

From: [Michael Christian](#)
To: [James Thum](#); [External - Joy M. Vega](#); [Kourtney Romine](#)
Subject: Witness and exhibit disclosure
Date: Monday, August 24, 2020 09:01:09 AM
Attachments: [20200824.SROG Witness and Exhibit Disclosure.pdf](#)
[Barlow 1-14 flow test perf 3503-12.xls](#)
[Fallon 1-11 Exhibits Aug 24.pptx](#)

All --

Attached please find:

1. The Applicant's witness and exhibit disclosure;
2. Ex. SR-1, which is an 11-page PowerPoint file;
3. Ex. SR-2, an Excel spreadsheet.

Thanks,
Mike

--

Michael R. Christian
Attorney at Law



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Boise, Idaho 83702
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For additional information about Smith + Malek, PLLC, including a list of attorneys, please see our website at 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 consisting of the SE ¼ of Section)
10, the SW ¼ of Section 11, the NW ¼ of Section)
14, and the NE ¼ of Section 15, Township 8)
North, Range 5 West, Boise Meridian, Payette)
County, Idaho)**

Docket No. CC-2020-OGR-01-002

**SNAKE RIVER OIL AND GAS, LLC,)
Applicant.)
)
)
)**

APPLICANT'S WITNESS AND EXHIBIT DISCLOSURE

Applicant Snake River Oil and Gas, LLC discloses the following witnesses and exhibits for the hearing of this matter on August 27, 2010:

1. Witnesses: David M. Smith
2. Exhibits: Attached are copies of:
 - a. Exhibit SR-1, an 11-page PowerPoint presentation consisting of:
 - i. Structure maps
 - ii. Seismic cross sections
 - iii. Isopach maps
 - iv. Responses to IDL June 2, 2020 letter
 - v. Log sections with permeability/porosity discussion
 - vi. Zedi gas analysis
 - b. Exhibit SR-2, an Excel spreadsheet containing flow test information from the Barlow #1-14 well.

Dated this 24th day of August, 2020.

SMITH+MALEK PLLC



Michael Christian, Attorney for Applicant

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 24th day of August, 2020, I caused to be served a true and correct copy of the foregoing by the method indicated below, and addressed as follows:

James Thum
Idaho Department of Lands
P.O. Box 83720
Boise, Idaho 83720-0050

☐ U.S. Mail
☐ Certified Mail, return receipt requested
☐ Overnight Delivery
☐ Messenger Delivery
☒ Email: jthum@idl.idaho.gov

Kristina Fugate
Deputy Attorney General
P.O. Box 83720
Boise, ID 83720

☐ U.S. Mail
☐ Certified Mail, return receipt requested
☐ Overnight Delivery
☐ Messenger Delivery
☒ Email: kristina.fugate@ag.idaho.gov

Joy Vega
Deputy Attorney General
P.O. Box 83720
Boise, ID 83720

☐ U.S. Mail
☐ Certified Mail, return receipt requested
☐ Overnight Delivery
☐ Messenger Delivery
☒ Email: joy.vega@ag.idaho.gov

Kourtney Romine
Idaho Department of Lands
P.O. Box 83720
Boise, Idaho 83720-0050

☐ U.S. Mail
☐ Certified Mail, return receipt requested
☐ Overnight Delivery
☐ Messenger Delivery
☒ Email: kromine@idl.idaho.gov



Michael Christian

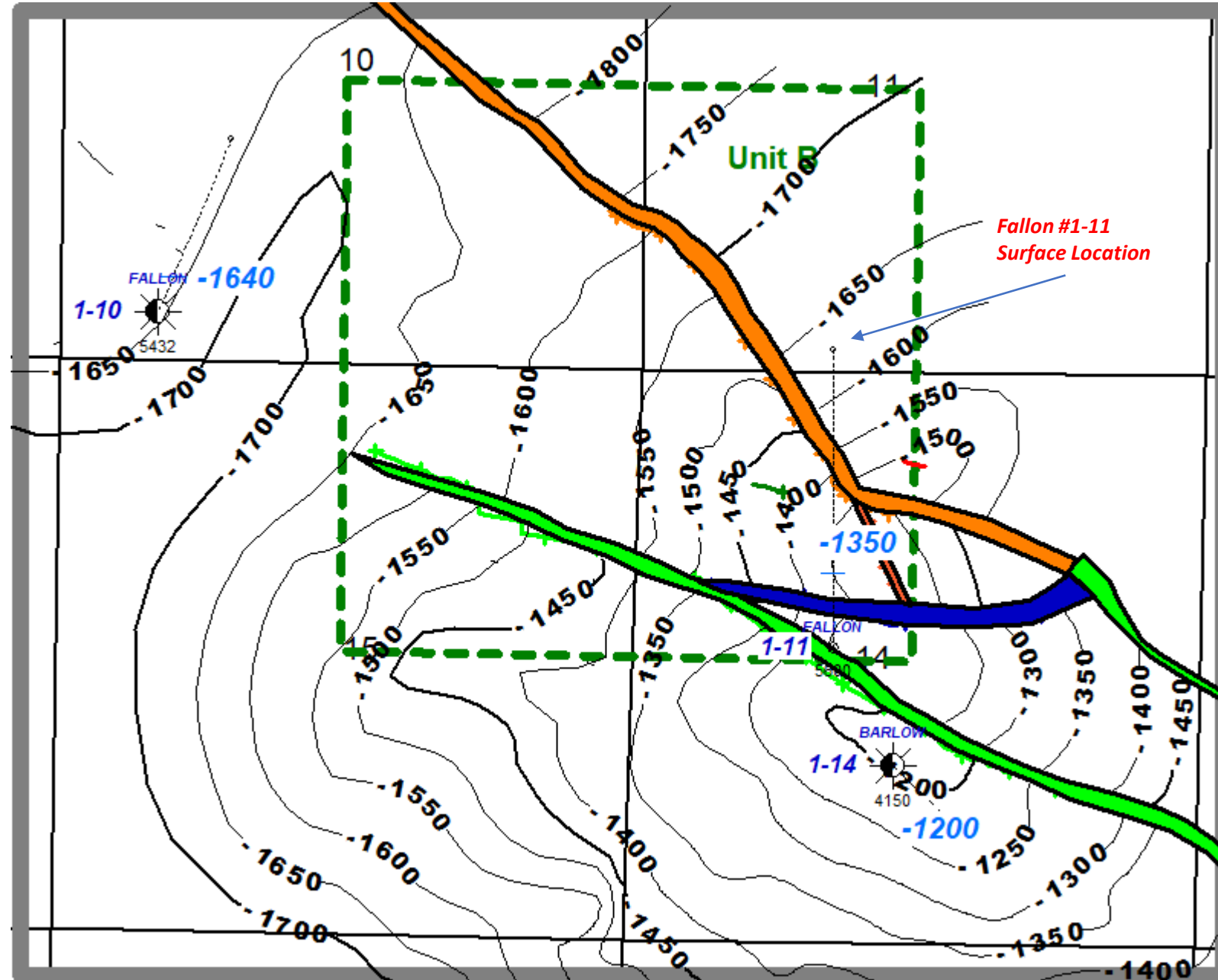
Proposed Unit Outline in Green: SE/4 Sec. 10, SW/4 Sec. 11, NE/4 Sec 15, & NW/4 Sec 14

Barlow #1-14 is upthrown to green fault, has top Sand D @ -1200' subsea and is gas/condensate Productive to LKG -1334' subsea

Fallon #1-11 Will be drilled Directionally to south, Expected to encounter Sand D at -1350' subsea

Fallon #1-10 has top Sand D @ -1640' subsea, D sand is low and water saturated at this location to the northeast

STRUCTURE TOP SAND D



Snake River O&G

Structure: Top of D Sand
(Subsea)

C.I.= 50'

