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July 21, 1989

Garry Mauro, Land Commissioner General Land Office Stephen F. Austin Bldg., 1700 Congress Ave. Austin, Texas 78701

Attention: C. B. Thomson, LSLS, Director of Surveying

Re: Surveyors Report on Survey 6, Block L, Gunter and Munson Survey, Motley and Hall Counties, Texas.

ABSTRACT

Survey 6, Block L, Gunter and Munson Survey, is located in both Motley and Hall Counties, Texas, about N5°W, 20 miles from Matador, county seat of Motley County, and S35°W, 34 miles from Memphis, county seat of Hall County. It is an irregular "L" shaped survey with its beginning ties to Survey 5 of the same block to the North and adjoining senior (older) Sections 189 and 190, Block S5 on the East side, and Sections 149 and 150, Block S5 on the West side. A junior Survey 121, W. E. Hughes Survey has been inserted, breaking the adjoining call on the south for Sections 95 and 100, Block 3, Texas and Pacific Railway Survey.

INTRODUCTION

The first settlers in this area were sheep herders from New Mexico and cattlemen from South Texas. The area is a rolling terrain of well drained sandy loam soil. The general drainage pattern is a Southeasterly flow away from the higher plains area to the West. There are several of these creeks or rivers that supply fresh running water the year round. The running water creeks were very valuable prior to the turn of the century, when the drilling of wells and the pumping of water was a difficult task. Therefore, the first location of the surveys was along these creeks to insure ownership and/or access to the supply of water.

PURPOSE

Survey 6 is patented for 497 acres of land. All recent retracements have reported approximately 150 acres of excess acreage within said Survey 6, which is reflected by the total acreage of the deeds and oil and gas leases in Survey 6. It is to our advantage to acquire a Deed of Acquittance from the State of Texas covering this excess acreage. This survey was ordered by Chevron, the leasee of the oil and gas rights, to comply with the requirement for corrected field notes to obtain the Deed of Acquittance for the excess acreage from the State.



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Motley Co. Sk. File 37

Surveyor's Report on Survey 6, Block L, G. & M., 7/21/89, Page 2

RECORDS RESEARCHED

The General Land Office prepared a working sketch for Chevron on January 12, 1989, covering Survey 6 and all adjacent surveys. Also, Chevron had copies made of all the field notes that where plotted on the working sketch. Copies of these documents were supplied to me by Chevron. I also searched the Sketch and Roll Sketch Files of the General Land Office and found several maps and reports which will be discussed later in this report. I also pulled approximately 40 file jackets on surveys located in Block S5, E.L. & R.R. Survey and Block S5, D. & P. Ry. Survey. I built a rough working sketch checking the connection of these surveys. County line notes and sketches for both Motley and Hall Counties were pulled and copies were made.

Field book copies, survey maps, field notes, and working sketches on a 1984 patent survey in Section 96, Block 3, Texas and Pacific Railroad Survey, by Jimmie Nail of Keyes and Associates, were supplied to me. Field book copies of the staking of the producing wells in Section 149, Block S5 were supplied to me by Wilson Surveying Co. A plat of a survey by Carl Williams in 1972 covering this area made for the purpose of division of the Shoe Nail Ranch was supplied to me by Chevron. In files on hand of my late grandfather and uncle, respectively W. O. Jones Sr. and Jr., both being county surveyors of Cottle County, I found an ancient survey map prepared by George H. Chipman, in 1911, of the W. E. Hughes Estate located in Childress, Cottle, Motley, Hall, and Briscoe Counties.

During my research of the General Land Office records, I was not able to locate a filed copy of this map or a similar map that I believe was filed in the General Land Office by Chipman. In a letter to J. H. Robison, Commissioner General Land Office, dated March 21, 1911, Chipman states: "Will submit map at the earliest possible showing all connections." Also, in a following letter to Robison, he states: "I would be pleased to say that I have forwarded you this date, reports and mat (map ?) of the survey work which I, in connection with the County Surveyors of Hall, Cottle and Motley counties have been engaged in doing in the past year in said counties." Note that a xerox copy of a portion of this map is included with this report as Exhibit "B".

