

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

In re the Matter of the Application of PDC  
Energy, Inc., for Unit Operation

Grove Unit

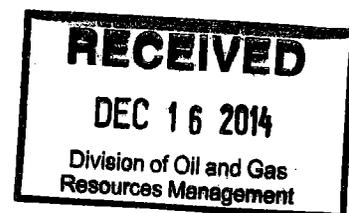
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Application Date: December 16, 2014

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**APPLICATION OF PDC ENERGY, INC. ("PDC")  
FOR UNIT OPERATION**

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Attachment 1 Unit Plan

Attachment 2 Prepared Direct Testimony of Joseph P. Smith (“Geologist”)

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Attachment 4 Prepared Direct Testimony of J. Tyler Sims (“Landman”)

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In re the Matter of the Application of PDC :  
Energy, Inc., for Unit Operation :  
 : Application Date: December 16, 2014  
Grove Unit :

**APPLICATION**

Pursuant to Ohio Revised Code Section 1509.28, PDC Energy, Inc. (the “Applicant” or “PDC”), hereby respectfully requests the Chief of the Division of Oil and Gas Resources Management (“Division”) for an order authorizing PDC to operate the Unitized Formation and applicable land area in Washington County, Ohio, (hereinafter, the “Grove Unit”) as a unit according to the Unit Plan attached hereto and as more fully described herein. PDC makes this request for, and unitization is necessary 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

PDC is a corporation organized under the laws of the State of Nevada, with its principal office located at 1775 Sherman Street, Suite 3000, Denver, Colorado 80203. PDC is registered in good standing as an “owner” with the Division.

PDC 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:

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## II. PROJECT DESCRIPTION

The Grove Unit is located in Washington County, Ohio, and consists of fourteen (14) separate tracts of land. See Exhibits A-1 and A-2 to the Unit Operating Agreement (showing the plat and tract participations, respectively). The total land area in the Grove Unit is 538.391 acres and, at the time of this Application, PDC and its working interest partners have the right to drill on and produce from all 538.391 acres of the proposed unit – i.e., one hundred percent of the Unit Area. PDC makes this application, however, because a single lease in the unit has a non-conforming pooling provision – i.e., it limits the amount of acreage that may be voluntarily consolidated by PDC into a unit to something less than the 538.391 acres proposed for the Grove Unit. This lease is referred to herein as the Non-Conforming Lease and consists of approximately 22 acres.<sup>1</sup> PDC seeks a unitization order to allow it to develop the entirety of the Grove Unit in accordance with the Unit Plan to protect the correlative rights of all of the interest owners in the unit and prevent the waste of natural resources that would otherwise occur.<sup>2</sup> To effectively and efficiently develop the Unit Area, therefore, PDC seeks authorization from the Division, as more specifically described herein, to drill and complete one or more horizontal wells in the Unitized Formation to efficiently test, develop, operate and produce the Unitized Formation for oil, natural gas, and related liquids production.

PDC's plan for unit operations (the "Unit Plan") is attached to this Application as Attachment 1. Among other things, the Unit Plan allocates unit production and expenses based upon each tract's surface acreage participation in the unit; includes various operating provisions in the event that other entities or persons become owners in the unit, as that term is understood in the Revised Code; and conforms to industry standards for the drilling and operating of horizontal wells.

## III. TESTIMONY

The following pre-filed testimony has been attached to the Application supporting the creation of the Grove Unit: (i) testimony from a Geologist establishing that the Unitized For-

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<sup>1</sup> As indicated on Exhibit A-1 to the Unit Operating Agreement, PDC's acreage can be allocated as follows: Leases with conforming pooling provisions – 516.199 acres (or approximately 95.9% of the Unit) and the Non-Conforming Lease – 22.192 acres (or approximately 4.1% of the Unit). The Non-Conforming Lease is set out more specifically on Exhibit A-3 to the Unit Operating Agreement.

<sup>2</sup> Note that PDC is not seeking to modify the Non-Conforming Lease. Rather, PDC is seeking an order from the Division, pursuant to the Division's statutory authority under R.C. 1509.28, that would allow PDC to develop the Grove Unit under the terms of the Unit Plan attached hereto.

mation is part of a pool and supporting the Unit Plan's recommended allocation of unit production and expenses on a surface acreage basis;<sup>3</sup> (ii) testimony from a Reservoir Engineer establishing that unitization is reasonably necessary to increase substantially the recovery of oil and gas, and that the value of the estimated additional resource recovery from unit operations exceeds its estimated additional costs;<sup>4</sup> and (iii) testimony from a Landman describing the project generally and the terms of the Unit Plan.<sup>5</sup>

#### IV. THE CHIEF SHOULD GRANT 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 – if 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 that includes the following:

- (1) a description of the unit area;
- (2) a statement of the nature of the contemplated operations;
- (3) an allocation of production from the unit area not used in unit operations, or otherwise lost, to the separately owned tracts;
- (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;
- (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;
- (6) a provision, if necessary, for carrying someone unable to meet their financial obligations in connection with the unit;
- (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;
- (8) the time when operations shall commence and the manner in which, and circumstances under which, unit operations will terminate; and

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<sup>3</sup> See Attachment 2.

<sup>4</sup> See Attachment 3.

<sup>5</sup> See Attachment 4.

(9) such other provisions appropriate for engaging in unit operations and for the protection or adjustment of correlative rights. Here, PDC proposes to present to the unitized party the following options:

- (a) amend their oil and gas lease according to the *Amendment and Ratification of Oil and Gas Lease* attached as Exhibit B to the Unit Operating Agreement, and entitled, “Amendment of Oil and Gas Lease”, for a lease bonus payment of five hundred dollars (\$500) per net mineral acre; or
- (b) have their interests in the Grove Unit unitized pursuant to the Unit Plan attached hereto.

PDC would present these options by certified mail. Should the unitized party fail to make an affirmative election as to one of the above options, the unitized party would be deemed to have selected option (b).

See Ohio Rev. Code § 1509.28(A). The Chief’s order becomes effective once approved in writing by those owners who will be responsible for paying at least sixty-five percent of the costs of the unit’s operations and by royalty and unleased fee-owners of sixty-five percent of the unit’s acreage. Once effective, production that is “allocated to a separately owned tract shall be deemed, for all purposes, to have been actually produced from the tract, and all operations \*\*\* [conducted] upon any portion of the unit area shall be deemed for all purposes the conduct of such operations and production from any lease or contract for lands any portion of which is included in the unit area.” Ohio Rev. Code § 1509.28(B)(2).

B. PDC’s Application Meets this 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 an approximate depth of from 50’ above the top of the Utica Shale formation to 50’ below the base of the Point Pleasant formation, believed to be approximately 6,596’ to 7,240’ TVD (true vertical depth) within the Grove Unit. The evidence presented with 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.<sup>6</sup> Additionally, that evidence establishes that the Unitized Formation is likely to be reasonably uniformly distributed throughout the Unit Area and thus, it is reasona-

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<sup>6</sup> 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 Attachment 2.

ble for the Unit Plan to allocate unit production and expenses to separately owned tracts on a surface acreage basis.<sup>7</sup>

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 Grove Unit. The Unit Plan contemplates the potential drilling of as many as four (4) horizontal wells, with laterals in approximate length of 6,300 feet.<sup>8</sup> PDC estimates that the ultimate recovery from this unit development, if all unit wells are drilled, could be as much as approximately 33 (BSCFE) of natural gas or nearly 5.5 million barrels of oil equivalent from the Unitized Formation.<sup>9</sup> Absent unit operations, PDC estimates that the recovery would be substantially less given the acreage limitations imposed by the Non-Conforming Lease (the evidence further shows that absent unit operations vertical development of the unit is likely to be uneconomic).<sup>10</sup>

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.

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

The evidence shows that the estimated additional recovery from unit operations has a net present value of approximately \$3.5 million.<sup>11</sup> See also Attachment 3 – Exhibit 3 (both) (describing for each proposed well the estimated value of the well’s production and the estimated drilling and operating costs, incorporated here as if fully rewritten herein). The evidence accordingly establishes that the value of the estimated additional recovery exceeds the estimated additional costs incident to conducting unit operations.

V.  
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 Attachment 4 – Exhibit JTS-1. Accordingly, PDC respectfully requests that the Division schedule a hearing

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<sup>7</sup> *Id.*

<sup>8</sup> See Attachment 3.

<sup>9</sup> See Attachment 3. We emphasize that these are only estimates, and like the rest of the estimates set forth in this Application, they should be treated as simply estimates based upon the best information available at the time.

<sup>10</sup> *Id.*

<sup>11</sup> See Attachment 3. We emphasize that these are only estimates, and like the rest of the estimates set forth in this Application, they should be treated as simply estimates based upon the best information available at the time.

at an available hearing room located at the Division's Columbus complex on or before April 15, 2015 to consider the Application filed herein.

VI.  
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 estimated additional costs. PDC respectfully submits that the Application meets this standard, and that the terms and conditions of the proposed Unit Plan are just and reasonable and satisfy the requirements of Ohio Revised Code § 1509.28(B). PDC therefore asks the Chief to issue an order authorizing PDC to operate the Grove Unit according to the Unit Plan attached hereto.

Respectfully submitted,



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**1**

**PLAN FOR UNIT OPERATIONS**  
**THE GROVE UNIT**  
**ADAMS TOWNSHIP**  
**WASHINGTON COUNTY, OHIO**

The following shall constitute the Plan for Unit Operations applicable to the Grove Unit in Adams Township, Washington County, Ohio, and having as its purpose the unitized management, operation, and development of the Unitized Formation as herein defined, to advance the public welfare and promote conservation, to increase the ultimate recovery of oil, natural gas, and other substances therefrom, and to avoid waste and protect the correlative rights of the owners of interests therein.

**ARTICLE 1: DEFINITIONS**

As used in this Plan for Unit Operations:

**Division** refers to the Ohio Department of Natural Resources' Division of Oil and Gas Resources Management.

**Effective Date** is the time and date this Plan becomes effective as provided in Article 11.

**Oil and Gas Rights** are the rights to investigate, explore, prospect, drill, develop, produce, market, transport, and operate within the Unit Area for the production of Unitized Substances, or to share in the production so obtained or the proceeds thereof, including without limitation the conducting of exploration, geologic and/or geophysical surveys by seismograph, core test, gravity and/or magnetic methods, the injecting of gas, water, air or other fluids into the Unitized Formation, the installation, operation and maintenance of monitoring facilities, the laying of pipelines, building of roads, tanks, power stations, telephone lines, and/or other structures.

**Person** is any individual, corporation, partnership, association, receiver, trustee, curator, executor, administrator, guardian, fiduciary, or other representative of any kind, any department, agency, or instrumentality of the state, or any governmental subdivision thereof, or any other entity capable of holding an interest in the Unitized Substances or Unitized Formation.

**Plan** means this Plan for Unit Operations for the Grove Unit, Adams Township, Washington County, Ohio, including, unless otherwise expressly mentioned, any and all attachments and exhibits hereto.

**Royalty Interest** means a right to or interest in any portion of the Unitized Substances or proceeds from the sale thereof, other than a Working Interest.

**Royalty Owner** is a Person who owns a Royalty Interest.

**Tract** means the land identified by a tract number in Exhibit A-2 to the Unit Operating Agreement.

**Tract Participation** means the fractional interest shown on Exhibit A-2 to the Unit Operating Agreement for allocating Unitized Substances to a Tract.

**Uncommitted Working Interest Owner** is a Working Interest Owner, other than an Unleased Mineral Owner, who has not agreed to, ratified or otherwise approved this Plan. Uncommitted Working Interest Owners are likely, but not necessarily, to have obtained their interest by lease.

**Unit Area** means the lands shown on the plat attached as Exhibit A-1 and identified on Exhibit A-2 to the Unit Operating Agreement, including also areas to which this Plan may be extended as herein provided.

**Unit Equipment** means all personal property, lease and well equipment, plants, and other facilities and equipment taken over or otherwise acquired for the unit account for use in Unit Operations.

**Unit Expense** means all cost, expense, investment and indebtedness incurred by Working Interest Owners or Unit Operator pursuant to this Plan for or on account of Unit Operations.

**Unitized Formation** means the subsurface portion of the Unit Area located from 50' feet above the top of the Utica formation to 50' feet below the base of the Point Pleasant formation, believed to be approximately 6,596 feet subsurface to 7,240 feet subsurface TVD ("True Vertical Depth").

**Unit Operating Agreement** means the modified A.A.P.L. Form 610-1989 Model Form Operating Agreement that is attached hereto as Exhibit 1 and incorporated herein by reference as if fully re-written herein and to which all Working Interest Owners are deemed to be parties; provided, however, that in the event two or more Working Interest Owners have agreed to a separate joint operating agreement relating to the supervision and conduct of unit operations contemplated herein, such operating agreement shall control. The Unit Operating Agreement contains provisions for credits and charges among Working Interest Owners for their respective investments in, and expenses for, Unit Operations, including a provision, if necessary, for carrying any Person unable or electing not to participate in Unit Operations. In addition, the Unit Operating Agreement also contains provisions relating to the supervision and conduct of Unit Operations and the manner in which Working Interest Owners may vote. In the event of a conflict between the terms of the Unit Operating Agreement and the other terms of this Plan, excluding the Unit Operating Agreement, such other terms of this Plan shall govern.

**Unit Operations** are all operations conducted pursuant to this Plan.

**Unit Operator** is the Person designated by Working Interest Owners under the Unit Operating Agreement to conduct Unit Operations.

**Unit Participation** is the sum of the interests obtained by multiplying the Working Interest of a Working Interest Owner in each Tract by the Tract Participation of such Tract.

**Unitized Substances** are all oil, gas, gaseous substances, sulfur, condensate, distillate, and all associated and constituent liquid or liquefiable hydrocarbons within or produced from the Unitized Formation.

**Unleased Mineral Owner** is a Person who owns Oil and Gas Rights free of a lease or other instrument conveying all or any portion of the Working Interest in such rights to another.

**Working Interest** means an interest in Unitized Substances in the Unit Area by virtue of a lease, operating agreement, fee title, or otherwise, including a carried interest, the owner of which is obligated to pay, either in cash or out of production or otherwise, a portion of the Unit Expense; however, Oil and Gas Rights that are free of a lease or other instrument creating a Working Interest shall be regarded as a Working Interest to the extent of 87.5% thereof and a Royalty Interest to the extent of the remaining 12.5% thereof, such Royalty Interest to be subject to any post-production costs, taxes, assessments and other fees as may be set forth in the Unit Operating Agreement. A Royalty Interest created out of a Working Interest subsequent to the participation of, subscription to, ratification of, approval by, or consent to this Plan by the owner of such Working Interest shall continue to be subject to such Working Interest burdens and obligations that are stated in this Plan.

**Working Interest Owner** is a Person who owns a Working Interest.

## ARTICLE 2: CREATION AND EFFECT OF UNIT

**Oil and Gas Rights Unitized.** All Royalty Interests and Working Interests in Oil and Gas Rights in and to the lands identified on Exhibits A-1 and A-2 to the Unit Operating Agreement are hereby unitized insofar as, and only insofar as, the respective Oil and Gas Rights pertain to the Unitized Formation, so that Unit Operations may be conducted with respect to the Unitized Formation as if the Unit Area had been included in a single lease executed by all Royalty Owners, as lessors, in favor of all Working Interest Owners, as lessees, and as if the lease contained all of the provisions of this Plan.

**Personal Property Excepted.** All lease and well equipment, materials, and other facilities heretofore or hereafter placed by any of the Working Interest Owners on the lands covered hereby shall be deemed to be and shall remain personal property belonging to, and may be removed by, Working Interest Owners with the prior consent of Unit Operator. The rights and interests therein, as among Working Interest Owners, are set forth in the Unit Operating Agreement.

**Continuation of Leases and Term Interests.** Unit Operations conducted upon any part of the Unit Area or production of Unitized Substances from any part of the Unitized Formation, except for the purpose of determining payments to Royalty Owners, shall be considered as operations upon or production from each portion of each Tract, and such production or operations shall continue in effect each lease or term, mineral or Royalty Interest, as to all Tracts and formations covered or affected by this Plan just as if such Unit Operations had been

conducted and a well had been drilled on and was producing from each portion of each Tract. Each lease shall remain in full force and effect from the date of execution hereof until the Effective Date, and thereafter in accordance with its terms and this Plan.

**Titles Unaffected by Unitization.** Nothing herein shall be construed to result in any transfer of title to Oil and Gas Rights by any Person to any other Person or to Unit Operator.

**Pre-existing Conditions in Unit Area.** Working Interest Owners shall not be liable for or assume any obligation with respect to (i) the restoration or remediation of any condition associated with the Unit Area that existed prior to the Effective Date of this Plan, or (ii) the removal and/or plugging and abandonment of any wellbore, equipment, fixtures, facilities or other property located in, on or under the Unit Area prior to the Effective Date of this Plan.

### ARTICLE 3: UNIT OPERATIONS

**Unit Operator.** Unit Operator shall have the exclusive right to conduct Unit Operations, which shall conform to the provisions of this Plan.

**Unit Expenses.** All Unit Expenses shall be just and reasonable, and shall be charged as set out in the Unit Operating Agreement. Except as otherwise provided in the Unit Operating Agreement, Unit Expenses shall be allocated to each Tract based upon its Tract Participation, and shall be paid by the Tract's Working Interest Owners.

### ARTICLE 4: TRACT PARTICIPATIONS

**Tract Participations.** The Tract Participation of each Tract is identified in Exhibit A-2 to the Unit Operating Agreement and shall be determined solely upon an acreage basis as the proportion that the Tract surface acreage inside the Unit Area bears to the total surface acreage of the Unit Area. The Tract Participation of each Tract has been calculated as follows: TRACT SURFACE ACRES WITHIN THE UNIT AREA DIVIDED BY THE TOTAL SURFACE ACRES WITHIN THE UNIT AREA.

### ARTICLE 5: ALLOCATION OF UNITIZED SUBSTANCES

**Allocation of Unitized Substances.** All Unitized Substances produced and saved shall be allocated to the several Tracts in accordance with the respective Tract Participations effective during the period that the Unitized Substances were produced. The amount of Unitized Substances allocated to each Tract, regardless of whether the amount is more or less than the actual production of Unitized Substances from the well or wells, if any, on such Tract, shall be deemed for all purposes to have been produced from such Tract.

**Distribution Within Tracts.** The Unitized Substances allocated to each Tract or portion thereof shall be distributed among, or accounted for to, the Persons entitled to share in the production from such Tract or portion thereof in the same manner, in the same proportions, and upon the same conditions as they would have participated and shared in the production from such Tract, or in the proceeds thereof, had this Plan not been entered into, and with the same legal effect. If any Oil and Gas Rights in a Tract hereafter become divided and owned in severalty as to different parts of the Tract, the owners of the divided interests, in the absence of an agreement providing for a different division, shall share in the Unitized Substances allocated to the Tract, or in the proceeds thereof, in proportion to the surface acreage of their respective parts of the Tract. Any royalty or other payment which depends upon per well production or pipeline runs from a well or wells on a Tract shall, after the Effective Date, be determined by dividing the Unitized Substances allocated to the Tract by the number of wells on the Tract capable of producing Unitized Substances on the Effective Date; however, if any Tract has no well thereon capable of producing Unitized Substances on the Effective Date, the Tract shall, for the purpose of this determination, be deemed to have one (1) such well thereon.

### ARTICLE 6: USE OR LOSS OF UNITIZED SUBSTANCES

**Use of Unitized Substances.** Working Interest Owners may use or consume Unitized Substances for Unit Operations, including but not limited to, the injection thereof into the Unitized Formation.

**Royalty Payments.** No royalty, overriding royalty, production, or other payments shall be payable on account of Unitized Substances used, lost, or consumed in Unit Operations,

including without limitation the testing of the productivity of any wells drilled in the Unit Area. Royalty payments shall be made to Unleased Mineral Owners beginning with the initial distribution date for production of Unitized Substances from any well within the Grove Unit.

#### ARTICLE 7: TITLES

**Warranty and Indemnity.** Each Person who, by acceptance of produced Unitized Substances or the proceeds from a sale thereof, may claim to own a Working Interest or Royalty Interest in and to any Tract or in the Unitized Substances allocated thereto, shall be deemed to have warranted its title to such interest, and, upon receipt of the Unitized Substances or the proceeds from a sale thereof to the credit of such interest, shall indemnify and hold harmless all other Persons in interest from any loss due to failure, in whole or in part, of its title to any such interest; provided, however, that nothing in this provision shall apply to Unleased Mineral Owners.

**Production Where Title is in Dispute.** If the title or right of any Person claiming the right to receive in kind all or any portion of the Unitized Substances allocated to a Tract is in dispute, Unit Operator at the direction of Working Interest Owners may: Require that the Person to whom such Unitized Substances are delivered or to whom the proceeds from a sale thereof are paid furnish security for the proper accounting therefor to the rightful owner or owners if the title or right of such Person fails in whole or in part; or withhold and market the portion of Unitized Substances with respect to which title or right is in dispute, and hold the proceeds thereof until such time as the title or right thereto is established by a final judgment of a court of competent jurisdiction or otherwise to the satisfaction of Working Interest Owners, whereupon the proceeds so held shall be paid to the Person rightfully entitled thereto.

**Transfer of Title.** Any conveyance of all or any part of any interest owned by any Person hereto with respect to any Tract shall be made expressly subject to this Plan. No change of title shall be binding upon Unit Operator, or upon any Person hereto other than the Person so transferring, until 7:00 a.m. on the first day of the calendar month next succeeding the date of receipt by Unit Operator of a certified copy of the recorded instrument evidencing such change in ownership.

#### ARTICLE 8: EASEMENTS, GRANTS, OR USE OF SURFACE

**Grant of Easements.** Subject to the terms and conditions of the various leases, Unit Operator shall have the right of ingress and egress along with the right to use as much of the surface of the land within the Unit Area as may be reasonably necessary for Unit Operations and the removal of Unitized Substances from the Unit Area.

**Use of Water.** The following shall apply subject to the terms and conditions of the various leases: Unit Operator shall have and is hereby granted free use of water from the Unit Area for Unit Operations, except water from any well, lake, pond, or irrigation ditch of a Royalty Owner. Unit Operator may convert dry or abandoned wells in the Unit Area for use as water supply or disposal wells.

**Surface Damages.** Subject to the terms and conditions of the various leases, Working Interest Owners shall reimburse the owner for the market value prevailing in the area of growing crops, livestock, timber, fences, improvements, and structures on the Unit Area that are destroyed or damaged as a result of Unit Operations.

**Unleased Property.** Notwithstanding anything in this Article 8 to the contrary, and except where otherwise authorized by the Division, there shall be no Unit Operations conducted on the surface of any property located within the Grove Unit, and there shall be no right of ingress and egress over and no right to use the surface waters of any surface lands located within the Grove Unit, owned by a non-consenting Unleased Mineral Owner.

#### ARTICLE 9: CHANGE OF TITLE

**Covenant Running with the Land.** This Plan shall extend to, be binding upon, and inure to the benefit of the owners of the Royalty Interests and Working Interests in Oil and Gas Rights unitized hereby, and the respective heirs, devisees, legal representatives, successors, and assigns thereof, and shall constitute a covenant running with the lands, leases, and interests impacted hereby.

**Waiver of Rights of Partition.** No Person affected hereby shall resort to any action to,

and shall not, partition Oil and Gas Rights, the Unit Area, the Unitized Formation, the Unitized Substances or the Unit Equipment.

#### **ARTICLE 10: RELATIONSHIPS OF PERSONS**

**No Partnership.** All duties, obligations, and liabilities arising hereunder shall be several and not joint or collective. This Plan is not intended to and shall not be construed to create an association or trust, or to impose a partnership or fiduciary duty, obligation, or liability. Each Person affected hereby shall be individually responsible for its own obligations.

**No Joint or Cooperative Refining, Sale or Marketing.** This Plan is not intended and shall not be construed to provide, directly or indirectly, for any joint or cooperative refining, sale or marketing of Unitized Substances.

#### **ARTICLE 11: EFFECTIVE DATE**

**Effective Date.** This Plan shall become effective as of, and operations may commence hereunder as of, 7:00 A.M. on the date of an effective order approving this unit by the Division in accordance with the provisions of Ohio Revised Code Section 1509.28; provided, however, that Working Interest Owners may terminate this Plan in the event of a material modification by the Division of all or any part of this Plan in such order by filing a notice of termination with the Division within thirty (30) days of such order becoming final and no longer subject to further appeal. In the event a dispute arises or exists with respect to this Plan, or the order approving this unit issued by the Division, Unit Operator may, in its sole discretion, hold the revenues from the sale of Unitized Substances until such time as such dispute is resolved or, in the Unit Operator's opinion, it is appropriate to distribute such revenues.

#### **ARTICLE 12: TERM**

**Term.** This Plan, unless sooner terminated in the manner hereinafter provided, shall remain in effect for five (5) years from the Effective Date and as long thereafter as Unitized Substances are produced, or are capable of being produced, in paying quantities from the Unit Area without a cessation of more than one hundred and eighty (180) consecutive days, or so long as other Unit Operations are conducted without a cessation of more than one hundred and eighty (180) consecutive days, unless sooner terminated by Working Interest Owners owning a combined Unit Participation of fifty-one percent (51%) or more whenever such Working Interest Owners determine that Unit Operations are no longer warranted. The date of any termination hereunder shall be known as the "Termination Date."

**Effect of Termination.** Upon termination of this Plan, the further development and operation of the Unitized Formation as a unit shall cease. Each oil and gas lease and other agreement covering lands within the Unit Area shall remain in force for one hundred eighty (180) days after the date on which this Plan terminates, and for such further period as is provided by the lease or other agreement. The relationships among owners of Oil and Gas Rights shall thereafter be governed by the terms and provisions of the leases and other instruments, not including this Plan, affecting the separate Tracts.

**Certificate of Termination.** Upon termination of this Plan, Unit Operator shall file with the Division and for record in the county or counties in which the land affected is located a certificate stating that this Plan has terminated and the Termination Date.

**Salvaging Equipment Upon Termination.** If not otherwise granted by the leases or other instruments affecting the separate Tracts, Working Interest Owners shall have a period of six (6) months after the Termination Date within which to salvage and remove Unit Equipment.

#### **ARTICLE 13: APPROVAL**

**Original, Counterpart, or Other Instrument.** An owner of Oil and Gas Rights or its agent may approve this Plan by signing the original, a counterpart thereof, or other instrument approving this Plan. The signing of any such instrument shall have the same effect as if all Persons had signed the same instrument.

**Commitment of Interests to Unit.** The approval of this Plan by a Person or their agent shall bind that Person and commit all interests owned or controlled by that Person as of the date of such approval, and additional interests thereafter acquired.

**Joinder in Dual Capacity.** Execution as herein provided by any Person, as either Working Interest Owner or a Royalty Owner, shall commit all interests owned or controlled by such Person as of the date of such execution and any additional interest thereafter acquired.

#### **ARTICLE 14: MISCELLANEOUS**

**Determinations by Working Interest Owners.** Each Working Interest Owner shall have a voting interest equal to its Unit Participation. All decisions, determinations, or approvals by Working Interest Owners hereunder shall be made by the affirmative vote of one or more parties having a combined voting interest of at least fifty one percent (51%). No vote, however, is required for such determinations if the Unit Operator owns or controls fifty one percent (51%) or more of the Working Interest in the Unit Area.

**Severability of Provisions.** The provisions of this Plan are severable and if any section, sentence, clause or part thereof is held to be invalid for any reason, such invalidity shall not be construed to affect the validity of the remaining provisions of this Plan.

**Laws and Regulations.** This Plan shall be governed by and subject to the laws of the State of Ohio, to the valid rules, regulations, orders and permits of the Division, and to all other applicable federal, state, and municipal laws, rules, regulations, orders, and ordinances. Any change of the Unit Area or any amendment to this Plan shall be in accordance with Ohio law.



A.A.P.L. FORM 610 - 1989

**MODEL FORM OPERATING AGREEMENT  
HORIZONTAL MODIFICATIONS**

OPERATING AGREEMENT

DATED

December 16 , 2014 ,  
*Year*

OPERATOR PDC Energy, Inc.

CONTRACT AREA The lands shown on the plat attached as Exhibit A-1 and described on  
Exhibit A-2 and generally known as the Grove Unit.

COUNTY ~~OR PARISH~~ OF Washington , STATE OF Ohio

UNIT NAME: Grove

COPYRIGHT 2013 - ALL RIGHTS RESERVED  
AMERICAN ASSOCIATION OF PROFESSIONAL  
LANDMEN, 4100 FOSSIL CREEK BLVD. FORT  
WORTH, TEXAS, 76137, APPROVED FORM.  
A.A.P.L. NO. 610 - 1989 (Horz.)

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**OPERATING AGREEMENT**

THIS AGREEMENT, entered into by and between PDC Energy, Inc., a Nevada corporation, hereinafter designated and referred to as "Operator," and the signatory party or parties other than Operator, sometimes hereinafter referred to individually as "Non-Operator," and collectively as "Non-Operators."

**WITNESSETH:**

WHEREAS, the parties to this agreement are owners of Oil and Gas Leases and/or Oil and Gas Interests in the land identified in Exhibit "A," and the parties hereto have reached an agreement to explore and develop these Leases and/or Oil and Gas Interests for the production of Oil and Gas to the extent and as hereinafter provided,

NOW, THEREFORE, it is agreed as follows:

**ARTICLE I.  
DEFINITIONS**

As used in this agreement, the following words and terms shall have the meanings here ascribed to them:

A. The term "AFE" shall mean an Authority for Expenditure prepared by a party to this agreement for the purpose of estimating the costs to be incurred in conducting an operation hereunder. An AFE is not a contractual commitment. Rather it is only an estimate, made in good faith. / **An AFE for a Horizontal Well shall clearly stipulate that the well being proposed is a Horizontal well and shall include all Completion operations for the proposed Horizontal well.**

B. The term "Completion" or "Complete" shall mean a single operation intended to complete a well as a producer of Oil and Gas in one or more Zones, including, but not limited to, the setting of production casing, perforating, well stimulation and production testing conducted in such operation.

C. The term "Contract Area" shall mean all of the lands, Oil and Gas Leases and/or Oil and Gas Interests intended to be developed and operated for Oil and Gas purposes under this agreement. Such lands, Oil and Gas Leases and Oil and Gas Interests are described in Exhibit "A."

D. The term "Deepen" shall mean a single operation whereby a well is drilled to an objective Zone below the deepest Zone in which the well was previously drilled, or below the Deepest Zone proposed in the associated AFE, whichever is the lesser. When used in connection with a Horizontal Well, the term "Deepen" shall mean an operation whereby a Lateral is drilled to a Displacement greater than (i) the Displacement contained in the proposal for such operation approved by the Consenting Parties, or (ii) to the Displacement to which the Lateral was drilled pursuant to a previous proposal.

E. The term "Displacement" shall have the same meaning as the term defined by the state regulatory agency having jurisdiction over the Contract Area, in the absence of which the term shall otherwise mean the length of a Lateral.

F. The terms "Drilling Party" and "Consenting Party" shall mean a party who agrees to join in and pay its share of the cost of any operation conducted under the provisions of this agreement.

G. The term "Drilling Unit" shall mean the area fixed for the drilling of one well by order or rule of any state or federal body having authority. If a Drilling Unit is not fixed by any such rule or order, a Drilling Unit shall be the drilling unit as established by the pattern of drilling in the Contract Area unless fixed by express agreement of the Drilling Parties.

H. The term "Drillsite" shall mean the Oil and Gas Lease or Oil and Gas Interest on which a proposed well is to be located. When used in connection with a Horizontal Well, the term "Drillsite" shall mean (i) the surface hole location, and (ii) the Oil and Gas Leases or Oil and Gas Interests within the Drilling Unit on or under which the wellbore, including the Lateral, is located.

I. The term "Horizontal Rig Move-On Period" shall mean the number of days after the date of rig release of a Spudder Rig until the date a rig capable of drilling a Horizontal Well to its Total Measured Depth has moved on to location.

J. The term "Horizontal Well" shall have the same meaning as the term defined by the state regulatory agency having jurisdiction over the Contract Area, in the absence of which the term shall mean a well containing one or more Laterals which are drilled, Completed or Recompleted in a manner in which the horizontal component of the Completion interval (1) extends at least one hundred feet (100') in the objective formation(s) and (2) exceeds the vertical component of the Completion interval in the objective formation(s).

K. The term "Initial Well" shall mean the well required to be drilled by the parties hereto as provided in Article VI.A.

L. The term "Lateral" shall mean that portion of a wellbore that deviates from approximate vertical orientation to approximate horizontal orientation and all wellbore beyond such deviation to Total Measured Depth.

M. The term "Non-Consent Well" shall mean a well in which less than all parties have conducted an operation as provided in Article VI.B.2.

N. The terms "Non-Drilling Party" and "Non-Consenting Party" shall mean a party who elects not to participate in a proposed operation.

O. The term "Oil and Gas" shall mean oil, gas, casinghead gas, gas condensate, and/or all other liquid or gaseous hydrocarbons and other marketable substances produced therewith, unless an intent to limit the inclusiveness of this term is specifically stated.

P. The term "Oil and Gas Interests" or "Interests" shall mean unleased fee and mineral interests in Oil and Gas in tracts of land lying within the Contract Area which are owned by parties to this agreement.

Q. The terms "Oil and Gas Lease," "Lease" and "Leasehold" shall mean the oil and gas leases or interests therein covering tracts of land lying within the Contract Area which are owned by the parties to this agreement.

R. The term "Plug Back" shall mean a single operation whereby a deeper Zone is abandoned in order to attempt a Completion in a shallower Zone. When used in connection with a Horizontal Well, the term "Plug Back" shall mean an operation to test or Complete the well at a stratigraphically shallower Zone in which the operation has been or is being Completed and which is not in an existing Lateral.

S. The term "Recompletion" or "Recomplete" shall mean an operation whereby a Completion in one Zone is abandoned in order to attempt a Completion in a different Zone within the existing wellbore.

T. The term "Rework" shall mean an operation conducted in the wellbore of a well after it is Completed to secure, restore, or improve production in a Zone which is currently open to production in the wellbore. Such operations include, but are not limited to, well stimulation operations but exclude any routine repair or maintenance work or drilling, Sidetracking, Deepening, Completing, ReCompleting, or Plugging Back of a well.

U. The term "Sidetrack" shall mean the directional control and intentional deviation of a well from vertical so as to change the bottom hole location unless done to straighten the hole or drill around junk in the hole to overcome other mechanical difficulties. When used in connection with a Horizontal Well, the term "Sidetrack" shall mean the directional control and deviation of a well outside the existing Lateral(s) so as to change the Zone or the direction of a Lateral from the approved proposal unless done to straighten the hole or drill around junk in the hole or to overcome other mechanical difficulties.

V. The term "Spudder Rig" shall mean a drilling rig utilized only for drilling all or part of the vertical component of a Horizontal Well; a rig used only for setting conductor pipe shall not be considered a Spudder Rig.

W. The term "Terminus" shall have the same meaning as the term defined by the state regulatory agency having jurisdiction

1 over the Contract Area, in the absence of which the term shall mean the furthest point drilled in the Lateral.

2 X. The term "Total Measured Depth," when used in connection with a Horizontal Well, shall mean the distance from the surface of  
3 the ground to the Terminus, as measured along and including the vertical component of the well and Lateral(s). When the proposed  
4 operation(s) is the drilling of, or operation on, a Horizontal Well, the terms "depth" or "total depth" wherever used in this agreement shall be  
5 deemed to read "Total Measured Depth" insofar as it applies to such well.

6 Y. The term "Vertical Well" shall mean a well drilled, Completed or Recompleted other than a Horizontal Well.

7 Z. The term "Zone" shall mean a stratum of earth containing or thought to contain a common accumulation of Oil and Gas  
8 separately producible from any other common accumulation of Oil and Gas.

9 Unless the context otherwise clearly indicates, words used in the singular include the plural, the word "person" includes  
10 natural and artificial persons, the plural includes the singular, and any gender includes the masculine, feminine, and neuter.

11 **ARTICLE II.**  
12 **EXHIBITS**

13 The following exhibits, as indicated below and attached hereto, are incorporated in and made a part hereof:

14 X A. Exhibit "A," shall also mean all sub-exhibits as appropriate, including Exhibits "A-1", "A-2", and "A-3", and shall include  
15 the following information:

- 16 (1) Description of lands subject to this agreement,
- 17 (2) Restrictions, if any, as to depths, formations, or substances,
- 18 (3) Parties to agreement with addresses and telephone numbers for notice purposes,
- 19 (4) Percentages or fractional interests of parties to this agreement,
- 20 (5) Oil and Gas Leases and/or Oil and Gas Interests subject to this agreement. (also included on Exhibit "A-2")
- 21 (Exhibit A-1) Plat of Contract Area
- 22 (Exhibit A-2) List of Contract Area Interests
- 23 (Exhibit A-3 List of Unlease Mineral Owners
- 24 (6) Burdens on production.
- 24 (7) **Addresses of parties for notice purposes (also included on Exhibit "A-3")**

25 X B. Exhibit "B," Form of Lease.

26 X C. Exhibit "C," Accounting Procedure.

27 X D. Exhibit "D," Insurance.

28 X E. Exhibit "E," Gas Balancing Agreement.

29 ~~\_\_\_\_\_~~ F. ~~Exhibit "F," Non-Discrimination and Certification of Non-Segregated Facilities.~~

30 ~~\_\_\_\_\_~~ G. ~~Exhibit "G," Tax Partnership.~~

31 If any provision of any exhibit, except Exhibits "E," ~~and "F" and "G,"~~ is inconsistent with any provision contained in the body of  
32 this agreement, the provisions in the body of this agreement shall prevail.

33 **ARTICLE III.**  
34 **INTERESTS OF PARTIES**

35 **A. Oil and Gas Interests:**

36 **or hereafter acquires**

37 If any party owns / an Oil and Gas Interest in the Contract Area, that Interest shall be treated for all purposes of this agreement  
38 and during the term hereof as if it were covered by the form of Oil and Gas Lease attached hereto as Exhibit "B," and the owner  
39 thereof shall be deemed to own both royalty interest in such lease and the interest of the lessee thereunder.

