

July 8, 2016

Via Email (Jennifer.Reynolds@ dnr.state.oh.us)

ODNR Oil & Gas Resources Management
2045 Morse Road, Building F-2
Columbus, Ohio 43229-6605

Re: Supplement to XTO Energy Inc. Application for Unit Operation – Kurth Unit D

Dear ODNR:

I am writing in connection with XTO Energy Inc.'s ("XTO") pending Application for Unit Operation of the Kurth Unit D in Belmont County. Following the hearing in this matter conducted on June 22, 2016, XTO has determined that it wishes to add back into the proposed Kurth Unit D a small portion of land owned by the State of Ohio that had previously been deleted between the date the Application was filed and the date of the hearing. As a result of this change, there is no longer a proposed no-perf zone associated with any of the proposed wellbores.

Included with this letter are the following documents in support of this supplement:

- (1) Revised Exhibit A to the Joint Operating Agreement;
- (2) Revised Exhibits A-2, A-3, and A-4 to the Joint Operating Agreement;
- (3) Revised Plats depicting the Unit, including a legend identifying each tract in the Unit by tax parcel number; and
- (4) Revised Testimony of Steven Cervantes (since the added State of Ohio tracts were included in the Unit in the original Application, Mr. Cervantes' revised testimony is essentially the same as his prepared testimony submitted with the original Application).

The included documents also incorporate leasing and working interest changes that were testified to by Matthew Midkiff at the public hearing. Otherwise, the only changes are related to adding back the State of Ohio tracts.

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If the ODNR requires any additional information with respect to this Application, please let me know. Thank you for your assistance with this matter. I look forward to working with the Department in any way I can to move toward the issuance of an Order at the Department's earliest convenience.

Best regards,



Paul B. Westbrook

cc: Mr. Eric Vendel (Eric.Vendel@dnr.state.oh.us)

EXHIBIT "A"

ATTACHED TO AND MADE A PART OF THAT CERTAIN OPERATING AGREEMENT
DATED _____, 2016, WITH XTO ENERGY INC., AS "OPERATOR",
COVERING THE KURTH UNIT D, IN RICHLAND AND PULTNEY TOWNSHIPS,
BELMONT COUNTY, OHIO.

1. Description of lands subject to this Agreement:

627.7596 acres of land, more or less, being the same lands described herein on Exhibit "A" and as depicted on Exhibit "A-1." Further, Exhibits A-2 through A-4 list, among other things, all of the mineral owners and tax identification numbers of the tracts included in the lands.

2. Restrictions, if any, as to depths, formations, or substances:

Fifty feet above stratigraphic equivalent of the top of the Utica formation, which occurs at a measured depth of 6,141 feet as found in the Batelle Memorial Institute – Ohio Geological Survey CO2 1 well (API# 34157-25334-0000), located in Tuscarawas County, Ohio, to fifty feet below the top of the Trenton formation, which occurs at a measured depth of 6,398 feet found in the Batelle Memorial Institute – Ohio Geological Survey CO2 1 well (API# 34157-25344-0000), located in Tuscarawas County, Ohio.

3. Parties to Agreement with addresses and telephone numbers for notice purposes:

XTO Energy Inc.
810 Houston Street
Fort Worth, TX 76102
ATTENTION: Win Ryan- Sr. Vice President-Land
Email: win_ryan@xtoenergy.com
Telephone: (817) 870-2800
Fax: (817) 870-1671

Phillips Exploration, LLC
Use same information as provided above for XTO Energy Inc.

Ascent Resources Utica, LLC
301 N.W. 63rd Street, Suite 600
Oklahoma City, OK 73116
ATTENTION: Bob Kelly
Email: bob.kelly@ascentresources.com
Thomas Blalock
Email: tom.blalock@ascentresources.com
Serena Evans
Email: serena.evans@ascentresources.com
Telephone: (405) 418-8000
Fax: (405) 418-8040

CNX Gas Company, LLC
One Energy Drive
Jane Lew, West Virginia 26378
ATTENTION: Derek Fitzwater
Email: derekfitzwater@consolenergy.com
Telephone: (304) 884-2036

Hess Ohio Developments, LLC
1501 McKinney
Houston, TX 77010
ATTENTION: Ivy Phillips
Email: iphillips@hess.com
Telephone: (713) 496-5404

Gulfport Buckeye, LLC

14313 N. May Avenue, Suite 100
Oklahoma City, OK 73134
ATTENTION: Lester Zitkus, Vice-President - Land
Email: lzitkus@gulfportenergy.com
Telephone: (405) 848-8807

Rice Drilling D, LLC

400 Woodcliff Drive
Canonsburg, PA 15317
ATTENTION: Aileen A. Rice, Managing Director of Land Operations
Email: aileen.rice@riceenergy.com
Telephone: (724) 746-6720

Fossil Creek Ohio, LLC

1400 Brown Trail, Suite B
Bedford, TX 76022
ATTENTION: Chris Rowntree, Manager
Email: N/A
Telephone: N/A

Estate of Ruth V. Klee

10284 Alamo Road
Lucerne Valley, CA 92356
Email: N/A
Telephone: (760) 810-7255

Danny Wise, Jr.

52439 Gordon State Highway 149
St. Clairsville, OH 43950
Email: N/A
Telephone: (740) 699-2647

James E. Childers and Theresa L. Childers

64404 Sand Hill Road
Bellaire, OH 43906
Email: N/A
Telephone: (740) 676-3297

Robert A. Moskey

46561 National Road
St. Clairsville, OH 43950
Email: N/A
Telephone: (740) 695-9525

Roger A. Barack and Lana J. Barack, husband and wife

64501 Harvey Hill Road
St. Clairsville, OH 43950
Email: gunite@bellaire.tv
Telephone: (740) 312-2400

State of Ohio

2323 West 5th Avenue Suite 150
Columbus, OH 43204
Email: N/A
Telephone: N/A

*Party not subject to the terms of this Operating Agreement

4. Percentages of fractional interests of parties to this Agreement:

<u>Operator</u>	<u>Working Interest %</u>
XTO Energy Inc. (Operator)	51.645906928%
<u>Non-Operator</u>	
*Phillips Exploration, LLC	34.351748663%
*Ascent Resources - Utica, LLC	0.282494485%
CNX Gas Company, LLC (Lana J. Barack and Roger Barack- Potential ODMA Claim)	0.111587302%
Hess Ohio Developments, LLC (Lana J. Barack and Roger Barack- Potential ODMA Claim)	0.111587302%
Rice Drilling D, LLC	10.764630282%
Gulfport Buckeye, LLC	1.392571296%
Fossil Creek Ohio, LLC	0.031759769%
Estate of Ruth V. Klee	0.634000659%
Danny Wise, Jr.	0.036001042%
James E. Childers and Theresa L. Childers	0.336115927%
Robert A. Moskey	0.160937403%
State of Ohio	0.140658940%
<u>TOTAL</u>	<u>100.000000000%</u>

*Party not subject to this Operating Agreement.

NOTE: The working interests listed above are estimates and are subject to change based upon the verification of title, additional leasehold acquired within the Contract Area, and/or participation or non-participation of unleased mineral interest and/or third parties. The Parties' interests shall be adjusted to reflect the actual interest owned by the Parties in the Contract Area. Moreover, the unleased mineral interest owners are shown above to reflect their share of the working interest in the event they do not elect to lease their interest following unitization.

5. Oil and Gas Leases Subject to Agreement:

1. Oil and Gas Lease dated June 8, 2006, between Michael W. Kurth, single never married, and William Kurth and Patricia Kurth - Life Estate, as Lessor, and Reserve Energy Exploration Company, as Lessee, recorded at Instrument Number 200600005950, Book 65, Page 798, Records of Belmont County, Ohio. (Tracts 1, 2, 6, 7, 8, 9, 40 and 108 as depicted on Exhibit "A-1")
2. Oil and Gas Lease dated July 11, 2006, between Gary A. Clark and Nancy J. Clark, husband and wife, and Gregory A. Clark and Daneen Clark, husband and wife, as Lessor, and Reserve Energy Exploration Company, as Lessee, recorded at Instrument Number 200600007589, Book 72, Page 552, Records of Belmont County, Ohio. (Tracts 3 and 106 as depicted on Exhibit "A-1")
3. Oil and Gas Lease dated June 3, 2006, between Donald P. Barnes and Katherine A. Barnes, husband and wife, and Olexa Family Trust of November 25, 1998, as Lessor, and Reserve Energy Exploration Company, as Lessee, recorded at Instrument Number

