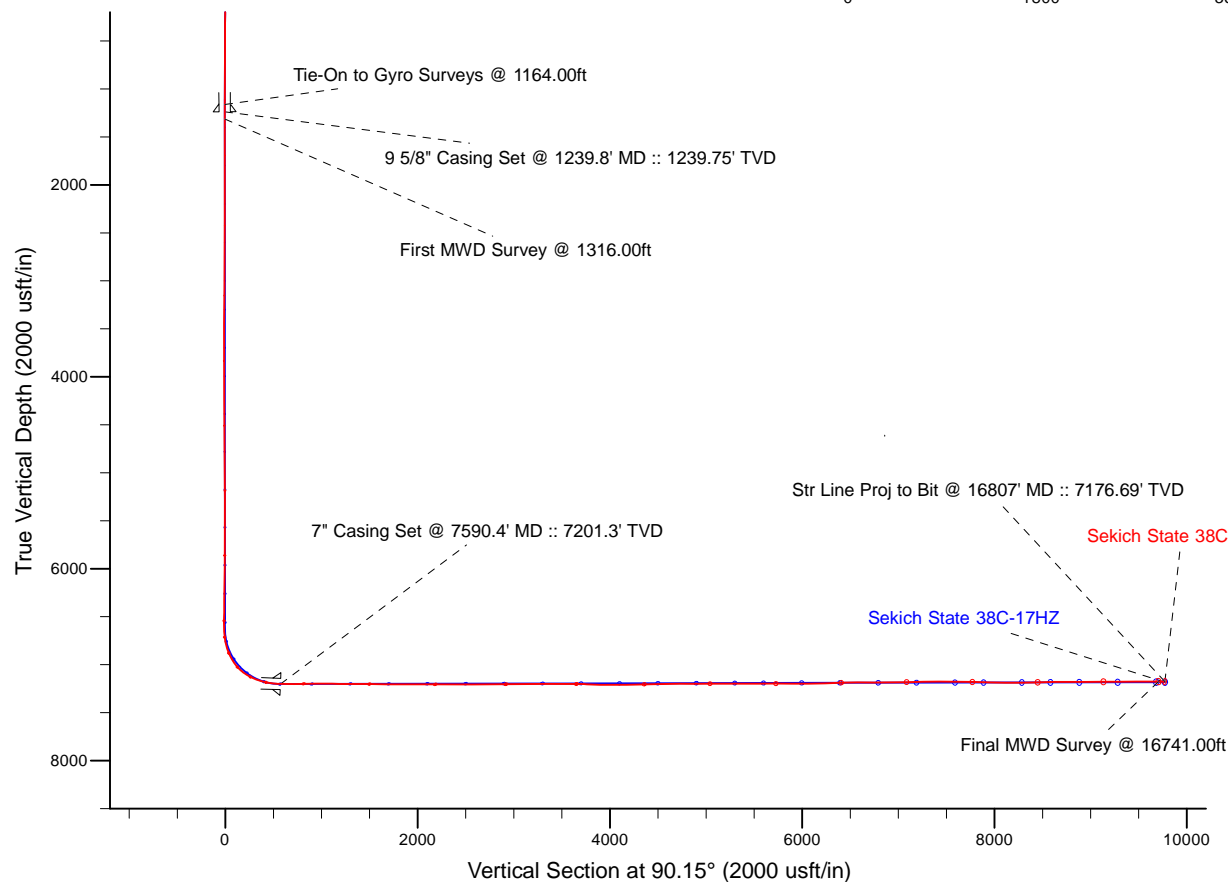
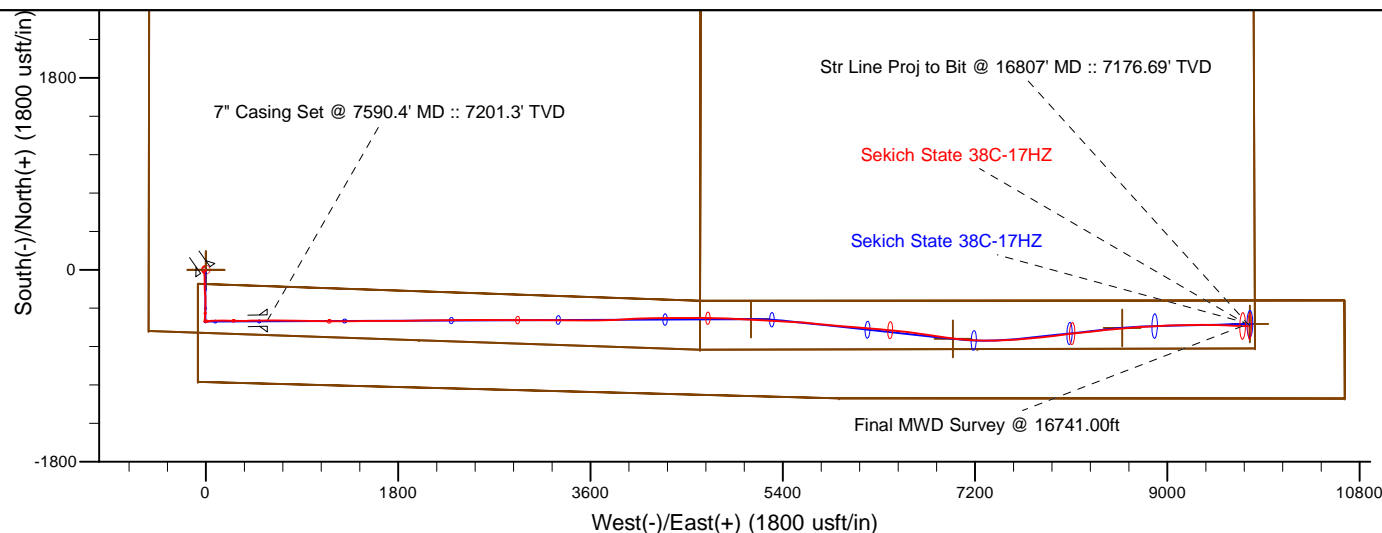


Project: Weld County, CO (NAD 83)
 Site: Sec. 18-T3N-R67W
 Well: Sekich State 38C-17HZ
 Wellbore: Plan A
 Design: Actual Field Surveys



LEGEND

- ✕ Sekich State 38C-17HZ, Plan A, Rev A1 V0
- ✕ Actual Field Surveys

7" Casing: ~136.08' FSL, ~1109.06' FWL
 Lat/Long: 40.219374 N, -104.937787 E
 State Planes - CO Northern: 1,323,257.71' N, 3,156,998.33' E
 Location: Sec. 18-T3N-R67W

BHL: ~210.25' FSL, ~50.61' FEL
 Lat/Long: 40.219229 N, -104.904853 E
 State Planes - CO Northern: 1,323,264.99' N, 3,166,195.43' E
 Location: Sec. 17-T3N-R67W

WELL DETAILS: Sekich State 38C-17HZ

Ground Level: 4876.00

RKB = 16' @ 4892.00usft (Xtreme 22)

Design: Actual Field Surveys (Sekich State 38C-17HZ/Plan A)

Created By: Clint Eshelman

Date: 6/4/2014

Reviewed: _____

Date: _____

SPERRY-SUN DRILLING SERVICES


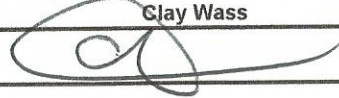
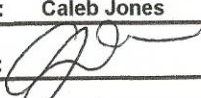
CERTIFIED SURVEY WORK SHEET

| | |
|----------------------|--------------------------|
| OPERATOR: | Anadarko Petroleum Corp. |
| WELL: | Sekich State 38C-17HZ |
| FIELD: | Sekich State |
| RIG: | Xtreme 22 |
| LEGALS: | Sec. 18-T3N-R67W |
| COUNTY: | Weld |
| STATE: | CO |
| CAL. METHOD: | Min Curvature |
| MAG. DECL. APPLIED: | 8.61 |
| VERTICAL SEC. DIR. : | 90.150 |

| | |
|---------------------------|-----------------|
| SSDS Job Number : | 901272707 |
| Start Date of Job : | 5/3/2014 |
| End Date of Job : | 5/31/2014 |
| Lead Directional Driller: | Chris Hopwood |
| | Bogdan Cristian |
| Other SSDS DD's : | |
| SSDS MWD Engineers : | Clay Wass |
| | Caleb Jones |

| | Main Hole =====> | | 1st Side Track =====> | | 2nd Side Track =====> | | 3rd Side Track =====> | | 4th Side Track =====> | |
|-------------------------|------------------|--------|-----------------------|---------|-----------------------|---------|-----------------------|---------|-----------------------|---------|
| First Survey Depth | 1164.00 | Tie On | | Tie On | | Tie On | | Tie On | | Tie On |
| Last Survey Depth | 1316.00 | | | | | | | | | |
| | 16741.00 | | | | | | | | | |
| KOP Depth/Sidetrack MD | 6659.00 | KOP | | KOP-ST1 | | KOP-ST2 | | KOP-ST3 | | KOP-ST4 |
| First Survey Depth | 1316.00 | MWD | | MWD | | MWD | | MWD | | MWD |
| Last Survey Depth | 16741.00 | MWD | | MWD | | MWD | | MWD | | MWD |
| Bit Extrapolation to TD | 16807.00 | T.D. | | T.D. | | T.D. | | T.D. | | T.D. |

