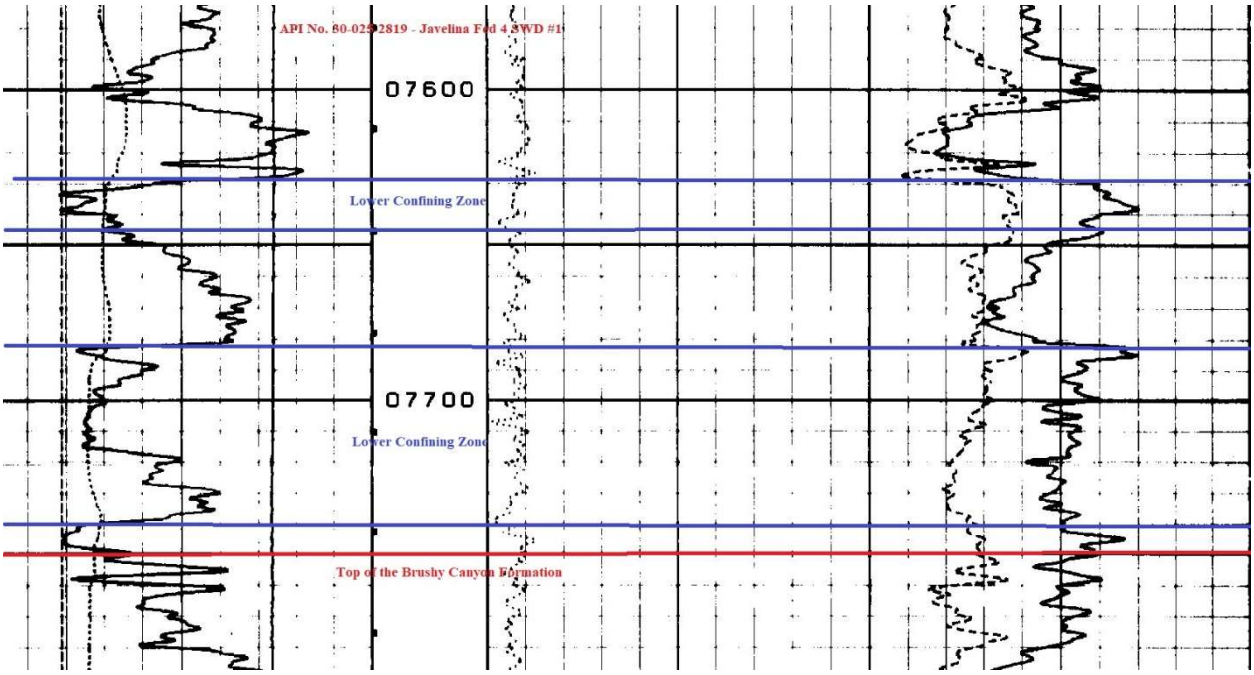


2. Historic Field Usage

a. Offset Production

A review of all wells in the NMOCD database within a 2-mile radius of the Javelina Fed 4 SWD #1 does not show any historic or current hydrocarbon production from the Bell Canyon or Cherry Canyon formations of the Delaware Mountain Group.

b. Commercial Water Sources

A review of all wells in the NMOCD and OSE databases within a 2-mile radius of the Javelina Fed 4 SWD #1 does not show any historic or current commercial water supply sources from the Delaware Mountain Group.

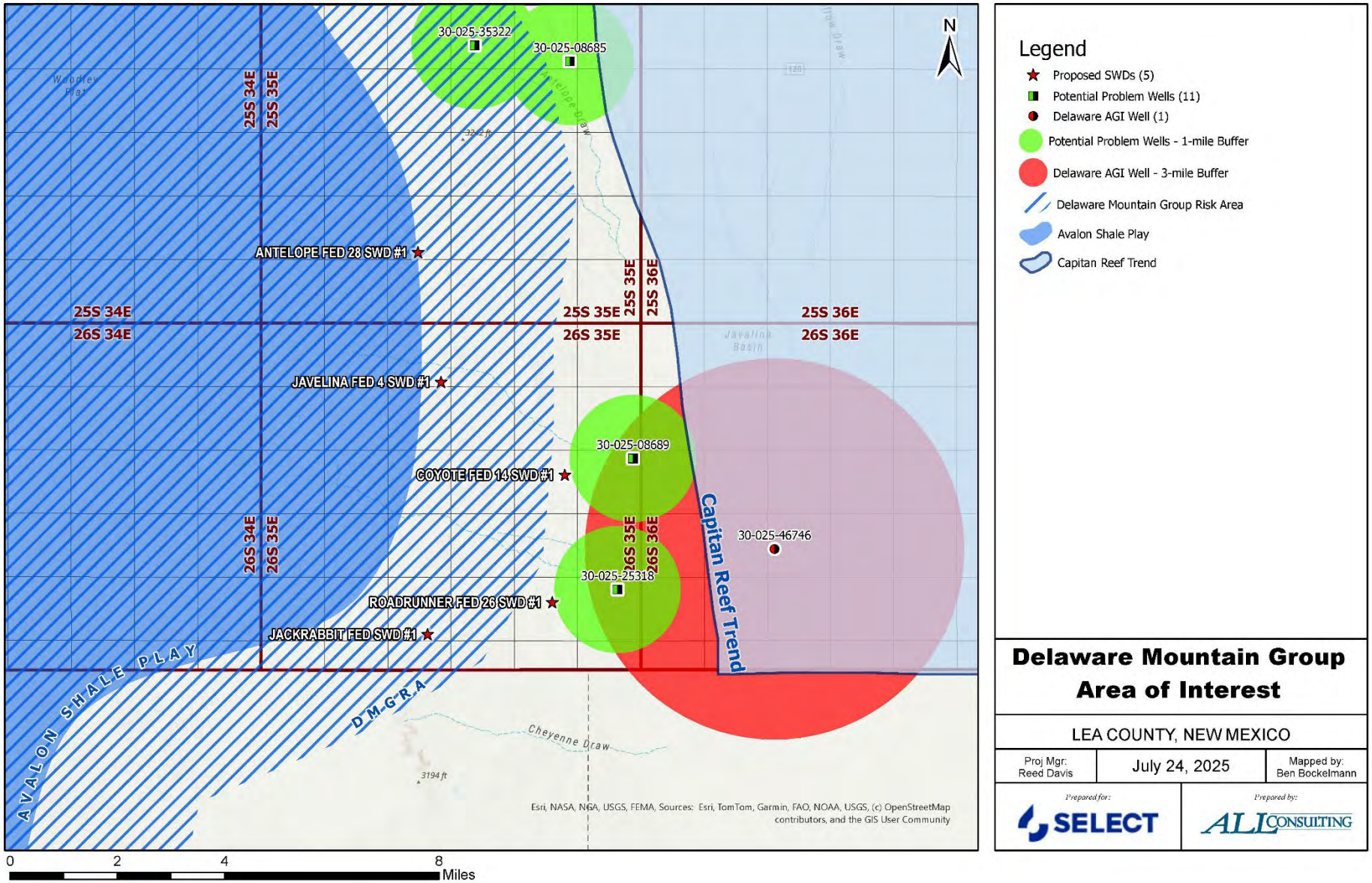
c. Enhanced Oil Recovery

A review of all wells in the NMOCD database within a 2-mile radius of the Javelina Fed 4 SWD #1 does not show any historic or current enhanced oil recovery operations utilizing the overlying Lamar Dolomite, or the underlying Brushy Canyon.