- 200600005945, Book 65, Page 783, Records of Belmont County, Ohio. (Tracts 4 and 110 as depicted on Exhibit "A-1")
4. Oil and Gas Lease dated December 31, 2014, between Dale E. Klee, a divorced man not having since remarried, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500001805, Book 535, Page 609, Records of Belmont County, Ohio. (Tracts 5, 41 and 42 as depicted on Exhibit "A-1")
 5. Oil and Gas Lease dated September 29, 2013, between Gary Henthorne and Lucinda Henthorne, husband and wife, and John Henthorne and Susan Henthorne, husband and wife, as Lessor, and Gulfport Energy Corporation, as Lessee, a Memorandum of which is recorded at Instrument Number 201400003408, Book 459, Page 94, Records of Belmont County, Ohio. (Tract 10 as depicted on Exhibit "A-1")
 6. Oil and Gas Lease dated September 29, 2013, between Gary Henthorne and Lucinda Henthorne, husband and wife, as Lessor, and Gulfport Energy Corporation, as Lessee, a Memorandum of which is recorded at Instrument Number 201400005432, Book 469, Page 106, Records of Belmont County, Ohio. (Tract 11 as depicted on Exhibit "A-1")
 7. Oil and Gas Lease dated September 16, 2015, between Eric M. Driscoll and Stacey D. Driscoll a/k/a Stacey D. Koher, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500015323, Book 589, Page 903, Records of Belmont County, Ohio. (Tract 12 as depicted on Exhibit "A-1")
 8. Quitclaim Deed effective July 31, 2011, between Consolidation Coal Company, as Grantor, and CNX Gas Company LLC, as Grantee, recorded at Instrument Number 201100007400, Book 286, Page 149, Records of Belmont County, Ohio. (Tracts 13 and 23 as depicted on Exhibit "A-1")
 9. Mineral Interest Deed effective August 1, 2011, between CNX Gas Company LLC, as Grantor, and Hess Ohio Developments, LLC, as Grantee, recorded at Instrument Number 201200001906, Book 309, Page 690, Records of Belmont County, Ohio. (Tracts 13 and 23 as depicted on Exhibit "A-1")
 10. Quitclaim Deed effective October 24, 2000, between Roger A. Barack aka Roger Barack and Lana J. Barack, husband and wife, as Grantor, and Lana J. Barack, as Grantee, recorded at Instrument Number 200000009721, Book 762, Page 159, Records of Belmont County, Ohio. (Tracts 13 and 23 as depicted on Exhibit "A-1")
 11. Oil and Gas Lease dated November 10, 2012, between Charles R. Neff and Paula M. Neff, husband and wife, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201200013766, Book 362, Page 52, Records of Belmont County, Ohio. (Tracts 14, 15, 16, 17, 18, 19, 20, 21, 22, 56 and 57 as depicted on Exhibit "A-1")
 12. Oil and Gas Lease dated October 23, 2015, between Charles R. Neff and Paula M. Neff, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500014617, Book 587, Page 165, Records of Belmont County, Ohio. (Tract 24 as depicted on Exhibit "A-1")
 13. Oil and Gas Lease dated June 8, 2015, between Lyle Ross Tipton and Alma Jean Tipton, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500008044, Book 556, Page 817, Records of Belmont County, Ohio. (Tract 25 as depicted on Exhibit "A-1")
 14. Oil and Gas Lease dated September 6, 2006, between Thomas L. Pacifico and Patricia L. Pacifico, husband and wife, as Lessor, and EOG Resources, Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 200600010449, Book 85, Page 525, Records of Belmont County, Ohio. (Tracts 26 and 27 as depicted on Exhibit "A-1")
 15. Oil and Gas Lease dated September 6, 2006, between John M. Pacifico and Alison M. Pacifico, husband and wife, as Lessor, and EOG Resources, Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 200600010453, Book 85, Page 529, Records of Belmont County, Ohio. (Tract 28 as depicted on Exhibit "A-1")

16. Oil and Gas Lease dated October 14, 2014, between Randy K. Sadlowski and Carol M. Sadlowski, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201400017317, Book 521, Page 265, Records of Belmont County, Ohio. (Tracts 29, 49 and 50 as depicted on Exhibit "A-1")
17. Oil and Gas Lease dated February 25, 2014, between Charles Weekley and Jolynn Weekley, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, recorded at Instrument Number 201400004328, Book 464, Page 321, Records of Belmont County, Ohio. (Tract 30 as depicted on Exhibit "A-1")
18. Oil and Lease dated January 25, 2016, between Kenneth E. Ware, a divorced man not having since remarried, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201600002881, Book 608, Page 711, Records of Belmont County, Ohio. (Tract 31 as depicted on Exhibit "A-1")
19. Oil and Gas Lease dated October 17, 2014, between Daniel L. Williams and Edith E. Williams, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, recorded at Instrument Number 201400015709, Book 513, Page 950, Records of Belmont County, Ohio. (Tracts 33 and 34 as depicted on Exhibit "A-1")
20. Oil and Gas Lease dated March 3, 2015, between Charles R. Neff and Paula M. Neff, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500003617, Book 540, Page 761, Records of Belmont County, Ohio. (Tracts 35, 48 and 104 as depicted on Exhibit "A-1")
21. Oil and Gas Lease dated February 20, 2014, between Lana J. Barack and Roger A. Barack, wife and husband, as Lessor, and Paloma Partners III, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400003510, Book 459, Page 443, Records of Belmont County, Ohio. (Tract 36 as depicted on Exhibit "A-1")
22. Oil and Gas Lease dated July 24, 2014, between Edwin Hall aka Edwin Lee Hall and Tina A. Hall, husband and wife, as Lessor, and Rice Drilling D, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400012915, Book 501, Page 164, Records of Belmont County, Ohio. (Tracts 37 and 38 as depicted on Exhibit "A-1")
23. Oil and Gas Lease dated January 25, 2016, between Franklin D. Gillespie and Beatrice L. Gillespie, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201600001608, Book 601, Page 706, Records of Belmont County, Ohio. (Tract 39 as depicted on Exhibit "A-1")
24. Oil and Gas Lease dated September 28, 2011, between George Holler III and wife, Michelle Holler, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201100009258, Book 293, Page 854, Records of Belmont County, Ohio. (Tracts 43 and 45 as depicted on Exhibit "A-1")
25. Oil and Gas Lease dated September 28, 2011, between Sharon Heinlein, a widow, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201100009300, Book 293, Page 938, Records of Belmont County, Ohio. (Tracts 43 and 45 as depicted on Exhibit "A-1")
26. Oil and Gas Lease dated September 28, 2011, between Bruce Holler and wife, Sandra Holler, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201100009320, Book 294, Page 38, Records of Belmont County, Ohio. (Tracts 43 and 45 as depicted on Exhibit "A-1")
27. Oil and Gas Lease dated September 28, 2011, between William Cappelletti and wife, Kelly Cappelletti, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201100009807, Book 295, Page 447, Records of Belmont County, Ohio. (Tracts 43 and 45 as depicted on Exhibit "A-1")
28. Oil and Gas Lease dated October 3, 2011, between Michele Smith and husband, Vance Smith, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201200000338, Book 303, Page 899, Records of Belmont County, Ohio. (Tracts 43 and 45 as depicted on Exhibit "A-1")

29. Certificate of Transfer dated July 17, 1979, between the Estate of Karl Klee aka Carl Klee and Karl A. Klee, Deceased, as Devisor, and Ruth Klee, as Devisee, recorded at Book 586, Page 761, Records of Belmont County, Ohio. (Tract 44 as depicted on Exhibit "A-1")
30. Oil and Gas Lease dated September 27, 2011, between John J. Malik, Jr. and John J. Malik, Jr. as Power of Attorney for Adrienne Malik, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201200000578, Book 304, Page 619, Records of Belmont County, Ohio. (Tracts 32, 46, 63, and 67 as depicted on Exhibit "A-1")
31. Oil and Gas Lease dated August 16, 2013, between Lester L. Troyer and Edna L. Troyer, husband and wife, as Lessor, and Great River Energy, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400001067, Book 448, Page 435, Records of Belmont County, Ohio. (Tracts 47 and 114 as depicted on Exhibit "A-1")
32. Oil and Gas Lease dated June 3, 2015, between Mary Louise Helms, a widow by death not having since remarried, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500007336, Book 554, Page 342, Records of Belmont County, Ohio. (Tract 51 as depicted on Exhibit "A-1")
33. Oil and Gas Lease dated December 12, 2014, between Donna R. Gottardi, a divorced woman not having since remarried, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500001217, Book 533, Page 374, Records of Belmont County, Ohio. (Tract 52 as depicted on Exhibit "A-1")
34. Oil and Gas Lease dated September 16, 2015, between Tommie Renee Cottello, a single woman, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500012265, Book 575, Page 194, Records of Belmont County, Ohio. (Tract 52 as depicted on Exhibit "A-1")
35. Oil and Gas Lease dated September 16, 2015, between Robert Ticarich and Letha A. Ticarich, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500012480, Book 576, Page 152, Records of Belmont County, Ohio. (Tract 53 as depicted on Exhibit "A-1")
36. Oil and Gas Lease dated February 18, 2016, between Barbara Balwanz, a widow by death not having since remarried, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201600002082, Book 604, Page 173, Records of Belmont County, Ohio. (Tracts 54 and 55 as depicted on Exhibit "A-1")
37. Oil and Gas Lease dated October 17, 2014, between Penny Lee Williams, a widow by death not having since remarried, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201400016460, Book 517, Page 148, Records of Belmont County, Ohio. (Tract 58 as depicted on Exhibit "A-1")
38. General Warranty Deed dated April 25, 2007, between Danny Wise, Sr. and Betty Wise, husband and wife, as Grantor, and Danny Wise, Jr., as Grantee, recorded at Instrument Number 200700003216, Book 104, Page 645, Records of Belmont County, Ohio. (Tract 59 as depicted on Exhibit "A-1")
39. Oil and Gas Lease dated February 19, 2014, between Thomas W. Burch and Ethel Darlene Burch, husband and wife, as Lessor, and Gulfport Energy Corporation, as Lessee, a Memorandum of which is recorded at Instrument Number 201400004101, Book 463, Page 468, Records of Belmont County, Ohio. (Tract 60 as depicted on Exhibit "A-1")
40. Oil and Gas Lease dated November 8, 2012, between Edward N. Cirola, Jr., and Suzanne Cirola, husband and wife, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201200013658, Book 361, Page 649, Records of Belmont County, Ohio. (Tract 61 as depicted on Exhibit "A-1")
41. Oil and Gas Lease dated November 7, 2012, between Bruce G. Blank and Diane Blank, husband and wife, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of