The following Sperry Sun Drilling Services personnel listed below, do certify the above survey information to be accurate :

| | | |
|---|---|---|
| Print Name : Chris Hopwood | Print Name : Clay Wass | Print Name : Caleb Jones |
| Sign Name :  | Sign Name :  | Sign Name :  |
| Print Name : Bogdan Cristian | Print Name : | Print Name : |
| Sign Name : BOGDAN CRISTIAN | Sign Name : | Sign Name : |

TieOn Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole)
 MWD Sperry Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's
 ESS Sperry Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's
 Gyro Gyro Survey's ; Provided by third party vendor, or by Sperry Sun Drilling Services (SSDS)
 SS Single Shot (SS) Survey's ; Provided by Sperry Sun Drilling Services (SSDS) or third party vendor.

Examples of Survey Types:

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 18-T3N-R67W

Sekich State 38C-17HZ

Plan A

Design: Actual Field Surveys

Sperry Drilling Services

Standard Report

04 June, 2014

Well Coordinates: 1,323,729.53 N, 3,156,421.98 E (40° 13' 14.44" N, 104° 56' 23.42" W)

Ground Level: 4,876.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Sekich State 38C-17HZ

RKB = 16' @ 4892.00usft (Xtreme 22)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16.00 | 0.00 | 0.00 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 116.00 | 0.55 | 326.98 | 116.00 | 0.40 | -0.26 | -0.26 | 0.55 |
| 216.00 | 0.75 | 249.64 | 215.99 | 0.58 | -1.14 | -1.14 | 0.83 |
| 316.00 | 0.87 | 252.24 | 315.98 | 0.12 | -2.47 | -2.47 | 0.13 |
| 416.00 | 0.74 | 218.18 | 415.97 | -0.62 | -3.60 | -3.59 | 0.49 |
| 516.00 | 0.57 | 156.62 | 515.97 | -1.59 | -3.80 | -3.79 | 0.69 |
| 616.00 | 0.72 | 219.46 | 615.96 | -2.53 | -4.00 | -3.99 | 0.68 |
| 716.00 | 0.57 | 303.24 | 715.96 | -2.74 | -4.81 | -4.81 | 0.87 |
| 816.00 | 0.37 | 81.88 | 815.96 | -2.42 | -4.91 | -4.90 | 0.88 |
| 916.00 | 0.73 | 261.42 | 915.96 | -2.47 | -5.22 | -5.21 | 1.10 |
| 1,016.00 | 0.45 | 327.89 | 1,015.95 | -2.23 | -6.06 | -6.05 | 0.69 |
| 1,116.00 | 0.38 | 131.86 | 1,115.95 | -2.12 | -6.02 | -6.02 | 0.82 |
| 1,164.00 | 0.58 | 107.29 | 1,163.95 | -2.30 | -5.67 | -5.67 | 0.59 |
| Tie-On to Gyro Surveys @ 1164.00ft | | | | | | | |
| 1,239.80 | 0.39 | 145.42 | 1,239.75 | -2.63 | -5.16 | -5.15 | 0.48 |
| 9 5/8" Casing Set @ 1239.8' MD :: 1239.75' TVD | | | | | | | |
| 1,316.00 | 0.48 | 194.00 | 1,315.94 | -3.15 | -5.09 | -5.08 | 0.48 |
| First MWD Survey @ 1316.00ft | | | | | | | |
| 1,506.00 | 0.48 | 176.33 | 1,505.94 | -4.71 | -5.23 | -5.22 | 0.08 |
| 1,694.00 | 0.87 | 167.87 | 1,693.92 | -6.89 | -4.88 | -4.86 | 0.21 |
| 1,877.00 | 0.08 | 191.12 | 1,876.92 | -8.38 | -4.61 | -4.59 | 0.44 |
| 2,060.00 | 0.14 | 292.29 | 2,059.92 | -8.42 | -4.85 | -4.82 | 0.10 |
| 2,242.00 | 0.17 | 285.25 | 2,241.92 | -8.26 | -5.31 | -5.29 | 0.02 |
| 2,425.00 | 0.26 | 296.10 | 2,424.91 | -8.01 | -5.95 | -5.93 | 0.05 |
| 2,608.00 | 0.25 | 298.07 | 2,607.91 | -7.64 | -6.67 | -6.65 | 0.01 |
| 2,790.00 | 0.37 | 284.96 | 2,789.91 | -7.30 | -7.59 | -7.57 | 0.08 |
| 2,972.00 | 0.63 | 280.67 | 2,971.90 | -6.96 | -9.14 | -9.12 | 0.14 |
| 3,154.00 | 0.29 | 219.44 | 3,153.90 | -7.13 | -10.42 | -10.40 | 0.30 |
| 3,326.00 | 2.56 | 196.03 | 3,325.83 | -11.16 | -11.75 | -11.73 | 1.34 |
| 3,497.00 | 4.88 | 186.07 | 3,496.46 | -22.07 | -13.58 | -13.52 | 1.40 |
| 3,668.00 | 8.19 | 178.51 | 3,666.33 | -41.48 | -14.03 | -13.92 | 2.00 |
| 3,839.00 | 11.02 | 178.26 | 3,834.92 | -70.00 | -13.22 | -13.03 | 1.66 |
| 4,011.00 | 10.09 | 179.76 | 4,004.01 | -101.50 | -12.66 | -12.39 | 0.56 |
| 4,182.00 | 10.14 | 177.82 | 4,172.35 | -131.52 | -12.02 | -11.68 | 0.20 |
| 4,353.00 | 10.08 | 177.57 | 4,340.69 | -161.51 | -10.81 | -10.39 | 0.04 |
| 4,525.00 | 9.28 | 178.72 | 4,510.24 | -190.41 | -9.87 | -9.37 | 0.48 |
| 4,696.00 | 10.33 | 175.20 | 4,678.74 | -219.48 | -8.27 | -7.70 | 0.71 |
| 4,867.00 | 9.57 | 174.99 | 4,847.17 | -248.92 | -5.75 | -5.10 | 0.44 |
| 5,038.00 | 8.93 | 180.96 | 5,015.95 | -276.35 | -4.73 | -4.01 | 0.67 |
| 5,210.00 | 7.73 | 180.50 | 5,186.13 | -301.26 | -5.06 | -4.27 | 0.70 |
| 5,381.00 | 9.11 | 181.50 | 5,355.29 | -326.30 | -5.51 | -4.66 | 0.81 |
| 5,552.00 | 10.31 | 181.24 | 5,523.83 | -355.13 | -6.20 | -5.27 | 0.70 |
| 5,724.00 | 8.27 | 178.75 | 5,693.57 | -382.89 | -6.26 | -5.26 | 1.21 |
| 5,895.00 | 8.58 | 183.84 | 5,862.73 | -407.91 | -6.85 | -5.78 | 0.47 |
| 6,067.00 | 9.49 | 183.38 | 6,032.59 | -434.87 | -8.54 | -7.40 | 0.53 |
| 6,238.00 | 7.39 | 184.59 | 6,201.73 | -459.90 | -10.25 | -9.05 | 1.23 |
| 6,410.00 | 4.18 | 186.58 | 6,372.83 | -477.16 | -11.86 | -10.61 | 1.87 |
| 6,581.00 | 1.27 | 236.08 | 6,543.63 | -484.41 | -14.14 | -12.87 | 2.04 |
| 6,624.00 | 1.15 | 261.48 | 6,586.63 | -484.74 | -14.97 | -13.70 | 1.27 |

