STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

AMENDED APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20151 (TOMAHAWK)

Table of Contents

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

AMENDED APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC TO APPROVE SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO.

CASE NO. 20151

AMENDED APPLICATION

NGL Water Solutions Permian, LLC ("NGL"), OGRID No. 372338, through its undersigned attorneys, hereby submits this amended application to the Oil Conservation Division pursuant to the provisions of N.M. Stat. Ann. § 70-2-12, for an order approving drilling of a salt water disposal well in Lea County, New Mexico. In support of this application, NGL states as follows:

(1) NGL submitted an application to drill the Tomahawk SWD #1 well in November 2018. NGL is filing this amended application to update the proposed location for drilling the well.

(2) NGL proposes to drill the Tomahawk SWD #1 well at a surface location 900 feet from the North line and 151 feet from the East line of Section 4, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.

(3) NGL is proposing this change in location to accommodate the operations of an offset oil and gas operator.

(4) Apart from the change in location, NGL makes no further changes to the application NGL previously filed with the Division in November 2018.

(5) A revised plat, revised maps of the area of review, and a revised lists of wells and operators within the one-mile area of review are attached hereto in Attachment A.

(6) The granting of this application will avoid the drilling of unnecessary wells, will prevent waste, and will protect correlative rights.

(7) This case has been continued to the May 30, 2019 docket.

WHEREFORE, NGL requests that, after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: Deana M Bennett

Deana M. Bennett
Post Office Box 2168
500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

CASE NO. 20151: Application of NGL Water Solutions Permian, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Silurian-Devonian formation through the Tomahawk SWD #1 well at a surface location 900 feet from the North line and 151 feet from the East line of Section 4, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 16,805' to 18,475'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 16.9 miles northwest of Jal, New Mexico.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT
revised location

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
	97869	SWD; Devonian-Silurian

4 Property Code	5 Property Name	6 Well Number
	TOMAHAWK SWD	1

7 OGRID No.	8 Operator Name	9 Elevation
372338	NGL Water Solutions Permian, LLC	3373.00'±

10 Surface Location

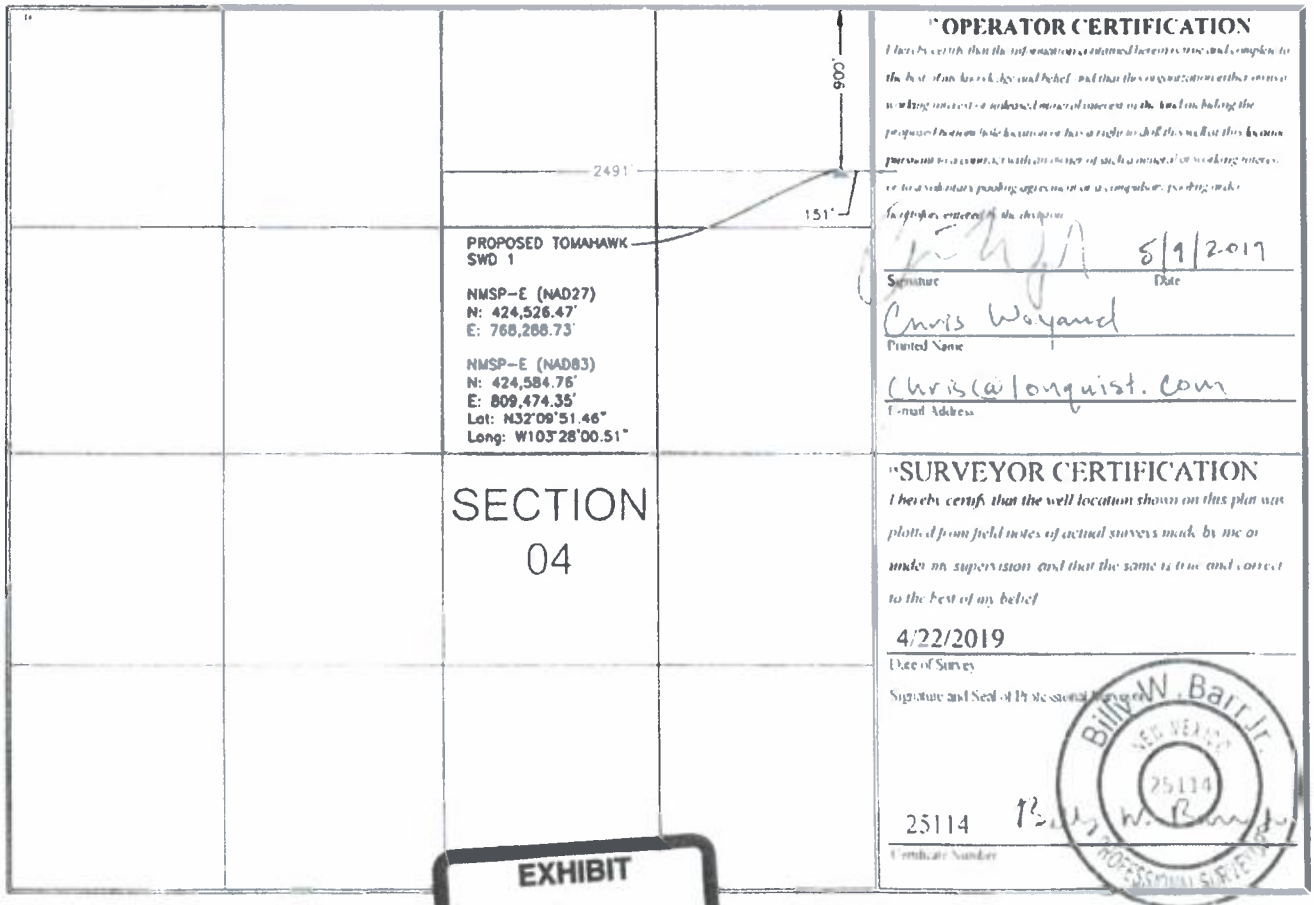
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	04	25 S	34 E	N/A	900'	NORTH	151'	EAST	LEA

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division



16 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

5/1/2019
Signature Date

Chris Wayland
Printed Name

chris@longuist.com
E-mail Address

17 SURVEYOR CERTIFICATION

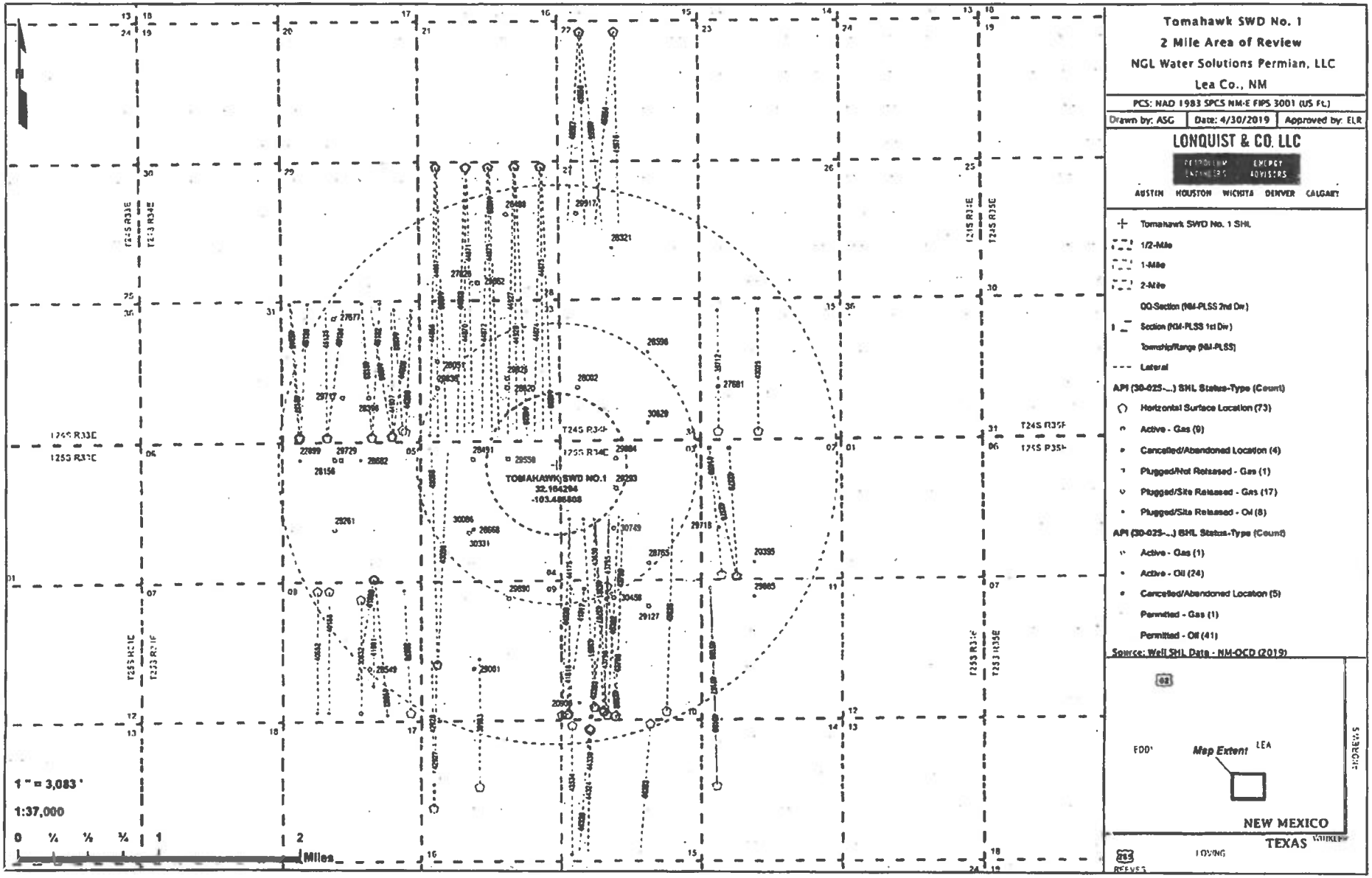
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

4/22/2019
Date of Survey

Signature and Seal of Professional Surveyor: Billy W. Barr Jr. NEW MEXICO 25114 PROFESSIONAL SURVEYOR

25114
Certificate Number

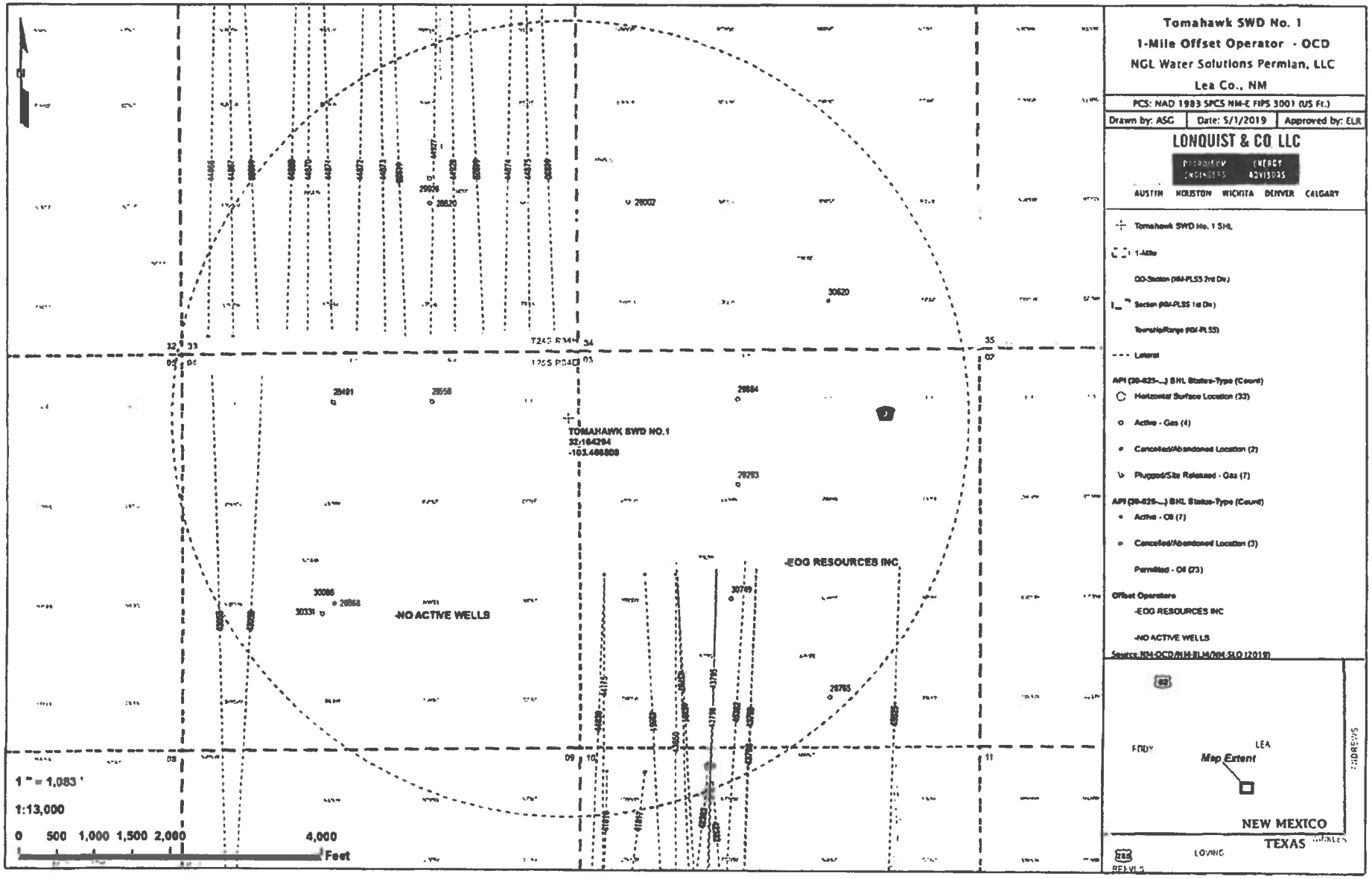
EXHIBIT
rabbler
A

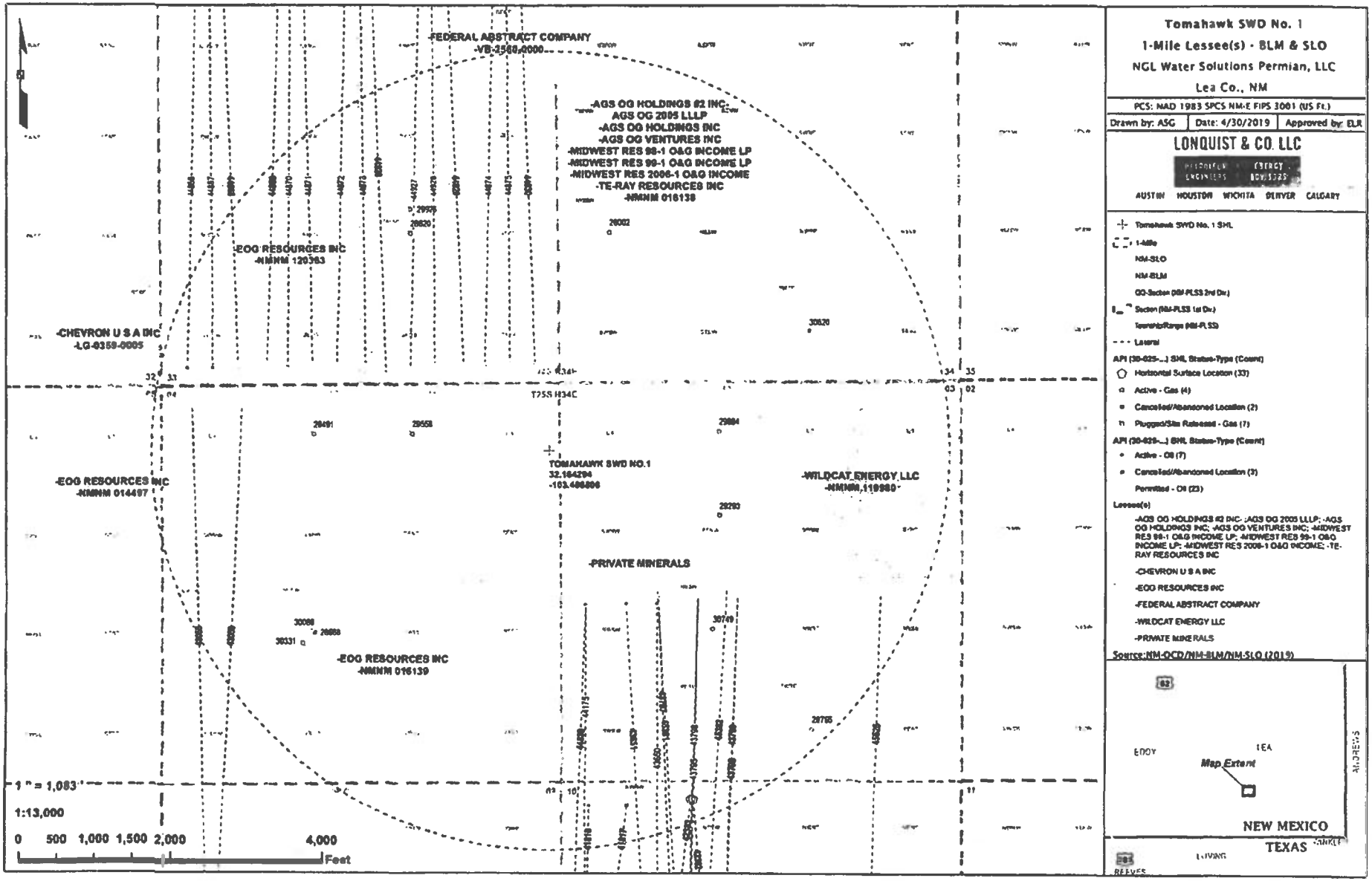

Tomahawk SWD No. 1
2 Mile Area of Review
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 4/30/2019
Approved by: ELR
LONQUIST & CO. LLC
AUSTIN HOUSTON WICHITA DENVER CALGARY
Tomahawk SWD No. 1 SHL
1/2-Mile
1-Mile
2-Mile
QQ-Section (NM-PLSS 2nd Div)
Section (NM-PLSS 1st Div)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (73)
Active - Gas (9)
Cancelled/Abandoned Location (4)
Plugged/Not Released - Gas (1)
Plugged/Site Released - Gas (17)
Plugged/Site Released - Oil (8)
API (30-025-...) SHL Status-Type (Count)
Active - Gas (1)
Active - Oil (24)
Cancelled/Abandoned Location (5)
Permitted - Gas (1)
Permitted - Oil (41)
Source: Well SHL Data - NM-OCD (2019)
TOMAHAWK SWD NO.1
32.184294
-103.486808
T24S R34E
T25S R34E
T24S R33E
T25S R33E
T24S R35E
T25S R35E
1" = 3,083'
1:37,000
0 ¼ ½ ¾ 1 2 Miles
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
REEVES

Tomahawk SWD No. 1

1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED
28002	PITCHFORK 34 FEDERAL COM #001	G	A	EOG RESOURCES INC	15435	32.17219160	-103.46417240	11/11/1982
28491	VACA RIDGE 4 FEDERAL COM #001	G	P	EOG RESOURCES INC	15160	32.16494750	-103.47695160	12/17/1983
28620	MADERA 33 FEDERAL COM #002	G	P	EOG RESOURCES INC	15159	32.17220310	-103.47270200	5/9/1984
28668	PRE-ONGARD WELL #001C	O	C	PRE-ONGARD WELL OPERATOR	0	32.15768643	-103.47695520	12/31/9999
28765	WARREN 3 #001	G	A	EOG RESOURCES INC	15420	32.15404890	-103.45567320	12/31/9999
29293	PAGE 3 COM #001	G	P	EOG RESOURCES INC	15600	32.16185380	-103.45956420	6/19/1985
29558	VACA RIDGE 4 FEDERAL COM #002	G	P	ROBERT E. LANDRETH	13975	32.16494370	-103.47268680	1/2/1986
29884	PAGE 3 COM #002	G	A	EOG RESOURCES INC	14110	32.16493230	-103.45956420	12/31/9999
29926	MADERA 33 FEDERAL COM #004	G	P	EOG RESOURCES INC	14000	32.17310330	-103.47270200	7/18/1987
30086	PITCHFORK 4 FEDERAL #001	G	P	EOG RESOURCES INC	15230	32.15769580	-103.47698210	12/31/9999
30331	PITCHFORK 4 FEDERAL #002	G	P	EOG RESOURCES INC	13845	32.15728380	-103.47747040	4/24/1988
30620	PITCHFORK 34 FEDERAL COM #002	O	C	EOG RESOURCES INC	0	32.16854643	-103.45566780	12/31/9999
30749	WARREN 3 #002	G	A	EOG RESOURCES INC	15350	32.15768810	-103.45988460	12/31/9999
41816	OSPREY 10 #601H	O	A	EOG RESOURCES INC	12092	32.13833620	-103.46568300	11/16/2014
41817	OSPREY 10 #002C	O	C	EOG RESOURCES INC	0	32.13833620	-103.46558380	12/31/9999
42382	OSPREY 10 #702C	O	C	EOG RESOURCES INC	0	32.15163106	-103.46071659	12/31/9999
42383	OSPREY 10 #701C	O	C	EOG RESOURCES INC	0	32.15163124	-103.46081399	12/31/9999
43055	HOLYFIELD 9 FEDERAL #001H	O	N	EOG RESOURCES INC	0	32.14360989	-103.48151420	12/31/9999
43056	HOLYFIELD 9 FEDERAL #002H	O	N	EOG RESOURCES INC	0	32.14360999	-103.48141730	12/31/9999
43650	OSPREY 10 #602H	O	A	EOG RESOURCES INC	12027	32.13910780	-103.46226830	4/7/2017
43651	OSPREY 10 #701H	O	A	EOG RESOURCES INC	12,405	32	-103	4/6/2017
43795	OSPREY 10 #603H	O	N	EOG RESOURCES INC	0	32.13867580	-103.46110560	12/31/9999
43796	OSPREY 10 #604H	O	N	EOG RESOURCES INC	0	32.13823000	-103.45974210	12/31/9999
43797	OSPREY 10 #702H	O	N	EOG RESOURCES INC	0	32.13876800	-103.46130410	12/31/9999
43798	OSPREY 10 #703H	O	N	EOG RESOURCES INC	0	32.13872190	-103.46120480	12/31/9999
43799	OSPREY 10 #704H	O	N	EOG RESOURCES INC	0	32.13815870	-103.45981800	12/31/9999
44175	OSPREY 10 #705H	O	A	EOG RESOURCES INC	12837	32.13844170	-103.46543340	11/30/2017
44839	OSPREY 10 #301H	O	A	EOG RESOURCES INC	10289	32.13835130	-103.46628760	6/25/2018
44866	STONEWALL 28 FEDERAL COM #301H	O	A	EOG RESOURCES INC	10348	32.19525230	-103.48139220	7/5/2018
44867	STONEWALL 28 FEDERAL COM #302H	O	A	EOG RESOURCES INC	10320	32.19525220	-103.48128550	7/7/2018
44868	STONEWALL 28 FEDERAL COM #703H	O	N	EOG RESOURCES INC	0	32.19525210	-103.48117880	12/31/9999
44869	STONEWALL 28 FEDERAL COM #704H	O	N	EOG RESOURCES INC	0	32.19524920	-103.47770980	12/31/9999
44870	STONEWALL 28 FEDERAL COM #705H	O	N	EOG RESOURCES INC	0	32.19524910	-103.47760310	12/31/9999
44871	STONEWALL 28 FEDERAL COM #706H	O	N	EOG RESOURCES INC	0	32.19524900	-103.47749650	12/31/9999
44872	STONEWALL 28 FEDERAL COM #707H	O	N	EOG RESOURCES INC	0	32.19524680	-103.47499170	12/31/9999
44873	STONEWALL 28 FEDERAL COM #708H	O	N	EOG RESOURCES INC	0	32.19524590	-103.47488510	12/31/9999
44874	STONEWALL 28 FEDERAL COM #713H	O	N	EOG RESOURCES INC	0	32.19524110	-103.46861270	12/31/9999
44875	STONEWALL 28 FEDERAL COM #714H	O	N	EOG RESOURCES INC	0	32.19524100	-103.46850600	12/31/9999
44926	STONEWALL 28 FEDERAL COM #709H	O	N	EOG RESOURCES INC	0	32.19524670	-103.47477840	12/31/9999
44927	STONEWALL 28 FEDERAL COM #710H	O	N	EOG RESOURCES INC	0	32.19524400	-103.47181290	12/31/9999
44928	STONEWALL 28 FEDERAL COM #711H	O	N	EOG RESOURCES INC	0	32.19524390	-103.47170620	12/31/9999
44929	STONEWALL 28 FEDERAL COM #712H	O	N	EOG RESOURCES INC	0	32.19524390	-103.47159960	12/31/9999
44930	STONEWALL 28 FEDERAL COM #715H	O	N	EOG RESOURCES INC	0	32.19524090	-103.46839930	12/31/9999
45381	OSPREY 10 #302H	O	N	EOG RESOURCES INC	0	32.13832410	-103.46084700	12/31/9999
45382	OSPREY 10 #303H	O	N	EOG RESOURCES INC	0	32.13832400	-103.46073400	12/31/9999
45525	OSPREY 10 #706H	O	N	EOG RESOURCES INC	0	32.13866000	-103.45355490	2/28/2019


Tomahawk SWD No. 1
1-Mile Offset Operator - OCD
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 5/1/2019
Approved by: ELR
LONQUIST & CO LLC
AUSTIN HOUSTON WICHITA DENVER CALGARY
Tomahawk SWD No. 1 SHL
1-Mile
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (33)
Active - Gas (4)
Canceled/Abandoned Location (2)
Plugged/Site Released - Gas (7)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (7)
Canceled/Abandoned Location (3)
Permitted - Oil (23)
Offset Operators
-EOG RESOURCES INC
-NO ACTIVE WELLS
Source: NM-OCD/NM-BLM/NM-SLO (2019)
TOMAHAWK SWD NO.1
32.164294
-103.486808
-EOG RESOURCES INC
-NO ACTIVE WELLS
T24S R34E
T25S R34E
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000
Feet
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING



Tomahawk SWD No. 1

1-Mile Lessee(s) - BLM & SLO

NGL Water Solutions Permian, LLC

Lea Co., NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)

Drawn by: ASG	Date: 4/30/2019	Approved by: ELR

LONQUIST & CO. LLC

PETROLEUM ENGINEERS ENERGY ADVISORS

AUSTIN HOUSTON WICHITA DENVER CALGARY

- Tomahawk SWD No. 1 SHL
- 1-Mile
- NM-SLO
- NM-BLM
- QQ-Section (NM-PLSS 2nd Div.)
- Section (NM-PLSS 1st Div.)
- Township/Range (NM-PLSS)
- Lateral

API (30-025-...) SHL Status-Type (Count)

- Horizontal Surface Location (33)
- Active - Gas (4)
- Canceled/Abandoned Location (2)
- Plugged/Site Released - Gas (7)

API (30-025-...) SHL Status-Type (Count)

- Active - Oil (7)
- Canceled/Abandoned Location (3)
- Permitted - Oil (23)

Lessee(s)

-AGS OG HOLDINGS #2 INC; -AGS OG 2005 LLLP; -AGS OG HOLDINGS INC; -AGS OG VENTURES INC; -MIDWEST RES 98-1 O&G INCOME LP; MIDWEST RES 98-1 O&G INCOME LP; MIDWEST RES 2006-1 O&G INCOME; -TE-RAY RESOURCES INC

-CHEVRON U S A INC

-EOG RESOURCES INC

-FEDERAL ABSTRACT COMPANY

-WILDCAT ENERGY LLC

-PRIVATE MINERALS

Source:NM-OCD/NM-BLM/NM-SLO (2019)

CASE NO. 20151: Application of NGL Water Solutions Permian, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Silurian-Devonian formation through the Tomahawk SWD #1 well at a surface location 900 feet from the North line and 151 feet from the East line of Section 4, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 16,805' to 18,475'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 16.9 miles northwest of Jal, New Mexico.

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC TO APPROVE SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO.

CASE NO. _____

APPLICATION

NGL Water Solutions Permian, LLC ("NGL"), OGRID No. 372338, through its undersigned attorneys, hereby makes this application to the Oil Conservation Division pursuant to the provisions of N.M. Stat. Ann. § 70-2-12, for an order approving drilling of a salt water disposal well in Lea County, New Mexico. In support of this application, NGL states as follows:

(1) NGL proposes to drill the Tomahawk SWD #1 well at a surface location 220 feet from the North line and 2420 feet from the East line of Section 4, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well.

(2) NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 16,805' to 18,475'.

(3) NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day.

(4) NGL anticipates using an average pressure of 2,520 psi for this well, and it requests that a maximum pressure of 3,361 psi be approved for the well.

(5) A proposed C-108 for the subject well is attached hereto in Attachment A.

(6) The granting of this application will avoid the drilling of unnecessary wells, will prevent waste, and will protect correlative rights.

WHEREFORE, NGL requests that this application be set for hearing before an Examiner of the Oil Conservation Division on January 10, 2018; and that after notice and hearing, the Division enter its order approving this application.

Respectfully submitted,

MODRALL, SPERLING, ROEHL, HARRIS
& SISK, P.A.

By: _____

Jennifer Bradfute
Deana Bennett
Post Office Box 2168
Bank of America Centre
500 Fourth Street NW, Suite 1000
Albuquerque, New Mexico 87103-2168
Telephone: 505.848.1800
Attorneys for Applicant

11

CASE NO. _____: Application of NGL Water Solutions Permian, LLC for approval of salt water disposal well in Lea County, New Mexico. Applicant seeks an order approving disposal into the Silurian-Devonian formation through the Tomahawk SWD #1 well at a surface location 220 feet from the North line and 2420 feet from the East line of Section 4, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 16,805' to 18,475'. NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 16.9 miles northwest of Jal, New Mexico.

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Geological & Engineering Bureau –
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: NGL WATER SOLUTIONS PERMIAN LLC **OGRID Number:** 37233[illegible]
Well Name: TOMAHAWK SWD #1 **API:** TBD
Pool: SWD; SILURIAN-DEVONIAN **Pool Code:** 96101

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]
A. Location – Spacing Unit – Simultaneous Dedication
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

B. Check one only for [I] or [II]
[I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
A. ☒ Offset operators or lease holders
B. ☐ Royalty, overriding royalty owners, revenue owners
C. ☒ Application requires published notice
D. ☒ Notification and/or concurrent approval by SLO
E. ☒ Notification and/or concurrent approval by BLM
F. ☒ Surface owner
G. ☐ For all of the above, proof of notification or publication is attached, and/or,
H. ☐ No notice required

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

11/16/2018
Date

CHRIS WEYAND
Print or Type Name

512-600-1764
Phone Number

Signature

CHRIS@LONQUIST.COM
e-mail Address

EXHIBIT
tabbies A

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ____ Secondary Recovery ____ Pressure Maintenance __X__ Disposal ____ Storage
Application qualifies for administrative approval? __X__ Yes ____ No

II. OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

ADDRESS: 1509 W WALL ST // STE 306 // MIDLAND, TX 79701

CONTACT PARTY: SARAH JORDAN PHONE: (432) 685-0005 x1989

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ____ Yes __X__ No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

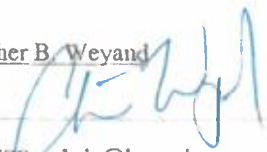
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Christopher B. Weyand TITLE: Consulting Engineer

SIGNATURE:  DATE: 11/16/2018

E-MAIL ADDRESS: chris@lonquist.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: NGL WATER SOLUTIONS PERMIAN, LLC

WELL NAME & NUMBER: TOMAHAWK SWD #1

WELL LOCATION:	220' FNL & 2,420' FEL	B	4	25S	34E
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 24.000"

Casing Size: 20.000"

Cemented with: 1,184 sx.

or _____ ft^3

Top of Cement: Surface

Method Determined: Circulation

1st Intermediate Casing

Hole Size: 17.500"

Casing Size: 13.375"

Cemented with: 4,983 sx.

or _____ ft^3

Top of Cement: Surface

Method Determined: Circulation

2nd Intermediate Casing

Hole Size: 12.250"

Casing Size: 9.625"

Cemented with: 3,295 sx.

or _____ ft^3

Top of Cement: Surface

Method Determined: Circulation

10

Production Liner

Hole Size: 8.500"

Casing Size: 7.625"

Cemented with: 330 sx.

or _____ ft^3

Top of Cement: 11,900'

Method Determined: Calculation

Total Depth: 18,475'

Injection Interval

16,805 feet to 18,475 feet

(Open Hole)

17

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 7", 26 lb/ft, P-110, TCPC from 0'- 11,800' and 5,500", 17 lb/ft, P-110 TCPC from 11,800' – 16,780'
Lining Material: Duoline

Type of Packer: 7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

Packer Setting Depth: 16,780'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? ___X___Yes _____No

   If no, for what purpose was the well originally drilled? N/A

2. Name of the Injection Formation: Devonian, Silurian, Fusselman and Montoya (Top 100')

3. Name of Field or Pool (if applicable): SWD; Silurian-Devonian

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No, new drill.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
   Bone Spring: 9,144'
   Wolfcamp: 12,034'
   Strawn: 13,428'
   Atoka: 13,726'
   Morrow: 14,103'

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Tomahawk SWD
Lea County NM
Vertical Injection - Devonian, Silurian, Fusselman, Montoya

Location - Sec 4, 25S, 34E
Drilling and Complete Cost - $10.69MM
AFE #

TD 18,475
GL/KB 3,365

Directions to Site - 21.4m NW from Jal NM Lat/Long - 32.1661694, -103.4741444

Geologic Tops (MD ft)	Section	Problems	Bit/BHA	Mud	Casing	Logging	Cement (HOLD)	Injection String
Rustler Anhydrite 994 **Surface TD - 1400**	**Surface** Drill 24" 0' - 1400 Set and Cement 20" Casing	Loss Circulation Hole Cleaning Wellbore stability in the Red Beds Anhydrite in the Rustler	24" Tricone 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface	Spud Mud MW< 9.0	1420' of 20" K55 133ppf STC Centralizers - bottom 2 joints and every 3rd jt thereafter, Cement basket at 200'	No Logs	Lead -499 sx of HES Extenda Cem, 13.7ppg, 4.5hrs TT Tail - 685x of Halcem 3hr TT 25% Excess 1000psi CSD after 10hrs	
Saldado 1419 **1st Int TD - 5300**	**1st Intermediate** Drill 3900' of 17-1/2" Hole 1400' - 5300' Set and Cement 13-3/8" Casing	Seepage Losses Possible H2S Anhydrite Salt Sections	17-1/2" PDC 9-5/8" x 8" MM 9 jts: 8" DC 21 jts: 5" HWDP 5 " DP to surface		5M A Section Casing Bowl. Stage tool positioned at top of salt 5300' of 13-3/8" 68# HCL80 BTC Centralizers - bottom jt, every 3rd joint in open hole and 2 jt inside the surface casing	Mudlogger on site by 1650'	**Stage 2** - 1316 sx of Halcem 13.7ppg (60% XS) **Stage 1** - 3667 sx of Halcem 13.7ppg (60% XS)	11,800' of 7" P110 26# TCPC
ECP DV Tool - 5260 Delaware 5257 Cherry Canyon - 6235 Brushy 7928 **DV Tool - 9200** Bone Spring - 9144 **3rd Int Liner Top - 11,900** Wolfcamp - 12034 **2nd Int TD - 12,400**	**2nd Intermediate** Drill 7100' of 12-1/4" Hole 5300' - 12,400' Set 9-5/8" Intermediate Casing and Cement in 3 Stages	Hard Drilling in the Brushy Canyon Seepage to Complete Loss Water Flows Some Anhydrite H2S possible Production in the Bone Spring and Wolfcamp Ballooning is possible in Cherry Canyon and Brushy if Broken Down	12-1/4" PDC 8" MM 9jts: 8" DC 8" Drilling Jars 21 jts: 5" HWDP 5" DP to Surface	8.5 ppg OBM High Vis Sweeps UBD/MPD usig ADA	10M B Section 12400' of 9-5/8" 53.5# P110 BTC **Special Drift to 8.535"** Externally Coat Between DV Tools DV tool at at 9200' ECP DV Tool 40' Inside Previous Casing Centralizers - bottom jt, 100' aside of DV tool, every 3rd joint in open hole and 5 within the surface casing	MWD GR Triple combo + CBL of 13-3/8" Casing	**Stage 3: 0% Excess** Lead 663sx Neocem 12.9 ppg Tail 534sx Halcem 14.8ppg 1000psi CSD after 10 hrs Cement to Surface **Stage 2: 25% Excess** Lead 480sx Neocem 12.9 ppg Tail 650sx Halcem 14.8ppg 1000psi CSD after 10 hrs **Stage 1: 25% Excess** Lead 498sx Neocem 12.9 ppg Tail 471sx Halcem 14.8ppg. 1000psi CSD after 10hrs	4980 of 5-1/2" P110 17# TCPC Duoline Internally Coated Injection Tubing
Strawn - 13428 Atoka - 13726 Morrow - 14103 Miss Lst - 16283 Woodford - 16605 Perm Packer - 16,780 **3rd Int TD - 16,805**	**3rd Intermediate** Drill 4405' of 8-1/2" Hole 12400 - 16805' Set 7-5/8" Liner and Cement in Single Stage	High Pressure (up to 15ppg) and wellbore instability (fracturing) expected in the Atoka 150 target radius Hard Drilling in the Morrow Clastic	8-1/2" PDC 6-3/4" MM 9 jts: 6" DC 21 jts: 5" HWDP 5" DP to Surface	12.5 ppg OBM UBD/MPD using ADA	4905' of 7 5/8" 39# Q125 - DTL (FJ4) FJ (Gas Tight) VersaFlex Packer Hanger Centralizers on and 1 jt above shoe jt and then every 2nd jt.	MWD GR Triple combo, CBL of 9-5/8" Casing	330 sx of Halcem 13.7ppg Cement (30% XS)	7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and full Inconel 925 trim
Devonian - 16,785 Fusselman - 17805 Montoya - 18,375' TD - 18,475'	**Injection Interval** Drill 1670' of 6-1/2" hole 16805' - 18475'	Chert is possible Well flows or LC is expected H2S encountered on the Striker 3 well BHT estimated at 280F	6-1/2" PDC 4-3/4"MM 9 jts: 4-3/4" DC 4-3/4" Drilling Jars 18 jts: 4" FH HWDP 4" FH DP to Surface	Drill with Brine water	Openhole completion	MWD GR Triple Combo with FMI, CBL of 7-5/8"	Brine Water in OH	

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NGL Water Solutions Permian, LLC

Tomahawk SWD No. 1

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Tomahawk SWD
Well No.	1
Location	S-4 T-25S R-34E
Footage Location	220' FNL & 2,420' FEL

2.

a. Wellbore Description

Casing Information				
Type	Surface	Intermediate	Production	Liner
OD	20"	13.375"	9.625"	7.625"
WT	0.635"	0.480"	0.545"	0.500"
ID	18.730"	12.415"	8.535"	6.625"
Drift ID	18.542"	12.259"	8.535"	6.500"
COD	21.00"	14.375"	10.625"	7.625"
Weight	133 lb/ft	68 lb/ft	53.5 lb/ft	39 lb/ft
Grade	K-55	HCL-80	P-110	Q-125
Hole Size	24"	17.5"	12.25"	8.5"
Depth Set	1,400'	5,300'	12,400'	16,805'

b. Cementing Program

Cement Information				
Casing String	Surface	Intermediate	Production	Liner
Lead Cement	Extenda Cem	-	Neocem, Neocem, Neocem	-
Lead Cement Volume	499	-	Stage 1: 498 sx Stage 2: 480 sx Stage 3: 663 sx	-
Tail Cement	Halcem	Halcem, Halcem	Versacem C, Halcem, Halcem	Halcem
Tail Cement Volume	685	Stage 1: 3,667 Stage 2: 1,316	Stage 1: 471 sx Stage 2: 650 sx Stage 3: 534 sx	330
Cement Excess	25%	60%	25%, 25%, 0%	35%
TOC	Surface	Surface	Surface	11,900'
Method	Circulate to Surface	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information		
OD	7"	5.5"
WT	0.362"	0.304"
ID	6.276"	4.892"
Drift ID	7.875"	6.050"
COD	6.151"	4.653"
Weight	26 lb/ft	17 lb/ft
Grade	P-110 TCPC	P-110 TCPC
Depth Set	0'-11,800'	11,800' -16,780'

Tubing will be lined with Duoline.

