RAILROAD COMMISSION OF TEXAS
HEARINGS DIVISION

EXAMINERS' REPORT AND RECOMMENDATION

OIL & GAS DOCKET NO. 09-0296642: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 2H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

OIL & GAS DOCKET NO. 09-0296643: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 3H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

OIL & GAS DOCKET NO. 09-0296644: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 4H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

OIL & GAS DOCKET NO. 09-0296648: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 5H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

OIL & GAS DOCKET NO. 09-0296651: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 6H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

OIL & GAS DOCKET NO. 09-0296652: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 8H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

OIL & GAS DOCKET NO. 09-0296653: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 9H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

OIL & GAS DOCKET NO. 09-0296654: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 10H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

OIL & GAS DOCKET NO. 09-0297061: THE APPLICATION OF VANTAGE FORT WORTH ENERGY LLC PURSUANT TO THE MINERAL INTEREST POOLING ACT FOR THE FORMATION OF A POOLED UNIT FOR THE ROSEDALE SOUTH MIPA 11H WELL IN THE NEWARK, EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS

APPEARANCES

FOR APPLICANT VANTAGE FORT WORTH ENERGY LLC:

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PROCEDURAL HISTORY

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STATEMENT OF THE CASE

Vantage Fort Worth Energy LLC (*"Vantage"*) has filed nine applications under the Texas Mineral Interest Pooling Act (the *"MIPA"*), Chapter 102 of the Texas Natural Resources Code. The nine dockets were consolidated for the purpose of a joint hearing record. By its applications, Vantage is requesting that the Commission enter orders creating nine force-pooled units: the Rosedale South 2H MIPA Unit (the *"2H Unit"*) with its proposed Well No. 2H, the Rosedale South 3H MIPA Unit (the *"3H Unit"*) with its proposed Well No. 3H, the Rosedale South 4H MIPA Unit (the *"4H Unit"*) with its proposed Well No. 4H, the Rosedale South 5H MIPA Unit (the *"5H Unit"*) with its proposed Well No. 5H, the Rosedale South 6H MIPA Unit (the *"6H Unit"*) with its proposed Well No. 6H, the Rosedale South 8H MIPA Unit (the *"8H Unit"*) with its proposed Well No. 8H, the Rosedale South 9H MIPA Unit (the *"9H Unit"*) with its proposed Well No. 9H, the Rosedale South 10H MIPA Unit (the *"10H Unit"*) with its proposed Well No. 10H, and the Rosedale South 11H MIPA Unit (the *"11H Unit"*) with its proposed Well No. 11H. If the applications are approved, Vantage intends to drill the MIPA wells as horizontal wells in the Newark, East (Barnett Shale) Field (the *"Field")* in Tarrant County, Texas.

The applications are unprotested. The Examiners recommend approval.

APPLICABLE LAW

Subject to limitations found elsewhere in the act, Section 102.011 of the MIPA provides that "[w]hen two or more separately owned tracts of land are embraced in a common reservoir of oil or gas for which the commission has established the size and shape of proration units, whether by temporary or permanent field rules, and where there are separately owned interests in oil and gas within an existing or proposed proration unit in the common reservoir and the owners have not agreed to pool their interests, and where at least one of the owners of the right to drill has drilled or has proposed to drill a well on the existing or proposed proration unit to the common reservoir, the commission, on the application of an owner specified in

Section 102.012 of [the MIPA] and for the purpose of avoiding the drilling of unnecessary wells, protecting correlative rights, or preventing waste, shall establish a unit and pool all of the interests in the unit within an area containing the approximate acreage of the proration unit, which unit shall in no event exceed 160 acres for an oil well or 640 acres for a gas well plus 10 percent tolerance."

DISCUSSION OF THE EVIDENCE

Vantage's Evidence

All nine of the proposed MIPA units are located in Fort Worth, Tarrant County, in the Rosedale area west of Lake Arlington.[1] The proposed units adjoin one another. Each of the proposed units includes some unleased acreage and acreage from one or more voluntary pooled units.[2]

The proposed 2H Unit contains 49.65 total acres comprised of 64 separate tracts. Vantage has leases on 61 tracts containing 44.73 mineral acres, which is 90.09% of the total acreage in the 2H Unit. The proposed 2H Unit includes 3 unleased tracts, containing 4.92 acres, which is 9.91% of the total acreage.[3]

The proposed 3H Unit contains 47.32 total acres comprised of 146 separate tracts. Vantage has leases on 138 tracts containing 43.13 mineral acres, which is 94.52% of the total acreage in the 3H Unit. The proposed 3H Unit includes 8 unleased tracts, containing 4.17 acres, which is 5.48% of the total acreage.[4]

The proposed 4H Unit contains 42.66 total acres comprised of 153 separate tracts. Vantage has leases on 146 tracts containing 41.45 mineral acres, which is 97.15% of the total acreage in the 4H Unit. The proposed 4H Unit includes 7 unleased tracts, containing 1.22 acres, which is 2.85% of the total acreage.[5]

