

VIRGINIA: Docket No. VGOB-11-0816-2986

BEFORE THE VIRGINIA GAS AND OIL BOARD

APPLICANT:

Instrument # LR2012000611

Book 561 Page 1146

Filed: 04/11/2012 At 04:12 PM

VIRGINIA GAS AND OIL BOARD ON ITS OWN MOTION

ACTION UNDER  
CONSIDERATION:

ESTABLISHMENT OF THE SOUTHWEST VIRGINIA  
HORIZONTAL-1 DRILLING POOL (hereafter known as  
"SWVH-1 HORIZONTAL POOL"), FIELD RULES AND  
DRILLING UNITS FOR THE PRODUCTION OF NATURAL  
GAS PRODUCED FROM COAL BEDS AND ROCK  
FORMATIONS PURSUANT TO VA. CODE § 45.1-361.20.

LEGAL DESCRIPTION:

THE SWVH-1 HORIZONTAL DRILLING POOL LYING IN BUCHANAN,  
DICKENSON, LEE, RUSSELL, SCOTT, TAZEWELL, AND WISE COUNTIES,  
VIRGINIA; MORE PARTICULARLY DESCRIBED IN SUBPARAGRAPH 5  
BELOW AND DEPICTED IN FIGURE '1' ATTACHED HERETO AND MADE  
PART HEREOF (hereafter known as "Subject Lands")

1. **Hearing Date and Place:** This cause came on for hearing before the Virginia Gas and Oil Board (Hereinafter "Board") upon the Board's own motion at 9:00 AM on Tuesday, December 18, 2011 at the Russell County Government Complex, Conference Center, 135 Highland Drive, Lebanon, Virginia.

2. **Appearances:** James A. Kaiser led testimony for the Horizontal Drilling Unit Committee established by the Virginia Gas and Oil Board and Sharon M. B. Pigeon, Senior Assistant Attorney General was present to advise the Board.

3. Applicant seeks by this application the establishment of the Southwest Virginia Horizontal-1 Drilling Pool (hereafter known as "SWVH-1 Horizontal Pool"), field rules and drilling units for the production of natural gas produced from coal beds and rock formations pursuant to VA. Code § 45.1-361.20.

4. **Jurisdiction and Notice:** Pursuant to Section 45.1-361.1 *et seq.*, Virginia Code, 1950 as amended, the Board finds that it has jurisdiction over the subject matter. The Board has caused notice of this hearing to be published as required by Va. Code §§ 45.1-361.19 and 45.1-361.19. Whereupon, the Board hereby finds that the notices given herein satisfy all statutory requirements, Board rule requirements and the minimum standards of state due process.

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##### **5. Pool Definition:**

