

**Annual OIL, GAS, and HELIUM\* production in Arizona**

**1954 - 2014**

**Compiled by**

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**ARIZONA GEOLOGICAL SURVEY**

**Oil and Gas Publication OG-2**

\*The symbol **He** in text indicates helium-bearing gas produced 1961-76 that averaged 8% helium.

| STATE<br>PERMIT<br>NO. | WELL NAME                             | LOCATION         |
|------------------------|---------------------------------------|------------------|
| ID 1-72                | Kerr-McGee 1 State                    | SW SW 34-20N-26E |
| 10                     | Colgrove 2 Macie-Hortenstine          | SW SE 33-20N-26E |
| 18                     | Shell 1 Navajo                        | SE SE 6-41N-29E  |
| 22                     | Shell 2 Navajo                        | SE NW 3-41N-28E  |
| 28                     | Humble 1 Navajo                       | NE SE 4-41N-28E  |
| 32                     | Franco Western Oil 1 Navajo           | SW NW 22-41N-28E |
| 35                     | El Paso 1 Bita Peak-Navajo            | SW SW 19-41N-31E |
| 36                     | Apache Oil & Helium 3 Macie State     | NW SE 34-20N-26E |
| 37                     | Kerr-McGee 3 State                    | NW SE 4-19N-26E  |
| 38                     | Kerr-McGee 4 State                    | SW NE 32-20N-26E |
| 39                     | Kerr-McGee 2 Fee                      | N2 NW 35-20N-26E |
| 46                     | Superior Oil 2 Navajo-H               | SW SW 16-41N-30E |
| 58                     | Humble Oil 1 Navajo-E                 | SW NE 10-41N-28E |
| 69                     | Shell 23-11 Navajo                    | NE SW 11-41N-28E |
| 77                     | Texas Pacific Coal & Oil 1 Navajo-138 | NE NE 11-40N-28E |
| 80                     | Eastern 1-10 State                    | NE NE 10-19N-26E |
| 81                     | Eastern 1-2 State                     | NE SW 2-19N-26E  |
| 88                     | Eastern 1-28 State                    | SE SE 28-20N-26E |
| 106                    | Texas Pacific Coal & Oil 2 Navajo-138 | SW NW 12-40N-28E |
| 113                    | Texaco 1 Navajo-Z                     | NW SW 36-41N-30E |
| 115                    | Texas Pacific Coal & Oil 3 Navajo-138 | SW SE 2-40N-28E  |
| 146                    | Atlantic 7-1 Navajo                   | SE SE 7-40N-29E  |
| 179                    | Pan American 1 Navajo-F               | NW SW 6-40N-28E  |
| 194                    | Eastern 13 Santa Fe                   | NE SW 31-20N-27E |
| 206                    | Eastern 14 Santa Fe                   | SE NW 5-19N-27E  |
| 213                    | Pure Oil (Dry Mesa Corp) 5 Navajo-138 | SW SW 1-40N-28E  |
| 226                    | Texaco 1 Navajo-AG                    | NW SE 16-41N-25E |
| 232                    | Pan American 1 Navajo-O               | SE SW 23-41N-30E |
| 234                    | Apache Drilling 21 Ancon-Santa Fe     | SE NW 31-20N-28E |
| 236                    | Eastern 17 Santa Fe                   | W2 W2 4-19N-27E  |
| 238                    | Kerr-McGee 1 Barfoot-State            | NE SW 32-20N-27E |
| 263                    | Eastern 35 Santa Fe                   | NE SW 27-20N-27E |
| 349                    | Kerr-McGee 3A State                   | NE NE 4-19N-26E  |
| 377                    | Kerr-McGee 1 Navajo                   | SE SW 32-36N-30E |
| 378                    | Kerr-McGee 4A State                   | NE SE 32-20N-26E |
| 379                    | Kerr-McGee 2 Navajo                   | SE NW 32-36N-30E |
| 384                    | Kerr-McGee 4 Navajo                   | SE NE 32-36N-30E |
| 385                    | Kerr-McGee 2 Navajo-B                 | SE NE 5-35N-30E  |
| 386                    | Kerr-McGee 3X Navajo                  | SE SE 32-36N-30E |
| 388                    | Humble 1 Navajo-138                   | SE NE 6-35N-30E  |
| 389                    | Kerr-McGee 7 Navajo                   | SE SW 29-36N-30E |
| 390                    | Kerr-McGee 6 Navajo                   | SE NE 31-36N-30E |
| 396                    | Kerr-McGee 9 Navajo                   | SE SE 30-36N-30E |
| 416                    | Kerr-McGee 14 Navajo                  | SE NW 31-36N-30E |
| 417                    | Kerr-McGee 15 Navajo                  | SE SW 30-36N-30E |
| 419                    | Kerr-McGee 16 Navajo                  | SE NW 30-36N-30E |
| 420                    | Kerr-McGee 13 Navajo                  | SE SW 31-36N-30E |
| 421                    | Humble 1 Navajo-88                    | SE SE 25-36N-29E |
| 427                    | Kerr-McGee 1 Navajo-F                 | SE SE 24-36N-29E |
| 431                    | Humble 2 Navajo-88                    | SE NE 25-36N-29E |
| 434                    | Champlin 1 Navajo-335                 | NE SE 4-41N-29E  |
| 443                    | Humble 3 Navajo-88                    | SE NE 36-36N-29E |
| 444                    | AAA Fishing Tool 2 Navajo-E           | SW NE 9-41N-28E  |
| 445                    | Kerr-McGee 1X Navajo-B                | NW NW 5-35N-30E  |
| 446                    | Kerr-McGee 10 Navajo                  | SE NE 30-36N-30E |
| 471                    | Crest Oil-Arizona Helium 1 Santa Fe   | SE SE 25-20N-27E |
| 481                    | Consolidated 2-13 Navajo              | SW SW 2-41N-28E  |
| 483                    | Globe Minerals 3 Navajo-E             | NE NE 9-41N-28E  |

| STATE<br>PERMIT<br>NO. | WELL NAME                             | LOCATION         |
|------------------------|---------------------------------------|------------------|
| 484                    | Kerr-McGee 1 Navajo-C                 | NW SW 33-36N-30E |
| 490                    | Consolidated 3-4 Navajo               | NE SW 3-41N-28E  |
| 506                    | Kerr-McGee 11 Navajo                  | NW SE 32-36N-30E |
| 511                    | AAA Fishing Tool 1 Navajo-E           | NW NE 9-41N-28E  |
| 514                    | Consolidated 3-3 Navajo               | SW SW 3-41N-28E  |
| 515                    | Humble 3 Navajo                       | SW SE 4-41N-28E  |
| 518                    | Consolidated 2-11 Navajo              | SW NW 11-41N-28E |
| 537                    | Eastern 21-1A Santa Fe                | NW NW 31-20N-28E |
| 553                    | Western Helium & Connelly 1 KM State  | NE NE 36-30N-27E |
| 559                    | Cities Service 1 Monsanto/Navajo-A    | SE NE 21-40N-29E |
| 581                    | Cities Service 1 Monsanto/Navajo-C    | SE NW 16-40N-29E |
| 582                    | Pan American 2 Navajo-O               | NW SE 23-41N-30E |
| 592                    | Eastern 1 Merde                       | SW SW 30-20N-28E |
| 608                    | American Fuels 1 Navajo-B             | SE SW 9-40N-29E  |
| 615                    | American Fuels 1 Navajo-AC            | NE NE 17-40N-29E |
| 618                    | Kerr-McGee 17 Navajo                  | NW SE 31-36N-30E |
| 640                    | Clinton(Energy Reserves) 3 Navajo-O   | SW SW 23-41N-30E |
| 663                    | Energy Reserves 4 Navajo-O            | SW SE 23-41N-30E |
| 678                    | Energy Reserves 5 Navajo-O            | NE NE 26-41N-30E |
| 683                    | Energy Reserves 6 Navajo-O            | SW NW 25-41N-30E |
| 690                    | Kerr-McGee 18 Navajo                  | NW NE 32-36N-30E |
| 691                    | Kerr-McGee 19 Navajo                  | NW NE 31-36N-30E |
| 692                    | Kerr-McGee 22 Navajo                  | NW SW 30-36N-30E |
| 693                    | Kerr-McGee 21 Navajo                  | NW SE 30-36N-30E |
| 694                    | Kerr-McGee 23 Navajo                  | NW SW 29-36N-30E |
| 695                    | Kerr-McGee 24 Navajo                  | NW NW 32-36N-30E |
| 696                    | Kerr-McGee 20 Navajo                  | NW NW 31-36N-30E |
| 717                    | Kenai Oil & Gas 34-7 Navajo           | SW SE 7-40N-29E  |
| 719                    | Kerr-McGee 25 Navajo                  | NE NW 31-36N-30E |
| 720                    | Kerr-McGee 26 Navajo                  | NW SW 31-36N-30E |
| 721                    | Kerr-McGee 27 Navajo                  | NE SE 31-36N-30E |
| 722                    | Kerr-McGee 6 Navajo-88                | NW SE 25-36N-29E |
| 723                    | Kerr-McGee 3 Navajo-138               | NW NE 6-35N-30E  |
| 801                    | Mountain States Resources 12 Navajo-O | SE NE 22-41N-30E |
| 834                    | Mountain States Resources 16 Navajo-O | SE SE 22-41N-30E |
| 852                    | Monsanto Oil Company 6 Navajo         | NE SW 2-40N-28E  |
| 868                    | Chuska Energy Company 5 Black Rock    | SW SW 16-40N-29E |
| 871                    | Chuska Energy Company 8 Black Rock    | NE NE 18-40N-29E |
| 875                    | Chuska Energy Company 12 Black Rock   | NW SW 7-40N-29E  |
| 882                    | Harken Southwest Corp 20 Black Rock   | SE SE 7-40N-29E  |
| 896                    | Ridgeway Arizona Oil Corp 10-22 State | SW SW 22-10N-30E |
| 907                    | Coleman Oil & Gas 10 Dry Mesa         | NW SE 12-40N-28E |

| STATE<br>PERMIT<br>NO.  | 1954      |               | 1955       |               | 1956      |           |
|-------------------------|-----------|---------------|------------|---------------|-----------|-----------|
|                         | OIL (Bbl) | GAS (Mcf)     | OIL (Bbl)  | GAS (Mcf)     | OIL (Bbl) | GAS (Mcf) |
| 18                      | 0         | 497           |            |               |           |           |
| 22                      | 38        | 28,350        | 0          | 0             | 0         | 0         |
| 28                      |           |               | 749        | 68,676        | 0         | 0         |
| <b>ANNUAL<br/>TOTAL</b> | <b>38</b> | <b>28,847</b> | <b>749</b> | <b>68,676</b> | <b>0</b>  | <b>0</b>  |