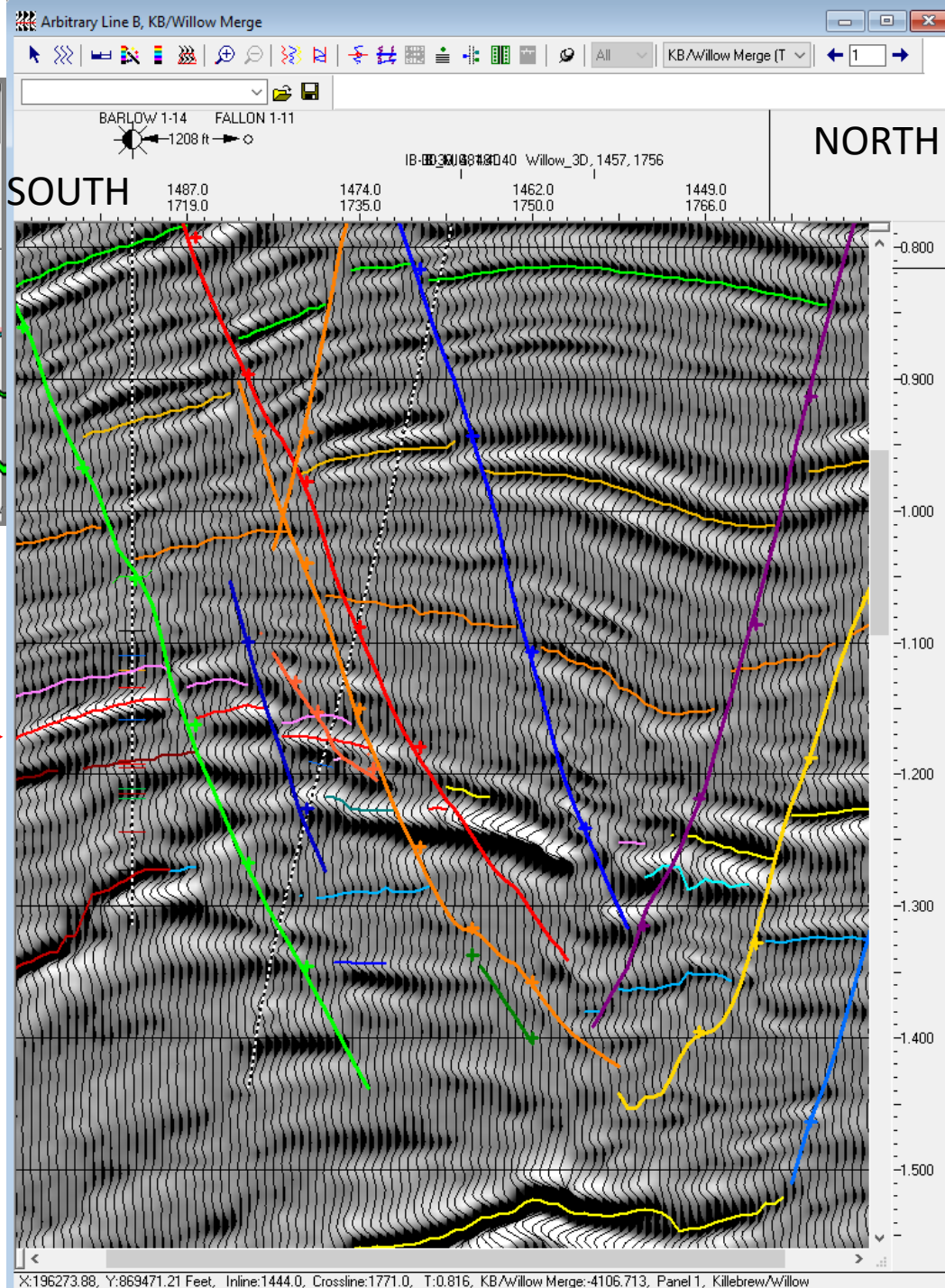
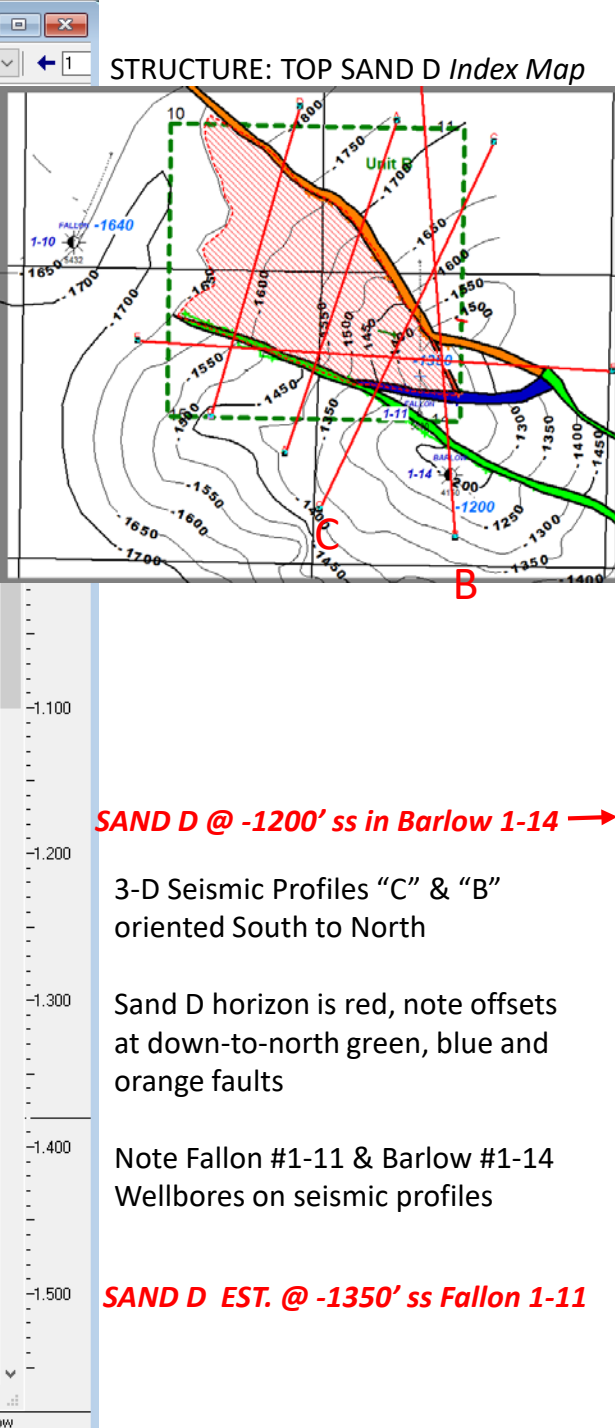
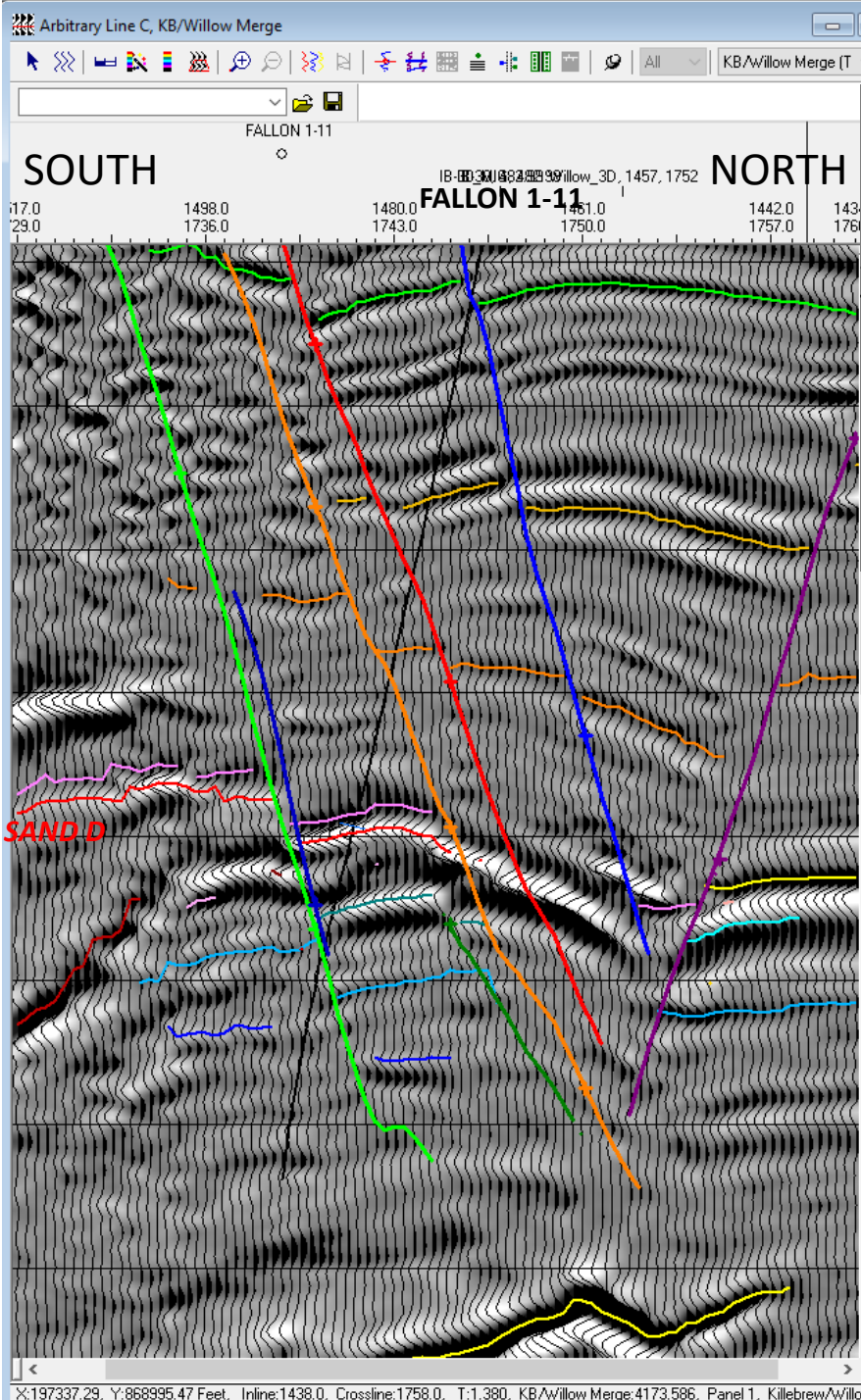
T8N – R5W