d. Additional OCD Exhibit 11a Requirements

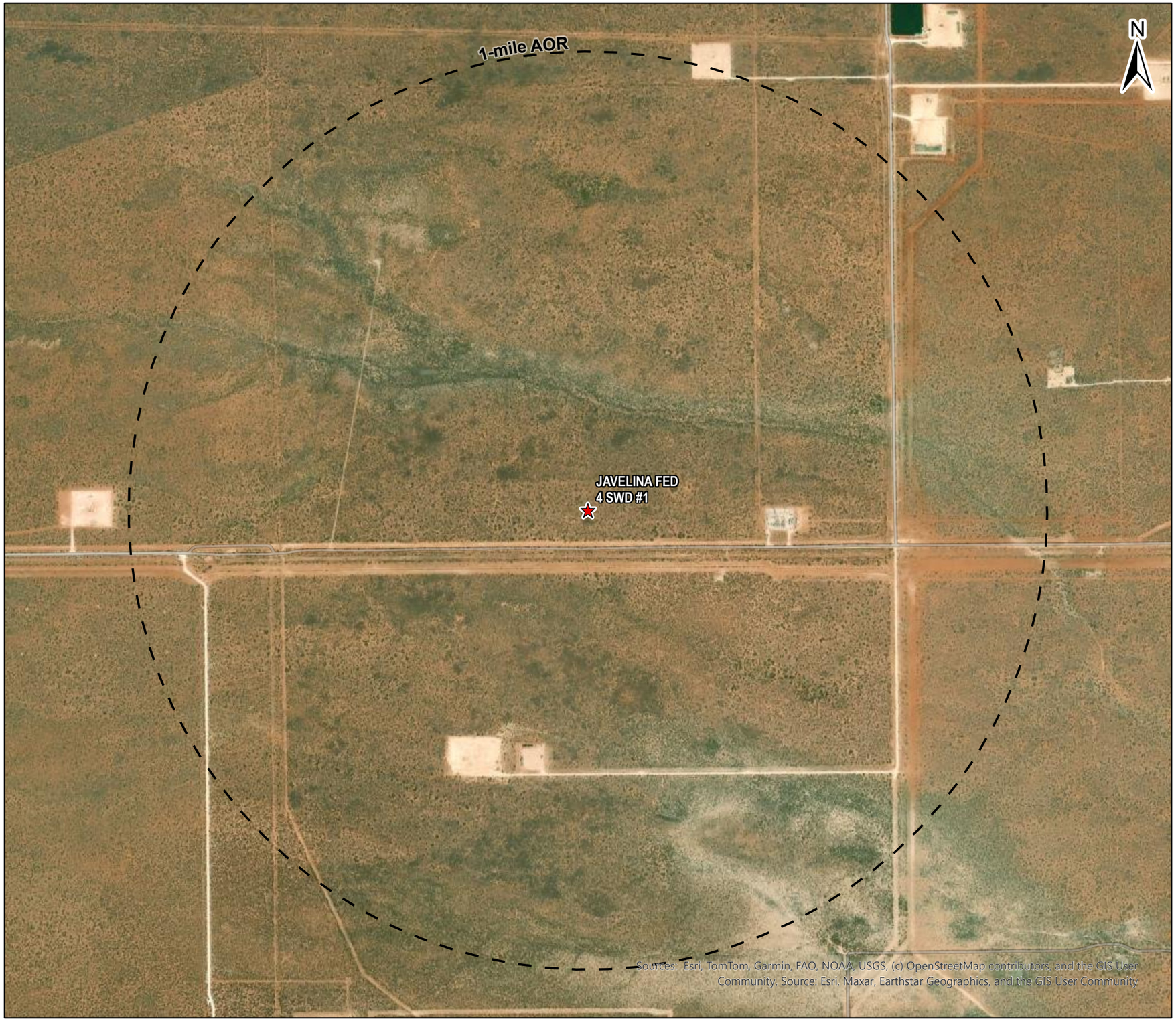
No Delaware Acid Gas Injection wells are located within 3-miles of the proposed Javelina Fed 4 SWD #1. In addition, the proposed SWD is located outside of the Avalon Shale play, the Capitan Reef Trend, and has been positioned more than 1-mile from any identified wells with potential wellbore concerns or lack of data for evaluation (see **Figure 3**).

Figure 3 – Delaware Mountain Group Area of Interest



Attachment 6

Water Well Map and Well Data



0 0.25 0.5 1 Miles

SourceInfo: ttps://gis.ose.state.nm.us/arcgis/rest/services/WatersPod/OSE_PODs/MapServer/0

Legend

- Proposed SWD

OSE Water PODs

POD Status

- Active (0)
- Pending (0)
- Changed Location of Well (0)
- Inactive (0)
- Capped (0)
- Plugged (0)
- Unknown (0)

1-mile Water Well AOR

JAVELINA FED 4 SWD #1

LEA COUNTY, NEW MEXICO

Proj Mgr: Reed Davis	April 18, 2025	Mapped by: Ben Bockelmann

Prepared for: SELECT

Prepared by: ALL CONSULTING

Javelina Fed 4 SWD #1 - Water Well Sampling Rationale					
Water Wells	**Owner**	**Available Contact Information**	**Use**	**Sampling Required**	**Notes**
Note: There are no water wells within 1-mile of the proposed Javelina Fed 4 SWD #1.					

Attachment 7

No Hydrologic Connection Statement

RE: Select Water Solutions LLC – Javelina Fed 4 SWD #1 application, Lea County, New Mexico

ALL Consulting LLC (ALL) has performed a thorough hydrologic investigation related to the one saltwater disposal well (SWD) listed above. The investigation was conducted to determine if there were any existing or potential connections between the proposed injection zones in the Bell Canyon and Cherry Canyon formations and the deepest underground source of drinking water (USDW).

ALL performed an assessment and analysis of the subsurface geophysical log data along with published documents on the groundwater in this vicinity of Lea County, New Mexico. The area is within the South Plain and the surficial geology is Quaternary alluvial deposits consisting predominantly of sand and silt deposits. In this area the depths to potable water for stock and domestic supplies are less than 175 feet below the surface. The USDW is the Rustler Formation and the base of the USDW plus 25 feet into the anhydrite unit is approximately 1,090 feet below the surface.

Based on ALL's assessment and analysis there is containment through multiple confining zones above the proposed Bell Canyon and Cherry Canyon injection zones and the USDW and over 4,270 feet of vertical separation between the base of the USDW and the top of the injection interval. Additionally, there is no evidence of faults that would allow for communication between the USDW and Bell Canyon and Cherry Canyon injection zones.

Tom Tomastik _____ June 11, 2025

Tom Tomastik Date

Chief Geologist and Regulatory Specialist

ALL Consulting LLC

Attachment 8

List of Affected Persons

Javelina Fed 4 SWD #1 - Notice of Application Recipients						
Affected Party Classification	**Entity - Proof of Notice**	**Entity - As Mapped/Exhibited**	**Address**	**City**	**State**	**Zip Code**
Surface and Mineral Owner	New Mexico Bureau of Land Management	BLM	620 E Greene St.	Carlsbad	NM	88220
NMOCD District Office	New Mexico Oil Conservation District 1	N/A	1625 N. French Drive	Hobbs	NM	88240
Well Operator	Pre-Ongard Well Operator	Max M. Wilson	NA	NA	NA	NA
Well Operator	Pre-Ongard Well Operator	M. J. Harvey Jr.	NA	NA	NA	NA
BLM - Lessee and Unit Operator	Devon Energy Production Company, LP	DEVON ENERGY PROD CO LP	333 West Sheridan Ave.	Oklahoma City	OK	73102
BLM - Lessee	CHEVRON U S A INC	CHEVRON USA INC	6301 Deauville	Midland	TX	79706-2964
BLM - Unit Operator	COG OPERATING LLC	COG OPERATING LLC	600 W Illinois Ave	Midland	TX	79701

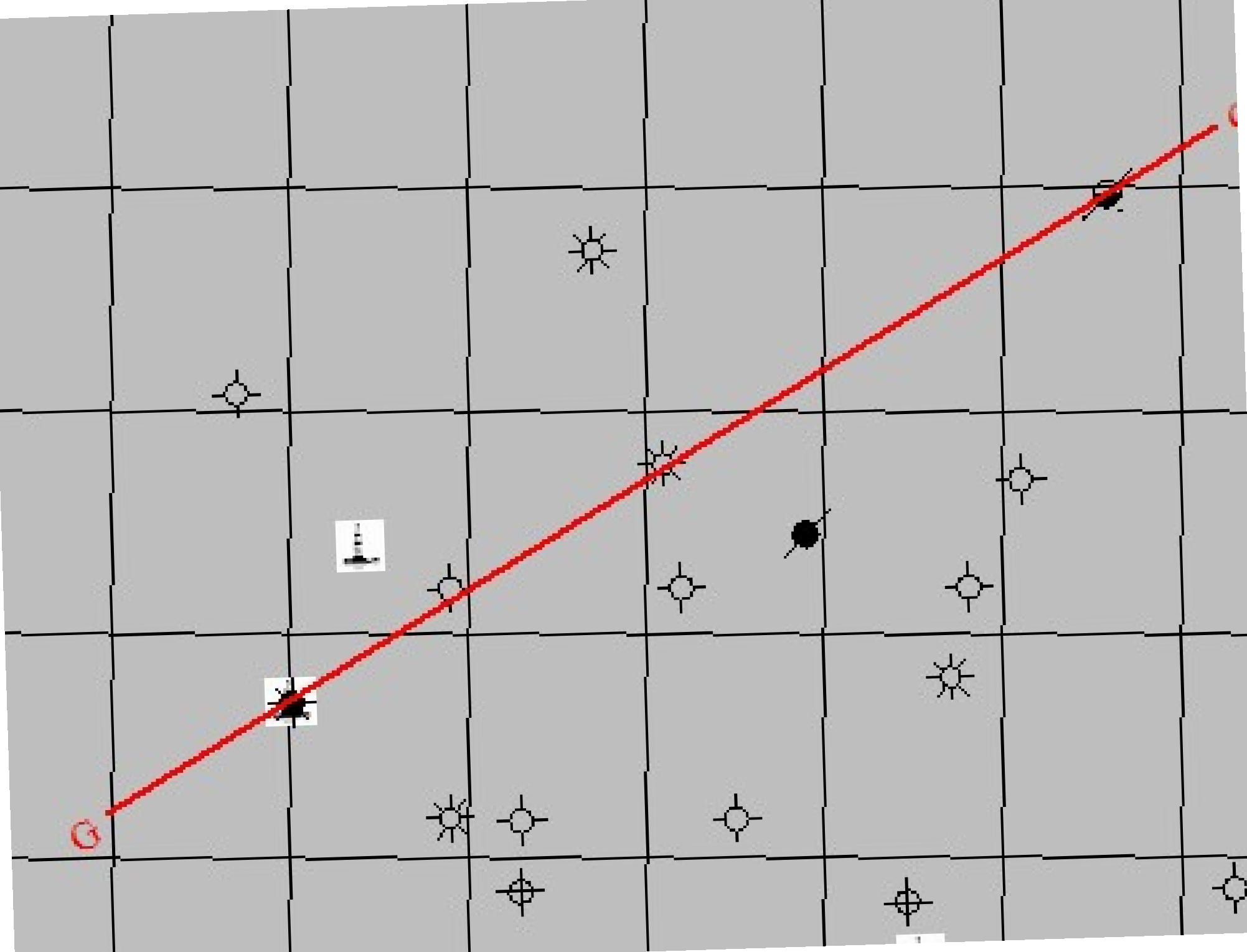
Note: The affected parties above received notification of this C-108 application.
BLM Unit Operators and Lessee information was retrieved from BLM MLRS (https://mlrs.blm.gov/s/).
NMSLO Lessee information retreived from NMOCD Operator Search (https://wwwapps.emnrd.nm.gov/OCD/OCDPermitting/Operators/Search/OperatorSearch.aspx).

