CHRYSLER

January 30, 2013

Mr. Jeffrey L. Quandt, Chief
Vehicle Controls Division (VCD), NVS-213
U S. Department of Transportation

National Highway Traffic Safety Administration (NHTSA)
Office of Defects Investigation (ODI)
Room W48-312
1200 New Jersey Avenue SE
Washington, D.C. 20590

Reference: NVS-213krh; PE12-032

Dear Mr. Quandt:

As directed in PE12-032 IR dated November 7, 2012, attached is Chrysler Group LLC's response to Request Nos. 8-9. In addition, an amended response for No. 5 is being submitted to include owner information and warranty narratives that were inadvertently omitted in the January 9, 2013 submission. In performing the analysis and reaching conclusions, and by providing the information contained herein, Chrysler Group LLC is not waiving its claim to attorney work product and attorney-client privileged communications.

Reginald Modlin

Attachment and Enclosures

Preliminary Statement

On April 30, 2009 Chrysler LLC, the entity that manufactured and sold the vehicles that are the subject of this Information Request, filed a voluntary petition for relief under Chapter 11 of Title 11 of the United States Bankruptcy Code.

On June 10, 2009, Chrysler LLC sold substantially all of its assets to a newly formed company now known as Chrysler Group LLC. Pursuant to the sales transaction, Chrysler Group LLC assumed responsibility for safety recalls pursuant to the 49 U.S.C. Chapter 301 for vehicles that were manufactured and sold by Chrysler LLC prior to the June 10, 2009 asset sale.

On June 11, 2009, Chrysler LLC changed its name to Old Carco LLC. The assets of Old Carco LLC that were not purchased by Chrysler Group LLC, as well as the liabilities of Old Carco that were not assumed, remain under the jurisdiction of the United States Bankruptcy Court – Southern District of New York (*In re Old Carco LLC, et al*., Case No. 09-50002).

Note: This attachment contains Chrysler Group LLC's response to Questions 8 and 9 as well as an amended response to Question 5.

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1. State, by model, engine and model year, the number of MY 2011 through 2012 Jeep Patriot vehicles Chrysler has manufactured for sale or lease in the United States and federalized territories. Separately, for each subject vehicle manufactured to date by Chrysler, state the following:

   a. Vehicle identification number (VIN);
   b. Model;
   c. Engine (displacement and engine code);
   d. Model Year;
   e. Date of manufacture; Date warranty coverage commenced; and
   f. The State in the United States, or the federalized territory, where the vehicle was originally sold or leased (or delivered for sale or lease).

   Provide the table in Microsoft Access 2003, 2007, or a compatible format, entitled "PE12_ 032_ PRODUCTION DATA."

A1. The 2011 and 2012 model year (MY) Jeep Patriot US market vehicles are designated as the MK model and are built in the Belvidere Assembly Plant in Belvidere, Illinois. The total number of subject vehicles manufactured by Chrysler for sale or lease for the US market was 114,998.

The detailed response that lists the production data is provided in Enclosure 1 as Microsoft Access 2010 tables titled "PE12_032_PRODUCTION DATA.mdb".

2. State, by model, engine and model year, the number of each of the following, received by Chrysler, or of which Chrysler is otherwise aware, which relate to, or may relate to, the alleged defect in MY 2011 through 2012 Jeep Patriot vehicles:

   a. Consumer complaints, including those from fleet operators;
   b. Field reports, including dealer field reports;
   c. Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
   d. Property damage claims;
   e. Third-party arbitration proceedings where Chrysler is or was a party to the arbitration; and
   f. Lawsuits, both pending and closed, in which Chrysler is or was a defendant or codefendant.

   For subparts "a" through "d," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the

same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "f," provide a summary description of the alleged problem and causal and contributing factors and Chrysler's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "f" and "g," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

A2. The following summarizes the reports identified by Chrysler that relate to, or may relate to, the alleged condition in the subject vehicles. Chrysler has conducted a reasonable and diligent search of the normal repositories of such information.

a. There are 220 consumer complaints (Customer Assistance Inquiry Request or CAIR) that may relate to the alleged condition for the subject vehicle, which represent 185 unique VINs.

b. There are a total 71 field reports that may relate to the alleged condition for the subject vehicles, which represent 67 unique VINs.

c. There are 2 reports alleging a crash which represent one unique VIN, and no injury or fatalities in the subject vehicles that may relate to the alleged condition.

d. There are no reports alleging property damage in the subject vehicles that may relate to the alleged condition.

e. There are no third-party arbitration proceedings involving Chrysler for the subject vehicles.

f. There are 3 legal claims involving the subject vehicles that may relate to the alleged condition.

Based on the analysis of these complaints for the subject vehicles, Chrysler has determined that all of the responsive complaints (CAIRs, field reports and legal claims) comprise 224 unique VINs.

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:

a. Chrysler's file number or other identifier used;
b. The category of the item, as identified in Request No. 3 (i.e., consumer complaint, field report, etc.);
c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
d. Vehicle's VIN;
e. Vehicle's model and model year;
f. Vehicle's mileage at time of incident;

g. Incident date;
h. Report or claim date;
i. Whether a crash is alleged;
j. Whether property damage is alleged;
k. Number of alleged injuries, if any; and
l. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2003 or 2007, or a compatible format, entitled "PE12 032 REQUEST NUMBER THREE DATA.".