- a. The proposed pool, identified as SWVH-1, would encompass portions of the Appalachian Plateaus and the Valley and Ridge Physiographic Provinces of Southwest Virginia, as generally defined by the Virginia Division of Geology and Mineral Resources geologic mapping (see attached Figure 1). The subject lands would include the coal bearing portions and the conventional natural gas formations currently / historically produced within Buchanan, Dickenson, Lee, Russell, Scott, Tazewell and Wise Counties.
  - b. Pennsylvanian coal seams within the subject lands permitting horizontal drilling would include the Splashdam coal seam and all other coal seams located stratigraphically below the Splashdam seam and all coal beds above the base of the Pocahontas Formation which is currently identified as the Squire Jim coal bed. Horizontal drilling would be prohibited in any coal seam within this geologic section that is less than (1) 500 feet below the lowest topographic point or (2) 500 feet below the elevation of the lowest water well total depth (whichever is lowest) – occurring within a 1,500 foot radius of the producing leg of the horizontal well bore.
  - c. Conventional natural gas formations subject to the pool field rules would include all geologic formations occurring between the base of the Pennsylvanian formation and the base of the Lower Devonian Corniferous formation. The local drilling and production units include, but are not limited to the following: Bluestone, Ravencliff, Maxton, Little Lime, Big Lime, Weir, Sunbury, Berea, Cleveland, Huron, Rhinestreet, and Marcellus (and all equivalent formal geologic and stratigraphic units found between the top of the Bluestone Formation and base of the Wildcat Valley Sandstone / Huntersville Formation as used by the Virginia Division of Geology and Mineral Resources.
- ##### **6. Base Grid System:**
- a. A base grid system composed of 20 acre squares has been developed and will be utilized to define the horizontal drilling unit associated with coal seams or natural gas formations to be drilled and/or completed. The base grid system has been defined by the State Plane NAD 1983 coordinate system as depicted by Figure 2 (attached hereto) and the legal description provided in Table 1 (attached hereto). The base grid system has been designed to accommodate any future pools defined within the State boundaries. The base grid system will employ a grid naming nomenclature prescribed by the Gas and Oil Director.
  - b. The horizontal drilling unit will be composed of a combination of the base grid 20 acre squares conforming to the following guidelines and a naming nomenclature prescribed by the Gas and Oil Director. The horizontal unit can be defined and approved during the DGO permitting process, if all application requirements and Board actions (if any) are complete.
  - c. A polygon representing the drainage area that would be anticipated to contribute gas production will provide the base area used to define the unit. The base area polygon will be constructed with a 300 foot offset from the proposed horizontal lateral(s). Any base grid located within any portion of the horizontal lateral(s) base drainage area will be included in the drilling unit. The base grid system and associated base area polygon allows for overlapping horizontal drilling units. Individual base grid 20 acre squares can



be included in multiple horizontal drilling units if multiple horizons are developed, or any horizontal lateral base drainage area polygon would be located within any portion of the same 20 acre base grid. The horizontal drilling unit with horizontal lateral well bore and base drainage area polygon will be depicted on the well plat identifying the base grids included using the naming convention prescribed by the Gas and Oil Director.

**7. Relief Sought:**

- a. Applicant sets by this application the establishment of the Southwest Virginia Horizontal-1 Drilling Pool (hereafter known as "SWVH-1 Horizontal Pool"), field rules and drilling units for the production of natural gas produced from coal beds and rock formations pursuant to VA. Code § 45.1-361.20.
- b. The Field Rules are a reasonable exercise of a gas owner's right to explore for gas;
- c. The Field Rules will not unreasonably interfere with the present or future mining of coal.
- d. Acreage to be included in Order (See description attached hereto);
- e. Multiple lateral well bore(s) targeting multiple geologic formations (excluding combining both coal seams and conventional natural gas formations as defined in paragraphs 5b and 5c) from a common vertical well bore will be permissible and gas production reporting may be comingled.
- f. The proposed surface location, estimated landing point(s) vertical depth, estimated location of initial production along the lateral(s), estimated lateral orientation(s) defined by azimuth, estimated total measured depth of the horizontal lateral(s), unit name, and well name, will be depicted on the well plat. All drilled or permitted wells (coal bed methane, conventional natural gas wells, and horizontal well bores) located within a 2000' radius of the proposed surface location and horizontal lateral will be identified on the plat with associated horizontal distances. A "Final Plat" with true location and length of the horizontal bore hole as drilled will be submitted with the drilling report.
- g. The proposed surface location, estimated vertical depth(s), estimated lateral orientation(s) and estimated total measured depth of the horizontal lateral(s) will be depicted on a topographic map, minimum of 1":400' scale.
- h. The surface location may be located outside of a drilling unit and may be located in a base grid where gas production is not anticipated.
- i. (1) Conventional natural gas horizontal drilling lateral(s) gas producing sections will not be located within 600 feet horizontally of an existing vertical well producing from the same conventional natural gas formation. (2) Coalbed methane horizontal drilling lateral(s) gas producing sections will not be located within 600 feet horizontally of an existing vertical well producing from the same coal bed. (3) Proposed horizontal drilling lateral(s) gas producing sections will be located 600 feet vertically from existing horizontal drilling lateral(s) gas producing sections in different natural gas formations and/or coal beds only if the gas ownership of conventional natural gas formations and/or coal beds differs. (4) The Gas and Oil Director may grant a variance to spacing

requirements if the well operator demonstrates that correlative gas rights are not impacted.

