

NTRD Program Disclaimers

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**Texas Commission on Environmental Quality
New Technology Research & Development (NTRD) Program
Monthly Project Status Report**

Contract Number: 582-5-70807-M031

Grantee: Extengine Transport Systems, LLC

Date Submitted: November 10, 2005

Report for the **Monthly** period:

Starting Date 10/1/05 Ending Date 10/31/05

Section I. Accomplishments *(Please provide a bulleted list of project accomplishments as well as a description of their importance to the project.)*

Task 1: (all technical work is included in this task)

- A 2001 Mack E7-350 engine has been selected – target engine group is 1998-2003 300-450 HP on-road engines).
- Catalyst/DPF configuration has been finalized based on E7-350 engine.
- DPF test hardware has been installed and tested
- SCR test hardware has been received – except as noted below for the catalyts..
- E7-350 engine has been test run with DPF system
- Continuing negotiations with EPA and RTI regarding test requirements:
 - Aging cycle and equipment for aging test hardware
 - EPA will not accept fuel born catalyst for DPF or vanadium based SCR catalyts.
 - Applicability of existing field durability experience of the SCR and DPF components.
- Field installation of the DPF using the FBC on a Freightliner prototype vehicle for FedEx. System is working satisfactorily in New York City but is using fuel born catalyst.
- Two additional DPF prototypes are being installed on off-road construction equipment in Idaho.
- Alternate ECU control system is being evaluated which uses forward control NOx sensor signals rather than self learned map. .
- ARB has asked for clarification of various points in the application.
- Submitted updated EPA ETV application

Indicate which part of the Grant Activities as defined in the grant agreement, the above accomplishments are related to:

These accomplishments relate to preparation of test hardware and the initiation of testing. Work to date is required prior to start of testing. These charges are not reimbursable by the grant. A no-charge FSR is attached with this report.

Section II: Problems/Solutions

<p>Problem(s) Identified</p> <p><i>(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)</i></p>	<ol style="list-style-type: none"> 1) EPA will not approve start of testing with a vanadium based SCR catalyst. 2) EPA and ARB will not approve start of verification testing until the additive solution containing the catalyst is registered as an additive which will take 6-12 months. 3) Self-learning feature using NOx sensor is not effective.
<p>Proposed Solution(s)</p> <p><i>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</i></p>	<ol style="list-style-type: none"> 1) Alternate catalysts using zeolite are available but will have lower NOx efficiency due to higher light-off temperature. Extengine's current design uses 2) The verification test will be conducted without using the additive. This will increase the frequency of regeneration cycles. . 3) Alternate ECU NOx sensor system has been selected.
<p>Action(s) Conducted and Results</p> <p><i>(Please describe the action(s) taken to resolve the problem(s) and its effect)</i></p>	<ol style="list-style-type: none"> 1) E-mail and telephone negotiation with EPA, RTI, and ARB regarding program scope and approach. 2) Additional test reports have been requested from VERT laboratory in Switzerland but not yet received. 3) License agreement with supplier of forward control SCR system has been completed and samples received and installed for testing.

Section III. Goals and Issues for Succeeding Period: *(Please provide a brief description of the goal(s) you hope to realize in the coming period and identify any notable challenges that can be foreseen)*

Goals:

- Complete negotiation on program test protocol between RTI, SwRI, EPA and ARB.
- Receive zeolite SCR catalysts.
- Begin tests of SCR forward control system.
- Issue PO to RTI

Issues:

- Resolution of ARB/EPF questions
- Verification of SCR and DPF performance.
- Delay in starting test program – contract period may expire before tests can be conducted; Extengine will request an extension in the contract.



November 10, 2005

Date: _____

Authorized Project Representative's Signature

NOTE: *Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.*