- which is recorded at Instrument Number 201200013545, Book 361, Page 169, Records of Belmont County, Ohio. (Tract 62 as depicted on Exhibit "A-1")
42. Oil and Gas Lease dated April 18, 2012, between Marietta Coal Company, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201200004936, Book 323, Page 43, Records of Belmont County, Ohio. (Tract 64 as depicted on Exhibit "A-1")
 43. Oil and Gas Lease dated August 10, 2013, between Scott Klee and Kathy Klee, husband and wife, as Lessor, and Great River Energy, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300018506, Book 441, Page 747, Records of Belmont County, Ohio. (Tracts 65 and 113 as depicted on Exhibit "A-1")
 44. Oil and Gas Lease dated May 31, 2011, between Charles A. McGuire and Lucinda R. McGuire, his wife, as Lessor, and Marquette Exploration, LLC, as Lessee, recorded at Instrument Number 201100004718, Book 275, Page 79, Records of Belmont County, Ohio. (Tract 66 as depicted on Exhibit "A-1")
 45. Oil and Gas Lease dated November 7, 2013, between John R. Trigg and Nancy C. Trigg, husband and wife, as Lessor, and Great River Energy, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400001104, Book 448, Page 558, Records of Belmont County, Ohio. (Tracts 68, 72 and 117 as depicted on Exhibit "A-1")
 46. Oil and Gas Lease dated July 16, 2013, between Geoffery A. Violet, a single man, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300010880, Book 409, Page 621, Records of Belmont County, Ohio. (Tract 69 as depicted on Exhibit "A-1")
 47. Oil and Gas Lease dated September 21, 2015, between Dwane E. Trigg, a divorced man not having since remarried, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500012258, Book 575, Page 180, Records of Belmont County, Ohio. (Tracts 70 and 120 as depicted on Exhibit "A-1")
 48. Oil and Gas Lease dated June 10, 2014, between Paul R. Hartlieb and Tiffany L. Hartlieb, husband and wife, as Lessor, and Gulfport Energy Corporation, as Lessee, a Memorandum of which is recorded at Instrument Number 201400009896, Book 488, Page 537, Records of Belmont County, Ohio. (Tracts 71, 121 and 122 as depicted on Exhibit "A-1")
 49. Oil and Gas Lease dated December 13, 2011, between Charles R. and Mary K. Weekley, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201200000442, Book 304, Page 348, Records of Belmont County, Ohio. (Tract 73 as depicted on Exhibit "A-1")
 50. Oil and Gas Lease dated August 10, 2013, between Calvin M. Palian and Lynsey N. Palian, husband and wife, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300012504, Book 416, Page 251, Records of Belmont County, Ohio. (Tract 74 as depicted on Exhibit "A-1")
 51. Oil and Gas Lease dated November 21, 2012, between William F. Edge and Barbara A. Edge, husband and wife, and David W. Edge and Theresa T. Edge, husband and wife, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300009748, Book 404, Page 343, Records of Belmont County, Ohio. (Tract 75 as depicted on Exhibit "A-1")
 52. Oil and Gas Lease dated February 12, 2016, between David W. Edge and Theresa T. Edge, husband and wife, together with joint and survivorship rights with William F. Edge and Barbara A. Edge, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201600003174, Book 609, Page 996, Records of Belmont County, Ohio. (Tract 76 as depicted on Exhibit "A-1")
 53. Oil and Gas Lease dated February 12, 2016, between William F. Edge and Barbara Ann Edge, husband and wife, together with joint and survivorship rights with David W. Edge and Theresa T. Edge, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201600003175, Book 609, Page 998, Records of Belmont County, Ohio. (Tract 76 as depicted on Exhibit "A-1")

54. Oil and Gas Lease dated December 20, 2006, between William A. Reager and Kristy L. Reager, his wife, as Lessor, and Mason Dixon Energy, Inc., as Lessee, recorded at Instrument Number 200700001426, Book 97, Page 99, Records of Belmont County, Ohio. (Tracts 77, 78 and 79 as depicted on Exhibit "A-1")
55. Oil and Gas Lease dated June 3, 2016, between Resource Minerals Headwater I, a Delaware Limited Partnership, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is **PENDING RECORDING**, Records of Belmont County, Ohio. (Tract 80 as depicted on Exhibit "A-1")
56. Oil and Gas Lease dated September 7, 2013, between William J. Marinelli and Pamela J. Marinelli, husband and wife, as Lessor, and Gulfport Energy Corporation, as Lessee, a Memorandum of which is recorded at Instrument Number 201400001898, Book 451, Page 569, Records of Belmont County, Ohio. (Tract 81 as depicted on Exhibit "A-1")
57. Oil and Gas Lease dated April 25, 2014, between Gary E. Matusik and Jennifer I. Matusik, husband and wife, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400009076, Book 484, Page 799, Records of Belmont County, Ohio. (Tract 82 as depicted on Exhibit "A-1")
58. Estate by the Entireties with Survivorship Deed dated April 22, 1983, between Nelson Ball, a single person, as Grantor, and James E. Childers and Theresa L. Childers, husband and wife, for their joint lives, remainder to the survivor of them, as Grantee, recorded at Book 612, Page 354, Records of Belmont County, Ohio. (Tract 83 as depicted on Exhibit "A-1")
59. Oil and Gas Lease dated September 29, 2011, between Gary Homer and wife, Suzan Homer, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201200000603, Book 304, Page 669, Records of Belmont County, Ohio. (Tracts 84, 85 and 125 as depicted on Exhibit "A-1")
60. Oil and Gas Lease dated September 27, 2011, between Eddie E. King and wife, Florence M. King, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201200000554, Book 304, Page 572, Records of Belmont County, Ohio. (Tracts 86, 97, 98 and 127 as depicted on Exhibit "A-1")
61. Oil and Gas Lease dated May 12, 2016, between Kermit L. Scott, a single man, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is **PENDING RECORDING**, Records of Belmont County, Ohio. (Tracts 86, 97, 98 and 127 as depicted on Exhibit "A-1")
62. Oil and Gas Lease dated May 12, 2016, between Barbara Ellen Smathers, a single woman, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is **PENDING RECORDING**, Records of Belmont County, Ohio. (Tracts 86, 97, 98 and 127 as depicted on Exhibit "A-1")
63. Oil and Gas Lease dated May 12, 2016, between David E. Erb and George Edward Preot Buxton, Jr., husband and husband, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is **PENDING RECORDING**, Records of Belmont County, Ohio. (Tracts 86, 97, 98 and 127 as depicted on Exhibit "A-1")
64. Oil and Gas Lease dated May 12, 2016, between Beatrice K. Baker and James R. Baker, wife and husband, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is **PENDING RECORDING**, Records of Belmont County, Ohio. (Tracts 86, 97, 98 and 127 as depicted on Exhibit "A-1")
65. Oil and Gas Lease dated October 6, 2014, between Robert Alan Krupinski and Holly Ann Krupinski, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, recorded at Instrument Number 201500001166, Book 533, Page 175, Records of Belmont County, Ohio. (Tracts 87 and 126 as depicted on Exhibit "A-1")
66. Oil and Gas Lease dated January 23, 2014, between Russell J. Peters and Paula J. Peters, husband and wife, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400002219, Book 453, Page 773, Records of Belmont County, Ohio. (Tracts 88 and 89 as depicted on Exhibit "A-1")

