



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

**RULE 37 CASE NO. 0286341**  
**STATUS NO. 747692**  
**District No. 7B**

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**TO CONSIDER THE APPLICATION OF VAN OPERATING, LTD. FOR A RULE 37 EXCEPTION FOR ITS SOUTH GREEN 54 LEASE, WELL NO. 3, PAM (CHESTER) FIELD, SHACKELFORD COUNTY, TEXAS, OR IN THE ALTERNATIVE, THAT THE BOTTOM HOLE LOCATION AND/OR PERFORATED INTERVAL IS IN SUBSTANTIAL COMPLIANCE WITH ITS PERMIT.**

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**HEARD BY:** Laura E. Miles-Valdez - Legal Examiner  
Paul Dubois - Technical Examiner

### PROPOSAL FOR DECISION

#### PROCEDURAL HISTORY

APPLICATION FILED:	December 7, 2013
NOTICE OF HEARING:	June 6, 2014
HEARING DATES:	December, 10 & 11, 2014 & January 29, 2015
RECORD CLOSED:	March 25, 2015
PFD ISSUANCE DATE:	November 6, 2015

#### APPEARANCES:

##### FOR APPLICANT:

John Camp, Attorney  
Buford Salters, Geologist  
Michael Davis, Surveyor  
Bill Marshall, Geologist  
Tim Smith, P.E.

##### APPLICANT:

Van Operating, Ltd.

##### PROTESTANT:

David Nelson, Atty.  
Jeffrey Cole, Geologist  
Dale Miller, Engineer  
John Rhodes  
William Keating, Surveyor

##### REPRESENTING:

Midville Energy, Inc.

## STATEMENT OF THE CASE

### STATEMENT OF THE CASE

Van Operating, Ltd. (“Van” or “Applicant”), seeks to amend its permit for an exception of its surface location and bottom-hole location pursuant to Statewide Rule 37, for the Van South Green 54 Lease, Well No. 3, in the Pam (Chester) Field in Shackelford County, Texas. In the alternative, Van seeks to demonstrate that the as-drilled location and/or perforated interval of the well is in substantial compliance with its permit. On September 14, 2012, the Commission issued Permit #747692, for the South Green 54 Lease, Well No. 3, (the “subject well”) in the Pam (Chester) Field in Shackelford County. The plat associated with that application is attached to this proposal for decision as Attachment I<sup>1</sup>, which is incorporated herein by reference. The issued permit was for a regular location, being 330 feet from the nearest lease line. On December 7, 2013, Van filed an amended permit seeking to correct the as-drilled surface location of the Van South Green 54, Well No. 3, to the corrected 269 feet from the westernmost lease line, and 324 feet from the southern lease line. The plat associated with the amended application is attached to this proposal for decision as Attachment II<sup>2</sup>, which is incorporated herein by reference. It is that amended permit that is the subject of this docket. The amended permit application was protested by the adjoining operator, Midville Energy, which has an offsetting regular well located to the west northwest of the subject well. Midville Energy filed its protest of the amended application on January 16, 2014. Also of note, Protestant Midville Energy operates the adjoining leases located directly west and south to the subject Van South Green 54 lease.

The surface location of the Well No. 3 is 269 feet from the west line and 324 feet from the south line and 334 feet from the south line and offlease 2,373 feet from the east line of the T&P RR Co./Jordan, F. Survey. The bottom hole location is 302 feet from the western lease line based on a directional survey run by Van. The well was drilled to a total depth of 4,625 feet.

The Pam (Chester) Field Oil regular field rules provide for 330 feet from the nearest lease line and 933 feet between wells on the same lease in the same field and reservoir on 20 acre proration units.

Van contends a Statewide Rule 37 exception is needed for the as-drilled South Green 54 Lease, Well No. 3, because the as-drilled surface location is less than 330 feet to the western and southern lease lines. Van asserts that the as-drilled location was not at the permitted location due to an unintentional error committed in the initial surveying of the subject well. In the alternative, Van contends that the as-drilled location is in substantial compliance with Statewide Rule 37 and requests that the permit be issued. Van further contends that denial of a Statewide Rule 37

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<sup>1</sup> See Van Exh. 1, page 2.

<sup>2</sup> See Van Exh. 2, page 2.

exception in this case would bar any recovery of its fair share of reserves in the field, as it would be uneconomic to have to re-drill the well at a location 61 feet away from the lease line. Van also noted having to re-drill the subject well at a regular 330 foot location would not guarantee that the bottom hole location would end up any closer to a regular 330 foot location when compared to the current 302 foot distance from the lease line.

Protestant, Midville Energy contends that the as-drilled location should not be granted a Statewide Rule 37 exception nor be permitted a designation of “substantial compliance” because it contends that Van failed to act in good faith in drilling the well at the irregular as-drilled location, which occurred due to a surveying error. Further, Midville contends that Van fails to meet its burden in demonstrating that either waste or confiscation will occur as a result of denial of the Statewide Rule 37 exception.

Because Van demonstrated that the as-drilled location was not the result of an intentional error, nor the result of a bad faith, and that an exception is necessary to prevent waste and to prevent confiscation, it is recommended that the application be granted.

#### **DISCUSSION OF THE EVIDENCE**

##### **VAN OPERATING, INC.**

Van seeks approval of its amended permit application on its South Green 54 Lease, Well No. 3. Van’s original drilling permit was approved by the Commission on September 14, 2012. The amended permit application seeks approval for the as-drilled surface location of Well No. 3, which is 269 feet from the west line and 324 feet from the south line and 334 feet from the south line and offlease 2,373 feet from the east line of the T&P RR Co./Jordan, F. Survey. In the alternative, Van seeks an exception to Statewide Rule 37 for the as-drilled well because the well is in substantial compliance with Statewide Rule 37 and Commission rules.

##### **Surveying Error**

Mr. Buford Salters, a petroleum engineer for Van Operating, Limited, testified in support of Van. Mr. Salters stated that when planning to drill the subject well, he was the individual who communicated with Van’s surveyor, Mr. Davis. Mr. Salters testified that he let Mr. Davis know that Van intended to drill a regular 330 location well located on the southwest quarter of the South Green 54 Lease, which would offset Midville production.<sup>3</sup> He then explained in detail the process by which he and Mr. Davis coordinated to locate, stake, and eventually drill the subject well. In the process of locating and staking the subject well, Mr. Salters testified that he provided Mr. Davis with general

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<sup>3</sup> Tr. Vol. I, pg. 29, lns. 13-18.

information regarding the proposed well and Mr. Davis used the AutoCAD program to determine, measure, and compare the proposed well's location in relation to a nearby well to ensure that it did not encroach on the field rules' 933 foot spacing limitation. He also compared the proposed well location as staked to the plat submitted to the Commission. Mr. Salters stated that he depended on Mr. Davis to ultimately verify the distances before drilling of the subject well began. He testified that Mr. Davis' coordinates for the proposed well were not the result of actual measuring via the traditional methods of using a tape measure or chains, but rather, solely by reliance on surveying instrumentation/AutoCAD.<sup>4</sup>

In calculating the proposed location of the subject well, Mr. Salters testified that he based his measurement of the 330 foot location off of the western boundary of the lease. In his calculation taken from the drilling permit application plat,<sup>5</sup> he also measured the proposed location to be approximately 2,372 feet from the eastern lease line boundary. The 2,372 foot measurement for the half-way point of the distance from the eastern lease line was not of concern to Mr. Salters when calculating the proposed location,<sup>6</sup> as the proposed location had also been calculated using the 330 foot lease line distance (from the western lease line boundary) and the 933 foot between well distance. Further, when Mr. Salters and Mr. Davis, the surveyor, went to verify by GPS the proposed well location to stake the site the calculation error had been already built into the GPS equipment.<sup>7</sup> After the proposed well location had been staked, and the plat prepared by Mr. Davis, Mr. Salters confirmed that he reviewed the plat prepared by Mr. Davis prior to filing the application.