The proposed 5H Unit contains 45.55 total acres comprised of 106 separate tracts. Vantage has leases on 102 tracts containing 44.82 mineral acres, which is 98.4% of the total acreage in the 5H Unit. The proposed 5H Unit includes 4 unleased tracts, containing 0.73 acres, which is 1.6% of the total acreage.[6]

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[1] Ex. 6.
[2] Exs 2A-2I; Ex. 8. All nine proposed units include some acreage from the Rosedale South Voluntary Pooled Unit. In addition, the proposed 6H, 8H, and 9H Units each include acreage from the Olcott North A Voluntary Pooled Unit; the proposed 8H Unit includes acreage from the Rosedale West Voluntary Pooled Unit; and the proposed 11H Unit includes acreage from the Lawhon West Voluntary Pooled Unit.
[3] Tr. 46-49; Ex. 12(R).
[4] *Id.*
[5] *Id.*
[6] *Id.*

The proposed 6H Unit contains 41.99 total acres comprised of 79 separate tracts. Vantage has leases on 76 tracts containing 41.36 mineral acres, which is 97.21% of the total acreage in the 6H Unit. The proposed 6H Unit includes 3 unleased tracts, containing 1.19 acres, which is 2.79% of the total acreage.[7]

The proposed 8H Unit contains 88.11 total acres comprised of 267 separate tracts. Vantage has leases on 238 tracts containing 80.73 mineral acres, which is 91.62% of the total acreage in the 8H Unit. The proposed 8H Unit includes 29 unleased tracts, containing 7.39 acres, which is 8.38% of the total acreage.[8]

The proposed 9H Unit contains 83.67 total acres comprised of 225 separate tracts. Vantage has leases on 201 tracts containing 78.09 mineral acres, which is 93.33% of the total acreage in the 9H Unit. The proposed 9H Unit includes 24 unleased tracts, containing 5.58 acres, which is 6.67% of the total acreage.[9]

The proposed 10H Unit contains 81.85 total acres comprised of 331 separate tracts. Vantage has leases on 308 tracts containing 75.74 mineral acres, which is 92.54% of the total acreage in the 10H Unit. The proposed 10H Unit includes 23 unleased tracts, containing 6.11 acres, which is 7.46% of the total acreage.[10]

The proposed 11H Unit contains 75.57 total acres comprised of 399 separate tracts. Vantage has leases on 374 tracts containing 70.6 mineral acres, which is 93.42% of the total acreage in the 11H Unit. The proposed 11H Unit includes 25 unleased tracts, containing 4.98 acres, which is 6.58% of the total acreage.[11]

Field, Discovery Date and State of Texas Ownership

The MIPA does not apply in fields discovered and produced before March 8, 1961, and it does not apply to land in which the State of Texas has an interest unless the State has given consent.[12] These exceptions do not apply in this case—the proposed MIPA units lie within the productive limits of the Newark, East (Barnett Shale) Field, which was not discovered until 1981,[13] and the Commissioner of the General Land Office of the State of Texas has consented to Vantage's MIPA application for the proposed 11H Unit, which is the only proposed unit that applies to land in which the State of Texas has an interest.[14]

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[7] *Id.*
[8] *Id.*
[9] *Id.*
[10] *Id.*
[11] *Id.*
[12] MIPA §§ 102.003, 102.004.
[13] Tr. 76-77; Ex. 14.
[14] Tr. 20-21; Ex. 2I.

The Voluntary Pooling Offer

On May 4, 2015, Vantage sent a voluntary pooling offer to all mineral owners of unleased tracts within the boundaries of the proposed units.[15] Vantage offered these unleased mineral owners four options for inclusion of their interests in the respective proposed units: two lease options, a working-interest participation option, and a farm-out option.[16]

One lease option included a 25% royalty and a bonus of $3,000 per net mineral acre.[17] The oil, gas, and mineral lease attached to the offer letter had a primary term of three years.[18] The second lease option was to lease with a 20% royalty and a bonus of $3,500 per net mineral acre.[19] Except for the different royalty and bonus amounts, this second lease option was identical to the first lease option. The oil, gas and mineral lease attached to the offer letter provided that Vantage was authorized to pool the tract owner's mineral interest into a pooled unit. The lease provided that the lessee could drill a horizontal well beneath the surface of the leased premises but could not conduct drilling operations on the surface of the lease.[20]

The participation option provided each unleased owner an opportunity to participate as a working interest owner in the respective proposed unit. By electing this option, the owner would be responsible for his or her proportionate share of the costs of drilling and completing the well or wells in the unit and would share proportionately in the production from the well. Each offer letter had as an attachment an AFE (Authorization for Expenditure) indicating the estimated cost to complete and drill the relevant well. The estimated cost for Well No. 2H is $2,583,177; for the 3H, $2,452,231; for the 4H, $2,288,811; for the 5H, $2,448,244; for the 6H, $2,299,840; for the 8H, $3,502,778; for the 9H, $3,350,777; for the 10H, $3,350,987; and for the 11H, $3,356,978.[21] This option stated that if the owner failed to fully pay his or her proportionate share of costs to Vantage within 15 days prior to commencement of actual drilling operations, then the owner would be subject to the non-consent penalties set forth in the standard Joint Operating Agreement (the *"JOA"*) proposed by Vantage. Vantage represented to each owner that the proposed JOA would not contain any of the following: (1) a preferential right of the operator to purchase mineral interests in the unit; (2) a call on or option to purchase production from the unit; (3) operating charges that may include any part of district or central office expenses other than reasonable overhead charges; or (4) a prohibition against non-operators questioning the operation of the unit.[22]