| STATE<br>PERMIT<br>NO.  | 1957      |           | 1958          |               | 1959          |               |
|-------------------------|-----------|-----------|---------------|---------------|---------------|---------------|
|                         | OIL (Bbl) | GAS (Mcf) | OIL (Bbl)     | GAS (Mcf)     | OIL (Bbl)     | GAS (Mcf)     |
| 22                      | 0         | 0         | 0             | 0             | 0             | 0             |
| 28                      | 0         | 0         | 0             | 0             | 0             | 0             |
| 58                      |           |           | 11,794        | 15,277        | 1,450         | 6,482         |
| 69                      |           |           |               |               | 1,179         | 7,020         |
| 77                      |           |           |               |               | 24,981        | 4,546         |
| <b>ANNUAL<br/>TOTAL</b> | <b>0</b>  | <b>0</b>  | <b>11,794</b> | <b>15,277</b> | <b>27,610</b> | <b>18,048</b> |

| STATE<br>PERMIT<br>NO.           | 1960          |               | 1961          |                             | 1962          |                              |
|----------------------------------|---------------|---------------|---------------|-----------------------------|---------------|------------------------------|
|                                  | OIL (Bbl)     | GAS (Mcf)     | OIL (Bbl)     | GAS (Mcf)                   | OIL (Bbl)     | GAS (Mcf)                    |
| 10                               |               |               |               | He 3,763                    |               | He 63,282                    |
| 22                               | 0             | 5,209         | 0             | 0                           | 0             | 20,748                       |
| 28                               | 0             | 0             | 0             | 0                           | 0             | 0                            |
| 35                               |               |               |               |                             |               | 83,659                       |
| 36                               |               |               |               | He 8,587                    |               | He 121,401                   |
| 37                               |               |               |               | He 164                      |               | He 2,405                     |
| 38                               |               |               |               | He 1,840                    |               | He 16,829                    |
| 39                               |               |               |               | He 6,833                    |               | He 54,491                    |
| 58                               | 2,714         | 1,976         | 8,402         | 269,651                     | 984           | 27,499                       |
| 69                               | 129           | 2,163         | 0             | 0                           | 1,386         | 44,548                       |
| 77                               | 48,324        | 8,795         | 23,066        | 4,212                       | 11,709        | 880                          |
| 80                               |               |               |               |                             |               | He 6,620                     |
| 81                               |               |               |               |                             |               | He 22,905                    |
| 88                               |               |               |               |                             |               | He 55,074                    |
| 106                              | 3,831         | 1,044         | 3,735         | 680                         | 0             | 0                            |
| 113                              | 622           | 77            | 142           | 251                         |               |                              |
| 115                              | 18,433        | 4,999         | 34,523        | 9,351                       | 29,685        | 3,856                        |
| 146                              |               |               | 3,763         | 4,884                       | 2,410         | 3,224                        |
| 179                              |               |               |               |                             | 2,751         | 12,934                       |
| <b>1-72<br/>ANNUAL<br/>TOTAL</b> | <b>74,053</b> | <b>24,263</b> | <b>73,631</b> | <b>289,029</b><br>He 30,358 | <b>48,925</b> | <b>197,348</b><br>He 371,151 |

| STATE<br>PERMIT<br>NO. | 1963      |            | 1964      |            | 1965      |            |
|------------------------|-----------|------------|-----------|------------|-----------|------------|
|                        | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf)  |
| 10                     |           | He 85,319  |           | He 92,987  |           | He 73,524  |
| 22                     | 0         | 76,353     | 0         | 109,212    | 624       | 192,996    |
| 28                     | 1,144     | 247,364    | 1,609     | 342,463    | 2,492     | 302,679    |
| 32                     | 77        | 198,428    | 180       | 292,872    | 32        | 73,046     |
| 35                     | 946       | 65,545     | 1,128     | 130,297    | 3,949     | 488,883    |
| 36                     |           | He 138,743 |           | He 185,046 |           | He 214,937 |
| 37                     |           | He 1,928   |           | He 1,133   |           | He 513     |
| 38                     |           | He 18,793  |           | He 7,329   |           | He 2,719   |
| 39                     |           | He 64,361  |           | He 76,068  |           | He 99,029  |
| 46                     | 28        | 5,118      | 524       | 144,389    | 47        | 33,953     |
| 58                     | 1,973     | 104,581    | 979       | 53,820     | 37,124    | 30,719     |
| 69                     | 4,576     | 262,710    | 2,281     | 169,789    | 3,374     | 341,440    |
| 77                     | 7,894     | 595        | 6,555     | 486        | 5,902     | 441        |
| 80                     |           | He 7,254   |           | He 7,546   |           | He 9,968   |
| 81                     |           | He 24,106  |           | He 35,795  |           | He 40,028  |
| 88                     |           | He 58,225  |           | He 72,601  |           | He 89,074  |
| 115                    | 28,614    | 3,715      | 28,540    | 3,703      | 21,804    | 2,230      |
| 179                    | 2,984     | 5,524      | 1,165     | 3,218      |           |            |
| 194                    |           |            |           |            |           | He 62,957  |
| 226                    | 20,170    | 0          | 21,008    | 0          | 19,430    | 0          |
| 232                    |           |            | 1,005     | 163,357    | 7,043     | 323,371    |
| 238                    |           |            |           | He 22,606  |           | He 50,131  |
| 1-72                   |           | He 38,689  |           | He 52,559  |           | He 61,354  |
| ANNUAL                 | 68,406    | 969,933    | 64,974    | 1,413,606  | 101,821   | 1,789,758  |
| TOTAL                  |           | He 437,418 |           | He 553,670 |           | He 704,234 |

| STATE<br>PERMIT<br>NO. | 1966      |            | 1967      |            | 1968      |            |
|------------------------|-----------|------------|-----------|------------|-----------|------------|
|                        | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf)  |
| 10                     |           | He 44,374  |           | He 65,702  |           | He 0       |
| 22                     | 928       | 192,447    | 1,003     | 200,384    | 967       | 215,559    |
| 28                     | 10,563    | 131,238    | 12,212    | 126,162    | 13,204    | 89,007     |
| 32                     | 0         | 60,582     | 0         | 59,473     | 0         | 91,523     |
| 35                     | 4,524     | 1,050,287  | 1,767     | 508,114    | 214       | 49,822     |
| 36                     |           | He 146,752 |           | He 207,069 |           | He 85,697  |
| 37                     |           | He 41      |           |            |           |            |
| 38                     |           | He 712     |           | He 22      |           |            |
| 39                     |           | He 100,829 |           | He 90,872  |           |            |
| 46                     | 20        | 15,359     | 3         | 3,144      |           |            |
| 58                     | 56,205    | 25,966     | 22,881    | 7,760      | 15,999    | 5,375      |
| 69                     | 3,076     | 294,279    | 3,517     | 300,931    | 5,687     | 406,596    |
| 77                     | 5,591     | 445        | 9,915     | 703        | 7,120     | 493        |
| 80                     |           | He 7,268   |           | He 4,731   |           |            |
| 81                     |           | He 40,221  |           | He 55,683  |           | He 174,122 |
| 88                     |           | He 84,235  |           | He 94,796  |           | He 136,091 |
| 113                    |           |            |           |            |           | He 174,275 |
| 115                    | 28,173    | 1,820      | 35,939    | 2,222      | 26,235    | 1,824      |
| 194                    |           | He 191,107 |           | He 165,738 |           | He 92,975  |
| 226                    | 16,724    | 0          | 11,462    | 0          | 6,503     | 0          |
| 232                    | 6,238     | 42,953     | 10,657    | 40,993     | 13,449    | 33,707     |
| 238                    |           | He 56,144  |           | He 31,304  |           | He 45,108  |
| 349                    |           | He 28,064  |           | He 94,420  |           | He 0       |
| 377                    |           |            | 221,558   | 17,432     | 175,697   | 13,974     |
| 378                    |           |            |           | He 266     |           |            |
| 379                    |           |            | 646,219   | 45,057     | 470,103   | 45,851     |
| 384                    |           |            | 425,178   | 21,353     | 678,725   | 32,208     |
| 386                    |           |            | 556,289   | 38,367     | 385,413   | 54,115     |
| 388                    |           |            | 196,929   | 67,987     | 217,814   | 52,312     |
| 389                    |           |            | 274,867   | 23,365     | 196,490   | 12,478     |
| 390                    |           |            | 24,304    | 4,616      | 29,988    | 5,656      |
| 396                    |           |            | 381,517   | 29,901     | 323,904   | 30,486     |
| 416                    |           |            | 20,574    | 14,396     | 46,993    | 18,209     |
| 417                    |           |            | 14,954    | 2,340      | 18,251    | 3,652      |
| 419                    |           |            | 16,803    | 2,622      | 16,553    | 2,585      |
| 420                    |           |            | 1,378     | 1,291      | 698       | 188        |
| 431                    |           |            | 34,599    | 2,318      | 229,497   | 19,475     |
| 434                    |           |            | 479       | 2,107      | 84        | 455        |
| 443                    |           |            |           |            | 38,545    | 68,200     |
| 444                    |           |            |           |            | 577       | 4,255      |
| 445                    |           |            |           |            | 401,603   | 27,025     |
| 446                    |           |            |           |            | 49,289    | 3,876      |
| 1-72                   |           | He 66,961  |           | He 89,180  |           | He 269,948 |
| ANNUAL                 | 132,042   | 1,815,376  | 2,925,004 | 1,523,038  | 3,369,602 | 1,288,906  |
| TOTAL                  |           | He 766,708 |           | He 899,783 |           | He 978,216 |