4. Packer Description

7-5/8" x 5-1/2" TCPC Permanent Packer with High Temp Elastomer and Full Inconel 925 trim

B. Completion Information

1. Injection Formation: Devonian, Silurian, Fusselman, Montoya (Top 100')
2. Gross Injection Interval: 16,805' – 18,475'

   Completion Type: Open Hole
3. Drilled for injection.
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Bone Spring	9,144'
Wolfcamp	12,034'
Strawn	13,428'
Atoka	13,726'
Morrow	14,103'

VI. Area of Review

No wells within the area of review penetrate the proposed injection zone.

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

   Average Volume: 40,000 BPD
   Maximum Volume: 50,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

   Average Injection Pressure: 2,520 PSI (surface pressure)
   Maximum Injection Pressure: 3,361 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Bone Spring and Wolfcamp formations. Attached are produced water sample analyses taken from the closest wells that feature samples from the Delaware, Bone Spring, Wolfcamp, Strawn, Atoka, and Morrow formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area.

VIII. Geological Data

The Devonian formation is a dolomitic ramp carbonate that occurs below the Woodford shale and above the Fusselman formation. Strata found in the Devonian formation include two major groups, the Wristen Buildups and the Thirtyone Deepwater Chert, with the Wristen being more abundant. The Wristen Groups is composed of mixed limestone and dolomites with mudstone to grainstone and boundstone textures. Porosity in the Wristen group is a result of both primary and secondary development. Present are moldic, vugular, karstic (including collapse breccia) features that allow for higher porosities and permeabilities. The Thirtyone Formation contains two end-member reservoir facies, skeletal packstones/grainstones and spiculitic chert, with most of the porosity and permeability found in the coarsely crystalline cherty dolomite. These particular characteristics allow for this formation to be a tremendous Salt Water Disposal horizon.

A. Injection Zone: Siluro-Devonian Formation

Formation	Depth
Rustler	994'
Salado	1,419'
Delaware	5,257'
Cherry Canyon	6,235'
Brushy Canyon	7,928'
Bone Spring	9,144'
Wolfcamp	12,034'
Strawn	13,428'
Atoka	13,726'
Morrow	14,103'
Mississippian Lime	16,283'
Woodford	16,605'
Devonian	16,785'
Fusselman	17,805'
Montoya	18,375'

B. Underground Sources of Drinking Water

No water wells exists within one mile of the proposed Tomahawk SWD #1 location. Water wells in the surrounding area have an average depth of 293 ft and an average water depth of 241 ft generally producing from the Santa Rosa. The upper Rustler may also be another USDW and will be protected.

IX. Proposed Stimulation Program

Stimulate with up to 50,000 gallons of acid.

X. Logging and Test Data on the Well

There are no logs or test data on the well. During the process of drilling and completion resistivity, gamma ray, and density logs will be run.

XI. Chemical Analysis of Fresh Water Wells

No water wells exist within one mile of the proposed well location.

XII. Affirmative Statement of Examination of Geologic and Engineering Data

Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed **Tomahawk SWD #1**) and any underground sources of drinking water.

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: John C. Webb

DATE: Nov. 4 2018

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address	2. OGRID Number
NGL WATER SOLUTIONS PERMIAN, LLC 1509 W WALL ST, STE 306 MIDLAND, TX 79701	372338
	3. API Number TBD

4. Property Code	5. Property Name	6. Well No.
	TOMAHAWK SWD	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
B	04	25S	34E	N/A	220'	NORTH	2,420'	EAST	LEA

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
	-	-	-		-	-	-	-	-

9. Pool Information

Pool Name	Pool Code
SWD; Silurian-Devonian	96101

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
N	SWD	R	Private	3,345'
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	18,475'	Siluro-Devonian	TBD	ASAP
Depth to Ground water	Distance from nearest fresh water well		Distance to nearest surface water	
241'	> 1 mile		505'	

☐ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	24"	20"	133 lb/ft	1,400'	1,184	Surface
Intermediate	17.5"	13.375"	68 lb/ft	5,300'	4,983	Surface
Production	12.25"	9 625"	53.5 lb/ft	12,400'	3,295	Surface
Prod. Liner	8.5"	7.625"	39 lb/ft	11,900' – 16,805'	330	11,900'
Tubing	N/A	7"	26 lb/ft	0' – 11,800'	N/A	N/A
Tubing	N/A	5.5"	17 lb/ft	11,800' – 16,780'	N/A	N/A

Casing/Cement Program: Additional Comments

See attached schematic.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	10,000 psi	8,000 psi	TBD – Schaffer/Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒, if applicable. Signature:	OIL CONSERVATION DIVISION Approved By:
Printed name: Christopher B. Wyland	Title:
Title: Consulting Engineer	Approved Date: / Expiration Date:
E-mail Address: chris@lonquist.com	
Date: 11/15/2018 / Phone: (512) 600-1764	Conditions of Approval Attached

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
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Phone: (505) 334-6178 Fax: (505) 334-6170
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1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	96101	SWD; Silurian-Devonian

[4] Property Code	[5] Property Name	[6] Well Number
	TOMAHAWK SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
372338	NGL WATER SOLUTIONS PERMIAN, LLC	3345.00'±

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	04	25 S	34 E	N/A	220'	NORTH	2420'	EAST	LEA

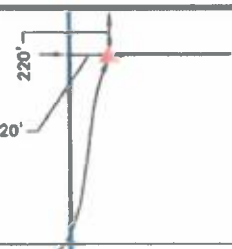
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]



PROPOSED TOMAHAWK SWD 1

NMSP-E (NAD27)
N: 425,190.52'
E: 766,013.42'

NMSP-E (NAD83)
N: 425,248.81'
E: 807,198.97'
Lat: N32°09'58.21"
Long: W103°28'26.92"

SECTION 04

[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 11/16/2018

Chris Weyand
Printed Name

chris@lonquist.com
E-mail Address

[18] SURVEYOR CERTIFICATION

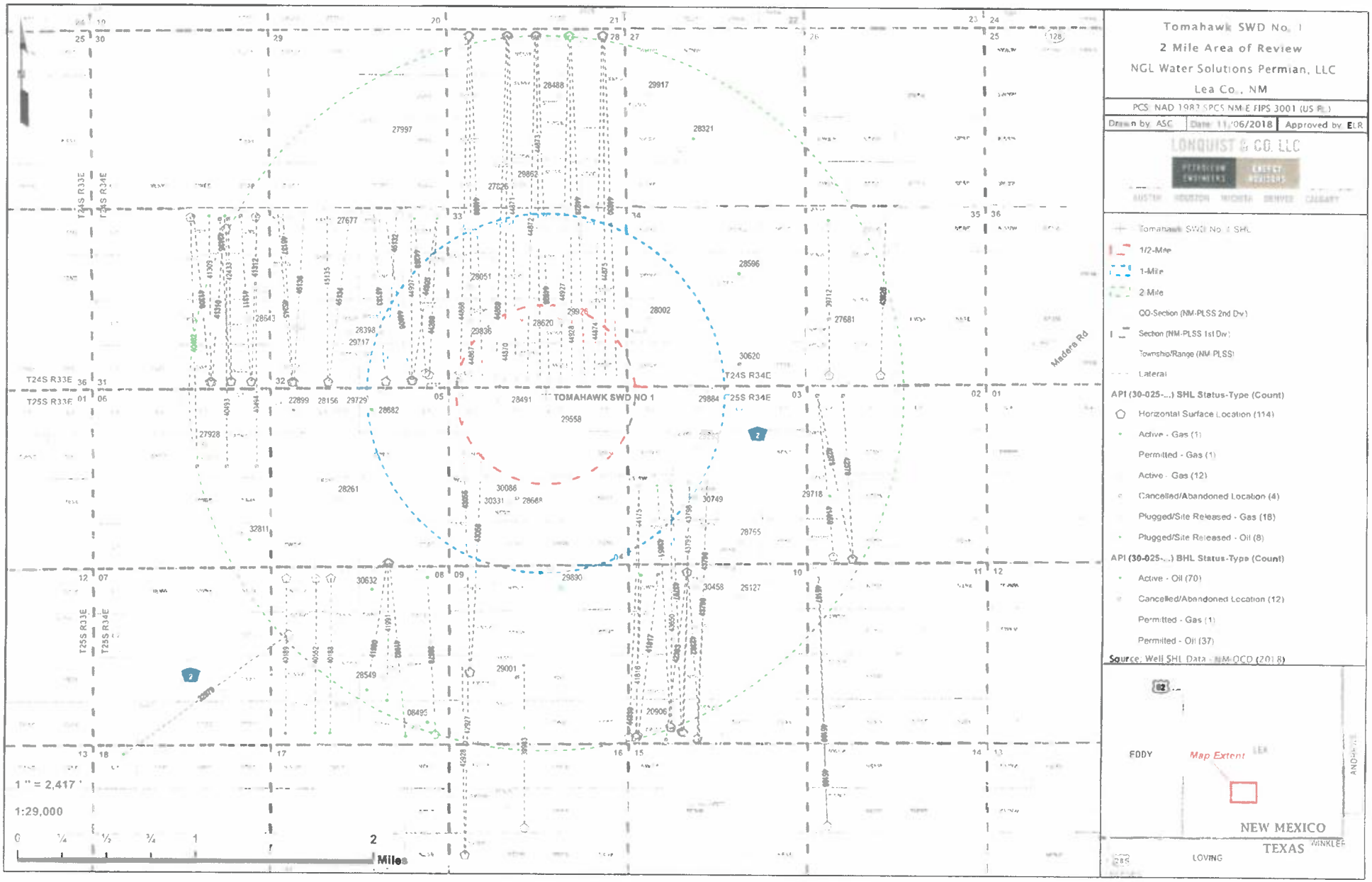
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

10/23/18
Date of Survey

Signature and Seal of Professional Surveyor

CODY A. CLARK — NEW MEXICO — 23001 — PROFESSIONAL SURVEYOR

23001
Certificate Number


Tomahawk SWD No. 1
2 Mile Area of Review
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US FT.)
Drawn by: ASC
Date: 11/06/2018
Approved by: ELR
LONQUIST & CO. LLC
Tomahawk SWD No. 1 SHL
1/2-Mile
1-Mile
2-Mile
QQ-Section (NM-PLSS 2nd Div)
Section (NM-PLSS 1st Div)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (114)
Active - Gas (1)
Permitted - Gas (1)
Active - Gas (12)
Cancelled/Abandoned Location (4)
Plugged/Site Released - Gas (18)
Plugged/Site Released - Oil (8)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (70)
Cancelled/Abandoned Location (12)
Permitted - Gas (1)
Permitted - Oil (37)
Source: Well SHL Data - NMOCD (2018)
TOMAHAWK SWD NO 1
Madera Rd
T24S R33E
T24S R34E
T25S R33E
T25S R34E
1 " = 2,417 '
1:29,000
0 1/4 1/2 3/4 1 2 Miles
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
WINKLER

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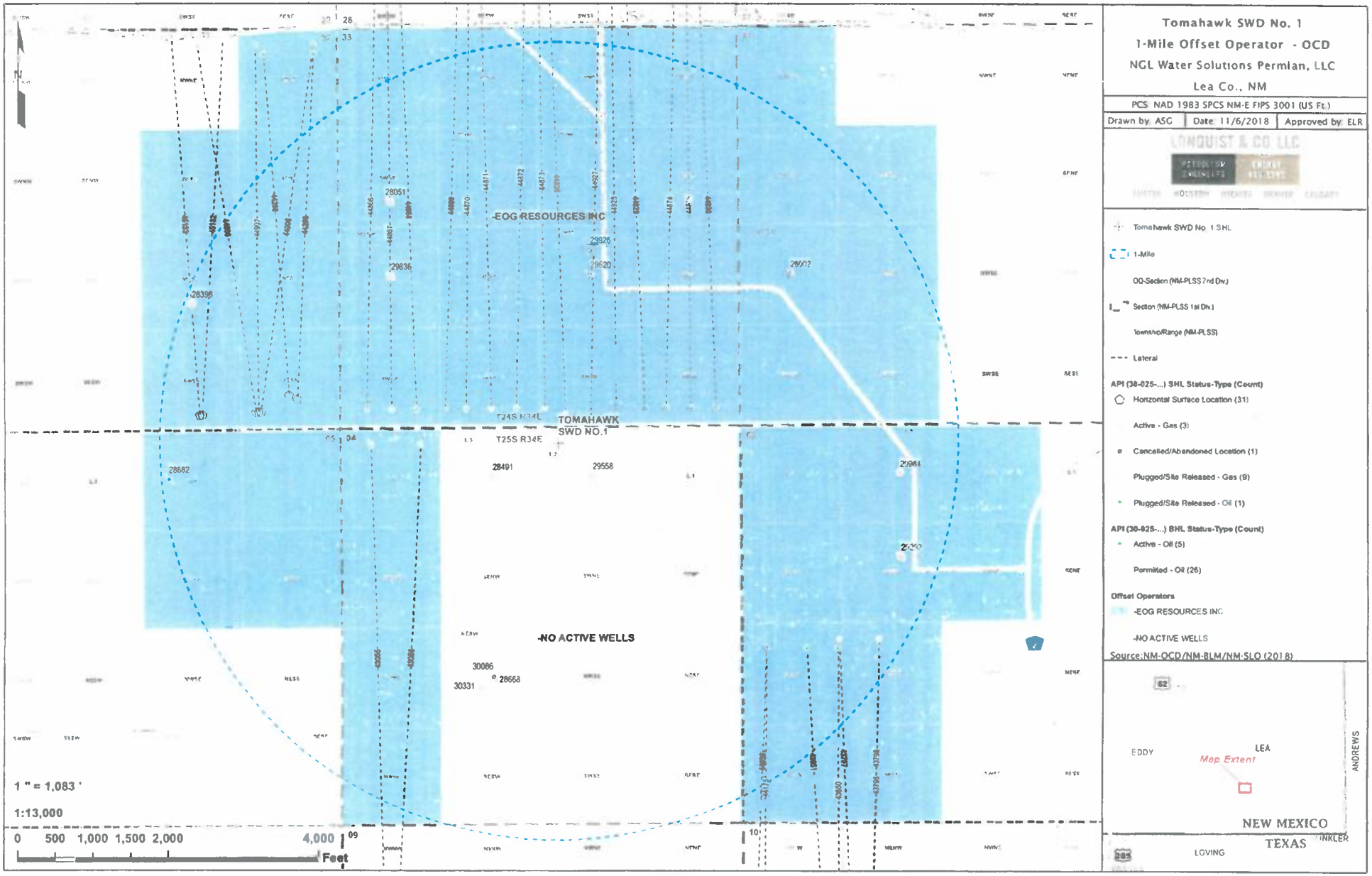
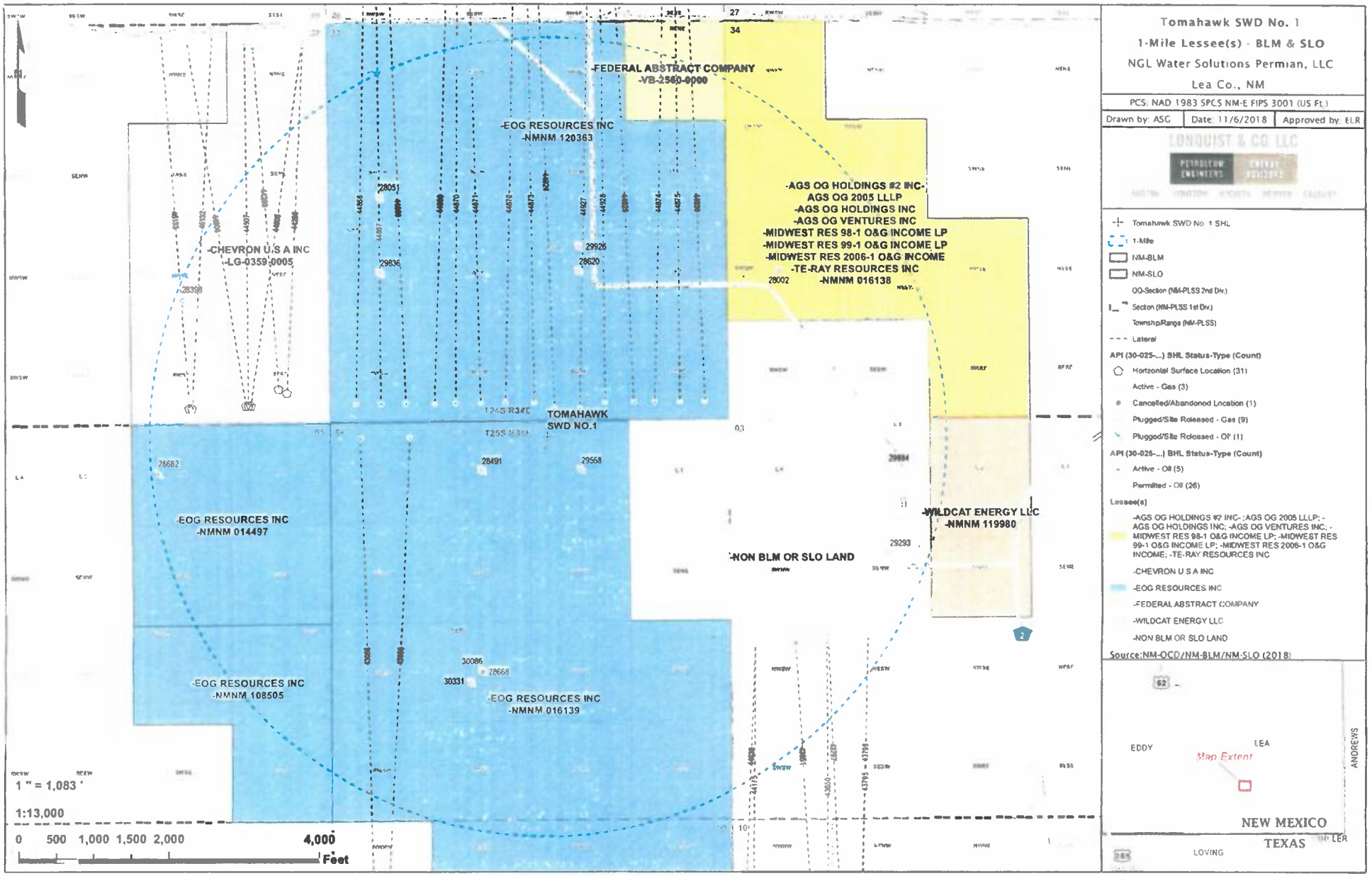
Tomahawk SWD No. 1
1 Mile Area of Review List

API (30-025-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	DATE DRILLED
28002	PITCHFORK 34 FEDERAL COM #001	G	A	EOG RESOURCES INC	15435	32.17219160	-103.46417240	11/11/1982
28051	MADERA 33 FEDERAL COM #001	G	P	EOG RESOURCES INC	15130	32.17493820	-103.48122410	2/18/1982
28398	MADERA 32 STATE #002	G	A	EOG RESOURCES INC	15160	32.17131040	-103.48975370	10/5/1983
28491	VACA RIDGE 4 FEDERAL COM #001	G	P	EOG RESOURCES INC	15160	32.16494750	-103.47695160	12/17/1983
28620	MADERA 33 FEDERAL COM #002	G	P	EOG RESOURCES INC	15159	32.17220310	-103.47270200	5/9/1984
28668	PRE-ONGARD WELL #001C	O	C	PRE-ONGARD WELL OPERATOR	0	32.15768643	-103.47695520	12/31/9999
28682	DIAMOND 5 FEDERAL #002	O	P	EOG RESOURCES INC	5583	32.16496280	-103.49082180	1/1/1900
29293	PAGE 3 COM #001	G	P	EOG RESOURCES INC	15600	32.16185380	-103.45956420	6/19/1985
29558	VACA RIDGE 4 FEDERAL COM #002	G	P	ROBERT E. LANDRETH	13975	32.16494370	-103.47268680	1/2/1986
29836	MADERA 33 FEDERAL COM #003	G	P	EOG RESOURCES INC	13960	32.17221070	-103.48122410	7/19/1987
29884	PAGE 3 COM #002	G	A	EOG RESOURCES INC	14110	32.16493230	-103.45956420	12/31/9999
29926	MADERA 33 FEDERAL COM #004	G	P	EOG RESOURCES INC	14000	32.17310330	-103.47270200	7/18/1987
30086	PITCHFORK 4 FEDERAL #001	G	P	EOG RESOURCES INC	15230	32.15769580	-103.47698210	12/31/9999
30331	PITCHFORK 4 FEDERAL #002	G	P	EOG RESOURCES INC	13845	32.15728380	-103.47747040	4/24/1988
41817	OSPREY 10 #002C	O	C	EOG RESOURCES INC	0	32.13833620	-103.46558380	12/31/9999
43055	HOLYFIELD 9 FEDERAL #001H	O	N	EOG RESOURCES INC	0	32.14360989	-103.48151420	12/31/9999
43056	HOLYFIELD 9 FEDERAL #002H	O	N	EOG RESOURCES INC	0	32.14360999	-103.48141730	12/31/9999
43650	OSPREY 10 #602H	O	A	EOG RESOURCES INC	12027	32.13910780	-103.46226830	4/7/2017
43651	OSPREY 10 #701H	O	A	EOG RESOURCES INC	12405	32.13915390	-103.46236750	4/6/2017
43795	OSPREY 10 #603H	O	N	EOG RESOURCES INC	0	32.13867580	-103.46110560	12/31/9999
43797	OSPREY 10 #702H	O	N	EOG RESOURCES INC	0	32.13876800	-103.46130410	12/31/9999
43798	OSPREY 10 #703H	O	N	EOG RESOURCES INC	0	32.13872190	-103.46120480	12/31/9999
44268	COBALT 32 STATE #701H	O	A	EOG RESOURCES INC	12285	32.16786990	-103.48527900	1/24/2018
44269	COBALT 32 STATE #702H	O	A	EOG RESOURCES INC	12291	32.16802350	-103.48563420	1/26/2018
44839	OSPREY 10 #301H	O	N	EOG RESOURCES INC	0	32.13835130	-103.46628760	6/25/2018
44866	STONEWALL 28 FEDERAL COM #301H	O	N	EOG RESOURCES INC	0	32.19525230	-103.48139220	7/5/2018
44867	STONEWALL 28 FEDERAL COM #302H	O	N	EOG RESOURCES INC	0	32.19525220	-103.48128550	7/7/2018
44868	STONEWALL 28 FEDERAL COM #703H	O	N	EOG RESOURCES INC	0	32.19525210	-103.48117880	12/31/9999
44869	STONEWALL 28 FEDERAL COM #704H	O	N	EOG RESOURCES INC	0	32.19524920	-103.47770980	12/31/9999
44870	STONEWALL 28 FEDERAL COM #705H	O	N	EOG RESOURCES INC	0	32.19524910	-103.47760310	12/31/9999
44871	STONEWALL 28 FEDERAL COM #706H	O	N	EOG RESOURCES INC	0	32.19524900	-103.47749650	12/31/9999
44872	STONEWALL 28 FEDERAL COM #707H	O	N	EOG RESOURCES INC	0	32.19524680	-103.47499170	12/31/9999
44873	STONEWALL 28 FEDERAL COM #708H	O	N	EOG RESOURCES INC	0	32.19524590	-103.47488510	12/31/9999
44874	STONEWALL 28 FEDERAL COM #713H	O	N	EOG RESOURCES INC	0	32.19524110	-103.46861270	12/31/9999
44875	STONEWALL 28 FEDERAL COM #714H	O	N	EOG RESOURCES INC	0	32.19524100	-103.46850600	12/31/9999
44905	COBALT 32 STATE #201H	O	N	EOG RESOURCES INC	0	32.16741620	-103.48683750	12/31/9999
44906	COBALT 32 STATE #202H	O	N	EOG RESOURCES INC	0	32.16741620	-103.48705070	12/31/9999
44907	COBALT 32 STATE #301H	O	N	EOG RESOURCES INC	0	32.16741620	-103.48694410	12/31/9999
44926	STONEWALL 28 FEDERAL COM #709H	O	N	EOG RESOURCES INC	0	32.19524670	-103.47477840	12/31/9999
44927	STONEWALL 28 FEDERAL COM #710H	O	N	EOG RESOURCES INC	0	32.19524400	-103.47181290	12/31/9999
44928	STONEWALL 28 FEDERAL COM #711H	O	N	EOG RESOURCES INC	0	32.19524390	-103.47170620	12/31/9999
44929	STONEWALL 28 FEDERAL COM #712H	O	N	EOG RESOURCES INC	0	32.19524390	-103.47159960	12/31/9999
44930	STONEWALL 28 FEDERAL COM #715H	O	N	EOG RESOURCES INC	0	32.19524090	-103.46839930	12/31/9999
45132	COBALT 32 STATE #703H	O	N	EOG RESOURCES INC	0	32.16733400	-103.48937420	12/31/9999
45133	COBALT 32 STATE #704H	O	N	EOG RESOURCES INC	0	32.16733400	-103.48948080	12/31/9999

29


Tomahawk SWD No. 1
1-Mile Offset Operator - OCD
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASG
Date: 11/6/2018
Approved by: ELR
LONQUIST & CO. LLC
Tomahawk SWD No. 1 SHL
1-Mile
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (31)
Active - Gas (3)
Cancelled/Abandoned Location (1)
Plugged/Site Released - Gas (9)
Plugged/Site Released - Oil (1)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (5)
Permitted - Oil (26)
Offset Operators
-EOG RESOURCES INC
-NO ACTIVE WELLS
Source:NM-OCD/NM-BLM/NM-SLO (2018)
-EOG RESOURCES INC
-NO ACTIVE WELLS
TOMAHAWK SWD NO.1
T25S R34E
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000 Feet
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
ANDREWS


Tomahawk SWD No. 1
1-Mile Lessee(s) - BLM & SLO
NGL Water Solutions Permian, LLC
Lea Co., NM
PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: ASC
Date: 11/6/2018
Approved by: ELR
LONQUIST & CO LLC
PETROLEUM ENGINEERS
ENERGY ADVISORS
-FEDERAL ABSTRACT COMPANY
-VB-2560-0000
-EOG RESOURCES INC
-NMNM 120363
-AGS OG HOLDINGS #2 INC-
AGS OG 2005 LLLP
-AGS OG HOLDINGS INC
-AGS OG VENTURES INC
-MIDWEST RES 98-1 O&G INCOME LP
-MIDWEST RES 99-1 O&G INCOME LP
-MIDWEST RES 2006-1 O&G INCOME
-TE-RAY RESOURCES INC
-NMNM 016138
-CHEVRON U.S A INC
-LG-0359-0005
TOMAHAWK
SWD NO.1
-EOG RESOURCES INC
-NMNM 014497
-EOG RESOURCES INC
-NMNM 108505
-EOG RESOURCES INC
-NMNM 016139
-WILDCAT ENERGY LLC
-NMNM 119980
-NON BLM OR SLO LAND
Tomahawk SWD No. 1 SHL
1-Mile
NM-BLM
NM-SLO
QQ-Section (NM-PLSS 2nd Div.)
Section (NM-PLSS 1st Div.)
Township/Range (NM-PLSS)
Lateral
API (30-025-...) SHL Status-Type (Count)
Horizontal Surface Location (31)
Active - Gas (3)
Cancelled/Abandoned Location (1)
Plugged/Site Released - Gas (9)
Plugged/Site Released - Oil (1)
API (30-025-...) BHL Status-Type (Count)
Active - Oil (5)
Permitted - Oil (26)
Lessee(s)
-AGS OG HOLDINGS #2 INC- ;AGS OG 2005 LLLP; -AGS OG HOLDINGS INC; -AGS OG VENTURES INC; -MIDWEST RES 98-1 O&G INCOME LP; -MIDWEST RES 99-1 O&G INCOME LP; -MIDWEST RES 2006-1 O&G INCOME; -TE-RAY RESOURCES INC
-CHEVRON U S A INC
-EOG RESOURCES INC
-FEDERAL ABSTRACT COMPANY
-WILDCAT ENERGY LLC
-NON BLM OR SLO LAND
Source:NM-OCD/NM-BLM/NM-SLO (2018)
EDDY
LEA
Map Extent
NEW MEXICO
TEXAS
LOVING
ANDREWS
1 " = 1,083 '
1:13,000
0 500 1,000 1,500 2,000 4,000
Feet

3

Tomahawk SWD #1: Offsetting Produced Water Analysis																	
wellname	api	section	township	range	unit	county	formation	ph	tds_mgL	sodium_mgL	calcium_mgL	iron_mgL	magnesium_mgL	manganese_mgL	chloride_mgL	bicarbonate_mgL	sulfate_mgL	co2_mgL
BELL LAKE UNIT #002	3002508489	30	23S	34E	N	LEA	DELAWARE		52115						32200	451	529	
BELL LAKE UNIT A #007	3002508367	1	24S	33E	A	LEA	DELAWARE		87686						53920	391	749	
BELL LAKE UNIT #009	3002520261	18	23S	34E	K	LEA	BONE SPRING		204652						130000	512	260	
CORIANDER AOC STATE #002	3002533574	1	23S	32E	H	LEA	BONE SPRING	5.2			24176	0	3815		167962	61.1	165	
THISTLE UNIT #071H	3002542425	27	23S	33E	A	Lea	BONE SPRING 1ST SAND	5.6	171476.3	55363.2	9140	40.4	1023	1.1	104576.4	244	560	770
BELL LAKE 19 STATE #002H	3002541515	19	24S	33E	O	Lea	BONE SPRING 2ND SAND	6.2		47148	6419	15	854	0	86572	232	670	240
BELL LAKE 19 STATE #004H	3002541517	19	24S	33E	O	Lea	BONE SPRING 2ND SAND	6.3		47537	6950	11	886	0	88389	171	650	210
SALADO DRAW 6 FEDERAL #001H	3002541293	6	26S	34E	M	Lea	BONE SPRING 3RD SAND	6.5	99612.7	34586.5	3244	10.3	417.7	0.39	59986.5	158.6	820	50
GAUCHO UNIT #011H	3002541184	17	22S	34E	O	Lea	BONE SPRING 3RD SAND	6.5		48879	6182	11	802	0.12	88836	122	1240	70
SNAPPING 2 STATE #014H	3001542688	2	26S	31E	P	EDDY	WOLFCAMP	7.3	81366.4	26319.4	2687.4	26.1	326.7		50281.2		399.7	100
BELLOQ 2 STATE #002H	3001542895	2	23S	31E	C	EDDY	WOLFCAMP	6.8	119471.8	37359.2	5659.1	22.4	746.1		73172.5		1035.5	250
PRONGHORN AHO FEDERAL #001	3002526496	6	23S	33E	G	LEA	STRAWN	5.5			20.1	0	12.2		35.5	61.1	48.8	
ANTELOPE RIDGE UNIT #002	3002520444	4	24S	34E	B	LEA	ATOKA	6.7	51475						31000	317	340	
CUSTER MOUNTAIN UNIT #001	3002520756	9	24S	35E	K	LEA	MORROW		282741						176800	161	650	

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC TO APPROVE SALT WATER DISPOSAL WELLS IN LEA AND EDDY COUNTY, NEW MEXICO

CASE NO. 20151

WITHDRAWAL OF ENTRY OF APPEARANCE

The New Mexico State Land Office, through its undersigned counsel, hereby withdraws its Entry of Appearance as a party in the above cases.

Respectfully submitted,

Andrea Antillon
Associate Counsel,
New Mexico State Land Office
PO Box 1148
310 Old Santa Fe Trail
Santa Fe, NM 87504
(505) 827-5752
(505) 827-4262 fax
aantillon@slo.state.nm.us

ATTORNEY FOR THE COMMISSIONER OF PUBLIC LANDS, NEW MEXICO STATE LAND OFFICE

EXHIBIT
tabbies
1·B

CERTIFICATE OF SERVICE

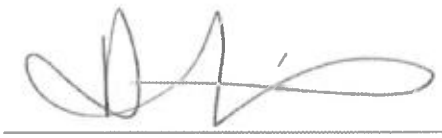
I hereby certify that on this 23rd day of May, 2019, a copy of the foregoing Withdrawal of Entry of Appearance was served via email upon the following:

Deana M. Bennett
Modrall Sperling
500 Fourth Street NW, Suite 1000
P.O. Box 2168
Albuquerque, NM 87102
dmb@modrall.com

Michael Feldewert
mfeldewert@hollandhart.com

Adam Rankin
arankin@hollandhart.com

Julia Broggi
jbroggi@hollandhart.com



Andrea Antillon

Deana M. Bennett

From: Adam Rankin <AGRankin@hollandhart.com>
Sent: Thursday, March 14, 2019 11:18 AM
To: Jones, William V, EMNRD; Ocd.Hearings@state.nm.us
Cc: Gary Larson; jamesbruc@aol.com; 'Moellenberg, Dalva L.'; Antillon, Andrea; jamesbruc@aol.com; Deana M. Bennett
Subject: Marathon - withdrawal of objections/EOAs in Harpoon, Maverick, Tomahawk and Thurnderbolt

***

Examiners and counsel,

This is to advise that Marathon hereby withdraws its objections and entries of appearance in the following NGL cases:

- Harpoon Case No. 16506;
- Maverick Case No. 20150;
- Tomahawk Case No. 20151; and
- Thunderbolt Case No. 20236.

Thank you.

From: Deana M. Bennett <dmb@modrall.com>
Sent: Thursday, March 14, 2019 10:43 AM
To: Jones, William V, EMNRD <WilliamV.Jones@state.nm.us>; Ocd.Hearings@state.nm.us
Cc: Gary Larson <glarson@hinklelawfirm.com>; Adam Rankin <AGRankin@hollandhart.com>; jamesbruc@aol.com; 'Moellenberg, Dalva L.' <DLM@gknet.com>; Antillon, Andrea <aantillon@slo.state.nm.us>; jamesbruc@aol.com
Subject: NGL cases on docket to continue

Hello,

Please continue the following NGL cases. Counsel for parties who have entered an appearance are cc'd on this email. I have heard back from most everyone cc'd and they do not oppose the continuance. Thanks. Deana

Well Name	Case Nos.	Hearing Date	Continue
Harpoon	16506	3/21/2019	April 18
Maverick	20150	3/21/2019	April 18
Tomahawk	20151	3/21/2019	April 18
Cobra	16504	3/21/2019	April 18
Quintana	20140	3/21/2019	May 16
Thunderbolt	20236	3/21/2019	May 16

Raptor	16509	3/21/2019	May 16

MODRALL SPERLING
Deana M. Bennett
Lawyer
Modrall Sperling | www.modrall.com
P.O. Box 2168 | Albuquerque, NM 87103-2168
500 4th St. NW, Ste. 1000 | Albuquerque, NM 87102
D: 505.848.1834 | O: 505.848.1800

XII. Affirmative Statement of Examination of Geologic and Engineering Data

Based on the available engineering and geologic data we find no evidence of open faults or any other hydrologic connection between the disposal zone (in the proposed **Tomahawk SWD #1** – 900' FNL & 151' FEL, Sec. 4-25S-34E) and any underground sources of drinking water.