The farm-out option proposed to each unleased owner that he or she convey to Vantage an 80% net revenue interest attributable to his or her mineral interest and retain an overriding royalty interest equal to 20% of 8/8ths, proportionately reduced to the extent that each owner's

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[15] Tr. 37-44; Exs. 11A-I.
[16] Tr, 39-40.
[17] *Id.*
[18] Exs. 11A-I.
[19] Tr. 39.
[20] Exs. 11A-I.
[21] *Id.*
[22] *Id.*; Tr. 41.

mineral interest bears to all of the mineral interests in the unit, until payout of all well costs (to drill, test, fracture stimulate, complete, equip, and connect the well for production). At payout, the electing owner would have the option to convert the retained override to a 25% working interest, proportionately reduced.[23]

The only owners who responded to Vantage's offers accepted one of the lease options. As a result, Vantage leased 12 additional tracts: one tract within the proposed 3H Unit, two within the proposed 4H Unit, one within the proposed 5H Unit, one within the proposed 6H Unit, two within the proposed 8H Unit, two within the proposed 9H Unit, two within the proposed 10H Unit, and one within the proposed 11H Unit.[24]

Vantage believed that the lease terms included in its voluntary offer were fair and reasonable.[25] Mr. Montgomery stated that Vantage has been entering into leases on the same terms ($3,000 per-acre bonus with a 25% royalty or $3,500 per-acre bonus with a 20% royalty) in the area for at least the last three and a half years.[26] Mr. Montgomery also testified that the offers made in conjunction with these applications contained the same terms that Vantage used in previous MIPA applications that were found to be fair and reasonable.[27]

Need for MIPA Wells

Vantage's expert petroleum engineering witness, Mr. Rick Johnston, prepared a model to predict recovery from Barnett Shale wells with varying drainhole length. Mr. Johnston presented a map showing Barnett Shale wells within a five-mile radius of the terminus point of the Rosedale No. 1H.[28] Mr. Johnston also presented a cross-section over that area showing the Barnett Shale formation.[29] From the location of existing wells and his study of the cross-section, Mr. Johnston concluded that the Barnett Shale formation is expected to be productive over the entirety of the area within a five-mile radius, including the nine proposed MIPA Units.[30]

For every well within the five-mile study with sufficient data (401 wells), Mr. Johnston plotted the estimated drainhole length of the well versus the well's estimated ultimate oil recovery ("EUR"). He calculated the estimated ultimate recoveries (the "EURs") by decline curve analysis. Using the EUR as the y-coordinate and the estimated drainhole length as the x-coordinate, he then created a scatter plot of the data points. A computer-generated least-squares regression of the plotted data points resulted in a line through the points with a positive slope of 0.3836 and a y-intercept of 993. The inference of this

[23] Exs. 11A-I; Tr. 40.
[24] Tr. 47; Ex. 12(R).
[25] Tr. 43.
[26] *Id.*
[27] Tr. 38.
[28] Tr. 74; Ex. 13.
[29] Ex. 15; Tr. 74, 78-79.
[30] Tr. 76.

resulting equation is that an average well within the five-mile radius will recover 0.3836 MMCF of gas for each incremental foot of drainhole length.[31]

At the time of the hearing, Vantage's development plan for the Rosedale South Unit included drilling all nine of the proposed MIPA wells in a parallel orientation at specific locations based on between-well spacing that Vantage selected for the optimal development of the Barnett Shale in this area.[32]

Vantage's plats showed that, in spite of the high percentage of acreage under lease, there was no path for the planned wellbores that would not encounter some unleased, unpooled interest.[33] Vantage contends that, absent MIPA approval of the proposed wells, the underlying reserves could not be recovered and would therefore be wasted.[34] Mr. Johnston also testified that MIPA approval was necessary to protect correlative rights by giving Vantage and its lessors a reasonable opportunity to recover their fair share of the oil and gas underlying the proposed units.[35]

Mr. Johnston presented plats of the proposed MIPA units and associated wells, in each case showing the portion of the lateral that could not be drilled or perforated absent approval of the application.[36] In each case, absent approval of the application, the length of the well's completed lateral would be significantly shorter than planned.[37] He then calculated the following amounts of lost reserves based on the lost perforated drainhole length of each well if the MIPA applications were not approved:[38]

Well	Lost drainhole length	Lost reserves if MIPA not approved
2H	2,644 feet	1,014 MMCF
3H	3,749 feet	1,150 MMCF
4H	2,388 feet	897 MMCF
5H	1,697 feet	651 MMCF
6H	1,197 feet	459 MMCF
8H	5,101 feet	1,957 MMCF
9H	5,076 feet	1,947 MMCF
10H	5,860 feet	2,248 MMCF
11H	5,848 feet	2,243 MMCF

[31] Tr. 96-97.
[32] Tr. 27-28; Ex. 7.
[33] Exs 9A-9I.
[34] Tr. 104.
[35] Tr. 103-104.
[36] Exs. 21A-21I.
[37] Tr. 94, 98-101.
[38] Ex. 22.