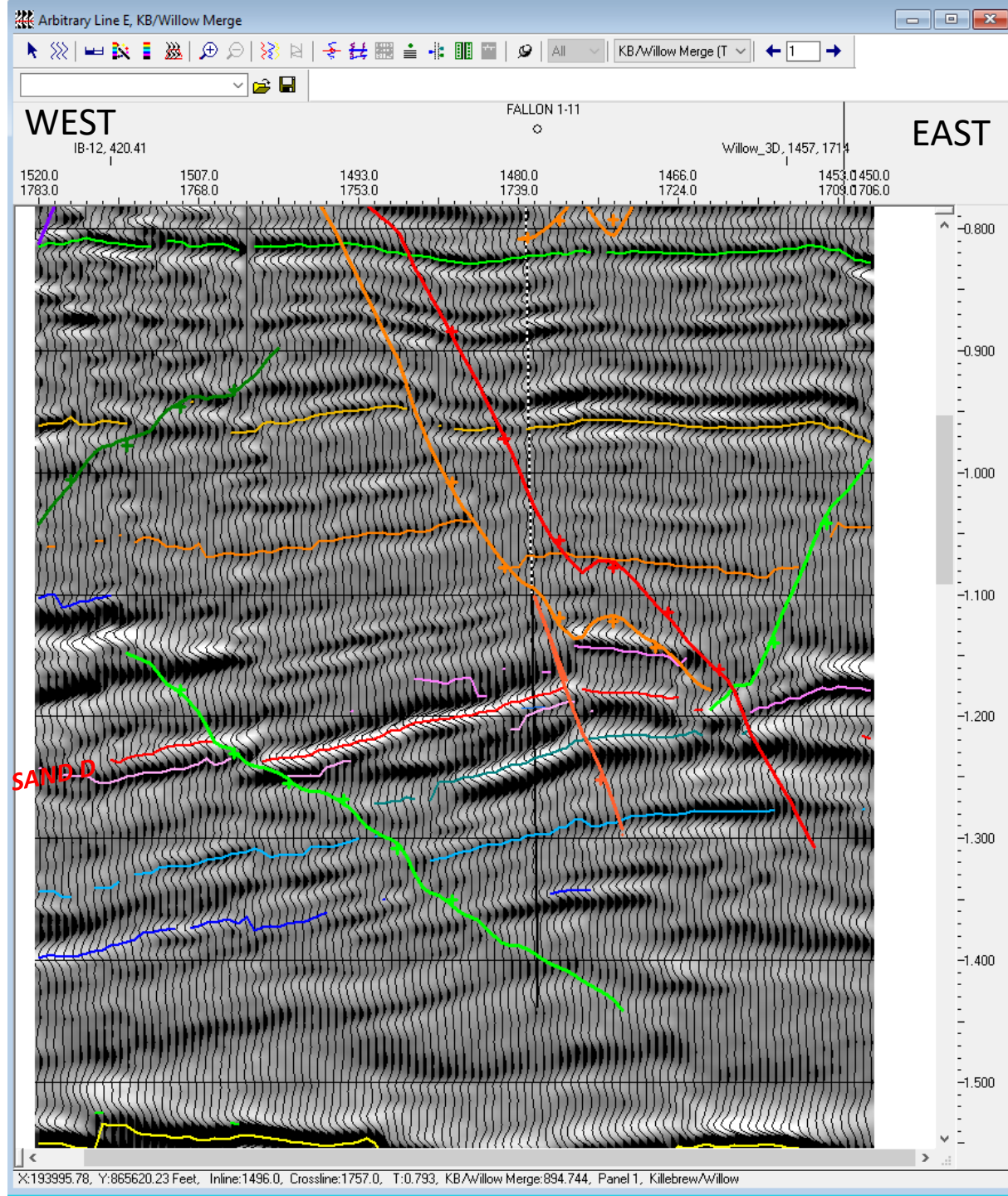
August 2020

Scale

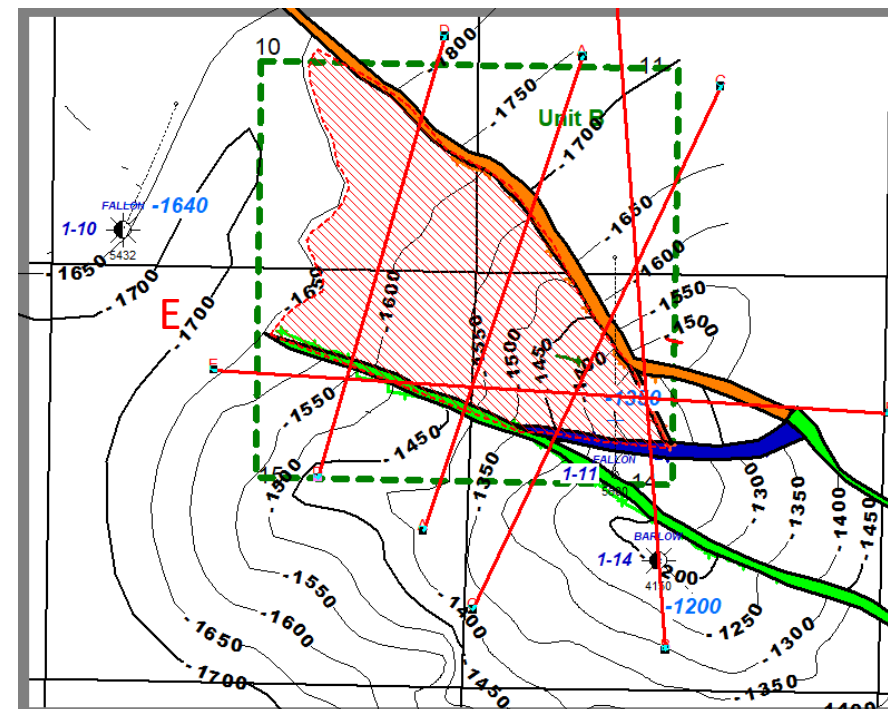
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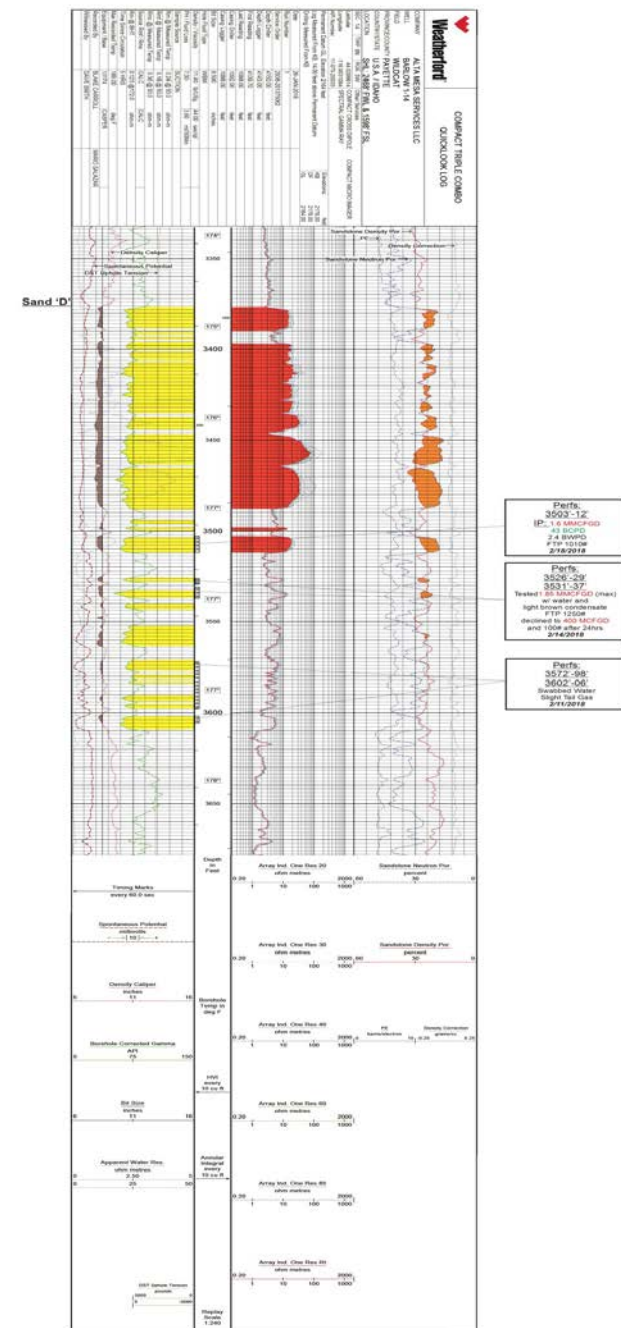
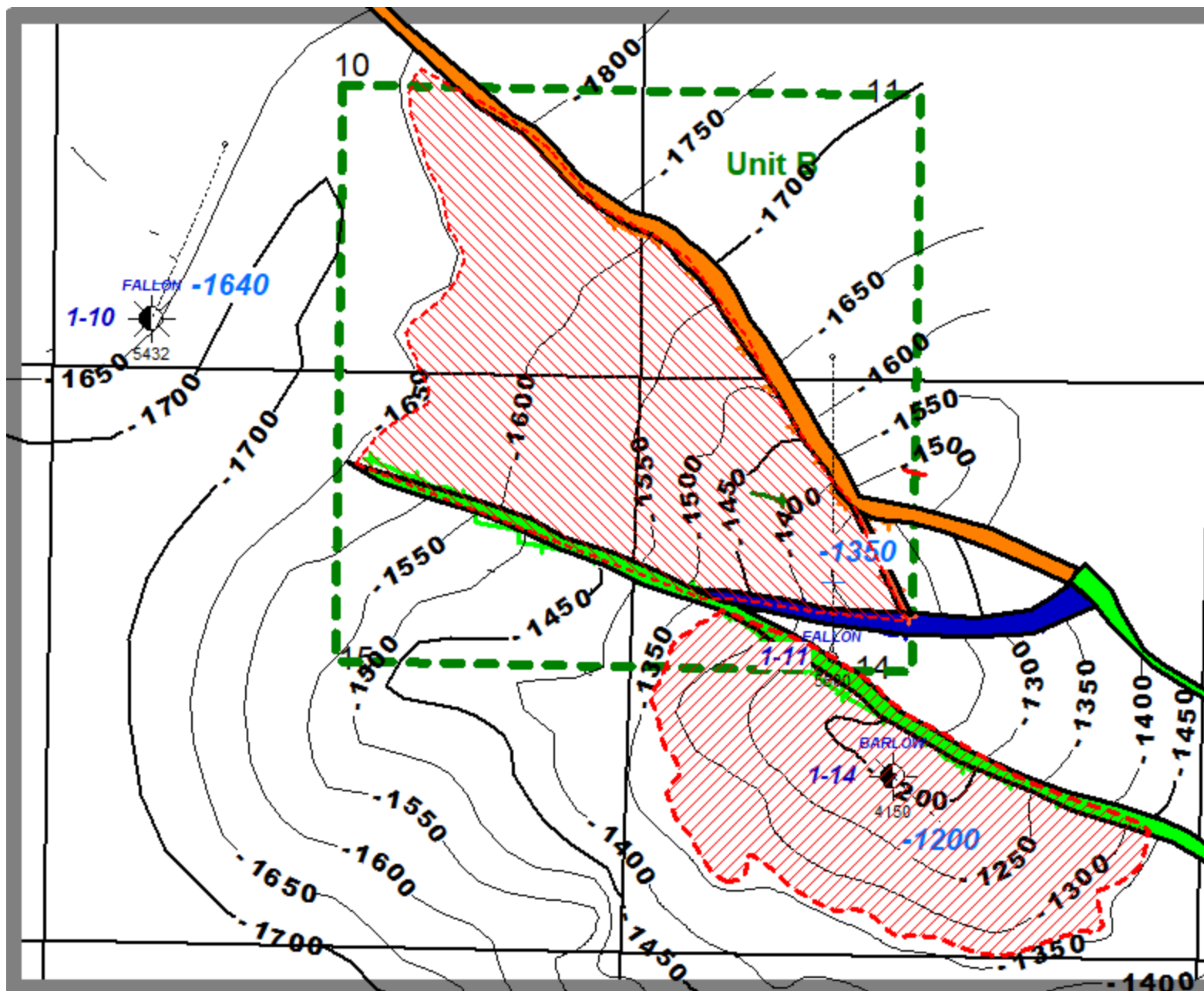
STRUCTURE: TOP SAND D Index Map



