

From: [Sarah Hudson](#)
To: [Kourtney Romine](#)
Cc: [James Thum](#); kristina.fugate@ag.idaho.gov; [External - Joy M. Vega](#); sjb@msbtlaw.com; cdm@msbtlaw.com; james@idunionlaw.com; molly@idunionlaw.com; deastman@woodgrain.com; [Michael Christian](#)
Subject: Exhibit Disclosure
Date: Friday, October 02, 2020 04:50:52 PM
Attachments: [SROG Exhibit Disclosure for Continued Hearing.pdf](#)
[EX. SR 12 PowerPoint Presentation.pptx](#)

Attached please find the SROG Exhibit Disclosure for Continued Hearing from Mike Christian. Also attached is EX. SR 12 which is a PowerPoint. If you have any questions, please feel free to contact us.

Thank you,
Sarah Hudson
Legal Assistant

101 S. Capitol Blvd., Suite 930
Boise, ID 83702 p. 208. 473.7009 | f. 208.473.7661 | e. sarah@smithmalek.com

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For additional information about Smith + Malek, PLLC, including a list of attorneys, please see our website at www.smithmalek.com <<http://www.smithmalek.com>>.**

BEFORE THE OIL AND GAS CONSERVATION COMMISSION STATE OF IDAHO

**In the Matter of Application of Snake)
River Oil and Gas, LLC, for an order)
establishing a spacing unit for Fallon #1-10)
well consisting of the E ½ of the SE ¼ of)
Section 9, SW ¼ of Section 10, N ½ of the)
N ½ of the NW ¼ of Section 15, and the N)
½ of the NE ¼ of the NE ¼ of Section 16,)
Township 8 North, Range 5 West, Boise)
Meridian, Payette County, Idaho)
)
SNAKE RIVER OIL AND GAS, LLC,)
Applicant.)**

Docket No. CC-2020-OGR-01-001

APPLICANT'S DISCLOSURE OF EXHIBITS FOR CONTINUED HEARING

Applicant Snake River Oil and Gas, LLC discloses the following exhibit for the continued hearing of this matter on October 6, 2020:

1. Exhibits: Attached are copies of the following exhibits:
 - a. SR12: PowerPoint presentation

Dated this 2nd day of October, 2020.

SMITH+MALEK PLLC



Michael Christian
Attorney for Applicant

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 2nd day of October, 2020, I caused to be served a true and correct copy of the foregoing by the method indicated below, and addressed as follows:

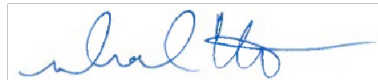
<p>James Thum Idaho Department of Lands P.O. Box 83720 Boise, Idaho 83720-0050</p> <p>Kristina Fugate Deputy Attorney General P.O. Box 83720 Boise, ID 83720</p> <p>Joy Vega Deputy Attorney General P.O. Box 83720 Boise, ID 83720</p>	<p><input type="checkbox"/> U.S. Mail <input type="checkbox"/> Certified Mail, return receipt requested <input type="checkbox"/> Overnight Delivery <input type="checkbox"/> Messenger Delivery <input checked="" type="checkbox"/> Email: jthum@idl.idaho.gov</p> <p><input type="checkbox"/> U.S. Mail <input type="checkbox"/> Certified Mail, return receipt requested <input type="checkbox"/> Overnight Delivery <input type="checkbox"/> Messenger Delivery <input checked="" type="checkbox"/> Email: kristina.fugate@ag.idaho.gov</p> <p><input type="checkbox"/> U.S. Mail <input type="checkbox"/> Certified Mail, return receipt requested <input type="checkbox"/> Overnight Delivery <input type="checkbox"/> Messenger Delivery <input checked="" type="checkbox"/> Email: joy.vega@ag.idaho.gov</p>
<p>Kourtney Romine Idaho Department of Lands P.O. Box 83720 Boise, Idaho 83720-0050</p> <p>Stephanie Bonney Cherise McClain MSBT Law, Chtd. Attorneys for City of Fruitland 7699 W. Riverside Dr. Boise, ID 83714</p>	<p><input type="checkbox"/> U.S. Mail <input type="checkbox"/> Certified Mail, return receipt requested <input type="checkbox"/> Overnight Delivery <input type="checkbox"/> Messenger Delivery <input checked="" type="checkbox"/> Email: kromine@idl.idaho.gov</p> <p><input type="checkbox"/> U.S. Mail <input type="checkbox"/> Certified Mail, return receipt requested <input type="checkbox"/> Overnight Delivery <input type="checkbox"/> Messenger Delivery <input checked="" type="checkbox"/> Email: sjb@msbtlaw.com, cdm@msbtlaw.com</p>

James Piotrowski
1020 W. Main, Suite 400
P.O. Box 2864
Boise, ID 83702

Woodgrain Millwork, Inc.
Kelly Dame
c/o David Eastman

U.S. Mail
 Certified Mail, return receipt requested
 Overnight Delivery
 Messenger Delivery
 Email: james@idunionlaw.com,
molly@idunionlaw.com

U.S. Mail
 Certified Mail, return receipt requested
 Overnight Delivery
 Messenger Delivery
 Email: deastman@woodgrain.com



Michael Christian

Explanation for correction to error on structure map





This PowerPoint is submitted in response to Paragraphs 7-9 of Section D of the Administrator's Conclusions of Law in the September 14, 2020, Continuance and Notice of Continued Hearing. An error was discovered in the structure map submitted previously as Exhibit SR-1 and Base B Sand map used to calculate the isopach map. The error was made converting the seismic times to depth. The seismic data clearly show where the top of the B Sand intersects the base of the B Sand. It was indicated on the submitted structure and isopach maps in Exhibit SR-1 with a thin dotted line and labeled "B Sand Net Pay isopach zero line on SE is where -1289' intersects Base of B Sand". Location is critical because the intersection line is the furthest south the B Sand can be drained by the Fallon #1-10 if water drive. It occurs well north of the south boundary and well west of the east boundary of the 300-acre unit.

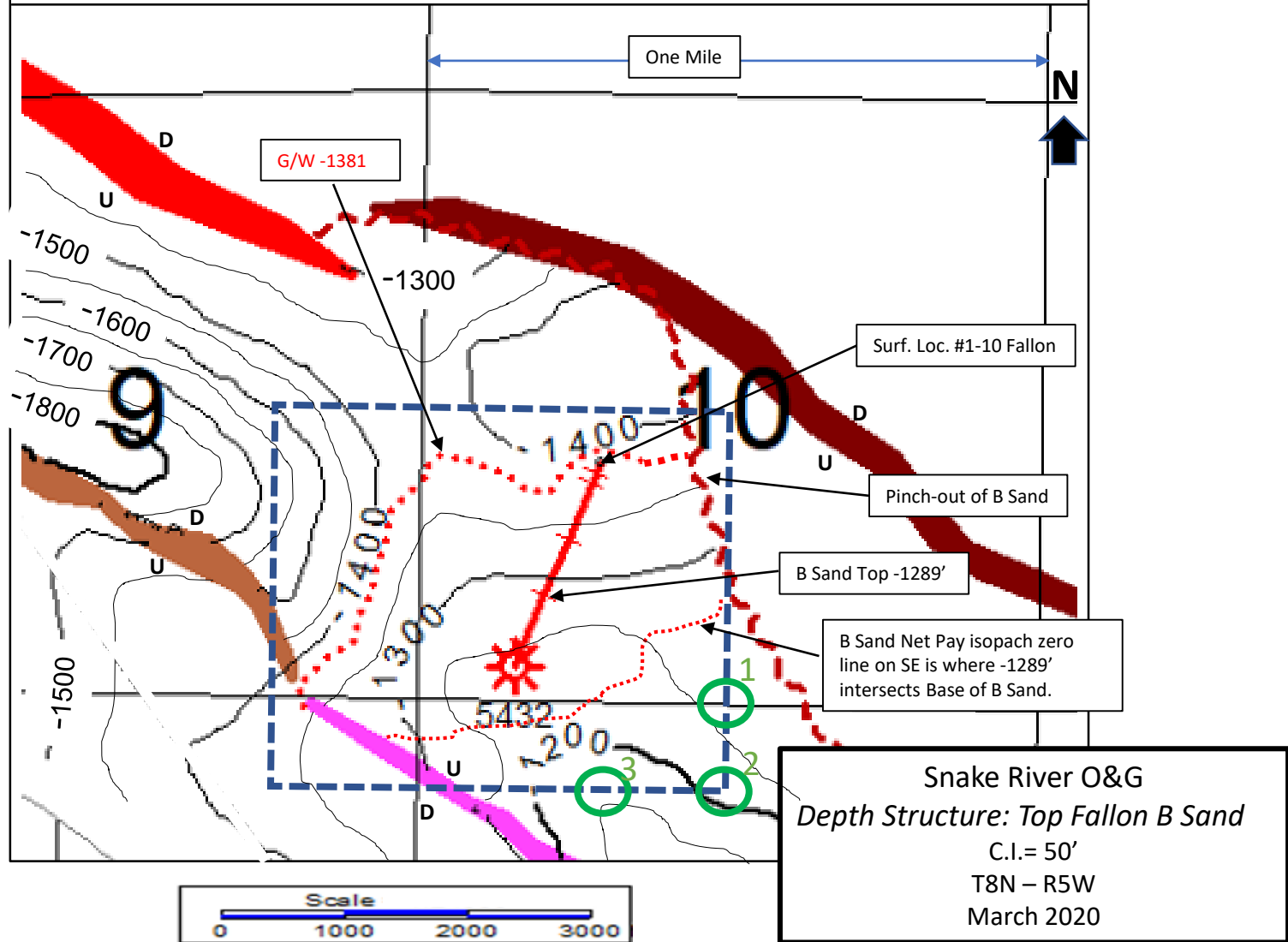
The error occurred because, in converting from seismic time to subsea depth for the Top B Sand and Base B Sand maps, I used the time-depth chart from the Barlow #1-14 instead of the one from the Fallon #1-10. The difference, and how it affects the structure and isopach maps, are shown in this PowerPoint. First, though, Slides 2-4 illustrate the error. Then, slides 5-9 demonstrate how that critical intersection line was constructed. Slide 10 compares the two time-depth charts and the amount of difference. Slide 11 demonstrates how the time-depth chart for the Fallon 1-10 was constructed. The error is completely in the construction of the maps and not the actual location of the intersection line. Slide 12 is the new Top B Sand depth map, 13 the Base B Sand depth map, and 14 the new isopach map to replace those in Exhibit SR-1.

