

# Alpha Resources, Inc.

## Certificate Of Analysis

### Coal and Coke Standards

| Part #  | Lot #        | Hg   | S.D.    | Cl   | S.D.   | % S  | S.D.    | % Ash | S.D.    |
|---------|--------------|------|---------|------|--------|------|---------|-------|---------|
| AR-3701 | 701399JRC100 | 0.09 | +/-0.02 | 1562 | +/-134 | 1.04 | +/-0.03 | 7.22  | +/-0.16 |
| AR-3702 | 702399JRC75  | 0.10 | +/-0.01 | 1713 | +/-213 | 0.77 | +/-0.04 | 6.45  | +/-0.13 |
| AR-3703 | 703399WAL99  | 0.12 | +/-0.02 | 165  | +/-35  | 0.45 | +/-0.02 | 7.64  | +/-0.69 |
| AR-3704 | 704399LIG94  | 0.13 | +/-0.01 | 107  | +/-50  | 1.17 | +/-0.02 | 10.31 | +/-0.23 |
| AR-3705 | 705399BLK5   | 0.19 | +/-0.02 | 239  | +/-61  | 4.71 | +/-0.09 | 11.80 | +/-0.89 |

### Coal and Coke Standards – Sulfur Only

| Part #          | Lot #   | Mean Weight % Sulfur | Standard Deviation |
|-----------------|---------|----------------------|--------------------|
| AR-1700         | 7001000 | 0.29                 | +/- 0.04           |
| AR-1701         | 701400  | 0.46                 | +/- 0.03           |
| AR-1702         | 702700  | 0.62                 | +/- 0.02           |
| AR-1703         | 7031099 | 0.82                 | +/- 0.03           |
| AR-1704         | 704999  | 1.04                 | +/- 0.03           |
| AR-1705         | 705898  | 1.52                 | +/- 0.03           |
| AR-1706         | 706897  | 2.37                 | +/- 0.03           |
| AR-1707         | 707696  | 2.56                 | +/- 0.05           |
| AR-1708         | 708895  | 3.00                 | +/- 0.04           |
| AR-1709         | 709895  | 3.48                 | +/- 0.06           |
| AR-1710         | 71099   | 4.84                 | +/- 0.14           |
| AR-1711         | 92I     | 5.66                 | +/- 0.06           |
| AR-1712         | 712298  | 6.67                 | +/- 0.29           |
| AR-1713 Lignite | LIG96   | 1.18                 | +/- 0.03           |

### Coke Standards

| Part # | Lot #  | Mean Weight % Sulfur | Standard Deviation |
|--------|--------|----------------------|--------------------|
| AR-719 | 719899 | 0.67                 | +/- 0.02           |
| AR-720 | 20LV97 | 0.81                 | +/- 0.02           |
| AR-723 | KOP97  | 0.59                 | +/- 0.03           |

