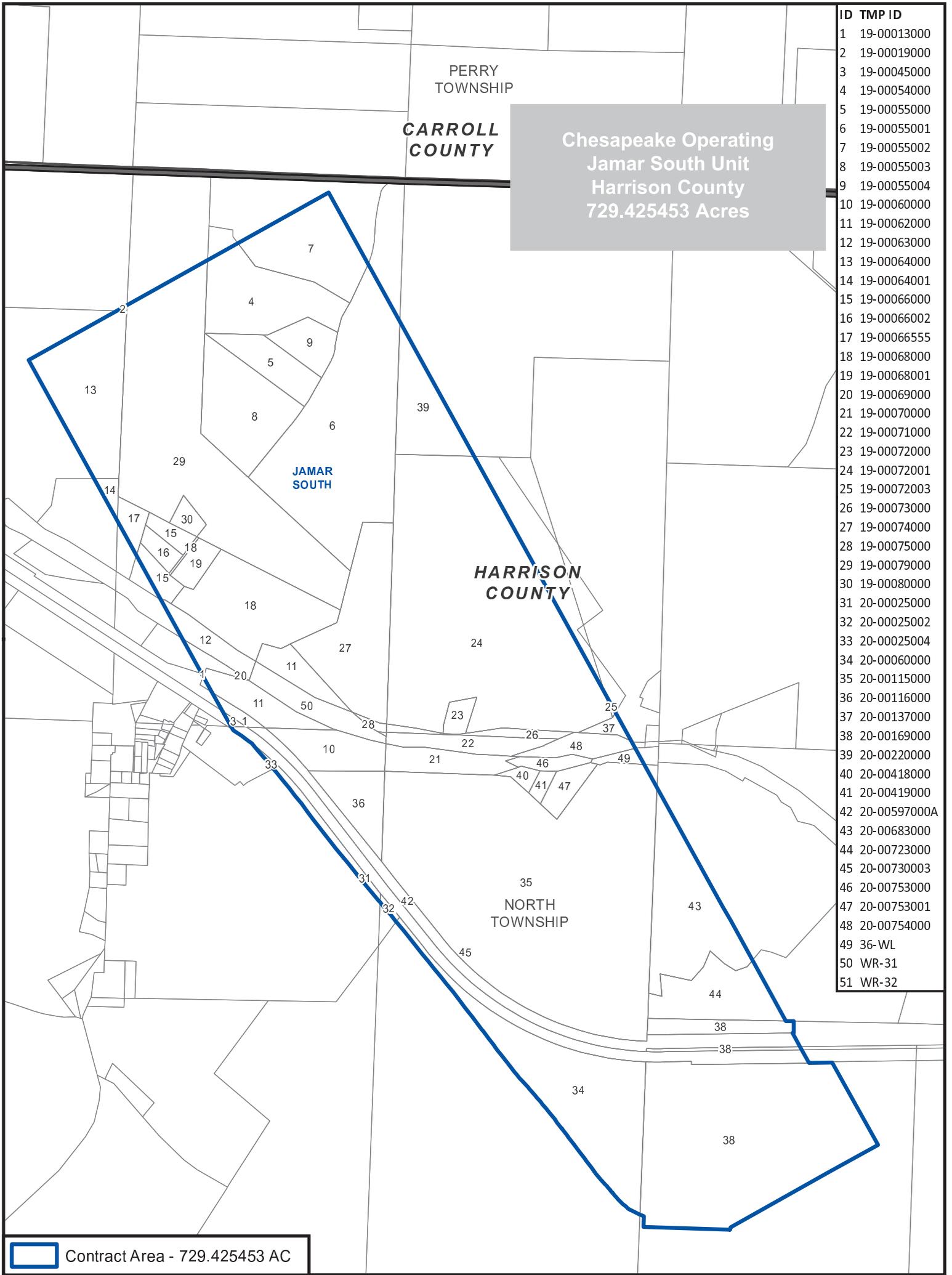


Exhibit "A-1"



CONTRACT AREA

Jamar South
North Township
Harrison Co., OH

1 inch = 1,150 feet



Exhibit "A-2"
Leases Within the Contract Area

Attached to and made a part of that certain Unit Operating Agreement dated April 25, 2014 as approved by the Ohio Department of Natural Resources for the Jamar South Unit.

TRACT NUMBER	CHESAPEAKE LEASE ID NUMBER	LESSOR	LEASED YES/NO	SURFACE ACRES IN UNIT	TRACT PARTICIPATION	TAX MAP PARCEL ID NUMBERS	TOWNSHIP	COUNTY	STATE	UNIT WORKING INTEREST	CHESAPEAKE WORKING INTEREST	CHESAPEAKE UNIT PARTICIPATION	ENERVEST WORKING INTEREST	ENERVEST UNIT PARTICIPATION	XTO WORKING INTEREST	XTO UNIT PARTICIPATION	AEU WORKING INTEREST	AEU UNIT PARTICIPATION	ADDRESS	CITY	STATE	ZIP CODE
1	1-383504-001	WHEELING AND LAKE ERIE RAILWAY COMPANY	YES	1.076294	0.0014755	19-00013000	North	HARRISON	OH	0.14755%	100.00000%	0.14755%							100 E First St	Brewster	OH	44613
2	34-000369-000	BRUCE W & MARGARET A GANDEE	YES	0.067774	0.0000929	19-00019000	North	HARRISON	OH	0.00929%	100.00000%	0.00929%							35000 Scio-Bowenston Rd	Bowenston	OH	44695
3	34-0001356-000	CONSOLIDATED RAIL CORPORATION	YES	0.267635	0.003669	19-00045000	North	HARRISON	OH	0.03669%	100.00000%	0.03669%							1717 Arch St, Ste 1310	Philadelphia	PA	19103
4	34-029804-000	JERRY E & PEGGY L KNIGHT	YES	17.870888	0.0244999	19-00054000	North	HARRISON	OH	2.44999%	100.00000%	2.44999%							91800 Timmerman Rd	Bowenston	OH	44695
5	34-000849-000	GEORGE H FARNSWORTH, II	YES	7.176977	0.0098392	19-00055000	North	HARRISON	OH	0.98392%	100.00000%	0.98392%							2600 Ranch Rd	Carrollton	OH	44615
6	34-012516-000	JAMES R COSTIGAN	YES	50.892839	0.0697711	19-00055001	North	HARRISON	OH	6.97711%	62.50000%	4.36070%	37.50%	2.616417%					3670 Forest Oaks Dr	Fairlawn	OH	44333
7	34-014466-000	JAMAR HOLDINGS LTD BY JACOB E YODER, JR	YES	16.188587	0.0221936	19-00055002	North	HARRISON	OH	2.21936%	62.50000%	1.38710%	37.50%	0.832261%					13405 Harrison Rd	Applecreek	OH	44606
8	34-000849-000	GEORGE H FARNSWORTH, II	YES	17.644692	0.0241898	19-00055003	North	HARRISON	OH	2.41898%	100.00000%	2.41898%							2600 Ranch Rd	Carrollton	OH	44615
9	34-000849-000	GEORGE H FARNSWORTH, II	YES	5.097083	0.0069878	19-00055004	North	HARRISON	OH	0.69878%	100.00000%	0.69878%							2600 Ranch Rd	Carrollton	OH	44615
10	OH0000357-000	WOODLAND LEGACY, LLLP	YES	8.011035	0.0109827	19-00060000	North	HARRISON	OH	1.09827%	100.00000%	1.09827%							3123 E Kimberly Rd	Davenport	IA	52807
11	OH0000357-000	WOODLAND LEGACY, LLLP	YES	11.039072	0.0151339	19-00062000	North	HARRISON	OH	1.51339%	100.00000%	1.51339%							3123 E Kimberly Rd	Davenport	IA	52807
12	OPEN	OHIO DEPARTMENT OF TRANSPORTATION	NO	4.472621	0.006132	19-00063000	North	HARRISON	OH	0.61317%									Attn: John Maynard and Jim Viau ODOT Office of Real Estate 4TH Floor, 1980 W. Broad St. Mail Stop 4120	Columbus	OH	43223
13	34-003701-000	VERNON J WEBB	YES	21.277188	0.0291698	19-00064000	North	HARRISON	OH	2.91698%	100.00000%	2.91698%							35200 Scio-Bowenston Rd	Bowenston	OH	44695
14	34-0002282-000	LJ SMITH INC.	YES	1.125892	0.0015435	19-00064001	North	HARRISON	OH	0.15435%	100.00000%	0.15435%							Attn: Craig Kurtz, President 35280 Scio-Bowenston Rd	Bowenston	OH	44695
15	34-001563-000	BERNARD L & KAREN J WEST	YES	4.347784	0.0059606	19-00066000	North	HARRISON	OH	0.59606%	100.00000%	0.59606%							35500 SR 151 TR 204	Bowenston	OH	44695
16	34-000753-000	TY J WEST	YES	1.945348	0.0026670	19-00066002	North	HARRISON	OH	0.26670%	100.00000%	0.26670%							91200 Timmerman Rd	Bowenston	OH	44695
17	34-0001415-000	BERNARD L & KAREN J WEST	YES	2.217811	0.0030405	19-00066555	North	HARRISON	OH	0.30405%	100.00000%	0.30405%							35500 Scio-Bowenston Rd	Bowenston	OH	44695
18	34-000583-000	JOSEPH H & TERESA FINNICUM	YES	20.896866	0.0286484	19-00068000	North	HARRISON	OH	2.86484%	100.00000%	2.86484%							9229 Deacon Rd	Bowenston	OH	44695
19	34-000753-000	TY J WEST	YES	2.790428	0.0038255	19-00068001	North	HARRISON	OH	0.38255%	100.00000%	0.38255%							91200 Timmerman Rd	Bowenston	OH	44695
20	34-000582-000	JOSEPH H & TERESA FINNICUM	YES	1.428318	0.0019581	19-00069000	North	HARRISON	OH	0.19581%	100.00000%	0.19581%							9229 Deacon Rd	Bowenston	OH	44695
21	34-000609-000	GREEN FIELDS FAMILY FARM LTD	YES	6.261692	0.0085844	19-00070000	North	HARRISON	OH	0.85844%	100.00000%	0.85844%							132 Fair Ave NW	New Philadelphia	OH	44663
22	OPEN	OHIO DEPARTMENT OF TRANSPORTATION	NO	5.420135	0.007431	19-00071000	North	HARRISON	OH	0.74307%									Attn: John Maynard and Jim Viau ODOT Office of Real Estate 4TH Floor, 1980 W. Broad St. Mail Stop 4120	Columbus	OH	43223
23	34-0000812-001	DWIGHT & SANDRA L MCBRIDE	YES	0.617243	0.0008462	19-00072000	North	HARRISON	OH	0.08462%	100.00000%	0.08462%							124 Piedmont Dr	Kannapolis	NC	28081
23	34-0000959-000	ROBERT MCBRIDE	YES	0.617243	0.0008462	19-00072000	North	HARRISON	OH	0.08462%	100.00000%	0.08462%							1100 Liberty Ave	Pittsburgh	PA	15222
23	34-0000812-002	MILDRED M MCBRIDE	YES	0.617243	0.0008462	19-00072000	North	HARRISON	OH	0.08462%	100.00000%	0.08462%							36000 Scio-Bowenston rd	Bowenston	OH	44695
24	34-000609-000	GREEN FIELDS FAMILY FARM LTD	YES	92.614990	0.1269698	19-00072001	North	HARRISON	OH	12.69698%	100.00000%	12.69698%							132 Fair Ave NW	New Philadelphia	OH	44663
25	34-000609-000	GREEN FIELDS FAMILY FARM LTD	YES	0.132494	0.0001816	19-00072003	North	HARRISON	OH	0.01816%	100.00000%	0.01816%							132 Fair Ave NW	New Philadelphia	OH	44663
26	OPEN	OHIO DEPARTMENT OF TRANSPORTATION	NO	2.243520	0.003076	19-00073000	North	HARRISON	OH	0.30757%									Attn: John Maynard and Jim Viau ODOT Office of Real Estate 4TH Floor, 1980 W. Broad St. Mail Stop 4120	Columbus	OH	43223
27	34-000609-000	GREEN FIELDS FAMILY FARM LTD	YES	23.141469	0.0317256	19-00074000	North	HARRISON	OH	3.17256%	100.00000%	3.17256%							132 Fair Ave NW	New Philadelphia	OH	44663
28	OPEN	OHIO DEPARTMENT OF TRANSPORTATION	NO	0.468629	0.000642	19-00075000	North	HARRISON	OH	0.06425%									Attn: John Maynard and Jim Viau ODOT Office of Real Estate 4TH Floor, 1980 W. Broad St. Mail Stop 4120	Columbus	OH	43223
29	34-002232-000	THOMAS C & GAIL L DENNIS	YES	63.362215	0.0868659	19-00079000	North	HARRISON	OH	8.68659%	100.00000%	8.68659%							91300 Timmerman Rd	Bowenston	OH	44695
30	34-002232-000	THOMAS C & GAIL L DENNIS	YES	1.628601	0.0022327	19-00080000	North	HARRISON	OH	0.22327%	100.00000%	0.22327%							91300 Timmerman Rd	Bowenston	OH	44695
31	34-019492-000	CHRISTINE BLANC-OSBOURNE	YES	2.627418	0.0036020	20-00025000	North	HARRISON	OH	0.36020%	100.00000%	0.36020%							9 Springfield Way	Arden	NC	28704