A3. The detailed response that lists the customer complaints, field reports, and legal claims from Request No. 2, as requested in Items a. through n. is provided in Enclosure 3 – Request Number Two Data in a Microsoft Access 2010 table, titled "PE12_032_REQUEST NUMBER THREE DATA.mdb".

4. Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Chrysler used for organizing the documents.

A4. Copies of all documents within the scope of Question No. 2 are provided in Enclosure 4 – Field Data. The documents for the subject vehicles contain CAIR reports, field reports, and legal claims. The CAIR summaries are submitted in one .pdf file and the related documents are arranged in folders by CAIR number.

5. State, by model, engine and model year, total counts for all of the following categories of claims, collectively, that have been paid by Chrysler to date that relate to, or may relate to, the alleged defect in MY 2011 through 2012 Jeep Patriot vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

a. Chrysler's claim number;
b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
c. VIN
d. Repair date;
d. Repair date;
e. Whether a claim for towing was made within five days of the claim date;
f. Vehicle mileage at time of repair;
g. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
h. Labor operation number and description;

i. Problem code and description;
j. Replacement part number(s) and description(s);
k. Concern stated by customer;
l. Cause and Correction stated by dealer/technician; and
m. Additional comments, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2003 or 2007, or a compatible format, entitled "PE12_ 032_ WARRANTY DATA.mdb".

A5. The total number of warranty claims for the alleged condition, in the subject vehicles is listed below.

Description of Repair	Labor Operation	Fail Code	2011 MY 2.0L	2011 MY 2.4L	2012 MY 2.0L	2012 MY 2.4L
Sensor, oxygen - Test and replace 2.0-2.4 liter engine upstream (B)	25017027	DO – Die Out	0	0	0	1
Driveability, No Trouble Found - No repair/Trouble Not Found No Repair/TNF	85411801	Y2-Stall	22	13	2	25
Check Engine Light, No Trouble Found - No repair/Trouble Not Found No Repair /TNF Check	85412501	Y2–Stall	0	1	0	1
Module, global powertrain engine controller (GPEC) - Test and replace 2.0- 2.4 liter	081903	DO – Die Out	12	12	4	9

Additionally, not all of the warranty claims are necessarily related to the alleged condition as there are various reasons for a vehicle to exhibit an engine stall condition. Therefore, the number of responsive warranty claims may be artificially high with regard to the alleged condition. Thus, Chrysler has not drawn conclusions regarding trends based on warranty data alone**.**

The detailed response that lists the warranty claims is provided in Enclosure 5 – "PE12_032_WARRANTY DATA.mdb"

A5. Amended Response

Owner information and warranty narratives were inadvertently omitted in the January 9, 2013 response. An updated detailed response that lists the warranty claims is provided in Enclosure 5 – "UPDATED_PE12_032_WARRANTY DATA.mdb"

6. Describe in detail the search criteria used by Chrysler to identify the claims Identified in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by make and model year, the terms of the new vehicle warranty coverage offered by Chrysler on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered).

A6. Chrysler searched warranty labor operations that contained a failure code related to "die out" or "stall" and can be seen in the table below:

Description of Repair	Labor Operation	Fail Code
Sensor, oxygen - Test and replace 2.0-2.4 liter engine upstream	250170	DO – Die Out
Driveability, No Trouble Found - No repair/Trouble Not Found No Repair/TNF Driveability (B)	854118	Y2 - Stall
Driveability, No Trouble Found - No repair/Trouble Not Found No Repair/TNF Driveability (B)	854125	Y2 – Stall
Sensor, intake air temperature - Test and replace (B)	250160	DO – Die Out
Module, global powertrain engine controller (GPEC) - Test and replace 2.0-2.4 liter	081903	DO – Die Out

It should be noted that there are no specific failure codes for "stall while driving" and the above list contains the only failure codes that could reasonably be related to the alleged condition.

The standard warranty coverage offered for the 2011 and 2012 MY Jeep Patriot vehicles was 36 months / 36,000 miles.

The powertrain limited warranty offered for the 2011 and 2012 MY Jeep Patriot vehicles was five years / 100,000 miles.

7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that Chrysler has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletin, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that Chrysler is planning to issue within the next 120 days.

A7. A search was conducted and one document was found that may be related to the alleged condition. The document is being provided in Enclosure 7 – Dealer Communications.

The Global Parts Order Process Tech Tip (GPOP Tech Tip) was issued to ensure the dealer technicians were going through the proper diagnostic procedures prior to replacing the fuel pump module.

There are also no such communications or informational documents currently planned to be issued in the next 120 days.

8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, “actions”) that relate to, or may relate to the alleged defect that have been conducted, are being conducted, are planned, or are being planned by, or for, Chrysler. For each such action, provide the following information:
   a. Action title or identifier;
   b. The actual or planned start date;
   c. The actual or expected end date;
   d. Brief summary of the subject and objective of the action;
   e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
   f. A brief summary of the findings and/or conclusions resulting from the action.

