

Facility Footprint



Orla Facility at ~75% completion



S. Midland Facility Unloading Pad



S. Midland Facility Overview

Case No. 20657

Milestone

Exhibit 2

Mailing List for Pooling Letters for
Milestone LLC NMOCD Application

Bureau of Land Management
620 E. Green Street
Carlsbad, NM 88220

COG Operating LLC.
600 W. Illinois Avenue
Midland, TX 79701-4882

Delaware Energy Services, LLC.
405 N. Marienfeld, Suite 200
Midland, TX 79701

Devon Energy Entities
6488 Seven Rivers Hwy
Artesia, NM 88210

Daniel Baeza
P.O. Drawer 1384
Jal, NM 88252

Robert E. Landreth
110 W. Louisiana, #404
Midland, TX 79701

New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501

OXY USA, Inc.
5 Greenway Plz., #110
Houston, TX 77046-0521

OXY USA, Inc.
P.O. Box 27570
Houston, TX 77227-7570

Case No. 20657
Milestone
Exhibit 3



HINKLE SHANOR LLP
ATTORNEYS AT LAW
PO BOX 2068
SANTA FE, NEW MEXICO 87504
505-982-4554 (FAX) 505-982-8623

WRITER
Gary W. Larson
Partner
glarson@hinklelawfirm.com

July 17, 2019

VIA CERTIFIED MAIL

Daniel Baeza
P.O. Drawer 1834
Jal. NM 88252

Re: Milestone Environmental Services LLC NMOCD Application

Dear Mr. Baeza:

Enclosed is a copy of an application for approval of a salt water disposal well that Milestone Environmental Services LLC ("Milestone") has filed with the New Mexico Oil Conservation Division ("the Division"). Milestone's application seeks authorization to inject produced water for disposal into the proposed Beaza SWD No. 1 well, which will be drilled in Unit H in Section 25, Township 24 South, Range 34 East, N.M.P.M., Lea County, New Mexico.

This matter (Division Case No. 20657) is scheduled for hearing at 8:15 a.m. on Thursday, August 8, 2019 in Porter Hall at the Division's offices located at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505. You are not required to attend this hearing, but as an owner of an interest that may be affected by Milestone's application, you may appear at the hearing and present testimony. If you do not appear at that time and become a party of record, you will be precluded from contesting the matter at a later date.

A party appearing in a Division case is required by the Division's Rules to file a Pre-Hearing Statement, which in this matter must be filed no later than Thursday, August 1, 2019. The Pre-Hearing Statement must be filed with the Division's Santa Fe office at the address above, and should include: the name of the party and the party's attorney; a concise statement of the case; the name(s) of the witness(es) the party will call to testify at the hearing; the approximate amount of time the party will need to present the party's case; and an identification of any procedural matters that need to be resolved prior to the hearing. The Pre-Hearing Statement must also be provided to me.

If you would like a copy of the forty-eight page Division Form C-108 that is Exhibit A to the enclosed application, please contact me at (505) 982-4554 or glarson@hinklelawfirm.com. Alternatively, a digital copy of the Form C-108 is available in the case file on the Division's website, www.emnrd.state.nm.us/OCD.

Thank you for your attention to this matter.

Very truly yours,

Gary W. Larson

GWL;jwl
Enclosure

PO BOX 10
ROSWELL, NEW MEXICO 88202
575-622-6510
(FAX) 575-623-9332

PO BOX 1720
ARTESIA, NEW MEXICO 88211
575-622-6510
(FAX) 575-746-6316

PO BOX 2068
SANTA FE, NEW MEXICO 87504
505-982-4554
(FAX) 505-982-8623

7601 JEFFERSON ST NE • SUITE 180
ALBUQUERQUE, NEW MEXICO 87109
505-858-8320
(FAX) 505-858-8321

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- 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:

New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501



9590 9402 4821 9032 2143 18

2. Article Number (Transfer from service label)

7018 2290 0000 3424 4756

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

☐ Adult Signature☐ Adult Signature Restricted Delivery☒ Certified Mail®☐ Certified Mail Restricted Delivery☐ Collect on Delivery☐ Collect on Delivery Restricted Delivery

nd Mail

nd Mail Restricted Delivery

(\$500)

☐ Priority Mail Express®☐ Registered Mail™☐ Registered Mail Restrict

Delivery

☐ Return Receipt for

Merchandise

☐ Signature Confirmation™☐ Signature Confirmation

Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- 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:

OXY USA, Inc.
P.O. Box 27570
Houston, TX 77231-1570



9590 9402 4821 9032 2142 95

2. Article Number (Transfer from service label)

7018 2290 0000 3424 4770

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

☐ Adult Signature☐ Adult Signature Restricted Delivery☒ Certified Mail®☐ Certified Mail Restricted Delivery☐ Collect on Delivery☐ Collect on Delivery Restricted Delivery

sured Mail

sured Mail Restricted Delivery

ver \$500)

☐ Priority Mail Express®☐ Registered Mail™☐ Registered Mail Restrict

Delivery

☐ Return Receipt for

Merchandise

☐ Signature Confirmation™☐ Signature Confirmation

Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Devon Energy Entities
6488 Seven Rivers Hwy
Artesia, NM 88210



9590 9402 4821 9032 2143 49

2. Article Number (Transfer from service label)

7018 2290 0000 3424 4725

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

Denise Menoud☐ Agent☐ Addressee

B. Received by (Printed Name)

Denise Menoud

C. Date of Delivery

*7-23-19*D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail (over \$500)

- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- 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:

Delaware Energy Services, LLC
405 N. Marienfeld, Suite 200
Midland, TX 79701



9590 9402 4821 9032 2143 56

2. Article Number (Transfer from service label)

7018 2290 0000 3424 4718

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

Kristen Chavez☐ Agent☐ Addressee

B. Received by (Printed Name)

Kristen Chavez

C. Date of Delivery

*7-22-*D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail (over \$500)

- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
■ Complete items 1, 2, and 3. ■ 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.		A. Signature ☒ Agent ☒ Addressee	
1. Article Addressed to: Robert E. Landreth 110 W. Louisiana, #404 Midland, TX 79701		B. Received by (Printed Name) C. Date of Delivery LINDA CARTER	
2. Article Number (Transfer from service label) 7018 2290 0000 3424 4749		D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☐ No	
3. Service Type ☐ Adult Signature ☐ Priority Mail Express® ☐ Adult Signature Restricted Delivery ☐ Registered Mail™ ☒ Certified Mail® ☐ Registered Mail Restricted Delivery ☐ Certified Mail Restricted Delivery ☐ Return Receipt for Merchandise ☐ Collect on Delivery ☐ Signature Confirmation™ ☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation Restricted Delivery			

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
■ Complete items 1, 2, and 3. ■ 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.		A. Signature ☐ Agent ☒ Addressee	
1. Article Addressed to: OXY USA, Inc. 5 Greenway Plz., #110 Houston, TX 77046-0521		B. Received by (Printed Name) C. Date of Delivery Erenbo 7/20/19	
2. Article Number (Transfer from service label) 7018 2290 0000 3424 4763		D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☐ No	
3. Service Type ☐ Adult Signature ☐ Priority Mail Express® ☐ Adult Signature Restricted Delivery ☐ Registered Mail™ ☒ Certified Mail® ☐ Registered Mail Restricted Delivery ☐ Certified Mail Restricted Delivery ☐ Return Receipt for Merchandise ☐ Collect on Delivery ☐ Signature Confirmation™ ☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation Restricted Delivery			

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt

2. Article Number (Transfer from service label)
7018 2290 0000 3424 4701

9590 9402 4821 9032 2705 74

1. Article Addressed to:
COG Operating LLC.
600 W. Illinois Avenue
Midland, TX 79701-4882

3. Service Type
☐ Priority Mail Express
☐ Registered Mail™
☐ Registered Mail Restr
☐ Return Receipt for Merchandise
☐ Certified Mail®
☒ Adult Signature Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail (over \$500)
☐ Restricted Delivery

A. Signature
☒ Signature
☐ Agent
☐ Address
☐ Date of Delivery
☐ Is delivery address different from item 1? ☐ Yes ☐ No
 If YES, enter delivery address below:

COMPLETE THIS SECTION ON DELIVERY

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt

2. Article Number (Transfer from service label)
7018 2290 0000 3424 4787

9590 9402 4821 9032 2705 81

1. Article Addressed to:
Bureau of Land Management
620 E. Green Street
Carlsbad, NM 88220

3. Service Type
☐ Priority Mail Express
☐ Registered Mail™
☐ Registered Mail Restr
☐ Return Receipt for Merchandise
☐ Certified Mail®
☒ Adult Signature Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail (over \$500)
☐ Restricted Delivery

A. Signature
☒ Signature
☐ Agent
☐ Address
☐ Date of Delivery
☐ Is delivery address different from item 1? ☐ Yes ☐ No
 If YES, enter delivery address below:

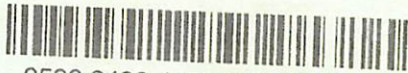
COMPLETE THIS SECTION ON DELIVERY

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- 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:

Daniel Baeza
P.O. Drawer 1384
Jal, NM 88252



9590 9402 4821 9032 2149 67

2. Article Number (Transfer from service label)

7018 2290 0000 3432 4489

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☒ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

8/16/13

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

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Registered Mail
- ☐ Registered Mail Restricted Delivery (over \$500)

- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 26, 2018

Wayne Price

Milestone Environmental Services LLC
15721 Park Row Suite 150
Houston, TX 77084
TEL: (832) 739-6708
FAX

RE: Orla INJ Water

OrderNo.: 1812003

Dear Wayne Price:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/3/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Case No. 20657
Milestone
Exhibit 4

Analytical Report

Lab Order 1812003

Date Reported: 12/26/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Milestone Environmental Services LLC

