



Directional Services  
P. O. Box 3047  
Conroe, TX 77305  
936-442-2456 Office  
936-442-2459 Fax

April 3, 2007

The Railroad Commission of Texas  
Oil & Gas Division  
P.O. Drawer 12967  
Capital Station  
Austin, Texas 78711-2967

Attention: Ms. Diane Crum

RE: Chesapeake Operating, Inc.  
University 21-6 E, Well #1H  
Survey: UL / Abstract Not Available  
Field: Wink, S. (Bone Springs) / Haley (Bone Springs) / Wildcat  
Winkler County, TX  
API Number: 42-495-33238

Dear Ms. Crum:

Please find enclosed the original and one copy of the survey performed on the above referenced well by Multi-Shot Directional Services, LLC. Other information required by your office is as follows:

<u>Name of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Date Performed</u>	<u>Type of Survey</u>
Sammy Smith	Original	Surface - 11,200'	03/15 - 16/07	Gyroscopic

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Sincerely,

Larae Townsend  
Operations



Directional Services

Job Number: 071117505399

Company: Chesapeake Operating, Inc.

Lease/Well: University 21-6E, Well #1H

Location: Winkler County, TX

Rig Name: Nomac #20

RKB: 32'

G.L. or M.S.L.: GL

State/Country: Texas/USA

Declination: 9.43°

Grid: East To Grid

File name: F:\SURVEY\2007SU~1\CHESAP~1\UN216E1H.SVY

Date/Time: 16-Mar-07 / 13:13

Curve Name: Surface - 11200' M.D.

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane .00  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
200.00	.25	14.81	200.00	.42	.11	.42	.44	14.81	.12
400.00	.25	319.99	400.00	1.18	-.06	1.18	1.18	357.21	.12
600.00	.25	73.08	600.00	1.64	.08	1.64	1.64	2.78	.21
800.00	.25	151.17	800.00	1.38	.71	1.38	1.55	27.07	.16
1000.00	.25	41.26	999.99	1.33	1.21	1.33	1.79	42.20	.20
1200.00	.25	139.35	1199.99	1.33	1.78	1.33	2.22	53.27	.19
1400.00	.25	220.52	1399.99	.66	1.78	.66	1.90	69.53	.16
1600.00	.25	68.06	1599.99	.50	1.90	.50	1.96	75.39	.24
1800.00	.25	71.15	1799.99	.80	2.72	.80	2.83	73.61	.01
2000.00	.25	60.24	1999.99	1.16	3.51	1.16	3.69	71.76	.02

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2200.00	.50	55.33	2199.98	1.87	4.61	1.87	4.97	67.90	.13
2400.00	.75	56.42	2399.97	3.09	6.41	3.09	7.12	64.28	.13
2600.00	1.50	55.61	2599.93	5.29	9.66	5.29	11.02	61.29	.38
2800.00	1.75	57.70	2799.85	8.40	14.41	8.40	16.68	59.74	.13
3000.00	1.75	59.78	2999.76	11.57	19.63	11.57	22.78	59.48	.03
3200.00	1.75	58.87	3199.66	14.69	24.88	14.69	28.89	59.44	.01
3400.00	2.00	58.82	3399.56	18.07	30.48	18.07	35.43	59.33	.13
3600.00	2.00	60.75	3599.43	21.59	36.51	21.59	42.41	59.41	.03
3800.00	1.75	60.69	3799.33	24.79	42.22	24.79	48.96	59.58	.13
4000.00	1.50	55.63	3999.25	27.76	47.04	27.76	54.62	59.46	.14
4200.00	1.25	59.57	4199.19	30.34	51.08	30.34	59.41	59.29	.13
4400.00	1.25	66.51	4399.14	32.32	54.96	32.32	63.76	59.55	.08
4600.00	1.25	78.45	4599.09	33.62	59.10	33.62	68.00	60.37	.13
4800.00	1.25	77.39	4799.05	34.53	63.37	34.53	72.17	61.41	.01
5000.00	1.25	75.33	4999.00	35.56	67.61	35.56	76.39	62.25	.02
5200.00	.75	64.27	5198.97	36.68	70.90	36.68	79.83	62.64	.27
5400.00	.75	69.90	5398.95	37.70	73.31	37.70	82.43	62.78	.04
5600.00	1.00	66.84	5598.93	38.84	76.14	38.84	85.47	62.97	.13
5800.00	.50	63.78	5798.91	39.91	78.53	39.91	88.09	63.06	.25
6000.00	.75	71.72	5998.90	40.71	80.55	40.71	90.25	63.19	.13
6200.00	.50	47.66	6198.89	41.71	82.44	41.71	92.39	63.17	.18
6400.00	.50	45.60	6398.88	42.90	83.71	42.90	94.06	62.86	.01
6600.00	.50	23.54	6598.87	44.31	84.68	44.31	95.58	62.38	.10
6800.00	.50	52.48	6798.86	45.65	85.72	45.65	97.12	61.97	.12
7000.00	.25	13.07	6998.86	46.60	86.51	46.60	98.27	61.69	.17
7200.00	.25	17.66	7198.86	47.44	86.74	47.44	98.87	61.32	.01
7400.00	.00	.00	7398.86	47.86	86.88	47.86	99.19	61.15	.12
7600.00	.25	80.84	7598.86	47.93	87.31	47.93	99.60	61.23	.12
7800.00	.25	78.43	7798.85	48.09	88.17	48.09	100.43	61.39	.01
8000.00	.50	65.02	7998.85	48.54	89.38	48.54	101.71	61.50	.13
8200.00	.50	83.61	8198.84	49.01	91.04	49.01	103.39	61.71	.08
8400.00	.75	83.20	8398.83	49.26	93.21	49.26	105.42	62.14	.13