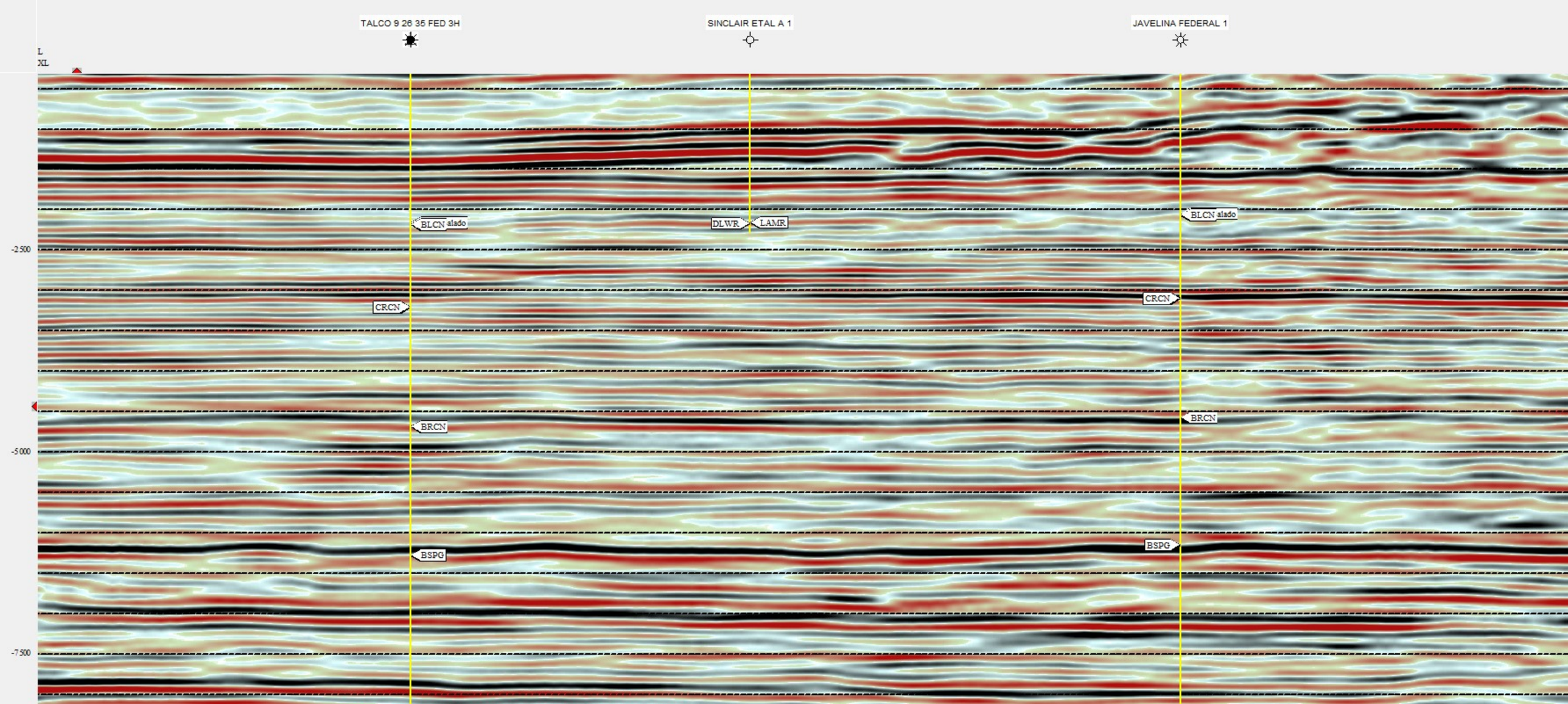
Appendix A

Seismic and Structural Cross Sections

Appendix A-1

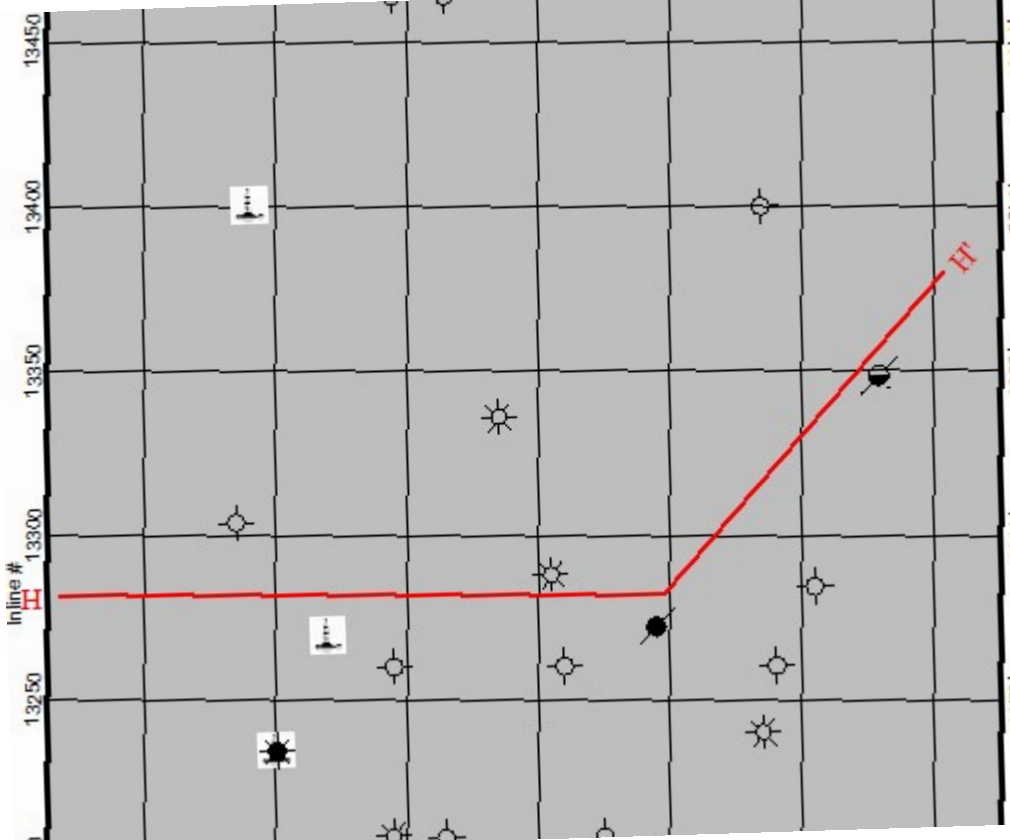
Seismic G-G'