40 **B. Interests of Parties in Costs and Production:**

41 Unless changed by other provisions, all costs and liabilities incurred in operations under this agreement shall be borne and paid,  
42 and all equipment and materials acquired in operations on the Contract Area shall be owned, by the parties as their interests are set forth in  
43 Exhibit "A." In the same manner, the parties shall also own all production of Oil and Gas from the Contract Area subject, however, to the  
44 payment of royalties and other burdens on production as / ~~described hereafter.~~  
**subject to burdens of record.**

45 Regardless of which party has contributed any Oil and Gas Lease or Oil and Gas Interest on which royalty or other burdens may  
46 be payable and except as otherwise expressly provided in this agreement, each party shall pay or deliver, or cause to be paid or delivered,  
47 all burdens / on its share of the production from the Contract Area up to, but not in excess of, \_\_\_\_\_ and  
48 shall indemnify, defend and hold the other parties free from any liability therefor. Except as otherwise expressly provided in this agreement,  
49 if any party has contributed hereto any Lease or Interest which is burdened with any royalty, overriding royalty, production payment or  
50 other burden on production in excess of the amounts stipulated above, such party so burdened shall assume and alone bear all such excess  
51 obligations and shall indemnify, defend and hold the other parties hereto harmless from any and all claims attributable to such excess burden.  
52 However, so long as the Drilling Unit for the productive Zone(s) is identical with the Contract Area, each party shall pay or deliver, or cause  
53 to be paid or delivered, all burdens on production from the Contract Area due under the terms of the Oil and Gas Lease(s) which such party  
54 has contributed to this agreement, and shall indemnify, defend and hold the other parties free from any liability therefor.

55 No party shall ever be responsible, on a price basis higher than the price received by such party, to any other party's lessor or  
56 royalty owner, and if such other party's lessor or royalty owner should demand and receive settlement on a higher price basis, the party  
57 contributing the affected Lease shall bear the additional royalty burden attributable to such higher price.

58 Nothing contained in this Article III.B. shall be deemed an assignment or cross-assignment of interests covered hereby, and in  
59 the event two or more parties contribute to this agreement jointly owned Leases, the parties' undivided interests in said Leaseholds shall be  
60 deemed separate leasehold interests for the purposes of this agreement.

61 **C. Subsequently Created Interests:**

62 If any party has contributed hereto a Lease or Interest that is burdened with an assignment of production given as security for the  
63 payment of money, or if, after the date of this agreement, any party creates an overriding royalty, production payment, net profits interest,  
64 assignment of production or other burden payable out of production attributable to its working interest hereunder, such burden shall be  
65 deemed a "Subsequently Created Interest." Further, if any party has contributed hereto a Lease or Interest burdened with an overriding  
66 royalty, production payment, net profits interests, or other burden payable out of production created prior to the date of this agreement, and  
67 such burden / is not shown on Exhibit "A," such burden also shall be deemed a Subsequently Created Interest to the extent such burden  
68 causes the burdens on such party's Lease or Interest to exceed the amount stipulated in Article III.B. above.

69 The party whose interest is burdened with the Subsequently Created Interest (the "Burdened Party") shall assume and alone  
70 bear, pay and discharge the Subsequently Created Interest and shall indemnify, defend and hold harmless the other parties from and against  
71 any liability therefor. Further, if the Burdened Party fails to pay, when due, its share of expenses chargeable hereunder, all provisions of  
72 Article VII.B. shall be enforceable against the Subsequently Created Interest in the same manner as they are enforceable against the working  
interest of the Burdened Party. If the Burdened Party is required under this agreement to assign or relinquish to any other party, or parties,

all or a portion of its working interest and/or the production attributable thereto, said other party, or parties, shall receive said assignment and/or production free and clear of said Subsequently Created Interest, and the Burdened Party shall indemnify, defend and hold harmless said other party, or parties, from any and all claims and demands for payment asserted by owners of the Subsequently Created Interest.

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ARTICLE IV.

TITLES

A. Title Examination:

And Drilling Unit  
 Title examination shall be made on the Drillsite / of any proposed well prior to commencement of drilling operations and, if a on  
~~any portion of the Contract Area as deemed appropriate by Operator, majority in interest of the Drilling Parties so request or Operator so~~  
~~elects, title examination shall be made on the entire Drilling Unit, or~~  
~~maximum anticipated Drilling Unit, of the well.~~ The opinion will include the ownership of the working interest, minerals, royalty,  
 overriding royalty and production payments under the applicable Leases. Each party, <sup>other than an Unleased Mineral Owner</sup> contributing Leases and/or Oil and Gas Interests to be  
 included in the Drillsite or Drilling Unit, if appropriate, shall furnish to Operator all abstracts (including federal lease status reports), title  
 opinions, title papers and curative material in its possession free of charge. All such information not in the possession of or made available to  
 Operator by the parties, but necessary for the examination of the title, shall be obtained by Operator. Operator shall cause title to be examined  
 by attorneys on its staff or by outside attorneys. Copies of all title opinions shall be furnished to each Drilling Party. Costs incurred by  
 Operator in procuring abstracts, fees paid outside attorneys <sup>and other land consultants</sup> / for title examination (including preliminary, supplemental, shut-in royalty  
 opinions and division order title opinions <sup>and curative work</sup> / ) and other direct charges as provided in Exhibit "C" shall be borne by the Drilling Parties in the  
 proportion that the interest of each Drilling Party bears to the total interest of all Drilling Parties as such interests appear in Exhibit "A."  
 Operator shall make no charge for services rendered by its staff attorneys or other personnel in the performance of the above functions.

~~Each party / shall be responsible for / securing curative matter and pooling amendments or agreements required in connection with~~  
~~Leases or Oil and Gas Interests contributed by such party.~~ Operator shall be responsible for the preparation and recording of pooling  
 designations or declarations and communitization agreements as well as the conduct of hearings before governmental agencies for the  
 securing of spacing or pooling orders or any other orders necessary or appropriate to the conduct of operations hereunder. This shall not  
 prevent any party from appearing on its own behalf at such hearings. Costs incurred by Operator, including fees paid to outside attorneys,  
 which are associated with hearings before governmental agencies, and which costs are necessary and proper for the activities contemplated  
 under this agreement, shall be direct charges to the joint account and shall not be covered by the administrative overhead charges as provided  
 in Exhibit "C." Operator shall make no charge for services rendered by its staff attorneys or other personnel in the performance of the above  
 functions, **except as provided herein.**

No well shall be drilled on the Contract Area until after (1) the title to the Drillsite or Drilling Unit, if appropriate, has been  
 examined as above provided, and (2) the title has been approved by the examining attorney or title has been accepted by ~~all of the Drilling~~  
~~Parties in such well~~ **Operator.**

B. Loss or Failure of Title:

1. Failure of Title: Should any Oil and Gas Interest or Oil and Gas Lease be lost through failure of title, which results in a  
 reduction of interest from that shown on Exhibit "A," the party credited with contributing the affected Lease or Interest (including, if  
 applicable, a successor in interest to such party) shall have ninety (90) days from final determination of title failure to acquire a new lease  
 or other instrument curing the entirety of the title failure, which acquisition will not be subject to Article VIII.B., and failing to do so, this  
 agreement, nevertheless, shall continue in force as to all remaining Oil and Gas Leases and Interests; and,

(a) The party credited with contributing the Oil and Gas Lease or Interest affected by the title failure (including, if applicable,  
 a successor in interest to such party) shall bear alone the entire loss and it shall not be entitled to recover from Operator or the other parties  
 any development or operating costs which it may have previously paid or incurred, but there shall be no additional liability on its part to the  
 other parties hereto by reason of such title failure;

(b) There shall be no retroactive adjustment of expenses incurred or revenues received from the operation of the Lease or  
 Interest which has failed, but the interests of the parties contained on Exhibit "A" shall be revised on an acreage basis, as of the time it is  
 determined finally that title failure has occurred, so that the interest of the party whose Lease or Interest is affected by the title failure will  
 thereafter be reduced in the Contract Area by the amount of the Lease or Interest failed;

(c) If the proportionate interest of the other parties hereto in any producing well previously drilled on the Contract Area  
 is increased by reason of the title failure, the party who bore the costs incurred in connection with such well attributable to the Lease or  
 Interest which has failed shall receive the proceeds attributable to the increase in such interest (less costs and burdens attributable thereto)  
 until it has been reimbursed for unrecovered costs paid by it in connection with such well attributable to such failed Lease or Interest;

(d) Should any person not a party to this agreement, who is determined to be the owner of any Lease or Interest which has  
 failed, pay in any manner any part of the cost of operation, development, or equipment, such amount shall be paid to the party or parties  
 who bore the costs which are so refunded;

(e) Any liability to account to a person not a party to this agreement for prior production of Oil and Gas which arises by  
 reason of title failure shall be borne severally by each party, <sup>other than an Unleased Mineral Owner</sup> / (including a predecessor to a current party) who received production for which  
 such accounting is required based on the amount of such production received, and each such party shall severally indemnify, defend and  
 hold harmless all other parties hereto for any such liability to account;

(f) No charge shall be made to the joint account for legal expenses, fees or salaries in connection with the defense of the  
 Lease or Interest claimed to have failed, but if the party contributing such Lease or Interest hereto elects to defend its title it shall bear all  
 expenses in connection therewith; and

(g) If any party is given credit on Exhibit "A" to a Lease or Interest which is limited solely to ownership of an interest in the  
 wellbore of any well or wells and the production therefrom, such party's absence of interest in the remainder of the Contract Area shall be  
 considered a Failure of Title as to such remaining Contract Area unless that absence of interest is reflected on Exhibit "A."

~~2. Loss by Non-Payment or Erroneous Payment of Amount Due: If, through mistake or oversight, any rental, shut-in well~~  
~~payment, minimum royalty or royalty payment, or other payment necessary to maintain all or a portion of an Oil and Gas Lease or interest is~~  
~~not paid or is erroneously paid, and as a result a Lease or Interest terminates, there shall be no monetary liability against the party who failed~~  
~~to make such payment. Unless the party who failed to make the required payment secures a new Lease or Interest covering the same interest~~  
~~within ninety (90) days from the discovery of the failure to make proper payment, which acquisition will not be subject to Article VIII.B., the~~  
~~interests of the parties reflected on Exhibit "A" shall be revised on an acreage basis, effective as of the date of termination of the Lease or~~  
~~Interest involved, and the party who failed to make proper payment will no longer be credited with an interest in the Contract Area on account~~  
~~of ownership of the Lease or Interest which has terminated. If the party who failed to make the required payment shall not have been fully~~  
~~reimbursed, at the time of the loss, from the proceeds of the sale of Oil and Gas attributable to the lost Lease or Interest, calculated on an~~  
~~acreage basis, for the development and operating costs previously paid on account of such Lease or Interest, it shall be reimbursed for~~  
~~unrecovered actual costs previously paid by it (but not for its share of the cost of any dry hole previously drilled or wells previously~~  
~~abandoned) from so much of the following as is necessary to effect reimbursement:~~

~~(a) Proceeds of Oil and Gas produced prior to termination of the Lease or Interest, less operating expenses and lease~~  
~~burdens chargeable hereunder to the person who failed to make payment, previously accrued to the credit of the lost Lease or Interest, on an~~

1 acreage basis, up to the amount of unrecovered costs;

2 ~~\_\_\_\_\_ (b) Proceeds of Oil and Gas, less operating expenses and lease burdens chargeable hereunder to the person who failed~~  
3 ~~to make payment, up to the amount of unrecovered costs attributable to that portion of Oil and Gas thereafter produced and marketed~~  
4 ~~(excluding production from any wells thereafter drilled) which, in the absence of such Lease or Interest termination, would be attributable to~~  
5 ~~the lost Lease or Interest on an acreage basis and which as a result of such Lease or Interest termination is credited to other parties, the~~  
6 ~~proceeds of said portion of the Oil and Gas to be contributed by the other parties in proportion to their respective interests reflected on Exhibit~~  
7 ~~"A"; and,~~

8 ~~\_\_\_\_\_ (c) Any monies, up to the amount of unrecovered costs, that may be paid by any party who is, or becomes, the owner of the~~  
9 ~~Lease or Interest lost, for the privilege of participating in the Contract Area or becoming a party to this agreement.~~

10 3. Other Losses: All losses of Leases or Interests committed to this agreement, other than those set forth in Articles  
11 IV.B.1. and IV.B.2. above, shall be joint losses and shall be borne by all parties in proportion to their interests shown on Exhibit "A." This  
12 shall include but not be limited to the loss of any Lease or Interest through failure to develop or because express or implied covenants have  
13 not been performed (other than performance which requires only the payment of money), and the loss of any Lease by expiration at the end of  
14 its primary term if it is not renewed or extended. There shall be no readjustment of interests in the remaining portion of the Contract Area on  
15 account of any joint loss.

16 4. Curing Title: In the event of a Failure of Title under Article IV.B.1. or a loss of title under Article IV.B.2. above, any Lease or  
17 Interest acquired by any party hereto (other than the party whose interest has failed or was lost) during the ninety (90) day period  
18 provided by Article IV.B.1. and Article IV.B.2. above covering all or a portion of the interest that has failed or was lost shall be offered at  
19 cost to the party whose interest has failed or was lost, and the provisions of Article VIII.B. shall not apply to such acquisition.

20 **ARTICLE V.**  
21 **OPERATOR**

22 **A. Designation and Responsibilities of Operator:**

23 PDC Energy, Inc. shall be the Operator of the Contract Area, and shall conduct and direct  
24 and have full control of all operations on the Contract Area as permitted and required by, and within the limits of this agreement. In its  
25 performance of services hereunder for the Non-Operators, Operator shall be an independent contractor not subject to the control or direction  
26 of the Non-Operators except as to the type of operation to be undertaken in accordance with the election procedures contained in this  
27 agreement. Operator shall not be deemed, or hold itself out as, the agent of the Non-Operators with authority to bind them to any obligation or  
28 liability assumed or incurred by Operator as to any third party. Operator shall conduct its activities under this agreement as a reasonably  
29 prudent operator, in a good and workmanlike manner, with due diligence and dispatch, in accordance with good oilfield practice, and in  
30 compliance with applicable law and regulation, but in no event shall it have any liability as Operator to the other parties for losses sustained or  
31 liabilities incurred except such as may result from gross negligence or willful misconduct.

32 **B. Resignation or Removal of Operator and Selection of Successor:**

33 1. Resignation or Removal of Operator: Operator may resign at any time by giving written notice thereof to Non-Operators.  
34 If Operator terminates its legal existence, no longer owns an interest hereunder in the Contract Area, or is no longer capable of serving as  
35 Operator, Operator shall be deemed to have resigned without any action by Non-Operators, except the selection of a successor. Operator may  
36 be removed only for good cause by the affirmative vote of Non-Operators owning a majority interest based on ownership as shown on  
37 Exhibit "A" remaining after excluding the voting interest of Operator; such vote shall not be deemed effective until a written notice has been  
38 delivered to the Operator by a Non-Operator detailing the alleged default and Operator has failed to cure the default within thirty (30) days  
39 from its receipt of the notice or, if the default concerns an operation then being conducted, within forty-eight (48) hours of its receipt of the  
40 notice. For purposes hereof, "good cause" shall mean not only gross negligence or willful misconduct but also the material breach of or  
41 inability to meet the standards of operation contained in Article V.A. or material failure or inability to perform its obligations under this  
42 agreement.

43 Subject to Article VII.D.1., such resignation or removal shall not become effective until 7:00 o'clock A.M. on the first day of the  
44 calendar month following the expiration of ninety (90) days after the giving of notice of resignation by Operator or action by the Non-  
45 Operators to remove Operator, unless a successor Operator has been selected and assumes the duties of Operator at an earlier date. Operator,  
46 after effective date of resignation or removal, shall be bound by the terms hereof as a Non-Operator. A change of a corporate name or  
47 structure of Operator or transfer of Operator's interest to ~~an affiliate or~~ any single subsidiary, parent or successor corporation shall not be the basis for  
48 removal of Operator.

49 2. Selection of Successor Operator: Upon the resignation or removal of Operator under any provision of this agreement, a  
50 successor Operator shall be selected by the parties. The successor Operator shall be selected from the parties owning an interest in the  
51 Contract Area at the time such successor Operator is selected. The successor Operator shall be selected by the affirmative vote of two (2) or  
52 more parties owning a majority interest based on ownership as shown on Exhibit "A"; provided, however, if an Operator which has been  
53 removed or is deemed to have resigned ~~but continues to own an interest in the Contract Area~~ / fails to vote or votes only to succeed itself, the successor Operator shall be selected by the affirmative  
54 vote of the party or parties owning a majority interest based on ownership as shown on Exhibit "A" remaining after excluding the voting, **and**  
55 **provided that the requirement for two or more parties will not apply in the event that two or less parties are entitled to vote**  
56 interest of the Operator that was removed or resigned / . The former Operator shall promptly deliver to the successor Operator all records and  
57 data relating to the operations conducted by the former Operator to the extent such records and data are not already in the possession of the  
58 successor operator. Any cost of obtaining or copying the former Operator's records and data shall be charged to the joint account. **It is**  
59 **expressly understood and agreed that, in the event Operator conveys all of its interest in the Contract Area, the party that acquires**  
60 **such interest shall be entitled to vote with that interest for any party, including itself, as Successor Operator.**

61 3. Effect of Bankruptcy: If Operator becomes insolvent, bankrupt or is placed in receivership, it shall be deemed to have  
62 resigned without any action by Non-Operators, except the selection of a successor. If a petition for relief under the federal bankruptcy laws is  
63 filed by or against Operator, and the removal of Operator is prevented by the federal bankruptcy court, all Non-Operators and Operator shall  
64 comprise an interim operating committee to serve until Operator has elected to reject or assume this agreement pursuant to the Bankruptcy  
65 Code, and an election to reject this agreement by Operator as a debtor in possession, or by a trustee in bankruptcy, shall be deemed a  
66 resignation as Operator without any action by Non-Operators, except the selection of a successor. During the period of time the operating  
67 committee controls operations, all actions shall require the approval of two (2) or more parties owning a majority interest based on ownership  
68 as shown on Exhibit "A." In the event there are only two (2) parties to this agreement, during the period of time the operating committee  
69 controls operations, a third party acceptable to Operator, Non-Operator and the federal bankruptcy court shall be selected as a member of the  
70 operating committee, and all actions shall require the approval of two (2) members of the operating committee without regard for their interest  
71 in the Contract Area based on Exhibit "A."

72 **C. Employees and Contractors:**

The number of employees or contractors used by Operator in conducting operations hereunder, their selection, and the hours of labor and the compensation for services performed shall be determined Operator, and all such employees or contractors shall be the employees or contractors of Operator.

**D. Rights and Duties of Operator:**

1 **operations conducted** **conducted**  
 2 1. **Competitive Rates and Use of Affiliates:** All wells drilled / on the Contract Area shall be drilled / on a competitive contract basis  
 3 at the usual rates prevailing in the area. If it so desires, Operator may employ its own tools and equipment in the drilling of wells, but its  
 4 charges therefor shall not exceed the prevailing rates in the area and the rate of such charges shall be agreed upon by the parties in writing  
 5 before drilling operations are commenced, and such work shall be performed by Operator under the same terms and conditions as are  
 6 customary and usual in the area in contracts of independent contractors who are doing work of a similar nature. All work performed or  
 7 materials supplied by affiliates or related parties of Operator shall be performed or supplied at competitive rates, pursuant to written  
 8 agreement, and in accordance with customs and standards prevailing in the industry.

9 2. **Discharge of Joint Account Obligations:** Except as herein otherwise specifically provided, Operator shall promptly pay and  
 10 discharge expenses incurred in the development and operation of the Contract Area pursuant to this agreement and shall charge each of  
 11 the parties hereto with their respective proportionate shares upon the expense basis provided in Exhibit "C." Operator shall keep an accurate  
 12 record of the joint account hereunder, showing expenses incurred and charges and credits made and received.

13 3. **Protection from Liens:** Operator shall pay, or cause to be paid, as and when they become due and payable, all accounts of  
 14 contractors and suppliers and wages and salaries for services rendered or performed, and for materials supplied on, to or in respect of the  
 15 Contract Area or any operations for the joint account thereof, and shall keep the Contract Area free from liens and encumbrances resulting  
 16 therefrom except for those resulting from a bona fide dispute as to services rendered or materials supplied.

17 4. **Custody of Funds:** Operator shall hold for the account of the Non-Operators any funds of the Non-Operators advanced  
 18 or paid to the Operator, either for the conduct of operations hereunder or as a result of the sale of production from the Contract Area, and such  
 19 funds shall remain the funds of the Non-Operators on whose account they are advanced or paid until used for their intended purpose or  
 20 otherwise delivered to the Non-Operators or applied toward the payment of debts as provided in Article VII.B. Nothing in this paragraph shall  
 21 be construed to establish a fiduciary relationship between Operator and Non-Operators for any purpose other than to account for Non-  
 22 Operator funds as herein specifically provided. Nothing in this paragraph shall require the maintenance by Operator of separate accounts for  
 23 the funds of Non-Operators unless the parties otherwise specifically agree.

24 5. **Access to Contract Area and Records:** Operator shall, except as otherwise provided herein, **Consenting Party** permit each / **Non-Operator**  
 25 or its duly authorized representative, at the **Consenting Party** Non-Operator / 's sole risk and cost, full and free access at all reasonable times to all operations of  
 26 every kind and character being conducted for the joint account on the Contract Area and to the records of operations conducted thereon or  
 27 production therefrom, including Operator's books and records relating thereto / . Such access rights shall not be exercised in a manner  
 28 interfering with Operator's conduct of an operation hereunder and shall not obligate Operator to furnish any geologic or geophysical data of an  
 29 interpretive nature unless the cost of preparation of such interpretive data was charged to the joint account. Operator will furnish to each **Non**  
 30 production **Consenting Party** Operator / upon request copies of any and all reports and information obtained by Operator in connection with  
 31 including, without limitation, meter and chart reports, production purchaser statements, run tickets and monthly gauge reports, but excluding  
 32 purchase contracts and pricing information to the extent not applicable to the production of the **Consenting Party** Non-Operator / seeking the information. Any  
 33 audit of Operator's records relating to amounts expended and the appropriateness of such expenditures shall be conducted in accordance with  
 34 the audit protocol specified in Exhibit "C."

35 6. **Filing and Furnishing Governmental Reports:** Operator will file, and upon written request promptly furnish copies to  
 36 each requesting **Consenting Party** Non-Operator / not in default of its payment obligations, all operational notices, reports or applications required to be filed by  
 37 local, State, Federal or Indian agencies or authorities having jurisdiction over operations hereunder. Each Non-Operator shall provide to  
 38 Operator on a timely basis all information necessary to Operator to make such filings.

39 7. **Drilling and Testing Operations:** The following provisions shall apply to each well drilled hereunder, including but not  
 40 limited to the Initial Well: **See Article XVI.I.**

41 (a) Operator will promptly advise **Consenting Parties** Non-Operators / of the date on which the well is spudded, or the date on which  
 42 drilling operations are commenced.

43 (b) Operator will send to **Consenting Parties** Non-Operators / such reports, test results and notices regarding the progress of operations on the well  
 44 as the **Consenting Party** Non-Operators / shall reasonably request, including, but not limited to, daily drilling reports, completion reports, and well logs.

45 (c) Operator shall adequately **evaluate** test / all Zones encountered which may reasonably be expected to be capable of producing Oil  
 46 and Gas in paying quantities as a result of examination of the electric log or any other logs or cores or tests conducted hereunder.

47 8. **Cost Estimates:** Upon request of any Consenting Party, Operator shall furnish estimates of current and cumulative costs  
 48 incurred for the joint account at reasonable intervals during the conduct of any operation pursuant to this agreement. Operator shall not be  
 49 held liable for errors in such estimates so long as the estimates are made in good faith.

50 9. **Insurance:** At all times while operations are conducted hereunder, Operator shall comply with the workers compensation law  
 51 of the state where the operations are being conducted; provided, however, that Operator may be a self- insurer for liability under said  
 52 compensation laws in which event the only charge that shall be made to the joint account shall be as provided in Exhibit "C." Operator  
 53 shall also carry or provide insurance for the benefit of the joint account of the parties as outlined in Exhibit "D" attached hereto and made a  
 54 part hereof. Operator shall require all contractors engaged in work on or for the Contract Area to comply with the workers compensation  
 55 law of the state where the operations are being conducted and to maintain such other insurance as Operator may require.

56 In the event automobile liability insurance is specified in said Exhibit "D," or subsequently receives the approval of the  
 57 parties, no direct charge shall be made by Operator for premiums paid for such insurance for Operator's automotive equipment.

**ARTICLE VI.**  
**DRILLING AND DEVELOPMENT**

**A. Initial Well:**

62 Operator anticipates commencing the drilling of the initial well within (1) year of the effective date of a final non-appealable unitization order  
 63 and shall thereafter continue the drilling of the well with due diligence to a depth sufficient in the Operator's reasonable opinion, to  
 64 adequately test the Utica/Point Pleasant formation with the Initial Well.

65 In the event a Party elects not to participate (a Non-Consenting Party) in the Initial Well proposed in the Contract Area  
 66 pursuant to Article VI.A., upon the timely commencement of actual drilling operations on such Well, such Non-Consenting Party  
 67 shall be deemed to have relinquished to the Consenting Parties, and the Consenting Parties shall own and be entitled to receive, in  
 68 proportion to their respective interests, all of such Non-Consenting Party's interest in the well and share of production therefrom  
 69 until the proceeds of the sale of such share, calculated at the well, or market value thereof if such share is not sold, (after deducting  
 70 production taxes, excise taxes, royalty, overriding royalty and other interests not excepted by Article III.D. payable out of or  
 71 measured by the production from such well accruing with respect to such interest until it reverts) shall equal the total of the  
 72 following: (a) 300% of such Non-Consenting Party's share of the cost of any newly acquired surface equipment beyond the  
 wellhead connections (including, but not limited to, stock tanks, separators, treaters, pumping equipment and piping), plus 300%

1 of such Non-Consenting Party's share of the cost of operation of the well commencing with first production and continuing until  
2 such Non-Consenting Party's relinquished interest shall revert to it under other provisions of this Article, it being agreed that such  
3 Non-Consenting Party's share of such costs and equipment will be that interest which would have been chargeable to such Non-  
4 Consenting Party had it participated in the well from the beginning of the operations; and (b) 300% of that portion of the costs and  
5 expenses of drilling, testing and completing, after deducting any cash contributions received under Article III.C., and 300% of that  
6 portion of the cost of newly acquired equipment in the well (to and including wellhead connections), which would have been  
7 chargeable to such Non-Consenting Party if it had participated therein.

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12 ~~and shall thereafter continue the drilling of the well (horizontally if a Horizontal Well) with due diligence to~~  
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 2 ~~The drilling of the Initial Well and the participation therein by all parties~~ <sup>other than an Unleased Mineral Owner,</sup> ~~is obligatory, subject to Article VI.C.1. as to participation in~~  
 3 ~~Completion operations and Article VI.F. as to termination of operations and Article XI as to occurrence of force majeure.~~

4 **B. Subsequent Operations:**

5 1. **Proposed Operations:** If any party <sup>, except an Unleased Mineral Owner,</sup> hereto should desire to drill any well on the Contract Area other than the Initial Well, or if  
 6 any party should desire to Rework, Sidetrack, Deepen, Recomplete or Plug Back a dry hole or a well no longer capable of producing in paying  
 7 paying quantities in which such party has not otherwise relinquished its interest in the proposed objective Zone under this agreement, the  
 8 party desiring to drill, Rework, Sidetrack, Deepen, Recomplete or Plug Back such a well shall give written notice of the proposed operation to  
 9 the parties who have not otherwise relinquished their interest in such objective Zone under this agreement (and to all other parties in the  
 10 case of a proposal for Sidetracking or Deepening as to a Vertical Well), specifying the work to be performed, the location, proposed depth,  
 11 objective Zone and the estimated cost of the operation as outlined in an AFE. A proposal for the drilling of or other operations for a  
 12 Horizontal Well shall: (1) state that the proposed operation is a Horizontal Well operation; (2) include drilling and Completion plans  
 13 specifying the proposed: (i) Total Measured Depth(s), (ii) surface hole location(s), (iii) Terminus/Termini, (iv) Displacement(s),  
 14 (v) utilization and scheduling of rig(s) (Spudder Rig, drilling and Completion), and (vi) stimulation operations, staging and sizing; and (3)  
 15 include estimated drilling and Completion costs as set forth in an AFE. The parties to whom such a notice is delivered shall have thirty (30)  
 16 days after receipt of the notice within which to notify the party proposing to do the work whether they elect to participate in the cost of the  
 17 proposed operation. If a drilling rig is on location, notice of a proposal to Rework, Sidetrack, Recomplete, Plug Back or Deepen may be  
 18 given by telephone, <sup>email, or facsimile</sup> / and the response period shall be limited to forty-eight (48) hours, <sup>inclusive</sup> / ~~exclusive~~ of Saturday, Sunday and legal holidays.  
 19 Failure of a party to whom such notice is delivered to reply within the period above fixed shall constitute an election by that party not to  
 20 participate in the cost of the proposed operation. Any proposal by a party to conduct an operation conflicting with the operation initially  
 21 proposed shall be delivered to all parties within the time and in the manner provided in Article VI.B.6. **No Party may elect to participate in**  
 22 **any well proposed pursuant to the Agreement with less than its full and undivided working interest in the Contract Area.**

23 If all parties to whom such notice is delivered elect to participate in such a proposed operation, the parties shall be contractually  
 24 committed to participate therein provided such operations are commenced within the time period hereafter set forth, and Operator shall, no  
 25 later than ~~ninety (90)~~ <sup>one hundred eighty (180)</sup> / days after expiration of the notice period of thirty (30) days (or as promptly as practicable after the expiration of the  
 26 forty-eight (48) hour period when a drilling rig is on location, as the case may be), actually commence the proposed operation and thereafter  
 27 complete it with due diligence at the risk and expense of the parties participating therein; provided, however, said commencement date may  
 28 be extended upon written notice of same by Operator to the other parties, for a period of up to thirty (30) additional days if, in the sole  
 29 opinion of Operator, such additional time is reasonably necessary to obtain permits from governmental authorities, surface rights (including  
 30 rights-of-way) or appropriate drilling equipment, or to complete title examination or curative matter required for title approval or  
 31 acceptance. If the actual operation has not been commenced within the time provided (including any extension thereof as specifically  
 32 permitted herein or in the force majeure provisions of Article XI) and if any party hereto still desires to conduct said operation, written  
 33 notice proposing same must be resubmitted to the other parties in accordance herewith as if no prior proposal had been made. Those parties  
 34 that did not participate in the drilling of a well for which a proposal to Deepen or Sidetrack is made hereunder shall, if such parties desire to  
 35 participate in the proposed Deepening or Sidetracking operation, reimburse the Drilling Parties in accordance with Article VI.B.4. in the  
 36 event of a Deepening operation and in accordance with Article VI.B.5. in the event of a Sidetracking operation.

37 2. **Operations by Less Than All Parties: See Article XVI.T**

38 (a) **Determination of Participation.** If any party to whom such notice is delivered as provided in Article VI.B.1. or VI.C.1.  
 39 (Option No. 2) elects not to participate in the proposed operation, then, in order to be entitled to the benefits of this Article, the party or  
 40 parties giving the notice and such other parties as shall elect to participate in the operation shall, no later than ~~ninety (90)~~ <sup>one hundred eighty (180)</sup> / days after the  
 41 expiration of the notice period of thirty (30) days (or as promptly as practicable after the expiration of the forty-eight (48) hour period when  
 42 a drilling rig is on location, as the case may be) actually commence the proposed operation and complete it with due diligence. Operator  
 43 shall perform all work for the account of the Consenting Parties; provided, however, if no drilling rig or other equipment is on location, and  
 44 if Operator is a Non-Consenting Party, the Consenting Parties shall either: (i) request Operator to perform the work required by such  
 45 proposed operation for the account of the Consenting Parties, or (ii) designate one of the Consenting Parties as Operator to perform such  
 46 work. The rights and duties granted to and imposed upon the Operator under this agreement are granted to and imposed upon the party  
 47 designated as Operator for an operation in which the original Operator is a Non-Consenting Party. Consenting Parties, when conducting  
 48 operations on the Contract Area pursuant to this Article VI.B.2., shall comply with all terms and conditions of this agreement.

49 If less than all parties approve any proposed operation, the proposing party, immediately after the expiration of the applicable  
 50 notice period, shall advise all Parties of the total interest of the parties approving such operation and its recommendation as to whether the  
 51 Consenting Parties should proceed with the operation as proposed. Each Consenting Party, within forty-eight (48) hours (exclusive of  
 52 Saturday, Sunday, and legal holidays) after delivery of such notice, shall advise the proposing party of its desire to (i) limit participation to  
 53 such party's interest as shown on Exhibit "A" or (ii) carry only its proportionate part (determined by dividing such party's interest in the  
 54 Contract Area by the interests of all Consenting Parties in the Contract Area) of Non-Consenting Parties' interests, or (iii) carry its  
 55 proportionate part (determined as provided in (ii)) of Non-Consenting Parties' interests together with all or a portion of its proportionate  
 56 part of any Non-Consenting Parties' interests that any Consenting Party did not elect to take. Any interest of Non-Consenting Parties that is  
 57 not carried by a Consenting Party shall be deemed to be carried by the party proposing the operation if such party does not withdraw its  
 58 proposal. Failure to advise the proposing party <sup>email or facsimile,</sup> within the time required shall be deemed an election under (i). In the event a drilling rig is  
 59 on location, notice may be given by telephone, / and the time permitted for such a response shall not exceed a total of forty-eight (48) hours  
 60 (exclusive of Saturday, Sunday and legal holidays). The proposing party, at its election, may withdraw such proposal if there is less than  
 61 100% participation and shall notify all parties of such decision within ten (10) days, or within twenty-four (24) hours if a drilling rig is on  
 62 location, following expiration of the applicable response period. If 100% subscription to the proposed operation is obtained, the proposing  
 63 party shall promptly notify the Consenting Parties of their proportionate interests in the operation and the party serving as Operator shall  
 64 commence such operation within the period provided in Article VI.B.1., subject to the same extension right as provided therein.

65 (b) **Relinquishment of Interest for Non-Participation.** The entire cost and risk of conducting such operations shall be borne by  
 66 the Consenting Parties in the proportions they have elected to bear same under the terms of the preceding paragraph. Consenting Parties  
 67 shall keep the leasehold estates involved in such operations free and clear of all liens and encumbrances of every kind created by or arising  
 68 from the operations of the Consenting Parties. If such an operation results in a dry hole, then subject to Articles VI.B.6. and VI.E.3., the  
 69 Consenting Parties shall plug and abandon the well and restore the surface location at their sole cost, risk and expense; provided, however,  
 70 that those Non Consenting Parties that participated in the drilling, Deepening or Sidetracking of the well shall remain liable for, and shall  
 71 pay, their proportionate shares of the cost of plugging and abandoning the well and restoring the surface location insofar only as those costs  
 72 were not increased by the subsequent operations of the Consenting Parties. If any well drilled, Reworked, Sidetracked, Deepened,  
 Recompleted or Plugged Back under the provisions of this Article results in a well capable of producing Oil and/or Gas in paying

1 quantities, the Consenting Parties shall Complete and equip the well to produce at their sole cost and risk, and the well shall then be turned  
 2 over to Operator (if the Operator did not conduct the operation) and shall be operated by it at the expense and for the account of the  
 3 Consenting Parties. Upon commencement of operations for the drilling, Reworking, Sidetracking, Recompleting, Deepening or Plugging  
 4 Back of any such well by Consenting Parties in accordance with the provisions of this Article, each Non-Consenting Party shall be deemed  
 5 to have relinquished to Consenting Parties, and the Consenting Parties shall own and be entitled to receive, in proportion to their respective  
 6 interests, all of such Non-Consenting Party's interest in the well and share of production therefrom or, in the case of a Reworking,  
 7 Sidetracking, Deepening, Recompleting or Plugging Back, ~~or a Completion pursuant to Article VI.C.1. Option No. 2,~~ all of such Non-  
 8 Consenting Party's interest in the production obtained from the operation in which the Non-Consenting Party did not elect to participate.  
 9 Such relinquishment shall be effective until the proceeds of the sale of such share, calculated at the well,  
 10 (after deducting applicable ad valorem, production, severance, and excise taxes, royalty, overriding royalty and other  
 11 interests not excepted by Article III.C. payable out of or measured by the production from such well accruing with respect to such interest  
 12 until it reverts), shall equal the total of the following:

13 (i) 200 % of each such Non-Consenting Party's share of the cost of any newly acquired surface equipment beyond the  
 14 wellhead connections (including but not limited to stock tanks, separators, treaters, pumping equipment and piping), plus 100% of each  
 15 such Non-Consenting Party's share of the cost of operation of the well commencing with first production and continuing until each such  
 16 Non-Consenting Party's relinquished interest shall revert to it under other provisions of this Article, it being agreed that each Non-  
 17 Consenting Party's share of such costs and equipment will be that interest which would have been chargeable to such Non-Consenting Party  
 18 had it participated in the well from the beginning of the operations; and

19 (ii) 200 % of (a) that portion of the costs and expenses of drilling, Reworking, Sidetracking, Deepening, Plugging  
 20 Back, testing, Completing, and Recompleting, after deducting any cash contributions received under Article VIII.C., and of (b) that portion  
 21 of the cost of newly acquired equipment in the well (to and including the wellhead connections), which would have been chargeable to such  
 22 Non-Consenting Party if it had participated therein.

23 Notwithstanding anything to the contrary in this Article VI.B., if the well does not reach the deepest objective Zone described in  
 24 the notice proposing the well for reasons other than the encountering of granite or practically impenetrable substance or other condition in  
 25 the hole rendering further operations impracticable, Operator shall give notice thereof to each Non-Consenting Party who submitted or  
 26 voted for an alternative proposal under Article VI.B.6. to drill the well to a shallower Zone than the deepest objective Zone proposed in the  
 27 notice under which the well was drilled, and each such Non-Consenting Party shall have the option to participate in the initial proposed  
 28 Completion of the well by paying its share of the cost of drilling the well to its actual depth, calculated in the manner provided in Article  
 29 VI.B.4. (a). If any such Non-Consenting Party does not elect to participate in the first Completion proposed for such well, the  
 30 relinquishment provisions of this Article VI.B.2. (b) shall apply to such party's interest.