NAME: John C. Webb

TITLE: Sr. Geologist

SIGNATURE: John C Webb

DATE: Aug 15, 2019

EXHIBIT

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1-D

Exhibits of Scott Wilson
On Behalf of NGL Water Solutions Permian, LLC

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

AMENDED APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20151
(TOMAHAWK)

AFFIDAVIT OF SCOTT J. WILSON

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, Scott J. Wilson, make the following affidavit based upon my own personal knowledge.

1. I am over eighteen (18) years of age and am otherwise competent to make the statements contained herein.

2. I am the Senior Vice President for Ryder Scott Company in Denver, Colorado. My responsibilities at Ryder Scott Company include the performance of reserve appraisals, technical evaluations, and reservoir analysis.

3. I have obtained a bachelor's degree in petroleum engineering from the Colorado School of Mines, and a master's degree business from the University of Colorado. I have worked as a petroleum engineer since 1983.

4. I am familiar with the amended application that NGL Water Solutions Permian, LLC ("NGL") has filed in this matter, and I have conducted a nodal analysis and reservoir study

EXHIBIT
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related to the area which is the subject matter of the application. A copy of my study is attached hereto as Exhibit A.

5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Tomahawk SWD #1 well, which is a salt water disposal well.

6. The approved injection zone for the well is located below the base of the Woodford Shale formation and above the Ordovician formation, which consists of significant shale deposits.

7. I have reviewed step rate tests for similar disposal wells drilled within the area and conducted a nodal analysis. It is my opinion that a large percentage of surface pressure it was encountering using smaller diameter tubing was a result of friction pressure. In Case No. 15720 evidence had been presented to the Division showing that up to 85% of this surface pressure was due to friction. Increasing the tubing size would reduce friction and would conserve pump horsepower, fuel, and reduce emissions.

8. My nodal analysis indicates that increasing the tubing size to 7" by 5 ½" would not significantly increase reservoir pressures over a twenty-year time period. The injection zone is located within a reservoir with significant thickness which consists of high permeability rocks, which results in only very small pressure increases even when injection is increased to a rate of 40,000 barrels per day over a 20 year period.

9. It is my opinion that increasing the tubing size will not cause fractures in the formation. Wellhead pressures are set at a maximum that is below the formation fracture pressure and, as a result, it is impossible to get above the formation fracture pressure while honoring wellhead pressure constraints. Consequently, it is highly unlikely that increasing the tubing size in the well would result in fractures to the formation.

10. I have also studied the potential impact on pore pressures and put together a simulation of the radial influence that the well would have if larger tubing is used for a period of time. A copy of this study is included within Exhibit A to this affidavit. This study shows that it is anticipated that there will be a minimal impact on reservoir pressures and that the majority of fluids will not travel greater than 1 mile in 20 years.

11. My studies further indicate that additional injection wells located one mile away from the well will not create any materially adverse pressures in the formation.

12. I attest that the information provided herein is correct and complete to the best of my knowledge and belief.

[Signature page follows]

Scott J. Wilson

SUBSCRIBED AND SWORN to before me this 20th day of August, 2019 by Scott J. Wilson.

Notary Public

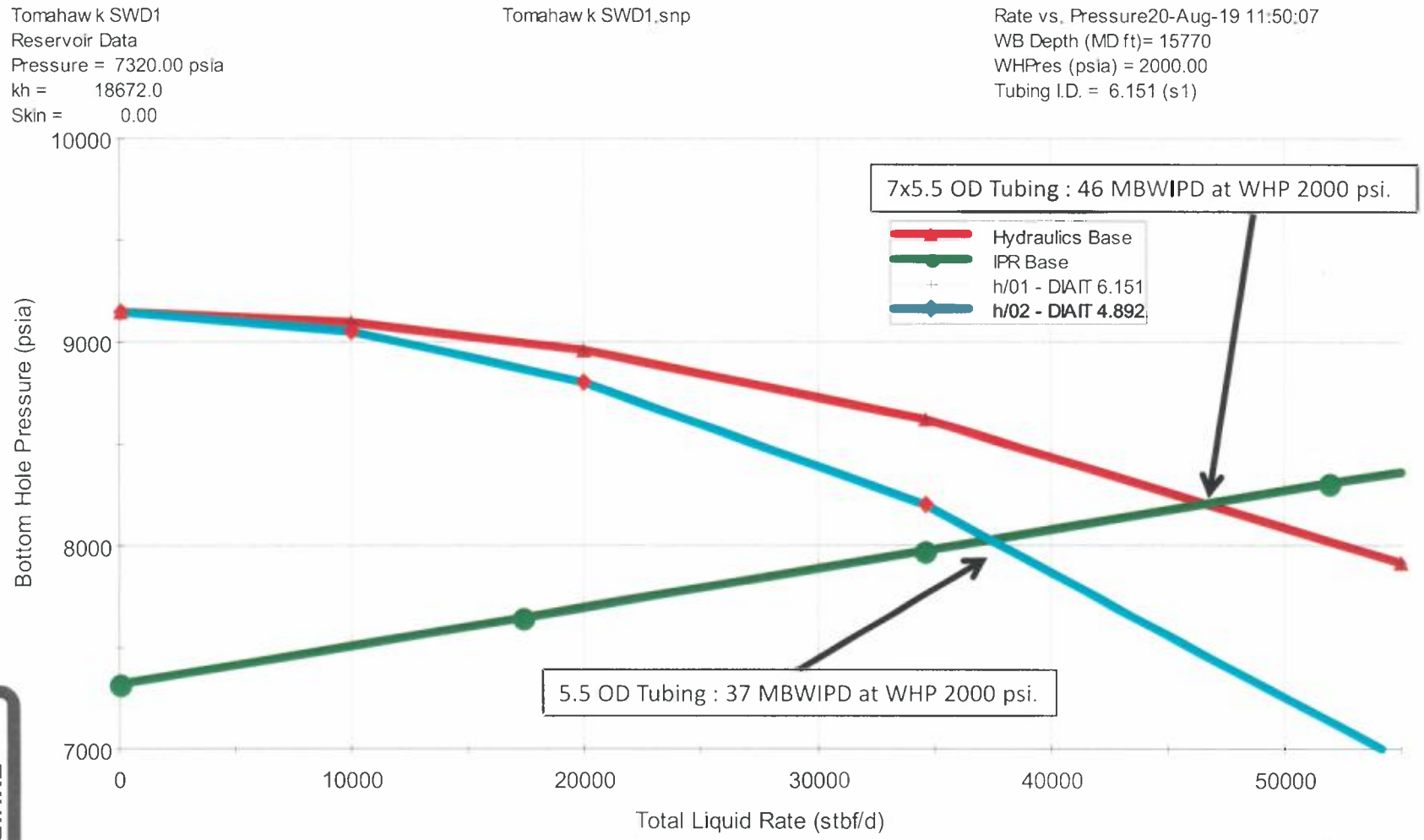
My commission expires: 8/23/21

DARSHAE E RODRIGUEZ
Notary Public - State of Colorado
Notary ID 20134006986
My Commission Expires Aug 23, 2021

Exh. A1

NGL Water Solutions, LLC

Typical Wellbore Hydraulics Models predict a 30% increase in maximum injection rate between 5.5 tubing and 7x5.5 tubing.



2019-08-20

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EXHIBIT 2-A

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Exh. A2

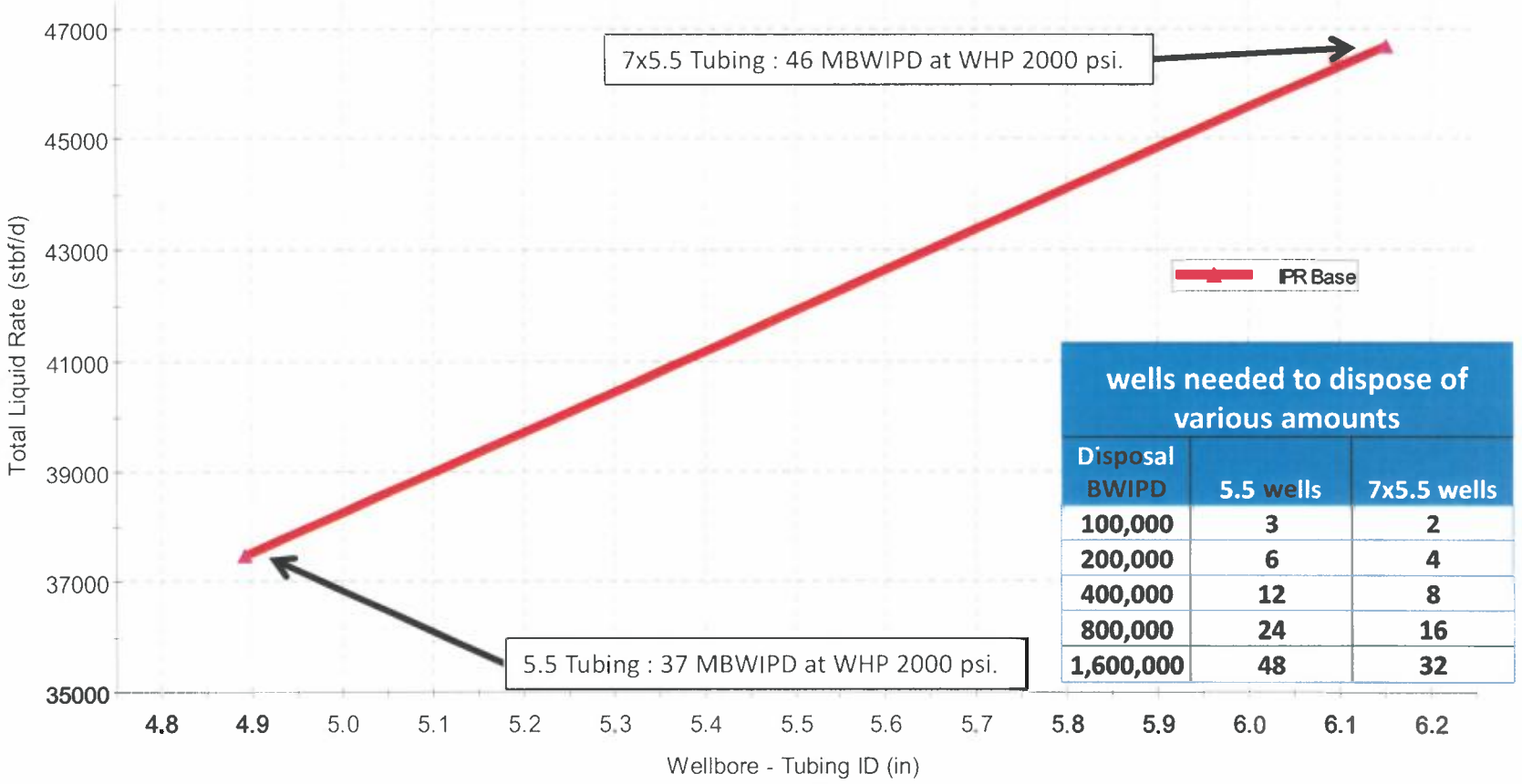
NGL Water Solutions, LLC

Increased injection rate per well equates to fewer injectors.

Tomahaw k SWD1
Reservoir Data
Pressure = 7320.00 psia
kh = 18672.0
Skin = 0.00

Tomahaw k SWD1.snp

Rate vs. Wellbore - Tubing ID (in)
20-Aug-19 11:53:17
WB Depth (MD ft)= 15770
WHPres (psia) = 2000.00
Tubing I.D. = 6.151 (s1)



wells needed to dispose of various amounts		
Disposal BWIPD	5.5 wells	7x5.5 wells
100,000	3	2
200,000	6	4
400,000	12	8
800,000	24	16
1,600,000	48	32

2019-08-20

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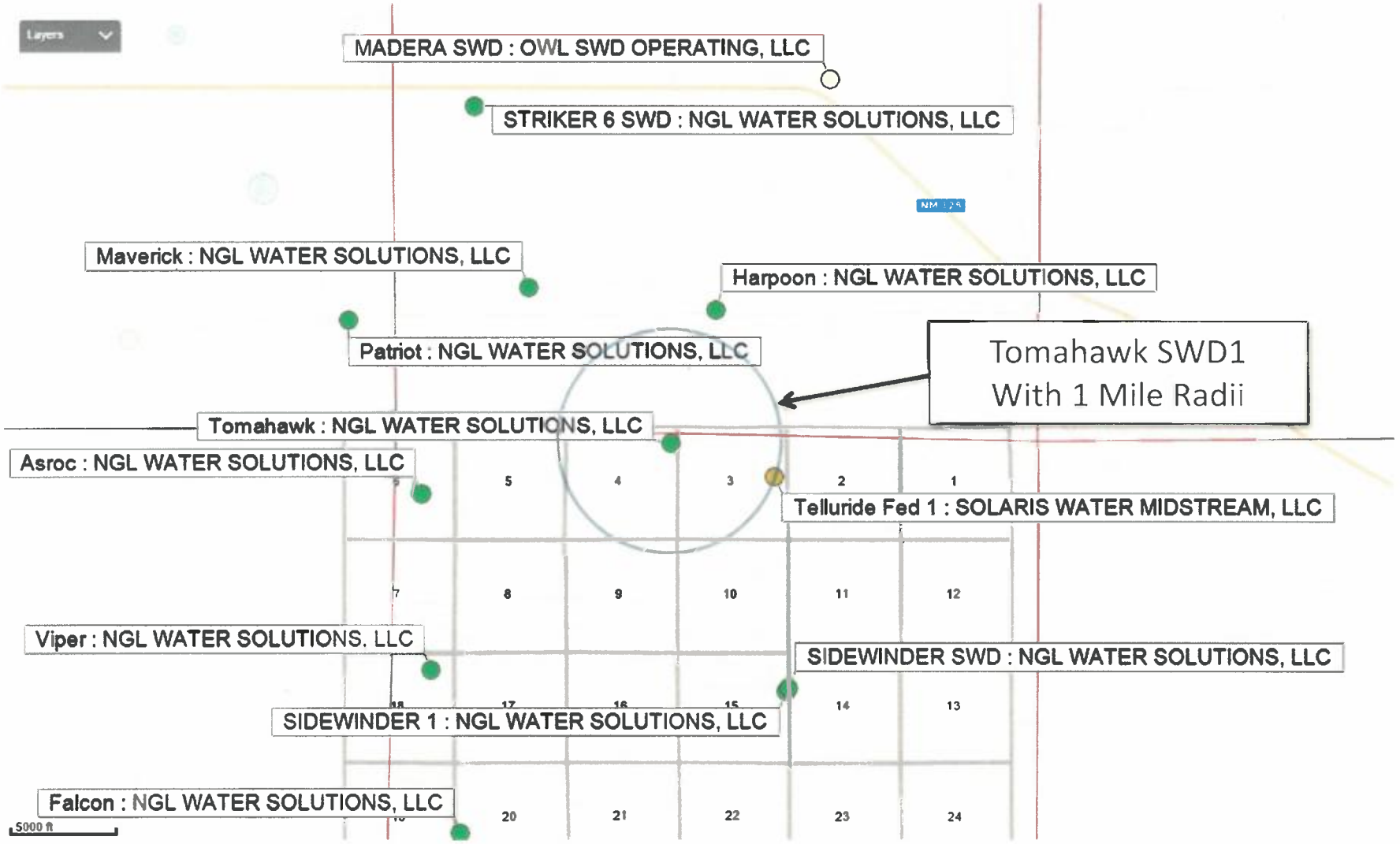
NGL Water Solutions, LLC

Exh. A3

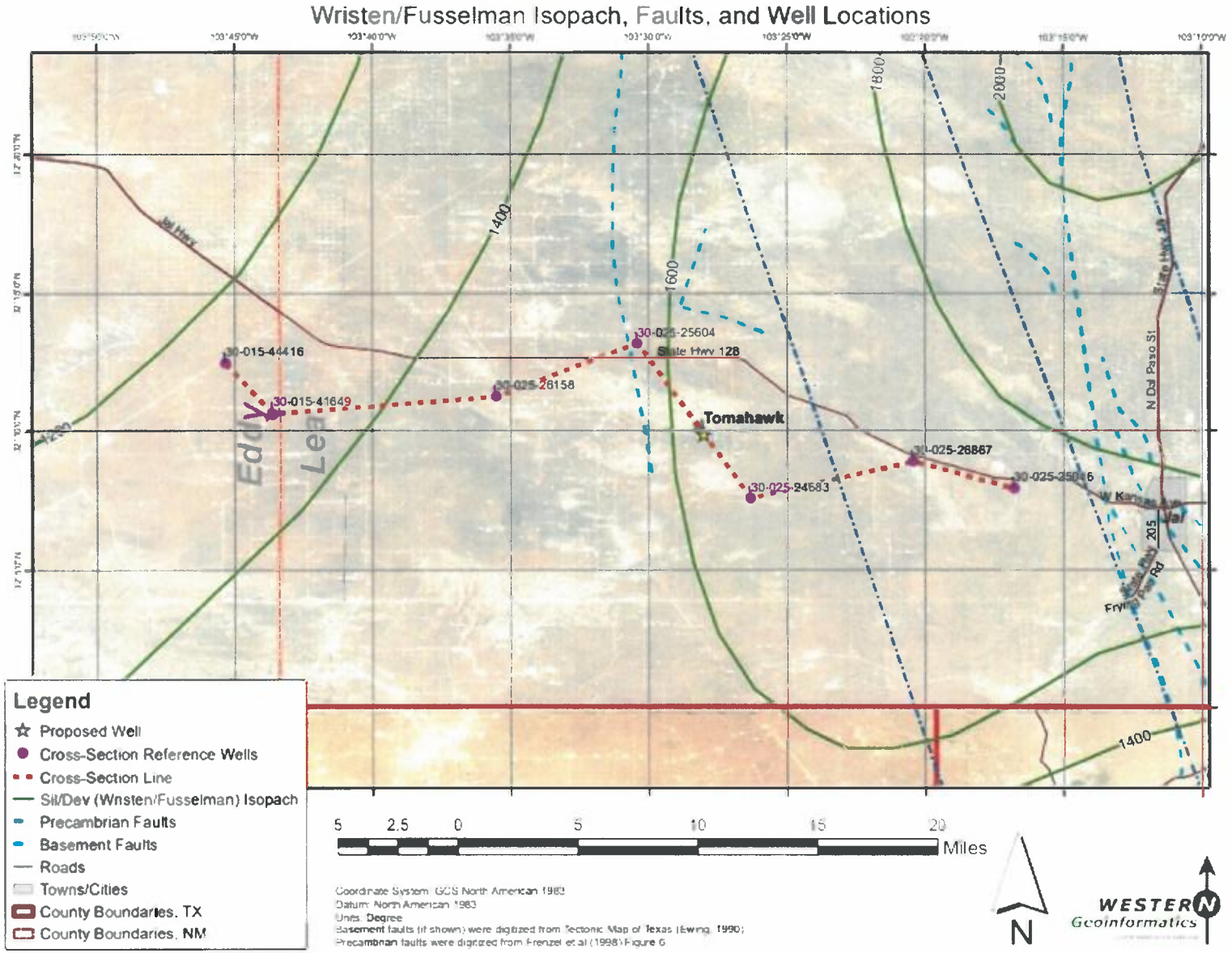
Wells injecting water into the Devonian formation in the area.
Area is roughly 14 miles (E-W) by 8 miles (N-S)



NGL Water Solutions, LLC

Exh. A4

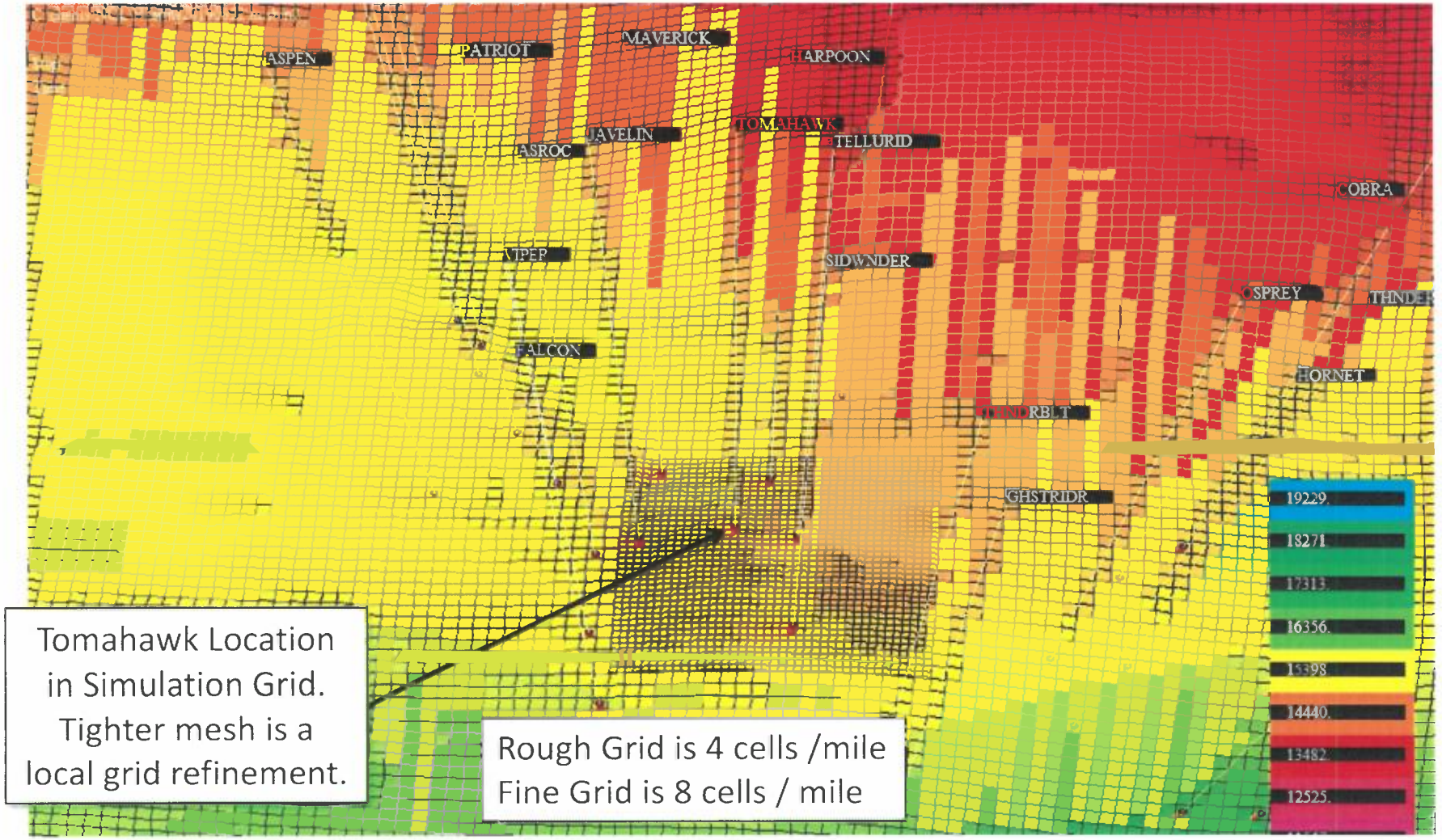
Target Zone Thickness at Tomahawk is 1600 feet



NGL Water Solutions, LLC

Simulation Grid matches Structure and Thickness

Reservoir Simulation grid incorporates the NGL proposed wells and the close offsets.



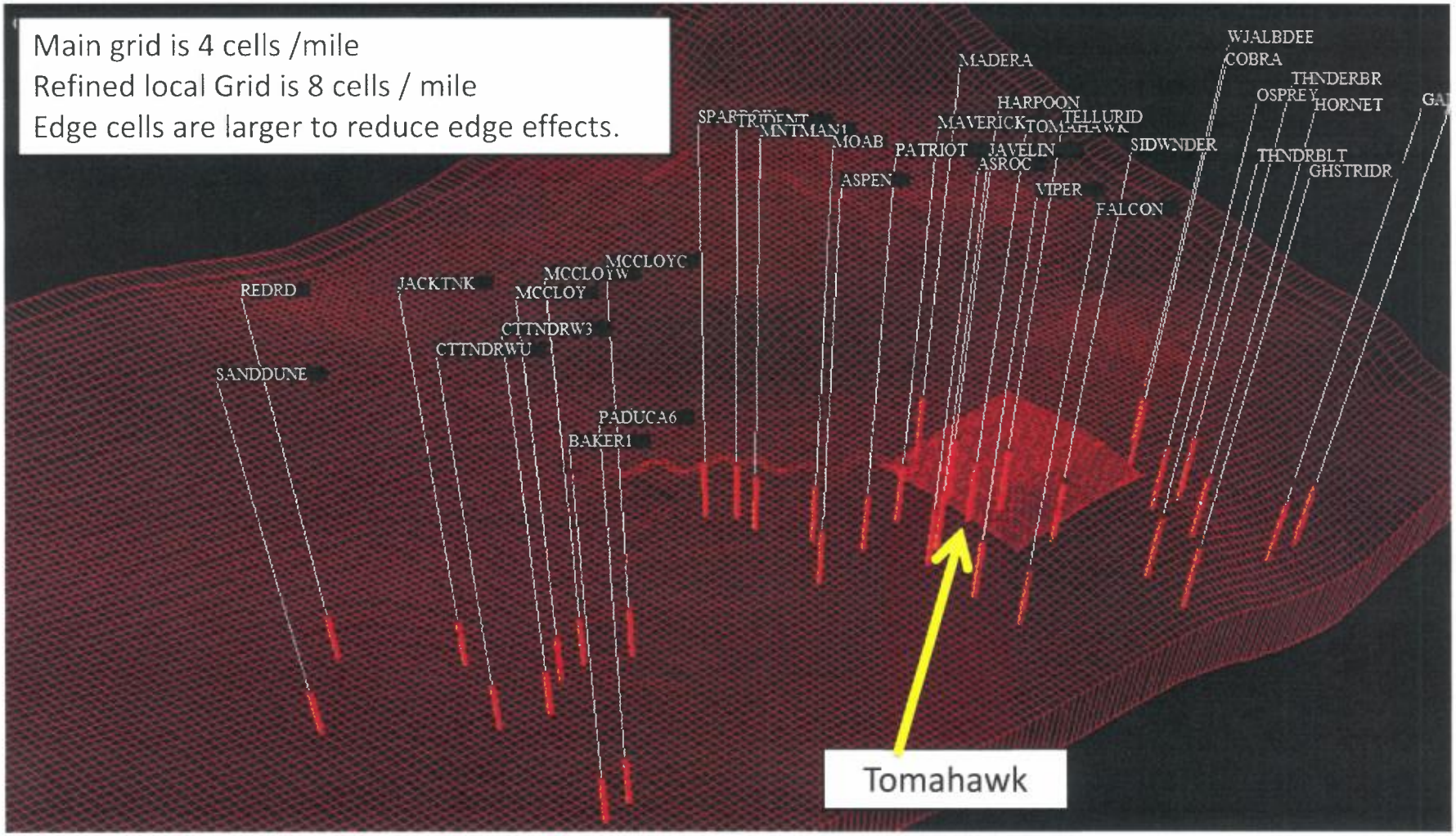
Tomahawk Location in Simulation Grid. Tighter mesh is a local grid refinement.

Rough Grid is 4 cells /mile
Fine Grid is 8 cells / mile

NGL Water Solutions, LLC

3D view of grid shows Structural Relief.

Thickness is accurate but not easy to see at this aspect ratio.



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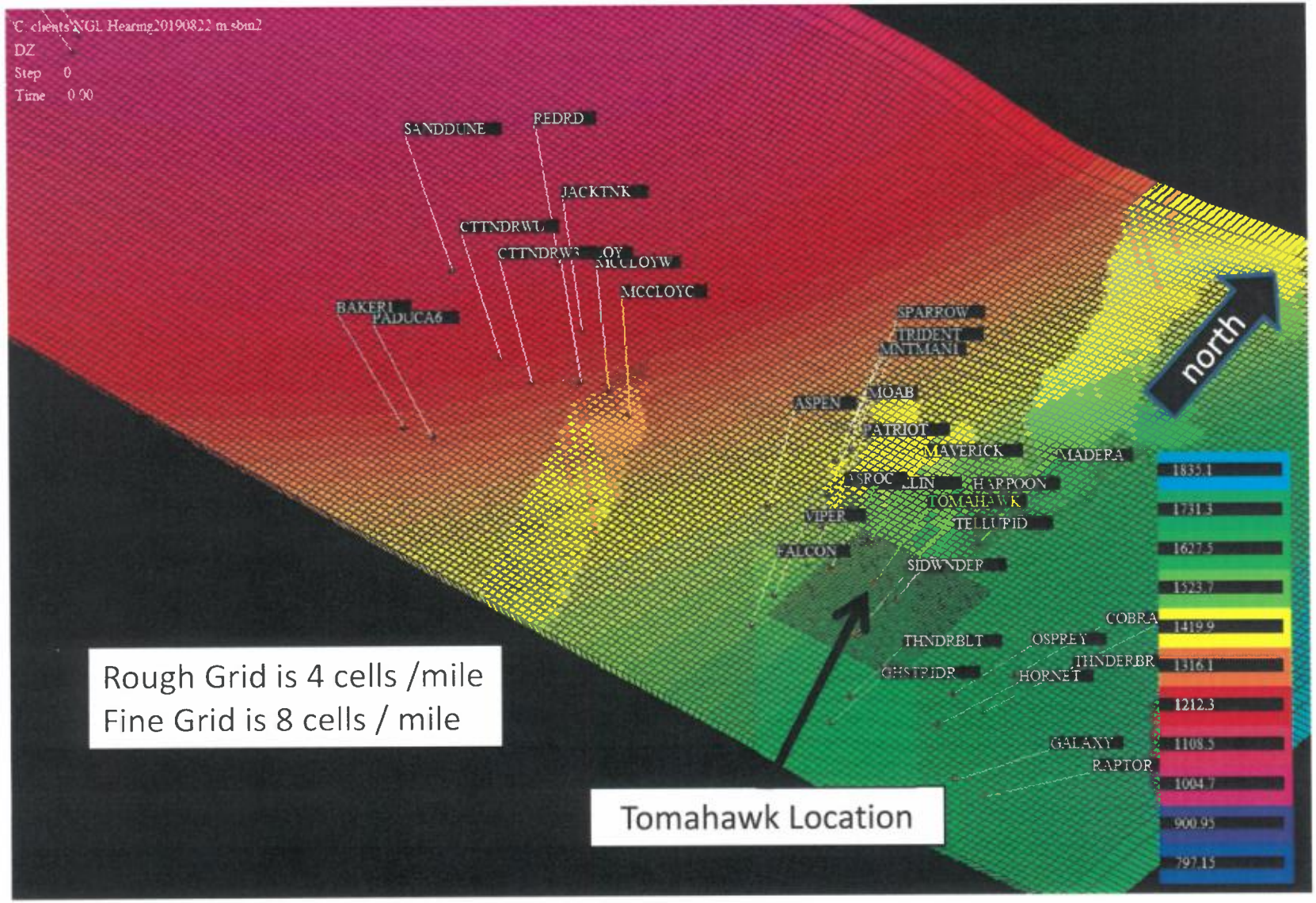
Exh. A7

NGL Water Solutions, LLC

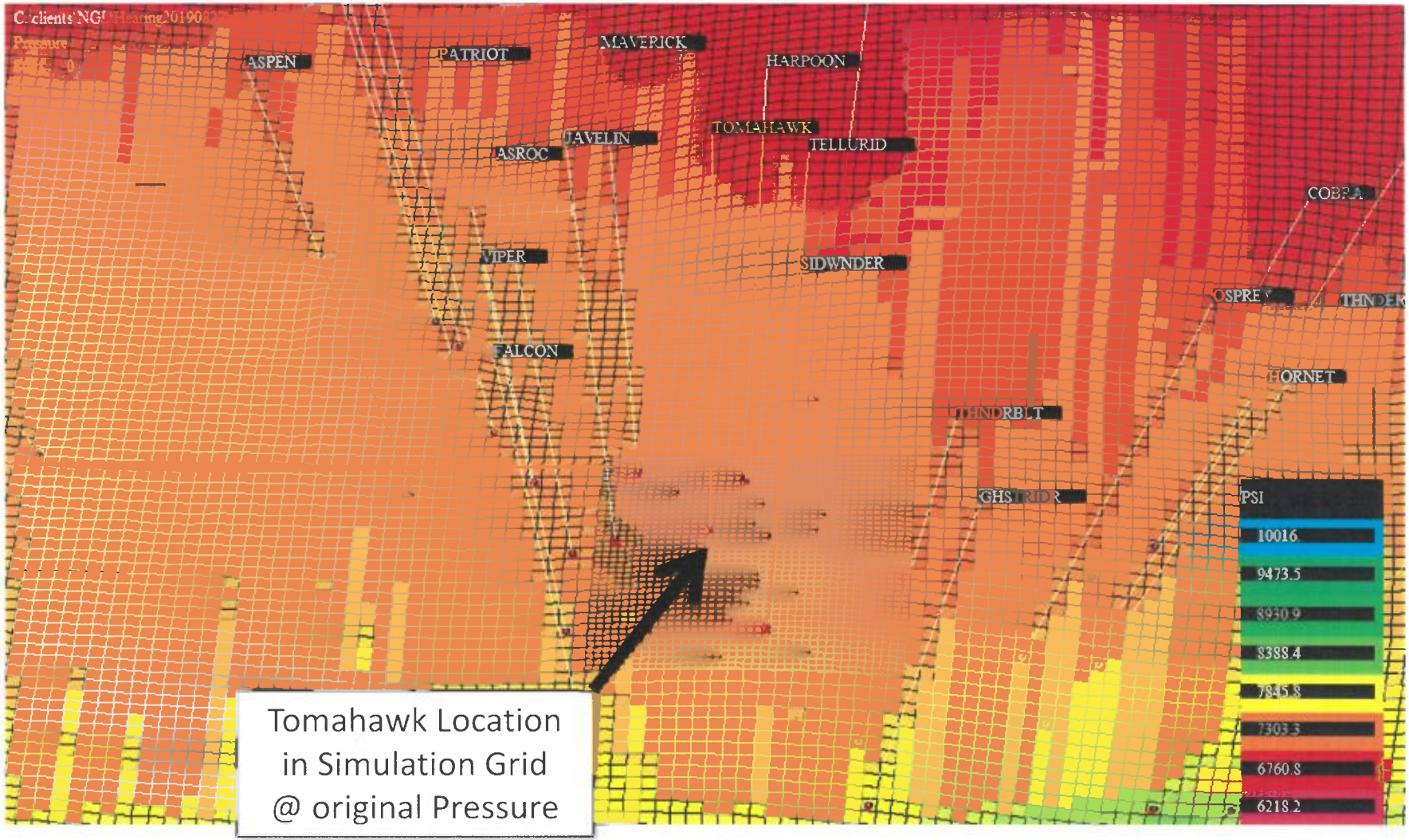
Red and dark blue to the West is the thinest Sil/Dev.



NGL Water Solutions, LLC

Exh. A8

Initial pressure is equilibrated by the model based on grid cell depth, fluids(water) and capillary pressure.

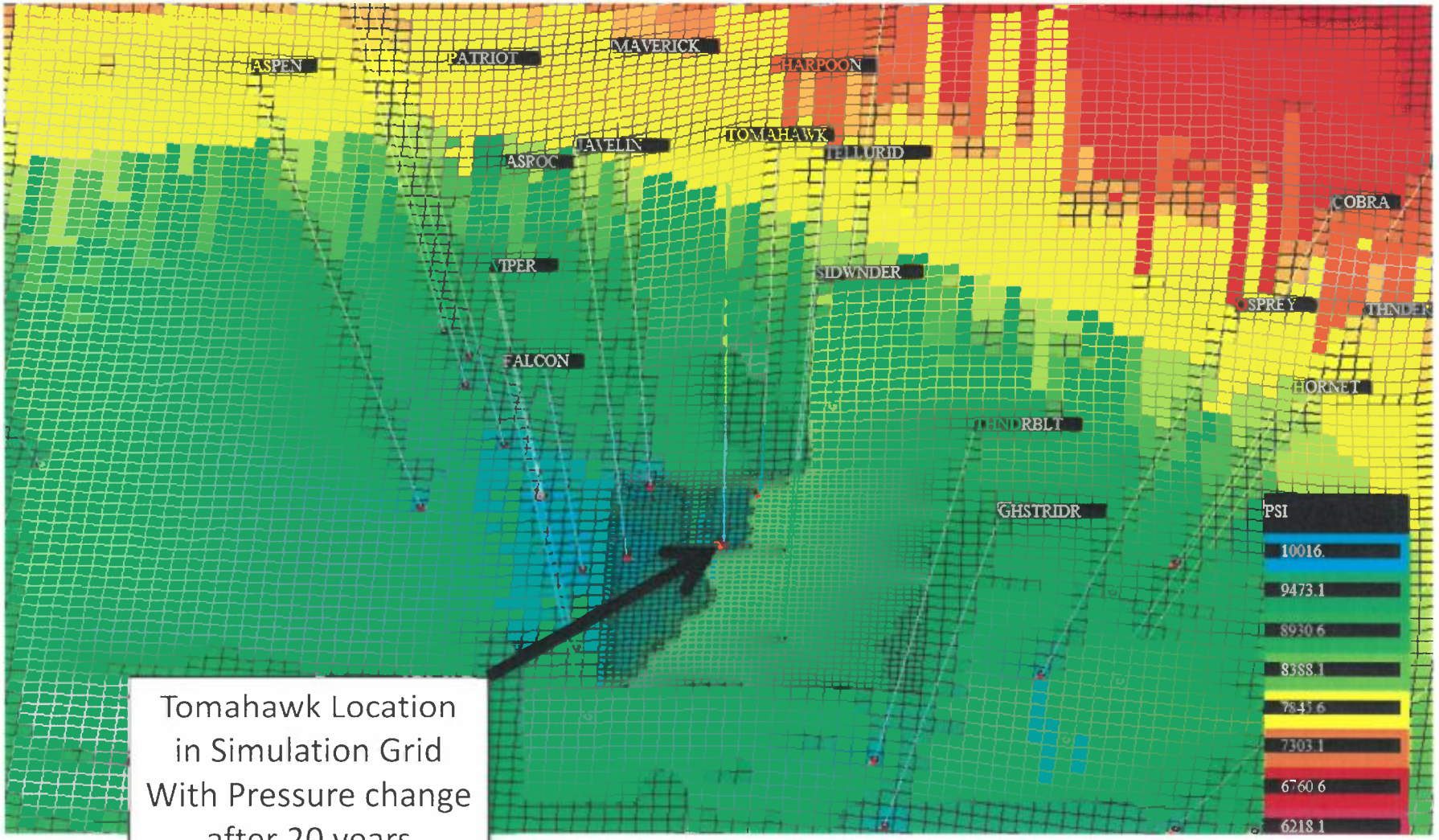


bh

NGL Water Solutions, LLC

Exh. A9

Pressure at 20 years is affected by original pressure, injected volumes, and the ability of the reservoir to dissipate pressure.