Client Sample ID: INJ Water

Project: Orla INJ Water

Collection Date: 11/29/2018 4:30:00 PM

Lab ID: 1812003-001

Matrix: AQUEOUS

Received Date: 12/3/2018 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY							Analyst: JRR
Specific Gravity	1.062	0			1	12/4/2018 11:35:00 AM	R56055
EPA METHOD 300.0: ANIONS							Analyst: MRA
Fluoride	6.5	2.0	*	mg/L	20	12/4/2018 6:00:29 PM	R56063
Chloride	63000	2500	*	mg/L	5E	12/4/2018 6:26:13 PM	R56063
Nitrogen, Nitrite (As N)	ND	20		mg/L	200	12/5/2018 1:15:57 PM	R56119
Bromide	290	10		mg/L	100	12/4/2018 6:13:21 PM	R56063
Nitrogen, Nitrate (As N)	ND	2.0	H	mg/L	20	12/4/2018 6:00:29 PM	R56063
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	12/4/2018 6:00:29 PM	R56063
Sulfate	2100	50	*	mg/L	100	12/4/2018 6:13:21 PM	R56063
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	140000	250		µmhos/c	50	12/5/2018 3:56:39 PM	R56121
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	ND	50.00		mg/L Ca	2.5	12/5/2018 4:00:40 PM	R56121
Carbonate (As CaCO ₃)	394.6	5.000		mg/L Ca	2.5	12/5/2018 4:00:40 PM	R56121
Total Alkalinity (as CaCO ₃)	2234	50.00		mg/L Ca	2.5	12/5/2018 4:00:40 PM	R56121
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	87800	200	*D	mg/L	1	12/5/2018 6:53:00 PM	41887
SM4500-H+B / 9040C: PH							Analyst: JRR
pH	11.7		*H	pH units	1	12/3/2018 9:27:47 PM	R56067
SM 2540D: TSS							Analyst: KS
Suspended Solids	35000	400	D	mg/L	1	12/4/2018 12:23:00 PM	41856
EPA METHOD 200.7: TOTAL METALS							Analyst: ELS
Calcium	10000	500		mg/L	50	12/13/2018 2:43:40 PM	42016
Magnesium	610	100		mg/L	10	12/13/2018 1:55:58 PM	42016
Potassium	470	50		mg/L	5	12/11/2018 6:13:56 PM	41884
Sodium	27000	500		mg/L	50	12/13/2018 2:43:40 PM	42016
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: lrm
Diesel Range Organics (DRO)	33	1.0		mg/L	1	12/5/2018 9:14:57 PM	41893
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	12/5/2018 9:14:57 PM	41893
Surr: DNOP	115	76.7-135		%Rec	1	12/5/2018 9:14:57 PM	41893

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	MB-41884	SampType:	MBLK	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	PBW	Batch ID:	41884	RunNo:	56188					
Prep Date:	12/4/2018	Analysis Date:	12/7/2018	SeqNo:	1876893	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	ND	1.0								

Sample ID	LCS-41884	SampType:	LCS	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	LCSW	Batch ID:	41884	RunNo:	56188					
Prep Date:	12/4/2018	Analysis Date:	12/7/2018	SeqNo:	1876894	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	52	1.0	50.00	0	103	85	115			

Sample ID	LLLCS-41884	SampType:	LCSLL	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	BatchQC	Batch ID:	41884	RunNo:	56188					
Prep Date:	12/4/2018	Analysis Date:	12/7/2018	SeqNo:	1876895	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	ND	1.0	0.5000	0	105	50	150			

Sample ID	MB-42016	SampType:	MBLK	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	PBW	Batch ID:	42016	RunNo:	56327					
Prep Date:	12/10/2018	Analysis Date:	12/13/2018	SeqNo:	1882637	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS-42016	SampType:	LCS	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	LCSW	Batch ID:	42016	RunNo:	56327					
Prep Date:	12/10/2018	Analysis Date:	12/13/2018	SeqNo:	1882642	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	100	85	115			
Magnesium	50	1.0	50.00	0	101	85	115			
Sodium	51	1.0	50.00	0	101	85	115			

Sample ID	LLLCS-42016	SampType:	LCSLL	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	BatchQC	Batch ID:	42016	RunNo:	56327					
Prep Date:	12/10/2018	Analysis Date:	12/13/2018	SeqNo:	1882644	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	106	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	LL LCS-42016	SampType:	LCSLL	TestCode:	EPA Method 200.7: Total Metals					
Client ID:	BatchQC	Batch ID:	42016	RunNo:	56327					
Prep Date:	12/10/2018	Analysis Date:	12/13/2018	SeqNo:	1882644	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0	0.5000	0	105	50	150			
Sodium	ND	1.0	0.5000	0	120	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	MB	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R56063	RunNo:	56063					
Prep Date:		Analysis Date:	12/4/2018	SeqNo:	1872962	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	ND	0.10								
Chloride	ND	0.50								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R56063	RunNo:	56063					
Prep Date:		Analysis Date:	12/4/2018	SeqNo:	1872963	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	0.49	0.10	0.5000	0	98.3	90	110			
Chloride	4.9	0.50	5.000	0	97.6	90	110			
Bromide	2.5	0.10	2.500	0	98.6	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	96.3	90	110			
Sulfate	10	0.50	10.00	0	101	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R56119	RunNo:	56119					
Prep Date:		Analysis Date:	12/5/2018	SeqNo:	1874685	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Nitrogen, Nitrite (As N)	ND	0.10								
--------------------------	----	------	--	--	--	--	--	--	--	--

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R56119	RunNo:	56119					
Prep Date:		Analysis Date:	12/5/2018	SeqNo:	1874686	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	100	90	110			
--------------------------	-----	------	-------	---	-----	----	-----	--	--	--

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	LCS-41893			SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range			
Client ID:	LCSW			Batch ID:	41893		RunNo:	56089			
Prep Date:	12/4/2018			Analysis Date:	12/5/2018		SeqNo:	1874398		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	101	70	130				
Surr: DNOP	0.56		0.5000		112	76.7	135				

Sample ID	MB-41893		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	41893		RunNo:	56089				
Prep Date:	12/4/2018		Analysis Date:	12/5/2018		SeqNo:	1874400		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	1.0									
Motor Oil Range Organics (MRO)	ND	5.0									
Surr: DNOP	1.1		1.000		106	76.7	135				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	ics-1 99.0uS eC		SampType:	LCS		TestCode:	SM2510B: Specific Conductance				
Client ID:	LCSW		Batch ID:	R56121		RunNo:	56121				
Prep Date:			Analysis Date:	12/5/2018		SeqNo:	1874853		Units:		µmhos/cm
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Conductivity	100	5.0	99.00	0	103	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	mb-1 alk	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R56121	RunNo:	56121					
Prep Date:		Analysis Date:	12/5/2018	SeqNo:	1874778					
				Units:	mg/L CaCO3					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1 alk	SampType: LCS			TestCode: SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID: R56121			RunNo: 56121					
Prep Date:		Analysis Date: 12/5/2018			SeqNo: 1874779		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	76.96	20.00	80.00	0	96.2	90	110			

Sample ID	mb-2 alk	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R56121	RunNo:	56121					
Prep Date:		Analysis Date:	12/5/2018	SeqNo:	1874802					
				Units:	mg/L CaCO3					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-2 alk	SampType: LCS			TestCode: SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID: R56121			RunNo: 56121					
Prep Date:		Analysis Date: 12/5/2018			SeqNo: 1874803		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.88	20.00	80.00	0	97.4	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	1812003-001BDUP	SampType:	DUP	TestCode:	Specific Gravity					
Client ID:	INJ Water	Batch ID:	R56055	RunNo:	56055					
Prep Date:		Analysis Date:	12/4/2018	SeqNo:	1871960	Units:				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity	1.057	0						0.463	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	MB-41887	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	41887	RunNo:	56107					
Prep Date:	12/4/2018	Analysis Date:	12/5/2018	SeqNo:	1873891	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-41887	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	41887	RunNo:	56107					
Prep Date:	12/4/2018	Analysis Date:	12/5/2018	SeqNo:	1873892	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1812003

26-Dec-18

Client: Milestone Environmental Services LLC

Project: Orla INJ Water

Sample ID	MB-41856	SampType:	MBLK	TestCode:	SM 2540D: TSS					
Client ID:	PBW	Batch ID:	41856	RunNo:	56056					
Prep Date:	12/3/2018	Analysis Date:	12/4/2018	SeqNo:	1871962	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID	LCS-41856	SampType:	LCS	TestCode:	SM 2540D: TSS					
Client ID:	LCSW	Batch ID:	41856	RunNo:	56056					
Prep Date:	12/3/2018	Analysis Date:	12/4/2018	SeqNo:	1871963	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	93	4.0	95.10	0	97.8	81.07	115.67			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: MILESTONE ENVIRONM

Work Order Number: 1812003

RcptNo: 1

Received By: Anne Thorne 12/3/2018 7:30:00 AM

Completed By: Isaiah Ortiz 12/3/2018 7:58:37 AM

Reviewed By: YVZ 12/03/18

LB: JAB 12/03/18

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0° C? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☒ No ☒ JAB 12/03/18 NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH: 1 (2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? ☒ JAB 12/03/18
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐ Checked by: JAB 12/03/18

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks: Formetals analysis: Added approx 3 ml HNO3 to ODC container left for preferred pH. Held 24 hours prior to analysis.

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

Client: MILESTONE ENVIRONMENTAL

BILL TO MILESTONE 832-739-6700

Mailing Address: 15721 PARK ROW STE 150
HOUSTON TX 77084-7208

Phone #: CALL WAYNE PRICE-505-715-2809

email or Fax#: WAYNEPRICE@q.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other NM

☐ EDD (Type)

☐ Standard ☒ Rush

Project #: MS-0001

Project Manager: WAYNE PRICE
PRICE LLC

Sampler: WAYNE PRICE JR - PRICE LLC

On Ice: ☒ Yes ☐ No

of Coolers:

Cooler Temp (including CF): 1.1 C

Container Type and #	Preservative Type
-------------------------	----------------------

HEAL No.