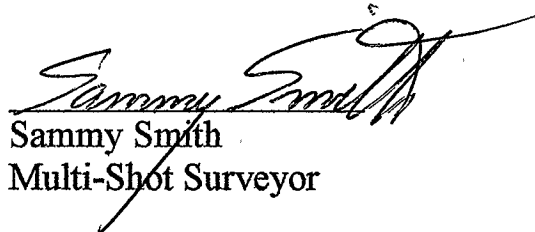
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
8600.00	.25	354.74	8598.82	49.85	94.47	49.85	106.81	62.18	.39
8800.00	.50	342.33	8798.82	51.11	94.16	51.11	107.14	61.51	.13
9000.00	1.25	311.91	8998.80	53.40	92.28	53.40	106.61	59.94	.43
9200.00	1.75	293.49	9198.73	56.08	87.85	56.08	104.22	57.45	.34
9400.00	1.50	252.09	9398.65	56.49	82.56	56.49	100.04	55.62	.59
9600.00	2.00	252.68	9598.56	54.65	76.74	54.65	94.21	54.54	.25
9800.00	2.00	14.29	9798.50	56.99	74.27	56.99	93.61	52.50	1.75
10000.00	2.25	23.89	9998.36	63.96	76.72	63.96	99.88	50.18	.22
10200.00	2.00	31.47	10198.23	70.53	80.13	70.53	106.75	48.65	.19
10400.00	1.50	55.45	10398.13	74.99	84.11	74.99	112.68	48.28	.44
10600.00	2.25	58.44	10598.03	78.53	89.61	78.53	119.15	48.77	.38
10800.00	2.00	78.40	10797.89	81.28	96.37	81.28	126.07	49.85	.39
11000.00	1.00	127.39	10997.83	80.93	101.18	80.93	129.56	51.35	.77
Last Survey Depth Recorded									
11200.00	1.75	188.37	11197.78	76.85	102.12	76.85	127.80	53.04	.77



Directional Services

State of Texas  
County of Montgomery

I, Sammy Smith, certify that; I am employed by Multi-Shot Directional Services; that I did on the day(s) of 3-15-07 through 3-16-07 conduct or supervise the taking of Byro survey(s) from a depth of 0 feet to a depth of 11200 feet; that the data is true, correct, complete and within the limitations of the tool set forth by Multi-Shot Directional Services; that I am authorized and qualified to make this report; that this report was conducted at the request of Chesapeake, for the University 21-6E, Well No. 1H, API No. 4249533238 in Winkler County, Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Multi-Shot Directional Services.

  
Sammy Smith  
Multi-Shot Surveyor

SECTION 6, BLOCK 21, UNIVERSITY LAND SURVEY  
WINKLER COUNTY TEXAS

P.S.L. SURVEY  
BLOCK 27

N73°42'37"E - 5281.8'

CHESAPEAKE OPERATING, INC.