| STATE<br>PERMIT<br>NO. | 1969      |            | 1970      |            | 1971      |            |
|------------------------|-----------|------------|-----------|------------|-----------|------------|
|                        | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf)  |
| 10                     |           | He 19,334  |           | He 34,246  |           | He 23,500  |
| 22                     | 1,107     | 193,856    | 1,003     | 108,953    | 897       | 84,799     |
| 28                     | 250       | 248,940    | 0         | 127,392    | 0         | 57,770     |
| 32                     | 0         | 80,737     | 0         | 40,982     | 0         | 12,918     |
| 35                     | 0         | 341        |           |            |           |            |
| 36                     |           | He 54,348  |           | He 136,654 |           | He 80,979  |
| 58                     | 27,415    | 121,189    | 15,995    | 106,751    | 8,703     | 50,052     |
| 69                     | 8,755     | 527,542    | 10,244    | 513,862    | 18,610    | 489,767    |
| 77                     | 6,363     | 444        | 7,008     | 492        | 5,084     | 356        |
| 81                     |           | He 153,303 |           | He 131,502 |           | He 79,593  |
| 88                     |           | He 92,914  |           | He 72,489  |           | He 39,142  |
| 106                    | 0         | 0          | 0         | 0          | 0         | 3,556      |
| 113                    |           | He 211,499 |           |            |           |            |
| 115                    | 22,932    | 1,624      | 17,042    | 1,193      | 13,497    | 944        |
| 194                    |           | He 86,576  |           | He 155,207 |           | He 205,293 |
| 206                    |           |            |           | He 7,281   |           | He 6,299   |
| 226                    | 3,134     | 0          |           |            |           |            |
| 232                    | 15,488    | 40,092     | 12,970    | 45,495     | 11,350    | 37,281     |
| 234                    |           | He 5,445   |           | He 7,873   |           | He 5,540   |
| 236                    |           |            |           | He 2,570   |           | He 14,254  |
| 238                    |           | He 22,228  |           | He 14,457  |           | He 17,393  |
| 263                    |           | He 6,169   |           | He 701     |           | He 3,148   |
| 349                    |           | He 29,179  |           | He 38,446  |           | He 10,082  |
| 377                    | 186,942   | 15,258     | 144,199   | 7,444      | 66,403    | 5,769      |
| 379                    | 274,394   | 21,383     | 112,103   | 24,363     | 53,035    | 16,703     |
| 384                    | 438,700   | 14,649     | 248,702   | 3,833      | 225,267   | 2,939      |
| 386                    | 420,870   | 66,429     | 187,815   | 48,470     | 83,856    | 32,770     |
| 388                    | 135,034   | 36,963     | 89,900    | 13,027     | 68,564    | 11,898     |
| 389                    | 67,470    | 6,623      | 27,887    | 6,207      | 15,746    | 5,213      |
| 390                    | 17,068    | 4,182      | 15,538    | 3,823      | 13,762    | 3,703      |
| 396                    | 223,523   | 23,896     | 136,366   | 17,413     | 107,221   | 15,822     |
| 416                    | 26,631    | 10,851     | 19,162    | 8,854      | 14,899    | 5,778      |
| 417                    | 12,984    | 2,707      | 8,908     | 1,929      | 7,351     | 866        |
| 419                    | 11,053    | 1,747      | 7,969     | 1,194      | 6,411     | 645        |
| 421                    | 0         | 878        | 1,100     | 1,440      | 4,126     | 1,440      |
| 427                    | 109       | 1,395      |           |            |           |            |
| 431                    | 103,207   | 12,835     | 63,532    | 13,365     | 38,568    | 7,518      |
| 443                    | 19,101    | 25,916     | 18,188    | 17,468     | 14,347    | 14,119     |
| 445                    | 243,252   | 22,243     | 207,734   | 16,213     | 180,760   | 11,489     |
| 446                    | 15,155    | 3,439      | 8,885     | 2,029      | 8,533     | 2,154      |
| 471                    |           | He 7,600   |           | He 0       |           | He 862     |
| 481                    | 1,182     | 384        |           |            |           |            |
| 483                    | 29,900    | 36,620     | 25,157    | 47,312     | 14,993    | 25,489     |
| 484                    | 1,114     | 306        | 321       | 528        | 179       | 340        |
| 490                    | 4,072     | 1,692      | 2,457     | 1,488      |           |            |
| 506                    | 83,803    | 19,563     | 302,291   | 62,206     | 197,353   | 45,895     |
| 509                    | 11,086    | 23,452     | 18,050    | 16,451     | 16,661    | 21,660     |
| 511                    | 4,426     | 0          | 18,502    | 73,364     | 13,898    | 61,150     |
| 514                    | 10,792    | 22,717     | 11,249    | 88,691     | 2,463     | 45,155     |
| 515                    | 4,163     | 8,093      | 18,124    | 131,553    | 15,451    | 63,409     |
| 518                    | 1,850     | 8,840      | 17,019    | 55,940     | 8,442     | 53,501     |
| 537                    |           |            |           | He 2,492   |           | He 2,569   |
| 1-72                   |           | He 186,300 |           | He 172,348 |           | He 265,419 |
| ANNUAL                 | 2,433,325 | 1,607,826  | 1,775,420 | 1,609,725  | 1,236,430 | 1,192,868  |
| TOTAL                  |           | He 874,895 |           | He 776,266 |           | He 754,073 |

| STATE<br>PERMIT<br>NO. | 1972      |            | 1973      |            | 1974      |            |
|------------------------|-----------|------------|-----------|------------|-----------|------------|
|                        | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf)  |
| 10                     |           | He 16,640  |           | He 5,893   |           | He 1,272   |
| 22                     | 0         | 37,996     | 0         | 41,330     | 0         | 18,267     |
| 28                     | 0         | 59,603     | 0         | 35,094     | 0         | 1,439      |
| 32                     | 0         | 2,567      | 0         | 1,470      | 0         | 742        |
| 36                     |           | He 37,601  |           | He 8,260   |           | He 4,862   |
| 39                     |           |            |           | He 21,163  |           |            |
| 58                     | 22,942    | 65,191     | 14,175    | 53,822     | 17,847    | 14,849     |
| 69                     | 19,943    | 321,696    | 6,500     | 72,614     |           |            |
| 77                     | 5,829     | 401        | 5,102     | 356        | 4,763     | 332        |
| 81                     |           | He 146,902 |           | He 114,739 |           | He 64,219  |
| 88                     |           | He 10,320  |           |            |           |            |
| 106                    | 0         | 6,044      | 0         | 3,839      | 0         | 3,364      |
| 115                    | 13,853    | 959        | 12,980    | 909        | 11,392    | 797        |
| 194                    |           | He 219,372 |           | He 223,352 |           | He 207,760 |
| 206                    |           | He 21,251  |           | He 12,763  |           |            |
| 232                    | 12,184    | 29,830     | 15,346    | 17,491     | 16,076    | 12,759     |
| 234                    |           | He 3,199   |           |            |           |            |
| 236                    |           | He 31,765  |           | He 38,359  |           |            |
| 238                    |           | He 9,533   |           | He 2,692   |           | He 2,609   |
| 263                    |           | He 8,759   |           | He 6,782   |           |            |
| 349                    |           | He 6,480   |           | He 11,718  |           | He 19,662  |
| 377                    | 50,675    | 4,639      | 38,621    | 3,690      | 35,336    | 5,029      |
| 379                    | 28,632    | 8,375      | 127,250   | 16,070     | 75,416    | 14,222     |
| 384                    | 192,536   | 936        | 121,364   | 1,512      | 106,286   | 2,059      |
| 386                    | 38,598    | 19,069     | 38,948    | 16,452     | 41,320    | 21,009     |
| 388                    | 52,145    | 2,050      | 34,790    | 6,474      | 50,329    | 33,322     |
| 389                    | 23,227    | 2,049      | 15,889    | 2,721      | 9,658     | 3,641      |
| 390                    | 11,621    | 3,456      | 11,007    | 2,542      | 23,399    | 6,091      |
| 396                    | 101,144   | 9,795      | 78,721    | 9,918      | 68,429    | 12,277     |
| 416                    | 16,273    | 3,410      | 15,608    | 3,182      | 20,148    | 7,739      |
| 417                    | 6,369     | 779        | 5,993     | 713        | 5,316     | 0          |
| 419                    | 5,055     | 392        | 3,659     | 722        | 4,200     | 65         |
| 421                    | 3,661     | 1,440      | 261       | 97         | 241       | 858        |
| 431                    | 26,177    | 5,166      | 30,728    | 2,492      | 52,425    | 6,914      |
| 443                    | 15,914    | 2,242      | 10,004    | 1,084      | 13,146    | 6,878      |
| 445                    | 139,542   | 15,123     | 130,533   | 12,468     | 109,880   | 17,022     |
| 446                    | 9,717     | 1,817      | 10,092    | 3,226      | 7,675     | 2,009      |
| 471                    |           | He 15,333  |           | He 18,278  |           |            |
| 483                    | 7,503     | 12,757     | 4,207     | 7,152      | 2,137     | 3,633      |
| 484                    | 105       | 0          | 72        | 0          | 56        | 0          |
| 506                    | 147,043   | 31,399     | 48,703    | 11,256     | 45,716    | 15,672     |
| 509                    | 8,078     | 10,117     | 4,610     | 5,992      | 959       | 1,247      |
| 511                    | 16,485    | 25,089     | 11,222    | 14,590     | 689       | 895        |
| 514                    | 1,650     | 13,434     |           |            |           |            |
| 515                    | 10,602    | 59,911     | 2,508     | 17,453     | 515       | 12,148     |
| 518                    | 5,607     | 38,880     | 4,575     | 18,309     | 2,877     | 7,787      |
| 537                    |           | He 3,238   |           |            |           |            |
| 553                    |           | He 11,321  |           | He 12,016  |           |            |
| 592                    |           | He 365     |           | He 626     |           |            |
| 608                    | 0         | 0          | 534       | 9,227      | 795       | 5,460      |
| 618                    | 0         | 0          | 0         | 0          | 13,017    | 6,087      |
| 1-72                   |           | He 268,543 |           | He 184,948 |           | He 84,912  |
| ANNUAL                 | 993,110   | 796,612    | 804,002   | 394,267    | 740,043   | 244,613    |
| TOTAL                  |           | He 810,622 |           | He 661,589 |           | He 385,296 |



| STATE<br>PERMIT<br>NO. | 1975      |            | 1976*     |           | 1977      |           |
|------------------------|-----------|------------|-----------|-----------|-----------|-----------|
|                        | OIL (Bbl) | GAS (Mcf)  | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) |
| 10                     |           | He 758     |           | He 98     |           |           |
| 22                     | 308       | 246        | 142       | 124       | 149       | 121       |
| 36                     |           | He 9,569   |           | He 644    |           |           |
| 58                     | 6,493     | 8,194      | 975       | 1,830     | 1,492     | 1,984     |
| 77                     | 5,748     | 401        | 5,735     | 402       | 5,174     | 362       |
| 81                     |           | He 16,546  |           | He 589    |           |           |
| 106                    | 0         | 4,363      | 0         | 2,737     | 0         | 3,080     |
| 115                    | 12,320    | 875        | 11,532    | 806       | 10,333    | 724       |
| 194                    |           | He 158,813 |           | He 14,918 |           |           |
| 232                    | 19,775    | 18,184     | 16,881    | 39,462    | 10,263    | 41,128    |
| 238                    |           | He 2,174   |           | He 433    |           |           |
| 349                    |           | He 24,695  |           | He 3,381  |           |           |
| 377                    | 41,452    | 6,732      | 27,970    | 5,144     | 20,428    | 4,908     |
| 379                    | 56,682    | 13,826     | 37,402    | 17,067    | 27,005    | 16,679    |
| 384                    | 86,191    | 277        | 109,448   | 1,945     | 86,689    | 922       |
| 386                    | 26,386    | 21,604     | 19,324    | 26,089    | 11,584    | 23,057    |
| 388                    | 55,305    | 36,794     | 44,998    | 54,104    | 25,548    | 42,409    |
| 389                    | 7,107     | 4,068      | 5,486     | 5,541     | 3,608     | 8,309     |
| 390                    | 25,664    | 7,077      | 20,172    | 6,203     | 11,568    | 9,525     |
| 396                    | 57,792    | 13,676     | 43,042    | 22,973    | 50,547    | 29,964    |
| 416                    | 19,620    | 9,718      | 14,076    | 8,494     | 12,103    | 8,220     |
| 417                    | 4,576     | 0          | 6,493     | 2,317     | 3,491     | 3,221     |
| 419                    | 3,363     | 0          | 3,488     | 824       | 2,420     | 0         |
| 421                    | 233       | 788        | 339       | 81        | 360       | 0         |
| 431                    | 46,206    | 9,154      | 28,517    | 7,233     | 20,945    | 9,300     |
| 443                    | 9,291     | 6,875      | 9,068     | 9,370     | 6,250     | 14,212    |
| 445                    | 79,093    | 16,037     | 61,648    | 11,395    | 46,625    | 14,760    |
| 446                    | 5,589     | 2,102      | 860       | 317       |           |           |
| 484                    | 58        | 0          | 50        | 0         | 67        | 0         |
| 506                    | 42,603    | 12,889     | 22,205    | 16,753    | 14,673    | 43,595    |
| 515                    | 186       | 8,370      | 524       | 9,448     | 1,602     | 8,485     |
| 518                    | 1,102     | 8,421      | 205       | 615       | 619       | 1,857     |
| 582                    | 4,122     | 14,025     | 1,166     | 2,097     |           |           |
| 618                    | 8,103     | 3,124      | 8,061     | 5,970     | 3,926     | 11,462    |
| 640                    | 9,301     | 20,470     | 19,080    | 28,514    | 17,187    | 13,477    |
| 663                    |           |            |           |           | 31,217    | 22,726    |
| 678                    |           |            |           |           | 1,407     | 1,894     |
| 683                    |           |            |           |           | 50        | 0         |
| 1-72                   |           | He 899     |           | He 5      |           |           |
| ANNUAL                 | 634,669   | 248,290    | 518,887   | 287,855   | 427,330   | 336,381   |
| TOTAL                  |           | He 213,454 |           | He 20,068 |           |           |