1817003

250 ml - AMBER ICE

500 mL - PE	11
-------------	----

50ml - PE NTRK Azin

- 00



www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

BTEX / MTBE / TMB's (8021)

TPH:8015D(GRO/DRO/MRO)

3081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

Cl, F, Br, NO₃, NO₂, PO₄, SO₄

3260 (VOA)

3270 (Semi-VOA)

Total Coliform (Present/Absent)	
11	11

Various, PH, 11P, 55, 50
DATE

2011H-

Date: 12/1/18	Time: 10:15 AM	Relinquished by: Wayne Price
---------------	----------------	------------------------------

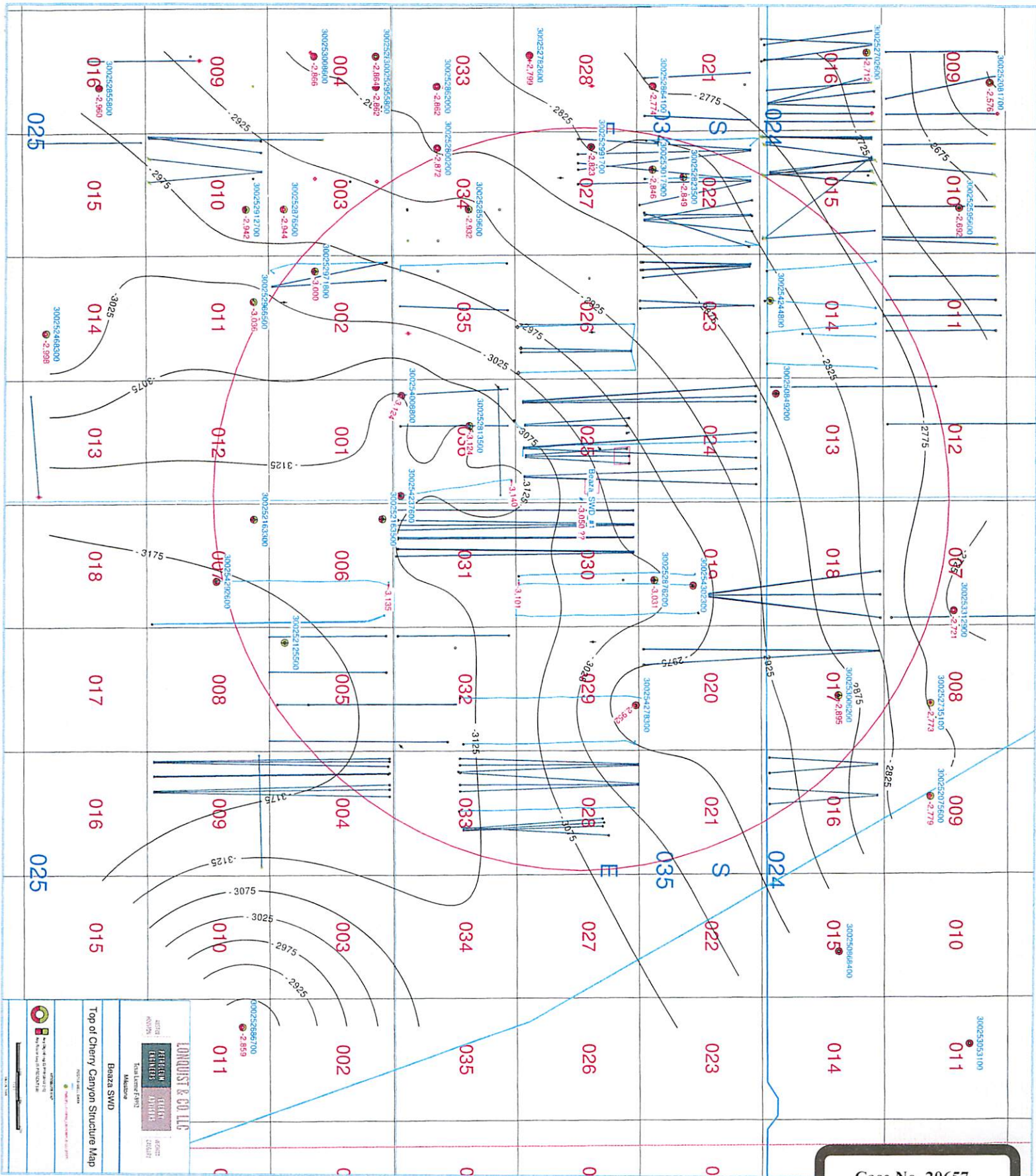
Received by:	Via:	Date	Time
<i>[Signature]</i>		12/1/18	01:00 AM

Date: 12/27/18	Time: 9:30 AM	Relinquished by: [Signature]
----------------	---------------	------------------------------

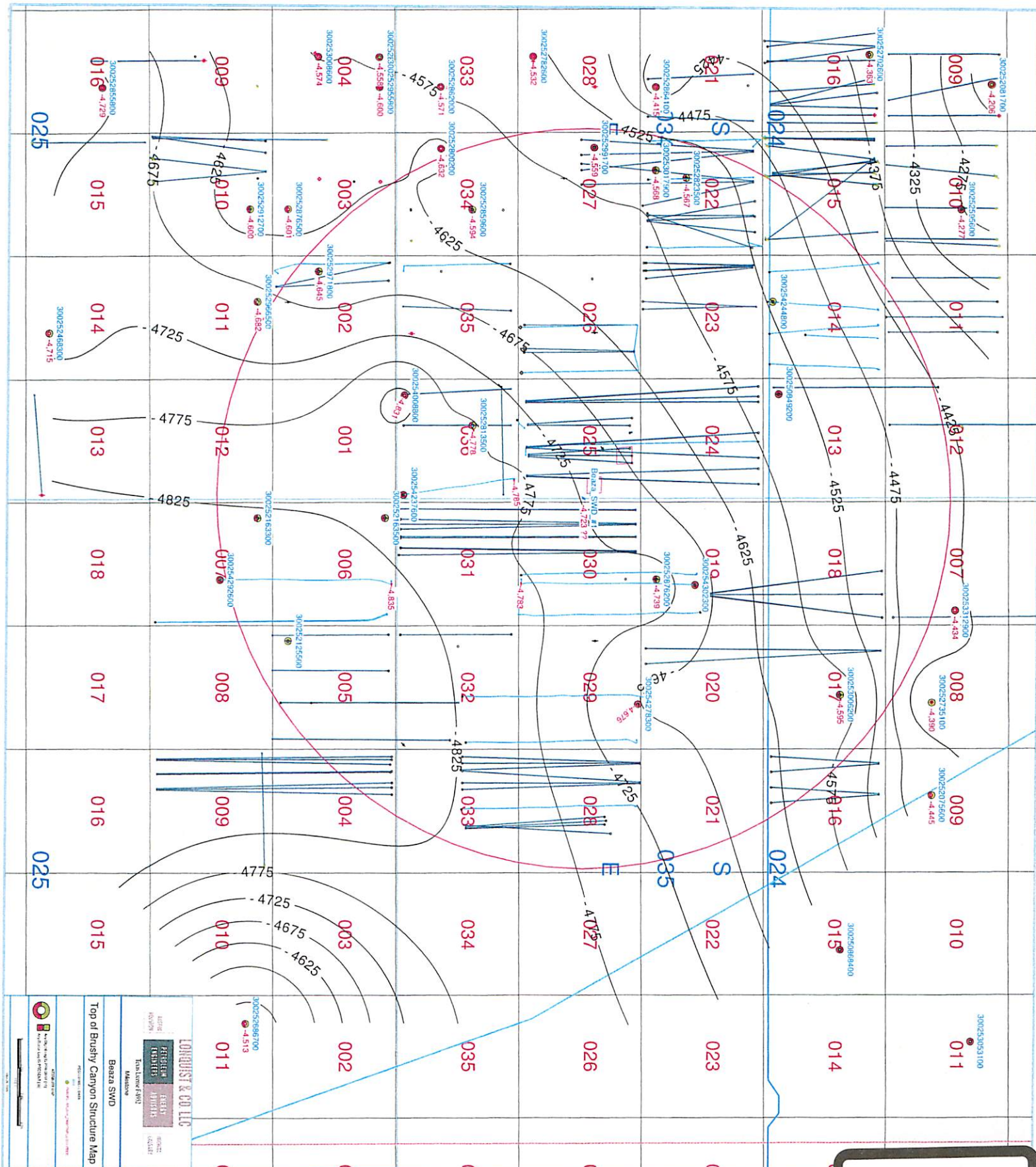
Received by: Via: Date Time
12/03/18 12/03/18

Remarks: SHAKE SAMPLES for T35
Q1 → SP 12/1/18 01⁰⁰ AM
3R → LAB 12/2/18 _____
0730
12/2/18