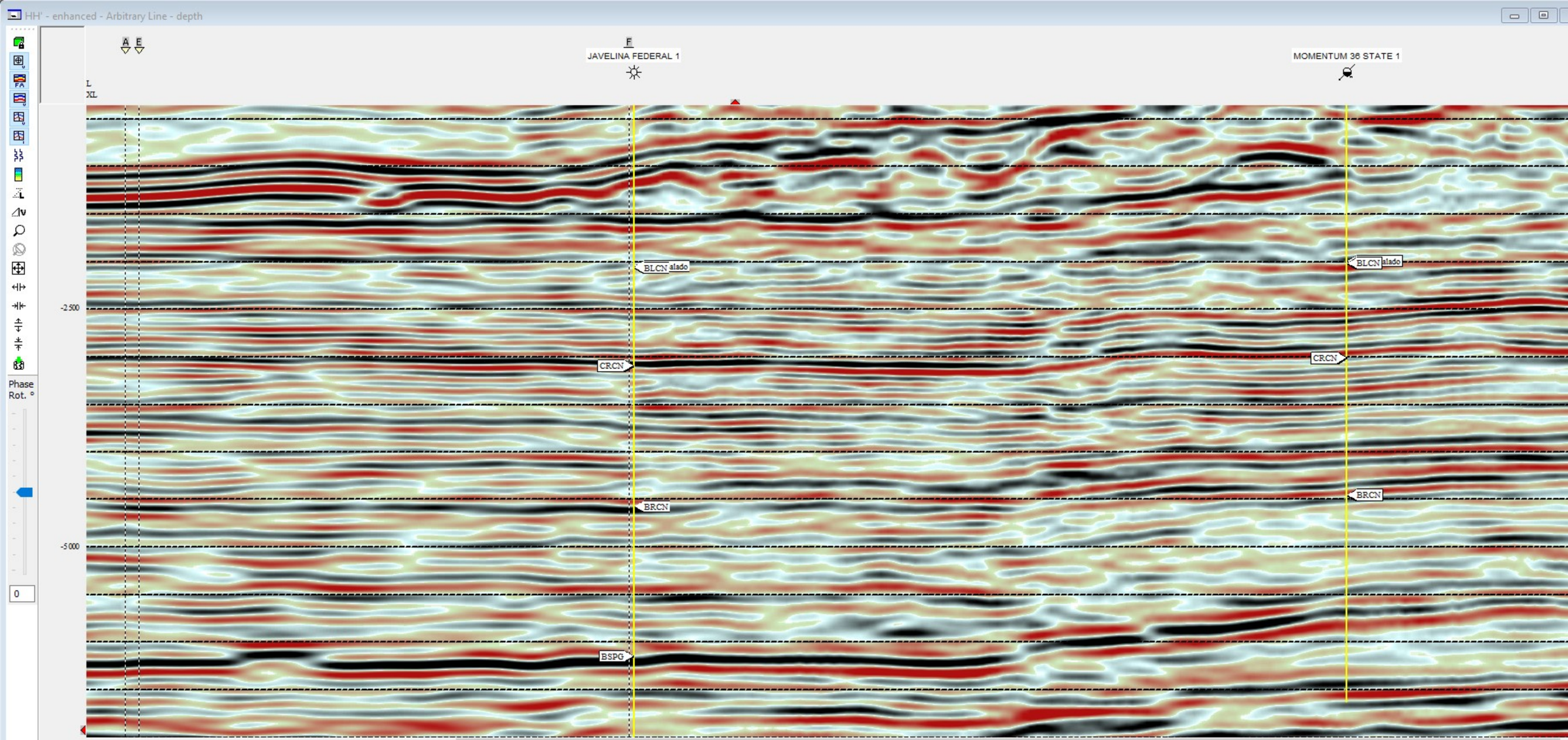



TALCO 9 26 35 FED 3H
SINCLAIR ETAL A 1
JAVELINA FEDERAL 1
L
XL
BLCN alado
DLWR
LAMR
BLCN alado
-2 500
CRCN
CRCN
BRCN
BRCN
-5 000
BSPG
BSPG
-7 500

Appendix A-2

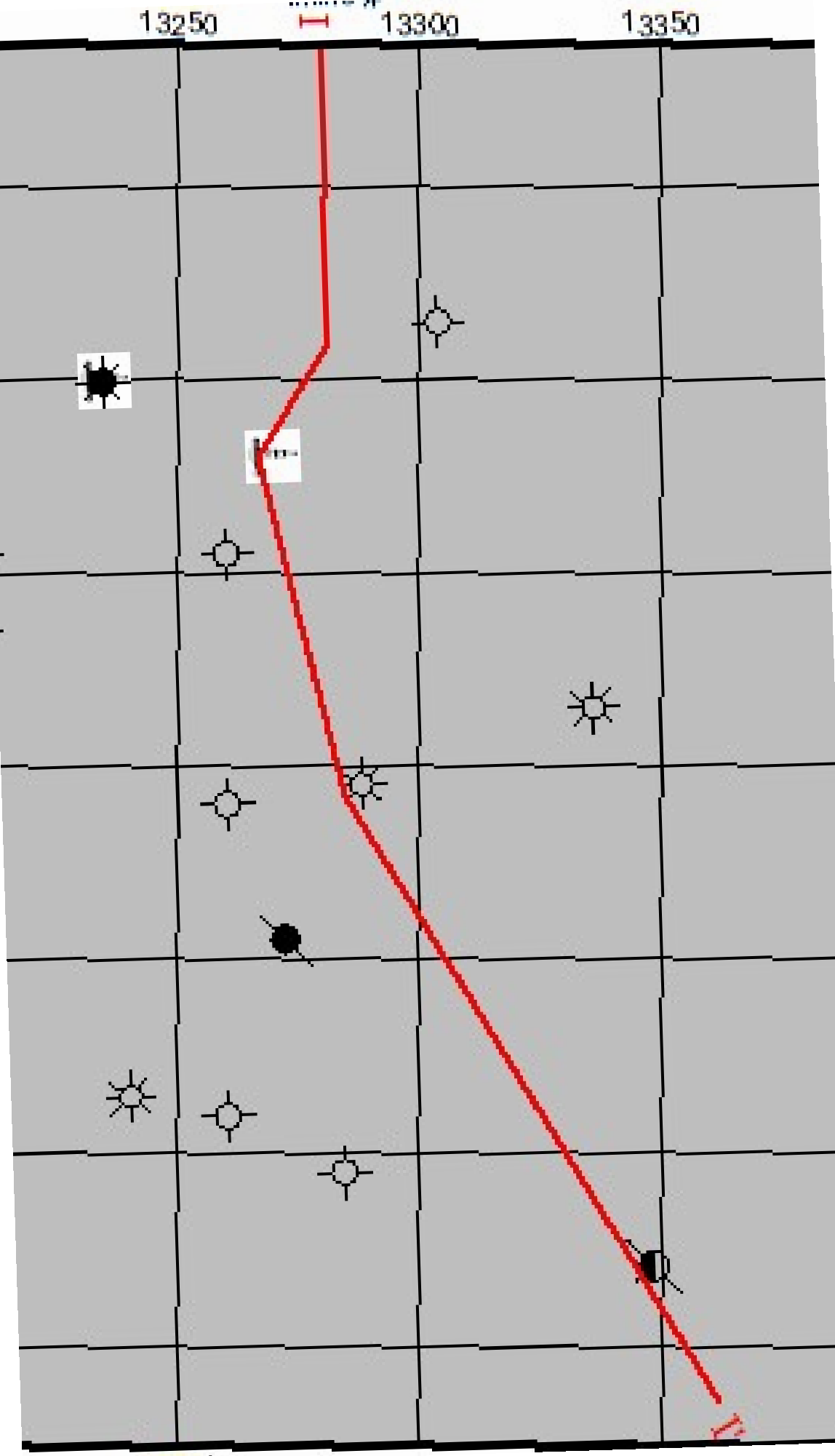
Seismic H-H'

