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**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: December 16, 2014
:
Hardman North Unit :

APPLICATION

Pursuant to Ohio Revised Code Section 1509.28, Chesapeake Exploration, L.L.C. (“Chesapeake”), hereby respectfully requests the Chief of the Ohio Department of Natural Resources’ Division of Oil and Gas Resources Management (“Division”) to issue an order authorizing Chesapeake to operate the Unitized Formation and applicable land area in Carroll County, Ohio (hereinafter, the “Hardman North Unit”) as a unit according to the Unit Plan attached hereto and as more fully described herein. Chesapeake makes this request for the purpose of substantially increasing the ultimate recovery of oil and natural gas, including related liquids, from the Unitized Formation, and to protect the correlative rights of unit owners, consistent with the public policy of Ohio to conserve and develop the state’s natural resources and prevent waste.

**I.
APPLICANT INFORMATION**

Chesapeake Exploration, L.L.C., is a limited liability company organized under the laws of the State of Oklahoma and a wholly-owned subsidiary of Chesapeake Energy Corporation. Chesapeake has its principal office in Oklahoma City, Oklahoma, and local offices at 400 Third St., S.E., Canton, Ohio 44702. Chesapeake is the most active driller of horizontal wells in Northeast Ohio and is registered in good standing as an “owner” with the Division.

Chesapeake designates to receive service, and respectfully requests that all orders, correspondence, pleadings and documents from the Division and other persons concerning this filing be served upon, the following:

R. Neal Pierce (0028379)
Katerina E. Milenkovski (0063314)
Steptoe & Johnson PLLC
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41 South High Street, Suite 2200
Columbus, Ohio 43215
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Eric Hensley
Landman II – Appalachia South
Chesapeake Energy Corporation
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Oklahoma City, Oklahoma 73154-0496
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Charles T. Akers, Jr.
Manager – Utica Land
EnerVest Operating, LLC
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Charleston, West Virginia 25301
Tel. (304) 343-5505
Email: cakers@enervest.net

II. PROJECT DESCRIPTION

The Hardman North Unit is located in Carroll County, Ohio, and consists of twenty-two (22) separate tracts of land. See Exhibits A-1 and A-2 of the Unit Operating Agreement (showing the plat and tract participations, respectively). The total land area in the Hardman North Unit is approximately 738.253070 acres and, at the time of this Application, Chesapeake has the right to drill on and produce from 588.234318 acres¹ of the proposed unit – i.e., more than seventy-eight percent (78%) of the unit area, above the sixty-five percent (65%) threshold required by Ohio Revised Code § 1509.28.² As more specifically described herein, Chesapeake seeks authority to drill and complete five horizontal wells in the Unitized Formation from a single well pad located near the unit’s southern boundary to efficiently test, develop, and operate the Unitized Formation for oil, natural gas, and related liquids production.

Chesapeake’s plan for unit operations (the “Unit Plan”) is attached to this Application and consists of the Unit Agreement, attached as Exhibit 1; and the Unit Operating Agreement, attached as Exhibit 2. Among other things, the Unit Plan allocates unit production and expenses based upon each tract’s surface acreage participation in the unit; includes a carry provision for those unit participants unable to meet their financial obligations, the amount of which is based upon the risks of and costs related to the project; and conforms to industry standards for the drilling and operating of horizontal wells generally used by the Applicant with other interest owners.

III. TESTIMONY

The following pre-filed testimony has been attached to the Application supporting the Hardman North Unit’s formation: (i) testimony from a Geologist establishing that the Unitized Formation is part of a pool and supporting the Unit Plan’s recommended allocation of unit production and expenses on a surface acreage basis;³ (ii) testimony from a Reservoir Engineer establishing that unitization is reasonably necessary to increase substantially the recovery of oil and

¹ Chesapeake Exploration, LLC, as Operator, is authorized to file this application on behalf of TOTAL E&P USA, Inc. and CHK Utica, LLC as other working interest owners in this acreage.

² See Prepared Direct Testimony of Eric Hensley at 2-3, attached as Exhibit 5.

³ See Prepared Direct Testimony of Travis Glauser, attached as Exhibit 3.

gas, and that the value of the estimated additional resource recovery from unit operations exceeds its additional costs;⁴ and (iii) testimony from an operational Landman with firsthand knowledge of Chesapeake's Ohio development who describes the project generally, the Unit Plan, efforts to lease unleased owners, and the approvals received for unit development.^{5,6}

IV.

THE CHIEF SHOULD GRANT AN ORDER FOR THIS APPLICATION

A. Legal Standard

Ohio Revised Code § 1509.28 requires the Chief of the Division to issue an order providing for the unit operation of a pool – or a part thereof – when the applicant shows that it is reasonably necessary to increase substantially the ultimate recovery of oil and gas, and the value of the estimated additional resource recovery from the unit's operations exceeds its additional costs. See Ohio Rev. Code § 1509.28(A).

The Chief's order must be on terms and conditions that are just and reasonable and prescribe a plan for unit operations. See Ohio Rev. Code § 1509.28(A). Chesapeake proposes the following conditions for its operation of the Hardman North Unit that will satisfy the statutory requirements set forth below:

(1) A description of the unit area.

See the above section on "PROJECT DESCRIPTION."

(2) A statement of the nature of the contemplated operations.

Chesapeake anticipates drilling five (5) wells from a centralized pad location in the Hardman North Unit for the purpose of recovering oil and gas. Drilling operations in the Unit will commence within twelve (12) months from the date of approval of the Division's Unitization Order.⁷

(3) An allocation of production from the unit area not used in unit operations, or otherwise lost, to the separately owned tracts.

Chesapeake's geology testimony illustrates that the Utica/Point Pleasant Formation uniformly underlies the Unit Area.⁸ Therefore, the value of each separate tract in the Unit Area shall be determined by calculating the ratio of its surface acreage to the total surface acreage of the Unit Area; this is known as "Unit Participation". The allocated share of production to each separate tract shall be equal to its Unit Participation.

(4) A provision addressing credits and charges to be made for the investment in wells, tanks, pumps, and other equipment contributed to unit operations by owners in the unit.

⁴ See Prepared Direct Testimony of Andrew Hopson, attached as Exhibit 4.

⁵ See Prepared Direct Testimony of Eric Hensley, attached as Exhibit 5.

⁶ Each of the witnesses is an employee of Chesapeake Energy Corporation, testifying on behalf of the Applicant, its wholly-owned subsidiary, Chesapeake Exploration, L.L.C., which operates Chesapeake's Ohio wells.

⁷ Exhibit 5 at 4.

⁸ Exhibit 3 at 2-3.

Owners in the Unit Area are responsible for their pro rata share of these credits and charges based upon their total Unit Participation within the Unit Area.

(5) A provision addressing how unit operation expenses shall be determined and charged to the separately owned tracts in the unit, and how they will be paid.

Expenses related to unit operations shall be charged to owners on a pro rata basis based upon their Unit Participation. These charges shall be just and reasonable.

(6) A provision, if necessary, for carrying someone unable to meet their financial obligations in connection with the unit.

Chesapeake will carry, or otherwise finance, an owner who is unable to meet its financial obligations in connection with unit operations. Chesapeake shall comply with the Unit Agreement and Unit Operating Agreement included in the subject unitization application should enactment of this provision become necessary.

(7) A provision for the supervision and conduct of unit operations in which each person has a vote with a value corresponding to the percentage of unit operations expenses chargeable against that person's interest.

Chesapeake, or its successors in interest, shall supervise and conduct all unit operations. Each working interest owner in the Unit Area shall have a voting interest equal to its Unit Participation. If the operator owns fifty-one percent (51%) or more of the Unit Area, unit operations shall not require an affirmative vote of all working interest owners. Otherwise, no unit operation shall be approved without an affirmative vote of at least fifty-one percent (51%) of the combined voting interest of the working interest owners.

(8) The time when operations shall commence and the manner in which, and circumstances under which, unit operations will terminate.

Unit operations may commence as of 7:00 a.m. on the day following the effective date of the Order, when and if one is issued by the Division, and may continue as long as oil and/or gas are produced. Working interest owners comprising at least fifty-one percent (51%) of the working interest owners in the Unit Area may terminate unit operations whenever they determine unit operations are no longer warranted. If unit operations are so terminated, Chesapeake shall provide written notice of the termination to the Division and to all unitized non-consenting working interest owners, as further defined in 9(b)(ii). In the event that termination of unit operations occurs prior to drilling and completing for production three (3) wells in the Hardman North Unit, the Chief may issue an order reducing the Unit Area to the minimum amount of acreage necessary to support those wells that have been drilled and are producing.

(9) Such other provisions appropriate for engaging in unit operation and for the protection or adjustment of correlative rights.

Chesapeake proposes the following as additional provisions:

(a) No activity associated with the drilling, completion, or operation of the Hardman North Unit shall be conducted on the surface of any unleased property without prior written consent of the landowner.

(b) If an Order is granted, Chesapeake shall present Unitized parties with the option to:

(i) lease their minerals to Chesapeake for a fifteen percent (15%) royalty rate on production, and a lease bonus payment of two thousand seven hundred fifty dollars (\$2,750) per net mineral acre. This lease option shall be for a non-surface use lease, meaning that Chesapeake shall not use the surface of the mineral owner's property without separate prior written consent by the mineral owner; or

(ii) participate in unit operations as a non-consenting working interest owner. The mineral owner shall receive a monthly cash payment equal to a one-eighth (1/8) landowner royalty interest calculated on gross revenues. The one-eighth (1/8) royalty interest shall be calculated based on the Unit Participation of the mineral owner's tract. Chesapeake shall make the royalty payment contemporaneously with those it makes to leased individuals within the Unit Area. In addition to the royalty payment, the non-consenting working interest owner shall have a working interest ownership in the well equal to seven-eighths (7/8) of the Unit Participation of his/her tract. This seven-eighths of his/her Unit Participation shall accrue based upon net production revenue until Chesapeake recovers 200% of the cost of drilling, testing, completing, and producing the initial well. Once Chesapeake recovers 200% of these costs, Chesapeake shall begin making monthly payments on net production revenue for that well equal to eight-eighths (8/8) of the non-consenting working interest owner's Unit Participation, thereby negating any future royalty interest in the well for the non-consenting working interest owner. For any subsequent wells drilled in the Unit Area, seven-eighths (7/8) of the non-consenting working interest owner's Unit Participation shall accrue until Chesapeake has recovered 150% of the cost of drilling, testing, completing, and producing the subsequent wells. Once Chesapeake recovers 150% of these costs, Chesapeake shall begin making monthly payments on net production revenue for the subsequent wells equal to eight-eighths (8/8) of the non-consenting working interest owner's Unit Participation, thereby negating any future royalty interest in the well for the non-consenting working interest owner. Once a specific cost is charged to a well, that same cost cannot be charged to the subsequent wells in the Unit Area.

(iii) Chesapeake shall present these options via certified mail. Should the Unitized Party not make an affirmative selection as to one of the two options, the Unitized Party will be deemed to have selected option 9(b)(i) to lease their tract under the terms of the lease form attached as Exhibit "B" to Exhibit 2 of this Application.

(c) Unitized parties shall not incur liability for any personal or property damage associated with any drilling, testing, completing, producing, operating, or plugging activities within the Hardman North Unit.

(d) If requested by an unleased mineral owner selecting option 9(b)(ii) above, or by the Division, Chesapeake shall provide, not later than thirty (30) days after receipt of the request, any of the following:

(i) A statement for the preceding month, covering all wells then in production within the Unit Area, depicting all costs incurred, together with the quantity of oil and gas produced, and the amount of proceeds realized from the sale of production during said preceding month; and

(ii) Any authorization for expenditure (AFE) prepared by Chesapeake; and

(iii) A statement of all costs and expenses for purposes of above Paragraph 9(b)(ii).

(10) The Order will become effective when Chesapeake provides the Chief with final written approval of the unit operations from sixty-five percent (65%) of the working interest owners in the Unit Area, and sixty-five percent (65%) of the royalty interest owners in the Unit Area. Upon receipt of these approvals, the Order shall become effective, and unit operations may commence as set forth above. Chesapeake will have six (6) months to provide these required approvals, and, if it does not do so, the Order will be deemed revoked, and the Chief shall provide notice of the revocation to Chesapeake and the unleased mineral interest owners in the Unit Area.

(11) Within twenty-one (21) days of the Order becoming effective, Chesapeake will file a copy of the Order with the Carroll County Recorder's Office.

(12) Chesapeake requests that its Unit Agreement and Unit Operating Agreement are adopted by the Order. In the event of a conflict between the Plan for Unit Operations approved by the Chief and contained in the Order, and Chesapeake's Unit Agreement and Unit Operating Agreement, the Order shall take precedence and the Unit Agreement and Unit Operating Agreement shall conform to the Order.

