



GENERAL MOTORS CORPORATION
Vehicle Structure & Safety Integration

5/13/08
Full

May 1, 2008

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NVS-210

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Kathleen C. DeMeter, Director
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Ave., S. E., Room W46-409
Washington, D.C. 20590

N070167A

NVS-213swmc
EA07-015

Dear Ms. DeMeter:

This letter is General Motors (GM) response to your information request (IR), dated March 5, 2008, regarding allegations of engine stalling due to fuel pump assembly failures in model year (MY) 2003 Chevrolet Cavalier vehicles manufactured by General Motors Corporation.

The GM reports and warranty claim information included in this response is an update to the information previously included in response to PE07-033 provided on August 17, 2007.

Your questions and our corresponding replies are as follows:

1. **State the number of each of the following, received by GM, or of which GM is otherwise aware, which relate to, or may relate to, the alleged defect in the subject 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. **Reports involving a fire, 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;**
 - e. **Property damage claims; and**
 - f. **Third-party arbitration proceedings where GM is or was a party to the arbitration; and**
 - g. **Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.**

For subparts "a" through "e" 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 "g," provide a summary description of the alleged problem and causal and contributing factors and GM'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.

Product Investigations

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EA07-015_N070167A_Response.doc

The additional reports of alleged engine stalling while driving due to fuel pump assembly failure is shown in Table 1-1. GM is also providing in Table 1-2, the reports where a fuel pump assembly failure resulted in a no start/hard-to-start or unknown result. GM has organized the records by the GM file number within each attachment.

To date, GM's investigation of the alleged defect has not included an assessment of the cause(s) of each incident responsive to Request No. 1. Some incident reports may not contain sufficient reliable information to accurately assess cause.

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES				
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/FATALITIES	NUMBER WITH FIRES**
Owner Reports	10	0	0	0	0	0
Field Reports	1	0	0	0	0	0
Not-In-Suit Claims	0	0	0	0	0	0
Subrogation Claims	0	0	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0	0
Total Reports (Including Duplicates)	11	0	0	0	0	0
Total Vehicles with Reports (Unique VIN)	11	0	0	0	0	0

TABLE 1-1: REPORT BREAKDOWN – ENGINE STALLING WHILE DRIVING

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES				
		CORRESPONDING TO NHTSA REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH INJURIES/FATALITIES	NUMBER WITH FIRES
Owner Reports	8	0	0	0	0	0
Field Reports	3	0	0	0	0	0
Not-In-Suit Claims	0	0	0	0	0	0
Subrogation Claims	0	0	0	0	0	0
Third Party Arbitration Proceedings	0	0	0	0	0	0
Product Liability Lawsuits	0	0	0	0	0	0
Total Reports (Including Duplicates)	11	2	0	0	0	0
Total Vehicles with Reports (Unique VIN)	11	2	0	0	0	0

TABLE 1-2: REPORT BREAKDOWN – NO START/HARD START/UNKNOWN CONDITIONS

The sources of the requested information and the last date the searches were conducted are tabulated in Table 1-3 below.

Source System	Last Date Gathered
Customer Assistance Center	3/14/08
Technical Assistance Center	3/18/08
Field Information Network Database (FIND)	3/10/08
Field Product Report Database (FPRD)	3/10/08
Company Vehicle Evaluation Database (CVEP)	3/14/08
Captured Test Fleet (CTF)	3/14/08
Early Quality Feedback (EQF)	3/14/08
Legal/Employee Self Insured Services (ESIS)/Product Liability Claims/Lawsuits	3/13/08

TABLE 1-3: DATA SOURCES

2. 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. **GM's file number or other identifier used;**
- b. **The category of the item, as identified in Request No. 2 (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 make, 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 a fire is alleged;**
- k. **Whether property damage is alleged;**
- l. **Number of alleged injuries, if any; and**
- m. **Number of alleged fatalities, if any.**

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a preformatted table which provides further details regarding this submission.

The requested information is provided on the ATT_1_GM disk in the folder labeled Q_02 refer to the Microsoft Access 2000 file labeled, "Q_02_REQUEST NUMBER TWO DATA – TABLE 1-1," for information on those cases that may relate to the engine stalling while driving due to fuel pump assembly failure. On the same disk, refer to the file labeled, "Q_02_REQUEST NUMBER TWO DATA – TABLE 1-2," for information on those cases that may relate to the vehicle exhibiting a no start or hard to start condition or an unknown result due to fuel pump assembly failure. All available attachments associated with those records can also be found in the same folder in the files labeled "Q_02_REQUEST NUMBER TWO DATA ATTACHMENTS TABLE 1-1" and "Q_02_REQUEST NUMBER TWO DATA ATTACHMENTS TABLE 1-2." Some incident reports may not contain sufficient reliable information to accurately answer all parts of question 1.

- 3. 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 GM used for organizing the documents.**

Copies of the records summarized in Table 1-1 and Table 1-2 are on the disk the ATT_1_GM embedded in the folder labeled Q_02; refer to the Microsoft Access 2000 files labeled "Q_02_REQUEST NUMBER TWO DATA - TABLE 1-1" and "Q_02_REQUEST NUMBER TWO DATA - TABLE 1-2." All available attachments associated with those records can also be found in the same folder in the files labeled "Q_02_REQUEST NUMBER TWO DATA ATTACHMENTS TABLE 1-1" and "Q_02_REQUEST NUMBER TWO DATA ATTACHMENTS TABLE 1-2." GM has organized the records by the GM file number within each attachment.

- 4. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by GM to date that relate to the subject component in the subject 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. GM's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Repair date;
- e. Vehicle mileage at time of repair;
- f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- g. Labor operation number;
- h. Problem code;
- i. Replacement part number(s) and description(s);
- j. Concern stated by customer;
- k. Towing claim within three days of the subject component repair claim (yes/no);
- l. Cause and correction as stated by dealer;
- m. Additional comments, if any, by dealer/technician relating to claim and/or repair; and
- n. GM's assessment of whether the repair is related to an engine stall incident (yes, no, or unknown).

Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Tables 4-1 through 4-5 summarize the regular warranty and MIC extended warranty data that may be related to fuel pump component or assembly replacements. This data was sorted into five categories as shown on the tables. The definition of those categories is as follows:

- Stall – Vehicle stalled while driving
- No Start/Hard Start – Vehicle had a no start or hard to start condition, but there was no indication that it stalled while driving.
- Fuel Level Sensor – Vehicle had a claim related to the fuel level gage, but there was no indication that the vehicle stalled while driving and no indication that it had a no start condition.

- Other Drivability Conditions – Vehicle had a claim related to the fuel pump assembly or the fuel level sensor, but there was no indication that the vehicle stalled while driving and no indication that it had a no start condition. (example: noise complaints)
- Unknown – The warranty claim did not provide enough information to put the claim in any of the previous four categories.

A list of labor codes and customer codes is provided in response to question number 6.

MAKE/MODEL	TYPE	2001 MY	2002 MY	2003 MY	2004 MY	TOTAL
Chevrolet Cavalier	Regular	4	1	17	10	32
	Extended (MIC)	1	8	59	12	80

TABLE 4-1
REGULAR & EXTENDED (MIC) WARRANTY CLAIMS – STALL WHILE DRIVING

MAKE/MODEL	TYPE	2001 MY	2002 MY	2003 MY	2004 MY	TOTAL
Chevrolet Cavalier	Regular	5	19	99	24	147
	Extended (MIC)	7	36	358	47	448

TABLE 4-2
REGULAR & EXTENDED (MIC) WARRANTY CLAIMS – NO START/HARD START

MAKE/MODEL	TYPE	2001 MY	2002 MY	2003 MY	2004 MY	TOTAL
Chevrolet Cavalier	Regular	1	6	15	48	70
	Extended (MIC)	3	10	26	30	69

Table 4-3
Regular & Extended (MIC) Warranty Claims – Fuel Level Sensor

MAKE/MODEL	TYPE	2001 MY	2002 MY	2003 MY	2004 MY	TOTAL
Chevrolet Cavalier	Regular	6	11	59	16	92
	Extended (MIC)	1	2	29	6	38

Table 4-4
Regular & Extended (MIC) Warranty Claims – Other Drivability Conditions

MAKE/MODEL	TYPE	2001 MY	2002 MY	2003 MY	2004 MY	TOTAL
Chevrolet Cavalier	Regular	1	15	49	13	78
	Extended (MIC)	3	9	94	12	118

Table 4-5
Regular & Extended (MIC) Warranty Claims - Unknowns

Tables 4-6 and 4-7, summarize the extended warranty claims from Universal Warranty Corporation (UWC) for the subject vehicles that may be related to fuel pump component or assembly replacements. These claims are separated into two tables, the first for those that relate to the fuel pump assembly and the second for those that relate to the fuel level sensor. These claims do not provide enough detail to sort the information into the same categories as the regular warranty data.

MAKE/MODEL	2001 MY	2002 MY	2003 MY	2004 MY	TOTAL
Chevrolet Cavalier (UWC)	4	5	42	6	57

Table 4-6
Extended Warranty (UWC) Claims for Fuel Pump Assembly

MAKE/MODEL	2001 MY	2002 MY	2003 MY	2004 MY	TOTAL
Chevrolet Cavalier (UWC)	1	0	1	1	3

Table 4-7
Extended Warranty (UWC) Claims for Fuel Level Sensor

The sources of the requested information and the last date the searches were conducted are tabulated in Table 4-8 below.

Source System	Last Date Gathered
GM CARD – Regular Warranty	3/10/2008
Motors Insurance Corporation (MIC) – Extended Warranty	3/13/2008
Universal Warranty Corporation (UWC) – Extended Warranty	3/9/2008

Table 4-8 Data Source

A summary of the warranty claims, including the information requested in 4 (a-n), is provided on the ATT_1_GM disk in the folder labeled Q_04; refer to Microsoft Access 2000 file labeled, "Q_04_WARRANTY DATA." Note that the MIC warranty claims provided in the August 17, 2007 submission are also included in this file since they have now been sorted into the same 5 categories as shown in Tables 4-1 through 4-5.

- Describe in detail the search criteria used by GM 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 GM on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that GM offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.**

To search for and collect the warranty data for this response, the GM Claim Adjustment Retrieval Database (CARD) regular warranty database and the Motors Insurance Corporation (MIC) extended warranty database were searched using the labor codes listed in Table 5-1. Universal Warranty Corporation (UWC) does not use labor codes or customer codes.

Labor Code	Description
L1200	Sender/Pump, Fuel Tank Unit – Replace
L1197	Sensor, Fuel Level (Tank Unit) – All
J5590	Pump, In Tank Fuel – Replace
L1198	Filter, Fuel (In Tank)-Replace All
Z1241	Product Liability/Investigation REP PR (Goodwill)
Z1242	PAR – Repairs/Reimbursement (Goodwill)

Table 5-1 Labor codes Used in Warranty Search

The labor codes Z1241 and Z1242 can be used by dealers for reimbursement for goodwill warranty repairs. They are not specific to replacement of the subject components. GM reviewed the goodwill claims with these two labor codes and did not find any additional claims that clearly related to the alleged defect.

Within the Labor Codes (L1200, L1197, L1198 & J5590), customer complaint codes are also provided for warranty claims. Table 5-2 lists those customer codes that were used to further classify the reasons that the subject components were replaced.