Charge for Risk

Vantage's applications requested that the Commission's MIPA pooling orders include a 100% charge for risk attached to the working-interest component, as authorized under Section 102.052 of MIPA.[39] In addition, the Notice of Hearing for the nine MIPA applications gave notice that Vantage was seeking a 100% charge for risk[40]—but no party appeared to protest the 100% charge for risk, or any other aspect of the nine applications.

Mr. Johnston stated that there are risks inherent to drilling in an unconventional reservoir such as the Barnett Shale development that are different than in a traditional reservoir.[41] For example, the risk of drilling a dry hole is associated with conventional reservoirs that experience a fault or sand pinch-out, not with unconventional reservoirs such as the Barnett Shale; however, there are other risks, including the operational problems associated with deep horizontal shale wells and the risk a well will be uneconomic, even though it was not a dry hole.[42]

Vantage believes that there exists significant risk that a Barnett Shale well in the area of the MIPA units will be uneconomic, meaning the well will not recover the cost of drilling and completing the well. Using a cost of drilling and completing equal to roughly $3.0 million, a monthly operating expense of $3,500, a gas price of $2.10 per MCF,[43] a severance tax rate of 5.2%, and a 10% discount rate, Mr. Johnston found the break-even gas recovery point, at which the well's cost would be recouped, was approximately 2.12 BCF.[44] Vantage estimated the volumetrically-calculated gas in place beneath the leased acreage within four proposed units. Using a 45 percent recovery factor, Vantage calculated that the recoverable gas in place beneath the leased acreage of the 2H Unit is 3.3 BCF; the 3H Unit is 3.2 BCF; the 4H Unit is 3.1 BCF; the 5H Unit is 3.3 BCF; the 6H Unit is 3.1 BCF; the 8H Unit is 6.0 BCF; the 9H Unit is 5.8 BCF; the 10H Unit is 5.6 BCF; and the 11H Unit is 5.3 BCF.[45]

Of the 434 Barnett Shale wells within five miles of the proposed MIPA wells, 252 of the wells, or 58%, had estimated ultimate recoveries of less than 2.1 BCF.[46] This analysis included 33 wells that were drilled over two years ago but so far have no reported production, indicating that there is some problem associated with those wells.[47] If those 33 wells are ignored, then 219 of the 401 wells (54%)[48] are estimated to recover less than 2.12 BCF.

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[39] Exs. 2A-2I; Tr. 19.
[40] Ex. 3.
[41] Tr. 119.
[42] Tr. 119.
[43] Tr. 71.
[44] Tr. 88-89; Ex. 19.
[45] Ex. 20.
[46] Tr. 89-90; Ex. 19.
[47] Tr. 90, 117-118..
[48] (252-33)/(434-33) = 219/401 = 54%.

If over 50% of the wells are not expected to reach the breakeven point, it means that, on average, an operator has to pay for at least two wells to end up with one good one. The scatter plot of the estimated ultimate recovery of wells within a five-mile radius shows significant variability in individual well performance.[49]

Mr. Johnston also testified as an expert in petroleum evaluation engineering, and he stated that the reserves associated with these nine MIPA applications are categorized as "proved undeveloped" reserves.[50] The industry applies a 50 percent reserve adjustment factor to proved undeveloped reserves to account for the economic risk associated with developing those reserves.[51] When the appropriate reserve adjustment factor is applied to the reserves in this case, the resulting "risked" payout volume is not 2.1 BCF of gas, but 4.2 BCF.[52] Only about 10% of the wells within a 5-mile radius are expected to recover at least 4.2 BCF and therefore be economic under the appropriate reserve adjustment factor to account for risk.[53] Mr. Johnston stated this evidence supports Vantage's requested 100% charge for risk.[54]

Mr. Johnston identified the most significant mechanical risk associated with these deep, long horizontal wells is the risk that the operator will not be able to get casing through the curve and all the way to the bottom of the well.[55] In the Barnett Shale, there is also a risk that the fracture stimulation of the formation could extend below the base of the Barnett Shale and into the Ellenburger formation, which could water out the well and impede its ability to produce gas from the Barnett Shale.[56] The variances in rock quality also result in a significant inherent risk that an individual well will not be a good well and therefore not recover its costs.[57]

Vantage contends that the economic risks associated with these deep, horizontal Barnett Shale wells is reflected in the recent bankruptcy filing by Quicksilver Resources, which is the operator of over 100 of the 434 Barnett Shale wells within a five-mile radius of the proposed MIPA wells.[58]

Vantage's witnesses also testified regarding the risk factors found in private joint operating agreements in the area. Mr. Montgomery testified that Vantage is party to nine operating agreements in Tarrant County that provide for a 300% non-consent penalty.[59] Under that provision, a working interest owner can elect not to pay his proportionate share