B. Chesapeake's Application Meets the Legal Standard

i. *The Unitized Formation is Part of a Pool*

The "Unitized Formation" consists of the subsurface portion of the Unit Area (i.e., the lands shown on Exhibit A-1 and identified in Exhibit A-2 to the Unit Operating Agreement) at a depth located from fifty feet above the top of the Utica Shale to fifty feet below the base of the Point Pleasant formation, and frequently referred to as the Utica/Point Pleasant formation. The evidence presented in this Application establishes that the Unitized Formation is part of a pool and thus an appropriate subject of unit operation under Ohio Rev. Code § 1509.28.⁹ Additionally, that evidence establishes that the Unitized Formation is likely to be reasonably uniformly distributed throughout the Unit Area – and thus that it is reasonable for the Unit Plan to allocate unit production and expenses to separately owned tracts on a surface acreage basis.¹⁰

ii. *Unit Operations Are Reasonably Necessary to Increase Substantially the Ultimate Recovery of Oil and Gas*

The evidence presented in this Application establishes that unit operations are reasonably necessary to increase substantially the ultimate recovery of oil and gas from the lands making up the Hardman North Unit. The Unit Plan contemplates the potential drilling of five (5) horizontal well from a single well pad, with laterals in length of approximately 9,500 feet.¹¹ Chesapeake estimates the total amount of gas in place ("GIP") through the planned unit development is approximately 63.1 billion cubic feet ("BCF") of natural gas from the Unitized Formation. Absent a unit order development would not occur and 63.1 BCF of GIP would be stranded.

The evidence thus shows that the contemplated unit operations are reasonably necessary to increase substantially the recovery of oil and gas from the Unitized Formation.¹²

⁹ A "pool" is defined under Ohio law as "an underground reservoir containing a common accumulation of oil or gas, or both, but does not include a gas storage reservoir." Ohio Rev. Code § 1509.01(E). See also Exhibit 3 at 2-3.

¹⁰ Exhibit 3 at 4-5.

¹¹ See, e.g., Exhibit 5 at 4-5.

¹² There are also substantial benefits in the form of reduced surface impacts as a result of the contemplated unit operations. For example, the use of a single, centrally-located well pad to drill five horizontal wells causes significantly less surface disruption than a vertical well drilling program designed to recover the same resource volumes. See, e.g., Exhibit 5 at 5-6 (both on-site and traffic-related surface impacts, for example).

iii. *The Value of Additional Recovery Exceeds Its Additional Costs*

Capital expenditure (“CAPEX”) to develop the unitized project (\$44.1 mm) increases by \$44.1 mm (approximately 100%) over CAPEX to develop the non-unitized project (\$0.0 mm).¹³ As set forth in Mr. Hopson’s testimony, by using the current price of \$4.350 per thousand cubic feet of natural gas, Chesapeake estimates that the value of the additional GIP in the unitized project, when compared to the GIP in the non-unitized project, increases by approximately 100%, from \$0.0 (zero) mm to \$111.62 mm; an increase of \$111.62 mm in potential value.¹⁴ Thus, the evidence establishes that the value of the estimated additional recovery is expected to exceed the estimated additional costs incident to conducting unit operations.

iv. *The Unit Plan Meets the Requirements of Ohio Revised Code § 1509.28*

The Unit Plan proposed by Chesapeake meets the requirements set forth in Ohio Revised Code § 1509.28. The unit area is described in the Unit Agreement at Article 1, as well as on Exhibits A-1 and A-2 to the Unit Operating Agreement. The nature of the contemplated unit operations can be found generally in the Unit Agreement at Article 3, with greater specificity throughout the Unit Agreement and Unit Operating Agreement.¹⁵ Unit production and unit expenses are allocated on a surface acreage basis as set forth in the Unit Agreement at Articles 3 through 5 (generally), except where otherwise allocated by the Unit Operating Agreement.¹⁶ Payment of unit expenses is addressed generally in Article 3 of the Unit Agreement.¹⁷ No provision for credits and charges related to contributions made by owners in the unit area regarding wells, tanks, pumps and other equipment for unit operations are addressed in the Unit Operating Agreement because none are contemplated.¹⁸ The Unit Plan provides for various carries in the event a participant is unable to meet its financial obligations related to the unit – see, e.g., Article VI of the Unit Operating Agreement.¹⁹ Voting provisions related to the supervision and conduct of unit operations are set forth in Article XVI of the Unit Operating Agreement, with each person having a vote that has a value corresponding to the percentage of unit expenses chargeable against

¹³ Id. at 4.

¹⁴ Exhibit 4 at 4-6.

¹⁵ See also, e.g., Exhibit 5 at 6-14.

¹⁶ Id. at 6-8.

¹⁷ Id. at 8.

¹⁸ Id. at 9-10.

¹⁹ Id. at 10-12.

that person's interest.²⁰ Commencement and termination of operations are addressed in Articles 11 and 12 of the Unit Agreement.

V. APPROVALS

As of the filing of this Application, the Unit Plan has been agreed to or approved by approximately seventy-nine (79%) of Working Interest Owners. See Exhibit 5 at 14, and Exhibit 6. This working interest owner approval exceeds the statutory minimum requirements set forth in Ohio Revised Code § 1509.28(B) for the Chief's order, if issued, to become effective.

VI. HEARING

Ohio Revised Code § 1509.28 requires the Chief to hold a hearing to consider this Application, when requested by sixty-five percent (65%) of the owners of the land area underlying the proposed unit. Ohio Rev. Code § 1509.28(A). That threshold level is met here. See Note 2 above. Accordingly, Chesapeake respectfully requests that the Division schedule a hearing at an available hearing room located at the Division's Columbus complex on or before April 30, 2015, to consider the Application filed herein.

VII. CONCLUSION

Ohio Revised Code § 1509.28 requires the Chief of the Division to issue an order for the unit operation of a pool – or a part thereof – if it is reasonably necessary to increase substantially the recovery of oil and gas, and the value of the estimated additional recovery from the unit's operations exceeds its additional costs. Chesapeake respectfully submits that the Application meets this standard, and that the terms and conditions of the Unit Plan are just and reasonable and satisfy the requirements of Ohio Revised Code § 1509.28(B). Chesapeake therefore asks the Chief to issue an order authorizing Chesapeake to operate the Hardman North Unit according to the Unit Plan attached hereto.

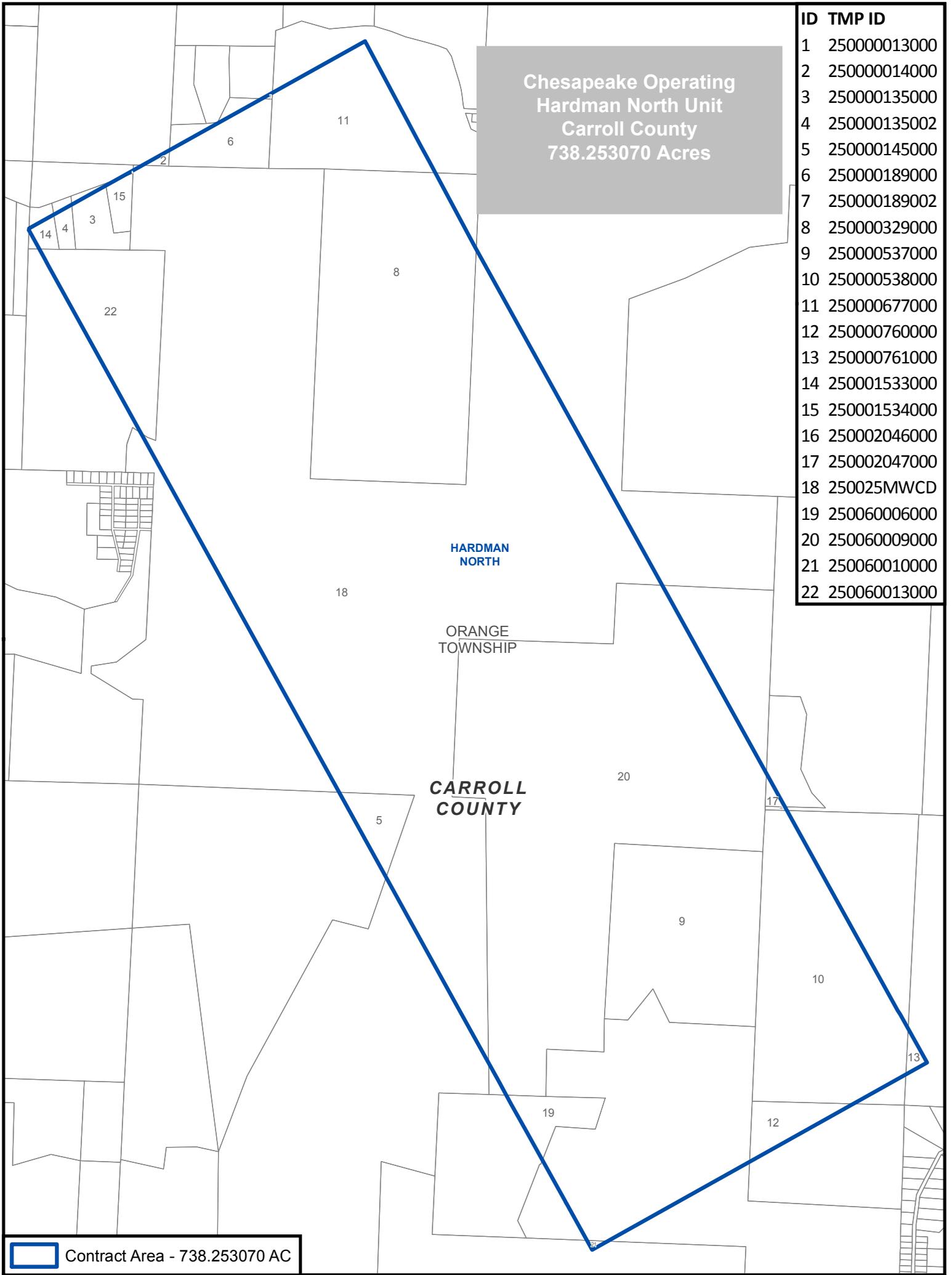
²⁰ *Id.* at 12.

Respectfully submitted,

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

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

Exhibit "A-1"



CONTRACT AREA

**Hardman North Unit
Orange Township
Carroll Co., OH**

1 inch = 1,000 feet



Exhibit "A-2"

Leases Within the Contract Area

Attached to and made a part of that certain Unit Operating Agreement dated December 16, 2014 as approved by the Ohio Department of Natural Resources for the Hardman North 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	ADDRESS	CITY	STATE	ZIP CODE
1	34-002177-000	ROBERT W. NEWELL, ETAL	YES	0.037981	0.005145%	25000013000	ORANGE	CARROLL	OH	0.00514%	100.00000%	0.00514%			550 Canton Rd. NW	Carrollton	OH	44615
2	34-002177-000	ROBERT W. NEWELL, ETAL	YES	0.349975	0.047406%	250000014000	ORANGE	CARROLL	OH	0.04741%	100.00000%	0.04741%			550 Canton Rd. NW	Carrollton	OH	44615
3	34-0000197-000	MARK A SABO	YES	3.924195	0.531551%	250000135000	ORANGE	CARROLL	OH	0.53155%	100.00000%	0.53155%			5058 Dublin Rd. SW	Bowlington	OH	44695
4		SCOTT J. AND TRACY DAVIS YEAGER	NO	1.175706	0.159255%	250000135002	ORANGE	CARROLL	OH	0.15926%					437 Silver Ridge Dr.	Copley	OH	44321
5	34-036441-000	THE MUSKINGUM CONSERVANCY	YES	5.186718	0.702566%	250000145000	ORANGE	CARROLL	OH	0.70257%	100.00000%	0.70257%			1319 3rd St. NW Box 349	New Philadelphia	OH	44663
6	34-0002627-000	CRAVAT COAL COMPANY	YES	7.533855	1.020498%	250000189000	ORANGE	CARROLL	OH	1.02050%	100.00000%	1.02050%			P.O. Box 246	Cadiz	OH	43907
7	34-0002627-000	CRAVAT COAL COMPANY	YES	0.058233	0.007888%	250000189002	ORANGE	CARROLL	OH	0.00789%	100.00000%	0.00789%			P.O. Box 246	Cadiz	OH	43907
8	34-036441-000	THE MUSKINGUM CONSERVANCY	YES	77.022336	10.433053%	250000329000	ORANGE	CARROLL	OH	10.43305%	100.00000%	10.43305%			1319 3rd St. NW Box 349	New Philadelphia	OH	44663
9	34-007200-000	JAY HARDMAN	YES	42.269236	5.725575%	250000537000	ORANGE	CARROLL	OH	5.72558%	100.00000%	5.72558%			4895 East Willock Road	Pittsburgh	PA	15227
10	34-007200-000	JAY HARDMAN	YES	49.073434	6.647237%	250000538000	ORANGE	CARROLL	OH	6.64724%	100.00000%	6.64724%			4895 East Willock Road	Pittsburgh	PA	15227
11	1-339175-000	CAMP FIREBIRD, LLC, A LIMITED	YES	23.343571	3.162001%	250000677000	ORANGE	CARROLL	OH	3.16200%	100.00000%	3.16200%			1319 3rd St. NW Box 349	New Philadelphia	OH	44663
12	34-019865-000	ROBERT W. MCFARLAND AND SHARON L. MCFARLAND	YES	5.061336	0.685583%	250000760000	ORANGE	CARROLL	OH	0.68558%	62.50000%	0.42849%	37.50000%	0.25709%	6164 Dodge Rd. SW	Canton	OH	44706
13	34-019865-000	ROBERT W. MCFARLAND AND SHARON L. MCFARLAND	YES	0.773050	0.104713%	250000761000	ORANGE	CARROLL	OH	0.10471%	62.50000%	0.06545%	37.50000%	0.03927%	6164 Dodge Rd. SW	Canton	OH	44706
14		SCOTT J. AND TRACY DAVIS YEAGER	NO	1.117842	0.151417%	250001533000	ORANGE	CARROLL	OH	0.15142%					437 Silver Ridge Dr.	Copley	OH	44321
15		EDWARD T. CARDEN, TRUSTEE (50%) ANN D. CARDEN, TRUSTEE (50%)	NO	1.981888	0.268456%	250001534000	ORANGE	CARROLL	OH	0.26846%					5032 Dublin Rd.	Bowlington	OH	44695
16	1-339147-000	DAVID W. DEVEY, A MARRIED MAN	YES	0.123236	0.016693%	250002046000	ORANGE	CARROLL	OH	0.01669%	100.00000%	0.01669%			22232 Rye Street	Shaker Heights	OH	44122
17	34-007200-000	JAY HARDMAN	YES	0.540775	0.073251%	250002047000	ORANGE	CARROLL	OH	0.07325%	100.00000%	0.07325%			1319 3rd St. NW Box 349	New Philadelphia	OH	44663
18	34-036441-000	THE MUSKINGUM CONSERVANCY	YES	346.176271	46.891274%	250025MWCDC	ORANGE	CARROLL	OH	46.89127%	100.00000%	46.89127%			1319 3rd St. NW Box 349	New Philadelphia	OH	44663
19	34-036441-000	THE MUSKINGUM CONSERVANCY	YES	5.196610	0.703906%	250060006000	ORANGE	CARROLL	OH	0.70391%	100.00000%	0.70391%			1319 3rd St. NW Box 349	New Philadelphia	OH	44663
20		STATE OF OHIO - DEPARTMENT OF NATURAL RESOURCES	NO	145.743316	19.741647%	250060009000	ORANGE	CARROLL	OH	19.74165%					2045 Morse Road, Building E-2	Columbus	OH	43229
21	34-036441-000	THE MUSKINGUM CONSERVANCY	YES	0.164270	0.022251%	250060010000	ORANGE	CARROLL	OH	0.02225%	100.00000%	0.02225%			1319 3rd St. NW Box 349	New Philadelphia	OH	44663
22	34-036441-000	THE MUSKINGUM CONSERVANCY	YES	21.399237	2.898632%	250060013000	ORANGE	CARROLL	OH	2.89863%	100.00000%	2.89863%			1319 3rd St. NW Box 349	New Philadelphia	OH	44663
TOTAL LEASED ACRES:				588.234318	79.679224%					100.00000%		79.38286%		0.29636%				
TOTAL UNIT ACRES:				738.253070														