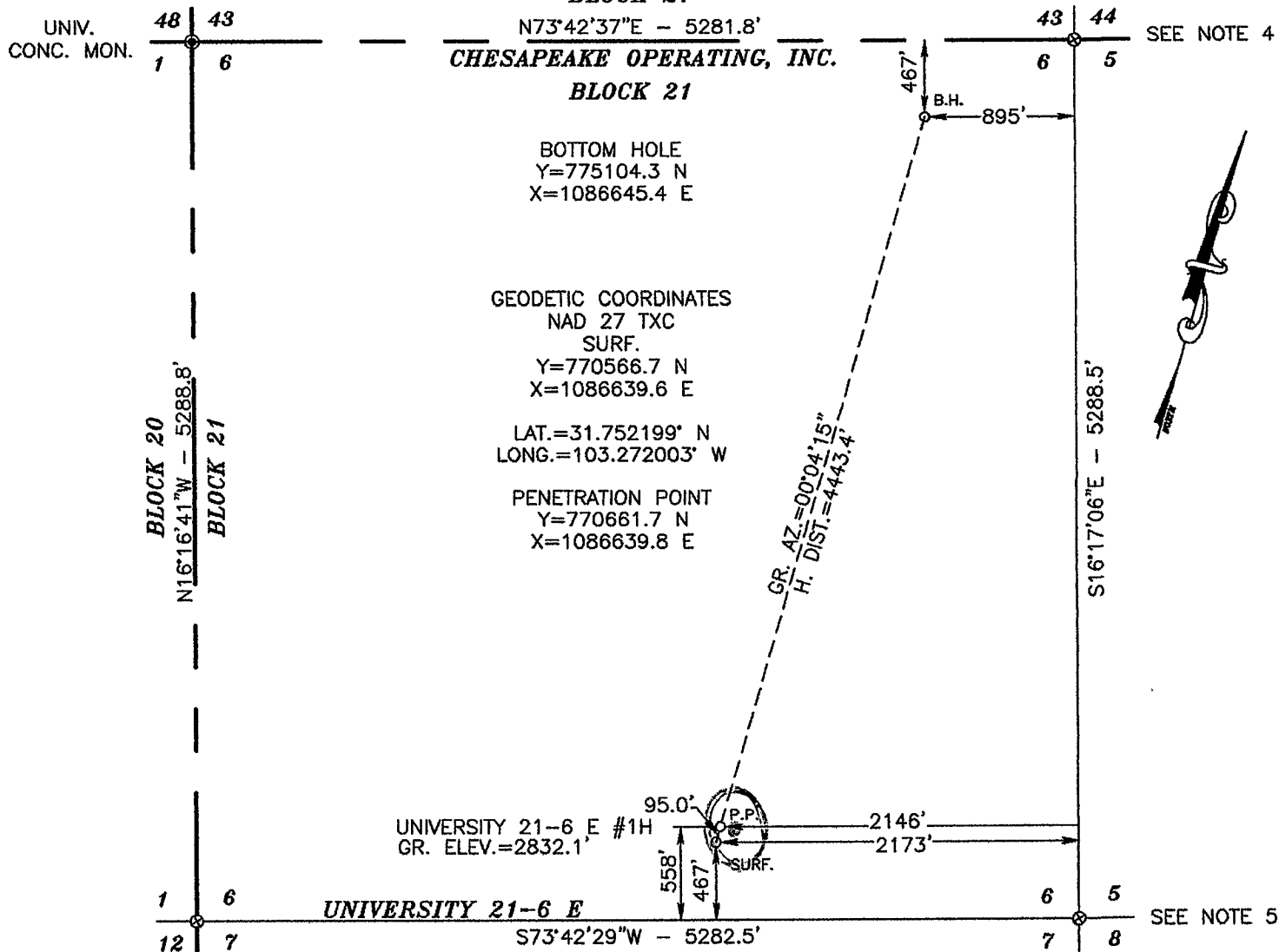
BLOCK 21

BOTTOM HOLE  
Y=775104.3 N  
X=1086645.4 E

GEODETIC COORDINATES  
NAD 27 TXC  
SURF.  
Y=770566.7 N  
X=1086639.6 E

LAT.=31.752199° N  
LONG.=103.272003° W

PENETRATION POINT  
Y=770661.7 N  
X=1086639.8 E



LEGEND

- DENOTES PROPOSED WELL LOCATION
- DENOTES FOUND MONUMENT AS NOTED
- ⊗ DENOTES CALCULATED CORNER

Multi-Shot bottom Hole Loc. 127.80 @ 53.04° Azm  
of Surface Location.  
MD 11200.00'  
TVD 11197.78'  
North 76.85°  
East 102.12' University 21-6 E, Well #1H

FILES

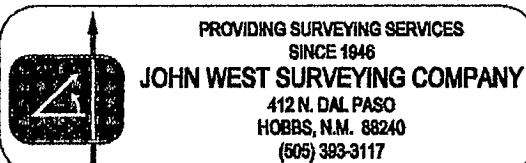
- SEE DOCUMENTS FILED FOR RECORD IN THIS OFFICE, WHICH DESCRIBES THE RECONSTRUCTION OF THIS SECTION.
- BEARINGS SHOWN HEREON ARE LAMBERT GRID AND CONFORM TO THE "TEXAS COORDINATE SYSTEM" TEXAS CENTRAL ZONE, NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.
- CALC. CORNER FROM WHICH A UNIV. CONC. MON. FOR THE NEc SEC. 5 BEARS N73°42'37"E 5281.8'.
- CALC. CORNER FROM WHICH A UNIV. CONC. MON. FOR THE SEC. 8 BEARS N73°42'29"E 5282.5' & S16°17'31"E 5288.3'.

1000 0 1000 2000 FEET  
Scale: 1" = 1000'

CHESAPEAKE OPERATING, INC.

UNIVERSITY 21-6 E #1H  
LOCATED 467 FEET FROM THE SOUTH LINE  
AND 2173 FEET FROM EAST LINE OF  
SECTION 6, BLOCK 21,  
UNIVERSITY LAND SURVEY,  
WINKLER COUNTY, TEXAS

GARY G. EIDSON TX R.P.L.S. No. 4735



Survey Date: 12/04/06	Sheet 1 of 1 Sheets
W.O. Number: 06.11.1943	Drawn By: J.R.
Date: 12/08/06 DISK:CD#6	06111943 Scale: 1" = 1000'



Post Office Box 750, Conroe, Texas 77305 936-441-5491 Fax No. 936-441-7268

**Chesapeake Operating, Inc**

University 21-6 E #1H  
Winkler County, Texas

April 20, 2007

**ORIGINAL**

Job Number LTX 86407

RECEIVED  
RRC OF TEXAS  
APR 23 2007  
O&G  
AUSTIN TX

**Completion Report**



**CHESAPEAKE OPERATING,  
INC.  
495-33238  
UNIVERSITY 21-6 E  
WELL #1H  
WINKLER**

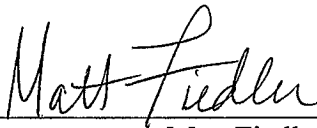
**Professional Guidance Services**

Post Office Box 750, Conroe, Texas 77305  
(936) 441-5491

State of Texas

County of Winkler

I, Matt Fiedler, certify that; I am employed by Professional Guidance Services, LLC; that I did on the day(s) of 3/18/07 through 4/07/07 conduct or supervise the taking of a MWD survey from a depth of 11292 feet to a depth of 16038 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Professional Guidance Services, LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of Chesapeake Operating for the University 21-6E #1A Well API No. 42-495-33238 in Winkler Cty, TX; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Professional Guidance Services, LLC.