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### Petroleum Cokes

| Part #    | AR-742B    | AR-744    | AR-745      | AR-747     | AR-748   | AR-756 |
|-----------|------------|-----------|-------------|------------|----------|--------|
|           | Green      | Calcined  | Green       | Green      | Calcined | Green  |
| Lot #     | CHAL196    | UMC744796 | 745BL       | TEX296     | NOR92    | 700    |
| S         | 0.89       | 1.91      | 0.49        | 3.67       | 2.75     | 6.23   |
| S.D.      | +/- 0.02   |           | +/- 0.06    | +/- 0.14   |          |        |
| Ash       | 0.09       | 0.55      | 0.11        | 0.28       | 0.33     | 0.81   |
| S.D.      | +/- 0.02   |           | +/- 0.04    | +/- 0.05   |          |        |
| Vol. Mat. | 9.67       | 0.33      | 5.81        | 13.06      | 1.31     | 5.97   |
| S.D.      | +/- 0.18   |           | +/- 0.36    | +/- 0.41   |          |        |
| C         | 93.81      | 96.10     | 95.28       | 90.08      |          | 88.32  |
| S.D.      | +/- 0.46   |           | +/- 0.65    | +/- 0.18   |          |        |
| H         | 3.76       | 0.14      | 1.83        | 4.56       |          | 1.19   |
| S.D.      | +/- 0.02   |           | +/- 0.32    | +/- 0.06   |          |        |
| N         | 1.27       | 1.27      | 0.67        | 1.11       |          | 1.78   |
| S.D.      | +/- 0.13   |           | +/- 0.04    | +/- 0.11   |          |        |
| Ni        | 0.0068     | 0.0145    | 0.00494     | 0.0222     | 0.0233   | 0.0297 |
| S.D.      | +/- 0.0014 |           | +/- 0.00049 | +/- 0.002  |          |        |
| Fe        | 0.0129     | 0.1856    | 0.014828    | 0.0271     | 0.0766   | 0.0653 |
| S.D.      | +/- 0.0026 |           | +/- 0.00158 | +/- 0.0026 |          |        |
| V         | 0.0022     | 0.0167    | 0.00134     | 0.0711     | 0.0289   | 0.1451 |
| S.D.      | +/- 0.0003 |           | +/- 0.00036 | +/- 0.0036 |          |        |
| Ca        | 0.0037     | 0.0168    | 0.00305     | 0.0066     | 0.0088   | 0.0041 |
| S.D.      | +/- 0.0009 |           | +/- 0.00064 | +/- 0.001  |          |        |
| Si        | 0.0081     | 0.022     | 0.00655     | 0.0067     | 0.0087   | 0.067  |
| S.D.      | +/- 0.0009 |           | +/- 0.00124 | +/- 0.001  |          |        |

| Part #  | Description | Lot #   | Mean % Sulfur | Standard Deviation |
|---------|-------------|---------|---------------|--------------------|
| AR-2712 | Calcined    | 7120497 | 0.43          | +/- 0.04           |
| AR-2713 | Green       | 0200    | 0.45          | +/- 0.03           |
| AR-2714 | Green       | 714CHAL | 0.906         | +/- 0.025          |
| AR-2715 | Green       | 6047-1  | 1.64          | +/- 0.03           |
| AR-2716 | Green       | TEX0200 | 2.00          | +/- 0.03           |
| AR-2717 | Green       | 7171096 | 2.42          | +/- 0.04           |
| AR-2719 | Calcined    | UM96    | 1.88          | +/- 0.04           |
| AR-2720 | Green       | 720799I | 4.46          | +/- 0.06           |
| AR-2721 | Green       | 700     | 6.15          | +/- 0.08           |
| AR-2722 | Calcined    | NOR92   | 2.85          | +/- 0.04           |

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### Prox Coal and Coke Standards

| Part #  | Lot #   | % Sulfur | Stand .Devi. | % Ash | Stand .Devi. | % Vol. Matter | Stand .Devi. | BTU     | Stand .Devi. | Fixed Carbon |
|---------|---------|----------|--------------|-------|--------------|---------------|--------------|---------|--------------|--------------|
| AR-1720 | 720400  | 0.46     | 0.03         | 7.40  | 0.20         | 42.67         | 1.04         | 11688   | 69           |              |
| AR-1721 | 721797  | 0.45     | 0.02         | 7.33  | 0.29         | 44.69         | 1.46         | 11491   | 80           |              |
| AR-1722 | 7221099 | 0.82     | 0.03         | 6.51  | 0.11         | 22.47         | 1.29         | 14667   | 70           |              |
| AR-1723 | 723298  | 1.20     | 0.03         | 9.59  | 0.24         | 37.54         | 0.32         | 13395   | 121          | 52.87        |
| AR-1724 | 724898  | 1.52     | 0.02         | 4.47  | 0.07         | 37.52         | 0.76         | 13517   | 57           |              |
| AR-1726 | 726897  | 2.37     | 0.03         | 11.59 |              | 35.41         |              | 11550   |              | 52.95        |
| AR-1727 | INT2.5  | 2.50     | 0.04         | 7.55  | 0.09         | 36.24         | 0.23         | 13466   | 42           |              |
| AR-1728 | 728895  | 2.99     | 0.03         | 8.98  | 0.13         | 43.01         | 1.14         | 13260   | 61           | 43.17        |
| AR-1729 | 729895  | 3.48     | 0.06         | 4.97  | 0.10         | 42.65         | 0.49         | 13876   | 17.78        | 52.35        |
| AR-1730 | 73099   | 4.84     | 0.14         | 8.98  | 0.13         | 43.01         | 1.14         | 13260   | 61           | 43.17        |
| AR-1731 | 731198  | 5.51     | 0.14         | 45.14 | 0.45         | 20.00         | 0.53         | 7797.67 | 88.66        | 34.86        |
| AR-1732 | 732298  | 6.67     | 0.29         | 45.88 | 0.44         | 20.18         | 0.25         | 7494.67 | 49.50        | 33.935       |