Exhibit "A-3"
Unitized Parties

Attached to and made a part of that certain Unit Operating Agreement dated December 16, 2014 as approved by the Ohio Department of Natural Resources for the Hardman North Unit.

TRACT NUMBER	LESSOR	ADDRESS	CITY	STATE	ZIP CODE	LEASED YES/NO	SURFACE ACRES IN UNIT	TRACT PARTICIPATION	TAX MAP PARCEL ID NUMBERS	TOWNSHIP	COUNTY	STATE	LESSOR WORKING INTEREST	UNIT PARTICIPATION
4	SCOTT J AND TRACY DAVIS YEAGER	437 Silver Ridge Dr.	Copley	OH	44321	NO	1.175706	0.001593	250000135002	ORANGE	CARROLL	OH	100.00000%	0.15926%
14	SCOTT J AND TRACY DAVIS YEAGER	437 Silver Ridge Dr.	Copley	OH	44321	NO	1.117842	0.001514	250001533000	ORANGE	CARROLL	OH	100.00000%	0.15142%
15	EDWARD T CARDEN, TRUSTEE (50%) ANN D CARDEN, TRUSTEE (50%)	5032 Dublin Rd.	Bowerston	OH	44695	NO	1.981888	0.002685	250001534000	ORANGE	CARROLL	OH	100.00000%	0.26846%
20	STATE OF OHIO - DEPARTMENT OF NATURAL RESOURCES	2045 Morse Road, Building E-2	Columbus	OH	43229	NO	145.743316	0.197416	250060009000	ORANGE	CARROLL	OH	100.00000%	19.74165%
TOTAL UNITIZED ACRES:							150.018752	0.203207						
TOTAL UNIT ACRES:							738.253070							

**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: December 16, 2014
: Revised Date: February 9, 2015
Hardman North Unit :

**PREPARED TESTIMONY OF TRAVIS GLAUSER
ON BEHALF OF CHESAPEAKE EXPLORATION, L.L.C.**

R. Neal Pierce (0028379)
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41 South High Street, Suite 2200
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Attorneys for Applicant,
Chesapeake Exploration, L.L.C.

PREPARED DIRECT TESTIMONY OF TRAVIS GLAUSER

1 **INTRODUCTION.**

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

3 A1. My name is Travis Glauser and my business address is 6100 N. Western Avenue,
4 Oklahoma City, Oklahoma 73118.

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

6 A2. Chesapeake Energy Corporation.

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

8 A3. I am a Staff Geologist with Chesapeake's Northern Division.

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

10 A4. My general responsibilities include: exploring for new accumulations of oil and gas
11 in the on-shore United States, evaluating prospects in different formations in the
12 Appalachian Basin, planning and monitoring horizontal drilling of wells and
13 mentoring less experienced geoscientists. Additionally, as an operations geologist,
14 I monitor drilling reports and well logs from active drilling of wells to ensure the
15 wellbore stays in the target formation.

16 **Q5. Starting with college, would you describe your education background?**

17 A5. I have a Bachelor's degree in Geology from the University of Kansas (2006) and a
18 Master's Degree in Geology from the University of Kansas (2010).

19 **Q6. Would you briefly describe your professional experience?**

20 A6. I have 5 years of petroleum industry experience, all at Chesapeake. Over that time,
21 I worked plays in the mid-continent region and the Appalachian Basin in the United
22 States. I worked as operations geologist, of which duties included well planning
23 and monitoring horizontal drilling of the Des Moines Granite Wash, Hogshooter,
24 Tonkawa, Cleveland and Woodford Formations in Oklahoma and Texas. I created
25 geological maps and provided prospect evaluations for the Des Moines Granite
26 Wash, Tonkawa and Woodford Shale in Oklahoma. I currently work as an
27 operations geologist with a focus on the development of Chesapeake's Utica Shale
28 assets in Ohio.

29 **Q7. Are you a member of any professional associations?**

30 A7. Yes. I am an active member of the American Association of Petroleum Geologists,

1 Ohio Geological Society, Oklahoma City Geological Society and Oklahoma
2 Energy Explorers.

3 **Q8. Are you familiar with Chesapeake Exploration, L.L.C.'s Application for Unit**
4 **Operations with respect to the Hardman North Unit?**

5 A8. Yes.

6 **Q9. Could you please describe the Hardman North Unit, in terms of its general**
7 **location, surface acreage, and subsurface depth?**

8 A9. The Hardman North Unit consists of twenty-two (22) separate tracts of land
9 totaling approximately 738.254228 acres in southwestern Carroll County, Ohio.
10 Exhibit TG-1 to the Application shows the geographical location of the proposed
11 unit in Carroll County and in relation to the surrounding counties. The Unitized
12 Formation described in the Application is the subsurface portion of the Hardman
13 North Unit at a depth located from 50' above the top of the Utica Shale, to 50'
14 below the base of the Point Pleasant formation.

15 **UNITIZED FORMATION IS PART OF A POOL.**

16 **Q10. In geological terms, what does "pool" mean in connection with unitization?**

17 A10. A pool is generally understood to be a common source of supply in pores of a rock
18 that yields hydrocarbons on drilling.

19 **Q11. Ohio Revised Code § 1509.01(E) defines the term "pool" as follows: "Pool"**
20 **means an underground reservoir containing a common accumulation of oil or**
21 **gas, or both, but does not include a gas storage reservoir. Each zone of a**
22 **geological structure that is completely separated from any other zone in the**
23 **same structure may contain a separate pool." Does this definition of "pool"**
24 **apply to the Hardman North Unit?**

25 A11. Yes. As part of a larger hydrocarbon pool, an equal accumulation of hydrocarbons
26 are expected to be in place throughout the Hardman North Unit. Furthermore, the
27 hydrocarbon pool would extend beyond the currently defined unit in each direction,
28 North, South, East, and West. Interpretation of data indicates that the Utica
29 formation has consistent characteristics across the Hardman North Unit.
30 Geological mapping suggests that the Unitized Formation constitutes a common
31 source of supply, meaning any portion of the Hardman North Unit would be

1 geologically equivalent to another portion of the Hardman North Unit. Stated
2 another way, the formation shows very similar traits from one well location to the
3 next, which suggests the production is likely to be similar from all wells drilled in
4 the unit. Therefore, the Unitized Formation qualifies as part of a pool.

5 **Q12. Generally speaking, what sources of data would you review and analyze in**
6 **order to assess the geologic characteristics of a potential shale play?**

7 A12. Wireline well log data and core data. Both public and proprietary logs are analyzed
8 by Chesapeake Energy petrophysicists and geologists. Cores are analyzed by
9 scientists at the Chesapeake Reservoir Technology Center.

10 **Q13. How is this data obtained, and what is it meant to show about the formation?**

11 A13. Chesapeake geologists have used public well logs and recently drilled Chesapeake
12 Energy well logs to pick rock formation tops across the basin. After picking
13 formation tops, such as the Queenston Shale, Utica Shale, Point Pleasant Shale, and
14 Trenton Limestone, maps are made to show the thickness of each formation across
15 Ohio. This mapping indicates equal thickness of the Utica and Point Pleasant
16 shales over the Hardman North Unit. The industry jargon has come to call this
17 entire interval the “Utica Formation”, and in our testimony we will often adopt this
18 naming convention.

19 **Q14. What data sources did you use in determining the geologic features of the**
20 **Hardman North Unit?**

21 A14. Wireline well log data and Gamma Ray data, which we used to compile Exhibits
22 TG-1 and TG-2 to the Application for Unit Operation.

23 **Q15. What do these exhibits tell us about the Hardman North Unit?**

24 A15. Exhibits TG-1 and TG-2 are a map and cross section that show wireline well logs.
25 The logs are annotated with formation names. The cross section offsetting the
26 Hardman North Unit suggests approximately equal thickness of the Utica
27 formation, including the Point Pleasant Shale. The three-well cross section
28 displays wireline Gamma Ray data on a 0-200 API scale, Resistivity data on a 0.2-
29 2,000 OHMM scale, and Bulk Density data on a 2.00-3.00 g/cm³ scale. As shown
30 on Exhibit TG-1, one of the three wells is located approximately 7.8 miles
31 northwest of the Hardman North Unit pad site, one well is approximately 6.5 miles

1 northeast of the Hardman North Unit pad site, and the other well is approximately
2 2.3 miles southeast of the pad site. Interpreted formation tops based on Gamma
3 Ray, Resistivity and Bulk Density electric log curves are shown on the cross
4 section in Exhibit TG-2. Because of the location of the three evaluation wells and
5 uniformity of the log data across the three wells, as displayed on the cross section,
6 the log data indicates that the Utica Shale is predicted to have similar
7 characteristics and be of uniform thickness across the Hardman North Unit.

8 **Q16. What is the approximate depth of the Utica/Point Pleasant formation under**
9 **the Hardman North Unit?**

10 A16. The top of the Utica formation is expected around 7,240 feet True Vertical Depth.

11 **Q17. Which formations are included in the proposed Hardman North Unit?**

12 A17. The Unitized Formation described in the Application is the subsurface portion of
13 the Hardman North Unit at a depth located from 50' above the top of the Utica
14 Shale to 50' below the base of the Point Pleasant formation.

15 **Q18. How and why were these formations chosen?**

16 A18. Chesapeake Engineers' fracture models, derived from the measured rock properties
17 obtained from well logs and core data, suggest fractures are contained 50' above
18 the top of the Utica Shale and 50' below the top of the Trenton Limestone.

19 **Q19. Based on the data you analyzed, should the area be considered a pool?**

20 A19. Yes, it is part of a pool.

21 **Q20. Could you please explain why?**

22 A20. Well log analysis and mapping based on core data indicates that reservoir
23 characteristics are very similar over a unit area for the Utica/Point Pleasant
24 formations. Formation thickness, saturation, and porosity should be roughly
25 equivalent across the formation. Geologically, this would qualify the area being
26 considered as part of a pool.

27 ALLOCATION METHODOLOGY

28 **Q21. Are you generally familiar with the manner in which unit plans allocate**
29 **production and unit expenses to parcels within the unit?**

30 A21. Yes.

1 **Q22. You testified earlier that the Utica/Point Pleasant formation underlying the**
2 **Hardman North Unit has a relatively uniform thickness and reservoir quality.**
3 **Given those characteristics, what would be an appropriate method of**
4 **allocating production and unit expenses among the parcels contained in the**
5 **Hardman North Unit?**

6 A22. An appropriate method of allocation would be on a surface-acreage basis. The
7 formation thickness and reservoir quality of the Utica formation is expected to be
8 consistent across the unit. I do not expect any substantial variations across the
9 proposed unit. Therefore, there is no geological reason to allocate by a method
10 other than on a surface-acreage basis.

11 **Q23. Is this method used elsewhere?**

12 A23. Yes. In fact, this method is employed in Ohio's pooling statute.

13 **Q24. What method of allocation is utilized in the unit plan for the Hardman North**
14 **Unit?**

15 A24. Based on the testimony of Eric Hensley attached to the Application, the method of
16 allocation utilized is on a surface-acreage basis.