Matt Fiedler  
MWD Operator





P.O. Box 750, Conroe, Texas 77305 936-441-5491

April 20, 2007

Railroad Commission of Texas  
Oil and Gas Division  
P.O. Box 12967  
Capitol Station  
Austin, Texas 78711


Attention: Cathy Garrison

Re: Chesapeake Operating, Inc  
University 21-6 E #1H  
RRC Lease/Gas ID No. 630716  
University Land Survey, Section 6, Block 21  
Winkler County, Texas  
API No. 42-495-33238

Enclosed, please find the original and one copy of the survey performed on the referenced well by Professional Guidance Services, L.L.C. (P-5 No. 681051). Other information required by your office is as follows:

<u>Name &amp; Title</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
M. Fiedler	Original	11292' – 16038'	03/18/07 – 04/07/07	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

  
Haley M. Tollett  
Technical Support

Enclosures  
Cc: Chesapeake Operating, Inc



Job Number: LTX 86407  
 Company: Chesapeake Operating  
 Lease/Well: University 21-6 E #1H  
 Location: Winkler County  
 Rig Name: Nomac #20  
 RKB:  
 G.L. or M.S.L.:

State/Country: Texas  
 Declination: 9.7  
 Grid:  
 File name: C:\WINSERVE\86407.SVY  
 Date/Time: 20-Apr-07 / 11:42  
 Curve Name: C:\DOCUME~1\PRODIR~1\MYDOCU~1\86407.CSV

**Professional Guidance Services, L.L.C.**

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane .07  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	Grid X FT	Grid Y FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
<b>Multi-Shot Directional Survey</b>											
.00	.00	.00	.00	.00	.00	.00	1086639.60	770566.70	.00	.00	.00
200.00	.25	14.81	200.00	.42	.42	.11	1086639.71	770567.12	.44	14.81	.12
400.00	.25	319.99	400.00	1.18	1.18	-.06	1086639.54	770567.88	1.18	357.21	.12
600.00	.25	73.08	600.00	1.64	1.64	.08	1086639.68	770568.34	1.64	2.78	.21
800.00	.25	151.17	800.00	1.38	1.38	.71	1086640.31	770568.08	1.55	27.07	.16
1000.00	.25	41.26	999.99	1.33	1.33	1.21	1086640.81	770568.03	1.79	42.20	.20
1200.00	.25	139.35	1199.99	1.33	1.33	1.78	1086641.38	770568.03	2.22	53.27	.19
1400.00	.25	220.52	1399.99	.67	.66	1.78	1086641.38	770567.36	1.90	69.53	.16
1600.00	.25	68.06	1599.99	.50	.50	1.90	1086641.50	770567.20	1.96	75.39	.24
1800.00	.25	71.15	1799.99	.80	.80	2.72	1086642.32	770567.50	2.83	73.61	.01

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	Grid X FT	Grid Y FT	C L O S U R E		Dogleg Severity Deg/100
									Distance FT	Direction Deg	
2000.00	.25	60.24	1999.99	1.16	1.16	3.51	1086643.11	770567.86	3.69	71.76	.02
2200.00	.50	55.33	2199.98	1.88	1.87	4.61	1086644.21	770568.57	4.97	67.90	.13
2400.00	.75	56.42	2399.97	3.10	3.09	6.41	1086646.01	770569.79	7.12	64.28	.13
2600.00	1.50	55.61	2599.93	5.30	5.29	9.66	1086649.26	770571.99	11.02	61.29	.38
2800.00	1.75	57.70	2799.85	8.42	8.40	14.41	1086654.01	770575.10	16.68	59.74	.13
3000.00	1.75	59.78	2999.76	11.60	11.57	19.63	1086659.23	770578.27	22.78	59.48	.03
3200.00	1.75	58.87	3199.66	14.72	14.69	24.88	1086664.48	770581.39	28.89	59.44	.01
3400.00	2.00	58.82	3399.56	18.11	18.07	30.48	1086670.08	770584.77	35.43	59.33	.13
3600.00	2.00	60.75	3599.43	21.63	21.59	36.51	1086676.11	770588.29	42.41	59.41	.03
3800.00	1.75	60.69	3799.33	24.84	24.79	42.22	1086681.82	770591.49	48.96	59.58	.13
4000.00	1.50	55.63	3999.25	27.82	27.76	47.04	1086686.64	770594.46	54.62	59.46	.14
4200.00	1.25	59.57	4199.19	30.40	30.34	51.08	1086690.68	770597.04	59.41	59.29	.13
4400.00	1.25	66.51	4399.14	32.38	32.32	54.96	1086694.56	770599.02	63.76	59.55	.08
4600.00	1.25	78.45	4599.09	33.69	33.62	59.10	1086698.70	770600.32	68.00	60.37	.13
4800.00	1.25	77.39	4799.05	34.61	34.53	63.37	1086702.97	770601.23	72.17	61.41	.01
5000.00	1.25	75.33	4999.00	35.65	35.56	67.61	1086707.21	770602.26	76.39	62.25	.02
5200.00	.75	64.27	5198.97	36.77	36.68	70.90	1086710.50	770603.38	79.83	62.64	.27
5400.00	.75	69.90	5398.95	37.79	37.70	73.31	1086712.91	770604.40	82.43	62.78	.04
5600.00	1.00	66.84	5598.93	38.93	38.84	76.14	1086715.74	770605.54	85.47	62.97	.13
5800.00	.50	63.78	5798.91	40.01	39.91	78.53	1086718.13	770606.61	88.09	63.06	.25
6000.00	.75	71.72	5998.90	40.81	40.71	80.55	1086720.15	770607.41	90.25	63.19	.13
6200.00	.50	47.66	6198.89	41.81	41.71	82.44	1086722.04	770608.41	92.39	63.17	.18
6400.00	.50	45.60	6398.88	43.01	42.90	83.71	1086723.31	770609.60	94.06	62.86	.01
6600.00	.50	23.54	6598.87	44.42	44.31	84.68	1086724.28	770611.01	95.58	62.38	.10
6800.00	.50	52.48	6798.86	45.75	45.65	85.72	1086725.32	770612.35	97.12	61.97	.12
7000.00	.25	13.07	6998.86	46.71	46.60	86.51	1086726.11	770613.30	98.27	61.69	.17
7200.00	.25	17.66	7198.86	47.55	47.44	86.74	1086726.34	770614.14	98.87	61.32	.01
7400.00	.00	.00	7398.86	47.96	47.86	86.88	1086726.48	770614.56	99.19	61.15	.12
7600.00	.25	80.84	7598.86	48.03	47.93	87.31	1086726.91	770614.63	99.60	61.23	.12
7800.00	.25	78.43	7798.85	48.19	48.09	88.17	1086727.77	770614.79	100.43	61.39	.01
8000.00	.50	65.02	7998.85	48.65	48.54	89.38	1086728.98	770615.24	101.71	61.50	.13