j. There will be no setback requirement limiting the location of the horizontal lateral well bore(s) within the defined unit. In the event the defined unit is located along the perimeter of the defined pool area, the Oil and Gas Director may impose a setback requirement (not greater than 300 feet) to protect correlative rights in adjacent areas.

k. In the event, the length of the proposed lateral can not be obtained within the proposed horizontal drilling unit, the operator shall submit a permit modification to revise the unit to reflect the base drainage area polygon. If the true location and length of the horizontal bore hole as drilled and resulting base drainage area polygon does not change the proposed horizontal drilling unit no permit modification will be required. If the permit is modified and the unit was subject to any Board action for pooling or escrowing, the unit would need to be revised and re-pooled by the Board

l. A digital plat, in a format prescribed by the Oil and Gas Director, defined by the State Plane NAD 1983 coordinate system, depicting the base grids and the associated horizontal drilling units will be provided by the operator during the permitting process to facilitate the Division of Gas and Oil mapping efforts.

m. The Board may set an allowable production from each well if it deems it necessary to prevent waste or protect correlative rights.

n. Providing that the Order to be issued herein be made effective as of the date of hearing;

o. Granting such – other and further relief as may be appropriate based on the evidence presented at the hearing.

8. **Legal Authority:** Va. Code §§ 45.1-361.1 *et seq.*, and such regulations as are promulgated pursuant to law.



1202551

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DONE AND EXECUTED this 12 day of Jan, 2012, by a majority of the Virginia Gas and Oil Board.

Bradley C. Lambert  
 Chairman, Bradley C. Lambert

DONE AND PERFORMED this 12<sup>th</sup> day of JANUARY, 2012, by Order of the Board.

Rick Cooper  
 Rick Cooper  
 (Acting) Principal Executive to the Staff, Virginia Gas and Oil Board

STATE OF VIRGINIA  
 COUNTY OF RUSSELL

Acknowledged on this 12<sup>th</sup> day of JANUARY, 2012, personally before me a notary public in and for the Commonwealth of Virginia, appeared Bradley C. Lambert, being duly sworn did depose and say that he is Chairman of the Virginia Gas and Oil Board, and appeared Rick Cooper, being duly sworn did depose and say that he is Acting Principal Executive to the Staff of the Virginia Gas and Oil Board that they executed the same and were authorized to do so.