The error in locating, staking, and drilling the location of the subject well was not discovered, or otherwise made known, to Van until Midville's surveying company, Topographic Surveys, contacted Mr. Davis, the surveyor. Mr. Davis then contacted Mr. Salters to inform him that there were questions regarding the location of the subject well. In conclusion, he stated that he never instructed the surveyor to move or misstate the location of the subject well from the regular 330 foot location.

In support of testimony that the subject well was not intentionally drilled at an irregular location, Mr. Michael Davis, the owner of Owen Surveying Company and the surveyor of the subject well, testified. He has worked for Owen Surveying Company for over 18 years, and has owned the company for the past 2 and a half years. Owen Surveying was previously hired by both Van and Midville to conduct over 20 surveys of proposed well sites. Mr. Davis testified that he prepared the plat, identified the proposed well location, and staked the well, based off the previous template used

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<sup>4</sup> Tr. Vol. I, pg 86-87.

<sup>5</sup> Van Exh. 1, pg. 2.

<sup>6</sup> The half way distance of a standard 640 acre section is 2640 feet from any lease line; however, it is not unusual in certain parts of the state for a section to be not a perfect 640 acre square. See Tr. Vol. I, pg. 72.

<sup>7</sup> Tr. Vol. I, pg. 43-44.

a few months prior. The previous Section 54 template was used in identifying and surveying an offsetting Midville well. As a result of Owen Surveying's prior experience with the area, Mr. Davis relied on previously observed monumentation, as well as previous templates of the area in making his calculations.<sup>8</sup>

When calculating and measuring the North-South midpoint of the Section 54 tract, Mr. Davis relied upon the previous Midville template and the AutoCAD for determining the Van proposed well. Mr. Davis testified that at some point the AutoCAD data had been erroneously altered and therefore shifted the midpoint of the Section 54 tract to the west. In explaining the possibilities as to how the erroneously AutoCAD data was created, Mr. Davis postulated that the AutoCAD software system was open and available to numerous persons in the Owens Surveying Company. He speculated that some one must have erroneously entered data into the system that created the shift of the Section 54 tract midpoint in calculating the proposed subject well.

Further, testimony offered demonstrated that after the protest filed by Midville was received by Van, Van ran a gyro directional survey to determine the location of the bottomhole of the subject well.<sup>9</sup> The gyro directional survey indicated that the wellbore walked to the east 33 feet away from the western lease line.<sup>10</sup> The perforations of the subject well were located at 302 feet from the west line and 324 feet from the south line. Based on this data, when the well was producing, it was producing from the perforated interval of 302 feet from the west lease line and 324 feet from the south lease line.

### Geology

Mr. Salters was also called to testify within the scope of his experience and expertise as a petroleum geologist. An isopach map derived from the log of a nearby well indicates the porosities of the Pam Chester Formation in this area is in excess of 10%. The subject well and another nearby Van well had porosities of 10% and 12%, while Midville's wells appeared to have porosities of 30% and 25%; thus further supporting there is faulting in the area. Mr. Salters testified that these numbers helped demonstrate how an up-dip oil well, such as the Midville wells, were structurally separated from the Van downdip gas well.<sup>11</sup>

Mr. Salters also presented evidence demonstrating that there appeared to be faulting in the immediate area. While most of the Pam (Chester) Field wells within the 1- to 2-mile area were oil

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<sup>8</sup> Tr. Vol. I, pg. 52-53.

<sup>9</sup> Tr. Vol. I, pg. 223.

<sup>10</sup> Van Exh. 38.

<sup>11</sup> Tr. Vol. I, pg. 145-46.

wells, a Midville well located less than a mile due south of the subject well is a gas well.<sup>12</sup> Further, the Van subject well is classified as a gas well. Mr. Salters testified that, in his opinion, the fact that oil and gas wells are located in such close proximity to each other often indicates faulting. Based on his study of the area, Mr. Salters presented two different structure maps of the top of the Chester Formation.<sup>13</sup> The first structure map presented indicated a northeast to southwest fault (“Fault A scenario”) that separated the Van 54, Well No. 3 and the Midville 59, Well No. 1 from the Van 54, Well No. 1 and the Midville 59, Well No. 2.<sup>14</sup> Mr. Salter’s second faulting structure map presented, (the “Fault B scenario”) indicated a faulting pattern which closely resembles a sideways “Y,” which began on the northeast portion of the structure map and then trended almost due south, then turning to a more west-southwesterly direction. (Attached as Attachments III & IV, are Van Exhibits 11 & 12 for reference.) The Fault B scenario separated the Van 54, Well No. 3 from the Midville 59, Well No. 1 and the Midville 59, Well No. 2.<sup>15</sup> The Fault B scenario also separated those three wells altogether from the Van 54, Well No. 1.<sup>16</sup>

A set of isochore and structure maps of the area were presented for each of the two faulting scenarios.<sup>17</sup> Each set of these exhibits demonstrated the two different interpretations with respect to the oil column<sup>18</sup> and the gas columns<sup>19</sup> in the reservoir based on the different faulting scenarios. The different thickness of the oil and gas columns presented under the two scenarios clearly demonstrates the complexity of the reservoir. Further, based on the structure maps and the isochore maps presented, Mr. Salter testified there was no indication that Van Well No. 3 gained any structure or isopach advantage by being drilled 61 feet to the west.

Mr. Bill Marshall, an expert geophysicist, testified on behalf of Van. Mr. Marshall interpreted the seismic 3-D data produced by Midville and incorporated it into an area structure map of the top

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<sup>12</sup> The South Green 54, Well No. 1, located less than a half mile to the north-northeast of the subject well, is an oil well. The Midville 54, Well No. 1, located less than a half mile west of the subject well, is an oil well. The Midville 59, Well No. 1 well, located less than a half mile west-southwest of the subject well, is an oil well. The Midville 59, Well No. 2, located about three-quarters of a mile due south of the subject well is a gas well. *See* Tr. Vol. I., pps. 125-128.

<sup>13</sup> Van Exhs. 11 & 12.

<sup>14</sup> Van Exh. 11.

<sup>15</sup> Van Exh. 12.

<sup>16</sup> Van Exh. 12.

<sup>17</sup> Van. Exhs. 13-16.

<sup>18</sup> Van Exh. 14 (Fault A scenario) & 16 (Fault B scenario).

<sup>19</sup> Van Exh. 13 (Fault A scenario) & 15 (Fault B scenario).

of the Chester Formation.<sup>20</sup> Based on his analysis of the data and the Chester Formations, he concluded that there was some faulting and possibly even minor faulting occurring throughout the area. Mr. Marshall described the minor faulting mapped throughout the area and described the faulting as not having much throw—an estimated 20 to 30 feet. He stated this small amount of throw still may be enough to displace the formation in a well-to-well correlation.<sup>21</sup>

Also testifying on behalf of Van was Mr. Tim Smith, an expert petroleum engineer. Mr. Smith testified the Pam (Chester) Field was discovered on September 8, 1978, with the South Green 54, Well No. 1 as the discovery well.<sup>22</sup> The Oil and Gas Proration Schedule for December 1, 2014, indicates that there were six (6) oil wells and one (1) gas well carried in the field. Mr. Smith clarified that there is a pending change to the Proration Schedule for this field. Van hopes to have the subject well re-classified as a gas well, because Van's preliminary testing indicated that the well is in the gas cap.<sup>23</sup>

Mr. Smith discussed the general history of the Pam (Chester) Field, as well as the history of the subject well. He noted that the subject well initially appeared to be an oil well and the W-2 for the subject well inaccurately reported a 24-hour oil rate of 75 bo and 840 mcf of gas.<sup>24</sup> However, this was inaccurate because Van stopped the initial test before the 24-hour period had lapsed. Van did not want to flare gas, and therefore did not continue to test the well for a full 24-hour period. He further discussed that although the subject well reported trace oil production on May 8, 2013, by May 14, 2013, the subject well had gone dry and there were zero barrels of oil and a flowing gas rate of 399 mcfpd.<sup>25</sup>

Mr. Smith also sponsored exhibits demonstrating the Midville South Green 59, Well No. 1 well's production,<sup>26</sup> and the Midville South Green 54 Well No. 1 well's production.<sup>27</sup> The Midville 591 well's production graph indicates the well is encountering a large amount of water-production

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<sup>20</sup> Van Exh. 17, pg. 1.