BLOCK 3, TEXAS AND PACIFIC RAILWAY

Block 3 and Block 4 of the Texas and Pacific Railway are the earliest surveys located in our area of interest. Therefore, they have the greatest dignity and must be located first. These surveys were performed by George Spiller early in the year of 1875. They cover Quitaque Creek, North Pease River, and Tom Ball Creek. These surveys, for 640 acres each, with each tier or column being 1900 varas (5277.78 feet) wide East and West. Block 3 starts on the North side of the North Pease River and Quitaque Creek and extending North until the first survey in each tier contains 640 acres of land. Note that these surveys are shown in red on the accompanying Exhibit A.

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The Spiller survey left only a few tangible marks on the ground. One is the Tom Ball Corner in the North Pease River close to the junction with Tom Ball Creek near the Northeast corner of Section 23, Block 4, and the Southeast corner of Section 113, Block 3. The second is the Mexican Monument, called in reference to the Northwest corner of Section 8, Block 3, being the grave of three dead Mexicans that he found and buried while performing his survey.

A resurvey of these blocks was performed by G. A. Lider in 1913, under appointment of the Commissioner of the General Land Office and contract agreement with most of the land owners in these blocks. In Lider's report of his survey, he states that his construction is based on the Chipman-Moore survey as suggested by J. T. Robison, Commissioner of the General Land Office. His report was filed with a large blue line map in the General Land Office on December 12, 1913, in person. His report states that he ran a connecting line from the Mexican Monument South to Pole Canyon and Southeasterly along the river to the Tom Ball Corner. He also states that he adjusted his variation to get the best fit to the monuments set by the Chipman-Moore survey. His construction of Blocks 3 & 4, Texas and Pacific, has been the basis of many of the patent surveys within these blocks. Two examples are Section 94, Block 3, on the Working Sketch as prepared by the General Land Office and Section 96, Block 3, as patented based on survey by Jimmie Nail in August of 1984. Also, in Lider's report he states that permanent corners were set as shown on his map at each of the sections surveyed. A bound volume of the field notes of this survey are filed in the county survey records of Motley County and probably the other affected counties.

During our field work we found five of Lider's monuments and three additional patented monuments which conform to his map and construction. I believe that this construction is the only correct and logical position of the Texas and Pacific Railway Surveys. Therefore, we have adopted this construction for Block 3, lying just south and West of Survey 6, for the purpose of this survey.

BLOCK S5, EAST LINE AND RED RIVER RAILWAY

The J. Summerfield survey of Block S5, East Line and Red River Railway Survey in December of 1878 is the second most senior of surveys in our area of interest. These surveys, for the most part, contain 320 acres of land, with each side being 1344 varas. Four of these surveys are located on each certificate for 640 acres, two for the railroad (odd numbers) and two for the Public School Fund (even numbers). Mr. Summerfield was apparently running random lines along both Turkey Creek and Wind River (Gypsum Creek) and locating the certificates to cover all the running water and bottom lands possible. Note that these surveys are shown in blue on the accompanying Exhibit A. 0.586

Apparently, on these random lines he set a few rocks and piles of stones. Seven of these monuments are called for in the field notes of Surveys 23 through 42, and only one of these monuments, the common North corner of Surveys 23 and 24, has any witness information. This monument is known as the Wind River Corner and is the only monument in Surveys 23 through 42 which was identified in the Chipman-Moore Survey. In the surveyor report filed by George W. Chipman in 1911, he states, "In this block of surveys there are only three of the original corners which have been fully identified. These corners are as follows; The N. W. Cr. of surveys of No. 14, the common S. Cr. of survey No. 27 and 28 and the common N. corner of surveys of No. 23 and 24."

