

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

Contract Number: 582-11-13515-2019

Grantee: Nett Technologies Inc. (Nett)

Report for the **Date**
Monthly period: March 1, 2013 to March 31, 2013 **Submitted:** April 10, 2013

Section I. Accomplishments

Provide a bulleted list of project accomplishments as well as a description of their importance to the project.

- 1000 hour system durability started.
- Durability hours accumulation had to be stopped due to system's performance degradation.
- System had to be removed for inspection and technical evaluation.
- Root cause has been identified.
- New system built and durability to begin in April 2013.

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

- Task 2

Section II: Problems/Solutions

Problem(s) Identified: Report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project

- a) The ageing of the system had to be stopped at 478 hours due to lower than expected NO_x performance. The system had been designed to perform at 85+% NO_x conversions and we expected ageing degradation will lower this conversion to a max of 80%. It was observed however that the performance was lowered to 65% which was not acceptable in our opinion. When problem was investigated it was found that a custom made urea tank had sand contamination resulting in entering it the pump. Because of the abrasive nature of the contamination (sand leftover from sand blasting process) the seals within urea pump were damaged resulting in lower than programmed urea dosing rates and consequently poor NO_x performance of the system.
- b) While the durability of the system can still be done within timeline, the actual laboratory testing might be pushed outside of the project timeline. Considering that the engine is already at Environment Canada testing lab, we'll be sending complete system for testing as soon as the 1000 hour durability will be done.

Proposed Solution(s): Report any possible solution(s) to the problem(s) that were considered/encountered

- a) The pump was sent to manufacturer for examination and seal damage confirmed. The tank had to be clean flashed extensively to assure it is no longer contaminated. Installation procedure review with technicians done.

Action(s) Conducted and Results: Describe the action(s) taken to resolve the problem(s) and its effect

- a) New system has been released for fabrication and ageing of the system will begin in April 2013 utilizing a new pump.

Section III. Goals and Issues for Succeeding Period:

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

- To continuously run durability program as per approved test plan
- To be in touch with Environment Canada assuring they are ready for system delayed testing arrival.

Date: April 10, 2013

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.*