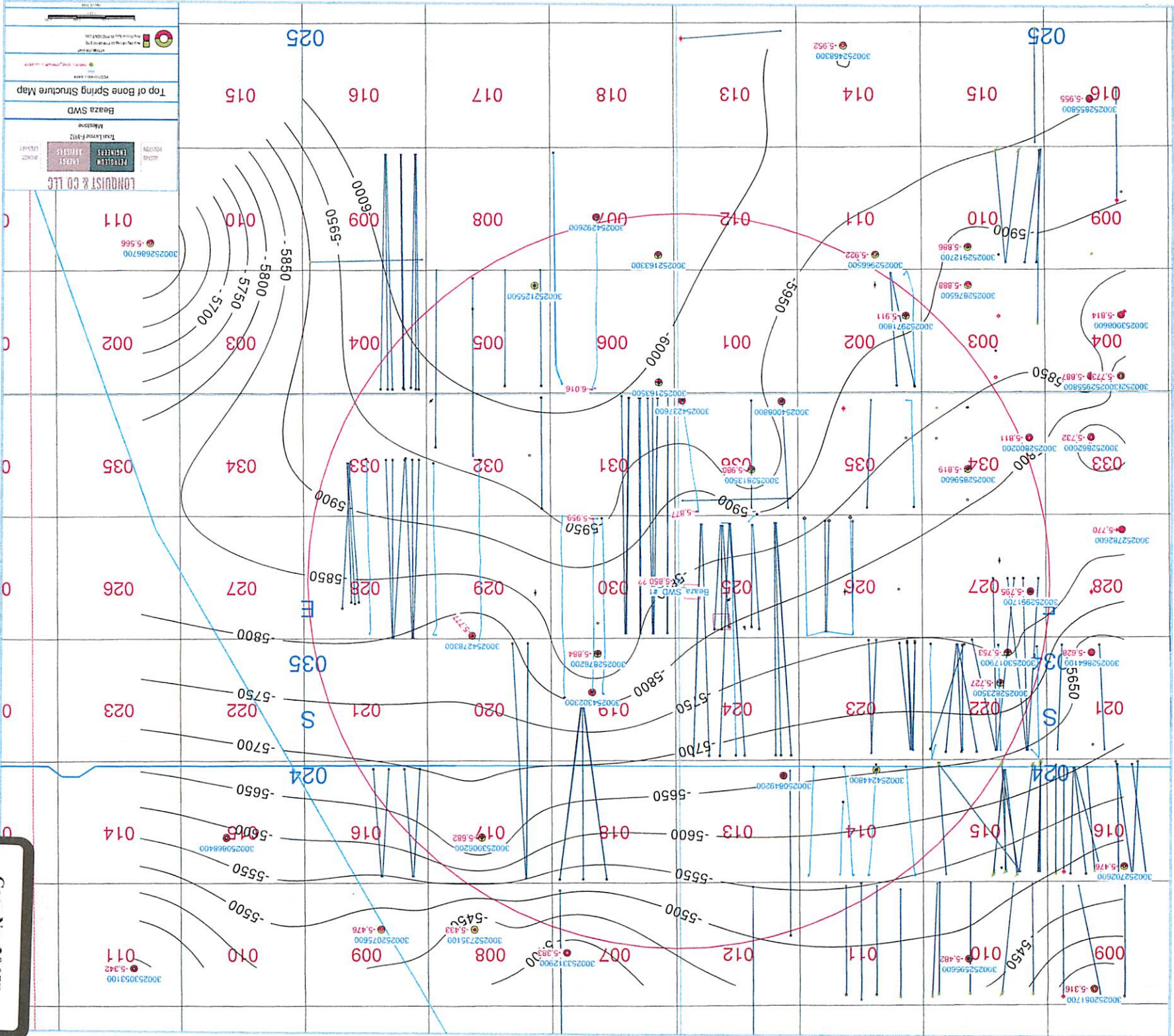
If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



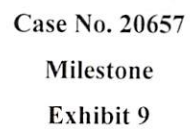
Case No. 20657
Milestone
Exhibit 6



Case No. 20657
Milestone
Exhibit 7



Case No. 20657
Milestone
Exhibit 8



30025280020000 <10,633FT>
PITCHFORK 34 FEDERAL.COM B
001
EOG RESOURCES, INC.
TD:13,930
ELEV_KB:3,416

T> 30025400880000
BLACK RAIDER BQK STATE
001H
EOG RESOURCES, INC.
TD :13,675
ELEV_KB:3,414

```

1FT>                                <5,
30025281350000
PITCHFORK
001
PRE-ONGARD WELL OPERATOR
TD : 16.300
ELEV_KB: 3.405