67. Oil and Gas Lease dated April 21, 2015, between David Marchese and Cynthia E. Marchese, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500006081, Book 549, Page 136, Records of Belmont County, Ohio. (Tract 90 as depicted on Exhibit "A-1")
68. Quit-Claim Deed dated September 19, 2007, between Janet R. Howell, married, as Grantor, and Robert A. Moskey, as Grantee, recorded at Instrument Number 200700007669, Book 123, Page 826, Records of Belmont County, Ohio. (Tract 91 as depicted on Exhibit "A-1")
69. Oil and Gas Lease dated October 15, 2014, between Patrick D. Ney and Judith A. Ney, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500000252, Book 529, Page 244, Records of Belmont County, Ohio. (Tract 92 as depicted on Exhibit "A-1")
70. Oil and Gas Lease dated October 21, 2014, between Bobby Russell and Teresa Russell, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500000982, Book 532, Page 313, Records of Belmont County, Ohio. (Tracts 93 and 128 as depicted on Exhibit "A-1")
71. Oil and Gas Lease dated November 25, 2014, between Glen A. Imhoff and Helen J. Imhoff, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500000983, Book 532, Page 315, Records of Belmont County, Ohio. (Tracts 94 and 95 as depicted on Exhibit "A-1")
72. Oil and Gas Lease dated January 20, 2014, between James Edward Francis and Laura Jean Francis, husband and wife, as Lessor, and Fossil Creek Ohio, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400005063, Book 467, Page 569, Records of Belmont County, Ohio. (Tract 96 as depicted on Exhibit "A-1")
73. Oil and Gas Lease dated October 27, 2015, between Wesley R. Wood, a single man, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500014618, Book 587, Page 167, Records of Belmont County, Ohio. (Tract 96 as depicted on Exhibit "A-1")
74. Oil and Gas Lease dated September 26, 2013, between Donald E. Smathers, divorced and not remarried, as Lessor, and Paloma Partners III, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300015060, Book 426, Page 857, Records of Belmont County, Ohio. (Tracts 99 and 134 as depicted on Exhibit "A-1")
75. Oil and Gas Lease dated May 10, 2006, between Michael T. Fry and Carol A. Fry, husband and wife, as Lessor, and Reserve Energy Exploration Company, as Lessee, recorded at Instrument Number 200600005844, Book 65, Page 412, Records of Belmont County, Ohio. (Tracts 100 and 101 as depicted on Exhibit "A-1")
76. Oil and Gas Lease dated September 29, 2011, between Tilena Craig, a single woman, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201100009630, Book 295, Page 46, Records of Belmont County, Ohio. (Tract 102 as depicted on Exhibit "A-1")
77. Oil and Gas Lease dated September 29, 2011, between Darlene and Benjamin Littleton, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201100009631, Book 295, Page 48, Records of Belmont County, Ohio. (Tract 102 as depicted on Exhibit "A-1")
78. Oil and Gas Lease dated September 29, 2011, between Timothy Krebs and Christine Thompson-Krebs, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201200000367, Book 304, Page 35, Records of Belmont County, Ohio. (Tract 102 as depicted on Exhibit "A-1")
79. Oil and Gas Lease dated June 8, 2015, between Thomas M. Williams and Helen R. Williams, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500012264, Book 575, Page 192, Records of Belmont County, Ohio. (Tract 103 as depicted on Exhibit "A-1")

80. Oil and Gas Lease dated September 15, 2015, between Mary Ann Cerminara, Successor Trustee of the Marie VanDyne Testamentary Trust created by Item V of the Will of Marie VanDyne, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500011816, Book 573, Page 102, Records of Belmont County, Ohio. (Tract 105 as depicted on Exhibit "A-1")
81. Oil and Gas Lease dated April 12, 2016, between Appalachian Grouting Service, Inc., as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201600004575, Book 618, Page 124, Records of Belmont County, Ohio. (Tracts 107 and 112 as depicted on Exhibit "A-1")
82. Oil and Gas Lease dated August 29, 2013, between Diamond Energy Acquisition Group, LLC, as Lessor, and Paloma Partners III, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300013504, Book 420, Page 613, Records of Belmont County, Ohio. (Tract 111 as depicted on Exhibit "A-1")
83. Oil and Gas Lease dated December 19, 2014, between Charles A. McGuire a/k/a Charles McGuire and Lucinda Rebecca McGuire a/k/a Lucinda McGuire, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500000260, Book 529, Page 260, Records of Belmont County, Ohio. (Tract 115 as depicted on Exhibit "A-1")
84. Oil and Gas Lease dated September 29, 2013, between John F. Rico and Carol A. Rico, husband and wife, as Lessor, and Great River Energy, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400001608, Book 450, Page 457, Records of Belmont County, Ohio. (Tract 116 as depicted on Exhibit "A-1")
85. Oil and Gas Lease dated February 9, 2016, between Robert L. Eikleberry and Linda K. Eikleberry, husband and wife, as Lessor and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201600002083, Book 604, Page 175, Records of Belmont County, Ohio. (Tract 118 as depicted on Exhibit "A-1")
86. Oil and Gas Lease dated July 16, 2013, between Geoffery A. Violet, a single man, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300010882, Book 409, Page 625, Records of Belmont County, Ohio. (Tract 119 as depicted on Exhibit "A-1")
87. Oil and Gas Lease dated November 5, 2012, between Steven M. and Tracy L. Badia, husband and wife, and B. Richard and Linda M. McCabe, husband and wife, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300000390, Book 365, Page 746, Records of Belmont County, Ohio. (Tracts 123 and 124 as depicted on Exhibit "A-1")
88. Oil and Gas Lease dated October 14, 2014, between Rodney L. Driscoll and Brenda Kay Driscoll, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201400016461, Book 517, Page 150, Records of Belmont County, Ohio. (Tract 129 as depicted on Exhibit "A-1")
89. Oil and Gas Lease dated June 11, 2014, between The County of Belmont, Ohio, a political subdivision of the State of Ohio by and through the Belmont County Board of Commissioners, as Lessor, and Rice Drilling D LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400010514, Book 490, Page 985, Records of Belmont County, Ohio. (Tracts 130 and 131 as depicted on Exhibit "A-1")
90. Oil and Gas Lease dated October 17, 2014, between Eric M. Williams and Bonnie J. Williams, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201400017316, Book 521, Page 263, Records of Belmont County, Ohio. (Tract 132 as depicted on Exhibit "A-1")
91. Oil and Gas Lease dated May 31, 2014, between Donald W. Dunfee, Sr. and Evelyn K. Dunfee, husband and wife, as Lessor, and Great River Energy, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201400010597, Book 491, Page 437, Records of Belmont County, Ohio. (Tract 133 as depicted on Exhibit "A-1")

92. Oil and Gas Lease dated March 24, 2016, between Curtis Randall Wallner, a single person, and Roberta K. Heil, a single person, a joint life estate remainder to the survivor of them, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201600004662, Book 618, Page 554, Records of Belmont County, Ohio. (Tract 135 as depicted on Exhibit "A-1")
93. Oil and Gas Lease dated August 9, 2013, between Charles Jenkins and Trudy A. Jenkins, as Lessor, and Great River Energy, LLC, as Lessee, a Memorandum of which is recorded at Instrument Number 201300017897, Book 438, Page 539, Records of Belmont County, Ohio. (Tract 136 as depicted on Exhibit "A-1")
94. Oil and Gas Lease dated September 7, 2013, between Daniel E. Steadman and Robin R. Steadman, husband and wife, as Lessor, and Gulfport Energy Corporation, as Lessee, a Memorandum of which is recorded at Instrument Number 201400001849, Book 451, Page 442, Records of Belmont County, Ohio. (Tract 137 as depicted on Exhibit "A-1")
95. Oil and Gas Lease dated March 12, 2015, between Thomas L. Pacifico and Patricia L. Pacifico, husband and wife, as Lessor, and XTO Energy Inc., as Lessee, a Memorandum of which is recorded at Instrument Number 201500004548, Book 543, Page 410, Records of Belmont County, Ohio. (Tract 138 as depicted on Exhibit "A-1")
96. Warranty Deed dated June 14, 1996, between William F. Kurth and Patricia A. Kurth, husband and wife, as Grantor, and the State of Ohio, as Grantee, recorded at Instrument Number 199600015216, Book 719, Page 606, Records of Belmont County, Ohio. (Tract 139 as depicted on Exhibit "A-1")
97. Warranty Deed dated June 14, 1996, between Arlie Tipton nka Arlie Tipton McMahan, widow, as Grantor, and the State of Ohio, as Grantee, recorded at Instrument Number 199600015211, Book 719, Page 594, Records of Belmont County, Ohio. (Tract 140 as depicted on Exhibit "A-1")
98. Warranty Deed dated June 14, 1996, between Gloria G. Sadlowski, widow, as Grantor, and the State of Ohio, as Grantee, recorded at Instrument Number 199600015217, Book 719, Page 609, Records of Belmont County, Ohio. (Tract 141 as depicted on Exhibit "A-1")
99. Warranty Deed dated June 26, 1996, between James W. Harris and Frances M. Harris, Fee Owners, husband and wife, and Richard L. Loew and Kimberly A. Loew, Land Contract Holders, husband and wife, as Grantor, and the State of Ohio, as Grantee, recorded at Instrument Number 199600015714, Book 720, Page 90, Records of Belmont County, Ohio. (Tract 142 as depicted on Exhibit "A-1")
100. Warranty Deed dated June 14, 1996, between Daniel L. Williams and Edith E. Williams, husband and wife, as Grantor, and the State of Ohio, as Grantee, recorded at Instrument Number 199600015213, Book 719, Page 599, Records of Belmont County, Ohio. (Tract 143 as depicted on Exhibit "A-1")

Together with all amendments, ratifications, corrections, and/or modifications of the Oil and Gas Leases described herein, and INSO FAR as said Oil and Gas Leases cover those depths and formations identified in Section 2 above.