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	Grid X FT	Grid Y FT	CLOSURE		Dogleg Severity Deg/100
Distance FT	Direction Deg										
8200.00	.50	83.61	8198.84	49.12	49.01	91.04	1086730.64	770615.71	103.39	61.71	.08-
8400.00	.75	83.20	8398.83	49.37	49.26	93.21	1086732.81	770615.96	105.42	62.14	.13
8600.00	.25	354.74	8598.82	49.96	49.85	94.47	1086734.07	770616.55	106.81	62.18	.39
8800.00	.50	342.33	8798.82	51.23	51.11	94.16	1086733.76	770617.81	107.14	61.51	.13-
9000.00	1.25	311.91	8998.80	53.52	53.40	92.28	1086731.88	770620.10	106.61	59.94	.43
9200.00	1.75	293.49	9198.73	56.18	56.08	87.85	1086727.45	770622.78	104.22	57.45	.34
9400.00	1.50	252.09	9398.65	56.59	56.49	82.56	1086722.16	770623.19	100.04	55.62	.59
9600.00	2.00	252.68	9598.56	54.74	54.65	76.74	1086716.34	770621.35	94.21	54.54	.25
9800.00	2.00	14.29	9798.50	57.08	56.99	74.27	1086713.87	770623.69	93.61	52.50	1.75
10000.00	2.25	23.89	9998.36	64.05	63.96	76.72	1086716.32	770630.66	99.88	50.18	.22
10200.00	2.00	31.47	10198.23	70.63	70.53	80.13	1086719.73	770637.23	106.75	48.65	.19
10400.00	1.50	55.45	10398.13	75.09	74.99	84.11	1086723.71	770641.69	112.68	48.28	.44
10600.00	2.25	58.44	10598.03	78.64	78.53	89.61	1086729.21	770645.23	119.15	48.77	.38
10800.00	2.00	78.40	10797.89	81.40	81.28	96.37	1086735.97	770647.98	126.07	49.85	.39
11000.00	1.00	127.39	10997.83	81.05	80.93	101.18	1086740.78	770647.63	129.56	51.35	.77
Tie into Multi-Shot Directional Survey											
11200.00	1.75	188.37	11197.78	76.97	76.85	102.12	1086741.72	770643.55	127.80	53.04	.77
Professional Guidance MWD Services											
11292.00	1.50	198.00	11289.74	74.43	74.31	101.54	1086741.14	770641.01	125.83	53.80	.40
11322.00	.40	249.00	11319.74	74.02	73.90	101.32	1086740.92	770640.60	125.41	53.90	4.29
11357.00	4.20	349.90	11354.70	75.24	75.12	100.99	1086740.59	770641.82	125.86	53.36	12.27
11390.00	7.40	336.70	11387.53	78.38	78.26	99.93	1086739.53	770644.96	126.93	51.93	10.44
11422.00	12.10	335.00	11419.06	83.31	83.20	97.70	1086737.30	770649.90	128.32	49.58	14.71
11455.00	16.30	338.00	11451.05	90.74	90.63	94.50	1086734.10	770657.33	130.93	46.20	12.92
11487.00	20.30	342.00	11481.42	100.19	100.07	91.10	1086730.70	770666.77	135.33	42.31	13.09
11516.00	24.10	344.80	11508.27	110.68	110.58	87.99	1086727.59	770677.28	141.32	38.51	13.60
11552.00	29.70	346.90	11540.36	126.47	126.37	84.04	1086723.64	770693.07	151.76	33.63	15.78
11585.00	35.80	349.00	11568.10	143.92	143.82	80.34	1086719.94	770710.52	164.74	29.19	18.80
11617.00	41.10	350.60	11593.16	163.49	163.40	76.84	1086716.44	770730.10	180.57	25.18	16.85
11650.00	45.90	354.30	11617.09	186.00	185.91	73.89	1086713.49	770752.61	200.05	21.67	16.46