TRACT NUMBER	CHESAPEAKE LEASE ID NUMBER	LESSOR	LEASED YES/NO	SURFACE ACRES IN UNIT	TRACT PARTICIPATION	TAX MAP PARCEL ID NUMBERS	TOWNSHIP	COUNTY	STATE	UNIT WORKING INTEREST	CHESAPEAKE WORKING INTEREST	CHESAPEAKE UNIT PARTICIPATION	ENERVEST WORKING INTEREST	ENERVEST UNIT PARTICIPATION	XTO WORKING INTEREST	XTO UNIT PARTICIPATION	AEU WORKING INTEREST	AEU UNIT PARTICIPATION	ADDRESS	CITY	STATE	ZIP CODE	
32	34-019492-000	CHRISTINE BLANC-OSBOURNE	YES	0.345483	0.0004736	20-00025002	North	HARRISON	OH	0.04736%	100.00000%	0.04736%							9 Springfield Way	Arden	NC	28704	
33	34-016700-000	KIM INBOURNE	YES	0.222696	0.0003053	20-00025004	North	HARRISON	OH	0.03053%	100.00000%	0.03053%							91009 Conotton Rd.	Bowerston	OH	44695	
34		WOODLAND LEGACY, LLLP	YES	33.054697	0.0453161	20-00060000	North	HARRISON	OH	4.53161%	100.00000%	4.53161%							3123 E. Kimberly Rd.	Davenport	IA	52807	
35	34-001565-000	WILLIAM R HARDING	YES	121.358067	0.1663749	20-00115000	North	HARRISON	OH	16.63749%	100.00000%	16.63749%							283 Second St NW	Carrollton	OH	44615	
36	34-001565-000	WILLIAM R HARDING	YES	7.513478	0.0103005	20-00116000	North	HARRISON	OH	1.03005%	100.00000%	1.03005%							283 Second St NW	Carrollton	OH	44615	
37	34-012310-000	THELMA M HORSTMAN	YES	1.145866	0.0015709	20-00137000	North	HARRISON	OH	0.15709%	100.00000%	0.15709%							36230 Scio-Bowerston Rd	Bowerston	OH	44695	
38	OH0000358-000	D STEVEN & LORRAINE REESE AND R CHRISTOPHER & CATHY REESE AND DOUGLAS S & CHRISTINA REESE	YES	72.601458	0.0995324	20-00169000	North	HARRISON	OH	9.95324%	100.00000%	9.95324%							37900 Crimm Rd	Scio	OH	43988	
39	34-012516-000	JAMES R COSTIGAN	YES	11.483287	0.0157429	20-00220000	North	HARRISON	OH	1.57429%	62.50000%	0.98393%	37.50%	0.590359%					3670 Forest Oaks Dr	Fairlawn	OH	44333	
40	XTO	HARRY C & DEANN HORSTMAN	YES	1.097243	0.0015043	20-00418000	North	HARRISON	OH	0.15043%					100.00000%	0.150426%			90151 Kilgore Ridge Rd	Scio	OH	43988	
41	XTO	HARRY C & DEANN HORSTMAN	YES	1.025847	0.0014064	20-00419000	North	HARRISON	OH	0.14064%					100.00000%	0.140638%			90151 Kilgore Ridge Rd	Scio	OH	43988	
42	34-0001356-000	CONSOLIDATED RAIL CORPORATION	YES	16.527543	0.0226583	20-00597000A	North	HARRISON	OH	2.26583%	100.00000%	2.26583%							1717 Arch St, Ste 1310	Philadelphia	PA	19103	
43	34-004953-000	PAUL A TRUSHELL	YES	21.977235	0.0301295	20-00683000	North	HARRISON	OH	3.01295%	100.00000%	3.01295%							36695 Scio-Bowerston Rd	Scio	OH	43988	
44	XTO	MARSH E AMOS	YES	12.952806	0.0177575	20-00723000	North	HARRISON	OH	1.77575%					100.00000%	1.775755%			90700 Amos Rd	Scio	OH	43988	
45	1-383504-001	WHEELING AND LAKE ERIE RAILWAY COMPANY	YES	15.807006	0.0216705	20-00730003	North	HARRISON	OH	2.16705%	100.00000%	2.16705%							100 E First St	Brewster	OH	44613	
46	34-012310-000	THELMA M HORSTMAN	YES	1.973373	0.0027054	20-00753000	North	HARRISON	OH	0.27054%	100.00000%	0.27054%							36230 Scio-Bowerston Rd	Bowerston	OH	44695	
47	AEU	RICHARD RICE	YES	3.141143	0.0043063	20-00753001	North	HARRISON	OH	0.43063%							100.00000%	0.430632%	36230 Scio-Bowerston Rd	Bowerston	OH	44695	
48	OPEN	OHIO DEPARTMENT OF TRANSPORTATION	NO	4.198011	0.005755	20-00754000	North	HARRISON	OH	0.57552%									Attn: John Maynard and Jim Viau ODOT Office of Real Estate 4TH Floor, 1980 W. Broad St. Mail Stop 4120	Columbus	OH	43223	
49	OPEN	OHIO DEPARTMENT OF TRANSPORTATION	NO	1.047435	0.001436	36-WL	North	HARRISON	OH	0.14360%									Attn: John Maynard and Jim Viau ODOT Office of Real Estate 4TH Floor, 1980 W. Broad St. Mail Stop 4120	Columbus	OH	43223	
50	OPEN	OHIO DEPARTMENT OF TRANSPORTATION	NO	6.325792	0.008672	31-WR	North	HARRISON	OH	0.86723%									Attn: John Maynard and Jim Viau ODOT Office of Real Estate 4TH Floor, 1980 W. Broad St. Mail Stop 4120	Columbus	OH	43223	
51	OPEN	OHIO DEPARTMENT OF TRANSPORTATION	NO	0.003894	0.000053	32-WR	North	HARRISON	OH	0.00535%									Attn: John Maynard and Jim Viau ODOT Office of Real Estate 4TH Floor, 1980 W. Broad St. Mail Stop 4120	Columbus	OH	43223	
TOTAL LEASED ACRES:				705.2103165	0.9668025					96.68025%	90.14376%	4.03904%			2.06682%	0.43063%							
TOTAL UNIT ACRES:				729.4254530																			

Exhibit "A-3"
Unitized Parties

Attached to and made a part of that certain Unit Operating Agreement dated April 25, 2014 as approved by the Ohio Department of Natural Resources for the Jamar South Unit.

TRACT NUMBER	MINERAL OWNER	ADDRESS	LEASED YES/NO	SURFACE ACRES IN UNIT	TRACT PARTICIPATION	TAX MAP PARCEL ID NUMBERS	TOWNSHIP	COUNTY	STATE	LESSOR WORKING INTEREST	UNIT PARTICIPATION
12	OHIO DEPARTMENT OF TRANSPORTATION	OFFICE OF REAL ESTATE, ATTN: JOHN MAYNARD AND JIM VIAU, MAIL STOP 4120, 1980 W. BROAD STREET, COLUMBUS, OH 43223	NO	4.472620562	0.0061317	19-00063000	NORTH	HARRISON	OH	100.00%	0.006132
22	OHIO DEPARTMENT OF TRANSPORTATION	OFFICE OF REAL ESTATE, ATTN: JOHN MAYNARD AND JIM VIAU, MAIL STOP 4120, 1980 W. BROAD STREET, COLUMBUS, OH 43223	NO	5.420134757	0.0074307	19-00071000	NORTH	HARRISON	OH	100.00%	0.007431
26	OHIO DEPARTMENT OF TRANSPORTATION	OFFICE OF REAL ESTATE, ATTN: JOHN MAYNARD AND JIM VIAU, MAIL STOP 4120, 1980 W. BROAD STREET, COLUMBUS, OH 43223	NO	2.24351992	0.0030757	19-00073000	NORTH	HARRISON	OH	100.00%	0.003076
28	OHIO DEPARTMENT OF TRANSPORTATION	OFFICE OF REAL ESTATE, ATTN: JOHN MAYNARD AND JIM VIAU, MAIL STOP 4120, 1980 W. BROAD STREET, COLUMBUS, OH 43223	NO	0.468629306	0.0006425	19-00075000	NORTH	HARRISON	OH	100.00%	0.000642
48	OHIO DEPARTMENT OF TRANSPORTATION	OFFICE OF REAL ESTATE, ATTN: JOHN MAYNARD AND JIM VIAU, MAIL STOP 4120, 1980 W. BROAD STREET, COLUMBUS, OH 43223	NO	4.198011469	0.0057552	20-00754000	NORTH	HARRISON	OH	100.00%	0.005755
49	OHIO DEPARTMENT OF TRANSPORTATION	OFFICE OF REAL ESTATE, ATTN: JOHN MAYNARD AND JIM VIAU, MAIL STOP 4120, 1980 W. BROAD STREET, COLUMBUS, OH 43223	NO	1.04743492	0.0014360	36-WL	NORTH	HARRISON	OH	100.00%	0.001436
50	OHIO DEPARTMENT OF TRANSPORTATION	OFFICE OF REAL ESTATE, ATTN: JOHN MAYNARD AND JIM VIAU, MAIL STOP 4120, 1980 W. BROAD STREET, COLUMBUS, OH 43223	NO	6.325791843	0.0086723	31-WR	NORTH	HARRISON	OH	100.00%	0.008672
51	OHIO DEPARTMENT OF TRANSPORTATION	OFFICE OF REAL ESTATE, ATTN: JOHN MAYNARD AND JIM VIAU, MAIL STOP 4120, 1980 W. BROAD STREET, COLUMBUS, OH 43223	NO	0.03899368	0.0000535	32-WR	NORTH	HARRISON	OH	100.00%	0.000053
		TOTAL UNITIZED ACRES:		24.2151365	0.0331975						
				TOTAL UNIT ACRES:		729.4254530					

**STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS RESOURCES MANAGEMENT**

In re the Matter of the Application of :
Chesapeake Exploration, L.L.C., for :
Unit Operation : Application Date: April 25, 2014
: :
Jamar South Unit :

**PREPARED TESTIMONY OF DAVID F. YARD, PE
ON BEHALF OF CHESAPEAKE EXPLORATION, L.L.C.**

R. Neal Pierce (0028379)
Katerina E. Milenkovski (0063314)
STEPTOE & JOHNSON PLLC
Huntington Center
41 South High Street, Suite 2200
Columbus, OH 43215

Attorneys for Applicant,
Chesapeake Exploration, L.L.C.

Date: January 5, 2015

PREPARED DIRECT TESTIMONY OF DAVID F. YARD, PE

1 **Q1. Please introduce yourself.**

2 **A1.** My name is David Yard and my business address is 6100 N. Western Avenue, Oklahoma
3 City, Oklahoma 73154-0496. I am a Reservoir Engineering Advisor for Chesapeake
4 Energy Corporation.

5 **Q2. What is the purpose of your testimony today?**

6 **A2.** I am testifying in support of the Application of Chesapeake Exploration, L.L.C., for Unit
7 Operation filed with respect to the Jamar South Unit. My testimony addresses the
8 following: (1) that unit operations for the Jamar South Unit are reasonably necessary to
9 increase substantially the recovery of oil and gas, protect the correlative rights of the
10 mineral owners, and (2) that the estimated additional revenue, due to unit operations,
11 exceeds the estimated additional capital investment.

12 **Q3. Can you summarize your educational experience for me?**

13 **A3.** I hold a Bachelors of Science degree from Columbia University, NYC and I am licensed
14 as a Professional Petroleum Engineer in the State of Oklahoma, #14582.