Diane Davis  
 Diane Davis, Notary Public  
 174394

My commission expires: September 30, 2013

1200312



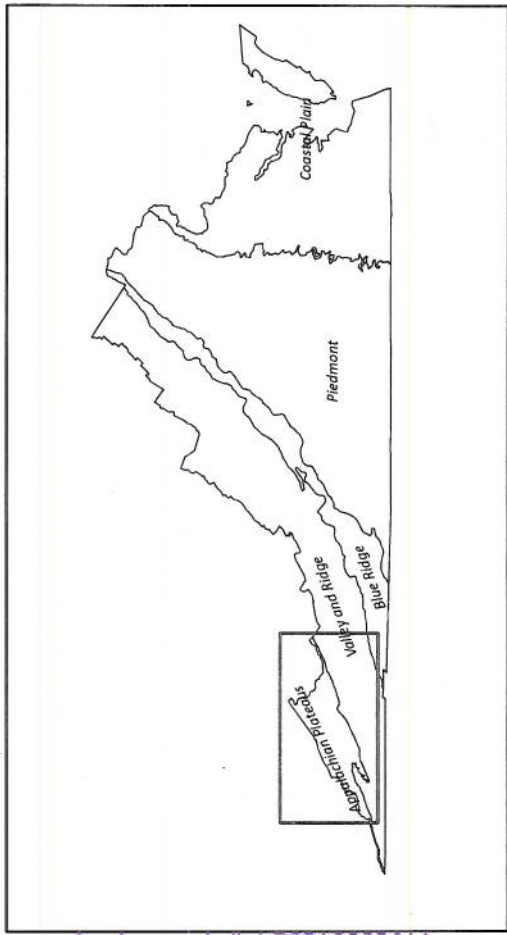
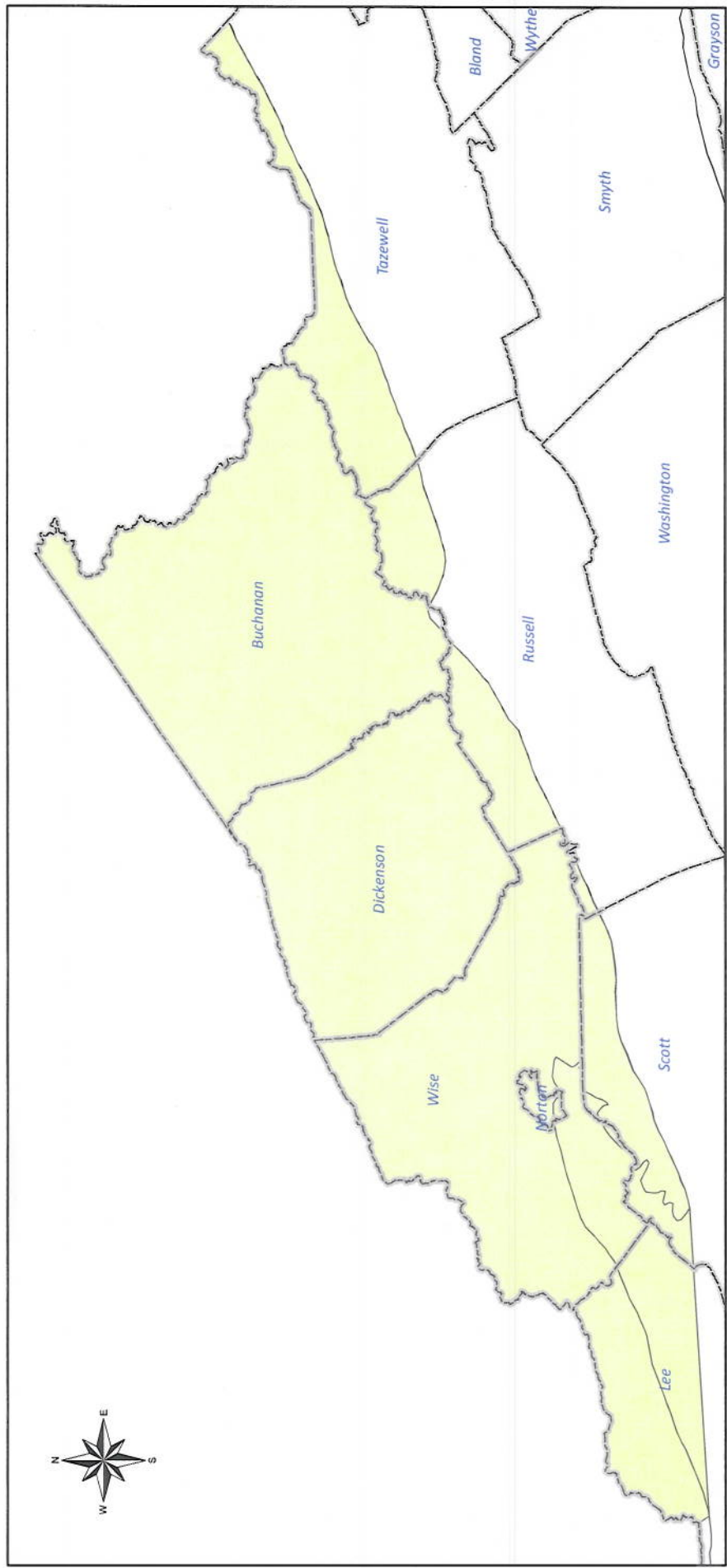
VIRGINIA: IN THE OFFICE OF THE CLERK OF THE CIRCUIT OF RUSSELL COUNTY, 2-13, 2012. This deed was this day presented in said office, and upon the certificate of acknowledgment thereto annexed, admitted to record at 1:53 o'clock P M, after payment of \$            tax imposed by Sec. 58.1-802.