<sup>21</sup> Tr. Vol. 1, pg. 180.

<sup>22</sup> Tr. Vol. 1, pg. 190; Van Exh. 19.

<sup>23</sup> Tr. Vol. 1, pg. 190.

<sup>24</sup> Tr. Vol. 1, pg. 214; Van Exh. 32.

<sup>25</sup> Tr. Vol. 1, pg. 216; Van Exh. 33.

<sup>26</sup> Van Exh. 40, Note: Reference in the transcript and hearing regarding the "Midville South Green 591 well," "Midville South Green 541 well," and the "Van South Green 541 well," refer to the Midville South Green 59 Lease, Well No. 1; the Midville South Green 54 Lease, Well No. 1' and the "Van South Green 54 Lease, Well No. 1, respectively.

<sup>27</sup> Van Exh. 41.

which tends to indicate that the reservoir may be a water drive reservoir.<sup>28</sup> The Midville Well 541 production indicates a different phenomena than what was occurring in the Midville 591 well. While the Midville 591 well is structurally higher up, the Midville 541 well has increasing oil production without increasing water production;<sup>29</sup> thus, indicating that the two Midville wells are likely to be structurally separated from each other. Mr. Smith explained that when wells are higher up on structure and are producing water and are then compared to wells appearing lower down on structure which are not producing water, there must be some reservoir phenomena that is different and separating the two wells, such as faulting.

Van also ran a bottomhole pressure bomb on the subject well, measuring pressure every 500 feet as it went down hole.<sup>30</sup> Based on the bottomhole pressure and the consistent pressure throughout the well, Van determined that the subject well is typical of a gas-column well. The pressure test also indicated that from an engineering and geologic standpoint, the reservoir is not a simple reservoir. Based on the subject well being in the gas cap, even if the well were re-drilled at a regular location it would still be in the same gas-cap;<sup>31</sup> and therefore, no structural advantage has been gained by the current location.

Mr. Smith also testified and presented evidence demonstrating the variations in volumetric calculations, which quantify the estimated amount of oil and gas in the reservoir. The volumetric calculations presented were based on log analysis, geological mapping, and isochore mapping, and included 16 different outcomes based on variations---including whether the Fault A or Fault B interpretations were considered.<sup>32</sup> Based on the variations in volumetric calculations, Mr. Smith testified that if Van had to re-drill the subject well at a regular location, (*i.e.*, 28 feet away) there are insufficient reserves in the reservoir to ever economically recover the cost of re-drilling the subject well.<sup>33</sup>

Mr. Smith testified on Commission precedent regarding similarly drilled irregular wells which failed to comply with Statewide Rule 37 and which the Commission found to be in substantial compliance with Commission Rules. In that complaint docket, the Examiners determined that although the well was 7% off of the previously permitted location, based on numerous factors, the

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<sup>28</sup> Tr. Vol. I, pg. 232-233.

<sup>29</sup> Tr. Vol. I, pg 234-235.

<sup>30</sup> Tr. Vol. I, pg. 238-241; *See* Van Exh. 42.

<sup>31</sup> *See* Tr. Vo. II, pg. 110-111.

<sup>32</sup> Van Exh. 43.

<sup>33</sup> Tr. Vol. I, pg. 245-253; *See also* Van Exh. 44 & 45.

well was in substantial compliance with Commission rules.<sup>34</sup> Here, Mr. Smith argues the subject well is 8 % off from the permitted location and therefore, the subject well should be considered a well in substantial compliance with Commission rules. In further support of Van's substantial compliance contention, Mr. Smith also sponsored a Commission Memorandum issued April 3, 1996, which set out a 10% rule of thumb for determining whether a well's location was reasonable.<sup>35</sup> This 10% rule of thumb discussed that in Statewide Rule 11 situations, the Commission may consider a well drilled 10% off of its permitted location to be a reasonable location and would not require a Statewide Rule 37 permit. The Memorandum also states that in previous irregular well deviations presented to the Commission, "locations have been considered reasonable as close as 50% of the permitted distance to the nearest lease line."<sup>36</sup> Based on the previous Commission dockets and the 1996 Memo, Mr. Smith asserts that having a substantial compliance ruling or granting the Statewide Rule 37 exception for the subject well would give Van an opportunity to attempt to recover some of their recoverable gas and would allow Van to recover their fair share, thus preventing confiscation.

In conclusion, Mr. Smith discussed his concerns regarding the fact that the subject well was currently an associated prorated well, but that in his opinion, he believed that if allowed to produce, the subject well seems to be capable of producing more than the Midville 592 well. He further stated that Van would be agreeable and would not produce above the Commission's Statewide Rule 49B allowable rate. However, Mr. Smith acknowledged that particular issue may be outside of the scope of the subject hearing.

Van contends denial of its Statewide Rule 37 exception for the already existing well would result in confiscation of Van's reserves and cause waste of gas reserves. In the alternative, Van contends it substantially complied with Statewide Rule 37, in line with previously established Commission precedent regarding substantial compliance.

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<sup>34</sup> See Exh. 46 at pg. 4; Commission Oil & Gas Docket 3-82,009 (Final Order issued August 28, 1984); *Complaint of Reece B. Anderson concerning the location of the George T. McGehee Arco-Laird No. 3 Well in the Sally Withers Lake (3650) Filed, Jasper Count, Texas*. Those factors considered: amount of deviation, geology of the area, drainage in the area, greater harm to offsets, circumstances of moving the location, intention in moving the location, field rules in existence, status of development in the area, and the method by which the variation comes to the attention of the Commission. See also Van Exh. 47, Final Order and Proposal for Decision of the Commission Oil & Gas Docket 107,498. *Application of Noble Energy, Inc. For an Exception to Statewide Rule 37 to permit the horizontal drilled Well No. 5, Bennett Brothers "C" Lease, Pearsall (Austin Chalk) Field, Frio County, Texas*.

<sup>35</sup> See Van Exh. 48; April 3, 1996 Memorandum from David Schieck, Director of the Oil & Gas Division to the Commissioners, Regarding "Administrative Determination Whether New Drilling Permit is Required for Wells Deviated Pursuant to Statewide Rule 11."

<sup>36</sup> Van Exh. 48 at pg. 2; Tr. Vol. I, pg. 263.

**PROTESTANT MIDVILLE ENERGY, INC.’S POSITION AND EVIDENCE**

In support of Midville’s protest of the Statewide Rule 37 exception, Mr. Jeffrey Cole, an independent geologist testified. Mr. Cole sponsored seven exhibits all related to the area’s geology; specifically area porosity, geologic structure, and stratigraphic cross sections of neighboring wells, as well as the subject well. In Mr. Cole’s opinion and based on the data he studied, there appeared to be no faulting between the Midville 543, 541, and 591 wells,<sup>37</sup> nor any faulting in the area in general.<sup>38</sup> Further, based on his review of his data, he concluded there is no communication between the three Midville wells.<sup>39</sup> In concluding his testimony, he stated as “you move updip, you lose the quality of porosity, both the amount in net feet and the net percent of porosity. However, because of the lack of control, it’s impossible to say that if this well were 30 or 60 or whatever feet away from [the current location] that it [*i.e.*, the reservoir conditions] would be exactly the same.”<sup>40</sup>

Mr. John Rhodes, an expert geophysicist, presented brief testimony and sponsored four (4) exhibits. Overall, Mr. Rhodes’ testimony indicated that he did not believe there was any faulting in the area based on the seismic data he reviewed and sponsored.