31 (c) Reworking, Recompleting or Plugging Back. An election not to participate in the drilling, Sidetracking or Deepening of a  
 32 well shall be deemed an election not to participate in any Reworking or Plugging Back operation proposed in such a well, or portion  
 33 thereof, to which the initial non-consent election applied that is conducted at any time prior to full recovery by the Consenting Parties of the  
 34 Non-Consenting Party's recoupment amount. Similarly, an election not to participate in the Completing or Recompleting of a well shall be  
 35 deemed an election not to participate in any Reworking operation proposed in such a well, or portion thereof, to which the initial non-  
 36 consent election applied that is conducted at any time prior to full recovery by the Consenting Parties of the Non-Consenting Party's  
 37 recoupment amount. Any such Reworking, Recompleting or Plugging Back operation conducted during the recoupment period shall be  
 38 deemed part of the cost of operation of said well and there shall be added to the sums to be recouped by the Consenting Parties 200 %  
 39 of that portion of the costs of the Reworking, Recompleting or Plugging Back operation which would have been chargeable to such Non-  
 40 Consenting Party had it participated therein. If such a Reworking, Recompleting or Plugging Back operation is proposed during such  
 41 recoupment period, the provisions of this Article VI.B. shall be applicable as between said Consenting Parties in said well.

42 (d) Recoupment Matters. During the period of time Consenting Parties are entitled to receive Non-Consenting Party's share of  
 43 production, or the proceeds therefrom, Consenting Parties shall be responsible for the payment of all ad valorem, production, severance,  
 44 excise, gathering and other taxes, and all royalty, overriding royalty and other burdens applicable to Non-Consenting Party's share of  
 45 production not excepted by Article III.C.

46 In the case of any Reworking, Sidetracking, Plugging Back, Recompleting or Deepening operation, the Consenting Parties shall  
 47 be permitted to use, free of cost, all casing, tubing and other equipment in the well, but the ownership of all such equipment shall remain  
 48 unchanged; and upon abandonment of a well after such Reworking, Sidetracking, Plugging Back, Recompleting or Deepening, the  
 49 Consenting Parties shall account for all such equipment to the owners thereof, with each party receiving its proportionate part in kind or in  
 50 value, less cost of salvage.

51 Within ~~ninety (90)~~ one hundred eighty (180) days after the completion of any operation under this Article, the party conducting the operations for the  
 52 Consenting Parties shall furnish each Non-Consenting Party with an inventory of the equipment in and connected to the well, and an  
 53 itemized statement of the cost of drilling, Sidetracking, Deepening, Plugging Back, testing, Completing, Recompleting, and equipping the  
 54 well for production; or, at its option, the operating party, in lieu of an itemized statement of such costs of operation, may submit a detailed  
 55 statement of monthly billings. Each ~~month~~ quarter thereafter, during the time the Consenting Parties are being reimbursed as provided above, the  
 56 party conducting the operations for the Consenting Parties shall furnish the Non-Consenting Parties with an itemized statement of all costs  
 57 and liabilities incurred in the operation of the well, together with a statement of the quantity of Oil and Gas produced from it and the  
 58 amount of proceeds realized from the sale of the well's working interest production during the preceding ~~month~~ quarter. In determining the quantity  
 59 of Oil and Gas produced during any ~~month~~ quarter, Consenting Parties shall use industry accepted methods such as but not limited to metering or  
 60 periodic well tests. Any amount realized from the sale or other disposition of equipment newly acquired in connection with any such  
 61 operation which would have been owned by a Non-Consenting Party had it participated therein shall be credited against the total unreturned  
 62 costs of the work done and of the equipment purchased in determining when the interest of such Non-Consenting Party shall revert to it as  
 63 above provided; and if there is a credit balance, it shall be paid to such Non-Consenting Party.

64 If and when the Consenting Parties recover from a Non-Consenting Party's relinquished interest the amounts provided for above,  
 65 the relinquished interests of such Non-Consenting Party shall automatically revert to it as of 7:00 a.m. on the day following the day on  
 66 which such recoupment occurs, and, from and after such reversion, such Non-Consenting Party shall own the same interest in such well, the  
 67 material and equipment in or pertaining thereto, and the production therefrom as such Non-Consenting Party would have been entitled to  
 68 had it participated in the drilling, Sidetracking, Reworking, Deepening, Recompleting or Plugging Back of said well. Thereafter, such Non-  
 69 Consenting Party shall be charged with and shall pay its proportionate part of the further costs of the operation of said well in accordance  
 70 with the terms of this agreement and Exhibit "C" attached hereto.

71 3. Stand-By Costs: When a well which has been drilled or Deepened has reached its authorized depth and all tests have been  
 72 completed and the results thereof furnished to the parties, or when operations on the well have been otherwise terminated pursuant to

1 Article VI.F., stand-by costs incurred pending response to a party's notice proposing a Reworking, Sidetracking, Deepening, Recompleting,  
 2 Plugging Back or Completing operation in such a well (including the period required under Article VI.B.6. to resolve competing proposals)  
 3 shall be charged and borne as part of the drilling or Deepening operation just completed. Stand-by costs subsequent to all parties  
 4 responding, or expiration of the response time permitted, whichever first occurs, and prior to agreement as to the participating interests of  
 5 all Consenting Parties pursuant to the terms of the second grammatical paragraph of Article VI.B.2. (a), shall be charged to and borne as  
 6 part of the proposed operation, but if the proposal is subsequently withdrawn because of insufficient participation, such stand-by costs shall  
 7 be allocated between the Consenting Parties in the proportion each Consenting Party's interest as shown on Exhibit "A" bears to the total  
 8 interest as shown on Exhibit "A" of all Consenting Parties.

9 In the event that notice for a Sidetracking operation is given while the drilling rig to be utilized is on location, any party  
 10 may request and receive up to five (5) additional days after expiration of the forty-eight hour response period specified in Article VI.B.1.  
 11 within which to respond by paying for all stand-by costs and other costs incurred during such extended response period; Operator may require  
 12 such party to pay the estimated stand-by time in advance as a condition to extending the response period. If more than one party elects to take  
 13 such additional time to respond to the notice, standby costs shall be allocated between the parties taking additional time to respond on a day  
 14 to-day basis in the proportion each electing party's interest as shown on Exhibit "A" bears to the total interest as shown on Exhibit "A" of all  
 15 the electing parties.

16 4. Deepening: If less than all parties elect to participate in a drilling, Sidetracking, or Deepening operation proposed  
 17 pursuant to Article VI.B.1., the interest relinquished by the Non-Consenting Parties to the Consenting Parties under Article VI.B.2. shall relate  
 18 only and be limited to the lesser of (i) the total depth actually drilled or (ii) the objective depth or Zone of which the parties were given notice  
 19 under Article VI.B.1. ("Initial Objective"). Such well shall not be Deepened beyond the Initial Objective without first complying with this  
 20 Article to afford the Non-Consenting Parties the opportunity to participate in the Deepening operation.

21 In the event any Consenting Party desires to drill or Deepen a Non-Consent Well to a depth below the Initial Objective,  
 22 such party shall give notice thereof, complying with the requirements of Article VI.B.1., to all parties (including Non-Consenting Parties).  
 23 Thereupon, Articles VI.B.1. and 2. shall apply and all parties receiving such notice shall have the right to participate or not participate in the  
 24 Deepening of such well pursuant to said Articles VI.B.1. and 2. If a Deepening operation is approved pursuant to such provisions, and if any  
 25 Non-Consenting Party elects to participate in the Deepening operation, such Non-Consenting party shall pay or make reimbursement (as the  
 26 case may be) of the following costs and expenses.

27 (a) If the proposal to Deepen is made prior to the Completion of such well as a well capable of producing in paying  
 28 quantities, such Non-Consenting Party shall pay (or reimburse Consenting Parties for, as the case may be) that share of costs and expenses  
 29 incurred in connection with the drilling of said well from the surface to the Initial Objective which Non-Consenting Party would have paid  
 30 had such Non-Consenting Party agreed to participate therein, plus the Non-Consenting Party's share of the cost of Deepening and of  
 31 participating in any further operations on the well in accordance with the other provisions of this Agreement; provided, however, all costs for  
 32 testing and Completion or attempted Completion of the well incurred by Consenting Parties prior to the point of actual operations to Deepen  
 33 beyond the Initial Objective shall be for the sole account of Consenting Parties.

34 (b) If the proposal is made for a Non-Consent Well that has been previously Completed as a well capable of producing  
 35 in paying quantities, but is no longer capable of producing in paying quantities, such Non-Consenting Party shall pay (or reimburse  
 36 Consenting Parties for, as the case may be) its proportionate share of all costs of drilling, Completing, and equipping said well from the  
 37 surface to the Initial Objective, calculated in the manner provided in paragraph (a) above, less those costs recouped by the Consenting Parties  
 38 from the sale of production from the well. The Non-Consenting Party shall also pay its proportionate share of all costs of re-entering said well.  
 39 The Non-Consenting Parties' proportionate part (based on the percentage of such well Non-Consenting Party would have owned had it  
 40 previously participated in such Non-Consent Well) of the costs of salvable materials and equipment remaining in the hole and salvable surface  
 41 equipment used in connection with such well shall be determined in accordance with Exhibit "C." If the Consenting Parties have recouped the  
 42 cost of drilling, Completing, and equipping the well at the time such Deepening operation is conducted, then a Non-Consenting Party may  
 43 participate in the Deepening of the well with no payment for costs incurred prior to re-entering the well for Deepening

44 The foregoing shall not imply a right of any Consenting Party to propose any Deepening for a Non-Consent Well prior  
 45 to the drilling of such well to its Initial Objective without the consent of the other Consenting Parties as provided in Article VI.F.

46 This Article VI.B.4 shall not apply to Deepening operations within an existing Lateral of a Horizontal Well.

47 5. Sidetracking: Any party having the right to participate in a proposed Sidetracking operation that does not own an  
 48 interest in the affected wellbore at the time of the notice shall, upon electing to participate, tender to the wellbore owners its proportionate  
 49 share (equal to its interest in the Sidetracking operation) of the value of that portion of the existing wellbore to be utilized as follows:

50 (a) If the proposal is for Sidetracking an existing dry hole, reimbursement shall be on the basis of the actual costs  
 51 incurred in the initial drilling of the well down to the depth at which the Sidetracking operation is initiated.

52 (b) If the proposal is for Sidetracking a well which has previously produced, reimbursement shall be on the basis of  
 53 such party's proportionate share of drilling and equipping costs incurred in the initial drilling of the well down to the depth at which the  
 54 Sidetracking operation is conducted, calculated in the manner described in Article VI.B.4(b) above. Such party's proportionate share of the  
 55 cost of the well's salvable materials and equipment down to the depth at which the Sidetracking operation is initiated shall be determined in  
 56 accordance with the provisions of Exhibit "C."

57 This Article VI.B.5, "Sidetracking," shall not apply to operations in an existing Lateral of a Horizontal Well. , other than an  
 58 Unleased Mineral Owner.

59 6. Order of Preference of Operations. Except as otherwise specifically provided in this agreement, if any party / desires to propose  
 60 the conduct of an operation that conflicts with a proposal that has been made by a party under this Article VI, such party shall have fifteen  
 61 (15) days from delivery of the initial proposal, in the case of a proposal to drill a well or to perform an operation on a well where no drilling  
 62 rig is on location, or twenty-four (24) hours, exclusive of Saturday, Sunday and legal holidays, from delivery of the initial proposal, if a  
 63 drilling rig is on location for the well on which such operation is to be conducted, to deliver to all parties entitled to participate in the proposed  
 64 operation such party's alternative proposal, such alternate proposal to contain the same information required to be included in the initial  
 65 proposal. Each party receiving such proposals shall elect by delivery of notice to Operator within five (5) days after expiration of the proposal  
 66 period, or within twenty-four (24) hours (exclusive of Saturday, Sunday and legal holidays) if a drilling rig is on location for the well that is  
 67 the subject of the proposals, to participate in one of the competing proposals. Any party not electing within the time required shall be deemed  
 68 not to have voted. The proposal receiving the vote of parties owning the largest aggregate percentage interest of the parties voting shall have  
 69 priority over all other competing proposals; in the case of a tie vote, the initial proposal shall prevail. Operator shall deliver notice of such  
 70 result to all parties entitled to participate in the operation within five (5) days after expiration of the election period (or within twenty-four (24)  
 71 hours, exclusive of Saturday, Sunday and legal holidays, if a drilling rig is on location). Each party shall then have two (2) days (or twenty  
 72 four (24) hours if a rig is on location) from receipt of such notice to elect by delivery of notice to Operator to participate in such operation or  
 to relinquish interest in the affected well pursuant to the provisions of Article VI.B.2.; failure by a party to deliver notice within such period

1 shall be deemed an election not to participate in the prevailing proposal.

2 7. Conformity to Spacing Pattern. Notwithstanding the provisions of this Article VI.B.2., it is agreed that no wells shall be  
3 proposed to be drilled to or Completed in or produced from a Zone from which a well located elsewhere on the Contract Area is producing,  
4 unless such well conforms to the then-existing well spacing pattern for such Zone / or such well has been approved as an exception to the then  
5 existing spacing pattern for such Zone by the appropriate regulatory agency.

6 8. Paying Wells. No party shall conduct any Reworking, Deepening, Plugging Back, Completion, Recompletion, or Sidetracking  
7 operation under this agreement with respect to any well then capable of producing in paying quantities except with the consent of all parties  
8 that have not relinquished interests in the well at the time of such operation.

9 9. Spudder Rigs.

10 (a) Within Approved Horizontal Well proposals (i.e. proposals which include an approved AFE). If an approved Horizontal  
11 Well proposal provides that a Spudder Rig shall be utilized, and Operator desires to extend the proposed Horizontal Rig Move-On Period,  
12 Operator may obtain one or more extensions, each for a period of time not to exceed 90 days only upon notice and the affirmative vote  
13 of not less than 51 % in interest of the Consenting Parties to the drilling of the proposed well.

14 (b) Not Within Approved Horizontal Well proposals. If an approved Horizontal Well proposal does not provide that a Spudder  
15 Rig may be utilized, and Operator subsequently desires to utilize a Spudder Rig, Operator may utilize a Spudder Rig upon notice to the  
16 Drilling Parties (which notice shall include a Horizontal Rig Move-On Period) and the affirmative vote of not less than 51 % in  
17 interest of the Consenting Parties. Extension(s) of the Horizontal Rig Move-On Period may be requested by Operator in the same manner as  
18 provided in Article VI.B.9.(a) immediately above.

19 (c) Failure to meet Horizontal Rig Move-On Period. If a rig capable of drilling a Horizontal Well to its Total Measured Depth  
20 has not commenced operations within the Horizontal Rig Move-On Period, or any approved extension(s) thereof, unless 51 % in  
21 interest of the Consenting Parties agree to abandon the operation, Operator shall re-propose the well in the manner provided in Article VI.B  
22 of this agreement. Any party who was a Non-Consenting Party to the original drilling proposal shall be entitled to a new election. Costs of  
23 the operation, incurred both before and after such re-proposal, shall be borne as follows:

24 (1) Operator shall promptly reimburse all unused funds previously advanced for the drilling of the well to each party who  
25 advanced such unused funds;

26 (2) If the well's drilling operations are subsequently resumed, all costs, whether incurred before or after the re-proposal,  
27 shall be borne by the Consenting Parties to the re-proposed well; and, the Consenting Parties shall proportionately reimburse each party  
28 who consented to the original proposal but did not consent to the re-proposal such party's share of costs incurred prior to the re-proposal.

29 (3) If the well's drilling operations are not subsequently resumed pursuant to a re-proposal as herein provided, all costs  
30 incurred prior to the re-proposal, and all costs of abandonment, shall be borne and paid by the original Consenting Parties.

31 (d) Commencement of Operations. For purposes of Article VI.B., <sup>only</sup> and subject to the provisions of this sub-section 9, the date a  
32 Spudder Rig commences actual drilling operations shall be considered the commencement of drilling operations of the proposed well.

33 10. Multi-well Pads. If multiple Horizontal Wells are drilled or proposed to be drilled from a single pad or location, the costs of  
34 such pad or location shall be allocated, and/or reallocated as necessary , to the Consenting Parties of each of the wells thereon.

35 **C. Completion of Wells; Reworking and Plugging Back:**

36 1. Completion: Without the consent of all parties, no well shall be drilled, Deepened or Sidetracked, except any well drilled,  
37 Deepened or Sidetracked pursuant to the provisions of Article VI.B.2. of this agreement. Consent to the drilling, Deepening or Sidetracking  
38 shall include:

39  Option No. 1: All necessary expenditures for the drilling, Deepening or Sidetracking, testing, Completion and equipping  
40 of the Well, including tankage and/or surface facilities.

41  Option No. 2: All necessary expenditures for the drilling, Deepening or Sidetracking and testing of a Vertical Well.  
42 When such well has reached its authorized depth, and all logs, cores and other tests have been completed, and the results  
43 thereof furnished to the parties, Operator shall give immediate notice to the Non-Operators having the right to participate  
44 in a Completion attempt whether or not Operator recommends attempting to Complete the well, together with Operator's  
45 AFE for Completion costs if not previously provided. The parties receiving such notice shall have forty-eight (48) hours  
46 (exclusive of Saturday, Sunday and legal holidays) in which to elect by delivery of notice to Operator to participate in a  
47 recommended Completion attempt or to make a Completion proposal with an accompanying AFE. Operator shall deliver  
48 any such Completion proposal, or any Completion proposal conflicting with Operator's proposal, to the other parties  
49 entitled to participate in such Completion in accordance with the procedures specified in Article VI.B.6. Election to  
50 participate in a Completion attempt shall include consent to all necessary expenditures for the Completing and equipping  
51 of such well, including necessary tankage and/or surface facilities but excluding any stimulation operation not contained  
52 on the Completion AFE. Failure of any party receiving such notice to reply within the period above fixed shall constitute  
53 an election by that party not to participate in the cost of the Completion attempt; provided, that Article VI.B.6. shall  
54 control in the case of conflicting Completion proposals. If one or more, but less than all of the parties, elect to attempt a  
55 Completion, the provisions of Article VI.B.2. hereof (the phrase "Reworking, Sidetracking, Deepening, Recompleting or  
56 Plugging Back" as contained in Article VI.B.2. shall be deemed to include "Completing") shall apply to the operations  
57 thereafter conducted by less than all parties; — provided, however, that Article VI.B.2. shall apply separately to each  
58 separate Completion or Recompletion attempt undertaken hereunder, and an election to become a Non-Consenting Party  
59 as to one Completion or Recompletion attempt shall not prevent a party from becoming a Consenting Party in subsequent  
60 Completion or Recompletion attempts regardless whether the Consenting Parties as to earlier Completions or  
61 Recompletions have recouped their costs pursuant to Article VI.B.2.; provided further, that any recoupment of costs by a  
62 Consenting Party shall be made solely from the production attributable to the Zone in which the Completion attempt is  
63 made. Election by a previous Non-Consenting party to participate in a subsequent Completion or Recompletion attempt  
64 shall require such party to pay its proportionate share of the cost of salvable materials and equipment installed in the well  
65 pursuant to the previous Completion or Recompletion attempt, insofar and only insofar as such materials and equipment  
66 benefit the Zone in which such party participates in a Completion attempt.

67 Notwithstanding anything to the contrary, including the selection of Option 2 above, or anything else in this agreement, Option  
68 1 shall apply to all Horizontal Wells.

69 2. Rework, Recomplete or Plug Back: No well shall be Reworked, Recompleted or Plugged Back except a well Reworked,  
70 Recompleted, or Plugged Back pursuant to the provisions of Article VI.B.2. of this agreement. Consent to the Reworking, Recompleting or  
71 Plugging Back of a well shall include all necessary expenditures in conducting such operations and Completing and equipping of said well,  
72 including necessary tankage and/or surface facilities.

**D. Other Operations:**

Operator shall not undertake any single project reasonably estimated to require an expenditure in excess of \_\_\_\_\_  
**Fifty Thousand** Dollars (\$ 50,000.00) except in connection with the drilling, Sidetracking, Reworking, Deepening,  
 Completing, Recompleting or Plugging Back of a well that has been previously authorized by or pursuant to this agreement; provided,  
 however, that, in case of explosion, fire, flood or other sudden emergency, whether of the same or different nature, Operator may take such  
 steps and incur such expenses as in its opinion are required to deal with the emergency to safeguard life and property but Operator, as  
 promptly as possible, shall report the emergency to the other parties. If Operator prepares an AFE for its own use, Operator shall furnish  
 any Non-Operator so requesting an information copy thereof for any single project costing in excess of \_\_\_\_\_  
**Fifty Thousand** Dollars (\$ 50,000.00). Any party who has not relinquished its interest in  
 a well shall have the right to propose that Operator perform repair work or undertake the installation of artificial lift equipment or ancillary  
 production facilities such as salt water disposal wells or to conduct additional work with respect to a well drilled hereunder or other similar  
 project (but not including the installation of gathering lines or other transportation or marketing facilities, the installation of which shall be  
 governed by separate agreement between the parties) reasonably estimated to require an expenditure in excess of the amount first set forth  
 above in this Article VI.D. (except in connection with an operation required to be proposed under Articles VI.B.1. or VI.C.1. Option No. 2,  
 which shall be governed exclusively by those Articles). Operator shall deliver such proposal to all parties entitled to participate therein. If  
 within thirty (30) days thereof Operator secures the written consent of any party or parties owning at least 80 % of the interests  
 of the parties entitled to participate in such operation, each party having the right to participate in such project shall be bound by the terms  
 of such proposal and shall be obligated to pay its proportionate share of the costs of the proposed project as if it had consented to such  
 project pursuant to the terms of the proposal. **See Article XVI.U**

**E. Abandonment of Wells:**

1. **Abandonment of Dry Holes:** Except for any well drilled or Deepened pursuant to Article VI.B.2., any well which has been  
 drilled or Deepened under the terms of this agreement and is proposed to be completed as a dry hole shall not be plugged and abandoned  
 without the consent of all parties ~~who participated in the cost of drilling the well~~. Should Operator, after diligent effort, be unable to contact any party, or should any party fail to reply  
 within  
 forty-eight (48) hours (exclusive of Saturday, Sunday and legal holidays) after delivery of notice of the proposal to plug and abandon such  
 well, such party shall be deemed to have consented to the proposed abandonment. All such wells shall be plugged and abandoned in  
 accordance with applicable regulations and at the cost, risk and expense of the parties who participated in the cost of drilling or Deepening  
 such well. Any party who objects to plugging and abandoning such well by notice delivered to Operator within forty-eight (48) hours  
 (exclusive of Saturday, Sunday and legal holidays) after delivery of notice of the proposed plugging shall take over the well as of the end of  
 such forty-eight (48) hour notice period and conduct further operations in search of Oil and/or Gas subject to the provisions of Article VI.B.;  
 failure of such party to provide proof reasonably satisfactory to Operator of its financial capability to conduct such operations or to take over  
 the well within such period or thereafter to conduct operations on such well or plug and abandon such well shall entitle Operator to retain or  
 take possession of the well and plug and abandon the well. The party taking over the well shall indemnify Operator (if Operator is an  
 abandoning party) and the other abandoning parties against liability for any further operations conducted on such well except for the costs of  
 plugging and abandoning the well and restoring the surface, for which the abandoning parties shall remain proportionately liable.

2. **Abandonment of Wells That Have Produced:** Except for any well in which a Non-Consent operation has been  
 conducted hereunder for which the Consenting Parties have not been fully reimbursed as herein provided, Any well which has been completed  
 as a producer shall not be plugged and abandoned without the consent of all parties/. If all parties consent to such abandonment, the well shall  
 be plugged and abandoned in accordance with applicable regulations and at the cost, risk and expense of all the parties hereto. Failure of a  
 party to reply within sixty (60) days of delivery of notice of proposed abandonment shall be deemed an election to consent to the proposal. If,  
 within sixty (60) days after delivery of notice of the proposed abandonment of any well, all parties do not agree to the abandonment of such  
 well, those wishing to continue its operation from the Zone then open to production shall be obligated to take over the well as of the expiration  
 of the applicable notice period and shall indemnify Operator (if Operator is an abandoning party) and the other abandoning parties against  
 liability for any further operations on the well conducted by such parties. Failure of such party or parties to provide proof reasonably  
 satisfactory to Operator of their financial capability to conduct such operations or to take over the well within the required period or thereafter  
 to conduct operations on such well shall entitle operator to retain or take possession of such well and plug and abandon the well.

Parties taking over a well as provided herein shall tender to each of the other parties its proportionate share of the value of  
 the well's salvable material and equipment, determined in accordance with the provisions of Exhibit "C," less the estimated cost of salvaging  
 and the estimated cost of plugging and abandoning and restoring the surface; provided, however, that in the event the estimated plugging and  
 abandoning and surface restoration costs and the estimated cost of salvaging are higher than the value of the well's salvable material and  
 equipment, each of the abandoning parties shall tender to the parties continuing operations their proportionate shares of the estimated excess  
 cost. Each abandoning party shall assign to the non-abandoning parties, without warranty, express or implied, as to title or as to quantity, or  
 fitness for use of the equipment and material, all of its interest in the wellbore of the well and related equipment, together with its interest in  
 the Leasehold insofar and only insofar as such Leasehold covers the right to obtain production from that wellbore in the Zone then open to  
 production. If the interest of the abandoning party is or includes an Oil and Gas Interest, such party shall execute and deliver to the non-  
 abandoning party or parties an oil and gas lease, limited to the wellbore and the Zone then open to production, ~~for a term of one (1) year and~~  
~~so long thereafter as Oil and/or Gas is produced from the Zone covered thereby, such lease to be on the form attached as Exhibit "B."/~~ **a mutually agreed upon form.** The  
 assignments or leases so limited shall encompass the Drilling Unit upon which the well is located. The payments by, and the assignments or  
 leases to, the assignees shall be in a ratio based upon the relationship of their respective percentage of participation in the Contract Area to the  
 aggregate of the percentages of participation in the Contract Area of all assignees. There shall be no readjustment of interests in the remaining  
 portions of the Contract Area.

Thereafter, abandoning parties shall have no further responsibility, liability, or interest in the operation of or production  
 from the well in the Zone then open other than the royalties retained in any lease made under the terms of this Article. Upon request, Operator  
 shall ~~continue to operate the assigned well for the account of the non-abandoning parties at the rates and charges contemplated by this~~  
~~agreement, plus any additional cost and charges which may arise as the result of the separate ownership of the assigned well. Upon proposed~~  
~~abandonment of the producing Zone assigned or leased, the assignor or lessor shall then have the option to repurchase its prior interest in the~~  
~~well (using the same valuation formula) and participate in further operations therein subject to the provisions hereof.~~  
**have the option to**

3. **Abandonment of Non-Consent Operations:** The provisions of Article VI.E.1. or VI.E.2. above shall be applicable as  
 between Consenting Parties in the event of the proposed abandonment of any well excepted from said Articles; provided, however, no well  
 shall be permanently plugged and abandoned unless and until all parties having the right to conduct further operations therein have been  
 notified of the proposed abandonment and afforded the opportunity to elect to take over the well in accordance with the provisions of this  
 Article VI.E.; and provided further, that Non-Consenting Parties who own an interest in a portion of the well shall pay their proportionate  
 shares of abandonment and surface restoration cost for such well as provided in Article VI.B.2.(b).

1 **F. Termination of Operations:**

2 Upon the commencement of an operation for the drilling, Reworking, Sidetracking, Plugging Back, Deepening, testing,  
3 Completion or plugging of a well, including but not limited to the Initial Well, such operation shall not be terminated without consent of  
4 parties bearing 80 % of the costs of such operation; provided, however, that in the event granite or other practically impenetrable  
5 substance or condition in the hole is encountered which renders further operations impractical, Operator may discontinue operations and  
6 give notice of such condition in the manner provided in Article VI.B.1, and the provisions of Article VI.B. or VI.E. shall thereafter apply to  
7 such operation, as appropriate.

8 **G. Taking Production in Kind:** See Article XVI.M

9  **Option No. 1: Gas Balancing Agreement Attached** **have the right to**

10 Each party shall / take in kind or separately dispose of its proportionate share of all Oil and Gas produced from the Contract Area,  
11 exclusive of production which may be used in development and producing operations and in preparing and treating Oil and Gas for  
12 marketing purposes and production unavoidably lost. Any extra expenditure incurred in the taking in kind or separate disposition  
13 by any party of its proportionate share of the production shall be borne by such party. Any party taking its share of production in  
14 kind shall be required to pay for only its proportionate share of such part of Operator's surface facilities which it uses.

15 Each party shall execute such division orders and contracts as may be necessary for the sale of its interest in production from the  
16 Contract Area, and, except as provided in Article VII.B., shall be entitled to receive payment directly from the purchaser thereof  
17 for its share of all production.

18 If any party fails to make the arrangements necessary to take in kind or separately dispose of its proportionate share of the Oil  
19 produced from the Contract Area, Operator shall have the right, subject to the revocation at will by the party owning it, but not the  
20 obligation, to purchase such Oil or sell it to others at any time and from time to time, for the account of the non-taking party. Any  
21 such purchase or sale by Operator may be terminated by Operator upon at least ten (10) days written notice to the owner of said  
22 production and shall be subject always to the right of the owner of the production upon at least ten (10) days written notice to  
23 Operator to exercise at any time its right to take in kind, or separately dispose of, its share of all Oil not previously delivered to a  
24 purchaser. Any purchase or sale by Operator of any other party's share of Oil shall be only for such reasonable periods of time as  
25 are consistent with the minimum needs of the industry under the particular circumstances, but in no event for a period in excess of  
26 one (1) year.

27 Any such sale by Operator shall be in a manner commercially reasonable under the circumstances but Operator shall have no  
28 duty to share any existing market or to obtain a price equal to that received under any existing market. The sale or delivery by  
29 Operator of a non-taking party's share of Oil under the terms of any existing contract of Operator shall not give the non-taking  
30 party any interest in or make the non-taking party a party to said contract. No purchase shall be made by Operator without first  
31 giving the non-taking party at least ten (10) days written notice of such intended purchase and the price to be paid or the pricing  
32 basis to be used.

33 All parties shall give timely written notice to Operator of their Gas marketing arrangements for the following month, excluding  
34 price, and shall notify Operator immediately in the event of a change in such arrangements. Operator shall maintain records of all  
35 marketing arrangements and of volumes actually sold or transported, which records shall be made available to Non-Operators upon  
36 reasonable request.

37 In the event one or more parties' separate disposition of its share of the Gas causes split-stream deliveries to separate pipelines  
38 and/or deliveries which on a day-to-day basis for any reason are not exactly equal to a party's respective proportion- ate share of  
39 total Gas sales to be allocated to it, the balancing or accounting between the parties shall be in accordance with any Gas balancing  
40 agreement between the parties hereto, whether such an agreement is attached as Exhibit "E" or is a separate agreement. Operator  
41 shall give notice to all parties of the first sales of Gas from any well under this agreement.

42  **Option No. 2: No Gas Balancing Agreement:**

43 Each party shall take in kind or separately dispose of its proportionate share of all Oil and Gas produced from the Contract Area,  
44 exclusive of production which may be used in development and producing operations and in preparing and treating Oil and Gas for  
45 marketing purposes and production unavoidably lost. Any extra expenditures incurred in the taking in kind or separate disposition  
46 by any party of its proportionate share of the production shall be borne by such party. Any party taking its share of production in  
47 kind shall be required to pay for only its proportionate share of such part of Operator's surface facilities which it uses.

48 Each party shall execute such division orders and contracts as may be necessary for the sale of its interest in production from the  
49 Contract Area, and, except as provided in Article VII.B., shall be entitled to receive payment directly from the purchaser thereof  
50 for its share of all production.

51 If any party fails to make the arrangements necessary to take in kind or separately dispose of its proportionate share of the Oil  
52 and/or Gas produced from the Contract Area, Operator shall have the right, subject to the revocation at will by the party owning it,  
53 but not the obligation, to purchase such Oil and/or Gas or sell it to others at any time and from time to time, for the account of the  
54 non-taking party. Any such purchase or sale by Operator may be terminated by Operator upon at least ten (10) days written notice  
55 to the owner of said production and shall be subject always to the right of the owner of the production upon at least ten (10) days  
56 written notice to Operator to exercise its right to take in kind, or separately dispose of, its share of all Oil and/or Gas not previously  
57 delivered to a purchaser; provided, however, that the effective date of any such revocation may be deferred at Operator's election  
58 for a period not to exceed ninety (90) days if Operator has committed such production to a purchase contract having a term  
59 extending beyond such ten (10) day period. Any purchase or sale by Operator of any other party's share of Oil and/or Gas shall be  
60 only for such reasonable periods of time as are consistent with the minimum needs of the industry under the particular  
61 circumstances, but in no event for a period in excess of one (1) year.

62 Any such sale by Operator shall be in a manner commercially reasonable under the circumstances, but Operator shall have no  
63 duty to share any existing market or transportation arrangement or to obtain a price or transportation fee equal to that received  
64 under any existing market or transportation arrangement. The sale or delivery by Operator of a non-taking party's share of  
65 production under the terms of any existing contract of Operator shall not give the non-taking party any interest in or make the non-  
66 taking party a party to said contract. No purchase of Oil and Gas and no sale of Gas shall be made by Operator without first giving  
67 the non-taking party ten days written notice of such intended purchase or sale and the price to be paid or the pricing basis to be  
68 used. Operator shall give notice to all parties of the first sale of Gas from any well under this Agreement.

69 All parties shall give timely written notice to Operator of their Gas marketing arrangements for the following month, excluding  
70 price, and shall notify Operator immediately in the event of a change in such arrangements. Operator shall maintain records of all  
71 marketing arrangements, and of volumes actually sold or transported, which records shall be made available to Non-Operators  
72 upon reasonable request.

ARTICLE VII.

EXPENDITURES AND LIABILITY OF PARTIES

A. Liability of Parties:

The liability of the parties shall be several, not joint or collective. Each party shall be responsible only for its obligations, and shall be liable only for its proportionate share of the costs of developing and operating the Contract Area. Accordingly, the liens granted among the parties in Article VII.B. are given to secure only the debts of each severally, and no party shall have any liability to third parties hereunder to satisfy the default of any other party in the payment of any expense or obligation hereunder. It is not the intention of the parties to create, nor shall this agreement be construed as creating, a mining or other partnership, joint venture, agency relationship or association, or to render the parties liable as partners, co-venturers, or principals. In their relations with each other under this agreement, the parties shall not be considered fiduciaries or to have established a confidential relationship but rather shall be free to act on an arm's-length basis in accordance with their own respective self-interest, subject, however, to the obligation of the parties to act in good faith in their dealings with each other with respect to activities hereunder. See Article XVII.L

B. Liens and Security Interests: See Article XVI.W

Each party other than an unleased mineral owner grants to the other parties hereto a lien upon any interest it now owns or hereafter acquires in Oil and Gas Leases and Oil and Gas Interests in the Contract Area, and a security interest and/or purchase money security interest in any interest it now owns or hereafter acquires in the personal property and fixtures on or used or obtained for use in connection therewith, to secure performance of all of its obligations under this agreement including but not limited to payment of expense, interest and fees, the proper disbursement of all monies paid hereunder, the assignment or relinquishment of interest in Oil and Gas Leases as required hereunder, and the proper performance of operations hereunder. Such lien and security interest granted by each party hereto shall include such party's leasehold interests, working interests, operating rights, and royalty and overriding royalty interests in the Contract Area now owned or hereafter acquired and in lands pooled or unitized therewith or otherwise becoming subject to this agreement, the Oil and Gas when extracted therefrom and equipment situated thereon or used or obtained for use in connection therewith (including, without limitation, all wells, tools, and tubular goods), and accounts (including, without limitation, accounts arising from gas imbalances or from the sale of Oil and/or Gas at the wellhead), contract rights, inventory and general intangibles relating thereto or arising therefrom, and all proceeds and products of the foregoing. / Notwithstanding anything to the contrary contained in this agreement Article VII B shall not apply to Unleased Mineral Owners.

To perfect the lien and security agreement provided herein, each party hereto shall execute and acknowledge the recording supplement and/or any financing statement prepared and submitted by any party hereto in conjunction herewith or at any time following execution hereof, and Operator is authorized to file this agreement or the recording supplement executed herewith as a lien or mortgage in the applicable real estate records and as a financing statement with the proper officer under the Uniform Commercial Code in the state in which the Contract Area is situated and such other states as Operator shall deem appropriate to perfect the security interest granted hereunder. Any party may file this agreement, the recording supplement executed herewith, or such other documents as it deems necessary as a lien or mortgage in the applicable real estate records and/or a financing statement with the proper officer under the Uniform Commercial Code.

Each party represents and warrants to the other parties hereto that the lien and security interest granted by such party to the other parties shall be a first and prior lien, and each party hereby agrees to maintain the priority of said lien and security interest against all persons acquiring an interest in Oil and Gas Leases and Interests covered by this agreement by, through or under such party. All parties acquiring an interest in Oil and Gas Leases and Oil and Gas Interests covered by this agreement, whether by assignment, merger, mortgage, operation of law, or otherwise, shall be deemed to have taken subject to the lien and security interest granted by this Article VII.B. as to all obligations attributable to such interest hereunder whether or not such obligations arise before or after such interest is acquired.

To the extent that parties have a security interest under the Uniform Commercial Code of the state in which the Contract Area is situated, they shall be entitled to exercise the rights and remedies of a secured party under the Code. The bringing of a suit and the obtaining of judgment by a party for the secured indebtedness shall not be deemed an election of remedies or otherwise affect the lien rights or security interest as security for the payment thereof. In addition, upon default by any party in the payment of its share of expenses, interests or fees, or upon the improper use of funds by the Operator, the other parties shall have the right, without prejudice to other rights or remedies, to collect from the purchaser the proceeds from the sale of such defaulting party's share of Oil and Gas until the amount owed by such party, plus interest as provided in "Exhibit C," has been received, and shall have the right to offset the amount owed against the proceeds from the sale of such defaulting party's share of Oil and Gas. All purchasers of production may rely on a notification of default from the non-defaulting party or parties stating the amount due as a result of the default, and all parties waive any recourse available against purchasers for releasing production proceeds as provided in this paragraph.

If any party fails to pay its share of cost within one hundred twenty (120) days after rendition of a statement therefor by Operator, the non-defaulting parties, including Operator, shall upon request by Operator, pay the unpaid amount in the proportion that the interest of each such party bears to the interest of all such parties. The amount paid by each party so paying its share of the unpaid amount shall be secured by the liens and security rights described in Article VII.B., and each paying party may independently pursue any remedy available hereunder or otherwise.

