

November 12, 2003

Thomas Z. Cooper, Chief  
Vehicle Integrity Division  
Office of Defects Investigation  
NHTSA Safety Assurance  
Room #6326  
400 Seventh Street, S.W.  
Washington, D.C. 20560



GM-844

NVS-212kmb  
PE03-042

Dear Mr. Cooper:

This letter is General Motors (GM) response to your information request (IR), dated September 29, 2003, regarding alleged windshield wiper failures in 2002 and 2003 Model Year (MY) Chevrolet TrailBlazer, GMC Envoy and Oldsmobile Bravada vehicles manufactured by GM. The subject vehicles for this response are:

GM Vehicles:

- 2002-2004 MY Chevrolet TrailBlazer (including TrailBlazer EXT)
- 2002-2004 MY GMC Envoy (including Envoy XL and Envoy XUV)
- 2002-2004 MY Oldsmobile Bravada
- 2004 MY Buick Rainier

Isuzu Vehicles:

- 2002-2004 MY Ascender

Your questions and our corresponding replies are as follows:

1. State, by model and model year, the number of subject vehicles GM has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by GM, state the following:
  - a. Vehicle identification number (VIN);
  - b. Make;
  - c. Model;
  - d. Model Year;
  - e. Date of manufacture;
  - f. Date warranty coverage commenced;
  - g. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease); and
  - h. Whether the vehicle is equipped with Rainsee™ automatic moisture-sensitive wipers.

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

The number of subject vehicles GM has manufactured for sale or lease in the United States is shown in Table Q1-1. An electronic summary of the production data is provided on the CD in Attachment 1; refer to the Microsoft Access 2000 file in the folder labeled "Response for Q1."

**Product Investigations**

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This data was collected from GM Claims Analysis Retrieval Database (CARD). As discussed in a telephone conversation on October 3, 2003 between Mr. Kyle Bowker of your office and Mr. Michael Plotzke of my office, the vehicle production data provided in Attachment 1 does not identify the vehicles that are equipped with Rainsense<sup>®</sup>, because this feature is not pertinent to NHTSA's investigation.

VEHICLE	2002 MY	2003 MY	2004 MY*	TOTAL
Chevrolet TrailBlazer	277,129	280,958	90,812	648,899
GMC Envoy	121,511	139,071	41,392	301,974
Oldsmobile Bravada	28,709	8,542	1,739	39,000
Buick Rainier	Not Applicable	Not Applicable	6,421	6,421

\* Production through October 8, 2003

The number of Isuzu Ascender vehicles that GM has manufactured for sale or lease in the North America (US, Canada, and Mexico) is shown in Table Q1-2. Attachment 1-Response to Q1 contains a file with the production information for the Isuzu Ascender vehicles. GM does not have sales/marketing information for the Isuzu Ascender and cannot provide responses to items "f", "g" and "h."

VEHICLE	2002 MY	2003 MY	2004 MY*	TOTAL
Isuzu Ascender	13,543	16,705	7,432	37,680

\* Production through October 13, 2003

2. State the number of each of the following, received by GM, or of which GM are 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. Property damage claims; and
  - e. Third-party arbitration proceedings where GM is or was a party to the arbitration; and
  - f. Lawsuits, both pending and closed, in which GM is or was a defendant or

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 "d," 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 "e" and "f," 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.

Table Q2-1 summarizes the reports to GM that could relate to the subject condition. GM does not collect customer complaints and field reports on Isuzu Ascender vehicles in the normal course of business.

TYPE OF REPORT	COUNT (INCLUDING DUPLICATES)	GM REPORTS	GM REPORTS CORRESPONDING TO NHTSA REPORTS	NUMBER OF REPORTS ALLEGING PROPERTY DAMAGE	NUMBER OF REPORTS ALLEGING A CRASH	NUMBER OF REPORTS ALLEGING INJURIES/FATALITIES*	LOCATION OF REPORTS (ATTACHMENT)
Owner Reports	234	232	2	0	1	0	2A
Field Reports	988	983	2	0	2	0	2B
No-In-Suit Claims	2	2	0	0	2	0	2C
Subrogation Claims	0	0	0	0	0	0	Not Applicable
3rd Party Arbitration Proceedings	0	0	0	0	0	0	Not Applicable
Product Liability Lawsuits	0	0	0	0	0	0	Not Applicable
Total (Including Duplicates)	1221	1217	4	0	5	0	Not Applicable
Total (Excluding Duplicates)	1207	1204	3	0	2	0	Not Applicable

\* GM's not aware of any injuries or fatalities related to the subject condition

The sources of the requested information and the last date the searches were conducted are tabulated in Table Q2-2 below.