\* LAST YEAR OF HELIUM PRODUCTION IN HOLBROOK BASIN

| STATE<br>PERMIT<br>NO. | 1978           |                | 1979           |                | 1980           |                |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                        | OIL (Bbl)      | GAS (Mcf)      | OIL (Bbl)      | GAS (Mcf)      | OIL (Bbl)      | GAS (Mcf)      |
| 22                     | 84             | 65             | 404            | 46,714         | 731            | 43,889         |
| 28                     | 0              | 0              | 1,884          | 5,566          | 12,036         | 21,556         |
| 58                     | 371            | 484            | 929            | 273            | 1,663          | 0              |
| 77                     | 5,416          | 380            | 5,199          | 364            | 4,418          | 309            |
| 106                    | 0              | 3,176          | 0              | 3,039          | 0              | 2,308          |
| 115                    | 9,295          | 651            | 8,206          | 575            | 7,814          | 548            |
| 232                    | 6,896          | 41,736         | 5,056          | 41,846         | 2,884          | 44,688         |
| 377                    | 15,336         | 1,999          | 11,989         | 2,102          | 7,897          | 1,957          |
| 379                    | 16,276         | 18,142         | 1,171          | 2,974          |                |                |
| 384                    | 95,073         | 1,521          | 62,036         | 961            | 62,332         | 783            |
| 386                    | 8,201          | 35,102         | 5,471          | 12,253         | 5,610          | 2,062          |
| 388                    | 18,992         | 33,644         | 12,631         | 14,869         | 12,201         | 27,650         |
| 389                    | 8,193          | 24,161         | 2,421          | 3,775          |                |                |
| 390                    | 13,107         | 7,347          | 12,467         | 3,881          | 7,478          | 3,714          |
| 396                    | 39,367         | 7,504          | 23,942         | 12,207         | 10,696         | 19,824         |
| 416                    | 23,247         | 15,139         | 14,461         | 3,940          | 11,016         | 6,974          |
| 417                    | 3,353          | 3,015          | 2,376          | 3,422          | 2,722          | 1,504          |
| 419                    | 3,054          | 532            | 3,784          | 2,050          | 2,076          | 1,510          |
| 420                    | 0              | 0              | 257            | 0              | 1,643          | 5,824          |
| 421                    | 0              | 0              | 21             | 0              |                |                |
| 431                    | 18,786         | 7,448          | 22,962         | 4,680          | 12,593         | 2,351          |
| 443                    | 7,226          | 3,448          | 5,884          | 2,497          | 4,226          | 2,330          |
| 445                    | 29,745         | 7,772          | 25,257         | 5,995          | 23,459         | 2,906          |
| 484                    | 70             | 0              | 63             | 0              | 118            | 0              |
| 506                    | 4,097          | 14,494         | 1,688          | 58,011         | 1,895          | 39,465         |
| 515                    | 1,051          | 5,576          | 790            | 16,404         | 1,841          | 18,117         |
| 518                    | 219            | 657            | 125            | 1,816          | 320            | 1,742          |
| 618                    | 2,744          | 4,816          | 2,638          | 3,029          | 3,004          | 1,626          |
| 640                    | 19,072         | 11,910         | 15,627         | 15,780         | 16,561         | 14,878         |
| 663                    | 20,043         | 12,397         | 16,502         | 14,537         | 12,258         | 11,220         |
| 678                    | 6,485          | 12,235         | 3,973          | 11,149         | 4,591          | 13,345         |
| 683                    | 60             | 0              |                |                |                |                |
| 690                    | 3,001          | 826            | 37,282         | 6,949          | 17,992         | 1,515          |
| 691                    | 18,215         | 1,467          | 88,770         | 11,779         | 55,444         | 25,176         |
| 692                    | 5,485          | 2,772          | 6,182          | 3,572          | 5,521          | 2,346          |
| 693                    | 8,199          | 1,415          | 4,833          | 5,401          | 6,156          | 1,388          |
| 694                    | 560            | 0              | 841            | 103            |                |                |
| 695                    | 5,888          | 3,884          | 36,762         | 19,621         | 20,277         | 11,598         |
| 696                    | 400            | 0              | 26,952         | 6,146          | 66,470         | 22,338         |
| <b>ANNUAL</b>          | <b>417,607</b> | <b>285,715</b> | <b>471,836</b> | <b>348,280</b> | <b>405,943</b> | <b>357,441</b> |
| <b>TOTAL</b>           |                |                |                |                |                |                |

| STATE<br>PERMIT<br>NO. | 1981      |           | 1982      |           | 1983      |           |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                        | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) |
| 22                     | 684       | 31,269    | 658       | 22,025    | 757       | 25,016    |
| 28                     | 10,886    | 13,759    | 12,903    | 12,542    | 11,137    | 9,308     |
| 58                     | 1,503     | 0         | 145       | 0         |           |           |
| 77                     | 4,195     | 294       | 4,976     | 348       | 4,441     | 306       |
| 106                    | 0         | 2,797     | 0         | 9,006     | 0         | 10,223    |
| 115                    | 6,131     | 430       | 6,734     | 456       | 9,311     | 653       |
| 232                    | 2,992     | 46,353    | 2,043     | 13,247    | 2,415     | 10,981    |
| 377                    | 8,485     | 2,361     | 7,750     | 2,337     | 8,231     | 2,155     |
| 384                    | 52,156    | 522       | 58,484    | 1,724     | 49,283    | 1,528     |
| 386                    | 8,145     | 38,420    | 6,459     | 22,892    | 3,702     | 17,701    |
| 388                    | 10,418    | 9,149     | 10,081    | 18,857    | 7,981     | 14,635    |
| 390                    | 6,324     | 4,546     | 4,961     | 1,545     | 3,488     | 801       |
| 396                    | 4,743     | 2,254     | 3,107     | 717       | 2,013     | 584       |
| 416                    | 8,147     | 5,697     | 3,662     | 2,796     | 2,751     | 1,425     |
| 417                    | 2,132     | 1,985     | 1,574     | 3,179     | 1,177     | 1,276     |
| 419                    | 3,300     | 807       | 2,975     | 816       | 279       | 169       |
| 420                    | 1,412     | 8,896     | 624       | 4,131     | 403       | 1,635     |
| 431                    | 8,570     | 2,030     | 9,739     | 2,177     | 9,729     | 1,876     |
| 443                    | 2,504     | 3,131     | 3,113     | 3,259     | 410       | 1,600     |
| 445                    | 24,734    | 3,067     | 24,916    | 4,842     | 17,591    | 2,201     |
| 484                    | 168       | 0         | 689       | 0         | 827       | 0         |
| 506                    | 699       | 8,761     | 960       | 13,462    | 841       | 23,881    |
| 515                    | 1,816     | 7,654     | 301       | 3,075     |           |           |
| 618                    | 2,094     | 1,132     | 1,888     | 1,119     | 1,903     | 496       |
| 640                    | 12,683    | 12,068    | 8,874     | 7,802     | 7,279     | 15,001    |
| 663                    | 8,865     | 9,527     | 7,365     | 7,692     | 4,670     | 3,835     |
| 678                    | 3,858     | 15,375    | 4,079     | 8,895     | 2,116     | 5,014     |
| 690                    | 8,516     | 3,010     | 7,405     | 3,110     | 7,328     | 640       |
| 691                    | 36,150    | 15,166    | 26,037    | 16,582    | 16,222    | 19,186    |
| 692                    | 5,486     | 0         | 3,142     | 1,376     | 1,949     | 3,411     |
| 693                    | 3,978     | 2,147     | 2,725     | 2,115     | 3,025     | 1,761     |
| 695                    | 15,548    | 4,968     | 8,601     | 4,796     | 9,324     | 4,183     |
| 696                    | 30,870    | 6,783     | 16,499    | 6,012     | 8,757     | 5,036     |
| 717                    | 5,668     | 12,850    | 528       | 695       | 0         | 0         |
| 719                    | 7,070     | 848       | 20,872    | 7,391     | 9,563     | 6,620     |
| 720                    | 3,257     | 944       | 4,085     | 9,251     | 668       | 556       |
| 721                    | 11,868    | 1,187     | 14,901    | 5,382     | 11,123    | 6,012     |
| 722                    | 8,345     | 9,082     | 11,556    | 22,007    | 5,481     | 31,160    |
| 723                    | 22,961    | 3,042     | 25,724    | 12,618    | 12,834    | 8,059     |
| 801                    |           |           | 4,073     | 896       | 604       | 1,022     |
| ANNUAL<br>TOTAL        | 357,361   | 292,311   | 335,208   | 261,172   | 239,613   | 239,946   |