When it was indicated the structure and isopach maps included in Exhibit SR-1 implied that the Fallon 1-10 would drain south of the unit boundary, I was incredulous, as I knew that the depth of the Top Pay in the B Sand intersected the Base of B Sand well north of the unit boundary. The Fallon 1-10 could not drain south of the boundary if water drive. So, I checked the maps and found that hearing officer was correct and that an error existed in the exhibit. The error is mine in using the incorrect time-depth chart and not double-checking my work. Below, I go through my calculations that demonstrate the error. For the locations of Circles 1-3, go to the maps on slides 3 and 4, which are from the original Exhibit SR-1, and see the green circles.





- Circle 1: B Sand depth=-1260', B Sand Isopach=60' => Base B Sand = -1320'.
- Circle 2: B Sand depth=-1220', B Sand Isopach=110' => Base B Sand = -1330'.
- Circle 3: B Sand depth=-1170', B Sand Isopach=160' => Base B Sand = -1330'.
- Consequently, all three points are deeper than the Top of the B Sand in the Fallon #1-10.
- At this point, I will demonstrate why the intersection line is drawn as it is on the submitted depth and isopach maps in Exhibit SR-1, and why these points are erroneous.

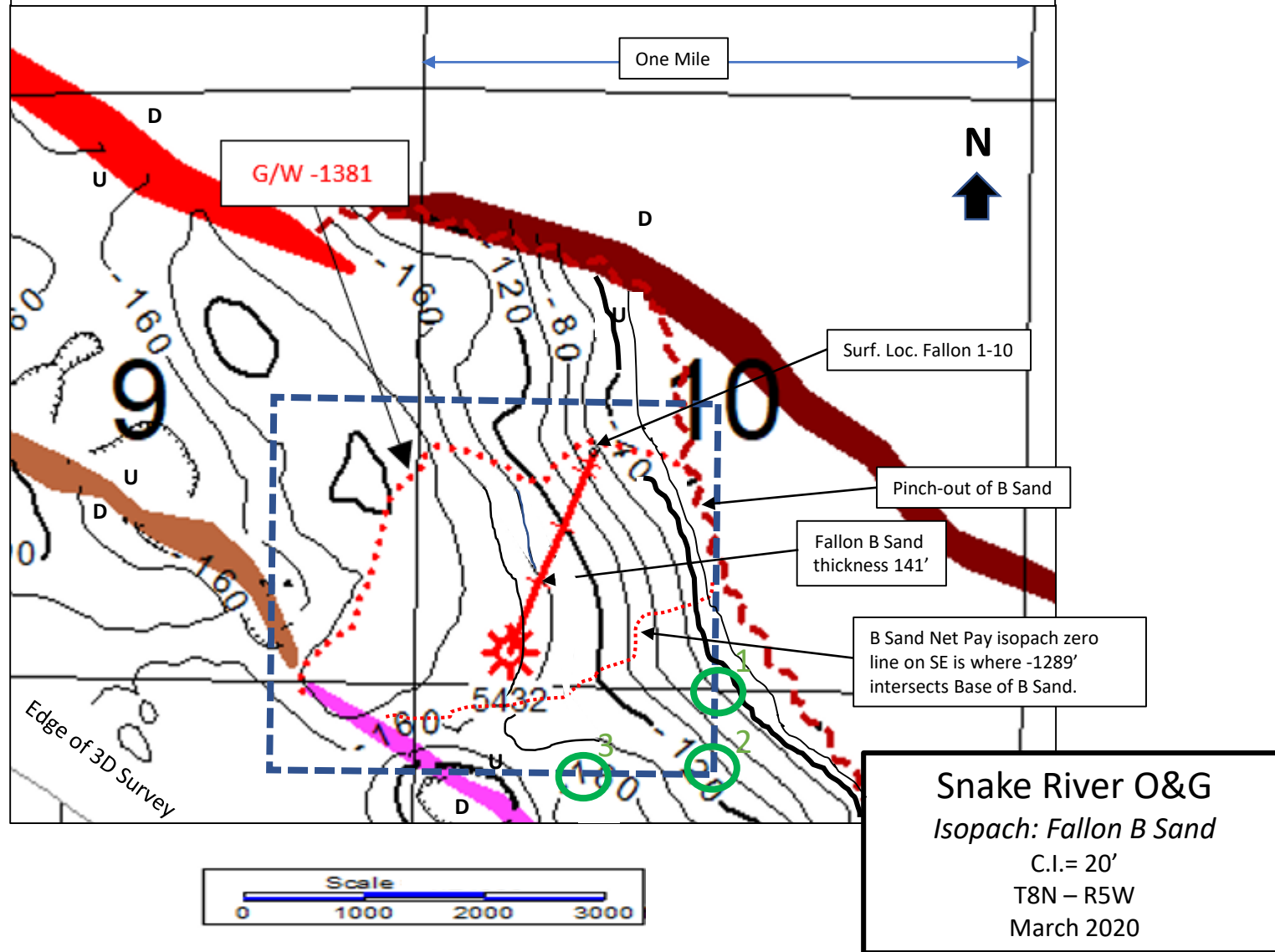
Proposed 300-Acre Unit & Depth Structure Map for Fallon B Sand

- Legend**
-  300-acre Unit
 -  Gas-Water Contact
 -  Sand Pinch-Out
 -  Intersection of Top Pay with Base B Sand