"We found the two corners namely the N. W. of 14 and common N Cr. of No. 23 and 24 just as described in the original field notes we connected them by a straight line and determined the variation to be 10 degrees and 51 min. E. and the excess per mile between the said corners to be 6 vs. We checked upon the said original common S. Cr. of said surveys of No. 27 and 28 and found its position true as set forth in the original field notes." The Wind River Corner has been located during the field work performed for this survey as called for in the original notes, with the exception that a 1 1/4" galvanized iron pipe marked "NE23 ELR" has been added to the center of the pile of stones. The use of this monument to locate this block will be discussed under the "CONSTRUCTION OF SURVEY 5 & 6, BLOCK L" heading.

BLOCK S5, DENISON AND PACIFIC RAILWAY

The J. Summerfield survey of Block S5, Denison and Pacific Railway Survey in October of 1879, is the third most senior of surveys in our area of interest and is positioned on both sides of Block L, Gunter and Munson Survey. These surveys, for the most part, contain 640 acres of land and are 1900 varas square, except where they adjoin or attempt to adjoin other surveys. The surveys positioned East of Block L are tied to Block S5, E.L. & R.R. and their calls are correct to remain adjacent to the E.L. & R.R. survey. The surveys positioned West of Block L are tied to Block 3, Texas and Pacific Railway Survey. Note that these survey are shown in yellow on the accompanying Exhibit A.

Mr. Summerfield shows different chainmen on the field notes than the East Line and Red River Survey performed the previous year, so it is probable that he ran some additional connecting lines to write these approximately 250 sets of Field Notes. None of the field notes in our area of interest call for any tangible monuments, so their position must be located from the beginning calls and adjoining calls to the senior surveys. It is interesting that the original notes East of Block L have an adjoining call marked out which calls to adjoin the surveys West of Block L. This shows that Summerfield was not completely sure of the relationship of Block 3, T. & P. and Block S5, East Line and Red River Railway Survey.

BLOCK L, GUNTER AND MUNSON SURVEY

Surveys 1 through 11, Block L, Gunter and Munson Survey was surveyed by W. A. Jones in February of 1884. It is positioned fourth in the order of seniority in our area of interest and includes the subject Survey 6. These surveys were filler surveys between senior surveys and contain varying amounts of acreages with the largest containing 640 acres. Some were located between the East and West part of Block S5, D. & P. Ry. Survey and others between the East part of Block S5 and Block 3, Texas and Pacific Railway Survey. The surveys in our area of interest are shown in green on the accompanying Exhibit A.

Mr. Jones calls for no tangible monuments in the field notes of Survey 6 and only a pile of buffalo bones three feet high and a pile of brush as reference monuments at the Northeast and Southeast corners of Survey 5, respectively. Both of these monument positions are now located in plowed fields and have never been reported as found. He also calls for witness bearings to hills, bushes, and Quitaque Peak. There are two reasons, I believe that these reference bearings are from the reference monuments and not the survey's corners. First, Quitaque Peak is not visible from the Southeast corner of Survey 5 or within several hundred vara radius of that point. Second, I do not believe that Mr. Jones monumented or surveyed the true lines of Survey 5 and 6, but surveyed along connecting lines or traverse lines summing his latitudes and departures to calculate the size and location of these surveys. He fails to give any passing calls on the creeks that he crossed and he relates the position of the reference monuments in North-South and East-West offsets which would be a direct result of the process of summing latitudes and departures instead of a bearing and a distance, which would be the result of making a normal reference tie with a compass and chain from the corner.

The reference call at the Southeast corner of Survey 5 calls to be 628 varas North and 511 varas West of a pile of brush whence Quitaque Peak bears S54 5/8°W, a bush S54°W, a bush in a swag of hill bears N84 1/8°E, and the East one of two hills bears S54 1/4°E. This point could, in theory, be located at the intersection of lines extended from Quitaque Peak and the East one of two hills since the other two bushes are no longer in existence. The two major problems in doing this is Quitaque Peak is some thirteen miles in distance, from the corner which yields an uncertainty of approximately 108 varas based on fifteen minutes of angle accuracy and that there is two possible hills in the area both of which are large sand dunes which can shift some distance in 107 years. From a calculated point established from the Southeast corner of said Survey 5, 628 varas Southerly along the East boundary line of Survey 6 and 511 Easterly at a right angle to said East boundary line Quitaque Peak bears a true bearing of S53°30'W. If you adjust Mr. Jones bearing of S54 5/8°W for his error of declination from is 12°E to the estimated correct declination from the U.S.