6. Surface and Production Burdens:

Each party hereto shall bear and pay its proportionate share (as set forth above) of any and all overriding royalties and specific payments for additional wells burdening pad sites used to drill wells in and under the Contract Area covered by this Operating Agreement, insofar and only insofar as such overriding royalties and payments are attributable to wells drilled in and under the Contract Area.

END OF EXHIBIT "A"

EXHIBIT A-3 (Revised July 9, 2016)
 Uncommitted Working Interest Owner
 Attached to that certain Operating Agreement dated July 1, 2016 covering the Kurth Unit D, Pultney and Richland Township, Belmont County, Ohio

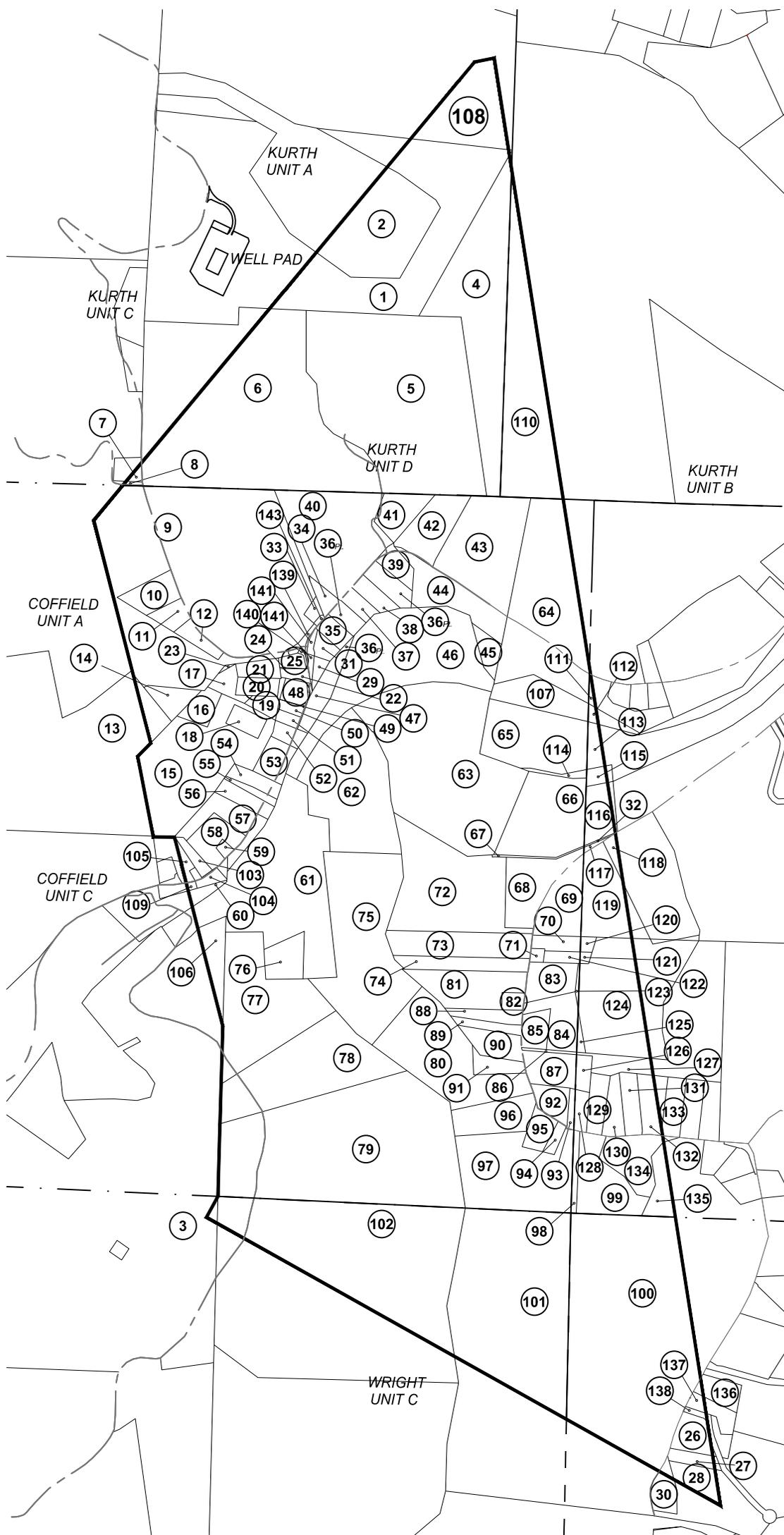
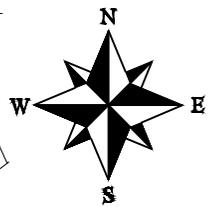
Tract #	Tax Map Number	Mineral Owner	Leased (Y/N)	Parcel Surface Acres in Unit	Mineral Owner Interest	Mineral Owner Surface Acres	Tract Participation	Unit Working Interest	XTO Working Interest	XTO Unit Participation	Phillips Exploration Working Interest	Phillips Exploration Unit Participation	ARU Working Interest	ARU Unit Participation	Rice Working Interest	Rice Unit Participation	Gulfport Buckeye Working Interest	Gulfport Buckeye Unit Participation	Gulfport Working Interest	Gulfport Unit Participation	Fossil Creek Working Interest	Fossil Creek Unit Participation	Mineral Owner Address	City	State	Zip Code
14	30-00134.000	Charles R. Neff and Paula M. Neff	Yes	1.512300	1.0000	1.512300	0.002409	0.240904321%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.240904321%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
15	30-00525.000	Charles R. Neff and Paula M. Neff	Yes	11.728000	1.0000	11.728000	0.018682	1.868231087%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	1.868231087%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
16	30-00525.001	Charles R. Neff and Paula M. Neff	Yes	1.000900	1.0000	1.000900	0.001594	0.159440015%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.159440015%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
17	30-00525.000	Charles R. Neff and Paula M. Neff	Yes	0.806600	1.0000	0.806600	0.001285	0.128488676%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.128488676%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
18	30-00525.000	Charles R. Neff and Paula M. Neff	Yes	1.000000	1.0000	1.000000	0.001593	0.159298648%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.159298648%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
19	30-00525.002	Charles R. Neff and Paula M. Neff	Yes	0.827500	1.0000	0.827500	0.001318	0.131817976%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.131817976%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
20	30-00250.000	Charles R. Neff and Paula M. Neff	Yes	0.981600	1.0000	0.981600	0.001564	0.156365590%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.156365590%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
21	30-00127.000	Charles R. Neff and Paula M. Neff	Yes	0.920000	1.0000	0.920000	0.001466	0.146552916%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.146552916%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
22	30-00178.000	Charles R. Neff and Paula M. Neff	Yes	0.406000	1.0000	0.406000	0.000647	0.064674439%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.064674439%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64720 Campbell Johnson Road	St. Clairsville	OH	43950
56	30-00207.000	Charles R. Neff and Paula M. Neff	Yes	1.140000	1.0000	1.140000	0.001816	0.181598179%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.181598179%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
57	30-00113.000	Charles R. Neff and Paula M. Neff	Yes	2.840000	1.0000	2.840000	0.004524	0.452402480%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	0.452402480%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64692 Campbell Johnson Road	St. Clairsville	OH	43950
61	30-00339.000	Edward N. Cirolli, Jr. and Suzanne Cirolli	Yes	17.983100	1.0000	17.983100	0.028646	2.864647550%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	2.864647550%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	1477 King Road	Hinckley	OH	44233
62	30-00437.000	Bruce G. Blank and Diane P. Blank	Yes	10.870000	1.0000	10.870000	0.017316	1.731554563%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	1.731554563%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	P.O. Box 207	Stewartsville	OH	43950
75	30-00428.000	William F. Edge and Barbara A. Edge	Yes	15.560000	0.5000	7.780000	0.012393	1.239327921%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	1.239327921%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	1116 Virginia Street	Martins Ferry	OH	43935
75	30-00428.000	David W. Edge and Theresa T. Edge	Yes	15.560000	0.5000	7.780000	0.012393	1.239327921%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	100.000000000%	1.239327921%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	27 Pine Lane	Wheeling	WV	26003
96	30-00434.000	James Edward Francis and Laura Jean Francis	Yes	3.190000	0.5000	1.595000	0.002541	0.254078153%	83.125000000%	0.211202465%	0.000000000%	0.000000000%	4.375000000%	0.01115919%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	12.500000000%	0.031759769%	283 Clearview Heights Drive	Moundsville	WV	26041
				TOTALS		68.171000		11.018708436%		0.211202465%	0.000000000%		0.01115919%		10.764630282%		0.000000000%		0.000000000%		0.031759769%					