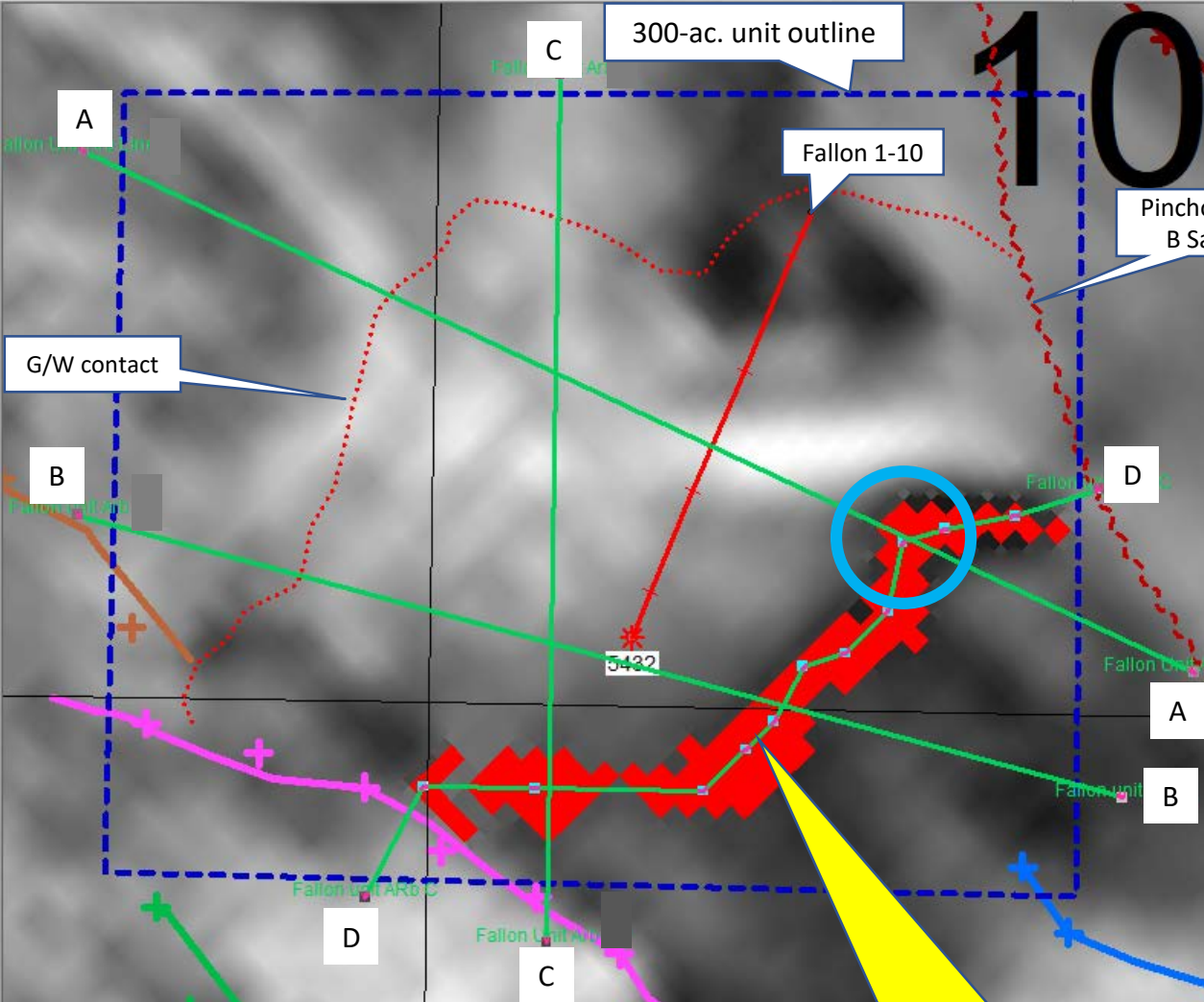
Proposed 300-Acre Unit & Gross Thickness Isopach Map for Fallon B Sand

- Legend**
-  300-acre Unit
 -  Gas-Water Contact
 -  Sand Pinch-Out
 -  Intersection of Top Pay with Base B Sand