### C., H., and N. Coal Standards

| Part #  | Lot #   | Carbon | Standard Deviation | Hydrogen | Standard Deviation | Nitrogen | Standard Deviation |
|---------|---------|--------|--------------------|----------|--------------------|----------|--------------------|
| AR-1905 | 9051000 | 77.498 | 0.506              | 5.153    | 0.243              | 1.713    | 0.056              |
| AR-1906 | 906SUF  | 71.59  | 0.29               | 4.76     | 0.08               | 1.17     | 0.04               |
| AR-1907 | WAL996  | 69.62  |                    | 4.56     |                    | 1.11     |                    |
| AR-1908 | 908400  | 69.96  | 0.41               | 4.83     | 0.28               | 0.92     | 0.06               |

### Coal Standards for Chlorine

| Part #  | Lot #  | % Chlorine | Standard Deviation |
|---------|--------|------------|--------------------|
| AR-1910 | 910999 | 0.0511     | 0.0066             |
| AR-1911 | 911297 | 0.108      | 0.008              |
| AR-1912 | 912297 | 0.3905     | 0.0055             |

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### The “Ultimates”

|                           | Coke<br>AR-<br>2771 | Coke<br>AR-<br>2772 | Coal<br>AR-<br>2773 | Coal<br>AR-<br>2775 | Coal<br>AR-<br>2776 | Coal<br>AR-<br>2778 | Coal<br>AR-<br>2780 | Coal<br>AR-<br>2782 |
|---------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Lot #                     | 771100              | 772Ltv9<br>7        | 773wal8<br>96       | 80ts                | 7761097             | ANTB                | 780898              | 7821097             |
| <b>Proximate Analysis</b> |                     |                     |                     |                     |                     |                     |                     |                     |
| % Ash                     | 8.35                | 6.728               | 7.27                | 6.47                | 11.62               | 10.76               | 7.55                | 13.13               |
| % Vol. Matter             | 0.36                | 0.562               | 42.27               | 37.14               | 36.14               | 6.31                | 39.74               | 38.02               |
| % Fix. Carbon             | 91.29               | 92.73               | 50.46               | 56.39               | 52.25               | 82.93               | 52.57               | 48.85               |
| BTU                       | 12713               | 12996               | 11723               | 13513               | 13234               | 13191               | 12328               | 11495               |
| % Sulfur                  | 0.663               | 0.81                | 0.32                | 0.66                | 0.96                | 0.63                | 3.48                | 4.70                |
| <b>Ultimate Analysis</b>  |                     |                     |                     |                     |                     |                     |                     |                     |
| % Carbon                  | 89.23               | 89.42               | 69.62               | 77.16               | 74.84               | 83.44               | 69.77               | 64.95               |
| % Hydrogen                | 0.13                | 0.11                | 4.56                | 4.89                | 5.01                | 2.11                | 4.84                | 4.57                |
| % Nitrogen                | 1.11                | 1.28                | 1.11                | 1.45                | 1.52                | 0.92                | 1.31                | 1.28                |
| % Chlorine                | 0.96                | 0.037               | 0.01                | 0.03                | 0.113               | 0.03                | 0.045               | 0.057               |
| % Ash                     |                     | 6.728               | 7.27                | 6.47                |                     | 10.76               |                     |                     |
| % Sulfur                  | 0.65                | 0.81                | 0.32                | 0.66                |                     | 0.63                | 3.48                |                     |
| <b>Sulfur Forms</b>       |                     |                     |                     |                     |                     |                     |                     |                     |
| % Pyritic                 | 0.013               | 0.01                | 0.05                | 0.05                | 0.21                | 0.06                | 0.87                | 0.94                |