EXHIBIT A-4 (Revised July 8, 2016)
Unleased Owners

Attached to that certain Operating Agreement dated July 1, 2016 covering the Kurth Unit D, Pultney and Richland Township, Belmont County, Ohio

Tract #	Tax Map Number	Mineral Owner	Leased (Y/N)	Parcel Surface Acres in Unit	Mineral Owner Interest	Mineral Owner Surface Acres	Tract Participation	Unit Working Interest	XTO Working Interest	XTO Unit Participation	Phillips Exploration Working Interest	Phillips Exploration Unit Participation	ARU Working Interest	ARU Unit Participation	Rice Working Interest	Rice Unit Participation	Gulfport Buckeye Working Interest	Gulfport Buckeye Unit Participation	Gulfport Working Interest	Gulfport Unit Participation	Fossil Creek Working Interest	Fossil Creek Unit Participation	Mineral Owner Address	City	State	Zip Code	
13	30-00401.000	Lana J. Barack and Roger A. Barack*	No	1.339300	0.0000	0.000000	0.000000	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64501 Harvey Hill Road	St. Clairsville	OH	43950	
13	30-00401.000	Hess Ohio Developments, LLC	No	1.339300	0.5000	0.669650	0.001067	0.106673000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	1501 McKinney Street	Houston	TX	77010	
13	30-00401.000	CNX Gas Company, LLC	No	1.339300	0.5000	0.669650	0.001067	0.106673000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	1000 CONSOL Energy Drive	Canonsburg	PA	15317	
23	30-00401.000	Lana J. Barack and Roger A. Barack*	No	0.061700	0.0000	0.000000	0.000000	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64501 Harvey Hill Road	St. Clairsville	OH	43950	
23	30-00401.000	Hess Ohio Developments, LLC	No	0.061700	0.5000	0.039850	0.000049	0.004914302%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	1501 McKinney Street	Houston	TX	77010
23	30-00401.000	CNX Gas Company, LLC	No	0.061700	0.5000	0.039850	0.000049	0.004914302%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	1000 CONSOL Energy Drive	Canonsburg	PA	15317
44	30-00161.000	Estate of Ruth V. Klee	No	3.980000	1.0000	3.980000	0.006340	0.634000659%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	10284 Alamo Road	Lucerne Valley	CA	92356
59	30-00077.000	Danny Wise, Jr.	No	0.226000	1.0000	0.226000	0.000360	0.036001042%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	52439 Gordon State Highway 149	St. Clairsville	OH	43950
83	30-00026.000	James E. Childers and Theresa L. Childers	No	2.110000	1.0000	2.110000	0.003361	0.336115927%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	64404 Sand Hill Road	Bellaire	OH	43906
91	30-00059.000	Robert A. Moskey	No	1.010300	1.0000	1.010300	0.001609	0.160937403%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	46651 National Road	St. Clairsville	OH	43950
139	30-00377.003	State of Ohio	No	0.301000	1.0000	0.301000	0.000479	0.047948291%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	2323 West 5th Avenue Suite 150	Columbus	OH	43204
140	30-00197.001	State of Ohio	No	0.062000	1.0000	0.062000	0.000099	0.009876392%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	2323 West 5th Avenue Suite 150	Columbus	OH	43204
141	30-00249.001	State of Ohio	No	0.209000	1.0000	0.209000	0.000333	0.033292989%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	2323 West 5th Avenue Suite 150	Columbus	OH	43204
142	30-00298.001	State of Ohio	No	0.240000	1.0000	0.240000	0.000382	0.038231196%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	2323 West 5th Avenue Suite 150	Columbus	OH	43204
143	30-00377.002	State of Ohio	No	0.071000	1.0000	0.071000	0.000113	0.011310062%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	2323 West 5th Avenue Suite 150	Columbus	OH	43204
				TOTALS		9.610300		1.530888576%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%	0.000000000%						

* = Potential claim subject to ODMA Interpretation



Scale: 1 in. = 1000 ft.



Graphical Scale

SCALE 1" = 1000'
ISSUE DATE 7/08/2016
DRAWN BY FDO
CHECKED BY JCL
APPROVED BY JCL

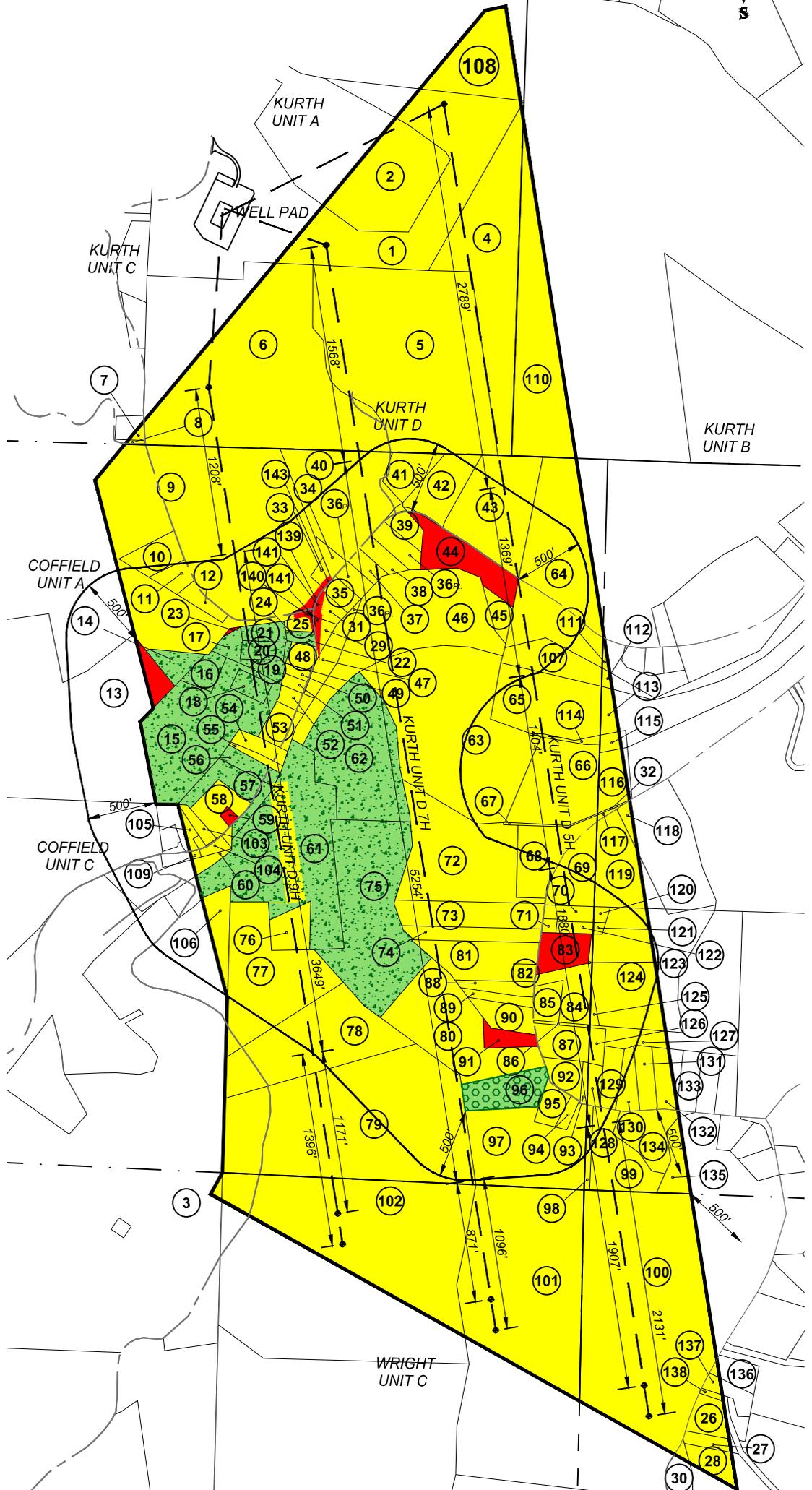
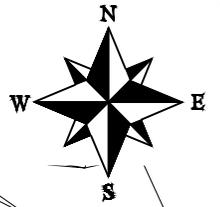


COUNTY BELMONT
TOWNSHIP PULTNEY, RICHLAND
QUAD MAP ARMSTRONG MILLS
TOWNSHIP 5&6N
RANGE 3W
SECTION 13, 17, 18, 19, 23 & 24

KURTH UNIT D
TARGET FORMATION:
POINT PLEASANT
XTO ENERGY INC.
190 THORN HILL ROAD
WARRENDALE, PA 15086

COLOR SHADING KEY

- = XTO/COMMITTED WORKING INTEREST OWNERS
- = UNLEASED
- = RICE DRILLING D, LLC
- = FOSSIL CREEK - PARTIAL INTEREST
- = WELL BORES



Scale: 1 in. = 1000 ft.

