WCF Bottom ash 7-8

# COMMERCIAL TESTING & ENGINEERING CO.

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May 30, 2002

TENNESSEE VALLEY AUTHORITY
1101 Market Street PSC 1A
Chattanooga TN 37402
RENEE B. MERRELL

SAMPLE No.: 257768
SAMPLE TYPE: BOT ASH 7-8
REMARKS: BOT

Date Received March 5, 2002
Analysis report no. 72-470165

| PROXIMATE ANALYSIS | As Received | Dry Basis |
|---|---|---|
| % Moisture | 0.22 | xxxxxx |
| % Ash | 90.91 | 91.11 |
| % Volatile | < 0.01 | < 0.01 |
| % Fixed Carbon | 8.86 | 8.88 |
| | 100.00 | 100.00 |
| Btu/lb | 966 | 968 |
| % Sulfur | 4.32 | 4.33 |
| MAF Btu/lb | 10889 | |

| ULTIMATE ANALYSIS | As Received | Dry Basis |
|---|---|---|
| % Moisture | 0.22 | xxxxxx |
| % Carbon | 3.62 | 3.63 |
| % Hydrogen | 0.51 | 0.51 |
| % Nitrogen | 0.41 | 0.41 |
| % Sulfur | 4.32 | 4.33 |
| % Ash | 90.91 | 91.11 |
| % Oxygen | 0.01 | 0.01 |
| | 100.00 | 100.00 |

| ANALYSIS OF ASH | % Weight Ignited Basis |
|---|---|
| Silica, $SiO_2$ | 44.41 |
| Alumina, $Al_2O_3$ | 17.14 |
| Titania, $TiO_2$ | 0.77 |
| Ferric Oxide, $Fe_2O_3$ | 28.67 |
| Lime, CaO | 4.33 |
| Magnesia, MgO | 0.96 |
| Potassium Oxide, $K_2O$ | 1.95 |
| Sodium Oxide, $Na_2O$ | 0.32 |
| Sulfur Trioxide, $SO_3$ | 0.76 |
| Phosphorous Pentoxide, $P_2O_5$ | 0.41 |
| Strontium Oxide, SrO | 0.05 |
| Barium Oxide, BaO | 0.16 |
| Manganese Oxide, $Mn_3O_4$ | 0.07 |
| Undetermined | 0.00 |
| Alks. as $Na_2O$, Dry Coal Basis | 1.46 |
| Base:Acid Ratio | 0.58 |
| T250 Temperature | 2256 |

| | |
|---|---|
| Silica Value | 56.67 |
| Type of Ash | BITUMINOUS |
| Fouling Index | 0.19 |
| Slagging Index | 2.51 |
| % MAF Fixed Carbon | 99.89 |
| % MAF Volatile | 0.11 |
| lb $SO_2$/mm Btu | 89.44 |
| lb Sulfur/mm Btu | 44.72 |
| % Air Dry Loss | 0.00 |
| As Received Net Sample Wt. | 260.80 g |

NQA ISO9002 REGISTERED COMPANY
Certificate No. 7061/1

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Denver Laboratory

MEMBER ACIL

F-465

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