

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

Contract Number: 582-11-13469-2019

Grantee: QuantLogic Corporation

Report for the Monthly period: August 1, 2011 to September 9, 2011

Date Submitted: September 9, 2011

Section I. Accomplishments

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

- Procure components: 80% completion of the task.
- Set up engine retrofit and engine control: 40% completion of the task.
- Overall project is well on target to meet key milestones.

- Task 1: Procure components within 3 months: 80% completion of the task. Continued in the components procurement process:
 - Received flywheel adaptor for connecting driveshaft to the engine flywheel, as shown in **Error! Reference source not found.**

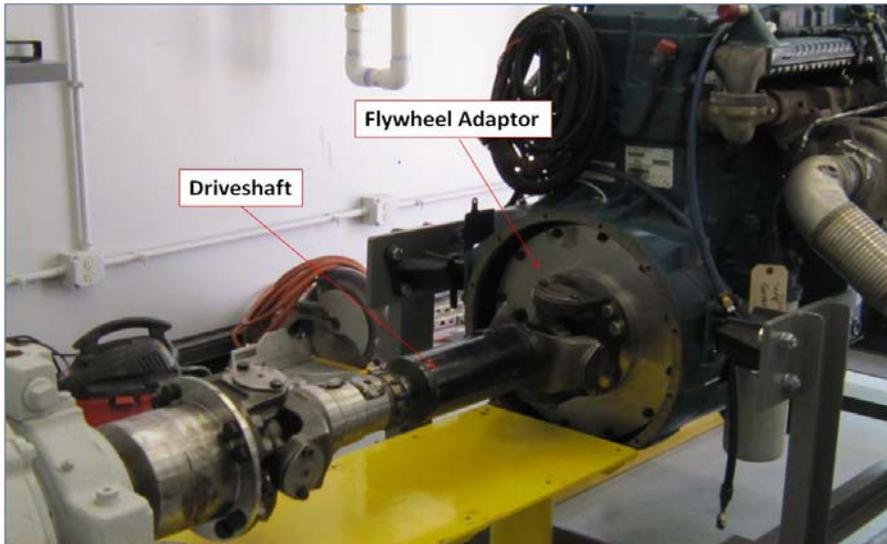


Figure 1 Installation of Engine Flywheel Adaptor and Driveshaft

- Received rapid prototyping engine control system (openECU) and wire harness from supplier, Pi-Shurlok, as shown in **Error! Reference source not found.**



Figure 2 Rapid Prototyping Engine Control System (OpenECU) and Wire harness

- Received crankshaft encoder from supplier-Kistler, as shown in **Error! Reference source not found..**

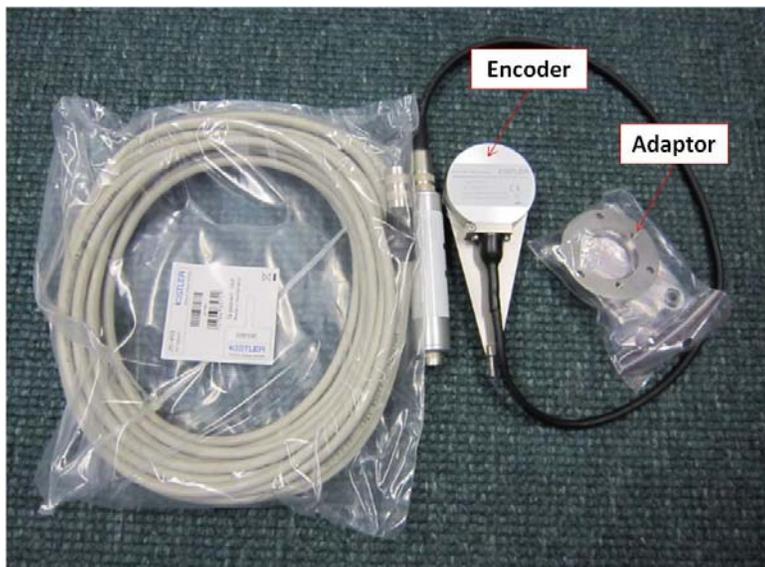


Figure 3 Crank Angle Encoder from Kistler for Low Emission Combustion Analysis

- Procured exhaust aftertreatment devices and started to install them on the engine, as shown in Figure 4

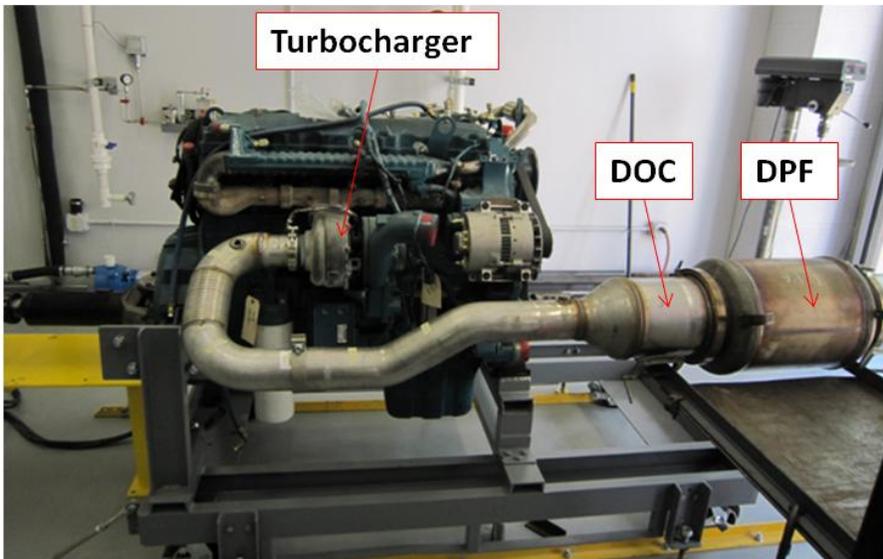


Figure 4 Installation of Retrofit Aftertreatment System (DOC and DPF)

All major test components have been procured. The remaining 20% of the procurement related to retrofit will require more precise configuration such as dimensions for retrofit, it needs be done at the engine retrofit stage.

- Task 2: Set up engine retrofit and engine control systems within 6 months: 40% completion of the task. Continuation of engine installation:
 - The engine driveshaft and flywheel adaptor were installed as shown in Figure 1 **Error! Reference source not found.**
 - The exhaust aftertreatment system (DOC and DPF) was installed as shown in Figure 4.

The remaining 60% of engine retrofit and engine control system setup will be the focus in the coming months of September, October, and November.

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

The authorized tasks are related to:

- Task 1: Procure components within 3 months:
 - a) Finalize the specifications for and procure all test components needed for the completion of the project, and
 - b) Procure all test components needed to complete the project.
- Task 2: Set up engine retrofit and engine control systems within 6 months.
 - a) Set up the engine, dual loop EGR retrofit, and engine control systems in the laboratory in preparation for testing.
 - b) Install instrumentation for monitoring all major engine operation parameters
 - c) Set up the engine control system for fueling control, dual loop EGR control, and boost control.

Section II: Problems/Solutions

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

a) None.

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

a) None.

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

a) None.

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

- Continue procurement of other components during the engine retrofit and setup.
- Continue engine setup with control system and retrofit with dual loop EGR systems.
- Start engine instrumentation setup.

Date: 9/9/2011

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.*