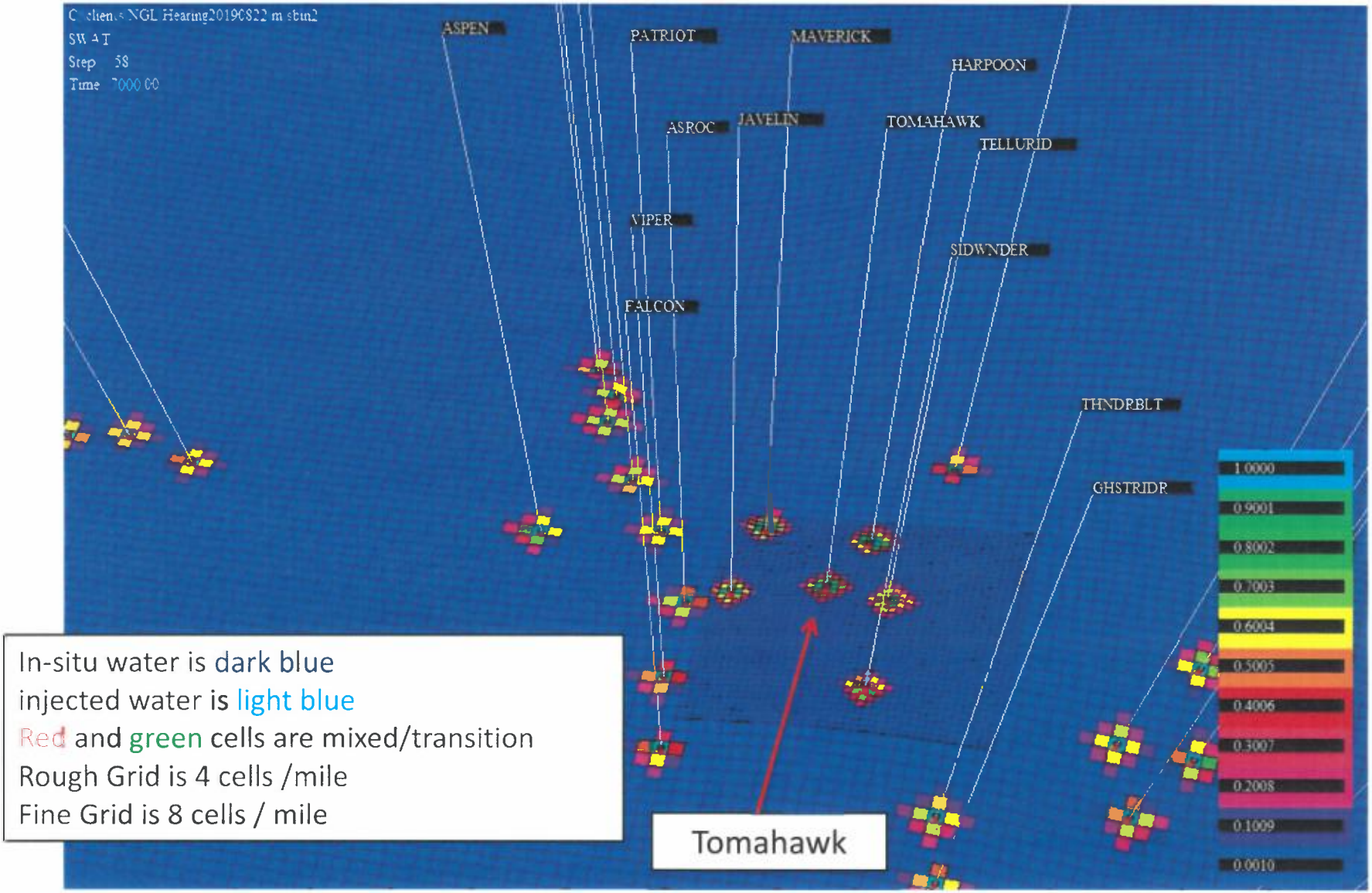


8

Exh. A10

NGL Water Solutions, LLC

Large scale saturation profiles after 20 years of injection.

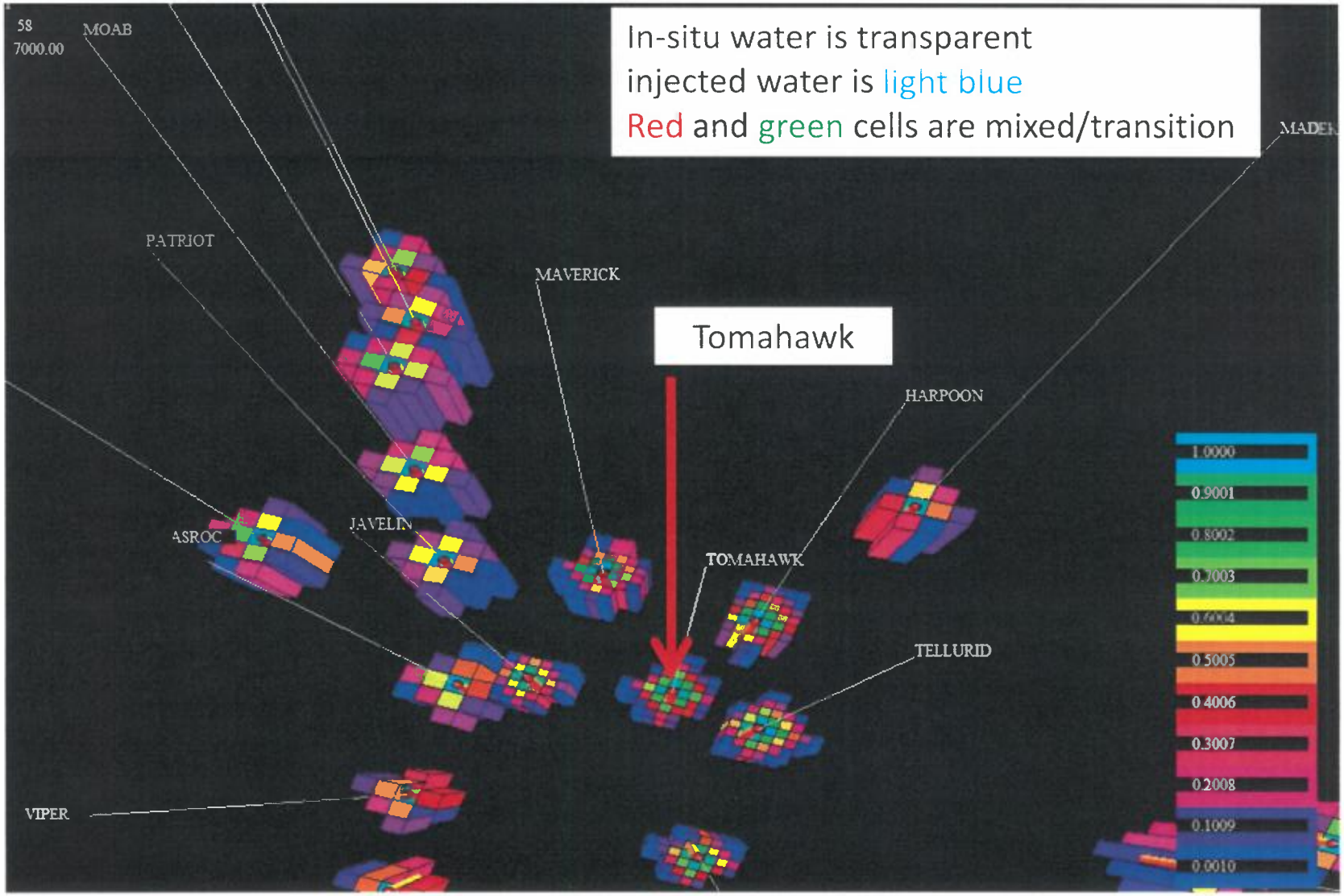


51

NGL Water Solutions, LLC

Exh. A11

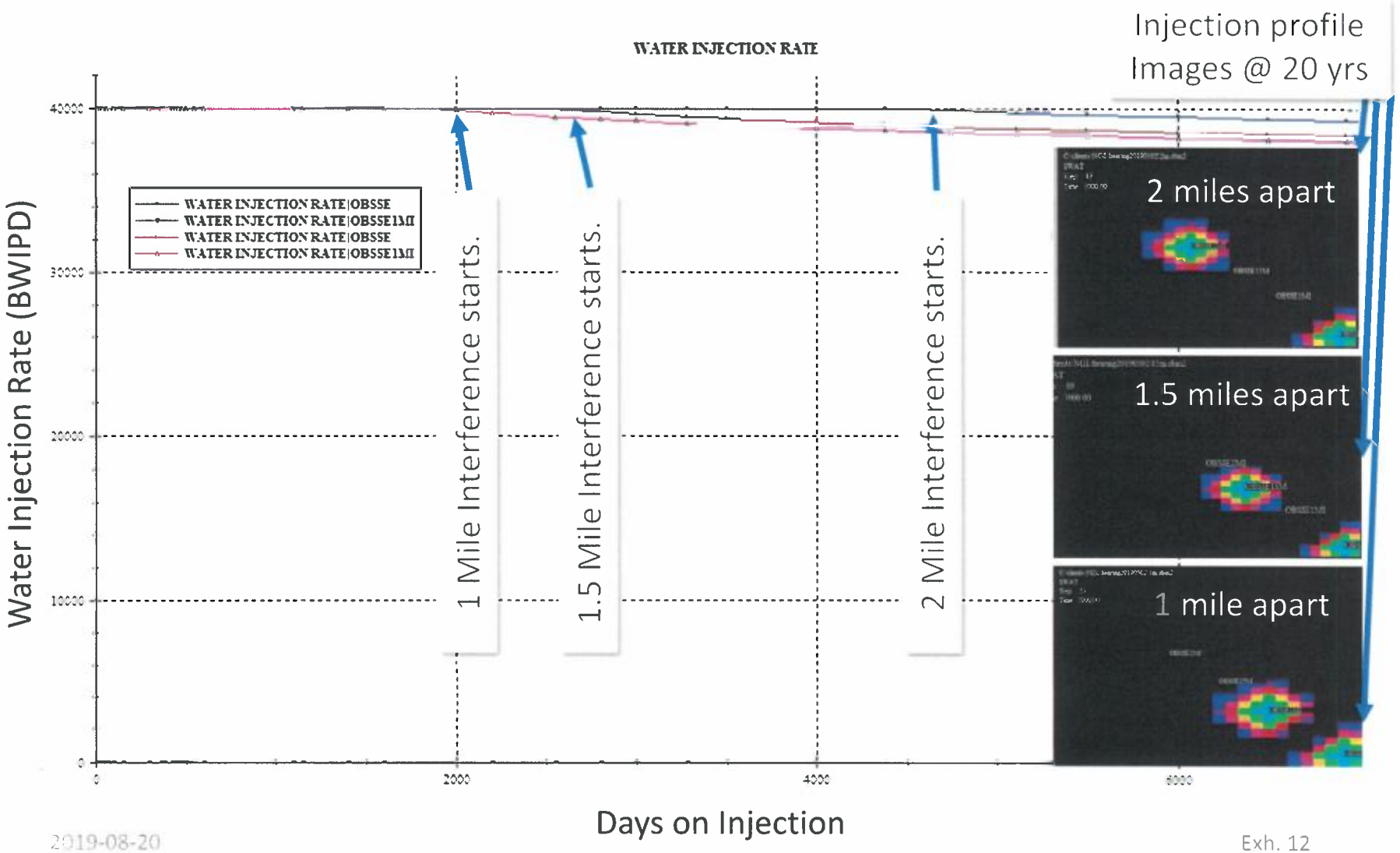
Detailed saturation profiles after 20 years of injection.



NGL Water Solutions, LLC

Exh. A12

Typical wells showing interference when spaced 1, 1.5, and 2 miles apart.
Closer spacing causes rates to fall, but not significantly.

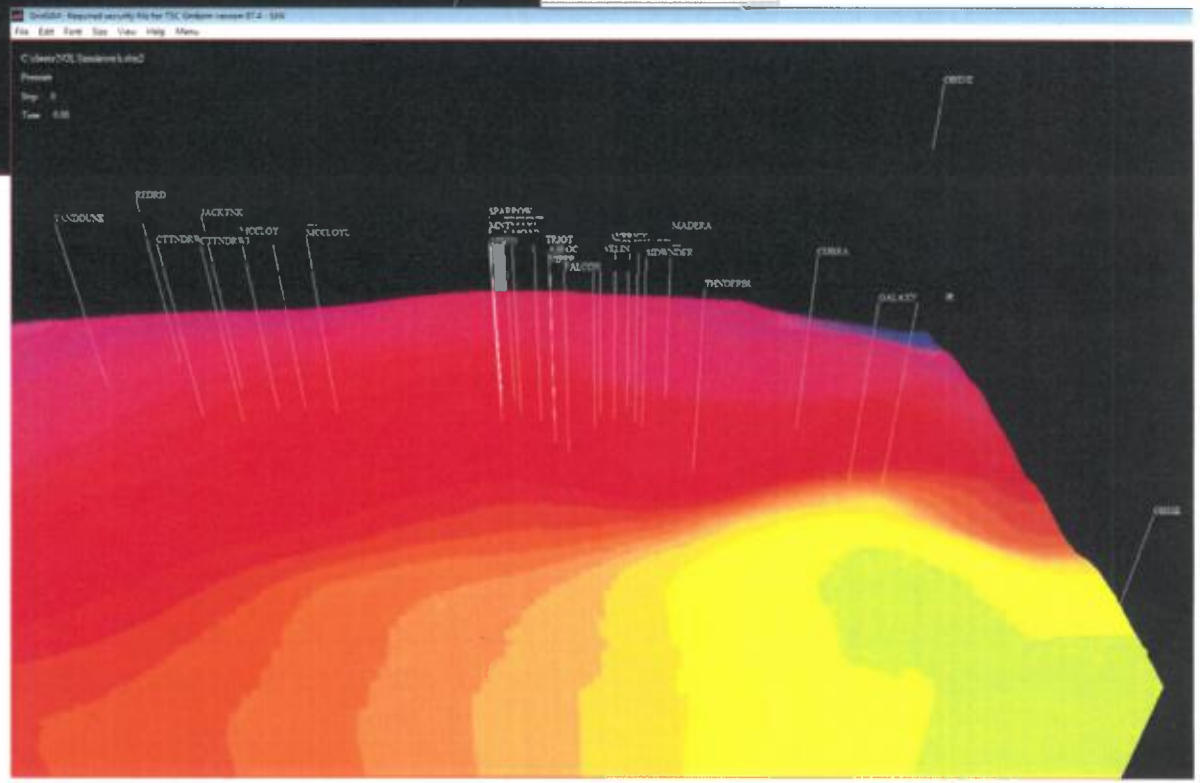


2019-08-20

Exh. 12

Exh. A13

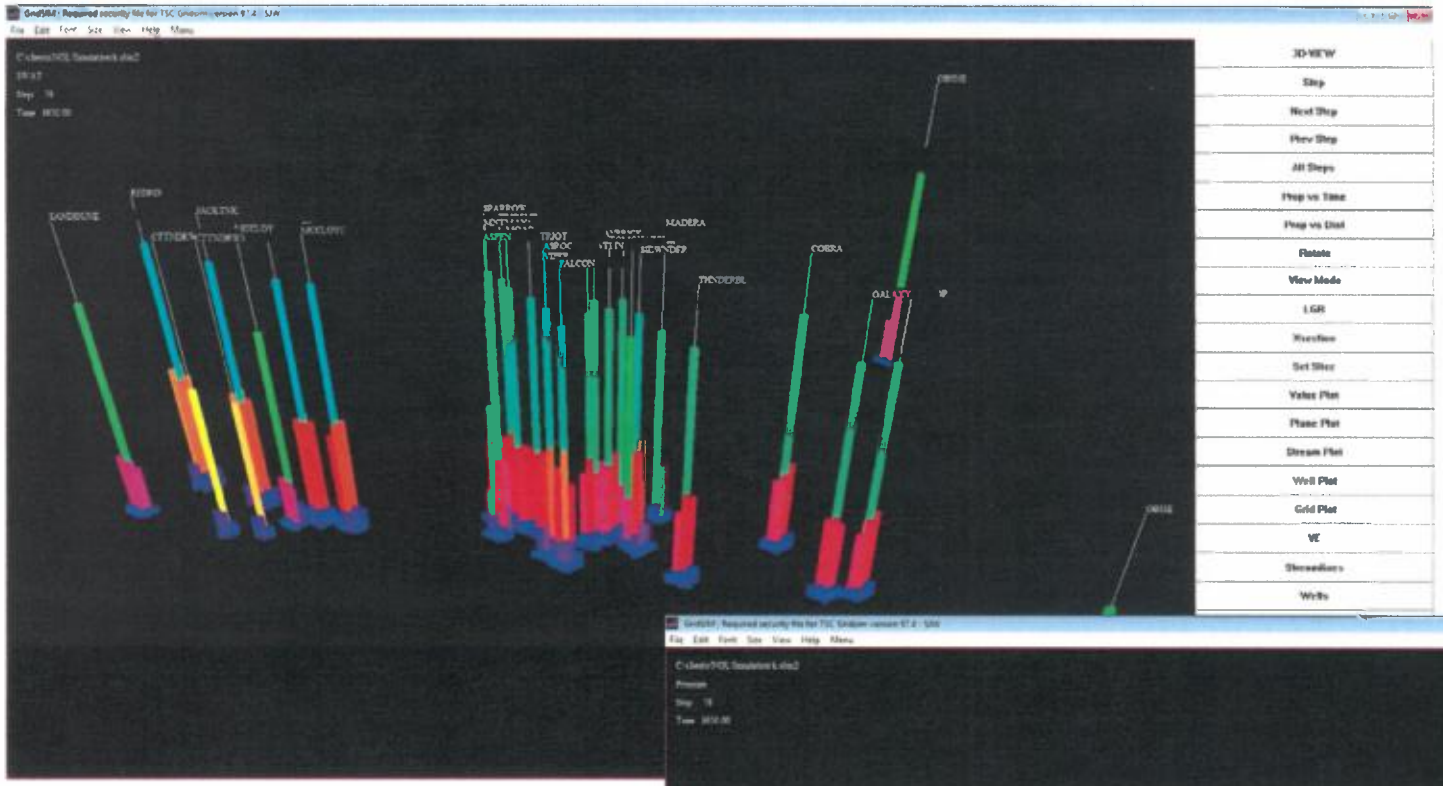
2019
(0 years)



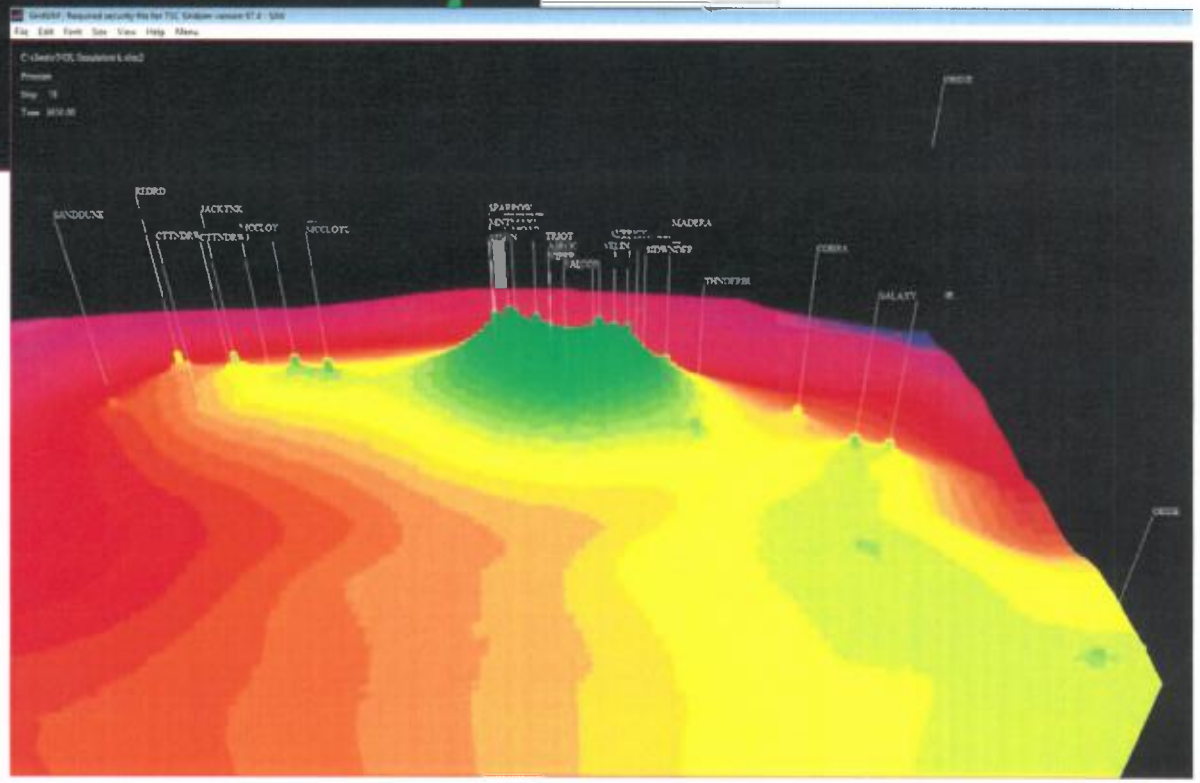
Typical Water movement & Pressure

2019-08-20

Exh. A14



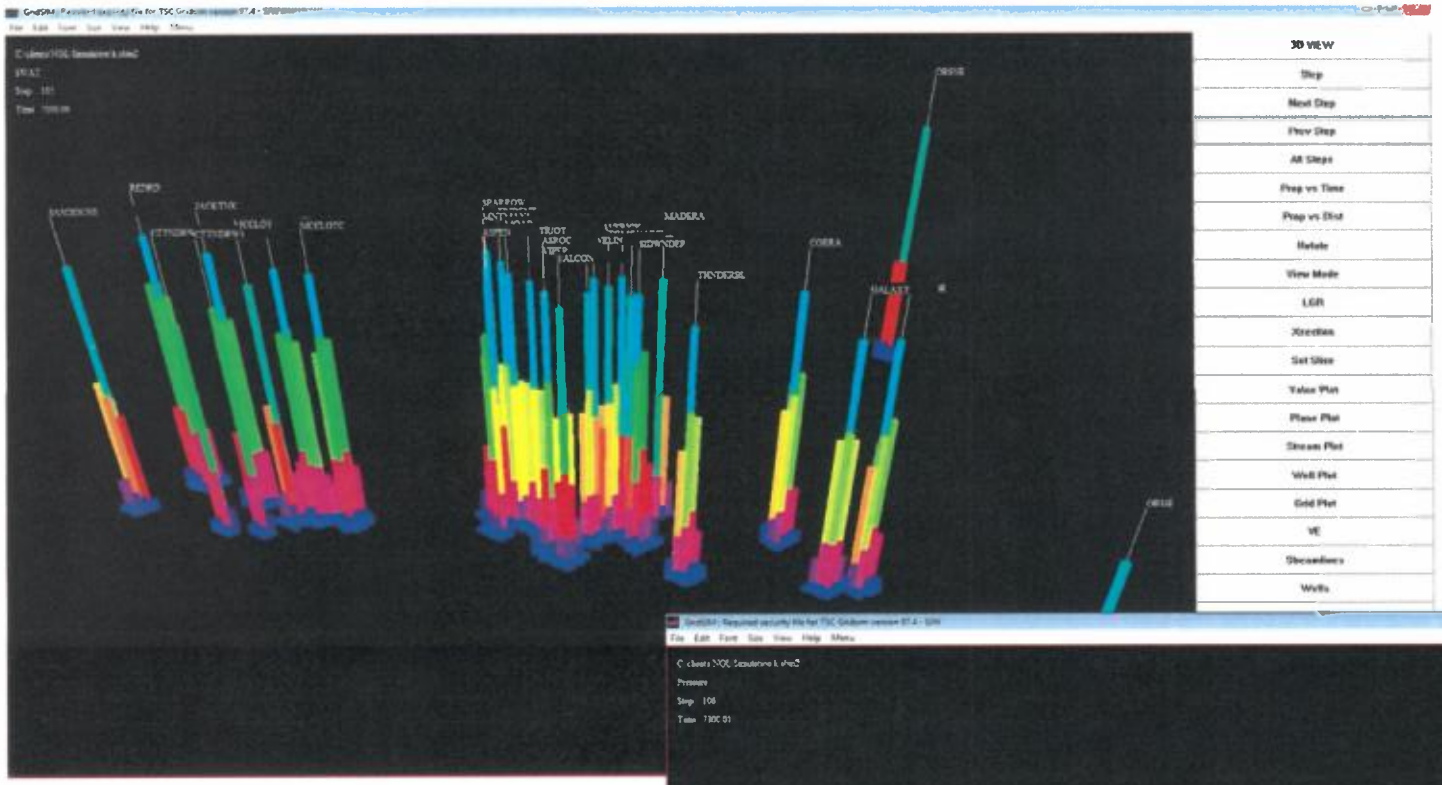
2029
(10 years)



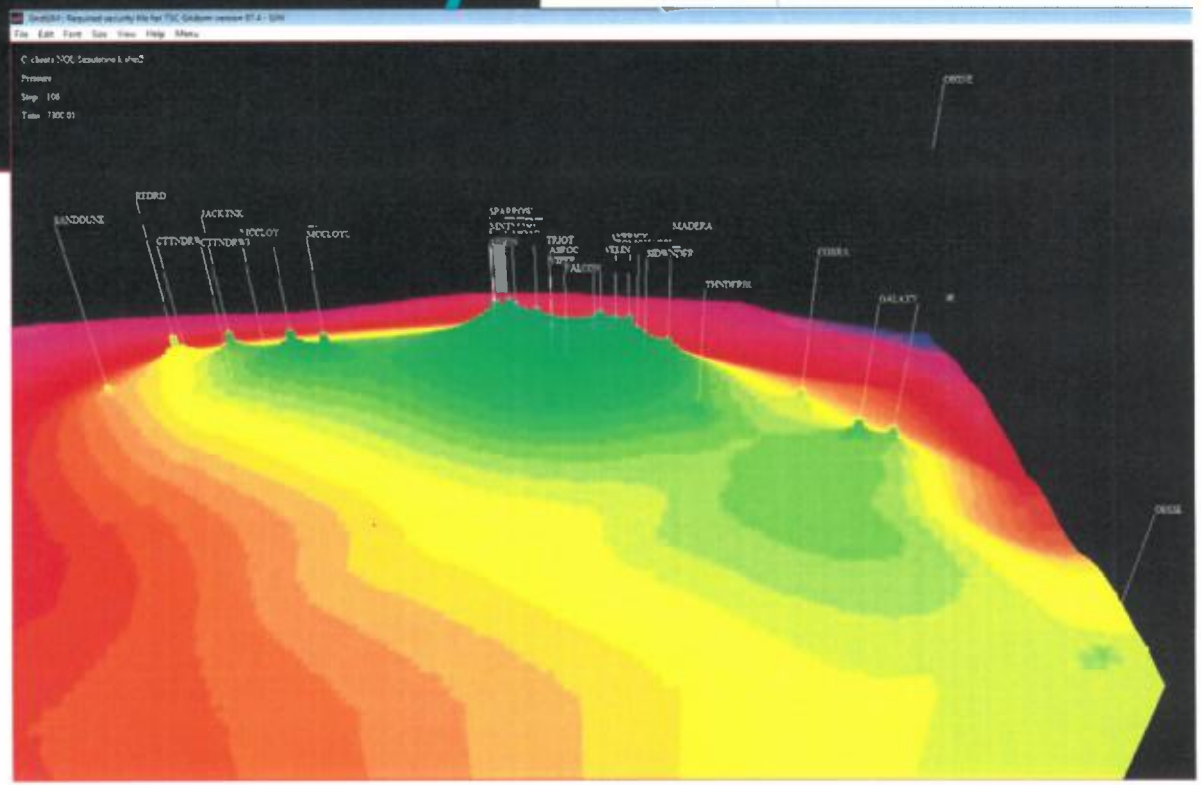
Typical Water movement & Pressure

2019-08-20

Exh. A15



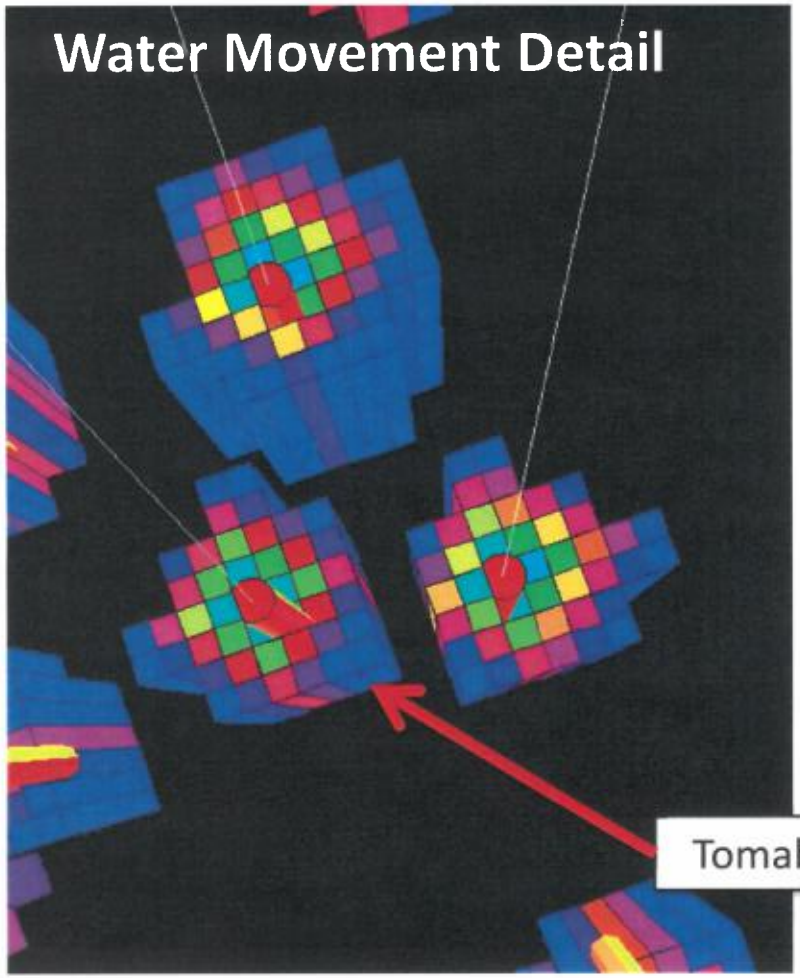
2039
(20 years)

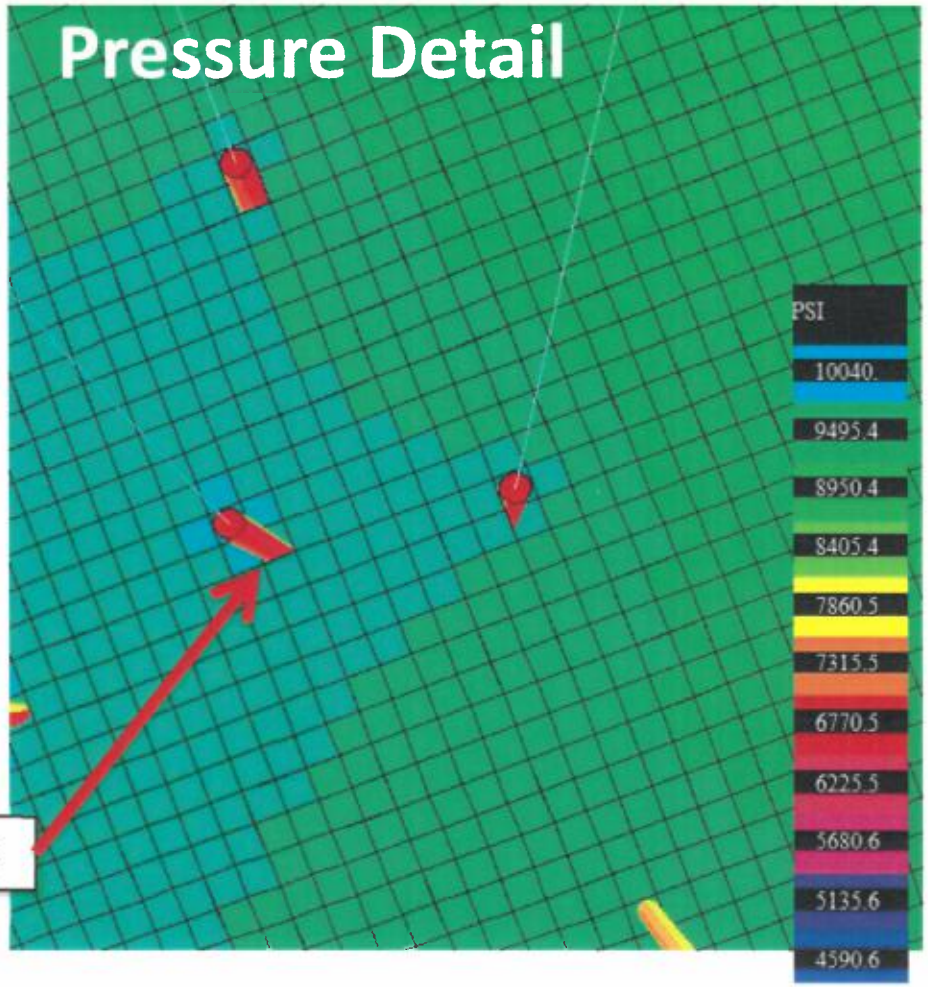


Typical Water movement & Pressure

2019-08-20

Detailed water saturation and pressure distributions at 2039 (20 years)



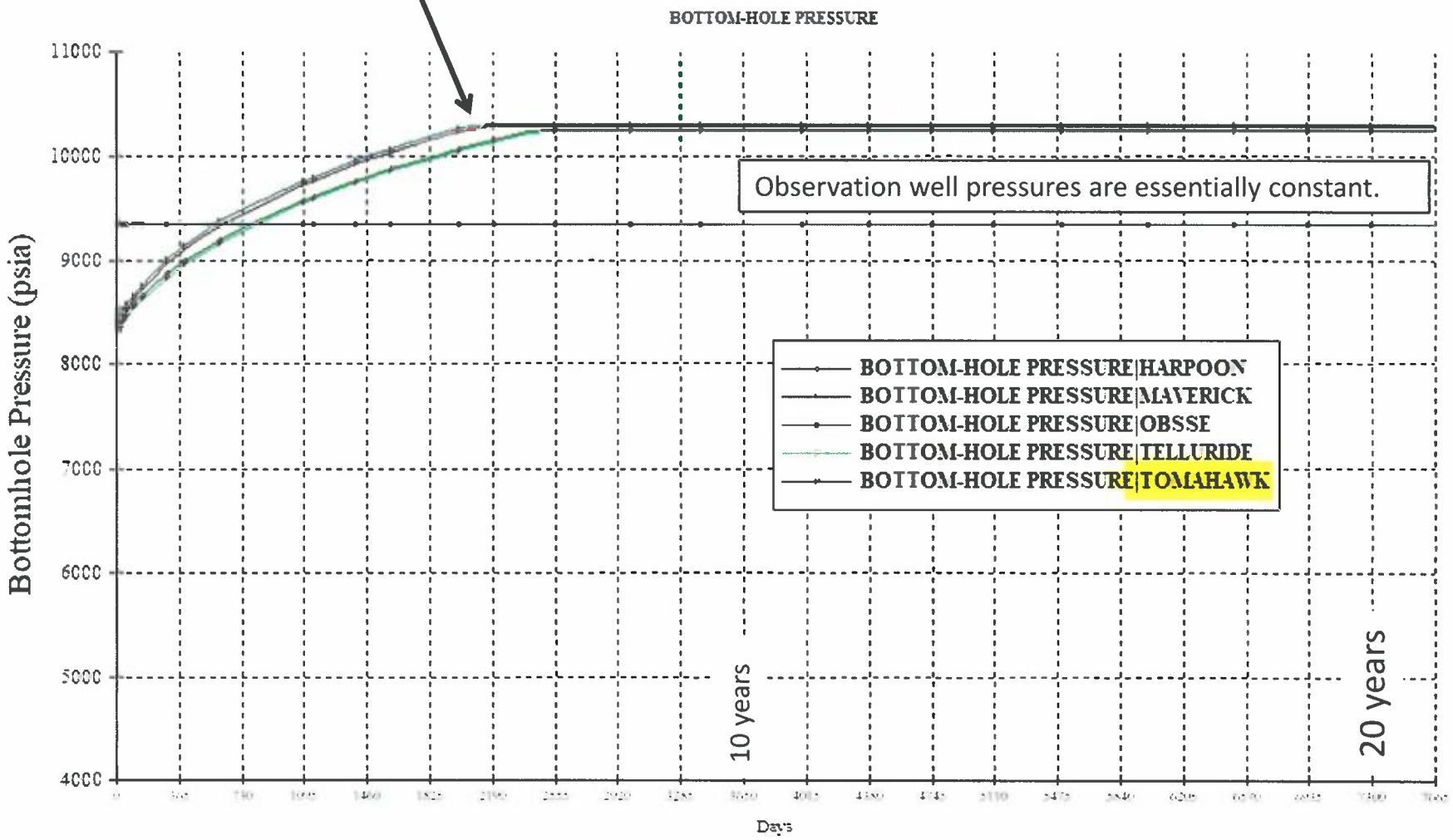


NGL Water Solutions, LLC

Exh. A17

Simulation BHIP predictions for wells near Tomahawk

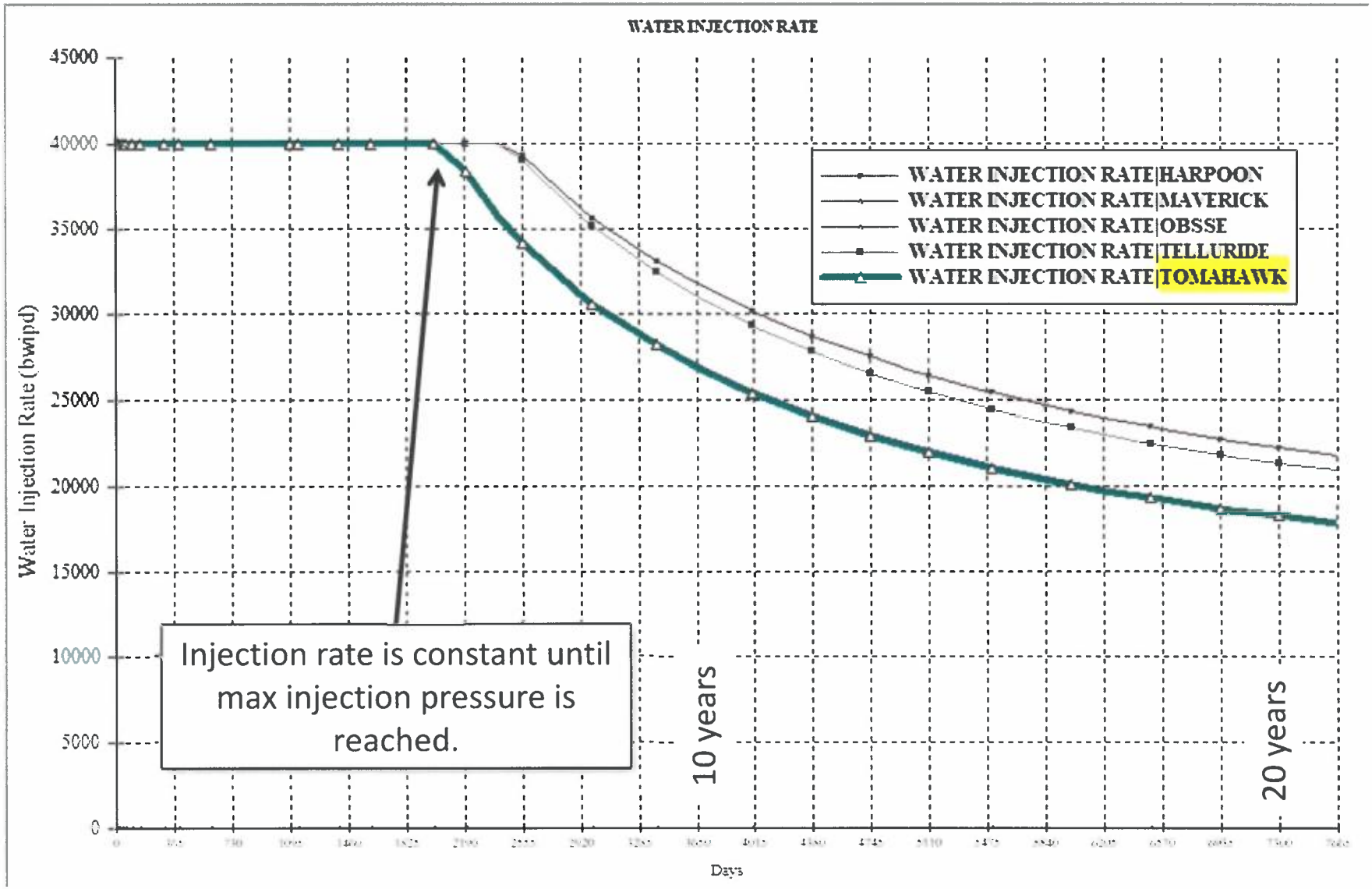
Injection well pressures increase until max injection pressures are reached.