   The response to this request should include a detailed description of all past, present and future actions by any and all engineering working groups (e.g., engine stall task

force) of which Chrysler is an active member or is otherwise aware. This includes, at a minimum, all of the information requested in items "a" through "f."

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

A8. Chrysler has conducted or is conducting the following assessments related to the alleged condition:

Assessment 1: Complaint Analysis

Start Date	End Date	Engineering Group Responsible
07/06/2011	11/04/2011	Regulatory Affairs, Product Investigation

Objective: Determine if there are any identifiable trends in the number of complaint vehicles (any subject vehicle with a CAIR, field report or legal claim associated with the alleged condition) sorted by build date of the vehicle, report date (date of complaint), and by the mileage of the vehicle when the complaint occurred.

Results: See Enclosure 8X - 2011-2012 MY Patriot Complaint Assessment for details on the results.

Complaint Analysis Assessment Summary: The complaint analysis revealed two powertrain combinations that show elevated complaint levels. These include the 2011 MY 2.0L CVT, and the 2012 MY 2.4L 4x4 and will be analyzed in further detail below.

Assessment 2: 2011 MY 2.0L CVT Dodge Caliber, Jeep Compass and Jeep Patriot stalling Investigation

Start Date	End Date	Engineering Group Responsible
07/06/2011	11/04/2011	Regulatory Affairs, Product Investigation

Objective: Investigate allegations of vehicle stalling in 2011 MY 2.0L CVT (continuously variable transmission) Dodge Caliber (PM), Jeep Compass (MK49) and Jeep Patriot (MK74) vehicles (the "affected vehicles").

Analysis Results: Analysis of customer complaint data on the affected vehicles showed that in the summer of 2011 CY – near the conclusion of the 2011 MY production run -- there was an increase in allegations of engine stalling. These vehicles were all equipped with a new engine controller (GPEC2). The investigation determined that the engine stalls were happening at speeds below 16 MPH, in the summer, while driving

with high A/C and electrical loads. The investigation also showed that these engine stalls were occurring at low mileages, typically less than 4,000 miles and less than 4 months in service. It was concluded that the issue was likely related to a green engine break-in condition and the remaining affected vehicle population was highly unlikely to experience a low-speed stalling condition. This analysis is provided in Enclosure 8 – Assessments. Nevertheless, Chrysler Group continued to monitor these types of complaints.

Moreover, as a result of the 2011 investigation, a revised 2.0L CVT engine calibration was developed and released, which added more torque compensation for A/C and electrical loads under high ambient conditions. This revised engine calibration was updated in the last 36 affected vehicles built for the 2011 MY. These same engine calibration revisions were implemented at the start of production for the 2012 MY 2.0L CVT PM, MK49 and MK74 vehicles. The 2011 MY revised engine calibration was also released to service on early August 2011. Pursuant to Chrysler Group's policy, vehicles brought in for service for whatever reason would receive automatically the revised engine calibration if it was found to be out of date. A current review of warranty claims showed that approximately 1,124 of about 53,000 affected vehicles have been updated with the revised engine calibration.

In connection with this investigation, Chrysler Group again analyzed the customer complaints and field reports for the subject vehicle 2011 MY 2.0L engine Jeep Patriot, which were previously submitted in response to Question 2. This analysis shows that the allegations of low-speed engine stalling in the 2.0L engine vehicles continued to level off after the investigation was concluded in November 2011 and are now virtually nonexistent. This lends further support to the conclusion reached in November 2011 that the low speed stalling condition was most likely related to a green engine break-in condition and is no longer affecting 2011 MY Jeep Patriot vehicles with a 2.0L engine. (*See* Enclosure 8W, PE12-032 2011 MY Two Liter Report Date Accumulation Graph.pdf).

Assessment 3: 2012 MY 2.4L 4x4 Patriot Complaint Analysis

Start Date	End Date	Engineering Group Responsible
07/06/2011	11/04/2011	Regulatory Affairs, Product Investigation

Objective: Investigate allegations of vehicle stalling in 2012 MY 2.4L 4x4 Jeep Patriot (MK74) vehicles.

Results: See Enclosure 8V - MK 2.4L 4x4 Assessment for details on the results.

Complaint Analysis Assessment Summary: Analysis of customer complaint data showed that the 2012 MY MK74 4x4 vehicles had the greatest number of claims of any powertrain combination and exhibited an increase in the number of complaints over the 2011 MY.

When analyzing the 2012 MY claims by build date, it is noted that approximately 80 percent of the claims occurred in a four month window between October 2011 and January 2012, suggesting some degree of change in product or deviation in process.

Analysis of the claims by report date shows that nearly 80 percent of all claims occurred between the months of June 2012 and October 2012 and further, 92 percent of all claims occurred between March 2012 and October 2012. This suggests the issue may be influenced to some degree by warm weather conditions.

The mileage does not appear to be a factor as the claims are somewhat evenly distributed out to 20,000 miles.

