

**COG OPERATING LLC
AUTHORITY FOR EXPENDITURE
DRILLING**

| | | | |
|------------|--------------------------|-----------------|----------------------|
| WELL NAME: | STONEWALL 9 FEE #1H | PROSPECT NAME: | LAKEWOOD/CEMETARY |
| SHL: | 300' FSL & 330' FWL UL-M | STATE & COUNTY: | New Mexico, Eddy |
| BHL: | 330' FNL & 330' FWL UL-D | OBJECTIVE: | SH12 Yeso Horizontal |
| FORMATION: | Glorieta Yeso | DEPTH: | 7,415 |
| LEGAL: | SEC9 T19S-R26E | TVD: | 3,100 |

| INTANGIBLE COSTS | | BCP | ACP | TOTAL |
|--|-----|------------------|------------------|------------------|
| Title/Curative/Permit | 201 | 10,000 | | 10,000 |
| Insurance | 202 | 22,000 | 0 | 22,000 |
| Damages/Right of Way | 203 | 50,000 | 0 | 50,000 |
| Survey/Stake Location | 204 | 3,000 | 0 | 3,000 |
| Location/Pits/Road Expense | 205 | 60,000 | 25,000 | 85,000 |
| Drilling / Completion Overhead | 206 | 2,500 | 2,000 | 4,500 |
| Turnkey Contract | 207 | | | 0 |
| Footage Contract | 208 | | | 0 |
| Daywork Contract (0 days f/spud-ris @ \$0) | 209 | 225,000 | 45,000 | 270,000 |
| Directional Drilling Services (0 dir days @ \$0) | 210 | 190,000 | | 190,000 |
| Fuel & Power | 211 | 57,000 | 12,000 | 69,000 |
| Water | 212 | 39,000 | 100,000 | 139,000 |
| Bits | 213 | 27,000 | 5,000 | 32,000 |
| Mud & Chemicals | 214 | 32,000 | 0 | 32,000 |
| Drill Stem Test | 215 | | 0 | 0 |
| Coring & Analysis | 216 | | | 0 |
| Cement Surface | 217 | 48,000 | | 48,000 |
| Cement Intermediate | 218 | 0 | | 0 |
| Cement 2nd Intermediate/Production | 218 | 0 | 65,000 | 65,000 |
| Cement Squeeze & Other (Kickoff Plug) | 220 | 40,000 | 0 | 40,000 |
| Float Equipment & Centralizers | 221 | 2,000 | 30,000 | 32,000 |
| Casing Crews & Equipment | 222 | 5,000 | 12,000 | 17,000 |
| Fishing Tools & Service | 223 | | | 0 |
| Geologic/Engineering | 224 | 10,000 | | 10,000 |
| Contract Labor | 225 | 20,000 | 21,000 | 41,000 |
| Company Supervision | 226 | 2,000 | 2,000 | 4,000 |
| Contract Supervision | 227 | 26,000 | 20,000 | 46,000 |
| Testing Casing/Tubing | 228 | 3,000 | 12,000 | 15,000 |
| Mud Logging Unit (logging f/24 days) | 229 | 14,000 | | 14,000 |
| Logging | 230 | 25,000 | | 25,000 |
| Perforating/Wireline Services | 231 | 3,500 | 50,000 | 53,500 |
| Stimulation/Treating | | | 750,000 | 750,000 |
| Completion Unit | | | 30,000 | 30,000 |
| Swabbing Unit | | | | 0 |
| Rentals-Surface | 235 | 24,000 | 250,000 | 274,000 |
| Rentals-Subsurface | 236 | 44,000 | 75,000 | 119,000 |
| Trucking/Forklift/Rig Mobilization | 237 | 47,000 | 20,000 | 67,000 |
| Welding Services | 238 | 5,000 | 2,500 | 7,500 |
| Water Disposal | 239 | 0 | 40,000 | 40,000 |
| Plug to Abandon | 240 | 0 | 0 | 0 |
| Seismic Analysis | 241 | 0 | 0 | 0 |
| Closed Loop & Environmental | 244 | 113,000 | 0 | 113,000 |
| Miscellaneous | 242 | 0 | 0 | 0 |
| Contingency 10% | 243 | 115,000 | 157,500 | 272,500 |
| TOTAL INTANGIBLES | | 1,264,000 | 1,726,000 | 2,990,000 |

| TANGIBLE COSTS | | | | |
|---|-----|------------------|------------------|------------------|
| Surface Casing (8 5/8" 32# J55 LTC) | 401 | 28,000 | | 28,000 |
| Intermediate Casing(2150' 8 5/8" 32# J55 LTC) | 402 | 0 | 0 | 0 |
| Production Casing (5 1/2" 17# L80) | | | 122,000 | 122,000 |
| Tubing | | | 22,000 | 22,000 |
| Wellhead Equipment | 405 | 6,000 | 20,000 | 26,000 |
| Pumping Unit | | | 60,000 | 60,000 |
| Prime Mover | | | 20,000 | 20,000 |
| Rods | | | 12,000 | 12,000 |
| Pumps | | | 70,000 | 70,000 |
| Tanks | | | 21,000 | 21,000 |
| Flowlines | | | 8,000 | 8,000 |
| Heater Treater/Separator | | | 30,000 | 30,000 |
| Electrical System | | | 20,000 | 20,000 |
| Packers/Anchors/Hangers | 414 | 0 | 2,500 | 2,500 |
| Couplings/Fittings/Valves | 415 | 500 | 60,000 | 60,500 |
| Gas Compressors/Meters | | | 5,000 | 5,000 |
| Dehydrator | | | | 0 |
| Injection Plant/CO2 Equipment | | | | 0 |
| Miscellaneous | 419 | 500 | 500 | 1,000 |
| Contingency | 420 | 2,000 | 24,000 | 26,000 |
| TOTAL TANGIBLES | | 37,000 | 497,000 | 534,000 |
| TOTAL WELL COSTS | | 1,301,000 | 2,223,000 | 3,524,000 |

COG Operating LLC

By: Carl Bird

Date Prepared: 12/10/12

JJ

COG Operating LLC

By:

We approve:

% Working Interest

Company:

By:

Printed Name:

Title:

Date:

This AFE is only an estimate. By signing you agree to pay of the actual costs incurred.

EXHIBIT 4