3-D Seismic Profile "E" oriented West to East

Sand D horizon is red, note offsets at green and orange faults

Note Fallon #1-11 wellbore on seismic profile



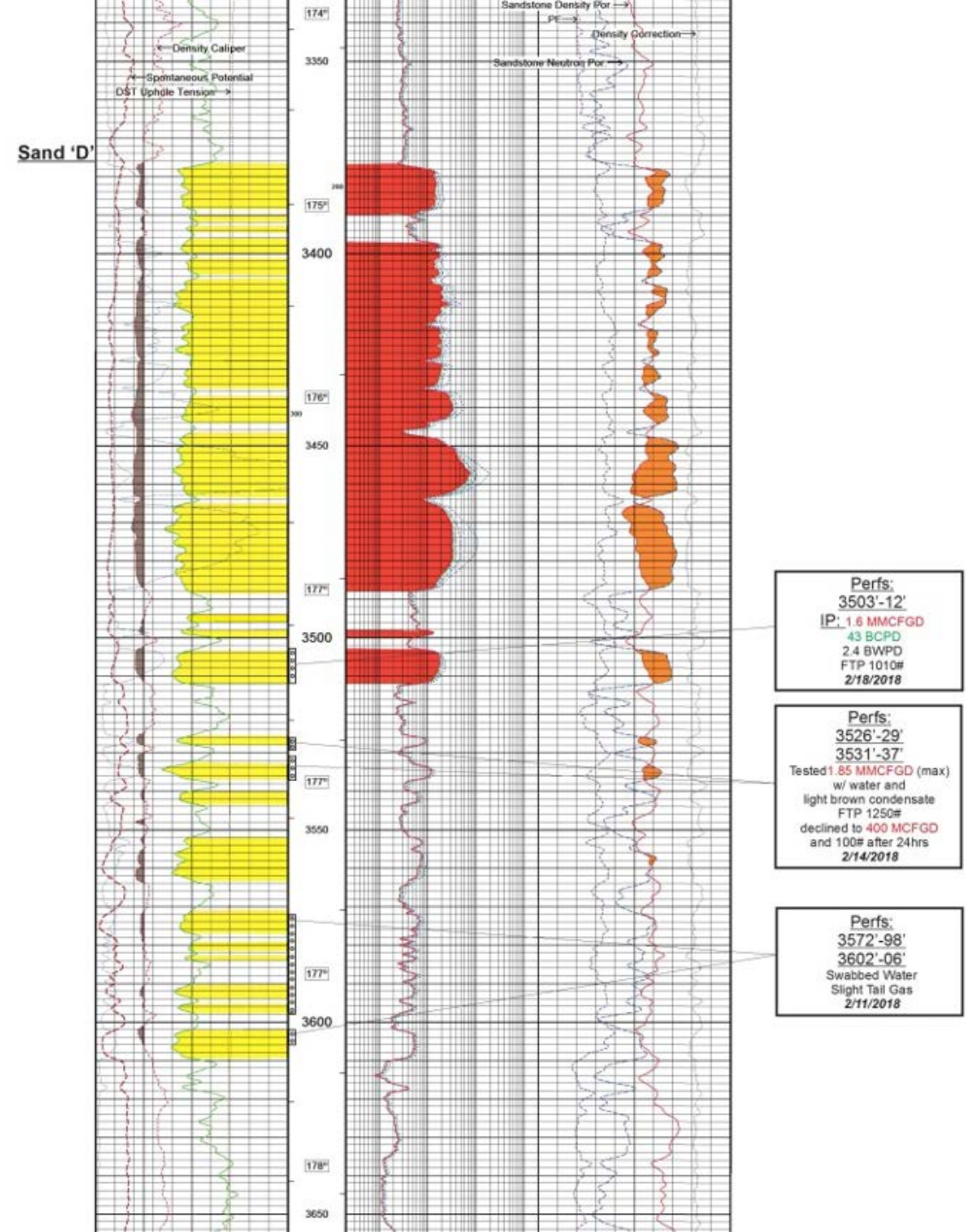
Triple Combo Log from Barlow #1-14

Sand D Top @ 3378' MD (-1200' Subsea)