Assessment 4: Duplication of Field Issue in Vehicle on Chassis

Start Date	End Date	Engineering Group Responsible
8/20/2012	8/20/2012	Chrysler Reactive Quality

Objective: Indirect measurement of flow through transfer tube in vehicle that had exhibited a stalling concern in the field. Test conditions include 12.5 Reid Vapor Pressure (RVP) fuel and 100° F ambient temperature.

Results: Analysis is provided in Enclosure 8A - In Vehicle Duplicate Field Issue CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

Flow through the transfer tube stopped part way through the test and the vehicle runs out of fuel and stalls with approximately three gallons of fuel in the secondary side of fuel tank.

Assessment 5: Fuel Transfer Rate Testing in Vehicle on Chassis Dynamometer with 5/8", 1/2" and 3/8" Diameter Transfer Tubes

Start Date	End Date	Engineering Group Responsible
12/04/2012	12/17/2012	Chrysler Reactive Quality

Objective: Compare flow rate through transfer tube in a vehicle equipped with a 5/8", 1/2", and 3/8" diameter transfer tubes. Worst-case test conditions included: 12.5RVP fuel, 100° F ambient and simulated 5000 feet altitude.

Results: Analysis is provided in Enclosure 8B - In Vehicle Fuel Transfer Testing CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

Flow through the 1/2" and 5/8" diameter transfer tubes stopped during the test with fuel remaining in the secondary side of the fuel tank. All fuel was transferred from the secondary side of the fuel tank with the 3/8" transfer tube during the test.

Assessment 6: Measurement of Voltage to Fuel Pump in Vehicle

Start Date	End Date	Engineering Group Responsible
10/19/2012	12/06/2012	Chrysler Reactive Quality

Objective: Determine if low voltage to the fuel pump may be a contributor to the lack of fuel transfer issue from the secondary to primary side of fuel tank. Measure 30 2011 MY and 2012 MY vehicles at full electrical load condition.

Results: Analysis is provided in Enclosure 8C - In Vehicle Fuel Pump Voltage CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

Worst case, lowest voltage, at the fuel pump was slightly below the 12V system design bogey, but above the 11V minimum operating point.

Assessment 7: Hot Fuel Handling Performance Of A Warranty Return Module. [Testing Performed At Denso: Fuel Module Supplier- Michigan Engineering Center]

Start Date	End Date	Engineering Group Responsible
10/09/2012	10/09/2012	Denso Fuel Systems Engineering

Objective: Determine if a warranty return fuel module will pass the standard fuel module hot fuel handling test for this application.

Results: Analysis is provided in Enclosure 8D - Hot Fuel Handling Performance CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The warranty return module passed the standard hot fuel test requirement of maintaining a minimum fuel pressure of 370kPa through the test run from 20-70°C.

Assessment 8: Hot Fuel Handling Comparison of a Warranty Return and New Module. [Testing Performed At Denso: Fuel Module Supplier - Japan Engineering Center]

Start Date	End Date	Engineering Group Responsible
10/05/2012	10/05/2012	Denso Fuel Systems Engineering

Objective: Determine if a warranty return fuel module will pass the standard module hot fuel handling test for this application.

Results: Analysis is provided in Enclosure 8E - Hot Fuel Handling Comparison CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The warranty return module and new Denso module had comparable hot fuel results and both passed the standard hot fuel test requirement of maintaining a minimum fuel pressure of 370kPa through the test run from 20-70°C.

Assessment 9: Evaluation Of Transfer Rate and Time-to-Prime With 5/8" (Production), 1/2", and 3/8" Diameter Unformed Transfer Tubes [Testing Performed At Denso: Fuel Module Supplier - Michigan Engineering Center]

Start Date	End Date	Engineering Group Responsible
11/02/2012	11/04/2012	Denso Fuel Systems Engineering

Objective: Determine the transfer rate and the time to prime of a warranty return fuel module with 5/8", 1/2" and 3/8" unformed transfer tubes.

Results: Analysis is provided in Enclosure 8F - Transfer Rate Evaluation CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The Transfer rate for all three tube diameters was well above the maximum engine fuel usage rate of 60 liters per hour. The time to prime results showed the 5/8" transfer tube was nearly double the time to prime compared to the 1/2" and 3/8" diameter transfer tubes.

Assessment 10: Evaluation of The Jet Pump Relief Valve Opening Pressure Capability. [Testing Performed At Denso: Fuel Module Supplier - Michigan Engineering Center]

Start Date	End Date	Engineering Group Responsible
11/19/2012	11/28/2012	Denso Fuel Systems Engineering

Objective: Determine the jet pump relief valve opening pressure for thirty production fuel modules.

Results: Analysis is provided in Enclosure 8G - Relief Valve Opening Pressure Capability CONF BUS INFO which has been submitted under separate cover to the

NHTSA Chief Counsel's Office with a request for confidential treatment.

The average jet pump relief valve opening pressure was 82kPa using the Denso Engineering Test Procedure. The pressure relief valve was operating as expected.

Assessment 11: Evaluation of The Jet Pump Relief Valve Opening Pressure of New and Fuel Soaked Fuel Modules. [Testing Performed At Denso: Fuel Module Supplier - Michigan Engineering Center]

Start Date	End Date	Engineering Group Responsible
01/02/2013	01/02//2013	Denso Fuel Systems Engineering

Objective: Determine the jet pump relief valve opening pressure for new and fuel soaked fuel modules.