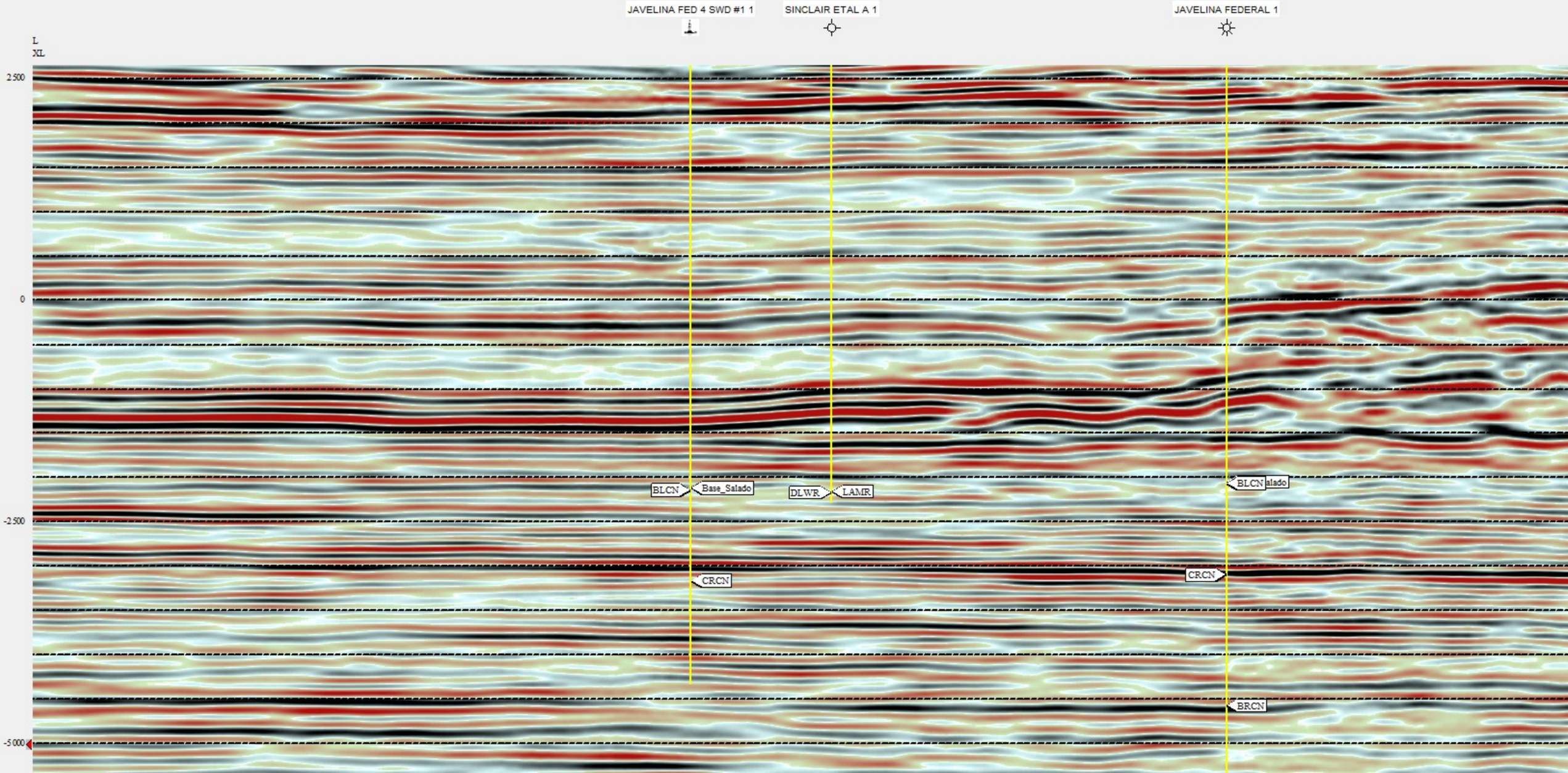

Inline #
13450
13400
13350
13300
13250
H
H'


HH' - enhanced - Arbitrary Line - depth
A
E
F
JAVELINA FEDERAL 1
MOMENTUM 36 STATE 1
L
XL
BLCN alado
BLCN alado
-2500
CRCN
CRCN
BRCN
BRCN
-5000
BSPG
Phase
Rot. °
0

Appendix A-3

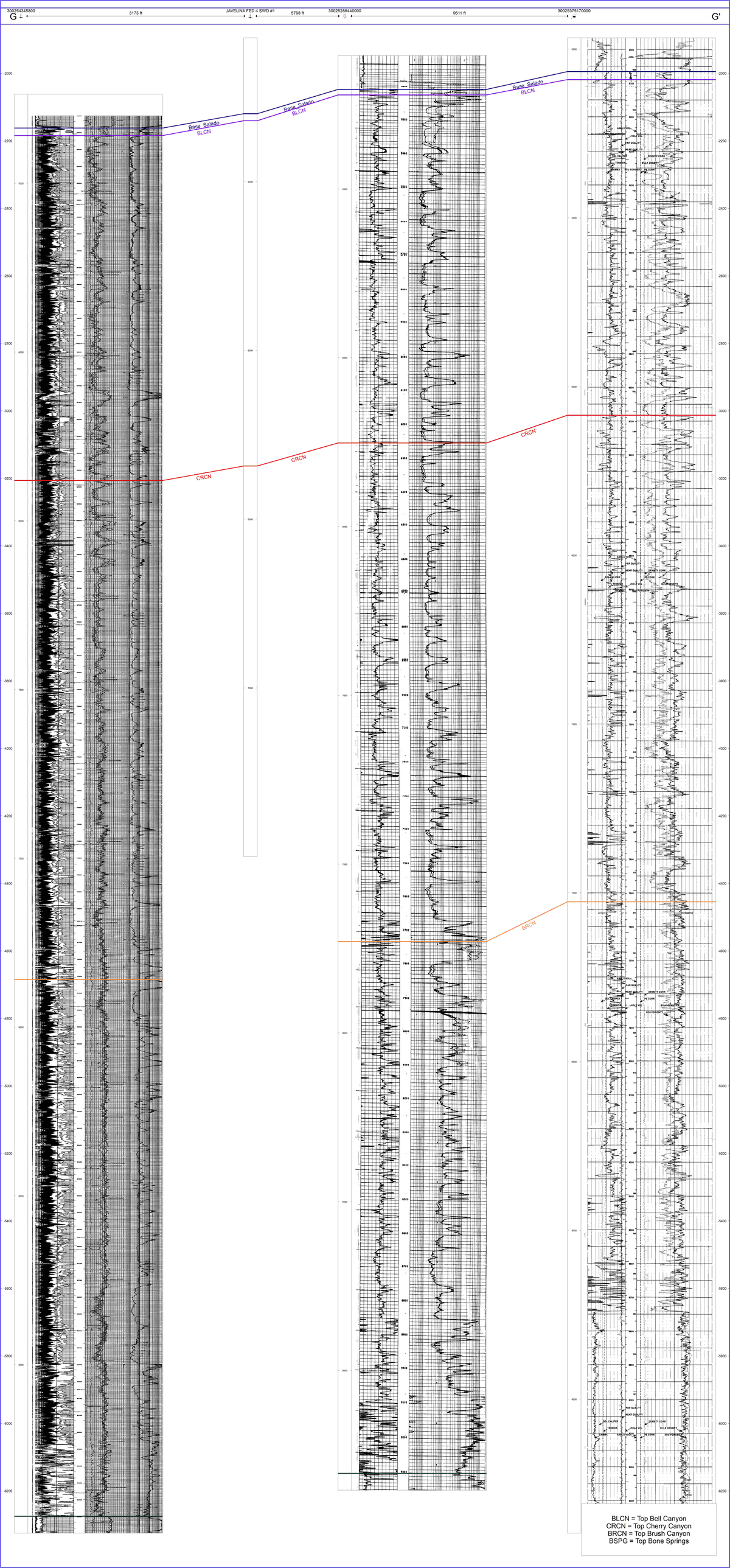
Seismic I-I'


13250
13300
13350


JAVELINA FED 4 SWD #1 1
SINCLAIR ETAL A 1
JAVELINA FEDERAL 1
L
XL
2500
0
-2500
-5000
BLCN
Base_Salado
DLWR
LAMR
BLCN
alado
CRCN
CRCN
BRCN

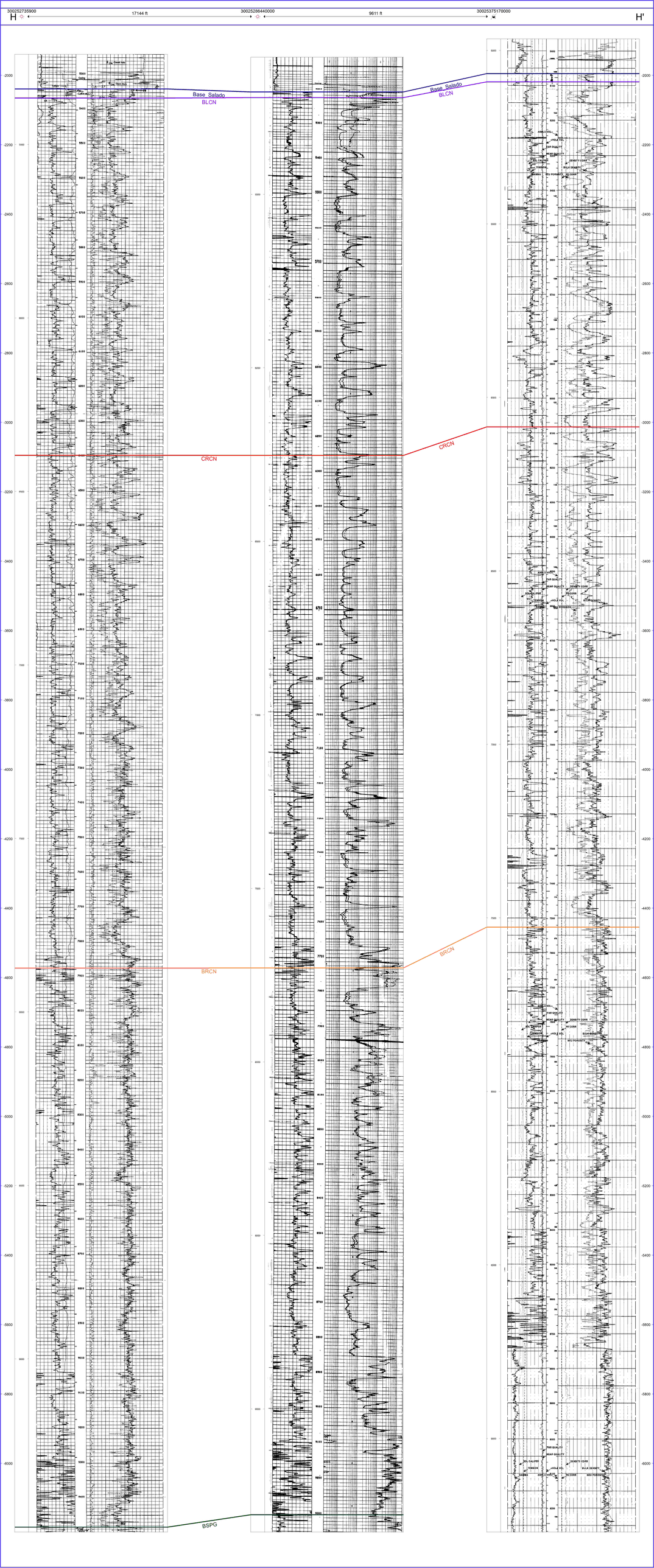
Appendix A-4

Structural G-G'