If any party does not perform all of its obligations hereunder, and the failure to perform subjects such party to foreclosure or execution proceedings pursuant to the provisions of this agreement, to the extent allowed by governing law, the defaulting party waives any available right of redemption from and after the date of judgment, any required valuation or appraisal of the mortgaged or secured property prior to sale, any available right/ to stay execution or to require a marshaling of assets/ or sale in inverse order of alienation and any required bond in the event a receiver is appointed. In addition, to the extent permitted by applicable law, each party hereby grants to the other parties a power of sale as to any property that is subject to the lien and security rights granted hereunder, such power to be exercised in the manner provided by applicable law or otherwise in a commercially reasonable manner and upon reasonable notice.

Each party agrees that the other parties shall be entitled to utilize the provisions of Oil and Gas lien law or other lien law of any state in which the Contract Area is situated to enforce the obligations of each party hereunder. Without limiting the generality of the foregoing, to the extent permitted by applicable law, Non-Operators agree that Operator may invoke or utilize the mechanics' or materialmen's lien law of the state in which the Contract Area is situated in order to secure the payment to Operator of any sum due hereunder for services performed or materials supplied by Operator.

C. Advances:

Operator, at its election, shall have the right from time to time to demand and receive from one or more of the other parties, other than Unleased Mineral Owners, payment in advance of their respective shares of the estimated amount of the expense to be incurred in operations hereunder during the next succeeding month, which right may be exercised only by submission to each such party of an itemized statement of such estimated expense, together with an invoice for its share thereof. Each such statement and invoice for the payment in advance of estimated expense shall be submitted on or before the 20th day of the next preceding month. Each party shall pay to Operator its proportionate share of such estimate

1 within fifteen (15) days after such estimate and invoice is received. If any party fails to pay its share of said estimate within said time, the  
2 amount due shall bear interest as provided in Exhibit "C" until paid. Proper adjustment shall be made monthly between advances and actual  
3 expense to the end that each party shall bear and pay its proportionate share of actual expenses incurred, and no more.

4 **D. Defaults and Remedies:**

5 If any party fails to discharge any financial obligation under this agreement, including without limitation the failure to make any  
6 advance under the preceding Article VII.C. or any other provision of this agreement, within the period required for such payment  
7 hereunder, then in addition to the remedies provided in Article VII.B. or elsewhere in this agreement, the remedies specified below shall be  
8 applicable. For purposes of this Article VII.D., all notices and elections shall be delivered only by Operator, except that Operator shall  
9 deliver any such notice and election requested by a non-defaulting Non-Operator, and when Operator is the party in default, the applicable  
10 notices and elections can be delivered by any Non-Operator. Election of any one or more of the following remedies shall not preclude the  
11 subsequent use of any other remedy specified below or otherwise available to a non-defaulting party.

12 1. Suspension of Rights: <sup>Upon request by any party Operator will</sup> / deliver to the party in default a Notice of Default, which shall specify the default,  
13 specify the action to be taken to cure the default, and specify that failure to take such action will result in the exercise of one or more of the  
14 remedies provided in this Article. If the default is not cured within thirty (30) days of the delivery of such Notice of Default, all of the rights  
15 of the defaulting party granted by this agreement may upon notice be suspended until the default is cured, without prejudice to the right of  
16 the non-defaulting party or parties to continue to enforce the obligations of the defaulting party previously accrued or thereafter accruing  
17 under this agreement. If Operator is the party in default, the Non-Operators shall have in addition the right, by vote of Non-Operators  
18 owning a majority in interest in the Contract Area after excluding the voting interest of Operator, to appoint a new Operator effective  
19 immediately. The rights of a defaulting party that may be suspended hereunder at the election of the non-defaulting parties shall include,  
20 without limitation, the right to receive information as to any operation conducted hereunder during the period of such default, the right to  
21 elect to participate in an operation proposed under Article VI.B. of this agreement, the right to participate in an operation being conducted  
22 under this agreement even if the party has previously elected to participate in such operation, and the right to receive proceeds of  
23 production from any well subject to this agreement.

24 2. Suit for Damages: Non-defaulting parties or Operator for the benefit of non-defaulting parties may sue (at joint account  
25 expense) to collect the amounts in default, plus interest accruing on the amounts recovered from the date of default until the date of  
26 collection at the rate specified in Exhibit "C" attached hereto. Nothing herein shall prevent any party from suing any defaulting party to  
27 collect consequential damages accruing to such party as a result of the default.

28 3. Deemed Non-Consent: The non-defaulting party may deliver a written Notice of Non-Consent Election to the defaulting  
29 party at any time after the expiration of the thirty-day cure period following delivery of the Notice of Default, in which event if the billing is  
30 for the drilling a new well or the Plugging Back, Sidetracking, Reworking or Deepening of a well which is to be or has been plugged as a  
31 dry hole, or for the Completion or Recompletion of any well, the defaulting party will be conclusively deemed to have elected not to  
32 participate in the operation and to be a Non-Consenting Party with respect thereto under Article VI.B. or VI.C., as the case may be, to the  
33 extent of the costs unpaid by such party, notwithstanding any election to participate theretofore made. If election is made to proceed under  
34 this provision, then the non-defaulting parties may not elect to sue for the unpaid amount pursuant to Article VII.D.2.

35 Until the delivery of such Notice of Non-Consent Election to the defaulting party, such party shall have the right to cure its  
36 default by paying its unpaid share of costs plus interest at the rate set forth in Exhibit "C," provided, however, such payment shall not  
37 prejudice the rights of the non-defaulting parties to pursue remedies for damages incurred by the non-defaulting parties as a result of the  
38 default. Any interest relinquished pursuant to this Article VII.D.3. shall be offered to the non-defaulting parties in proportion to their  
39 interests, and the non-defaulting parties electing to participate in the ownership of such interest shall be required to contribute their shares  
40 of the defaulted amount upon their election to participate therein.

41 4. Advance Payment: If a default is not cured within thirty (30) days of the delivery of a Notice of Default, Operator, or Non-  
42 Operators if Operator is the defaulting party, may thereafter require advance payment from the defaulting party of such defaulting party's  
43 anticipated share of any item of expense for which Operator, or Non-Operators, as the case may be, would be entitled to reimbursement  
44 under any provision of this agreement, whether or not such expense was the subject of the previous default. Such right includes, but is not  
45 limited to, the right to require advance payment for the estimated costs of drilling a well or Completion of a well as to which an election to  
46 participate in drilling or Completion has been made. If the defaulting party fails to pay the required advance payment, the non-defaulting  
47 parties may pursue any of the remedies provided in this Article VII.D. or any other default remedy provided elsewhere in this agreement.  
48 Any excess of funds advanced remaining when the operation is completed and all costs have been paid shall be promptly returned to the  
49 advancing party.

50 5. ~~Costs and Attorneys' Fees: In the event any party is required to bring legal proceedings to enforce any financial obligation of a~~  
51 ~~party hereunder, the prevailing party in such action shall be entitled to recover all court costs, costs of collection, and a reasonable~~  
52 ~~attorney's fee, which the lien provided for herein shall also secure.~~

53 **E. Rentals, Shut-in Well Payments and Minimum Royalties:**

54 Rentals, shut-in well payments and minimum royalties which may be required under the terms of any lease shall be paid by the  
55 party or parties who ~~subjected /~~ <sup>contributed, or who is deemed to have contributed</sup> such lease to this agreement at its or their expense. In the event two or more parties own and have  
56 contributed interests in the same lease to this agreement, such parties may designate one of such parties to make said payments for and on  
57 behalf of all such parties. Any party may request, and shall be entitled to receive, proper evidence of all such payments. In the event of  
58 failure to make proper payment of any rental, shut-in well payment or minimum royalty through mistake or oversight where such payment  
59 is required to continue the lease in force, any loss which results from such non-payment shall be borne in accordance with the provisions of  
60 Article IV.B.2.

61 Operator shall notify Non-Operators of the anticipated completion of a shut-in well, or the shutting in or return to production of  
62 a producing well, at least five (5) days (excluding Saturday, Sunday, and legal holidays) prior to taking such action, or at the earliest  
63 opportunity permitted by circumstances, but assumes no liability for failure to do so. In the event of failure by Operator to so notify Non-  
64 Operators, the loss of any lease contributed hereto by Non-Operators for failure to make timely payments of any shut-in well payment shall  
65 be borne jointly by the parties hereto under the provisions of Article IV.B.3.

66 **F. Taxes:**

67 Beginning with the first calendar year after the effective date hereof, Operator shall render for ad valorem taxation all property  
68 subject to this agreement which by law should be rendered for such taxes, and it shall pay <sup>and assessments</sup> all such taxes / assessed thereon before they  
69 become delinquent. Prior to the rendition date, each Non-Operator shall furnish Operator information as to burdens (to include, but not be  
70 limited to, royalties, overriding royalties and production payments) on Leases and Oil and Gas Interests contributed by such Non-Operator.  
71 If the assessed valuation of any Lease is reduced by reason of its being subject to outstanding excess royalties, overriding royalties or  
72 production payments, the reduction in ad valorem taxes resulting therefrom shall inure to the benefit of the owner or owners of such Lease,

1 and Operator shall adjust the charge to such owner or owners so as to reflect the benefit of such reduction. If the ad valorem taxes are based  
2 in whole or in part upon separate valuations of each party's working interest, then notwithstanding anything to the contrary herein, charges  
3 to the joint account shall be made and paid by the parties hereto in accordance with the tax value generated by each party's working interest.  
4 Operator shall bill the other parties for their proportionate shares of all tax payments in the manner provided in Exhibit "C." **Provided,**  
5 **however, if at any time any party takes its share of production in kind, or separately disposes of it, such party shall pay or cause to be**  
6 **paid any and all taxes as to such production except for any and all ad valorem taxes which shall be paid in accordance with this**  
7 **Article VII.F.**

8 If Operator considers any tax assessment improper, Operator may, at its discretion, protest within the time and manner  
9 prescribed by law, and prosecute the protest to a final determination, unless all parties agree to abandon the protest prior to final  
10 determination. During the pendency of administrative or judicial proceedings, Operator may elect to pay, under protest, all such taxes and  
11 any interest and penalty. When any such protested assessment shall have been finally determined, Operator shall pay the tax for the joint  
12 account, together with any interest and penalty accrued, and the total cost shall then be assessed against the parties, and be paid by them, as  
13 provided in Exhibit "C."

14 Each party shall pay or cause to be paid all production, severance, excise, gathering and other taxes / imposed upon or with  
15 and assessments.  
16 respect to the production or handling of such party's share of Oil and Gas produced under the terms of this agreement.

17 **ARTICLE VIII.**  
18 **ACQUISITION, MAINTENANCE OR TRANSFER OF INTEREST**

19 **A. Surrender of Leases:**

20 The Leases covered by this agreement, insofar as they embrace acreage in the Contract Area, shall not be surrendered in whole  
21 or in part unless all parties consent thereto; **however, no consent shall be necessary to release a lease which has expired or otherwise**  
22 **terminated.**

23 However, should any party / <sup>except an Unleased Mineral Owner,</sup> desire to surrender its interest in any Lease or in any portion thereof, such party shall give written  
24 notice of the proposed surrender to all parties, and the parties to whom such notice is delivered shall have thirty (30) days after delivery of  
25 the notice within which to notify the party proposing the surrender whether they elect to consent thereto. Failure of a party to whom such  
26 notice is delivered to reply within said 30-day period shall constitute a consent to the surrender of the Leases described in the notice. If all  
27 parties do not agree or consent thereto, the party desiring to surrender shall assign, without express or implied warranty of title, all of its  
28 interest in such Lease, or portion thereof, and any well, material and equipment which may be located thereon and any rights in production  
29 thereafter secured, to the parties not consenting to such surrender. If the interest of the assigning party is or includes an Oil and Gas Interest,  
30 the assigning party shall execute and deliver to the party or parties not consenting to such surrender an oil and gas lease covering such Oil  
31 and Gas Interest for a term of one (1) year and so long thereafter as Oil and/or Gas is produced from the land covered thereby, such lease to  
32 be on the form attached hereto as Exhibit "B." Upon such assignment or lease, the assigning party shall be relieved from all obligations  
33 thereafter accruing, but not theretofore accrued, with respect to the interest assigned or leased and the operation of any well attributable  
34 thereto, and the assigning party shall have no further interest in the assigned or leased premises and its equipment and production other than  
35 the royalties retained in any lease made under the terms of this Article. The party assignee or lessee shall pay to the party assignor or lessor  
36 the reasonable salvage value of the latter's interest in any well's salvable materials and equipment attributable to the assigned or leased  
37 acreage. The value of all salvable materials and equipment shall be determined in accordance with the provisions of Exhibit "C," less the  
38 estimated cost of salvaging and the estimated cost of plugging and abandoning and restoring the surface. If such value is less than such  
39 costs, then the party assignor or lessor shall pay to the party assignee or lessee the amount of such deficit. If the assignment or lease is in  
40 favor of more than one party, the interest shall be shared by such parties in the proportions that the interest of each bears to the total interest  
41 of all such parties. If the interest of the parties to whom the assignment is to be made varies according to depth, then the interest assigned  
42 shall similarly reflect such variances.

43 Any assignment, lease or surrender made under this provision shall ~~not reduce or change the assignor's, lessor's or surrendering~~  
44 ~~party's interest as it was immediately before the assignment, lease or surrender in the balance of the Contract Area;~~ and the acreage  
45 assigned, leased or surrendered, and subsequent operations thereon, shall not thereafter be subject to the terms and provisions of this  
46 agreement ~~but shall be deemed subject to an Operating Agreement in the form of this agreement.~~

47 **B. Renewal or Extension of Leases:** See Article XVI V

48 If any party / <sup>except an Unleased Mineral Owner,</sup> secures a renewal or replacement of an Oil and Gas Lease or Interest subject to this agreement, then all other parties  
49 shall be notified promptly upon such acquisition or, in the case of a replacement Lease taken before expiration of an existing Lease,  
50 promptly upon expiration of the existing Lease. The parties notified shall have the right for a period of thirty (30) days following delivery  
51 of such notice in which to elect to participate in the ownership of the renewal or replacement Lease, insofar as such Lease affects lands  
52 within the Contract Area, by paying to the party who acquired it their proportionate shares of the acquisition cost allocated to that part of  
53 such Lease within the Contract Area, which shall be in proportion to the interest held at that time by the parties in the Contract Area. Each  
54 party who participates in the purchase of a renewal or replacement Lease shall be given an assignment of its proportionate interest therein  
55 by the acquiring party/  
56 **without warranty of title, except as to acts by, through or under the acquiring party**

57 If some, but less than all, of the parties elect to participate in the purchase of a renewal or replacement Lease, it shall be owned  
58 by the parties who elect to participate therein, in a ratio based upon the relationship of their respective percentage of participation in the  
59 Contract Area to the aggregate of the percentages of participation in the Contract Area of all parties participating in the purchase of such  
60 renewal or replacement Lease. The acquisition of a renewal or replacement Lease by any or all of the parties hereto shall ~~not~~ cause a  
61 readjustment of the interests of the parties stated in Exhibit "A," but any renewal or replacement Lease in which less than all parties elect to  
62 participate shall ~~not~~ be subject to this agreement ~~but shall be deemed subject to a separate Operating Agreement in the form of this~~  
63 ~~agreement.~~

64 If the interests of the parties in the Contract Area vary according to depth, then their right to participate proportionately in  
65 renewal or replacement Leases and their right to receive an assignment of interest shall also reflect such depth variances.

66 The provisions of this Article shall apply to renewal or replacement Leases whether they are for the entire interest covered by  
67 the expiring Lease or cover only a portion of its area or an interest therein. Any renewal or replacement Lease taken before the expiration of  
68 its predecessor Lease, or taken or contracted for or becoming effective within six (6) months after the expiration of the existing Lease, shall  
69 be subject to this provision so long as this agreement is in effect at the time of such acquisition or at the time the renewal or replacement  
70 Lease becomes effective; but any Lease taken or contracted for more than six (6) months after the expiration of an existing Lease shall not  
71 be deemed a renewal or replacement Lease and shall not be subject to the provisions of this agreement.

72 The provisions in this Article shall <sup>not</sup> also be applicable to extensions of Oil and Gas Leases.

73 **C. Acreage or Cash Contributions:**

74 While this agreement is in force, if any party contracts for a contribution of cash towards the drilling of a well or any other  
75 operation on the Contract Area, such contribution shall be paid to the party who conducted the drilling or other operation and shall be  
76 applied by it against the cost of such drilling or other operation. ~~If the contribution be in the form of acreage, the party to whom the~~

contribution is made shall promptly tender an assignment of the acreage, without warranty of title, to the Drilling Parties in the proportions said Drilling Parties shared the cost of drilling the well. Such acreage shall become a separate Contract Area and, to the extent possible, be governed by provisions identical to this agreement. Each party shall promptly notify all other parties of any acreage or cash contributions it may obtain in support of any well or any other operation on the Contract Area. The above provisions shall also be applicable to optional rights to earn acreage outside the Contract Area which are in support of well drilled inside the Contract Area.

----- If any party contracts for any consideration relating to disposition of such party's share of substances produced hereunder, such consideration shall not be deemed a contribution as contemplated in this Article VIII.C.

**D. Assignment; Maintenance of Uniform Interest:** See Article XVI.E

Any sale, encumbrance, transfer or other disposition made by any party affecting any of that party's interest in the Contract Area, shall be made without prejudice to the right of the other parties, and any transferee of an ownership interest in any Oil and Gas Lease or Interest shall be deemed a party to this agreement as to the interest conveyed from and after the effective date of the transfer of ownership; provided, however, that the other parties shall not be required to recognize any such sale, encumbrance, transfer or other disposition for any purpose hereunder until thirty (30) days after they have received a copy of the instrument of transfer or other satisfactory evidence thereof in writing from the transferor or transferee. No assignment or other disposition of interest by a party shall relieve such party of obligations previously incurred by such party hereunder with respect to the interest transferred, including without limitation the obligation of a party to pay all costs attributable to an operation conducted hereunder in which such party has agreed to participate prior to making such assignment, and the lien and security interest granted by Article VII.B. shall continue to burden the interest transferred to secure payment of any such obligations.

If, at any time the interest of any party is divided among and owned by four or more co-owners, Operator, at its discretion, may require such co-owners to appoint a single trustee or agent with full authority to receive notices, approve expenditures, receive billings for and approve and pay such party's share of the joint expenses, and to deal generally with, and with power to bind, the co-owners of such party's interest within the scope of the operations embraced in this agreement; however, all such co- owners shall have the right to enter into and execute all contracts or agreements for the disposition of their respective shares of the Oil and Gas produced from the Contract Area and they shall have the right to receive, separately, payment of the sale proceeds thereof.

**E. Waiver of Rights to Partition:**

If permitted by the laws of the state or states in which the property covered hereby is located, each party hereto owning an undivided interest in the Contract Area waives any and all rights it may have to partition and have set aside to it in severalty its undivided interest therein.

**F. Preferential Right to Purchase:**

(Optional: Check if applicable)

----- Should any party desire to sell all or any part of its interests under this agreement, or its rights and interests in the Contract Area, it shall promptly give written notice to the other parties, with full information concerning its proposed disposition, which shall include the name and address of the prospective transferee (who must be ready, willing and able to purchase), the purchase price, a legal description sufficient to identify the property, and all other terms of the offer. The other parties shall then have an optional prior right, for a period of ten (10) days after notice is delivered, to purchase for the stated consideration on the same terms and conditions the interest which the other party proposes to sell; and, if this optional right is exercised, the purchasing parties shall share the purchased interest in the proportions that the interest of each bears to the total interest of all purchasing parties. However, there shall be no preferential right to purchase in those cases where any party wishes to mortgage its interests, or to transfer title to its interest to its mortgagee in lieu of or pursuant to foreclosure of a mortgage of its interests, or to dispose of its interests by merger, reorganization, consolidation, or by sale of all or substantially all of its Oil and Gas assets to any party, or by transfer of its interests to a subsidiary or parent company or to a subsidiary of a parent company, or to any company in which such party owns a majority of the stock.

**ARTICLE IX.**

**INTERNAL REVENUE CODE ELECTION**

If, for federal income tax purposes, this agreement and the operations hereunder are regarded as a partnership, and if the parties have not otherwise agreed to form a tax partnership pursuant to Exhibit "G" or other agreement between them, each party hereby affected elects to be excluded from the application of all of the provisions of Subchapter "K," Chapter 1, Subtitle "A," of the Internal Revenue Code of 1986, as amended ("Code"), as permitted and authorized by Section 761 of the Code and the regulations promulgated thereunder. Operator is authorized and directed to execute on behalf of each party hereby affected such evidence of this election as may be required by the Secretary of the Treasury of the United States or the Federal Internal Revenue Service, including specifically, but not by way of limitation, all of the returns, statements, and the data required by Treasury Regulation §1.761. Should there be any requirement that each party hereby affected give further evidence of this election, each such party shall execute such documents and furnish such other evidence as may be required by the Federal Internal Revenue Service or as may be necessary to evidence this election. No such party shall give any notices or take any other action inconsistent with the election made hereby. If any present or future income tax laws of the state or states in which the Contract Area is located or any future income tax laws of the United States contain provisions similar to those in Subchapter "K," Chapter 1, Subtitle "A," of the Code, under which an election similar to that provided by Section 761 of the Code is permitted, each party hereby affected shall make such election as may be permitted or required by such laws. In making the foregoing election, each such party states that the income derived by such party from operations hereunder can be adequately determined without the computation of partnership taxable income.

**ARTICLE X.**

**CLAIMS AND LAWSUITS**

Operator may settle any single uninsured third party damage claim or suit arising from operations hereunder if the expenditure does not exceed Fifty Thousand Dollars (\$ 50,000.00) and if the payment is in complete settlement of such claim or suit. If the amount required for settlement exceeds the above amount, the parties hereto shall assume and take over the further handling of the claim or suit, unless such authority is delegated to Operator. All costs and expenses of handling settling, or otherwise discharging such claim or suit shall be at the joint expense of the parties participating in the operation from which the claim or suit arises. If a claim is made against any party or if any party is sued on account of any matter arising

1 from operations hereunder over which such individual has no control because of the rights given Operator by this agreement, such party  
2 shall immediately notify all other parties, and the claim or suit shall be treated as any other claim or suit involving operations hereunder.  
3

4 **ARTICLE XI.**  
5 **FORCE MAJEURE**

6 If any party is rendered unable, wholly or in part, by force majeure to carry out its obligations under this agreement, other than  
7 the obligation to indemnify or make money payments or furnish security, that party shall give to all other parties prompt written notice of  
8 the force majeure with reasonably full particulars concerning it; thereupon, the obligations of the party giving the notice, so far as they are  
9 affected by the force majeure, shall be suspended during, but no longer than, the continuance of the force majeure. The term "force  
10 majeure," as here employed, shall mean an act of God, strike, lockout, or other industrial disturbance, act of the public enemy, war,  
11 blockade, public riot, lightning, fire, storm, flood or other act of nature, explosion, governmental action, governmental delay, restraint or  
12 inaction, unavailability of equipment /, and any other cause, whether of the kind specifically enumerated above or otherwise, which is not  
13 reasonably within the control of the party claiming suspension.  
14

15 The affected party shall use all reasonable diligence to remove the force majeure situation as quickly as practicable. The  
16 requirement that any force majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes, lockouts, or  
17 other labor difficulty by the party involved, contrary to its wishes; how all such difficulties shall be handled shall be entirely within the  
18 discretion of the party concerned.

19 **ARTICLE XII.**  
20 **NOTICES**

21 All notices authorized or required between the parties by any of the provisions of this agreement, unless otherwise specifically  
22 provided, shall be in writing and delivered in person or by United States mail, courier service, telegram, telex, ~~teletype~~ or any other form  
23 of facsimile, postage or charges prepaid, and addressed to such parties at the addresses listed on Exhibit "A." All telephone, / or oral notices  
24 permitted by this agreement shall be confirmed immediately thereafter by written notice. The originating notice given under any provision  
25 hereof shall be deemed delivered only when received by the party to whom such notice is directed, and the time for such party to deliver  
26 any notice in response thereto shall run from the date the originating notice is received. "Receipt" for purposes of this agreement with  
27 respect to written notice delivered hereunder shall be actual delivery of the notice to the address of the party to be notified specified in  
28 accordance with this agreement, or to the / ~~teletype~~, facsimile or telex machine of such party. The second or any responsive notice shall be  
29 deemed delivered when deposited in the United States mail or at the office of the courier or telegraph service, or upon transmittal by / ~~telex~~,  
30 teletype or facsimile, or when personally delivered to the party to be notified, provided, that when response is required within 24 or 48  
31 hours, such response shall be given orally or by telephone, / ~~telex~~, teletype or other facsimile within such period. Each party shall have the  
32 right to change its address at any time, and from time to time, by giving written notice thereof to all other parties. If a party is not available  
33 to receive notice orally or by telephone / ~~or email~~ when a party attempts to deliver a notice required to be delivered within 24 or 48 hours, the notice  
34 may be delivered in writing by any other method specified herein and shall be deemed delivered in the same manner provided above for  
35 any responsive notice. **An automatic response via email shall not be deemed as a response to a notice delivered via email.**

36 **ARTICLE XIII.**

37 **TERM OF AGREEMENT**

38 **The term of this agreement shall be as provided in the Unit Plan.**

39 **ARTICLE XIV.**

40 **COMPLIANCE WITH LAWS AND REGULATIONS**

41 **A. Laws, Regulations and Orders:**

42 This agreement shall be subject to the applicable laws of the state in which the Contract Area is located, to the valid rules,  
43 regulations, and orders of any duly constituted regulatory body of said state; and to all other applicable federal, state, and local laws,  
44 ordinances, rules, regulations and orders.

45 **B. Governing Law:**

46 This agreement and all matters pertaining hereto, including but not limited to matters of performance, non-  
47 performance, breach, remedies, procedures, rights, duties, and interpretation or construction, shall be governed and determined by  
48 the law of the state in which the Contract Area is located. ~~If the Contract Area is in two or more states, the law of the state of~~  
49 ~~\_\_\_\_\_ shall govern.~~

50 **C. Regulatory Agencies:**

51 ~~Nothing herein contained shall grant, or be construed to grant, Operator the right or authority to waive or release any rights,~~

1 ~~privileges, or obligations which Non-Operators may have under federal or state laws or under rules, regulations or orders promulgated~~  
2 ~~under such laws in reference to oil, gas and mineral operations, including the location, operation, or production of wells, on tracts offsetting~~  
3 ~~or adjacent to the Contract Area.~~

4 and With respect to the operations hereunder, Non-Operators **other than unleased mineral owners** agree to release Operator from any  
5 and ~~all~~ losses, damages, injuries,  
6 claims and causes of action arising out of, incident to or resulting directly or indirectly from Operator's interpretation or application of rules,  
7 rulings, regulations or orders of the Department of Energy or Federal Energy Regulatory Commission or predecessor or successor agencies  
8 to the extent such interpretation or application was made in good faith and does not constitute gross negligence. Each Non-Operator further  
9 agrees to reimburse Operator for such Non-Operator's share of production or any refund, fine, levy or other governmental sanction that  
10 Operator may be required to pay as a result of such an incorrect interpretation or application, together with interest and penalties thereon  
11 owing by Operator as a result of such incorrect interpretation or application.

12 **ARTICLE XV.**  
13 **MISCELLANEOUS**

14 **A. Execution:**

15 This agreement shall be binding upon each Non-Operator **other than unleased mineral owners** when this agreement or a  
16 counterpart thereof has been executed by  
17 such Non-Operator and Operator notwithstanding that this agreement is not then or thereafter executed by all of the parties to which it is  
18 tendered or which are listed on Exhibit "A" as owning an interest in the Contract Area or which own, in fact, an interest in the Contract  
19 Area. Operator may, however, by written notice to all Non-Operators who have become bound by this agreement as aforesaid, given at any  
20 time prior to the actual spud date of the Initial Well but in no event later than five days prior to the date specified in Article VI.A. for  
21 commencement of the Initial Well, terminate this agreement if Operator in its sole discretion determines that there is insufficient  
22 participation to justify commencement of drilling operations. In the event of such a termination by Operator, all further obligations of the  
23 parties hereunder shall cease as of such termination. In the event any Non-Operator has advanced or prepaid any share of drilling or other  
24 costs hereunder, all sums so advanced shall be returned to such Non-Operator without interest. Except as otherwise provided in Article  
25 IV.B, in the event operations on a well shall be commenced without execution of this agreement by all persons listed on Exhibit "A" as  
26 having a current interest in such well, or in the event that subsequent to the commencement of operations on the well previously unknown  
27 or undisclosed persons owning working interests in a well are discovered, or both, the parties executing this agreement agree to one of the  
28 following:

29  ~~Option No. 1:~~ Operator shall indemnify executing Non-Operators with respect to all costs incurred for the well which would  
30 have been charged to each such person under this agreement as if such person had executed the same and Operator shall receive  
31 all revenues which would have been received by each such person under this agreement as if such person had executed the same.

32  ~~Option No. 2:~~ The Operator shall advise all parties of the total interest of the parties that have executed this agreement. Each  
33 party executing this agreement, within forty-eight (48) hours (exclusive of Saturday, Sunday, and legal holidays) after delivery  
34 of such notice, shall advise the Operator of its desire to (i) limit participation to such party's interest as shown on Exhibit "A" or  
35 (ii) carry only its proportionate part (determined by dividing such party's interest in the Contract Area by the interest of all  
36 parties executing this agreement) of non-executing persons' interests, or (iii) carry its proportionate part (determined as provided  
37 in (ii)) of non-executing persons' interests together with all or a portion of its proportionate part of any non-executing persons  
38 interests that any executing party did not elect to take. Any interest of non-executing persons that is not carried by an executing  
39 party shall be deemed to be carried by the Operator. Failure to advise the Operator within the time required shall be deemed an  
40 election under (i).

41 **B. Successors and Assigns:**

42 This agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective heirs, devisees, legal  
43 representatives, successors and assigns, and the terms hereof shall be deemed to run with the Leases or Interests included within the  
44 Contract Area.

45 **C. Counterparts:**

46 This instrument may be executed in any number of counterparts, each of which shall be considered an original for all purposes.

47 **D. Severability:**

48 For the purposes of assuming or rejecting this agreement as an executory contract pursuant to federal bankruptcy laws, this  
49 agreement shall not be severable, but rather must be assumed or rejected in its entirety, and the failure of any party to this agreement to  
50 comply with all of its financial obligations provided herein shall be a material default.

**ARTICLE XVI.  
OTHER PROVISIONS**

**A. Conflict of Terms:**

Notwithstanding anything in this agreement to the contrary, in the event of any conflict between the provisions of Article I through XV of this agreement and the provisions of this Article XVI, the provisions of this Article XVI shall govern. **This agreement is subject to all the terms and provisions of that certain Unit Agreement for the Development of the Grove Unit dated December 16, 2014, to which a copy of this agreement is attached (hereinafter the "Unit Agreement"). In the event of a conflict between the provisions of this agreement, including this Article XVI, and the Unit Agreement, the provisions of this agreement, including this Article XVI, shall prevail and control.**

**B. [This has been intentionally left blank]**

**C. Priority of Operations – Horizontal Wells:**

Notwithstanding Article VI.B.6 or anything else in this agreement to the contrary, it is agreed that where a Horizontal Well subject to this agreement has been drilled to the objective Displacement and the Consenting Parties cannot agree upon the sequence and timing of further operations regarding such Horizontal Well, the following elections shall control the order of priority enumerated hereafter:

- First: Testing, coring or logging;
- Second: Complete drilling operations of all proposed Laterals;
- Third: Extend or Deepen a Lateral;
- Fourth: Kick out and drill an additional Lateral in the same Zone;
- Fifth: Plug Back the well to a Zone above the Zone in which a Lateral was drilled; if there is more than one proposal to Plug Back, the proposal to Plug Back to the next deepest prospective Zone shall have priority over a proposal to Plug Back to a shallower prospective Zone;
- Sixth: Sidetrack; and
- Seventh: Plug and abandon as provided for in Article VI.E

Provided, however, that if, at the time the Consenting Parties are considering any of the above, the hole is in such a condition that a reasonably prudent operator would not conduct the particular contemplated operation involved for fear of placing the hole in jeopardy or losing the hole prior to Completing the Horizontal Well in the objective Zone, such operation shall be eliminated from the priorities set forth above.

**D. Subrogation:**

In addition to the other rights and remedies, the parties may be subrogated to the rights of any party under any lien or encumbrance and be entitled to an assignment of the subrogor's interest in the Contract Area.

**E. Maintenance of Uniform Interest:**

In the event any party hereto creates a necessity for separate measurement facilities by virtue of any encumbrance or conveyance, the assignee shall alone bear the costs of acquisition, operation, maintenance and repair of such facility.

**F. [This has been intentionally left blank]**

**G. Rights Suspended:**

If a lien conferred in Article VII.B. has been enforced, for so long as the affected Party remains in default it shall have no other access to the Contract Area or information obtained in connection with the operations hereunder and shall not be entitled to vote on any matter hereunder. As to any proposed operation in which it otherwise would have the right to participate, such Party shall have the right to be a Consenting Party therein only if it pays the amount it is in default before the operation is commenced; otherwise, it automatically shall be deemed a Non-Consenting Party to this operation.

**H. [This has been intentionally left blank]**

**I. Information:**

Notwithstanding anything to the contrary contained elsewhere in this Agreement, a Non-Consenting Party shall not be entitled to receive proprietary, non-public geological or technical information or information concerning well-tests with respect to the non-consent operation until the recovery of all sums to be recovered pursuant to Article VI.B.2(b). Nothing in this paragraph shall limit any party's right to receive information as to the cost and expense of conducting operations or as to the actual quantity or price of oil, gas or other hydrocarbons produced or sold from any well on the Contract Area during any regular reporting period.

**J. Subsequent Operations:**

For the purposes of Article VI.B., Operator may commence activities preliminary to actual drilling operations, including without limitation building location, roads and pits, delivering materials and equipment to the well site, setting conductor pipe, drilling of surface hole by a small drilling rig and cementing of surface casing, rigging up a drilling rig, and/or actual drilling operations at any time before giving the notice of proposed operations required by said Article. Notwithstanding the foregoing, the parties receiving notice of proposed operations pursuant to Article VI.B.1. and VI.B.2. shall have the full time allowed in which to make their elections(s) and shall be subject to the non-consent provisions thereof to the same extent and in the same manner as provided in said Article VI.B. without reference to the time that such activities were commenced relative to giving notice. Nothing in this provision shall serve to extend the time within which Operator is required to commence operations pursuant to Articles VI.B.1. and VI.B.2.

**K. Liability of Operator:**

Operator shall conduct all such operations in a good and workmanlike manner, but, notwithstanding anything to the contrary herein contained, Operator shall have no liability, in contract, tort, or otherwise, to the other parties for losses or liabilities, whether or not such losses or liabilities are caused by the negligence, sole or concurrent, of Operator incurred, arising out of or in connection with the performance or administration of this Agreement, including, without limitation, any payment of royalty, accounting, marketing, purchasing or governmental filings, or operations performed hereunder or on the Contract Area, except such as may result from gross negligence or willful misconduct of Operator.

**L. Liability of Parties:**

In their relations with each other under and in performance of this Agreement, and any unitization agreement or other agreement relating to this Agreement or the Contract Area including the marketing of gas, the parties shall not be considered fiduciaries or to have a fiduciary or confidential relationship (subject to the confidentiality provisions of this Operating Agreement) or duty of good faith or similar duty but rather shall be free to act on an arm's-length basis in accordance with their own respective self-interests. No party shall be liable to another Party for consequential, incidental, punitive, exemplary, special or indirect damages arising from or in connection with performance of this Agreement. The Parties intend that the limitations imposed on remedies and the measure of damages hereunder be without regard to the cause or causes related thereto, including, without limitation, the negligence or strict liability of any Party, whether such negligence be sole, joint or concurrent, or active or passive.

M. Marketing:

If Operator sells any gas of a non-operator pursuant to Article VI.G., Operator shall conclusively be deemed to have satisfied all its obligations with respect to any gas sold by Operator for a non-operator, if (1) the net price received by the non-operator for the sale of such gas is not less than the price received by Operator for gas produced from the same well, and (2) any charges, costs or fees paid by Operator to an affiliate for services in connection with the sale of such gas and deducted from the price received by the non-operator are not greater than those charged by such affiliate to others in arm's-length transactions. The failure of Operator to obtain such net price or the incurring of affiliate charges greater than those specified above shall not be deemed to prove any breach of Operator's obligations to sell the product in a commercially reasonable manner.

N. Confidentiality:

Any information furnished to or obtained by a Non-Operator pursuant to Articles V.D.5., V.D.6, and V.D.7. shall be maintained as confidential by the Non-Operator and shall not be disclosed by the Non-Operator without prior written consent of Operator. Notwithstanding anything in this Agreement to the contrary, the rights of a Non-Operator as set forth in Articles V.D.5., V.D.6., and V.D.7. shall only apply in favor of those Non-Operator parties who are Consenting Parties with respect to a proposed operation, until such time as the Consenting Parties are no longer entitled to the Non-Consenting Party's share of production, or the proceeds therefrom, attributable to the proposed operation in which the Non-Consenting Parties did not participate.

O. Media/News Release: other than Operator

No party hereto shall, / at any time, issue to the press or other media any news release, or distribute any information or photographs, concerning the Contract Area, without prior approval of all o the other parties hereto. When all of the parties have reviewed such material and all parties have approved the issuance of the material, the party desiring such release shall have the principal responsibility for its issuance. The only other exception to the foregoing shall be that in the event of any emergency involving extensive property damage, operations failure, loss of human life or other clear emergency, the party designated as Operator hereunder is authorized to furnish such minimum, strictly factual information as shall be necessary to satisfy the legitimate public interest on the part of the press and duly constituted authorities, if time does not permit obtaining prior approval by the other parties. Said Operator shall thereupon promptly advise parties of the information so furnished.

P. Damage to Reservoir/Loss of Reserves:

Notwithstanding any contrary provision of this agreement no party shall be liable to any other party for damage to a reservoir or loss of hydrocarbons that may result from any operation(s) conducted under this Agreement, except if that damage or loss arises from a party's gross negligence or willful misconduct.