17 **Q25. Does this conclude your testimony?**

18 A25. Yes.

Exhibit "TG-1"

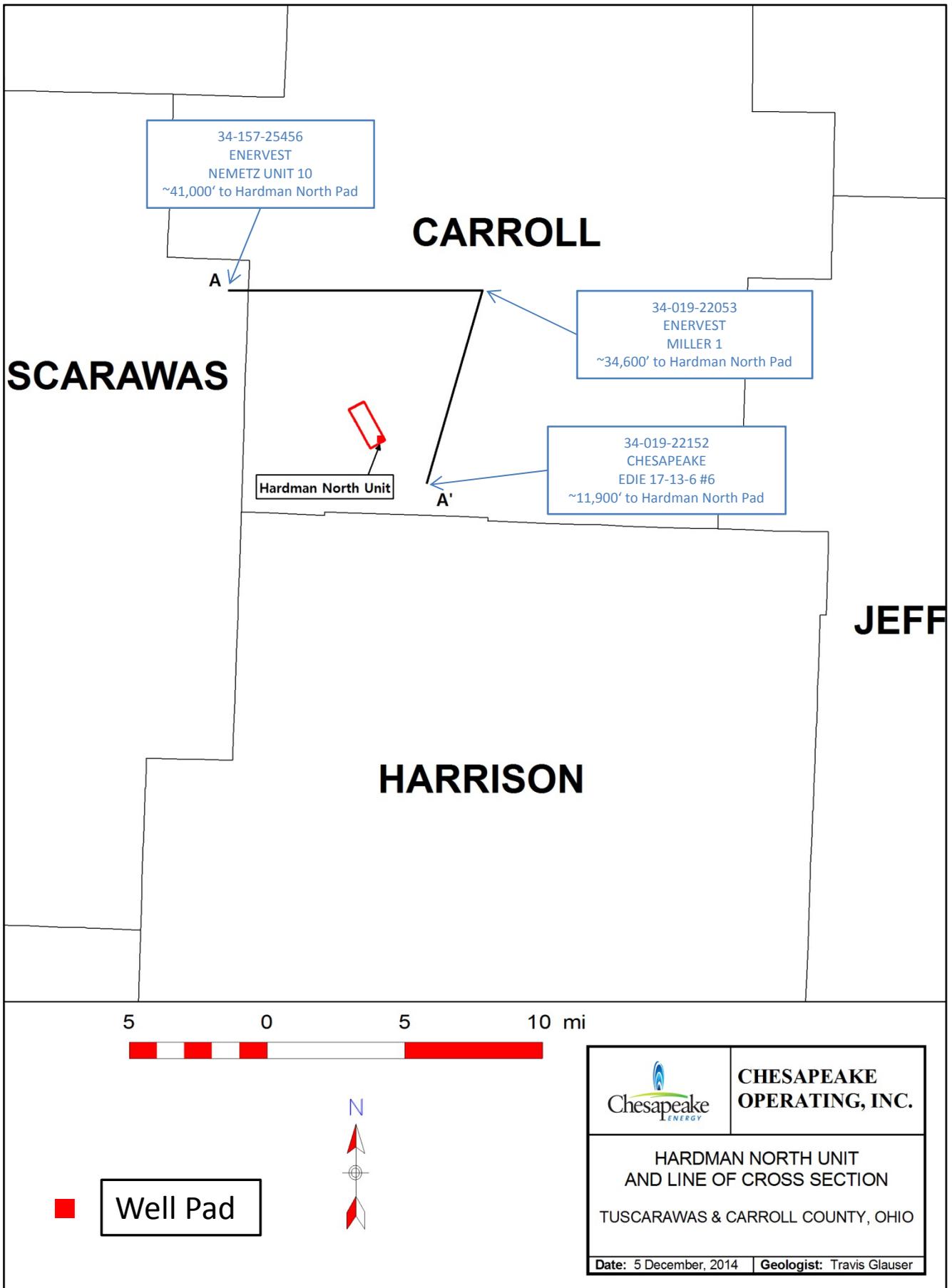
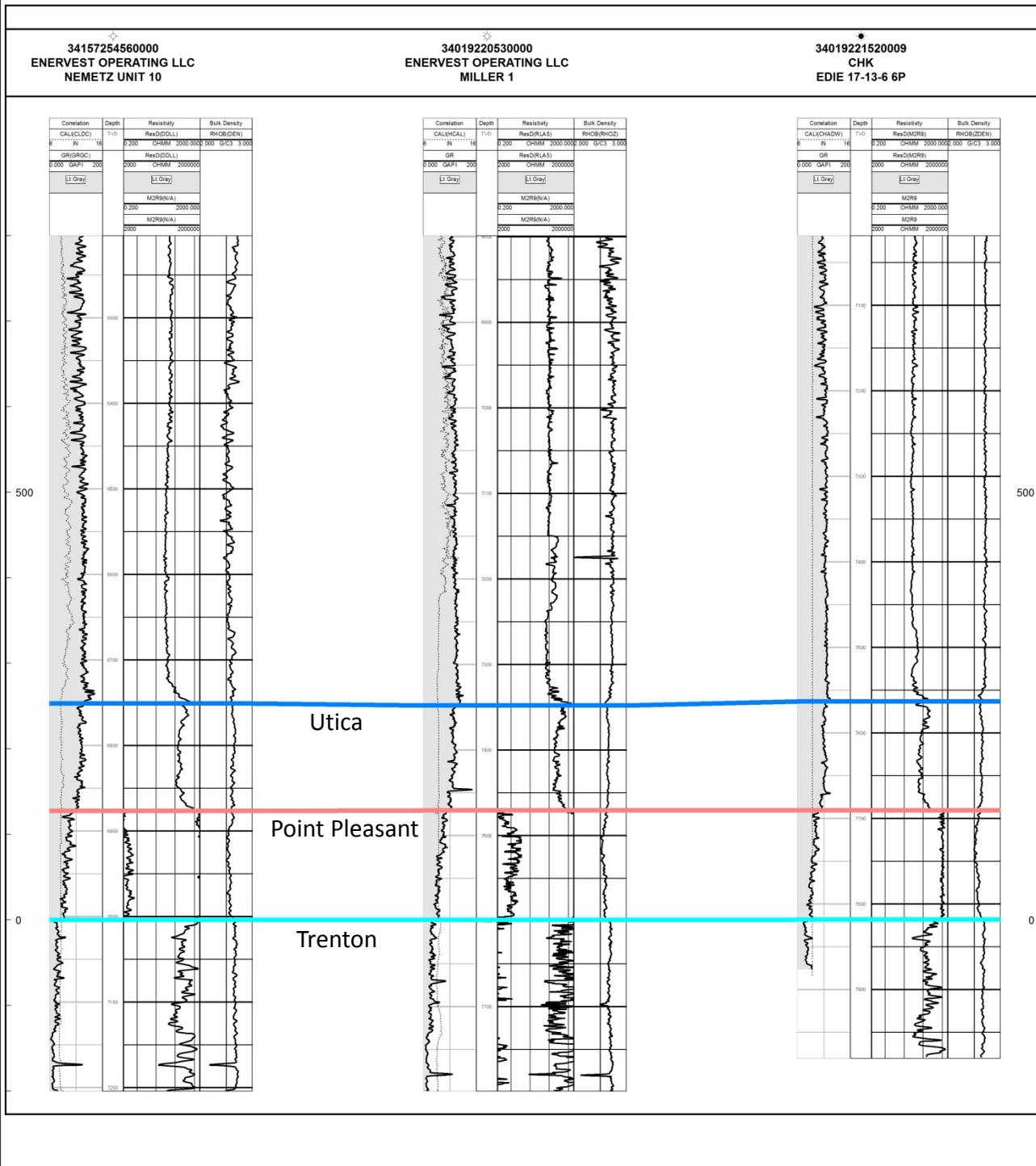


Exhibit "TG-2"

Hardman North Offset Cross Section
 Gamma Ray Logs (0-200 API)
 Resistivity Logs (0.2 – 2000 OHMM)
 Bulk Density (2.00-3.00 g/cm³)

A

A'



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

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**PREPARED TESTIMONY OF ANDREW HOPSON
ON BEHALF OF CHESAPEAKE EXPLORATION, L.L.C.**

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Chesapeake Exploration, L.L.C.

PREPARED DIRECT TESTIMONY OF ANDREW HOPSON

1 **Q1. Please introduce yourself.**

2 **A1.** My name is Andrew Hopson and my business address is 6100 N. Western Avenue,
3 Oklahoma City, Oklahoma 73154-0496. I am a Reservoir Engineer 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 Hardman North Unit. My testimony addresses the
8 following: (1) that unit operations for the Hardman North Unit are reasonably necessary
9 to 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 Texas A&M University, College Station.

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

15 **A4.** I am a member of the Society of Petroleum Engineers.

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

17 **A5.** I have been a Reservoir Engineer at Chesapeake for a little under two years.

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

19 **A6.** I have worked as a Reservoir Engineer in our Devonian asset, primarily focused on
20 conventional formations and optimizing production from existing wells. Prior to working
21 on the Devonian asset I supported the Utica team as a Field Engineer in Canton, OH.

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

23 **A7.** I am responsible for the strategy and development of Chesapeake's Utica asset. In
24 addition to providing reserve estimates it is my job to drive development that optimizes
25 oil and gas recovery in an efficient and responsible manner. Finally I am responsible for
26 the preparation of expert engineering testimony for the Utica play in Ohio.

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

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

1 **Q9. Did you perform any analysis to support Chesapeake's application for unitization**
2 **for the proposed Hardman North Unit?**

3 **A9.** Yes.

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

5 **A10.** Using volumetric analysis, based on provided petrophysical data, I estimated the original
6 gas-in-place. Then, using estimates of ultimate production from analogy wells in the
7 area, I estimated the recoverable hydrocarbons (gas, condensate, and natural gas liquids)
8 foregoing unitization, observing current regulatory setbacks. Next, I calculated the
9 recoverable hydrocarbons pursuant to a unitization order. Recovery factors (RF %) for
10 the project, both unitized and abbreviated were calculated. And lastly I calculated an
11 estimate of future cashflow associated with the extracted hydrocarbons, based on current
12 SEC pricing.

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

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

19 **Q12. Turning specifically to the Hardman North Unit, have you made an estimate of the**
20 **production you anticipate from the proposed unit's operations?**

21 **A12.** Yes. I have estimated the GIP from the proposed Unit Area in the Hardman North Unit
22 to be 63.1 BCFE. Likewise I have estimated the recoverable gas to be 23.8 BCF,
23 recoverable condensate to be 1862 MBBLs, and recoverable natural gas liquids to be
24 1,832 MBBLs, if unitization is granted.

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

26 **A13.** I used isopleth maps of petrophysical data, obtained from other wells in the area, to
27 estimate the anticipated GIP. Then I used forecasted recoveries from all producing wells
28 within a 10 mile radius to estimate expected recovery from this unit.

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

31 **A14.** I used the porosity, water saturations, net pay, formation pressures, etc. to do volumetric

1 calculations of the GIP based on industry accepted methodologies. The RF % was then
2 calculated by dividing the estimated ultimate recovery (BCFE) by the GIP (BCF).

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 Hardman North
9 Unit 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 AWH-1.

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

17 **A19.** The results of my prior stated methodology are;

18 1) Capital expenditure (CAPEX) to develop the unitized project is \$56.3 million.
19 Anticipated recoverable gas from the project is 34.9 BCFE and future cashflow (CF)
20 (using current SEC pricing of \$4.350/Mcf (no btu adjustments)) is \$130.5 million. A
21 recovery factor (RF) of 57.1% is anticipated.

22 2) The unit could not be developed from the planned location under the current scenario.

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

24 **A20.** Every company has its own ideas of economic indicators by which it decides to invest in
25 an opportunity or not. Current SEC pricing, un-escalated, eliminates all the issues
26 associated with corporate decision trees and reduces the evaluation of corporate assets,
27 and projects, to a single deterministic standard. We have no clear crystal ball into the
28 future of oil and gas prices. What we do know, and can verify, is the price we currently
29 and historically get for each barrel of oil and each MMBtu of gas.

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

1 **A21.** We know that the products ultimately purchased from these wells will be comprised of
2 natural gas, condensate, and natural gas liquids. However, for the purpose of conducting
3 a volumetric analysis of the reservoir at initial conditions, there is only natural gas in the
4 reservoir. The condensates and natural gas liquids are separated out at the surface and
5 sold separately, when economic to do so, in an attempt to maximize cash flow.
6 Ultimately, as the reservoir pressure drops below the dew point, condensate will drop out
7 in the reservoir. However, under initial conditions the reservoir is only natural gas.
8 Therefore to determine an estimate of the RF % we need to begin with initial conditions
9 in the reservoir.

10 **Q22. Can you briefly comment on the anticipated range of recovery factors that**
11 **Chesapeake would expect to achieve for the Hardman North Unit?**

12 **A22.** Based upon the current statistical distribution of known data, a range of 30% to 70% is
13 anticipated. The statistical mean of the data is 49%. I expect a 57 % recovery, of
14 original hydrocarbon, from this location.

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

17 **A23.** Yes. The recoverable gas in the unitized project increases by approximately 100% from
18 0.0 BCFE to 34.9 BCFE.

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

22 **A24.** Yes. CAPEX increases by \$56.3 million for the unitized project from the non-unitized
23 project. The estimated additional cashflow from the proposed Hardman North Unit is
24 approximately \$130.5 million as compared to what could be realized if the ODNR does
25 not grant this application for unit operations.