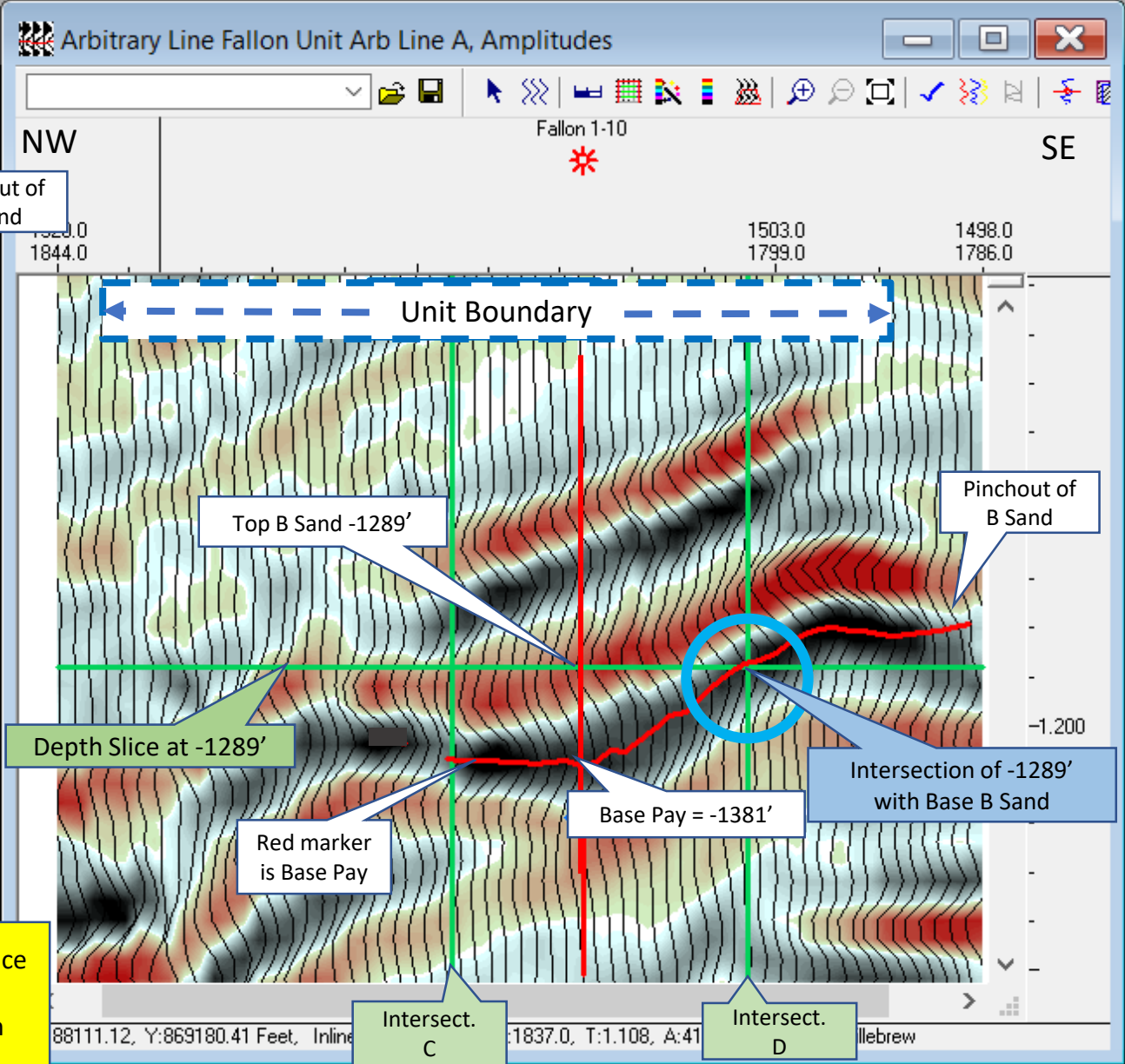


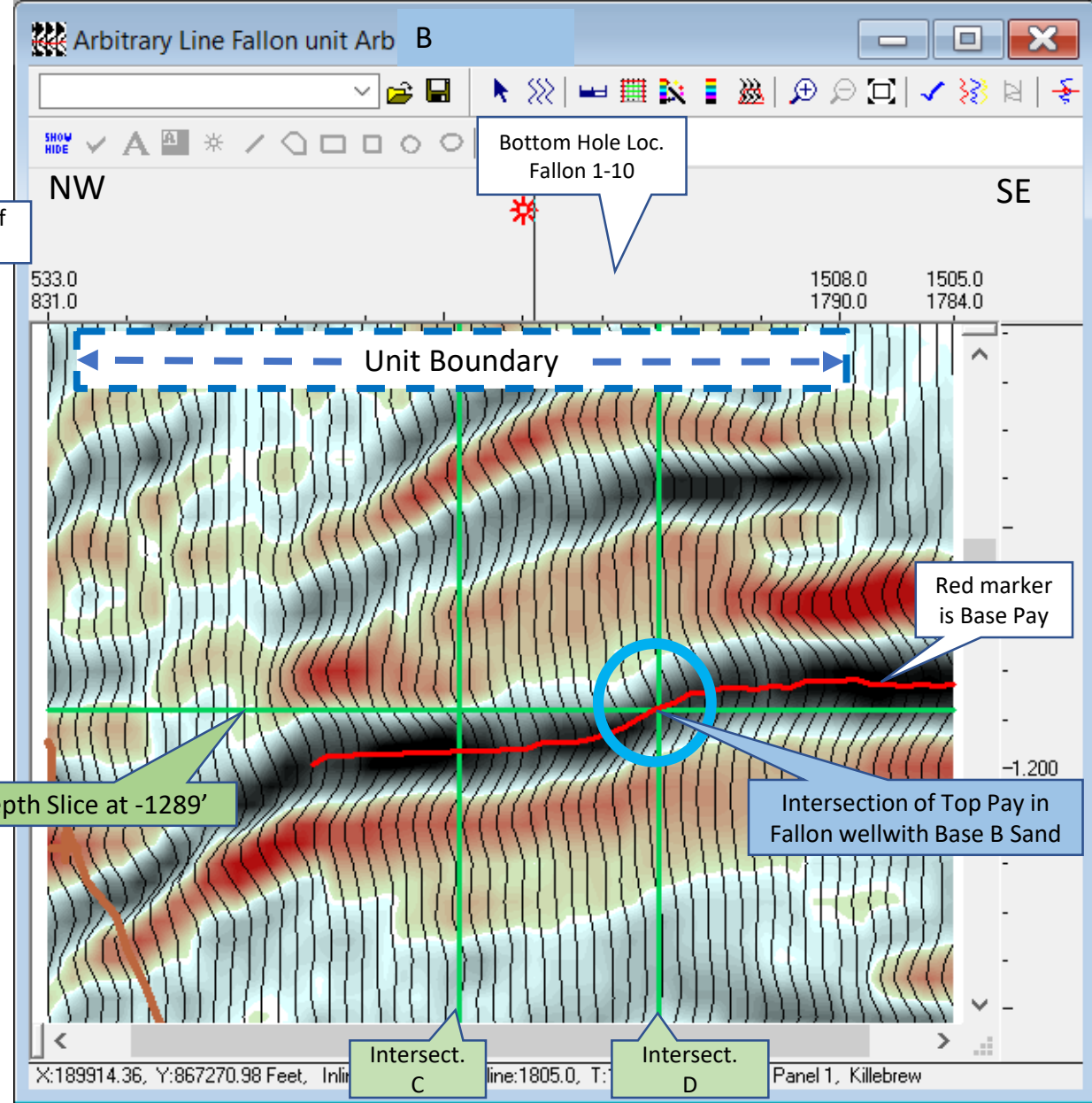
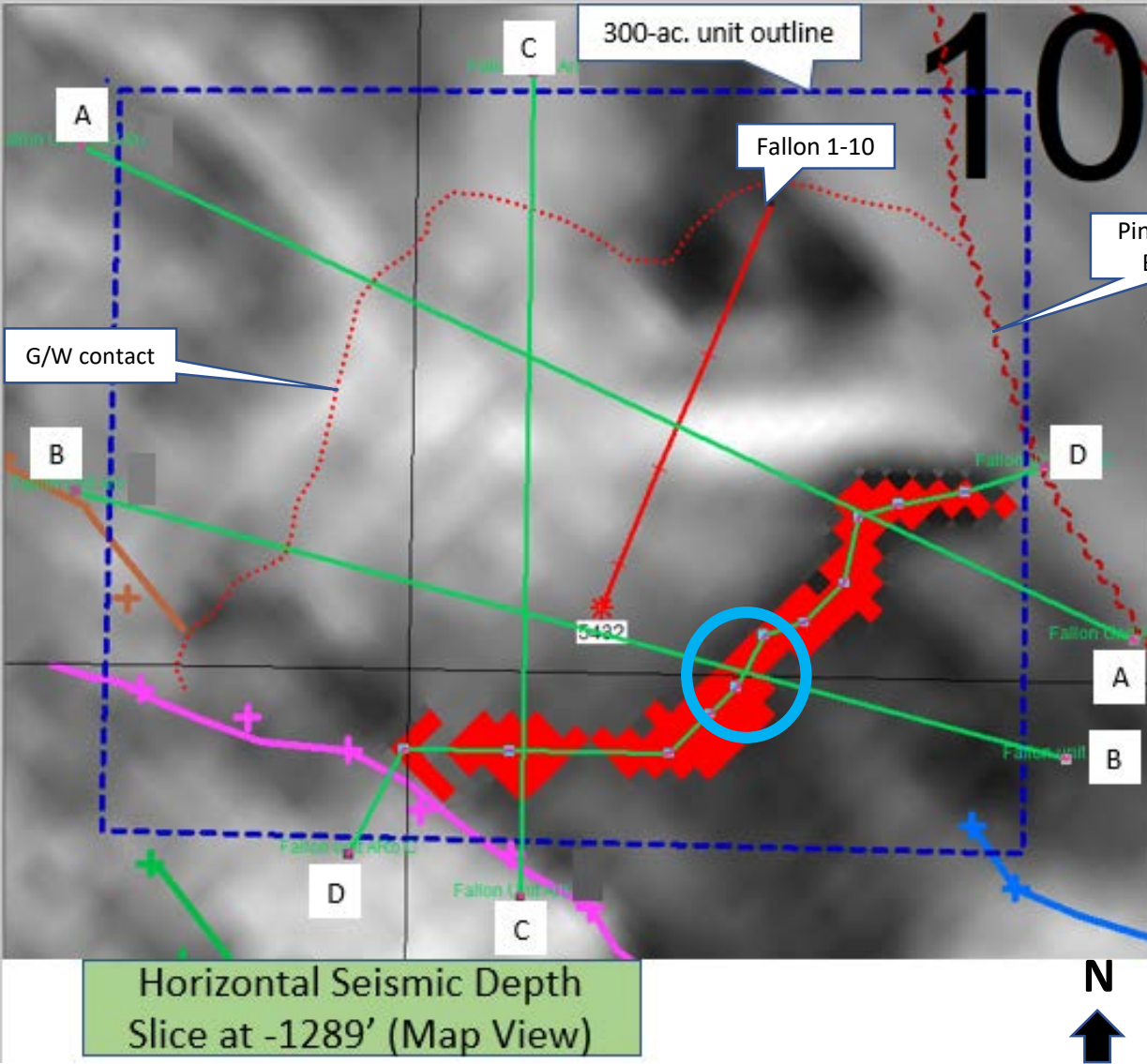
Placement of Intersection Line