30025434580
G
3173 ft
JAVELINA FED 4 SWD #1
5798 ft
30025286440000
9611 ft
30025375170000
G'
Base Salado
BLCN
CRCN
BRCN
BLCN = Top Bell Canyon
CRCN = Top Cherry Canyon
BRCN = Top Brush Canyon
BSPG = Top Bone Springs

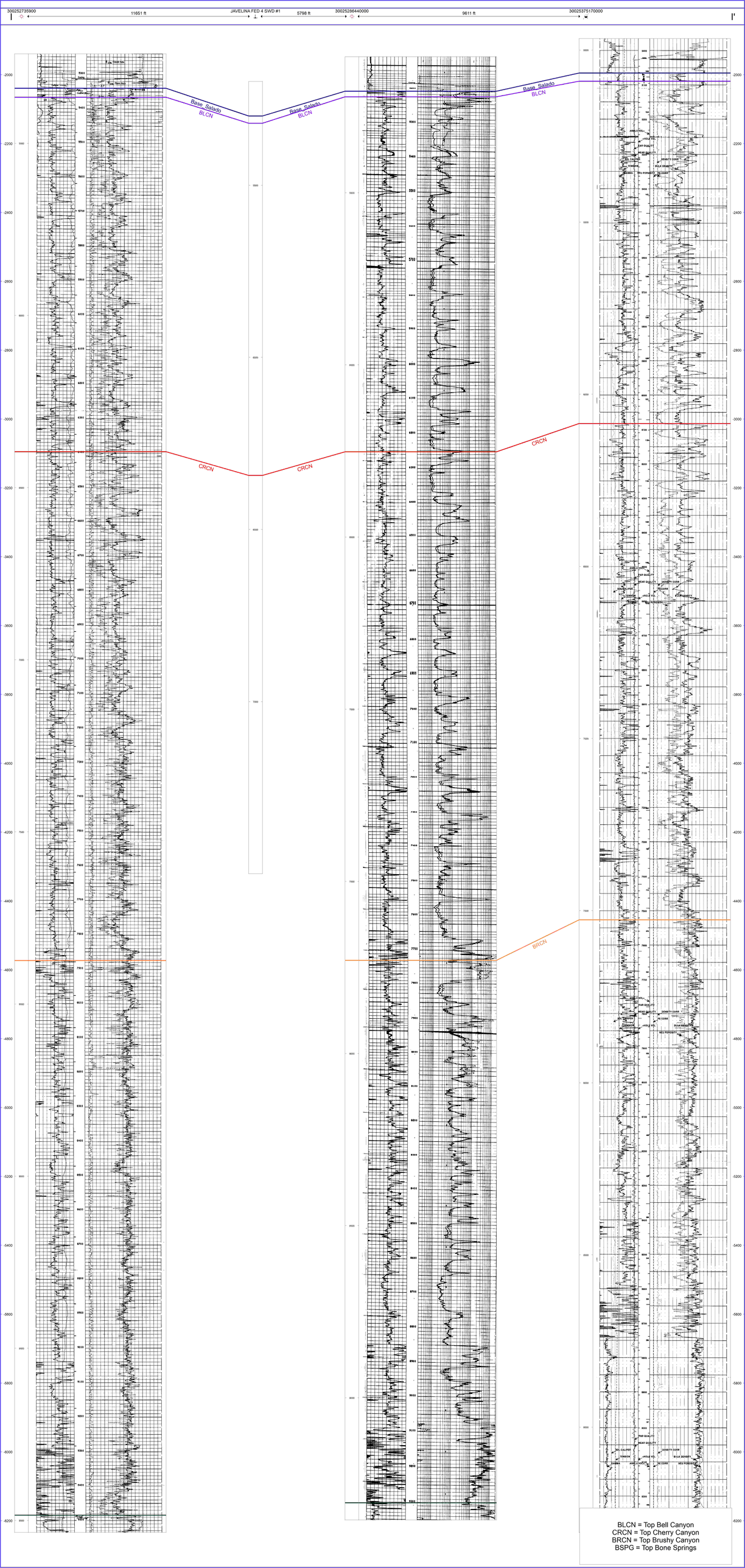
Appendix A-5

Structural H-H'


30025273590 0
H
17144 ft
30025286440000
9611 ft
30025375170000
H'
Base Salado
BLCN
CRCN
BRCN
BSPG
Base Salado
BLCN
CRCN
BRCN

Appendix A-6

Structural I-I'


30025273590
11651 ft
JAVELINA FED 4 SWD #1
5798 ft
30025286440000
9611 ft
30025375170000
Base Salado
BLCN
CRCN
BRCN
BLCN = Top Bell Canyon
CRCN = Top Cherry Canyon
BRCN = Top Brushy Canyon
BSPG = Top Bone Springs

Appendix B

Reservoir Performance Modeling

Southeast Lea County
5 DMG SWDs east of Jal New Mexico

TASP Group, June 9, 2025

Dave Childers, Sr. Reservoir Engineer

5 YEARS

WTTR LISTED NYSE

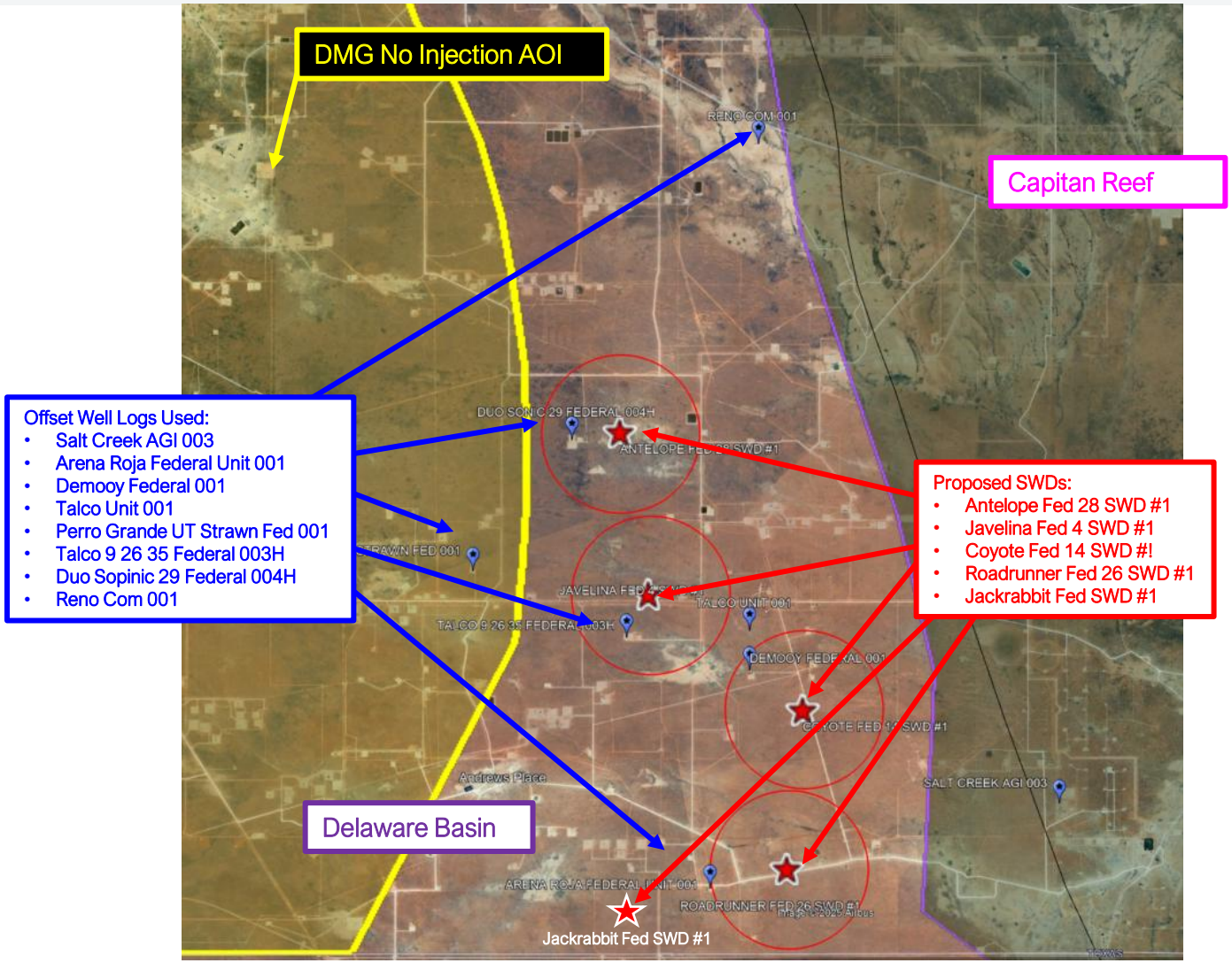
Scope of Work

- Determine:
  - Reservoir and geomechanical properties to approximate reservoir and wellbore hydraulics.
  - Analyze confining layers and estimate fracture gradients.
  - Estimate operational pressure gradients based on maximum injection rates and SWD life.
- Proposed SWDs:
  - Antelope Fed 28 SWD #1
  - Javelina Fed 4 SWD #1
  - Coyote 14 SWD #1
  - Roadrunner Fed 26 SWD #1
  - Jackrabbit Fed SWD #1