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[49] Tr. 97-98; Ex. 20.
[50] Tr. 106.
[51] Tr. 108-109; Ex. 23.
[52] Tr, 109.
[53] *Id.*
[54] Tr. 111.
[55] *Id.*
[56] Tr. 112.
[57] *Id.*
[58] Tr. 112-113 (for the Chapter 11 bankruptcy filing); Ex. 18 (for Quicksilver's well count).
[59] Tr. 49-53.

of well costs in advance, which means that some or all of the other working interest owners will advance the costs for that working interest owner. The parties advancing the costs for the non-consenting owner can then recover those costs, plus a non-consent penalty of three times the non-consenting owner's share of the costs. By shifting its share of the costs to the other working interest owners who pay for the well, the non-consenting owner takes on no risk that the well might be unsuccessful. Instead, the working interest owners who advanced the well costs take that risk, and the non-consent penalty in the private operating agreements accounts for the risk. Mr. Johnston also testified that it is fairly standard for private operating agreements to have a non-consent penalty of 300%, which would be the equivalent of a 200% "charge for risk" under the terminology used in the MIPA.[60]

Mr. Montgomery testified that some mineral owners in Tarrant County would prefer to be subject to a compulsory pooling order rather than voluntarily enter into a lease or a participation agreement because these owners expect a better deal from the Railroad Commission than the prevailing market terms for leases and participation agreements. This "better deal" is an immediate cost-free royalty interest plus a working interest that is assessed with little or no charge for risk.[61]

Finally, Vantage stated that, based on the scheduling requirements of its drilling rig for the proposed MIPA wells, it would not consider a recommendation of a 50% charge for risk to be adverse in this case.

EXAMINERS' OPINION

Under the MIPA, the Commission may order compulsory pooling only if it is necessary to avoid the drilling of unnecessary wells, protect correlative rights, or prevent waste. The evidence in this unprotested proceeding demonstrates that compulsory pooling is necessary to protect correlative rights.

Due to the locations of the unleased tracts within the respective proposed units, the MIPA wells could not be drilled as proposed without compulsory pooling. Well 2H would traverse three unleased tracts; Well 3H would traverse three unleased tracts and be less than the minimum spacing distance to six unleased tracts inside the 3H Unit; Well 4H would traverse two unleased tracts and be less than the minimum spacing distance to five unleased tracts inside the 4H Unit; Well 5H would traverse one unleased tract and be less than the minimum spacing distance to three unleased tracts inside the 5H Unit; Well 6H would traverse one unleased tract and be less than the minimum spacing distance to five unleased tracts inside the 6H Unit; Well 8H would traverse eight unleased tracts and be less than the minimum spacing distance to twenty-two unleased tracts inside the 8H Unit; Well 9H would traverse seven unleased tracts and be less than the minimum spacing distance to seventeen unleased tracts

[60] Tr. 110-111.
[61] Tr. 67-68.

inside the 9H Unit; Well 10H would traverse eight unleased tracts and be less than the minimum spacing distance to seventeen unleased tracts inside the 10H Unit; and Well 11H would traverse seven unleased tracts and be less than the minimum spacing distance to twenty-three unleased tracts inside the 11H Unit.[62] Vantage cannot drill these wells, as proposed, unless compulsory pooling is ordered because of the impracticality of drilling around the unleased tracts. Therefore, in the absence of compulsory pooling, each mineral interest owner within these proposed units would not be afforded a reasonable opportunity to recover his fair share of hydrocarbons.

Compulsory pooling as proposed by Vantage, wherein the proposed horizontal wells will extend the length of the unit, protects correlative rights because all tract owners, whether leased or unleased, will have their fair share of hydrocarbons produced.

Furthermore, the wells and units proposed by Vantage would allow the Commission to fashion an order in compliance with Section 102.017 of the MIPA, which requires that a MIPA order be made on terms that are fair and reasonable and will afford the owner of each tract in the unit the opportunity to produce and receive their fair share.

The Examiners believe that Vantage's voluntary pooling offer was fair and reasonable. Its offer followed the framework—providing a lease, participation, and farm-out options—that the Commission has determined to be fair and reasonable in recent approved MIPA applications.

Charge for Risk

Section 102.052(a) of the MIPA provides "As to an owner who elects not to pay his proportionate share of the drilling and completion costs in advance, the commission shall make provision in the pooling order for reimbursement solely out of production, to the parties advancing the costs, of all actual and reasonable drilling, completion, and operating costs plus a charge for risk not to exceed 100 percent of the drilling and completion costs."

Vantage's unprotested applications requested a 100% charge for risk be applied to the working interest portion of an owner who elects not to pay his proportionate share of the drilling and completion costs in advance.

Traditionally, Commission precedent has been to not assess a risk penalty against unleased owners who are being forcibly pooled. The working-interest portion of the force-pooled basis has been subjected to a zero risk penalty in the majority of the MIPA applications, starting with Finley, that the Commission has approved.[63] However, in the Commission's most

[62] Exs. 9A-9I.