Q. Operator Indemnity:

The drilling of multiple horizontal wellbores adjacent to an existing horizontal wellbore and fracing such wellbores to achieve possible communication between such wellbores is contemplated as a means to achieve maximum production and recovery of reserves. Such operations shall not constitute negligence or gross negligence under the terms of this Agreement, and all Non-Operators acknowledge that such operations associated with an adjacent horizontal wellbore by Operator will impact the operation of existing horizontal well(s), including flow rates and recoverable reserves, and that such impact may have a negative economic effect on any one or more of the existing horizontal wells in which Non-Operators may own an interest. Each Non-Operator acknowledges and agrees that Operator and its shareholders, officers, directors, subsidiaries, affiliates, agents, employees, and contractors (the "Operator Parties") shall not be liable, responsible, or accountable in damages to Non-Operators, its shareholders, officers, directors, subsidiaries, affiliates, agents, employees, and contractors (the "Non-Operator Parties") for any loss, liability, damage or costs, that the Non-Operator Parties may incur or suffer as a result of Non-Operator's non-consent or failure to participate pursuant to this operating agreement in any horizontal wellbore drilled to the same objective producing zone as an existing horizontal wellbore and Non-Operators hereby release, waive, discharge and covenant not to sue for, any claim they might have as a result of any loss, liability, damage or costs suffered by any Non-Operator with respect to any Non-Operator's interest in any existing wells in the Contract Area or otherwise, arising out of, or related to, the lawful drilling or completion, or any other lawful operational activity associated with a horizontal wellbore in which Non-Operator is a Consenting or a Non-Consenting participant and Non-Operator also hereby indemnifies and holds Operator Parties harmless from any such loss, liability, damage or cost suffered by Non-Operator.

R. Regulatory Filings:

Operator shall act as representative of all parties **other than unleased mineral owners** in all hearings and proceedings before administrative bodies concerning the Contract Area and all costs and expenses incurred by Operator directly or by retention of outside personnel for such hearings or proceedings shall be proper charges against the joint account. Nothing contained herein, however, shall prevent any of the parties from participating in any such hearings or proceedings on its own behalf and at its own cost and expense. Operator shall use its commercially reasonable judgment in making any filings, and preparing any of the notices, reports and applications referred to in Article V.D.6. of this Agreement. However, in no event shall Operator have any liability to any Non-Operator in making and prosecuting any such filing or in rendering any notice, report or application, absent bad faith, gross negligence or willful misconduct on the part of any senior executive of Operator. Any penalties incurred as a result of any incorrect filing, notice, report or application shall, in absence of bad faith, gross negligence or willful misconduct, be charged to the parties owning the production to which the penalty pertains.

S. Overhead – Environmental Response:

Non-Operators /,other than Unleased Mineral Owners, agree to compensate Operator, in proportion to each Non-Operator's interest, for overhead costs incurred in responding to any Environmental Claim or any Environmental Condition with regard to or arising from the Cotnract Area. The term "Environmental Claim" means any action, suit, investigation, proceeding, demand, claim or written notice by any person alleging or inquiring as to potential liability arising out of any Environmental Law with respect to the Contract Area; and the term "Environmental Condition" means any existing or threatened condition with respect to the soil, subsurface, surface waters, ground waters, atmosphere or other environmental media, whether or not the Environmental Condition is yet discovered, which could result in any damage, loss, cost, expense, claim, demand, order, lien or liability to or against the Contract Area or against the parties with respect to the Contract Area under any Environmental Law. The term "Environmental Law" means all state, local, and federal treaties, laws, rules, regulations and permits in effect during the term of this Agreement relating to pollution or protection of the environment, including, without limitations, the Comprehensive Environmental Response Compensation and Liability Act of 1980 as amended ("CERCLA"), the Resource Conversation and Recovery Act of 1976 as amended ("RCRA"), the Toxic Substances Control Act ("TSCA"). The overhead rates for amounts in excess of \$25,000.00 is as follows:

1. 5% of total costs through \$100,000.00; plus
2. 3% of total costs in excess of \$100,000.00, but less than \$1,000,000.00; plus
3. 2% of total costs in excess of \$1,000,000.00

T. Operations by Less Than All Parties

Election by a previous Non-Consenting Party to participate in a subsequent Completion or Recompletion attempt on the same wellbore shall require such party to pay its proportionate share of the cost of salvable materials and equipment installed in the well pursuant to the previous Completion or Recompletion attempt, insofar and only insofar as such materials and equipment benefit the Zone in which such party elects to participate in a subsequent Completion attempt.

U. Additional Facilities

Any party /,except an Unleased Mineral Owner, may propose the installation of additional facilities reasonably intended to benefit the joint property, beyond those included in a proposed operation, by giving to all other parties written notice of the proposal together with an estimate of anticipated expenses and all other reasonably necessary details. The parties shall have thirty (30) days from receipt of such notice to elect in writing whether or not to participate in the proposed installation, which time may be extended an additional thirty (30) days by agreement of a majority in interest in order to obtain additional information. At the expiration of the response time, those parties electing to participate may proceed to install the proposed facilities at their own risk and expense and shall own said facilities in the proportion that they bear the expense of construction. To the extent that the additional facilities are to be used for the benefit the joint property, all of the parties shall have access to and use of said facilities ratably, provided that the participating parties shall be entitled to a reasonable fee for such use by the non-participating parties, which fee shall include a reasonable return on investment. Unless otherwise agreed by all participating parties and Operator, Operator shall be responsible for constructing and operating said facilities and shall be entitled to collect a reasonable charge for overhead during construction pursuant to the provisions of Exhibit "C".

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V. Renewal or Extension of Leases:

Notwithstanding anything herein to the contrary, each party committing a lease or leases to this Agreement shall have the option upon the expiration of each lease to renew or extend such lease and to bear the renewal or extension costs and expenses and thereby retain its original interest and title in said lease. By exercising such option, the parties' working interest shall remain unchanged. If such party committing a lease or leases to this Agreement does not exercise its option within sixty (60) days after the expiration date of the original lease, the renewal or extension lease will then be subject to the terms of Article VIII.B. above. If any working interest owner other than the party committing a lease or leases to this Agreement renews or extends the lease, the renewing or extending party shall furnish such other party an itemized statement of the complete renewal or extension costs and expenses of such lease. Such other party shall then have sixty (60) days after the receipt of such itemized statement to reimburse the renewing or extending party in full. Failure of such other party to do so shall result in the forfeiture of its option hereunder. The provision hereof shall only apply to leases or portions of leases located in the Contract Area.

W. Notice of Lien and Security Interest:

Each party to this agreement ratifies and agrees to execute a "Recording Supplement to Operating Agreement and Financing Statement" in the form attached hereto as Exhibit "H" simultaneously with their execution of this agreement. Each party further authorizes the Operator to file such instrument in the appropriate records of the county or counties where the Contract Lands are located and in the Uniform Commercial Code records of the appropriate Secretary of State's office and/or such other records as may be required under applicable state law to fully perfect the security interests created herein.

X. Non-Consenting of Initial Well

~~In the event a Party elects not to participate (a Non-Consenting Party) in the Initial Well proposed in the Contract Area pursuant to Article VI.A., upon the timely commencement of actual drilling operations on such Well, such Non-Consenting Party shall be deemed to have relinquished to the Consenting Parties, and the Consenting Parties shall own and be entitled to receive, in proportion to their respective interests, all of such Non-Consenting Party's interest in the well and share of production therefrom until the proceeds of the sale of such interests, calculated at the well (after deducting production taxes, assessments, excise taxes, royalty, overriding royalty and other interests not otherwise excepted in this agreement, payable out of or measured by the production from such well accruing with respect to such interest until it reverts) shall equal the total of the following: a) 300% of such Non-Consenting Party's share of the cost of any newly acquired surface equipment beyond the wellhead connections (including, but not limited to, stock tanks, separators, treaters, pumping equipment and piping), plus 300% of such Non-Consenting Party's share of the cost of the operation of the well commencing with first production and continuing until such Non-Consenting Party's relinquished interest shall revert to it under other provisions of this Article, it being agreed that such Non-Consenting Party's share of such costs and equipment will be that interest that would have been chargeable to such Non-Consenting Party had it participated in the well from the beginning of the operations; and b) 300% of that portion of the costs and expenses of drilling, testing and completing, after deducting any cash contributions received under Article III.C., and 300% of that portion of the cost of newly acquired equipment in the well (to and including wellhead connections) which would have been chargeable to such Non-Consenting Party if it had participated therein.~~

Y. Additional Definitions:

In addition to those set out in this agreement, the definitions set forth in the Unit Plan for the Miley Unit are hereby adopted and incorporated as if fully rewritten herein.

Z. Netting and Setoff:

**Except for any payments related to charges on any joint interest billing that a Non-Operator has disputed in good faith, in the event that Non-Operator does not remit payment for any operating costs or charges assessable to Non-Operators and permitted under this Operating Agreement within forty five (45) days after the date payment is due, Operator is authorized to deduct such costs or charges, and to remit to such Non-Operators their respective net share of any proceeds attributable to the interest of such Non-Operators being received directly from any purchasers of production from the Contract Area. The foregoing provisions shall not diminish Operator's lien rights contained within this agreement.**

AA. Working Interest Adjustment:

Subject to approval by the State, any recalculation or adjustment of the Parties' Exhibit "A" working interests pursuant to Articles VIII.A, VIII.B, XVI.AA or XVI.CC of this Agreement shall be recalculated or adjusted after written notice is provided to the affected party(ies) of such recalculation or adjustment of working interest. Such recalculation or adjustment shall be made effective as of the date of the lease surrender, renewal, acquisition and/or Contract Area/Drilling Unit Adjustment; provided, however, any such recalculation or adjustment to the Parties' working interests prior to the date of the first sale of production from such Drilling Unit shall be made effective as of the date first costs were incurred on and for such Drilling Unit.

BB. Contract Area/Drilling Unit Adjustment:

Subject to approval by the State, it is recognized by the Parties consenting to unit operations that it may be prudent and/or necessary to enlarge or reduce the size of an existing Contract Area/Drilling Unit and/or include within an existing Contract Area/Drilling Unit acreage which was not initially included therein. Without the consent of the Parties consenting to unit operations, an existing Contract Area/Drilling Unit may not be enlarged or reduced in size. Such consent shall not be unreasonably withheld, delayed or conditioned. The party proposing such enlargement or reduction to an existing Contract Area/Drilling Unit shall notify the other party(ies) consenting to unit operations in writing, providing an explanation for the Contract Area/Drilling Unit modification proposal. To the extent a Contract Area/Drilling Unit is modified pursuant to this Agreement, the working interests of the Parties consenting to unit operations shall be recalculated in the manner set forth in Article XVI.AA and XVI.BB and a modified declaration of pooled unit shall be prepared and filed of record.

To the extent the Contract Area is modified pursuant to this Agreement, this Agreement shall be amended with revised Exhibits "A," "A-1," and "A-2."

This Article XVI.BB shall not apply to the loss or failure of title pursuant to Article IV.B of this Agreement.

CC. Term

This Agreement shall continue in effect so long as the Unit Agreement remains in effect, and thereafter until (a) all wells in the Unit Area have been plugged and abandoned or turned over to Working Interest Owners; (b) all Unit Equipment and real property acquired for the joint account have been disposed of by Unit Operator in accordance with the instructions of Working Interest Owners; and (c) there has been a final accounting.



A.A.P.L. FORM 610 - MODEL FORM OPERATING AGREEMENT - 1989 (Horz.)

IN WITNESS WHEREOF, this agreement shall be effective as of the 16<sup>th</sup> day of December, 2014.

\_\_\_\_\_, who has prepared and circulated this form for execution, represents and warrants that the form was printed from and, with the exception(s) listed below, is identical to the AAPL Form 610-1989 Model Form Operating Agreement, as published in computerized form by Forms On A Disk, Inc. No changes, alterations, or modifications, other than those made by strikethrough and/or insertion and that are clearly recognizable as changes in Articles \_\_\_\_\_, have been made to the form.

**ATTEST OR WITNESS:**

\_\_\_\_\_  
\_\_\_\_\_

**OPERATOR**  
**PDC Energy, Inc., a Nevada corporation**

By \_\_\_\_\_

\_\_\_\_\_  
Type or print name

Title \_\_\_\_\_

Date \_\_\_\_\_

Tax ID or S.S. No. \_\_\_\_\_

**NON-OPERATORS**

\_\_\_\_\_  
\_\_\_\_\_

By \_\_\_\_\_

\_\_\_\_\_  
Type or print name

Title \_\_\_\_\_

Date \_\_\_\_\_

Tax ID or S.S. No. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

By \_\_\_\_\_

\_\_\_\_\_  
Type or print name

Title \_\_\_\_\_

Date \_\_\_\_\_

Tax ID or S.S. No. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

By \_\_\_\_\_

\_\_\_\_\_  
Type or print name

Title \_\_\_\_\_

Date \_\_\_\_\_

Tax ID or S.S. No. \_\_\_\_\_



# Exhibit A

**Exhibit "A"**

Attached to and made a part of that certain Unit Operating Agreement for the Grove Unit.

**(1) DESCRIPTION OF LANDS SUBJECT TO THIS AGREEMENT**

The Contract Area is shown on Exhibit "A-1" attached hereto.

**(2) RESTRICTIONS AS TO DEPTHS, FORMATIONS, OR SUBSTANCES**

This Agreement shall cover the Unit Area from fifty feet above the top of the Utica Shale formation to fifty feet below the base of the Point Pleasant formation (as more particularly defined in Article 1 of the Unit Agreement).

**(3) PARTIES TO THIS AGREEMENT**

**PDC Energy, Inc.**

1775 Sherman Street, Suite 3000  
Denver, Colorado 80203  
Attention: Vice President Land  
Telephone: (303) 860-5800  
Fax: (303) 860-5838

**EnerVest Operating, LLC**

Attention: James D. McKinney, Senior Vice President & General Manager  
300 Capitol Street, Suite 200  
Charleston, WV 52301  
Telephone: 304-343-5505  
Fax: 304-343-5525

The names and addresses of the remaining parties are set forth in Exhibit "A-3" attached hereto.

**(4) PERCENTAGES OR FRACTIONAL INTERESTS OF PARTIES TO THIS AGREEMENT**

The owners and interests of the owners are set forth in Exhibit "A-2" attached hereto.

**(5) OIL AND GAS LEASES AND/OR OIL AND GAS INTERESTS SUBJECT TO THIS AGREEMENT**

See Exhibits "A-2" and "A-3" for a list of the oil and gas leases and interests subject to this agreement.

**(6) BURDENS ON PRODUCTION**

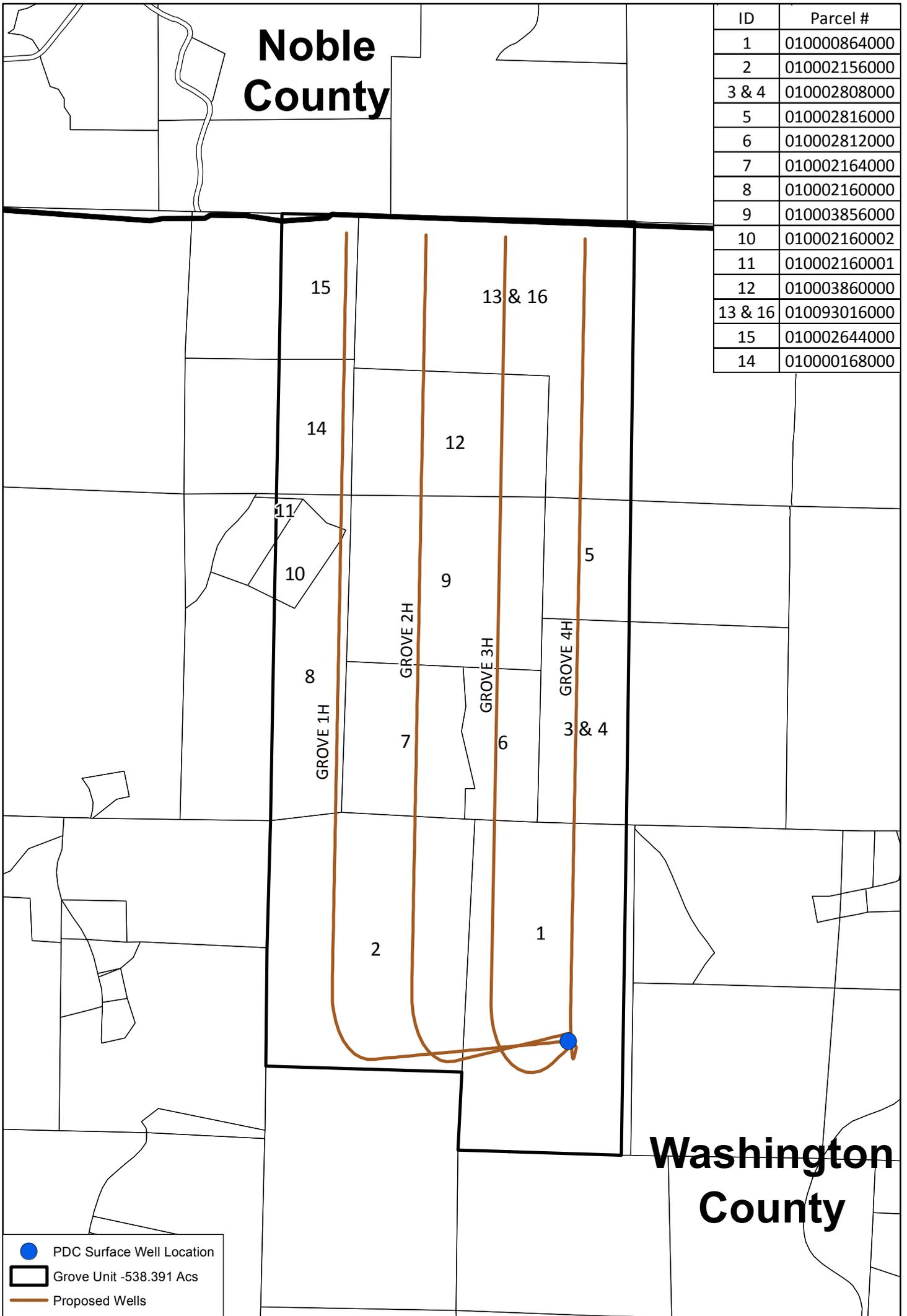
**(7) ADDRESSES OF PARTIES FOR NOTICE PURPOSES**

The addresses are set forth in Exhibit "A-3" attached hereto.

\*It is understood by the parties that the interests listed in this Unit Operating Agreement (and any attachments hereto) are estimates only and are subject to change based upon final verification of title, due diligence, or surveying work that may be performed. The parties' interests shall be adjusted to reflect the actual interest owned by the parties in the Contract Area.

End of Exhibit "A"

# **Exhibit A-1**



# Unit Plat

Grove Unit  
Adams Township  
Washington Co., OH



Coordinate System: NAD 1983 State Plane Ohio South

1 inch = 1,000 feet

Prepared Date: 12/15/2014

# **Exhibit A-2**

**EXHIBIT "A-2"**  
Leases Within the Contract Area

Attached to and made a part of that certain Unit Operating Agreement for the Grove Unit.

Tract #	Tax Map Number	Leased (Y/N)	Lease Amended (Y/N/NA)	Lessor	Parcel Surface Acres In Unit	Mineral Owner Interest	Mineral Owner Surface Acres	Tract Participation	Unit Working Interest	PDC Working Interest	PDC Unit Participation	EnerVest Working Interest	EnerVest Unit Participation	Address
1	010000864000	Yes	Yes	Lance R. Grove, subject to life estate of Sheila Joy Grove	95.86700000	1.000000	95.867000	0.178062	17.806204%	100.000000%	17.806204%	0%	0%	3895 Winding Path Drive Winchester, OH 43110
2	010002156000	Yes	Yes	Gary G. Waters	75.00000000	1.000000	75.000000	0.139304	13.930396%	100.000000%	13.930396%	0%	0%	151 Anderson Lane Waterford, OH 45786
3 & 4	010002808000	Yes	Yes	Lance R. Grove, subject to life estate of Sheila Joy Grove	27.11800000	1.000000	27.118000	0.050369	5.036860%	100.000000%	5.036860%	0%	0%	3895 Winding Path Drive Winchester, OH 43110
5	010002816000	Yes	Yes	Lucas Williams	13.60000000	1.000000	13.600000	0.025260	2.526045%	100.000000%	2.526045%	0%	0%	0% Lowell, OH 45744 3895 Winding Path Drive
6	010002812000	Yes	Yes	Lance R. Grove, subject to life estate of Sheila Joy Grove	29.41000000	1.000000	29.410000	0.054626	5.462373%	100.000000%	5.462373%	0%	0%	151 Anderson Lane Winchester, OH 43110
7	010002164000	Yes	Yes	Gary G. Waters	25.43000000	1.000000	25.430000	0.047233	4.723333%	100.000000%	4.723333%	0%	0%	0% Waterford, OH 45786
8	010002160000	Yes	Yes	Gary G. Waters	38.94800000	1.000000	38.948000	0.072341	7.234148%	100.000000%	7.234148%	0%	0%	151 Anderson Lane Waterford, OH 45786
9	010003856000	Yes	Yes	Lance R. Grove, subject to life estate of Sheila Joy Grove Kenneth W. Rowan & Janice Rowan, husband and wife, as joint tenants with the right of survivorship, subject to the reservation and retention of an option to repurchase tract by Gary G. Waters	46.00000000	1.000000	46.000000	0.085440	8.543976%	100.000000%	8.543976%	0%	0%	3895 Winding Path Drive Winchester, OH 43110
10	010002160002	Yes	Yes	Kenneth W. Rowan & Janice Rowan, husband and wife, as joint tenants with the right of survivorship	4.26800000	1.000000	4.268000	0.007927	0.792732%	100.000000%	0.792732%	0%	0%	4000 Laurel Ridge Rd. Lowell, OH 45744
11	010002160001	Yes	Yes	Lance R. Grove, subject to life estate of Sheila Joy Grove	50.00000000	1.000000	50.000000	0.001243	0.124259%	100.000000%	0.124259%	0%	0%	0% Lowell, OH 45744 3895 Winding Path Drive
12	010003860000	Yes	Yes	Dorothy J. Kuntz with Stuart L. Kuntz as Power of Attorney	90.68000000	0.500000	45.340000	0.092869	9.286931%	100.000000%	9.286931%	0%	0%	247 Waterford Drive Winchester, OH 43110
13A & 16A	010093016000	Yes	N/A	Twilla D. Hettrick, widow	90.68000000	0.500000	45.340000	0.084214	8.421389%	100.000000%	8.421389%	0%	0%	0% Dublin, OH 43017 10840 Highland Ridge Rd. Macksburg, OH 45746
14	010000168000	Yes	No	Bill W. Baker	22.19200000	1.000000	22.192000	0.041219	4.121911%	70.000000%	2.885338%	30.000000%	1.236573%	1875 Laurel Ridge Rd. Lowell, OH 45744
15A	010002644000	Yes	Yes	OGI, Inc.	19.20900000	1.667/50000	0.640428	0.001190	0.118952%	100.000000%	0.118952%	0%	0%	Contact: Jack Searle 841 Hensch Ave. Pagosa Springs, CO 81147
15B	010002644000	Yes	Yes	Wind River Resources, Inc.	19.20900000	33333/100000	0.640236	0.001189	0.118917%	100.000000%	0.118917%	0%	0%	Contact: William N. Heiss, Vice President P.O. Box 2944 Casper, WY 82602
15C	010002644000	Yes	Yes	Walter Production, Inc.	19.20900000	3/10	5.762700	0.010704	1.070356%	100.000000%	1.070356%	0%	0%	Contact: Ron A. Wilson 1100 Louisiana, Suite 200 Houston, TX 77002
15D	010002644000	Yes	Yes	Helis Oil & Gas Company, LLC	19.20900000	3/10	5.762700	0.010704	1.070356%	100.000000%	1.070356%	0%	0%	Contact: Roxanne Simpson, Attorney-in-Fact 228 St. Charles Ave, Suite 912 New Orleans, LA 70130 Contact: Josh Lefler, Managing Partner 7303 North Highway 81 Duncan, OK 73533
15E	010002644000	Yes	Yes	Black Hawk Royalty IV, LP, an Oklahoma Limited Partnership	19.20900000	33333/100000	6.402936	0.011893	1.189272%	100.000000%	1.189272%	0%	0%	0% Lowell, OH 45744 1.236573%
					TOTAL UNIT ACRES	538.3910000								
					TOTAL PDC UNIT ACRES	531.734000								
					TOTAL ENERVEST UNIT ACRES	6.6576000								

# **Exhibit A-3**

**EXHIBIT "A-3"**  
Unitized Parties

Attached to and made a part of that certain Unit Operating Agreement for the Grove Unit.

Tract #	Tax Map Number	Leased (Y/N)	Lease Amended (Y/N/NA)	Lessor	Parcel Surface Acres in Unit	Mineral Owner Interest	Mineral Owner Surface Acres	Tract Participation	Unit Working Interest	PDC Working Interest	PDC Unit Participation	EnerVest Working Interest	EnerVest Unit Participation	Address
14	010000168000	Yes	No	Bill M. Baker	22.19200000	1.000000	22.192000	0.041219	4.121911%	70.000000%	2.885338%	30.000000%	1.236573%	1875 Laurel Ridge Rd Lowell, OH 45744
<b>TOTAL UNIT ACRES</b>					<b>538.3910000</b>									
<b>TOTAL CONFORMING ACRES</b>					<b>516.1990000</b>									
<b>TOTAL NONCONFORMING ACRES TO BE UNITIZED</b>					<b>22.1920000</b>									
									<b>4.121911%</b>					
									<b>2.885338%</b>					
									<b>1.236573%</b>					

# Exhibit B

**Exhibit "B"**

Attached to and made a part of that certain Unit Operating Agreement  
for the Grove Unit.

**AMENDMENT AND RATIFICATION OF OIL AND GAS LEASE**

This Amendment and Ratification of Oil and Gas Lease ("Amendment") is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2014, by and between \_\_\_\_\_, with an address of \_\_\_\_\_, ("Lessor"), and PDC Energy, Inc., having an address of 1775 Sherman Street, Suite #3000, Denver, Colorado 80203 ("Lessee").

**WHEREAS**, Lessor and Lessee, through various conveyances and assignments, are successors in title to that certain lease dated \_\_\_\_\_ by \_\_\_\_\_, as lessor, and \_\_\_\_\_, as lessee, covering \_\_\_\_ acres, more or less, in \_\_\_\_\_ Township, \_\_\_\_\_ County, Ohio, and of record in the \_\_\_\_\_ County Recorder's Office, in Lease Record \_\_\_\_, Page \_\_\_\_, (the "Lease").

**WHEREAS**, Lessor and Lessee agree this Amendment is limited to all depths, formations and strata below the base of the Berea Formation.

**WHEREAS**, Lessor and Lessee now desire to ratify the Lease as being in full force and effect and to amend and modify certain provisions of the same.

**WHEREAS**, Lessor and Lessee adopt the recitals set forth above as part of this Amendment, and such recitals are confirmed to be true and accurate by each party.

**NOW THEREFORE**, for and in consideration of the foregoing recitals, other good and valuable consideration, and the mutual advantage to the parties hereto, the receipt and sufficiency of which is hereby acknowledged, the Lease is hereby amended and modified to include the following provision(s), should any of the following provisions conflict with or be inconsistent with any provision of the Lease, the terms below shall prevail. Notwithstanding anything to the contrary in the Lease, the parties hereto agree as follows:

- 1. Pooling.** Lessee shall have the right but not the obligation to pool all or any part of the leased premises or interest therein with any other lands or interests, as to any or all depths or zones, and as to any or all substances covered by this lease, either before or after the commencement of drilling or production, whenever Lessee deems it necessary or proper to do so in order to prudently develop or operate the leased premises, whether or not similar pooling authority exists with respect to such other lands or interests. The creation of a unit by such pooling shall be based on the following criteria (hereinafter called "pooling criteria"): A unit for an oil well (other than a horizontal completion) shall not exceed 40 acres plus a maximum acreage tolerance of 10%, and for a gas well or a horizontal completion shall not exceed 1280 acres plus a maximum acreage tolerance of 10%; provided that a larger unit may be formed for an oil well or gas well or horizontal completion to conform to any well spacing or density pattern that may be prescribed or permitted by any governmental authority having jurisdiction to do so. For the purpose of the foregoing, the terms "oil well" and "gas well" shall have the meanings prescribed by applicable law or the appropriate governmental authority, or, if no definition is so prescribed, "oil well" means a well with an initial gas-oil ratio of less than 100,000 cubic feet per barrel and "gas well" means a well with an initial gas-oil ratio of 100,000 cubic feet or more per barrel, based on a 24-hour production test conducted under normal producing conditions using standard lease separator facilities or equivalent testing equipment; and the term "horizontal completion" means a well in which the horizontal component of the completion interval in the reservoir exceeds the vertical component in such interval. In exercising its pooling rights hereunder, Lessee shall file of record a written declaration describing the unit and stating the effective date of pooling. Production, drilling or reworking operations anywhere on a unit which includes all or any part of the leased premises shall be treated as if it were production, drilling

## Exhibit "B"

Attached to and made a part of that certain Unit Operating Agreement  
for the Grove Unit.

or reworking operations on the leased premises, except that the production on which Lessor's royalty is calculated shall be that proportion of the total unit production which the net acreage covered by this lease and included in the unit bears to the total acreage in the unit, but only to the extent such proportion of unit production is sold by Lessee. In the event a unit is formed hereunder before the unit well is drilled and completed, so that the applicable pooling criteria are not yet known, the unit shall be based on the pooling criteria Lessee expects in good faith to apply upon completion of the well; provided that within a reasonable time after completion of the well, the unit shall be revised if necessary to conform to the pooling criteria that actually exist. Pooling in one or more instances shall not exhaust Lessee's pooling rights hereunder, and Lessee shall have the recurring right but not the obligation to revise any unit formed hereunder by expansion or contraction or both, either before or after commencement of production, in order to conform to the well spacing or density pattern prescribed or permitted by the governmental authority having jurisdiction, or to conform to any productive acreage determination made by such governmental authority. To revise a unit hereunder, Lessee shall file of record a written declaration describing the revised unit and stating the effective date of revision. To the extent any portion of the leased premises is included in or excluded from the unit by virtue of such revision, the proportion of unit production on which royalties are payable hereunder shall thereafter be adjusted accordingly.

2. **Unitization.** Lessee shall have the right but not the obligation to commit all or any part of the leased premises or interest therein to one or more unit plans or agreements for the cooperative development or operation of one or more oil and/or gas reservoirs or portions thereof, if in lessee's judgment such plan or agreement will prevent waste and protect correlative rights, and if such plan or agreement is approved by the federal, state or local governmental authority having jurisdiction. When such a commitment is made, this lease shall be subject to the terms and conditions of the unit plan or agreement, including any formula prescribed therein for the allocation of production from a unit. Upon permanent cessation thereof, Lessee may terminate the unit by filing of record a written declaration describing the unit and stating the date of termination. Pooling hereunder shall not constitute a cross-conveyance of interests.
3. **Lessor Gas Usage.** Lessor may lay a line to one gas well located on the leased premises and connect at the location designated by Lessee on said leased premises and may take annually 200,000 cubic feet of gas produced from said well for domestic use in a single principal residential dwelling located on the leased premises. Lessor understands and recognizes that the gas delivered by the Lessee is production gas that is high pressure, explosive, flammable and odorless and does not meet pipeline quality standards. Lessor agrees that any gas taken or used by Lessor will be at Lessor's sole risk, cost, expense and responsibility. Lessor hereby indemnifies and holds harmless Lessee, its successors and assigns, from any liability, loss, risk, expense, cost, damage to property or injury or death to any person or persons incurred or arising out of the taking or using of this gas even if caused by or attributable to the sole, joint or concurrent negligence of Lessee. Lessor acknowledges that the production of gas can be unexpectedly interrupted from time to time in routine well operations. In lieu of free use of gas, Lessee shall have the option to compensate Lessor with an annual payment representing 200,000 cubic feet of gas, the cash value of such gas shall be based upon net proceeds received by Lessee at the average wellhead price received by Lessee for gas produced from such well(s), subject to the proportionate interest of the Lessor in any pooled unit. Lessor at Lessee's option may purchase additional amounts of gas at well head prices from any and all wells drilled on Lessor's property and all additional gas purchased shall be used for residential purposes.

## Exhibit "B"

Attached to and made a part of that certain Unit Operating Agreement  
for the Grove Unit.

4. **Regulation and Delay.** Lessee's obligations under this lease, whether express or implied, shall be subject to all applicable laws, rules, regulations and orders of any governmental authority having jurisdiction, including restrictions on the drilling and production of wells, and regulation of the price or transportation of oil, gas and other substances covered hereby. When drilling, reworking, production or other operations are prevented or delayed by such laws, rules, regulations or orders, or by inability to obtain necessary permits, equipment, services, material, water, electricity, fuel, access or easements, or by fire, flood, adverse weather conditions, war, sabotage, rebellion, insurrection, riot, strike or labor disputes, or by inability to obtain a satisfactory market for production or failure of purchasers or carriers to take or transport such production, or by any other cause not reasonably within Lessee's control, this lease shall not terminate because of such prevention or delay, and, at Lessee's option, the period of such prevention or delay shall be added to the term hereof. Lessee shall not be liable for breach of any provisions or implied covenants of this lease when drilling, production or other operations are so prevented or delayed.
5. **Shut-in Royalty.** If after the primary term one or more wells on the leased premises or lands pooled or unitized therewith are capable of producing Oil and Gas Substances in paying quantities, but such well or wells are either shut in or production therefrom is not being sold by Lessee, such well or wells shall nevertheless be deemed to be producing in paying quantities for the purpose of maintaining this lease. If for a period of 90 consecutive days such well or wells are shut in or production therefrom is not sold by Lessee, then Lessee shall pay an aggregate shut-in royalty of one dollar per acre then covered by this lease. The payment shall be made to Lessor on or before the first anniversary date of the lease following the end of the 90-day period and thereafter on or before each anniversary while the well or wells are shut in or production therefrom is not being sold by Lessee; provided that if this lease is otherwise being maintained by operations under this lease, or if production is being sold by Lessee from another well or wells on the leased premises or lands pooled or unitized therewith, no shut-in royalty shall be due until the first anniversary date of the lease following the end of the 90-day period after the end of the period next following the cessation of such operations or production, as the case may be. Lessee's failure to properly pay shut-in royalty shall render Lessee liable for the amount due, but shall not operate to terminate this lease.
6. **Royalty Payment.** For all Oil and Gas Substances that are physically produced from the leased premises, or lands pooled, unitized or communitized therewith, and sold, Lessor shall receive as its royalty one-eighth (12.5%) of the sales net proceeds actually received by Lessee or, if applicable, its affiliate, as a result of the first sale of the affected production to an affiliated third party, less this same percentage share of all production, severance and ad valorem taxes and all post production costs. For royalty calculation purposes, lessee shall never be required to adjust the sales proceeds to account for the purchaser's costs or charges downstream of the point of sale.
  - a. If Lessee uses the Oil and Gas Substances (other than as fuel in connection with the production and sale thereof) in lieu of receiving sale proceeds, the price to be used under this provision shall be based upon arm's-length sale(s) to unaffiliated parties for the applicable month that are obtainable, comparable in terms of quality and quantity, and in closest proximity to the leased premises.

Lessor and Lessee hereby: (i) ratify and affirm all of the terms and provisions of the Lease to the extent that they are not changed, altered, or amended by this Amendment; and (ii) agree that the Lease is valid and in full force and effect and binding on the parties. Lessee

**Exhibit "B"**

Attached to and made a part of that certain Unit Operating Agreement  
for the Grove Unit.

covenants and agrees to pay all royalties hereafter due and payable under the Lease and this Amendment in accordance with the terms thereof and with any statutory regulations applicable thereto.

Lessor hereby release and forever discharge Lessee, together with its respective successors and assigns, for any and all actions or causes of actions, suits, debts, dues, sums of money, expenses, costs, claims, demands, indemnities and covenants, whether express or implied, and for damages, interest, attorney fees, collection fees, services fees, and loss or injury of every nature and kind, whether asserted or unasserted, known or unknown, which Lessor may heretofore have had or may now have against Lessee at law or in equity (collectively "Claims") arising out of or in manner related to Lessee's operations, including, without limitation, any Claims related to royalties, under the Lease prior to the date of this Amendment.

The provisions hereof shall be binding upon the parties, their heirs, legatees, devisees, personal representatives, successors, and assigns.

This Amendment may be executed in one or more counterparts, each of which will be deemed to be an original copy of this Amendment and all of which will be deemed to comprise one single instrument.

This Amendment is signed by Lessor and Lessee as of the date of acknowledgment of their signatures below, but shall be effective for all purposes as of the Effective Date stated above.

**IN WITNESS WHEREOF**, the parties have executed this Amendment and Ratification of Oil and Gas Lease as of the date first set forth above.

**LESSOR:**

\_\_\_\_\_

**LESSEE:**  
**PDC Energy, Inc.**

\_\_\_\_\_  
O.F. Baldwin II  
As: Vice President Land

**Exhibit "B"**

Attached to and made a part of that certain Unit Operating Agreement  
for the Grove Unit.

**ACKNOWLEDGEMENTS**

STATE OF OHIO )  
 ) §: **Individual Acknowledgment**  
COUNTY OF \_\_\_\_\_ )

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2014, by \_\_\_\_\_.

\_\_\_\_\_  
Notary Public in and for the state of Ohio  
Printed Name: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

STATE OF OHIO )  
 ) §: **Individual Acknowledgment**  
COUNTY OF \_\_\_\_\_ )

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2014, by \_\_\_\_\_.

\_\_\_\_\_  
Notary Public in and for the state of Ohio  
Printed Name: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

STATE OF COLORADO )  
CITY & ) §: **Corporate Acknowledgment**  
COUNTY OF DENVER )

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2014, by O.F. Baldwin II, as Vice President Land of PDC Energy, Inc., a Nevada corporation, on behalf of the corporation.

\_\_\_\_\_  
Notary Public in and for the state of Colorado  
Printed Name: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

This instrument prepared by J. Tyler Sims on behalf of PDC Energy, Inc.

# Exhibit C

EXHIBIT "C"

Attached to and made a part of that certain Unit Operating Agreement for the Grove Unit.