15 **Q4. Are you a member of any professional associations?**

16 **A4.** I am a member, and former Section Chairman, of the Society of Petroleum Engineers; a
17 member of the Society of Petroleum Evaluation Engineers; and member of the Interstate
18 Oil and Gas Compact Commission.

19 **Q5. How long have you been a Reservoir Engineer for Chesapeake?**

20 **A5.** Three years.

21 **Q6. What other work experiences have you had?**

22 **A6.** I have experience of more than 30 years in the oil and gas industry; twenty of those years
23 as a domestic and international consultant specializing in regional studies for investment
24 purposes, secondary and tertiary flood design, optimization of mature oil and gas fields,
25 pressure transient analysis, Nodal analysis, and the economic evaluation of oil and gas
26 properties. I was one of the two founders of Columbia Production Co.; President and
27 CEO (4 yrs). Additionally, I was Technical Manager, Oklahoma Corporation
28 Commission, Oil and Gas Division in 2002.

29 **Q7. What do your job responsibilities entail?**

30 **A7.** I do exploratory property evaluations and strategic planning. I also train, coach, and
31 mentor other engineers in all matters associated with reservoir engineering and the public

1 disclosure of Chesapeake's assets. Finally I am responsible for the preparation of expert
2 engineering testimony for the Utica play in Ohio as well as all other areas of interest to
3 Chesapeake Energy Corporation.

4 **Q8. How do you do that?**

5 **A8.** I use public and proprietary information, coupled with sound engineering practices to
6 audit the value of Chesapeake assets. Practices include, but are not limited to,
7 volumetrics, material balance, Arps (decline curve) analysis, as well as other forms of
8 rate-time analysis and analytical models.

9 **Q9. Did you perform any analysis to support Chesapeake's application for unitization
10 for the proposed Jamar South Unit?**

11 **A9.** Yes.

12 **Q10. What sort of analysis did you perform?**

13 **A10.** First, I estimated the gas-in-place (GIP) without unitization, observing current regulatory
14 setbacks for individual tracts. Next, I calculated GIP pursuant to a unitization order.
15 Lastly, I calculated the future revenue, based on current pricing, and determined a
16 minimum recovery factor (RF) needed for revenues to exceed capital investment.

17 **Q11. Why is Chesapeake looking at drilling horizontal wells?**

18 **A11.** The permeability of unconventional resource plays is so low (in nano-darcy units (nd),
19 i.e. 1.0×10^{-9} darcies) that the hydrocarbons cannot be economically produced without
20 the use of horizontal drilling, coupled with massive stimulation treatments (i.e. hydraulic
21 fracturing). Horizontal drilling is the predominant method used to develop shale
22 formations such as the Utica/Point Pleasant.

23 **Q12. Turning specifically to the Jamar South Unit, have you made an estimate of the
24 production you anticipate from the proposed unit's operations?**

25 **A12.** Yes. I have estimated the GIP from the proposed Unit Area in the Jamar South Unit to be
26 72.0 BCFE.

27 **Q13. How did you make those estimates?**

28 **A13.** I used isopleth maps of petrophysical data, obtained from other wells in the area, to
29 estimate the anticipated GIP.

30 **Q14. Once you had that data from the other Utica/Point Pleasant wells, what did you do
31 with it?**

1 **A14.** I used the porosity, water saturations, net pay, formation pressures, etc. to do volumetric
2 calculations based on industry accepted methodologies.

3 **Q15. Why do you qualify your calculations as an estimate?**

4 **A15.** There is always the possibility that the petrophysical and geological data used from offset
5 wells may be slightly different than the characteristics of the productive horizon at this
6 location. However, the volumetric calculations of GIP should be a reasonably certain
7 estimate in this statistical unconventional play.

8 **Q16. In your professional opinion, would it be economic to develop the Jamar South Unit
9 using traditional vertical drilling?**

10 **A16.** Absolutely not.

11 **Q17. Are the estimates that you made based on good engineering practices and accepted
12 methods in the industry?**

13 **A17.** Yes.

14 **Q18. Do you have the calculations you performed?**

15 **A18.** The results of my calculations are attached to this prepared testimony as Exhibit DFY-1.

16 **Q19. Can you summarize what your calculations show?**

17 **A19.** The results of my prior stated methodology are (assuming 100% recovery in all cases);
18 1) Capital expenditure (CAPEX) to develop the unitized project is \$29.9 million. GIP
19 from the project is 69.8 BCFE (reduced from 72.0 BCFE due to regulatory setbacks from
20 unit boundaries) and future revenues (using current SEC pricing of \$4.350/Mcf (no btu
21 adjustments)) are \$303.4 million. A recovery factor (RF) of 9.8% is needed to achieve
22 revenues that exceed CAPEX.

23 2) CAPEX to develop the non-unitized project is \$11.6 million. GIP from the project is
24 28.2 BCFE and future revenues (using current SEC pricing of \$4.35/Mcf (no btu
25 adjustments)) are \$122.6 million. A recovery factor (RF) of 9.5% is needed to achieve
26 revenues that exceed CAPEX.

27 **Q20. Can you briefly explain why you are using current SEC pricing in this application?**

28 **A20.** Every company has its own ideas of economic indicators by which it decides to invest in
29 an opportunity or not. Current SEC pricing, un-escalated, eliminates all the issues
30 associated with corporate decision trees and reduces the evaluation of corporate assets,
31 and projects, to a single deterministic standard. We have no clear crystal ball into the

1 future of oil and gas prices. What we do know, and can verify, is the price we currently
2 and historically get for each barrel of oil and each MMBtu of gas.

3 **Q21. Can you briefly discuss why your analysis in this application considers natural gas**
4 **as the only product to be produced?**

5 **A21.** We know that the products ultimately purchased from these wells will be comprised of
6 natural gas, condensate, and natural gas liquids (NGLs). However, for the purpose of
7 conducting a volumetric analysis of the reservoir at initial conditions, there is only natural
8 gas in the reservoir. The condensates and NGLs are separated out at the surface and sold
9 separately, when economic to do so, in an attempt to maximize cash flow. Ultimately, as
10 the reservoir pressure drops below the dew point, condensate will drop out in the
11 reservoir. However, under initial conditions the reservoir is only natural gas. By using
12 only gas prices to evaluate the future cash flow from the project, I have assumed the most
13 conservative scenario, as no additional value for condensate sales, btu adjustments, or
14 NGL sales, all very real values, have been included. If the cash flow from the project
15 exceeds the investment, under the most conservative scenario, then unitization should be
16 granted to protect the correlative rights of the mineral owners.

17 **Q22. Can you briefly comment on the anticipated range of recovery factors that**
18 **Chesapeake would expect to achieve for the Jamar South Unit?**

19 **A22.** Based upon the current statistical distribution of known data, a range of 30% to 70% is
20 anticipated. The statistical mean of the data is 49%.

21 **Q23. Based on this information and your professional judgment, do unit operations**
22 **increase substantially the ultimate recovery of oil and gas?**

23 **A23.** Yes. The GIP in the unitized project increases by approximately 147.5% from 28.2
24 BCFE to 69.8 BCFE.

25 **Q24. Based on this information and your professional judgment, does the value of the**
26 **estimated additional recovery of hydrocarbons from the unitized project exceed its**
27 **estimated costs?**

28 **A24.** Yes. CAPEX increases by \$18.3 million (157%) for the unitized project from the non-
29 unitized project. The maximum value of additional revenues from the proposed Jamar
30 South Unit is approximately \$180.8 million (148%) as compared to what could be
31 realized without approval of this application for unit operations.

1 **Q25. In your professional opinion, do you believe that the proposed unit operations for**
2 **the Jamar South Unit are reasonably necessary to increase substantially the**
3 **ultimate recovery of oil and gas from the unit area?**

4 **A25.** Yes. The unitization of the Jamar South Unit is definitely needed to maximize the
5 economic benefit to the interest owners, and protect the correlative rights of the mineral
6 owners. If the project is not unitized it will strand 59.6% of the recoverable gas, or 41.6
7 BCFE (100% RF) in the ground from which mineral owners would, most likely, never
8 see financial benefit, nor Chesapeake, nor the State of Ohio.

9 **Q26. Does this conclude your testimony?**

10 **A26.** Yes.

EXHIBIT “DFY-1”

Jamar South Unit

	Acreage	GIP (BCFE)
Nonconsenting Parcels (1)	24.2	2.4
Stranded CHK Leasehold (2)	375.8	37.1
Stranded Non-CHK Leasehold (3)	0.0	0.0
Abbreviated Development (4) = 5-(1+2+3)	329.5	32.5
Unit Total (5)	729.4	72.0

UNITIZED

Well Name	Lateral Length (ft)	GIP (BCFE)	Capital (MM\$)
Jamar 10H	10400	26.5	\$11.39
Jamar 8H	10400	26.5	\$11.39
Jamar 6H	6550	16.7	\$7.08
	27,350	69.8	\$29.9

NON-UNITIZED

Well Name	Lateral Length (ft)	GIP (BCFE)	Capital (MM\$)
Jamar 10H	4950	12.6	\$5.29
Jamar 8H	4275	10.9	\$4.53
Jamar 6H	1825	4.7	\$1.79
	11,050	28.2	\$11.6

SEC Price = \$4.350	Unitized	Non-Unitized	Increases due to Unitization
Total Capital (MM\$) *	\$29.87	\$11.62	\$18.25
GIP (BCFE)	69.75	28.18	41.57
Potential Revenues (MM\$) @ SEC (4.35)	\$303.41	\$122.59	\$180.83
RF needed for revenue to exceed CAPEX	9.8%	9.5%	

* CAPEX for compression and pipeline will be burden of midstream operator

% increase in Total Capital due to Unitization:	157%
% increase in GIP due to Unitization:	148%
% increase in Revenues due to Unitization:	148%
 Est. Disc. Time to PO (Unitized), Yrs:	 3.7
P50 Fixed LOE per well, \$/month:	\$3,302
 Est. RF% due to Unitization:	 32%
Est. Abbreviated RF%:	13%

* Used Toe Setback of 150 '

Total Toe & Heel Setbacks = 300 '

** Used Heel Setback of 150 '

PREPARED DIRECT TESTIMONY OF LAUREN ELLIOTT

1 **INTRODUCTION.**

2 **Q1. Please state your name and business address.**

3 A1. My name is Lauren Elliott and my business address is 6100 N. Western Avenue,
4 Oklahoma City, Oklahoma 73154-0496.

5 **Q2. Who is your employer?**

6 A2. Chesapeake Energy Corporation.

7 **Q3. What is your position with Chesapeake?**

8 A3. My official title at Chesapeake Energy Corporation is Landman I.

9 **Q4. Please describe your professional responsibilities at Chesapeake.**

10 A4. I am responsible for assisting with our oil and gas development program in eastern
11 Ohio in Chesapeake’s Appalachia South business unit.

12 **Q5. Starting with college, please describe your educational background.**

13 A5. I hold a Bachelor of Arts from the University of Central Oklahoma and a Master’s
14 Degree in Energy Legal Studies from Oklahoma City University.

15 **Q6. Please briefly describe your professional experience.**

16 A6. I began working at Chesapeake Energy in 2007 as a Land Assistant in the Barnett
17 Shale Land Division. I worked in the Barnett Shale for approximately five years
18 before moving into Chesapeake’s Utica Shale Land Division as a Senior Land
19 Technician. Since early 2014 I have worked as a Landman I which entails
20 operational responsibility for a particular geographic area of the play.

21 **Q7. What do you do as a Landman I?**

22 A7. I essentially engage in what can be considered “prospect building.” After our
23 geology department identifies a play, I help execute the company’s leasing and
24 development efforts in a particular area. I help facilitate development of the Utica
25 play through lease acquisitions and negotiations, joint operation negotiations, title
26 review, unit formation, wellbore planning, various permitting activities, drilling
27 wells, and other related operational activities.

28 **Q8. Are you a member of any professional associations?**

29 A8. Yes. The American Association of Professional Landmen.

30 **Q9. Were you involved in the preparation of Chesapeake Exploration, L.L.C.’s**

1 **Application for unitization with respect to the Jamar South Unit?**

2 A9. Yes. I also am familiar with the efforts made by Chesapeake to put the Jamar
3 South Unit together and the Unit Plan that Chesapeake is proposing.

4 **Q10. Can you generally describe the Jamar South Unit?**

5 A10. Yes. The Jamar South Unit consists of fifty-one (51) separate tracts of land totaling
6 approximately 729.425453 acres in Harrison County, Ohio.