Results: Analysis is provided in Enclosure 8H - Relief Valve Opening Pressure New - Used CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The average jet pump relief valve opening pressure was 94kPa for new modules and 53kPa for modules soaked in methanol 15% (M15) Fuel. The pressure relief valve was operating as expected.

Assessment 12: Determine The Effect That Fuel Pump Voltage Has On Fuel Module Transfer Rates. [Testing Performed At Kautex: Tank Supplier – Windsor, Ontario]

Start Date	End Date	Engineering Group Responsible
11/09/2012	11/22/2012	Kautex Quality Engineering

Objective: Evaluate the relative effect that fuel pump voltage has on transfer rates of a warranty return tank assembly. The voltage range was 10.5 - 13.5 volts through the test runs performed.

Results: Analysis is provided in Enclosure 8I - Fuel Pump Voltage vs Transfer Rate CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The warranty module and pump assembly did not meet transfer rate of 60lph at maximum engine demand through the entire voltage range of the test.

Assessment 13: Evaluation of the Transfer Rates By Swapping Components Between A Warranty Return And Production Module. [Testing Performed At Kautex: Fuel Tank Supplier-Windsor, Ontario]

Start Date	End Date	Engineering Group Responsible
11/22/2012	12/22/2012	Kautex Quality Engineering

Objective: Evaluate the effect that component swapping of BOB and WOW fuel modules has on transfer rate performance.

Results: Analysis is provided in Enclosure 8J - Transfer Rate of New and Warranty Return Module CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The swapping experiments indicated that the transfer rate was most influenced by swapping the Jet Pump Relief Valve of the Modules although there was not a complete reversal during the swapping process. This test shows the variation in the jet pump relief valve pressure is a contributing factor just as the high temperature, high RVP fuel, high altitude, etc. plays a role in the fuel transfer process.

Assessment 14: Evaluation of the Transfer Rates Of A Warranty Return Module With 1/2" and 3/8" Formed Transfer Lines. [Testing Performed At Kautex: Tank Supplier- Windsor, Ontario]

Start Date	End Date	Engineering Group Responsible
01/07/2013	01/09/2013	Kautex Quality Engineering

Objective: Evaluate the effect that the 1/2" and 3/8" diameter formed transfer tubes have on transfer rate performance.

Results: Analysis is provided in Enclosure 8K - Transfer Rate vs. Tube Diameter on Warranty Return CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

Transfer rates for both the 1/2" and 3/8" diameter formed transfer tubes met the transfer rate requirement in each of the test runs.

Assessment 15: Evaluate The Effect of 5/8" and 1/2" Diameter Transfer Tubes On Fuel Transfer Rates At High Temperature - Mid Range RVP Conditions

Start Date	End Date	Engineering Group Responsible
11/14/2012	11/14/2012	Chrysler Fuel Systems Engineering

Objective: Evaluate the effect that 1/2" and 5/8" diameter transfer tubes have on

transfer rate performance at high temperature and mid-range RVP conditions.

Results: Analysis is provided in Enclosure 8L - Tube Diameter High Temp Mid RVP CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The transfer rate for the 1/2" diameter transfer tube met the transfer requirement at max engine demand but the 5/8" diameter transfer tube did not meet the requirement under the same test conditions.

Assessment 16: Determine The Effect Pump Voltage Has On The Fuel Module Transfer Rates At Ambient Conditions

Start Date	End Date	Engineering Group Responsible
11/12/2012	11/13/2012	Chrysler Fuel Systems Engineering

Objective: Evaluate the effect that fuel pump voltage supplied to the pump has on transfer rates from 10.5 to 13.5 volts.

Results: Analysis is provided in Enclosure 8M - Pump Voltage vs Transfer Rate - Ambient CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The 5/8" diameter transfer tube did not meet the maximum engine demand transfer requirement throughout the voltage range. The 1/2" and 3/8" diameter transfer tubes met the maximum engine demand transfer requirement above 11.0 volts.

Assessment 17: Evaluation of the Transfer Rate of Smaller Diameter Transfer Tubes - Larger Jet Pump Relief Orifice Valves - Warranty Return Unit

Start Date	End Date	Engineering Group Responsible
11/09/2012	11/09/2012	Chrysler Fuel Systems Engineering

Objective: Determine the effect that smaller diameter transfer tubes and larger relief valve orifices have on transfer performance in comparison to a warranty return module.

Results: Analysis is provided in Enclosure 8N - Smaller Tube Dia - Larger Orifice on Warranty Return CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The 1/2" diameter transfer tube met the transfer rate of 60lph at max engine demand with a rate of 81lph and the larger orifice also met the transfer rate with a rate of 135lph. The warranty part did not meet the requirement with a transfer rate of 36lph.

Assessment 18: Compare The Transfer Rate and Jet Relief Pressure For a New and Warranty Return Module

Start Date	End Date	Engineering Group Responsible
11/27/2012	11/30/2012	Chrysler Fuel Systems Engineering

Objective: Compare the fuel transfer rate and jet relief pressure for a new fuel module and a warranty return Module.