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 6,667.00 | 1.76 | 69.62 | 6,629.62 | -484.58 | -14.77 | -13.50 | 6.73 |
| 6,710.00 | 4.81 | 74.40 | 6,672.54 | -483.86 | -12.42 | -11.15 | 7.12 |
| 6,753.00 | 7.96 | 82.94 | 6,715.27 | -483.01 | -7.72 | -6.46 | 7.63 |
| 6,795.00 | 10.86 | 87.50 | 6,756.70 | -482.48 | -0.88 | 0.38 | 7.12 |
| 6,838.00 | 14.20 | 86.76 | 6,798.67 | -482.01 | 8.43 | 9.69 | 7.78 |
| 6,881.00 | 18.45 | 82.12 | 6,839.93 | -480.77 | 20.44 | 21.70 | 10.33 |
| 6,924.00 | 22.80 | 84.05 | 6,880.17 | -478.98 | 35.48 | 36.73 | 10.24 |
| 6,966.00 | 27.76 | 86.52 | 6,918.13 | -477.54 | 53.35 | 54.60 | 12.07 |
| 7,009.00 | 30.66 | 88.29 | 6,955.66 | -476.60 | 74.31 | 75.55 | 7.04 |
| 7,052.00 | 36.51 | 88.63 | 6,991.47 | -475.97 | 98.07 | 99.32 | 13.61 |
| 7,095.00 | 41.75 | 89.64 | 7,024.81 | -475.57 | 125.20 | 126.44 | 12.28 |
| 7,138.00 | 47.26 | 89.96 | 7,055.47 | -475.47 | 155.33 | 156.57 | 12.82 |
| 7,181.00 | 52.86 | 91.12 | 7,083.06 | -475.80 | 188.28 | 189.52 | 13.19 |
| 7,223.00 | 58.28 | 91.44 | 7,106.80 | -476.57 | 222.90 | 224.15 | 12.92 |
| 7,266.00 | 62.38 | 91.85 | 7,128.08 | -477.65 | 260.24 | 261.49 | 9.57 |
| 7,309.00 | 67.32 | 90.20 | 7,146.35 | -478.33 | 299.14 | 300.39 | 12.00 |
| 7,352.00 | 71.39 | 89.24 | 7,161.51 | -478.13 | 339.37 | 340.62 | 9.69 |
| 7,394.00 | 74.72 | 88.90 | 7,173.75 | -477.48 | 379.54 | 380.79 | 7.97 |
| 7,437.00 | 77.42 | 89.70 | 7,184.10 | -476.97 | 421.26 | 422.51 | 6.53 |
| 7,480.00 | 81.03 | 89.62 | 7,192.14 | -476.72 | 463.50 | 464.75 | 8.40 |
| 7,522.00 | 84.35 | 89.25 | 7,197.48 | -476.31 | 505.15 | 506.39 | 7.95 |
| 7,590.40 | 87.96 | 89.35 | 7,202.06 | -475.48 | 573.38 | 574.62 | 5.29 |
| 7" Casing Set @ 7590.4' MD :: 7201.3' TVD | | | | | | | |
| 7,659.00 | 91.59 | 89.45 | 7,202.33 | -474.76 | 641.96 | 643.20 | 5.29 |
| 7,830.00 | 89.94 | 90.96 | 7,200.05 | -475.37 | 812.94 | 814.18 | 1.31 |
| 8,001.00 | 91.06 | 91.74 | 7,198.56 | -479.40 | 983.88 | 985.13 | 0.80 |
| 8,172.00 | 87.37 | 90.06 | 7,200.90 | -482.08 | 1,154.81 | 1,156.06 | 2.37 |
| 8,343.00 | 91.19 | 88.50 | 7,203.05 | -479.94 | 1,325.74 | 1,326.99 | 2.41 |
| 8,515.00 | 89.06 | 90.23 | 7,202.67 | -478.03 | 1,497.71 | 1,498.96 | 1.60 |
| 8,686.00 | 89.74 | 89.72 | 7,204.46 | -477.95 | 1,668.70 | 1,669.95 | 0.50 |
| 8,858.00 | 90.23 | 89.69 | 7,204.51 | -477.07 | 1,840.70 | 1,841.94 | 0.29 |
| 9,029.00 | 89.62 | 88.47 | 7,204.73 | -474.32 | 2,011.67 | 2,012.91 | 0.80 |
| 9,200.00 | 89.65 | 88.66 | 7,205.82 | -470.04 | 2,182.62 | 2,183.84 | 0.11 |
| 9,384.00 | 90.60 | 90.88 | 7,205.42 | -469.30 | 2,366.60 | 2,367.82 | 1.31 |
| 9,567.00 | 89.12 | 89.81 | 7,205.87 | -470.40 | 2,549.59 | 2,550.81 | 1.00 |
| 9,751.00 | 90.69 | 89.97 | 7,206.17 | -470.05 | 2,733.58 | 2,734.80 | 0.86 |
| 9,935.00 | 90.42 | 90.68 | 7,204.39 | -471.10 | 2,917.57 | 2,918.79 | 0.41 |
| 10,119.00 | 90.32 | 89.30 | 7,203.20 | -471.06 | 3,101.56 | 3,102.79 | 0.75 |
| 10,302.00 | 90.14 | 90.31 | 7,202.47 | -470.44 | 3,284.56 | 3,285.78 | 0.56 |
| 10,486.00 | 90.20 | 91.24 | 7,201.92 | -472.93 | 3,468.54 | 3,469.76 | 0.51 |
| 10,668.00 | 89.83 | 89.68 | 7,201.87 | -474.39 | 3,650.53 | 3,651.76 | 0.88 |
| 10,849.00 | 86.16 | 86.41 | 7,208.21 | -468.23 | 3,831.25 | 3,832.47 | 2.71 |
| 11,033.00 | 91.31 | 86.99 | 7,212.27 | -457.64 | 4,014.84 | 4,016.03 | 2.82 |
| 11,204.00 | 91.53 | 89.47 | 7,208.03 | -452.36 | 4,185.69 | 4,186.86 | 1.46 |
| 11,375.00 | 90.48 | 89.85 | 7,205.03 | -451.35 | 4,356.66 | 4,357.83 | 0.65 |
| 11,546.00 | 90.33 | 90.44 | 7,203.82 | -451.78 | 4,527.66 | 4,528.82 | 0.36 |
| 11,717.00 | 90.51 | 90.70 | 7,202.57 | -453.48 | 4,698.64 | 4,699.81 | 0.18 |
| 11,888.00 | 90.79 | 91.30 | 7,200.63 | -456.47 | 4,869.61 | 4,870.78 | 0.39 |
| 12,059.00 | 90.26 | 92.77 | 7,199.06 | -462.54 | 5,040.49 | 5,041.68 | 0.91 |
| 12,231.00 | 89.55 | 94.31 | 7,199.35 | -473.16 | 5,212.15 | 5,213.37 | 0.99 |
| 12,402.00 | 90.02 | 92.32 | 7,199.99 | -483.04 | 5,382.85 | 5,384.10 | 1.20 |