NGL Water Solutions, LLC

Exh. A18

Simulation predictions for individual wells over 20 Years



LS

Exhibits of Dr. Kate Zeigler
On Behalf of NGL Water Solutions Permian, LLC

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

AMENDED APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20151
(TOMAHAWK)

AFFIDAVIT OF DR. KATE ZEIGLER

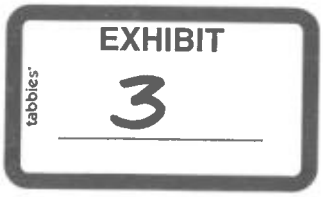
STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, Dr. Kate Zeigler, make the following affidavit based upon my own personal knowledge.

1. I am over eighteen (18) years of age and am otherwise competent to make the statements contained herein.

2. I am the senior geologist at Zeigler Geologic Consulting, and I provide a wide range of geoscience related services to companies and other entities in Southeastern New Mexico.

3. I have obtained a bachelor's degree in geology from Rice University, a master's degree in paleontology from the University of New Mexico, and a Ph.D. in stratigraphy and paleomagnetism from the University of New Mexico. Additionally, I have completed several surface geologic maps for the New Mexico Bureau of Geology and Mineral Resource's Geologic Mapping Program as well as for independent operators who are exploring prospects within the western Permian Basin. I have also conducted a prior geologic study concerning what is



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commonly referred to as the Devonian and Silurian formations in Southeastern New Mexico to help determine whether the approval of 7" by 5 ½" tubing is appropriate in Devonian and Silurian salt water disposal wells approved by the New Mexico Oil Conservation Division.

4. I am familiar with the amended application that NGL Water Solutions Permian, LLC ("NGL") has filed in this matter, and I have conducted a geologic study of the lands which are the subject matter of the application. A copy of my geologic study, including cross sections, a structure map and isopach are is included in Attachment A to this affidavit.

5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Tomahawk SWD #1, which is a salt water disposal well.

6. I have been informed that the injection intervals for the well will be isolated to the Devonian and Silurian formations (also referred to as the Wristen Group and Fusselman Formation) and the well will have four strings of casing protecting the fresh water aquifer, the salt-bearing interval, the Permian aged rocks through the Wolfcamp Formation. The deepest casing is 7 5/8", which is cemented and cement is circulated on the 7 5/8" casing.

7. The injection zone for the well is located below the Woodford Shale. The Woodford Shale is an Upper Devonian unit which has low porosity and permeability and consists predominantly of shale and mudstone with some carbonate beds. The Woodford Shale acts as a permeability boundary to prevent fluids from moving upward out of the underlying formations. The Woodford Shale formation in the areas where the well is located is between 120 feet to 160 feet thick.

8. Below the injection zone for the well is the Ordovician formation, also referred to as the Simpson Group, which contains sequences of shale that make up approximately 55% of the total thickness of the formation in any given place and can likewise act as a permeability boundary

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which prevents fluids from migrating downwards into deeper formations and the basement rock. In the area where the well is located, the Ordovician formation is between 800 and 900 feet thick and, as a result, there is a significant thickness in this lower shale. Below the Ordovician is the Ellenburger Formation, which is up to 650 feet thick.

9. Based on my geologic study of the area, it is my opinion that the approved injection zone for the well is located below the base of the Woodford Shale formation and above the Simpson Group formation, both of which consist of significant shale deposits. Evidence indicates that shale formations located above and below the approved injection zones will likely restrict fluids from migrating beyond the approved injection zones for the well.

10. The well will primarily be injecting fluids into the Wristen Group and Fusselman Formation, with some fluids potentially being injected into the Upper Montoya Group. Each of these rock units are located within what is commonly referred to by operators and the Division as the "Devonian-Silurian" formations. These zones consist of a very thick sequence of limestone and dolostone which has significant primary and secondary porosity and permeability that is collectively between 1,600 and 1,700 feet thick.

11. It is my opinion that there is no risk to freshwater resources for injection within the Wristen Group, Fusselman, and Upper Montoya Group because of the depth of these sub-formations and the upper shale permeability boundary created by the Woodford Shale.

12. I have also studied the location of known fault lines within the area where the well is proposed to be drilled and the closest known fault line to the well is located approximately 3 miles away from where the well is proposed to be drilled.

13. There are no currently recognized production shales within the Wristen Group, Fusselman Formation, and Upper Montoya Group in this part of the western Permian Basin. While

there may be some isolated traps located within these sub-formations, it takes significant ability with imaging to be able to locate these deposits in order to properly target them.

14. I attest that the information provided herein is correct and complete to the best of my knowledge and belief.

15. In my opinion, the granting of this application is in the interests of conservation and the prevention of waste.

[Signature page follows]

Dr. Kate Zeigler

SUBSCRIBED AND SWORN to before me this 17th day of August, 2019 by Dr. Kate Zeigler.

Notary Public

My commission expires: 01/31/2023

OFFICIAL SEAL
BELINDO YAZZIE
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 01/31/2023

Delaware Basin **Stratigraphic Unit Descriptions**

Lower Paleozoic

Woodford Shale (Upper Devonian)

The Woodford Shale is dominated by organic-rich mudstone interbedded with carbonate (limestone and/or dolostone) beds, chert beds and radiolarian laminae. This unit has been interpreted to include sedimentary gravity-flow deposits. Dominantly shale means lower porosity and permeability than the limestone/dolostone units above and below. The Woodford Shale is unconformable on the units below it. Locally this contact includes solution cavities and fissures down into the underlying carbonate unit(s), creating a complex boundary. It is up to 150' thick locally.

Thirtyone Formation (Lower Devonian)

The Thirtyone Formation is part of a wedge of sedimentary rocks that thins to the north and the west where the wedge ends up truncated beneath the base of the overlying Woodford Shale. The Thirtyone Formation is only present in southeastern Lea County and consists of an upper coarsely crystalline dolostone unit and lower chert unit. This unit is not present in the area of concern.

Wristen Group (Middle-Upper Silurian)

The Wristen Group consists of interbedded limestone and dolostone that has a maximum thickness in Lea County, then thins to the north and the west. Thicknesses range from 0 to 1,400' thick. In the Delaware Basin, it occurs up to 19,000' below land surface, then rises to 10,000' to 12,000' subsurface to the north and west. It represents deposition in a shelf-margin environment and includes buildups of coral reefs, stromatoporoids and other invertebrate colonialists. The carbonate beds include boundstones, rudstones and oolitic grainstones with significant primary porosity. To the north, reservoirs targeted for production are dolomitic with vugular and fracture-related porosity.

Fusselman Formation (Late Ordovician-Lower Silurian)

The Fusselman Formation is almost entirely dolostone and can be up to 1,500' thick. As with the overlying Thirtyone Formation and Wristen Group, the Fusselman Formation thinks to the north and west where it is truncated beneath the Woodford Shale to the north of where the Wristen Group pinches out. In Lea County, the Fusselman Formation can be 18,000' or more below land surface. It is primarily coarsely crystalline dolostone that is vugular, fractured and/or brecciated, with significant secondary porosity due to the fracturing and brecciation.

Montoya Group (**Middle-Upper Ordovician**)

The Montoya Formation includes three dolostone members overlying a sandstone unit. The three upper carbonate units include the Upham, Aleman and Cutter Members and the lower sandstone unit is the Cable Canyon Sandstone. The entire package can be up to 600' thick and depth to the top of the unit ranges from 5,500' near the northern pinchout in Chaves County to as much as 20,000' in southern Lea County. The Montoya Group was stripped from the higher parts of the Central Basin Platform by erosion in the Late Pennsylvanian and Early Permian.

Simpson Group (Middle-Upper Ordovician)

The Simpson Group in a heterogeneous unit with limestone, dolostone, sandstone and green shale horizons. Up to 1000' thick, it is dominated by the shale beds (55% of total thickness), followed by the dolostone and limestone beds (40%) and finally sandstone (5%). The shale horizons can serve as a permeability barrier between the underlying Precambrian basement rocks and overlying reservoirs where the Simpson Group is present and has sufficient thickness. Depths to the Simpson Group range from 6,700' on parts of the Central Basin Platform to up to 21,000' in the Delaware Basin.

Ellenburger Formation (Lower Ordovician)

The Ellenburger Formation is up to 1000' thick and composed of limestone and dolostone that represent cyclic deposition in waters of the inner platform with restricted circulation. Porosity in the Ellenburger Formation includes porosity in the matrix, vugs, major karst dissolution features, collapse karst breccias and fractures. Depths to the top of the unit range from 7,500' on the Central Basin Platform to up to 22,000' in the Delaware Basin.

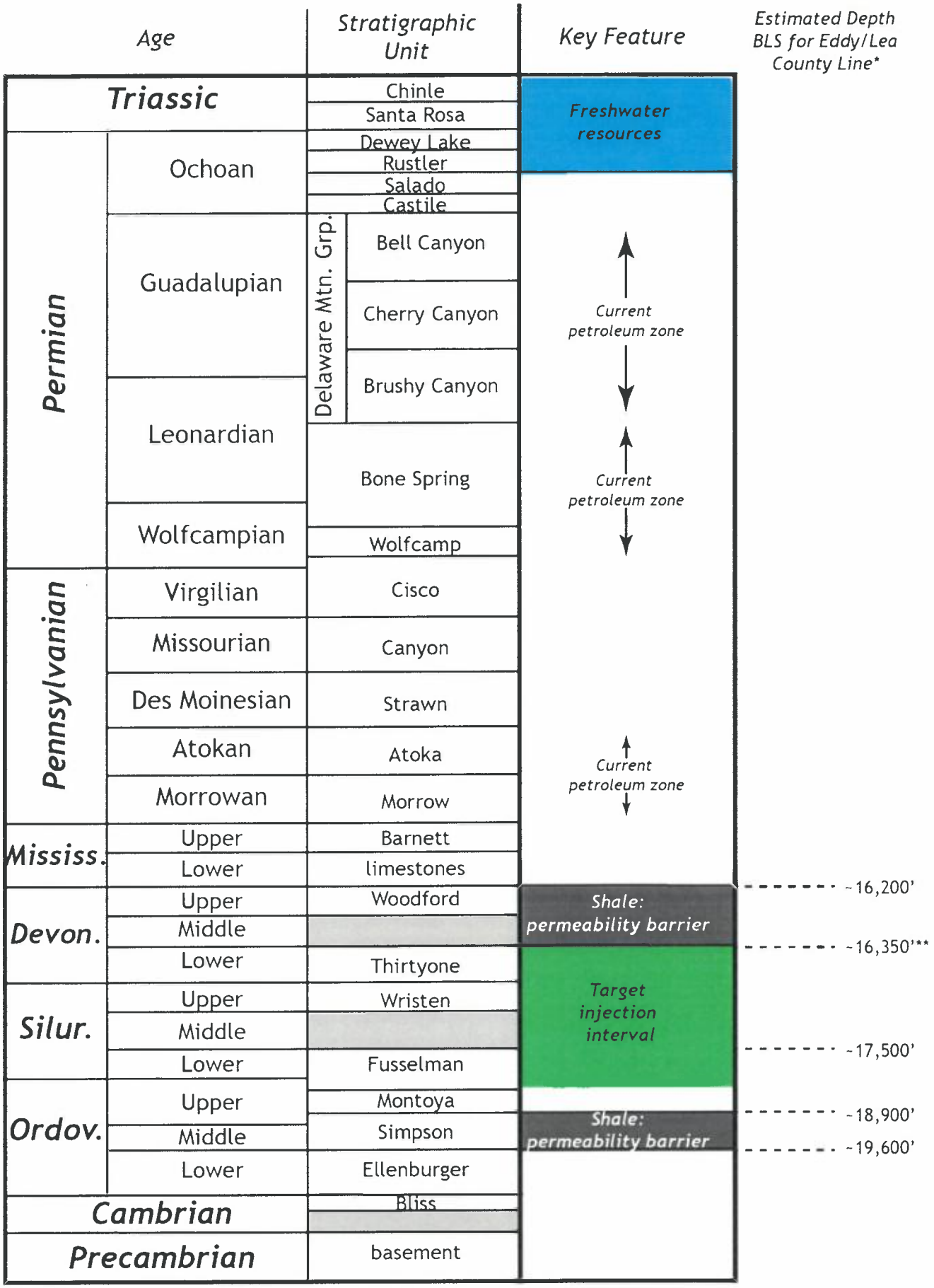
References

Broadhead, R.F., 2017, Petroleum Geology: *in* V.T. McLemore, S. Timmons and M. Wilks (eds.), Energy and Mineral Resources of New Mexico, New Mexico Bureau of Geology and Mineral Resources Memoir 50, vol. A, 90 p.

Comer, J.B., 1991, Stratigraphic analysis of the Upper Devonian Woodford Formation, Permian Basin, West Texas and southeastern New Mexico: Bureau of Economic Geology, University of Texas at Austin, Report of Investigations no. 201, 63 p.

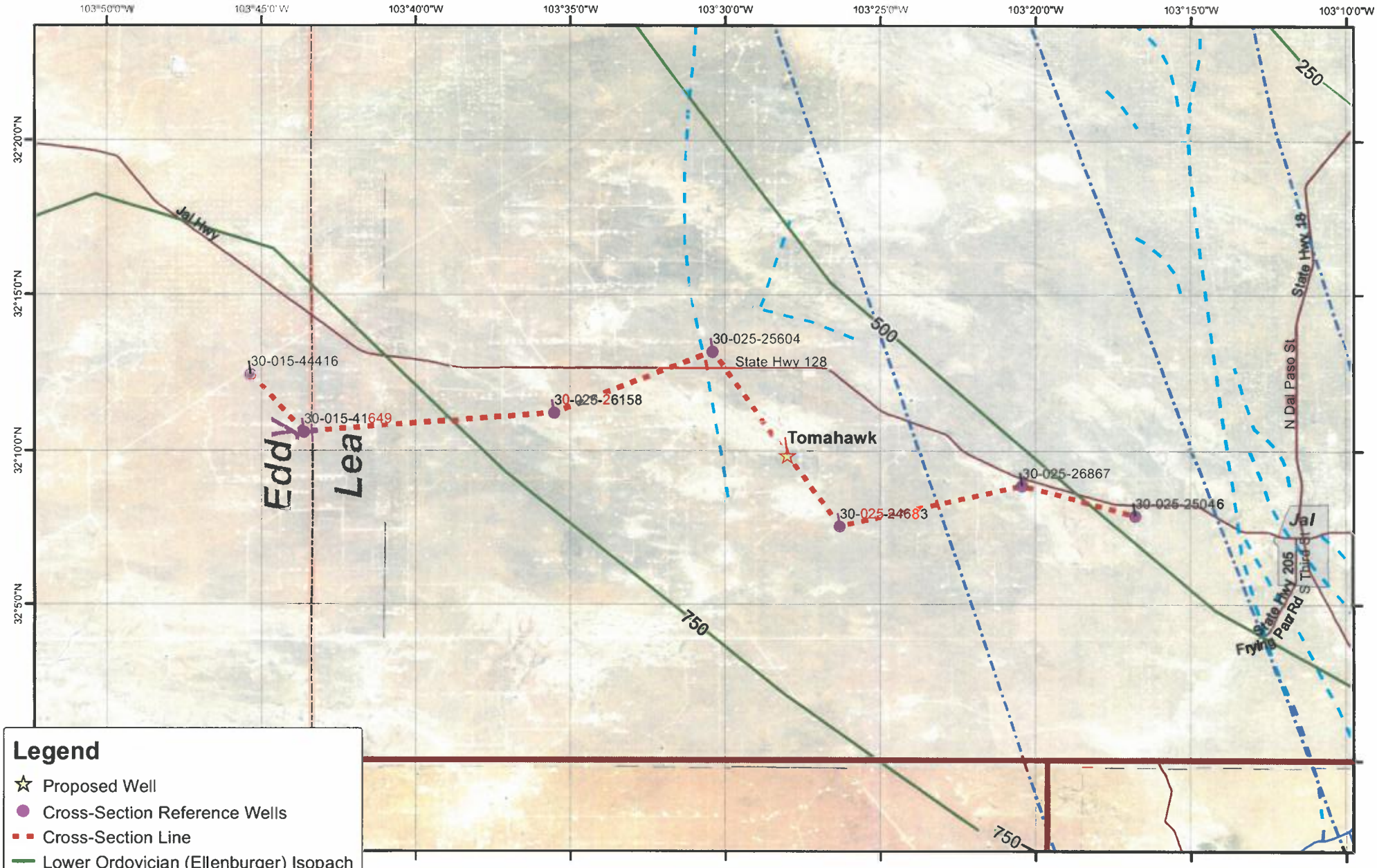
Hemmesch, N.T., Harris, N.B., Mnich, C.A. and Selby, D., 2014, A sequence-stratigraphic framework for the Upper Devonian Woodford Shale, Permian Basin, west Texas: American Association of Petroleum Geologists Bulletin, v. 98, no. 1, p. 23-47, doi:10.1306/05221312077

Texas Bureau of Economic Geology, 2009, Integrated Synthesis of the Permian Basin: Data and Models for Recovering Existing and Undiscovered Oil Resources from the Largest Oil-Bearing Basin in the U.S.: Department of Energy Final Technical Report, Award No: DE-FC26-04NT15509, 964 p.



Stratigraphic chart for the Delaware Basin from Broadhead (2017).
* Based on data from 30-025-25604 Government L #1 (18-24S-34E) and 30-025-24683 Fairview Mills Fed #1 (14-25S-34E).

Ellenburger Isopach, Faults, and Well Locations



Legend

- Proposed Well
- Cross-Section Reference Wells
- Cross-Section Line
- Lower Ordovician (Ellenburger) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, TX
- County Boundaries, NM

5 2.5 0 5 10 15 20 Miles

N

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.

WESTERN Geoinformatics
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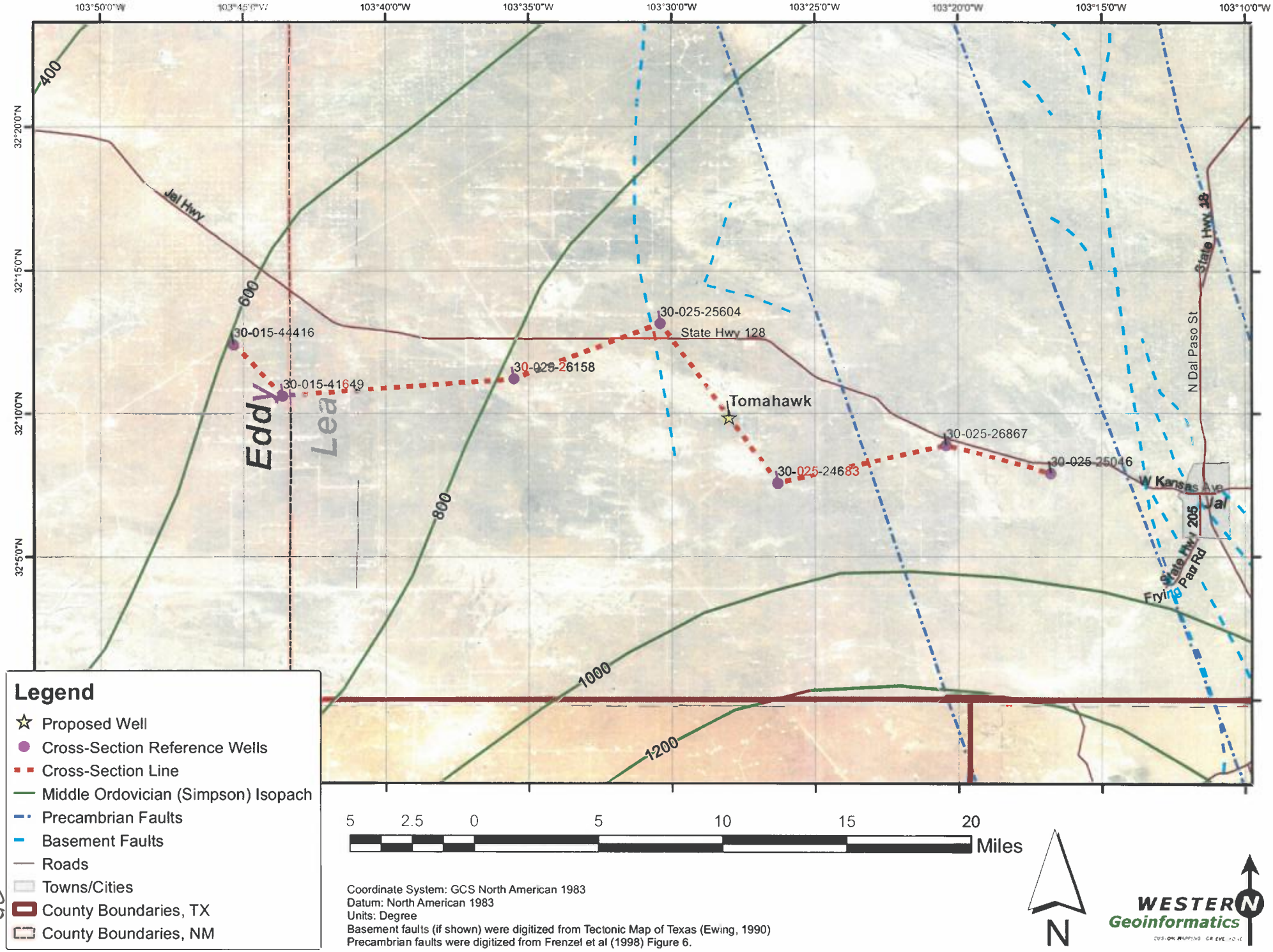
Simpson Isopach, Faults, and Well Locations

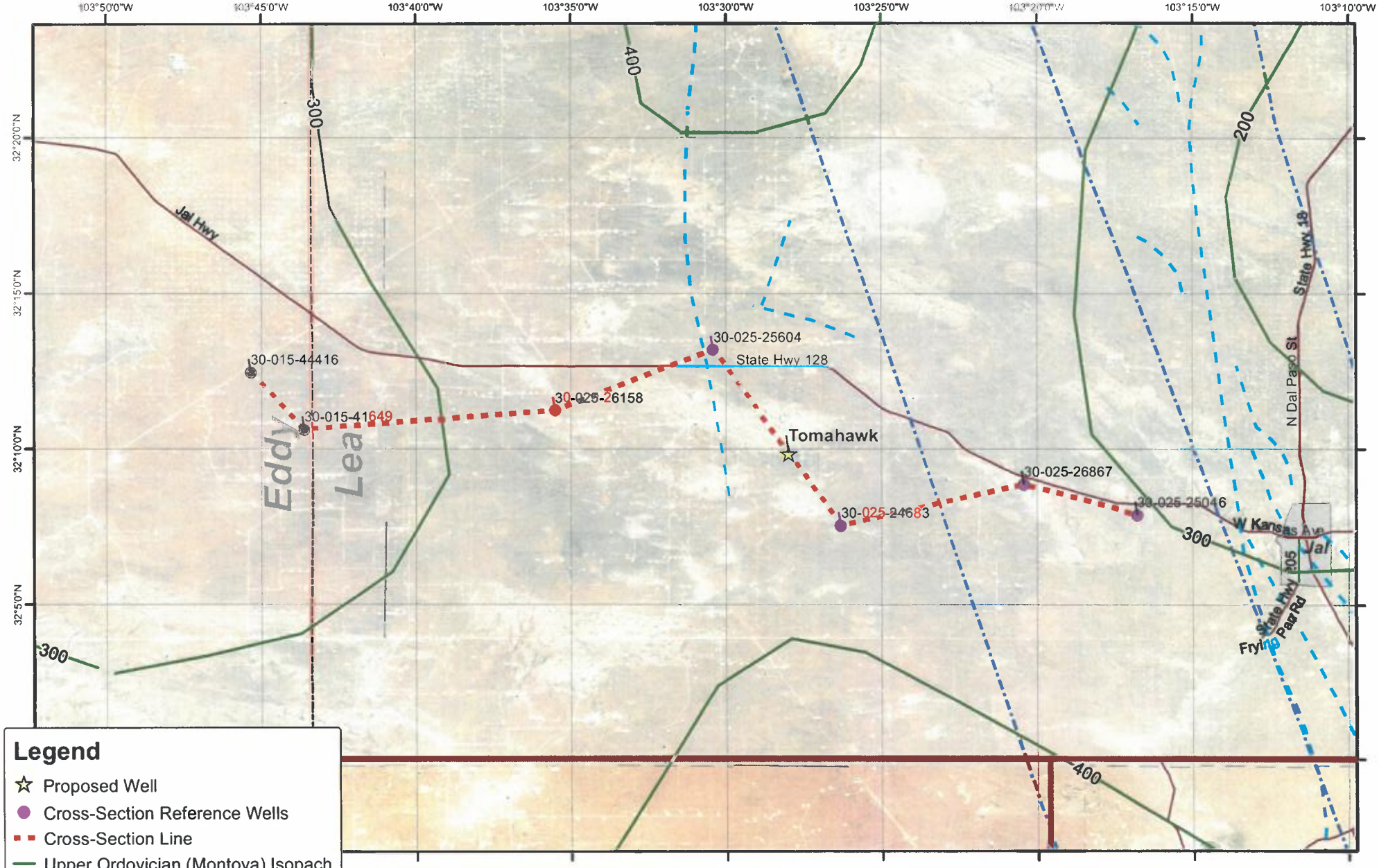


Legend

- Proposed Well
- Cross-Section Reference Wells
- Cross-Section Line
- Middle Ordovician (Simpson) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, TX
- County Boundaries, NM

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.

Montoya Isopach, Faults, and Well Locations



Legend

- Proposed Well
- Cross-Section Reference Wells
- Cross-Section Line
- Upper Ordovician (Montoya) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, TX
- County Boundaries, NM

5 2.5 0 5 10 15 20 Miles

N

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.

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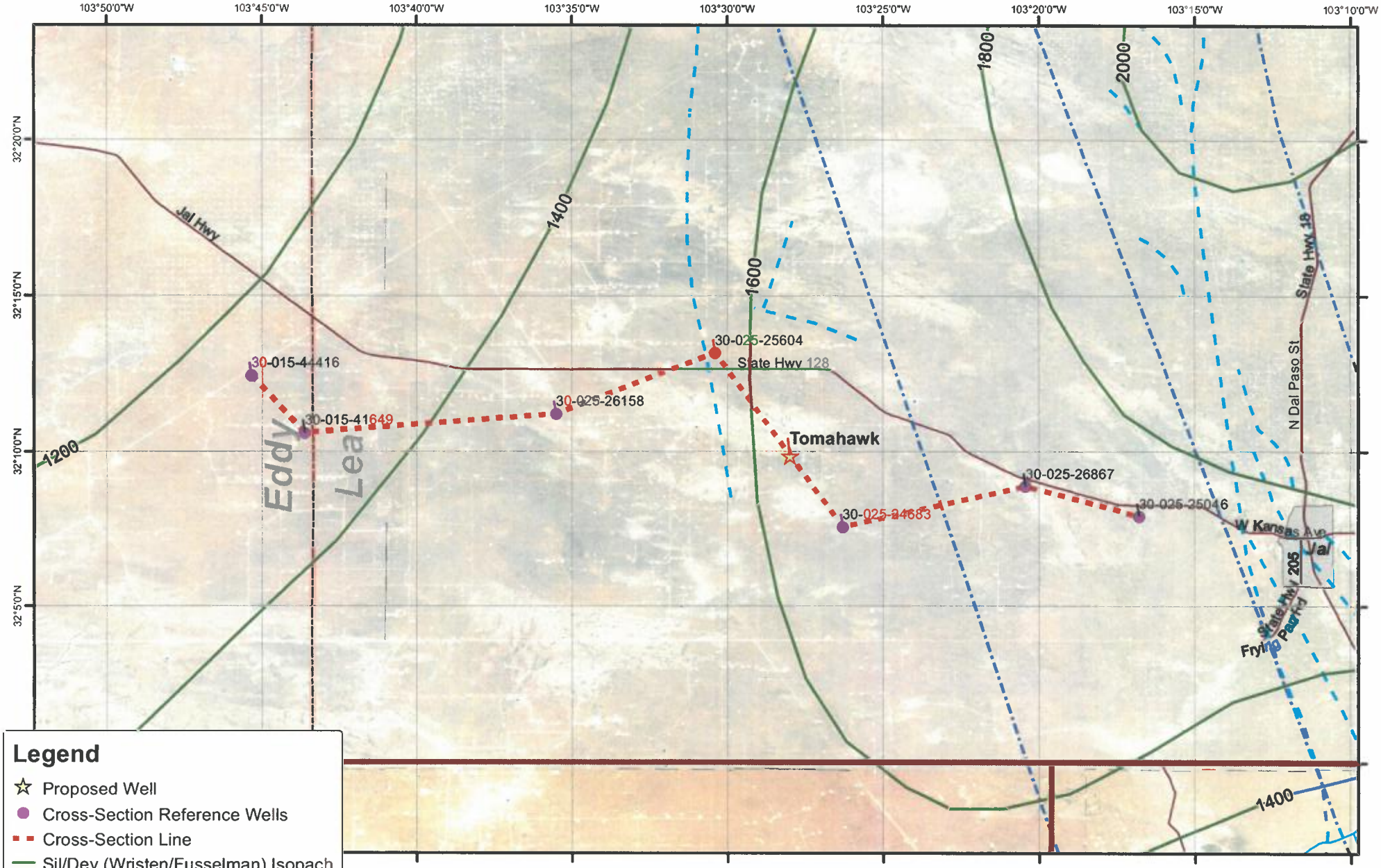
Wristen/Fusselman Isopach, Faults, and Well Locations



Legend

- Proposed Well
- Cross-Section Reference Wells
- Cross-Section Line
- Sil/Dev (Wristen/Fusselman) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, TX
- County Boundaries, NM

5 2.5 0 5 10 15 20 Miles

N

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.

WESTERN Geoinformatics
CUSTOM MAPPING FOR EVERYONE

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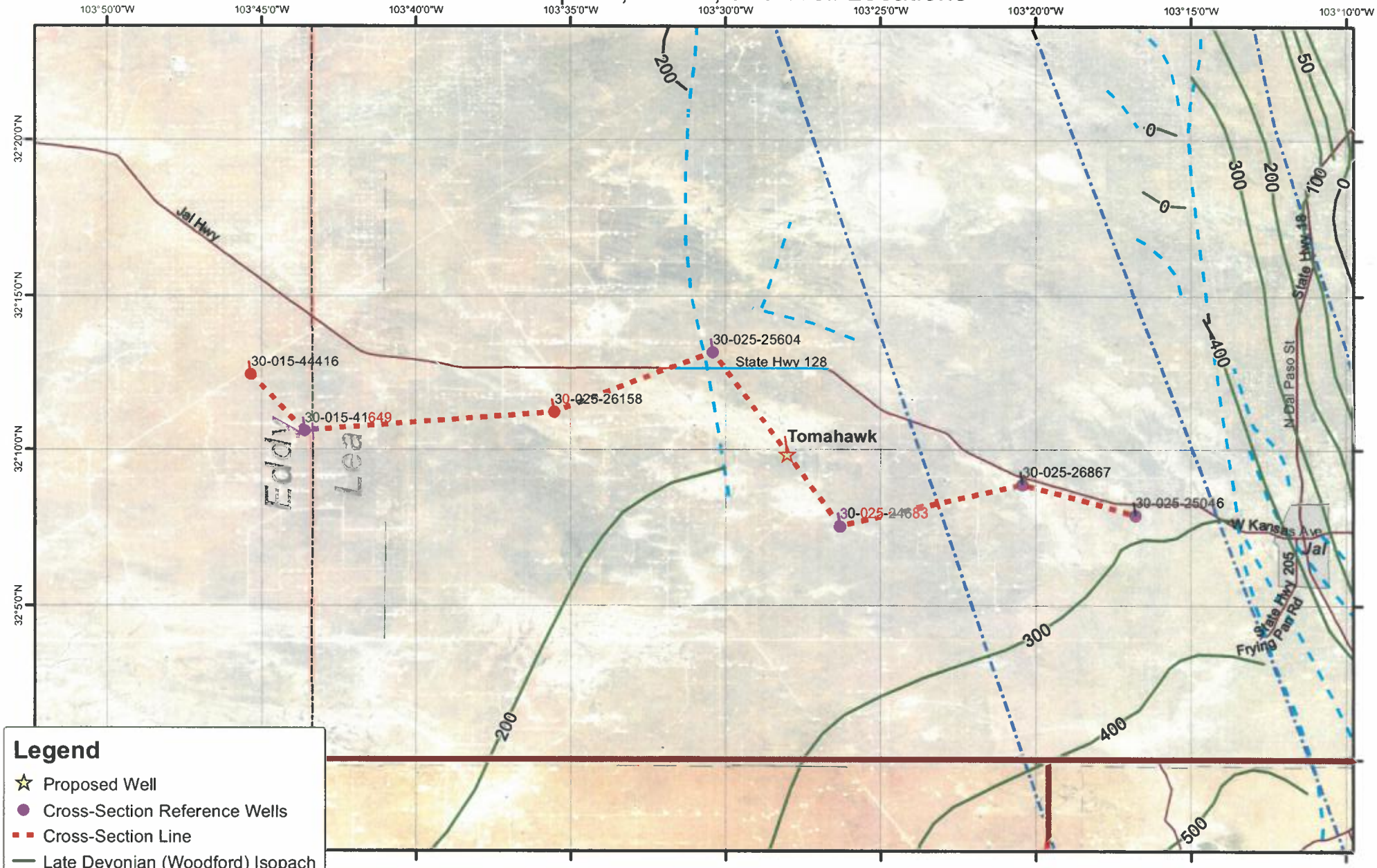
Woodford Isopach, Faults, and Well Locations



Legend

- Proposed Well
- Cross-Section Reference Wells
- Cross-Section Line
- Late Devonian (Woodford) Isopach
- Precambrian Faults
- Basement Faults
- Roads
- Towns/Cities
- County Boundaries, TX
- County Boundaries, NM

5 2.5 0 5 10 15 20 Miles

N

Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree
Basement faults (if shown) were digitized from Tectonic Map of Texas (Ewing, 1990)
Precambrian faults were digitized from Frenzel et al (1998) Figure 6.