Midville’s third witness was Mr. Dale Miller, an oil and gas regulatory consultant and graduate engineer. Mr. Miller’s qualifications were accepted without objection as an expert witness. Mr. Miller sponsored numerous exhibits outlining the history of the subject well, as well as the area oil and gas history. A 1903 surveyed patent for the subject lease — Section 54 of the TNPR Company Survey, Block 11— issued by the Texas General Land Office was offered in support that the subject lease was originally patented as being a square 1900 by 1900 varas.<sup>41</sup> Mr. Miller also sponsored an amended permit filed on behalf of Van’s predecessor company (Jones) for the South Green 54, Well No. 1, filed to amend the original December 1971 permit.<sup>42</sup> That amended permit application indicated that the subject lease was reported to be part of a 640 acre survey. Midville also offered into evidence a copy of the Van application for the South Green 54, Well No., 3, indicating that Van reported the subject lease to be part of a 640 acre tract. All of these exhibits were presented as a means of demonstrating that Van knew, or should have known, that the original

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<sup>37</sup> Tr. Vol. II, pgs. 124-25.

<sup>38</sup> Tr. Vol. II, pg. 129.

<sup>39</sup> Tr. Vol. II, pg. 124.

<sup>40</sup> Tr. Vol. II, pg. 131, lns. 11-16.

<sup>41</sup> A Vara is a unit of linear measure, formerly used in Latin America and Texas, equal to about 33 inches. 1900 Varas is approximately 5277.78 feet. *See* Tr. Vol. III, pg. 41, lns 8-9.

<sup>42</sup> Tr. Vol. II, pgs. 150-51.

survey of the proposed drill site for the subject well was incorrect.<sup>43</sup>

Midville's fourth witness was Mr. James Terracio, an employee of Wellbore Capital (a business partner of Midville Energy) and a designated expert petroleum engineer. Mr. Terracio testified as to the effect the subject well had on Midville's neighboring wells. In support, he sponsored exhibits regarding the Midville wells' pressure history, production history, and the possibility of communication occurring between the Midville wells, and the subject well.

Specifically, Mr. Terracio sponsored exhibits which Midville contends indicates that the Midville 591 and 541 wells are not in communication, and that the subject well had no impact/ or pressure differential effect on the Midville 591 well.<sup>44</sup> Further, he testified that the "only well that the Van well impacts is the 54 — the Midville 541."<sup>45</sup> Midville concluded that because of the change in pressure experienced by the Midville 541 well when the Van 54 well came on, the subject well and the Midville 541 well are in communication and which "is indicative of the fact that those wells are producing from the same common source [reservoir]."<sup>46</sup>

Mr. Terracio testified about the effect the Van well will have on the Midville well and how the Van well would contribute to waste. Specifically, Mr. Terracio calculated the estimated ultimate recovery (EUR) for the Midville South Green 541 well and stated that based on his calculations and under current conditions (i.e., where the Van well is not currently producing from the reservoir), there are 296,000 barrels<sup>47</sup> of reserves anticipated to be produced. Further, he estimated that Midville's remaining reserves to be 179,000 barrels of oil, and approximately 151,000 Mcf of gas.<sup>48</sup> Based on his analysis, he estimated that allowing the Van well to produce "where it is right now and the damage and the waste that would be caused by leaving 109,000 — almost 100,000 barrels in the reservoir."<sup>49</sup> Midville also asserted that the 302 feet from the Midville lease line that the Van well bottom-hole location is currently located at will have an impact on Midville's recovery in the future

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<sup>43</sup> See Tr. Vol. II, pg. 163, lns. 17-19. Mr. Miller testified: "So, no matter how you looked at it, there was a problem [with the plating]. It just wasn't adding up the way it should have."

<sup>44</sup> Tr. Vol. II, pg. 188.

<sup>45</sup> Tr. Vol. II, pg. 188, lns. 15-16.

<sup>46</sup> Tr. Vol. II, pg. 188, lns. 22-25.

<sup>47</sup> Tr. Vol. II, pg 192, ln 13.

<sup>48</sup> Tr. Vol. II, pgs. 192, 193.

<sup>49</sup> Tr. Vol. II, pgs. 193-194.

via the pressure transient that the Van well has within the reservoir.<sup>50</sup>

Midville's fifth witness was Mr. Bill Keating, a surveyor with Topographic Land Surveyors. Mr. Keating conducted a survey of the Midville and Van wells located on the South Green Lease on behalf of Midville after it was discovered that the subject well has been drilled at an irregular location. Topographic's survey indicated the current locations of all the Midville and Van wells at issue in the instant docket. More specifically, Mr. Keating testified as to how surveying of land is generally conducted – i.e., hierarchy of momentation in surveying. He discussed the methodology that surveyors use in conducting surveys and also discussed how, in his opinion, the surveying of the subject well as flawed, and how the Van surveyor knew or should have known that the survey was erroneous.

### EXAMINERS' OPINION

It is the basic right of every landowner or lessee to a fair and reasonable chance to recover the oil and gas under their property as recognized by the Texas Supreme Court in *Gulf Land Co. v. Atlantic Refining Co.*, 131 S.W.2d 73, 80 (Tex. 1939). There are two ways that an applicant may receive an exception to Statewide Rule 37 by demonstrating either: (1) confiscation; or (2) waste. An applicant seeking an exception to Statewide Rule 37 based on prevention of confiscation must prove that granting of the requested exception permit is necessary to afford the mineral owners a reasonable opportunity to recover their fair share of hydrocarbons currently in place under the subject lease, or the equivalent in kind. The applicant must show that: (1) it is not possible to recover its fair share from wells drilled at regular locations; and (2) the proposed irregular location is reasonable. To establish entitlement to an exception to Statewide Rule 37 based on prevention of waste must prove that: (1) unusual conditions, different from conditions in adjacent parts of the field, exist under the tract for which the exception is sought; (2) as a result of these conditions, hydrocarbons will be recovered by the well for which the exception permit is sought that would not be recovered by any existing well or by additional wells drilled at regular locations; and (3) the volume of otherwise unrecoverable hydrocarbons is substantial.

Here, Applicant Van has asserted that denial of its requested Statewide Rule 37 exception "would result in confiscation of Van's property rights and cause the waste of gas reserves."<sup>51</sup> The Examiners are of the opinion that approval of the Statewide Rule 37 exception requested by Van is

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<sup>50</sup> See Tr. Vol. II, pg 198, lns. 11-19.

"The closer their well is to our well, the faster we see the pressure transient move from their well to our well, and the faster they blow that down, and the greater effect is.

And so yet — we are being adversely affected by their well being too close to us and — and we think that's a big effect."

<sup>51</sup> Van's Closing Argument at p. 2.

necessary to prevent confiscation and protect correlative rights. Van and its lessors are entitled to recover as much as possible of their fair share of gas from beneath the South Green 54 Lease. “Fair share” is measured by the currently recoverable reserves from regular locations beneath the entire lease. The evidence shows that it is not feasible for Van to have to re-drill a well at a regular location to recover its fair share of gas from a regular location in the Lease. The costs associated with having to plug back this well and then re-drill the well at a regular location, 61 feet from its current surface location, demonstrates the necessity of a Statewide Rule 37 exception. Further, Van contends it is purely speculative that a re-drilled well would not walk out similarly and end up with a bottom hole location substantially the same as the current as-drilled Van South Green 54, Well No. 3.

Van, in the alternative, seeks relief on its existing permit, and argues that the well was drilled in substantial compliance with Statewide Rule 37. Under the substantial compliance argument, Van asserts that previous Commission policy has authorized and approved permitted wells drilled when substantial compliance with the rule has been demonstrated. Factors that the Commission has previously considered in substantial compliance dockets include, but are not limited to: (1) amount of deviation; (2) geology of the area; (3) drainage in the area; (4) greater harm to offsets; (5) intention in moving the location; (6) field rules in existence; (7) status of development in the area; and (8) the method by which the variance comes to the attention to the Commission’s attention.<sup>52</sup>

The issues raised by Protestant Midville: (1) that Van knew or should have known that the initial survey was wrong; (2) that the current location of the Van well –302 feet from the nearest Midville leaseline will cause waste and impact reservoir pressure to the detriment of Midville; and (3) that Van should not be granted an exception to Statewide Rule 37 under the substantial compliance doctrine, are not sufficiently persuasive to deny the subject application.