Results: Analysis is provided in Enclosure 8O - Transfer Rate and Relief Pressure - Warranty and New CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

Both fuel modules did not meet the maximum engine demand transfer requirements using the 5/8" transfer tube.

Assessment 19: Evaluation of Transfer Rate of Warranty Return Modules Using 5/8" - 1/2" - 3/8" Diameter Transfer Tubes With High Temperature- High RVP Fuel

Start Date	End Date	Engineering Group Responsible
12/04//2012	12/11/2012	Chrysler Fuel Systems Engineering

Objective: Compare the transfer rate of several warranty returns at high temperature –high RVP - E10 Fuel. Test conditions, samples of 5/8", 1/2", and 3/8" transfer tubes were used during the test.

Results: Analysis is provided in Enclosure 8P - Transfer Rate - Warranty Return High Temp and RVP CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

All test runs performed with the 1/2" and 3/8" diameter transfer tubes met the maximum engine demand fuel requirement. The four runs performed using the 5/8" transfer tube did not meet the maximum engine demand fuel requirement.

Assessment 20: Evaluation of Transfer Rate of WOW Fuel Module (Module with Low End Pump Flow Performance - Low End Jet Pump Relief Pressure Orifice Size - Low End Jet Pump Relief Spring Force)

Start Date	End Date	Engineering Group Responsible
12/19//2012	12/19/2012	Chrysler Fuel Systems Engineering

Objective: Compare the transfer rate of the WOW fuel module supplied by Denso. - (module with low end pump flow performance - low end jet pump relief pressure orifice size - low end jet pump relief spring force). Samples of 5/8", 1/2", and 3/8" diameter transfer tubes were used during the test.

Results: Analysis is provided in Enclosure 8Q -Transfer Rate - Wow Fuel Module CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

All test runs performed with the 3/8" diameter transfer tubes met the maximum engine demand fuel requirement. The two runs performed using the 5/8" and 1/2" diameter transfer tubes did not meet maximum engine demand fuel requirement.

Assessment 21: Determine Priming Capability of 3/8", 1/2" and 5/8" OD Transfer Tubes

Start Date	End Date	Engineering Group Responsible
12/11/2012	12/11/2012	Chrysler Fuel Systems Engineering

Objective: Evaluation of the priming capability of the 5/8", 1/2" and 3/8" OD Transfer Tubes at High Temperature - High RVP Conditions.

Results: Analysis is provided in Enclosure 8R - Priming Capability vs. Tube Dia CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The time to prime for the 3/8" transfer tube showed the best results with a time to prime of 8 seconds.(filled tube) and 46 sec.(empty tube). The time to prime for the 1/2" diameter transfer tube was 7-19 sec (filled) and 1min 26 sec (empty). The time to prime for the 5/8" diameter transfer tube was 20 sec (filled) and 56 sec (empty).

Assessment 22: Evaluation of Transfer Rate With High RVP Fuel - E15 Fuel

Start Date	End Date	Engineering Group Responsible
01/16/2013	01/16//2013	Chrysler Fuel Systems Engineering

Objective: Evaluate the fuel transfer rate of a warranty return module with 5/8" and 3/8" diameter transfer tubes in high temperature – High RVP – Ethanol 15% (E15) Fuel.

Results: Analysis is provided in Enclosure 8S - Transfer Rate with E15 CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The 3/8" diameter transfer tube met the maximum engine fuel requirement of 60lph with a 60-64lph transfer rate. The 5/8" diameter transfer tube did not meet the maximum engine fuel requirement with a transfer rate of 30-35lph.

Assessment 23: Priming Capability of 3/8" and 5/8" Transfer Tubes

Start Date	End Date	Engineering Group Responsible
12/21/2012	12/21/2012	Chrysler Fuel Systems Engineering

Objective: Evaluation of the priming capability of the 5/8” and 3/8” diameter transfer tubes at high temperature - high RVP conditions.

Results: Analysis is provided in Enclosure 8T - Priming Capability – vs. Tube Dia CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel’s Office with a request for confidential treatment.

The time to prime for the 3/8” diameter transfer tube showed the results with a time to prime of 62 seconds.(empty tube). The 5/8” diameter transfer tube time to prime was more than double the results of the 3/8” diameter transfer tube with a time to prime of 2 min 28 seconds (empty).

Assessment 24: Evaluation of Warranty Return Transfer Tube for Leakage

Start Date	End Date	Engineering Group Responsible
12/01/2012	12/01/2012	TI Automotive Engineering

Objective: Evaluate the leakage of two transfer tubes returned from warranty returns to determine if there is leakage at the quick connects or in the tube length.

Results: The results of a study performed by TI Automotive indicated there were no leaks in the two transfer tubes from the warranty return parts.

Assessment 25: Notification of Customer Complaint / Corrective Action

Start Date	End Date	Engineering Group Responsible
1/25/2012	6/30/2012	TI Automotive Engineering

Objective: Notify Kautex of a malformed transfer tube issue and identify corrective actions to be taken.

Results: Enclosure 8U - Malformed Transfer Tube 8D CONF BUS INFO which has been submitted under separate cover to the NHTSA Chief Counsel’s Office with a request for confidential treatment.

