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Date: May 8, 2024  
Lab No.: 24-588

REPORT OF NATRUAL POZZOLAN TESTS			
Date Sampled: <u>March 2024 Sample</u>		Date Received: <u>March 29, 2024</u>	
Manufacturer: <u>Utah Natural Pozzolan</u>			
Chemical Analysis	Results (wt%)	Specification (Class N)	
		ASTM C618-23e1	AASHTO M295-21
Silicon Dioxide (SiO <sub>2</sub> )	73.5	----	----
Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> )	11.2	---	----
Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )	1.91	----	----
Sum of Silicon Dioxide, Iron Oxide & Aluminum Oxide (SiO <sub>2</sub> +Al <sub>2</sub> O <sub>3</sub> +Fe <sub>2</sub> O <sub>3</sub> )	86.6	70.0 % min.	70.0 % min.
Calcium Oxide (CaO)	0.6	----	----
Magnesium Oxide (MgO)	0.2	----	----
Sodium Oxide (Na <sub>2</sub> O)	2.40	----	----
Potassium Oxide (K <sub>2</sub> O)	5.15	---	----
“Sodium Oxide Equivalent (Na <sub>2</sub> O+0.658K <sub>2</sub> O)”	5.79	----	----
Sulfur Trioxide (SO <sub>3</sub> )	0.06	4.0 % max.	4.0 % max.
Loss on Ignition	4.7	10.0 % max.	5.0 % max.
Moisture Content	0.19	3.0 % max.	3.0 % max.
Available Alkalies			
Sodium Oxide (Na <sub>2</sub> O) as Available Alkalies	0.53	----	----
Potassium Oxide (K <sub>2</sub> O) as Available Alkalies	0.94	----	----
Available Alkalies as “Sodium Oxide Equivalent (Na <sub>2</sub> O+0.658K <sub>2</sub> O)”	1.15	----	1.5 % max.*
Physical Analysis			
Fineness (Amount Retained on #325 Sieve)	5.1%	34 % max.	34 % max.
Strength Activity Index (Lehigh Leeds Alabama Portland Cement)			
At 7 Days:		88%	75 % min. <sup>†</sup> (of control)
Control Average, psi: 4540	Test Average, psi: 3990		
At 28 Days:		94%	75 % min. <sup>†</sup> (of control)
Control Average, psi: 6550	Test Average, psi: 6160		
Water Requirements (Test H <sub>2</sub> O/Control H <sub>2</sub> O)		100%	115 % max. (of control)
Control, mls: 242	Test, mls: 242		
Autoclave Expansion:	0.00%	± 0.8 % max.	± 0.8 % max.
Specific Gravity:	2.37	----	----

† Meeting the 7 day or 28 day strength activity index will indicate specification compliance.

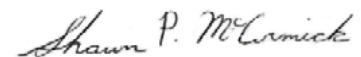
\* Optional

The results of our testing indicate that this sample complies with ASTM C618-23e1 and AASHTO M295-21 specifications for Class N pozzolans.

Respectfully Submitted,  
SGS TEC Services



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Project Manager



Shawn McCormick  
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