Source System	Last Date Gathered
Corporate Central File	10/08/2003
Customer Assistance Center	10/13/2003
Technical Assistance Center	10/09/2003
Field Information Network Database (FIND)	10/06/2003
Company Vehicle Evaluation Program (CVEP)	10/08/2003
Captured Test Fleet (CTF)	10/06/2003
Early Quality Feedback (EQF)	10/10/2003
Field Product Report Database (FPRD)	10/06/2003
Legal / Employee Self Insured Services (ESIS)	10/03/2003

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

An electronic summary of the records included in Item 2 is provided on the CD in Attachment 1; refer to the Microsoft Access 2000 file in the folder labeled "Response to Q3." GM has organized this summary by GM file number within each attachment.

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 GM used for organizing the documents.

Refer to the Table Q2-1 above. The reports are provided in Attachments 2A – 2C. The reports in each attachment have been organized by report type and report number.

5. 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, or may relate to, the alleged defect 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; and
- k. Comment, if any, by dealer/technician relating to claim and/or repair.

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.

A summary of warranty claims that may relate to the subject condition on GM vehicles for sale or lease in the U.S. is provided on the CD in Attachment 1; refer to the Microsoft Access 2000 files in the folder labeled "Response to Q5." GM searched CARD (regular warranty), Motors Insurance Corporation (MIC – extended warranty) and Universal Warranty Corporation (UWC – extended warranty) databases. Searches were completed on October 8, 2003. GM does not provide warranty coverage for Isuzu Ascender vehicles.

GM's warranty database does not contain the following information: vehicle owner's name or telephone number, replacement part number description, or customer concern statement. GM is providing fields labeled "Customer Code", "Customer Code Description" and "Verbatim Text" in response to requests 5j and 5k. The verbatim text is an optional field, not required to be completed for every warranty claim. It is for the dealer to enter any additional comments that may be applicable to the warranty claim.

The warranty data provided has limited analytical value in analyzing the field performance of a motor vehicle component. The warranty records do not contain sufficient information to establish the condition of the part at the time of the warranty correction; and service personnel may not consistently use the appropriate labor and trouble codes. Warranty numbers represent claims by our dealers for reimbursement for parts and labor costs incurred in performing warranty service for our customers.

6. 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.

The warranty data was collected from the GM CARD database by searching for the labor codes and trouble codes listed in Table Q6-1 and Table Q6-2. Extended warranty data was collected from MIC by searching for the labor codes listed in Table Q6-1.

LABOR CODE	DESCRIPTION
B1788	Transmission Assembly, Windshield Wiper - Replace
N3520	Motor, Wiper - Windshield - Replace
N3566	Cover/Module, Windshield Wiper - Replace

TROUBLE CODE	DESCRIPTION
1D	Broken
1W	Condensation/Moisture
1Y	Foreign Material
2K	Improperly Sealed
5W	Rusted/Corroded
6C	Component-Inoperative
6D	Component-Intermittent
6F	Component-Open
6G	Component-Shorted
6J	Connector-Corroded

The warranty data was collected from the UWC database by searching for any repair involving a subject vehicle using the UWC repair codes listed in Table Q6-3.

LABOR CODE	DESCRIPTION
07095	Electrical - Window Wiper Mtr Front & Rear
07097	Electrical - Pulse Wiper Delay Module
12098	Enhanced Electrical - Misc Bumper To Bumper

The subject vehicles are covered by a bumper-to-bumper new vehicle warranty for three years or 36,000 miles whichever occurs first. Many 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 GM warranty system does not contain information on the number of vehicles that have extended warranty coverage.

The warranty data provided has limited analytical value in analyzing the field performance of a motor vehicle component. The warranty records do not contain sufficient information to establish the condition of the part at the time of the warranty correction; and service personnel may not consistently use the appropriate labor and trouble codes. Warranty numbers represent claims by our dealers for reimbursement for parts and labor costs incurred in performing warranty service for our customers.

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 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.

GM has not found any documents responsive to this request.

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 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.

Table Q8 contains a summary of the report found in Attachment 1, Response to Q8:

TABLE Q8: TESTING/ANALYSIS CONDUCTED BY GM RELATING TO THE SUBJECT CONDITION					
	Start Date	End Date	Reason for Test	Organization	Results
Red-X Study: GMT360 Windshield Wiper	02/25/2002	04/19/2002	Determine reason for High GMT360 Wiper Warranty and potential resolution	Moraine Arm. Plant Engineering	Water could penetrate the vent hole opening during 8 minute water intrusion test at plant. The global wiper design prevented water from entering the wiper motor cavity.