0' 1000' 2000' 3000'



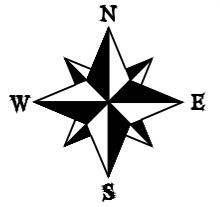
Graphical Scale

SCALE 1" = 1200'
 ISSUE DATE 7/08/2016
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COUNTY BELMONT
 TOWNSHIP PULTNEY, RICHLAND
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KURTH UNIT D
 TARGET FORMATION:
 POINT PLEASANT
XTO ENERGY INC.
 190 THORN HILL ROAD
 WARRENDALE, PA 15086



PARCELS WITHIN KURTH UNIT D		
TRACT #	PARCEL #	ACREAGE (LEASE)
1	32-01476.000	22.301
2	32-01476.001	10.436
3	30-00342.000	0.4130
4	32-01762.000	15.866
5	30-00374.000	31.52
6	30-00423.000	29.135
7	32-01076.000	0.208
8	32-01479.000	0.083
9	30-00377.000	41.5164
10	30-00134.002	1.847
11	30-00134.003	0.970
12	30-00134.001	0.8512
13	30-00401.000	1.3393
14	30-00134.000	1.5123
15	30-00525.000	11.728
16	30-00525.001	1.0009
17	30-00526.000	0.8066
18	30-00055.000	1
19	30-00525.002	0.8275
20	30-00250.000	0.9816
21	30-00127.000	0.92
22	30-00178.000	0.406
23	30-00401.000	0.0617
24	30-00197.002	0.0223
25	30-00197.000	0.3857
26	26-01548.007	1.564
27	26-01547.000	0.724
28	26-01547.003	1.492
29	30-00249.000	0.488
30	26-01547.002	0.182
31	30-00289.000	0.5852
32	26-00769.000	0.0900
33	30-00377.001	0.3034
34	30-00310.000	0.5759
35	30-00501.000	0.7895
36	30-00500.000	3.2127
37	30-00499.000	0.7458
38	30-00500.001	0.9415
39	30-00500.002	0.7853
40	30-00423.000	8.72
41	30-00374.000	2.08
42	30-00375.000	3.57
43	30-00395.000	9.10625
44	30-00161.000	3.980
45	30-00396.000	0.89375
46	30-00379.000	14.5
47	30-00165.000	0.452
48	30-00053.000	0.718
49	30-00053.001	0.014
50	30-00248.000	0.354
51	30-00131.000	0.37
52	30-00486.000	0.6976
53	30-00487.000	1.4729
54	30-00152.001	1
55	30-00152.000	0.43
56	30-00207.000	1.14
57	30-00113.000	2.84
58	30-00312.000	1.911
59	30-00077.000	0.226
60	30-00087.000	0.5894
61	30-00339.000	17.9831
62	30-00437.000	10.87
63	30-00378.000	23.250
64	30-00424.000	15.340
65	30-00513.000	7.550
66	30-00286.000	7.500
67	30-00380.000	0.270
68	30-00290.000	4.044
69	30-00024.000	3.314
70	30-00025.000	1.077
71	30-00185.000	0.228

72	30-00512.000	12.3037
73	30-00305.000	4.45
74	30-00180.000	2.22
75	30-00428.000	15.56
76	30-00058.000	1.88
77	30-00361.002	11.46
78	30-00361.001	12.01
79	30-00361.000	32
80	30-00389.000	10.357
81	30-00120.000	4.38
82	30-00234.000	0.48
83	30-00026.000	2.110
84	30-00174.000	2.413
85	30-00140.000	1.213
86	30-00319.000	0.087
87	30-00145.000	2.309
88	30-00141.001	1.084
89	30-00141.000	0.754
90	30-00173.000	1.762
91	30-00059.000	1.0103
92	30-00200.000	1.484
93	30-00219.000	0.3401
94	30-00144.000	0.4392
95	30-00143.000	1.1837
96	30-00434.000	3.19
97	30-00435.000	10.0331
98	26-01904.000	0.906
99	26-01189.000	4.410
100	26-01548.000	34.500
101	30-00383.000	25.354
102	30-00411.000	30.626
103	30-00313.000	0.494
104	30-00282.000	0.47
105	30-00298.000	0.4107
106	30-00490.000	2.347
107	p/o 32-03976.000	3.107
108	30-00376.000	7.972
109	30-00283.000	0.243
110	26-01902.000	13.015
111	26-01873.000	0.168
112	p/o 26-03895.000	0.113
113	26-03198.000	0.805
114	30-00285.000	0.300
115	26-01306.000	0.2
116	26-01083.000	1.906
117	26-01325.000	0.087
118	26-00413.000	0.441
119	26-00048.000	4.541
120	26-00049.000	0.095
121	26-00049.001	0.185
122	30-00025.001	0.483
123	30-00174.001	0.178
124	26-01703.002	8.564
125	26-01703.000	0.211
126	26-00623.000	0.510
127	26-01903.000	1.413
128	26-00989.000	0.6609
129	26-01165.000	1.202
130	26-01197.000	1.2749
131	26-01202.000	1.3802
132	26-00386.000	1.357
133	26-00385.000	0.006
134	26-01190.000	3.065
135	26-01543.000	1.633
136	26-01548.004	0.106
137	26-01548.006	0.324
138	26-01547.004	0.191
139	30-00377.003	0.301
140	30-00197.001	0.062
141	30-00249.001	0.209
142	30-00289.001	0.240
143	30-00377.002	0.071
		627.75960

SCALE N/A
 ISSUE DATE 7/08/2016
 DRAWN BY FDO
 CHECKED BY JCL
 APPROVED BY JCL



COUNTY BELMONT
 TOWNSHIP PULTNEY, RICHLAND
 QUAD MAP ARMSTRONG MILLS
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KURTH UNIT D
TARGET FORMATION:
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XTO ENERGY INC.
 190 THORN HILL ROAD
 WARRENDALE, PA 15086

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

In re the Matter of the Application of :
XTO Energy Inc. for Unit Operation :
 : Application Date: February 17, 2016
 :
Kurth Unit D :

**REVISED TESTIMONY OF STEVEN CERVANTES
ON BEHALF OF XTO ENERGY INC. ("XTO")
(RESERVOIR ENGINEER)**

Paul B. Westbrook (0092870)
HARRIS, FINLEY & BOGLE, P.C.
777 Main Street, Suite 1800
Fort Worth, Texas 76102
Attorneys for Applicant,
XTO Energy Inc.

Revised July 8, 2016

1 **INTRODUCTION**

2 **Q1. Please introduce yourself to the Division.**

3 A1. My name is Steven Cervantes. I am a reservoir engineer for XTO Energy Inc.

4 **Q2. What is your educational background?**

5 A2. I have a Bachelors of Science in Petroleum Engineering from the University of Texas.

6 **Q3. Would you briefly describe your professional experience?**

7 A3. I have worked as a reservoir engineer for 6 years at XTO.

8 **Q4. What do you do as a Reservoir Engineer for XTO?**

9 A4. My primary function is to calculate oil and gas reserves and perform economic analysis
10 of oil and gas development projects.

11 **Q5. Are you a member of any professional associations?**

12 A5. Yes, I am a member of the Society of Petroleum Engineers.

13 **Q6. What is the purpose of your testimony today?**

14 A6. I am testifying in support of the application of XTO Energy for Unit Operation filed with
15 respect to the Kurth Unit D, consisting of 143 separate tracts of land totaling
16 approximately 628 acres in Richland and Pultney Townships, Belmont County, Ohio.
17 My testimony addresses that the unit operations for the Kurth Unit D are reasonably
18 necessary to increase the recovery of oil and gas substantially and that the value of the
19 estimated additional recovery due to unit operations exceeds its estimated additional
20 costs.