Geological Surveys Branch of Globas Seismology and Geomagnetism of 10°43.6'E it would decrease his bearing to S53°21'06"W which would conform reasonably close to the true bearing. Neither of two possible hills conform very close to the call bearings.

Therefore, these surveys must be located from their beginning calls and adjoining calls to senior surveys. Deed of Acquittances have been filed on Surveys 4 and 5 for the excess acreage in each of these surveys. The survey on which these Deed of Acquittances are based was performed by W. A. Thompson, County Surveyor of Hall County in 1946. He established the Eastern part of Block S5, D. & P. Ry. Survey based on the Wind River corner utilizing call distance and establishing a baseline accounting for Summerfield declination as established by George Chipman in 1911. Then he established the Western part of said Block S5 based on the resurvey of Blocks 3 and 4, Texas and Pacific Railway Survey, by G. A. Lider in 1913.

SURVEY 121, W. E. HUGHES SURVEY

Survey 121, W. E. Hughes Survey, dated October 28, 1913, as surveyed by B. F. Moore, is junior (younger) to the aforementioned surveys in the area. Therefore, it typically should be located after all the adjoining senior surveys have been located correctly. This survey's existence could be in question since it has to break the adjoining call in said Survey 6 for the Northwest and Northeast corners of Section 95, Block 3, the Northwest corner of Survey 100, Block 3, and the Southeast corner of Survey 190 to be positioned on the ground. The field notes upon which its patent was issued bear the following endorsement: "Note - Under proper construction of the calls in Survey No. 6, Gunter and Munson, Fan. S. 18747, ptd. - the area of this survey would be excess belonging to said Survey No. 6 - But considering the fact that the applicant, W. E. Hughes, appears to be the owner or President of the Continental Land & Cattle Co. - who owns the Gunter & Munson Survey 6 and surrounding surveys - this survey is passed correct -6/16/14 Clark". The General Land Office under letter dated July 5, 1989, from C. B. Thomson, Director of Surveying, states that: "The office approved the survey submitted for SF 10676 for patent. In view of this, it seems that the construction of Survey No. 6 as it now exists should be to honor the calls for SF 10676, leaving the balance of the area in the base of the L in Survey No. 6." Note that this survey and other W. E. Hughes Surveys are colored pink on the accompanying Exhibit A.

CONSTRUCTION OF SURVEYS 5 & 6, BLOCK L

The location of Survey 6, Block L, Gunter and Munson Survey is based on the adjoining senior surveys as set out above, since there are no locatable marks left of the original survey. We will consider Block S5, D. & P. Ry. and Block S5, E. L. & R. R. Ry. to the East first. As already discussed, Block S5, D. & P. Ry. has no tangible monuments on the ground in our area of interest and

relies on Block 5, E. L. & R. R. Ry. for its location. The Wind River Corner at the Northeast corner of Survey 23, Block S5, East Line and Red River Railway Survey, is the principle controlling monuments, as previously discussed.

The question is, on what meridian should these surveys be located? In Summerfield's field notes a variation of 12° East is shown. An interpolation from values for magnetic declination by the U.S. Geological Survey, Branch of Global Seismology and Geomagnetism shows the correct declination to be 10°55' East in late 1878 in this area. This would show that Mr. Summerfield's lines would truly bear NO1°05'W and S88°55'W. In Mr. Chipman's report, as previously discussed, he found the declination of his connecting line between the original corners to be 10°51'E in 1911. From the U.S.G.S. tables of declination and applying correction factors calculated at the Matador and Memphis Magnetic Stations, it shows the correct declination to be 10°32 East. This would indicate that Mr. Chipman's retracement of the original lines should bear N0°19'W and S89°41'W. Therefore, it is obvious that using a true geodetic bearing would not be following in the footsteps of the original surveyor.