First, by Midville’s own admission, Van has been a “good neighbor” in operating the subject well. Once it was discovered that the Van well had impacted the neighboring Midville well, Van shut its well in.

Second, testimony offered that the Van well’s current bottom-hole location substantially negatively impacts the Midville wells is insufficient to substantiate denial of the subject application. Van demonstrated that it would not be economical to re-drill the subject well, especially in light of current gas prices. Midville acknowledges that Van has a right to the oil and gas under its lease and that the Van well is located within the gas cap. It is apparent from the testimony that the true nature of Midville’s protest is not that Van is producing 302 feet from the Midville leaseline and from the same reservoir, but rather merely that the Van well is producing from the same reservoir. (*i.e.*, the Van well production competes with production from the Midville well and therefore, Midville is unable to capture all the fugitive reserves.) Midville’s testimony and evidence offered to support the argument that the current location of the Van well substantially harms correlative rights, creates

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<sup>52</sup> Oil & Gas Docket No. 3-82,009, *Complaint of Reece Anderson Concerning the Location of the George T. McGehee Arco-Laird No. 3 Well*, at p. 4. Copy of PFD entered into the record as Van’s Exh. 46.

waste, and causes confiscation is unpersuasive.

Third, Midville's assertion that the Van well should not be granted an exception to Statewide Rule 37 under the substantial compliance doctrine is also unpersuasive. Under Commission precedent, operators have been previously granted exceptions to Statewide Rule 37 under the substantial compliance doctrine for deviations as high as 50% off a regular drill site.<sup>53</sup> Imposing a strict "10%" rule of thumb substantial compliance doctrine is unwieldy and would impose too great a burden on operators who demonstrate: (1) amount of deviation; (2) geology of the area; (3) drainage in the area; (4) greater harm to offsets; (5) intention in moving the location; (6) field rules in existence; (7) status of development in the area; and (8) the method by which the variance comes to the attention of the Commission.<sup>54</sup> Clearly, the objective of a substantial compliance rule is to allow operators a "close-enough" permit where the as-drilled location substantially meets the requirements of Statewide spacing rules. Midville's arguments and evidence to the contrary are insufficient to support a finding of no substantial compliance in this case where the subject well bottom-hole location is 8.5% off the leaseline spacing and the surface location is 269-324 off the leaseline line spacing.

The Examiners find Van did not intentionally drill the surface location of the well at the 269 foot irregular location and that the as-drilled bottom-hole location of the subject well is in substantial compliance with Statewide Rule 37. The Examiners further find that denial of the Statewide Rule 37 exception in this case would result in waste of hydrocarbons under the lease. Testimony provided demonstrates denial of Van's Statewide Rule 37 exception will result in the confiscation of the fair share of reserves attributable to Van and its lessors.

The evidence presented indicates Van met its burden in demonstrating substantial compliance with Statewide Rule 37 as laid out in previous Commission matters. The amount of deviation of the as-drilled surface location versus a regular Statewide Rule 37 location is no more than 62 feet. The as-drilled bottom hole location of the subject well is 302 feet from the western leaseline, less than 8.5% deviation of a regular 330 foot well.

The complexity in the geology of the area demonstrates it is difficult to definitively determine whether the subject well has created or will create greater harm to Midville's well. Van demonstrated the highly likelihood of faulting in the area. Further, the different thickness of the oil and gas columns presented under the two scenarios clearly demonstrates the complexity of the reservoir. Van demonstrated there is no indication that the subject well gained any structural or isopach advantage by being drilled 61 feet closer to the western leaseline.

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<sup>53</sup> The Examiners declined to comment as to the reasonableness of finding a well drilled 50% off the permitted location as being in "substantial compliance" with Commission rules; nonetheless, such Commission precedence does exist. That particular set of facts are not before the Examiners in this docket.

<sup>54</sup> Oil & Gas Docket No. 3-82,009, *Complaint of Reece Anderson Concerning the Location of the George T. McGehee Arco-Laird No. 3 Well*, at p. 4. Copy of PFD entered into the record as Van's Exh. 46.

Additionally, testimony provided by Van indicated, and Midville agreed, that Van acted as a good neighbor to Midville. Once it was discovered that the subject well was having a negative effect on the nearby Midville well, Van shut the subject well in.

The Examiners recommend Van's exception to Statewide Rule 37 for its Well No. 3 on the South Green 54 Lease unit in Shackelford County be granted based on the prevention of waste and prevention of confiscation. The Examiners also find that Van demonstrated substantial compliance with Statewide Rule 37 and therefore be granted an exception to Statewide Rule 37 for its Well No. 3 on the South Green 54 Lease unit in Shackelford County.

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

**FINDINGS OF FACT**

1. At least 10 days notice of this hearing was given to all parties entitled to notice pursuant to Commission rules and State law.
2. Van Operating, Inc. ("Van" or "Applicant"), seeks an exception to 16 Tex. Admin. Code § 3.37 ("Statewide Rule 37") for the Van South Green 54 Lease, Well No. 3, in the Pam (Chester) Field in Shackelford County. In the alternative, Van seeks to demonstrate that the as-drilled location and/or perforated interval of the well is in substantial compliance with its permit.
3. On September 14, 2012, the Commission issued Permit # 747692, for the South Green 54 Lease, Well No. 3, (the "subject well") in the Pam (Chester) Field in Shackelford County. The plat associated with that application is attached to this proposal for decision as Attachment I<sup>55</sup>, which is incorporated herein by reference. The issued permit was for a regular location, being 330 feet from the nearest lease line.
4. On December 7, 2013, Van filed an amended permit seeking to correct the as-drilled surface location to the corrected 269 feet from the westernmost lease line, and 324 feet from the southern lease line. The plat associated with the amended application is attached to this proposal for decision as Attachment II<sup>56</sup>, which is incorporated herein by reference.
  - a. The December 7, 2013 amended permit is the subject of this docket.

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<sup>55</sup> See Van Exh. 1, page 2.

<sup>56</sup> See Van Exh. 2, page 2.

- b. The amended permit application was protested by the adjoining operator, Midville Energy, Inc., which has an offsetting regular well located to the west northwest of the subject well. Midville Energy filed its protest of the amended application on January 16, 2014. Protestant Midville Energy operates the adjoining leases located directly west and south to the subject Van South Green 54 Lease.
5. The surface location of Well No. 3 is 269 feet from the west line and 324 feet from the south line and 334 feet from the south line and offlease 2,373 feet from the east line of the T&P RR Co./Jordan, F. Survey. The bottom hole location is 302 feet from the western lease line based on a directional survey run by Van. The well was drilled to a total depth of 4,625 feet.
6. The as-drilled location of the Van South Green 54 Well No. 3 was not at the permitted location due to an unintentional error committed in the initial surveying of the subject well.
7. There is faulting in the subject lease area.
  - a. An isopach map derived from the log of a nearby well indicates the subject well and another nearby Van well have porosities of 10% and 12%.
  - b. An isopach map derived from the log of a nearby well indicates that Midville Energy's wells have porosities of 30% and 25%; indicating there is faulting in the area.
8. Midville's wells South Green 59 Lease, Well No. 1, and Midville South Green 54 Lease, Well No. 1 are located up-dip oil and structurally separated from the Van South Green 54 Lease, Well No. 1, downdip gas well.
9. The Oil and Gas Proration Schedule for December 1, 2014, indicates that there are currently six (6) oil wells and one (1) gas well carried in the Pam (Chester) Field.
10. Van demonstrated that the subject well can be re-classified as a gas well.
  - a. Preliminary testing conducted on the Van South Green 54, Well No. 3, indicated that the well is in the gas cap.
  - b. The Van South Green 54, Well No.3 initially was classified as an oil well.
  - c. Based on the bottomhole pressure and the consistent pressure throughout the Van South Green 54 Well No. 3, Van demonstrated that the subject well is typical of a gas-column well.