Malformed transfer tubes were identified in the January 2012 timeframe and a 100% inspection was established on January 26, 2012.

9. Furnish Chrysler's assessment of the alleged defect in the subject vehicle, including:
   a. The causal or contributory factor(s);
   b. The failure mechanism(s);
   c. The failure mode(s);
   d. The stalling incident rates estimated by Chrysler at 36- and 60-months in service based on statistical modeling of incident experience to date. Include a detailed explanation of Chrysler's method for performing the statistical analysis the statistical model, files listing the failure and suspension inputs values, the model output parameters (e.g., Weibull slope and shape parameters), and the requested incident rate estimates;
   e. The risk to motor vehicle safety that it poses; and
   f. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning.

A9. Based on the complaint analysis, the data highlights two distinct and unique drivetrain combinations exhibiting the alleged condition of stalling while driving. These vehicle drivetrain combinations can be observed in Enclosure 8X and include the 2011 model year (MY) 2.0L front-wheel drive (FWD) CVT transmission vehicle and the 2012 MY 2.4L 4x4 vehicle.

When comparing the fuel systems between these two vehicles, the one distinct difference is the fuel tank design. The fuel tank in a FWD vehicle contains a single reservoir with a fuel pump that supplies fuel to the engine. The 4x4 fuel tank sits on top of, and beside, the drive shaft to the rear wheels. It contains two distinct reservoirs that contain fuel. The portion of the fuel tank that connects the two reservoirs is referred to as a saddle as it sits higher in the tank. The primary side of the fuel tank houses the fuel pump that supplies fuel to the engine. In supplying fuel to the engine, it also creates a siphon to draw fuel from secondary side of the fuel tank, over the saddle portion, to the primary side of the fuel tank. This fuel is transferred from the secondary to primary sides of the fuel tank through a formed transfer tube. Diagrams of the two types of fuel tanks can be observed in enclosure 8Y.

As stated in Assessment 2, when analyzing the 2011 MY 2.0L FWD complaints, it was noted that most engine stalls were happening at slow speeds, below 16 MPH, in the summer, with high A/C and electrical loads. The Assessment also noted that these engine stalls were occurring at low mileages, typically less than 4,000 miles and less than 4 months in service. The rate of reports on the cumulative repair date histogram has virtually leveled off over the past year which indicates the condition no longer exists as a current issue in the field. These items help validate the conclusion that the engine stall issue was attributed to a green engine break-in condition.

Analysis of the 2012 MY 2.4L 4x4 vehicle showed a total of 51 unique customer complaints and field reports of stall while driving vs. only 13 for the prior model year. As noted in Assessment 3, when analyzing the 2012 MY complaints by build date, approximately 80 percent occurred in a four month window between October 2011 and January 2012, suggesting some type of change in product or deviation in process.

As mentioned above, the elevated levels of engine stall complaints in the October 2011 through January 2012 timeframe was attributable to a unique event. Due to a material shortage, the industry shifted from nylon-12 to nylon 6/12. This change affected the transfer tube production as the supplier switched to the new material and made the first shipment of fuel tanks on September 19, 2011. It was later learned that the nylon 6/12 material requires additional heat to allow the polymer to reach a temperature great enough to properly form the transfer tube and retain its shape.

Malformed transfer tubes were identified at the fuel tank assembly supplier and a 100% inspection and sort was established at the fuel tank supplier on January 26, 2012. This can be seen from the supplier corrective action plan document in Enclosure 8U - Malformed Transfer Tube 8D CONF BUS INFO. A high rate of malformed transfer tubes were identified during the sorting process and removed from the system. The 100% inspection continued until November, 2012. During this time, the transfer tube manufacturing process was brought into control and the sort was maintained as a confirmation.

When looking at the customer complaints and field data, along with the tube material change and clean date from sorting at the fuel tank assembly supplier, it is apparent that the material change could correlate to the elevated level of complaints between October 2011, and January 2012. This is illustrated below in Figure 1.