Customer Complaint Code	Description
PU	PERFORMANCE: STALLS-HOT ENG
PB	PERFORMANCE: CUTS OUT
PT	PERFORMANCE: STALLCOLD(FAILED EMISS
PR	PERFORMANCE: SLUGGISH(STALLS-HOT EN
PQ	PERFORMANCE: ROUGHIDLE-HOT(STALLCOL
PN	PERFORMANCE: NO START(ROUGH IDLECOL
PF	PERFORMANCE: HARD ST-COLD(HESIT-HOT
PG	PERFORMANCE: HARD ST-HOT(HESIT-HOT
AV	VISUAL: UNUSUAL GAGE READING
V5	VISUAL: SPOT/STAIN(UNUSU GAGERDG)
N2	NOISE: WHISTLE
N3	NOISE: WIND NOISE
NA	NOISE: BOOM
NB	NOISE: BUZZ
NC	NOISE: CHATTER
ND	NOISE: CLICK/TICKING
NE	NOISE: CLUNK
NF	NOISE: CREAK(GRIND)
NG	NOISE: GRIND(GROWL)
NH	NOISE: GROWL(HISS)
NI	NOISE: HISS(HOWLING)
NJ	NOISE: HOWLING(KNOCK)
NK	NOISE: INTERFERENCE(MOAN)
NM	NOISE: KNOCK(POPPING)
NN	NOISE: MOAN(RATTLE)
NP	NOISE: POPPING(ROAR)
NQ	NOISE: RATTLE(RUMBLE)
NR	NOISE: ROAD NOISE(SQUEAK)
NS	NOISE: ROAR(SQUEAL)
NT	NOISE: RUMBLE(WHINE)
NU	NOISE: SQUEAK(WHISTLE)
NV	NOISE: SQUEAL(WIND NOISE)
NW	NOISE: SQUISH(CHATTER)
NY	NOISE: TAPPING
NZ	NOISE: WHINE
WG	WARNING LIGHTS: SERVICE ENGINE SOON
PH	PERFORMANCE: HESIT-COLD(MISS)
PI	PERFORMANCE: HESIT-HOT(OVERHEATING)
PP	PERFORMANCE: ROUGH IDLECOLD(SLUGGIS
PS	PERFORMANCE: SPARK KNOCK(SURGE)
PV	PERFORMANCE: SURGE
VN	VISUAL: LEAK/LEAKS(MISSING)

Table 5-2 Customer complaint codes used to classify regular warranty claims

The process used to categorize the regular warranty data is described in an attached document located on ATT_1_GM disk in the folder labeled Q_05; refer to Microsoft Word file labeled, "Q_05_WARRANTYDATASORT". This is the same information provided in GM's response to PE07-033 on August 17, 2007.

The subject vehicles are covered by a bumper-to-bumper new vehicle warranty for three years or 36,000 miles whichever occurs first. Many different extended warranty options are available

through GM dealerships. They are offered at different prices and for varying lengths of time, based on customer's preference, up to 7 years from the date of purchase or up to a total of 100,000 vehicle miles. The number of MIC extended warranty coverage contracts that have been sold for the subject vehicles as of January 25, 2008 is contained in Table 5-3.

MAKE/MODEL	2001 MY	2002 MY	2003 MY	2004 MY	TOTAL
Chevrolet Cavalier	49546	85686	54556	46639	236427

TABLE 5-3: MIC EXTENDED WARRANTY COVERAGE CONTRACTS

6. **Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that GM has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, 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 GM is planning to issue within the next 120 days.**

All bulletins were included in response to question 7 in General Motor's response to PE07-033 on August 17, 2007.

GM is not planning to issue in the next 120 days, any service, warranty or other technical documents or communications to its dealers, regional offices, zone offices or other entities regarding the subject condition in the subject vehicles.

The data search was completed on March 18, 2008.

7. **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 in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, GM. 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.**

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.

Action 7-A: Returned parts analysis report information

Start Date: 6/29/2007

End Date: 8/29/2007

Engineering Groups: Automotive Systems US, Inc.* and GM Engineering

Attachments: The first document can be found on the ATT_4_SPLR_CONF disk in the folder labeled Q_07, refer to the file labeled, Q_07_A_PRT. The second document can be found on ATT_1_GM disk. Refer to the file labeled Q_7_A_TeardownSummary.

Description: Spreadsheet of the results of parts analysis and teardowns.

Summary of Action: Fuel pump assemblies returned through the GM Warranty Parts Center were torn down and analyzed by ¹Continental Automotive Systems*. Some of this same information was provided in response to question 9, for PE07-033 (for that response it was included on ATT_4_SPLR_CONF disk in the folder labeled Q_07, refer to the file labeled Q_07_K_PRT). However, these documents also include information on additional fuel pumps that have been torn down and analyzed since the original response and also includes a summary.

Action 7-B: Teardown summary of 6 fuel pumps

Start Date: March, 2008

End Date: March, 2008

Engineering Group: Continental Automotive Systems US, Inc.*

Attachments: The document The documents can be found on the ATT_4_SPLR_CONF disk in the folder labeled Q_07_B, refer to the files labeled, "PumpTeardown", "Item 1 Carbon Brush", "Item 2 end shield", "Item 3 spring", "Item 4 field ring assy", "Item 5 field ring", "Item 6 rotor assy", Item 7 rotor assy", and "Item 8 commutator".

Description: Results of fuel pump teardowns of 6 fuel pumps and the original design drawings for comparison.

Summary of Action: Summarizes the results of 6 fuel pumps torn down and analyzed including dimensional data on the motor brushes and force data on the motor springs.

Action 7-C: Dealer Call Information

Start Date: March 17, 2008

End Date: March 27, 2008

Engineering Group: GM Engineering

Attachments: The documents can be found on the "ATT_1_GM" disk in the folder labeled Q_07, refer to the files labeled, "Q_07_C_CavalierDealerInformation" and "Q_07_C_CavalierDealerInfoSummary".

Description: A spreadsheet of the results and a summary of the results from contacting dealers for warranty cases.

Summary of Action: GM contacted dealers to gather additional information on cases identified in warranty as having a stall while driving incident in order to gather additional information about the incident from the dealers and the dealer repair orders.