```

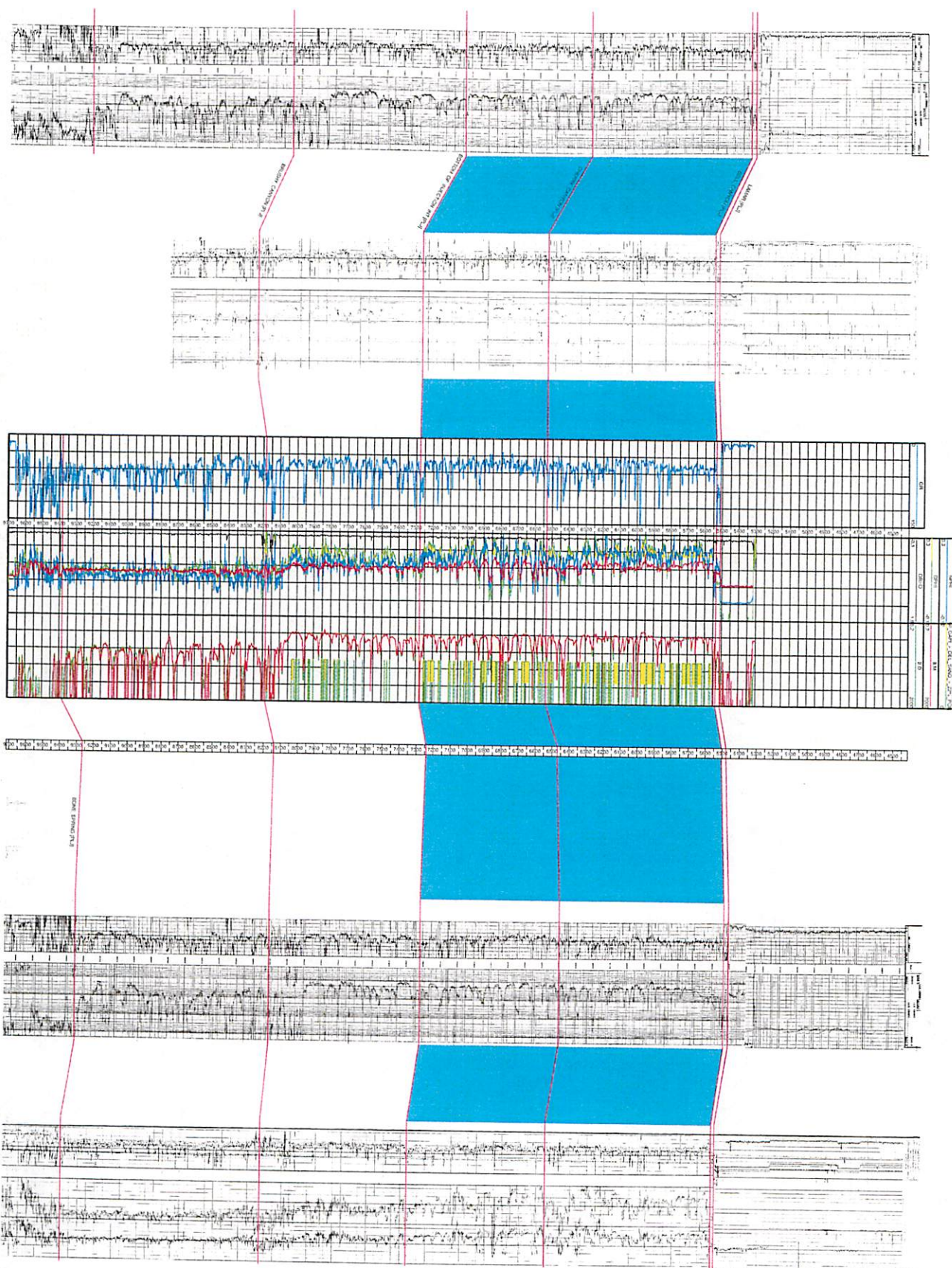
Beaza SWD_#1
Milestone Environmental
ELEV_KB: 3,415

```

3FT>                                <5,
30025287620000
MADERA 19
001
PRE-ONGARD WELL OPERATOR
TD : 15.803
ELEV_KB : 3.366

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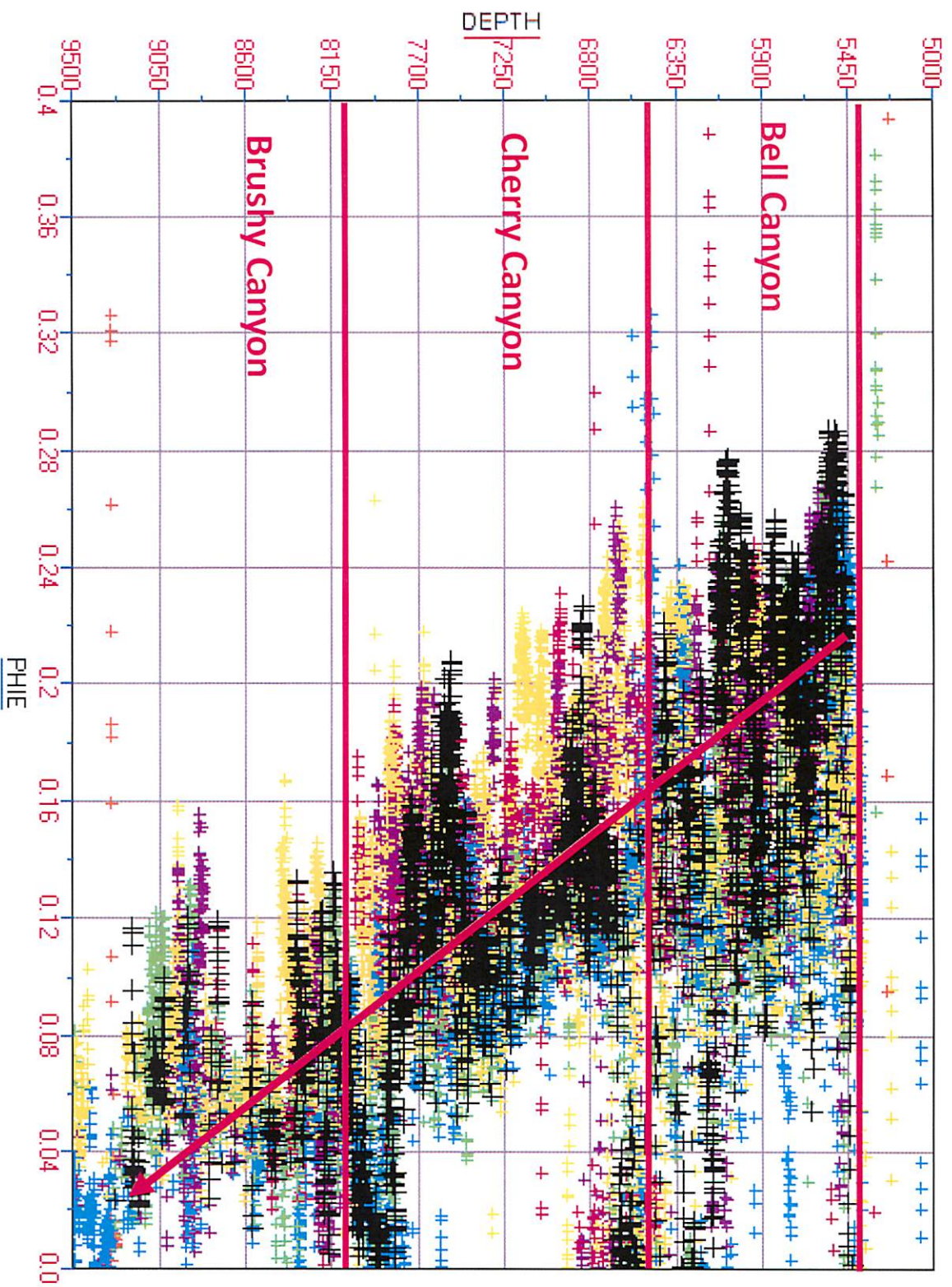
30025430230000
FASCINATOR FEE COM
002H
COG OPERATING LLC
TD : 19,840
ELEV_KB : 3,344



LONGHIST & CO. LLC
PETROLEUM
ENV. NEEDS
SOLID
WASTES
1000 LACROSSE BLVD.
LAKE CHARLES, LA 70601
504.735.1100
www.longhist.com

Case No. 20657
Milestone
Exhibit 10

6 Wells Porosity Vs Depth Trend



U.S. Geological Survey - Earthquake Hazards Program

Search Earthquake Catalog

Search results are limited to 20,000 events. To get URL for a search, click the search button, then copy the URL from the browser address bar.

- [Help](#)
- [ANSS Comprehensive Earthquake Catalog \(ComCat\) Documentation](#)
- [Developer's Corner - bulk access to catalog, tools for obtaining specific products](#)
- [Significant Earthquakes Archive](#)

Basic Options

Magnitude

☐ 2.5+☐ 4.5+☒ Custom

Minimum

Maximum

Date & Time

☐ Past 7 Days☐ Past 30 Days☒ Custom

Start (UTC)

End (UTC)

Geographic Region

☐ World☐ Conterminous U.S.¹☒ Custom

Custom Circle

- 32.18895 Latitude
- -103.415668 Longitude
- 9.08 Radius (km)

Draw Rectangle on Map

- Advanced Options

Geographic Region

Decimal degree coordinates. North must be greater than South.
East must be greater than West.

Depth (km)

Minimum

Maximum

Case No. 20657
Milestone
Exhibit 12

North	
West	East
South	

Azimuthal Gap

Minimum