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 12,573.00 | 91.25 | 93.53 | 7,198.09 | -491.77 | 5,553.61 | 5,554.88 | 1.01 |
| 12,745.00 | 89.09 | 96.28 | 7,197.58 | -506.47 | 5,724.96 | 5,726.26 | 2.03 |
| 12,915.00 | 89.37 | 95.11 | 7,199.87 | -523.34 | 5,894.10 | 5,895.45 | 0.71 |
| 13,086.00 | 91.13 | 94.52 | 7,199.12 | -537.69 | 6,064.49 | 6,065.87 | 1.09 |
| 13,257.00 | 91.46 | 94.43 | 7,195.26 | -551.03 | 6,234.92 | 6,236.34 | 0.20 |
| 13,428.00 | 92.82 | 95.28 | 7,188.87 | -565.49 | 6,405.18 | 6,406.64 | 0.94 |
| 13,599.00 | 89.99 | 97.36 | 7,184.68 | -584.31 | 6,575.07 | 6,576.57 | 2.05 |
| 13,770.00 | 89.12 | 98.33 | 7,186.01 | -607.65 | 6,744.46 | 6,746.03 | 0.76 |
| 13,942.00 | 91.50 | 97.98 | 7,185.07 | -632.05 | 6,914.70 | 6,916.33 | 1.40 |
| 14,113.00 | 90.51 | 95.68 | 7,182.07 | -652.38 | 7,084.45 | 7,086.13 | 1.46 |
| 14,284.00 | 91.40 | 91.31 | 7,179.22 | -662.80 | 7,255.07 | 7,256.78 | 2.61 |
| 14,455.00 | 89.62 | 87.66 | 7,177.70 | -661.26 | 7,426.02 | 7,427.72 | 2.37 |
| 14,627.00 | 89.65 | 86.16 | 7,178.80 | -651.99 | 7,597.76 | 7,599.44 | 0.87 |
| 14,798.00 | 88.73 | 85.05 | 7,181.21 | -638.89 | 7,768.23 | 7,769.88 | 0.84 |
| 14,970.00 | 88.38 | 81.98 | 7,185.55 | -619.47 | 7,939.06 | 7,940.65 | 1.80 |
| 15,141.00 | 89.74 | 83.12 | 7,188.36 | -597.30 | 8,108.58 | 8,110.12 | 1.04 |
| 15,312.00 | 90.39 | 85.02 | 7,188.16 | -579.64 | 8,278.66 | 8,280.15 | 1.17 |
| 15,483.00 | 91.65 | 82.74 | 7,185.12 | -561.41 | 8,448.64 | 8,450.09 | 1.52 |
| 15,654.00 | 90.51 | 85.97 | 7,181.90 | -544.60 | 8,618.76 | 8,620.16 | 2.00 |
| 15,825.00 | 89.74 | 86.00 | 7,181.52 | -532.63 | 8,789.34 | 8,790.70 | 0.45 |
| 15,997.00 | 90.70 | 88.58 | 7,180.86 | -524.49 | 8,961.13 | 8,962.47 | 1.60 |
| 16,168.00 | 90.42 | 88.11 | 7,179.19 | -519.56 | 9,132.05 | 9,133.38 | 0.32 |
| 16,339.00 | 90.30 | 88.71 | 7,178.12 | -514.81 | 9,302.98 | 9,304.29 | 0.36 |
| 16,510.00 | 90.08 | 93.28 | 7,177.55 | -517.78 | 9,473.91 | 9,475.23 | 2.68 |
| 16,682.00 | 90.30 | 91.35 | 7,176.98 | -524.73 | 9,645.76 | 9,647.10 | 1.13 |
| 16,741.00 | 90.08 | 90.52 | 7,176.78 | -525.69 | 9,704.75 | 9,706.09 | 1.46 |
| Final MWD Survey @ 16741.00ft | | | | | | | |
| 16,807.00 | 90.08 | 90.52 | 7,176.69 | -526.29 | 9,770.75 | 9,772.09 | 0.00 |
| Str Line Proj to Bit @ 16807' MD :: 7176.69' TVD | | | | | | | |

Design Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
|-----------------------|-----------------------|-------------------|--------------|--|
| | | +N/-S (usft) | +E/-W (usft) | |
| 1,164.00 | 1,163.95 | -2.30 | -5.67 | Tie-On to Gyro Surveys @ 1164.00ft |
| 1,316.00 | 1,315.94 | -3.15 | -5.09 | First MWD Survey @ 1316.00ft |
| 16,741.00 | 7,176.78 | -525.69 | 9,704.75 | Final MWD Survey @ 16741.00ft |
| 16,807.00 | 7,176.69 | -526.29 | 9,770.75 | Str Line Proj to Bit @ 16807' MD :: 7176.69' TVD |

Vertical Section Information

| Angle Type | Target | Azimuth (°) | Origin Type | +N/_S (usft) | +E/-W (usft) | Start TVD (usft) |
|------------|----------------------|-------------|-------------|--------------|--------------|------------------|
| User | No Target (Freehand) | 90.15 | Slot | 0.00 | 0.00 | 0.00 |

Survey tool program

| From (usft) | To (usft) | Survey/Plan | Survey Tool |
|-------------|-----------|----------------------------|-----------------|
| 16.00 | 1,164.00 | MS Energy Surveys | NS-GYRO-MS |
| 1,316.00 | 7,659.00 | MWD Vertical/Build Surveys | MWD+IFR1+MS+sag |
| 7,830.00 | 16,741.00 | MWD Lateral Surveys | MWD+IFR1+MS+sag |

Design Report for Sekich State 38C-17HZ - Actual Field Surveys**Casing Details**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") |
|-----------------------|-----------------------|--|---------------------|-------------------|
| 1,239.80 | 1,239.75 | 9 5/8" Casing Set @ 1239.8' MD :: 1239.75' TVD | 9-5/8 | 13-1/2 |
| 7,590.40 | 7,202.06 | 7" Casing Set @ 7590.4' MD :: 7201.3' TVD | 7 | 8-3/4 |

Wellbore Targets

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|--|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|-------------------|
| Sekich State 38C-17H. - actual wellpath hits target center - Point | 0.00 | 0.36 | 0.00 | 0.00 | 0.00 | 1,323,729.53 | 3,156,421.98 | 40° 13' 14.444 N | 104° 56' 23.424 W |
| Sekich State 38C-17H. - actual wellpath hits target center - Polygon | 0.00 | 0.36 | 0.00 | 0.00 | 0.00 | 1,323,729.53 | 3,156,421.98 | 40° 13' 14.444 N | 104° 56' 23.424 W |
| Point 1 | | | | 0.00 | 4,747.80 | -558.91 | 1,328,477.13 | 3,155,863.09 | |
| Point 2 | | | | 0.00 | 4,618.07 | 1,964.78 | 1,328,347.40 | 3,158,386.68 | |
| Point 3 | | | | 0.00 | 4,580.39 | 4,604.06 | 1,328,309.73 | 3,161,025.84 | |
| Point 4 | | | | 0.00 | 1,946.11 | 4,616.86 | 1,325,675.56 | 3,161,038.64 | |
| Point 5 | | | | 0.00 | -718.82 | 4,628.74 | 1,323,010.74 | 3,161,050.52 | |
| Point 6 | | | | 0.00 | 1,946.11 | 4,616.86 | 1,325,675.56 | 3,161,038.64 | |
| Point 7 | | | | 0.00 | 4,580.39 | 4,604.06 | 1,328,309.73 | 3,161,025.84 | |
| Point 8 | | | | 0.00 | 4,580.39 | 4,604.06 | 1,328,309.73 | 3,161,025.84 | |
| Point 9 | | | | 0.00 | 4,574.25 | 7,187.73 | 1,328,303.59 | 3,163,609.40 | |
| Point 10 | | | | 0.00 | 4,579.10 | 9,772.30 | 1,328,308.44 | 3,166,193.86 | |
| Point 11 | | | | 0.00 | -674.40 | 9,824.91 | 1,323,055.16 | 3,166,246.47 | |
| Point 12 | | | | 0.00 | -696.57 | 7,226.92 | 1,323,032.99 | 3,163,648.59 | |
| Point 13 | | | | 0.00 | -718.82 | 4,628.74 | 1,323,010.74 | 3,161,050.52 | |
| Point 14 | | | | 0.00 | -647.04 | 1,999.23 | 1,323,082.52 | 3,158,421.12 | |
| Point 15 | | | | 0.00 | -577.57 | -532.21 | 1,323,151.99 | 3,155,889.79 | |
| Sekich State 38C-17H. - actual wellpath hits target center - Polygon | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,323,729.53 | 3,156,421.98 | 40° 13' 14.444 N | 104° 56' 23.424 W |
| Point 1 | | | | 0.00 | -129.63 | -75.26 | 1,323,599.44 | 3,156,347.54 | |
| Point 2 | | | | 0.00 | -288.02 | 4,624.96 | 1,323,470.75 | 3,161,048.47 | |
| Point 3 | | | | 0.00 | -286.26 | 10,657.04 | 1,323,510.61 | 3,167,080.16 | |
| Point 4 | | | | 0.00 | -1,206.41 | 10,661.35 | 1,322,590.54 | 3,167,090.28 | |
| Point 5 | | | | 0.00 | -1,205.13 | 5,924.60 | 1,322,561.90 | 3,162,353.82 | |
| Point 6 | | | | 0.00 | -1,049.99 | -76.11 | 1,322,679.13 | 3,156,352.51 | |
| Sekich State 38C-17H. - actual wellpath misses target center by 20.71usft at 16807.00usft MD (7176.69 TVD, -526.29 N, 9770.75 E) - Point | 0.00 | 0.00 | 7,183.00 | -506.60 | 9,771.96 | 1,323,284.69 | 3,166,196.52 | 40° 13' 9.419 N | 104° 54' 17.454 W |
| Sekich State 38C-17H. - actual wellpath misses target center by 4.95usft at 15612.24usft MD (7182.37 TVD, -547.82 N, 8577.12 E) - Point | 0.00 | 0.00 | 7,185.50 | -544.00 | 8,576.80 | 1,323,239.74 | 3,165,001.68 | 40° 13' 9.054 N | 104° 54' 32.861 W |
| Sekich State 38C-17H. - actual wellpath misses target center by 7.44usft at 14021.96usft MD (7183.30 TVD, -642.40 N, 6993.97 E) - Point | 0.00 | 0.00 | 7,188.82 | -647.38 | 6,993.47 | 1,323,126.37 | 3,163,419.10 | 40° 13' 8.037 N | 104° 54' 53.272 W |
| Sekich State 38C-17H. - actual wellpath misses target center by 7.40usft at 12122.10usft MD (7198.92 TVD, -465.90 N, 5103.49 E) - Point | 0.00 | 0.00 | 7,192.80 | -461.74 | 5,103.76 | 1,323,300.06 | 3,161,528.33 | 40° 13' 9.876 N | 104° 55' 17.631 W |

