

**Mineral Analysis**

Silicon Dioxide (SiO <sub>2</sub> )	50.1%
Alumina (Al <sub>2</sub> O <sub>3</sub> )	13.3%
Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )	14.3%
Magnesium Oxide (MgO)	3.40%
Calcium Oxide (CaO)	4.75%
Potassium Oxide (K <sub>2</sub> O)	4.08%
Sodium Oxide (Na <sub>2</sub> O)	4.10%
Titanium Oxide (TiO <sub>2</sub> )	1.19%
Manganese Oxide (MnO)	0.29%
Phosphorus Pentoxide (P <sub>2</sub> O <sub>5</sub> )	0.18%
Chromium Oxide (Cr <sub>2</sub> O <sub>3</sub> )	<0.01%
Vanadium Oxide (V <sub>2</sub> O <sub>5</sub> )	0.01%
Loss on Incineration (LOI)	3.74%
Sum Total	99.40%

**Additional Elements**

Barium (Ba)	446 ppm
Beryllium (Be)	<5 ppm
Chromium (Cr)	80 ppm
Copper (Cu)	20 ppm
Iron (Fe)	9.69%
Potassium (K)	3.6%
Lithium (Li)	27 ppm
Magnesium (Mg)	1.96%
Nickel (Ni)	40 ppm
Scandium (Sc)	17 ppm
Strontium (Sr)	101 ppm
Titanium (Ti)	0.66%
Vanadium (V)	124 ppm
Zinc (Zn)	139 ppm
Silver (Ag)	<1 ppm
Arsenic (As)	5 ppm
Bismuth (Bi)	0.2ppm
Cadmium (Cd)	<0.2 ppm
Cerium (Ce)	82.9 ppm
Cobalt (Co)	25.9 ppm
Cesium (Cs)	5.5 ppm
Dysprosium (Dy)	16.8 ppm
Erbium (Er)	10.8 ppm
Europium (Eu)	3.14 ppm
Gallium (Ga)	31 ppm
Gadolinium (Gd)	15.3 ppm
Germanium (Ge)	6.1 ppm
Hafnium (Hf)	14 ppm
Holmium (Ho)	3.55 ppm
Indium (In)	0.2 ppm
Lanthanum (La)	35.6 ppm

**Additional Elements Cont'd**

Lutetium (Lu)	1.69 ppm
Molybdenum (Mo)	4 ppm
Niobium (Nb)	19 ppm
Neodymium (Nd)	51.4 ppm
Lead (Pb)	<5 ppm
Praseodymium (Pr)	12.0 ppm
Rubidium (Rb)	184 ppm
Antimony (Sb)	2.9 ppm
Samarium (Sm)	13.2 ppm
Tin (Sn)	1.3 ppm
Tantalum (Ta)	1.3 ppm
Terbium (Tb)	2.71 ppm
Thorium (Th)	5.9 ppm
Thallium (Tl)	1.9 ppm
Thulium (Tm)	1.72 ppm
Uranium (U)	2.59 ppm
Tungsten (W)	3 ppm
Yttrium (Y)	97.1 ppm
Ytterbium (Yb)	10.5 ppm
Zirconium (Zr)	504 ppm
Sulfur (S)	0.02%
Mercury (Hg)	<0.0005 ppm