| % Sulfate                 | 0.01                | 0.00                | 0.01                | 0.00                | 0.01                | 0.00                | 1.15                | 1.59                |
| % Organic                 | 0.64                | 0.80                | 0.26                | 0.61                | 0.74                | 0.57                | 1.56                | 2.17                |
| % Total                   | 0.663               | 0.81                | 0.32                | 0.66                | 0.96                | 0.63                | 3.48                | 4.70                |
| <b>Mineral Analysis</b>   |                     |                     |                     |                     |                     |                     |                     |                     |
| Phosphorous Pentoxide     | 0.19                | 0.20                | 1.71                | 0.90                | 0.59                | 0.68                | 0.19                | 0.18                |
| Silica                    | 37.63               | 49.36               | 36.71               | 62.70               | 54.08               | 51.24               | 40.96               | 44.24               |
| Ferric Acid               | 39.10               | 12.97               | 5.69                | 2.27                | 4.41                | 4.78                | 37.10               | 28.38               |
| Alumina                   | 16.62               | 27.75               | 16.21               | 28.21               | 34.47               | 32.06               | 13.29               | 18.18               |
| Titania                   | 0.82                | 1.51                | 1.22                | 1.48                | 1.15                | 2.09                | 0.82                | 0.92                |
| Sulfur Trioxide           | 0.74                | 1.02                | 9.24                | 0.46                | 0.62                | 1.77                | 0.74                | 1.94                |
| Potassium Oxide           | 1.22                | 1.93                | 0.53                | 1.41                | 1.24                | 2.00                | 1.22                | 2.18                |
| Sodium Oxide              | 0.39                | 0.91                | 1.53                | 0.28                | 0.29                | 0.84                | 0.39                | 0.23                |
| Calcium Oxide             | 1.76                | 1.87                | 19.91               | 0.96                | 1.44                | 2.17                | 1.76                | 2.22                |
| Magnesium Oxide           | 0.56                | 0.94                | 4.95                | 0.38                | 0.57                | 1.04                | 0.56                | 0.81                |
| Strontium Oxide           | 0.02                | 0.045               | 0.45                | 0.30                | 0.24                | 0.19                | 0.02                | 0.02                |
| Barium Oxide              | 0.11                | 0.021               | 0.71                | 0.06                | 0.15                | 0.25                | 0.11                | 0.07                |
| Manganese Oxide           | 0.025               | 0.085               | 0.04                | 0.00                | 0.14                | 0.00                | 0.03                | 0.04                |
| Undetermined              | 0.007               | 0.21                |                     |                     | 0.00                | 0.94                | 0.00                | 0.61                |

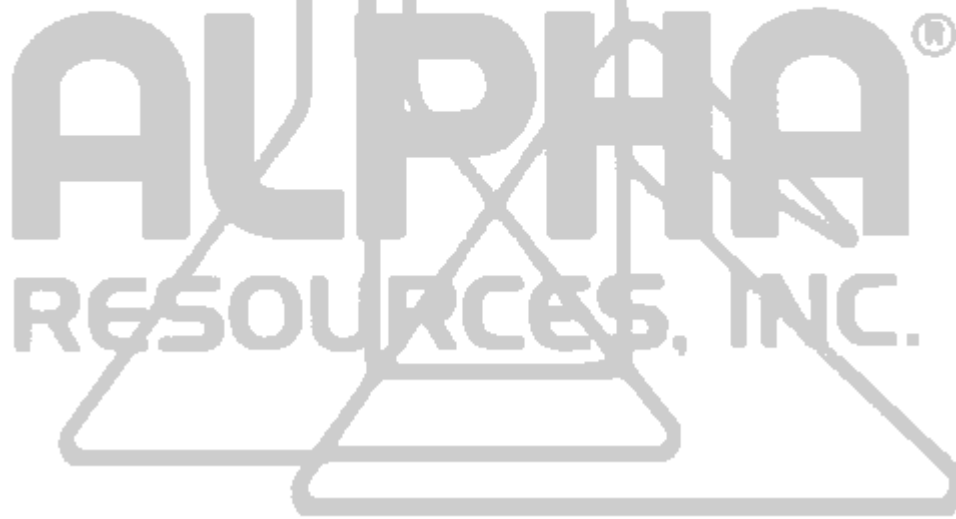
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| Ash Fusion Temperature        |      |  |      |      |  |      |      |      |
|-------------------------------|------|--|------|------|--|------|------|------|
| Initial Deformation Reducing  | 2501 |  | 2118 | 2700 |  | 2700 | 1995 | 1976 |
| Initial Deformation Oxidizing | 2575 |  | 2203 | 2700 |  | 2700 | 2528 | 2458 |
| Softening Reducing (H=W)      | 2521 |  | 2142 | 2700 |  | 2700 | 2006 | 1993 |
| Softening-Oxidizing (H=W)     | 2632 |  | 2217 | 2700 |  | 2700 | 2544 | 2475 |
| Softening-Reducing (H=1/2W)   | 2686 |  | 2155 | 2700 |  | 2700 | 2025 | 2015 |
| Softening-Oxidizing (H=1/2W)  | 2656 |  | 2239 | 2700 |  | 2700 | 2554 | 2500 |
| Fluid- Reducing               | 2627 |  | 2188 | 2700 |  | 2700 | 2100 | 2218 |
| Fluid- Oxidizing              | 2697 |  | 2269 | 2700 |  | 2700 | 2566 | 2542 |