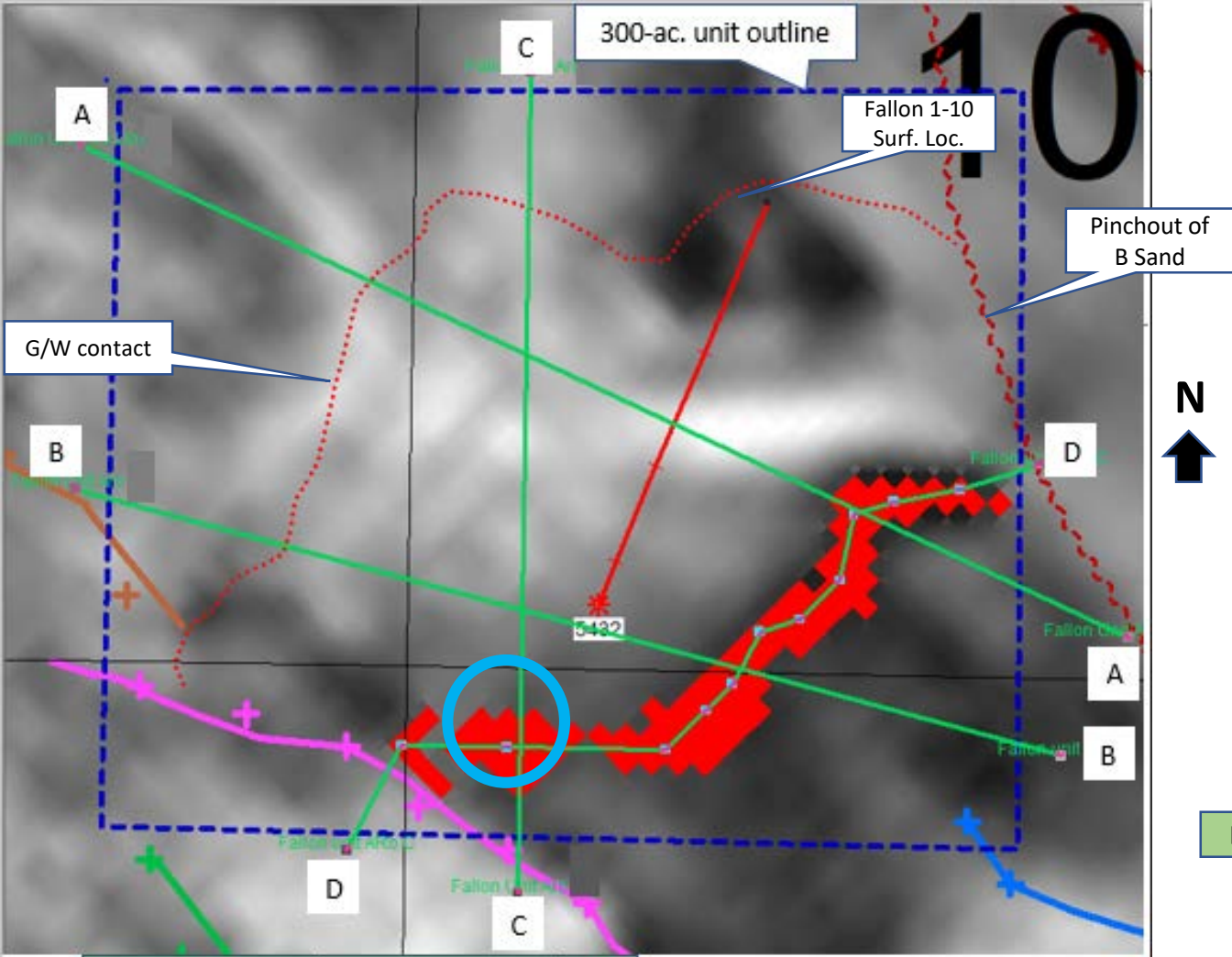
- On the following four slides of three NW-SE lines and one SW-NE line I demonstrate where the depth of the Top of the B Sand intersects the Base of the B Sand. The Top of the B Sand is critical because the Fallon 1-10 cannot drain above that depth if water drive.



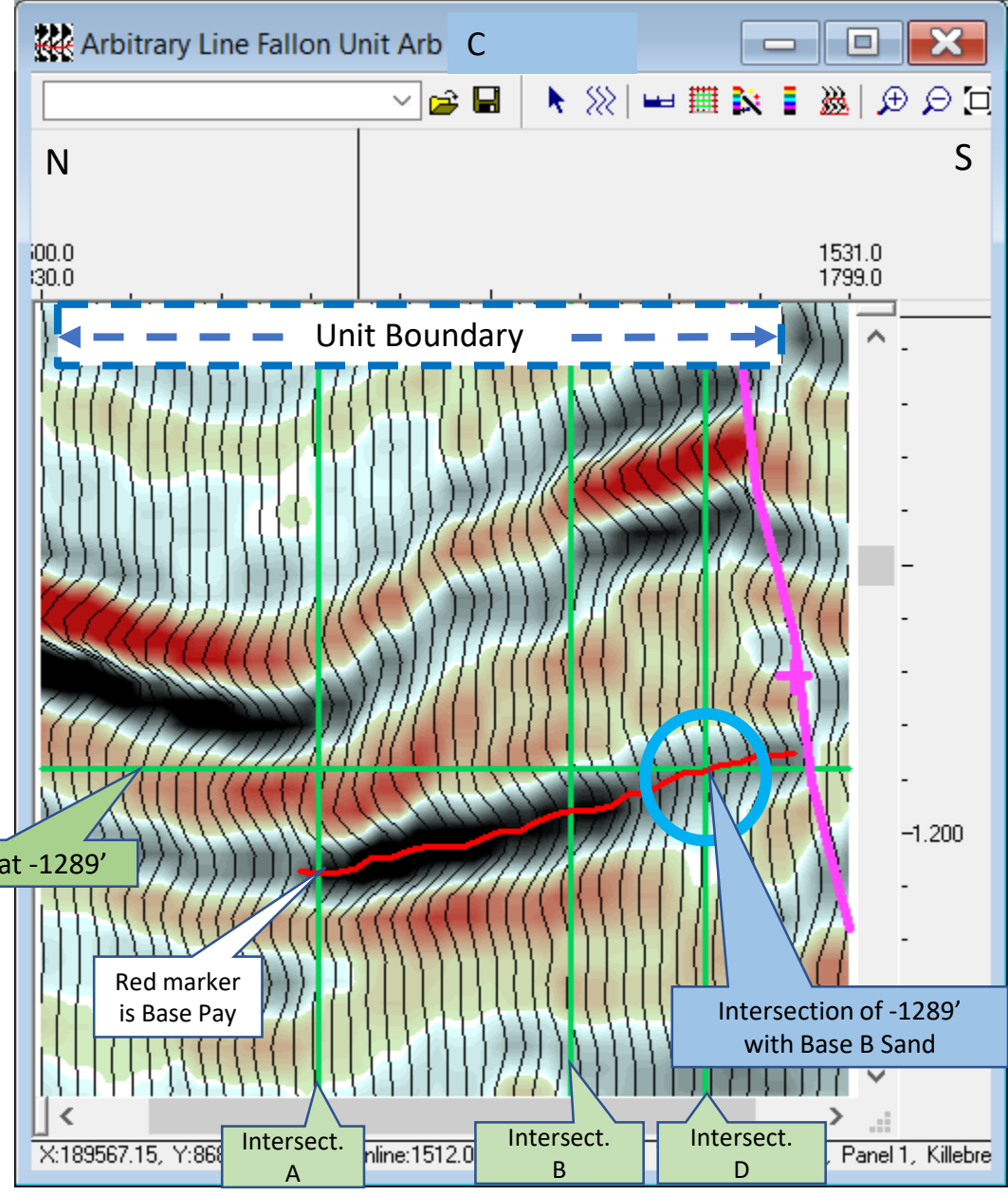
Each red box is where depth slice and Base Pay Sand intersect. Origin of small dotted line on structure and isopach maps.