Maximum

Review Status

☒ Any☐ Automatic☐ Reviewed

Circle

Center Latitude

Center Longitude

Outer Radius (km)

☐ Event Type☐ Impact (PAGER, ShakeMap, DYFI)☐ Catalog☐ Contributor☐ Product Type☐ Output Options

Search

¹Conterminous U.S. refers to a rectangular region including the lower 48 states and surrounding areas which are outside the Conterminous U.S.



Legend

Bell Canyon + Upper Cherry Canyon Completion Interval

Radius: 1449'

Cherry Canyon below Completion Interval

Radius: 262'

No concentrations below the Cherry Canyon exceed 1%.

300250849200

300252876200

300254278300

-2050

-2050

-2100

300254237600

300254302300

300252813500

-2150

300254008800

300252163500

300254292600



LONQUIST & CO. LLC

AUSTIN
HOUSTON

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

WICHITA
CALGARY

Texas License F-8952

Beaza SWD No. 1

Lea County

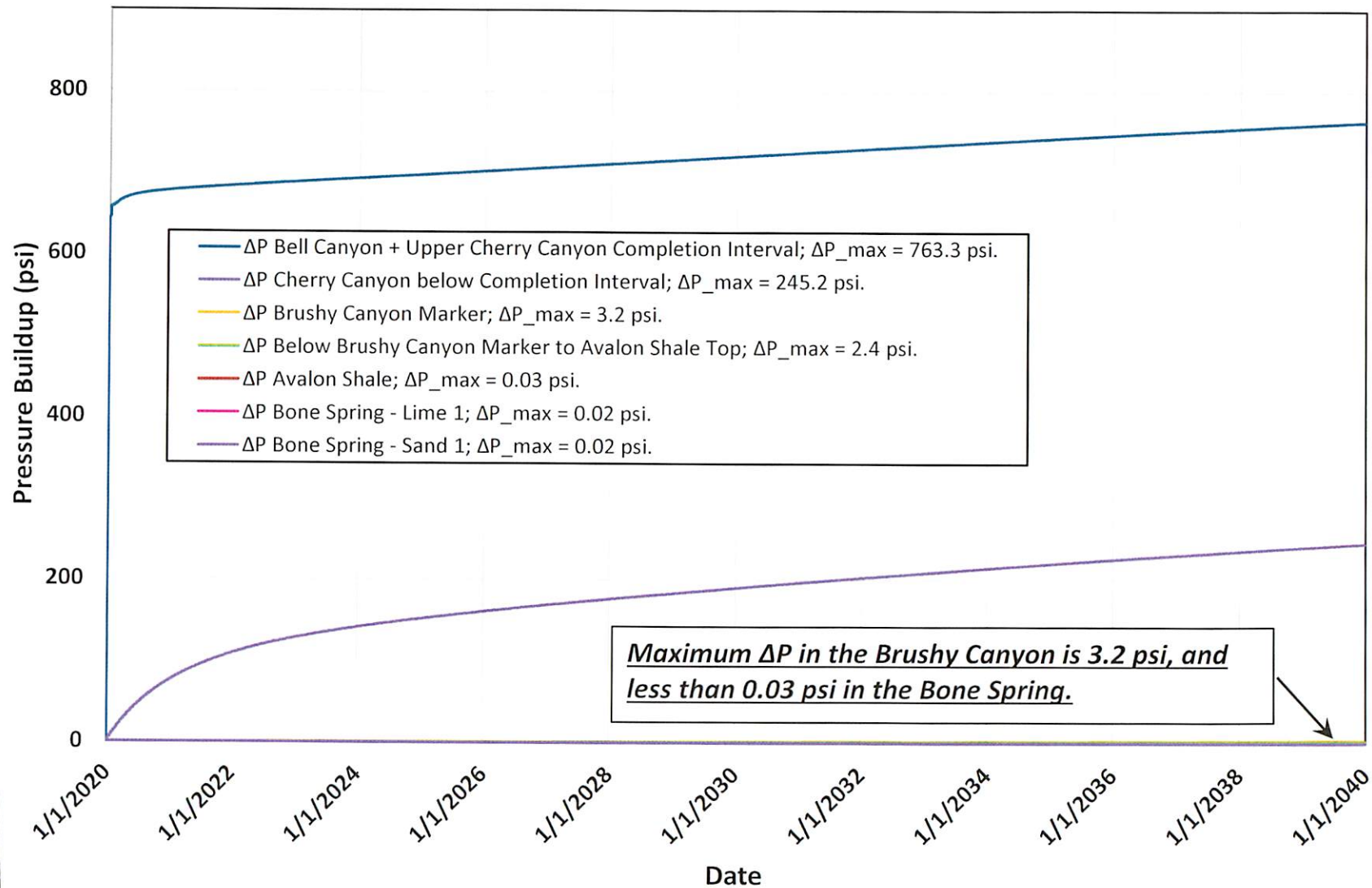
Injected Brine Plume
1% Concentration Contour

Case No. 20657

Milestone

Exhibit 14

Pressure Rise (ΔP) Beaza SWD #1 Wellbore and Formations Below TD Plotted over SWD #1 Service Life and By Formation



Legend

Bell Canyon + Upper Cherry Canyon Completion Interval

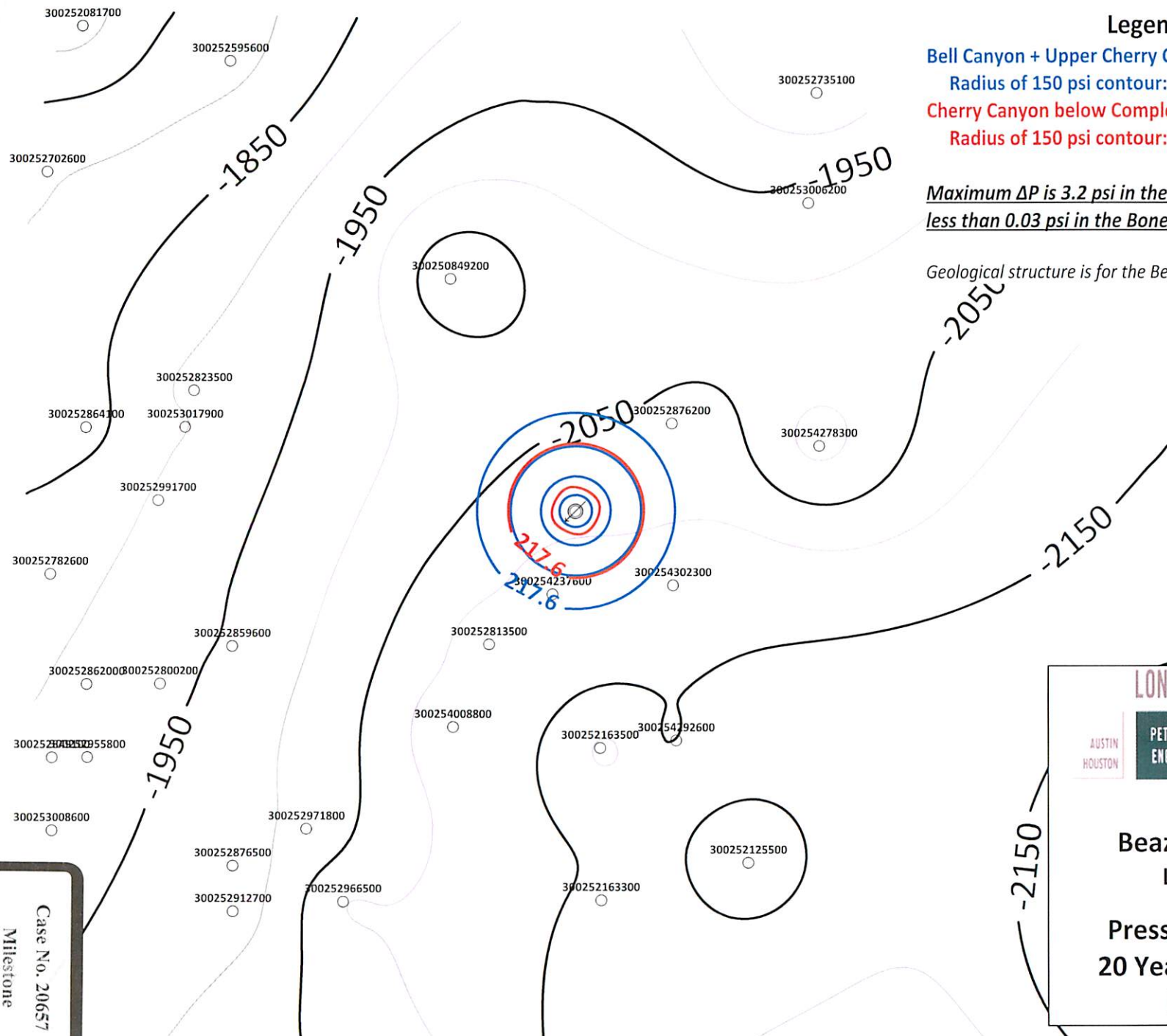
Radius of 150 psi contour: 3,891' (0.74 miles)

Cherry Canyon below Completion Interval

Radius of 150 psi contour: 2,930' (0.55 miles)

Maximum ΔP is 3.2 psi in the Brushy Canyon, and less than 0.03 psi in the Bone Spring.

Geological structure is for the Bell Canyon.



LONQUIST & CO. LLC

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CALGARY

Texas License F-8952