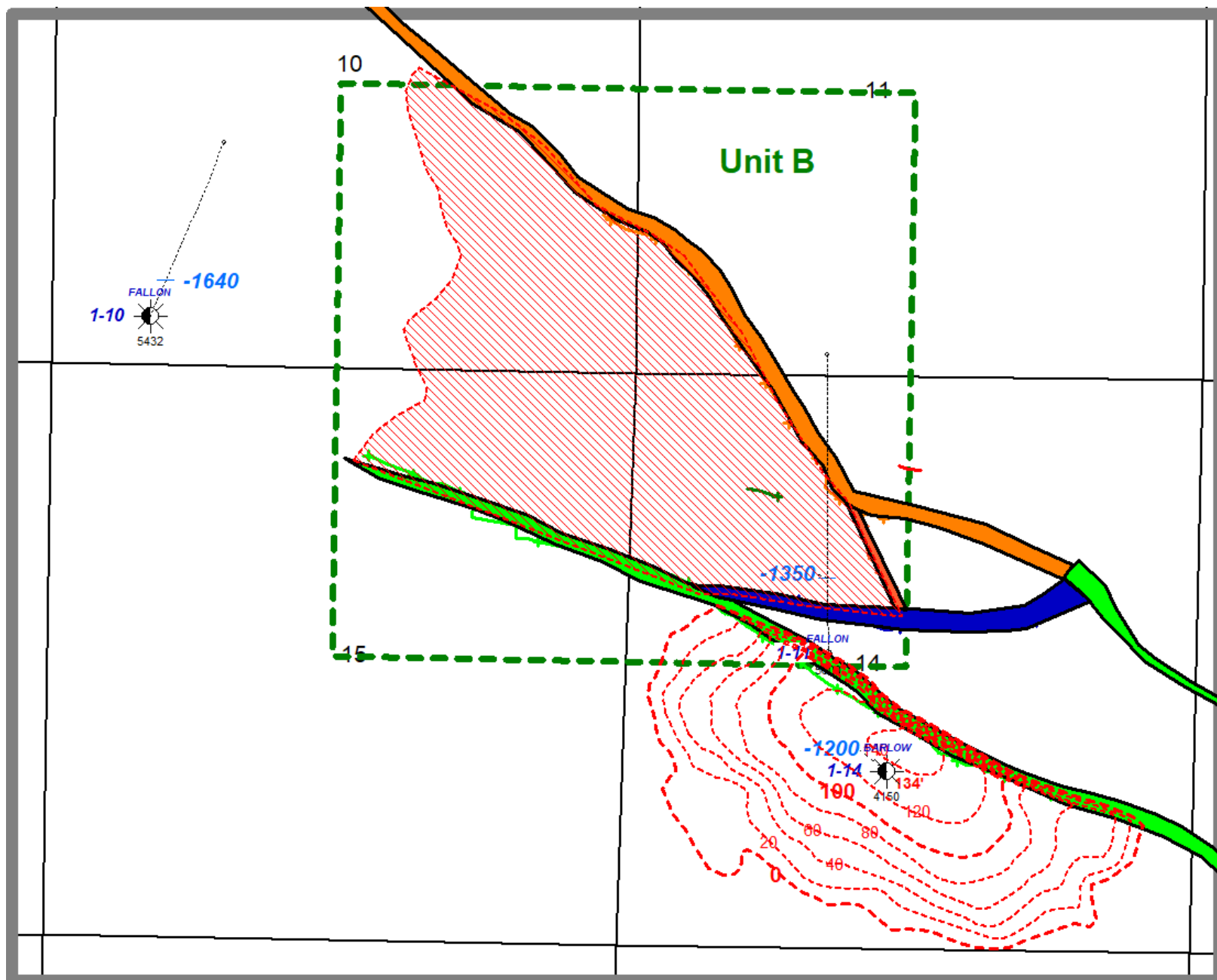
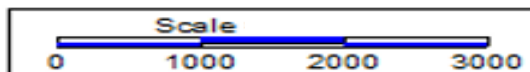
2 Deeper zones of Sand D tested unsuccessfully
With shows of gas, non-commercial

Lowest Known Gas (LKG) is 3512' MD (-1334' subsea)

Barlow 1-14 has 134' Gross Pay, 109' Net Pay



August 2020



Answers to Items 1.c. to 1.j. in letter from James Thum dated June 2, 2020.

- c. Porosity ranges from 24-28% on density porosity log, with an average of 25.3%. Permeability is estimated to be 2900-3200 millidarcies (see following slide for explanation).
- d. Thickness of net pay in the Barlow D Sand is 109' (134' gross).
- e. Water Saturation is 26% (calculated by Robert McGowen, independent consulting engineer with Coutret & Associates of Shreveport, LA).
- f. Reservoir Temperature is 157 degrees Fahrenheit.
- g. Gas-oil ratio in the Barlow Sand D is 59,167. Gas analysis by an independent company, Zedi US Inc., is shown on the slide after next. Most significant result is BTU =1189.
- h. Gas Formation Volume Factor for the Barlow D Sand = 0.0090611 rcf/scf. The Reservoir Pressure is 1,631 psi.
- i. From Mr. McGowen, estimated original gas in place for the Barlow D Sand is 10.93 BCF and recovery factor is 0.482%.
- j. Reservoir Drive Mechanism of the Barlow D Sand is either water-drive or a combination water-drive with some depletion. Because of the thick pay sand, we know a water cushion of some size exists, but we can't map the extent of the reservoir tank due to limited seismic data.

Porosity and Permeability of BARLOW D Sand

Sidewall Core Analysis

SROG ML Investments 2-10

Willow Field
Payette County, Idaho



File No.: HOU-130982
Date: August 12, 2013
Drilling Fluid: Water Based Mud
Analyst(s): JDH/PH
Cores: Schlumberger