| STATE<br>PERMIT<br>NO. | 1984      |           | 1985      |           | 1986      |           |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                        | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) |
| 22                     | 237       | 5,392     | 1,197     | 9,419     | 715       | 6,046     |
| 28                     | 11,106    | 5,222     | 9,039     | 9,627     | 7,032     | 3,408     |
| 77                     | 4,162     | 292       | 4,467     | 64        | 821       | 0         |
| 106                    | 0         | 9,739     | 0         | 12,753    | 0         | 2,077     |
| 115                    | 7,704     | 539       | 7,245     | 116       | 4,345     | 0         |
| 232                    | 2,337     | 7,660     | 1,206     | 6,002     | 1,083     | 4,700     |
| 377                    | 7,825     | 2,812     | 4,949     | 2,681     | 4,260     | 2,576     |
| 384                    | 61,622    | 1,942     | 38,064    | 1,879     | 40,528    | 1,893     |
| 386                    | 4,522     | 18,966    | 3,657     | 17,034    | 3,851     | 13,373    |
| 388                    | 6,990     | 18,822    | 6,638     | 18,255    | 7,543     | 18,313    |
| 390                    | 3,676     | 979       | 3,568     | 1,010     | 3,789     | 975       |
| 416                    | 3,289     | 1,620     | 2,725     | 1,584     | 2,617     | 1,504     |
| 417                    | 2,799     | 1,953     | 2,644     | 1,995     | 1,356     | 1,050     |
| 431                    | 9,008     | 2,496     | 7,647     | 2,058     | 7,065     | 2,166     |
| 445                    | 15,912    | 2,834     | 12,228    | 2,680     | 11,680    | 2,695     |
| 484                    | 409       | 0         | 639       | 0         | 458       | 0         |
| 506                    | 946       | 33,359    | 964       | 33,413    | 1,244     | 32,049    |
| 618                    | 2,935     | 642       | 2,342     | 618       | 2,304     | 710       |
| 640                    | 7,489     | 8,212     | 4,970     | 817       | 2,747     | 0         |
| 663                    | 2,288     | 663       | 1,380     | 138       | 476       | 0         |
| 678                    | 1,816     | 2,997     | 887       | 1,330     |           |           |
| 690                    | 2,306     | 442       | 0         | 0         |           |           |
| 691                    | 11,385    | 21,880    | 11,413    | 22,510    | 9,880     | 22,860    |
| 692                    | 2,509     | 2,427     | 3,514     | 2,521     | 2,399     | 2,461     |
| 693                    | 3,582     | 1,843     | 3,093     | 1,910     | 2,931     | 1,941     |
| 695                    | 1,099     | 649       | 0         | 0         |           |           |
| 696                    | 6,525     | 5,864     | 4,632     | 5,962     | 4,445     | 5,762     |
| 719                    | 7,297     | 6,331     | 4,205     | 5,996     | 4,094     | 5,620     |
| 721                    | 8,633     | 6,000     | 7,286     | 5,945     | 6,919     | 5,910     |
| 722                    | 5,297     | 44,290    | 3,310     | 30,989    | 2,747     | 35,162    |
| 723                    | 6,832     | 9,910     | 3,661     | 9,605     | 3,467     | 9,244     |
| 801                    | 2,482     | 0         | 653       | 0         | 135       | 0         |
| 852                    |           |           | 15,835    | 834       | 19,291    | 2,715     |
| ANNUAL<br>TOTAL        | 215,019   | 226,777   | 174,058   | 209,745   | 160,222   | 185,210   |

| STATE<br>PERMIT<br>NO. | 1987           |                | 1988           |                | 1989           |                  |
|------------------------|----------------|----------------|----------------|----------------|----------------|------------------|
|                        | OIL (Bbl)      | GAS (Mcf)      | OIL (Bbl)      | GAS (Mcf)      | OIL (Bbl)      | GAS (Mcf)        |
| 22                     | 929            | 9,739          | 824            | 8,301          | 748            | 11,824           |
| 28                     | 5,479          | 4,381          | 4,161          | 2,355          | 3,208          | 2,606            |
| 115                    | 2,201          | 0              | 1,988          | 0              | 5,351          | 0                |
| 232                    | 895            | 2,610          | 467            | 0              | 13             | 0                |
| 377                    | 4,477          | 2,802          | 3,728          | 2,774          | 3,406          | 2,817            |
| 384                    | 47,347         | 2,020          | 38,448         | 1,990          | 43,882         | 1,584            |
| 386                    | 5,547          | 19,390         | 4,328          | 18,854         | 3,587          | 16,007           |
| 388                    | 7,880          | 19,252         | 6,579          | 18,686         | 6,499          | 17,294           |
| 390                    | 3,607          | 1,001          | 3,343          | 874            | 2,511          | 796              |
| 416                    | 2,725          | 1,511          | 2,081          | 1,449          | 1,387          | 1,372            |
| 431                    | 6,487          | 2,116          | 7,562          | 2,123          | 7,743          | 2,316            |
| 445                    | 10,964         | 2,853          | 8,489          | 2,743          | 8,786          | 2,977            |
| 484                    | 283            | 0              | 193            | 0              | 229            | 0                |
| 506                    | 2,067          | 34,133         | 3,447          | 32,846         | 4,540          | 24,875           |
| 559                    |                |                |                |                | 493            | 355,487          |
| 581                    |                |                |                |                | 516            | 92,271           |
| 615                    |                |                |                |                | 1,930          | 858,497          |
| 618                    | 606            | 225            |                |                |                |                  |
| 640                    | 821            | 0              |                |                |                |                  |
| 691                    | 8,471          | 22,517         | 8,427          | 22,500         | 6,889          | 17,501           |
| 692                    | 2,869          | 2,432          | 2,398          | 2,494          | 1,539          | 2,081            |
| 693                    | 3,002          | 1,872          | 2,865          | 1,909          | 3,235          | 1,648            |
| 696                    | 3,035          | 5,827          | 3,527          | 5,353          | 3,194          | 4,134            |
| 719                    | 2,096          | 4,827          | 2,477          | 3,959          | 2,372          | 5,192            |
| 721                    | 3,977          | 4,218          | 3,837          | 5,889          | 2,389          | 4,675            |
| 722                    | 1,730          | 31,597         | 1,682          | 33,675         | 789            | 21,796           |
| 723                    | 3,221          | 9,602          | 2,306          | 9,822          | 3,470          | 8,407            |
| 801                    | 12             | 2              | 5              | 0              |                |                  |
| 852                    |                |                | 17             | 0              | 19,264         | 0                |
| ANNUAL<br>TOTAL        | <u>130,728</u> | <u>184,927</u> | <u>113,179</u> | <u>178,596</u> | <u>137,970</u> | <u>1,456,157</u> |

| STATE<br>PERMIT<br>NO. | 1990           |                  | 1991           |                  | 1992          |                |
|------------------------|----------------|------------------|----------------|------------------|---------------|----------------|
|                        | OIL (Bbl)      | GAS (Mcf)        | OIL (Bbl)      | GAS (Mcf)        | OIL (Bbl)     | GAS (Mcf)      |
| 22                     | 695            | 8,363            | 991            | 13,399           | 817           | 13,995         |
| 28                     | 1,072          | 1,521            | 989            | 2,402            | 30            | 57             |
| 106                    | 0              | 0                | 623            | 364,207          | 82            | 250,714        |
| 115                    | 6,509          | 0                | 2,197          | 84,347           | 11            | 26,696         |
| 213                    |                |                  |                |                  | 0             | 6,489          |
| 377                    | 3,184          | 2,492            | 3,754          | 2,527            | 2,250         | 2,659          |
| 384                    | 30,473         | 325              | 36,712         | 340              | 31,993        | 454            |
| 386                    | 4,221          | 9,772            | 3,652          | 9,828            | 3,819         | 9,825          |
| 388                    | 6,273          | 11,764           | 5,345          | 11,934           | 4,326         | 12,263         |
| 390                    | 2,409          | 329              | 2,072          | 338              | 1,451         | 363            |
| 416                    | 1,423          | 1,340            | 1,027          | 1,428            | 415           | 1,452          |
| 431                    | 6,489          | 2,212            | 7,933          | 2,415            | 5,570         | 2,424          |
| 445                    | 8,123          | 2,848            | 7,694          | 2,880            | 7,840         | 2,915          |
| 484                    | 266            | 247              | 228            | 236              | 340           | 364            |
| 490                    | 0              | 0                | 1,492          | 32,043           | 329           | 260            |
| 506                    | 3,365          | 4,928            | 4,953          | 4,998            | 10,725        | 5,096          |
| 559                    | 313            | 346,628          | 0              | 92,412           | 64            | 72,080         |
| 581                    | 1,149          | 171,371          | 398            | 60,207           | 110           | 50,454         |
| 615                    | 1,372          | 670,759          | 265            | 68,969           |               |                |
| 691                    | 6,626          | 6,138            | 4,623          | 6,372            | 4,817         | 6,372          |
| 692                    | 2,004          | 1,424            | 790            | 1,404            | 973           | 1,497          |
| 693                    | 3,221          | 999              | 3,307          | 1,053            | 4,645         | 1,161          |
| 696                    | 2,409          | 351              | 1,421          | 337              | 1,146         | 359            |
| 719                    | 2,178          | 3,390            | 1,283          | 3,570            | 1,169         | 3,710          |
| 721                    | 3,514          | 2,082            | 1,422          | 1,848            | 2,018         | 1,817          |
| 722                    | 528            | 333              | 891            | 349              | 718           | 359            |
| 723                    | 2,880          | 4,886            | 1,657          | 4,844            | 1,571         | 4,962          |
| 852                    | 17,342         | 0                | 12,121         | 0                | 6,782         | 0              |
| 868                    | 2,933          | 686,800          | 695            | 92,414           | 138           | 72,080         |
| 871                    | 854            | 205,887          | 2,237          | 412,786          | 228           | 242,804        |
| <b>ANNUAL</b>          | <b>121,825</b> | <b>2,147,189</b> | <b>110,772</b> | <b>1,279,887</b> | <b>94,377</b> | <b>793,681</b> |
| <b>TOTAL</b>           |                |                  |                |                  |               |                |

| STATE<br>PERMIT<br>NO. | 1993      |           | 1994      |           | 1995      |           |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                        | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) |
| 22                     | 1,522     | 15,103    | 688       | 8,591     | 129       | 841       |
| 28                     | 0         | 0         | 195       | 77,006    | 921       | 7,896     |
| 106                    | 3         | 49,295    | 0         | 807       | 0         | 0         |
| 115                    | 0         | 0         | 0         | 0         | 0         | 0         |
| 213                    | 0         | 9680      | 0         | 8,786     | 146       | 32,869    |
| 377                    | 2,373     | 2,785     | 3,638     | 1,876     | 3,167     | 1,451     |
| 384                    | 27,201    | 3,159     | 24,961    | 2,171     | 22,705    | 1,588     |
| 386                    | 3,393     | 2,985     | 2,770     | 173       | 3,393     | 0         |
| 388                    | 2,950     | 12,207    | 3,902     | 7,874     | 3,502     | 4,332     |
| 390                    | 1,215     | 1,892     | 613       | 74        | 977       | 0         |
| 416                    | 647       | 714       | 322       | 20        | 398       | 0         |
| 431                    | 3,913     | 2,143     | 4,002     | 1,420     | 4,285     | 1,421     |
| 445                    | 5,455     | 2,669     | 5,240     | 2,267     | 4,538     | 1,958     |
| 484                    | 261       | 365       | 121       | 115       | 112       | 0         |
| 490                    | 1,705     | 38,823    | 729       | 7,856     | 0         | 0         |
| 506                    | 5,362     | 7,953     | 4,292     | 6,417     | 3,730     | 3,779     |
| 559                    | 42        | 24,716    | 2         | 1,875     | 4         | 5,079     |
| 581                    | 116       | 116,583   | 149       | 156,195   | 153       | 119,717   |
| 691                    | 3,648     | 1,168     | 2,637     | 105       | 2,321     | 0         |
| 692                    | 843       | 5,631     | 531       | 216       | 762       | 0         |
| 693                    | 3,846     | 1,335     | 2,178     | 8         | 3,739     | 0         |
| 696                    | 1,295     | 4,209     | 977       | 71        | 1,364     | 0         |
| 719                    | 1,016     | 335       | 718       | 12        | 950       | 0         |
| 721                    | 1,612     | 999       | 1,593     | 221       | 1,406     | 0         |
| 722                    | 650       | 334       | 139       | 6         | 184       | 0         |
| 723                    | 985       | 5,022     | 274       | 170       | 383       | 0         |
| 852                    | 2,573     | 0         | 3,216     | 2,692     | 7,691     | 8,682     |
| 868                    | 104       | 105,186   | 96        | 85,298    | 71        | 59,510    |
| 871                    | 138       | 80,616    | 27        | 41,758    | 65        | 28,863    |
| 875                    | 273       | 122,090   | 738       | 345,316   | 670       | 204,397   |
| 882                    |           |           |           |           | 3,301     | 75,828    |
| ANNUAL<br>TOTAL        | 73,141    | 617,997   | 64,748    | 759,396   | 71,067    | 558,211   |