26 **Q25. In your professional opinion, do you believe that the proposed unit operations for**
27 **the Hardman North Unit are reasonably necessary to increase substantially the**
28 **ultimate recovery of oil and gas from the unit area?**

29 **A25.** Yes. The unitization of the Hardman North Unit is definitely needed to maximize the
30 economic benefit to the interest owners, and protect the correlative rights of the mineral
31 owners. If the project is not unitized it will strand 100.0% of the recoverable gas, or 34.9

1 BCFE in the ground from which mineral owners would, most likely, never see financial
2 benefit, nor Chesapeake, nor the State of Ohio.

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

4 **A26.** Yes.

5

EXHIBIT “AWH-1”

Hardman North Unit

UNITIZED

Well Name	Lateral Length (ft)	Anticipated Gas Recovery, BCFE	Capital (MMS)
Hardman 24-13-6 1H	9575	6.99	\$11.28
Hardman 24-13-6 2H	9570	6.98	\$11.27
Hardman 24-13-6 3H	9566	6.98	\$11.27
Hardman 24-13-6 4H	9561	6.98	\$11.26
Hardman 24-13-6 5H	9556	6.98	\$11.26

34.91 \$56.34

NON-UNITIZED

Well Name	Lateral Length (ft)	Anticipated Gas Recovery, BCFE	Capital (MMS)
Hardman 24-13-6 1H	791	0.0	\$0.00
Hardman 24-13-6 2H	832	0.0	\$0.00
Hardman 24-13-6 3H	1059	0.0	\$0.00
Hardman 24-13-6 4H	1929	0.0	\$0.00
Hardman 24-13-6 5H	1610	0.0	\$0.00

Abbreviated Totals 6,221 0.0 \$0.0

	Unitized	Non-Unitized	Increases due to Unitization
Total Capital (MMS) *	\$56.34	\$0.00	\$56.34
Anticipated Recoverable Gas, BCFE	34.91	0.00	34.91
Anticipated Recoverable Gas, BCF	23.8	0.0	23.75
Anticipated Recoverable Oil, MBBL	1,861.9	0.0	1,861.88
Anticipated Recoverable NGLs, MBBL	1,832.4	0.0	1,832.44
Estimated Project CF, (MMS) @ SEC Prices \$4.35mcf/\$94.63bbl	\$130.51	\$0.00	\$130.51

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

Est. Disc. Time to PO (Unitized), Yrs: 1.6
 Est. Disc. Time to PO (Abbreviated), Yrs: NA
 Anticipated Initial LOE per well, \$/month: \$21,001

Est. RF% due to Unitization: **57%**
 Est. Abbreviated RF%: **0%**

* Used Toe Setback of 150'

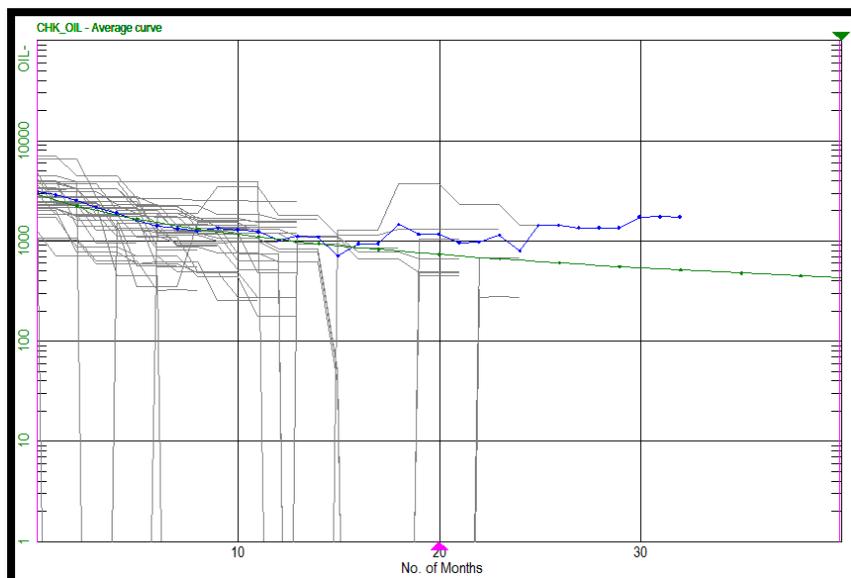
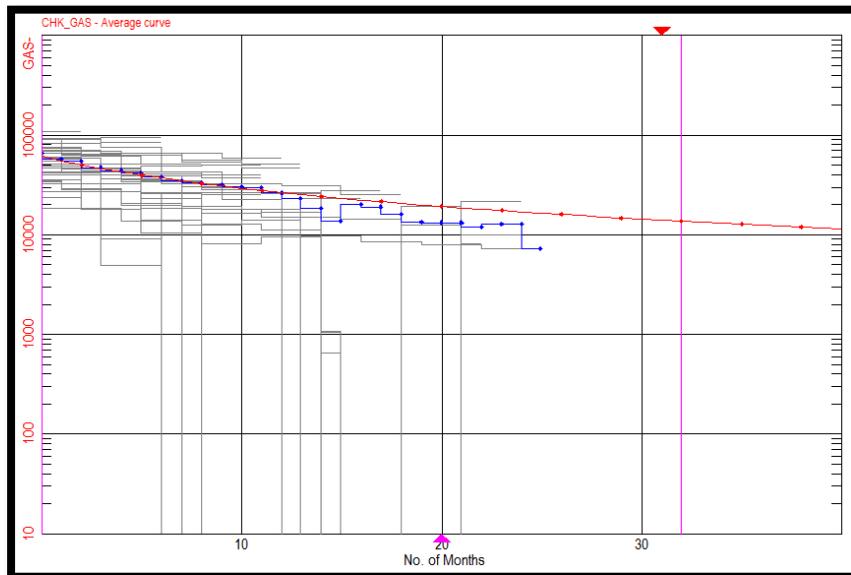
** Used Heel Setback of 150'

EXHIBIT "AWH-2"

Support Data

Hardman North Unit

LEASE	API	OPERATOR	LL, FT.	MILES
CUMMINGS 17-14-6	3401922147	CHESAPEAKE EXPLORATION LL	5,404	5.0
BURGETT 7-15-6 6H	3401922110	CHESAPEAKE EXPLORATION LLC	6,491	7.0
BURGETT 7-15-6	3401922085	CHESAPEAKE EXPLORATION LL	6,499	7.0
WALTERS 30-12-5 8H	3401922122	CHESAPEAKE EXPLORATION LLC	5,255	6.9
CAIRNS 5H	3401922093	ENERVEST OPERATING L L C	5,465	9.7
FLIGIEL 29-12-5	3401922234	CHESAPEAKE EXPLORATION LL	4,013	7.0
FLIGIEL 29-12-5	3401922233	CHESAPEAKE EXPLORATION LL	4,132	7.0
FLIGIEL 29-12-5	3401922194	CHESAPEAKE EXPLORATION LL	5,453	7.0
FLIGIEL 29-12-5	3401922200	CHESAPEAKE EXPLORATION LL	4,132	7.0
FLIGIEL 29-12-5	3401922232	CHESAPEAKE EXPLORATION LL	4,095	7.0
FLIGIEL 29-12-5	3401922193	CHESAPEAKE EXPLORATION LL	5,391	7.0
FLIGIEL 29-12-5	3401922117	CHESAPEAKE EXPLORATION LL	5,341	7.0
FLIGIEL 29-12-5	3401922235	CHESAPEAKE EXPLORATION LL	5,453	7.0
SCOTT 24-12-5 3H	3401922119	CHESAPEAKE EXPLORATION LLC	5,113	8.0
HENDERSON STUART 11-12-6 1H	3406721064	CHESAPEAKE EXPLORATION LLC	5,106	8.0
HOUYOUSE 15-13-5 6H	3401922100	CHESAPEAKE EXPLORATION LLC	3,656	9.2
HOUYOUSE 15-13-5 1H	3401922099	CHESAPEAKE EXPLORATION LLC	4,584	9.2
HOUYOUSE 15-13-5 8H	3401922096	CHESAPEAKE EXPLORATION LLC	4,742	9.2
WHITE 17-13-5 10H	3401922092	CHESAPEAKE EXPLORATION LLC	5,610	9.9
WHITE 17-13-5 3H	3401922095	CHESAPEAKE EXPLORATION LLC	4,316	9.9
WHITE 17-13-5 8H	3401922088	CHESAPEAKE EXPLORATION LLC	5,442	9.9
APPALACHIAN 16-12-5	3401922236	CHESAPEAKE EXPLORATION LL	3,753	9.4
APPALACHIAN 16-12-5	3401922266	CHESAPEAKE EXPLORATION LL	6,653	9.4
APPALACHIAN 16-12-5	3401922241	CHESAPEAKE EXPLORATION LL	3,576	9.4
APPALACHIAN 16-12-5	3401922264	CHESAPEAKE EXPLORATION LL	6,574	9.4
COLESCOTT 11-12-5	3401922206	CHESAPEAKE EXPLORATION LL	5,402	9.7
COLESCOTT 11-12-5	3401922179	CHESAPEAKE EXPLORATION LL	5,350	9.7
COLESCOTT 11-12-5	3401922188	CHESAPEAKE EXPLORATION LL	5,285	9.7
GOTSHALL 14-12-5	3406721079	CHESAPEAKE EXPLORATION LL	5,353	9.5
GOTSHALL 14-12-5	3406721085	CHESAPEAKE EXPLORATION LL	4,731	9.5
WALKER 12-12-5	3401922261	CHESAPEAKE EXPLORATION LL	4,349	10.0
WALKER 12-12-5	3401922262	CHESAPEAKE EXPLORATION LL	4,482	10.0
WALKER 12-12-5	3401922157	CHESAPEAKE EXPLORATION LL	4,972	10.0
WALKER 12-12-5	3401922263	CHESAPEAKE EXPLORATION LL	4,552	10.0



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Attorneys for Applicant,
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1 **INTRODUCTION.**

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

3 A1. My name is Eric Hensley 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 II.

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. Importantly, as a portion of my responsibilities, I am overseeing our
12 unitization efforts in Ohio by identifying appropriate candidates and compiling
13 unitization applications for same.

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

15 A5. I hold a Master of Business Administration from Texas State University and a
16 Bachelor of Science from Oklahoma State University.

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

18 A6. I have been employed by Chesapeake Energy since January 2011. I am currently an
19 in-house Landman assigned to Chesapeake’s Appalachia South Business unit,
20 operating and developing Chesapeake’s Utica Shale assets in Carroll County, Ohio.
21 Additionally, I have worked as a Field Landman in Chesapeake’s Uniontown, Ohio
22 field office, negotiating and acquiring oil and gas leases in the Utica and Marcellus
23 Shale plays.

24 **Q7. What did you do as an in-house landman?**

25 A7. An in-house landman basically engages in what can be considered “prospect
26 building.” After our geology department identifies a play, an in-house landman
27 helps execute the company’s leasing and development efforts in a particular area.
28 During my time as an in-house landman working in Chesapeake’s Appalachia
29 South Business unit I have been assigned various geographic areas of the Utica
30 Shale play (mainly Carroll, Harrison, and Jefferson Counties of Eastern Ohio) to

1 facilitate development of the play through lease acquisitions and negotiations, joint
2 operations negotiations, title review, unit formation, wellbore planning, various
3 permitting activities at local and state levels, drilling wells, and other related
4 operational activities.

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

6 A8. Yes. The American Association of Professional Landmen and the Oklahoma City
7 Association of Professional Landmen

8 **Q9. Were you involved in the preparation of Chesapeake Exploration, L.L.C.'s**
9 **Application for unitization with respect to the Hardman North Unit?**

10 A9. Yes. I also am familiar with the efforts made by Chesapeake to put the Hardman
11 North Unit together and the Unit Plan that Chesapeake is proposing.

12 **Q10. Can you generally describe the Hardman North Unit?**

13 A10. Yes. The Hardman North Unit consists of twenty-two (22) separate tracts of land
14 totaling approximately 738.253070 acres in Carroll County, Ohio.

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

16 **Q11. The Application submitted by Chesapeake indicates that it owns the oil and**
17 **gas rights to 588.234318 acres of the proposed 738.253070-acre unit. Would**
18 **you describe how Chesapeake acquired its rights?**

19 A11. Chesapeake acquired its working interest in this unit through acquisitions and a
20 ground floor leasing effort. In the leasing effort, Chesapeake assigned field title
21 and leasing agents to research the county records for a specific area and then secure
22 oil and gas leases with the relevant mineral owners for those particular tracts.

23 **Q12. What percentage of the total acreage of the Hardman North Unit is**
24 **represented by the oil and gas rights held by Chesapeake?**

25 A12. Approximately 78.19711%.

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

28 A13. There are four (4) unleased tracts owned by three (3) landowners (Unit Tracts 4, 14,
29 15, and 20) in the Hardman North Unit. Parcels 4 and 14 are owned by Scott J and
30 Tracy Davis Yeager. Chesapeake Energy is in the process of negotiating a lease
31 with the Yeager's on their minerals located within the Hardman North Unit Area.

1 At the time of this filing a lease has not been consummated. Parcel 15 is owned by
2 Edward T. Carden, Trustee and Ann D Carden, Trustee. Despite exhaustive
3 attempts, Chesapeake Energy and it's representatives have not been able to make
4 contact with Edward T. Carden, Trustee and Ann D Carden, Trustee. Parcel 20 is
5 owned by The State of Ohio. The State of Ohio has indicated that its lands are not
6 available to lease.

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

9 A14. Yes. As just discussed, Exhibit EH-1 contains three (3) affidavits which identify
10 lease efforts which were made to lease all unleased parcels.