WESTERN Geoinformatics
CUSTOM MAPPING FOR EVERYONE

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Northwest

Southeast

NGL Jack Tank
05-24S-32E
TD: -17,601'

30-015-44416
Striker 2 SWD #1
23-24S-31E
TD: 18,100'

30-015-41649
Cotton Draw SWD 181
36-24S-31E
TD: 16,700'

NGL McCloy West
14-23S-32E
TD: -18,451'

NGL McCloy Central
24-23S-32E
TD: -18,533'

30-025-26158
State 29 J #1
29-24S-33E
TD: 17,652'

NGL Minuteman
16-24S-33E
TD: -18,196'

NGL Asroc
06-25S-34E
TD: -18,890'

30-025-25604
Government L #1
18-24S-34E
TD: 17,620'

NGL Tornahawk
04-25S-34E
TD: -18,477'

30-025-24683
Fairview Mills Fed #1
14-25S-34E
TD: 20,840'

30 025-26867
Reno Com #001
11-25S-35E
TD: 19,170'

30 025-25046
West Jal B Deep #001
17-25S-36E
TD: 18,945'

Woodford Sh

"Devonian"

Fusselman

Montoya

Simpson

Ellenburger

Woodford Shale

100'

Exhibits of Dr. Steven Taylor
On Behalf of NGL Water Solutions Permian, LLC

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

AMENDED APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20151
(TOMAHAWK)

AFFIDAVIT OF DR. STEVEN TAYLOR

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

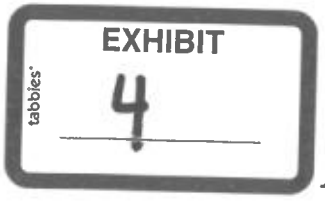
I, Dr. Steven Taylor, make the following affidavit based upon my own personal knowledge.

1. I am over eighteen (18) years of age and am otherwise competent to make the statements contained herein.

2. I have worked at the Los Alamos National Labs from 1991 to 2006. I currently am the secretary of GeoEnergy Monitoring Systems, Inc., a company that builds and conducts seismic monitoring.

3. I have obtained a Bachelor of Science degree in geology at Ohio University (1975) and a Ph.D. in Geophysics at the Massachusetts Institute of Technology (1980).

4. I am familiar with the amended application that NGL Water Solutions Permian, LLC ("NGL") filed in this matter and I have conducted a study related to the areas which is the subject matter of the application.



5. The applicant, NGL (OGRID No. 372338), seeks an order approving the Tomahawk SWD #1 well, which is a salt water disposal well.

6. The injection zone for the well is located below the base of the Woodford Shale formation and above the Ordovician formation, which consists of significant shale deposits.

7. The closest known fault line is located approximately 2 to 20 miles away from where the well is proposed to be located.

8. I have studied seismic catalogs, unpublished catalogs and USGS catalogs for the time period of 2010 – 2017 selective events within 50 km of one the Striker SWD wells.

9. Attached as Exhibit A is a copy of my study that concludes that there is very little seismic activity in the areas where the well is proposed to be located.

10. I have also reviewed information provided by FTI Platt Sparks involving several different fault slip probability analysis conducted, using a tool created by Stanford University. These fault slip potential models showed low probability of slip or earthquakes to known mapped faults located closest to the well. A copy of the studies are attached hereto as Exhibit B.

11. I attest that the information provided herein is correct and complete to the best of my knowledge and belief.

[Signature page follows]

Steven Taylor
Dr. Steven Taylor

SUBSCRIBED AND SWORN to before me this 19 th day of August, 2019 by Dr. Steven Taylor.

Notary Public

My commission expires: 11-27-2021

OFFICIAL SEAL
Jackie A. Gomez
NOTARY PUBLIC - State of New Mexico
My commission expires: 11/27/2021

Seismic Catalog Analysis Within 50 km of Tomahawk SWD #1 Well

Prepared for NGL-Permian
by
GeoEnergy Monitoring Systems
August 19, 2019

Analysis is based on NMT seismic catalogs, unpublished catalogs and USGS catalogs for the time period 2010-2017 selecting events within 50 km of the Tomahawk SWD well. Additionally, seismic monitoring from September 6, 2018 to date from the three NGL seismic stations installed at Striker 2, Striker 3 and Striker 6 SWD wells. NGL/GeoEMS installed a seismic monitor at the Salty Dog SWD well (SDOG) in Texas just across New Mexico border on March 28, 2019 that will help constrain locations in southeastern NM.

Striker Two (STR2), Sand Dunes well, Lat/Long: 32.2072820/-103.7557370
Striker Three (STR3), Gossett well, Lat/Long: 32.2551110/-104.0868610
Striker Six (STR6), Madera well, Lat/Long: 32.2091150/-103.5359570
Salty Dog (SDOG), Salty Dog well, Lat/Long: 32.22531/ -103.045212

Figure 1 shows seismic station locations with estimated detection levels for M 1.0 (green circles) and M 1.5 (red circles) along with NGL-Permian stations (yellow pushpins). **Figure 2** shows seismicity listed in Table 1 shown as red circles and additional regional stations from TexNet and NMT (green pushpins). These regional stations are used along with the 3 Striker SWD seismic stations for regional monitoring.

The USGS reports no events in the vicinity since 2010. New Mexico Tech runs a seismic network (SC) north of the wells for the DOE Waste Isolation Plant (only short-period vertical components). There are a total of seven seismic events in this time period ranging in magnitude from 1.0 to 3.1. Since the seismic deployment, there have been event detections listed in **Table 2** having preliminary locations using available regional data (**Figure 3**). Due to the small magnitudes, the signal-to-noise levels are low so the locations have large uncertainty and there is little constraint on depth.

No historic events have been located in the vicinity of Tomahawk SWD well. However, there were four small events located between 4-8 km from the Tomahawk SWD well in September and October of 2018 (Table 2)

Table 1: Seismicity Within 50 km of Striker SWD Wells 2010-2017

Date	Origin Time GMT	Latitude	Longitude	Depth (km)	Magnitude
20111227	23:10:37	32.37	-103.95	NaN	1.6
20120318	10:57:22	32.281	-103.892	5.0	3.1
20170211	14:34:27	32.29	-103.92	NaN	1.5

20170302	11:38:53	32.37	-103.88	NaN	1.7
20170325	22:46:01	32.13	-103.77	NaN	1
20170503	17:47:21	32.082	-103.023	5.0	2.6
20170814	01:09:56	32.39	-103.56	NaN	1.2

Table 2. New Mexico Area Reporting Period Seismicity (km units)

Date	Origin Time (GMT)	Lat	Long	Depth	Loc Error	M	(+/-)
09/10/18	23:35:43.942	32.1793	-103.5283	1	5.58	1.25	0.23
09/14/18	06:57:47.614	32.1540	-103.5030	1	5.58	1.11	0.41
09/15/18	16:48:21.041	32.1630	-103.5211	1	5.37	1.50	0.00
10/13/18	22:07:22.259	32.0998	-103.4560	6	5.64	1.60	0.12
11/18/18	09:04:52.707	32.2526	-103.7853	5	3.77	1.75	0.20
12/09/18	18:51:00.805	32.3634	-103.8510	1	2.09	1.44	0.08
01/03/19	09:15:48.809	32.2761	-103.6732	6	5.64	1.63	0.00
01/03/19	23:05:33.122	32.2599	-103.7654	4	5.51	1.60	0.25
01/04/19	09:45:38.943	32.2346	-103.7798	4	4.34	1.98	0.38
01/09/19	10:18:54.389	32.2255	-103.7166	5	2.80	1.47	0.41
01/27/19	07:33:47.127	32.2219	-103.7220	5	3.53	1.72	0.31
02/19/19	09:35:15.109	32.2443	-103.6898	1	4.17	1.20	0.00
02/19/19	09:35:15.109	32.2443	-103.6898	1	4.17	1.20	0.00
02/19/19	09:35:15.109	32.2443	-103.6898	1	4.17	1.20	0.00
05/23/19	06:33:40.530	32.2617	-103.7581	4	2.28	1.53	0.27
06/08/19	23:11:24.669	32.3102	-103.8510	2	0.55	1.39	0.07
07/17/19	03:24:43.975	32.3326	-103.8093	6	0.91	1.56	0.07

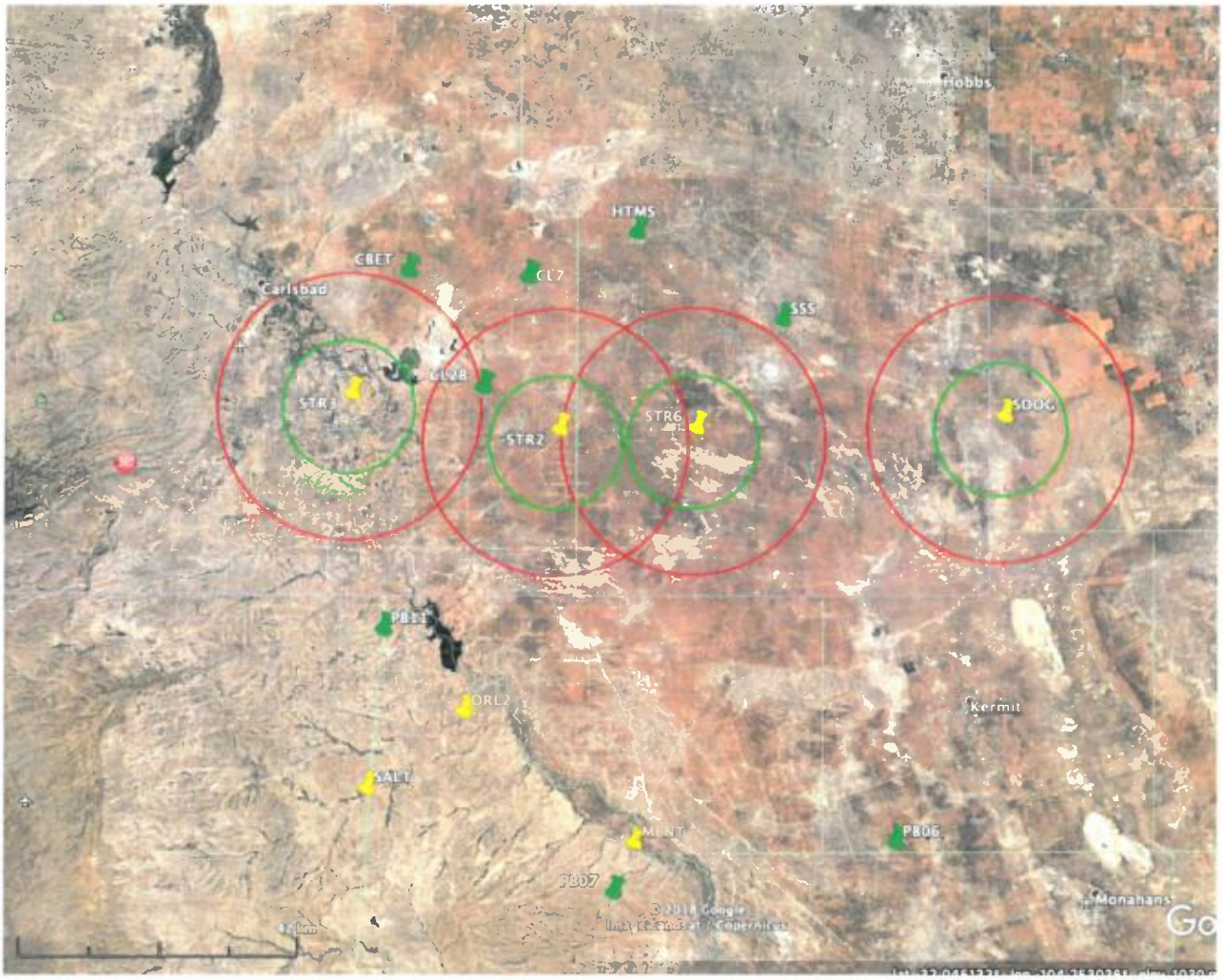


Figure 1. Striker SWD wells seismic station locations and existing NGL-Permian seismic stations (yellow pushpins). Green and red circles around stations show approximate detection levels for ML 1.0 and 1.5, respectively.

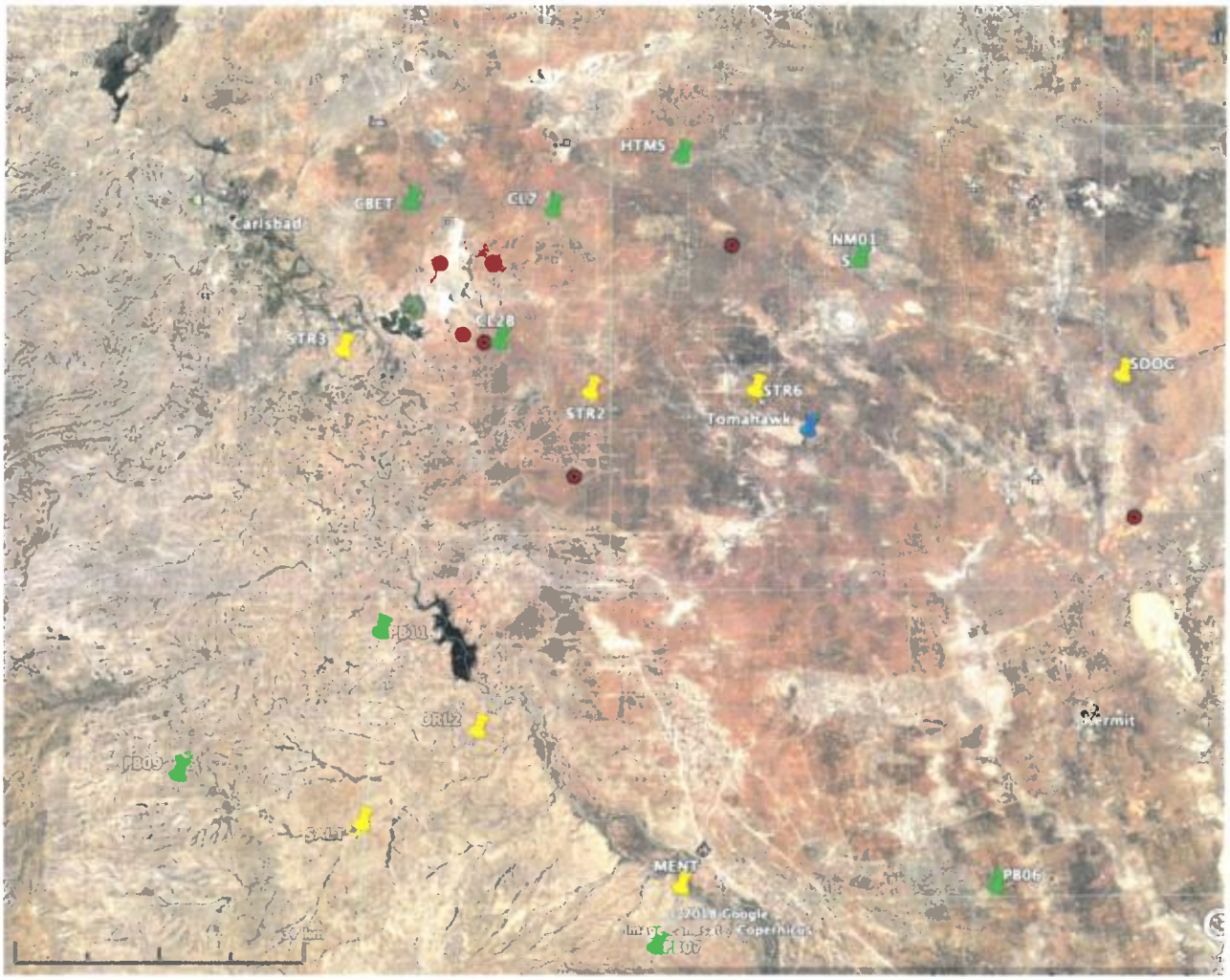


Figure 2. Striker SWD wells seismic station locations (yellow push pins) and existing NGL-Permian seismic stations (yellow pushpins). Other regional seismic stations run by TexNet and New Mexico Tech are shown as green pushpins. Historic seismicity listed in Table 1 shown as red circles. Tomahawk SWD well shown as blue pushpin.

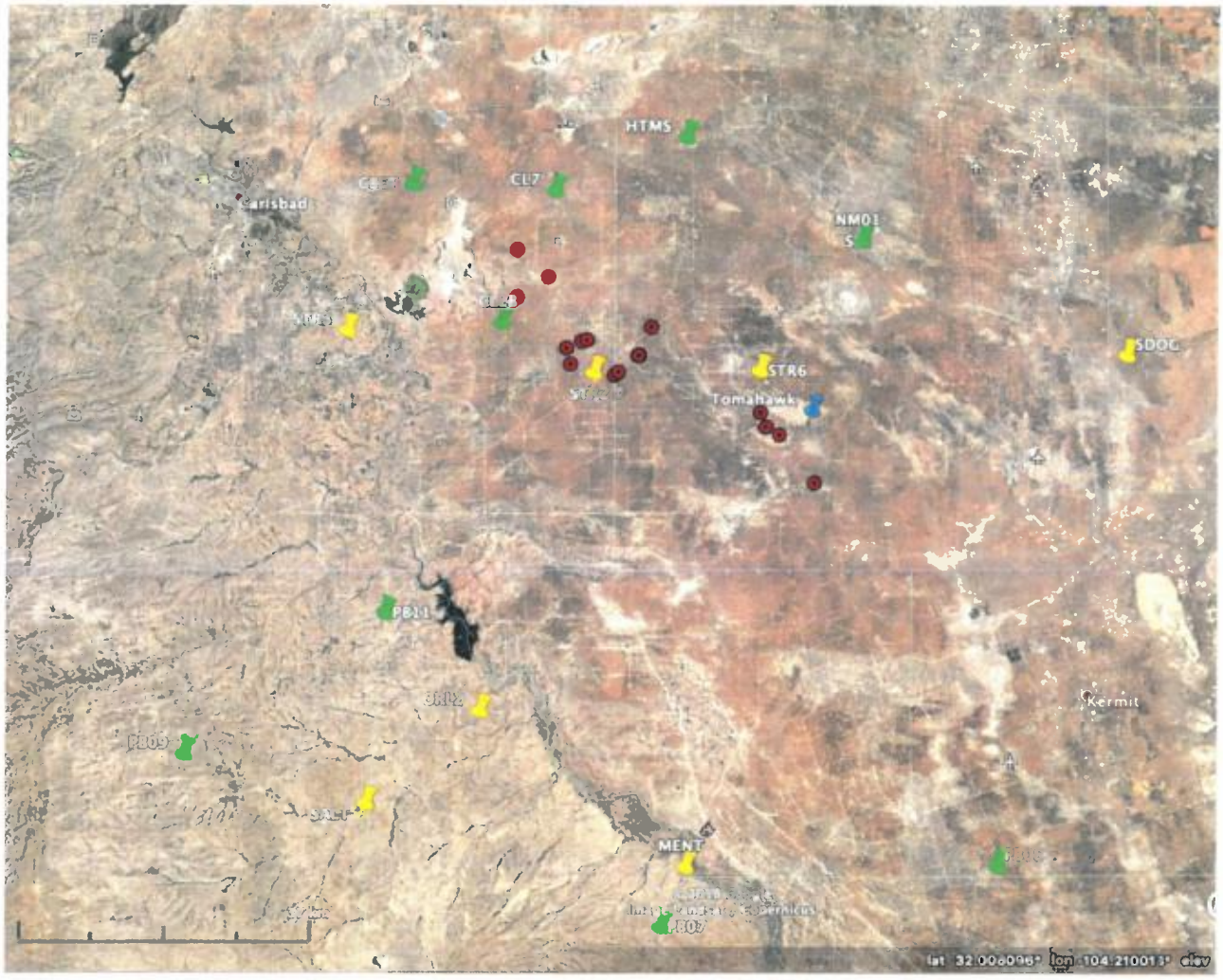


Figure 3. Seismic events in between September 6, 2018 to date as red circles (Table 2). Seismic stations as yellow (NGL) or green (NMT and TexNet) pushpins. Tomahawk SWD well shown as blue pushpin.

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Texas Registered Engineering Firm No F - 16381

August 18, 2019

RE: FSP Analysis
NGL Water Solutions Permian, LLC **(Tomahawk SWD #1)**
Eddy County, New Mexico

FSP Analysis

The FSP software used for this analysis was jointly developed by Stanford University, Exxon Mobil and XTO Energy as a tool for estimating fault slip potential resulting from fluid injection.

I have reviewed the geology, seismic activity, injection history and future proposed injection in the Subject Area and I would conclude that the Proposed **Tomahawk SWD #1** well does not pose a risk of increasing seismicity in the area. The primary risk reduction factor is that the faults are not optimally oriented to slip, and significant pressure increases would be necessary to initiate slip on the faults analyzed.

Fault slip potential (FSP) was analyzed in the area of review shown on **Exhibit No. 1.** The analysis integrates the proposed well location as well as any existing injection wells or pending applications in order to fully assess the pressure implications of injection in the area and the potential for slip along existing faults.

Exhibit No. 2 shows the FSP input parameters for the local stress, average reservoir depth, pressure gradients and reservoir characteristics. Depths and reservoir characteristics were derived from nearby well logs and stress values were derived from the Lund Snee and Zoback (2018) paper related to Stress in the Permian Basin.

Exhibit No. 3 shows the location of existing wells and locations of the Proposed SWD well relative to the faults documented in this area. The faults are sourced from GeoMap and these are similar to the fault traces shown in the referenced Snee/Zoback paper (Figure 3 in the paper) and shown as **Exhibit**

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EXHIBIT
tabbies
4.B

No. 4 in my report. The Snee/Zoback paper only considers fault orientation relative to the stress orientation in determination of fault slip potential. Based on their limited analysis of the area they concluded the faults have low slip potential based on orientation/azimuth.

My analysis further incorporates the injection history and future injection projections and the injection reservoir characteristics to fully assess the potential for slip along these faults. Existing wells were incorporated into the analysis using their injection volume histories and holding them constant into the future at their last reported monthly injection volume. The Subject well was modelled at 40,000 bbls/day and held constant for the life of the analysis (+25 years). Wells that have not been drilled or are currently pending were input in the model at +30,000 bbls/day.
(Only wells within the 10 km radius are used in the model)

The wells in the model: (**Exhibit No. 3 and Exhibit No. 1)**

VD	23895
MD	42448
S6	44291
AR	Asroc SWD
HP	Harpoon SWD
MV	Maverick SWD
SR	Sparrow SWD
TH	Tomahawk SWD
TD	Trident SWD
VP	Viper SWD
SW	Sidewinder SWD
Mo	Moab SWD 1
PT	Patriot SWD 1
MM	Minuteman SWD
JV	Javelin SWD
TL	Telluride Fed SWD
AS	Aspen SWD

Exhibit No. 5 illustrates the geomechanical properties of the fault segments in the area of review. It should be noted that the FSP software only calculates a single pressure change along a fault (at the fault

mid-point) so it is critical that faults are broken into multiple segments to get a true evaluation of the pressure increases associated with injection. **Exhibit No. 5** also shows the direction of max hor. stress as denoted by the grey arrows outside the circle on the stereonet in the lower right portion of this exhibit. Faults that align parallel or closer to this orientation will have the highest potential for slip or lowest ΔP to slip. Faults 1-9 have very low potential for slip.

Exhibit No. 6 shows that the input stress and fault values were varied by +/-10% to allow for uncertainty in the input parameters. Even considering the variability of the inputs the model results show low probability for slip on the faults in the area of review. An increase of 800 psi still only results in a 10% probability of fault slip along the most critical fault segment (F14)

Exhibit No. 7 takes a closer look at Fault 14. The sensitivity analysis is highlighted in the lower right portion of this exhibit and shows that without any variability of inputs the ΔP needed to slip is 1,170 psi along this fault. A 10% change in the fault friction coefficient could lower ΔP needed to slip to 800 psi. Fault 13 fails at slightly higher values (1,174 and 820). All other faults require higher ΔP to slip and pressures do not approach failure values by the year 2045.

Exhibit No. 8 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2020. This map indicates ΔP pressure increase of 26 psi at F14.

Exhibit No. 9 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2025. This map indicates ΔP pressure increase of 108 psi at F14.

Exhibit No. 10 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2030. This map indicates ΔP pressure increase of 254 psi at F14.

Exhibit No. 11 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2035. This map indicates ΔP pressure increase of 416 psi at F14. Note that this pressure is still well below the pressure that could initiate fault slip, which takes +800 psi. Pressure is building

along the N-S fault segments F4 – F7 with pressure of 1,265 psi at F5, however these faults require ΔP pressures of +4,000 psi to fail.

Exhibit No. 12 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2040. This map indicates ΔP pressure increase of 574 psi at F14. Note that this pressure is still well below the pressure that could initiate fault slip, which takes +800 psi. Pressure is building along the N-S fault segments F4 – F7 with pressure of 1,508psi at F5, however these faults require ΔP pressures of +4,000 psi to fail.

Exhibit No. 13 illustrates the ΔP pressure in a "heat map" and shows ΔP pressure increases at the faults as of 1/1/2045 This map indicates ΔP pressure increase of 723 psi at F14. Note that this pressure is approaching the pressure that could initiate fault slip, which takes +800 psi. Pressure is building along the N-S fault segments F4 – F7 with pressure of 1,719 psi at F5, however these faults require ΔP pressures of +4,000 psi to fail.

The pressure analysis over time shows that pressure is expected to increase along the faults however pressures remain below critical levels. The table below shows the ΔP pressure increases needed to initiate fault slip along each fault segment and the corresponding ΔP pressure increases as of 2045:

Fault Segment	ΔP to slip (fixed inputs)	ΔP to slip (10% varied inputs)	ΔP at 2045
F1	3,913	1,950	24
F2	4,844	2,500	104
F3	6,349	3,850	422
F4	6,255	3,800	1,365
F5	6,494	3,970	1,719
F6	6,353	3,850	1,622
F7	6,353	3,850	1,346
F8	6,353	3,850	933
F9	6,507	3,970	964
F10	5,897	3,500	1,117
F11	5,121	2,850	1,370
F12	3,572	1,850	665
F13	1,174	820	755
F14	1,170	800	723
F15	1,269	900	697
F16	1,359	1,100	394
F17	1,359	1,100	127
F18	2,893	1,600	667
F19	6,446	3,900	512
F20	6,953	4,500	327
F21	5,836	3,500	171
F22	3,884	1,900	59

TABLE 1

This analysis demonstrates that there is a low likelihood of injection induced seismicity in the Subject Area.

Conclusion

Most of the faults and fault trends in the area of review are not optimally oriented to slip. The orientation of the faults requires significant pressure changes (ΔP +6,000 psi) based on the fixed input parameters and the ΔP increase at these faults only reaches 1,719 psi by 2045. Faults F13 – F15 approach critical levels by 2045 if inputs are varied by 10% or more. It is unlikely that these faults reach these levels because the model assumes relatively high injection rates held constant for +25 years and very few wells have demonstrated that the formation will accept rates this high.

This model assumes constant injection rates over the next +25 years which is not a typical scenario as SWD wells tend to decrease injection volumes over time as the well ages and disposal demand decreases in the area. If injection volumes are lower over time than the model represents, then the risk for fault slip is lowered.

In the event seismicity should occur in the future, the wells closest to the faults (proposed and existing) should be the wells considered for modification or reduction of injection rates. At this time there is no evidence to support rate reduction for any of the existing or proposed wells.

Should you have any questions, please do not hesitate to call me at (512) 327-6930 or email me at todd.reynolds@ftiplattsparks.com.

Regards,

Todd W. Reynolds – Geologist/Geophysicist
Managing Director, Economics/FTI Platt Sparks

Todd W Reynolds

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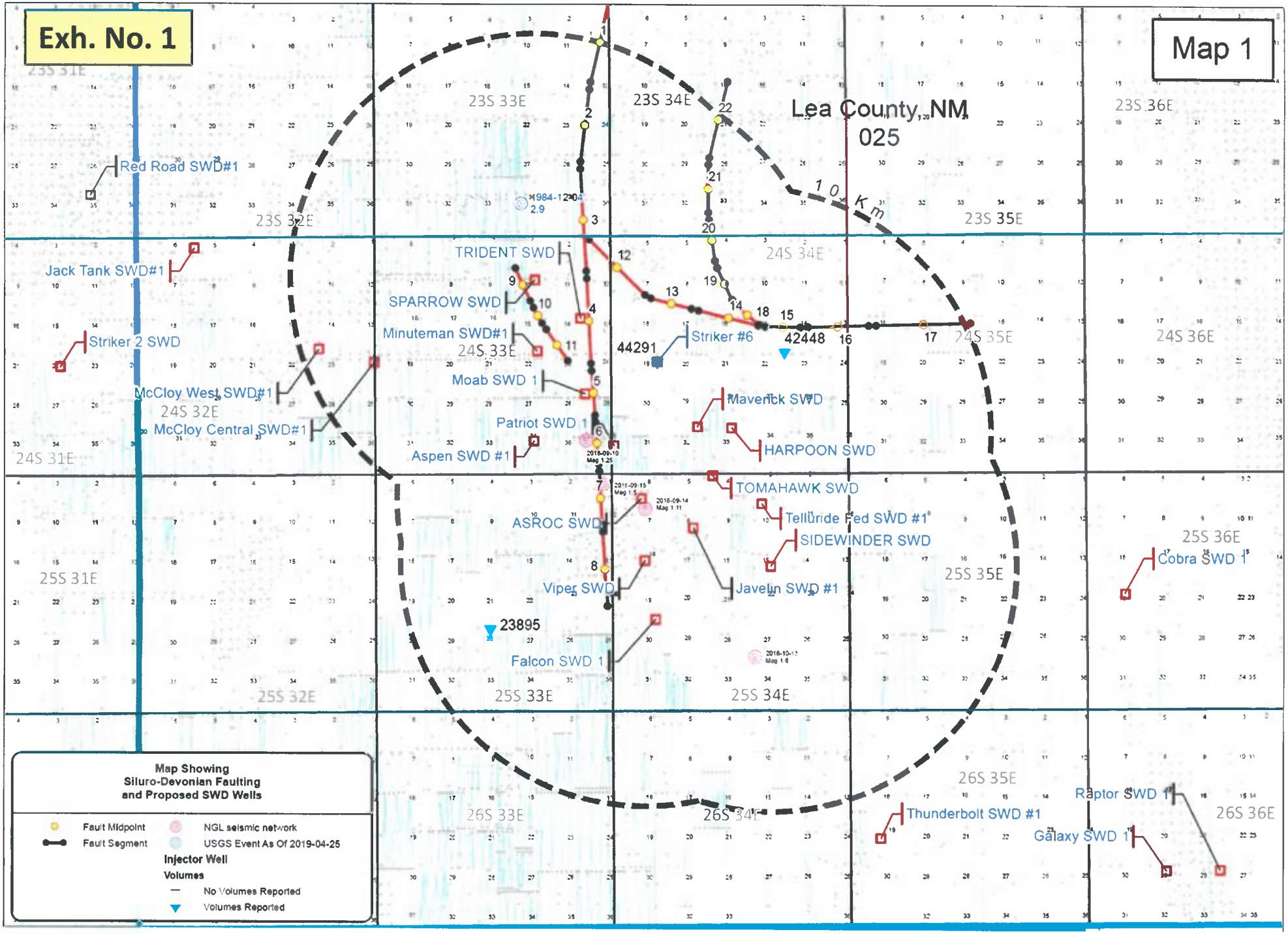
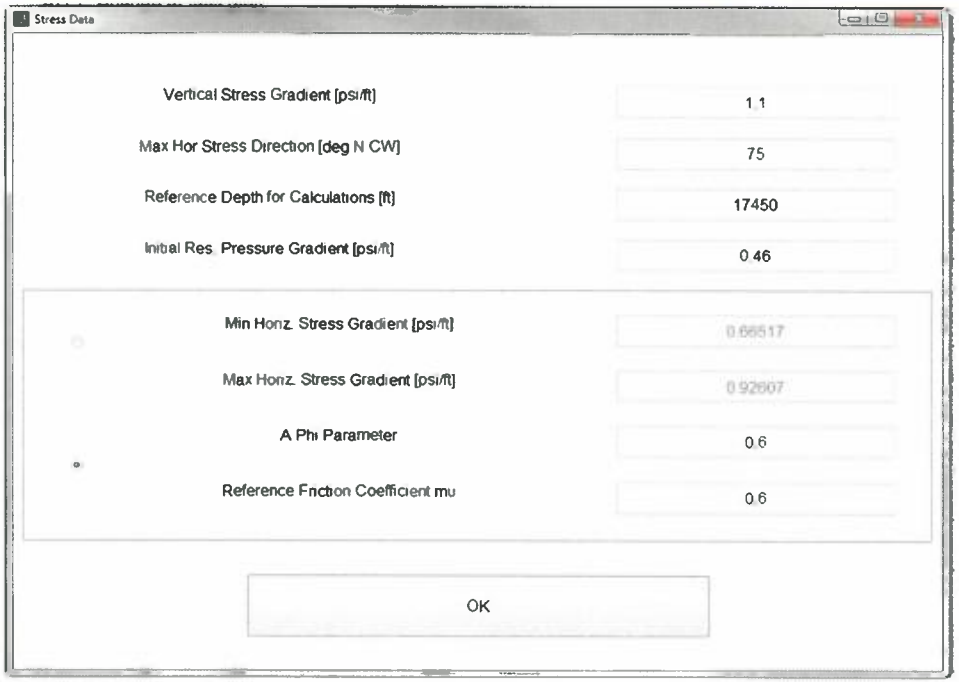
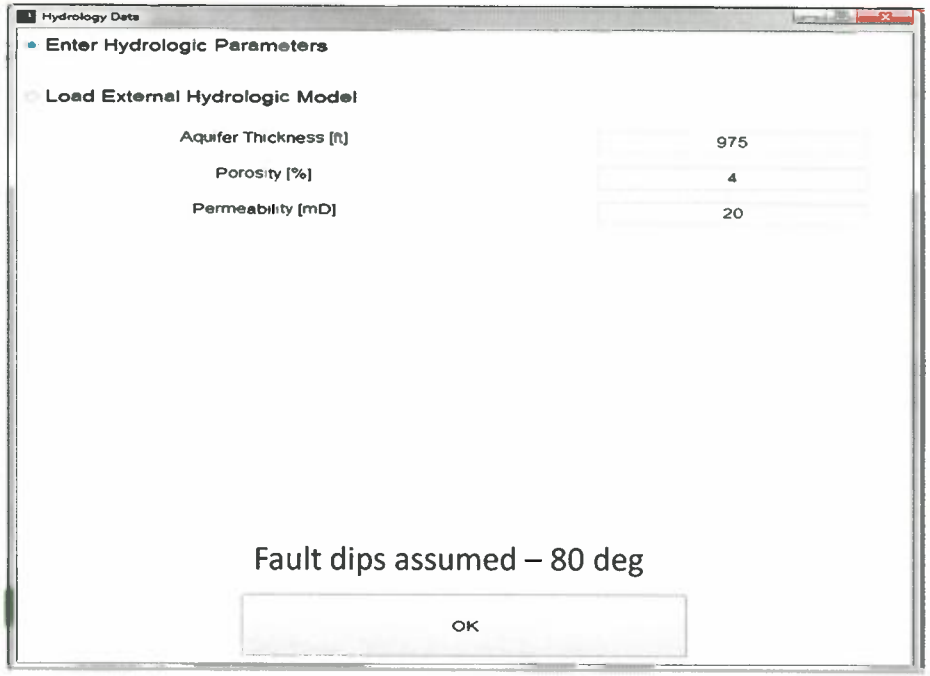
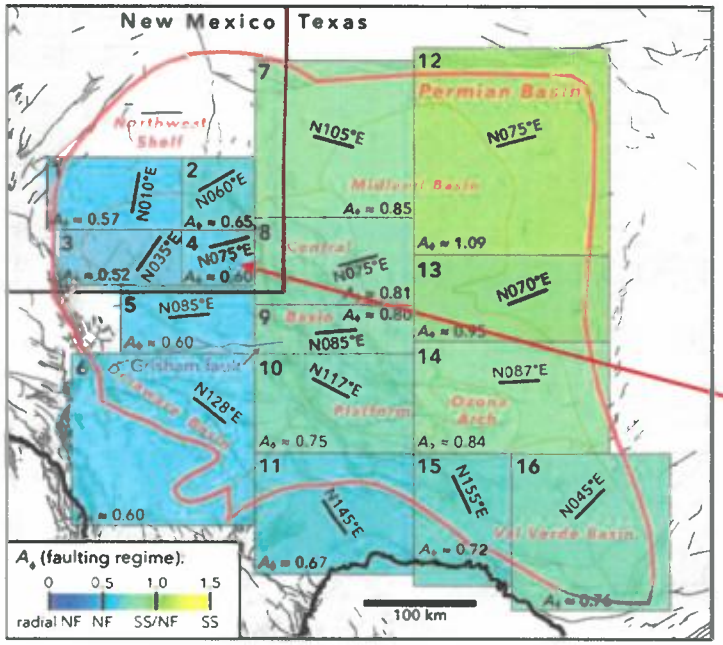