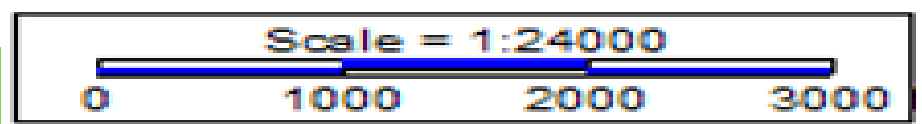
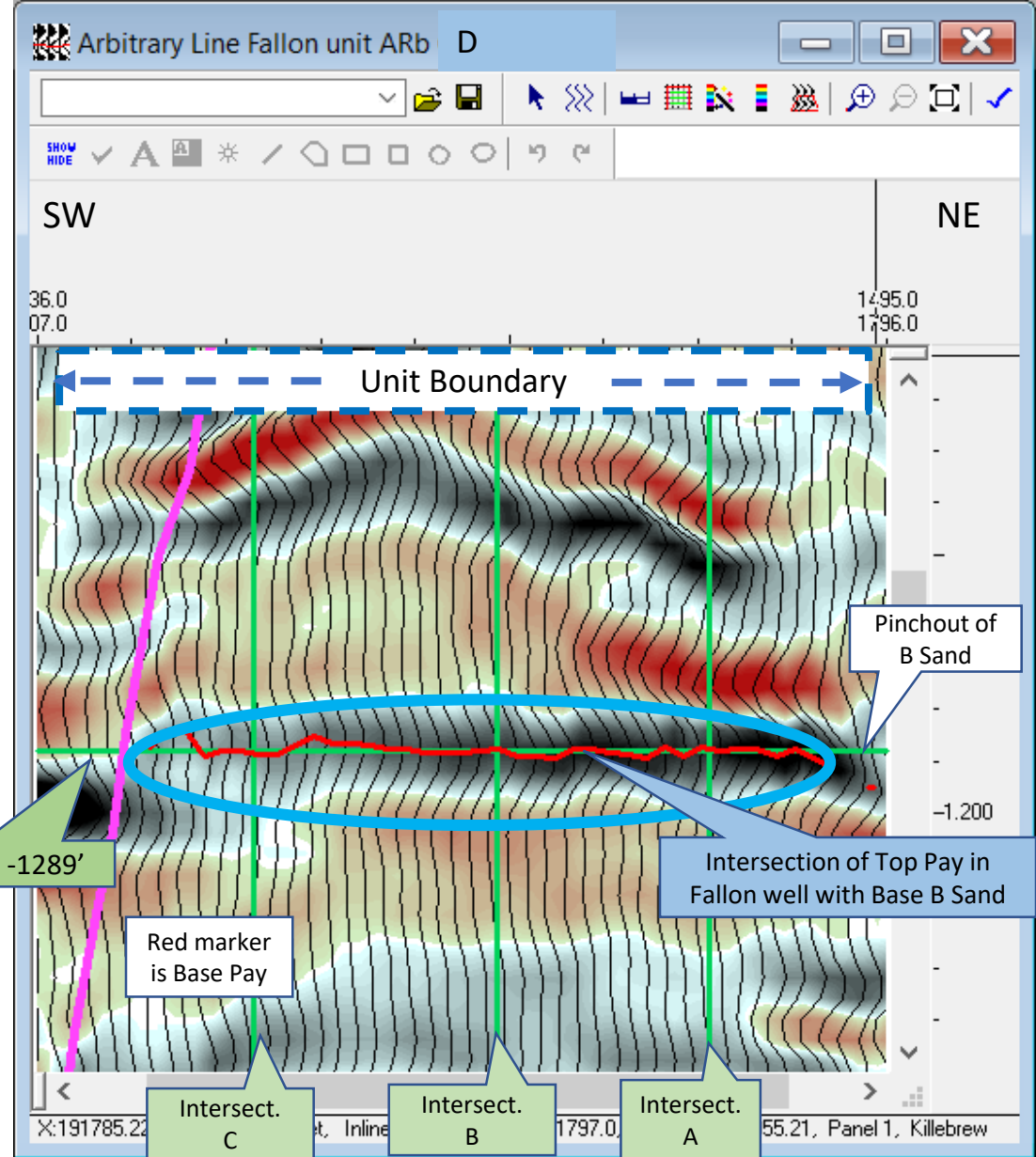
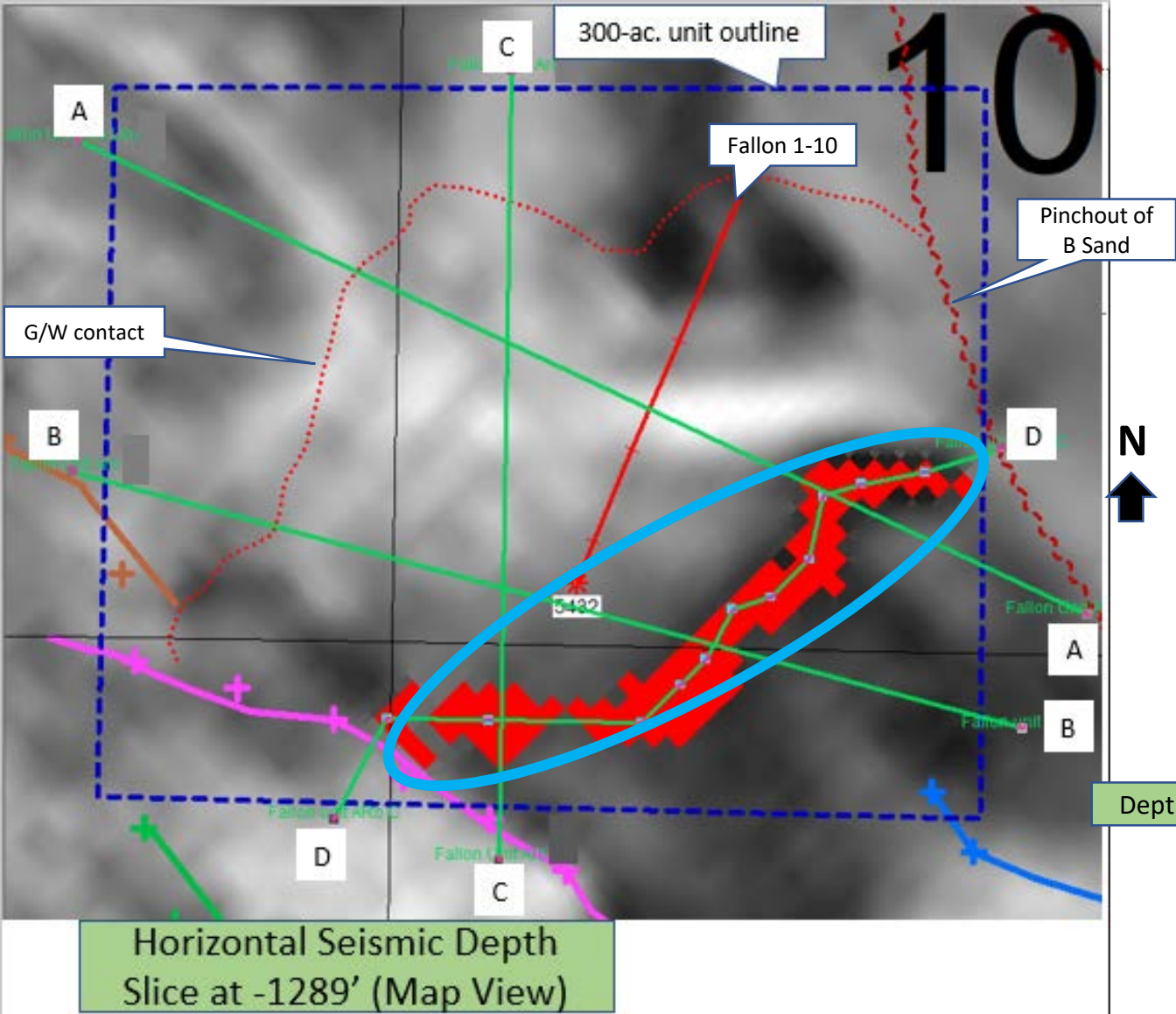






Horizontal Seismic Depth Slice at -1289' (Map View)





Comparison of Time-Depth charts between Barlow 1-14 and Fallon 1-10

Barlow 1-14 Time-Depth Chart

Depth(Feet)	Time
-1050.00	1.11706
-1066.00	1.12129
-1100.00	1.12988
-1150.00	1.14250
-1200.00	1.15509
-1250.00	1.16759
-1300.00	1.18003
-1334.00	1.18837
-1350.00	1.19229
-1400.00	1.20462
-1440.00	1.21445
-1450.00	1.21665
-1500.00	1.22869
-1550.00	1.24073
-1600.00	1.25230
-1733.00	1.28151
-1812.00	1.30007