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	Grid X FT	Grid Y FT	CLOSURE		Dogleg Severity Deg/100
									Distance FT	Direction Deg	
11683.00	50.50	355.30	11639.08	210.49	210.40	71.67	1086711.27	770777.10	222.27	18.81	14.12
11715.00	55.80	356.20	11658.27	236.01	235.93	69.78	1086709.38	770802.63	246.03	16.48	16.71
11748.00	60.90	356.80	11675.58	264.04	263.96	68.07	1086707.67	770830.66	272.59	14.46	15.53
11780.00	64.80	358.20	11690.18	292.48	292.40	66.83	1086706.43	770859.10	299.94	12.87	12.79
11813.00	67.50	357.40	11703.52	322.64	322.56	65.67	1086705.27	770889.26	329.17	11.51	8.48
11845.00	70.40	358.10	11715.01	352.47	352.40	64.50	1086704.10	770919.10	358.25	10.37	9.29
11878.00	73.30	358.80	11725.29	383.82	383.74	63.65	1086703.25	770950.44	388.98	9.42	9.02
11910.00	76.20	.00	11733.71	414.68	414.61	63.33	1086702.93	770981.31	419.41	8.68	9.76
11943.00	78.60	.30	11740.90	446.89	446.81	63.42	1086703.02	771013.51	451.29	8.08	7.33
11975.00	80.50	.90	11746.71	478.35	478.27	63.75	1086703.35	771044.97	482.50	7.59	6.22
12008.00	82.60	1.70	11751.56	510.98	510.91	64.49	1086704.09	771077.61	514.96	7.19	6.80
12040.00	84.40	1.40	11755.18	542.77	542.69	65.35	1086704.95	771109.39	546.61	6.87	5.70
12073.00	86.20	2.10	11757.88	575.64	575.56	66.35	1086705.95	771142.26	579.37	6.58	5.85
12105.00	87.60	1.70	11759.61	607.58	607.49	67.41	1086707.01	771174.19	611.22	6.33	4.55
12136.00	89.00	2.20	11760.53	638.54	638.46	68.46	1086708.06	771205.16	642.12	6.12	4.80
12201.00	89.00	3.10	11761.67	703.47	703.38	71.47	1086711.07	771270.08	707.00	5.80	1.38
12298.00	88.40	2.10	11763.87	800.35	800.26	75.87	1086715.47	771366.96	803.84	5.42	1.20
12398.00	88.40	2.00	11766.66	900.25	900.15	79.44	1086719.04	771466.85	903.65	5.04	.10
12493.00	88.70	1.30	11769.07	995.18	995.08	82.18	1086721.78	771561.78	998.47	4.72	.80
12589.00	90.00	.90	11770.15	1091.16	1091.06	84.02	1086723.62	771657.76	1094.29	4.40	1.42
12690.00	90.20	.80	11769.98	1192.15	1192.04	85.52	1086725.12	771758.74	1195.11	4.10	.22
12788.00	91.00	.80	11768.95	1290.13	1290.03	86.89	1086726.49	771856.73	1292.95	3.85	.82
12885.00	91.10	.80	11767.17	1387.11	1387.00	88.24	1086727.84	771953.70	1389.81	3.64	.10
12983.00	91.50	359.90	11764.95	1485.08	1484.97	88.84	1086728.44	772051.67	1487.63	3.42	1.00
13080.00	91.70	359.30	11762.24	1582.04	1581.93	88.16	1086727.76	772148.63	1584.39	3.19	.65
13177.00	92.10	359.40	11759.03	1678.98	1678.87	87.06	1086726.66	772245.57	1681.13	2.97	.43
13274.00	91.10	359.70	11756.32	1775.94	1775.83	86.30	1086725.90	772342.53	1777.93	2.78	1.08
13372.00	90.40	358.90	11755.04	1873.92	1873.81	85.11	1086724.71	772440.51	1875.75	2.60	1.08
13470.00	89.90	358.00	11754.78	1971.88	1971.78	82.45	1086722.05	772538.48	1973.50	2.39	1.05
13567.00	89.10	358.10	11755.63	2068.81	2068.72	79.15	1086718.75	772635.42	2070.23	2.19	.83
13665.00	89.00	358.70	11757.25	2166.76	2166.66	76.42	1086716.02	772733.36	2168.01	2.02	.62

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Vertical Section FT	N-S FT	E-W FT	Grid X FT	Grid Y FT	CLOSURE		Dogleg Severity Deg/100
Distance FT	Direction Deg										
13761.00	89.10	359.90	11758.84	2262.73	2262.64	75.25	1086714.85	772829.34	2263.89	1.90	1.25
13856.00	87.70	.00	11761.49	2357.69	2357.60	75.16	1086714.76	772924.30	2358.80	1.83	1.48
13952.00	86.40	359.90	11766.43	2453.56	2453.47	75.08	1086714.68	773020.17	2454.62	1.75	1.36
14049.00	87.30	358.80	11771.76	2550.41	2550.32	73.98	1086713.58	773117.02	2551.39	1.66	1.46
14146.00	88.30	359.60	11775.49	2647.32	2647.24	72.63	1086712.23	773213.94	2648.23	1.57	1.32
14242.00	89.30	358.90	11777.50	2743.29	2743.20	71.37	1086710.97	773309.90	2744.13	1.49	1.27
14339.00	89.60	359.10	11778.43	2840.27	2840.18	69.68	1086709.28	773406.88	2841.04	1.41	.37
14437.00	87.30	357.20	11781.08	2938.17	2938.09	66.52	1086706.12	773504.79	2938.84	1.30	3.04
14535.00	88.50	356.60	11784.67	3035.95	3035.88	61.22	1086700.82	773602.58	3036.49	1.16	1.37
14632.00	88.90	356.20	11786.87	3132.72	3132.66	55.13	1086694.73	773699.36	3133.14	1.01	.58
14730.00	88.80	357.40	11788.84	3230.54	3230.48	49.66	1086689.26	773797.18	3230.87	.88	1.23
14827.00	86.10	358.50	11793.16	3327.37	3327.32	46.19	1086685.79	773894.02	3327.64	.80	3.01
14925.00	86.40	358.30	11799.56	3425.12	3425.07	43.46	1086683.06	773991.77	3425.34	.73	.37
15021.00	86.30	357.90	11805.68	3520.87	3520.82	40.29	1086679.89	774087.52	3521.05	.66	.43
15118.00	88.60	358.60	11809.99	3617.71	3617.67	37.33	1086676.93	774184.37	3617.86	.59	2.48
15215.00	89.20	.10	11811.85	3714.69	3714.64	36.23	1086675.83	774281.34	3714.82	.56	1.67
15312.00	89.40	359.90	11813.04	3811.68	3811.64	36.23	1086675.83	774378.34	3811.81	.54	.29
15410.00	89.10	358.90	11814.32	3909.66	3909.62	35.20	1086674.80	774476.32	3909.78	.52	1.07
15507.00	89.40	358.70	11815.59	4006.63	4006.59	33.17	1086672.77	774573.29	4006.73	.47	.37
15604.00	89.30	359.30	11816.69	4103.61	4103.57	31.48	1086671.08	774670.27	4103.69	.44	.63
15701.00	88.40	358.10	11818.64	4200.56	4200.52	29.28	1086668.88	774767.22	4200.63	.40	1.55
15798.00	87.00	357.90	11822.53	4297.41	4297.38	25.90	1086665.50	774864.08	4297.46	.35	1.46
15896.00	88.80	359.50	11826.12	4395.31	4395.29	23.68	1086663.28	774961.99	4395.35	.31	2.46
15981.00	89.60	359.90	11827.31	4480.30	4480.28	23.23	1086662.83	775046.98	4480.34	.30	1.05
Projected											
16038.00	89.60	359.90	11827.71	4537.30	4537.27	23.13	1086662.73	775103.97	4537.33	.29	.00