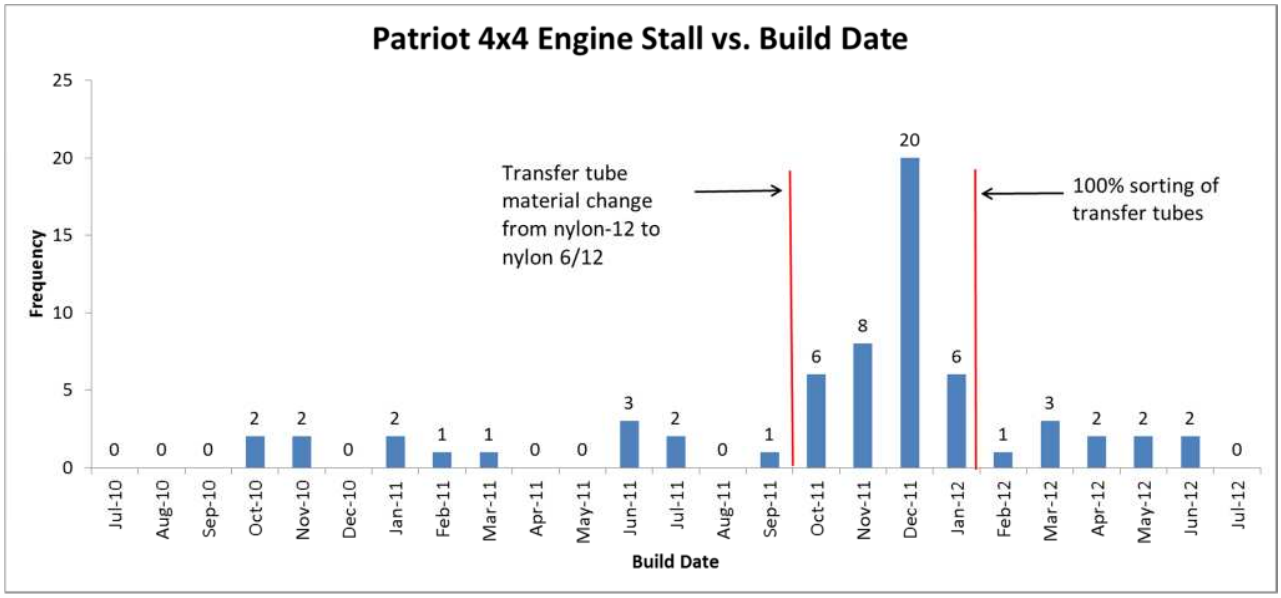

Fig 1

The 2012 MY VOQ data provided by NHTSA during the course of the investigation reveals a very similar pattern of complaint rate both by build data (Fig 1) and report date (Assessment 3).

Chrysler Group LLC had 25 assessments in analyzing data and understanding the alleged condition. Assessments 7-11, and 24-25 are tests conducted by the suppliers (TI, Denso, and Kautex).

Assessments 4-6, and 12-23 were unique tests conducted by Chrysler for the purposes of repeating the alleged condition and understanding its root cause. In order to induce a stalling condition a combination of several extreme conditions was required (high ambient temperature, high RVP fuel, low fuel pump voltage, maximum engine fuel demand for an extended period, and high altitude). During the assessments, it was noted that the siphoning process from the secondary to primary side of the fuel tank at times did not meet the 60lph maximum engine fuel demand. The consequence of this is that the primary side of the fuel tank would run out of fuel and stall the vehicle. Because the secondary side of the fuel tank may contain some level of fuel, the fuel gauge indicates the fuel tank is approximately a quarter full. See enclosure 8Y for a fuel tank diagram. The lack of an adequate rate of siphoning within the fuel tank, coupled with certain driving conditions, may lead to engine stalling.

Common to the field reports and customer complaints where there was a stalling condition, certain conditions were noted: driving on the highway for an extended period of time without stopping, high ambient temperatures, the vehicle could not

be immediately restarted, some customers stated the fuel gauge showed one quarter tank of fuel remaining, most vehicles were restarted at the dealership.

Some of the assessments may indicate the 5/8 inch tube to be more susceptible to creating a low rate of siphoning in the fuel tank. However, it should be noted it took a combination of several extreme operating conditions (high ambient temperature, high RVP fuel, low fuel pump voltage, maximum engine fuel demand for an extended period, and high altitude) to create the low rate of siphoning during the assessment. The properly formed 5/8 inch tube, prior to and after the material change, showed a far lower rate of engine stalling as can be seen in Figure 1.

The assessments suggest that some of these conditions reported in the field could create a low rate of siphoning in the fuel tank. These conditions in and of themselves may not lead to a lack of siphoning, but when coupled with a malformed transfer tube, it may exacerbate the siphoning process and lead to an engine stall condition. This is evidenced by the elevated customer complaint data during the same period of time when it is believed malformed tubes were installed in vehicles. See Figure 1 above.

The current production 5/8 inch diameter transfer tube by itself was not the cause of the lack of siphon. Rather, the malformed transfer tube may exacerbate the siphoning process under a combination of extreme operating conditions as it was allowed to sit higher in the fuel tank. The added height of a malformed transfer tube makes starting and maintaining the siphon process more difficult.

If the engine stalls, the vehicle has functioning brake and steering systems. At highway speeds, the vehicle requires very little effort to steer the vehicle to the side of the road and the brakes are able to safely slow the vehicle to a stop. This condition results in no imminent danger, but rather, is more of an inconvenience to driver. Typically the vehicle will restart at some point and the inconvenience is temporary.

Warnings to the driver may be evident under certain circumstances when an engine stall occurs. If the engine stalling condition was related to a fuel tank siphoning issue, there would be no warning to the driver leading up to the engine stall. However, once an engine stall occurs, the driver may notice any of the following: lights on the instrument panel illuminate, a lack of engine noise, steering efforts may increase, no vehicle acceleration when depressing the accelerator pedal, and the RPM gauge would go to zero. Upon understanding these warnings and recognizing the vehicle has lost mode of power, the operator still has full steering and braking capabilities to safely pull the vehicle to the side of the road.

This investigation remains open as the statistical analysis is not yet completed and will be submitted to the ODI on or before mid-February, 2013. Chrysler looks

forward to working with the ODI towards the successful resolution of this investigation.