Action 7-D: Customer Survey Information

Start Date: April 14, 2008

End Date: April 18, 2008

Engineering Group: GM Engineering

Attachments: The document can be found on the "ATT_1_GM" disk in the folder labeled Q_07, refer to the file labeled, "Q_07_D_CavalierCustomerSurvey".

Description: Update to customer survey previously sent to NHTSA on October 19, 2007.

Summary of Action: GM contacted customers that had been identified in the Customer Reports or Field Reports as having a stall while driving incident and gathered additional information about the incident.

Action 7-E: Wear of commutation system identification

Start Date: TBD

End Date: TBD

Engineering Group: Continental Automotive Systems US, Inc.* will conduct the testing.

Attachments: No documents have been generated.

Description: There is a plan to run two durability test for 1000 hours each with GM SC fuel pump modules. These tests will investigate the wear of the commutation system by using springs for the carbon brushes that are made to the minimum spring tolerance and springs that are made to the maximum spring tolerance values.

Summary of Action: See description.

¹ * Continental Automotive Systems US, Inc. was formerly Siemens VDO Automotive Corporation

Action 7-F: Field Information Network Database (FIND) Reports

Start Date: June, 2004

End Date: August, 2007

Engineering Group: GM Engineering

Attachments: The document can be found on the "ATT_2_GM_CONF" disk in the folder labeled Q_07_F, refer to the files labeled, "FPR16092004 A", "FPR16092004 B", "FPR16092004 C", "FPR16092004 D", "FPR16092004 E" and "FPR16092004 F".

Description : Documents associated with GM's FIND system which tracks issues identified in the field.

Summary of Action: Summarizes issues identified on the 2004 Chevrolet Cavalier fuel pumps and links those issues back to GM's Problem Resolution Tracking System (PRTS). These documents are associated with the PRTS N154637 and were not found in the search done for the August 17, 2007 response and are now being provided. Other associated documents related to the PRTS were provided in the August 17, 2007 in "ATT_2_GM_Conf" disk in the file labeled "Q_09_H_PRTS_N154637".

Action 7-G: Fuel pump issue identification in durability vehicles.

Start Date: 2/20/2001

End Date: 3/21/2002

Engineering Group: GM Engineering

Attachments: The documents can be found on the "ATT_2_GM_CONF" disk in the folder labeled Q_07, refer to the files labeled, "Q_07_G_PIMREPJ12J80008" and "Q_07_G_PIMREPJ12J80021".

Description : Documentation of fuel pump issues identified in GM durability vehicles.

Summary of Action: Issues identified on 2002 Chevrolet Cavalier durability test vehicles were diagnosed as fuel pump issues. These documents were not found during the search for the August 17, 2007 response and are now being provided.

Action 7-H: Graphs of 5 categories identified in the warranty data.

Start Date: 4/22/2008

End Date: 4/22/2008

Engineering Group: GM Engineering

Attachments: The documents can be found on the ATT_1_GM disk in the folder labeled Q_07, refer to the files labeled, "Q_07_H_WarrantyCharts".

Description : Analysis of warranty data.

Summary of Action: IPTV graphs of the Warranty data that was sorted into 5 categories(as described in question 4), plotted as IPTV versus time-to-repair (TTR) and Month of Vehicle build (MOB).

Action 7-I: Weibull analysis of warranty data.

Start Date: 4/9/2008

End Date: 4/9/2008

Engineering Group: GM Engineering

Attachments: The documents can be found on the "ATT_2_GM_CONF" disk in the folder labeled Q_07, refer to the files labeled, "Q_07_I_Weibull Cavalier".

Description : Analysis of warranty data.

Summary of Action: Weibull analysis results using the stall while driving warranty cases as well as stall while driving and a percentage of the towing claims.

8. Describe all modifications or changes made by, or on behalf of, GM in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:

- a. The date or approximate date on which the modification or change was incorporated into vehicle production;
- b. A detailed description of the modification or change;

- c. The reason(s) for the modification or change;
- d. The part number(s) (service and engineering) of the original component;
- e. The part number(s) (service and engineering) of the modified component;
- f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
- g. When the modified component was made available as a service component; and
- h. Whether the modified component can be interchanged with earlier production components.

Also, provide the above information for any modification or change that GM is aware of which may be incorporated into vehicle production within the next 120 days.

Refer to question 10 in GM's response to PE07-033 sent on August 17, 2007. All modifications and changes are documented in that response and no new changes have been made since that time.

GM is not planning to incorporate any modifications or changes into production of the subject vehicles that relate to the alleged defect within the next 120 days.

9. Describe in detail the differences between the following fuel pumps:

- a. Bebra pumps built with turbines from cavities 1-8 (a.k.a. the USA turbines) (page 6 of Q_09_D_PSW_B.pdf);
- b. Bebra pumps built with turbines from cavities 9-12 (a.k.a. the German turbines) (page 6 of Q_09_D_PSW_B.pdf);
- c. The Winchester pump; and
- d. The Juarez pump (page 22 of Q_09_D_PSW_B.pdf); and
- e. The Juarez module (page 11 of Q_09_D_PSW_B.pdf).

For each fuel pump, state whether each was utilized in production of the subject vehicles. If the fuel pump was utilized in production, provide the start and end dates of production.

The fuel pump supplier, Continental Automotive Systems US, Inc.* , provided the following answers to questions 9a through 9e.

Answer to 9a. and 9b.

The pumps with turbine wheels out of cavities 1-8 and turbine wheels out of cavities 9-12 differ by the size of the web separating the turbine wheel vanes. Turbine wheels out of cavities 1-8 have a web dimension that is at the lower end of the tolerance band and out of cavities 9-12 has a web dimension that is at the higher end of the tolerance. The difference in web thickness accounts for the difference in flow rate. Both are within tolerance specifications.