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

Directional Difficulty Index

| | | | |
|------------------------------------|----------------|-------------------------------|----------------------------------|
| Average Dogleg over Survey: | 1.45 °/100usft | Maximum Dogleg over Survey: | 13.61 °/100usft at 7,052.00 usft |
| Net Tortosity applicable to Plans: | 0.50 °/100usft | Directional Difficulty Index: | 6.769 |

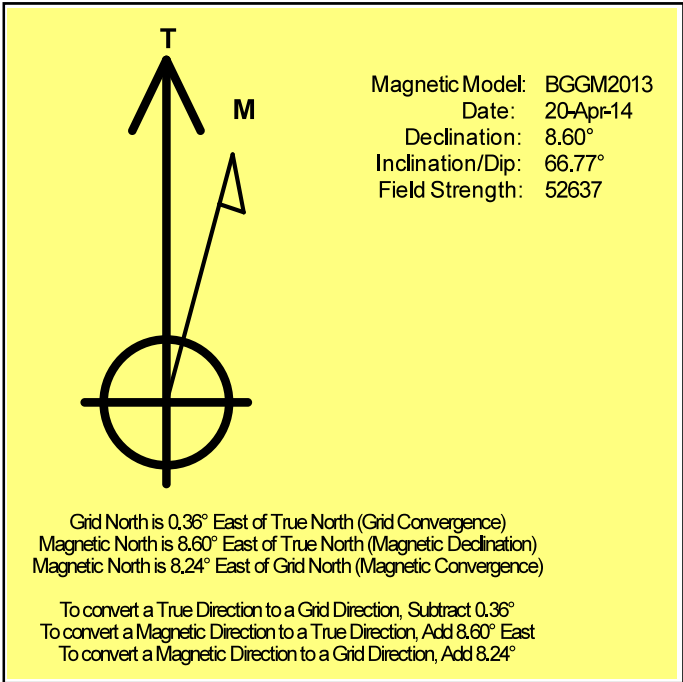
Audit Info

North Reference Sheet for Sec. 18-T3N-R67W - Sekich State 38C-17HZ - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
Vertical Depths are relative to RKB = 16' @ 4892.00usft (Xtreme 22). Northing and Easting are relative to Sekich State 38C-17HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980
Projection method is Lambert Conformal Conic (2 parallel)
Central Meridian is 105° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°
False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995698

Grid Coordinates of Well: 1,323,729.53 usft N, 3,156,421.98 usft E
Geographical Coordinates of Well: 40° 13' 14.44" N, 104° 56' 23.42" W
Grid Convergence at Surface is: 0.36°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,807.00usft
the Bottom Hole Displacement is 9,784.91usft in the Direction of 93.08° (True).
Magnetic Convergence at surface is: -8.24° (20 April 2014, , BGGM2013)



Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 18-T3N-R67W

Sekich State 38C-17HZ

Plan A

Design: Actual Field Surveys

Sperry Drilling Services

Geodetic Report

04 June, 2014

Well Coordinates: 1,323,729.53 N, 3,156,421.98 E (40° 13' 14.44" N, 104° 56' 23.42" W)

Ground Level: 4,876.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Sekich State 38C-17HZ

RKB = 16' @ 4892.00usft (Xtreme 22)