11. Van demonstrated based on volumetric calculations, there are insufficient reserves in the reservoir to ever economically recover the cost of re-drilling the subject well in the event that the Van South Green 54, Well No. 3 is required to be re-drilled at a regular location.
12. An April 3, 1996, Commission Memorandum sets out a 10% rule of thumb for determining whether a well's location is reasonable.<sup>57</sup> The 10% rule of thumb discussed that in Statewide Rule 11 situations, the Commission may consider a well drilled 10% off of its permitted location may be considered a reasonable location and would not require a Statewide Rule 37 permit.
  - a. The Van South Green 54, Well No. 3's surface location is approximately 18 % off of the permitted regular 330 feet location from the western lease line.
  - b. The Van South Green 54, Well No. 3's production interval and bottom-hole location is 28 feet off the permitted location – an 8.5% deviation of the permitted location.
13. The as-drilled location of the Van South Green 54 Well No. 3 is reasonable.
  - a. Based on 330 foot lease line spacing, the Subject well's as-drilled bottom-hole location is 302 feet from the nearest lease line, 28 feet off of being a regular 330 foot lease line location.
  - b. The Subject well's as-drilled surface location is 269 feet from the nearest lease line, 61 feet off of the 330 foot lease line spacing.
  - c. If the location of the Subject well were re-drilled there is no assurance that the re-drilled bottom-hole location would be closer to compliance with the 330 feet lease line requirement.
14. In the alternative, denial of the Van South Green 54 Well No. 3's exception to Statewide Rule 37 will cause waste and confiscation.

### CONCLUSIONS OF LAW

1. Proper notice of hearing was timely given to all persons legally entitled to notice. 16 Tex. Admin. Code § 3.37(a)(2)(A).

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<sup>57</sup> See Van Exh. 48; April 3, 1996 Memorandum from David Schieck, Director of the Oil & Gas Division to the Commissioners, Regarding "Administrative Determination Whether New Drilling Permit is Required for Wells Deviated Pursuant to Statewide Rule 11."

2. All things have occurred to give the Commission jurisdiction to decide this matter. Tex. Nat. Res. Code §81.051.
3. Van has met its burden of proof in demonstrating that the as-drilled Van South Green 54, Well No. 3 substantially complies with Statewide Rule 37. An 8.5% deviation of the production interval and bottom-hole location of 28 feet off the permitted location is reasonable and substantially complies with Statewide Rule 37.
4. In the alternative, approval of a Statewide Rule 37 exception for the Van South Green 54 Well No. 3, as proposed by Van Operating, Inc., is necessary to prevent confiscation and protect the correlative rights of the mineral owners. 16 Tex. Admin. Code § 3.37(a)(1).

### RECOMMENDATION

The Examiners recommend the application of Van Operating, Inc., for a Statewide Rule 37 exception for the as-drilled location of the Van South Green 54 Lease, Well No. 3 in the Pam (Chester) Field, Shackelford County, be GRANTED as Van has demonstrated that the as-drilled well substantially complies with Statewide Rule 37. In the alternative, the Examiners recommend APPROVAL of a Statewide Rule 37 exception for the Van South Green 54 Lease, Well No. 3 in the Pam (Chester) Field, Shackelford County, as proposed by Van Operating, Inc., is necessary to prevent confiscation and protect the correlative rights of the mineral owners.

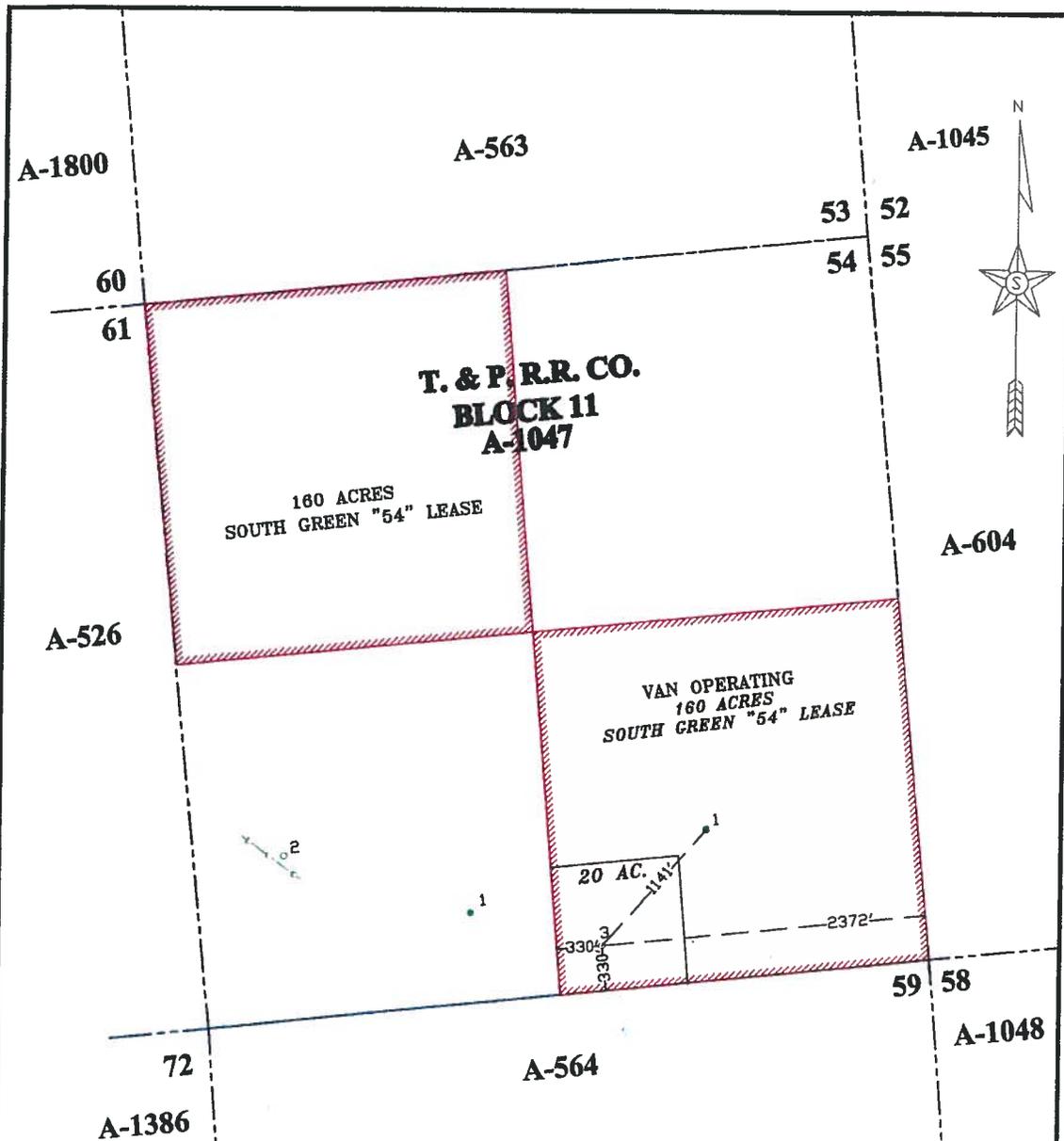
Respectfully submitted,

  
Laura E. Miles-Valdez  
Hearings Examiner

  
Paul Dubois  
Technical Examiner

ATTACHMENT

I



LOCATION IS 10.2 MILES SOUTHWEST OF ALBANY, TX  
 330' FSL & 2372' FEL OF THE T.&P. R.R. CO. SY., BLK 11 SEC. 54, A-1047  
 330' FSL & 330' FWL OF THE LEASE  
 NAD 83 N-6895943 E-1706215  
 NAD 27 X-1429827 Y-338182  
 NAD 83 Lat. 32°34'57.21" Long. -99°21'05.59"  
 NAD 83 Lat. 32.582558° Long. -99.351553°  
 ELEV. -1677'

LEGEND:	
SURVEY LINE	—
SOUTH GREEN '54' LEASE	▨
FENCE LINE	—
PROPOSED LATERAL	—
AS-DRILLED LATERAL	—
GAS WELL	⊙
GAS WELL PER DEED PROVIDED	⊙
PROPOSED LOCATION	⊙
DRY HOLE	⊙
DR. WELL	⊙
HOUSE	⊙
BARN	⊙

THE ABOVE SKETCH REPRESENTS THE LOCATION AS STAKED ON THE GROUND AND IS FOR PERMIT PURPOSES ONLY.