7 **Q10A. A hearing was previously held with the Division of Oil and Gas Resources**
8 **Management for the Jamar South Unit on June 11, 2014. Can you generally**
9 **describe how the proposed Jamar South Unit has changed since this date?**

10 A10A. Yes. Chesapeake seized upon an opportunity to optimize development of the Jamar
11 South after conversations with Atlas Resource Partners, L.P. (which manages Atlas
12 Noble, LLC and Atlas Resources, LLC). Chesapeake convinced Atlas that the Atlas
13 operated Cramblett Unit, as originally drawn in early 2014 and depicted upon the
14 original Exhibit 7 of the Application, was creating correlative rights problems and
15 obstructing optimal development of Chesapeake's planned offsetting units.
16 Chesapeake noted that Atlas's Unit was either pooling or planned to pool
17 potentially non-productive leasehold within the Cramblett Unit (some of which was
18 as distant as over 1,600 feet away from the nearest Cramblett Unit wellbore), and
19 Chesapeake proposed that Atlas use the leasehold over 500 feet away from the
20 Cramblett 1H and 5H (the two outermost wells within the unit) to participate in
21 Chesapeake's planned offsetting units to the east and west of the Cramblett Unit or
22 to convey the acreage to Chesapeake so that it could be developed and the resource
23 under these tracts would not be forever stranded and wasted as Chesapeake's
24 offsetting units were eventually developed. Atlas opted not to participate but
25 decided instead chose to convey its leasehold to Chesapeake. Originally my
26 colleague Mr. Highsaw testified that the Jamar South Unit consisted of 626.046000
27 acres and was comprised of forty-six (46) separate tracts of land. Now, the Jamar
28 South Unit is planned to consist of fifty-one (51) separate tracts of land totaling
29 approximately 729.425453 acres in Harrison County, Ohio.

30 **EFFORTS MADE BY CHESAPEAKE TO LEASE UNIT TRACTS.**

31 **Q11. The Application submitted by Chesapeake indicates that it owns the oil and**

1 **gas rights to 657.531511 acres of the proposed 729.425453-acre unit. Would**
2 **you describe how Chesapeake acquired its rights?**

3 A11. Chesapeake acquired its working interest in this unit through acquisitions and a
4 ground floor leasing effort. In the leasing effort, Chesapeake assigned field title
5 and leasing agents to research the county records for a specific area and then secure
6 oil and gas leases with the relevant mineral owners for those particular tracts. As
7 for the acquisitions, Chesapeake purchased some of its leasehold interest in the
8 Jamar South Unit from Atlas Noble, LLC and Atlas Resources, LLC.

9 **Q12. What percentage of the total acreage of the Jamar South Unit is represented**
10 **by the oil and gas rights held by Chesapeake and its working interest**
11 **partners?**

12 A12. Chesapeake and its working interest partners control over 96% of the acreage in the
13 unit, with Chesapeake holding 90.14376%, XTO holding 2.06882%, AEU holding
14 0.43063%, and EnerVest holding 4.03904% of the acreage in the Jamar South Unit.
15 Not including the non-operated acreage of XTO, AEU, and EnerVest, Chesapeake
16 alone accounts for over 90% of this Unit which still substantially exceeds the 65%
17 statutory minimum requirement for seeking unitization.

18 **Q13. Why was Chesapeake not able to acquire the oil and gas rights to all of the**
19 **acreage in the proposed unit?**

20 A13. There are eight (8) wholly unleased tracts owned by one (1) landowner (Unit Tracts
21 12, 22, 26, 28, 48, 49, 50 & 51) in the Jamar South Unit. The owner of all eight (8)
22 of the unleased tracts, the Ohio Department of Transportation, or "ODOT," has
23 indicated that it is generally not entering into any new oil and gas leases at this time
24 and that it also specifically will not be leasing to Chesapeake in the Jamar South at
25 present. Chesapeake recently obtained a lease, already submitted to the Division,
26 from the only other previously unleased mineral owner within the Jamar South
27 Unit, L. J. Smith, Inc.

28 **Q14. Have you prepared affidavits detailing Chesapeake's efforts to obtain a lease**
29 **from the unleased mineral owners in the proposed unit?**

30 A14. Yes. As just discussed, Exhibit LE-1 contains one (1) affidavit which identifies
31 lease efforts which were made to lease the unleased mineral owner.

1 **Q15. If the unleased tract owners in the unit were to ask to lease with Chesapeake,**
2 **would Chesapeake be likely to agree?**

3 A15. Absolutely. As Chesapeake has demonstrated on a number of occasions with its
4 previous unitization applications, Chesapeake remains willing to lease on
5 reasonable, fair market value terms. I think this is evidenced by Chesapeake's
6 recent acquisition of an oil and gas lease from L. J. Smith, Inc., the only other
7 previously unleased mineral owner as of the original June 11, 2014 hearing for the
8 Jamar South.

9 **Q16. Could you describe the location of the leased and unleased tracts within the**
10 **Jamar South Unit?**

11 A16. Yes. Exhibit LE-2, which is attached to my testimony, is a colored plat showing
12 each of the tracts in the Jamar South Unit, along with the wellbores in same. The
13 tracts in yellow indicate that Chesapeake has acquired the necessary mineral
14 interests for those particular tracts. The tracts in red indicate that those tracts are
15 still open and unleased for purposes of putting this unit together. The tracts in
16 green indicate the acreage owned by XTO and AEU in the Jamar South Unit.
17 Further, the green and olive portions of Exhibit LE-3 depict the approximate
18 393.974327-acre area of leasehold that is currently stranded from development due
19 to the aforementioned unleased tracts within the Jamar South Unit.

20 **UNIT PLAN PROVISIONS.**

21 **Q17. Would you describe generally the development plan for the Jamar South**
22 **Unit?**

23 A17. Chesapeake plans to develop the Jamar South Unit from a pad site located in the
24 northeast portion of the Unit, which would facilitate drilling three (3) planned
25 horizontal wells in the Unit. The Unit is configured to accommodate three
26 horizontal wellbores, with projected lateral lengths ranging from approximately
27 6,550 feet to 10,400 feet. These planned wellbores will be drilled to the southeast
28 from the aforementioned pad site. If an Order is granted for this application, and
29 depending upon rig availability and other logistical considerations, Chesapeake at
30 this point intends to drill the Jamar South wells no later than twelve (12) months
31 after the issuance of an Order. Chesapeake has already drilled out the entire Jamar

1 North Unit which consisted of six (6) horizontal wells and it would have been
2 preferable to have drilled out the entire pad all at once. However, Chesapeake was
3 not entirely unprepared for the present situation and the Jamar South pad was
4 optimally designed for a split development scenario such as this. It would have
5 been much more efficient to have drilled out the entire Jamar pad all at once.

6 **Q18. Can you describe the location of the proposed wellbore within the Jamar**
7 **South Unit?**

8 A18. Yes, the above-referenced Exhibit LE-2 depicts the configuration I just mentioned.
9 As you can see, it illustrates that we anticipate using a surface location in the
10 northeast portion of the Jamar South Unit, and then drilling three (3) wells in the
11 Unit Area to the southeast. The Jamar North Unit, which has already been drilled
12 out, accommodates 6 horizontal wells. Using one centrally located pad site to drill
13 nine (9) wellbores minimizes surface disturbance in the region by fully developing
14 nine (9) horizontal laterals from only one surface location. I have also attached to
15 my testimony an aerial map illustrating the pad location, identified as Exhibit LE-4.

16 **Q19. Do you know with certainty today where the drilling and completion equip-**
17 **ment will be located on the pad?**

18 A19. We have negotiated surface rights with a leased party for the area indicated on Ex-
19 hibit LE-4. A surface use agreement has been agreed upon and signed between the
20 surface owner and Chesapeake. Indeed the Jamar pad is already built and Chesa-
21 peake has already drilled six (6) Jamar laterals to the north from this location. All
22 unleased parcels are located over 3,000 or more feet from the proposed surface lo-
23 cation.

24 **Q20. What are the benefits to this type of unit development?**

25 A20. Developing the Jamar South Unit in the manner previously described not only
26 protects the correlative rights of the unit participants, but has substantial economic
27 and environmental benefits as well. Drilling, completing and producing multiple
28 wells from a single surface location significantly reduces the impact on the surface.
29 Only one access road is constructed instead of several, the need for separate tank
30 batteries at multiple locations is eliminated, traffic to and from the area is
31 significantly reduced, and it allows development of acreage that might not

1 otherwise be developed with traditional drilling methods due to surface limitations,
2 such as local water features and residential and commercial activities. There is a
3 significant amount of acreage in eastern Ohio, where operators like Chesapeake
4 believe the Utica formation is prospective. Development through vertical wells
5 would not be practicable for two reasons: (1) because unconventional reservoirs
6 cannot be produced at economic flow rates or volumes with vertical drilling (as
7 described by David Yard); and (2) because vertical wells, even if they were
8 practical, require numerous surface locations spaced at consistent intervals, which
9 become impractical in areas where the surface is already occupied with other uses
10 (such as residential and commercial activities, existing surface waters, and,
11 occasionally, timber activities). In contrast, horizontal drilling is expected to be
12 both economically practical and physically viable, since it allows operators to
13 locate surface operations on strategically located properties, which can serve as
14 centralized access points used to develop mineral acreage underlying otherwise
15 inaccessible lands.

16 **Q21. So is it fair to say that the benefits of this type of development are substantial?**

17 A21. Yes, the type of development planned by Chesapeake for the Jamar South Unit, and
18 its adjacent units, offers significant benefits not only to the operator, but also to the
19 landowners in the unit and the surrounding area.

20 **Q22. Are you familiar with the Unit Plan proposed by Chesapeake for the Jamar
21 South Unit?**

22 A22. Yes. The Unit Plan proposed by Chesapeake is set out in two documents attached
23 to the Application – the Unit Agreement, which establishes the non-operating
24 relationship between the parties in the unit; and a Unit Operating Agreement and
25 related exhibits, which establish how the unit is going to be explored, developed,
26 and produced.

27 **Q23. Let's turn first to the Unit Agreement, marked as Exhibit 1 to the Application.
28 Would you describe briefly what it does?**

29 A23. Yes. The Unit Agreement in effect combines the oil and gas rights in the Jamar
30 South Unit so that they can be uniformly developed as if they were part of a single
31 oil and gas lease.

1 **Q24. Are mineral rights to all geological formations combined under the Unit**
2 **Agreement?**

3 A24. No. The Unit Agreement only unitizes the oil and gas rights located fifty feet
4 above the top of the Utica Shale to fifty feet below the base of the Point Pleasant
5 formation, defined in the Agreement as the “Unitized Formation,” to allow
6 development of the Utica Shale formation.

7 **Q25. How will production proceeds from the Jamar South Unit be allocated among**
8 **royalty interest owners and working interest owners in the Unit?**

9 A25. On a surface-acreage basis. Under Article 4 of the Unit Agreement, every tract is
10 assigned a tract participation percentage based on surface acreage and shown on
11 Exhibit A-2 to the Unit Operating Agreement. Article 5 of the Unit Agreement
12 allocates production based on that tract participation.

13 **Q26. Why use a surface-acreage basis as the method of allocation?**

14 A26. Based on the testimony of Larry Carter attached to the original Application as
15 Exhibit 3, a surface-acreage basis is an appropriate method of allocation because
16 the formation thickness and reservoir quality of the Utica formation is expected to
17 be consistent across the unit.

18 **Q27. Would you go through an example from Exhibit A-2 to the Unit Operating**
19 **Agreement to illustrate how a surface-acreage basis would be applied to the**
20 **Jamar South Unit?**

21 A27. Yes. If you look at the fifth column on Exhibit A-2 to the Unit Operating
22 Agreement entitled “Surface Acres in Unit,” it shows the number of surface acres
23 in each tract of land within the Jamar South Unit. Column 6 on Exhibit A-2 shows
24 the related tract participation of each tract, which is calculated by taking the total
25 number of surface acres in the tract and dividing it by the total number of surface
26 acres in the unit. So, for example, if you look at Tract Number 11 on page 1 of
27 Exhibit A-2, it shows that this particular Woodland Legacy, LLLP tract comprises
28 11.03907241 surface acres in the 729.425453 acre Jamar South Unit, which equates
29 to a tract participation of approximately 1.51339% ($11.03907241 \div 729.425453$).