Original returned this date to: VA GAS & Oil Board

TESTE: ANN S. McREYNOLDS, CLERK

BY: Shirley Kotton D. CLERK

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**Figure 1**

**Virginia Horizontal Drilling**

**Pool Name: SWVH-1**



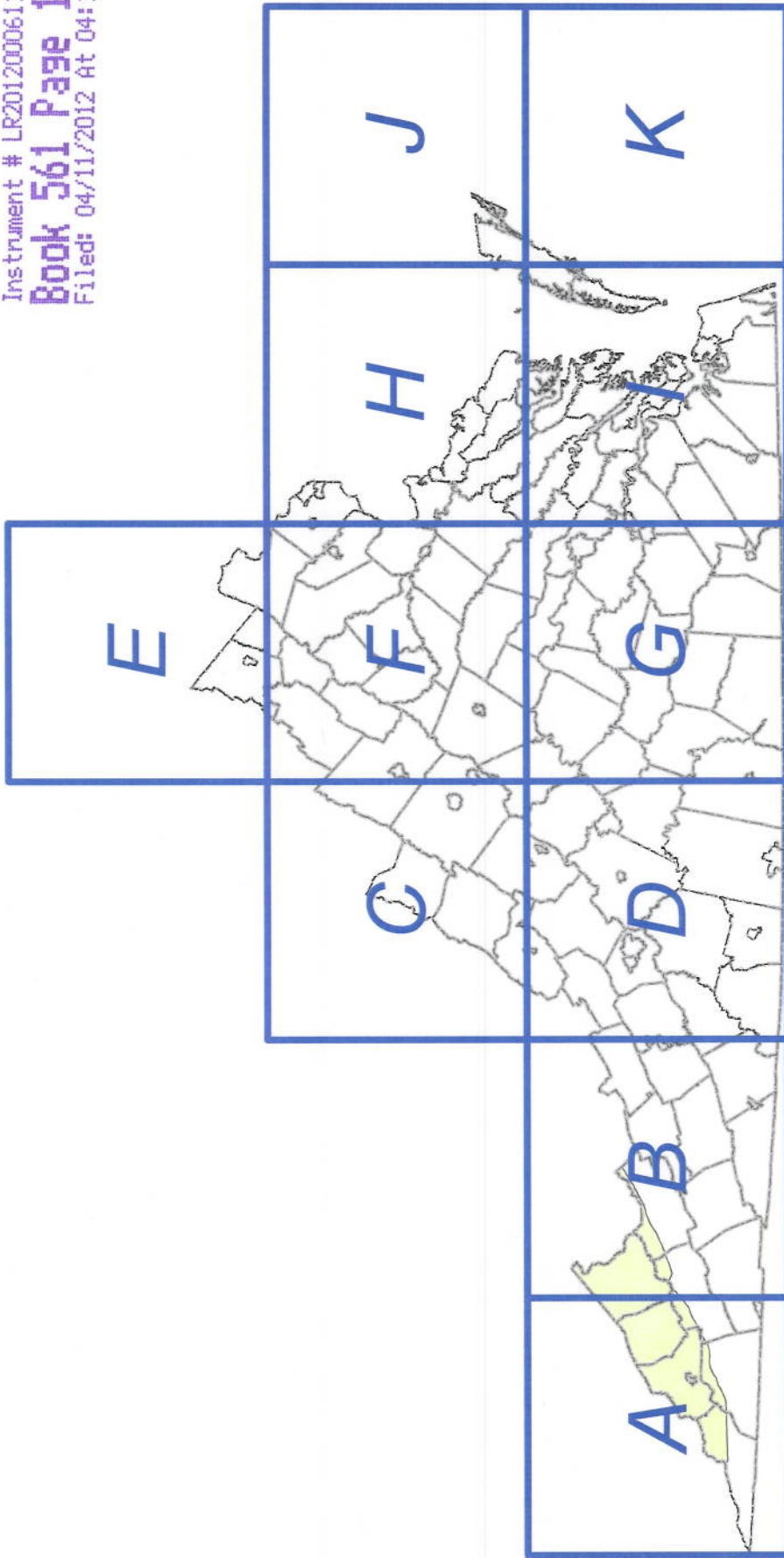
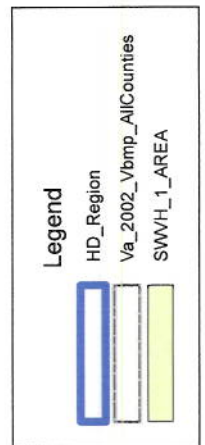