NOTE: FOR SURVEY CONSTRUCTION, CORNER DESCRIPTIONS AND RECORD REFERENCES, SEE SUPPORTING DOCUMENTS IN FILE

THIS PLAT MAY NOT SHOW ALL EXISTING EASEMENTS. CONTRACTORS ARE RESPONSIBLE FOR LOCATING ALL EASEMENTS.



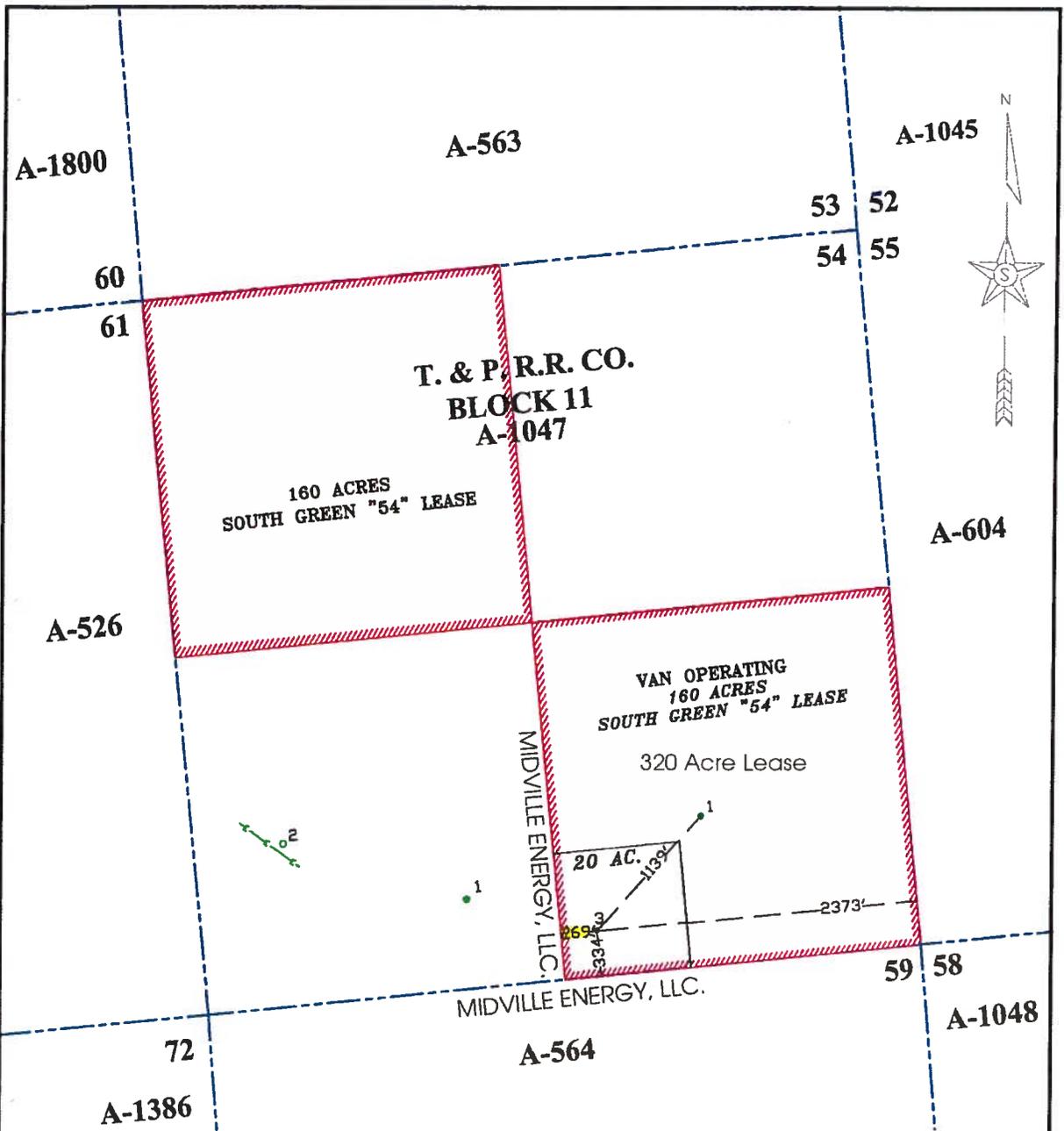
ERIC FRIEDMAN, TEXAS REGISTERED PROFESSIONAL LAND SURVEYOR NUMBER 6090

VAN OPERATING, LTD.  
 SOUTH GREEN '54' LEASE  
 # 3 LOCATION

LOCATION PLAT SHACKELFORD COUNTY, TEXAS		
OWEN SURVEYING CO. 3574 WEST F.M. 2231 BRECKENRIDGE, TEXAS 76424 FAX 254-359-7372		
Scale 1"=1000'	Date 08/27/2012	Print Number SH-1435L1



# ATTACHMENT II



LOCATION IS 10.2 MILES SOUTHWEST OF ALBANY, TX  
 334' FSL & 2373' FEL OF THE T.&P. R.R. CO. SY., BLK 11 SEC. 54, A-1047  
 334' FSL & 269' FWL OF THE LEASE  
 NAD 83 N-6895947 E-1706213  
 NAD 27 X-1429825 Y-338186  
 NAD 83 Lat. 32°34'57.25" Long. -99°21'05.62"  
 NAD 83 Lat. 32.582569° Long. -99.351560°  
 ELEV. -1677'

LEGEND:	
SURVEY LINE	—
SOUTH GREEN '54' LEASE	▨
FENCE LINE	—+—+—+—
PROPOSED LATERAL	—+—+—+—
AS-DRIILLED LATERAL	—+—+—+—
GAS WELLS	⊙
GAS WELL PER BOSS PROVIDED	⊙
PROPOSED LOCATION	⊙
DRY HOLE	⊙
OIL WELL	⊙
HOUSE	□
MARK	□

THE ABOVE SKETCH REPRESENTS THE WELL AS LOCATED ON THE GROUND.

NOTE: FOR SURVEY CONSTRUCTION, CORNER DESCRIPTIONS AND RECORD REFERENCES, SEE SUPPORTING DOCUMENTS IN FILE

THIS PLAT MAY NOT SHOW ALL EXISTING EASEMENTS. CONTRACTORS ARE RESPONSIBLE FOR LOCATING ALL EASEMENTS.