Cavities 1-8 (US turbine wheels): Dimension A of the separating web is at the lower tolerance for thickness. Therefore the fluid volume of the turbine vanes is slightly bigger compared to those from cavities 9 - 12 and as such produced a higher flow rate.

Cavities 9-12 (German turbine wheels): Dimension A of the separating web is at the higher tolerance for thickness. Therefore the fluid volume of the turbine vanes was slightly smaller compared to those from cavities 1-8 and as such produced a lower flow rate.

Both are within tolerance specifications.

Answer to 9c and 9d.

Winchester assembled pumps and Juarez assembled pumps are identical. Both pumps used only turbine wheels out of cavities 1 - 8.

Answer to 9e.

Juarez modules contained pumps built in Juarez, Winchester and Bebra. Only 7787 pumps were built in Bebra with turbine wheels out of cavities 9 to 12, and they were sorted in Juarez for correct flow values and approved by the Tier 1 customer (tank supplier). See page 22 of Q_09_D_PSW_B from our original response to PE07-033.

Each of the above pumps were utilized in production for the subject vehicles. The time frame for assembling these pumps into modules is shown "ATT_3_SPLR" folder. Refer to file "Q_09_PumpProd".

10. In response to question 9 of ODI's information request in PE07-033, GM provided documents in electronic format with the filename: "Q_09_D_DATA_A.pdf." With respect to page 8 of Q_09_D_DATA_A.pdf, provide the following:

- a. State whether the Bebra pumps tested were the Bebra pumps built with turbines from cavities 1-8 (a.k.a. the USA turbines) or the Bebra pumps built with turbines from cavities 9-12 (a.k.a. the German turbines);
- b. State whether any of the pumps tested were used in production; if the answer is yes, provide the start and end dates that the pumps were in production; and
- c. Explain in detail what "Rejected FX1" and "Rejected FX2" means.

The fuel pump supplier, Continental Automotive Systems US, Inc.*, provided the following answers to questions 10a through 10c.

Answer to 10a.

The 7787 Bebra pumps were assembled in Bebra using turbine wheels out of cavities 9 – 12 and then sorted for fuel flow. Any of the pumps that passed fuel flow rate were used in production.

Answer to 10b.

The pumps with turbine wheels out of cavities 9 – 12 were used after sorting for correct fuel flow, with a total of 5711 being accepted. Turbine wheels were built into pumps in the September 2002 time frame. Again, the timing of the pump production is found in "ATT_3_SPLR" folder; refer to file "Q_09_PumpProd".

Answer to 10c.

The end control test number 3 has 2 flow stations to measure the pumps performance parameters. "Reject FX1" and "Reject FX2" reflects the quantity of parts rejected.

11. In response to question 9 of ODI's information request in PE07-033, GM provided documents in electronic format with the filename: "Q_09_D_DATA_A.pdf." With respect to page 9 of Q_09_D_DATA_A.pdf, explain in detail:

- a. The process of running requalification pumps;
- b. What the "problem" with "fixture 2" was;
- c. Why the "data will not match up" if the tester is calibrated before running requalification pumps in Juarez;
- d. Whether the requalification pumps were ever run Juarez, and, if so, provide the dates such requalification was run;
- e. The consequences of the test malfunction on requalification;
- f. Whether the inability to run requalification pumps impacts the introduction of the pumps into production; and
- g. The chart shown on page 8 regarding Bebra pumps (1-8 or 9-12?) rejected.

The fuel pump supplier, Continental Automotive Systems US, Inc.*, provided the following answers to questions 11a through 11g.

Answer to 11a.

Pumps were not "re-qualified". Rather the equipment used/moved must be set up and re-qualified for use. Page 9 of the document Q_09_D_DATA_A.pdf, refers to the transfer of pump tester #2 from Winchester to Juarez. The process of running "requalification" pumps pertains to the measurement of pumps before the tester was prepared for shipping.

Answer to 11b.

Fixture 2 was adjusted by mistake to a higher pressure. This caused the pumps to produce a lower flow and a higher current draw. The end of line testers also measures the current draw to verify performance specifications – they sort for current draw and flow performance. No pumps were delivered out of specification.

Answer to 11c.

If pump tester #2 would have been shipped to Juarez and Juarez would have adjusted the pressure to the correct value, then the master pumps would have produced a higher flow rate. No pumps were delivered out of specification.

Answer to 11d.

"Re-qualification" refers to the pump tester only. The Production Part Approval Process (PPAP) for the pumps measured by this tester were approved by the Tier 1 customer (tank supplier). Refer to the answer to question 11a, and to the Part Submission Warrants (PSW) found in "ATT_4_SPLR_CONF" folder, refer to file "Q_11_PSW".

Answer to 11e.

When pump tester #2 arrived in Juarez, it was calibrated before in it was reintroduced into production. The tester was not used in production until it passed qualification tests.

Answer to 11f.

No, refer to the answer in 11e.

Answer to 11g.

The Bebra pumps with the turbine wheels out of cavities 9 – 12 were all tested and sorted in Juarez as noted in answers to questions 9a and 9b. No pumps were delivered out of specification.

* Continental Automotive Systems US, Inc. was formerly Siemens VDO Automotive Corporation

- 12. State the number of each of the following that GM has sold by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable):**
- a. Subject component; and**
 - b. Any kits that have been released, or developed, by GM for use in service repairs to the subject component/assemblies.**

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number). Also identify by make, model and model year, any other vehicles of which GM is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

An electronic summary table of the requested service part information for the subject components is provided on the "ATT_1_GM" disk in the folder labeled Q_12; refer to the Microsoft Excel files labeled, "Q_12_Part_Sales1" and "Q_12_Part_Sales2".

These numbers represent all of the service parts sales regardless of location, (not an update from PE07-033). This data has limited analytical value in analyzing the field performance of a motor vehicle component because the records do not contain sufficient information to establish the reason for the part sale. It is not possible from this data to determine the number of these parts that have been installed in the subject vehicles or the number remaining in dealer or replacement part supplier inventory.