Figure 2

**Horizontal Drilling Base Grid - Virginia**  
**NAD 83 VIRGINIA SOUTH FEET**





BK 494PG 779

TABLE 1 - Horizontal Drilling Regions

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Instrument # LR2012000611  
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 Filed: 04/11/2012 At 04:12 PM

HD_REGION	CORNERDESIGNATION	NAD 1983 EASTING	NAD 1983 NORTHING
A	NW	9957500.00	3816690.50
A	NE	10424190.50	3816690.50
A	SE	10424190.50	3350000.00
A	SW	9957500.00	3350000.00
B	NW	10424190.50	3816690.50
B	NE	10890881.00	3816690.50
B	SE	10890881.00	3350000.00
B	SW	10424190.50	3350000.00
C	NW	10890881.00	4283381.00
C	NE	11357571.50	4283381.00
C	SE	11357571.50	3816690.50
C	SW	10890881.00	3816690.50
D	NW	10890881.00	3816690.50
D	NE	11357571.50	3816690.50
D	SE	11357571.50	3350000.00
D	SW	10890881.00	3350000.00
E	NW	11357571.50	4750071.50
E	NE	11824262.00	4750071.50
E	SE	11824262.00	4283381.00
E	SW	11357571.50	4283381.00
F	NW	11357571.50	4283381.00
F	NE	11824262.00	4283381.00
F	SE	11824262.00	3816690.50
F	SW	11357571.50	3816690.50
G	NW	11357571.50	3816690.50
G	NE	11824262.00	3816690.50
G	SE	11824262.00	3350000.00
G	SW	11357571.50	3350000.00
H	NW	11824262.00	4283381.00
H	NE	12290952.50	4283381.00
H	SE	12290952.50	3816690.50
H	SW	11824262.00	3816690.50
I	NW	11824262.00	3816690.50
I	NE	12290952.50	3816690.50
I	SE	12290952.50	3350000.00
I	SW	11824262.00	3350000.00
J	NW	12290952.50	4283381.00
J	NE	12757643.00	4283381.00
J	SE	12757643.00	3816690.50
J	SW	12290952.50	3816690.50
K	NW	12290952.50	3816690.50
K	NE	12757643.00	3816690.50
K	SE	12757643.00	3350000.00
K	SW	12290952.50	3350000.00



\$ 18.00

- ✓ BU
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- ✓ T/A
- ✓ Wise

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INSTRUMENT #120000611  
RECORDED IN THE CLERK'S OFFICE OF  
SCOTT COUNTY ON  
APRIL 11, 2012 AT 04:19PM

MARK A. TAYLOR, CLERK  
RECORDED BY: EBS

INSTRUMENT #120000299  
RECORDED IN THE CLERK'S OFFICE OF  
DICKENSON ON  
MARCH 9, 2012 AT 03:03PM

RICHARD W. EDWARDS, CLERK  
RECORDED BY: TLF

INSTRUMENT #120000276  
RECORDED IN THE CLERK'S OFFICE OF  
BUCHANAN COUNTY ON  
FEBRUARY 16, 2012 AT 04:33PM

BEVERLY S. TILLER, CLERK  
RECORDED BY: GGB

INSTRUMENT #1202547  
RECORDED IN THE CLERK'S OFFICE OF  
LEE ON  
MARCH 22, 2012 AT 01:30PM

BEVERLY R. ANDERSON, CLERK  
RECORDED BY: MLF

*Mary Arthur DC*