Beaza SWD No. 1
Lea County

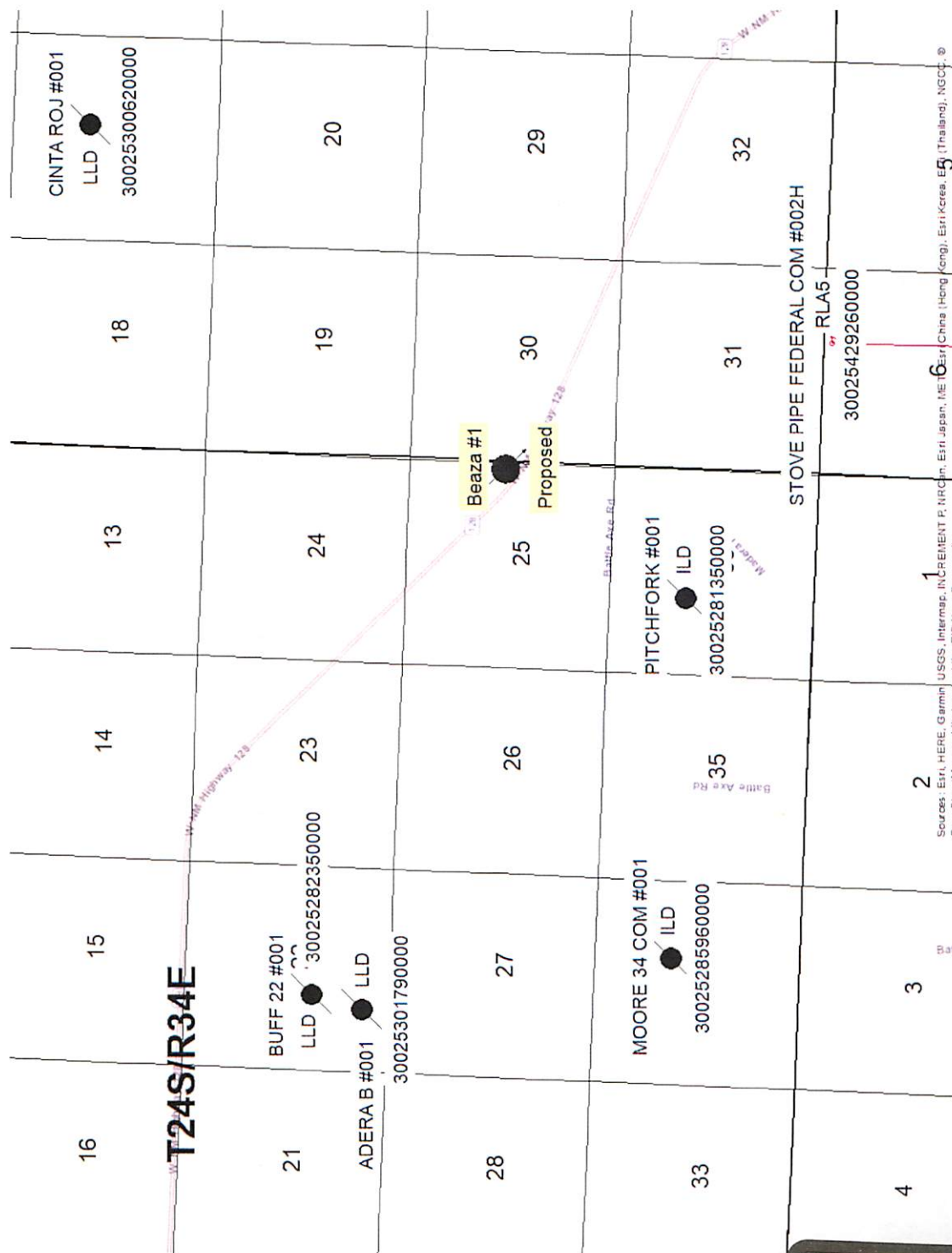
**Pressure Rise (psi),
20 Years Continuous
Injection**

Case No. 20657

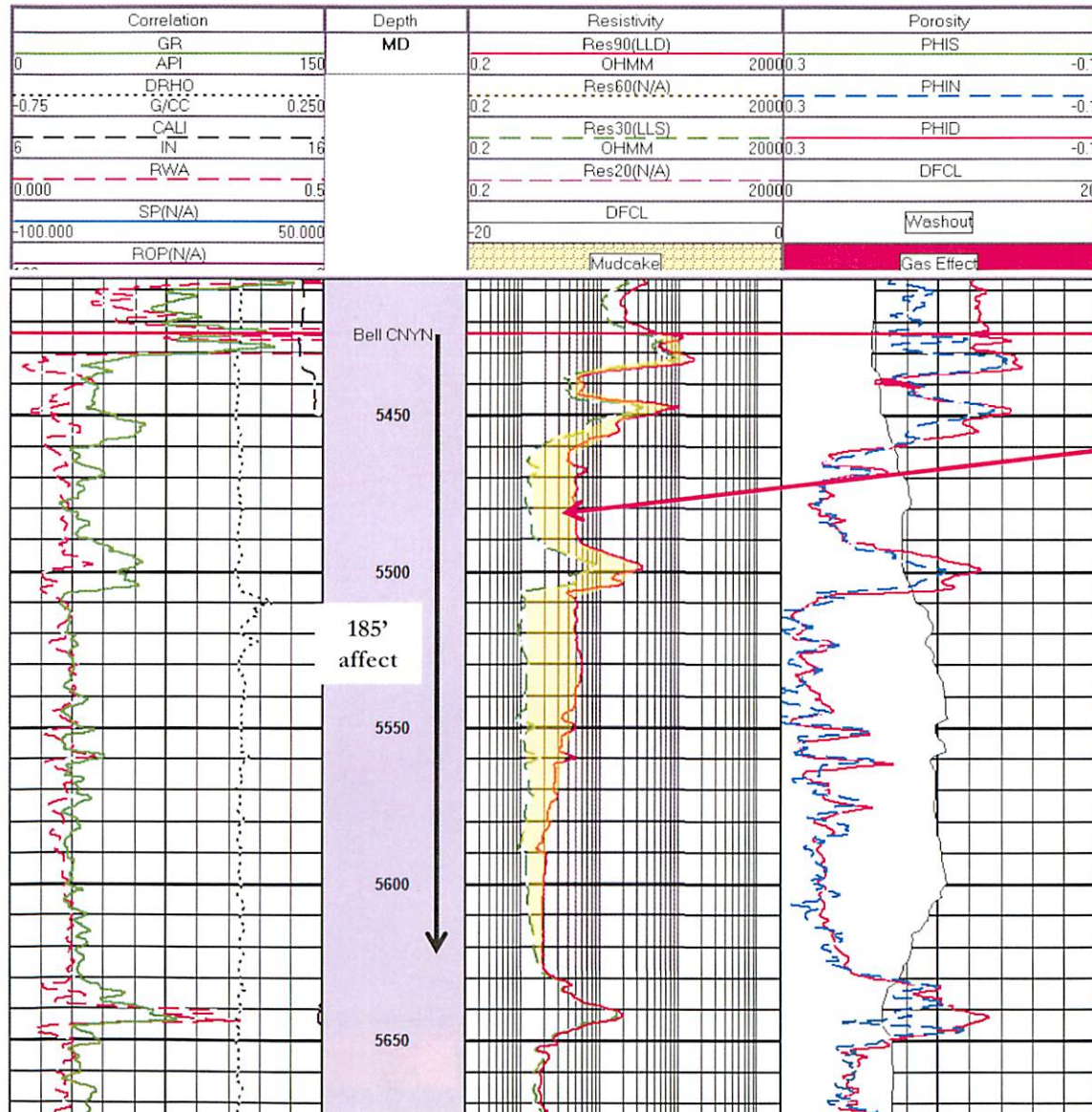
Milestone

Exhibit 16

Wells that were evaluated petrophysically



3002530179 well Example of Groningen effect



Groningen effect on LLD logs

30025301790000

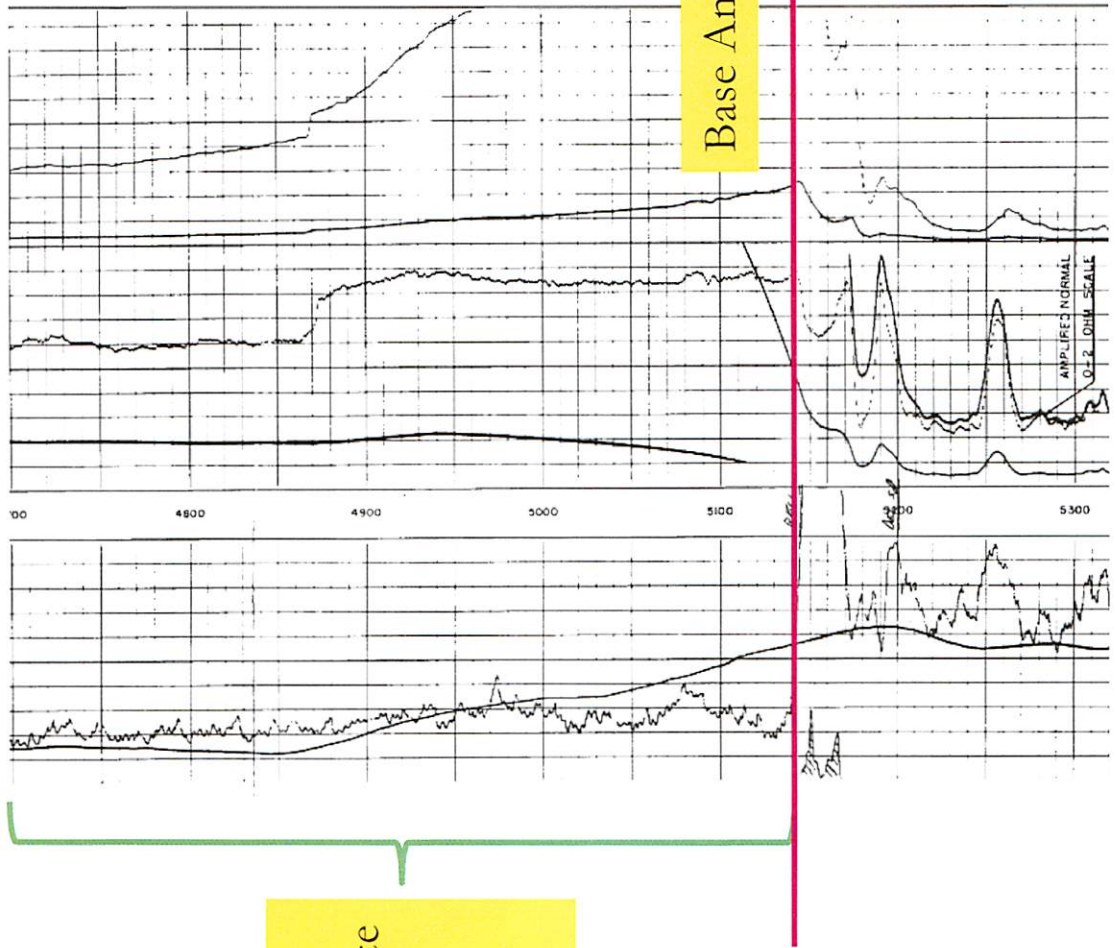
30025282350000

30025300620000

All three wells with LLD curves and the RLA5 saw the same effect immediately below casing set. LLS log was used to negate the effect on these three wells and RLA3 on the more modern Laterolog.

Case No. 20657
Milestone
Exhibit 18

Well 3002508488 Anhydrite sequence



Extremely thick
Anhydrite Sequence
overlying Bell
Canyon causing
Groningen effect

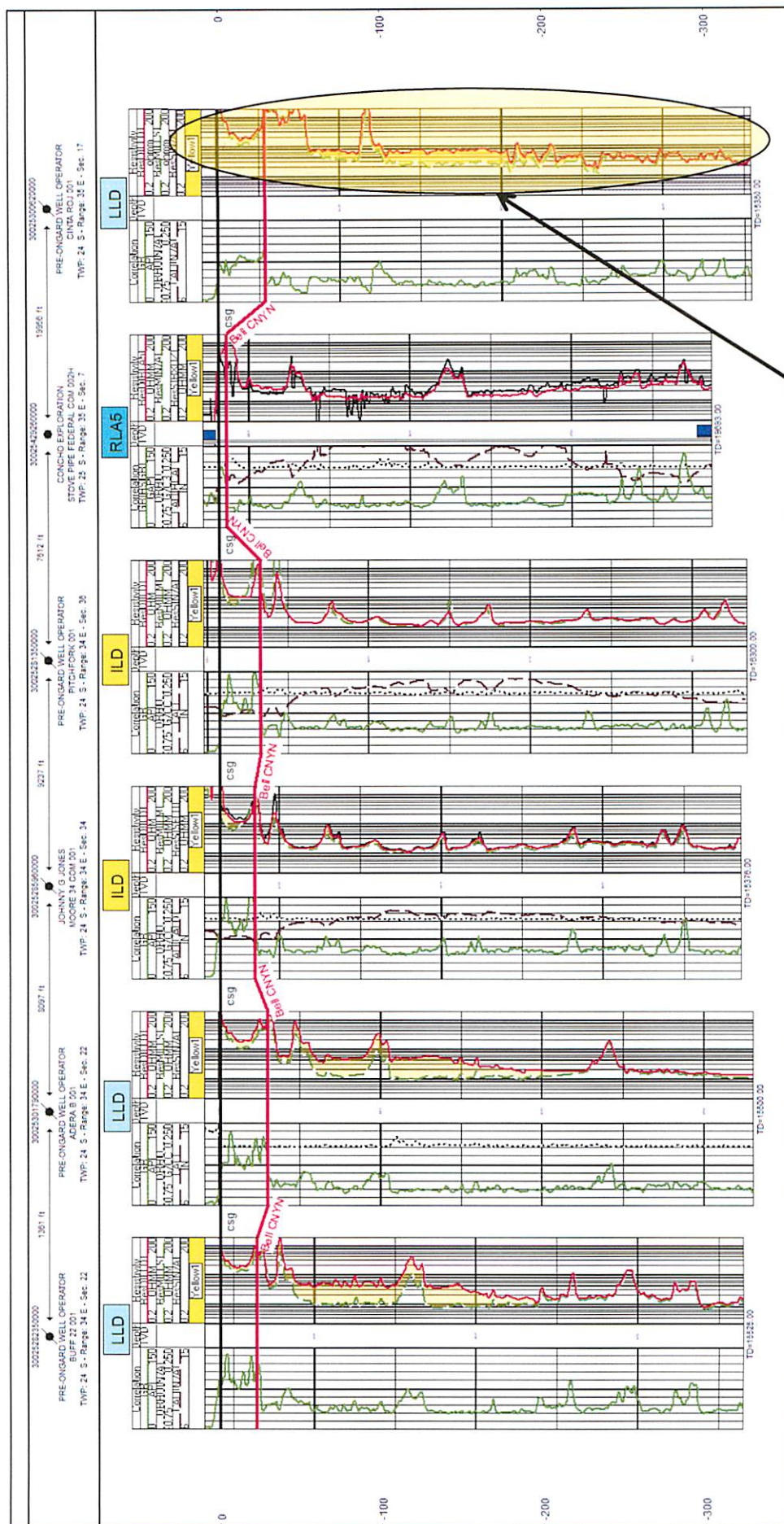
Base Anhydrite Sequence

Case No. 20657

Milestone

Exhibit 19

Cross section showing 3002530062 high resistivity



3002530062 Resistivity is substantially higher over the entire log and the well resistivity is probably erroneous due to a possible bad calibration or tool. Log reads 3-4 ohm-m higher than other five wells.

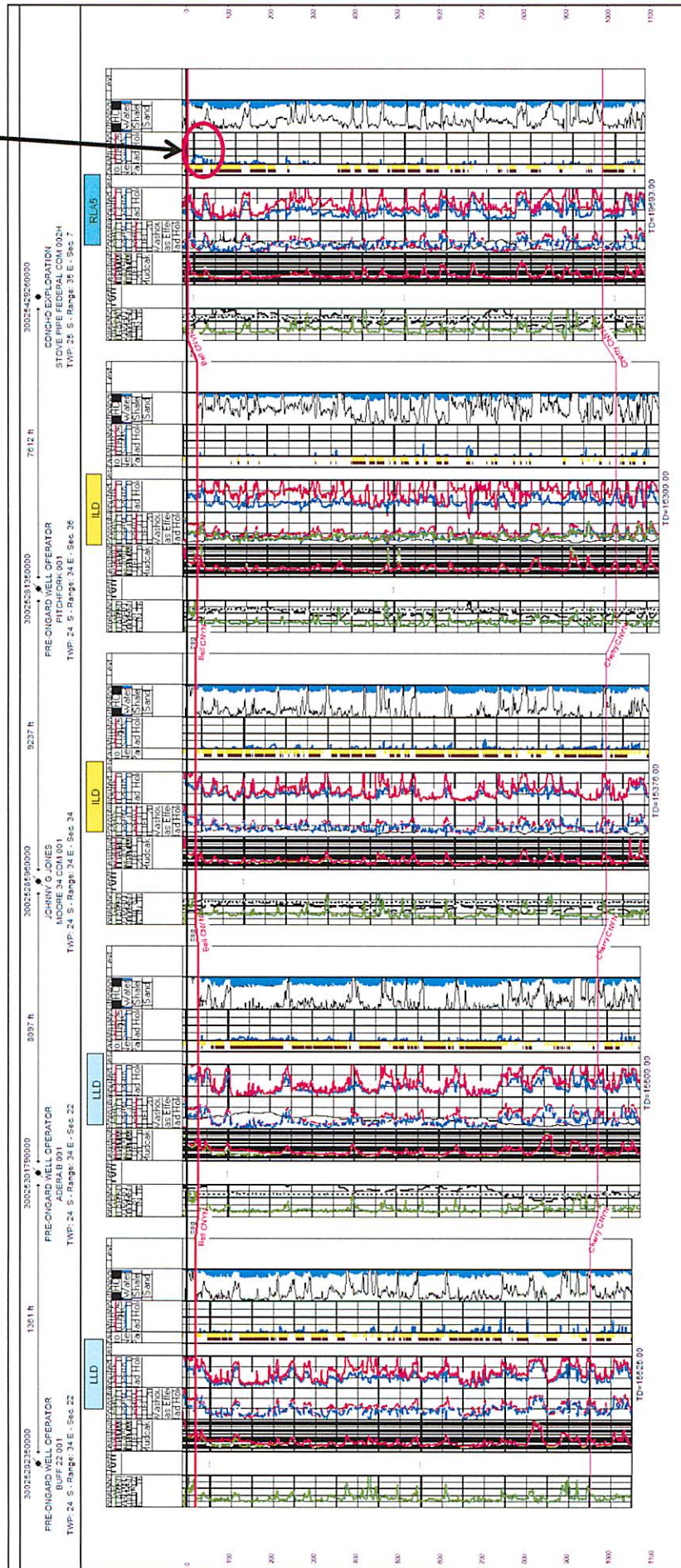


Petrophysical Methodology

- Calculated total porosity from Gas correction algorithm.
 - PHIA curve **Black**
- Calculated shale volume from GR with Steiber correction
 - $V_{shl} GR = (GR - GR_{cln}) / (GR_{shl} - GR_{cln})$ **Black**
- Calculated effective porosity from following equation.
 - $PHIE = PHIA * (1 - V_{shl})$ **Red**
- Calculated water saturation using Modified Simandoux
 - SwMS curve **Black**