N

True

Dec-Deg - API - US Survey Feet - Custom

HALLIBURTON

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Local Coordinates | | Geographic Coordinates | | UTM Coordinates | |
|-----------------------------|--------------------|----------------|-----------------------------|-------------------|-----------------|------------------------|---------------------|--------------------|-------------------|
| | | | | +N/-S (usft) | +E/-W (usft) | Latitude (usft) | Longitude (usft) | Northing (usft) | Easting (usft) |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 40.220679 | -104.939840 | 1,323,729.53 | 3,156,421.98 |
| 16.00 | 0.00 | 0.00 | 16.00 | 0.00 | 0.00 | 40.220679 | -104.939840 | 1,323,729.53 | 3,156,421.98 |
| 116.00 | 0.55 | 326.98 | 116.00 | 0.40 | -0.26 | 40.220680 | -104.939841 | 1,323,729.93 | 3,156,421.72 |
| 216.00 | 0.75 | 249.64 | 215.99 | 0.58 | -1.14 | 40.220681 | -104.939844 | 1,323,730.10 | 3,156,420.84 |
| 316.00 | 0.87 | 252.24 | 315.98 | 0.12 | -2.47 | 40.220679 | -104.939849 | 1,323,729.63 | 3,156,419.51 |
| 416.00 | 0.74 | 218.18 | 415.97 | -0.62 | -3.60 | 40.220677 | -104.939853 | 1,323,728.89 | 3,156,418.39 |
| 516.00 | 0.57 | 156.62 | 515.97 | -1.59 | -3.80 | 40.220675 | -104.939854 | 1,323,727.92 | 3,156,418.19 |
| 616.00 | 0.72 | 219.46 | 615.96 | -2.53 | -4.00 | 40.220672 | -104.939855 | 1,323,726.98 | 3,156,418.00 |
| 716.00 | 0.57 | 303.24 | 715.96 | -2.74 | -4.81 | 40.220672 | -104.939858 | 1,323,726.76 | 3,156,417.18 |
| 816.00 | 0.37 | 81.88 | 815.96 | -2.42 | -4.91 | 40.220672 | -104.939858 | 1,323,727.08 | 3,156,417.08 |
| 916.00 | 0.73 | 261.42 | 915.96 | -2.47 | -5.22 | 40.220672 | -104.939859 | 1,323,727.03 | 3,156,416.77 |
| 1,016.00 | 0.45 | 327.89 | 1,015.95 | -2.23 | -6.06 | 40.220673 | -104.939862 | 1,323,727.26 | 3,156,415.93 |
| 1,116.00 | 0.38 | 131.86 | 1,115.95 | -2.12 | -6.02 | 40.220673 | -104.939862 | 1,323,727.37 | 3,156,415.97 |
| 1,164.00 | 0.58 | 107.29 | 1,163.95 | -2.30 | -5.67 | 40.220673 | -104.939861 | 1,323,727.19 | 3,156,416.32 |
| 1,239.80 | 0.39 | 145.42 | 1,239.75 | -2.63 | -5.16 | 40.220672 | -104.939859 | 1,323,726.87 | 3,156,416.84 |
| 1,316.00 | 0.48 | 194.00 | 1,315.94 | -3.15 | -5.09 | 40.220670 | -104.939858 | 1,323,726.35 | 3,156,416.91 |
| 1,506.00 | 0.48 | 176.33 | 1,505.94 | -4.71 | -5.23 | 40.220666 | -104.939859 | 1,323,724.78 | 3,156,416.78 |
| 1,694.00 | 0.87 | 167.87 | 1,693.92 | -6.89 | -4.88 | 40.220660 | -104.939858 | 1,323,722.60 | 3,156,417.14 |
| 1,877.00 | 0.08 | 191.12 | 1,876.92 | -8.38 | -4.61 | 40.220656 | -104.939857 | 1,323,721.12 | 3,156,417.42 |
| 2,060.00 | 0.14 | 292.29 | 2,059.92 | -8.42 | -4.85 | 40.220656 | -104.939858 | 1,323,721.08 | 3,156,417.19 |
| 2,242.00 | 0.17 | 285.25 | 2,241.92 | -8.26 | -5.31 | 40.220656 | -104.939859 | 1,323,721.23 | 3,156,416.72 |
| 2,425.00 | 0.26 | 296.10 | 2,424.91 | -8.01 | -5.95 | 40.220657 | -104.939862 | 1,323,721.48 | 3,156,416.08 |
| 2,608.00 | 0.25 | 298.07 | 2,607.91 | -7.64 | -6.67 | 40.220658 | -104.939864 | 1,323,721.85 | 3,156,415.36 |
| 2,790.00 | 0.37 | 284.96 | 2,789.91 | -7.30 | -7.59 | 40.220659 | -104.939867 | 1,323,722.18 | 3,156,414.44 |
| 2,972.00 | 0.63 | 280.67 | 2,971.90 | -6.96 | -9.14 | 40.220660 | -104.939873 | 1,323,722.51 | 3,156,412.88 |
| 3,154.00 | 0.29 | 219.44 | 3,153.90 | -7.13 | -10.42 | 40.220659 | -104.939878 | 1,323,722.33 | 3,156,411.61 |
| 3,326.00 | 2.56 | 196.03 | 3,325.83 | -11.16 | -11.75 | 40.220648 | -104.939882 | 1,323,718.29 | 3,156,410.30 |
| 3,497.00 | 4.88 | 186.07 | 3,496.46 | -22.07 | -13.58 | 40.220618 | -104.939889 | 1,323,707.38 | 3,156,408.54 |
| 3,668.00 | 8.19 | 178.51 | 3,666.33 | -41.48 | -14.03 | 40.220565 | -104.939891 | 1,323,687.96 | 3,156,408.21 |
| 3,839.00 | 11.02 | 178.26 | 3,834.92 | -70.00 | -13.22 | 40.220487 | -104.939888 | 1,323,659.45 | 3,156,409.20 |
| 4,011.00 | 10.09 | 179.76 | 4,004.01 | -101.50 | -12.66 | 40.220400 | -104.939886 | 1,323,627.96 | 3,156,409.97 |
| 4,182.00 | 10.14 | 177.82 | 4,172.35 | -131.52 | -12.02 | 40.220318 | -104.939883 | 1,323,597.94 | 3,156,410.79 |
| 4,353.00 | 10.08 | 177.57 | 4,340.69 | -161.51 | -10.81 | 40.220236 | -104.939879 | 1,323,567.96 | 3,156,412.19 |
| 4,525.00 | 9.28 | 178.72 | 4,510.24 | -190.41 | -9.87 | 40.220156 | -104.939876 | 1,323,539.06 | 3,156,413.32 |
| 4,696.00 | 10.33 | 175.20 | 4,678.74 | -219.48 | -8.27 | 40.220077 | -104.939870 | 1,323,510.01 | 3,156,415.09 |
| 4,867.00 | 9.57 | 174.99 | 4,847.17 | -248.92 | -5.75 | 40.219996 | -104.939861 | 1,323,480.59 | 3,156,417.80 |
| 5,038.00 | 8.93 | 180.96 | 5,015.95 | -276.35 | -4.73 | 40.219920 | -104.939857 | 1,323,453.17 | 3,156,418.99 |
| 5,210.00 | 7.73 | 180.50 | 5,186.13 | -301.26 | -5.06 | 40.219852 | -104.939858 | 1,323,428.25 | 3,156,418.83 |
| 5,381.00 | 9.11 | 181.50 | 5,355.29 | -326.30 | -5.51 | 40.219783 | -104.939860 | 1,323,403.22 | 3,156,418.53 |
| 5,552.00 | 10.31 | 181.24 | 5,523.83 | -355.13 | -6.20 | 40.219704 | -104.939862 | 1,323,374.38 | 3,156,418.03 |
| 5,724.00 | 8.27 | 178.75 | 5,693.57 | -382.89 | -6.26 | 40.219628 | -104.939863 | 1,323,346.63 | 3,156,418.14 |
| 5,895.00 | 8.58 | 183.84 | 5,862.73 | -407.91 | -6.85 | 40.219559 | -104.939865 | 1,323,321.60 | 3,156,417.71 |