[63] The Commission has approved compulsory pooling in the Barnett Shale in the following dockets: Oil & Gas Docket No. 09-0252373, Application of Finley Resources Inc. for the Formation of a Unit Pursuant to the Mineral Interest Pooling Act for the Proposed East Side Unit; Oil & Gas Docket No. 09-0261375, Application of XTO Energy Inc. Pursuant to the Mineral Interest Pooling Act for the Proposed Rosen Heights 262-Acre Pooled Unit, Well No. 1H; Oil & Gas Docket No. 09-023416, Application of XTO Energy Inc. Pursuant to the Mineral Interest Pooling Act for the Proposed Wesco A1 Pooled Unit, Well No. 10H; Oil & Gas Docket No. 09-023417, Application

recent Barnett Shale MIPA cases,[64] the Commission determined that a 50% risk penalty was fair and reasonable. At conference in discussing the assessment of the 50% risk penalty in the previous Vantage MIPA cases, the Commissioners indicated that a 50% risk penalty would establish precedent that the Commission will allow risk penalty in appropriate circumstances.[65]

Here, while Vantage requested a 100% risk penalty be assessed to the working interest portion, the Examiners believe that such a high penalty is not supported either by precedent or the evidence provided by Vantage and therefore, it is not "fair and reasonable" as required by Section 102.017 of the MIPA. As explained below, the Examiners believe that imposition of a 50% risk penalty based on the facts of this case, is fair and reasonable as is required by Section 102.017 of the MIPA.

First, under the Commission's practice of providing the unleased owners with a cost-free royalty at the market rate for leases in the area, the unleased owners are in as good or better position than all of the other lessors in the MIPA units. The charge for risk is applicable only to the reimbursement to the parties advancing costs that is required under MIPA Section 102.052 and that is made solely out of production. This would apply only to the portion of the unleased owners' mineral interest that is treated as a cost-bearing working interest.

Second, to support its position that there is significant risk involved in drilling Barnett Shale wells in the area, Vantage demonstrated that, under a probabilistic analysis, less than half of the wells in the 5-mile radius are expected ultimately to recover 2.1 BCF, which is the unrisked break-even point, and far fewer will recover 4.2 BCF, which is the applicable risked break-even point for proved undeveloped reserves under petroleum evaluation engineering standards.

Third, according to Smith & Weaver, "the percentage risk factor that appears in private joint operating agreements in the field" is a factor for the Commission to consider in selecting the appropriate charge for risk.[66] Private operating agreements in the area provide for a non-consent penalty of at least 300%, which far exceeds the 100% charge for risk under the MIPA. Because of the lower charge for risk under MIPA, some owners might choose compulsory pooling over voluntary pooling, which is contrary to the purpose of MIPA.

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of XTO Energy Inc. Pursuant to the Mineral Interest Pooling Act for the Proposed Page Street D1 Pooled Unit, Well No. 11H.

[64]Oil & Gas Docket Nos. 09-0284751, 09-0284752, 09-0284753, and 09-0284754, Applications of Vantage Fort Worth Energy LLC Pursuant to the Mineral Interest Pooling Act for the Formation of a Pooled Unit for the Rosedale North 7H-10H MIPA Units, Well Nos. 7H-10H, Newark, East (Barnett Shale) Field, Tarrant County, Texas.

[65] RRC Conference of March 25, 2014, video transcript at 26 minutes, 15 seconds.

[66] 3 Ernest E. Smith & Jacqueline Lang Weaver, TEXAS LAW OF OIL AND GAS, § 12.6(B) at page 12-65 (LexisNexis Matthew Bender 2013).

Further, Vantage stated that, based on the scheduling requirements of its drilling rig for the proposed MIPA wells, it would not consider a recommendation of a 50% charge for risk to be adverse in this case.

Based on the record in this case, the Examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. Notice of the hearing was mailed to all interested parties at mailing addresses provided by the Applicant, Vantage Fort Worth Energy LLC *("Vantage")*, at least 30 days prior to the hearing date.[67]

2. Notice of the hearing was published in the Commercial Recorder on April 22, April 29, May 6, and May 13, 2015.[68]

3. No one appeared at the hearing in opposition to Vantage's applications.

4. Appendix 2H-1[69] to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 2H MIPA Unit (the *"2H Unit")* (Vantage Exhibit No. 9A) showing the proposed wellbore path of Well 2H and the unleased tracts within the 2H Unit. Appendix 2H-2 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 2H Unit.

5. Appendix 3H-1 to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 3H MIPA Unit (the *"3H Unit")* (Vantage Exhibit No. 9B) showing the proposed wellbore path of Well 3H and the unleased and partially-leased tracts within the 3H Unit. Appendix 3H-2 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 3H Unit.

6. Appendix 4H-1 to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 4H MIPA Unit (the *"4H Unit")* (Vantage Exhibit No. 9C) showing the proposed wellbore path of Well 4H and the unleased tracts within the 4H Unit. Appendix 4H-2 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 4H Unit.

7. Appendix 5H-1 to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 5H MIPA Unit (the *"5H Unit")*

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[67] Ex. 3.
[68] Ex. 4.
[69] There is no Appendix 1H.