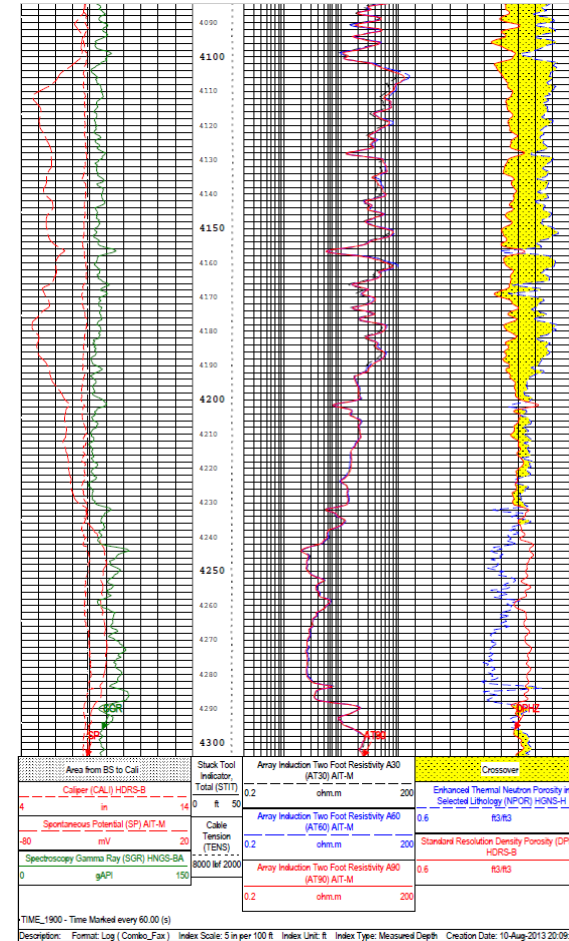
SIDEWALL CORE ANALYSIS

SHOT NO.	REC (in)	CQI	DEPTH (ft)	Kair (mD)*	POR (%)	Scp (%)	Stw (%)	PROB PROD	Ob (%)	Gb (%)	GAS DET	Scw (%)	*API	LITHOLOGY	FLU
52	1.1	A4	4133.0	1780.0	33.2	0.0	64.1	Gas	0.0	11.9	4	44		Sd f-cg vsshy slty scalc	
51	1.0	A3	4145.0	2900.0	34.8	0.0	74.5	Gas	0.0	8.9	10	44		Sd f-mg vsshy ssity	
50	1.1	A4	4157.0	2.7	15.1	0.0	76.9	(6)	0.0	3.5	18	64		Sd vfg vshy slty pyr	
49	1.2	A4	4161.0	1750.0	33.2	0.4	76.3	Gas	0.1	7.8	3	44		Sd f-cg vsshy slty	
48	1.1	A4	4171.0	3800.0	35.6	0.4	70.5	Gas	0.1	10.4	4	45		Sd m-cg vsshy ssity	
47	1.1	A4	4177.0	2500.0	34.0	0.0	65.3	Gas	0.0	11.8	1	44		Sd m-cg vsshy ssity	
46	1.0	A3	4183.0	3600.0	35.3	0.0	69.6	Gas	0.0	10.7	5	45		Sd m-cg vsshy ssity	
45	1.0	A3	4189.0	3900.0	35.7	0.0	71.5	Gas	0.0	10.2	4	45		Sd m-cg vsshy ssity	
44	1.0	A3	4195.0	1800.0	33.2	5.4	64.9	Oil	1.8	9.9	18	37	46	Sd m-cg vsshy ssity scalc	
42	1.0	A3	4203.0	4000.0	35.8	5.0	59.7	Oil	1.8	12.7	10	38	48	Sd m-cg vsshy ssity scalc	
41	0.8	B3	4207.0	3400.0	35.4	5.1	60.8	Oil	1.8	12.1	7	38	46	Sd m-cg vsshy ssity scalc	
40	0.7	B3	4211.0	3900.0	35.7	0.8	77.0	Water	0.3	7.9	23	38		Sd m-cg vsshy ssity scalc	
38	1.1	A4	4217.0	1730.0	33.1	0.0	80.5	Water	0.0	6.5	0	37		Sd m-cg vsshy ssity	
37	1.3	A4	4221.0	3800.0	35.6	0.0	78.2	Water	0.0	7.8	0	38		Sd m-cg vsshy ssity scalc	
36	1.2	A4	4227.0	3700.0	35.5	0.0	80.6	Water	0.0	6.9	0	38		Sd m-cg vsshy ssity	
35	1.3	A4	4231.0	1850.0	33.2	0.0	77.6	Water	0.0	7.4	0	37		Sd m-cg vsshy ssity	
34	1.1	A4	4235.0	3500.0	35.4	0.0	77.6	Water	0.0	7.9	0	38		Sd m-cg vsshy ssity	

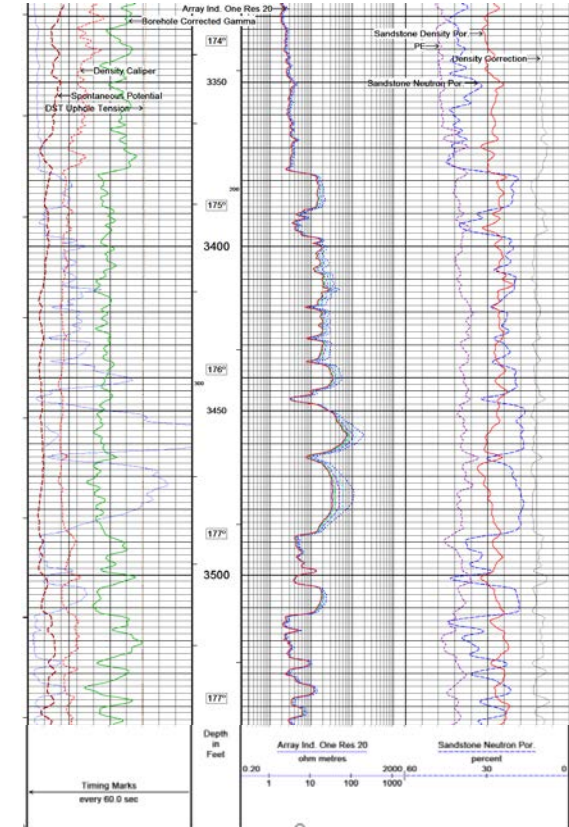
Density porosity of the Barlow D Sand measured 24%-28%. Cores were not taken so we have no direct measurement of permeability. We can estimate permeability using the ML Investment 2-10 from Willow Field. Cores in the 2-10 from 4133' to 4235' indicated porosity of 33%-35% and permeability in the 1700 – 4000 md. range with most varying from 3500 – 3900 md. Density logs showed porosity about 23%-24%, implying the cores significantly overestimated porosity. Assuming permeability was overestimated in the same proportion, the actual permeability in the ML 2-10 was 2500 – 2900 md.

Using that comparison, the D Sand in Barlow 1-14 has around 2900 – 3200 md.

SROG ML Invest. 2-10 T8N-R4W



SROG Barlow 1-14 T8N-R5W





Realize Production Potential

Zedi US Inc
29 Country Acres Road
Riverton, WY 82501
307-856-0866

Client:	Alta Mesa	Analysis Date:	2/21/2018
Sample ID:	Barlow 1-14	Date Sampled:	02/14/2018
Unique #:	NI	Purpose:	NI
Sample Temperature:	34 DEG F	Sample Pressure:	50 PSI
Sampled By:	Brett Baker	Type Sample:	Spot
County:	Payette		

Components	Mole %	Weight %	Liq. Vol. %
Carbon Dioxide.....	0.2188	0.442	0.201
Nitrogen.....	7.3287	9.415	4.340
Methane.....	76.0499	55.948	69.403
Ethane.....	7.4971	10.338	10.793
Propane.....	3.8225	7.729	5.669
iso-Butane.....	1.1332	3.020	1.996
n-Butane.....	1.6146	4.303	2.740
iso-Pentane.....	0.5380	1.780	1.059
n-Pentane.....	0.5288	1.749	1.032
Cyclopentane.....	0.0830	0.267	0.132
n-Hexane.....	0.2497	0.987	0.553
Cyclohexane.....	0.0872	0.336	0.160
Other Hexanes.....	0.3727	1.473	0.825
Heptanes.....	0.0936	0.430	0.233
Methylcyclohexane.....	0.0491	0.221	0.106
2,2,4-Trimethylpentane...	0.0160	0.084	0.045
Benzene.....	0.0850	0.305	0.128
Toluene.....	0.0279	0.118	0.050
Ethylbenzene.....	0.0059	0.029	0.012
Xylenes.....	0.0347	0.169	0.072
C8+ Heavies.....	0.1637	0.858	0.451
Totals	100.000	100.000	100.000

ADDITIONAL BETX DATA

Components	Mole %	Weight %	Liq. Vol. %
Cyclopentane	0.0830	0.267	0.132
Cyclohexane	0.0872	0.336	0.160
2-Methylpentane	0.2346	0.927	0.519
3-Methylpentane	0.1381	0.546	0.306
n-Hexane	0.2497	0.987	0.553
Methylcyclohexane	0.0491	0.221	0.106
2,2,4-Trimethylpentane	0.0160	0.084	0.045
Benzene	0.0850	0.305	0.128
Toluene	0.0279	0.118	0.050
Ethylbenzene	0.0059	0.029	0.012
m-Xylene	0.0055	0.027	0.011
p-Xylene	0.0235	0.114	0.049
o-Xylene	0.0057	0.028	0.012

SPECIFIC GRAVITY @ 60/60 F, calculated.....	0.7529
TOTAL GPM (Ethane Inclusive).....	4.827
CALCULATED BTU / REAL CF @ 14.73 PSIA, dry basis.....	1187.586
CALCULATED BTU / REAL CF @ 14.73 PSIA, wet basis.....	1167.683
AVERAGE MOLECULAR WEIGHT.....	21.807
MOLAR MASS RATIO.....	0.7529
RELATIVE DENSITY (G x Z (Air) / Z), calculated.....	0.7555
IDEAL GROSS HEATING VALUE, BTU / IDEAL CF @ 14.696 PSIA.....	1188.968
COMPRESSIBILITY FACTOR (Z).....	0.99655