ACCOUNTING PROCEDURE  
JOINT OPERATIONS

I. GENERAL PROVISIONS

1. Definitions

"Joint Property" shall mean the real and personal property subject to the agreement to which this Accounting Procedure is attached.

"Joint Operations" shall mean all operations necessary or proper for the development, operation, protection and maintenance of the Joint Property.

"Joint Account" shall mean the account showing the charges paid and credits received in the conduct of the Joint Operations and which are to be shared by the Parties.

"Operator" shall mean the party designated to conduct the Joint Operations.

"Non-Operators" shall mean the Parties to this agreement other than the Operator.

"Parties" shall mean Operator and Non-Operators.

"First Level Supervisors" shall mean those employees whose primary function in Joint Operations is the direct supervision of other employees and/or contract labor directly employed on the Joint Property in a field operating capacity.

"Technical Employees" shall mean those employees having special and specific engineering, geological or other professional skills, and whose primary function in Joint Operations is the handling of specific operating conditions and problems for the benefit of the Joint Property.

"Personal Expenses" shall mean travel and other reasonable reimbursable expenses of Operator's employees.

"Material" shall mean personal property, equipment or supplies acquired or held for use on the Joint Property.

"Controllable Material" shall mean Material which at the time is so classified in the Material Classification Manual as most recently recommended by the Council or Petroleum Accountants Societies.

2. Statement and Billings

Operator shall bill Non-Operators on or before the last day of each month for their proportionate share of the Joint Account for the preceding month. Such bills will be accompanied by statements which identify the authority for expenditure, lease or facility, and all charges and credits summarized by appropriate classifications of investment and expense except that items of Controllable Material and unusual charges and credits shall be separately identified and fully described in detail.

3. Advances and Payments by Non-Operators

A. Unless otherwise provided for in the agreement, the Operator may require the Non-Operators to advance their share of estimated cash outlay for the succeeding month's operation within fifteen (15) days after receipt of the billing or by the first day of the month for which the advance is required, whichever is later. Operator shall adjust each monthly billing to reflect advances received from the Non-Operators.

B. Each Non-Operator shall pay its proportion of all bills within ~~fifteen (15)~~ <sup>thirty (30)</sup> days after receipt. If payment is not made within such time, the unpaid balance shall bear interest monthly at the prime rate in effect at Bank of Oklahoma, N.A. +2% on the first day of the month in which delinquency occurs plus 1% or the maximum contract rate permitted by the applicable usury laws in the state in which the Joint Property is located, whichever is the lesser, plus attorney's fees, court costs, and other costs in connection with the collection of unpaid amounts.

Operator may, at its option, choose to substitute other penalties described elsewhere in this Agreement for failure to pay bills within the ~~fifteen (15)~~ <sup>thirty (30)</sup> day time frame described above.

4. Adjustments

Payment of any such bills shall not prejudice the right of any Non-Operator to protest or question the correctness thereof; provided, however, all bills and statements rendered to Non-Operators by Operator during any calendar year shall conclusively be presumed to be true and correct after twenty-four (24) months following the end of any such calendar year, unless within the said twenty-four (24) month period a Non-Operator takes written exception thereto and makes claim on Operator for adjustment. No adjustment favorable to Operator shall be made unless it is made within the same prescribed period. The provisions of this paragraph shall not prevent adjustments resulting from a physical inventory of Controllable Material as provided for in Section V.

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5. **Audits**

1 A. A Non-Operator, upon notice in writing to Operator and all other Non-Operators, shall have the right to audit  
2 Operator's accounts and records relating to the Joint Account for any calendar year within the twenty-four  
3 (24) month period following the end of such calendar year; provided, however, the making of an audit shall not  
4 extend the time for the taking of written exception to and the adjustments of accounts as provided for in  
5 Paragraph 4 of this Section I. Where there are two or more Non-Operators, the Non-Operators shall make  
6 every reasonable effort to conduct a joint audit in a manner which will result in a minimum of inconvenience  
7 to the Operator. Operator shall bear no portion of the Non-Operators' audit cost incurred under this  
8 paragraph unless agreed to by the Operator. The audits shall not be conducted more than once each year  
9 without prior approval of Operator, except upon the resignation or removal of the Operator, and shall be made  
10 at the expense of those Non-Operators approving such audit.  
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12 B. The Operator shall reply in writing to an audit report within 180 days after receipt of such report.  
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14 **6. Approval By Non-Operators**

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16 Where an approval or other agreement of the Parties or Non-Operators is expressly required under other sections of this  
17 Accounting Procedure and if the agreement to which this Accounting Procedure is attached contains no  
18 contrary provisions in regard thereto, Operator shall notify all Non-Operators of the Operator's proposal, and the  
19 agreement or approval of a majority in interest of the Non-Operators shall be controlling on all Non-Operators.  
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22 **II. DIRECT CHARGES**

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24 Operator shall charge the Joint Account with the following items:  
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26 **1. Ecological and Environmental**

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28 Costs incurred for the benefit of the Joint Property as a result of governmental or regulatory requirements to satisfy  
29 environmental considerations applicable to the Joint Operations. Such costs may include surveys of an ecological or  
30 archaeological nature and pollution control procedures as required by applicable laws and regulations.  
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32 **2. Rentals and Royalties**

33  
34 Lease rentals and royalties paid by Operator for the Joint Operations.  
35

36 **3. Labor**

37  
38 A. (1) Salaries and wages of Operator's field employees <sup>and/or consultants</sup> directly employed on the Joint Property in the conduct of  
39 Joint Operations.  
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41 (2) Salaries of First level Supervisors in the field.

<sup>and/or consultants</sup>

42 (3) Salaries and wages of Technical Employees <sup>and/or consultants</sup> directly employed on the Joint Property if such charges are  
43 excluded from the overhead rates.  
44

45 (4) Salaries and wages of Technical Employees <sup>and/or consultants</sup> either temporarily or permanently assigned to and directly  
46 employed in the operation or the Joint Property if such charges are excluded from the overhead rates.  
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49 B. Operator's cost of holiday, vacation, sickness and disability benefits and other customary allowances paid to  
50 employees whose salaries and wages are chargeable to the Joint Account under Paragraph 3A of this Section II.  
51 Such costs under this Paragraph 3B may be charged on a "when and as paid basis" or by "percentage assessment"  
52 on the amount of salaries and wages chargeable to the Joint Account under Paragraph 3A of this Section II. If  
53 percentage assessment is used, the rate shall be based on the Operator's cost experience.  
54

55 C. Expenditures or contributions made pursuant to assessments imposed by governmental authority which are  
56 applicable to Operator's costs chargeable to the Joint Account under Paragraphs 3A and 3B of this Section II.  
57

58 D. Personal Expenses of those employees whose salaries and wages are chargeable to the Joint Account under  
59 Paragraphs 3A and 3B of this Section II.  
60

61 **4. Employee Benefits**

62  
63 Operator's current costs or established plans for employees' group life insurance, hospitalization, pension, retirement,  
64 stock purchase, thrift, bonus, and other benefit plans of a like nature, applicable to Operator's labor cost chargeable to the  
65 Joint Account under Paragraphs 3A and 3B of this Section II shall be Operator's actual cost not to exceed the percent  
66 most recently recommended by the Council of Petroleum Accountants Societies.  
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5. **Material**

Material purchased or furnished by Operator for use on the Joint Property as provided under Section IV. Only such Material shall be purchased for or transferred to the Joint Property as may be required for immediate use and is reasonably practical and consistent with efficient and economical operations. The accumulation of surplus stocks shall be avoided.

6. **Transportation**

Transportation of employees and Material necessary for the Joint Operations but subject to the following limitations:

A. If Material is moved to the Joint Property from the Operator's warehouse or other properties, no charge shall be made to the Joint Account for a distance greater than the distance from the nearest reliable supply store where like material is normally available or railway receiving point nearest the Joint Property unless agreed to by the Parties.

B. If surplus Material is moved to Operator's warehouse or other storage point, no charge shall be made to the Joint Account for a distance greater than the distance to the nearest reliable supply store where like material is normally available, or railway receiving point nearest the Joint Property unless agreed to by the Parties. No charge shall be made to the Joint Account for moving Material to other properties belonging to Operator, unless agreed to by the Parties.

C. In the application of subparagraphs A and B above, the option to equalize or charge actual trucking cost is available when the actual charge is \$400 or less excluding accessorial charges. The \$400 will be adjusted to the amount most recently recommended by the Council of Petroleum Accountants Societies.

7. **Services**

The cost of contract services, equipment and utilities provided by outside sources, except services excluded by Paragraph 10 of Section II and Paragraph i, ii, and iii, of Section III. The cost of professional consultant services and contract services of technical personnel directly engaged on the Joint Property if such charges are excluded from the overhead rates. The cost of professional consultant services or contract services of technical personnel not directly engaged on the Joint Property shall not be charged to the Joint Account unless previously agreed to by the Parties.

8. **Equipment and Facilities Furnished By Operator**

A. Operator shall charge the Joint Account for use of Operator owned equipment and facilities at rates commensurate with costs of ownership and operation. Such rates shall include costs of maintenance, repairs, other operating expense, insurance, taxes, depreciation, and interest on gross investment less accumulated depreciation not to exceed ten percent (10%) per annum. Such rates shall not exceed average commercial rates currently prevailing in the immediate area of the Joint Property.

B. In lieu of charges in Paragraph 8A above, Operator may elect to use average commercial rates prevailing in the immediate area of the Joint Property ~~less—20%~~. For automotive equipment, Operator may elect to use rates published by the Petroleum Motor Transport Association.

9. **Damages and Losses to Joint Property**

All costs or expenses necessary for the repair or replacement of Joint Property made necessary because of damages or losses incurred by fire, flood, storm, theft, accident, or other cause, except those resulting from Operator's gross negligence or willful misconduct. Operator shall furnish Non-Operator written notice of damages or losses incurred as soon as practicable after a report thereof has been received by Operator.

10. **Legal Expense**

Expense of handling, investigating and settling litigation or claims, discharging of liens, payment of judgments and amounts paid for settlement of claims incurred in or resulting from operations under the agreement or necessary to protect or recover the Joint Property. Except that no charge for services of Operator's legal staff or fees or expense of outside attorneys shall be made unless previously agreed to by the Parties. All other legal expense is considered to be covered by the overhead provisions of Section III unless otherwise agreed to by the Parties, except as provided in Section I, Paragraph 3 and Article IV.A of the agreement to which this Accounting Procedure is attached.

11. **Taxes**

All taxes of every kind and nature assessed or levied upon or in connection with the Joint Property, the operation thereof, or the production therefrom, and which taxes have been paid by the Operator for the benefit of the Parties. If the ad valorem taxes are based in whole or in part upon separate valuations of each party's working interest, then notwithstanding anything to the contrary herein, charges to the Joint Account shall be made and paid by the Parties hereto in accordance with the tax value generated by each party's working interest.

12. **Insurance**

1 Net premiums paid for insurance required to be carried for the Joint Operations for the protection of the Parties. In the  
2 event Joint Operations are conducted in a state in which Operator may act as self-insurer for Worker's Compensation  
3 and/or Employers Liability under the respective state's laws, Operator may, at its election, include the risk under its self-  
4 insurance program and in that event, Operator shall include a charge at Operator's cost not to exceed manual rates.  
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6 **13. Abandonment and Reclamation**

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8 Costs incurred for abandonment of the Joint Property, including costs required by governmental or other regulatory  
9 authority.  
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11 **14. Communications**

12  
13 Cost of acquiring, leasing, installing, operating, repairing and maintaining communication systems, including radio and  
14 microwave facilities directly serving the Joint Property. In the event communication facilities/systems serving the Joint  
15 Property are Operator owned, charges to the Joint Account shall be made as provided in Paragraph 8 of this Section II.  
16

17 **15. Other Expenditures**

18 **The cost of Operator's Field Offices not covered in Section III, or any**

19 ~~Any~~ other expenditure not covered or dealt with in the foregoing provisions of this Section II, or in Section III and which  
20 is of direct benefit to the Joint Property and is incurred by the Operator in the necessary and proper conduct of the Joint  
21 Operations.  
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23  
24 **III. OVERHEAD**  
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26 **1. Overhead - Drilling and Producing Operations**

27  
28 i. As compensation for administrative, supervision, office services and warehousing costs, Operator shall charge  
29 drilling and producing operations on either:  
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- 31 ( X ) Fixed Rate Basis, Paragraph 1A, or  
32 ( ) Percentage Basis, Paragraph 1B  
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34 Unless otherwise agreed to by the Parties, such charge shall be in lieu of costs and expenses of all offices and  
35 salaries or wages plus applicable burdens and expenses of all personnel, except those directly chargeable under  
36 Paragraph 3A, Section II. The cost and expense of services from outside sources in connection with matters of  
37 taxation, traffic, or accounting shall be considered as included in  
38 the overhead rates provided for in the above selected Paragraph of this Section III unless such cost and expense are  
39 agreed to by the Parties as a direct charge to the Joint Account. However matters before or involving governmental agencies will not be covered  
40 by the overhead rates.  
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42 ii. The salaries, wages and Personal Expenses of Technical Employees and/or the cost of professional consultant  
43 services and contract services of technical personnel directly employed on the Joint Property:

- 44 ( ) shall be covered by the overhead rates, or  
45 ( X ) shall not be covered by the overhead rates.  
46

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48 iii. The salaries, wages and Personal Expenses of Technical Employees and/or costs of professional consultant services  
49 and contract services of technical personnel either temporarily or permanently assigned to and directly employed in  
50 the operation of the Joint Property:

- 51 ( X ) shall be covered by the overhead rates except that the salaries, wages and Personal Expenses of those positions set forth on Exhibit C-1  
52 employed in the operation of the Joint Property shall not be covered by the overhead rates., or  
53 ( ) shall not be covered by the overhead rates.  
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55 **A. Overhead - Fixed Rate Basis**

56  
57 (1) Operator shall charge the Joint Account at the following rates per well per month:  
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59 Drilling Well Rate \$ 13,349.61  
60 (Prorated for less than a full month)

61  
62 Producing Well Rate \$ 1,334.96  
63

64 (2) Application of Overhead - Fixed Rate Basis shall be as follows:

65  
66 (a) Drilling Well Rate

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68 (1) Charges for drilling wells shall begin on the date the well is spudded and terminate on the date  
69 the drilling rig, completion rig, or other units used in completion of the well is released, whichever  
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is later, except that no charge shall be made during suspension of drilling or completion operations for fifteen (15) or more consecutive calendar days.

- (2) Charges for wells undergoing any type of workover or recompletion for a period of five (5) consecutive work days or more shall be made at the drilling well rate. Such charges shall be applied for the period from date workover operations, with rig or other units used in workover, commence through date of rig or other unit release, except that no charge shall be made during suspension of operations for fifteen (15) or more consecutive calendar days.

(b) Producing Well Rates

- (1) An active well either produced or injected into for any portion of the month shall be considered as a one-well charge for the entire month.
- (2) Each active completion in a multi-completed well in which production is not commingled down hole shall be considered as a one-well charge providing each completion is considered a separate well by the governing regulatory authority.
- (3) An inactive gas well shut in because of overproduction or failure of purchaser to take the production shall be considered as a one-well charge providing the gas well is directly connected to a permanent sales outlet.
- (4) A one-well charge shall be made for the month in which plugging and abandonment operations are completed on any well. This one-well charge shall be made whether or not the well has produced except when drilling well rate applies.
- (5) All other inactive wells (including but not limited to inactive wells covered by unit allowable, lease allowable, transferred allowable, etc.) shall not qualify for an overhead charge.
- (3) The well rates shall be adjusted as of the first day of April each year following the effective date of the agreement to which this Accounting Procedure is attached ~~/. The adjustment shall be computed by multiplying the rate currently in use by the percentage increase or decrease in the average weekly earnings of Crude Petroleum and Gas Production Workers for the last calendar year compared to the calendar year preceding as shown by / the index of average weekly earnings of Crude Petroleum and Gas Production Workers as approved and recorded by COPAS,~~ **(i.e. [Month of execution of Settlement Agreement to which this Operating agreement is attached], 2011) by the percent increase or decrease published by COPAS** published by the United States Department of Labor, Bureau of Labor Statistics, or the equivalent Canadian index as published by Statistics Canada, as applicable. The adjusted rates shall be the rates currently in use, plus or minus the computed adjustment.

~~B. Overhead Percentage Basis~~

- ~~(1) Operator shall charge the Joint Account at the following rates:~~

~~(a) Development~~

~~\_\_\_\_\_ Percent (\_\_\_\_\_) of the cost of development of the Joint Property exclusive of costs provided under Paragraph 10 of Section II and all salvage credits.~~

~~(b) Operating~~

~~\_\_\_\_\_ Percent (\_\_\_\_\_) of the cost of operating the Joint Property exclusive of costs provided under Paragraphs 2 and 10 of Section II, all salvage credits, the value of injected substances purchased for secondary recovery and all taxes and assessments which are levied, assessed and paid upon the mineral interest in and to the Joint Property.~~

- ~~(2) Application of Overhead Percentage Basis shall be as follows:~~

~~For the purpose of determining charges on a percentage basis under Paragraph 1B of this Section III, development shall include all costs in connection with drilling, re-drilling, deepening, or any remedial operations on any or all wells involving the use of drilling rig and crew capable of drilling to the producing interval on the Joint Property; also, preliminary expenditures necessary in preparation for drilling and expenditures incurred in abandoning when the well is not completed as a producer, and original cost of construction or installation of fixed assets, the expansion of fixed assets and any other project clearly discernible as a fixed asset, except Major Construction as defined in Paragraph 2 of this Section III. All other costs shall be considered as operating.~~

**2. Overhead - Major Construction**

To compensate Operator for overhead costs incurred in the construction and installation of fixed assets, the expansion of fixed assets, and any other project clearly discernible as a fixed asset required for the development and operation of the Joint Property, Operator shall either negotiate a rate prior to the beginning of construction, or shall charge the Joint Account for overhead based on the following rates for any Major Construction project in excess of \$ 50,000.00 :

- A. 5.0 % of first \$100,000 or total cost if less, plus

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B. 3.0 % of costs in excess of \$100,000 but less than \$1,000,000, plus

C. 2.0 % of costs in excess of \$1,000,000.

Total cost shall mean the gross cost of any one project. For the purpose of this paragraph, the component parts of a single project shall not be treated separately and the cost of drilling and workover wells and artificial lift equipment shall be excluded.

### 3. Catastrophe Overhead

To compensate Operator for overhead costs incurred in the event of expenditures resulting from a single occurrence due to oil spill, blowout, explosion, fire, storm, hurricane, or other catastrophes as agreed to by the Parties, which are necessary to restore the Joint Property to the equivalent condition that existed prior to the event causing the expenditures, Operator shall either negotiate a rate prior to charging the Joint Account or shall charge the Joint Account for overhead based on the following rates:

A. 5.0 % of total costs through \$100,000; plus

B. 3.0 % of total costs in excess of \$100,000 but less than \$1,000,000; plus

C. 2.0 % of total costs in excess of \$1,000,000.

Expenditures subject to the overheads above will not be reduced by insurance recoveries, and no other overhead provisions of this Section III shall apply.

### 4. Amendment of Rates

The overhead rates provided for in this Section III may be amended from time to time only by mutual agreement between the Parties hereto if, in practice, the rates are found to be insufficient or excessive.

## IV. PRICING OF JOINT ACCOUNT MATERIAL PURCHASES, TRANSFERS AND DISPOSITIONS

Operator is responsible for Joint Account Material and shall make proper and timely charges and credits for all Material movements affecting the Joint Property. Operator shall provide all Material for use on the Joint Property; however, at Operator's option, such Material may be supplied by the Non-Operator. Operator shall make timely disposition of idle and/or surplus Material, such disposal being made either through sale to Operator or Non-Operator, division in kind, or sale to outsiders. Operator may purchase, but shall be under no obligation to purchase, interest of Non-Operators in surplus condition A or B Material. The disposal of surplus Controllable Material not purchased by the Operator shall be agreed to by the Parties.

### 1. Purchases

Material purchased shall be charged at the price paid by Operator after deduction of all discounts received. In case of Material found to be defective or returned to vendor for any other reasons, credit shall be passed to the Joint Account when adjustment has been received by the Operator.

### 2. Transfers and Dispositions

Material furnished to the Joint Property and Material transferred from the Joint Property or disposed of by the Operator, unless otherwise agreed to by the Parties, shall be priced on the following basis exclusive of cash discounts:

A. New Material (Condition A)

(1) Tubular Goods Other than Line Pipe

(a) Tubular goods, sized 2 3/8 inches OD and larger, except line pipe, shall be priced at Eastern mill published carload base prices effective as of date of movement plus transportation cost using the 80,000 pound carload weight basis to the railway receiving point nearest the Joint Property for which published rail rates for tubular goods exist. If the 80,000 pound rail rate is not offered, the 70,000 pound or 90,000 pound rail rate may be used. Freight charges for tubing will be calculated from Lorain, Ohio and casing from Youngstown, Ohio.

(b) For grades which are special to one mill only, prices shall be computed at the mill base of that mill plus transportation cost from that mill to the railway receiving point nearest the Joint Property as provided above in Paragraph 2.A.(1)(a). For transportation cost from points other than Eastern mills, the 30,000

pound Oil Field Haulers Association interstate truck rate shall be used.

1 (c) Special end finish tubular goods shall be priced at the lowest published out-of-stock price, f.o.b. Houston,  
2 Texas, plus transportation cost, using Oil Field Haulers Association interstate 30,000 pound truck rate,  
3 to the railway receiving point nearest the Joint Property.  
4

5 (d) Macaroni tubing (size less than 2 3/8 inch OD) shall be priced at the lowest published out-of-stock prices  
6 f.o.b. the supplier plus transportation costs, using the Oil Field Haulers Association interstate truck rate  
7 per weight of tubing transferred, to the railway receiving point nearest the Joint Property.  
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9 (2) Line Pipe  
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11 (a) Line pipe movements (except size 24 inch OD and larger with walls 3/4 inch and over) 30,000 pounds or  
12 more shall be priced under provisions of tubular goods pricing in Paragraph A.(1)(a) as provided above.  
13 Freight charges shall be calculated from Lorain, Ohio.  
14

15 (b) Line Pipe movements (except size 24 inch OD) and larger with walls 3/4 inch and over) less than 30,000  
16 pounds shall be priced at Eastern mill published carload base prices effective as of date of shipment,  
17 / plus 20 percent, plus transportation costs based on freight rates as set forth under provisions of tubular  
18 goods pricing in Paragraph A.(1)(a) as provided above. Freight charges shall be calculated from Lorain,  
19 Ohio.  
20

21 (c) Line pipe 24 inch OD and over and 3/4 inch wall and larger shall be priced f.o.b. the point of  
22 manufacture at current new published prices plus transportation cost to the railway receiving point  
23 nearest the Joint Property.  
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25 (d) Line pipe, including fabricated line pipe, drive pipe and conduit not listed on published price lists shall  
26 be priced at quoted prices plus freight to the railway receiving point nearest the Joint Property or at  
27 prices agreed to by the Parties.  
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29 (3) Other Material shall be priced at the current new price, in effect at date of movement, as listed by a reliable  
30 supply store nearest the Joint Property, or point of manufacture, plus transportation costs, if applicable, to the  
31 railway receiving point nearest the Joint Property.  
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33 (4) Unused new Material, except tubular goods, moved from the Joint Property shall be priced at the current  
34 new price, in effect on date of movement, as listed by a reliable supply store nearest the Joint Property, or  
35 point of manufacture, plus transportation costs, if applicable, to the railway receiving point nearest the Joint  
36 Property. Unused new tubulars will be priced as provided above in Paragraph 2.A.(1) and (2).  
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38 B. Good Used Material (Condition B)  
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40 Material in sound and serviceable condition and suitable for reuse without reconditioning:  
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42 (1) Material moved to the Joint Property  
43

44 At seventy-five percent (75%) of current new price, as determined by Paragraph A.  
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46 (2) Material used on and moved from the Joint Property  
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48 (a) At seventy-five percent (75%) of current new price, as determined by Paragraph A, if Material was  
49 originally charged to the Joint Account as new Material or  
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51 (b) At sixty-five percent (65%) of current new price, as determined by Paragraph A, if Material was  
52 originally charged to the Joint Account as used Material  
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54 (3) Material not used on and moved from the Joint Property  
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56 At seventy-five percent (75%) of current new price as determined by Paragraph A.  
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58 The cost of reconditioning, if any, shall be absorbed by the transferring property.  
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60 C. Other Used Material  
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62 (1) Condition C  
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64 Material which is not in sound and serviceable condition and not suitable for its original function until  
65 after reconditioning shall be priced at fifty percent (50%) of current new price as determined by  
66 Paragraph A. The cost of reconditioning shall be charged to the receiving property, provided Condition  
67 C value plus cost of reconditioning does not exceed Condition B value.  
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(2) Condition D

Material, excluding junk, no longer suitable for its original purpose, but usable for some other purpose shall be priced on a basis commensurate with its use. Operator may dispose of Condition D Material under procedures normally used by Operator without prior approval of Non-Operators.

(a) Casing, tubing, or drill pipe used as line pipe shall be priced as Grade A and B seamless line pipe of comparable size and weight. Used casing, tubing or drill pipe utilized as line pipe shall be priced at used line pipe prices.

(b) Casing, tubing or drill pipe used as higher pressure service lines than standard line pipe, e.g. power oil lines, shall be priced under normal pricing procedures for casing, tubing, or drill pipe. Upset tubular goods shall be priced on a non upset basis.

(3) Condition E

Junk shall be priced at prevailing prices. Operator may dispose of Condition E Material under procedures normally utilized by Operator without prior approval of Non-Operators.

D. Obsolete Material

Material which is serviceable and usable for its original function but condition and/or value of such Material is not equivalent to that which would justify a price as provided above may be specially priced as agreed to by the Parties. Such price should result in the Joint Account being charged with the value of the service rendered by such Material.

E. Pricing Conditions

(1) Loading or unloading costs may be charged to the Joint Account at the rate of twenty-five cents (25¢) per hundred weight on all tubular goods movements, in lieu of actual loading or unloading costs sustained at the stocking point. The above rate shall be adjusted as of the first day of April each year following January 1, 1985 by the same percentage increase or decrease used to adjust overhead rates in Section III, Paragraph 1.A.(3). Each year, the rate calculated shall be rounded to the nearest cent and shall be the rate in effect until the first day of April next year. Such rate shall be published each year by the Council of Petroleum Accountants Societies.

(2) Material involving erection costs shall be charged at applicable percentage of the current knocked-down price of new Material.

**3. Premium Prices**

Whenever Material is not readily obtainable at published or listed prices because of national emergencies, strikes or other unusual causes over which the Operator has no control, the Operator may charge the Joint Account for the required Material at the Operator's actual cost incurred in providing such Material, in making it suitable for use, and in moving it to the Joint Property; provided notice in writing is furnished to Non-Operators of the proposed charge prior to billing Non-Operators for such Material. ~~Each Non-Operator shall have the right, by so electing and notifying Operator within ten days after receiving notice from Operator, to furnish in kind all or part of his share of such Material suitable for use and acceptable to Operator.~~

**4. Warranty of Material Furnished By Operator**

Operator does not warrant the Material furnished. In case of defective Material, credit shall not be passed to the Joint Account until adjustment has been received by Operator from the manufacturers or their agents.

**V. INVENTORIES**

The Operator shall maintain detailed records of Controllable Material.

**1. Periodic Inventories, Notice and Representation**

At reasonable intervals, inventories shall be taken by Operator of the Joint Account Controllable Material. Written notice of intention to take inventory shall be given by Operator at least thirty (30) days before any inventory is to begin so that Non-Operators may be represented when any inventory is taken. Failure of Non-Operators to be represented at an inventory shall bind Non-Operators to accept the inventory taken by Operator.

**2. Reconciliation and Adjustment of Inventories**

Adjustments to the Joint Account resulting from the reconciliation of a physical inventory shall be made within six months following the taking of the inventory. Inventory adjustments shall be made by Operator to the Joint Account for

overages and shortages, but, Operator shall be held accountable only for shortages due to lack of reasonable diligence.

1 **3. Special Inventories**

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3 Special inventories may be taken whenever there is any sale, change of interest, or change of Operator in the Joint  
4 Property. It shall be the duty of the party selling to notify all other Parties as quickly as possible after the transfer of  
5 interest takes place. In such cases, both the seller and the purchaser shall be governed by such inventory. In cases  
6 involving a change of Operator, all Parties shall be governed by such inventory.  
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8 **4. Expense of Conducting Inventories**

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10 A. The expense of conducting periodic inventories shall not be charged to the Joint Account unless agreed to by the  
11 Parties.  
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13 B. The expense of conducting special inventories shall be charged to the Parties requesting such inventories, except  
14 inventories required due to change of Operator shall be charged to the Joint Account.  
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**EXHIBIT C-1**

**TECHNICAL EMPLOYEES EXCLUDED FROM OVERHEAD RATES**

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Title	Category
ASSOCIATE GEOLOGIST	Technical Labor
ASSOCIATE GEOPHYSICIST	Technical Labor
GEOLOGIST	Technical Labor
GEOPHYSICIST	Technical Labor
SR GEOLOGIST	Technical Labor
SR GEOPHYSICIST	Technical Labor
ASSET MANAGER	Technical Labor
ASSOCIATE ASSET MANAGER	Technical Labor
DRILLING ENGINEER I	Technical Labor
DRILLING ENGINEER II	Technical Labor
FIELD ENGINEER	Technical Labor
SR ASSET MANAGER	Technical Labor
SR DRILLING ENGINEER	Technical Labor
SR. ASSET MGR	Technical Labor

# Exhibit D

## EXHIBIT "D"

Attached to and made a part of that certain Unit Operating Agreement for the Grove Unit.

1. Operator shall procure and maintain, at all times while conducting operations under this Agreement, the following insurance coverages with limits not less than those specified below:

A. Workers' Compensation Employer's Liability	Statutory \$1,000,000 Each Accident
B. General Liability including bodily injury and property damage liability	\$5,000,000 Combined Single Limit
C. Auto Liability	\$1,000,000 Combined Single Limit
D. Excess or Umbrella Liability	\$20,000,000 Combined Single Limit
E. Cost of Well Control and Care, Custody and Control	\$5,000,000 Each Occurrence and \$250,000 CCC
F. Pollution Liability	\$20,000,000 Combined Single Limit

2. The insurance described in 1. above shall include Non-Operator as additional insured (except Workers' Compensation) and shall include a waiver by the insurer of all rights of subrogation in favor of Non-Operator. Such insurance shall be carried at the joint expense of the parties hereto and all premiums and other costs and expenses related thereto shall be charged to the Joint Account in accordance with the Accounting Procedure attached as Exhibit "C" to this Agreement, unless prior to spud a party hereto who desires to provide its own insurance or self-insurance provides Operator with a certificate of insurance evidencing such individual coverage.

3. Operator shall endeavor to have its contractors and subcontractors comply with applicable Workers' Compensation laws, rules and regulations and carry such insurance as Operator may deem necessary.

4. Operator shall not be liable to Non-Operator for loss suffered because of insufficiency of the insurance procured and maintained for the Joint Account nor shall Operator be liable to Non-Operator for any loss occurring by reason of Operator's inability to procure or maintain the insurance provided for herein. If, in Operator's opinion, at any time during the term of this Agreement, Operator is unable to procure or maintain said insurance on commercially reasonable terms, or Operator reduces the limits of insurance, Operator shall promptly so notify Non-Operator in writing.

5. In the event of loss not covered by the insurance provided for herein, such loss shall be charged to the Joint Account and borne by the parties in accordance with their respective percentage of participation as determined by this Agreement.

6. Any party hereto may individually and at its own expense procure such additional insurance as it desires; provided, however, such party shall provide Operator with a certificate of insurance evidencing such coverage before spud of the well and such coverage shall include a waiver by the insurer of all rights of subrogation in favor of the parties hereto.

End of Exhibit "D"

# Exhibit E

## EXHIBIT "E"

Attached to and made a part of that certain Unit Operating Agreement  
for the Grove Unit.

### Gas Balancing Agreement

#### I. DEFINITIONS:

For the purposes of this Gas Balancing Agreement ("GBA") the following terms shall be defined as follows:

(a) "Affiliate" shall have the meaning ascribed to such term in the Operating Agreement.

(b) The "Allowable" is the maximum rate of Gas production from each Gas Well permitted from time to time by the regulatory authority having jurisdiction.

(c) "Balance" is the condition occurring when a party has utilized, sold or disposed of a Quantity of Gas equal to the same percentage of the cumulative Gas production as such party's Percentage Ownership during the period of such cumulative Gas production.

(d) "Deliverability" shall mean the maximum sustainable daily Gas withdrawal from a Gas Well which may be accomplished without detriment to ultimate recovery of reserves as determined by Operator acting in good faith and taking into account relevant operational factors including, but not limited to, pipeline capacity and pressure and the maximum producing capability of the Gas Well based on data reported to the appropriate governmental agency having jurisdiction.

(e) "Gas" shall mean all gaseous hydrocarbons produced from each Gas Well but shall not include liquid hydrocarbons.

(f) "Gas Well" shall mean each well subject to the Operating Agreement that produces gas. If a single Gas Well is completed in two or more reservoirs, such Gas Well will be considered a separate Gas Well with respect to, but only as to, each reservoir from which the Gas production is not commingled in the well bore.

(g) "MMBtu" shall mean one million British thermal units.

(h) "Operating Agreement" means the operating agreement between the Parties to which this GBA is attached.

(i) "Operator" means the Party designated as operator under the Operating Agreement.

(j) "Overproduced" is the condition occurring when a party has utilized, disposed of or sold a greater Quantity of Gas from a particular Gas Well at any given time (individually or through its gas purchaser) than if such party were in Balance.

(k) "parties" means the legal entities that are signatory to the Operating Agreement, or their successors and assigns. Parties shall be referred to individually as a party.

(l) "Percentage Ownership" is the percentage interest of each party in each Gas Well as set forth in or determined in accordance with the provisions of the Operating Agreement, as such interest may change from time to time.

(m) "Percentage of Proceeds Sale" means a sale of Gas processed in a gas processing plant the price for which is computed as a percentage of the proceeds from the resale of residue gas and natural gas liquids attributable to such Gas.

(n) "Quantity" shall mean the number of units of Gas expressed in MMBtus.

(o) "Underproduced" is the condition occurring when a party has utilized, disposed of or sold a lesser Quantity of Gas from a particular Well at any given time (individually or through its gas purchaser) than if such party were in Balance.

## II. APPLICATION OF THIS AGREEMENT

The provisions of this GBA shall be separately applicable to each Gas Well to the end that Gas production from one Gas Well may not be utilized for the purposes of balancing underproduction of Gas from any other Gas Well.

## III. OVERPRODUCTION

### A. Right to Take All Gas Produced

Subject to the other provisions herein, during any period when any party hereto is not marketing or otherwise disposing of or utilizing its Percentage Ownership of the Allowable or Deliverability, as applicable, of Gas from any Gas Well, the other parties shall be entitled--but shall not have the obligation--to take, in addition to their own Percentage Ownership of Gas, that portion of such other party's Percentage Ownership of Gas which said party is not marketing, utilizing or otherwise disposing of, and shall be entitled to take such Gas production and deliver same to its or their purchasers in accordance with the provisions herein. Each such taking party shall have the right to take its pro rata portion of each such non-taking party's share, said pro rata portion being based on the ratio of its Percentage Ownership to the Percentage Ownership of all parties in the same balancing status (either Overproduced or Underproduced) who elect to take such non-taking party's share of gas; provided, however, an Underproduced party desiring to take a non-taking party's share of Gas shall take precedence over an Overproduced party which wishes to take such non-taking party's Gas, and an Overproduced party shall be entitled to take a non-taking party's share of Gas only to the extent that an Underproduced party has elected not to take said Gas. The Gas of a party not taking its production shall be allocated to a taking party hereunder prior to calculation of percentage entitlement to make up Gas from an Overproduced party under Article IV, below.

Notwithstanding the foregoing, all parties shall share in and own the liquid hydrocarbons recovered from Gas by primary separation equipment in accordance with their respective Percentage Ownership, which liquid hydrocarbon ownership shall be unaffected by this GBA. One or more parties may arrange to have their Gas processed in a gas processing plant for the recovery of liquefiable hydrocarbons. Nothing in this GBA shall afford a basis for balancing any liquefiable hydrocarbons recovered from a Gas processing plant. Each party taking Gas shall own all of the Gas delivered to its purchaser.

### B. Limitation on Overproduced Party's Right to Take Gas

Notwithstanding the provisions of Article III.A., above, if during any time and from time to time an Overproduced party shall have taken more than one hundred percent (100%) of such party's Percentage Ownership share of the estimated ultimate recoverable reserves for a Gas Well as determined by Operator acting in good faith, said Overproduced party shall not, after receipt of written notice of said fact from Operator, be entitled to take, sell or otherwise dispose of Gas from such Gas Well until such time as said party is no longer Overproduced; provided, however, said Overproduced party may take Gas from such Gas Well without restriction if and for so long as the other parties are not taking Gas from such Gas Well their full share of the Gas or as otherwise authorized by all of the Underproduced parties. Also, no Overproduced party shall at any time be entitled to take, sell or otherwise dispose of more than 300% of its Percentage Ownership of the Allowable from a Gas Well or, if there is no Allowable established, of the Deliverability of a Gas Well.

### C. Credit For Gas in Storage

Each party who markets less than its Percentage Ownership of the Gas produced shall be credited with Gas in storage equal to its Percentage Ownership share of the Gas produced, less the Gas actually marketed and taken by said party, and less such Party's Percentage Ownership share of the Gas, vented, used or lost in lease operations.

### IV. RIGHT OF UNDERPRODUCED PARTY TO MAKE UP PRODUCTION

Any Underproduced party may commence making up its underproduction provided it has given written notice to the Operator not later than the fifth day of the month preceding the month in which it wishes to commence making up its underproduction, or within such other time as Operator may from time to time reasonably establish.

In addition to its Percentage Ownership and its rights to a non-taking party's Gas under Article III, above, each Underproduced party will be entitled to take up to an additional twenty-five percent (25%) of the monthly Quantity of each Overproduced party's Percentage Ownership in Gas produced during any month; provided, however, nothing in this Article IV shall reduce the right of any Overproduced party to take a Quantity of Gas available for sale during any month less than seventy-five percent (75%) of its Percentage Ownership in Gas produced in said month.