Fallon 1-10 Time-Depth Chart

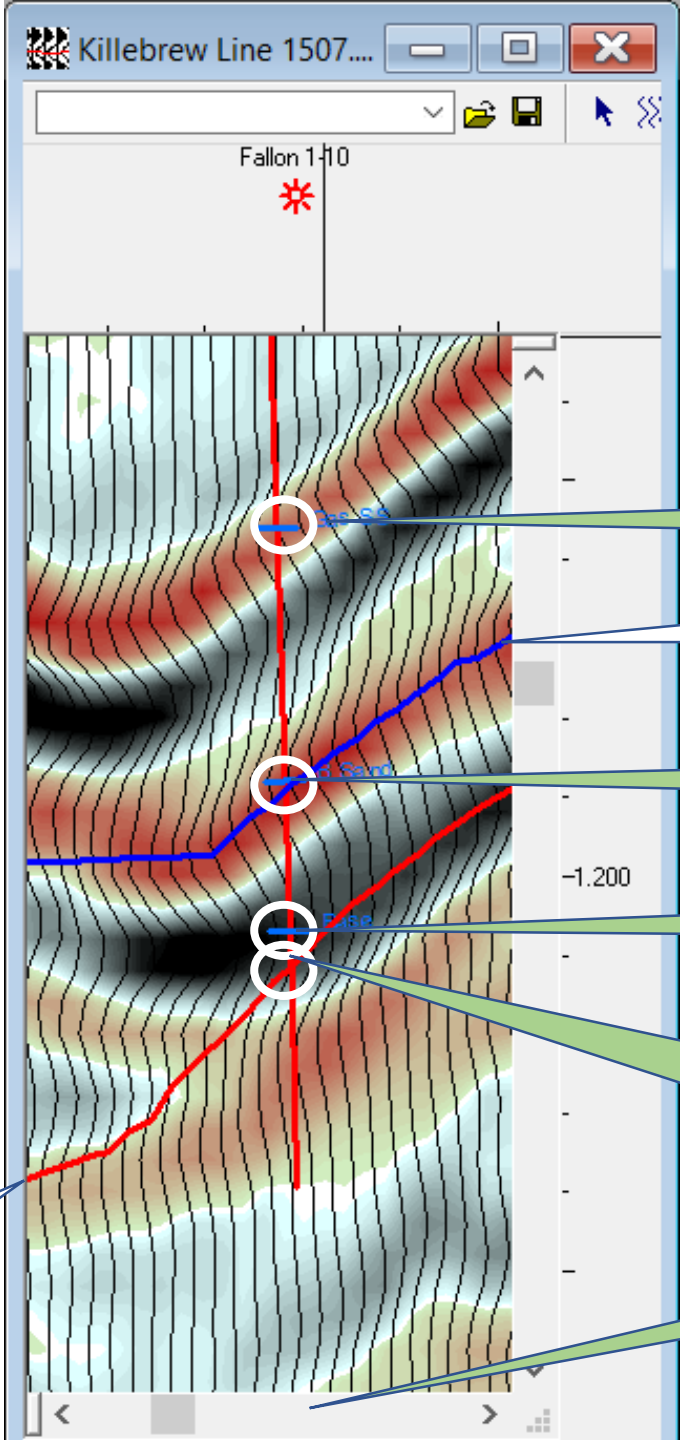
Depth(Feet)	Time
-1042.71	1.12100
-1050.00	1.12272
-1080.84	1.13000
-1100.00	1.13452
-1150.00	1.14632
-1191.00	1.15600
-1200.00	1.15894
-1250.00	1.17527
-1289.00	1.18800
-1300.00	1.19027
-1350.00	1.20060
-1381.00	1.20700
-1400.00	1.21153
-1430.00	1.21869
-1450.00	1.22347
-1500.00	1.23540
-1509.49	1.23766
-1600.00	1.25926
-2520.02	1.47880
-2545.58	1.48490
-2643.00	1.50815

- Compare the differences in time-> depth conversion at the three circles in slides 3 and 4.

Circle 1		Barlow depth	Fallon depth
Top B Sand time	1.167	-1250	-1225
Base B Sand time	1.182	-1308	-1270
	Isopach	58	45
Circle 2			
Top B Sand time	1.157	-1207	-1195
Base B Sand time	1.18	-1300	-1264
		93	69
Circle 3			
Top B Sand time	1.144	-1156	-1140
Base B Sand time	1.184	-1316	-1276
		160	136

- Top of B Sand is slightly higher using Fallon. The thicker the time interval, the more significant the difference in isopach values.

Construction of the time-depth conversion chart for the Fallon 1-10.



A seismic trace veering left (colored red here) means a soft interface, such as a gas sand like the A Sand and the B Sand tops.

A seismic trace veering right (colored black here) means a hard interface, such as a gas/water interface or a basalt top.

Red marker here is Base B Sand

From the points listed below, plus a shallow event, we develop a time-depth chart for the Fallon 1-10 that will be used to convert all seismic times to depth, seen to the right.

A Sand Top = -1191'. It occurs at a seismic time of 1.156 seconds.

Blue marker is Top B Sand

B Sand Top = -1289'. It occurs at a seismic time of 1.188 seconds.

Gas/Water interface = -1381'. It occurs at a seismic time of 1.207 seconds.

B Sand Base = -1430'. Cannot identify the individual reflector here but extrapolation from above and interpolation from below put it at 1.219 seconds.

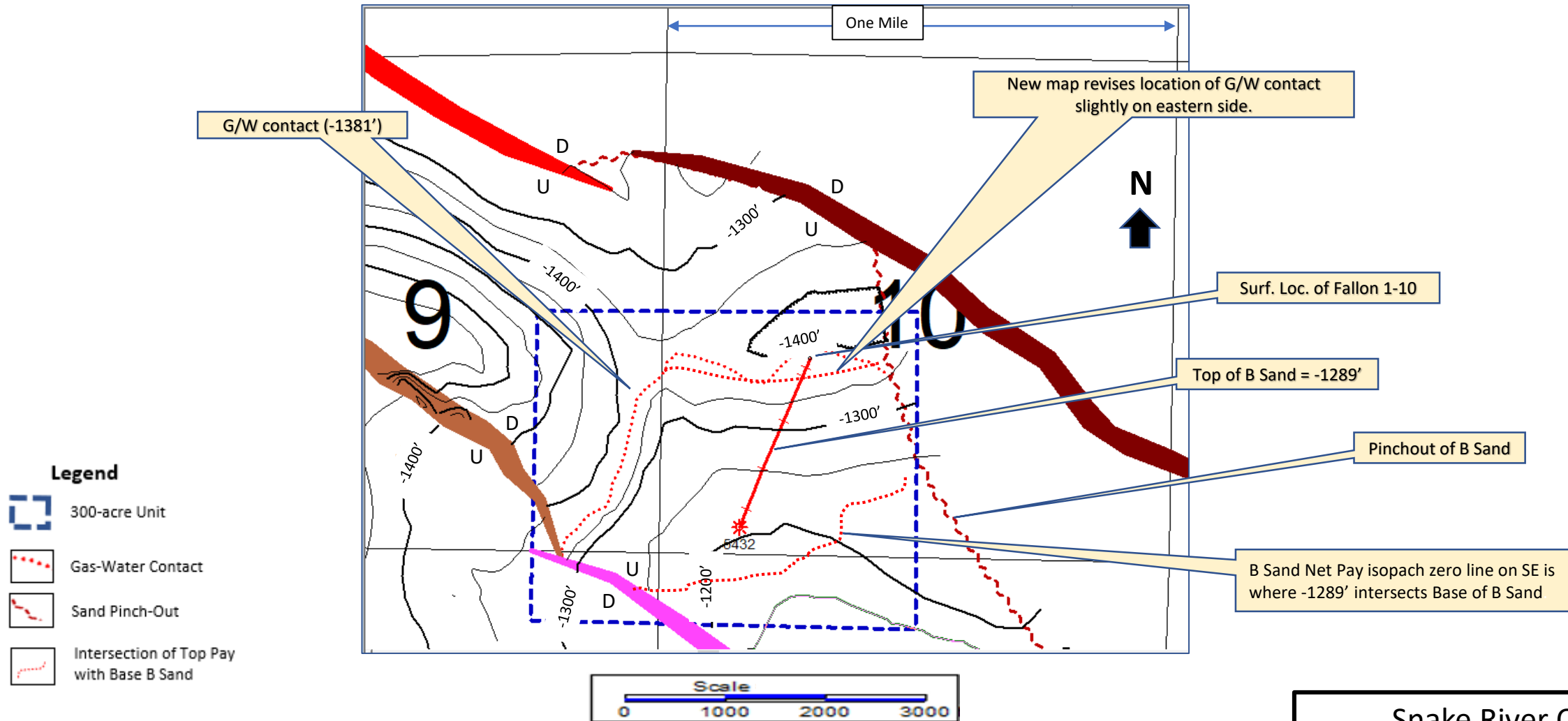
Basalt at -2545' with a time of 1.485 provides another point.