| STATE<br>PERMIT<br>NO. | 1996      |           | 1997      |           | 1998      |           |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                        | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) |
| 22                     | 440       | 11,971    | 642       | 19,300    | 354       | 7,447     |
| 28                     | 3,652     | 7,202     | 3,773     | 13,489    | 1,533     | 6,298     |
| 106                    | 0         | 0         | 449       | 50,112    | 1,662     | 95,244    |
| 115                    | 0         | 0         | 192       | 0         | 254       | 24,847    |
| 213                    | 162       | 40,852    | 42        | 32,457    | 0         | 329       |
| 377                    | 3,109     | 1,375     | 3,030     | 1,342     | 3,056     | 1,958     |
| 384                    | 23,811    | 742       | 16,532    | 263       | 17,143    | 474       |
| 386                    | 3,442     | 2,874     | 3,214     | 2,048     | 3,398     | 1,966     |
| 388                    | 3,146     | 2,830     | 3,387     | 1,686     | 2,342     | 1,514     |
| 389                    | 0         | 0         | 91        | 0         | 115       | 0         |
| 390                    | 940       | 0         | 891       | 0         | 955       | 0         |
| 396                    | 0         | 0         | 194       | 0         | 333       | 0         |
| 416                    | 395       | 0         | 374       | 0         | 399       | 0         |
| 417                    | 0         | 0         | 0         | 0         | 108       | 0         |
| 419                    | 0         | 0         | 0         | 0         | 174       | 0         |
| 431                    | 4,274     | 1,186     | 3,582     | 479       | 3,044     | 210       |
| 445                    | 3,947     | 1,674     | 3,625     | 266       | 4,264     | 0         |
| 484                    | 156       | 0         | 153       | 0         | 86        | 0         |
| 490                    | 9         | 7         | 315       | 1,311     | 0         | 0         |
| 506                    | 3,364     | 2,649     | 3,524     | 1,936     | 3,713     | 1,702     |
| 559                    | 3         | 3,764     | 2         | 3,884     | 1         | 3,848     |
| 581                    | 272       | 123,004   | 140       | 118,532   | 107       | 103,813   |
| 618                    | 2,120     | 626       | 1,342     | 0         | 1,791     | 0         |
| 691                    | 2,359     | 0         | 2,120     | 0         | 2,246     | 0         |
| 692                    | 628       | 0         | 1,543     | 0         | 1,283     | 0         |
| 693                    | 3,677     | 0         | 3,467     | 0         | 2,888     | 0         |
| 695                    | 9,888     | 1,357     | 14,740    | 2,550     | 8,726     | 2,172     |
| 696                    | 1,369     | 0         | 1,181     | 0         | 1,183     | 0         |
| 719                    | 958       | 1,118     | 918       | 1,612     | 956       | 1,460     |
| 720                    | 0         | 0         | 0         | 0         | 7,418     | 0         |
| 721                    | 1,612     | 579       | 1,609     | 750       | 1,629     | 636       |
| 722                    | 183       | 0         | 206       | 0         | 145       | 0         |
| 723                    | 348       | 1,178     | 349       | 0         | 353       | 0         |
| 852                    | 7,363     | 9,417     | 8,189     | 7,675     | 3,870     | 2,640     |
| 868                    | 118       | 56,170    | 56        | 50,519    | 38        | 36,433    |
| 871                    | 11        | 8,573     | 0         | 380       | 0         | 0         |
| 875                    | 417       | 72,848    | 315       | 36,888    | 944       | 78,200    |
| 882                    | 1,874     | 111,646   | 1,898     | 105,170   | 1,598     | 85,988    |
| ANNUAL<br>TOTAL        | 84,047    | 463,642   | 82,085    | 452,649   | 78,109    | 457,179   |



| STATE<br>PERMIT<br>NO. | 1999          |                | 2000          |                | 2001          |                |
|------------------------|---------------|----------------|---------------|----------------|---------------|----------------|
|                        | OIL (Bbl)     | GAS (Mcf)      | OIL (Bbl)     | GAS (Mcf)      | OIL (Bbl)     | GAS (Mcf)      |
| 22                     | 0             | 0              | 0             | 0              | 0             | 0              |
| 28                     | 0             | 0              | 0             | 0              | 0             | 0              |
| 106                    | 930           | 53,340         | 364           | 47,230         | 17            | 47,296         |
| 115                    | 440           | 48,357         | 330           | 72,027         | 10            | 58,638         |
| 213                    | 210           | 2,801          | 0             | 0              | 0             | 0              |
| 377                    | 1,605         | 0              | 2,411         | 0              | 2,913         | 0              |
| 384                    | 14,027        | 487            | 8,270         | 0              | 3,690         | 0              |
| 386                    | 2,393         | 595            | 2,560         | 0              | 2,530         | 0              |
| 388                    | 1,474         | 0              | 3,307         | 0              | 3,833         | 0              |
| 389                    | 50            | 0              | 50            | 0              | 31            | 0              |
| 390                    | 927           | 0              | 623           | 0              | 1,129         | 0              |
| 396                    | 99            | 0              | 50            | 0              | 56            | 0              |
| 416                    | 321           | 0              | 274           | 0              | 284           | 0              |
| 417                    | 125           | 0              | 12            | 0              | 21            | 0              |
| 419                    | 97            | 0              | 11            | 0              | 30            | 0              |
| 431                    | 2,746         | 183            | 2,448         | 51             | 3,473         | 0              |
| 445                    | 3,773         | 0              | 3,549         | 0              | 4,202         | 0              |
| 484                    | 61            | 0              | 56            | 0              | 33            | 0              |
| 490                    | 0             | 0              | 0             | 0              | 0             | 0              |
| 506                    | 4,411         | 0              | 4,392         | 0              | 5,183         | 585            |
| 559                    | 5             | 4,237          | 7             | 4,069          | 0             | 2,611          |
| 581                    | 165           | 93,805         | 191           | 95,835         | 222           | 88,762         |
| 618                    | 1,335         | 0              | 1,178         | 0              | 1,074         | 0              |
| 691                    | 2,261         | 0              | 1,555         | 0              | 2,832         | 0              |
| 692                    | 857           | 0              | 1,195         | 0              | 661           | 0              |
| 693                    | 1,717         | 0              | 2,295         | 0              | 2,738         | 0              |
| 695                    | 10,311        | 0              | 8,440         | 0              | 11,595        | 0              |
| 696                    | 1,173         | 0              | 1,016         | 0              | 1,359         | 0              |
| 719                    | 897           | 985            | 773           | 666            | 1,037         | 638            |
| 720                    | 7,458         | 0              | 8,405         | 0              | 7,634         | 0              |
| 721                    | 1,114         | 464            | 811           | 69             | 1,349         | 0              |
| 722                    | 220           | 0              | 207           | 0              | 224           | 0              |
| 723                    | 341           | 0              | 251           | 0              | 335           | 0              |
| 852                    | 412           | 84,184         | 279           | 8,483          | 0             | 8,125          |
| 868                    | 43            | 28,462         | 43            | 21,367         | 39            | 1,640          |
| 871                    | 0             | 0              | 0             | 13             | 0             | 118            |
| 875                    | 860           | 49,484         | 736           | 40,368         | 595           | 34,922         |
| 882                    | 2,442         | 100,453        | 1,208         | 72,267         | 1,168         | 63,241         |
| 907                    | 1,183         | 5,977          | 186           | 6,005          | 0             | 0              |
| <b>ANNUAL</b>          | <b>66,483</b> | <b>473,814</b> | <b>57,483</b> | <b>368,450</b> | <b>60,297</b> | <b>306,576</b> |
| <b>TOTAL</b>           |               |                |               |                |               |                |

| STATE<br>PERMIT<br>NO. | 2002      |                         | 2003      |                         | 2004      |                       |
|------------------------|-----------|-------------------------|-----------|-------------------------|-----------|-----------------------|
|                        | OIL (Bbl) | GAS (Mcf)               | OIL (Bbl) | GAS (Mcf)               | OIL (Bbl) | GAS (Mcf)             |
| 22                     | 0         | 0                       | 0         | 0                       | 0         | 0                     |
| 28                     | 0         | 0                       | 0         | 0                       | 0         | 0                     |
| 106                    | 234       | 27,231                  | 243       | 13,139                  | 23        | 5,023                 |
| 115                    | 379       | 50,972                  | 660       | 71,423                  | 665       | 81,467                |
| 377                    | 2,434     | 0                       | 2,570     | 0                       | 2,212     | 0                     |
| 384                    | 0         | 0                       | 0         | 0                       | 0         | 0                     |
| 385                    | 0         | 0                       | 0         | 181,909                 | 0         | 75,176                |
| 386                    | 2,838     | 0                       | 1,077     | 0                       | 2,137     | 0                     |
| 388                    | 3,479     | 0                       | 3,560     | 0                       | 2,867     | 0                     |
| 389                    | 0         | 0                       | 0         | 0                       | 0         | 0                     |
| 390                    | 895       | 0                       | 933       | 0                       | 1,099     | 0                     |
| 396                    | 0         | 0                       | 0         | 0                       | 0         | 0                     |
| 416                    | 292       | 0                       | 222       | 0                       | 574       | 0                     |
| 417                    | 102       | 0                       | 0         | 0                       | 0         | 0                     |
| 419                    | 0         | 0                       | 0         | 0                       | 0         | 0                     |
| 431                    | 2,542     | 0                       | 2,490     | 0                       | 498       | 0                     |
| 443                    | 0         | 0                       | 159       | 0                       | 0         | 0                     |
| 445                    | 3,476     | 0                       | 3,757     | 0                       | 2,909     | 0                     |
| 484                    | 38        | 0                       | 13        | 0                       | 0         | 0                     |
| 490                    | 0         | 0                       | 0         | 0                       | 0         | 0                     |
| 506                    | 5,023     | 201                     | 2,924     | 173                     | 2,584     | 180                   |
| 559                    | 0         | 1,522                   | 0         | 0                       | 0         | 0                     |
| 581                    | 122       | 105,029                 | 39        | 75,052                  | 271       | 74,883                |
| 618                    | 1,203     | 0                       | 843       | 0                       | 959       | 0                     |
| 691                    | 2,268     | 0                       | 1,261     | 0                       | 1,670     | 0                     |
| 692                    | 1,467     | 0                       | 1,560     | 0                       | 824       | 0                     |
| 693                    | 2,459     | 0                       | 2,986     | 0                       | 1,388     | 0                     |
| 695                    | 12,946    | 0                       | 12,312    | 0                       | 14,599    | 0                     |
| 696                    | 1,021     | 0                       | 839       | 0                       | 1,242     | 0                     |
| 719                    | 914       | 219                     | 468       | 192                     | 1,081     | 192                   |
| 720                    | 14,067    | 0                       | 4,408     | 0                       | 9,849     | 0                     |
| 721                    | 1,478     | 0                       | 1,047     | 0                       | 1,291     | 0                     |
| 722                    | 226       | 0                       | 21        | 0                       | 50        | 0                     |
| 723                    | 295       | 0                       | 330       | 0                       | 566       | 0                     |
| 852                    | 145       | 1,212                   | 48        | 1,177                   | 0         | 0                     |
| 868                    | 20        | 100                     | 5         | 0                       | 23        | 0                     |
| 871                    | 0         | 553                     | 0         | 0                       | 0         | 0                     |
| 875                    | 644       | 31,027                  | 772       | 23,997                  | 657       | 23,421                |
| 882                    | 1,577     | 70,772                  | 1,594     | 70,803                  | 1,134     | 64,885                |
| 896                    | 0         | CO <sub>2</sub> 216,897 | 0         | CO <sub>2</sub> 158,829 | 0         | CO <sub>2</sub> 2,168 |
| 907                    | 833       | 15,465                  | 148       | 5,569                   | 169       | 5,964                 |
| ANNUAL                 | 63,417    | 304,303                 | 47,289    | 443,434                 | 51,341    | 331,191               |
| TOTAL                  |           | CO <sub>2</sub> 216,897 |           | CO <sub>2</sub> 158,829 |           | CO <sub>2</sub> 2,168 |