Exh. No. 1
Map 1
Lea County, NM
025
10 Km
23S 31E
23S 32E
23S 33E
23S 34E
23S 35E
23S 36E
24S 31E
24S 32E
24S 33E
24S 34E
24S 35E
24S 36E
25S 31E
25S 32E
25S 33E
25S 34E
25S 35E
25S 36E
26S 33E
26S 34E
26S 35E
Red Road SWD#1
Jack Tank SWD#1
Striker 2 SWD
McCloy West SWD#1
McCloy Central SWD#1
TRIDENT SWD
SPARROW SWD
Minuteman SWD#1
Moab SWD 1
Patriot SWD 1
Aspen SWD #1
ASROC SWD
Viper SWD
Falcon SWD 1
23895
44291
Striker #6
42448
Maverick SWD
HARPOON SWD
TOMAHAWK SWD
Tellúride Fed SWD #1
SIDEWINDER SWD
Javelin SWD #1
Cobra SWD 1
Thunderbolt SWD #1
Raptor SWD 1
Galaxy SWD 1
Map Showing
Siluro-Devonian Faulting
and Proposed SWD Wells
Fault Midpoint
Fault Segment
NGL seismic network
USGS Event As Of 2019-04-25
Injector Well
Volumes
No Volumes Reported
Volumes Reported
Date Saved: 2019-04-30 10:25:08 AM
Path: P:\1428\FSP_.mxd
Feet
PLATT S PARKS

Exh. No. 2

FSP INPUT PARAMETERS







Input Parameter Comments

Hydrologic Parameters – Derived from nearby logs

Stress Gradients – Derived from A Phi parameter from Snee/Zoback paper (.60)

Max Hor. Stress Direction - Derived from Snee/Zoback paper (N60E)

ab

Exh. No. 3

File Zoom

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

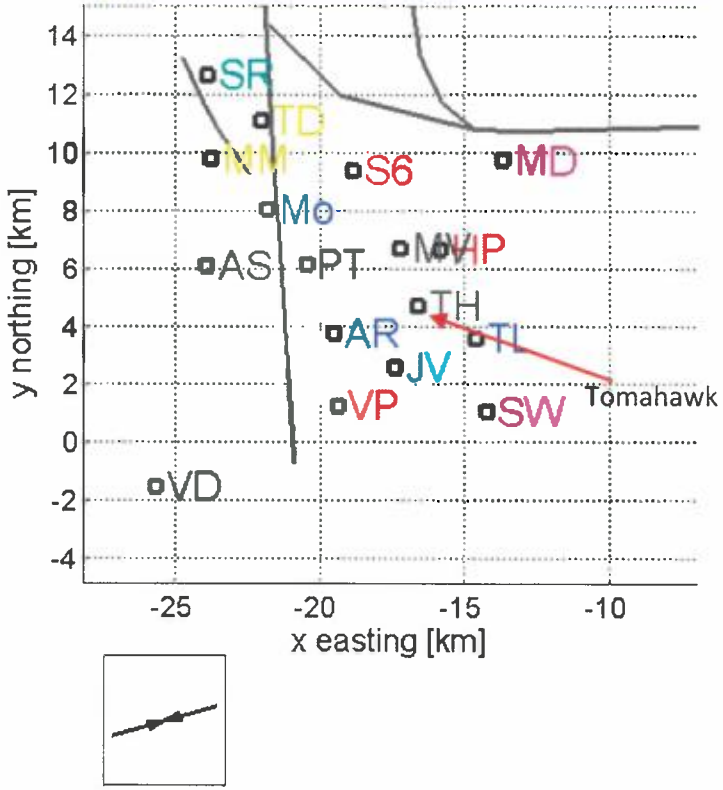
All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9
Fault #10
Fault #11
Fault #12
Fault #13
Fault #14
Fault #15
Fault #16
Fault #17
Fault #18
Fault #19
Fault #20
Fault #21
Fault #22

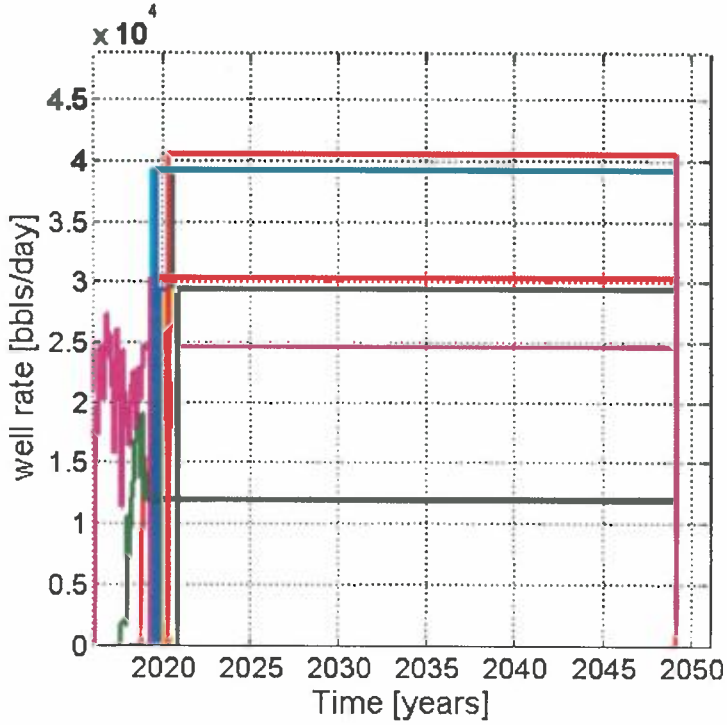
Calculate

Stress Regime: Normal Faulting

Select Well: All

FSP INPUT Fault and well locations





FSP INPUT Injection history and projected future injection

Exh. No. 4

Area of Review

Low slip potential based on fault orientation (green faults)

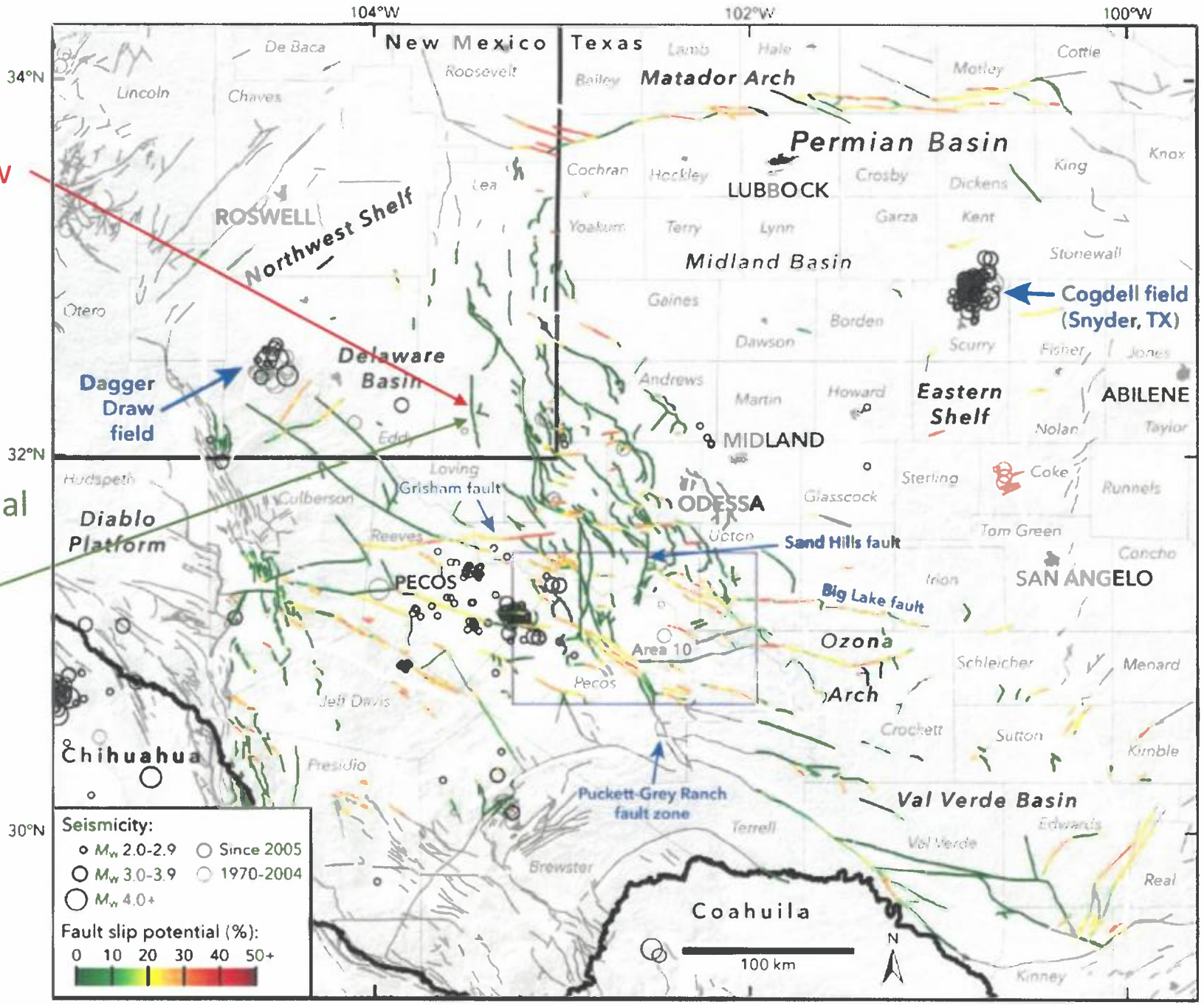


Figure 3. Results of our probabilistic FSP analysis across the Permian Basin. Data sources are as in Figures 1 and 2.

From Lund Snee and Zoback (2018)

Exh. No. 5

File Zoom

Fault Slip Potential

MODEL INPUTS | GEOMECHAN... | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

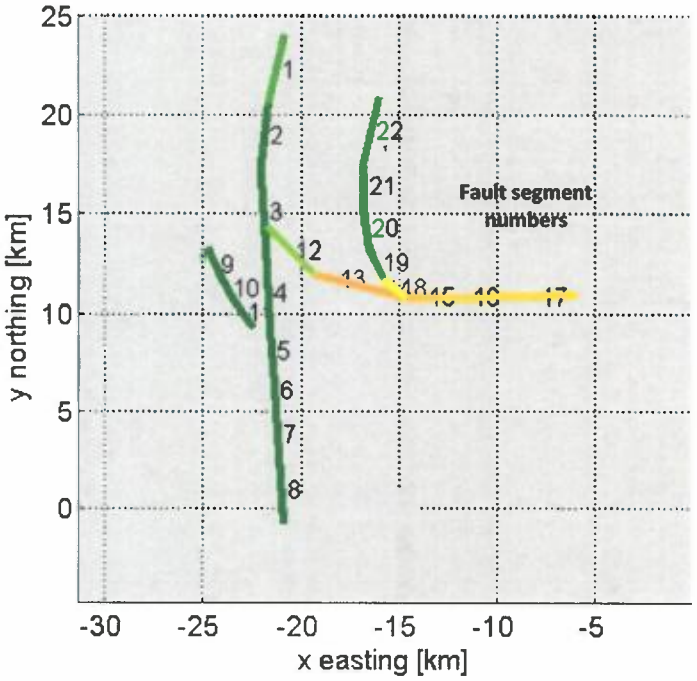
Fault Selector:

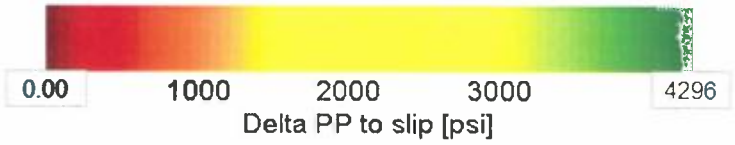
All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9
Fault #10
Fault #11
Fault #12
Fault #13
Fault #14
Fault #15
Fault #16
Fault #17
Fault #18
Fault #19
Fault #20
Fault #21
Fault #22

Calculate

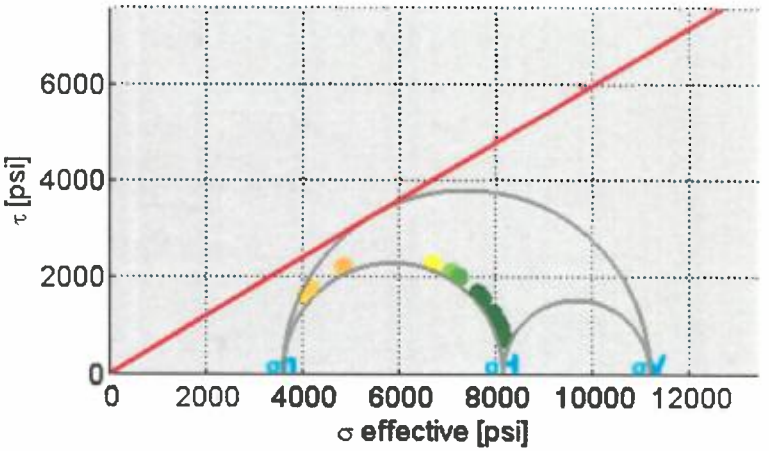
a) Fault Number

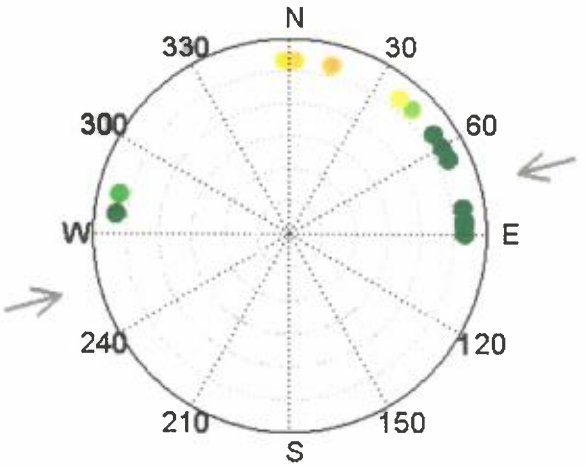
Help





Stress Regime: Normal Faulting





Stereonet Show: Fault Normals

42

Exh. No. 6

Fault Slip Potential

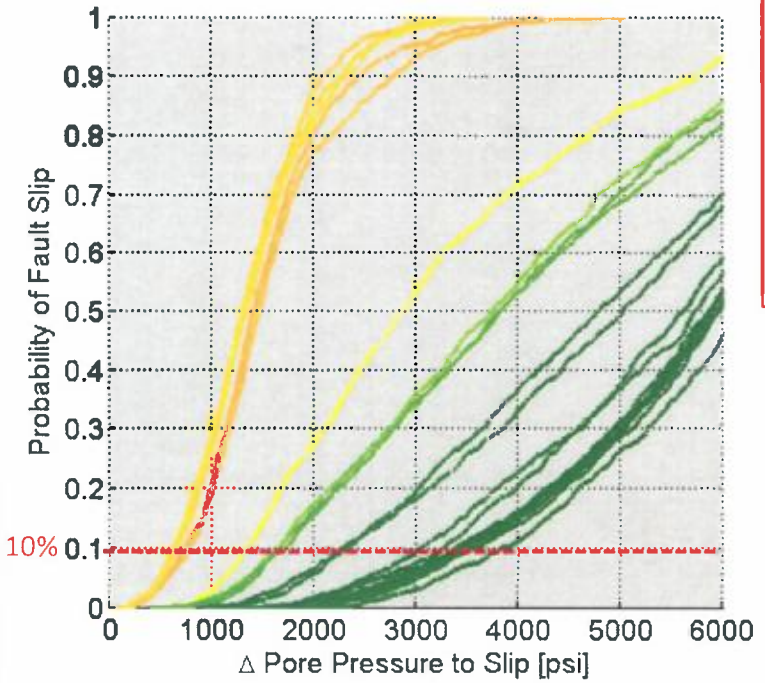
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9
Fault #10
Fault #11
Fault #12
Fault #13
Fault #14
Fault #15
Fault #16
Fault #17
Fault #18
Fault #19
Fault #20
Fault #21
Fault #22

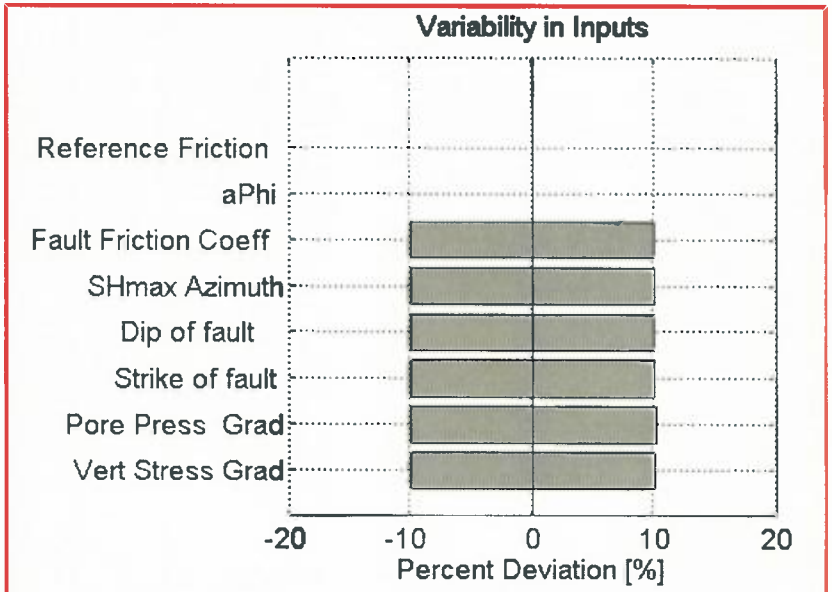
Calculate

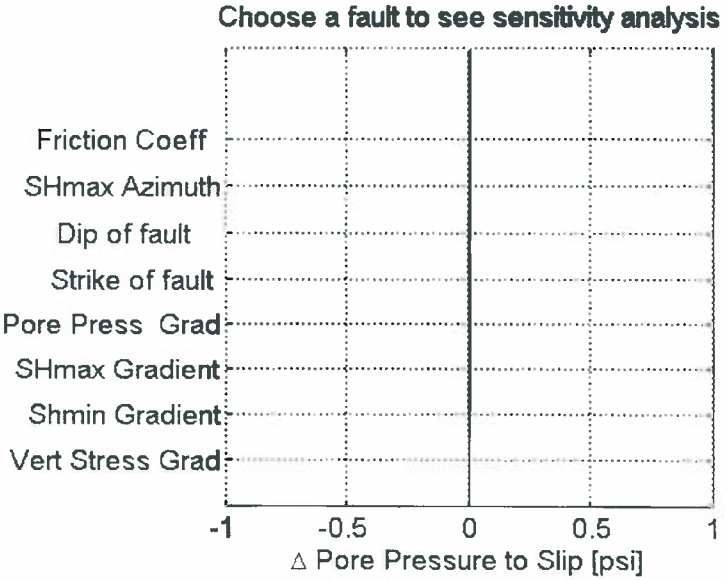
Load Distributions | Run Analysis



Max Delta PP [psi]: 6000

Export CDF data | Show Input Distributions





94

Exh. No. 7

Fault Slip Potential

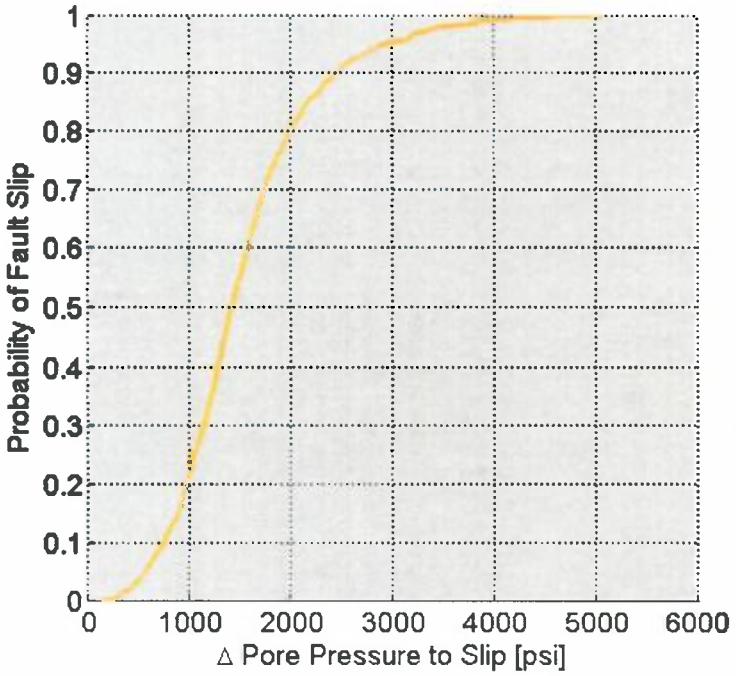
MODEL INPUTS | GEOMECHANICS | PROB. GEOM... | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

All Faults
Fault #1
Fault #2
Fault #3
Fault #4
Fault #5
Fault #6
Fault #7
Fault #8
Fault #9
Fault #10
Fault #11
Fault #12
Fault #13
Fault #14
Fault #15
Fault #16
Fault #17
Fault #18
Fault #19
Fault #20
Fault #21
Fault #22

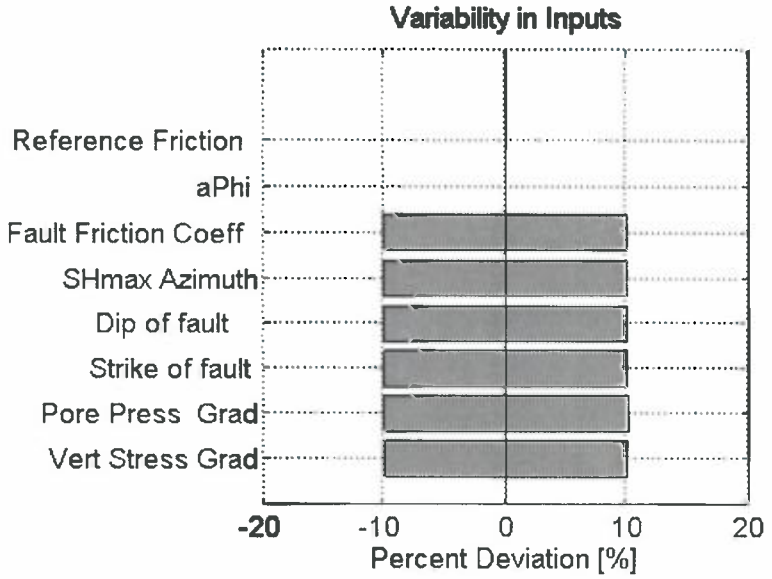
Calculate

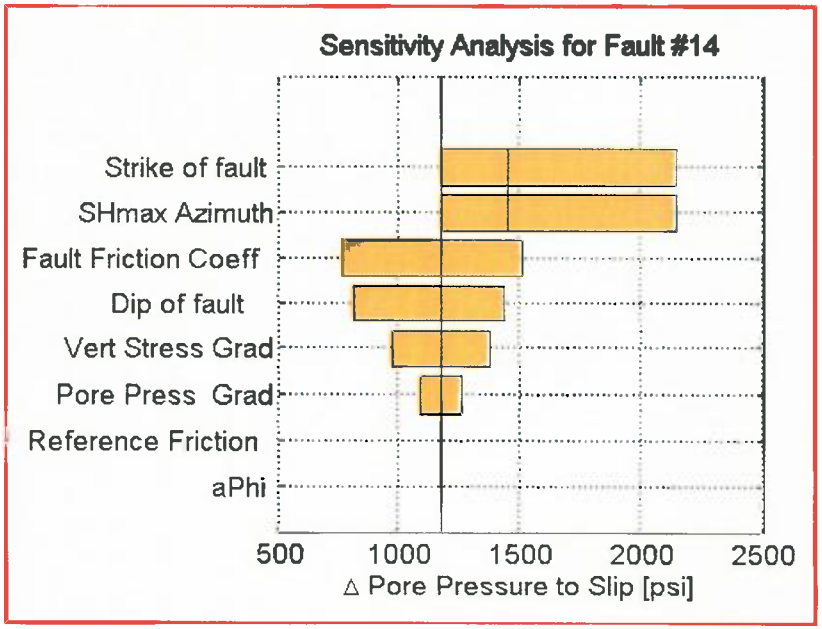
Load Distributions | Run Analysis



Max Delta PP [psi]: 6000

Export CDF data | Show Input Distributions





96

Exh. No. 8

Zoom

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

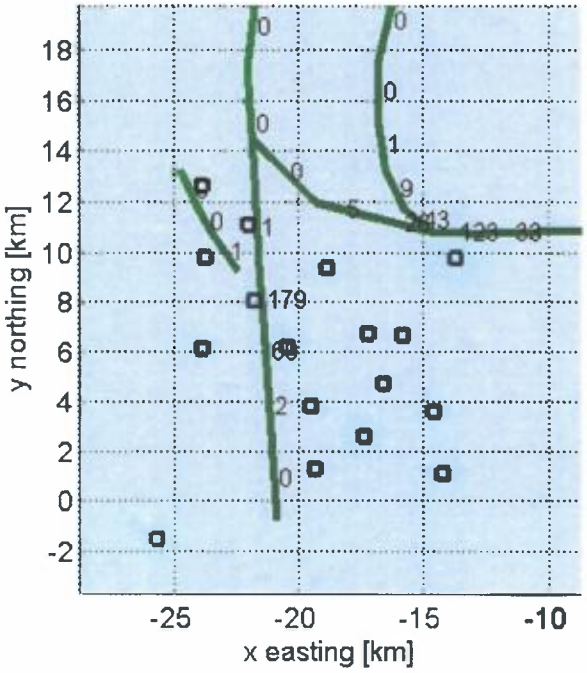
Fault Selector:

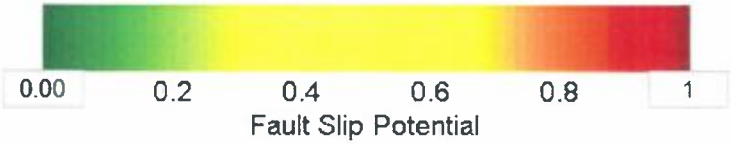
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.00 FSP
Fault #14, 0.00 FSP
Fault #15, 0.00 FSP
Fault #16, 0.00 FSP
Fault #17, 0.00 FSP
Fault #18, 0.00 FSP
Fault #19, 0.00 FSP
Fault #20, 0.00 FSP
Fault #21, 0.00 FSP
Fault #22, 0.00 FSP

Calculate

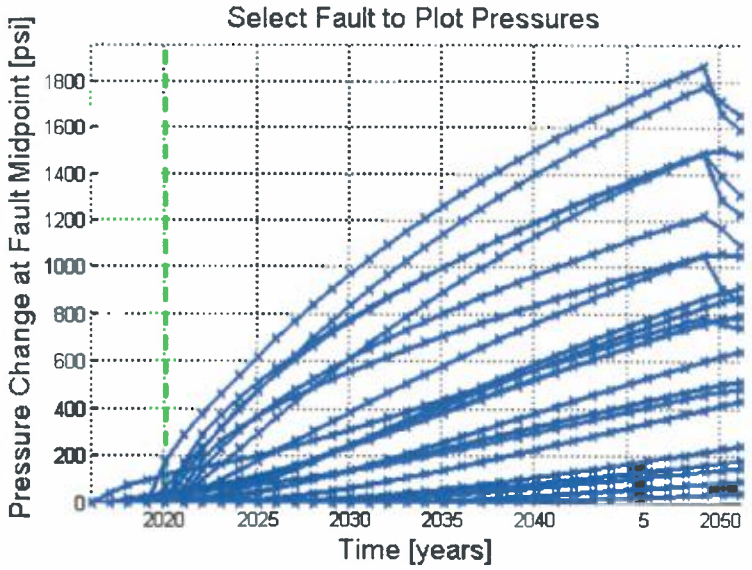
b) PP Change at fault [psi]

Summary Plots

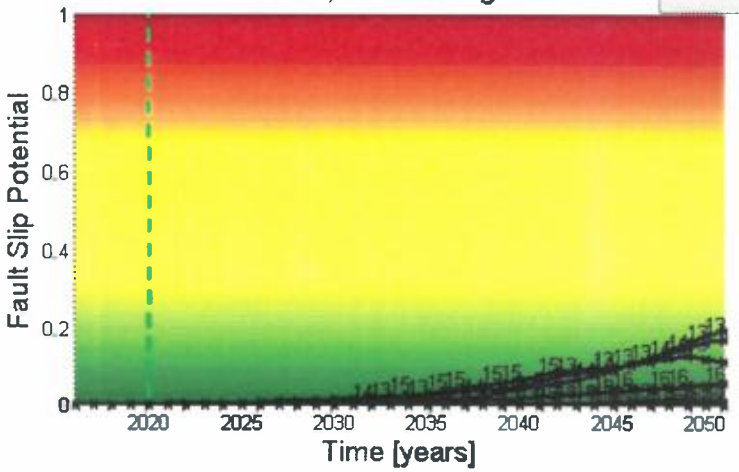




Year: 2020



Export



Exh. No. 9

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

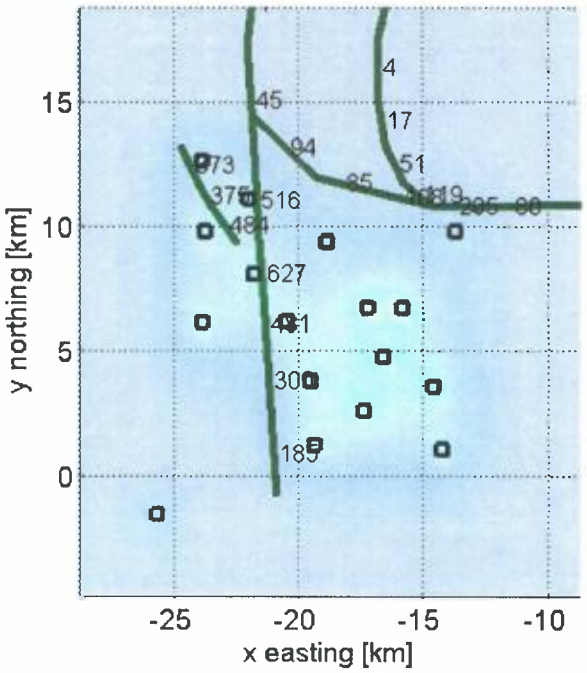
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.00 FSP
Fault #14, 0.00 FSP
Fault #15, 0.00 FSP
Fault #16, 0.00 FSP
Fault #17, 0.00 FSP
Fault #18, 0.00 FSP
Fault #19, 0.00 FSP
Fault #20, 0.00 FSP
Fault #21, 0.00 FSP
Fault #22, 0.00 FSP

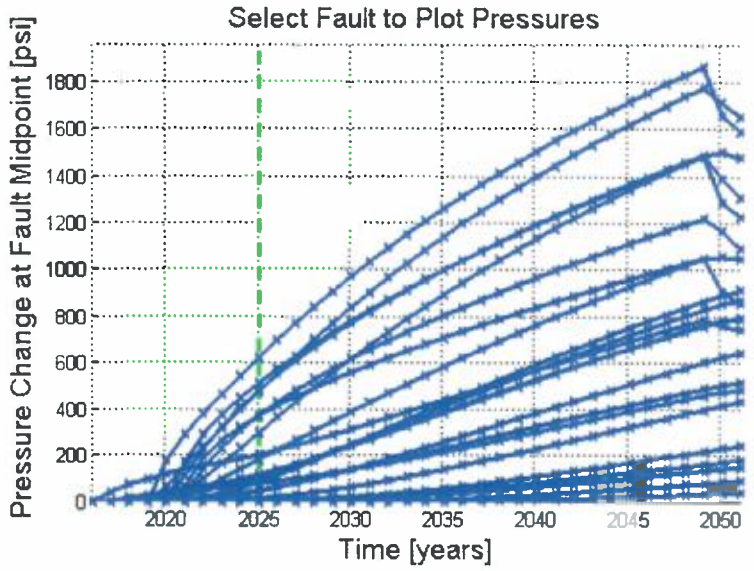
Calculate

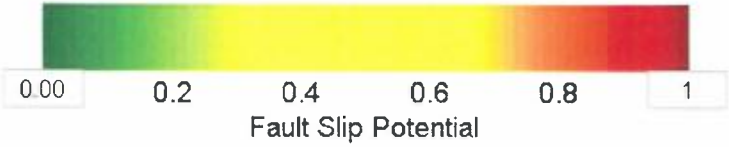
Export

b) PP Change at fault [psi]

Summary Plots

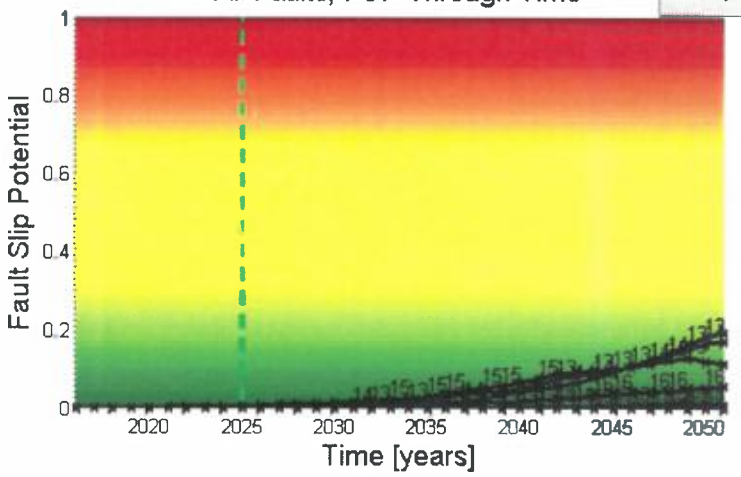






Year: 2025

Export



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Exh. No. 10

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

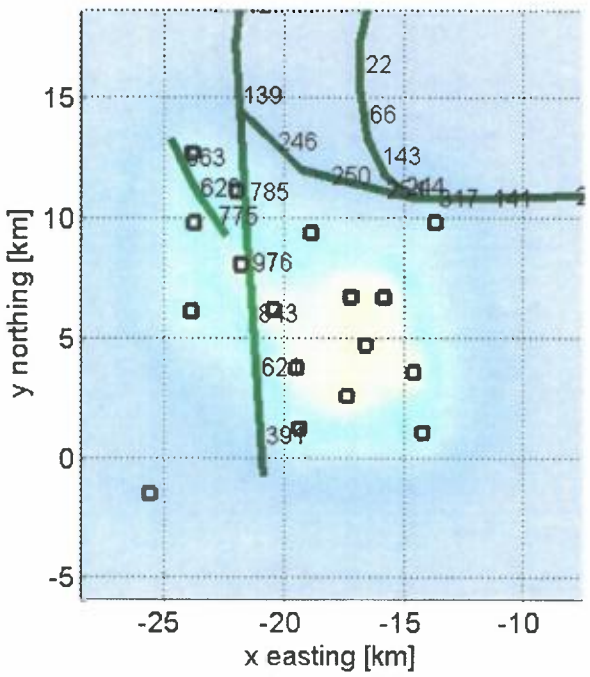
Fault Selector:

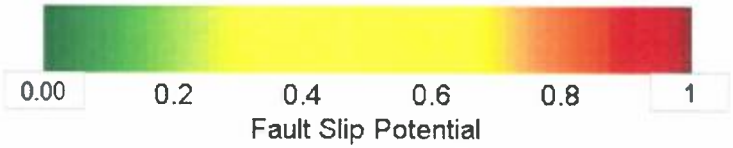
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.01 FSP
Fault #14, 0.00 FSP
Fault #15, 0.02 FSP
Fault #16, 0.00 FSP
Fault #17, 0.00 FSP
Fault #18, 0.00 FSP
Fault #19, 0.00 FSP
Fault #20, 0.00 FSP
Fault #21, 0.00 FSP
Fault #22, 0.00 FSP

Calculate

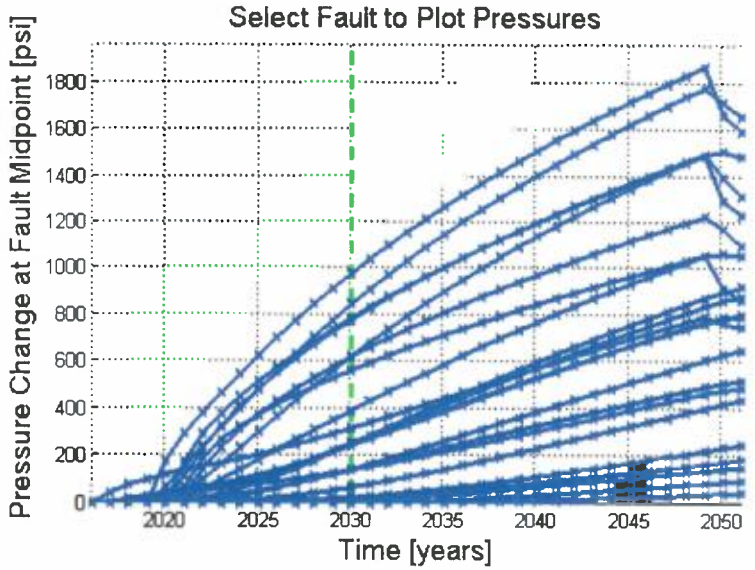
b) PP Change at fault [psi]