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### Mineral Analysis for Coal

|                           |          |          |         |         |         |         |         |         |
|---------------------------|----------|----------|---------|---------|---------|---------|---------|---------|
| Part #                    | AR-2751  | AR-2752A | AR-2753 | AR-2754 | AR-2755 | AR-2756 | AR-2758 | AR-2760 |
| Lot #                     | 751wa896 | F95      | 7697    | 1TBD    | 03      | NTB     | 380     | 90      |
| Silicon Dioxide           | 36.71    | 29.12    | 54.08   | 51.41   | 33.92   | 51.38   | 37.99   | 49.48   |
| Aluminum Dioxide          | 16.21    | 14.67    | 34.47   | 29.61   | 14.29   | 32.11   | 17.90   | 27.36   |
| Titanium Dioxide          | 1.22     | 0.51     | 1.15    | 1.32    | 0.73    | 2.09    | 0.75    | 1.33    |
| Ferric Oxide              | 5.69     | 45.87    | 4.41    | 10.31   | 46.55   | 4.78    | 23.54   | 15.16   |
| Calcium Oxide             | 19.91    | 4.50     | 1.44    | 1.79    | 0.54    | 2.19    | 8.87    | 1.07    |
| Magnesium Oxide           | 4.94     | 0.54     | 0.57    | 0.89    | 0.53    | 1.04    | 0.77    | 0.77    |
| Potassium Oxide           | 0.53     | 1.05     | 1.24    | 2.71    | 1.43    | 2.02    | 1.79    | 2.47    |
| Sodium Oxide              | 1.53     | 0.54     | 0.29    | 0.48    | 0.17    | 0.84    | 0.66    | 0.16    |
| Sulfur Trioxide           | 9.24     | 2.82     | 0.62    | 0.95    | 0.53    | 1.77    | 7.10    | 0.39    |
| Phosphorus Pentoxide      | 1.71     | 0.26     | 0.59    | 1.00    | 0.11    | 0.68    | 0.50    | 0.30    |
| Strontium Oxide           | 0.45     | 0.01     | 0.24    | .16     | 0.01    | 0.19    | 0.05    | 0.07    |
| Barium Oxide              | 0.71     | 0.09     | 0.15    | 0.08    | 0.00    | 0.25    | 0.04    | 0.00    |
| Manganese Oxide           | 0.04     | 0.02     | 0.14    | 0.00    | 0.29    | 0.00    | 0.04    | 0.11    |
| Undetermined              | 1.12     | 0.00     | 0.00    | 0.00    | 0.90    | 0.66    | 0.00    | 1.33    |
| Ash Content of Whole Coal | 7.27     | 18.61    | 11.62   | 8.10    | 8.21    | 10.74   | 12.20   | 15.00   |