11 **Q15. If the unleased tract owner in the unit were to ask to lease with Chesapeake,**
12 **would Chesapeake be likely to agree?**

13 A15. Absolutely, as Chesapeake has demonstrated on a number of occasions with its
14 previous unitization applications.

15 **Q16. Could you describe the location of the leased and unleased tract within the**
16 **Hardman North Unit?**

17 A16. Yes. Exhibit EH-2, which is attached to my testimony, is a colored plat showing
18 each of the tracts in the Hardman North Unit, along with the wellbores in same.
19 The tracts in yellow indicate that Chesapeake has acquired the necessary mineral
20 interests for those particular tracts. The tracts in red indicate that those tracts are
21 still open and unleased for purposes of putting this unit together. Further, the olive
22 portions of Exhibit EH-3 depict the approximate 479-acre area of leasehold that is
23 currently stranded from development due to the aforementioned unleased tracts
24 within the Hardman North Unit.

25 **UNIT PLAN PROVISIONS.**

26 **Q17. Would you describe generally the development plan for the Hardman North**
27 **Unit?**

28 A17. Chesapeake plans to develop the Hardman North Unit from a pad site located along
29 the southern boundary of the Unit, which would facilitate drilling multiple
30 horizontal wells in the Hardman North Unit and its Hardman South offset unit. The
31 Unit is configured to accommodate five wellbores, with a projected lateral length of

1 9,500 feet each. These wellbores will be drilled to the northwest from the
2 aforementioned pad site. Anecdotally, five additional horizontal wellbores will be
3 drilled from this surface location to the southeast into the directly adjacent
4 Hardman South Unit. If an Order is granted for this application, and depending
5 upon rig availability and other logistical considerations, Chesapeake intends to drill
6 the Hardman North wells in 1Q 2016.

7 **Q18. Can you describe the location of the proposed wellbores within the Hardman**
8 **North Unit?**

9 A18. Yes, the above-referenced Exhibit EH-2 depicts the configuration I just mentioned.
10 As you can see, it illustrates that we anticipate locating a well pad along the
11 southern boundary of the Hardman North Unit, and then drilling five wells to the
12 northwest in the Unit Area. Using one centrally located pad site to drill ten
13 wellbores, five Hardman North wells and five Hardman South wells, minimizes
14 surface disturbance in the region by fully developing two units and the collective
15 ten horizontal laterals from only one surface location. I have also attached to my
16 testimony an aerial map illustrating the pad location, identified as Exhibit EH-4.

17 **Q20. Do you know with certainty today where the drilling and completion equip-**
18 **ment will be located on the pad?**

19 A20. A surface location has been identified and we are in the process of negotiating a
20 surface use agreement with a leased party for the area indicated on Exhibit EH-4.
21 A surface use agreement will be agreed upon and executed between the surface
22 owner and Chesapeake before physical building of the pad commences.

23 **Q21. What are the benefits to this type of unit development?**

24 A21. Developing the Hardman North Unit in the manner previously described not only
25 protects the correlative rights of the unit participants, but has substantial economic
26 and environmental benefits as well. Drilling, completing and producing multiple
27 wells from a single surface location significantly reduces the impact on the surface.
28 Only one access road is constructed instead of several, the need for separate tank
29 batteries at multiple locations is eliminated, traffic to and from the area is
30 significantly reduced, and it allows development of acreage that might not
31 otherwise be developed with traditional drilling methods due to surface limitations,

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

15 **Q22. So is it fair to say that the benefits of this type of development are substantial?**

16 A22. Yes, the type of development planned by Chesapeake for the Hardman North Unit
17 offers significant benefits not only to the operator, but also to the landowners in the
18 unit and the surrounding area.

19 **Q23. Are you familiar with the Unit Plan proposed by Chesapeake for the Hardman
20 North Unit?**

21 A23. Yes. The Unit Plan proposed by Chesapeake is set out in two documents attached
22 to the Application – the Unit Agreement, which establishes the non-operating
23 relationship between the parties in the unit; and a Unit Operating Agreement and
24 related exhibits, which establish how the unit is going to be explored, developed,
25 and produced.

26 **Q24. Let's turn first to the Unit Agreement, marked as Exhibit 1 to the Application.
27 Would you describe briefly what it does?**

28 A24. Yes. The Unit Agreement in effect combines the oil and gas rights in the Hardman
29 North Unit so that they can be uniformly developed as if they were part of a single
30 oil and gas lease.

1 **Q25. Are mineral rights to all geological formations combined under the Unit**
2 **Agreement?**

3 A25. 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 **Q26. How will production proceeds from the Hardman North Unit be allocated**
8 **among royalty interest owners and working interest owners in the Unit?**

9 A26. 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 **Q27. Why use a surface-acreage basis as the method of allocation?**

14 A27. Based on the testimony of Travis Glouser attached to the Application as Exhibit 3,
15 a surface-acreage basis is an appropriate method of allocation because the
16 formation thickness and reservoir quality of the Utica formation is expected to be
17 consistent across the unit.

18 **Q28. 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 **Delmar South Unit?**

21 A28. 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 Hardman North Unit. Column 6 on Exhibit A-2
24 shows the related tract participation of each tract, which is calculated by taking the
25 total number of surface acres in the tract and dividing it by the total number of
26 surface acres in the unit. So, for example, if you look at Tract Number 5 on Exhibit
27 A-2, it shows that this particular Muskingum Conservancy tract comprises
28 5.18671799 surface acres in the 738.253070 acre Hardman North Unit, which
29 equates to a tract participation of approximately 0.70257% ($5.1671799 \div$
30 738.253070).

31 **Q29. What does that mean in terms of production allocated to that particular**

1 **Muskingum Watershed tract?**

2 A29. It would mean this particular Muskingum Watershed tract would have allocated to
3 it roughly 0.70257% of all production from the Hardman North Unit, which would
4 then be distributed based on the terms of the lease or other relevant document
5 affecting ownership to production proceeds from the tract.

6 **Q30. Does it work the same way for an unleased mineral interest, that is, for the**
7 **tract of a person or entity which did not lease its property in the unit?**

8 A30. Yes. If you take a look at Exhibit A-3 to the Unit Operating Agreement, you will
9 see that it lists, among other things, the surface acreage, tract participation and
10 related working interest and unit participation of the unleased parcel in the
11 proposed unit. In the twenty-two tract Hardman North Unit, Tract 20 is an
12 unleased parcel in the unit area. The minerals under this tract are currently owned
13 by the State of Ohio, and comprise 145.743316 acres. If the total unleased acreage
14 is divided by the full surface acreage comprising the unit (738.234318 acres), the
15 result gives a tract participation of approximately 19.741647%. Under the Unit
16 Agreement, should the landowner affirmatively select the non-consenting working
17 interest option if one is provided for in the Order, the landowners would receive a
18 7/8 working interest subject to an appropriate non-consent penalty and a 1/8 royalty
19 interest on its respective tract participation. The landowner's royalties would be
20 calculated on the net proceeds received by Chesapeake at the well in accordance
21 with the royalty provision contained in Exhibit B to the Unit Operating Agreement
22 and rulings in the majority of gas producing jurisdictions that royalty owners are
23 responsible for their proportionate share of post-production expenses. Allowing
24 deduction of post-production expenses for purposes of royalty calculation provides
25 incentive to producers to add value to their product by post-production treatment
26 and transportation. If producers are not allowed to deduct a proportionate share of
27 royalty owners' post-production expenses that enhance the value of the product, an
28 economic loss to all parties results and the incentive to generate additional value
29 disappears because producers are required to pay for *all* post-production expenses,
30 and also surrender one-eighth of the final proceeds received.

31 **Q31. In your experience, is that a customary way to allocate production in a unit?**

1 A31. In my experience, surface-acreage allocation is both fair and customary for
2 horizontal shale development.

3 **Q32. How are unit expenses allocated?**

4 A32. 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 **Q33. Who pays the unit expenses?**

10 A33. Working interest owners.

11 **Q34. Do the royalty owners pay any part of the unit expenses?**

12 A34. 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 **Q35. 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 A35. 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 **Q36. Are you familiar with the custom and usage of the Form 610 and other similar**
22 **agreements in the industry?**

23 A36. 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. As a landman, many of my professional endeavors have involved
26 negotiating and modifying versions of A.A.P.L. operating agreements.

27 **Q37. Turning to the Unit Operating Agreement in particular, does it address how**
28 **unit expenses are determined and paid?**

29 A37. Yes. Article III of the Unit Operating Agreement provides that all costs and
30 liabilities incurred in operations shall be borne and paid proportionately by the
31 working interest owners, according to their Unit Participation percentages. Those

1 percentages can be found in Exhibits A-2 and A-3 to the Unit Operating
2 Agreement. Moreover, the Unit Operating Agreement has attached to it an
3 accounting procedure identified as Exhibit C.

4 **Q38. What is the purpose of the document marked Exhibit C in connection with the**
5 **Hardman North Unit?**

6 A38. The document provides greater details regarding how unit expenses are determined
7 and paid.

8 **Q39. At the top of each page of Exhibit C, there appears a label that reads:**
9 **“COPAS 1984 ONSHORE Recommended by the Council of Petroleum**
10 **Accountants Societies.” Are you familiar with this society?**

11 A39. Yes, COPAS stands for the Council of Petroleum Accountants Societies.

12 **Q40. Is this COPAS document used in oil and gas operations across the country?**

13 A40. Yes. This form is commonly used in the industry.

14 **Q41. In your opinion, is this COPAS document generally accepted in the industry?**

15 A41. Yes. Drafted by an organization that includes members from many different
16 companies in diverse sections of the industry, it was designed to be generally fair to
17 the parties. Chesapeake, in fact, is frequently subject to the COPAS in its
18 operations with other producers.

19 **Q42. Will there be in-kind contributions made by owners in the unit area for unit**
20 **operations, such as contributions of equipment?**

21 A42. No, Chesapeake Energy does not anticipate in-kind contributions for the Unit Op-
22 erations.

23 **Q43. Are there times when a working interest owner in the unit chooses not to – or**
24 **cannot – pay their allocated share of the unit expenses?**

25 A43. Yes, such a situation is not uncommon in the industry. Joint operating agreements
26 contemplate that there will be times when less than all of the working interest
27 owners choose to participate in operations on the Contract Area. The agreements
28 are drafted to allow the parties flexibility. That includes flexibility for one or more
29 working interest owners to decline to participate in an operation that they may not
30 believe will be a profitable venture or one that they cannot afford, as well as
31 flexibility for the remaining parties to proceed with such operation at their own risk

1 and expense if they wish to do so.

2 **Q44. Generally, how is the working interest accounted for when an owner chooses**
3 **not to participate in an operation?**

4 A44. A working interest owner who cannot or chooses not to participate is considered a
5 non-consenting party. If the remaining working interest owners decide to proceed
6 with an operation, then the consenting parties bear the full costs and expenses of
7 that operation. A non-consenting party is deemed to have relinquished its interest
8 in that operation until such time as the well pays out the costs that would have been
9 payable by that party, plus some sort of risk factor, sometimes called a risk penalty
10 or non-consent penalty.

11 **Q45. What is a risk penalty or non-consent penalty, and why are they included in**
12 **the agreement?**

13 A45. A risk penalty or non-consent penalty is a mechanism which recognizes that in
14 instances when a working interest owner chooses not to agree in advance to pay its
15 share of the costs of drilling a well, the other working interest owners should be
16 compensated for the financial risks they undertake in paying the costs of drilling a
17 well considering that the well may be a non-producer. Additionally, a non-consent
18 penalty can serve as a means to allow a working interest owner to finance
19 participation in a well when unable to advance its share of drilling costs.

20 **Q46. Can a working interest owner choose to go non-consent in the initial well in**
21 **the Hardman North Unit?**

22 A46. Yes. If a working interest owner fails to participate in the unit's initial well, Article
23 VI.A of the Unit Operating Agreement provides that the working interest owner
24 shall be deemed to have relinquished to the other parties its working interest in the
25 unit with a back-in provision that includes a risk factor of 200%.

26 **Q47. Does the Unit Operating Agreement treat the initial well and subsequent**
27 **operations differently in terms of going non-consent, and if so, why?**

28 A47. Yes, subsequent operations have a smaller risk factor of 150%. It's typically much
29 riskier to participate in the initial well in a unit because, as here, you frequently
30 don't have enough information to determine whether the well will be productive
31 and economic. As a consequence, to prevent parties from gaming the system and

1 avoiding the substantial risks associated with the drilling of the initial well, while
2 still being able to participate in subsequent operations when the risks are
3 substantially reduced, it is common for joint operating agreements to distinguish
4 between these types of operations.

5 **Q48. But if the working interest owner still has a royalty interest in the unit, that**
6 **royalty interest would remain in place and be paid?**

7 A48. Yes. The royalty interest would still be paid even if the working interest is being
8 used to pay off a risk factor.

9 **Q49. What is the risk factor for subsequent operations set out in the Unit Operating**
10 **Agreement?**

11 A49. 150%, as is set out in Article VI.B of the Unit Operating Agreement.

12 **Q50. Are the percentages included in the Unit Operating Agreement unusual?**

13 A50. Actually, yes, these risk penalties are quite a bit lower than what Chesapeake
14 typically utilizes in its joint operating agreements used in horizontal drilling
15 programs. While Chesapeake and its peers in the industry are optimistic about
16 development of the Utica and other shale formations, the projects proposed are
17 significant capital investments (often exceeding \$7,000,000 per well to plan, drill
18 and complete). In addition, unconventional plays like the Utica are not simple,
19 homogeneous plays. Within the boundaries of the play (here, the Utica Shale
20 generally), there are likely to be areas of uneven geological performance.
21 Therefore, given the inherent risks and significant capital outlays, it is common for
22 companies to incorporate a higher risk factor in their joint operating agreements.