30 **Q28. What does that mean in terms of production allocated to that particular tract?**

31 A28. It would mean this particular Woodland Legacy, LLLP tract would have allocated

1 to it roughly 1.51339% of all production from the Jamar South Unit, which would
2 then be distributed based on the terms of the lease or other relevant document
3 affecting ownership to production proceeds from the tract.

4 **Q29. Does it work the same way for an unleased mineral interest, that is, for the**
5 **tract of a person or entity which did not lease its property in the unit?**

6 A29. Yes. If you take a look at Exhibit A-3 to the Unit Operating Agreement, you will
7 see that it lists, among other things, the surface acreage, tract participation and
8 related working interest and unit participations of each unleased parcel in the
9 proposed unit. In the fifty-one-tract Jamar South Unit, Tracts 12, 22, 26, 28, 48,
10 49, 50, and 51 are the eight (8) unleased parcels in the unit area. The minerals
11 under these tracts are currently owned by one (1) landowner. 24.215136 acres are
12 owned by ODOT. If the unleased acreage is divided by the full surface acreage
13 comprising the unit (729.425453 acres), the result gives a tract participation of
14 approximately 3.3198% for ODOT. Under the Unit Agreement, should the
15 unleased landowners affirmatively select the non-consenting working interest
16 option if one is provided for in the Order, the landowners would receive a 7/8
17 working interest and a 1/8 royalty interest on its respective tract participation. The
18 landowner's royalties would be calculated on the net proceeds received by
19 Chesapeake at the well in accordance with the royalty provision contained in
20 Exhibit B to the Unit Operating Agreement and rulings in the majority of gas
21 producing jurisdictions that royalty owners are responsible for their proportionate
22 share of post-production expenses. Allowing deduction of post-production
23 expenses for purposes of royalty calculation provides incentive to producers to add
24 value to their product by post-production treatment and transportation. If producers
25 are not allowed to deduct a proportionate share of royalty owners' post-production
26 expenses that enhance the value of the product, an economic loss to all parties
27 results and the incentive to generate additional value disappears because producers
28 are required to pay for *all* post-production expenses, and also surrender one-eighth
29 of the final proceeds received.

30 **Q30. In your experience, is surface acreage allocation a customary way to allocate**
31 **production in a unit?**

1 A30. In my experience, surface-acreage allocation is both fair and customary for
2 horizontal shale development.

3 **Q31. How are unit expenses allocated?**

4 A31. Like production in the unit, unit expenses are allocated generally on a surface-
5 acreage basis. Article 3 of the Unit Agreement provides that expenses, unless
6 otherwise allocated in the Unit Operating Agreement, will be allocated to each tract
7 of land within the unit in the proportion that the surface acres of each tract bears to
8 the surface acres of the entire unit.

9 **Q32. Who pays the unit expenses?**

10 A32. Working interest owners.

11 **Q33. Do the royalty owners pay any part of the unit expenses?**

12 A33. No. Royalty interest owners are responsible only for their proportionate share of
13 taxes and post-production costs, payable only from their share of the proceeds from
14 sales of production from the unit area.

15 **Q34. Let's turn to the Unit Operating Agreement, marked as Exhibit 2 to the**
16 **Application. It appears to be based upon a form document. Could you please**
17 **identify that form document?**

18 A34. Yes. The Unit Operating Agreement is based upon *A.A.P.L. Form 610 – Model*
19 *Form Operating Agreement – 1989*. We typically use a modified version of that
20 form agreement when we enter into joint operating agreements with other parties.

21 **Q35. Are you familiar with the custom and usage of the Form 610 and other similar**
22 **agreements in the industry?**

23 A35. Yes. The Form 610, together with its exhibits, is a commonly used form in the
24 industry and is frequently modified to fit the needs of the parties and
25 circumstances.

26 **Q36. Turning to the Unit Operating Agreement in particular, does it address how**
27 **unit expenses are determined and paid?**

28 A36. Yes. Article III of the Unit Operating Agreement provides that all costs and
29 liabilities incurred in operations shall be borne and paid proportionately by the
30 working interest owners, according to their Unit Participation percentages. Those
31 percentages can be found in Exhibits A-2 and A-3 to the Unit Operating

1 Agreement. Moreover, the Unit Operating Agreement has attached to it an
2 accounting procedure identified as Exhibit C.

3 **Q37. What is the purpose of the document marked Exhibit C in connection with the**
4 **Jamar South Unit?**

5 A37. The document provides greater details regarding how unit expenses are determined
6 and paid.

7 **Q38. At the top of each page of Exhibit C, there appears a label that reads:**
8 **“COPAS 1984 ONSHORE Recommended by the Council of Petroleum**
9 **Accountants Societies.” Are you familiar with this society?**

10 A38. Yes, COPAS stands for the Council of Petroleum Accountants Societies.

11 **Q39. Is this COPAS document used in oil and gas operations across the country?**

12 A39. Yes. This form is commonly used in the industry.

13 **Q40. In your opinion, is this COPAS document generally accepted in the industry?**

14 A40. Yes. Drafted by an organization that includes members from many different
15 companies in diverse sections of the industry, it was designed to be generally fair to
16 the parties. Chesapeake, in fact, is frequently subject to the COPAS in its
17 operations with other producers.

18 **Q41. Will there be in-kind contributions made by owners in the unit area for unit**
19 **operations, such as contributions of equipment?**

20 A41. No, Chesapeake Energy does not anticipate in-kind contributions for the Unit Op-
21 erations.

22 **Q42. Are there times when a working interest owner in the unit chooses not to – or**
23 **cannot – pay their allocated share of the unit expenses?**

24 A42. Yes, such a situation is not uncommon in the industry. Joint operating agreements
25 contemplate that there will be times when less than all of the working interest
26 owners choose to participate in operations on the Contract Area. The agreements
27 are drafted to allow the parties flexibility. That includes flexibility for one or more
28 working interest owners to decline to participate in an operation that they may not
29 believe will be a profitable venture or one that they cannot afford, as well as
30 flexibility for the remaining parties to proceed with such operation at their own risk
31 and expense if they wish to do so.

1 **Q43. Generally, how is the working interest accounted for when an owner chooses**
2 **not to participate in an operation?**

3 A43. A working interest owner who cannot or chooses not to participate is considered a
4 non-consenting party. If the remaining working interest owners decide to proceed
5 with an operation, then the consenting parties bear the full costs and expenses of
6 that operation. A non-consenting party is deemed to have relinquished its interest
7 in that operation until such time as the well pays out the costs that would have been
8 payable by that party, plus some sort of risk factor, sometimes called a risk penalty
9 or non-consent penalty.

10 **Q44. What is a risk penalty or non-consent penalty, and why are they included in**
11 **the agreement?**

12 A44. A risk penalty or non-consent penalty is a mechanism which recognizes that in
13 instances when a working interest owner chooses not to agree in advance to pay its
14 share of the costs of drilling a well, the other working interest owners should be
15 compensated for the financial risks they undertake in paying the costs of drilling a
16 well considering that the well may be a non-producer. Additionally, a non-consent
17 penalty can serve as a means to allow a working interest owner to finance
18 participation in a well when unable to advance its share of drilling costs.

19 **Q45. Can a working interest owner choose to go non-consent in the initial well in**
20 **the Jamar South Unit?**

21 A45. Yes. If a working interest owner fails to participate in the unit's initial well, Article
22 VI.A of the Unit Operating Agreement provides that the working interest owner
23 shall be deemed to have relinquished to the other parties its working interest in the
24 unit with a back-in provision that includes a risk factor of 200%.

25 **Q46. Does the Unit Operating Agreement treat the initial well and subsequent**
26 **operations differently in terms of going non-consent, and if so, why?**

27 A46. Yes, subsequent operations have a smaller risk factor of 150%. It's typically much
28 riskier to participate in the initial well in a unit because, as here, you frequently
29 don't have enough information to determine whether the well will be productive
30 and economic. As a consequence, to prevent parties from gaming the system and
31 avoiding the substantial risks associated with the drilling of the initial well, while

1 still being able to participate in subsequent operations when the risks are
2 substantially reduced, it is common for joint operating agreements to distinguish
3 between these types of operations.

4 **Q47. But if the working interest owner still has a royalty interest in the unit, that**
5 **royalty interest would remain in place and be paid?**

6 A47. Yes. The royalty interest would still be paid even if the working interest is being
7 used to pay off a risk factor.

8 **Q48. Are the risk penalty/non-consent penalty percentages included in the Unit**
9 **Operating Agreement unusual?**

10 A48. Actually, yes, these risk penalties are quite a bit lower than what Chesapeake
11 typically utilizes in its joint operating agreements used in horizontal drilling
12 programs. While Chesapeake and its peers in the industry are optimistic about
13 development of the Utica and other shale formations, the projects proposed are
14 significant capital investments (often exceeding \$7,000,000 per well to plan, drill
15 and complete). In addition, unconventional plays like the Utica are not simple,
16 homogeneous plays. Within the boundaries of the play (here, the Utica Shale
17 generally), there are likely to be areas of uneven geological performance.
18 Therefore, given the inherent risks and significant capital outlays, it is common for
19 companies to incorporate a higher risk factor in their joint operating agreements.

20 **Q49. Have you seen risk factor levels of 150% to 200% in other parts of the country**
21 **that you've worked in and are familiar with?**

22 A49. Typically, we will see see risk factor levels at significantly higher rates than these
23 due to the uncertainties and costs involved in horizontal development.
24 Additionally, courts in other jurisdictions have determined that higher non-consent
25 penalties than these were reasonable.

26 **Q50. How are decisions made regarding unit operations?**

27 A50. Article V of the Unit Operating Agreement designates Chesapeake Exploration,
28 L.L.C., as the Unit Operator, with full operational authority for the supervision and
29 conduct of operations in the unit. Additionally, except where otherwise provided,
30 Article XVI of the Unit Operating Agreement states that any decision,
31 determination or action to be taken by the unit participants shall be based on a

1 voting procedure in which each unit participant has a vote that corresponds in value
2 to that participant's allocated responsibility for the payment of unit expenses.

3 **Q51. I believe you've already described generally the documents in Exhibits A and**
4 **C to the Unit Operating Agreement. Let's turn therefore to Exhibit B of the**
5 **Unit Operating Agreement. What is it?**

6 A51. Exhibit B is a standard oil and gas lease form that is attached to the joint operating
7 agreement to govern any unleased interests owned by the parties. Article III.A of
8 the Unit Operating Agreement provides that if any party owns or acquires an oil
9 and gas interest in the Contract Area, then that interest shall be treated for all
10 purposes of the Unit Operating Agreement as if it were covered by the form of
11 lease attached as Exhibit B.

12 **Q52. Does this oil and gas lease contain standard provisions that Chesapeake uses in**
13 **connection with its drilling operations in Ohio and elsewhere?**

14 A52. Yes.

15 **Q53. Moving on to Exhibit D of the Unit Operating Agreement, would you describe**
16 **what it is?**

17 A53. Yes, Exhibit D is the insurance exhibit to the joint operating agreement. It sets
18 forth coverage amounts and limitations, and the insurance terms for operations
19 conducted under the Unit Operating Agreement. It requires the operator, to obtain
20 General Liability coverage, including bodily injury and property damage liability,
21 in an amount of five million dollars, which is substantially similar to those
22 employed in connection with Chesapeake's other unitized projects in the State of
23 Ohio.

24 **Q54. Would you next describe Exhibit E of the Unit Operating Agreement?**

25 A54. Yes. Exhibit E is the Gas Balancing Agreement, which further details the rights
26 and obligations of working interest parties with respect to marketing and selling
27 any production from the Contract Area. It would normally not come in to play with
28 an unleased landowner, but only with a working interest owner who desired to
29 market their share of production separately from the Operator.

1 **Q55. Has Chesapeake documented which of the working interest owners included**
2 **within the Jamar South Unit have given their consent to the proposed**
3 **unitization?**

4 A55. Yes. Exhibit 6 to the Application documents the approvals for the Unit Plan
5 received from working interest owners included within the Jamar South Unit, up to
6 the time that the Application was filed. Exhibit 6 gives the approval of working
7 interest owners approving the Unit Plan; currently, that being Chesapeake
8 Exploration as owner of 657.531511 acres (roughly 90%), EnerVest as owner of
9 29.4617672 (roughly 4%) XTO Energy as owner of 15.075896 (roughly 2%), and
10 American Energy – Utica as owner of 3.141143 (roughly 0.4%). The tracts in
11 which Chesapeake has a working interest are depicted in Exhibit 6-1.