ERIC BRENNAN, TEXAS REGISTERED PROFESSIONAL LAND SURVEYOR NUMBER 5560

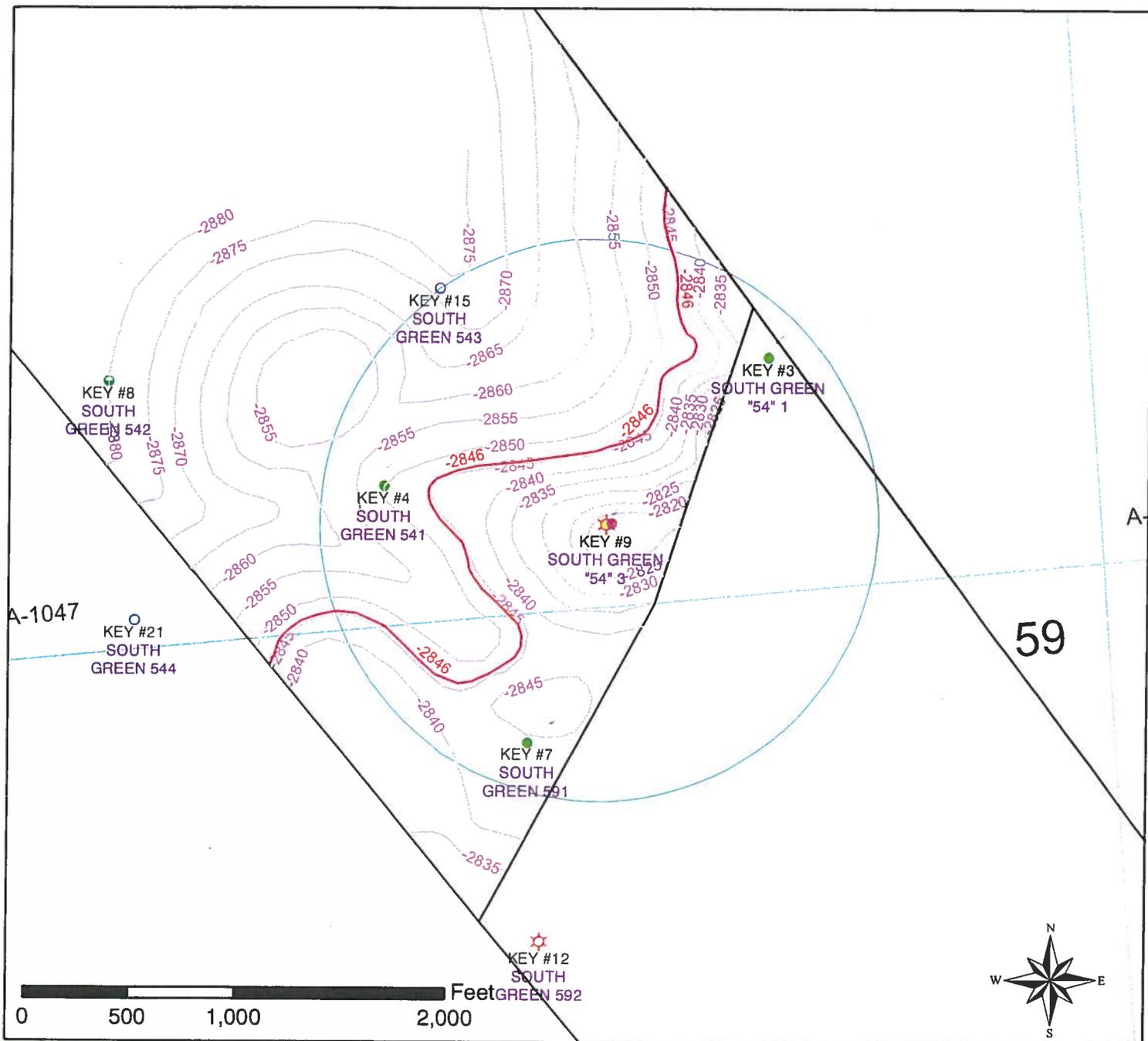
VAN OPERATING, LTD.  
 SOUTH GREEN '54' LEASE  
 # 3 WELL

LOCATION PLAT  
 SHACKELFORD COUNTY, TEXAS  
 OWEN SURVEYING CO.  
 3574 WEST F.M. 2231 BRECKENRIDGE, TEXAS 76424  
 FAX 254-559-7372

1000 0 1000 2000

Scale 1"=1000' Date 08/27/2012 Print Number SH-14351 1AR

# ATTACHMENT III



- 330'/330' Location
  - ☀ Perforated Location
  - Gas/Oil Contact
  - Fault A Interpretation
  - Quarter Mile Radius
- Van Operating South Green Leasehold

<b>VAN OPERATING, LTD.</b>	
Exhibit No.:	11 <sup>v</sup>
Docket No.:	0286341
Date:	12/10/2014

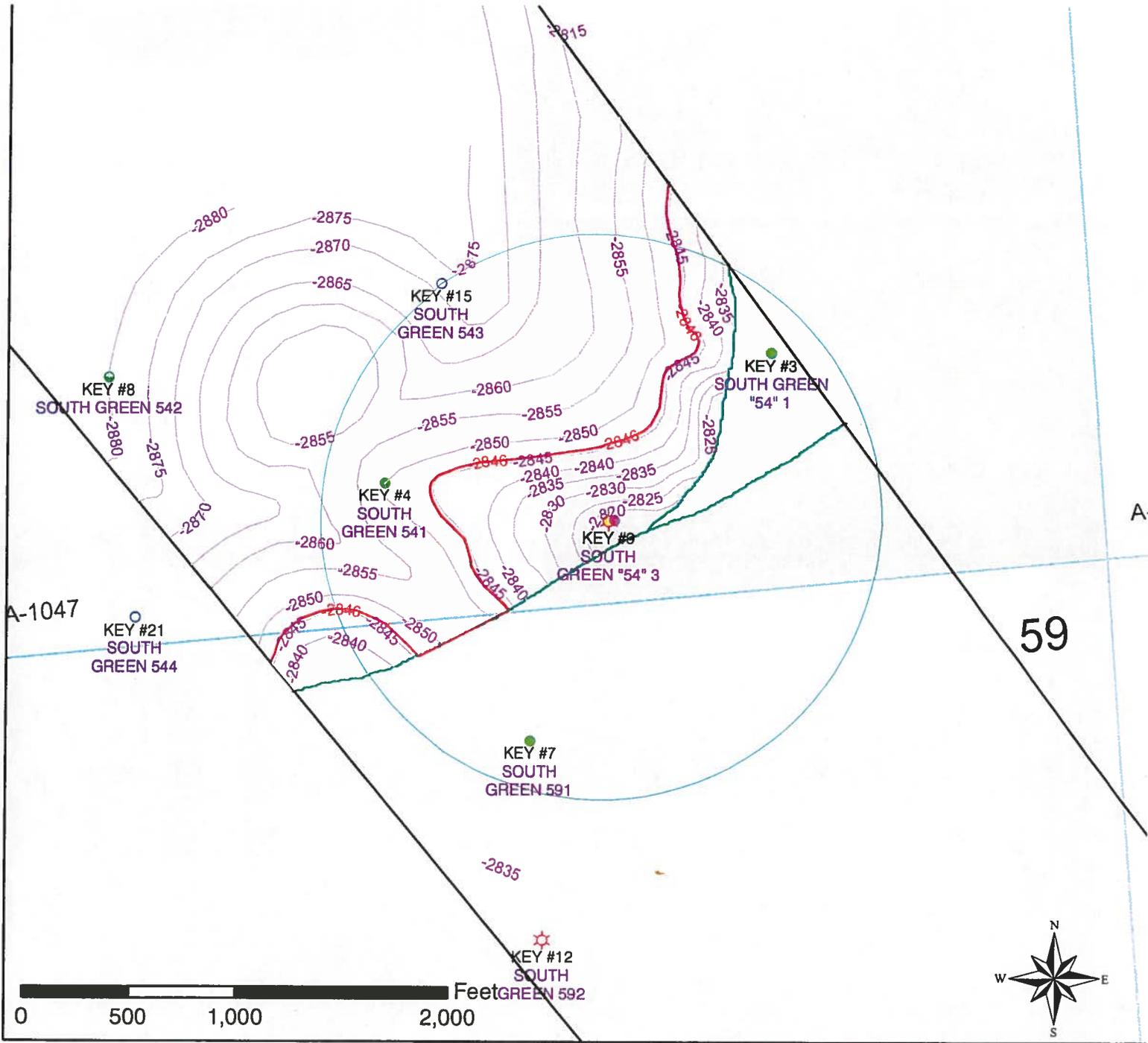
**Van Operating, LTD**

**Structure Map**  
**Top of Chester**  
*Form. Top = Top of Barnett LS*

**Pam (Chester) Field**  
Shackelford County, Tx

By: Buford Salters

# ATTACHMENT IV



- 330'/330' Location
  - ☼ Perforated Location
  - Gas/Oil Contact
  - - - Fault B Interpretation
  - Quarter Mile Radius
- Van Operating South Green Leasehold

**VAN OPERATING, LTD.**

Exhibit No.: 12 ✓  
 Docket No.: 0286341  
 Date: 12/10/2014

**Van Operating, LTD**

**Structure Map**

**Top of Chester**

*Form. Top = Top of Barnett LS*

**Pam (Chester) Field**

Shackelford County, Tx

By: Buford Salters