23 **Q51. Have you seen risk factor levels of 200% to 150% in other parts of the country**
24 **that you've worked in and are familiar with?**

25 A51. Typically, we will see risk factor levels at significantly higher rates than these
26 due to the uncertainties and costs involved in horizontal development.
27 Additionally, courts in other jurisdictions have determined that higher non-consent
28 penalties than these were reasonable.

29 **Q52. How are decisions made regarding unit operations?**

30 A52. Article V of the Unit Operating Agreement designates Chesapeake Exploration,
31 L.L.C., as the Unit Operator, with full operational authority for the supervision and

1 conduct of operations in the unit. Additionally, except where otherwise provided,
2 Article XVI of the Unit Operating Agreement states that any decision,
3 determination or action to be taken by the unit participants shall be based on a
4 voting procedure in which each unit participant has a vote that corresponds in value
5 to that participant's allocated responsibility for the payment of unit expenses.

6 **Q53. I believe you've already described generally the documents in Exhibits A and**
7 **C to the Unit Operating Agreement. Let's turn therefore to Exhibit B of the**
8 **Unit Operating Agreement. What is it?**

9 A53. Exhibit B is a standard oil and gas lease form that is attached to the joint operating
10 agreement to govern any unleased interests owned by the parties. Article III.A of
11 the Unit Operating Agreement provides that if any party owns or acquires an oil
12 and gas interest in the Contract Area, then that interest shall be treated for all
13 purposes of the Unit Operating Agreement as if it were covered by the form of
14 lease attached as Exhibit B.

15 **Q54. Does this oil and gas lease contain standard provisions that Chesapeake uses in**
16 **connection with its drilling operations in Ohio and elsewhere?**

17 A54. Yes.

18 **Q55. Moving on to Exhibit D of the Unit Operating Agreement, would you describe**
19 **what it is?**

20 A55. Yes, Exhibit D is the insurance exhibit to the joint operating agreement. It sets
21 forth coverage amounts and limitations, and the insurance terms for operations
22 conducted under the Unit Operating Agreement. It requires the operator, to obtain
23 General Liability coverage, including bodily injury and property damage liability,
24 in an amount of five million dollars, which is substantially similar to those
25 employed in connection with Chesapeake's other unitized projects in the State of
26 Ohio.

27 **Q56. Would you next describe Exhibit E of the Unit Operating Agreement?**

28 A56. Yes. Exhibit E is the Gas Balancing Agreement, which further details the rights
29 and obligations of working interest parties with respect to marketing and selling
30 any production from the Contract Area. It would normally not come in to play with
31 an unleased landowner, but only with a working interest owner who desired to

1 market their share of production separately from the Operator.

2 **Q57. Does the Application contain a list of the fee interest owner and mineral**
3 **reservation holders who have not previously agreed to enter into any oil and**
4 **gas lease with respect to the tracts they own, or possibly own, within the**
5 **Hardman North Unit?**

6 A57. Yes. Exhibit A-3 to the Unit Operating Agreement lists the “unitized parties,” that
7 is, the fee interest owner and mineral reservation holders who have not leased their
8 mineral interests to any party. For notice purposes, the proper addresses for these
9 unleased parties are listed on Exhibit A-3 as well.

10 **Q578. In your professional opinion, given your education and experience, are unit**
11 **operations for the proposed Hardman North Unit reasonably necessary to**
12 **increase substantially the ultimate recovery of oil and gas?**

13 A59. Yes. Unit operations for the proposed Hardman North Unit are reasonably
14 necessary to increase substantially the ultimate recovery of oil and gas. As testified
15 by my colleagues Mr. Hopson and Mr. Glouser, unit operations will promote a
16 rational and efficient development of the Utica formation underlying the Hardman
17 North Unit. In addition, as a land professional I am supportive of any efforts to
18 reduce waste by minimizing the number of wells and surface locations utilized for
19 drilling operations. Based on my experience I understand that land is a valuable
20 commodity and that horizontal drilling is an excellent way to accommodate both
21 the rights of the mineral owner and the rights of the surface owner to accomplish
22 reasonable development.

23 **Q59. Does this conclude your testimony?**

24 A59. Yes.

Dated this 9th day of February, 2015

ER. IL

Eric R. Hensley, Affiant
Landman II – Appalachia South
Chesapeake Energy Corporation

ACKNOWLEDGEMENT

STATE OF OKLAHOMA)
) SS
COUNTY OF OKLAHOMA)

The foregoing instrument was sworn to before me, a Notary Public in and for the State of Oklahoma, and subscribed in my presence this 9th day February, 2015, by Eric R. Hensley, known to me or satisfactorily proven to be the Affiant in the foregoing instrument, who acknowledged the above statements to be true as Affiant verily believes.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires:

6/23/18

Allyson Wolfe
Notary Public

Allyson Wolfe
Printed Name of Notary

(SEAL)



7. Throughout the latter part of 2013 and all 2014 Chesapeake Employees continued discussions with various State representatives concerning the State's position on leasing its lands for oil and gas development. Those discussions were of a general nature and not specific to parcel 25-0060009.000. To date those discussions have not resulted in the leasing of any lands owned by the State of Ohio. To date the State has maintained its position that it will not to enter into any oil and gas leases.

8. On December 1, 2014, Affiant sent a letter via certified mail to Tara L. Paciorek, Oil and Gas Program Coordinator, Office of Real Estate, Ohio Department of Natural Resources, referenced above, seeking to initiate lease negotiations on the above referenced parcel and presenting a formal offer of terms to lease the above referenced parcel. The purpose of this letter was to attempt to enter into an oil and gas lease on the above referenced parcel before submitting an application to unitize. As of the date of this affidavit Affiant has not received a response to this offer.

Further Affiant sayeth naught.

Dated this 8th day of December, 2014

Eric R. Hensley

Eric R. Hensley, Affiant
 Landman II – Appalachia South
 Chesapeake Energy Corporation

ACKNOWLEDGEMENT

STATE OF OKLAHOMA)
) SS
 COUNTY OF OKLAHOMA)

The foregoing instrument was sworn to before me, a Notary Public in and for the State of Oklahoma, and subscribed in my presence this 8th day December, 2014, by Eric R. Hensley, known to me or satisfactorily proven to be the Affiant in the foregoing instrument, who acknowledged the above statements to be true as Affiant verily believes.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires:

12/23/18

Allyson Wolfe

 Notary Public

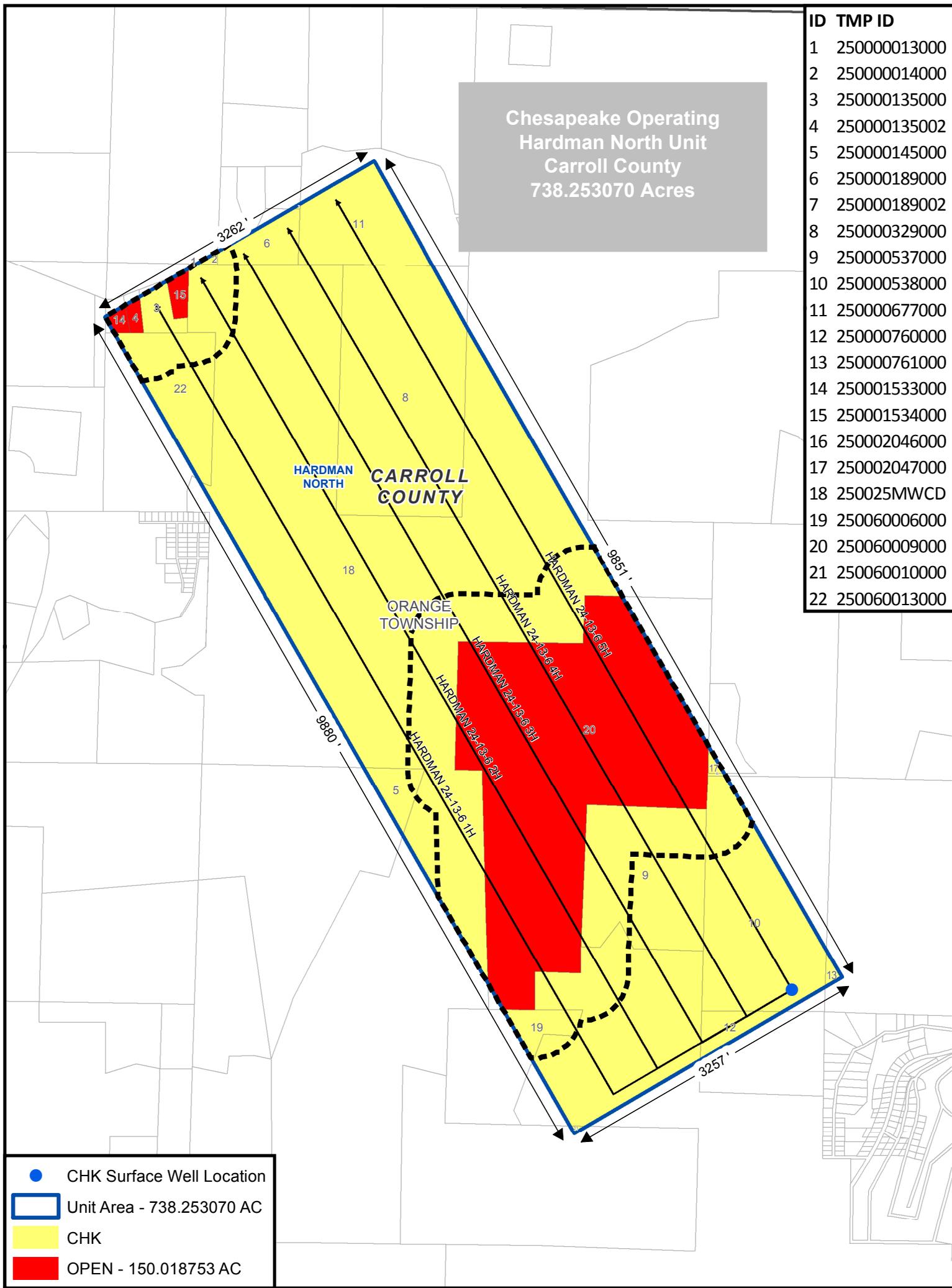
ALYSON WOLFE

 Printed Name of Notary



(S E A L)

Exhibit "EH-2"



ID	TMP ID
1	25000013000
2	25000014000
3	250000135000
4	250000135002
5	250000145000
6	250000189000
7	250000189002
8	250000329000
9	250000537000
10	250000538000
11	250000677000
12	250000760000
13	250000761000
14	250001533000
15	250001534000
16	250002046000
17	250002047000
18	250025MWCD
19	250060006000
20	250060009000
21	250060010000
22	250060013000

- CHK Surface Well Location
- Unit Area - 738.253070 AC
- CHK
- OPEN - 150.018753 AC



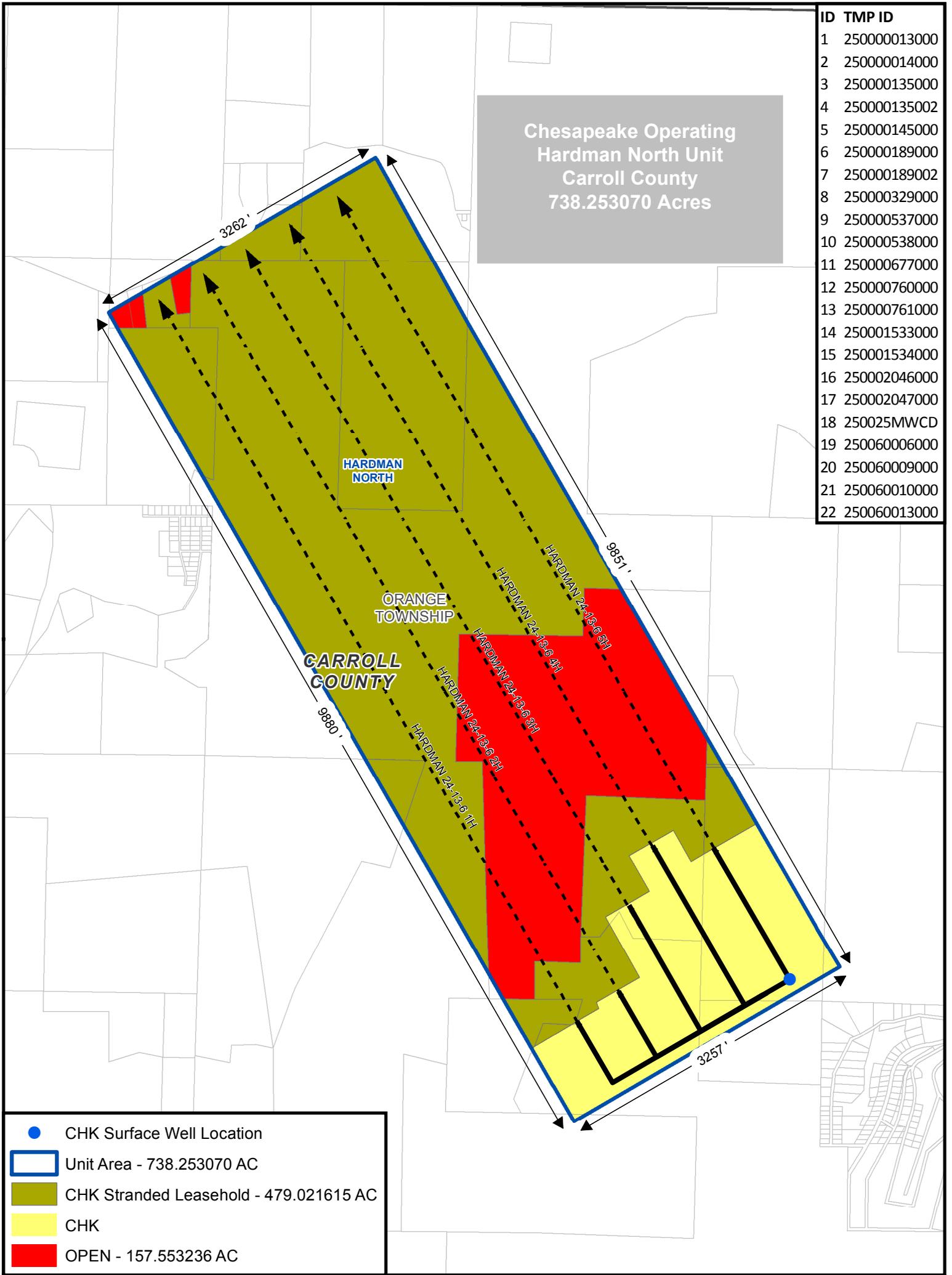
UNIT PLAT

**Hardman North
Orange Township
Carroll Co., OH**

1 inch = 1,250 feet



Exhibit "EH-3"