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Local Coordinates | | Geographic Coordinates | | UTM Coordinates | |
|-----------------------------|--------------------|----------------|-----------------------------|-------------------|-----------------|------------------------|---------------------|--------------------|-------------------|
| | | | | +N/-S (usft) | +E/-W (usft) | Latitude (usft) | Longitude (usft) | Northing (usft) | Easting (usft) |
| 6,067.00 | 9.49 | 183.38 | 6,032.59 | -434.87 | -8.54 | 40.219485 | -104.939871 | 1,323,294.64 | 3,156,416.19 |
| 6,238.00 | 7.39 | 184.59 | 6,201.73 | -459.90 | -10.25 | 40.219417 | -104.939877 | 1,323,269.59 | 3,156,414.63 |
| 6,410.00 | 4.18 | 186.58 | 6,372.83 | -477.16 | -11.86 | 40.219369 | -104.939883 | 1,323,252.32 | 3,156,413.14 |
| 6,581.00 | 1.27 | 236.08 | 6,543.63 | -484.41 | -14.14 | 40.219349 | -104.939891 | 1,323,245.06 | 3,156,410.90 |
| 6,624.00 | 1.15 | 261.48 | 6,586.63 | -484.74 | -14.97 | 40.219348 | -104.939894 | 1,323,244.72 | 3,156,410.08 |
| 6,667.00 | 1.76 | 69.62 | 6,629.62 | -484.58 | -14.77 | 40.219349 | -104.939893 | 1,323,244.89 | 3,156,410.27 |
| 6,710.00 | 4.81 | 74.40 | 6,672.54 | -483.86 | -12.42 | 40.219351 | -104.939885 | 1,323,245.62 | 3,156,412.62 |
| 6,753.00 | 7.96 | 82.94 | 6,715.27 | -483.01 | -7.72 | 40.219353 | -104.939868 | 1,323,246.50 | 3,156,417.31 |
| 6,795.00 | 10.86 | 87.50 | 6,756.70 | -482.48 | -0.88 | 40.219355 | -104.939843 | 1,323,247.07 | 3,156,424.14 |
| 6,838.00 | 14.20 | 86.76 | 6,798.67 | -482.01 | 8.43 | 40.219356 | -104.939810 | 1,323,247.61 | 3,156,433.46 |
| 6,881.00 | 18.45 | 82.12 | 6,839.93 | -480.77 | 20.44 | 40.219359 | -104.939767 | 1,323,248.91 | 3,156,445.46 |
| 6,924.00 | 22.80 | 84.05 | 6,880.17 | -478.98 | 35.48 | 40.219364 | -104.939713 | 1,323,250.81 | 3,156,460.48 |
| 6,966.00 | 27.76 | 86.52 | 6,918.13 | -477.54 | 53.35 | 40.219368 | -104.939649 | 1,323,252.36 | 3,156,478.34 |
| 7,009.00 | 30.66 | 88.29 | 6,955.66 | -476.60 | 74.31 | 40.219371 | -104.939574 | 1,323,253.43 | 3,156,499.29 |
| 7,052.00 | 36.51 | 88.63 | 6,991.47 | -475.97 | 98.07 | 40.219373 | -104.939489 | 1,323,254.21 | 3,156,523.05 |
| 7,095.00 | 41.75 | 89.64 | 7,024.81 | -475.57 | 125.20 | 40.219374 | -104.939392 | 1,323,254.78 | 3,156,550.17 |
| 7,138.00 | 47.26 | 89.96 | 7,055.47 | -475.47 | 155.33 | 40.219374 | -104.939284 | 1,323,255.07 | 3,156,580.30 |
| 7,181.00 | 52.86 | 91.12 | 7,083.06 | -475.80 | 188.28 | 40.219373 | -104.939166 | 1,323,254.95 | 3,156,613.25 |
| 7,223.00 | 58.28 | 91.44 | 7,106.80 | -476.57 | 222.90 | 40.219371 | -104.939042 | 1,323,254.39 | 3,156,647.88 |
| 7,266.00 | 62.38 | 91.85 | 7,128.08 | -477.65 | 260.24 | 40.219368 | -104.938908 | 1,323,253.55 | 3,156,685.22 |
| 7,309.00 | 67.32 | 90.20 | 7,146.35 | -478.33 | 299.14 | 40.219366 | -104.938769 | 1,323,253.12 | 3,156,724.12 |
| 7,352.00 | 71.39 | 89.24 | 7,161.51 | -478.13 | 339.37 | 40.219367 | -104.938625 | 1,323,253.57 | 3,156,764.35 |
| 7,394.00 | 74.72 | 88.90 | 7,173.75 | -477.48 | 379.54 | 40.219368 | -104.938481 | 1,323,254.48 | 3,156,804.51 |
| 7,437.00 | 77.42 | 89.70 | 7,184.10 | -476.97 | 421.26 | 40.219370 | -104.938332 | 1,323,255.25 | 3,156,846.23 |
| 7,480.00 | 81.03 | 89.62 | 7,192.14 | -476.72 | 463.50 | 40.219370 | -104.938181 | 1,323,255.77 | 3,156,888.46 |
| 7,522.00 | 84.35 | 89.25 | 7,197.48 | -476.31 | 505.15 | 40.219372 | -104.938031 | 1,323,256.44 | 3,156,930.11 |
| 7,590.40 | 87.96 | 89.35 | 7,202.06 | -475.48 | 573.38 | 40.219374 | -104.937787 | 1,323,257.71 | 3,156,998.33 |
| 7,659.00 | 91.59 | 89.45 | 7,202.33 | -474.76 | 641.96 | 40.219376 | -104.937541 | 1,323,258.86 | 3,157,066.90 |
| 7,830.00 | 89.94 | 90.96 | 7,200.05 | -475.37 | 812.94 | 40.219374 | -104.936929 | 1,323,259.32 | 3,157,237.87 |
| 8,001.00 | 91.06 | 91.74 | 7,198.56 | -479.40 | 983.88 | 40.219363 | -104.936317 | 1,323,256.38 | 3,157,408.82 |
| 8,172.00 | 87.37 | 90.06 | 7,200.90 | -482.08 | 1,154.81 | 40.219356 | -104.935705 | 1,323,254.77 | 3,157,579.76 |
| 8,343.00 | 91.19 | 88.50 | 7,203.05 | -479.94 | 1,325.74 | 40.219362 | -104.935093 | 1,323,258.00 | 3,157,750.67 |
| 8,515.00 | 89.06 | 90.23 | 7,202.67 | -478.03 | 1,497.71 | 40.219367 | -104.934477 | 1,323,260.99 | 3,157,922.62 |
| 8,686.00 | 89.74 | 89.72 | 7,204.46 | -477.95 | 1,668.70 | 40.219367 | -104.933865 | 1,323,262.15 | 3,158,093.60 |
| 8,858.00 | 90.23 | 89.69 | 7,204.51 | -477.07 | 1,840.70 | 40.219369 | -104.933249 | 1,323,264.12 | 3,158,265.58 |
| 9,029.00 | 89.62 | 88.47 | 7,204.73 | -474.32 | 2,011.67 | 40.219377 | -104.932637 | 1,323,267.94 | 3,158,436.52 |
| 9,200.00 | 89.65 | 88.66 | 7,205.82 | -470.04 | 2,182.62 | 40.219389 | -104.932025 | 1,323,273.30 | 3,158,607.43 |
| 9,384.00 | 90.60 | 90.88 | 7,205.42 | -469.30 | 2,366.60 | 40.219391 | -104.931366 | 1,323,275.21 | 3,158,791.40 |
| 9,567.00 | 89.12 | 89.81 | 7,205.87 | -470.40 | 2,549.59 | 40.219387 | -104.930711 | 1,323,275.26 | 3,158,974.38 |
| 9,751.00 | 90.69 | 89.97 | 7,206.17 | -470.05 | 2,733.58 | 40.219388 | -104.930052 | 1,323,276.77 | 3,159,158.36 |
| 9,935.00 | 90.42 | 90.68 | 7,204.39 | -471.10 | 2,917.57 | 40.219385 | -104.929393 | 1,323,276.89 | 3,159,342.34 |
| 10,119.00 | 90.32 | 89.30 | 7,203.20 | -471.06 | 3,101.56 | 40.219385 | -104.928734 | 1,323,278.09 | 3,159,526.32 |