In Mr. W. A. Thompson's Deed of Acquittance Survey of Surveys 4 and 5, Block L, he established a baseline West from the Wind River Corner which would pass 300 varas south of iron pipes found at the Southwest and Southeast corners of Survey 34, as monumented by Mr. Chipman. During our field work we found both of these iron pipes and an iron rod as called for by Thompson near the West end of the baseline in a road. No other corner monuments of Thompson were found on the ground during our survey. This is not surprising, since all of the exterior corner monuments are presently located in plowed fields. The bearing of the baseline established between the iron rod and the Wind River Corner is S89°03'50"W, relative to the Texas State Plane Coordinate System, North Zone. The difference between true geodetic North and this coordinate North is equal to 0°25'38" at the Wind River Corner, which would mean that the true bearing of the baseline as it exits at the Wind Corner would equal S89'29'27"W. This bearing agrees River reasonably close with the bearing which Mr. Moore cites in the field notes of Survey 121, W. E. Hughes Survey along the South line of Section 190 of N89°34'E. Since the Deed of Acquittances for said Surveys 4 and 5 were positioned from this baseline and it established allowing for the errors in the original was declination as determined in the past, I believe that it is the most logical meridian to locate the surveys which are tied to the Wind River Corner.

The original field notes distance calls West of the Wind River Corner to the East line of Surveys 4, 5, and 6, Block L, total 10350 varas. Therefore, I located a point on the baseline 10350 varas (Coordinate grid distance is 10,349.89) West of the Wind River Corner, which would be in the West line of Survey 186, Block S5, D. & P. Ry., and the East line of Block L. The North line of said Survey 5 was then located 214 varas North of the baseline as

called for in the Corrected Field Notes of Survey 5. The South line of Survey 5 was then located at call distance of 5247.1 varas (Coordinate grid distance is 5247.04) south of the said North line of Survey 5. The West boundary line of Survey 5 is then located adjoining Sections 150, 151, 152, and 153, Block S5. The North end of this line is established 3800 varas East of an iron pipe and brick set at the Northeast corner of Section 85, Block 3, Texas and Pacific Ry. Survey, by G. A. Lider's resurvey as discussed earlier in this report. The south end of this line is controlled by a pipe and brick found at the Southeast corner of Section 94, said Block 3. This construction yields an acreage of 926.67 acres of land in said Survey 5, which is 15.0 acres less than the Deed of Acquittance calls. This is explained by the fact that according to this survey the width (East and West distance) is reduced by 20.4 varas on the North end and 11.8 varas on the South end to comply to the calls for the adjoining senior surveys.

With Survey 5 located above, our subject Survey 6 can then be located. Beginning, as called for in the original field notes, at the Southwest corner of Survey 5 of this Block. Then South with the East line of Sections 149 and 150, as described above, a distance of 3175.6 varas to the Northwest corner of Survey 121, W. E. Hughes Survey, stopping short of 3292 varas as called for in the original notes. We must break the called distance and the adjoining call in the original notes for the Northwest corner of Section 95, Block 3, honoring the calls for the location of Survey 121 as instructed by the General Land Office. Then Easterly, Southerly, Easterly, and Northerly following the calls for courses and distances as cited in the field notes of said Survey 121. The last of these calls for North 543 varas to the Southeast corner of Section 190 must be adjusted to 441.2 varas to close on the south boundary line of Section 190 as constructed from the Wind River Baseline. Then the next call for West 1900 varas to the Southwest corner of Survey 190 must be adjusted to 1504.0 varas to close on the Southwest corner of Section 190 as located from the Wind River Corner. Then Northerly along the West line of Sections 189 and 190, a distance of 3153.9 varas to the Southeast corner of Survey 5, as determined previously. Then Westerly along the south line of said Survey 5 a distance of 1035.6 varas to the Place of Beginning. This last call is in excess of the original call by some 347.6 varas to adjoin between the senior surveys on each side of Block L. The acreage of Sections 6, as described above, is 654.07 acres some 157.07 acres in excess of the patented acreage.