This table contains service part numbers, part description, part usage information including the GM vehicles that contain the identical component, part sales figures by month and calendar year, and the supplier's name and address, contact name and phone number

- 13. Furnish copies of all communication between GM and each supplier of the subject component for the subject vehicles that pertain to the design, manufacture, performance, quality, durability, testing, or modification of the subject component in the subject vehicles. This includes, but is not limited to, discussions regarding GM engineering specifications and requirements, the specifications used by the supplier(s) in producing the subject component, and the manufacturing and quality control processes followed by the supplier(s) as to the subject components. If any communications on this subject were oral or were conducted electronically, provide a written transcript or summary of each such communication, and include a statement that identifies the participants and the date of communication.**

Communication: 13-A: Continental fuel pump motor brush analysis.

Date of Communication: August 17, 2007

Attachments: This document can be found on the "ATT_4_SPLR_CONF" disk in the folder labeled Q_13, refer to the file labeled, "Q_13_A_Siemens_Brush".

Description: Document sent from Continental Automotive Systems to GM engineering. Document describes communication between Siemens VDO and Kirkwood, the fuel pump motor brush supplier.

<p>Communication: 13-B: Status Update at Continental Automotive Systems* Meeting Date of Communication: November 15, 2007 Attachments: The document can be found on the "ATT_1_GM" disk in the folder labeled Q_13_B. Refer to the file labeled "Siemens_Update11-15-07". Description: Presentation given by GM to Continental Automotive Systems engineers. Provides a status update of NHTSA's investigation - PE07-033.</p>
<p>Communication: 13-C: E-mail from Continental Automotive Systems*. Date of Communication: November 15, 2007 Attachments: The document can be found on the "ATT_3_SPLR" disk in the folder labeled Q_13_C. Refer to the file labeled "SiemensGMemail4-16-08". Description: E-mails exchanged between GM and Continental Automotive Systems discussing the document that is included in the response to question 7, Action 7-B. (The document in question 7, Action 7-B is the same document shown as an attachment in the e-mails).</p>
<p>Communication: 13-D: E-mails between, Continental Automotive Systems*, General Motors Corporation, Carbone-Kirkwood LLC, and Cleveland Commutator Company. Date of Communication: July 26, 2007 through March 24, 2008 Attachments: The document can be found on the "ATT_3_SPLR" disk in the folder labeled Q_13_D. Refer to the file labeled "BrushE-mails". Description: A series of e-mails requesting additional information regarding the motor brushes used in the fuel pump motor of the subject vehicles.</p>
<p>Communication: 13-E: Letter related to review of records related to carbon brushes. Date of Communication: November 26, 2007 Attachments: The document can be found on the "ATT_3_SPLR" disk in the folder labeled Q_13_E. Refer to the file labeled "CalfeeLetter". Description: Letter from Calfee, Halter & Griswold, LLP giving permission from Cleveland Commutator Company and Kirkwood Holdings, Inc. to Siemens VDO Automotive for them to inspect the records of Carbone Kirkwood, LLC that relate to carbon brushes. This is the same document shown as an attachment labeled "20070912161636.pdf" referenced in the e-mails provided in Communication 13-D.</p>
<p>Communication: 13-F: Draft letter related to review of records for carbon brushes. Date of Communication: December 11, 2007 Attachments: : The document can be found on the "ATT_3_SPLR" disk in the folder labeled Q_13_F. Refer to the file labeled "Silverman-December11". Description: Draft letter from Continental Automotive Systems to General Motors Corporation indicating that they have been unsuccessful in acquiring records related to the carbon brushes. This is the same document shown as an attachment labeled "Silverman-December 11.doc" referenced in the e-mails provided in Communication 13-D.</p>
<p>Communication: 13-G: Letter related to review of records for carbon brushes. Date of Communication: December 11, 2007 Attachments: : The document can be found on the "ATT_1_GM" disk in the folder labeled Q_13_G. Refer to the file labeled "ContinentalLetter12-13". Description: Letter from Continental Automotive Systems to General Motors Corporation indicating that they have been unsuccessful in acquiring records related to the carbon brushes.</p>

14. Provide copies of all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that have been conducted by GM, or on behalf of GM, or by Siemens or Siemens VDO that relate in any way to the failure of the fuel pumps. For each such action, provide the following information:

- Action title or identifier;
- The actual or planned start date;
- The actual or expected end date;

- d. Brief summary of the subject and or 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 finding and/or conclusions resulting from the action.

Refer to the response to Question 7 above.

15. Provide copies of all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that have been conducted by GM, or on behalf of GM, or by Siemens, Siemens VDO that relate in any way to the consequences of a failed fuel pump under various vehicle operating conditions, including, but not limited to, start-up, stop and go, panic stops, and steady-state driving. 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 or 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 finding and/or conclusions resulting from the action.

Refer to the response to Question 7 above.

16. Furnish GM's current assessment of the alleged defect in the subject vehicles, and in the MY 2003 vehicles produced through June 20, 2003 including:

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);
- c. The failure mode(s);
- d. The risk to motor vehicle safety that it poses;
- e. 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;
- f. The reports included with this inquiry;
- g. The 1-year fuel pump warranty claim rate (all conditions);
- h. The 3-year fuel pump warranty claim rate (all conditions);
- i. The 5- and 10-year projected fuel pump failure rates using statistical modeling of warranty data (all conditions);
- j. The approximate percentages of fuel pump failures associated with each condition identified in subpart "16.b.;"
- k. For each condition identified in subpart "16.b.," the approximate percentages of fuel pump failures resulting in stall while driving incidents; and
- l. For each condition identified in subpart "16.b.," the approximate percentage of stall incidents that will result in a no restart condition.

GM has identified two main causes of vehicles stalling while driving related to the fuel pump assembly.

