

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

Contract Number: 582-11-13473-2019
Grantee: Robert Bosch LLC
Report for the Monthly period: September 2011 **Date Submitted:** October, 10, 2011

Section I. Accomplishments

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

- Identification of and lease negotiation with vessel owner - Buffalo Marine in Houston
- Vessel and engine selection:
 - Vessel: Saint Patricio
 - Engine: Cummins KTA19-M3, 447 KW
- Determination of available installation space for measurement equipment and aftertreatment system
- Identification of measuring points and sensor positions on vessel (Deliverable 1: Baseline Measurements)
- Procurement of measurement equipment and first after-treatment components (substrates, due to long lead time)
- Technical feasibility and supplier selection process for urea tank ongoing
- Clarification of impacts on vessel engine regarding fuel switch from marine gas oil (MGO) to ultra low sulfur diesel (ULSD)

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

- Phase 1 -Task 1: Baseline Measurement
 - 1.1 Identify Marine Vessel
 - 1.2 Measurement of Baseline Emissions
- Phase 1 – Task 2: System Design
 - 2.2 Tank Layout

Section II: Problems/Solutions

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

- a) Houston harbor craft vessels do not use ULSD yet. Vessels still use high sulfur fuel, MGO, which is not recommended for after-treatment systems especially for passive regenerated particulate filters. According to the original engine manufacturer (OEM), Cummins, implementation of an easy fuel switch would damage important engine components. Additionally, the fuel tank would have to be cleaned from MGO residuals and coated as ULSD is more aggressive compared to MGO.

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

- a) Technical proposal could be a change of relevant components (fuel filter, cleaning of tank, sealings, etc.) as defined by engine OEM.

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

- a) Technical discussion with engine OEM about alternative measures to allow for the installation of a fuel switch.

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

- Complete contract negotiations with vessel owner
- Preparation, testing and shipping of measurement equipment and baseline measurements
- Implementation of baseline measurements and initial results
- Clarify use of ULSD fuel for old vessel engine

Date: 10/10/11

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.*