TA-73

SWMUs 73-001(a-d)

Goering, Darlene, NMENV

From: John Keck [jkeck@northwind-inc.com]
Sent: Friday, December 29, 2006 10:38 AM
To: Goering, Darlene, NMENV
Cc: Enz, Robert D.; Douglas Jorgensen
Subject: MatCon test summary_12-28-06.doc
Attachments: MatCon test summary_12-28-06.doc

Ms. Goering, Bob asked me to forward to you this report summarizing the results of permeameter testing of the MatCon cores from the DOE-LASO TA-73 Airport Landfill. Please reply if you have questions, thanks.

4988

SUMMARY OF MATCON CORING AND TESTING AT THE DOE-LASO TA-73 AIRPORT LANDFILL

This report summarizes coring and testing of the MatCon asphalt surface at the DOE-LASO TA-73 Airport Landfill. The completed MatCon surface was cored at 12 locations. All coreholes were filled with MatCon hot mix after samples were obtained. Six of the cores were archived as duplicates while six were submitted to Kleinfelder's geotechnical laboratory in Pleasanton CA for testing for saturated hydraulic conductivity using ASTM D5084 Method C.

Results for the first six cores ranged from 1.5E-07 to 3.2E-09 cm/sec. Sidewall leakage was believed responsible for the variability, as evidenced by the very low final water content values indicating little or no effective porosity. These low porosity measurements corroborated the very low field void content estimates, based on correlation to field densities measured with a nuclear gauge.

Sidewall leakage in permeameter testing of very low permeability asphalt concrete specimens has been previously reported. Bowders et al. (2002) (available at http://www.missouri.edu/~geotech/html/Asphalt%20Barrier%20Papers/ASTM%20GTJ%20Sidewall%20Leakage.pdf) studied sidewall leakage during this type of testing and recommended modifications to ASTM D5084 including coating the sides of the asphalt concrete test cylinders with silicone vacuum grease and increasing the confining pressure. These modifications were used for the six duplicate MatCon test cylinders. The sides of the cylinders were coated with silicone vacuum grease and the confining pressure was increased from 3 psi to 10 psi. The tops and bottoms of the cylinders were not coated. The result was no measurable flow through any of the cylinders after 10 days of testing.

The hydraulic conductivity of the MatCon cores was below the limits of the ASTM D5084 procedure as performed by the testing laboratory, which has previously measured permeabilities below 1E-09 cm/sec for earthen materials using this method. The requirement that the test pad cores have a saturated hydraulic conductivity less than the value of 1E-08 cm/sec used in numerical modeling to establish RCRA Subtitle C cover equivalence, as described in the RDWP (DOE 2006), was therefore met. The laboratory test report will be provided in the Remedy Completion Report.