- 1) The fuel pump assembly does not provide adequate fuel to the engine. The primary failure mechanism in those cases is high brush wear in the fuel pump motor. External contamination in the fuel pump assembly is a contributing factor to the brush wear and other failures of the fuel pump assembly.
- 2) A secondary cause is due to the vehicle running out fuel. The failure mechanism in those cases is a faulty fuel level sensor.

The Regular and Extended (MIC) Warranty data was sorted as described in GM's August 17, 2007 response to PE07-033 (provided again on "ATT_1_GM" disk, filename: "Q_05_WARRANTYDATASORT"). The results of that sorting can be seen in Tables 4-1 through 4-5 above, and in Tables 5-1 through 5-5 in the 8/17/07 response. Those categories represent the different failure modes, which include: No Start/Hard Start, Stalling While Driving, Fuel Level Sensor, Drivable and Unknown. All cases of stalls while driving, regardless of cause, were included in the Stall category.

GM first calculated the rates by using all of the "stalls while driving" identified in those warranty tables. The results of that analysis is shown in the column labeled "IPTV" in Table 16-1. In addition, all of the warranty claims from the other categories (fuel level, driveable, & unknowns) were also checked to determine if there was a towing claim within 3 days of the fuel pump assembly repair. With the assumption that those with towing claims may have actually experienced either a no-start/hard start or a stall while driving, GM added 18% of those towing claims into the stall while driving category. (When all of the stalls while driving and no starts are combined from the warranty data, the stalls while driving make up 18% of that total). Using that new total of stalls while driving, GM then repeated the the analysis and the results of that are shown in the column labeled "IPTV (18% of towing claims)".

	IPTV	IPTV (18% OF TOWING CLAIMS)
1 year warranty rate	2.3	2.5
3 year warranty rate	5.9	6.7
5 year projection	13.5	14.3
10 year projection	34.6	35.1

TABLE 16-1 STALLS WHILE DRIVING IPTV – MODEL YEARS 2001 – 2004

These same calculations were also done using only the warranty claims from vehicles built from the Start-of-Production (SOP), Model Year 2003 through June 20, 2003. Those calculations are shown on Table 16.2

	IPTV	IPTV (18% OF TOWING CLAIMS)
1 year warranty rate	3.6	3.8
3 year warranty rate	8.1	9.1
5 year projection	18.7	21.8
10 year projection	49.7	58.8

TABLE 16-2 STALLS WHILE DRIVING IPTV – MODEL YEARS 2003 (SOP – 6/20/03)

GM as well as Continental Automotive Systems, conducted several studies related to the fuel pump assembly:

- GM called dealers to get additional information on some of the cases that were identified in the warranty as having a stall while driving incident. From those calls, 155 were confirmed as stalls while driving. Of those 155 cases, 23 (15%) stalled due to the customer running out of fuel and 132 (85%) stalled due to another failure of the fuel pump assembly. This information is included in the response to question 7, refer to "Action 7-C".
- There were 19 fuel pump assemblies returned through the warranty system where there was some indication that a stall while driving had occurred. Those assemblies were torn down and analyzed. Of those 19 assemblies, 13 (68%) exhibited high brush and/or commutator wear, 5 (26%) indicated contamination and 1 (8%) was unknown. This study excluded the fuel level sensor and only studied failure of the fuel pump. This information is included in the response to question 7, refer to "Action 7-A".

This data was used to examine the 2 failure mechanisms identified above:

1) Failures of the fuel pump assembly (excluding fuel level sensor)

The warranty data in the "stall" category included all the stalls while driving whether they were a result of the customer running out of fuel or a result of the fuel pump assembly not adequately pumping fuel. This data was used to calculate the IPTV rates for Tables 16-1 and 16-2. The IPTV rate from Table 16-1 is 6.7 for 3 years in service. The 1st study described above, provides an estimate of how this IPTV is ratioed between failure mechanisms. It indicates that 85% of this rate would be due to a failure of the fuel pump assembly, or a 5.7 IPTV ($0.85 \times 6.7 = 5.7$). Further, using data from the second study identified above, 68% of fuel pump assembly failures (stalls while driving) were due to high motor brush wear, resulting in a 3.9 IPTV ($0.68 \times 5.7 = 3.9$) and 26% were due to contamination or 1.5 IPTV ($0.26 \times 5.7 = 1.5$). This calculation would indicate that approximately 0.39% of the vehicles stalled while driving due to high motor brush wear during the first 3 years.

2) Failure of the Fuel Level Sensor

Again using the 1st study described above, 15% of stalls while driving would be due to a fuel level sensor failure. The contribution to the IPTV for this failure mechanism is 1.0 IPTV ($0.15 \times 6.7 = 1.0$). This calculation would indicate that approximately 0.1 % of the vehicles stalled while driving due to a faulty fuel level sensor during the first 3 years.

Summarizing this in Table 16-3:

3 Year IPTV Due to fuel level sensor	1.0
3 Year IPTV Due to high motor brush wear	3.9
3 Year IPTV due to contamination	1.5
3 Year IPTV due to unknown/other fuel pump issues	0.3
Total 3 year IPTV	6.7

TABLE 16-3 STALLS WHILE DRIVING IPTV (WITH 18% TOWING CLAIMS) – MODEL YEARS 2001 – 2004

Table 16-4 summarizes the results of doing this same analysis for vehicles built from SOP MY 2003 through June 20, 2003.

3 Year IPTV Due to fuel level sensor	1.4
3 Year IPTV Due to high motor brush wear	5.2
3 Year IPTV due to contamination	2.0
3 Year IPTV due to unknown/other fuel pump issues	0.5
Total 3 year IPTV	9.1

TABLE 16-4 STALLS WHILE DRIVING IPTV (WITH 18% TOWING CLAIMS) – SOP MY 2003 THROUGH 6/20/03

GM has also reviewed the ability of the vehicles to restart after a stall, using the limited data available for the failure mechanisms identified.