LOCATION OF THE MOTLEY-HALL COUNTY LINE

The Motley-Hall County line has been surveyed by both counties. Hall County surveyed its North, West, and South boundaries from August 17, to September 4, 1891, by Will P. Hedgecoke, County Surveyor of Hall Co., under order of the County Court. He states in his certification that "...the rules respecting the curvature, of the earth have been strictly observed in making the survey...". 0-586

Motley County surveyed its East, North, and West boundaries in 1892, by E. B. Ross, County Surveyor of Motley County. His notes on the North boundary line call to beginning at a marked stone 4 1/2 feet in length etc., 5 miles and 1384 varas West from the S.W. corner of Childress County. On the 25th mile of his field notes, he calls for the Southwest corner of Hall County and the Southeast corner of Briscoe County with very similar witnesses to the Southwest corner of Hall County, as described in Hedgecoke's Field Notes at that point.

Both of these surveys do not call for any substantial monuments at the mile posts in our area of interest nor does the standard U.S.G.S. maps covering this area show any mile posts. We were able to locate the old cut stone as called for by Ross at the Northwest corner of Motley County and a pipe and axle in a rock mound in the position shown to be the Northwest corner of Motley County and the Northeast corner of Floyd County on the standard U.S.G.S. topographical map "QUITAQUE" which covers this area.

We searched for, but could not find, the Southwest corner of Hall County. Its approximate position is in the edge of a plowed field or a pasture covered by sand dunes and it does not show to be found on the U.S.G.S. maps. The only monument that we were able to find in our area of interest is a standard F.A.P. (Federal Aid Project) concrete monument set in 1931 on the East side of U.S. Highway 70 in the position of the county line as shown on the U.S.G.S. map.

The following are the NAD 1983 latitudes of monuments found and tied along the County line: the cut stone set by Ross is equal to 34°18'42.2883"; 2" brass pipe and axle in ring of stones in position of Northwest corner of Motley County is equal to 34°18'44.6244"; and the F.A.P. monument at U.S. 70 is equal to 34°18'46.82144". The U.S.G.S. topographical maps show the next located monuments on this county line at the Northeast corner of Motley County and 2 miles East of the Southeast corner of Hall County. These monuments latitude positions scaled on the U.S.G.S. maps are equal to 34°18'49" and 34°18'46", respectively. This shows that there is a range of approximately 6.7 seconds of arc or 247 varas between the five positions noted. Since the F.A.P. monument is the nearest monument found to our project and agrees in the mid-range of the other monuments, its latitude was accepted to establish the county line where it intersected the East and West boundary lines of said Survey 6 for the purpose of calculating acreages in each of the counties.

FIELD SURVEYING PROCEDURE

Horizontal control traverse was extended from USC&GS stations "LEO-1964", "QUITAQUE-1964", and "GASOLINE-1964" using conventional electronic traverse with a one second Kern DKM-2AT theodolite and an AGA Geodimeter 112 distance meter. Horizontal

and vertical angles were read in both direct and reverse motions with two sets of horizontal angles on each traverse leg. Distance measurements were taken in two different units and compared, to eliminate blunders in reading and recording. Closure between stations "LEO-1964" and "QUITAQUE-1964" was 1/41,145, well within the classification of 2nd order by the Texas Society of Professional Surveyors for horizontal control.

CONCLUSION

I have performed a diligent survey, based on careful research and a complete search for the controlling corner monuments required for this survey. These footsteps are tied to the Texas State Plane Coordinate System as required by the General Land Office of Texas, by the best methods feasible. I have studied the sequence that these surveys were removed from the public domain of the State of Texas and derived a construction that is logical and legal. I have prepared a map, field notes, and this report showing the results of this survey. If you have any questions, please feel free to contact me.

Sincerely submitted,

J. Stan Piper, R.P.S., L.S.L.S. P. O. Box 252 Gardendale, Texas 79758 (915)561-9025

jsp enclosures

GENERAL LAND OFFICE	RECORDING	INFORMATION
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Sketch	File No.	37	5	Motley	County, Texas.
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