(Vantage Exhibit No. 9D) showing the proposed wellbore path of Well 5H and the unleased tracts within the 5H Unit. Appendix 5H-1 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 5H Unit.

8. Appendix 6H-1 to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 6H MIPA Unit (the *"6H Unit")* (Vantage Exhibit No. 9E) showing the proposed wellbore path of Well 6H and the unleased and partially-leased tracts within the 6H Unit. Appendix 6H-2 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 6H Unit.

9. Appendix 8H-1[70] to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 8H MIPA Unit (the *"8H Unit")* (Vantage Exhibit No. 9F) showing the proposed wellbore path of Well 8H and the unleased and partially-leased tracts within the 8H Unit. Appendix 8H-2 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 8H Unit.

10. Appendix 9H-1 to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 9H MIPA Unit (the *"9H Unit")* (Vantage Exhibit No. 9G) showing the proposed wellbore path of Well 9H and the unleased tracts within the 9H Unit. Appendix 9H-2 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 9H Unit.

11. Appendix 10H-1 to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 10H MIPA Unit (the *"10H Unit")* (Vantage Exhibit No. 9H) showing the proposed wellbore path of Well 10H and the unleased and partially-leased tracts within the 10H Unit. Appendix 10H-2 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 2H Unit.

12. Appendix 11H-1 to this Report and Recommendation, incorporated into this finding by reference, is a plat for the proposed Rosedale South 11H MIPA Unit (the *"11H Unit")* (Vantage Exhibit No. 9I) showing the proposed wellbore path of Well 11H and the unleased and partially-leased tracts within the 11H Unit. Appendix 11H-2 to this Report and Recommendation, incorporated into this finding by reference, is the legal description of the 11H Unit.

13. On May 24, 2015 Vantage sent a voluntary pooling offer to all mineral owners of unleased tracts within the boundaries of the proposed MIPA units.[71] The unleased

[70] There is no Appendix 7H.
[71] Exs. 11A-11I.

mineral owners were offered four options for inclusion of their interests in the proposed units: two lease options, a working-interest participation option, and a farm-out option.

a. The first lease option included a 25% royalty and a bonus offer of $3,000 per net mineral acre, for a three-year primary term. The oil, gas, and mineral lease attached to the offer letter provided that Vantage was authorized to pool the tract owner's mineral interest into a pooled unit and drill a horizontal well beneath the surface of the leased premises but could not conduct drilling operations on the surface of the lease.

b. The second lease option included a 20% royalty and a bonus offer of $3,500 per net mineral acre. Except for the different royalty and bonus amounts, this second lease option was identical to the first lease option.

c. The participation option provided each unleased owner an opportunity to participate as a working interest owner in the respective proposed unit. By choosing this option, the owner would be responsible for his or her proportionate share of the costs of drilling and completing the well or wells in the unit and would share proportionately in the production from the well. Each offer letter had as an attachment an AFE (Authorization for Expenditure) indicating the estimated cost to complete and drill the relevant well.

The estimated cost for Well No. 2H is $2,583,177; for the 3H, $2,452,231; for the 4H, $2,288,811; for the 5H, $2,448,244; for the 6H, $2,299,840; for the 8H, $3,502,778; for the 9H, $3,350,777; for the 10H, $3,350,987; and for the 11H, $3,356,978.[72] The participation option stated that if the owner failed to fully pay his or her proportionate share of costs to Vantage within 15 days prior to commencement of actual drilling operations, then the owner would be subject to the non-consent penalties set forth in the standard Joint Operating Agreement (the "JOA") proposed by Vantage.

Vantage represented to each owner that the proposed JOA would not contain any of the following: (1) a preferential right of the operator to purchase mineral interests in the unit; (2) a call on or option to purchase production from the unit; (3) operating charges that may include any part of district or central office expenses other than reasonable overhead charges; or (4) a prohibition against non-operators questioning the operation of the unit.

d. The farm-out option proposed to each unleased owner that he or she convey to Vantage an 80% net revenue interest attributable to his or her mineral interest and retain an overriding royalty interest equal to 20% of 8/8ths, proportionately reduced to the extent that each owner's mineral interest bears to all of the mineral interests in the unit, until payout of all well costs (to drill, test, fracture

[72] *Id.*

stimulate, complete, equip, and connect the well for production). At payout, the electing owner would have the option to convert the retained override to a 25% working interest, proportionately reduced.

14. Vantage provided the essential terms of the participation option and the farm-out option in its offer letter. Vantage did not enclose copies of its participation agreement or farm-out agreement, but instead offered to provide a copy of its participation agreement and farm-out agreement to any mineral owner who was interested in one or both of those options. None of the mineral owners expressed an interest in either the participation option or the farm-out option.