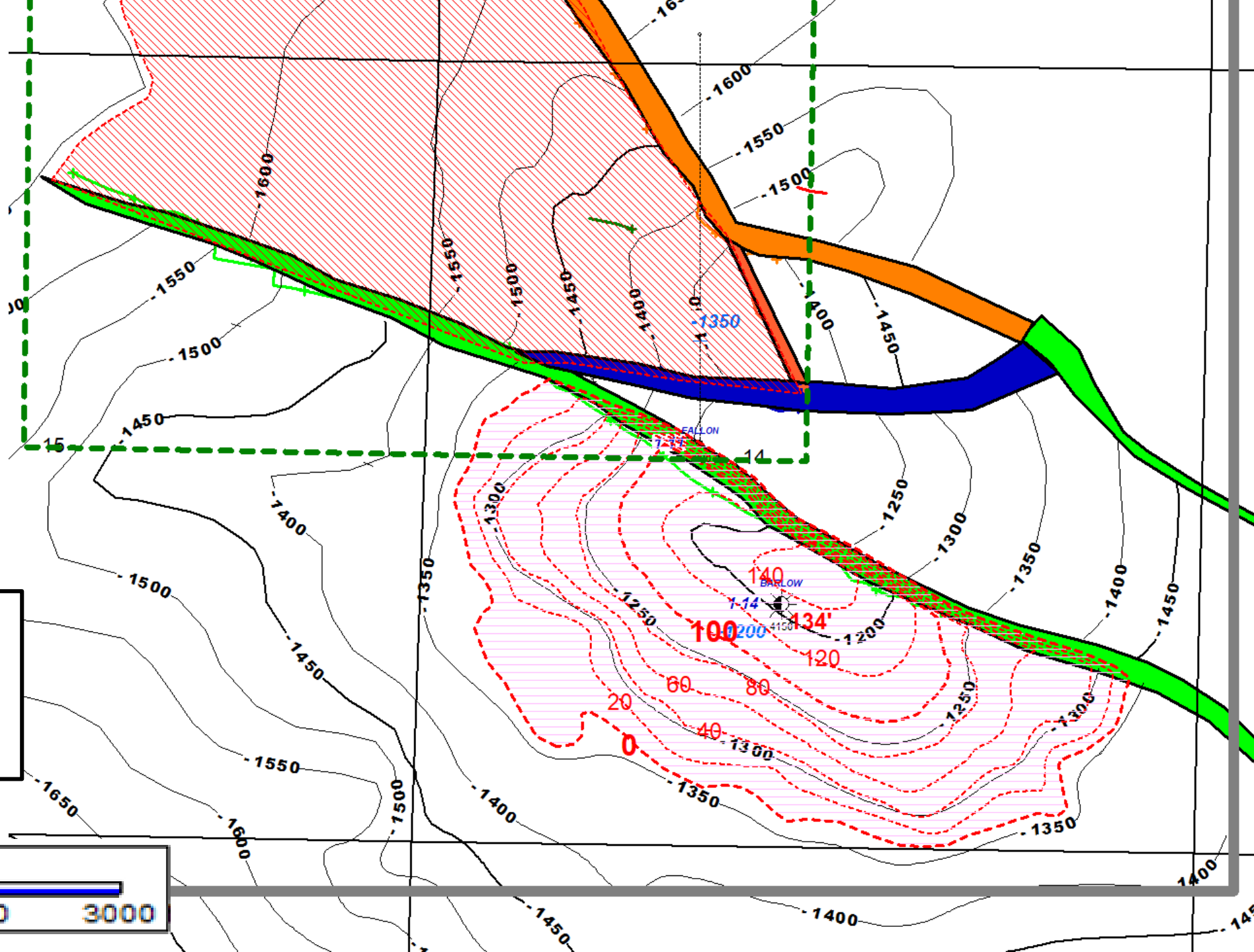
PROPANE GPM	1.0504
BUTANE GPM	0.8776
GASOLINE GPM (PENTANE AND HEAVIER)	0.8990

TOTAL ACID GAS MOLE %.....	0.2188
VOC WEIGHT FRACTION	0.239

NOTATION: ALL CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09, THE TABLES OF PHYSICAL CONSTANTS FOR HYDROCARBONS AND OTHER COMPOUNDS OF INTEREST TO THE NATURAL GAS INDUSTRY.

GROSS PAY ISOPACH
BARLOW SAND D
Overlain with Structure

Snake River O&G
Gross Pay Isopach (RED):
Structure top Barlow Sand D
C.I.= 20'
T8N – R5W
August 2020



PROS Incorporated

PROS CONTACT: Dan Kurtz Cell (661) 201-2122 Fax (661) 589-5228
OPERATIONS LOG

COMPANY : **Alta Mesa Services**
 CO. MAN : **Austin Taylor**
 LOCATION : **Barlow**
 WELL NO. : **1-14**
 PERFS : **Tight Hole 3rd Zone**
 DATE : **2/ 16/ 18 thru 2/ 17/ 2018**



DATE & TIME	SEQUENCE OF EVENTS
2/ 16/ 2018	
06:30	PROS Dan Kurtz on location , Walk location, fill out JSA
06:30	Fire Line Heater
07:00	Shut Down Line Heater, 115°
08:08	Drop Bar, Fire Guns
08:12	Flowing to Tank, 12/64" Adjustable Choke
	11.3 Bbls Water into Tank before opening into Separator - Load Water
08:38	Switch Flow into Separator on 18/64" Adj Choke
09:00	Pulled Co2 = 0.4 % VOL H2S = 0 ppm - Pulled from 1440 Separator Gas Out
10:00	Opened Choke from 18/64" to 19/64"
	Pulled Oil Gravity = 65.8
11:15	Closed Manways on Tanks, will gauge tanks at end of test or if needed
12:30	Bleed Down Casing pressure from 500 psi to 400 psi
13:10	Increased Adjustable choke from 19/64" to 22/64" at Line Heater
13:30	Pulled Co2 = 1.1 % VOL H2S = 0 ppm - Pulled from 1440 Separator Gas Out
13:45	Bleed Down Casing pressure from 520 psi to 450 psi
15:10	Pulled Oil Gravity = 65.8 / Water Specific Gravity = 1.047 , from 1440 Separator
15:30	Bleed Down Casing pressure from 530 psi to 300 psi
18:00	PROS Shift Change: James Johnston for Dan Kurtz
19:00	Pulled oil and water samples for processing.
20:24	Choked back to 21/64ths as instructed by Dale Hayes
21:35	Pulled Co2 = 0.1 % VOL H2S = 0 ppm - Pulled from 1440 Separator Gas Out
23:05	Bled Casing down from 500 to 300psi
2/ 17/ 2018	
00:00	Pulled Oil Gravity = 70.5 / Water Specific Gravity = 1.046 , from 1440 Separator
02:04	Pulled Co2 = 0.1 % VOL H2S = 0 ppm - Pulled from 1440 Separator Gas Out
04:00	Pulled Oil Gravity = 70.5 / Water Specific Gravity = 1.046 , from 1440 Separator
06:00	PROS Shift Change: Dan Kurtz for James Johnston
06:10	Checked all Sight Glasses, drained instrumentation air pots
07:45	Pulled Co2 = 0.15 % VOL H2S = 0 ppm - Pulled from 1440 Separator Gas Out
07:50	Pulled Oil Gravity = 69.5 / Water Specific Gravity = 1.047 , from 1440 Separator
09:30	Pulling 2 Gas Bombs and 2 Pressurized Condensate samples from 1440 Separator
11:00	Shut In Well at Wing Valve - Start Pressure Build Up on Tubing
14:00	Pressure Buildup complete Tubing Pressure = 1441 psi

PROS Incorporated

PROS CONTACT: Dan Kurtz Cell (661) 201-2122 Fax (661) 589-5228

WELL TEST DATA RECORD

METER RUN = 3.068 Inches
STATIC RANGE = 500 PSIA
DIFFERENTIAL = 100 Inches of Water Column
PRESSURE BASE= 14.73 PSIA
TEMPERATURE BASE= 60 Degrees F
SEPARATOR = 30318-240-60H