Depth(Feet)	Time
-1042.71	1.12100
-1050.00	1.12272
-1080.84	1.13000
-1100.00	1.13452
-1150.00	1.14632
-1191.00	1.15600
-1200.00	1.15894
-1250.00	1.17527
-1289.00	1.18800
-1300.00	1.19027
-1350.00	1.20060
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-1509.49	1.23766
-1600.00	1.25926
-2520.02	1.47880
-2545.58	1.48490
-2643.00	1.50815

Fallon 1-10 Time-Depth Chart

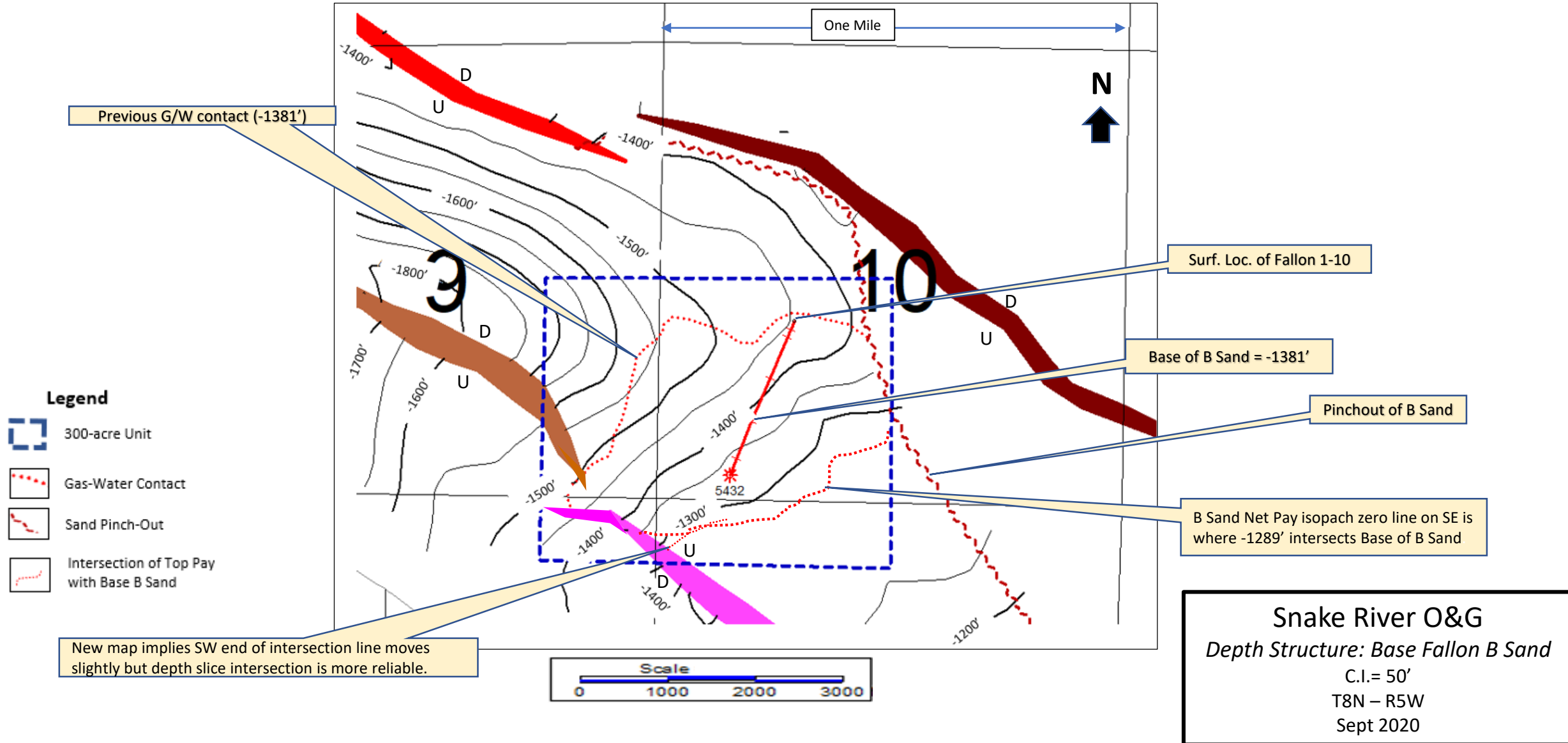
The following slides show the depth structure maps for the Top and Base of the Fallon B Sand and the isopach between.

Proposed 300-Acre Unit & Depth Structure: Top Fallon B Sand

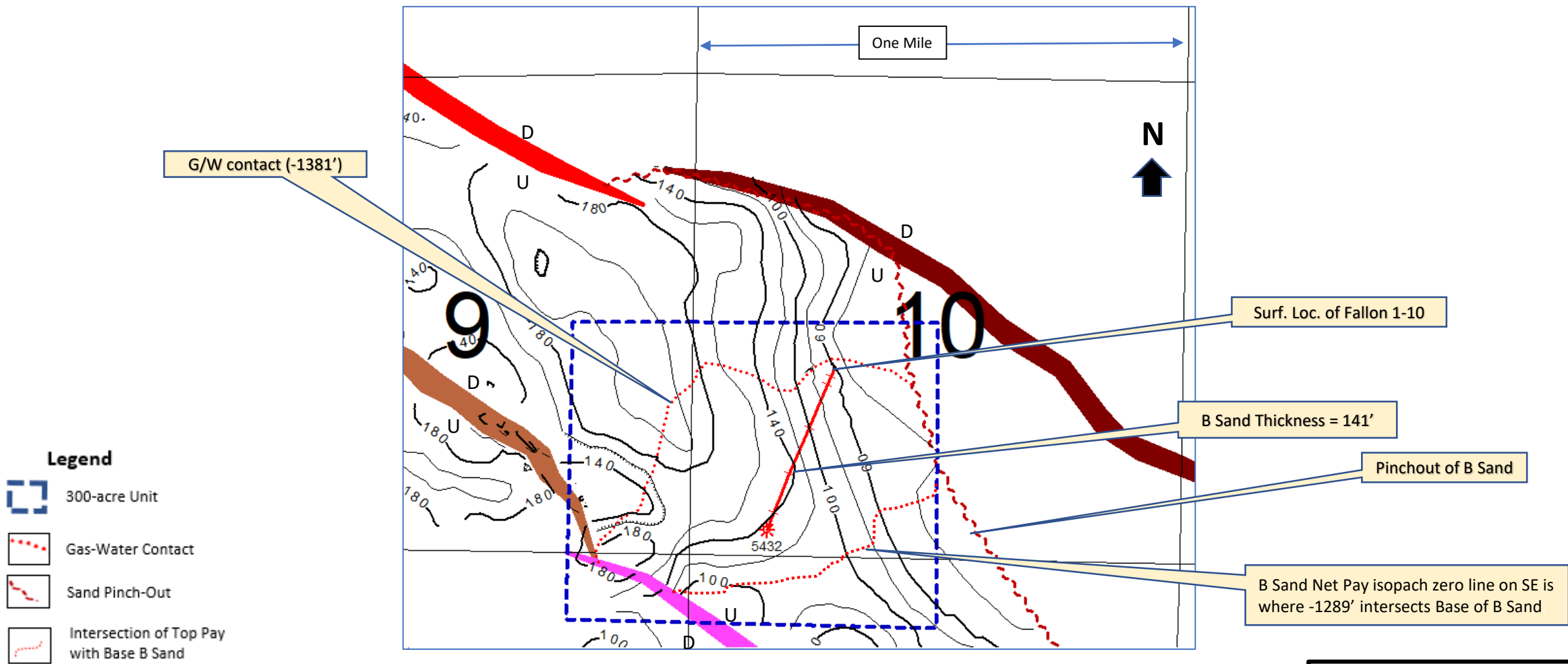


Snake River O&G
 Depth Structure: Top Fallon B Sand
 C.I.= 50'
 T8N – R5W
 Sept 2020

Proposed 300-Acre Unit & Depth Structure: Base Fallon B Sand



Proposed 300-Acre Unit & Gross Isopach: Fallon B Sand



G/W contact (-1381')

One Mile







Surf. Loc. of Fallon 1-10

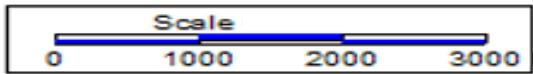
B Sand Thickness = 141'

Pinchout of B Sand

B Sand Net Pay isopach zero line on SE is where -1289' intersects Base of B Sand

Legend

-  300-acre Unit
-  Gas-Water Contact
-  Sand Pinch-Out
-  Intersection of Top Pay with Base B Sand



Snake River O&G
Gross Isopach: Fallon B Sand
 C.I.= 20'
 T8N – R5W
 Sept. 2020