SELECT

Locations & Offset Logs

- Review viability of SWD operations based on disposal injection rates.
- DMG Formation Injection Targets
  - Bell Canyon
  - Cherry Canyon
- Confining Layers
  - Lamar (upper interval)
  - Brushy Canyon (lower interval)



SELECT

Injection Interval

Well Name	Target Interval	Top of Interval Approximated (ft)	Gross Injection Zone Thickness (ft)
Antelope Fed 28 SWD #1	Bell Canyon	5,250’	2,500’
	Cherry Canyon	6,200’	
	Brushy Canyon	7,750’	
Javelina Fed 4 SWD #1	Bell Canyon	5,350’	2,430’
	Cherry Canyon	6,450’	
	Brushy Canyon	7,780’	
Coyote Fed 14 SWD #1	Bell Canyon	5,200’	2,350’
	Cherry Canyon	6,250’	
	Brushy Canyon	7,550’	
Roadrunner Fed 26 SWD #1	Bell Canyon	5,275’	2,475’
	Cherry Canyon	6,300’	
	Brushy Canyon	7,750’	
Jackrabbit Fed SWD #1	Bell Canyon	5,250'	2,450’
	Cherry Canyon	6,350'	
	Brushy Canyon	7,700'	

SELECT

Offset Wells used to Estimate Reservoir/Geomechanical Properties

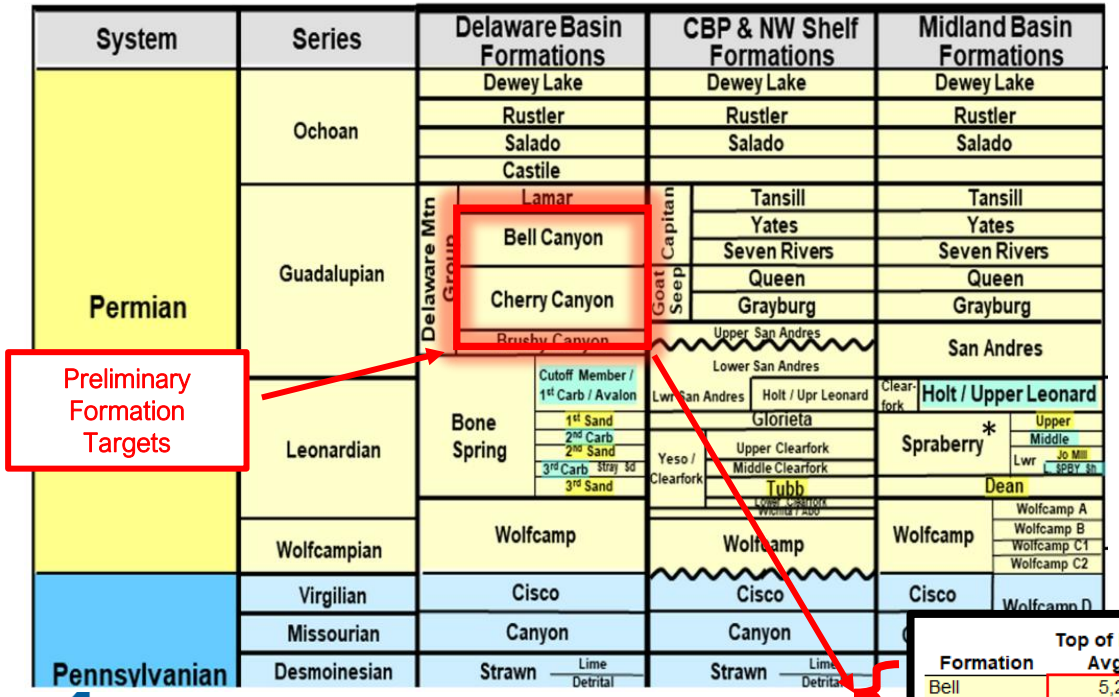
							Logs Used to Ascertain Reservoir and Geomechanical Properties					
							Porosity	Rock Density	Water or Hydrocarbon bearing Layers	Lithology	Lithology	Geomechanical Properties
API	Well Name	Lat.	Long.	Interval of Interest	Top of Interval (feet	Thickness	Neutron	Density	Resistivity	Photoelectric	Gamma Ray	Sonic DT
300255186500	Salt Creek AGI 003	32° 1'40.67"N	103°16'39.73"W	Saldo	1900		Yes	Yes	Yes	Yes	Yes	Yes
				Bell Canyon	5300	1900						
				Cherry Canyon	6200							
				Brushy Canyon (Approximation)	7200							
300253725700	Arena Roja Federal Unit 001	32° 0'44.66"N	103°21'11.39"W	Salt	4876		No	Yes	No	Yes	No	No
				Bell Canyon	5156	2494						
				Cherry Canyon (Approximation	6350							
				Brushy Canyon (Approximation)	7650							
300252253100	Demooy Federal 001	32° 3'8.46"N	103°20'40.96"W	Salado	1900		No	No	No	No	Yes	Yes
				Bell Canyon	5250	2375						
				Cherry Canyon (Approximation	6250							
				Brushy Canyon (Approximation)	7625							
300252674700	Talco Unit 001	32° 3'34.62"N	103°20'41.02"W	Saldo	1900		No	No	Yes	No	Yes	Yes
				Bell Canyon	5250	2400						
				Cherry Canyon	6250							
				Brushy Canyon (Approximation)	7650							
300252735900	Perro Grande UT Strawn Fed 001	32° 4'13.84"N	103°24'15.85"W	Saldo	1900		No	No	Yes	No	Yes	No
				Bell Canyon	5350	2525						
				Cherry Canyon	6550							
				Brushy Canyon (Approximation)	7875							
300254345800	Talco 9 26 35 Federal 003H	32° 3'30.11"N	103°22'16.54"W	Lamar	5332		Yes	Yes	Yes	Yes	Yes	No
				Bell Canyon	5360	2410						
				Cherry Canyon	6300							
				Brushy Canyon (Approximation)	7770							
300254309000	Duo Sopnic 29 Federal 004H	32° 5'40.23"N	103°22'59.30"W	Lamar	5239		No	No	No	No	No	No
				Bell Canyon	5269	2558						
				Cherry Canyon	6329							
				Brushy Canyon (Approximation)	7827							
300252686700	Reno Com 001	32° 8'55.60"N	103°20'34.62"W	Saldo	1900		Yes	Yes	Yes	Yes	No	Yes
				Bell Canyon	5300	2025						
				Cherry Canyon	6180							
				Brushy Canyon (Approximation)	7325							

