Final Report

Contract #PA 2011-12-17

Funding for Expansion of Existing CNG Fuel Station

May 20, 2014

Temecula Valley Unified School District
31350 Rancho Vista Road
Temecula, CA 92591

Prepared for the Mobile Source Air Pollution review Committee (MSRC) under the AB 2766 Discretionary Fund Work Program

Acknowledgements

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This report is submitted in fulfillment of PA2011-12-17 and Slow-fill CNG Station Expansion by the Temecula Valley Unified School District under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of 4/17/2013.

Disclaimer

The statements and conclusions in this report are those of the contractor and not necessarily those of the Mobile Source Air Pollution Reduction review Committee (MSRC) or the South Coast Air Quality Management District (SCAQMD). The mention of commercial products, their sources or their uses in connection with material reported here in is not to be construed as either an actual or implied endorsement of such products.

Scope, purpose and background of the project

On October 11, 2011 Temecula Valley Unified School District applied for funding from the Mobile Source Air Pollution Reduction Review Committee (MSRC) under program announcement PA2011-12 –Alternative Fuel Infrastructure Funding Opportunities.

At the time of application the District operated a slow-fill compressed natural gas (CNG) fueling station in its transportation facility located at 40516 Roripaugh Road, Temecula, CA 92591. The station was designed to fill 8 buses simultaneously.

The expansion of the station brought the total simultaneous fueling capacity to 18 buses and added a timer and filter to the system. This upgrade was needed as the District expanded its CNG fuel fleet. The District currently operates 20 CNG buses.

In October 2011, the CNG fueling station dispensed 2271 therms of compressed natural gas. In the month of April 2014 the station dispensed 7149 therms. In total the station has processed 142,352 therms of compressed natural gas since the application displacing the used on 102,480 gallons of diesel fuel.

Project

The project added 20 feet of K-rail for mounting the 10 new time fill NGV 1 Type 2 refueling nozzles. The additional K-rail allowed for the moving of the particulate trap regeneration electrical cables and the extension of the pressurized fuel lines. In addition a Nowata in line filter was added and a Kraus timer unit to allow all of the buses to be filled at the same time, minimizing the amount of time the compressor run.

Construction of the project began on January 2013 with completion on April 17, 2013.

Overall the project was completed in less time than projected and construction went smoothly.

Figure 1 - CNG Expansion - Looking at the new time fill re-fueling nozzles

Figure 2 - CNG Expansion - Bus being fueled by new time fill re-fueling nozzle

Figure 3 - CNG Expansion - Looking at new time fill re-fueling nozzles

Figure 4 - CNG Expansion - Buses being fueled by new time fill re-fueling nozzle

Figure 5 - CNG Expansion - MSRC Decal - affixed to K-rail

Figure 6 - CNG Expansion - Nowata In-line Filter

Figure 7 - CNG Expansion - Kraus Timer

Problems Encountered

There were very few problems with the construction process. The overall time frame was significantly shorter than we anticipated it to be. One challenge we did face was the manufacturing to the poles that hold the re-fill nozzle. This caused about a 3 week delay, but still brought the project in well ahead of schedule.

Emission Benefits

In October 2011, the CNG fueling station dispensed 2271 therms of compressed natural gas. In the month of April 2014 the station dispensed 7149 therms a 32% increase in the number of therms dispensed. In total the station has processed 142,352 therms of compressed natural gas since the application, displacing 102,480 gallons of diesel fuel.

Summary and Conclusions

The expansion of the time fill CNG fueling station has expanded the ability of TVUSD to operate compressed natural gas vehicles. TVUSD has now replaced 20 pre-1994 diesel powered school buses with 20 CNG powered school buses.