VTRC File No: _____

Virginia Transportation Research Council
Contract/Grant Progress Report

Project No: TPF5 (045) **Starting Date: 3/1/2003** **Target Completion Date: 12/31/06**
Project Title: Development of Performance Guidelines for the Selection of Bituminous Hot-Poured Crack Sealants
Performing Agency: University of Illinois
Principal Investigator(s): Imad L. Al-Qadi
Date of This Report: 11/30/05 **Next Report Due Date: 2/28/06**

Project Description
The project will establish performance guidelines for the proper selection of hot-poured crack sealants. The guidelines will be in the spirit of the performance Grade (PG) system for bituminous binders with some modifications to the equipment, data analysis procedure, and testing methods.

Research Activities Pursued This Period:

- Completed modeling of BBR samples using Prony-series expansion and finite element (FE) simulation
- Conduct sensitivity analysis using FE to fine-tune the DTT cracked sample geometry. This allows better simulation of the expected strain levels in the field
- Investigated the effect of loading rate on DTT sample
- Worked on "Blister Test" fixture. Two fixtures were designed and currently tested with different sealants.
- Development of the 3-D FE simulation for the Blister test is underway.
- Replicates for the semi-cylinder fixture have been manufactured.

Problems Encountered:

- None this quarter

Activities Planned for Next Period:

- Start testing sealants obtained from the field by BBR and viscometer
- Investigate the BBR repeatability using different testing devices, labs, and operators
- Evaluate the fracture toughness and the linearity response using the new DTT specimen geometry.
- Determine the repeatability of the semi-cylindrical adhesion fixture. If the test is repeatable, testing of sealant-aggregate combination will start.

Budget Status:

Current FY Project Budget: $291,434		Project Budget Lifetime: *820,000
Current FY Expenditures: $66,014	as of	Expenditures LTD: $448,314
Percent Expended this FY: 22.6%	(Date)	Percent Expended LTD: 54.6%

Timetable: Project is (check):

On Schedule	☒
Behind Schedule *	☐ (explain above)
Ahead of Schedule	☐

Preparer's Signature: _____ Date: _____