21 **UNIT OPERATIONS ARE REASONABLY NECESSARY TO INCREASE**

22 **SUBSTANTIALLY THE RECOVERY OF OIL AND GAS.**

23 **Q7. I'd like to begin by addressing whether unit operations in the Kurth Unit D are**
24 **reasonably necessary to increase substantially the recovery of oil and gas from those**
25 **properties. Would you describe briefly how XTO anticipates developing the Kurth**
26 **Unit D?**

27 A7. XTO plans to develop the Kurth Unit D by drilling three horizontal wells targeting the
28 Utica-Point Pleasant Shale formation. It is estimated that the lateral lengths for the Kurth
29 D 5H, 7H, and 9H wells will measure approximately 9,349 feet, 7,450 feet, and 6,100
30 feet, respectively.

1 **Q8. Do you have an opinion as to whether unit operations in the Kurth Unit D are**
2 **reasonably necessary to increase substantially the recovery of oil and gas from those**
3 **properties, and if so, what is your opinion?**

4 A8. By utilizing the full unit lateral length I previously stated, I estimate that production from
5 the three wells could total as much as 46.2 BCF. Without unitization, the lateral length
6 would have to be shortened to approximately 4,885 total combined feet, and therefore
7 production would only total 9.8 BCF. Due to this difference in production, it is my
8 opinion that unit operations are necessary in order to capture the additional 79% or 36.4
9 BCF of reserves.

10 **Q9. Can you please describe your method for making these production projections?**

11 A9. Yes, I looked at existing production for nearby offset dry gas wells and forecasted their
12 estimated ultimate recovery (EUR) using XTO's proprietary production type curve. I
13 then divided each offset well's EUR by their respective lateral length to determine a ratio
14 of EUR per foot of lateral length. I used the average EUR/ft from the group of offset
15 wells and multiplied it by our planned lateral lengths for the Kurth D 5H, 7H, and 9H in
16 order to determine their respective EURs.

17 **Q10. Can you calculate the production from these wells ahead of time with mathematical**
18 **certainty?**

19 A10. No, I can only estimate how much gas the well will produce. There is a lot of uncertainty
20 with how an unconventional rock formation such as the Utica-Point Pleasant Shale will
21 produce while still in the early phases of development.

22 **Q11. Is horizontal drilling technology, including hydraulic fracturing the formation,**
23 **required to economically develop unconventional resources?**

24 A11. Yes.

25 **Q12. Is horizontal drilling common in the oil and gas industry?**

26 A12. Yes.

27 **Q13. Is it fair to say that horizontal wells are commonly used to develop shale formations**
28 **like the Unitized Formation?**

29 A13. Yes.

30 **Q14. In your professional opinion, would it be economical to develop the Kurth Unit D**
31 **using vertical drilling?**

1 A14. No, due to the very low permeability of a shale formation such as the Utica-Point
2 Pleasant, profitable oil and gas development from the Utica-Point Pleasant requires that
3 the well make significantly more contact with the reservoir than it would with just
4 drilling a vertical well. Even though drilling a vertical well would be less expensive than
5 drilling horizontal well, it is highly unlikely that we would be able to produce enough gas
6 to overcome the high cost of drilling the vertical well.

7 **VALUE OF ESTIMATED ADDITIONAL RECOVERY EXCEEDS ITS ESTIMATED**
8 **ADDITIONAL COSTS**

9 **Q15. Let's turn to the financial side of the project. Generally, in your professional**
10 **experience, how would the economics of a development project such as the**
11 **development of the Kurth Unit D be evaluated?**

12 A15. For each well I would use an estimated gas production profile coupled with anticipated
13 natural gas prices to estimate the well's gross revenue streams, and then subtract all
14 capital costs, operating expenses, royalty burdens, and severance taxes from that revenue
15 stream.

16 **Q16. Did you do that here?**

17 A16. Yes.

18 **Q17. Can you explain your economic analysis, beginning with your estimate of the**
19 **anticipated revenue stream from the Kurth Unit D's development?**

20 A17. Yes, for each well I estimated a monthly gas production profile by adjusting my type
21 curve to fit to each well's respective EUR that I discussed earlier. I then took a constant
22 gas price of \$2.63/MMBTU, which was derived from a twelve month trailing average
23 NYMEX spot price (as of December 2015), applied a price reduction to account for the
24 differential between market price conditions and NYMEX, and multiplied the adjusted
25 constant gas price with the gas production profile to determine a gross revenue stream. I
26 then deducted Ohio oil and gas production taxes, a midstream gas
27 gathering/transportation fee, and a 19% royalty burden to determine a net revenue stream.
28 All estimated capital and recurring operating expenses were then deducted in order to
29 determine a total value for the wells.

30 **Q18. Can you define capital costs and describe the anticipated capital costs for these**
31 **wells?**

1 A18. Capital costs consist of items such as surface location or pad construction, road
2 construction, drilling, completions, and facilities. Due to the discrepancy in lateral
3 length, capital costs for the fully unitized and non-unitized Kurth D are estimated to total
4 \$25.1 million and \$17.6 million, respectively.

5 **Q19: With respect to pad construction costs, are wells for other units being drilled from**
6 **the same pad as the Kurth Unit D?**

7 A19. Yes, there will be three additional wells drilled from the Kurth pad into Kurth Unit A,
8 Kurth Unit B, and Kurth Unit C.

9 **Q20: How are the pad construction costs allocated between the Kurth A, B, C, and D**
10 **Units?**

11 A20. Construction costs for the Kurth pad are estimated to total approximately \$3.4 million,
12 which was split evenly between the first four wells to be drilled, one in each unit, or
13 about \$850,000 per well.

14 **Q21. Can you define operating expenses and describe the anticipated operating expenses**
15 **for this well?**

16 A21. Operating expenses include recurring repairs or maintenance for items such as the well's
17 surface facilities, casing or production tubing, the pad location itself, and disposing of
18 produced water. For the economic analysis, I applied the operating expenses as a
19 monthly recurrence throughout the life of the well. While operating expenses can vary
20 significantly from well to well, I estimated that the operating expenses for the Kurth D
21 5H, 7H, and 9H would average \$4,000 per month per well in fixed costs plus \$8 per
22 barrel of produced water as a variable cost.

23 **Q22. Based on this information and your professional judgment, does the value of the**
24 **estimated recovery from the operations proposed for the Kurth Unit D exceed its**
25 **estimated costs?**

26 A22. Yes.

27 **Q23. Do you have an opinion as to whether the value of the estimated additional recovery**
28 **from the proposed Kurth Unit D operations – compared to the estimated recovery if**
29 **unit operations do not occur – exceeds the operation's estimated additional costs?**

30 A23. Yes, I believe it would.

31 **Q24. Would you explain?**

1 A24. With unit operations, XTO will be able to extend the lateral lengths of the Kurth D 5H,
2 7H, and 9H by a total of 18,014 feet. According to my analysis, extending the laterals
3 will cost an additional \$7.5 million in drilling and completion capital expenses, and
4 increase the total gas reserves for the Kurth Unit D by about 36.4 BCF. The value of the
5 additional 36.4 BCF of natural gas well exceeds the additional \$7.5 million in drilling and
6 completion expenses, as evidenced by my economic analysis. By increasing the lateral
7 lengths, the total net present value of the Kurth Unit D (using a 10% discount rate) will
8 increase from negative \$13.1 million (absent unit operations), to positive \$2 million (with
9 unit operations), establishing that the value of the additional recovery from drilling the
10 longer laterals exceeds the additional capital costs.

11 **Q25. And your opinions are based on your education and professional experience?**

12 A25. Yes.

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

14 A26. Yes.

Unit vs Non-Unit Comparison										
Well Name	Unit Lateral Length (ft)	Estimated Non-Unit Lateral (ft)	Unit Capital Cost (k\$)	Non-Unit Capital Cost (k\$)	Unit Gross EUR (BCF)	Non-Unit Gross EUR (BCF)	Unit Net PV 10% (k\$)*	Non-Unit Net PV 10% (k\$)*	Unit Payout (yrs)*	Non-Unit Payout (yrs)*
Kurth D 5H	9,349	2,350	\$9,791	\$6,730	18.7	4.7	\$1,311	-\$4,410	6	N/A
Kurth D 7H	7,450	1,385	\$8,049	\$5,486	14.9	2.8	\$707	-\$4,248	6	N/A
Kurth D 9H	6,100	1,150	\$7,276	\$5,378	12.6	2.3	\$29	-\$4,439	8	N/A
Total	22,899	4,885	\$25,116	17,595	46.2	9.8	\$2,047	-13,097	20	N/A

**Economic calculations assume 100% WI and 81% NRI for both unit scenarios in order to provide a like-for-like comparison*

Unit vs Non-Unit Differences					
Well Name	Lateral (ft)	Capital Cost (k\$)	EUR (BCF)	Net PV 10% (k\$)	Payout (yrs)
Kurth D 5H	6,999	\$3,061	14.0	\$5,721	N/A
Kurth D 7H	6,065	\$2,562	12.1	\$4,955	N/A
Kurth D 9H	4,950	\$1,898	10.3	\$4,468	N/A
Total	18,014	\$7,521	36.4	\$15,144	-