Failures of the fuel pump assembly (excluding fuel level sensor):

- First, using the 1st study noted above, there were 132 confirmed stalls while driving cases due to the failure of the fuel pump (this excluded those cases where the customer ran out of fuel due to a faulty fuel level sensor). Of those 132 cases, the information obtained from dealer repair orders indicated that 59 (45%) had some level of restart ability of the vehicle after the stall. No additional detail was available.
- Second, GM called customers that had been identified as having a stall while driving in a Customer Complaint or Field Report. Of the 34 customers contacted where a stall was confirmed, 3 (9%) indicated some level of restart ability. This information is included in the response to question 7, refer to "Action 7-D".

Failure of the Fuel Level Sensor:

- These vehicles will only restart upon re-fueling the vehicle.

The reports that NHTSA has provided as part of this inquiry were also reviewed. While GM has not had an opportunity to review these vehicles, they appear to be consistent with the subject condition.

In summary, high motor brush wear is the predominant cause of the fuel pump assemblies being replaced on the subject vehicles. As noted in our earlier response, peroxide and sulfur within the fuel supply can react with the copper commutator to roughen the surface which interfaces with the motor brushes resulting in increased brush wear. The reduction of sulfur in the fuel supply beginning in the fall of 2003, coincides with an even lower incident rate for stall while driving and no start conditions, indicating the influence of fuel quality/composition on fuel pump life. Continental Automotive Systems has noted certain process changes by the brush manufacturer that may explain some variation in brush wear between vehicle populations.

Also, as noted in our earlier response, high motor brush wear is more likely to result in a no start condition, rather than a stall while driving, due to the higher level of energy and current required to start an electric motor, compared to the level required to sustain it once it is running and stabilizes. This is reflected in GM's warranty data.

In conclusion, GM has reviewed the data gathered for this response and believes that this condition does not pose an unreasonable risk to motor vehicle safety for the following reasons:

- The warranty rates for stall while driving conditions due to fuel pump assembly failure are low, 6.7 IPTV at 36 months in service for the subject vehicles and 9.1 IPTV for the vehicles built from SOP 2003 MY through June 20, 2003. These are the worst case numbers when adjusted with towing claims from Tables 16-1 and 16-2.

- A vehicle that exhibits the primary failure mechanism, high motor brush wear, would likely have incidents of a no start or difficult to start prior to a stall, which may lead a customer to seek service prior to a stall event.
- There are only 4 minor crashes and 2 minor injuries alleged to be the result of fuel pump assembly failure.

* * *

General Motors requested assistance and documents from suppliers in responding to items 7, 9, 10, 11, 13, 14, 15 and 16 and this response includes those documents received from suppliers.

GM claims that certain information, in documents that are part of lawsuit and claims files maintained by the GM Legal Staff, is attorney work product and/or privileged. That information includes notes, memos, reports, photographs, and evaluations by attorneys (and by consultants, claims analysts, investigators, and engineers working at the request of attorneys). GM is producing responsive documents from claims files that are neither attorney work product nor privileged, and withholding those that are attorney work product and/or privileged.

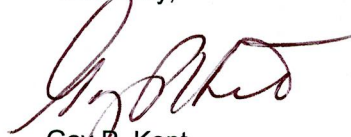
This response is based on searches of General Motors Corporation (GM) locations where documents determined to be responsive to your request would ordinarily be found. As a result, the scope of this search did not include, nor could it reasonably include, "all of its divisions, subsidiaries (whether or not incorporated) and affiliated enterprises and all of their headquarters, regional, zone and other offices and their employees, and all agents, contractors, consultants, attorneys and law firms and other persons engaged directly or indirectly (e.g., employee of a consultant) by or under the control of GM (including all business units and persons previously referred to), who are or, in or after 2000, were involved in any way with any of the following related to the alleged defect in the subject vehicles:

- a. Design, engineering, analysis, modification or production (e.g. quality control);
- b. Testing, assessment or evaluation;
- c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, part sales), analysis, claims, or lawsuits; or
- d. Communication to, from or intended for zone representatives, fleets, dealers, or other field locations, including but not limited to people who have the capacity to obtain information from dealers."

This response was compiled and prepared by this office upon review of the documents produced by various GM locations, and does not include documents generated or received at those GM locations subsequent to their searches.

Please contact me if you require further information about this response or the nature or scope of our searches.

Sincerely,



Gay P. Kent
Director

Product Investigations

Attachments

**N070167A
EA07-015**

GM CONFIDENTIALITY LETTER

**GM CONFIDENTIALITY LETTER
HAS BEEN REMOVED FROM THIS
ATTACHMENT AND SUPPLIED TO
THE OFFICE OF THE CHIEF COUNSEL**

**N070167A
EA07-015**

SUPPLIER CONFIDENTIAL LETTER

**SUPPLIER CONFIDENTIAL LETTER
HAS BEEN REMOVED FROM THIS
ATTACHMENT AND SUPPLIED TO
THE OFFICE OF THE CHIEF COUNSEL**

N070167A
EA07-015

ATTACHMENT "1"

GM NON-CONFIDENTIAL MATERIAL

**N070167A
EA07-015**

ATTACHMENT "2"

GM CONFIDENTIAL MATERIAL

**GM CONFIDENTIAL MATERIAL
HAS BEEN REMOVED FROM THIS
ATTACHMENT AND SUPPLIED TO
THE OFFICE OF THE CHIEF COUNSEL**

N070167A
EA07-015

ATTACHMENT "3"

SUPPLIER

NON CONFIDENTIAL MATERIAL

**N070167A
EA07-015**

ATTACHMENT "4"

CONTINENTAL AUTOMOTVE SYSTEMS US, INC.

CONFIDENTIAL MATERIAL

**CONTINENTAL AUTOMOTVE SYSTEMS US, INC.
MATERIAL**

**HAS BEEN REMOVED FROM THIS
ATTACHMENT AND SUPPLIED TO
THE OFFICE OF THE CHIEF COUNSEL**