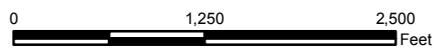
Chesapeake Operating
 Hardman North Unit
 Carroll County
 738.253070 Acres

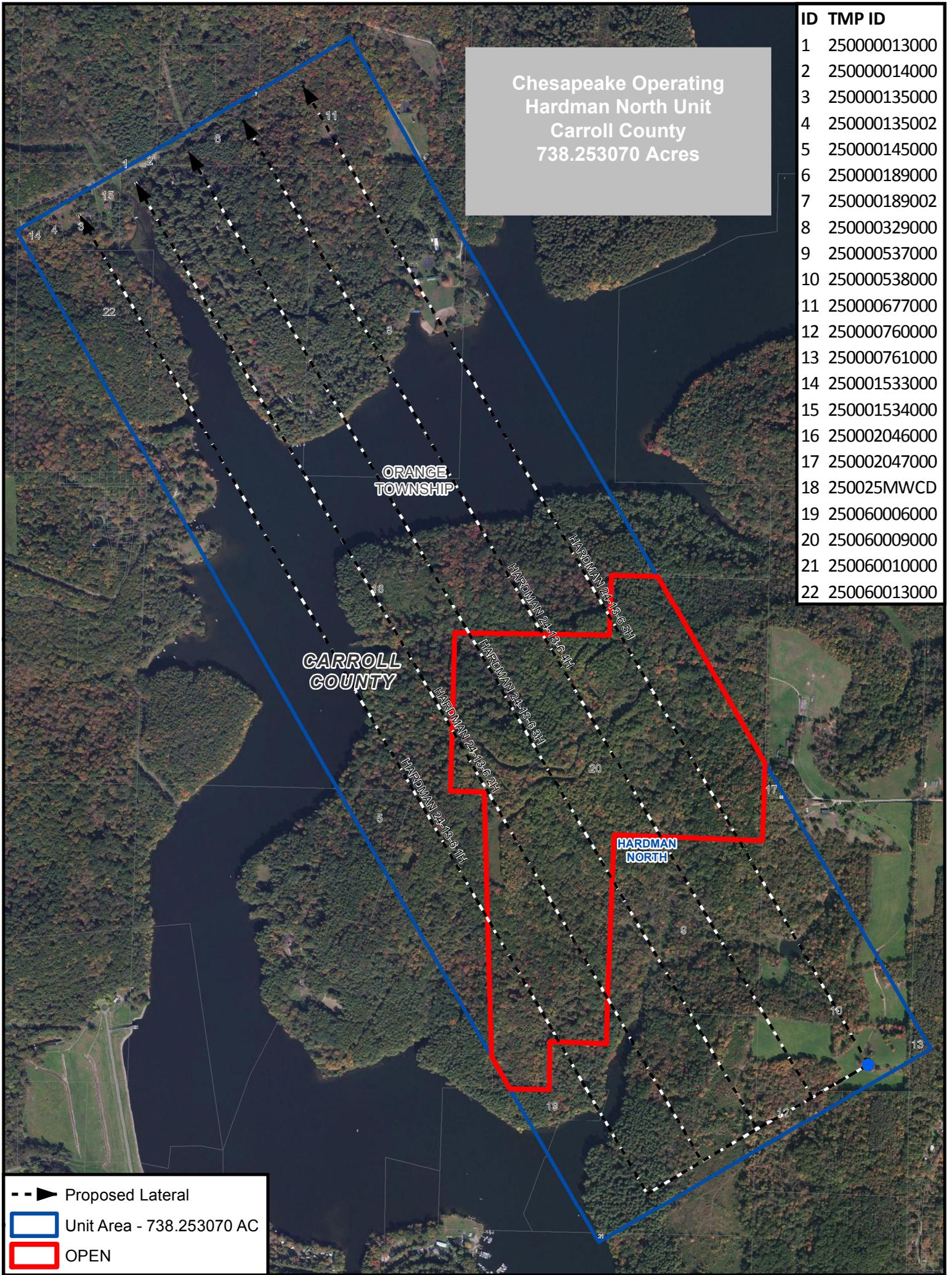
- CHK Surface Well Location
- Unit Area - 738.253070 AC
- CHK Stranded Leasehold - 479.021615 AC
- CHK
- OPEN - 157.553236 AC

UNIT PLAT

Hardman North
 Orange Township
 Carroll Co., OH

1 inch = 1,250 feet





Chesapeake Operating
 Hardman North Unit
 Carroll County
 738.253070 Acres

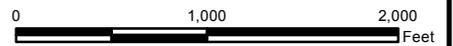
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2	250000014000
3	2500000135000
4	2500000135002
5	2500000145000
6	2500000189000
7	2500000189002
8	2500000329000
9	2500000537000
10	2500000538000
11	2500000677000
12	2500000760000
13	2500000761000
14	2500001533000
15	2500001534000
16	2500002046000
17	2500002047000
18	250025MWCD
19	250060006000
20	250060009000
21	250060010000
22	250060013000

--▶ Proposed Lateral
 [Blue Outline] Unit Area - 738.253070 AC
 [Red Outline] OPEN

UNIT PLAT

Hardman North
 Orange Township
 Carroll Co., OH

1 inch = 1,000 feet



WORKING INTEREST OWNER

APPROVAL OF

UNIT PLAN FOR THE

HARDMAN NORTH UNIT

Orange Township

Carroll 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 Hardman North Unit, Orange Township, Carroll County, Ohio," dated December 16, 2014 (the "Unit Agreement"); and an agreement entitled, "A.A.P.L. Form 610-1989 Model Form Operating Agreement," also regarding the Hardman North 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 588.234318

RELATED WORKING INTEREST PERCENTAGE 78.19711%

CHESAPEAKE EXPLORATION, L.L.C.

Date 12/8/14

By: 
Eric R. Hensley, Landman II – Appalachia South

WORKING INTEREST OWNER

APPROVAL OF

UNIT PLAN FOR THE

HARDMAN NORTH UNIT

Orange Township

Carroll 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 Hardman North Unit, Perry Township, Carroll County, Ohio," dated December 16, 2014 (the "Unit Agreement"); and an agreement entitled, "A.A.P.L. Form 610-1989 Model Form Operating Agreement," also regarding the Hardman North 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. 11, 12

TRACT ACREAGE 29.177957

RELATED WORKING INTEREST PERCENTAGE 1.48211%

ENERVEST OPERATING, L.L.C.

Date 2/13/15

By:


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



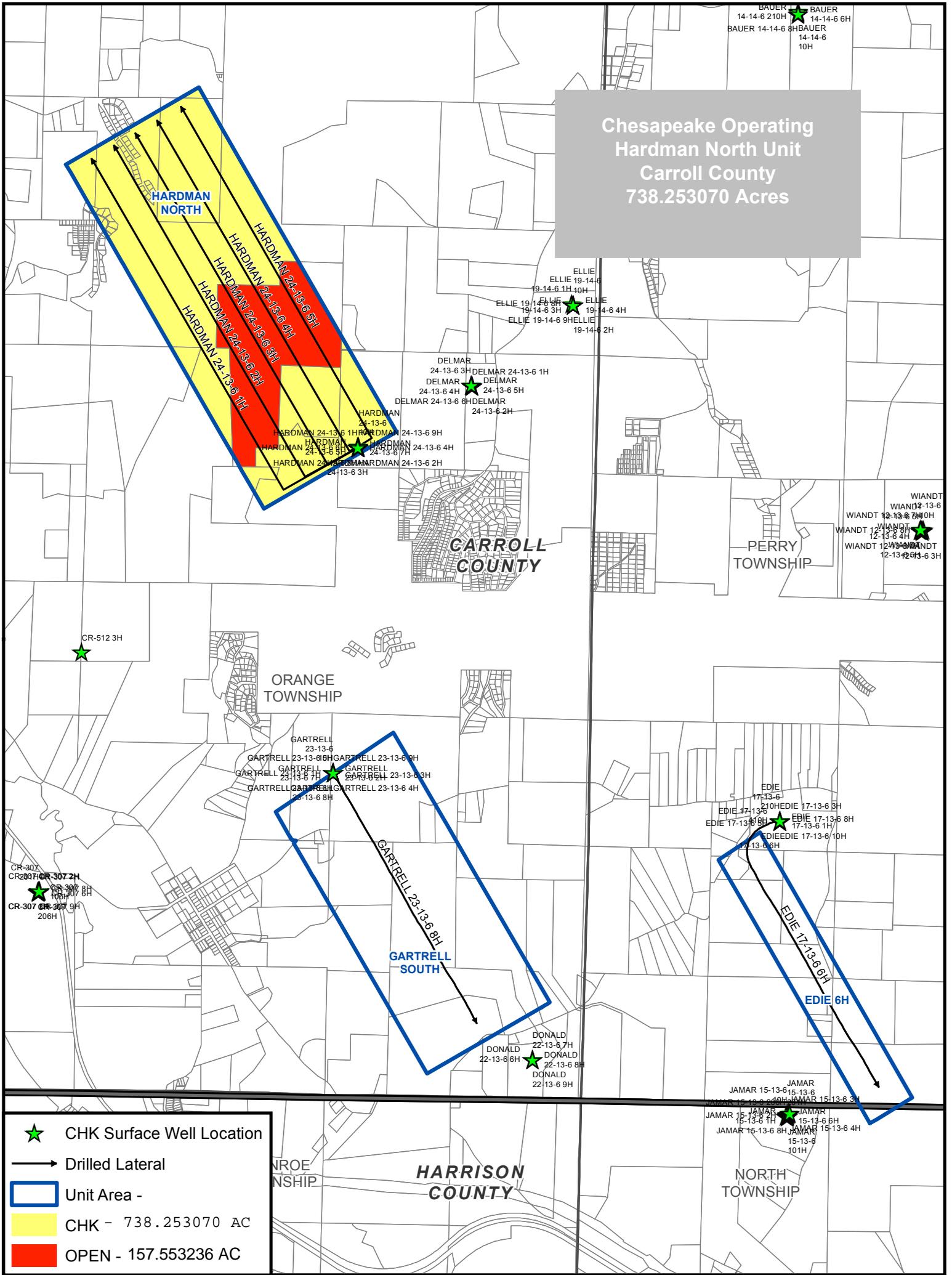
Exhibit 6.1

Working Interest Owners

Attached to and made a part of that certain Unit Operating Agreement dated December 16, 2014 as approved by the Ohio Department of Natural Resources for the Hardman North Unit.

TRACT NUMBER	LESSOR	SURFACE ACRES IN UNIT	TAX MAP PARCEL ID NUMBERS
1	ROBERT W. NEWELL, ETAL	0.037981	250000013000
2	ROBERT W. NEWELL, ETAL	0.349975	250000014000
3	MARK A SABO	3.924195	250000135000
5	THE MUSKINGUM CONSERVANCY	5.186718	250000145000
6	CRAVAT COAL COMPANY	7.533855	250000189000
7	CRAVAT COAL COMPANY	0.058233	250000189002
8	THE MUSKINGUM CONSERVANCY	77.022336	250000329000
9	JAY HARDMAN	42.269236	250000537000
10	JAY HARDMAN	49.073434	250000538000
11	CAMP FIREBIRD, LLC, A LIMITED	23.343571	250000677000
12	ROBERT W. MCFARLAND AND SHARON L. MCFARLAND	5.061336	250000760000
13	ROBERT W. MCFARLAND AND SHARON L. MCFARLAND	0.77305	250000761000
16	DAVID W. DEVEY, A MARRIED MAN	0.123236	250002046000
17	JAY HARDMAN	0.540775	250002047000
18	THE MUSKINGUM CONSERVANCY	346.176271	250025MWCD
19	THE MUSKINGUM CONSERVANCY	5.19661	250060006000
21	THE MUSKINGUM CONSERVANCY	0.16427	250060010000
22	THE MUSKINGUM CONSERVANCY	21.399237	250060013000
			588.234319

Exhibit 7 to Hardman North Unitization Application



UNIT PLAT

**Hardman North
Orange Township
Carroll Co., OH**

1 inch = 2,500 feet