12 **Q56. Does the Application contain a list of the fee interest owner and mineral**
13 **reservation holders who have not previously agreed to enter into any oil and**
14 **gas lease with respect to the tracts they own, or possibly own, within the**
15 **Jamar South Unit?**

16 A56. Yes. Exhibit A-3 to the Unit Operating Agreement lists the “unitized parties,” that
17 is, the fee interest owner and mineral reservation holders who have not leased their
18 mineral interests to any party. For notice purposes, the proper addresses for these
19 unleased parties are listed on Exhibit A-3 as well.

20 **Q57. In your professional opinion, given your education and experience, are unit**
21 **operations for the proposed Jamar South Unit reasonably necessary to**
22 **increase substantially the ultimate recovery of oil and gas?**

23 A57. Yes. Unit operations for the proposed Jamar South Unit are reasonably necessary to
24 increase substantially the ultimate recovery of oil and gas. As testified by my
25 colleagues Mr. Yard and, in June of 2014, Mr. Carter, unit operations will promote
26 a rational and efficient development of the Utica formation underlying the Jamar
27 South Unit. In addition, as a land professional I am supportive of any efforts to
28 reduce waste by minimizing the number of wells and surface locations utilized for
29 drilling operations. I understand that land is a valuable commodity and that
30 horizontal drilling is an excellent way to accommodate both the rights of the
31 mineral owner and the rights of the surface owner to accomplish reasonable

1 development.

2 **Q58. Does this conclude your testimony?**

3 A58. Yes.

AFFIDAVIT OF EFFORTS TO LEASE THE OHIO DEPARTMENT OF TRANSPORTATION

STATE OF OHIO)
) SS
COUNTY OF HARRISON)

Township of North

The undersigned, being first duly sworn according to the law, makes this Affidavit and deposes and says that:

1. Affiant, Robert S. Highsaw, is employed by Chesapeake Energy Corporation ("Chesapeake") as a Landman II. Affiant's job responsibilities include the acquisition of leases in certain areas of Ohio, including Harrison County, Ohio. Affiant has personal knowledge of the matters set forth in this affidavit, and the following information is true to the best of Affiant's knowledge and belief.
2. The following lands located in Sections 15, 14, 9, and 8, all in Township 13N, Range 6W, in North Township, Harrison County, Ohio, are owned of record by the Ohio Department of Transportation ("ODOT"):
 - a. 20-0000754.000 – a 2.919 acre tract aka "Parcel No. 34-WR (Highway)" and a 0.453 acre tract aka "Parcel No. 34-WR (Highway)"
 - b. 19-0000063.000 – a 0.144 acre tract aka "Parcel No. 31-WL (Highway)," a 1.952 acre tract aka "Parcel No. 28-WL," and a 5.397 acre tract aka "Parcel No. 28-WR"
 - c. NO TAX PARCEL NUMBER AVAILABLE – a 0.588 acre tract and a 5.775 acre tract aka "Parcel No. 31-WR (Highway)"
 - d. NO TAX PARCEL NUMBER AVAILABLE – a 0.090 acre tract aka "Parcel No. 32-WR (Highway)"
 - e. NO TAX PARCEL NUMBER AVAILABLE – a 1.543 acre tract aka "Parcel No. 36-WL (Highway)"
 - f. 19-0000075.000 – a 0.494 acre tract aka "Parcel No. 32-WR (Highway)"
 - g. 19-0000071.000 – a 6.011 acre tract aka "Parcel No. 32-WR (Highway)"
 - h. 19-0000073.000 – a 2.025 acre tract aka "Parcel No. 32-WR (Highway)"
3. The oil and gas interest in the above-referenced parcels of land are also owned by ODOT (or "Mineral Owner"), and are currently unleased. Affiant has personal knowledge of the efforts by Chesapeake and its employees (collectively, "Chesapeake Employee") to lease the above referenced parcels of land from Mineral Owner. Those efforts are described as follows.
4. On December 18, 2013, Mr. Highsaw emailed an offer to enter into an oil and gas lease covering the above-referenced parcels of land to Jim Viau, Section Manager and Larry Hamilton, Realty Specialist of the Office of Real Estate at ODOT. Immediately thereafter on December 18, 2013, Affiant sent a hard copy of this same offer to Mr. Viau and Mr. Hamilton of ODOT via certified mail.
5. On January 21, 2014, Mr. Highsaw sent a follow up email to Mr. Viau and Mr. Hamilton concerning the pending offer. Neither Mr. Viau nor Mr. Hamilton had responded to the offer at this point in time.
6. On January 31, 2014, Mr. Highsaw sent another follow up email to Mr. Viau and Mr. Hamilton, who had still not responded, again reminding them of the pending offer and further requesting to set up a telephone conference to discuss.

7. On January 31, 2014, Mr. Viau responded with his availability for the following week.
8. On February 3, 2014, a call was placed by Mr. Highsaw to Mr. Viau at 9:30 a.m. EST to discuss the offer. During the call, a conversation occurred between Mr. Highsaw, two other Chesapeake Employees, and Mr. Viau. During the conversation, which lasted approximately three to four minutes, Affiant reiterated a desire to discuss the offer to lease. Mr. Viau responded by stating that ODOT was currently not in a position to process Chesapeake's offer to lease and that ODOT could not proceed on such a request at this time. Mr. Viau made it abundantly clear that ODOT would not enter into an oil and gas lease with Chesapeake at this time. A Chesapeake Employee then commented that ODOT's current refusal to lease (specifically to enter into an oil and gas lease covering the above-referenced parcels) would leave Chesapeake with no alternative but to apply for a Unitization Order pursuant to O.R.C. 1509.28 to ensure that Chesapeake's lessors' correlative rights were protected. Mr. Viau responded that he understood this would be Chesapeake's only recourse and that ODOT still would not lease.
9. Throughout the winter and spring of 2014, Mr. Highsaw made inquiries about a long, contiguous stretch of land owned by ODOT in Monroe and North Townships. While not specifically inquiring about the two above-referenced parcels in his attempted leasing requests and discussion, Mr. Highsaw was informed by Administrators at the Office of Real Estate of ODOT that ODOT was not presently entering into oil and gas leases.
10. On May 16, 2014, Mr. Highsaw sent an email to Mr. Jim Viau, Mr. Larry Hamilton, and Mr. John Maynard, all of the Office of Real Estate of ODOT. Mr. Highsaw advised that a long contiguous stretch of ODOT acreage within Monroe and North Townships in Harrison County was currently obstructing efficient development of many planned Chesapeake Units. The Jamar South is among the units impacted by unleased ODOT acreage. Mr. Highsaw inquired whether ODOT's position remained that it could not or would not lease.
11. On June 25, 2014, Mr. Highsaw left a voice message for Mr. Viau to discuss whether or not ODOT's oil and gas leasing policy had changed.
12. On June 26, 2014, Mr. Viau left Mr. Highsaw a voice message stating that ODOT is still reviewing its entire oil and gas leasing program and that ODOT is not in a position to process any oil and gas leasing requests at this time.
13. On July 17, 2014, Mr. Highsaw reached out to the local ODOT administrator for Harrison County, Ohio—Mr. Steve Lucas, District Real Estate Administrator of ODOT for ODOT District 11 which includes Harrison County, Ohio. Mr. Highsaw spoke with Mr. Lucas by phone and Mr. Lucas confirmed that all decisions regarding ODOT's ability to lease or any decision regarding the sale of ODOT real property would have to pass through ODOT's Central Office.
14. On July 17, 2014, Mr. Highsaw sent an email to Mr. Maynard and Mr. Viau offering to outright purchase the fee simple minerals underlying all tracts or parcels of land owned in fee simple by ODOT in Monroe and North Townships, Harrison County, Ohio for \$7,000 per acre. Mr. Highsaw explained that a creative solution such as this could alleviate the current impasse caused by ODOT's inability or current unwillingness to enter into oil and gas leases. Furthermore, Mr. Highsaw reiterated that ODOT's sale of its mineral interest would no longer necessitate Chesapeake's filing of many additional Unitization Applications in Monroe and North Townships—areas of operations for Chesapeake where many

planned units are bisected by ODOT's approximate seven (7) mile stretch of fee simple owned tracts or parcels of land. Mr. Maynard responded via email that he could discuss Mr. Highsaw's email and proposal by phone the following day.

15. On July 18, 2014, Mr. Highsaw, Cory Shoemake, Supervisor – Land, Appalachia South, Grant Parker, Supervisor – Land, Appalachia South, and Lauren Elliott, Landman I spoke by phone with Mr. Maynard. Mr. Maynard indicated that ODOT does have the authority and discretion to buy and sell real property but that ODOT's acquisitions or sales are done at ODOT's discretion alone. Given several options, ODOT's preference would not be to sell any minerals it currently owns within Monroe and North Townships, Harrison County but rather to enter into an oil and gas lease. Mr. Maynard, however, reiterated the same message previously communicated by Mr. Viau—that ODOT is currently not processing any oil and gas leasing requests at this time. Mr. Highsaw and Mr. Shoemake stressed to Mr. Maynard that Unitization pursuant to ORC 1509.28 is currently Chesapeake's only realistic alternative to resolve the current impasse with ODOT and that Chesapeake would much prefer to either buy ODOT's minerals or obtain an oil and gas lease from ODOT. Mr. Maynard was unable to confirm any date by which ODOT would be willing and able to enter into oil and gas leases.
16. On November 5, 2014, Mr. Highsaw called Mr. Viau of ODOT but was unable to reach him. Mr. Highsaw left a voicemail asking Mr. Viau to call him back to discuss ODOT leasing in Harrison County, Ohio.
17. On November 5, 2014, Mr. Highsaw spoke with Mr. Maynard of ODOT who confirmed that there had been no new developments and ODOT still would not be able to process any Chesapeake oil and gas leasing requests pertaining to all presently unleased ODOT lands in Monroe and North Townships, Harrison County, Ohio. Mr. Maynard promised to apprise Chesapeake if and when the situation were to change.
18. On December 2, 2014, Mr. Highsaw emailed Glenn Stephen of ODOT to inquire whether ODOT was able to lease all presently unleased ODOT lands in Monroe and North Townships, Harrison County, Ohio. Glenn Stephen responded shortly thereafter stating that ODOT was not in a position to discuss any new proposed oil and gas leases and that ODOT would let Chesapeake know when that position changes.
19. On January 5, 2015, Mr. Highsaw, called John Maynard of ODOT to inquire whether ODOT's oil and gas leasing policy had changed and whether ODOT would consider entering into an oil and gas lease covering all presently unleased ODOT lands in Monroe and North Townships, Harrison County, Ohio. Mr. Maynard did not answer and Mr. Highsaw resorted to leaving a voice message.