If at any time more than one Underproduced party is taking a Quantity of Gas in excess of its Percentage Ownership in Gas production in order to balance its Gas production account ("Makeup"), then each such Underproduced party shall be entitled to take such Makeup in proportion that its Percentage Ownership bears to the total Percentage Ownership of all Underproduced parties desiring to take Makeup from the Well. Any portion of the Makeup to which an Underproduced party is entitled and which is not taken by such Underproduced party may be taken by any other Underproduced party in the proportion that its Percentage Ownership bears to the total Percentage Ownership of all Underproduced parties desiring to take such untaken portion of Makeup.

### V. MONTHLY DATA AND STATEMENTS TO BE PROVIDED

The Operator will establish and maintain a current Gas account which shows the Gas balance which exists for all the parties and will furnish each of these parties a monthly statement showing the total Quantity of Gas sold and taken in kind and the current and cumulative over and under account of each party within ninety (90) days following the end of each applicable month. Operator shall not incur any liability to any party for errors in the data provided by each party or third parties or for other matters pertaining to gas balancing statements (e.g., transporter's allocation of Gas). Each party shall be responsible for promptly providing written notification to Operator of any error(s) or inaccuracy(ies) contained in any gas balancing statement which it receives.

### VI. PAYMENT OF ROYALTIES AND PRODUCTION TAXES

At all times while Gas is produced from a Well, each party hereto will make, or cause to be made, settlement with respective royalty owners to whom each is accountable in accordance with the actual volumes of Gas taken by such party. Upon written request from any party, any other party shall provide on a monthly basis, any additional information which such requesting party may require in order to comply with its obligation to pay royalty pursuant to the terms hereof including, without limitation, name, address, decimal interest, tax identification and, to the extent it has same, title opinions and abstracts of ownership. The term "royalty owner" includes owners of royalty, overriding royalties, production payments and similar interests. Each party agrees to indemnify and hold harmless each other party from any and all claims asserted by its royalty owners and its Gas Purchasers for which said indemnifying party is responsible. Each party producing and/or delivering Gas to its purchaser shall pay, or cause to be paid, any and all production, severance and other similar taxes due on such Gas in accordance with the actual volumes of Gas taken by such party.

## VII. CASH SETTLEMENTS

### A. Events Occasioning Cash Settlements

A cash settlement of any imbalance of Gas production: (i) shall be made when production from a Gas Well permanently ceases or the Operating Agreement otherwise terminates (each being referred to herein as "Termination"); and (ii) shall be made by an Overproduced party at the request and option of any Underproduced party or parties upon the sale, transfer, assignment, mortgage or other disposition to an unaffiliated entity (herein individually or collectively referred to as a "Transfer"), by an Overproduced party of all or any portion of its Percentage Ownership in any Gas Well unless (x) the Transfer documentation clearly provides that the assignee has expressly assumed the gas balance position of, and the liability for gas imbalances from, the assignor, and (y) the assignee is not a known credit risk and the assignor has provided to the other parties evidence of the creditworthiness of assignee prior to the date that the applicable Transfer becomes effective taking into account the potential liability associated with the applicable gas imbalance. (A cash settlement pursuant to clause (ii) above may hereinafter be referred to as an "Optional Cash Settlement".) The parties acknowledge that a cash settlement may be made on more than one occasion pursuant to the terms of this GBA.

### B. Notification of Proposed Transfer By Overproduced Party

When an Overproduced party elects to Transfer all or a portion of its Percentage Ownership (except to an Affiliate, or where the liability for prior period gas imbalances is assumed by an assignee), it shall give notice to all other parties to the Operating Agreement of its intended Transfer and the anticipated closing date. Each Underproduced party shall have fifteen (15) days from the receipt of such notice in which to elect to receive a cash settlement from the transferring party for the transferring party's share of overproduction allocable to the Underproduced party. Such election shall be made in writing and sent to the transferring party and Operator. An Underproduced party's election not to request a cash settlement at the time of Transfer by an Overproduced party shall not, subject to the provisions of Article VII.E, below, preclude said Underproduced party from sharing in cash settlement at Termination or from requesting a cash settlement upon subsequent Transfer by an Overproduced party.

### C. Quantity of Gas

Within one hundred twenty (120) days after Termination, Operator shall provide a statement captioned "Final Quantity Statement" showing on a party-by-party basis the net unrecouped underproduction, the overproduction and the months and years in which such underproduction and overproduction occurred. Quantities of Gas for which settlement is due shall be determined by accruing the monthly overproduction and underproduction in the order of accrual of said overproduction and underproduction; i.e. makeup Quantities taken by an Underproduced party shall be applied against the oldest overproduction and underproduction then outstanding. In the event an Optional Cash Settlement is requested, Operator shall provide to the parties, within fifteen business days, an Interim Quantity Statement through the end of the last quarter for which Operator has production data, which shall contain similar information as would be contained within a Final Quantity Statement.

### D. Pricing

#### 1. For Overproduction Sold

The amount to be paid by an Overproduced party to an Underproduced party for such Underproduced party's Gas upon cash settlement shall, where the Overproduced party has sold the Gas to an unaffiliated third party, be based upon the price received by the Overproduced party at the time such overproduction occurred (the "price received") shall be the gross proceeds received, less the following:

- (a) production and/or severance taxes attributable to said Gas production paid by the Overproduced party;
- (b) royalties, if any, paid by the Overproduced party to an Underproduced party's royalty owner(s) to the extent said payments amounted to a discharge of said Underproduced party's royalty obligation;
- (c) any other payments made by the Overproduced party to obligees of the Underproduced party to the extent said payments by the Overproduced party were required by law and/or amounted to discharge of the obligations of the Underproduced party; and
- (d) all reasonable costs and expenses incurred to third parties in connection with the sale of said Gas; e.g., gathering, transportation, compression, storage, marketing and similar fees.

In the event sales by the Overproduced party were made to an Affiliate and the price paid by such Affiliate was less than the prevailing market price in the area of the Well at the time of the sale, then the price received shall be deemed to be the Dominion Transmission Inc. South Point Index price found inside the Federal Energy Regulatory Commission's Gas Market Report for the applicable month of overproduction, calculated from a pricing bulletin published at the time such overproduction occurred, less those items set forth in a-d above (the "Adjusted South Point Index Price"). Any Underproduced party that is entitled to payment with respect to the applicable cash settlement may, based upon competent evidence, object that sales by the Overproduced party to an Affiliate were at a price less than the prevailing market price in the area of the Well at the time of the sale, in which case the Adjusted South Point Index Price shall be used to price such sales in accordance with the prior sentence.

## 2. For Overproduction Taken or Utilized and Not Sold

If there is no actual sale to establish the amount received by the Overproduced party because the Overproduced party took such Gas for its own purposes instead of selling it, the amount to be paid by an Overproduced party to an Underproduced party for such Underproduced party's Gas upon cash settlement shall be based upon the Adjusted South Point Index Price.

## 3. Proceeds for Liquefiable Hydrocarbons Not Included

The parties agree that the terms "price received by an Overproduced party" and "weighted average price received" shall not include any compensation received by a party for liquid hydrocarbons derived from processing its Gas in a Gas processing plant, unless the overproduction for which the Overproduced party is accounting was sold under a Percentage of Proceeds Sale.

## E. Calculation, Collection and Distribution of Payments

### 1. For Cash Settlements at Termination

In the event of a cash settlement at Termination, within ten (10) days after receipt of the Final Quantity Statement from the Operator, each Overproduced party shall furnish to the Operator and the other parties a statement showing the price received for its overproduction on a monthly basis. Within ten (10) days after receipt of such pricing information from all parties, Operator shall submit to each party a statement showing the calculations and the total amount to be paid by each Overproduced party and to be received by each Underproduced party. Cash settlement shall be calculated on the "FIFO" accounting method.

Within twenty (20) days after receipt of said statement from Operator by an Overproduced party, the Overproduced party shall pay all amounts due and owing as

reflected on such statement to the Underproduced parties. In the event that all sums due and owing are not paid by an Overproduced party to the applicable Underproduced parties within the time periods set forth in this provision, interest shall accumulate on such unpaid amounts as provided herein. The amount to be received by each Underproduced party shall be determined by apportioning the total amount to be received by all Underproduced parties from all Overproduced parties among all Underproduced parties in proportion to the total sum to be received by each Underproduced party as a percent of the total sum to be received by all Underproduced parties. The amount to be paid by each Overproduced party to each Underproduced party shall be determined by apportioning the total amount to be paid by all Overproduced parties to each such Underproduced party among all Overproduced parties in proportion to the total sum to be paid by each such Overproduced party to all Underproduced parties as a percent of the total sum to be paid by all Overproduced parties to all Underproduced parties.

2. Optional Cash Settlement Pursuant to Article VII.A.(ii) from an Overproduced party Who Seeks to Transfer an Interest

In the event of a request for an Optional Cash Settlement by an Underproduced party pursuant to Article VII.A.(ii) from an Overproduced party who wishes to Transfer all or a portion of its Percentage Ownership, within twenty (20) working days after receipt of Operator's Interim Quantity Statement, the Overproduced party from whom cash settlement is sought shall provide to Operator a statement showing the price received for its overproduction on a monthly basis. Within ten (10) working days after receipt of such pricing information, Operator shall: (a) calculate the total amount due and owing by the Overproduced party and the total amount to be received by each Underproduced party requesting cash settlement based on the "FIFO" accounting method; and (b) provide the Overproduced party and each such Underproduced party with a statement showing the calculations and the total sum to be paid to said Underproduced party. The Overproduced party shall pay to each such Underproduced party the total amount due and owing as reflected in said statement within twenty (20) working days after receipt of said statement. In the event that all sums due and owing are not paid by an Overproduced party to the applicable Underproduced parties within the time periods set forth in this provision, interest shall accumulate on such unpaid amounts as provided herein.

The parties acknowledge that production and sales data may not be available for a brief period immediately preceding the closing date and prior to the effective date of the Transfer, and the transferring Overproduced party agrees to cash settle for any Gas produced during said period promptly after closing. In the event that said transferring Overproduced party for any reason fails to make all cash settlement payments required under this GBA, the transferee shall be obligated to make said payments.

3. Procedures Applicable to All Cash Settlements

For purposes of all price calculations the overproduction of each Overproduced party shall be apportioned to each Underproduced party in proportion to each Underproduced party's underproduction as a percent of the sum of the underproduction of all Underproduced parties. Overproduced volumes shall be matched to Underproduced volumes based on the order in which the overproduction and underproduction arose. The parties recognize that the months of overproduction by an Overproduced party may not coincide with the months of underproduction by an Underproduced party.

4. Amount Subject to Refund May Be Withheld.

In the event that any portion of the price actually received by an Overproduced party shall be subject to possible refund pursuant to rules and regulations issued by the Federal Energy Regulatory Commission ("FERC"), any state, administrative agency or successor governmental authority having jurisdiction, or any court order, the amount which may be ultimately required to be refunded by FERC or any other entity may be withheld without interest by the Overproduced party until such time as a final determination is made with respect thereto or until the party to whom payment is to be made provides a bond or other security to indemnify the party obligated to make such payments in form satisfactory to the

latter.

#### F. Operator's Liability

Except as otherwise provided herein, Operator is obligated to administer the provisions of this GBA, but shall have no liability to the other parties for losses sustained or liability incurred which arise out of or in connection with the performance of Operator's duties hereunder except such as may result from Operator's gross negligence or willful misconduct.

#### VIII. OPERATING EXPENSES

The operating expenses are to be borne as provided in the Operating Agreement, regardless of whether all parties are selling or using Gas or whether the sales and use of each are in proportion to their Percentage Ownership.

#### IX. DELIVERABILITY TESTS

Nothing herein shall be construed to deny any party the right from time to time to produce and take or deliver to the purchaser its full share of the Gas production to meet the deliverability test required by its purchaser. Also, nothing herein shall: (a) require the Operator to produce a Gas Well in excess of its deliverability or the applicable maximum allowable rate where such rate is established by regulatory authority having jurisdiction from time to time; or (b) prevent an Operator from operating the Gas Well in order to conduct such tests as may be required by any applicable regulatory authority from time to time.

#### X. NOMINATIONS

For each party wishing to sell, utilize or dispose of Gas from a Gas Well subject to this GBA, Operator shall provide each party an initial nomination by well/delivery point(s) six working days prior to the beginning of each month. Operator shall provide each party a revised nomination by well/delivery point as necessary during the month to reflect any change in production. Allocation of gas production in any month in which the total nominations vary from the total production shall be by the Operator according to such procedures as Operator from time to time may reasonably establish. Each non-operator party agrees to indemnify Operator for any charges or penalties incurred because of over or underdeliveries as compared to its nominations, except where such charges or penalties are solely attributable to action taken by Operator in total disregard of such nominations.

#### XI. TERM

This GBA shall remain in full force and effect for so long as the Operating Agreement is in effect and thereafter until the gas balance accounts are settled in full.

#### XII. SUCCESSORS AND ASSIGNS

The terms, covenants and conditions of this GBA shall be binding upon and shall inure to the benefit of the parties hereto and their respective legal representatives, successors and assigns. The parties hereto agree to give notice of the existence of this GBA to any successor in interest and to make any transfer of any interest subject to the Operating Agreement, or any part thereof, expressly subject to the terms of this GBA.

### XIII. AUDITS

Any Underproduced party shall have the right for a period of two (2) years after receipt of payment pursuant to a final accounting and after giving written notice to all parties, to audit an Overproduced party's accounts and records relating to such payment. The party conducting such audit shall bear its costs of the audit.

### XIV. MISCELLANEOUS

A. No assignment shall relieve the assignor from any obligation to the other parties with respect to any overproduction taken by assignor to such assignment.

B. Any amount remaining unpaid under the GBA more than thirty (30) days after it is due shall bear interest (commencing the day after said payment was due) at the rate set forth in the Accounting Procedure (Exhibit C to the Operating Agreement).

C. Unless the context otherwise clearly indicates, words used in the singular include the plural, and the plural includes the singular.

D. Each party agrees to maintain the necessary records and documents to enable the gas balancing and cash settlements contemplated hereby to be made.

E. If any party hereto fails to timely provide to Operator the data required hereby to enable gas balancing statements and cash settlements to be promptly made, Operator, or any other party, without prejudice to other remedies, is authorized to audit the records of the non-providing party and such audit shall be at the expense of the audited party.

F. To the extent permitted by law, this GBA shall be in lieu of and take precedence over any law, statute, rule or regulation requiring Gas balancing, revenue sharing or marketing of Gas.

G. In the event that any party is in default of any payment required by this GBA or fails to provide information required under this GBA, Operator is authorized--but not required--upon thirty (30) days notification to said defaulting party, without prejudice to any other remedies it may have, to curtail said party's Gas production from any and all Gas Wells subject to this GBA and such gas may be taken by the other parties in accordance with III.B. above.

H. In the event of a conflict between the terms of this GBA and the Operating Agreement, the terms of this GBA shall govern except where the conflict is between Article VI of this GBA and the Operating Agreement, in which event the Operating Agreement shall govern.

I. Nothing in this GBA shall be construed as precluding cash balancing at any time as may be agreed by the parties.

J. Nothing contained in this GBA shall require an Overproduced Party to pay to an Underproduced Party a sum which would be violative of any law, rule or regulation.

End of Exhibit "E"

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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 :  
PDC Energy, Inc., for Unit Operation :  
 : Application Date: December 16, 2014  
Grove Unit :

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**PREPARED TESTIMONY OF JOSEPH P. SMITH II  
ON BEHALF OF PDC ENERGY, INC.**

---

W. Jonathan Airey (0017437)  
Gregory D. Russell (0059718)  
J. Taylor Airey (0081092)  
Scott M. Guttman (0086639)  
VORYS, SATER, SEYMOUR AND PEASE LLP  
52 East Gay Street  
P. O. Box 1008  
Columbus, Ohio 43216-1008

Attorneys for Applicant,  
PDC Energy, Inc.

Date: December 16, 2014

Attachment 2

**PREPARED DIRECT TESTIMONY OF JOSEPH P. SMITH II**

1   **INTRODUCTION**

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

3   A1.   My name is Joseph P. Smith II and my business address is 120 Genesis Blvd,  
4        Bridgeport, West Virginia 26330. I am a Senior Geologist with PDC and currently  
5        working in its Utica asset.

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

7   A2.   I have a Bachelors and Masters degree in Geological Science from Ohio  
8        University.

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

10  A3.   I have almost 14 years of petroleum industry experience, working both  
11        conventional and unconventional plays. I have worked for large and small  
12        companies on projects, including California, the Gulf of Mexico, Wyoming,  
13        Oklahoma, Ohio, and Texas. The current focus of my work is the Appalachian  
14        Basin where I am responsible for the development of PDC's Utica Shale assets.

15  **Q4.   What do you do as a Senior Geologist for PDC?**

16  A4.   My responsibilities include: developing and reviewing plans for new horizontal  
17        Utica shale wells, monitoring active PDC drilling rig data to ensure that our Utica  
18        shale wells stay in their target formation, and mapping all Ohio subsurface horizons  
19        to identify hydrocarbon accumulations that may be exploitable via horizontal  
20        drilling.

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

23  A5.   Yes. I am an active member of the American Association of Petroleum Geologists,  
24        the Ohio Oil and Gas Association, the Southeastern Ohio Oil and Gas Association,  
25        and the Appalachian Geological Society.

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

27  A6.   I am testifying in support of the *Application of PDC Energy, Inc. for Unit*  
28        *Operation* filed with respect to the Grove Unit, consisting of fourteen (14) separate  
29        tracts of land totaling approximately 538 acres in Washington County, Ohio. My  
30        testimony will show that the Unitized Formation described in the Application is

1 part of a pool and thus an appropriate subject of unitization. Additionally, my  
2 testimony will support the Unit Plan's allocation of unit production and expenses to  
3 separately owned tracts on a surface-acreage basis, based on the unit area's nearly  
4 uniform thickness and substantially identical geological characteristics throughout.

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

6 **Q7. To begin, would you tell me what a "pool" is?**

7 A7. A pool is generally understood to be a common source of supply in pores of a rock that  
8 yields hydrocarbons on drilling. This is consistent with the Ohio statutory definition  
9 defining a pool as "an underground reservoir containing a common accumulation of  
10 oil or gas, or both, but does not include a gas storage reservoir."

11 **Q8. How is the Unitized Formation defined for the Grove Unit?**

12 A8. The Unitized Formation is the subsurface portion of the Grove Unit at a depth  
13 located from 50 feet above the top of the Utica Shale to 50 feet below the base of  
14 the Point Pleasant formation, an interval believed to be approximately 6,596 feet  
15 true vertical depth (TVD) to 7,240 feet TVD.

16 **Q9. Do you have an opinion on whether or not the Unitized Formation  
17 contemplated by the Grove Unit constitutes a pool or part of a pool?**

18 A9. Yes. It is my opinion, based on my education and professional experience, that the  
19 Unitized Formation is part of a pool.

20 **Q10. Why?**

21 A10. As part of a larger hydrocarbon pool, an equal accumulation of hydrocarbons are  
22 expected to be in place throughout the Grove Unit. Furthermore, the hydrocarbon  
23 pool would extend beyond the currently defined unit in each direction, North,  
24 South, East and West. Interpretation of data indicates that the Unitized Formation  
25 has consistent characteristics across the Grove Unit. Geological mapping suggest  
26 that the Unitized Formation constitutes a common source of supply, meaning any  
27 portion of the Grove Unit would be geologically equivalent to another portion of  
28 the Grove Unit. Stated another way, the formation shows very similar traits from  
29 one well location to the next, which suggesting that production is likely to be  
30 similar from all wells drilled in the unit. Therefore, the Unitized Formation  
31 qualifies as part of a pool.

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**Q11. Is your opinion based on your education and professional experience?**

A11. Yes.

**Q12. What data sources did you use in determining the geologic features of the Grove Unit?**

A12. Wireline well log data and Gamma Ray data, which we used to compile attached Exhibits JS-1 and JS-2.

**Q13. And is this a commonly accepted method of analysis in your profession for determining whether a pool or part of a pool exists?**

A13. Yes.

**ALLOCATION METHODOLOGY**

**Q14. Production and expenses are allocated to the separate tracts in the Grove Unit under the Unit Plan on a surface-acreage basis. Do you have an opinion on whether that allocation method is appropriate, given your education and professional experience?**

A14. I do. In my opinion, surface allocation is the appropriate method. The reason being is that the Utica-Point Pleasant is an unconventional reservoir. Unconventional reservoirs are characterized as “blanket type” deposits and the geology is therefore essentially uniform over large areal extents. Thus, the characteristics of the rock and the type of fluid it contains should not vary under any part of the proposed unit. This is marked contrast to the conventional reservoirs (sandstone and limestone) where over very small distances the nature and even the type of rock can change dramatically.

**Q15. In your experience, is this a common method for allocating production and expenses?**

A15. Yes

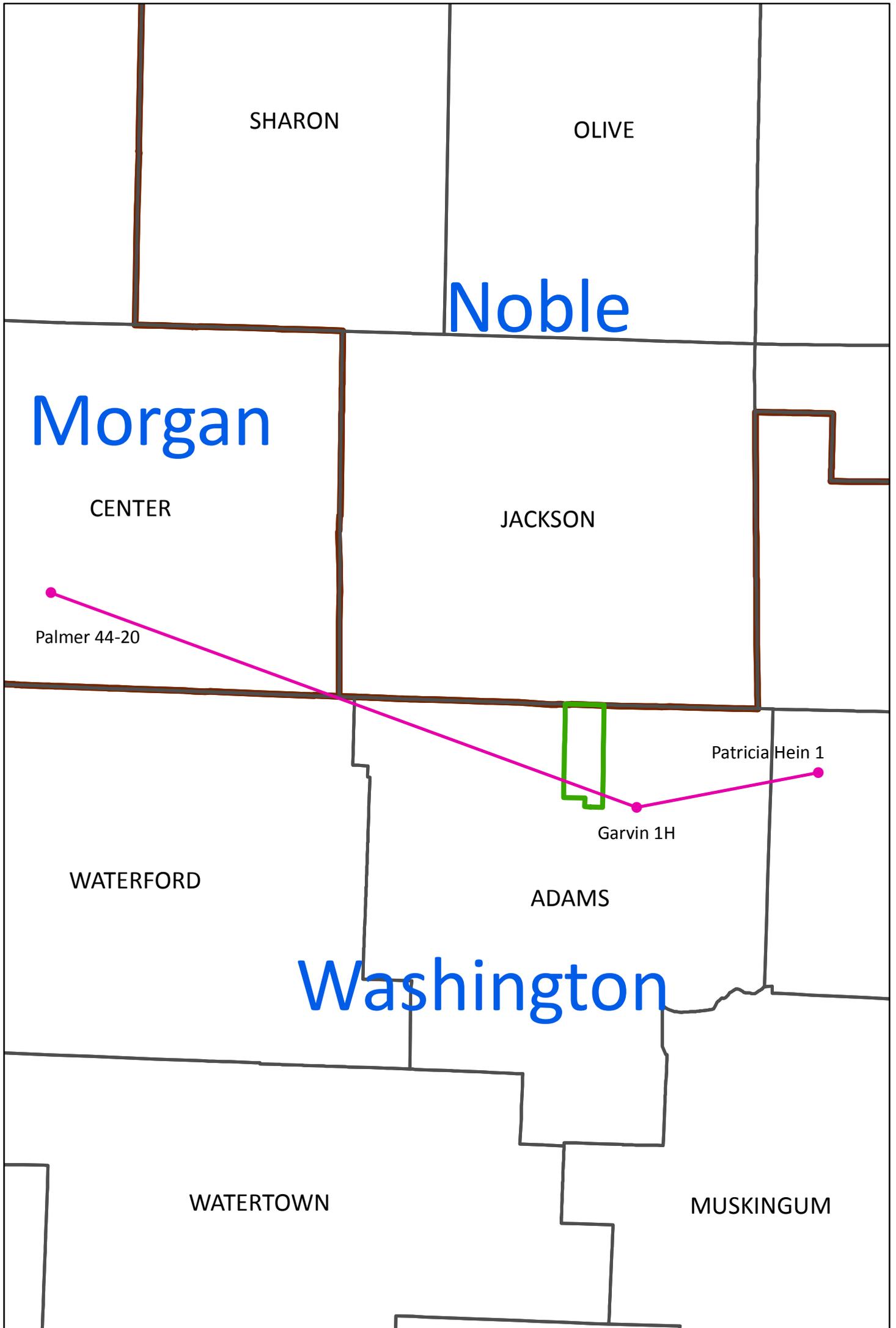
**Q16. Have you seen this allocation method used in other shale basins?**

A16. I have seen this method applied in the Monterey Shale of California, the Wolfcamp shale of the Permian Basin in Texas, as well as the Barnett Shale of the Fort Worth Basin in Texas.

1 **Q17. Does this conclude your testimony?**

2 A17. Yes.

# **Exhibit JS-1**



# Washington



## Cross-Section Map

Grove Unit  
Adams Township  
Washington Co., OH



Coordinate System: NAD 1983 State Plane Ohio South

1 inch = 9,000 feet

Prepared Date: 12/15/2014

# **Exhibit JS-2**



3

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

In re the Matter of the Application of :  
PDC Energy, Inc., for Unit Operation :  
 : Application Date: December 16, 2014  
Grove Unit :

---

**PREPARED TESTIMONY OF ANTONIO VIZURRAGA  
ON BEHALF OF PDC ENERGY, INC.**

---

W. Jonathan Airey (0017437)  
Gregory D. Russell (0059718)  
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Columbus, Ohio 43216-1008

Attorneys for Applicant,  
PDC Energy, Inc.

Date: December 16, 2014

**PREPARED DIRECT TESTIMONY OF ANTONIO VIZURRAGA**

1   **INTRODUCTION.**

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

3   A1.   My name is Antonio Vizurraga. I am a petroleum engineer with PDC Energy, Inc.  
4       My business address is 1775 Sherman Street, Suite 3000, Denver, Colorado 80203.

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

6   A2.   I hold a Bachelor and a Masters of Science in Mechanical Engineering from the  
7       Georgia Institute of Technology.

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

9   A3.   I have approximately 25 years of experience as a reservoir and production engineer  
10       in the oil and gas industry. After my Bachelor's degree, I worked for a year in a  
11       project management role for an energy conservation consultant firm. Upon finish-  
12       ing my graduate degree, I worked for Amoco E&P for seven years, eventually  
13       moving to Colorado. I went through their rigorous training program for the first  
14       two years where I trained in reservoir and production engineering. I also had vari-  
15       ous job assignments in reservoir, production and completion engineering roles  
16       throughout basins in the Unites States, including offshore Gulf of Mexico. After  
17       leaving Amoco, I worked for the consulting group within Schlumberger specializ-  
18       ing in reservoir studies. I worked on reservoir simulation projects and field devel-  
19       opment studies for conventional, tight gas sands and unconventional reservoirs in  
20       the USA, as well as conventional and unconventional projects in Mexico, Argenti-  
21       na, Nigeria and China. These projects required that I use reservoir and production  
22       engineering skills in nodal analysis, pressure transient analysis, fluid characteriza-  
23       tion, material balance and reservoir volumetric analysis. I was employed by  
24       Schlumberger for twelve years. Then, I worked for El Paso E&P for three years  
25       where I was a reservoir engineer on their New Mexico and Utah assets. This was  
26       mostly unconventional reservoirs: coalbed methane projects and tight oil sands. For  
27       more than three years since leaving El Paso, I have worked for PDC Energy as a  
28       Senior Lead Engineer for their Permian and Utica assets.

29   **Q4.   What do you do as a Senior Lead Engineer for PDC?**

30   A4.   As a Senior Lead Engineer at PDC, I am responsible for reservoir, production and

1 completion engineering in our Ohio operations. These responsibilities include  
2 calculating reserves and forecasting production for our company. The team that I  
3 supervise also the completion design for wells, which includes the perforation and  
4 hydraulic fracture treatments.

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

6 A5. I have been an active member of Society of Petroleum Engineers for over 10 years.

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

8 A6. I am testifying in support of the *Application of PDC Energy, Inc. for Unit*  
9 *Operation* filed with respect to the Grove Unit, consisting of fourteen (14) separate  
10 tracts of land totaling approximately 538 acres in Washington County, Ohio. My  
11 testimony addresses the following: (i) that unit operations for the Grove Unit are  
12 reasonably necessary to increase substantially the recovery of oil and gas; and (ii)  
13 that the value of the estimated additional recovery due to unit operations exceeds its  
14 estimated additional costs.

15 **UNIT OPERATIONS ARE REASONABLY NECESSARY TO INCREASE**  
16 **SUBSTANTIALLY THE RECOVERY OF OIL AND GAS.**

17 **Q7. I'd like to begin by addressing whether unit operations in the Grove Unit are**  
18 **reasonably necessary to increase substantially the recovery of oil and gas from**  
19 **those properties. Would you describe briefly how PDC anticipates developing**  
20 **the Grove Unit?**

21 A7. In the Unitized plan for the Grove leases, PDC Energy would develop the acreage  
22 with four horizontal wells each of approximately 6,300 feet each. The exact final  
23 lateral length of each well will depend upon final permit requirements. The well  
24 pad will be located in the southern part of the unit and go north according to the  
25 directional program as indicated on attached Exhibit AV-1.

26 **Q8. Do you have an opinion on whether unit operations in the Grove Unit are**  
27 **reasonably necessary to increase substantially the recovery of oil and gas from**  
28 **those properties, and if so, what is your opinion?**

29 A8. Yes. It is my opinion that unit operations are reasonably necessary to substantially  
30 increase the recovery of oil and gas from the unit properties. It is highly likely that  
31 the leases not included in the Non-Unitized plan would never be developed.

1           Therefore those reserves would be stranded.

2   **Q9.   What volumes would be lost if those properties are stranded?**

3   A9.   PDC has four wells to the east of the Grove Unit, located in Washington County,  
4       these wells were used to estimate the production characteristics of and volumes to  
5       be produced from of the wells within the Grove Unit. The volumes of oil and gas  
6       obtained from analyzing the internal model are the basis for the estimated ultimate  
7       recovery for the Grove Unit. The estimated ultimate recovery from the Grove Unit  
8       with an order authorizing unit operations is 32.99 BSCFE, which drops to 30.01  
9       BSCFE without an order authorizing unit operations. Thus, we estimate a loss of  
10      approximately 2.98 BSCFE absent unit operations. These estimates are broken  
11     down on a per well basis on attached Exhibit AV-2.

12 **Q10. Are the estimates that you made based on good engineering practices and**  
13 **accepted methods in the industry?**

14 A10. Yes.

15 Q11. **Can you calculate the production from these wells ahead of time with**  
16 **mathematical certainty?**

17 A11. Utica development is relatively new. As such there is uncertainty on the exact  
18      production for any given well; however, the range of production possible from  
19      these wells can be determined with reasonable confidence.

20 **Q12. Is horizontal drilling technology, including hydraulic fracturing the formation,**  
21 **required to economically develop unconventional resources?**

22 A12. Yes. Due to the low permeability of the Utica/Point Pleasant formation,  
23      economically recoverable reserves would not be possible without it.

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

26 A13. Yes.

1 **VALUE OF ESTIMATED ADDITIONAL RECOVERY EXCEEDS ITS**  
2 **ESTIMATED ADDITIONAL COSTS**

3 **Q14. Let's turn to the financial side of the project. Generally, in your professional**  
4 **experience, how would the economics of a development project such as the**  
5 **development of the Grove Unit be evaluated?**

6 A14. First, the hydrocarbon volumes produced over time are developed. The commodity  
7 pricing for oil, condensate, natural gas and natural gas liquids, based on NYMEX  
8 sources, are used to generate the revenue stream. The royalties, any burdens such as  
9 federal and state taxes, capital costs and operating taxes are then subtracted from  
10 the revenue stream to evaluate the income and cash flow from each well. These  
11 dollars are then discounted at various rates to calculate various economic factors  
12 such as present values and rate of return.

13 **Q15. Did you do that here?**

14 A15. Yes.

15 **Q16. Would you walk us through your economic evaluation?**

16 A16. First, the hydrocarbon volumes produced over time are estimated, using a  
17 production profile developed for each Grove Unit well. The initial production rate  
18 of oil and natural gas was declined to obtain monthly and annual hydrocarbon  
19 volumes. Then, the commodity pricing for oil, condensate, natural gas and natural  
20 gas liquids, based on NYMEX sources, are used to generate the annual revenue  
21 stream. The royalties, any burdens such as federal and state taxes, capital costs and  
22 operating taxes are then subtracted from the revenue stream to evaluate the income  
23 and cash flow from each well. The capital cost for each of the four Grove Unit  
24 wells with an order authorizing unit operations at 6,300 feet in lateral length was  
25 estimated at \$9,700,000. The Grove Unit wells without an order authorizing unit  
26 operations would have an estimated capital cost of \$8,000,000 for the 1H well,  
27 \$9,700,000 for Grove 2H, 3H, and 4H wells respectively. These dollars are then  
28 discounted at various rates to calculate various economic factors such as present  
29 values and rate of return.

1 **Q17. Based on this information and your professional judgment, does the value of**  
2 **the estimated additional recovery from the unit operations proposed for the**  
3 **Grove Unit exceed its estimated additional costs?**

4 **A17.** Yes. With an order authorizing unit operations, the Grove Unit would recover  
5 32.99 BSCFE and the total capital investment would be \$38,800,000. The  
6 economic analysis shows a net present value discounted at 10% (PV10) to be  
7 \$24,811,000. Whereas, for development without an order authorizing unit  
8 operations, the recovery of hydrocarbons would be 30.01 BSCFE and the total  
9 capital investment would be \$37,100,000. The Non-Unitized economic analysis  
10 shows a net present value discounted at 10% (PV10) to be \$21,220,000. This shows  
11 that developing the stranded leases through a unit order increases the production  
12 from the Grove Unit by 2.98 BSCFE having a net PV10 value of \$3,590,000.

13 **Q18. And your opinions are based on your education and professional experience?**

14 **A18.** Yes.

15 **Q19. Does this conclude your testimony?**

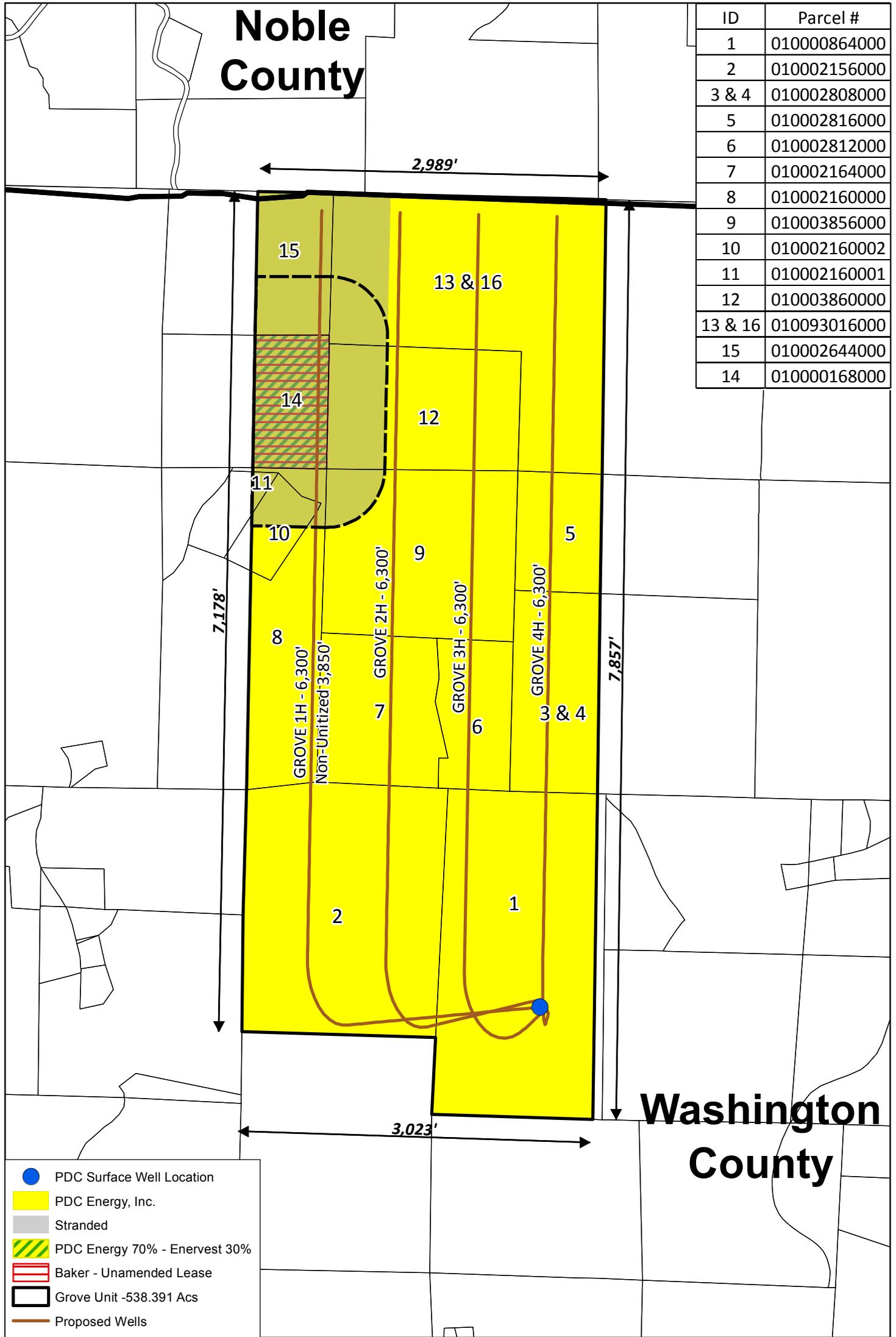
16 **A19.** Yes.