- Cut off used were as follows:
 - V Shale cut off = 40%
 - Effective Porosity cut off = 15%
 - Water Saturation cut off = 65%
- Constant Parameters;
 - $R_w = .12$ at FT Deg F at formation Temperature
 - $A=1, M = 2, N = 2$
 - R_w corrected for temperature with depth temperature gradient
- Hierarchy is as follows for nomenclature;
 - **Gross** ($V_{shale} < \text{Cut Off } 40\%$) **Yellow**
 - **Net** ($V_{shale} < \text{Cut Off } 40\%$ and $PHIE > \text{Cut Off } 15\%$) **Brown**
 - **Pay** ($V_{shale} < 40\%$ and $PHIE > \text{Cut Off } 15\%$ and $SwMS < 65\%$) **Black**

Cross section of Bell Canyon SW interpretation

Water saturation is incorrect due to borehole washout and porosity is erroneously high (see next slide 15)



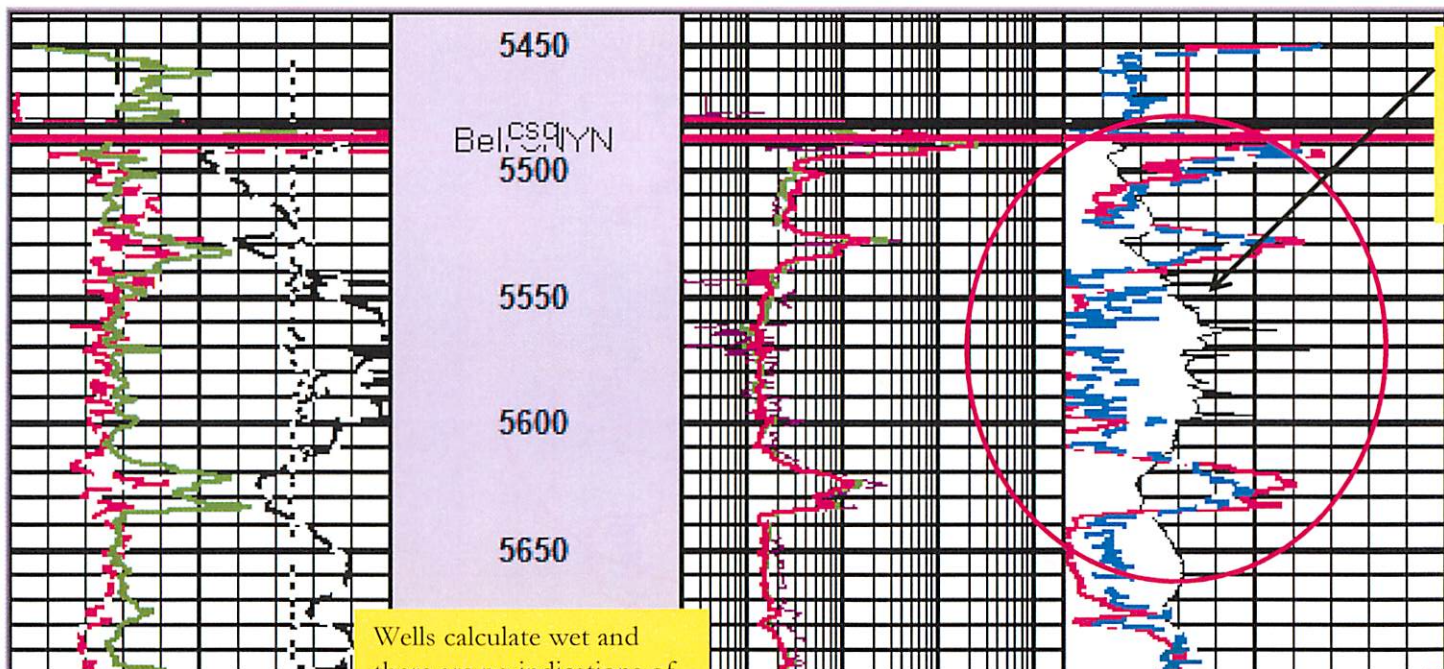
Wells calculate wet and there are no indications of Hydrocarbons



Case No. 20657
Milestone
Exhibit 22

30025429260000 Bad data on density neutron due to washout

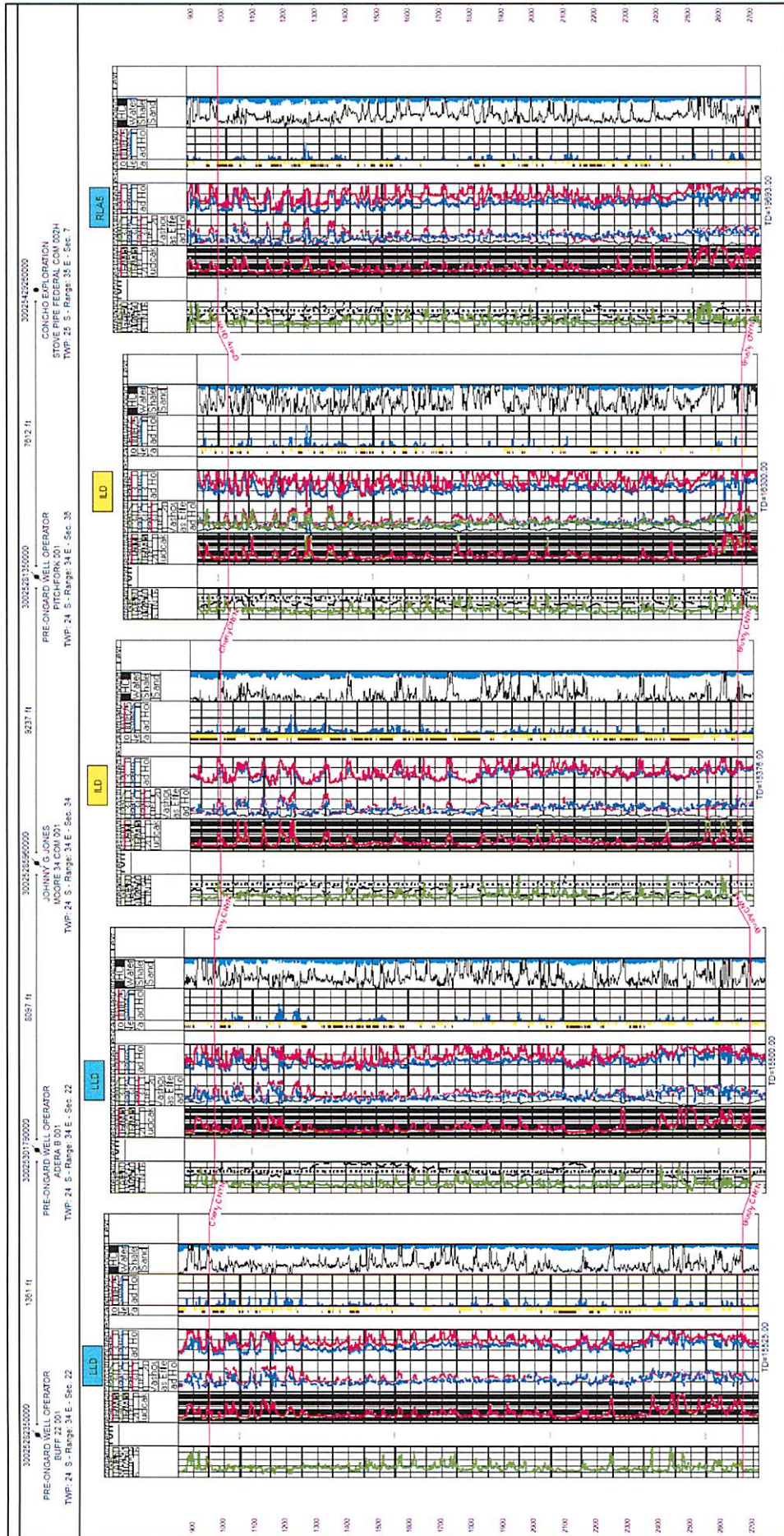
Correlation			Depth	Resistivity		Porosity	
GR(HSGR)			MD	Res90(RLA5)		PHIS	
0	GAPI	150		0.2	OHMM 2000	0.3	-0.1
DRHO				Res30(RLA3)		PHIN	
-0.75	G/C3	0.250		0.2	OHMM 2000	0.3	-0.1
CALI(HCAL)				Res60(N/A)		PHID	
6	IN	16		0.2	2000	0.3	-0.1
RWA				Res20(PXOZ)		DFCL	
0.000		0.5		0.2	OHMM 2000	0.3	-0.1



Water saturation is incorrect due to borehole washout and porosity is erroneously high

Wells calculate wet and there are no indications of Hydrocarbons

Cross section of Cherry Canyon SW interpretation



Wells calculate wet and there are no indications of Hydrocarbons





Case No. 20657
Milestone
Exhibit 25