SELECT

Isopach Thickness: Top of Bell Canyon - Bottom of Cherry Canyon

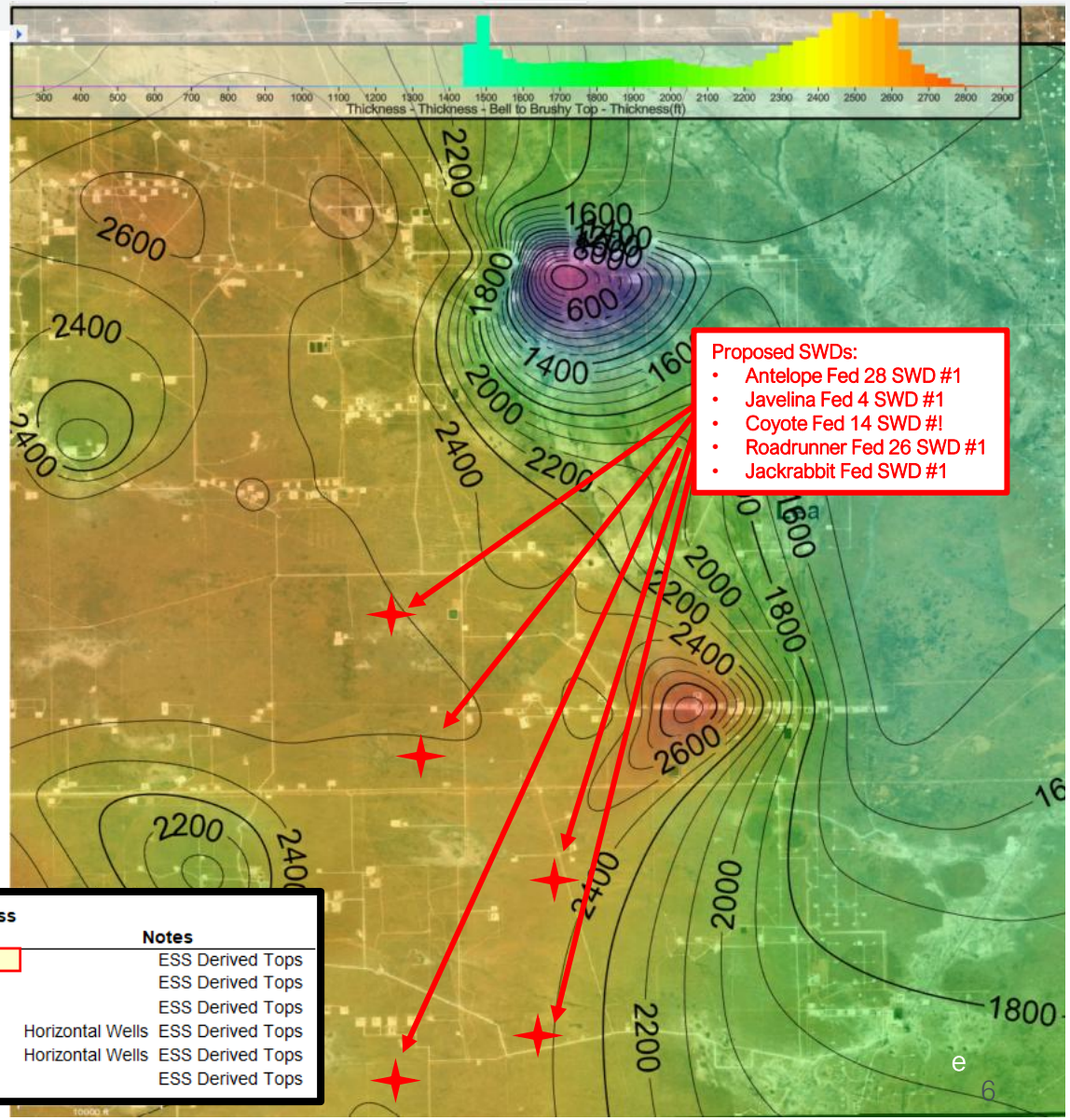
- Zones of interest (ZOI) are Bell Canyon and Cherry Canyon formations.
  - Average depth, thickness, and injection interval is provided in the table below.

Summary of lower Permian stratigraphic nomenclature, Permian Basin region



Preliminary Formation Targets

Formation	Top of Interval Avg (ft)	Target Thickness Avg (ft)	Notes	
Bell	5,250	2,500		ESS Derived Tops
Cherry	6,250			ESS Derived Tops
Brushy	7,750			ESS Derived Tops
Bone Springs	9,250		Horizontal Wells	ESS Derived Tops
Wolfcamp	12,375		Horizontal Wells	ESS Derived Tops
Strawn	13,500			ESS Derived Tops



SELECT

Findings

- Fracture Gradients:
  - Fracture Models used to estimate fracture limits *(Bourgoyne, 1986)*.
  - Triangular distribution with cumulative distribution function was used to estimate the most probable fracture gradient.
    - Deviation from the most likely facture gradient will result in lower probable fracture gradient outcomes.
  - Pressure gradients from injection operations are less than upper and lower confining layer fracture gradients indicating injectate confinement.

Near Wellbore Hydraulic Model:
- Coupling of reservoir and wellbore hydraulic models to estimate the pressure response as a function of injection rate *(Spivey et.al, 2013, and Lee et.al, 2003).*

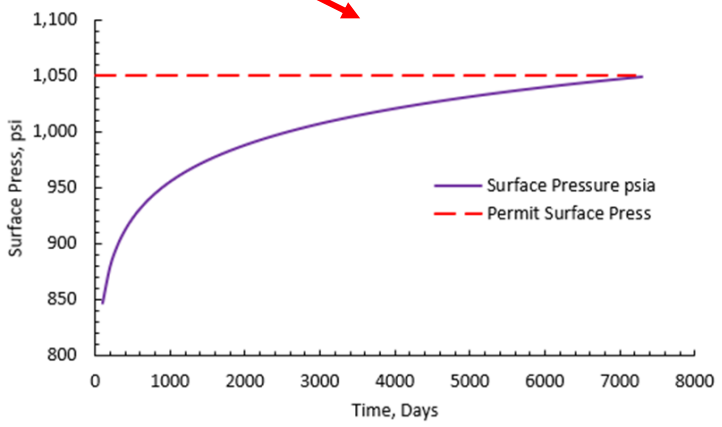
Fracture Mechanic Models	Upper Layer psi/ft	Lower Layer psi/ft
Hubbert and Willis Correlation	0.639	0.646
Mathews and Kelly Correlation	0.823	0.866
Pennebaker Correlation	0.814	0.871
Eaton Correlation	0.637	0.675

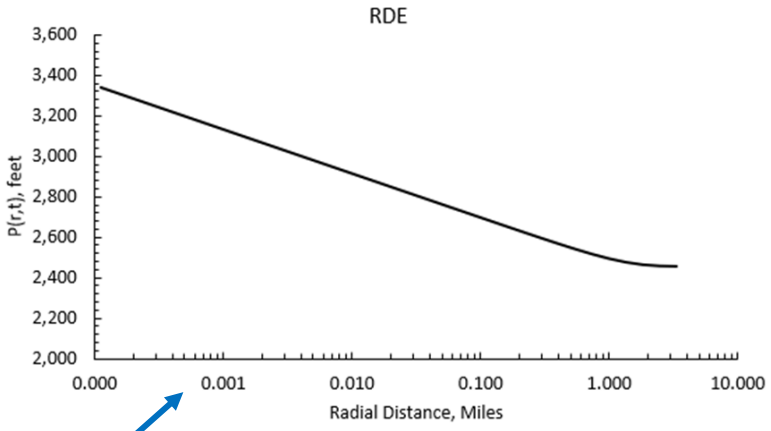
Offset Well Logs with Triangular Distribution	Fracture Gradient psi/ft min	mean	max
Upper Confining Layer	0.637	0.726	0.814
Lower Confining Layer	0.646	0.771	0.871

Most likely fracture gradients

Near Wellbore Model		
NMOCD Surface Pressure Gradient Constraint =	0.2	psi/ft

Model		
Rate =	20,000	BPD
Pore Pressure = Initial Pressure ~	2,455	psi/ft
Well Life =	10	yrs.
Injection Interval =	1,250	feet
Likely Porosity =	21.8%	dim
Minimum effective permeability k_{eff} >=	19.2	md
Pressure Gradient due to Injection Ops. =	0.64	psi/ft
Flow Capacity (kh) =	24,000	md-ft
Rate =	20,000	BPD
Pore Pressure = Initial Pressure ~	2,455	psi/ft
Well Life =	20	yrs.
Injection Interval =	1,250	feet
Likely Porosity =	21.8%	dim
Minimum effective permeability k_{eff} >=	19.93	md
Pressure Gradient due to Injection Ops. =	0.64	psi/ft
Flow Capacity (kh) =	24,913	md-ft





Radial Diffusion Model:
- Estimate of pressure diffusion with respect to SWD well life *(Spivey et.al, 2013, and Lee et.al, 2003).*

SELECT

Conclusions

- Injection pressure into the Bell/Cherry Canyon is below the fracture pressures of the upper and lower confining zones (Injectate Confinement).
- Radial Diffusion Model shows that initial pressure of 2,455 psi will be approached at approximately two-miles away from the wellbore with an injection rate of 20k bwpd for 20-years.
- Pressure Gradient (PG) near wellbore is approximately 0.64 psi/ft or 12.3 ppg EMW
  - Near Wellbore PG levels are around 0.64 psi/ft for 10 or 20-year time period.
- Simulations presented are for the least amount of flow capacity (kh) needed for disposal. We expect that the kh could be significantly higher due to additional height available and having higher reservoir porosity and permeability contrasts.
  - Step rate test will quantify the actual fracture gradient of the injection zone followed by a pressure fall off test to determine the actual reservoir properties.

SELECT

References

- Applied Drilling Engineering by Bourgoyne:
  - Bourgoyne, A. T., Millheim, K. K., Chenevert, M. E., & Young, F. S. (1986). Applied drilling engineering. Society of Petroleum Engineers.
- Applied Well Test Interpretation by Spivey and Lee
  - Spivey, J. P., & Lee, W. J. (2013). Applied well test interpretation. Society of Petroleum Engineers.
- Pressure Transient Analysis by Lee, Rollins, and Spivey (SPE Textbook Volume 9)
  - Lee, W. J., Rollins, J. B., & Spivey, J. P. (2003). Pressure transient testing (Vol. 9). Society of Petroleum Engineers.

SELECT