17

# **Exhibit AV-1**

**Noble  
County**

ID	Parcel #
1	010000864000
2	010002156000
3 & 4	010002808000
5	010002816000
6	010002812000
7	010002164000
8	010002160000
9	010003856000
10	010002160002
11	010002160001
12	010003860000
13 & 16	010093016000
15	010002644000
14	010000168000



**Washington  
County**



# Unit Plat

Grove Unit  
Adams Township  
Washington Co., OH



0 500 1,000 2,000  
Feet

Coordinate System: NAD 1983 State Plane Ohio South

1 inch = 1,000 feet

Prepared Date: 12/15/2014

# **Exhibit AV-2**

**GROVE PAD - ENGINEERING EXHIBIT  
EXHIBIT AV-2**

Well Information			
Well Name	Unit Lateral Length (ft)	Unit Development Cost (\$M)	Non-Unit Lateral Length (ft) Non-Unitized Development Cost (\$M)
Grove 1H	6300	9,700	3850 8,000
Grove 2H	6300	9,700	6300 9,700
Grove 3H	6300	9,700	6300 9,700
Grove 4H	6300	9,700	6300 9,700
<b>TOTALS</b>		<b>38,800</b>	<b>37,100</b>

Well Name	Unitized		Non-Unitized	
	EUR (MBOE)	EUR (BSCFE)	EUR (MBOE)	EUR (BSCFE)
Grove 1H	1374.5	8,247	878	5,268
Grove 2H	1374.5	8,247	1374.5	8,247
Grove 3H	1374.5	8,247	1374.5	8,247
Grove 4H	1374.5	8,247	1374.5	8,247
<b>TOTALS</b>	<b>5,498</b>	<b>32,988</b>	<b>5,001.5</b>	<b>30,009</b>

LEASE

497

2,979

3,591

\*results from DCA - ARIES Economic Modling software

Commodity Pricing			
Year	Oil (\$/bbl)	Gas (\$/ Mscf)	NGL \$/bbl)
2015	No Production until 2016		
2016	53.14	3.63	34.81
2017	56.09	4.16	36.28
2018	58.49	4.32	37.48
2019 & beyond	58.49	3.70	42.91

4

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

In re the Matter of the Application of :  
PDC Energy, Inc., for Unit Operation :  
: Application Date: December 16, 2014  
Grove Unit :

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**PREPARED TESTIMONY OF J. TYLER SIMS  
ON BEHALF OF PDC ENERGY, INC.**

---

W. Jonathan Airey (0017437)  
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Columbus, Ohio 43216-1008

Attorneys for Applicant,  
PDC Energy, Inc.

Date: December 16, 2014

**PREPARED DIRECT TESTIMONY OF J. TYLER SIMS**

1 **INTRODUCTION.**

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

3 A1. My name is J. Tyler Sims and I am a Senior Regional Landman with PDC Energy,  
4 Inc. ("PDC"), an independent oil and natural gas company.

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

6 A2. I graduated from Oklahoma State University in Stillwater, Oklahoma with a  
7 Bachelor of Science in Economics in May 2004. I later graduated with a Master's  
8 in Business Administration from Colorado State University in Fort Collins,  
9 Colorado in May 2013.

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

11 A3. I have been employed by PDC since 2013, during which time I have been a  
12 Landman for PDC's Ohio asset. Prior to that, I worked for Marathon Oil Company  
13 from 2007 to 2013 and was responsible for Land related activities in the Powder  
14 River Basin of Wyoming, Niobrara in Colorado and Wyoming and Bakken in  
15 North Dakota. Prior to that, I was an independent Landman working on a contract  
16 basis for Hal C. Smith and Associates from 2004 thru 2007, performing leasing and  
17 title related land activities.

18 **Q4. What do you do as a Senior Regional Landman for PDC?**

19 A4. As a landman I am responsible for all aspects of land within Washington and  
20 southern Noble Counties, including ordering, examining, curing, and clearing title  
21 in advance of the drilling schedule; managing field Landmen in their leasing  
22 efforts; ensuring that surface issues are being addressed in a timely manner; serving  
23 as the point of contact for attorneys, landowners, and other working interest  
24 owners; preparing and negotiating trade agreements and proposals, and compiling  
25 working interest units. I also assist PDC's Utica team in any and all other land  
26 related issues.

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

28 A5. I belong to the American Association of Professional Landman and the Denver  
29 Association of Petroleum Landmen.

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

1 A6. I am testifying in support of the *Application of PDC Energy, Inc. for Unit*  
2 *Operation* filed with respect to the Grove Unit, consisting of fourteen (14) separate  
3 tracts of land totaling approximately 538 acres in Adams Township in Washington  
4 County, Ohio. In particular, I will describe the efforts made by PDC to establish  
5 the Grove Unit and the Unit Plan that PDC is proposing.

6 **EFFORTS MADE BY PDC TO LEASE UNIT TRACTS.**

7 **Q7. The Application submitted by PDC indicates that it owns the oil and gas rights**  
8 **to more than 531 acres of the proposed 538-acre unit. Would you describe**  
9 **how PDC acquired those rights?**

10 A7. PDC and its Working Interest partner, EnerVest Operating, LLC (“EnerVest”),  
11 together own the oil and gas rights to all of the proposed 538 acre unit. PDC  
12 acquired its working interest through acquisitions of held-by-production leases in  
13 four (4) separate transactions between 2012 and 2014 covering 441 acres. PDC  
14 also obtained new leases on 91 acres. EnerVest owns the remaining acreage in the  
15 unit, consisting of approximately 6 acres.

16 **Q8. And that represents 100% of the unit acreage?**

17 A8. Yes. PDC and EnerVest now hold leases or mineral rights for all 538 acres, or  
18 100% of the unit. PDC holds leases or mineral rights for roughly 531.7 acres, or  
19 98.76% of the unit. That’s reflected on Exhibit A-2 to the Unit Operating  
20 Agreement.

21 **Q9. Has EnerVest approved of the filing of this Application?**

22 A9. Yes.

23 **Q10. What percentage of the total acreage of the Grove Unit is represented by the**  
24 **oil and gas rights held by EnerVest?**

25 A10. EnerVest has approximately a 1.24% working interest.

26 **Q11. Is it accurate to say then that the owners of One Hundred percent (100%) of**  
27 **the unit have approved the filing of this Application?**

28 A11. Yes. Working Owner Approvals are included in Exhibit JTS-1.

29 **Q12. If PDC and EnerVest together own 100% of the Grove Unit, why is PDC**  
30 **seeking a unitization order from the Division?**

31 A12. Tract 14 in the Grove Unit that is held by PDC and EnerVest, is subject to lease

1 with a non-conforming pooling provision (the “Non-Conforming Lease”). We  
2 have sought to amend the Non-Conforming Lease to allow for drilling units in  
3 excess of 40 acres but have been unable to reach an agreement with the owner of  
4 Tract 14. Tract 14 therefore needs to be statutorily unitized if we are to effectively  
5 and efficiently develop the Unit. Tract 14 contains 22.192 acres in the Grove Unit,  
6 being 4.121911% of the unit.

7 **Q13. Have you prepared an affidavit detailing PDC’s efforts to obtain a lease  
8 amendment from the owner of lands subject to the Non-Conforming Lease?**

9 A13. Yes, it is attached as Exhibit JTS-2 to this testimony.

10 **Q14. Do you have an exhibit to your testimony that shows the Non-Conforming  
11 Lease within the Grove Unit?**

12 A14. Yes. Exhibit JTS-3 is a plat of the Grove Unit showing Tract 14 as cross hatched.

13 **Q15. Do you have an aerial plat of the Grove Unit?**

14 A15. Yes, I’ve attached one as Exhibit JTS-4 to my testimony.

15 **UNIT PLAN PROVISIONS.**

16 **Q16. Would you describe generally the development plan for the Grove Unit?**

17 A16. PDC plans to develop the Grove Unit from a single well pad located at the southern  
18 end of the Unit, from which we intend to drill four horizontal wells. The four  
19 laterals are each projected to be approximately 6,300’ in length. Exhibit JTS-3  
20 illustrates the planned configuration.

21 **Q17. Does PDC have a specific timeline for drilling the wells in the Grove Unit?**

22 A17. Currently, the unit is on PDC’s schedule for a December 2015 spud date.

23 **Q18. Does PDC have any other development activity in the immediate area?**

24 A18. Yes. Adjacent to the eastern boundary of the Grove unit is PDC’s Garvin unit,  
25 which consists of three producing wells as shown on Exhibit JTS-5.

26 **Q19. Are you familiar with the Unit Plan proposed by PDC for the Grove Unit?**

27 A19. Yes. The Unit Plan proposed by PDC is attached to the Application and consists of  
28 an initial document that establishes the non-operating relationship between the  
29 parties in the unit, and an operating agreement and related exhibits that establish  
30 how the unit is going to be explored, developed and produced.

31 **Q20. Turning first to the body of the Unit Plan, marked as Attachment 1 to the**

1           **Application. Would you describe briefly what it does?**

2    A20. Yes. The general intent of the Unit Plan is to effectively combine the oil and gas  
3           rights and interests in the Grove Unit in a uniform manner so that they can be  
4           developed as though each of the tracts were covered by a single lease.

5    **Q21. Are all of the oil and gas rights in the proposed unit combined?**

6    A21. No. The Unit Plan only unitizes the oil and gas rights in and related to the Unitized  
7           Formation, which is the interval from 50 feet above the top of the Utica Shale to 50  
8           feet below the base of the Point Pleasant formation.

9    **Q22. How would production from the Grove Unit be allocated?**

10   A22. Production will be allocated on a surface-acreage basis. Under Article 4 of the Unit  
11           Plan, every tract is assigned a tract participation percentage based on surface  
12           acreage and shown on Exhibit A-2 to the Unit Operating Agreement. Article 5 of  
13           the Unit Plan allocates production based on that tract participation.

14   **Q23. Would you go through an example from Exhibit A-2 to the Unit Operating  
15           Agreement to illustrate what you mean?**

16   A23. Yes. If you look at Exhibit A-2 to the Unit Operating Agreement, the column  
17           entitled "Parcel Surface Acres in Unit" shows the number of surface acres in each  
18           tract of land within the Grove Unit. As some of the parcels are owned jointly by  
19           more than one mineral owner, the parcel surface acres are multiplied by the mineral  
20           owner's interest in the tract to get "Mineral Owner Surface Acres". "Mineral  
21           Owner Surface Acres" are then divided by the total number of surface acres in the  
22           unit, resulting in the tract participation percentage for each mineral owner under the  
23           tract. For example, Tract 13 is owned in equal shares by Dorothy J. Kuntz and  
24           Twilla D. Hetrick. The entire tract consists of 90.68 acres, which is owned in equal  
25           ½ interests by Dorothy and Twilla. Therefore, Dorothy and Twilla each own  
26           45.34 surface acres in Tract 13. This number (*i.e.*, 45.34) is then divided by the  
27           total number of surface acres (538.391) to give them each a tract participation  
28           percentage of approximately 8.421389% ( $90.68 * 0.5 / 538.391$ ).

29   **Q24. Does it work the same way for an unleased mineral interest, that is, for the  
30           tract of a person who did not lease the property in the unit?**

31   A24. Yes.

1 **Q25. In your experience, is this an unusual way to allocate production in a unit?**  
2 A25. No. In my experience, surface-acreage allocation is both fair and customary for  
3 horizontal shale development.

4 **Q26. How are unit expenses allocated?**  
5 A26. Like production in the unit, generally on a surface-acreage basis. Article 3 of the  
6 Unit Plan provides that expenses, unless otherwise allocated in the Unit Operating  
7 Agreement, will be allocated to each tract of land within the unit in the proportion  
8 that the surface acres of each tract bears to the surface acres of the entire unit.

9 **Q27. Who pays the unit expenses?**  
10 A27. According to the terms of the proposed Unit Plan, the working interest owners pay  
11 the expenses.

12 **Q28. Do the royalty owners pay any part of the unit expenses?**  
13 A28. No. Per our leases, royalty interest owners are only responsible for their  
14 proportionate share of taxes and third-party post-production costs.

15 **Q29. Let's turn to the Unit Operating Agreement. It appears to be based upon**  
16 **A.A.P.L. Form 610 – Model Form Operating Agreement, is that correct?**  
17 A29. Yes. We typically use the AAPL Form 610 – 1989, modified by the AAPL for  
18 horizontal development. The Form 610, together with its exhibits, is a commonly  
19 used form in the industry and is frequently modified to fit the needs of the parties  
20 and circumstances.

21 **Q30. Would it be fair to say, then, that you are familiar with the custom and usage**  
22 **of the Form 610 and other similar agreements in the industry?**  
23 A30. Yes.

24 **Q31. Turning to the Unit Operating Agreement in particular, does it address how**  
25 **unit expenses are determined and paid?**  
26 A31. Yes. Article III of the Unit Operating Agreement provides that all costs and  
27 liabilities incurred in operations shall be borne and paid proportionately by the  
28 working interest owners, according to their Unit Participation percentages. Those  
29 percentages can be found in Exhibit A-2 to the Unit Operating Agreement.  
30 Moreover, the Unit Operating Agreement has attached to it an accounting  
31 procedure identified as Exhibit C that offers greater details regarding how unit

1 expenses are determined and paid.

2 **Q32. That's commonly referred to as the COPAS?**

3 A32. Yes, it stands for the Council of Petroleum Accountants Societies and is a  
4 commonly used form in the industry.

5 **Q33. Based upon your education and professional experience, do you view the terms  
6 of Exhibit C as reasonable?**

7 A33. Yes. Drafted by an organization that includes members from many different  
8 companies in diverse sections of the industry, it was designed to be generally fair to  
9 the parties. PDC, in fact, is frequently subject to the COPAS in its operations with  
10 other producers.

11 **Q34. Will there be in-kind contributions made by owners in the unit area for unit  
12 operations, such as contributions of equipment?**

13 A34. No. We do not anticipate any.

14 **Q35. Are there times when a working interest owner in the unit chooses not to – or  
15 cannot – pay their allocated share of the unit expenses?**

16 A35. Yes, such a situation is not uncommon in the industry. The Operating Agreement  
17 includes the flexibility for one or more working interest owners to decline to  
18 participate in an operation that they believe may not be profitable, or one that they  
19 cannot afford. The remaining parties can then proceed at their own risk and  
20 expense.

21 **Q36. Generally, what happens if a working interest owner chooses not to participate  
22 in an operation?**

23 A36. That working owner would be considered a non-consenting party. If the remaining  
24 working interest owners decide to proceed with the operation, they would bear the  
25 full cost and expense. The non-consenting party would be deemed to have  
26 relinquished its interest in that operation until the well pays out the costs that would  
27 have been payable by that party, plus a risk penalty (non-consent penalty).

28 **Q37. Can a working interest owner choose to go non-consent in the initial well in  
29 the Grove Unit?**

30 A37. Yes. If a working interest owner chooses not to participate in the unit's initial well,  
31 Article VI.A. of the Unit Operating Agreement provides that the working interest

1 owner shall be deemed to have relinquished its working interest to the other parties  
2 in the unit, with a back-in provision and risk factor of 300%.

3 **Q38. Does the Unit Operating Agreement treat the initial well and subsequent**  
4 **operations differently in terms of going non-consent, and if so, why?**

5 A38. Yes. Subsequent operations have a smaller risk factor of 200%. Participation in the  
6 initial well is a riskier endeavor than subsequent operations due to a lack of  
7 information as to whether the well will be economic. Information gained from the  
8 initial well reduces the risk factor going forward; therefore, it is common for joint  
9 operating agreements to distinguish risk factors between initial and subsequent  
10 operations.

11 **Q39. But if the working interest owner still has a royalty interest in the unit, that**  
12 **royalty interest would remain in place and be paid?**

13 A39. Yes. That royalty interest would still be paid.

14 **Q40. Are the percentage risk penalties included in the Unit Operating Agreement**  
15 **unusual?**

16 A40. No they are not unusual given the determinations made previously in a similar  
17 application. On the other hand, they are a little conservative given my experience in  
18 other basins. Because of the significant costs associated with drilling horizontally  
19 to the Utica Shale (often in excess of \$10,000,000 to plan, drill, and complete) and  
20 because the Utica Shale is an unconventional play (where uneven geological  
21 performance is likely), it is common for companies to incorporate into their joint  
22 operating agreements a risk factor proportionate to the substantial financial  
23 commitment. These are often higher than those proposed here (e.g. 500/400).

24 **Q41. In your professional opinion, given your education and experience, are the**  
25 **terms of the Unit Plan, and the Unit Operating Agreement, just and**  
26 **reasonable?**

27 A41. Yes.

28 **Q42. Does this conclude your testimony?**

29 A42. Yes.

# **Exhibit JTS-1**

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

In re the Matter of the Application of :  
PDC Energy, Inc. for Unit Operation : Application Date: December 16, 2014  
:  
Grove Unit :  
:

**AFFIDAVIT OF OWNERSHIP**

I, J. Tyler Sims, being first duly cautioned and sworn, do hereby depose and state as follows:

1. My name is J. Tyler Sims and I am a Senior Regional Landman with PDC Energy, Inc. ("Applicant"). My day-to-day responsibilities include all aspects of land within Washington and southern Noble Counties, including ordering, examining, curing, and clearing title in advance of the drilling schedule; managing field Landmen in leasing efforts; ensuring that surface issues are being address in a timely manner; serving as the contact person for attorneys, landowners, and other working interest owners; preparing and negotiating acquisition and trade agreement and proposals; and compiling working interest units; for the Applicant in the State of Ohio, and I have personal knowledge of the facts stated herein.

2. Pursuant to Ohio Revised Code § 1509.28, the Applicant has filed an application with the Chief of the Division of Oil and Gas Resources Management requesting an order authorizing Applicant to operate the Unitized Formation and applicable land area, identified as the Grove Unit, according to the Unit Plan attached thereto (the "Application") (as those terms are used and defined therein). The Grove Unit is located in Washington County, Ohio, and consists of fourteen (14) separate tracts of land covering approximately 538 acres.

3. As of the Application Date set forth above, the Applicant and the Working Interest Owners supporting the Application are the owners, as that term is defined in Ohio Revised Code § 1509.01(K), of at least 65% of the land overlying the Unitized Formation, as outlined in Exhibit A attached hereto.

Further sayeth Affiant naught.

  
\_\_\_\_\_

Sworn to and subscribed before me this 15 day of December, 2014.



  
\_\_\_\_\_  
Notary Public

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

In re the Matter of the Application of :  
PDC Energy, Inc. for Unit Operation : Application Date: December 16, 2014  
:  
Grove Unit :  
:  
:

**LEASE AFFIDAVIT**

I, J. Tyler Sims, being first duly cautioned and sworn, do hereby depose and state as follows:

1. My name is J. Tyler Sims and I am a Senior Regional Landman with PDC Energy, Inc. ("Applicant"). My day-to-day responsibilities include overseeing and directing lease acquisition for Applicant in Noble and Washington Counties in the State of Ohio, for the Applicant in the State of Ohio, and I have personal knowledge of the facts stated herein.

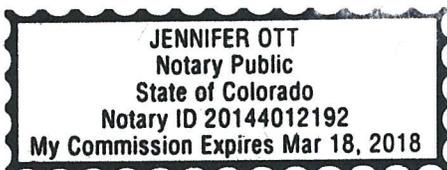
2. Pursuant to Ohio Revised Code § 1509.28, the Applicant has filed an application with the Chief of the Division of Oil and Gas Resources Management requesting an order authorizing Applicant to operate the Unitized Formation and applicable land area, identified as the Grove Unit, according to the Unit Plan attached thereto (the "Application") (as those terms are used and defined therein). The Grove Unit is located in Washington County, Ohio, and consists of fourteen (14) separate tracts of land covering approximately 538 acres.

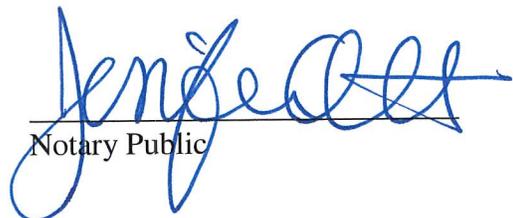
3. To my knowledge the Applicant holds a valid lease agreement pertaining to all of the Applicant's acreage that is held under lease, as described in Exhibit A-2 and A-4 of the Unit Operating Agreement attached to the Application.

Further sayeth Affiant naught.

  
\_\_\_\_\_

Sworn to and subscribed before me this 15 day of December, 2014.



  
\_\_\_\_\_  
Notary Public

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

In re the Matter of the Application of :  
PDC Energy, Inc. for Unit Operation : Application Date: December 16, 2014  
: :  
Grove Unit :

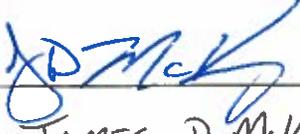
**WORKING INTEREST OWNER APPROVAL**

PDC Energy, Inc. ("Applicant") has prepared and/or filed an application asking the Chief of the Division of Oil and Gas Resources Management to issue an order authorizing Applicant to operate the Grove Unit, located in Washington County, Ohio, and consisting of fifteen (15) separate tracts of land covering approximately 538 acres, according to the Unit Plan attached thereto (the "Application").

EnerVest Operating, LLC is the partial owner (as that term is defined in Ohio Revised Code § 1509.01(K)) of one (1) tract(s) of land covering approximately 22.192 acres contained in the Grove Unit, or 4.122% of the lands in the unit, all as more specifically described on attached Exhibit 1.

EnerVest Operating, LLC hereby approves, and supports the making of, the Application, including without limitation the Unit Plan attached thereto, and acknowledges receipt of full and true copies thereof.

EnerVest Operating, LLC

By:  CA

Name: JAMES D. McKinney

Title: VP & GENERAL Manager

Date: 12/8/14

Exhibit 1

TRACT NUMBER	LESSOR	SURFACE ACRES IN UNIT	PARCEL ID NUMBER
14	Bill & Dee Baker	22.192	010000168000

# **Exhibit JTS-2**

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

In re the Matter of the Application of :  
PDC Energy, Inc. for Unit Operation : Application Date: December 16, 2014  
:   
Grove Unit :  
:   
:

**AFFIDAVIT OF J. TYLER SIMS  
(CONTACTS – AMENDMENT BY LEASED MINERAL OWNERS)**

I, J. Tyler Sims, being first duly cautioned and sworn, do hereby depose and state as follows:

1. My name is J. Tyler Sims and I am a Senior Regional Landman with PDC Energy, Inc. (“Applicant”). My day-to-day responsibilities include overseeing and directing lease acquisition for Applicant in Noble and Washington Counties in the State of Ohio. My duties regularly require me to coordinate my efforts with contractors associated with multi-well field development efforts, for the Applicant in the State of Ohio, and I have personal knowledge of the facts stated herein.

2. As part of those responsibilities, I work with and supervise contractors representing Applicant who contact landowners and obtain oil and gas leases on behalf of Applicant, including individuals from Western Land Services (“Contractor”).

3. I have received reports of contacts and attempts to contact that Contractor has made to amend leased lands within the Grove Unit. Those efforts are detailed below.

4. Regarding the following tract, the following contacts were made or attempted:

**Parcel No. 010000168000 (Tract 14)  
Owner’s Name: Bill and Dee Baker (“Current Owners”)**

<u>Date</u>	<u>Party Contacted</u>	<u>By Whom</u>	<u>Method</u>	<u>Address of Contact</u>	<u>Response</u>
8/15/2014	Dee Baker	Dan Stevenson	Home Visit	1875 Laurel Ridge Rd. Lowell, OH 45744	Discussed Amendment and its intent with Mrs. Baker; would follow up in a few days.
8/22/2014	Bill & Dee Baker	Dan Stevenson	Home Visit		Bakers requested five additional items be included in the Amendment.
9/1/2014	Bill & Dee Baker	Dan Stevenson	Home Visit		No one home.
9/4/2014	Bill & Dee Baker	Dan Stevenson	Phone		No answer, no message system available.
9/8/2014	Bill & Dee Baker	Dan Stevenson	Home Visit		Bakers continue to request same items.

9/14/2014	Bill & Dee Baker	Dan Stevenson	Home Visit	Dan conveyed PDC approval of two items and discussed those remaining. Still resistant to sign without "market value royalty" language.
9/18/2014	Bill & Dee Baker	Dan Stevenson Frank Smen- dziuk	Home Visit	Discussed amendment with Bakers who resisted understanding PDC explanation of the royalty provision.
9/23/2014	Bill & Dee Baker	Dan Stevenson	Home Visit	Offered consideration of \$1000 per acre to sign amendment PDC presented with two approved addendum items Bakers requested; asked Bakers to take a few days to think over.
10/3/2014	Bill & Dee Baker	Dan Stevenson	Phone	Mrs. Baker called Dan and reiterated they want all requested addendum items and also asked for \$3,500 per acre consideration paid on all 50 acres. Bakers understand that only approx. 22 acres will be in unit.
10/18/2014	Bill & Dee Baker	Dan Stevenson	Home Visit	No one home.
10/22/2014	Bill & Dee Baker	Dan Stevenson	Home Visit	No one home.
10/25/2014	Bill & Dee Baker	Dan Stevenson	Home Visit	No one home.
10/27/2014	Bill & Dee Baker	Dan Stevenson	Home Visit	Presented PDC counter, approving \$3,500 per acre and the two addendum items PDC previously approved. Bakers indicated agreement and they would have their attorney review the final draft.
11/5/2014	Bill & Dee Baker	Dan Stevenson	Home Visit	Draft still being reviewed by Baker's attorney.
11/8/2014	Bill & Dee Baker	Dan Stevenson	Phone	No answer, no message system available.

11/13/2014 Bill & Dee Baker Dan Stevenson Phone

Mrs. Baker left Dan a voicemail message to call back and discuss.

11/14/2014 Bill & Dee Baker Dan Stevenson Phone

Mrs. Baker requesting we address "Market Value" royalty language. Dan requested language they or their attorney want that would satisfy their concerns.

Further sayeth Affiant naught.

*A. M. R.*

Sworn to and subscribed before me this 15 day of December, 2014.

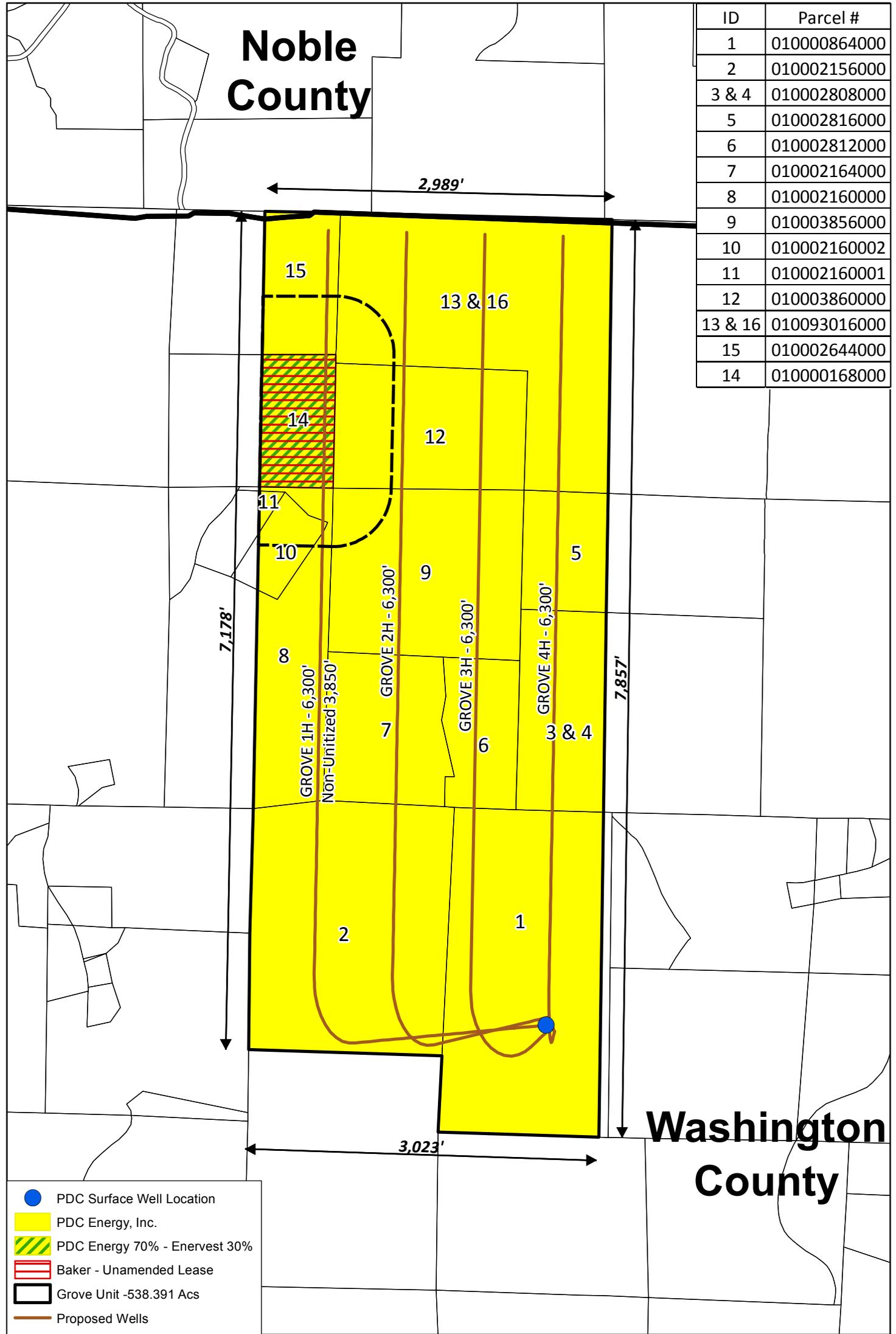


*Jennifer Ott*  
Notary Public

# **Exhibit JTS-3**

**Noble  
County**

ID	Parcel #
1	010000864000
2	010002156000
3 & 4	010002808000
5	010002816000
6	010002812000
7	010002164000
8	010002160000
9	010003856000
10	010002160002
11	010002160001
12	010003860000
13 & 16	010093016000
15	010002644000
14	010000168000



**Washington  
County**



# Unit Plat

Grove Unit  
Adams Township  
Washington Co., OH



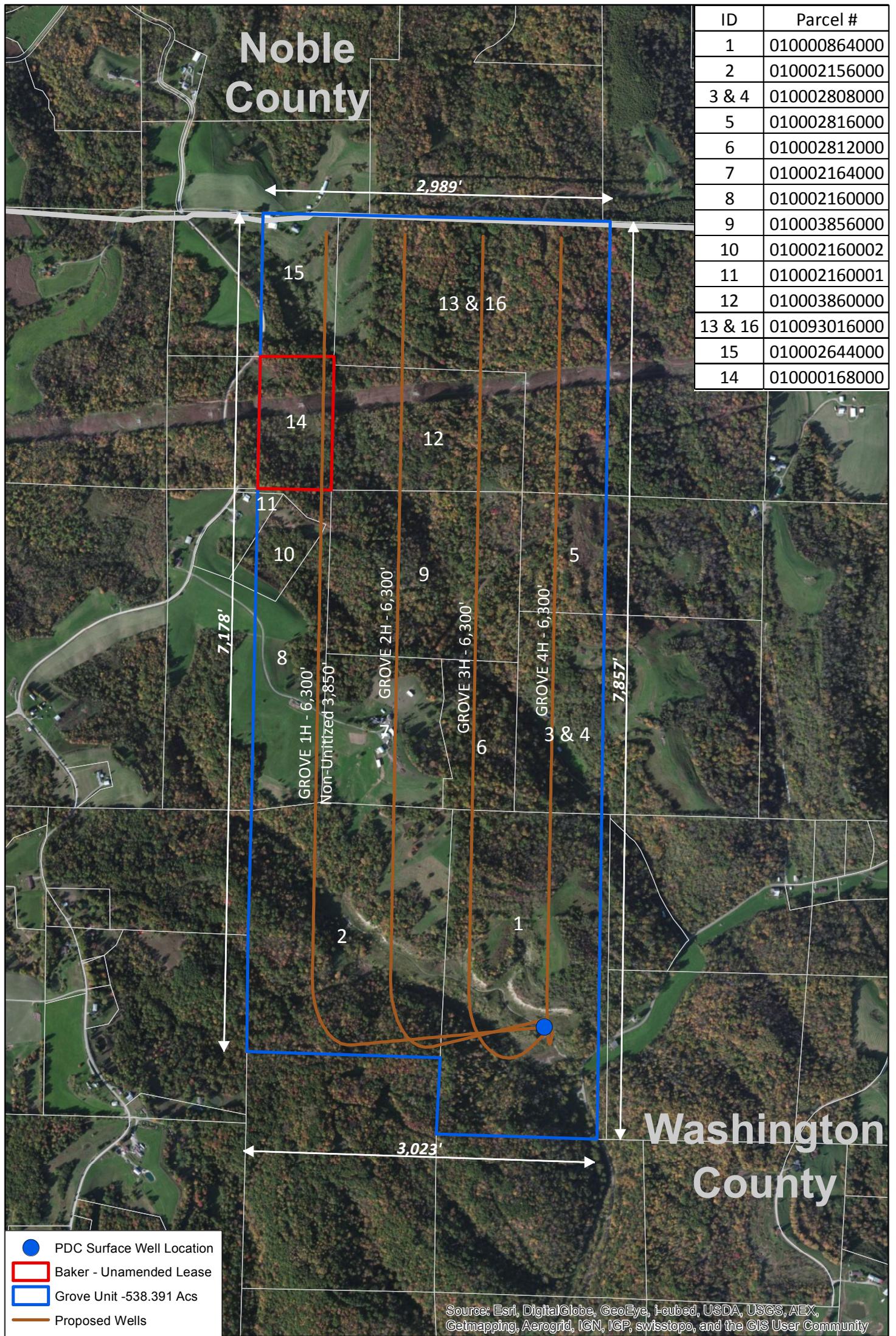
0 500 1,000 2,000  
Feet

1 inch = 1,000 feet

Prepared Date: 12/15/2014

Coordinate System: NAD 1983 State Plane Ohio South

# **Exhibit JTS-4**



ID	Parcel #
1	010000864000
2	010002156000
3 & 4	010002808000
5	010002816000
6	010002812000
7	010002164000
8	010002160000
9	010003856000
10	010002160002
11	010002160001
12	010003860000
13 & 16	010093016000
15	010002644000
14	010000168000

- PDC Surface Well Location
- Baker - Unamended Lease
- Grove Unit -538.391 Acs
- Proposed Wells

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



# Unit Plat

Grove Unit  
Adams Township  
Washington Co., OH

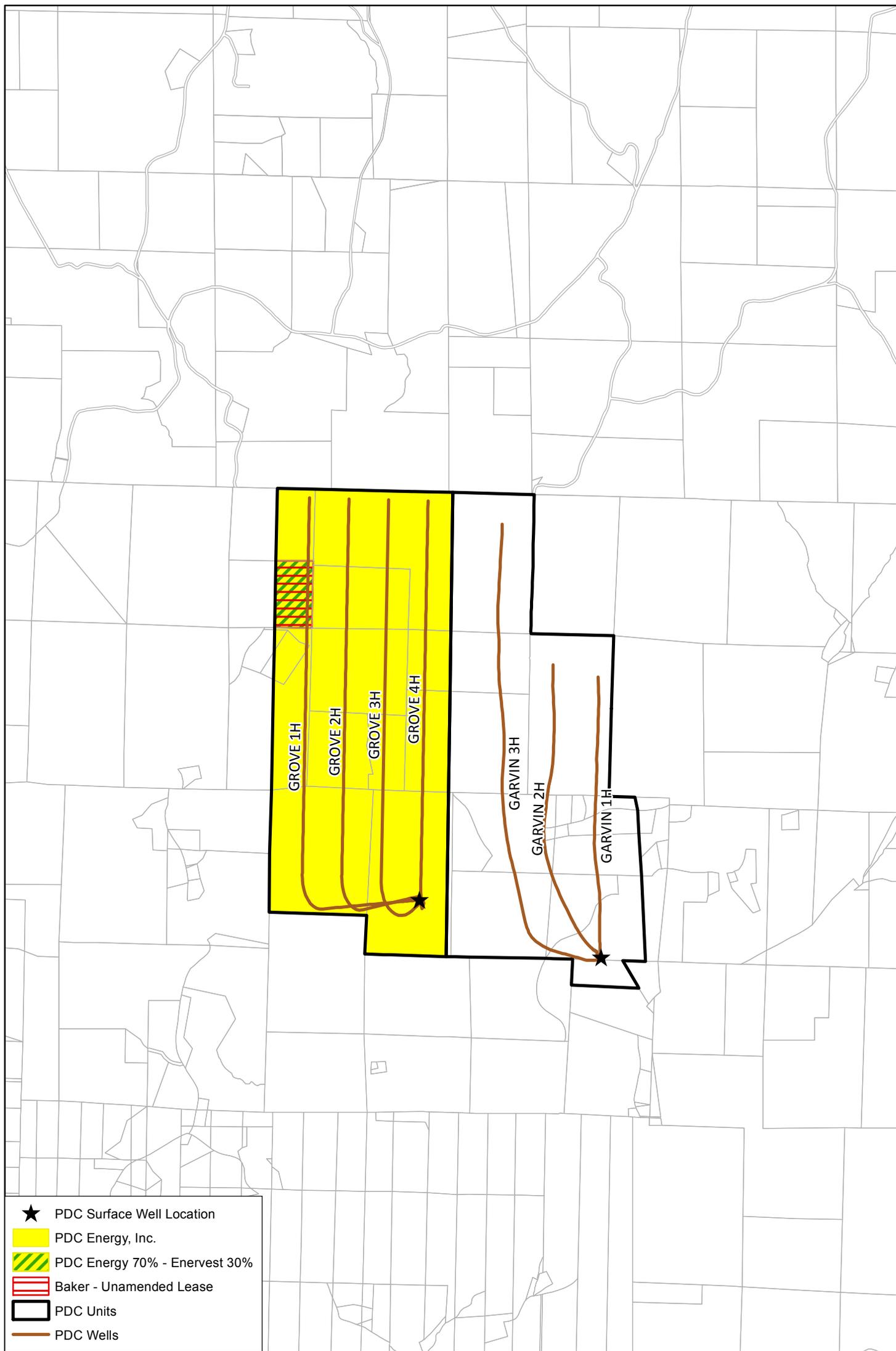


Coordinate System: NAD 1983 State Plane Ohio South

1 inch = 1,000 feet

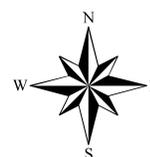
Prepared Date: 12/15/2014

# **Exhibit JTS-5**



# Unit Plat

Grove Unit  
Adams Township  
Washington Co., OH



0 500 1,000 2,000 3,000  
Feet

Coordinate System: NAD 1983 State Plane Ohio South

1 inch = 2,000 feet

Prepared Date: 12/15/2014