| STATE<br>PERMIT<br>NO. | 2005      |                   | 2006      |                   | 2007      |                   |
|------------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|
|                        | OIL (Bbl) | GAS (Mcf)         | OIL (Bbl) | GAS (Mcf)         | OIL (Bbl) | GAS (Mcf)         |
| 22                     | 230       | 0                 | 537       | 0                 | 0         | 0                 |
| 28                     | 60        | 0                 | 2,059     | 10,918            | 279       | 36                |
| 106                    | 3         | 8,212             | 1         | 4,564             | 0         | 658               |
| 115                    | 587       | 69,314            | 521       | 59,193            | 520       | 57,239            |
| 377                    | 2,149     | 0                 | 2,560     | 0                 | 1,599     | 0                 |
| 384                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 385                    | 0         | 0                 | 0         | 398,936           | 0         | 441,176           |
| 386                    | 2,277     | 0                 | 2,586     | 0                 | 1,135     | 0                 |
| 388                    | 3,392     | 0                 | 1,693     | 0                 | 2,098     | 0                 |
| 389                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 390                    | 1,523     | 0                 | 1,663     | 0                 | 1,344     | 0                 |
| 396                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 416                    | 1,430     | 0                 | 1,442     | 0                 | 131       | 0                 |
| 417                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 419                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 431                    | 1,312     | 0                 | 2,083     | 0                 | 124       | 0                 |
| 443                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 445                    | 3,042     | 0                 | 3,254     | 0                 | 3,893     | 0                 |
| 484                    | 60        | 0                 | 98        | 0                 | 25        | 0                 |
| 490                    | 141       | 0                 | 21        | 0                 | 53        | 0                 |
| 506                    | 3,989     | 180               | 4,556     | 180               | 4,917     | 180               |
| 559                    | 0         | 0                 |           |                   |           |                   |
| 581                    | 2         | 66,214            | 27        | 48,089            | 14        | 75,366            |
| 618                    | 827       | 0                 | 959       | 0                 | 662       | 0                 |
| 691                    | 2,447     | 0                 | 2,144     | 0                 | 1,614     | 0                 |
| 692                    | 1,077     | 0                 | 1,187     | 0                 | 0         | 0                 |
| 693                    | 1,289     | 0                 | 1,435     | 0                 | 390       | 0                 |
| 695                    | 11,656    | 0                 | 13,449    | 0                 | 13,119    | 0                 |
| 696                    | 1,355     | 0                 | 1,530     | 0                 | 1,017     | 0                 |
| 719                    | 1,697     | 192               | 1,927     | 192               | 1,283     | 144               |
| 720                    | 4,349     | 0                 | 3,911     | 0                 | 2,865     | 0                 |
| 721                    | 1,741     | 0                 | 1,081     | 0                 | 1,908     | 0                 |
| 722                    | 489       | 0                 | 925       | 0                 | 0         | 0                 |
| 723                    | 1,336     | 0                 | 1,285     | 0                 | 1,526     | 0                 |
| 852                    | 11        | 158               |           |                   |           |                   |
| 868                    | 0         | 0                 |           |                   |           |                   |
| 871                    | 0         | 0                 |           |                   |           |                   |
| 875                    | 476       | 21,530            | 604       | 20,630            | 743       | 20,447            |
| 882                    | 1,100     | 58,516            | 1,138     | 49,325            | 1,255     | 51,919            |
| 896                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 907                    | 204       | 8,842             | 131       | 16,413            | 178       | 7,365             |
| ANNUAL                 | 50,251    | 233,158           | 54,807    | 608,440           | 42,692    | 654,530           |
| TOTAL                  |           | CO <sub>2</sub> 0 |           | CO <sub>2</sub> 0 |           | CO <sub>2</sub> 0 |

| STATE<br>PERMIT<br>NO. | 2008      |                   | 2009      |                   | 2010      |           |
|------------------------|-----------|-------------------|-----------|-------------------|-----------|-----------|
|                        | OIL (Bbl) | GAS (Mcf)         | OIL (Bbl) | GAS (Mcf)         | OIL (Bbl) | GAS (Mcf) |
| 22                     | 0         | 0                 | 0         | 0                 | 0         | 0         |
| 28                     | 882       | 0                 | 211       | 0                 | 869       | 0         |
| 106                    | 0         | 194               |           |                   |           |           |
| 115                    | 911       | 62,680            | 810       | 55,609            | 762       | 60,316    |
| 377                    | 2,680     | 0                 | 2,376     | 0                 | 480       | 0         |
| 384                    | 0         | 0                 | 0         | 0                 | 0         | 0         |
| 385                    | 0         | 314,970           | 0         | 540,990           | 0         | 362       |
| 386                    | 531       | 0                 | 927       | 0                 | 594       | 0         |
| 388                    | 2,794     | 0                 | 3,037     | 0                 | 241       | 0         |
| 389                    | 0         | 0                 | 0         | 0                 | 0         | 0         |
| 390                    | 1,900     | 0                 | 1,799     | 0                 | 1,357     | 0         |
| 396                    | 0         | 0                 | 214       | 0                 | 0         | 0         |
| 416                    | 1,321     | 0                 | 1,312     | 0                 | 1,325     | 0         |
| 417                    | 0         | 0                 | 0         | 0                 | 0         | 0         |
| 419                    | 0         | 0                 | 0         | 0                 | 0         | 0         |
| 431                    | 1,909     | 0                 | 1,846     | 0                 | 3,029     | 0         |
| 443                    | 0         | 0                 | 0         | 0                 | 0         | 0         |
| 445                    | 4,084     | 0                 | 3,443     | 0                 | 1,755     | 0         |
| 484                    | 27        | 0                 | 0         | 0                 | 0         | 0         |
| 490                    | 0         | 0                 | 0         | 0                 | 0         | 0         |
| 506                    | 5,110     | 180               | 3,806     | 180               | 1,925     | 0         |
| 581                    | 69        | 72,668            | 68        | 53,425            | 11        | 52,189    |
| 618                    | 982       | 0                 | 927       | 0                 | 973       | 0         |
| 691                    | 2,315     | 0                 | 2,002     | 0                 | 1,002     | 0         |
| 692                    | 101       | 0                 | 805       | 0                 | 841       | 0         |
| 693                    | 0         | 0                 | 894       | 0                 | 1,600     | 0         |
| 695                    | 12,697    | 0                 | 13,108    | 0                 | 12,896    | 0         |
| 696                    | 1,036     | 0                 | 783       | 0                 | 929       | 0         |
| 719                    | 1,957     | 176               | 1,113     | 144               | 1,402     | 0         |
| 720                    | 4,377     | 0                 | 809       | 0                 | 2,961     | 0         |
| 721                    | 1,874     | 0                 | 1,796     | 0                 | 1,470     | 0         |
| 722                    | 704       | 0                 | 761       | 0                 | 1,412     | 0         |
| 723                    | 1,501     | 0                 | 1,871     | 0                 | 425       | 0         |
| 875                    | 617       | 16,336            | 471       | 16,563            | 600       | 22,527    |
| 882                    | 1,058     | 53,251            | 904       | 41,997            | 1,157     | 47,180    |
| 896                    | 0         | 0                 | 0         | 0                 | 0         | 0         |
| 907                    | 138       | 2,675             | 100       | 2,879             | 121       | 718       |
| ANNUAL<br>TOTAL        | 51,575    | 523,130           | 46,193    | 711,787           | 40,137    | 183,292   |
|                        |           | CO <sub>2</sub> 0 |           | CO <sub>2</sub> 0 |           |           |