**RAILROAD COMMISSION OF TEXAS  
OIL & GAS DIVISION**

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER <b>630716</b>	DATE PERMIT ISSUED OR AMENDED <b>Dec 19, 2006</b>	DISTRICT <b>* 08</b>
API NUMBER <b>42-495-33238</b>	FORM W-1 RECEIVED <b>Dec 19, 2006</b>	COUNTY <b>WINKLER</b>
TYPE OF OPERATION <b>NEW DRILL</b>	WELLBORE PROFILE(S) <b>Horizontal</b>	ACRES <b>640</b>
OPERATOR <b>CHESAPEAKE OPERATING, INC.</b> <b>2010 RANKIN HWY</b> <b>MIDLAND, TX 79701</b>		NOTICE This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored. District Office Telephone No: <b>(432) 684-5581</b>
LEASE NAME <b>UNIVERSITY 21-6 E</b>		WELL NUMBER <b>1H</b>
LOCATION <b>6.5 miles NW direction from WINK</b>		TOTAL DEPTH <b>20000</b>
Section, Block and/or Survey SECTION <b>6</b> BLOCK <b>21</b> ABSTRACT <b>66</b> SURVEY <b>UL</b>		
DISTANCE TO SURVEY LINES <b>2173 ft. NE    467 ft. SE</b>		DISTANCE TO NEAREST LEASE LINE <b>467 ft.</b>
DISTANCE TO LEASE LINES <b>2173 ft. E    467 ft. S</b>		DISTANCE TO NEAREST WELL ON LEASE <b>See FIELD(s) Below</b>
FIELD(s) and LIMITATIONS: <p align="center">*    SEE FIELD DISTRICT FOR REPORTING PURPOSES    *</p>		
FIELD NAME LEASE NAME	ACRES NEAREST LEASE	DEPTH NEAREST LEASE
WINK, S. (BONE SPRINGS) UNIVERSITY 21-6 E	640.00 467	9,630 0
WELLBORE PROFILE(s) FOR FIELD: <b>Horizontal</b>		
RESTRICTIONS:    Lateral: TH1 Penetration Point Location Lease Lines:        558.0 F S L 2146.0 F E L Terminus Location BH County: WINKLER Section: 6                      Block: 21                      Abstract: Survey: UL Lease Lines:        467.0 F N L 895.0 F E L Survey Lines:        467.0 F NW L 895.0 F NE L		
HALEY (BONE SPRINGS) UNIVERSITY 21-6 E	640.00 467	9,864 0
WELLBORE PROFILE(s) FOR FIELD: <b>Horizontal</b>		
RESTRICTIONS:    Lateral: TH1 Penetration Point Location Lease Lines:        558.0 F S L		