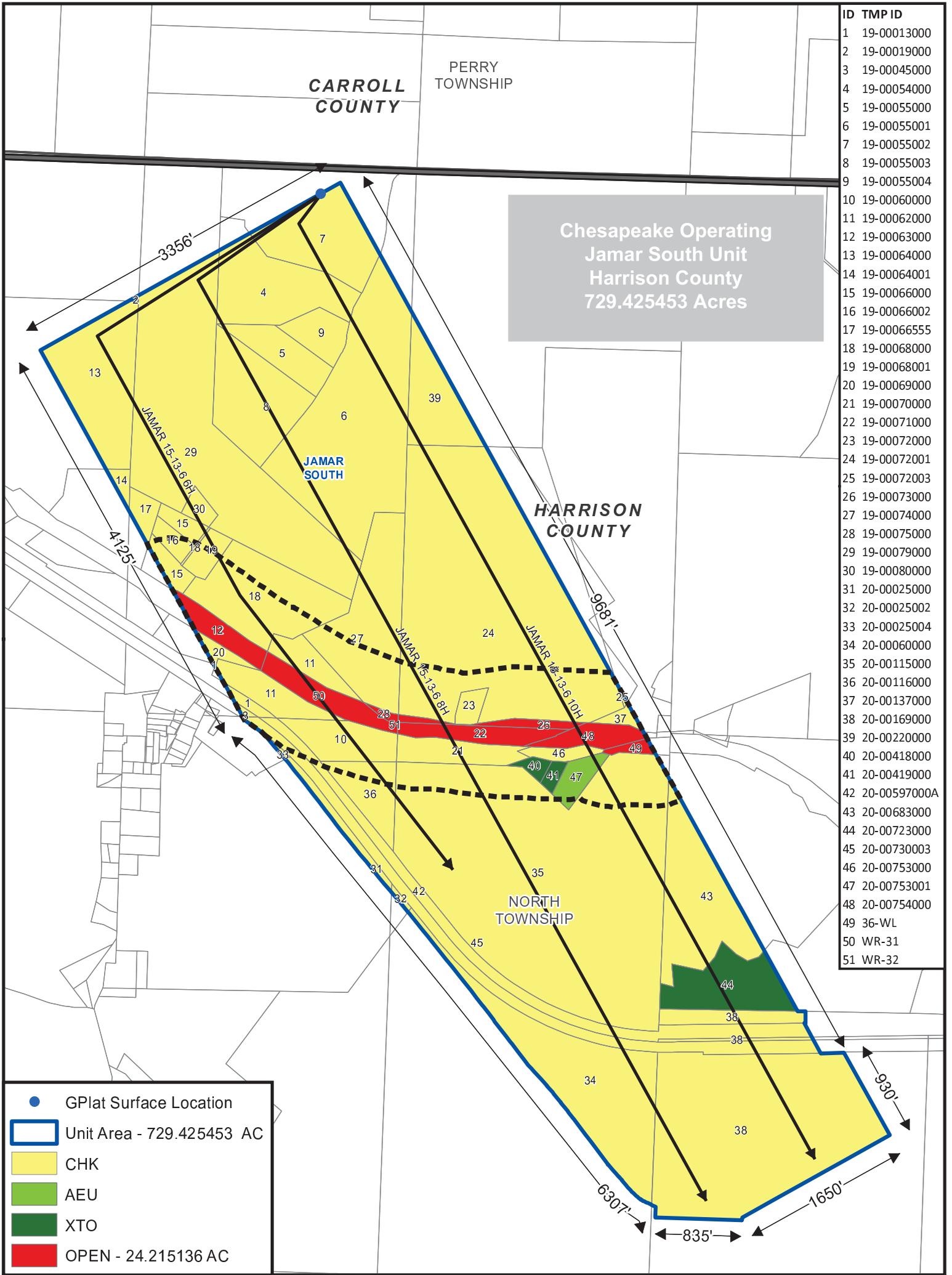
Further Affiant sayeth naught.

Dated this 5th day of January, 2015.



Robert S. Highsaw, Affiant
Landman II
Chesapeake Energy Corporation

Exhibit "LE-2"



ID	TMP ID
1	19-00013000
2	19-00019000
3	19-00045000
4	19-00054000
5	19-00055000
6	19-00055001
7	19-00055002
8	19-00055003
9	19-00055004
10	19-00060000
11	19-00062000
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13	19-00064000
14	19-00064001
15	19-00066000
16	19-00066002
17	19-00066555
18	19-00068000
19	19-00068001
20	19-00069000
21	19-00070000
22	19-00071000
23	19-00072000
24	19-00072001
25	19-00072003
26	19-00073000
27	19-00074000
28	19-00075000
29	19-00079000
30	19-00080000
31	20-00025000
32	20-00025002
33	20-00025004
34	20-00060000
35	20-00115000
36	20-00116000
37	20-00137000
38	20-00169000
39	20-00220000
40	20-00418000
41	20-00419000
42	20-00597000A
43	20-00683000
44	20-00723000
45	20-00730003
46	20-00753000
47	20-00753001
48	20-00754000
49	36-WL
50	WR-31
51	WR-32

- GPlat Surface Location
- Unit Area - 729.425453 AC
- CHK
- AEU
- XTO
- OPEN - 24.215136 AC

UNIT PLAT

Jamar South Unit
North Township
Harrison Co., OH

1 inch = 1,150 feet

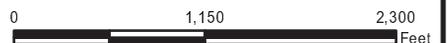
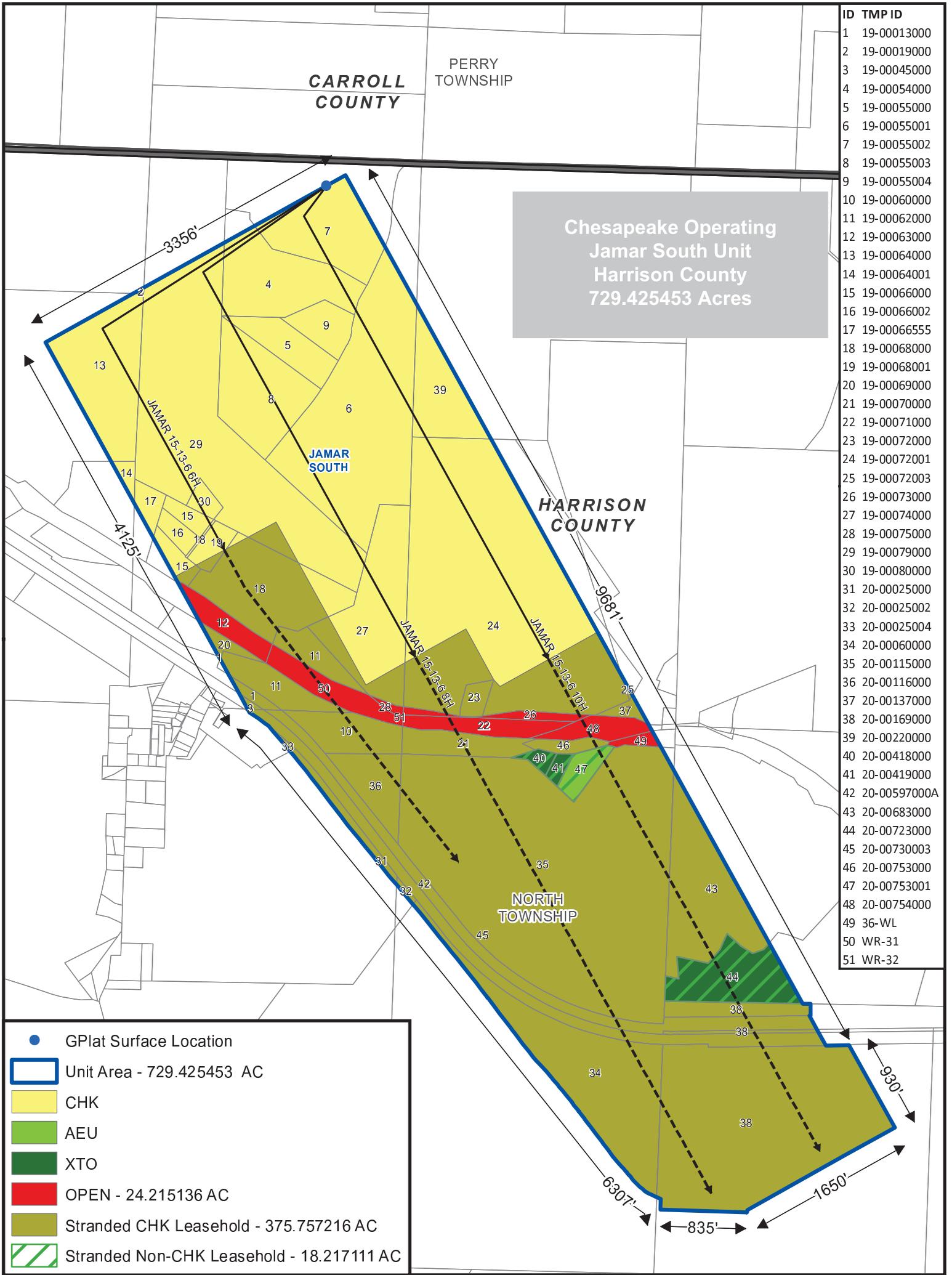


Exhibit "LE-3"



ID	TMP ID
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2	19-00019000
3	19-00045000
4	19-00054000
5	19-00055000
6	19-00055001
7	19-00055002
8	19-00055003
9	19-00055004
10	19-00060000
11	19-00062000
12	19-00063000
13	19-00064000
14	19-00064001
15	19-00066000
16	19-00066002
17	19-00066555
18	19-00068000
19	19-00068001
20	19-00069000
21	19-00070000
22	19-00071000
23	19-00072000
24	19-00072001
25	19-00072003
26	19-00073000
27	19-00074000
28	19-00075000
29	19-00079000
30	19-00080000
31	20-00025000
32	20-00025002
33	20-00025004
34	20-00060000
35	20-00115000
36	20-00116000
37	20-00137000
38	20-00169000
39	20-00220000
40	20-00418000
41	20-00419000
42	20-00597000A
43	20-00683000
44	20-00723000
45	20-00730003
46	20-00753000
47	20-00753001
48	20-00754000
49	36-WL
50	WR-31
51	WR-32

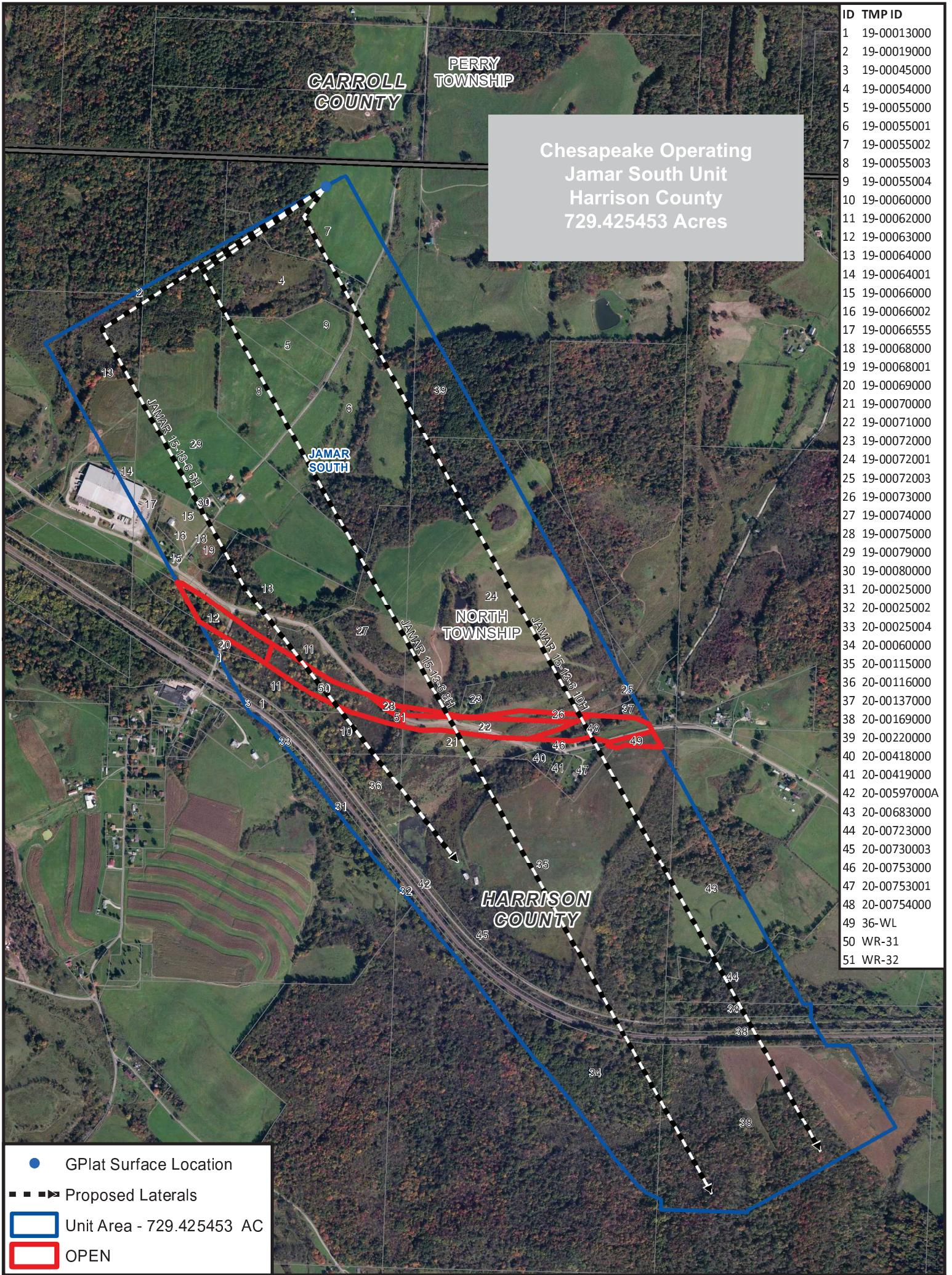
UNIT PLAT

**Jamar South Unit
North Township
Harrison Co., OH**

1 inch = 1,150 feet



Exhibit "LE-4"