Along with the testing that GM conducted, the wiper supplier, Valeo Wiper Systems conducted testing related to the alleged condition. A summary of Valeo's testing and reports are provided in "Attachment Valeo". Valeo is requesting confidentiality on a portion of this attachment.

9. 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 components, 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:
- The date or approximate date on which the modification or change was incorporated into vehicle production;
  - A detailed description of the modification or change;
  - The reason(s) for the modification or change;
  - The part numbers (service and engineering) of the original component;
  - The part number (service and engineering) of the modified component;
  - Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
  - When the modified component was made available as a service component; and
  - 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.

Attachment 1-Response to Q8 contains a copy of Engineering Work Order (EWO) 47918 that changed the wiper module released for Start Of Production (SOP) to the global wiper module (identified in the Red-X study, see Attachment 1, Response to Q8). This wiper module was incorporated into vehicle production in November 2002. Below is the information requested:

- The change in wiper motor was incorporated into production beginning November 2, 2003.
- The change released a new wiper motor (referred to as the global wiper motor) and wiper assembly to prevent water intrusion into the wiper motor housing.
- The global wiper motor incorporates a water resistant material (Sintered PTFE - Polytetrafluoroethylene) over the vent hole to allow the motor to breathe while helping to prevent water from entering the motor housing.
- The original part numbers of the wiper module (motor and transmission) were: 15171306 - base unit and 15171307 - unit with RainSense<sup>®</sup> option (Regular Production Option CE1)

- e. The new part numbers of the global wiper module (motor & transmission) were: 15094704 - base unit and 15094705 - unit with Rainsense<sup>®</sup> option (Regular Production Option CE1).
- f. The original parts were not withdrawn from GM Service Parts Organization (SPO) stock.
- g. The global wiper assemblies became available as service parts in late October 2002.
- h. The global wiper module can be interchanged with the wiper module that it replaces; however the global motor and cover cannot be interchanged with the motor and cover incorporated into the original wiper module.

**10. Produce one of each of the following:**

- a. Exemplar samples of each design version of the subject components;
- b. Field return samples of the subject components exhibiting the subject failure mode; and
- c. Any kits that have been released, or developed, by GM for use in service repairs to the subject components/assemblies which relate, or may relate, to the alleged defect in the subject vehicles.

As agreed during a telephone conversation between Mr. Michael Plotzke of my office and Mr. Kyle Bowker of your office, GM is supplying the following:

- A wiper motor that is representative of those used in production prior to November 2002.
- A wiper motor that is representative of those used in production after November 2002.
- A wiper linkage assembly showing the orientation of the motor to the linkage.
- A returned part from the field with the subject condition.

The aforementioned parts will be shipped separately.

**11. State the number of each of the following that GM has sold that may be used in the subject vehicles 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 components; and
- b. Any kits that have been released, or developed, by GM for use in service repairs to the subject components/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.

The requested information is provided on the CD in Attachment 1; refer to the Microsoft Excel file in the folder labeled, "Response to Q11."

**12. Furnish GM'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 risk to motor vehicle safety that it poses; and
- e. The reports included with this inquiry.

The Red-X analysis provided in (Attachment 1 - Response to Q8) indicates the subject condition is caused by water building up in the plenum of the vehicle to the level of the vent hole on the back of the wiper motor cover. If water rises to the vent hole on the wiper motor cover and enters through the vent hole, it may eventually cause the circuit board to corrode. This condition could interfere with the normal operation of the wiper circuit and wiper assembly.

GM released a new wiper motor to address this condition in November 2002. The new wiper motor has a water resistant patch covering the vent hole to prevent water from entering the motor assembly. Since the implementation of the new motor, warranty claims for the subject condition have dropped dramatically.

GM is continuing its investigation of this issue, but at this time GM does not believe this issue poses an unreasonable safety risk because there are only 2 minor crashes and no injuries or fatalities associated with these crashes.

GM has not had an opportunity to inspect the vehicles referenced in the 10 VOQ reports that NHTSA included with its inquiry; are therefore cannot draw any conclusions.

\* \* \*

GM claims that certain information, in documents that are part of 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 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.

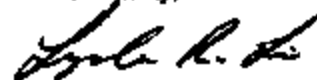
This response is based on searches of General Motors Corporation (GM) locations where documents determined to be responsive to your request would ordinarily be found. As a result, the scope of this search did not include, nor could it reasonably include, "all of its divisions, subsidiaries (whether or 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 1999, 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,



Lyndon R. Lie  
Director  
Product Investigations

attachments

**GM644**  
**PE03-042**

**ATTACHMENT "1"**