# SECTION 6, BLOCK 21, UNIVERSITY LAND SURVEY WINKLER COUNTY

BH  
MD=16038  
N=4537.27 E=23.13  
X=108664.73  
Y=775103.97  
4537.33 @ N 0.29° E

P.S.L. SURVEY  
BLOCK 27

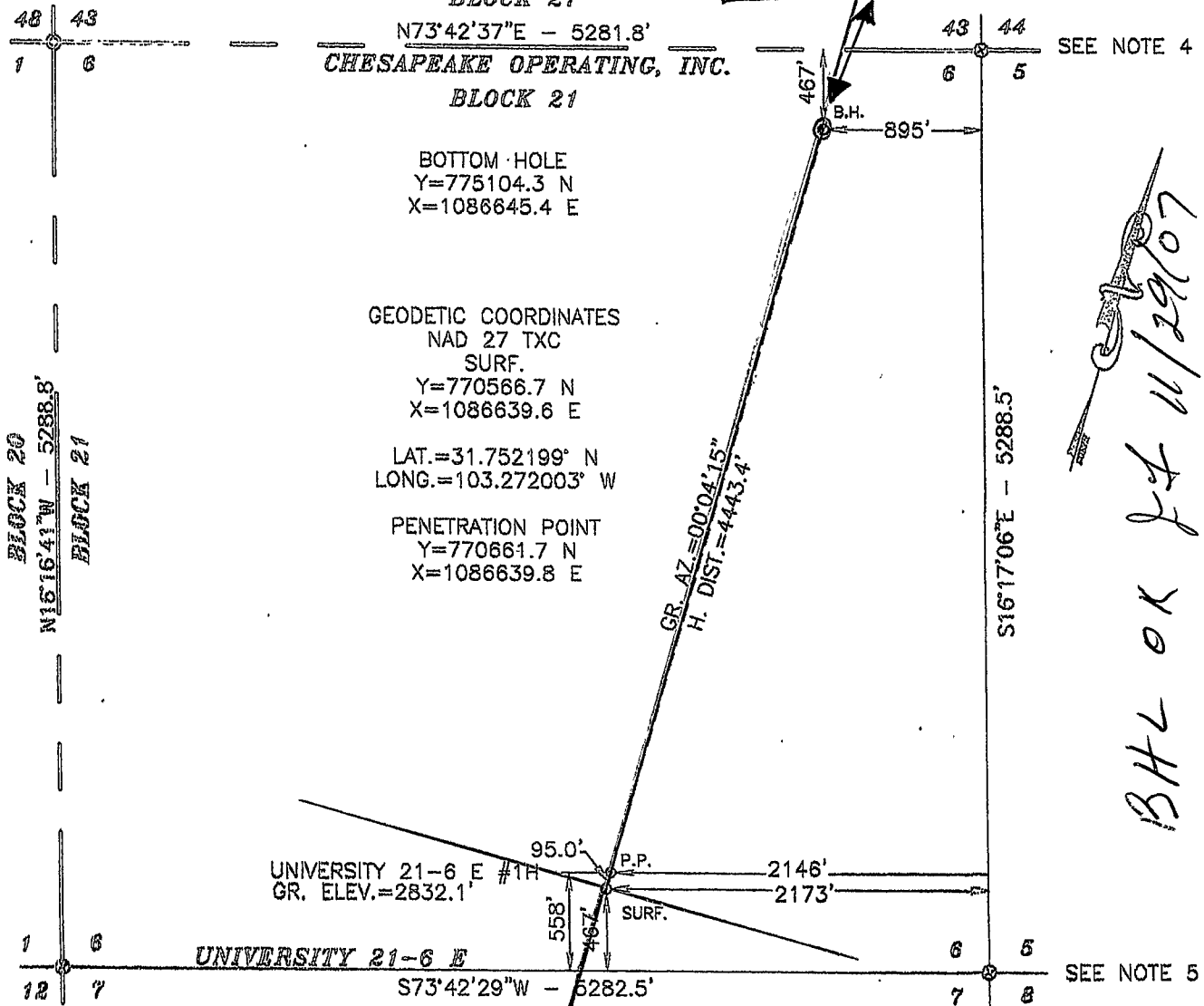
N73°42'37"E - 5281.8'  
CHESAPEAKE OPERATING, INC.  
BLOCK 21

BOTTOM HOLE  
Y=775104.3 N  
X=1086645.4 E

GEODETIC COORDINATES  
NAD 27 TXC  
SURF.  
Y=770566.7 N  
X=1086639.6 E

LAT.=31.752199° N  
LONG.=103.272003° W

PENETRATION POINT  
Y=770661.7 N  
X=1086639.8 E



## LEGEND

- DENOTES PROPOSED WELL LOCATION
- ⊙ DENOTES FOUND MONUMENT AS NOTED
- ⊗ DENOTES CALCULATED CORNER

## NOTES:

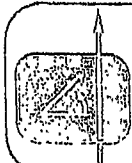
- THIS LOCATION IS APPROXIMATELY 6.5 MILES WEST-NORTHWEST OF WINK, TEXAS.
- SEE DOCUMENTS FILED FOR RECORD IN THIS OFFICE, WHICH DESCRIBES THE RECONSTRUCTION OF THIS SECTION.
- BEARINGS SHOWN HEREON ARE LAMBERT GRID AND CONFORM TO THE "TEXAS COORDINATE SYSTEM" TEXAS CENTRAL ZONE, NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.
- CALC. CORNER FROM WHICH A UNIV. CONC. MON. FOR THE NE<sub>4</sub> SEC. 5 BEARS N73°42'37"E 5281.8'.
- CALC. CORNER FROM WHICH A UNIV. CONC. MON. FOR THE SEC. 8 BEARS N73°42'29"E 5282.5' & S16°17'31"E 5288.3'.

1000 0 1000 2000 FEET  
Scale: 1"=1000'

## CHESAPEAKE OPERATING, INC.

UNIVERSITY 21-6 E #1H  
LOCATED 467 FEET FROM THE SOUTH LINE  
AND 2173 FEET FROM EAST LINE OF  
SECTION 6, BLOCK 21,  
UNIVERSITY LAND SURVEY,  
WINKLER COUNTY, TEXAS

GARY G. EIDSON TX R.P.L.S. No. 4735



PROVIDING SURVEYING SERVICES  
SINCE 1948  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO  
MCKINNEY, N.M. 86240  
(505) 383-3117

Survey Date: 12/04/06	Sheet 1 of 1 Sheets
W.O. Number: 06.11.1943	Drawn By: J.R.
Date: 12/08/06	DISK:CD#6
06111943	Scale: 1"=1000'

BH L OK 11/29/07