ID	TMP ID
1	19-00013000
2	19-00019000
3	19-00045000
4	19-00054000
5	19-00055000
6	19-00055001
7	19-00055002
8	19-00055003
9	19-00055004
10	19-00060000
11	19-00062000
12	19-00063000
13	19-00064000
14	19-00064001
15	19-00066000
16	19-00066002
17	19-00066555
18	19-00068000
19	19-00068001
20	19-00069000
21	19-00070000
22	19-00071000
23	19-00072000
24	19-00072001
25	19-00072003
26	19-00073000
27	19-00074000
28	19-00075000
29	19-00079000
30	19-00080000
31	20-00025000
32	20-00025002
33	20-00025004
34	20-00060000
35	20-00115000
36	20-00116000
37	20-00137000
38	20-00169000
39	20-00220000
40	20-00418000
41	20-00419000
42	20-00597000A
43	20-00683000
44	20-00723000
45	20-00730003
46	20-00753000
47	20-00753001
48	20-00754000
49	36-WL
50	WR-31
51	WR-32

- GPlat Surface Location
- Proposed Laterals
- Unit Area - 729.425453 AC
- OPEN

UNIT PLAT

Jamar South Unit
North Township
Harrison Co., OH

1 inch = 1,150 feet



WORKING INTEREST OWNER

APPROVAL OF

UNIT PLAN FOR THE

JAMAR SOUTH UNIT

North Township

Harrison County, Ohio

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, a Unit Plan has been prepared for the testing, development, and operation of certain Tracts identified therein, which Plan consists of an agreement entitled, "Unit Agreement, The Jamar South Unit, North Township, Harrison County, Ohio," dated April 18, 2014 (the "Unit Agreement"); and an agreement entitled, "A.A.P.L. Form 610-1989 Model Form Operating Agreement," also regarding the Jamar South Unit and of like date (the "Unit Operating Agreement"); and,

WHEREAS, the undersigned is the owner of a Working Interest in and to one or more of the Tracts identified in said Unit Plan, namely, the Tracts identified below (hereinafter, the "Owner").

NOW, THEREFORE, the Owner hereby approves the Unit Plan and acknowledges receipt of full and true copies of both the Unit Agreement and the Unit Operating Agreement.

IN WITNESS WHEREOF, the undersigned has executed this instrument on the date set forth opposite the signature of its representative.

WORKING INTEREST OWNER

TRACT NO. (see attached)

TRACT ACREAGE 657.531511

RELATED WORKING INTEREST PERCENTAGE 90.14376%

CHESAPEAKE EXPLORATION, L.L.C.

Date 12/23/2014

By: 
Robert Highsaw, Landman II – Appalachia South

WORKING INTEREST OWNER

APPROVAL OF
UNIT PLAN FOR THE
JAMAR SOUTH UNIT
North Township
Harrison County, Ohio

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WORKING INTEREST OWNER

TRACT NO. 47

TRACT ACREAGE 3.141143

RELATED WORKING INTEREST PERCENTAGE 0.43063%

American Energy-Utica, LLC

Date 1/7/15

By: 
Name: Serena Evans
Title: Land Director, Utica



WORKING INTEREST OWNER

APPROVAL OF

UNIT PLAN FOR THE

JAMAR SOUTH UNIT

North Township

Harrison County, Ohio

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NOW, THEREFORE, the Owner hereby approves the Unit Plan and acknowledges receipt of full and true copies of both the Unit Agreement and the Unit Operating Agreement.

IN WITNESS WHEREOF, the undersigned has executed this instrument on the date set forth opposite the signature of its representative.

WORKING INTEREST OWNER

TRACT NO. 40, 41, & 44

TRACT ACREAGE 15.075896

RELATED WORKING INTEREST PERCENTAGE 2.06682%

XTO Energy, Inc.

Date

12/9/14

By:

Edwin S. Ryan, Jr.

Name: Edwin S. Ryan, Jr.

Title: Sr. Vice President – Land

ESR
AK

Exhibit 6

WORKING INTEREST OWNER

APPROVAL OF

UNIT PLAN FOR THE

JAMAR SOUTH UNIT

North Township

Harrison County, Ohio

KNOW ALL MEN BY THESE PRESENTS:

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WHEREAS, the undersigned is the owner of a Working Interest in and to one or more of the Tracts identified in said Unit Plan, namely, the Tracts identified below (hereinafter, the "Owner").

NOW, THEREFORE, the Owner hereby approves the Unit Plan and acknowledges receipt of full and true copies of both the Unit Agreement and the Unit Operating Agreement.

IN WITNESS WHEREOF, the undersigned has executed this instrument on the date set forth opposite the signature of its representative.

WORKING INTEREST OWNER

TRACT NO. 6, 7, & 39

TRACT ACREAGE 29.46176719

RELATED WORKING INTEREST PERCENTAGE 4.03904%

ENERVEST OPERATING, L.L.C.

Date 12/2/2014

By: _____


James D. McKinney,
Senior Vice President and General Manager
On Behalf of All EnerVest Entities

CA

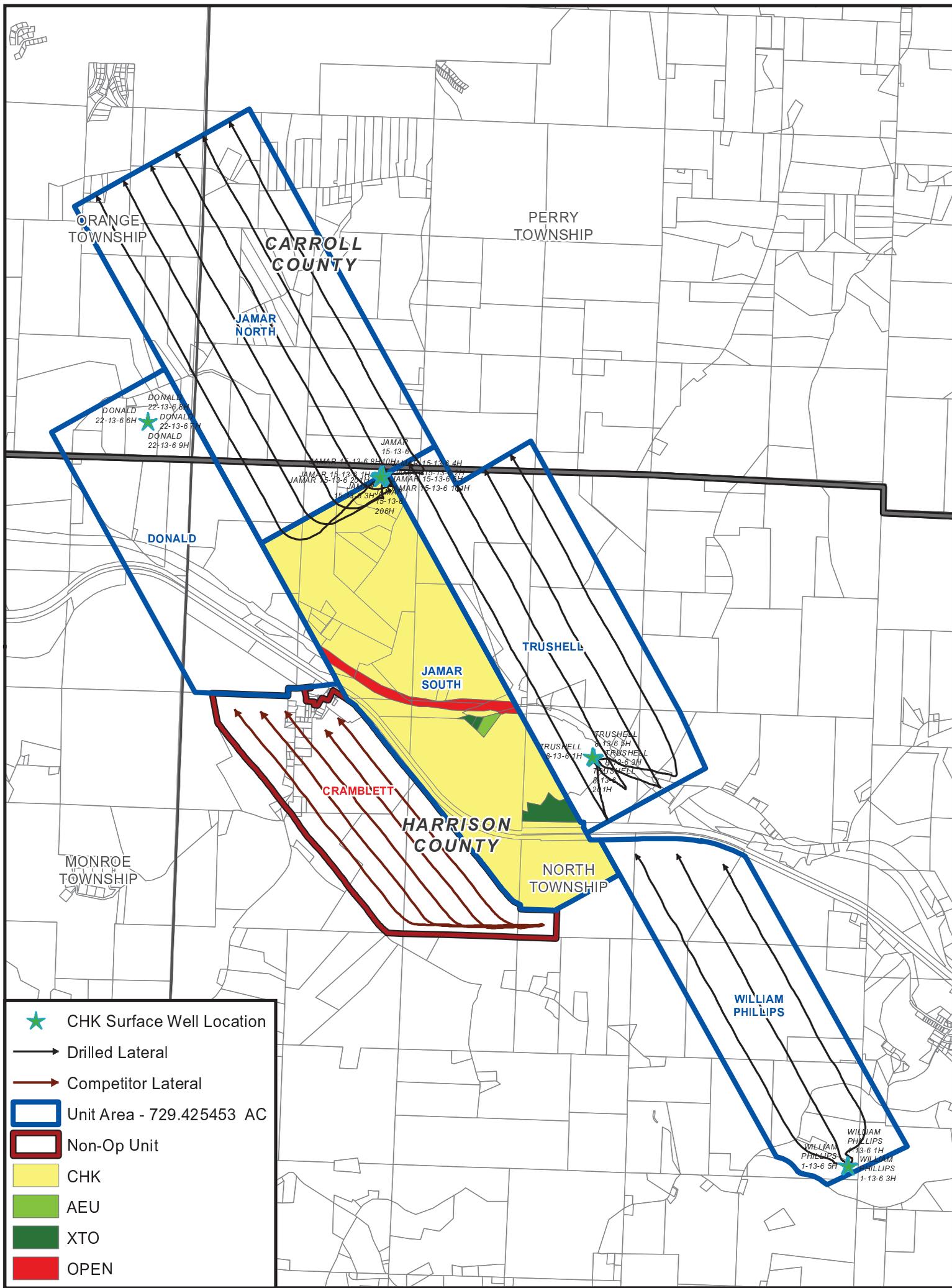
Exhibit 1
Working Interest Owners

Attached to and made a part of that certain Unit Operating Agreement dated April 25, 2014 as approved by the Ohio Department of Natural Resources for the Jamar South Unit.

TRACT NUMBER	LESSOR	SURFACE ACRES IN UNIT	TAX MAP PARCEL ID NUMBERS
1	WHEELING AND LAKE ERIE RAILWAY COMPANY	1.076294	19-00013000
2	BRUCE W & MARGARET A GANDEE	0.067774	19-00019000
3	CONSOLIDATED RAIL CORPORATION	0.267635	19-00045000
4	JERRY E & PEGGY L KNIGHT	17.870858	19-00054000
5	GEORGE H FARNSWORTH, II	7.176977	19-00055000
6	JAMES R COSTIGAN	31.808024	19-00055001
7	JAMAR HOLDINGS LTD BY JACOB E YODER, JR	10.117867	19-00055002
8	GEORGE H FARNSWORTH, II	17.644692	19-00055003
9	GEORGE H FARNSWORTH, II	5.097083	19-00055004
10	WOODLAND LEGACY, LLLP	8.011035	19-00060000
11	WOODLAND LEGACY, LLLP	11.039072	19-00062000
14	LJ SMITH INC.	1.125892	19-00064001
13	VERNON J WEBB	21.277188	19-00064000
15	BERNARD L & KAREN J WEST	4.347784	19-00066000
16	TY J WEST	1.945348	19-00066002
17	BERNARD L & KAREN J WEST	2.217811	19-00066555
18	JOSEPH H & TERESA FINNICUM	20.896866	19-00068000
19	TY J WEST	2.790428	19-00068001
20	JOSEPH H & TERESA FINNICUM	1.428318	19-00069000
21	GREEN FIELDS FAMILY FARM LTD	6.261692	19-00070000
23	DWIGHT & SANDRA L MCBRIDE	0.617243	19-00072000
23	ROBERT MCBRIDE	0.617243	19-00072000
23	MILDRED M MCBRIDE	0.617243	19-00072000
24	GREEN FIELDS FAMILY FARM LTD	92.614990	19-00072001
25	GREEN FIELDS FAMILY FARM LTD	0.132494	19-00072003
27	GREEN FIELDS FAMILY FARM LTD	23.141469	19-00074000
29	THOMAS C & GAIL L DENNIS	63.362215	19-00079000
30	THOMAS C & GAIL L DENNIS	1.628601	19-00080000
31	CHRISTINE BLANC-OSBOURNE	2.627418	20-00025000
32	CHRISTINE BLANC-OSBOURNE	0.345483	20-00025002
33	KIM INBODEN	0.222696	20-00025004
34	WOODLAND LEGACY, LLLP	33.054697	20-00060000

TRACT NUMBER	LESSOR	SURFACE ACRES IN UNIT	TAX MAP PARCEL ID NUMBERS
35	WILLIAM R HARDING	121.358067	20-00115000
36	WILLIAM R HARDING	7.513478	20-00116000
37	THELMA M HORSTMAN	1.145866	20-00137000
38	D STEVEN & LORRAINE REESE AND R CHRISTOPHER & CATHY REESE AND DOUGLAS S	72.601458	20-00169000
39	JAMES R COSTIGAN	7.177054	20-00220000
42	CONSOLIDATED RAIL CORPORATION	16.527543	20-00597000A
43	PAUL A TRUSHELL	21.977235	20-00683000
45	WHEELING AND LAKE ERIE RAILWAY COMPANY	15.807006	20-00730003
46	THELMA M HORSTMAN	1.973373	20-00753000
657.531511			

Exhibit 7 to Jamar South Unitization Application



UNIT PLAT

**Jamar South Unit
North Township
Harrison Co., OH**

1 inch = 2,750 feet

0 2,750 5,500
Feet