Summary Plots

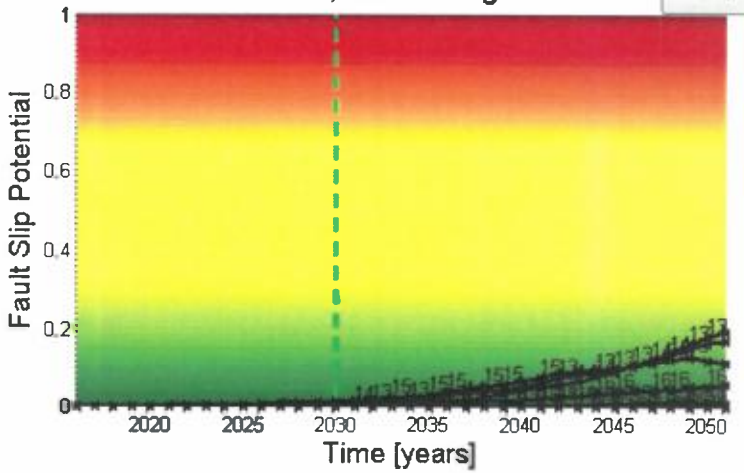




Year: 2030



Export



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Exh. No. 11

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

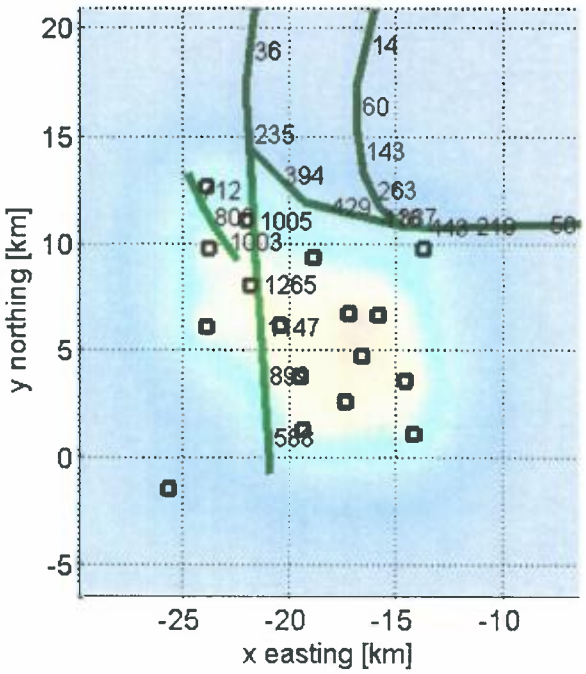
Fault Selector:

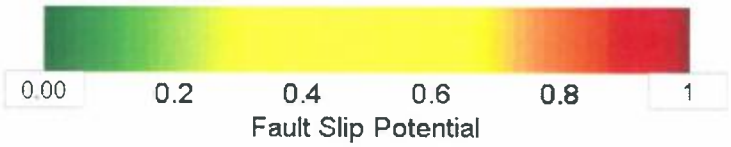
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.00 FSP
Fault #12, 0.00 FSP
Fault #13, 0.02 FSP
Fault #14, 0.02 FSP
Fault #15, 0.05 FSP
Fault #16, 0.01 FSP
Fault #17, 0.00 FSP
Fault #18, 0.00 FSP
Fault #19, 0.00 FSP
Fault #20, 0.00 FSP
Fault #21, 0.00 FSP
Fault #22, 0.00 FSP

Calculate

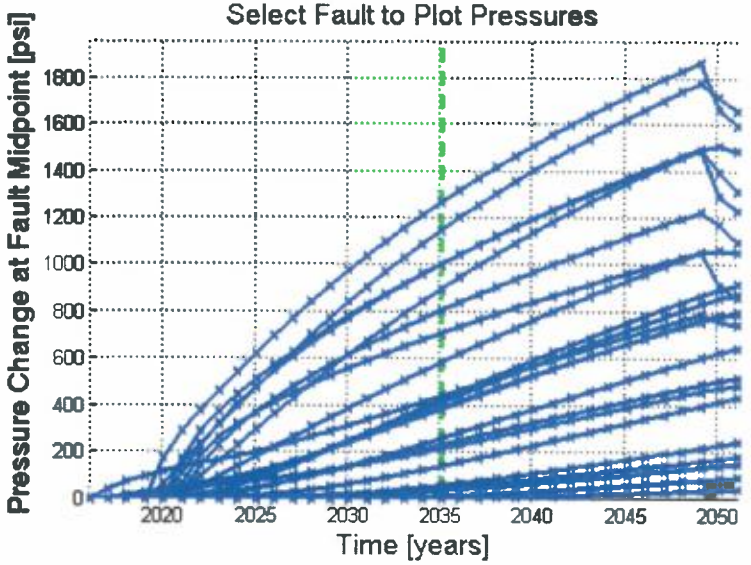
b) PP Change at fault [psi]

Summary Plots

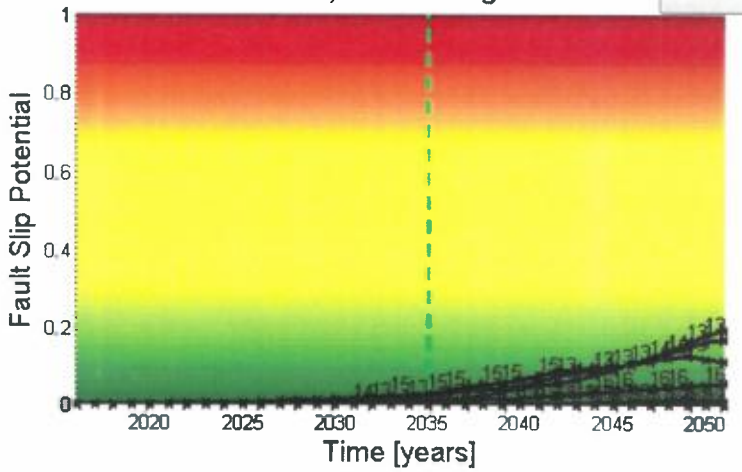




Year: 2035



Export



Exh. No. 12

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Fault Selector:

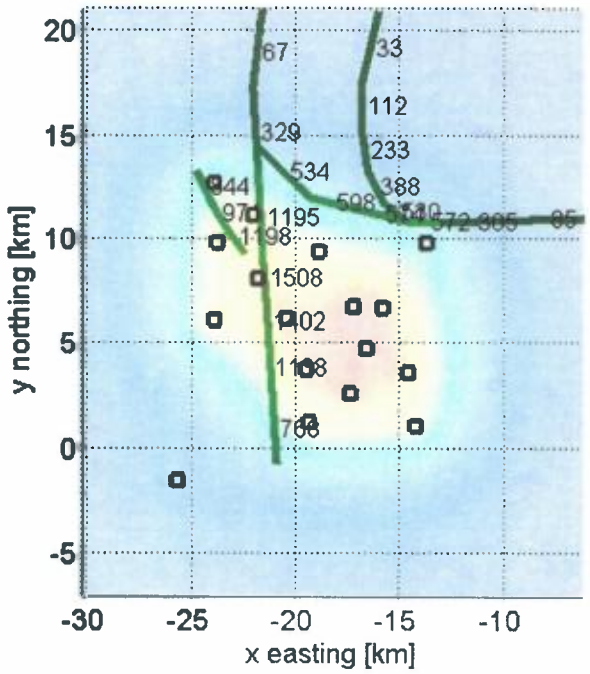
All Faults
Fault #1, 0.00 FSP
Fault #2, 0.00 FSP
Fault #3, 0.00 FSP
Fault #4, 0.00 FSP
Fault #5, 0.00 FSP
Fault #6, 0.00 FSP
Fault #7, 0.00 FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.01 FSP
Fault #12, 0.00 FSP
Fault #13, 0.05 FSP
Fault #14, 0.05 FSP
Fault #15, 0.09 FSP
Fault #16, 0.02 FSP
Fault #17, 0.00 FSP
Fault #18, 0.00 FSP
Fault #19, 0.00 FSP
Fault #20, 0.00 FSP
Fault #21, 0.00 FSP
Fault #22, 0.00 FSP

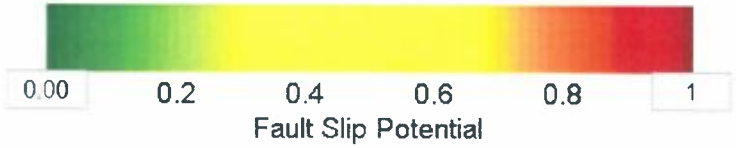
Calculate

Export

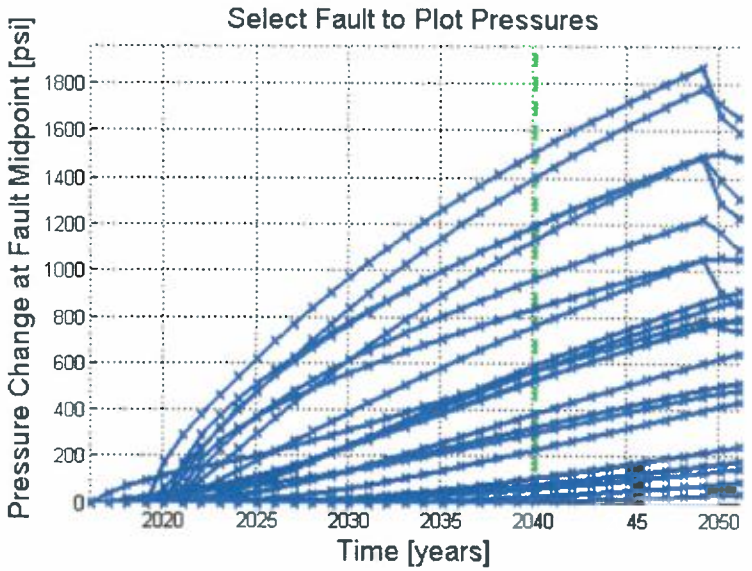
b) PP Change at fault [psi]

Summary Plots

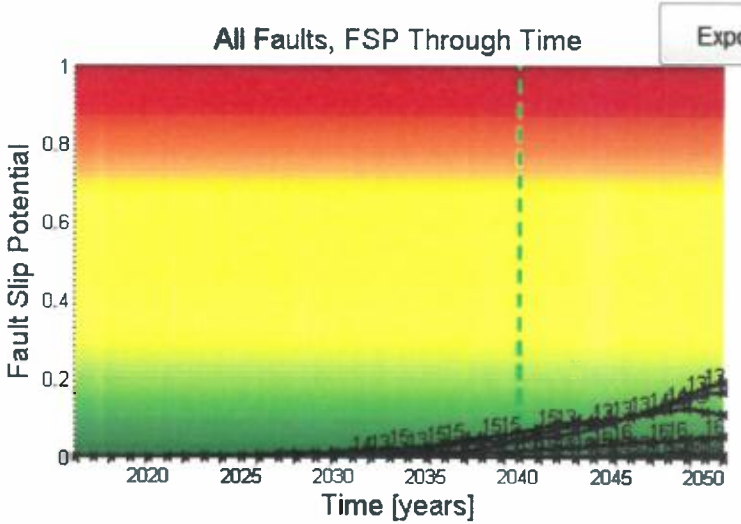




Year: 2040



Export



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Exh. No. 13

Fault Slip Potential

MODEL INPUTS | GEOMECHANICS | PROB. GEOMECH | HYDROLOGY | PROB. HYDRO | INTEGRATED

Export

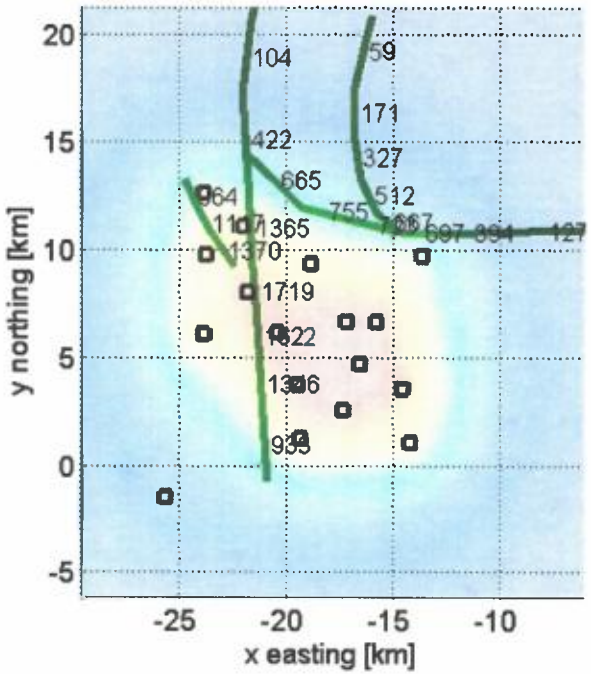
Fault Selector:

All Faults
Fault #1, 0.00 FSP
Fault #2, 0.0[illegible] FSP
Fault #3, 0.0[illegible] FSP
Fault #4, 0.00 FSP
Fault #5, 0.0[illegible] FSP
Fault #6, 0.0[illegible] FSP
Fault #7, 0.0[illegible] FSP
Fault #8, 0.00 FSP
Fault #9, 0.00 FSP
Fault #10, 0.00 FSP
Fault #11, 0.02 FSP
Fault #12, 0.00 FSP
Fault #13, 0.10 FSP
Fault #14, 0.09 FSP
Fault #15, 0.13 FSP
Fault #16, 0.03 FSP
Fault #17, 0.00 FSP
Fault #18, 0.01 FSP
Fault #19, 0.00 FSP
Fault #20, 0.00 FSP
Fault #21, 0.00 FSP
Fault #22, 0.00 FSP

Calculate

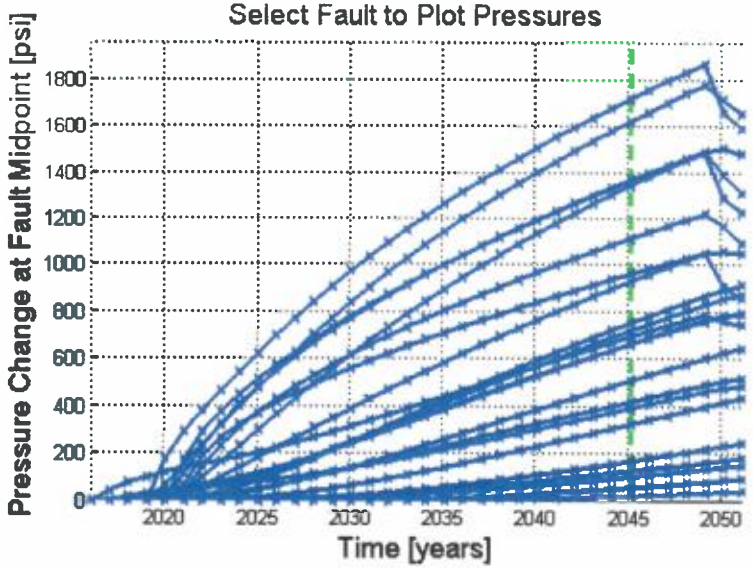
b) PP Change at fault [psi]

Summary Plots



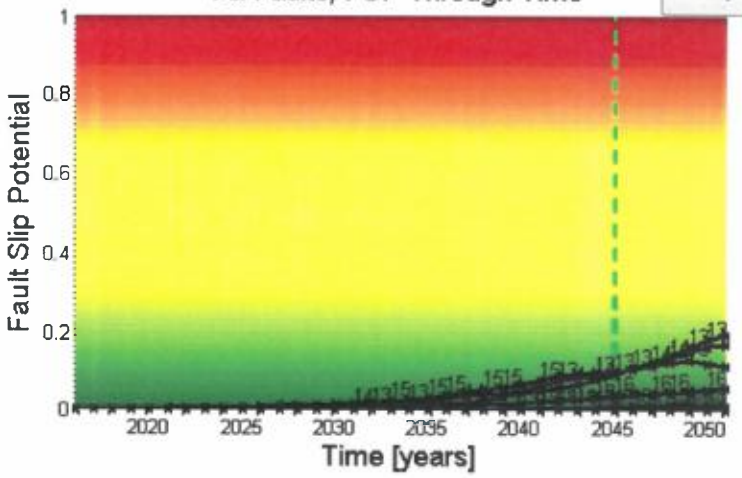
Year: 2045

Select Fault to Plot Pressures



All Faults, FSP Through Time

Export



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Notice Affidavits

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20151
(TOMAHAWK)

AFFIDAVIT

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

Deana M. Bennett, attorney in fact and authorized representative of NGL Water Solutions Permian LLC, the Applicant herein, being first duly sworn, upon oath, states that the above-referenced Application was provided under a notice letter and that proof of receipt is attached hereto.

Deana M. Bennett

SUBSCRIBED AND SWORN to before me this 16th day of August, 2019 by Deana M. Bennett.

OFFICIAL SEAL
Karlene Schuman
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 02/27/2021

Notary Public

My commission expires:_____

EXHIBIT
5

Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque NM 87102

87806.0003

PS Form 3877

Type of Mailing: CERTIFIED MAIL
05/09/2019

Firm Mailing Book ID: 166910

Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
1	9314 8699 0430 0059 0394 13	Oil Conservation Division District I - Hobbs 1625 N. French Drive Hobbs NM 88240	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
2	9314 8699 0430 0059 0394 20	NGL WATER SOLUTIONS PERMIAN, LLC Attn: Joe Vargo 1509 W Wall St., Ste. 306 Midland TX 79701	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
3	9314 8699 0430 0059 0394 37	NEW MEXICO STATE LAND OFFICE P.O. Box 1148, Santa Fe Santa Fe NM 87504	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
4	9314 8699 0430 0059 0394 44	BUREAU OF LAND MGMT 301 Dinosaur Trail Santa Fe NM 87508	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
5	9314 8699 0430 0059 0394 51	EOG RESOURCES INC P.O. Box 2267 Midland TX 79702	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
6	9314 8699 0430 0059 0394 68	AGS OG HOLDINGS #2 INC 4400 S FEDERAL BLVD STE 2D Englewood CO 80110	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
7	9314 8699 0430 0059 0394 75	AGS OG HOLDINGS INC 4400 S FEDERAL BLVD STE 2D Englewood CO 80110	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
8	9314 8699 0430 0059 0394 82	MIDWEST RES 2006-1 O&G INCOME PO BOX 76 Elm Grove WI 53122	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
9	9314 8699 0430 0059 0394 99	MIDWEST RES 98-1 O&G INCOME LP PO BOX 76 Elm Grove WI 53122	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
10	9314 8699 0430 0059 0395 05	MIDWEST RES 99-1 O&G INCOME LP PO BOX 76 Elm Grove WI 53122	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
11	9314 8699 0430 0059 0395 12	AGS OG VENTURES INC 4400 S FEDERAL BLVD STE 2D Englewood CO 80110	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
12	9314 8699 0430 0059 0395 29	AGS OG 2005 LLLP 4400 S FEDERAL BLVD STE 2D Englewood CO 80110	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
13	9314 8699 0430 0059 0395 36	TE-RAY RESOURCES INC 1105 SOVEREIGN ROW UNIT C Oklahoma City OK 73108	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
14	9314 8699 0430 0059 0395 43	Energen Resources Corporation 605 Richard Arrington, Jr. Blvd North Birmingham AL 35203	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
15	9314 8699 0430 0059 0395 50	Marathon Oil Permian LLC 5555 San Felipe St Houston TX 77056	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice

USPS MAY 9 2018 ALBUQUERQUE NM 87101

103

Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED MAIL
05/09/2019

Firm Mailing Book ID: 166910

Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
16	9314 8699 0430 0059 0395 67	COG Operating LLC One Concho Center, 600 West Illinois Midland TX 79701	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
17	9314 8699 0430 0059 0395 74	Advance Energy Partners, LLC 11490 Westheimer Road, Ste 950 Houston TX 77077	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
18	9314 8699 0430 0059 0395 81	EOG Resources Y, Inc 5509 Champions Drive Midland TX 79706	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
19	9314 8699 0430 0059 0395 98	EOG Resources M, Inc. 5509 Champions Drive Midland TX 79706	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
20	9314 8699 0430 0059 0396 04	EOG Resources A, Inc. 5509 Champions Drive Midland TX 79706	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
21	9314 8699 0430 0059 0396 11	Wayne Newkumet,etux, Linda Newkumet P. O. Box 11330 Midland TX 79702	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
22	9314 8699 0430 0059 0396 28	Robert E. Landreth,etux, Donna Landreth 110 W. Louisiana Avenue, #404 Midland TX 79701	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
23	9314 8699 0430 0059 0396 35	EOG RESOURCES INC 333 CLAY ST #4200 Houston TX 77002	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
24	9314 8699 0430 0059 0396 42	Oil Conservation Division District IV 1220 South St. Francis Drive Santa Fe NM 87505	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
25	9314 8699 0430 0059 0396 59	Chisos Minerals 1111 Bagby St., Ste. 2150 Houston TX 77002	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
26	9314 8699 0430 0059 0396 66	Tilden Capital Minerals, LLC P. O. Box 470857 Ft. Worth TX 76147	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
27	9314 8699 0430 0059 0396 73	GGM Exploration, Inc. P. O. Box 123610 Ft. Worth TX 76121	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
28	9314 8699 0430 0059 0396 80	Pegasus Resources, Inc. P. O. Box 470698 Ft. Worth TX 76147	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
29	9314 8699 0430 0059 0396 97	Nuray K. Pace, Guardian for Aleyna N. Pace 5716 Ridgemont Pl.	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
30	9314 8699 0430 0059 0397 03	Nuray K. Pace, Guardian for Tara N. Pace 5716 Ridgemont Pl.	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice

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Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED MAIL
05/09/2019

Firm Mailing Book ID: 166910

Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
31	9314 8699 0430 0059 0397 10	Shannon Sprowls, Individually and Under the Shannon R. Sprowls 2012 Trust 12801 Saratoga Springs Circle Keller TX 76244	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
32	9314 8699 0430 0059 0397 27	John T. Neisler, Individually and Under the John T. Neisler 2012 Trust 5121 Westgrove Blvd. Haltom TX 76117	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
33	9314 8699 0430 0059 0397 34	Robert Landreth 110 West Louisiana, Suite 404 Midland TX 79701	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
34	9314 8699 0430 0059 0397 41	Springbok Energy Partners II, LLC 5950 Berkshire Lane, Suite 1250 Dallas TX 75225	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
35	9314 8699 0430 0059 0397 58	Silver Spur Resources, LLC 606 Logans Lane, Southlake Southlake TX 76092	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
36	9314 8699 0430 0059 0397 65	Black Mountain Operating, LLC 500 Main St, Suite 1200 Ft. Worth TX 76102	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
37	9314 8699 0430 0059 0397 72	Tap Rock Resources 602 Park Point Dr., Ste. 200 Golden CO 80401	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
38	9314 8699 0430 0059 0397 89	MRC Permian Company 5400 LBJ Freeway, Ste. 1500 Dallas TX 75240	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
39	9314 8699 0430 0059 0397 96	Chief Capital (O&G) II, LLC 8111 Westchester Dr., Ste. 900 Dallas TX 75225	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
40	9314 8699 0430 0059 0398 02	OneEnergy Partners Operating, LLC 2929 Allen Parkway, Suite 200 Houston TX 77019	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
41	9314 8699 0430 0059 0398 19	Black Mountain Oil and Gas 500 Main Street, Suite 500 Ft. Worth TX 76102	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
42	9314 8699 0430 0059 0398 26	Bellomy Exploration, LLC 1700 Pacific Ave., Suite 2220 Dallas TX 75201	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
43	9314 8699 0430 0059 0398 33	MBOE, Inc. 4925 Greenville Ave., Suite 915 Dallas TX 75206	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
44	9314 8699 0430 0059 0398 40	Chevron USA, Inc. 3310 W. Wall Street Midland TX 79701	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice
45	9314 8699 0430 0059 0398 57	Blackbeard Resources, LLC 201 W. Wall Street, Suite 900 Midland TX 79701	$1.60	$3.50	$1.60	$0.00	87806-Tomahawk Notice

Karlene Schuman
Modrall Sperling Roehl Harris & Sisk P.A.
500 Fourth Street, Suite 1000
Albuquerque NM 87102

PS Form 3877

Type of Mailing: CERTIFIED MAIL
05/09/2019

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Line	USPS Article Number	Name, Street, City, State, Zip	Postage	Service Fee	RR Fee	Rest.Del.Fee	Reference Contents
		Totals:	$72.00	$157.50	$72.00	$0.00	
				Grand Total:		$301.50	

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45			

106

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USPS Article Number	Date Created	Reference Number	Name 1	Name 2	Address	City	State	Mailing Status	Service Options	Batch ID	Mail Delivery Date
9314869904300059039857	2019-05-09 9 PM	87806-Tomahawk	Blackbeard Resources, LLC		201 W. Wall Street, Suite 900	Midland	TX	To be Returned	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039840	2019-05-09 1:39 PM	87806-Tomahawk	Chevron USA, Inc.		3310 W. Wall Street	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039833	2019-05-09 1:39 PM	87806-Tomahawk	MBOE, Inc.		4925 Greenville Ave., Suite 915	Dallas	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-15-2019
9314869904300059039826	2019-05-09 1:39 PM	87806-Tomahawk	Bellomy Exploration, LLC		1700 Pacific Ave., Suite 2220	Dallas	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039819	2019-05-09 1:39 PM	87806-Tomahawk	Black Mountain Oil and Gas		500 Main Street, Suite 500	Ft. Worth	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039802	2019-05-09 1:39 PM	87806-Tomahawk	OneEnergy Partners Operating, LLC		2929 Allen Parkway, Suite 200	Houston	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039796	2019-05-09 1:39 PM	87806-Tomahawk	Chief Capital (O&G) II, LLC		8111 Westchester Dr., Ste. 900	Dallas	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039789	2019-05-09 1:39 PM	87806-Tomahawk	MRC Permian Company		5400 LBJ Freeway, Ste. 1500	Dallas	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039772	2019-05-09 1:39 PM	87806-Tomahawk	Tap Rock Resources		602 Park Point Dr., Ste. 200	Golden	CO	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-11-2019
9314869904300059039765	2019-05-09 1:39 PM	87806-Tomahawk	Black Mountain Operating, LLC		500 Main St, Suite 1200	Ft. Worth	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039758	2019-05-09 1:39 PM	87806-Tomahawk	Silver Spur Resources, LLC		606 Logans Lane, Southlake	Southlake	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039741	2019-05-09 1:39 PM	87806-Tomahawk	Springbok Energy Partners II, LLC		5950 Berkshire Lane, Suite 1250	Dallas	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039734	2019-05-09 1:39 PM	87806-Tomahawk	Robert Landreth		110 West Louisiana, Suite 404	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039727	2019-05-09 1:39 PM	87806-Tomahawk	John T. Neisler, Individually and Under the	John T. Neisler 2012 Trust	5121 Westgrove Blvd	Haltom	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039710	2019-05-09 1:39 PM	87806-Tomahawk	Shannon Sprowls, Individually and Under	the Shannon R. Sprowls 2012 Trust	12801 Saratoga Springs Circle	Keller	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-21-2019
9314869904300059039703	2019-05-09 1:39 PM	87806-Tomahawk	Nuray K. Pace, Guardian for Tara N. Pace		5716 Ridgemont Pl.	Midland	TX	To be Returned	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039697	2019-05-09 1:39 PM	87806-Tomahawk	Nuray K. Pace, Guardian for Aleyna N. Pace		5716 Ridgemont Pl.	Midland	TX	To be Returned	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039680	2019-05-09 1:39 PM	87806-Tomahawk	Pegasus Resources, Inc.		P. O. Box 470698	Ft. Worth	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039673	2019-05-09 1:39 PM	87806-Tomahawk	GGM Exploration, Inc.		P. O. Box 123610	Ft. Worth	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-20-2019
9314869904300059039666	2019-05-09 1:39 PM	87806-Tomahawk	Tilden Capital Minerals, LLC		P. O. Box 470857	Ft. Worth	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039659	2019-05-09 1:39 PM	87806-Tomahawk	Chisos Minerals		1111 Bagby St., Ste. 2150	Houston	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039642	2019-05-09 1:39 PM	87806-Tomahawk	Oil Conservation Division District IV		1220 South St. Francis Drive	Santa Fe	NM	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-10-2019
9314869904300059039635	2019-05-09 1:39 PM	87806-Tomahawk	EOG RESOURCES INC		333 CLAY ST #4200	Houston	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-16-2019
9314869904300059039628	2019-05-09 1:39 PM	87806-Tomahawk	Robert E. Landreth,etux, Donna Landreth		110 W. Louisiana Avenue, #404	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039611	2019-05-09 1:39 PM	87806-Tomahawk	Wayne Newkumet,etux, Linda Newkumet		P. O. Box 11330	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-21-2019
9314869904300059039604	2019-05-09 1:39 PM	87806-Tomahawk	EOG Resources A, Inc.		5509 Champions Drive	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-15-2019
9314869904300059039598	2019-05-09 1:39 PM	87806-Tomahawk	EOG Resources M, Inc.		5509 Champions Drive	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-15-2019
9314869904300059039581	2019-05-09 1:39 PM	87806-Tomahawk	EOG Resources Y, Inc.		5509 Champions Drive	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-15-2019
9314869904300059039574	2019-05-09 1:39 PM	87806-Tomahawk	Advance Energy Partners, LLC		11490 Westheimer Road, Ste 950	Houston	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-14-2019
9314869904300059039567	2019-05-09 1:39 PM	87806-Tomahawk	COG Operating LLC		One Concho Center, 600 West Illinois	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039550	2019-05-09 1:39 PM	87806-Tomahawk	Marathon Oil Permian LLC		5555 San Felipe St	Houston	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039543	2019-05-09 1:39 PM	87806-Tomahawk	Energen Resources Corporation		605 Richard Arrington, Jr. Blvd	North Birmingham	AL	Lost	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039536	2019-05-09 1:39 PM	87806-Tomahawk	TE-RAY RESOURCES INC		1105 SOVEREIGN ROW UNIT C	Oklahoma City	OK	To be Returned	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039529	2019-05-09 1:39 PM	87806-Tomahawk	AGS OG 2005 LLLP		4400 S FEDERAL BLVD STE 2D	Englewood	CO	To be Returned	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039512	2019-05-09 1:39 PM	87806-Tomahawk	AGS OG VENTURES INC		4400 S FEDERAL BLVD STE 2D	Englewood	CO	To be Returned	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039505	2019-05-09 1:39 PM	87806-Tomahawk	MIDWEST RES 99-1 O&G INCOME LP		PO BOX 76	Elm Grove	WI	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039499	2019-05-09 1:39 PM	87806-Tomahawk	MIDWEST RES 98-1 O&G INCOME LP		PO BOX 76	Elm Grove	WI	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039482	2019-05-09 1:39 PM	87806-Tomahawk	MIDWEST RES 2006-1 O&G INCOME		PO BOX 76	Elm Grove	WI	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039475	2019-05-09 1:39 PM	87806-Tomahawk	AGS OG HOLDINGS INC		4400 S FEDERAL BLVD STE 2D	Englewood	CO	To be Returned	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039468	2019-05-09 1:39 PM	87806-Tomahawk	AGS OG HOLDINGS #2 INC		4400 S FEDERAL BLVD STE 2D	Englewood	CO	To be Returned	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039451	2019-05-09 1:39 PM	87806-Tomahawk	EOG RESOURCES INC		P.O. Box 2267	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039444	2019-05-09 1:39 PM	87806-Tomahawk	BUREAU OF LAND MGMT		301 Dinosaur Trail	Santa Fe	NM	To be Mailed	Return Receipt - Electronic, Certified Mail	163260	
9314869904300059039437	2019-05-09 1:39 PM	87806-Tomahawk	NEW MEXICO STATE LAND OFFICE		P.O. Box 1148, Santa Fe	Santa Fe	NM	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-14-2019
9314869904300059039420	2019-05-09 1:39 PM	87806-Tomahawk	NGL WATER SOLUTIONS PERMIAN, LLC	Attn: Joe Vargo	1509 W Wall St., Ste. 306	Midland	TX	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019
9314869904300059039413	2019-05-09 1:39 PM	87806-Tomahawk	Oil Conservation Division District I - Hobbs		1625 N. French Drive	Hobbs	NM	Delivered	Return Receipt - Electronic, Certified Mail	163260	05-13-2019

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City, State
Oakville, Ontario, Canada L6M1M3

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

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353 Iroquois Shore Road
Oaksville, Ontario, Canada L6M1M3

9590 9402 3381 7227 2773 39

2. Article Number (Transfer from service label)

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A. Signature
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D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

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Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
August 09, 2019
and ending with the issue dated
August 09, 2019.

Publisher

Sworn and subscribed to before me this
9th day of August 2019.

Business Manager

My commission expires
January 29, 2023
(Seal)

OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico
My Commission Expires 1-29-23

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL LEGAL

LEGAL NOTICE
AUGUST 9, 2019

CASE NO. 20151: Notice to all affected parties, as well as the heirs and devisees of NEW MEXICO STATE LAND OFFICE; BUREAU OF LAND MGMT; EOG RESOURCES INC; AGS OG HOLDINGS #2 INC; AGS OG HOLDINGS INC; MIDWEST RES 2006-1 O&G INCOME; MIDWEST RES 98-1 O&G INCOME LP; MIDWEST RES 99-1 O&G INCOME LP; AGS OG VENTURES INC; AGS OG 2005 LLLP; TE-RAY RESOURCES INC; ENERGEN RESOURCES CORPORATION; MARATHON OIL PERMIAN LLC; COG OPERATING LLC; ADVANCE ENERGY PARTNERS, LLC; EOG RESOURCES Y, INC.; EOG RESOURCES M, INC.; EOG RESOURCES A, INC.; WAYNE NEWKUMET, ETUX, LINDA NEWKUMET; ROBERT E. LANDRETH, EOG RESOURCES INC., OIL CONSERVATION DIVISION DISTRICT IV, CHISOS MINERALS LLC, TILDEN CAPITAL MINERALS LLC, GGM EXPLORATION INC., PEGASUS RESOURCES INC., NURAY K PACE GUARDIAN FOR ALEYNA N. PACE, NURAY K. PACE, GUARDIAN FOR TARA N. PACE, SHANNON SPROWLS INDIVIDUALLY AND UNDER THE SHANNON R. SPROWLS 2012 TRUST, JOHN T. NEISLER INDIVIDUALLY AND UNDER THE JOHN T. NEISLER 2012 TRUST, ROBERT LANDRETH, SPRINGBOK ENERGY PARTNERS II LLC, SILVER SPUR RESOURCES LLC, BLACK MOUNTAIN OPERATING LLC, TAP ROCK RESOURCES, MRC PERMIAN COMPANY, CHIEF CAPITAL (O&G) II LLC, ONEENERGY PARTNERS OPERATING LLC, BLACK MOUNTAIN OIL AND GAS, BELLOMY EXPLORATION LLC, MBOE INC., CHEVRON USA INC., BLACKBEARD RESOURCES LLC, HEIRS OF D. MORGAN FIRESTONE FINANCE CORP., of NGL Water Solutions Permian, LLC's amended application for hearing along with a C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division for approval of salt water disposal well in Lea County, New Mexico. The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the Division will conduct a public hearing at 8:15 a.m. on August 22, 2019, to consider this application. In this amended application, NGL seeks an order approving disposal into the Silurian-Devonian formation through the **Tomahawk SWD #1** well at a surface location 900 feet from the North line and 151 feet from the East line of Section 4, Township 25 South, Range 34 East, NMPM, Lea County, New Mexico for the purpose of operating a salt water disposal well. NGL seeks authority to inject salt water into the Silurian-Devonian formation at a depth of 16,805' to 18,475'.NGL further seeks approval of the use of 7 inch tubing inside the surface and intermediate casings and 5 ½ inch tubing inside the liner and requests that the Division approve a maximum daily injection rate for the well of 50,000 bbls per day. Said area is located approximately 16.9 miles northwest of Jal, New Mexico. **#34554**

01104570 00231985

DOLORES SERNA
MODRALL, SPERLING, ROEHL, HARRIS &
P. O. BOX 2168
ALBUQUERQUE, NM 87103-2168

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

AMENDED APPLICATION OF NGL WATER SOLUTIONS PERMIAN, LLC FOR APPROVAL OF SALT WATER DISPOSAL WELL IN LEA COUNTY, NEW MEXICO

CASE NO. 20151
(TOMAHAWK)

AFFIDAVIT OF CHRIS WEYAND

STATE OF TEXAS)
) ss.
COUNTY OF TRAVIS)

I, Chris Weyand, make the following affidavit based upon my own personal knowledge.

1. I am over eighteen (18) years of age and am otherwise competent to make the statements contained herein.

2. I am a Staff Engineer at Lonquist & Co., LLC. My responsibilities at Lonquist & Co., LLC include saltwater disposal well permitting efforts in New Mexico as well as other states and jurisdictions.

3. I graduated from Texas A&M University in 2010 with an engineering degree.

4. I am familiar with the application and amended application that NGL Water Solutions Permian, LLC ("NGL") has filed in this matter.

5. In this case, NGL (OGRID No. 372338) seeks an order approving the Tomahawk SWD #1 well, which is a salt water disposal well.

6. I compiled a list of all parties entitled to notice within a one-mile area of review for the original application that was filed. I reviewed County and Division records to determine the parties entitled to notice, including the owner of the surface (NGL) and leasehold operators or other affected person. With respect to affected parties, I determined whether there was an operator, as shown in the Division records, or a designated unit operator, and if not, whether there were any working interests whose interest is evidenced by a written conveyance document either of record; and as to any tract or interest not subject to an existing oil and gas lease, whether there were mineral interest owner whose interest is evidenced by a written conveyance document either of record; and whether the United States or state of New Mexico owns the mineral estate in the spacing unit or identified tract or any part thereof, the BLM or state land office, as applicable.

7. NGL filed an amended application for the Tomahawk SWD #1. This was due to a change in location of the Tomahawk SWD #1. I determined that additional parties were entitled to notification and I provided the list of additional parties to NGL's counsel.

8. The change in location resulted in the Tomahawk SWD #1 being proposed approximately 1.03 miles from Solaris' proposed Telluride salt water disposal well.

9. I attest that the information provided herein is correct and complete to the best of my knowledge and belief.

[Signature page follows]

Chris Weyand

SUBSCRIBED AND SWORN to before me this 16 th day of August, 2019 by Chris Weyand.

MARIA L. RIVAS
Notary Public, State of Texas
My Commission Expires
September 16, 2019

Notary Public

My commission expires: 9/16/2019