| STATE<br>PERMIT<br>NO. | 2011      |                   | 2012      |                   | 2013      |                   |
|------------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|
|                        | OIL (Bbl) | GAS (Mcf)         | OIL (Bbl) | GAS (Mcf)         | OIL (Bbl) | GAS (Mcf)         |
| 28                     | 264       | 0                 | 0         | 0                 | 0         | 0                 |
| 115                    | 1,089     | 62,354            | 468       | 29,562            | 28        | 127               |
| 377                    | 2,172     | 0                 | 3,234     | 0                 | 2,569     | 0                 |
| 384                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 385                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 386                    | 95        | 0                 | 169       | 0                 | 183       | 0                 |
| 388                    | 1,140     | 0                 | 4,680     | 0                 | 4,063     | 0                 |
| 390                    | 833       | 0                 | 1,862     | 0                 | 1,959     | 0                 |
| 396                    | 0         | 0                 | 2,793     | 0                 | 3,204     | 0                 |
| 416                    | 969       | 0                 | 775       | 0                 | 1,083     | 0                 |
| 417                    | 0         | 0                 | 0         | 0                 | 912       | 0                 |
| 419                    | 0         | 0                 | 0         | 0                 | 3,992     | 0                 |
| 421                    | 0         | 0                 | 462       | 0                 | 1,317     | 0                 |
| 431                    | 2,588     | 0                 | 3,971     | 0                 | 3,788     | 0                 |
| 443                    | 0         | 0                 | 0         | 0                 | 1,097     | 0                 |
| 445                    | 4,649     | 0                 | 4,841     | 0                 | 2,922     | 0                 |
| 484                    | 0         | 0                 | 63        | 0                 | 147       | 0                 |
| 506                    | 3,818     | 0                 | 5,331     | 0                 | 5,120     | 0                 |
| 581                    | 7         | 40,134            | 7         | 35,416            | 20        | 26,848            |
| 618                    | 1,159     | 0                 | 180       | 0                 | 212       | 0                 |
| 691                    | 624       | 0                 | 372       | 0                 | 2,798     | 0                 |
| 692                    | 677       | 0                 | 3,749     | 0                 | 2,280     | 0                 |
| 693                    | 0         | 0                 | 1,695     | 0                 | 1,998     | 0                 |
| 695                    | 8,902     | 0                 | 8,783     | 0                 | 7,339     | 0                 |
| 696                    | 1,016     | 0                 | 343       | 0                 | 1,556     | 0                 |
| 719                    | 1,302     | 0                 | 456       | 0                 | 1,439     | 0                 |
| 720                    | 564       | 0                 | 1,595     | 0                 | 2,004     | 0                 |
| 721                    | 2,632     | 0                 | 1,796     | 0                 | 1,909     | 0                 |
| 722                    | 357       | 0                 | 848       | 0                 | 2,399     | 0                 |
| 723                    | 551       | 0                 | 1,974     | 0                 | 2,389     | 0                 |
| 875                    | 634       | 21,416            | 440       | 17,471            | 414       | 16,328            |
| 882                    | 765       | 43,864            | 902       | 34,070            | 785       | 21,337            |
| 896                    | 0         | 0                 | 0         | 0                 | 0         | 0                 |
| 907                    | 118       | 542               | 160       | 41                | 146       | 7,282             |
| ANNUAL                 | 36,925    | 168,310           | 51,949    | 116,560           | 60,072    | 71,922            |
| TOTAL                  |           | CO <sub>2</sub> 0 |           | CO <sub>2</sub> 0 |           | CO <sub>2</sub> 0 |

| STATE<br>PERMIT<br>NO. | 2014      |                   | 2015      |           | 2016      |           |
|------------------------|-----------|-------------------|-----------|-----------|-----------|-----------|
|                        | OIL (Bbl) | GAS (Mcf)         | OIL (Bbl) | GAS (Mcf) | OIL (Bbl) | GAS (Mcf) |
| 115                    | 82        | 16                |           |           |           |           |
| 377                    | 863       | 0                 |           |           |           |           |
| 384                    | 0         | 4,841             |           |           |           |           |
| 385                    | 0         | 11,568            |           |           |           |           |
| 386                    | 3,904     | 0                 |           |           |           |           |
| 388                    | 2,903     | 0                 |           |           |           |           |
| 390                    | 904       | 0                 |           |           |           |           |
| 396                    | 2,991     | 0                 |           |           |           |           |
| 416                    | 1,297     | 0                 |           |           |           |           |
| 417                    | 830       | 0                 |           |           |           |           |
| 419                    | 4,098     | 0                 |           |           |           |           |
| 421                    | 1,449     | 0                 |           |           |           |           |
| 431                    | 3,001     | 0                 |           |           |           |           |
| 443                    | 990       | 0                 |           |           |           |           |
| 445                    | 1,787     | 0                 |           |           |           |           |
| 484                    | 299       | 0                 |           |           |           |           |
| 506                    | 13,961    | 0                 |           |           |           |           |
| 581                    | 13        | 34,574            |           |           |           |           |
| 618                    | 358       | 0                 |           |           |           |           |
| 691                    | 879       | 0                 |           |           |           |           |
| 692                    | 593       | 0                 |           |           |           |           |
| 693                    | 597       | 0                 |           |           |           |           |
| 695                    | 4,867     | 0                 |           |           |           |           |
| 696                    | 1,419     | 0                 |           |           |           |           |
| 719                    | 1,490     | 0                 |           |           |           |           |
| 720                    | 823       | 0                 |           |           |           |           |
| 721                    | 1,129     | 0                 |           |           |           |           |
| 722                    | 2,363     | 0                 |           |           |           |           |
| 723                    | 1,392     | 0                 |           |           |           |           |
| 875                    | 308       | 16,756            |           |           |           |           |
| 882                    | 538       | 27,072            |           |           |           |           |
| 896                    | 0         | 0                 |           |           |           |           |
| 907                    | 111       | 10,825            |           |           |           |           |
| ANNUAL                 | 56,239    | 105,652           |           |           |           |           |
| TOTAL                  |           | CO <sub>2</sub> 0 |           |           |           |           |

## CUMULATIVE PRODUCTION BY PERMIT THROUGH DECEMBER 31, 2014

| PERMIT# | OIL (Bbl) | GAS (Mcf)    | PERMIT#      | OIL (Bbl)         | GAS (Mcf)               |
|---------|-----------|--------------|--------------|-------------------|-------------------------|
| ID 1-72 |           | He 1,779,380 | 446          | 115,795           | 20,969                  |
| 10      |           | He 530,692   | 471          |                   | He 42,073               |
| 18      |           | 497          | 481          | 1,182             | 384                     |
| 22      | 22,179    | 1,845,659    | 483          | 83,897            | 132,963                 |
| 28      | 147,883   | 2,054,982    | 484          | 8,811             | 2,501                   |
| 32      | 289       | 915,340      | 490          | 11,323            | 83,480                  |
| 35      | 12,528    | 2,376,948    | 506          | 1,047,856         | 649,474                 |
| 36      |           | He 1,441,149 | 509          | 59,444            | 78,919                  |
| 37      |           | He 6,184     | 511          | 65,222            | 175,088                 |
| 38      |           | He 48,244    | 514          | 26,154            | 169,997                 |
| 39      |           | He 513,646   | 515          | 59,474            | 369,696                 |
| 46      | 622       | 201,963      | 518          | 42,960            | 198,365                 |
| 58      | 281,153   | 973,725      | 537          |                   | He 8,299                |
| 69      | 89,257    | 3,754,957    | 553          |                   | He 23,337               |
| 77      | 239,958   | 27,499       | 559          | 936               | 922,212                 |
| 80      |           | He 43,387    | 581          | 4,358             | 2,150,436               |
| 81      |           | He 1,100,253 | 582          | 5,288             | 16,122                  |
| 88      |           | He 804,961   | 592          |                   | He 991                  |
| 106     | 12,200    | 1,101,091    | 608          | 1,329             | 14,687                  |
| 113     | 764       | 328          | 615          | 3,567             | 1,598,225               |
| 113     |           | He 385,774   | 618          | 74,649            | 41,682                  |
| 115     | 471,577   | 1,021,703    | 640          | 141,691           | 148,929                 |
| 146     | 6,173     | 8,108        | 663          | 105,064           | 82,735                  |
| 179     | 6,900     | 21,676       | 678          | 29,212            | 72,234                  |
| 194     |           | He 1,784,068 | 683          | 110               | 0                       |
| 206     |           | He 47,594    | 690          | 83,830            | 16,492                  |
| 213     | 560       | 134,263      | 691          | 356,744           | 239,279                 |
| 226     | 98,431    | 0            | 692          | 70,224            | 38,065                  |
| 232     | 197,012   | 1,105,926    | 693          | 102,073           | 29,906                  |
| 234     |           | He 22,057    | 694          | 1,401             | 103                     |
| 236     |           | He 86,948    | 695          | 307,872           | 55,778                  |
| 238     |           | He 276,812   | 696          | 205,285           | 84,544                  |
| 263     |           | He 25,559    | 717          | 6,196             | 13,545                  |
| 349     |           | He 266,127   | 719          | 89,428            | 65,731                  |
| 377     | 1,160,002 | 137,857      | 720          | 91,507            | 10,751                  |
| 378     |           | He 266       | 721          | 111,774           | 54,683                  |
| 379     | 1,925,688 | 260,712      | 722          | 55,787            | 261,139                 |
| 384     | 3,625,859 | 115,824      | 723          | 109,644           | 101,371                 |
| 385     |           | 1,965,087    | 801          | 7,964             | 1,920                   |
| 386     | 1,930,721 | 639,551      | 852          | 124,449           | 137,994                 |
| 388     | 1,165,523 | 653,170      | 868          | 4,422             | 1,295,979               |
| 389     | 658,386   | 108,151      | 871          | 3,560             | 1,022,351               |
| 390     | 304,683   | 87,339       | 875          | 12,928            | 1,252,877               |
| 396     | 1,666,008 | 259,211      | 882          | 27,396            | 1,249,553               |
| 416     | 322,647   | 148,816      | 896          |                   | CO <sub>2</sub> 377,894 |
| 417     | 116,929   | 37,903       | 907          | 3,925             | 96,262                  |
| 419     | 104,844   | 16,680       | <b>TOTAL</b> | <u>21,237,929</u> | <u>33,520,783</u>       |
| 420     | 6,415     | 21,965       |              |                   | He 9,237,801            |
| 421     | 13,570    | 7,022        |              |                   | CO <sub>2</sub> 377,894 |
| 427     | 109       | 1,395        |              |                   |                         |
| 431     | 883,232   | 143,751      |              |                   |                         |
| 434     | 563       | 2,562        |              |                   |                         |
| 443     | 179,463   | 182,629      |              |                   |                         |
| 444     | 577       | 4,255        |              |                   |                         |
| 445     | 1,920,493 | 224,817      |              |                   |                         |

**CUMULATIVE PRODUCTION BY FIELD THROUGH DECEMBER 31, 2014**

**OIL AND GAS FIELDS** (All production in Apache County)

|                             | <u>Oil (Bbl)</u> | <u>GAS (Mcf)</u> |
|-----------------------------|------------------|------------------|
| Bitá Peak (35)              | 12,528           | 2,376,948        |
| Black Rock                  | 70,865           | 9,527,973        |
| Dineh-Bi-Keyah              | 18,817,252       | 6,684,348        |
| Dry Mesa                    | 852,669          | 2,518,812        |
| East Boundary Butte         | 890,705          | 9,842,470        |
| North Toh-Atin (32)         | 289              | 915,340          |
| Teec Nos Pos                | 486,341          | 1,427,866        |
| Tohache Wash (113)          | 764              | 328              |
| Twin Falls Creek (46)       | 622              | 201,963          |
| Walker Creek (226)          | 98,431           | 0                |
| Undesignated (18, 179, 434) | 7,463            | 24,735           |

**HELIUM FIELDS** (Last production was in 1976)

|   |           |
|---|-----------|
| East Navajo Springs<br>(234, 471, 537, 553, 592)                  | 96,757    |
| Navajo Springs<br>(194, 206, 236, 238, 263)                       | 2,220,981 |
| Pinta Dome<br>(10, 36, 37, 38, 39, 80,<br>81, 88, 349, 378, 1-72) | 6,534,289 |
| Tohache Wash (113)  | 385,774   |

**CO<sub>2</sub> FIELD** (First production was in 2002)

|                    |         |
|--------------------|---------|
| St. Johns<br>(896) | 377,894 |
|--------------------|---------|