DATE TIME	FLOW DURATION (HRS.)	CHOKE SIZE 64ths	TBG psig	TBG temp	CSG psig	Surf CSG psig	CORR. GRAV.	H2O Grav	LAB RESULTS				WATER TANK			OIL TANK			OIL METER			WATER METER		SEP. TEMP °F	BPD GROSS	BPD Oil	BPD WATER	OVERALL WELL CUT % BS&W	CUMM TOTAL (BBLs)	CUMM WTR (BBLs)	CUMM OIL (BBLs)	Scrubber PRESS psig	1440 PRESS psig	GAS TEMP °F	ORIFICE SIZE	GAS METER TOTAL	GAS RATE MCFD	CUMM GAS MSCF	GLR	GOR	COMMENTS
									CHLORIDES PPM	pH	RESISTIVITY Rw	Tank Gauge	TOTAL BBLs	INCR BBLs	Tank Gauge	TOTAL BBLs	INCR BBLs	METER BBLs	INCR BBLs	CUT % BS&W	METER BBLs	INCR BBLs																			
2/16/18 8:10	0.00	0	0		100	620							1' 3.5"	69.8		0' 2.0"	9.0		8.3	0.00		18.5	0.00		0.00	0.00	0.00		0.00	0.00	0.00				1.500	693.70	0.00	0.00	0.000	0.000	
2/16/18 9:00	0.83	18	1,100		280	620							1' 6.0"	81.0	11.3	0' 2.0"	9.0	0.0	8.8	0.5	0.0%	19.1	0.60	110	31.68	14.40	17.28	54.5%	1.10	0.60	0.50	120	500	63	1.500	713.20	561.60	19.50	17727.27	39000.00	
2/16/18 10:00	1.83	18	1,100	65	250	620	65.8						1' 6.5"	83.4	2.4	0' 2.0"	9.0	0.0	9.4	0.6	0.0%	19.6	0.50	90	26.40	14.40	12.00	45.5%	2.20	1.10	1.10	110	510	64	1.500	774.75	1477.20	81.05	55954.55	102583.33	
2/16/18 11:00	2.83	19	1,070	71	370	620		1.047	76,640		0.125 @ 49°	1' 6.75	84.4	1.0	0' 2.5"	11.3	2.3	11.3	1.9	0.0%	19.8	0.20	95	50.40	45.60	4.80	9.5%	4.30	1.30	3.00	105	500	59	1.500	838.95	1540.80	145.25	30571.43	33789.47		
2/16/18 12:00	3.83	19	1,050	73	450	620							1' 6.75	84.4	0.0	0' 2.5"	11.3	0.0	12.9	1.6	0.0%	19.9	0.10	95	40.80	38.40	2.40	5.9%	6.00	1.40	4.60	110	500	60	1.500	908.69	1673.76	214.99	41023.53	43587.50	
2/16/18 13:00	4.83	19	1,040	75	440	620							1' 6.75	84.4	0.0	0' 2.5"	11.3	0.0	14.1	1.2	0.0%	20.0	0.10	90	31.20	28.80	2.40	7.7%	7.30	1.50	5.80	110	500	60	1.500	969.55	1460.64	275.85	46815.38	50716.67	Condensate - Clear in color
2/16/18 14:00	5.83	22	1,000	76	450	620							1' 6.75	84.4	0.0	0' 3.0"	13.5	2.3	16.2	2.1	0.0%	20.2	0.20	93	55.20	50.40	4.80	8.7%	9.60	1.70	7.90	110	500	62	1.500	1038.30	1650.00	344.60	29891.30	32738.10	CO2 = 1.1% VOL H2S = 0 ppm Oil Gravity = 65.8
2/16/18 15:00	6.83	22	1,000	78	500	620	69.1	1.047	77,801	7.0	0.113 @ 61°	1' 6.75	84.4	0.0	0' 3.25"	14.7	1.2	18.0	1.8	0.0%	20.2	0.00	90	43.20	43.20	0.00	0.0%	11.40	1.70	9.70	110	500	61	1.500	1107.76	1667.04	414.06	38588.89	38588.89	Water Specific Gravity = 1.047	
2/16/18 16:00	7.83	22	1,000	80	300	615							1' 6.75	84.4	0.0	0' 3.75"	16.9	2.2	19.8	1.8	0.0%	20.3	0.10	93	45.60	43.20	2.40	5.3%	13.30	1.80	11.50	110	500	62	1.500	1179.59	1723.92	485.89	37805.26	39905.56	
2/16/18 17:00	8.83	22	1,000	79	350	615							1' 6.75	84.4	0.0	0' 4.0"	18.0	1.1	21.5	1.7	0.0%	20.4	0.10	92	43.20	40.80	2.40	5.6%	15.10	1.90	13.20	110	500	62	1.500	1250.10	1692.24	556.40	39172.22	41476.47	
2/16/18 18:00	9.83	22	1,000	82	385	615							1' 6.75	84.4	0.0	0' 4.5"	20.1	2.1	23.3	1.8	0.0%	20.4	0.00	90	43.20	43.20	0.00	0.0%	16.90	1.90	15.00	110	500	60	1.500	1320.20	1682.40	626.50	38944.44	38944.44	
2/16/18 19:00	10.83	22	990	80	415	615	70.3	1.048	10,131	7.0	.92 @ 59°	1' 6.75	84.4	0.0	0' 4.75"	21.4	1.3	25.1	1.8	0.0%	20.5	0.10	89	45.60	43.20	2.40	5.3%	18.80	2.00	16.80	110	500	59	1.500	1389.60	1665.60	695.90	36526.32	38555.56		
2/16/18 20:00	11.83	22	980	79	445	615							1' 6.75	84.4	0.0	0' 5.0"	22.5	1.1	26.9	1.8	0.0%	20.5	0.00	89	43.20	43.20	0.00	0.0%	20.60	2.00	18.60	110	500	59	1.500	1460.30	1696.80	766.60	39277.78	39277.78	
2/16/18 21:00	12.83	21	1,000	80	460	615							1' 6.75	84.4	0.0	0' 5.5"	24.8	2.3	28.7	1.8	0.0%	20.6	0.10	89	45.60	43.20	2.40	5.3%	22.50	2.10	20.40	110	500	60	1.500	1528.30	1632.00	834.60	35789.47	37777.78	Choked back to 21/64
2/16/18 22:00	13.83	21	1,000	79	480	615							1' 6.75	84.4	0.0	0' 6"	27.0	2.2	30.4	1.7	0.0%	20.6	0.00	90	40.80	40.80	0.00	0.0%	24.20	2.10	22.10	110	500	60	1.500	1597.50	1660.80	903.80	40705.88	40705.88	CO2 = 0.1% VOL H2S = 0 ppm
2/16/18 23:00	14.83	21	1,000	79	500	615							1' 6.75	84.4	0.0	0' 6.5"	29.2	2.2	32.1	1.7	0.0%	20.6	0.00	90	40.80	40.80	0.00	0.0%	25.90	2.10	23.80	110	500	60	1.500	1664.00	1596.00	970.30	39117.65	39117.65	
2/17/18 0:00	15.83	21	1,000	79	320	615	70.5	1.046	68,533	7.0	.100 @ 76°	1' 6.75	84.4	0.0	0' 6.75"	30.3	1.1	33.9	1.8	0.0%	20.6	0.00	90	43.20	43.20	0.00	0.0%	27.70	2.10	25.60	110	500	60	1.500	1730.50	1596.00	1036.80	36944.44	36944.44	Oil Gravity = 70.5 Water Specific Gravity = 1.046	
2/17/18 1:00	16.83	21	1,000	80	350	615							1' 6.75	84.4	0.0	0' 7.25"	32.5	2.2	35.7	1.8	0.0%	20.8	0.20	90	48.00	43.20	4.80	10.0%	29.70	2.30	27.40	110	500	60	1.500	1796.50	1584.00	1102.80	33000.00	36666.67	
2/17/18 2:00	17.83	21	1,000	83	360	615							1' 6.75	84.4	0.0	0' 7.5"	33.8	1.3	37.5	1.8	0.0%	20.9	0.10	90	45.60	43.20	2.40	5.3%	31.60	2.40	29.20	110	500	61	1.500	1866.30	1675.20	1172.60	36736.84	38777.78	CO2 = 0.1% VOL H2S = 0 ppm
2/17/18 3:00	18.83	21	1,000	84	375	615							1' 6.75	84.4	0.0	0' 8"	36.0	2.2	39.2	1.7	0.0%	21.0	0.10	90	43.20	40.80	2.40	5.6%	33.40	2.50	30.90	110	500	61	1.500	1932.30	1584.00	1238.60	36666.67	38823.53	
2/17/18 4:00	19.83	21	1,000	83	390	615	70.5	1.046	70,542	7.0	.101 @ 76°	1' 6.75	84.4	0.0	0' 8.5"	38.3	2.3	41.0	1.8	0.0%	21.1	0.10	90	45.60	43.20	2.40	5.3%	35.30	2.60	32.70	110	500	61	1.500	2000.50	1636.80	1306.80	35894.74	37888.89	Oil Gravity = 70.5 Water Specific Gravity = 1.046	
2/17/18 5:00	20.83	21	1,000	84	400	615							1' 6.75	84.4	0.0	0' 8.75"	39.4	1.1	42.7	1.7	0.0%	21.2	0.10	90	43.20	40.80	2.40	5.6%	37.10	2.70	34.40	110	500	61	1.500	2065.80	1567.20	1372.10	36277.78	38411.76	
2/17/18 6:00	21.83	21	1,000	84	410	615							1' 7.0"	85.5	1.1	0' 8.75"	39.4	0.0	44.5	1.8	0.0%	21.3	0.10	90	45.60	43.20	2.40	5.3%	39.00	2.80	36.20	110	500	62	1.500	2132.20	1593.60	1438.50	34947.37	36888.89	
2/17/18 7:00	22.83	21	1,015	86	425	615							1' 7.0"	85.5	0.0	0' 8.75"	39.4	0.0	46.1	1.6	0.0%	21.3	0.00	92	38.40	38.40	0.00	0.0%	40.60	2.80	37.80	110	500	62	1.500	2202.80	1694.40	1509.10			

BARLOW 1-14

