


**ASTM C618-05 / AASHTO M 295 Testing of
Navajo Fly Ash**

Sample Type:	3200-ton	Report Date:	10/29/2009
Sample Date:	9/15 - 9/18/09	MTRF ID	1612NV
		Sample ID:	NV-083-09

Chemical Analysis	ASTM / AASHTO Limits		ASTM Test
	Class F	Class C	Method
Silicon Dioxide (SiO ₂)	<u>57.38</u> %		
Aluminum Oxide (Al ₂ O ₃)	<u>22.49</u> %		
Iron Oxide (Fe ₂ O ₃)	<u>5.08</u> %		
Sum of Constituents	<u>84.95</u> %	70.0% min	50.0% min
Sulfur Trioxide (SO ₃)	<u>0.50</u> %	5.0% max	5.0% max
Calcium Oxide (CaO)	<u>5.95</u> %		D4326
Moisture	<u>0.04</u> %	3.0% max	3.0% max
Loss on Ignition (AASHTO M 295 req.)	<u>0.30</u> %	6.0% max 5.0% max	C311
Available Alkalies, as Na ₂ O (AASHTO M 295 req.)	<u>1.42</u> %	1.5% max	1.5% max
Physical Analysis			
Fineness, % retained on #325	<u>17.03</u> %	34% max	34% max
Strength Activity Index - 7 or 28 day requirement			C311, C109
7 day, % of control	<u>89</u> %	75% min	75% min
28 day, % of control	<u>103</u> %	75% min	75% min
Water Requirement, % control	<u>93</u> %	105% max	105% max
Autoclave Soundness	<u>0.04</u> %	0.8% max	0.8% max
True Particle Density	<u>2.32</u>		C311, C151

Headwaters Resources certifies that pursuant to ASTM C618-05 protocol for testing, the test data listed herein was generated by applicable ASTM methods and meets the requirements of ASTM C618-05 for Class F fly ash.


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MTRF Manager