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Local Coordinates | | Geographic Coordinates | | UTM Coordinates | |
|-----------------------------|--------------------|----------------|-----------------------------|-------------------|-----------------|------------------------|---------------------|--------------------|-------------------|
| | | | | +N/-S (usft) | +E/-W (usft) | Latitude (usft) | Longitude (usft) | Northing (usft) | Easting (usft) |
| 10,302.00 | 90.14 | 90.31 | 7,202.47 | -470.44 | 3,284.56 | 40.219387 | -104.928079 | 1,323,279.87 | 3,159,709.30 |
| 10,486.00 | 90.20 | 91.24 | 7,201.92 | -472.93 | 3,468.54 | 40.219380 | -104.927420 | 1,323,278.54 | 3,159,893.29 |
| 10,668.00 | 89.83 | 89.68 | 7,201.87 | -474.39 | 3,650.53 | 40.219376 | -104.926768 | 1,323,278.23 | 3,160,075.27 |
| 10,849.00 | 86.16 | 86.41 | 7,208.21 | -468.23 | 3,831.25 | 40.219393 | -104.926121 | 1,323,285.53 | 3,160,255.95 |
| 11,033.00 | 91.31 | 86.99 | 7,212.27 | -457.64 | 4,014.84 | 40.219422 | -104.925464 | 1,323,297.28 | 3,160,439.46 |
| 11,204.00 | 91.53 | 89.47 | 7,208.03 | -452.36 | 4,185.69 | 40.219436 | -104.924852 | 1,323,303.64 | 3,160,610.27 |
| 11,375.00 | 90.48 | 89.85 | 7,205.03 | -451.35 | 4,356.66 | 40.219439 | -104.924240 | 1,323,305.73 | 3,160,781.22 |
| 11,546.00 | 90.33 | 90.44 | 7,203.82 | -451.78 | 4,527.66 | 40.219438 | -104.923627 | 1,323,306.38 | 3,160,952.21 |
| 11,717.00 | 90.51 | 90.70 | 7,202.57 | -453.48 | 4,698.64 | 40.219433 | -104.923015 | 1,323,305.76 | 3,161,123.19 |
| 11,888.00 | 90.79 | 91.30 | 7,200.63 | -456.47 | 4,869.61 | 40.219425 | -104.922403 | 1,323,303.85 | 3,161,294.16 |
| 12,059.00 | 90.26 | 92.77 | 7,199.06 | -462.54 | 5,040.49 | 40.219408 | -104.921791 | 1,323,298.86 | 3,161,465.07 |
| 12,231.00 | 89.55 | 94.31 | 7,199.35 | -473.16 | 5,212.15 | 40.219379 | -104.921176 | 1,323,289.33 | 3,161,636.79 |
| 12,402.00 | 90.02 | 92.32 | 7,199.99 | -483.04 | 5,382.85 | 40.219351 | -104.920565 | 1,323,280.52 | 3,161,807.55 |
| 12,573.00 | 91.25 | 93.53 | 7,198.09 | -491.77 | 5,553.61 | 40.219327 | -104.919954 | 1,323,272.87 | 3,161,978.35 |
| 12,745.00 | 89.09 | 96.28 | 7,197.58 | -506.47 | 5,724.96 | 40.219287 | -104.919340 | 1,323,259.25 | 3,162,149.78 |
| 12,915.00 | 89.37 | 95.11 | 7,199.87 | -523.34 | 5,894.10 | 40.219241 | -104.918735 | 1,323,243.45 | 3,162,319.01 |
| 13,086.00 | 91.13 | 94.52 | 7,199.12 | -537.69 | 6,064.49 | 40.219201 | -104.918124 | 1,323,230.18 | 3,162,489.48 |
| 13,257.00 | 91.46 | 94.43 | 7,195.26 | -551.03 | 6,234.92 | 40.219164 | -104.917514 | 1,323,217.91 | 3,162,659.99 |
| 13,428.00 | 92.82 | 95.28 | 7,188.87 | -565.49 | 6,405.18 | 40.219124 | -104.916904 | 1,323,204.53 | 3,162,830.33 |
| 13,599.00 | 89.99 | 97.36 | 7,184.68 | -584.31 | 6,575.07 | 40.219073 | -104.916296 | 1,323,186.79 | 3,163,000.32 |
| 13,770.00 | 89.12 | 98.33 | 7,186.01 | -607.65 | 6,744.46 | 40.219009 | -104.915690 | 1,323,164.52 | 3,163,169.85 |
| 13,942.00 | 91.50 | 97.98 | 7,185.07 | -632.05 | 6,914.70 | 40.218941 | -104.915080 | 1,323,141.20 | 3,163,340.24 |
| 14,113.00 | 90.51 | 95.68 | 7,182.07 | -652.38 | 7,084.45 | 40.218885 | -104.914472 | 1,323,121.94 | 3,163,510.10 |
| 14,284.00 | 91.40 | 91.31 | 7,179.22 | -662.80 | 7,255.07 | 40.218857 | -104.913861 | 1,323,112.60 | 3,163,680.78 |
| 14,455.00 | 89.62 | 87.66 | 7,177.70 | -661.26 | 7,426.02 | 40.218861 | -104.913249 | 1,323,115.22 | 3,163,851.71 |
| 14,627.00 | 89.65 | 86.16 | 7,178.80 | -651.99 | 7,597.76 | 40.218886 | -104.912634 | 1,323,125.57 | 3,164,023.38 |
| 14,798.00 | 88.73 | 85.05 | 7,181.21 | -638.89 | 7,768.23 | 40.218922 | -104.912024 | 1,323,139.75 | 3,164,193.76 |
| 14,970.00 | 88.38 | 81.98 | 7,185.55 | -619.47 | 7,939.06 | 40.218975 | -104.911412 | 1,323,160.25 | 3,164,364.45 |
| 15,141.00 | 89.74 | 83.12 | 7,188.36 | -597.30 | 8,108.58 | 40.219036 | -104.910805 | 1,323,183.48 | 3,164,533.83 |
| 15,312.00 | 90.39 | 85.02 | 7,188.16 | -579.64 | 8,278.66 | 40.219084 | -104.910196 | 1,323,202.22 | 3,164,703.78 |
| 15,483.00 | 91.65 | 82.74 | 7,185.12 | -561.41 | 8,448.64 | 40.219134 | -104.909587 | 1,323,221.52 | 3,164,873.64 |
| 15,654.00 | 90.51 | 85.97 | 7,181.90 | -544.60 | 8,618.76 | 40.219180 | -104.908978 | 1,323,239.41 | 3,165,043.64 |
| 15,825.00 | 89.74 | 86.00 | 7,181.52 | -532.63 | 8,789.34 | 40.219213 | -104.908367 | 1,323,252.46 | 3,165,214.13 |
| 15,997.00 | 90.70 | 88.58 | 7,180.86 | -524.49 | 8,961.13 | 40.219235 | -104.907752 | 1,323,261.67 | 3,165,385.86 |
| 16,168.00 | 90.42 | 88.11 | 7,179.19 | -519.56 | 9,132.05 | 40.219248 | -104.907140 | 1,323,267.69 | 3,165,556.73 |
| 16,339.00 | 90.30 | 88.71 | 7,178.12 | -514.81 | 9,302.98 | 40.219261 | -104.906528 | 1,323,273.52 | 3,165,727.62 |
| 16,510.00 | 90.08 | 93.28 | 7,177.55 | -517.78 | 9,473.91 | 40.219253 | -104.905916 | 1,323,271.63 | 3,165,898.56 |
| 16,682.00 | 90.30 | 91.35 | 7,176.98 | -524.73 | 9,645.76 | 40.219234 | -104.905300 | 1,323,265.77 | 3,166,070.44 |
| 16,741.00 | 90.08 | 90.52 | 7,176.78 | -525.69 | 9,704.75 | 40.219231 | -104.905089 | 1,323,265.18 | 3,166,129.44 |
| 16,807.00 | 90.08 | 90.52 | 7,176.69 | -526.29 | 9,770.75 | 40.219229 | -104.904853 | 1,323,264.99 | 3,166,195.43 |

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

Design Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
|-----------------------------|-----------------------------|-------------------|-----------------|--|
| | | +N/-S (usft) | +E/-W (usft) | |
| 1,164.00 | 1,163.95 | -2.30 | -5.67 | Tie-On to Gyro Surveys @ 1164.00ft |
| 1,316.00 | 1,315.94 | -3.15 | -5.09 | First MWD Survey @ 1316.00ft |
| 16,741.00 | 7,176.78 | -525.69 | 9,704.75 | Final MWD Survey @ 16741.00ft |
| 16,807.00 | 7,176.69 | -526.29 | 9,770.75 | Str Line Proj to Bit @ 16807' MD :: 7176.69' TVD |

Vertical Section Information

| Angle Type | Target | Azimuth (°) | Origin Type | Origin | | Start TVD (usft) |
|---------------|----------------------|----------------|----------------|-----------------|-----------------|------------------------|
| | | | | +N/_S (usft) | +E/-W (usft) | |
| User | No Target (Freehand) | 90.15 | Slot | 0.00 | 0.00 | 0.00 |

Survey tool program

| From (usft) | To (usft) | Survey/Plan | Survey Tool |
|----------------|--------------|----------------------------|-----------------|
| 16.00 | 1,164.00 | MS Energy Surveys | NS-GYRO-MS |
| 1,316.00 | 7,659.00 | MWD Vertical/Build Surveys | MWD+IFR1+MS+sag |
| 7,830.00 | 16,741.00 | MWD Lateral Surveys | MWD+IFR1+MS+sag |

Casing Details

| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") |
|-----------------------------|-----------------------------|--|---------------------------|-------------------------|
| 1,239.80 | 1,239.75 | 9 5/8" Casing Set @ 1239.8' MD :: 1239.75' TVD | 9-5/8 | 13-1/2 |
| 7,590.40 | 7,202.06 | 7" Casing Set @ 7590.4' MD :: 7201.3' TVD | 7 | 8-3/4 |

Design Report for Sekich State 38C-17HZ - Actual Field Surveys

Design Targets

| Shape | Target Name | TVD () | Northing () | Easting () | +N/-S | +E/-W | Created | Updated |
|-------|-------------|------------|-----------------|----------------|-------|-------|---------|---------|
|-------|-------------|------------|-----------------|----------------|-------|-------|---------|---------|

Directional Difficulty Index

| | | | |
|------------------------------------|----------------|-------------------------------|-------------------------------------|
| Average Dogleg over Survey: | 1.45 °/100usft | Maximum Dogleg over Survey: | 13.61 °/100usft at 7,052.00 usft |
| Net Tortosity applicable to Plans: | 0.50 °/100usft | Directional Difficulty Index: | 6.769 |

Audit Info

North Reference Sheet for Sec. 18-T3N-R67W - Sekich State 38C-17HZ - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB = 16' @ 4892.00usft (Xtreme 22). Northing and Easting are relative to Sekich State 38C-17HZ

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995698

Grid Coordinates of Well: 1,323,729.53 usft N, 3,156,421.98 usft E

Geographical Coordinates of Well: 40° 13' 14.44" N, 104° 56' 23.42" W

Grid Convergence at Surface is: 0.36°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,807.00usft

the Bottom Hole Displacement is 9,784.91usft in the Direction of 93.08° (True).

Magnetic Convergence at surface is: -8.24° (20 April 2014, , BGGM2013)