15. In response to Vantage's voluntary pooling offer, Vantage obtained leases on one tract in the proposed 3H Unit, two tracts in the proposed 4H Unit, one tract in the proposed 5H Unit, one tract in the proposed 6H Unit, two tracts in the proposed 8H Unit, two tracts in the proposed 9H Unit, two tracts in the proposed 10H Unit, and one tract in the proposed 11H Unit.[73]

16. The options included in the voluntary pooling offer made by Vantage contained the same options as the voluntary pooling offer the Commission found to be fair and reasonable in Vantage's prior MIPA applications.[74]

17. The tracts within each proposed MIPA unit are embraced in the Newark, East (Barnett Shale) Field, a common reservoir of oil or gas for which the Commission has established the size and shape of proration units. The Newark, East (Barnett Shale) Field is present and reasonably productive in the area covering all of the proposed units.[75]

18. The Newark, East (Barnett Shale) Field was discovered in 1981. This field has special field rules providing for 330-foot lease-line spacing, and there is no between-well spacing requirement. The standard drilling and proration unit for the Newark, East (Barnett Shale) is 320 acres. An operator is permitted to form optional drilling units of 20 acres.[76]

19. Vantage estimated the volumetrically-calculated gas in place beneath the leased acreage within four proposed units. Using a 45 percent recovery factor, Vantage calculated that the recoverable gas in place beneath the leased acreage of the 2H Unit is 3.3 BCF; the 3H Unit is 3.2 BCF; the 4H Unit is 3.1 BCF; the 5H Unit is 3.3 BCF; the 6H Unit is 3.1 BCF; the 8H Unit is 6.0 BCF; the 9H Unit is 5.8 BCF; the 10H Unit is 5.6 BCF; and the 11H Unit is 5.3 BCF.[77]

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[73] Ex. 12(R); Tr. 46-47.
[74] Tr. 38. *See* Oil & Gas Docket Nos. 09-0284751, 09-0284752, 09-0284753, 09-0284754, approved in April 2014; Docket Nos. 09-0288329, 09-0288331, 09-0288332, and 09-0288333, approved in January 2015; Docket Nos. 09-0295894, 09-0295895, and 09-0295896, approved in October 2015.
[75] Tr. 76.
[76] Tr. 77; Ex. 14.
[77] Ex. 20.

20. Vantage created a scatter plot of the estimated ultimate recoveries (the *"EURs")* versus the estimated drainhole length for Barnett Shale wells within five miles of the Rosedale North No. 1H. A computer-generated least-squares regression of the plotted data points resulted in a line with a positive slope of 0.3836 and a y-intercept of 993. The inference of this resulting equation is that an average well within the five-mile radius will recover 0.3836 MMCF of gas for each incremental foot of drainhole length.[78]

21. Vantage cannot drill the nine proposed wells unless compulsory pooling is ordered as requested.[79] None of the nine proposed wells can be drilled to its full planned length without traversing one or more unleased tracts.

22. There are no regular locations within the proposed units where a feasible horizontal well could drain the proposed unit.[80]

23. The proposed MIPA wells will reasonably drain the proposed MIPA units.[81]

24. Compulsory pooling within each of the nine units as requested by Vantage will protect the correlative rights and prevent waste. Without compulsory pooling, Vantage will not be able to drill the proposed wells, Vantage and its lessees will not have a reasonable opportunity to recover their fair share of hydrocarbons from the reservoir, and the underlying hydrocarbons will be left unrecovered.

25. Vantage presented evidence supporting a charge for risk of 50 percent of the drilling and completion costs of the respective well.

CONCLUSIONS OF LAW

1. Pursuant to Texas Natural Resources Code § 102.016, notice of the hearing was given to all interested parties by mailing the notices to their last known addresses at least 30 days before the hearing and, in the case of parties whose whereabouts were unknown, by publication of notice for four consecutive weeks in a newspaper of general circulation in the county where the proposed unit is located at least 30 days before the hearing.

2. The Commission has jurisdiction over the parties and the subject matter and has authority to issue a compulsory pooling order pursuant to Texas Natural Resources Code § 102.011.

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[78] Tr. 96-97.
[79] Tr. 98-102.
[80] Tr. 102.
[81] Tr. 93.

3. Vantage made a fair and reasonable offer to pool voluntarily to the mineral owners of the unleased tracts within each of the proposed units, as required by Texas Natural Resources Code § 102.013.

4. Compulsory pooling of the owners of the unleased tracts within each of the proposed proration units as owners of a 25% royalty and 75% working interest, proportionately reduced, with these owners' share of expenses, subject to a charge for risk of 50%, payable only from the owners' working-interest component, and subject to a no-surface-use restriction, is fair and reasonable within the meaning of Texas Natural Resources Code § 102.017.

5. Compulsory pooling of the mineral interests in all tracts within the boundaries of the 2H Unit, 3H Unit, 4H Unit, 5H Unit, 6H Unit, 8H Unit, 9H Unit, 10H Unit, and 11H Unit will serve the purpose of protecting correlative rights.

6. The terms and conditions of the Commission's Final Order in this proceeding are fair and reasonable and will afford the owner of each tract or interest in each respective unit the opportunity to produce or receive his fair share.

RECOMMENDATION

The Examiners recommend that Vantage's applications be approved, subject to conditions, as set forth in the attached recommended Final Orders.

Respectfully Submitted,

Laura Miles-Valdez
Hearings Examiner

Peggy Laird
Technical Examiner