



AMERICAN SUZUKI MOTOR CORPORATION

Full 9/8/05

September 2, 2005

Mr. Richard Boyd, Chief
Medium Heavy Duty Vehicle Division
Office of Defects Investigation
U.S. Department of Transportation
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, DC. 20690

Re: NVS-214jry
PE05-031

Dear Mr. Boyd:

On behalf of Suzuki Motor Corporation and American Suzuki Motor Corporation (collectively referred to as "Suzuki"), this responds to your letter dated June 22, 2005, which requests information to assist in the National Highway Traffic Safety Administration's ("NHTSA's") investigation (PE05-031) relating to information received by NHTSA alleging fuel tank leaks on certain VL1500-series motorcycles.

As agreed with Mr. Young of your staff, this response is based on information about subject motorcycles that were produced for sale by American Suzuki Motor Corporation ("ASMC"). Information about subject motorcycles produced for sale by Suzuki distributors in Hawaii and Puerto Rico is not included.

Your requests and our corresponding replies are provided below.

1. *State, by model and model year, the number of subject vehicles Suzuki has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Suzuki, state the following:*
 - a. *Vehicle identification number (VIN);*
 - b. *Model;*
 - c. *Model year;*
 - d. *Date of manufacture;*
 - e. *Date warranty coverage commenced; and*
 - f. *Selling dealer identification (dealer name address, phone, and Suzuki's dealer identification number).*

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 that provides further details regarding this submission.

The number of subject motorcycles manufactured for sale in the United States by ASMC, by model and model year, is shown in the table below.

Model Year	Model	Production
1998	VL1500	3,847
1999	VL1500	5,033
2000	VL1500	3,839
2001	VL1500	4,289
2002	VL1500	3,522
2003	VL1500	3,539
2004	VL1500	1,262
	VL1500B	532
2005	VL1500	3,446
	VL1500B	1,724
	VL1500T	2,044
	TOTAL	33,077

Enclosed is a CD-ROM containing a table in Microsoft Access 2000 Format entitled "PRODUCTION DATA" which contains the requested information for each subject motorcycle. The table only identifies the selling dealer by ASMC's dealer identification number. A current listing of Suzuki motorcycle dealer names, addresses, and telephone numbers, by dealer identification number, is provided in Attachment A. The source of the data provided was ASMC's master vehicle records, and the last date that information was gathered was July 13, 2005.

2. State the number of each of the following, received by Suzuki, or of which it is otherwise aware, which relate to, or may relate to, the alleged defect:
 - a. Consumer complaints, including those from fleet operators;
 - b. Field reports, including dealer field reports;
 - c. Reports involving a fire, injury, or fatality, based on claims against Suzuki involving a death or injury, notices received by Suzuki 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 Suzuki is or was a party to the arbitration,; and*
- f. *Lawsuits, both pending and closed, in which Suzuki is or was a defendant or codefendant.*

For subparts "a" through "d", separately state the total number of each item Suzuki has identified (e.g. consumer complaints, field reports, etc.). 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 Suzuki'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.

ASMC has identified the following number of reports in each of the listed categories.

Consumer complaints	- 1
Field reports	- 18
Reports involving a fire, injury or fatality	- 0
Property damage claims	- 0
Third-party arbitration proceedings	- 0
Lawsuits	- 0

The consumer complaints and field reports were identified by searching ASMC's consumer complaint and field report databases for records which were coded as involving the fuel system and which contained any complaint codes or key words which might indicate the presence of fuel leakage, a gasoline smell, etc. The last date that information was gathered was July 5, 2005.

- 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. *Suzuki'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 model and model year;
- f. Vehicle's mileage at time of incident;
- g. Incident date;
- h. Report or claim date;
- i. Whether a fire 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 that provides further details regarding this submission.

Enclosed is a CD-ROM containing a table in Microsoft Access 2000 format entitled "COMPLAINT DATA" which contains the requested information. The information provided in the table is based solely on information in the consumer complaint records. No effort has been made to provide additional details by searching other data sources.

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 Suzuki used for organizing the documents.

Attachment B-1 contains a copy of the consumer complaint record identified by ASMC in responding to Request No. 2. Attachment B-2 contains copies of the 18 field report records identified by ASMC in responding to Request No. 2.

5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Suzuki 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; and field, zone, or similar adjustments and reimbursements.

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

- a. Suzuki'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, including, but not limited to 030505A;
- 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 that provides further details regarding this submission.

ASMC has identified sixteen regular warranty claims and thirteen goodwill claims which may relate to the alleged defect in the subject motorcycles. The count for each category of claims, by model and model year is shown below.

Claim Category	Model Year	Model	No. of Claims
Regular	1998	VL1500	1
	1999	VL1500	1
	2001	VL1500	5
	2002	VL1500	5
	2003	VL1500	3
	2004	VL1500	1
Goodwill	1998	VL1500	4
	2000	VL1500	1
	2001	VL1500	2
	2002	VL1500	5
	2003	VL1500	1

Enclosed is a CD-ROM which contains the detailed warranty claim information requested by NHTSA. The warranty claim information is provided in a Microsoft Access 2000 table entitled "WARRANTY CLAIMS". Attachment C contains an explanation of the complaint codes and defect codes that are provided. The source of the data provided was ASMC's warranty claim database, and the last date that information was gathered was July 13, 2005.

6. Describe in detail the search criteria used by Suzuki 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 Suzuki 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 options(s) that Suzuki 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.

ASMC conducted a search of its warranty records for all claims involving the subject motorcycles that identify the failed part as any of the following part numbers. A few claims that were coded as "crate damage" were eliminated.

44110-10F00	TANK COMP, FUEL
44110-10F10	TANK COMP, FUEL
44110-10FA0	TANK COMP, FUEL

Attachment D contains a copy of Suzuki's On-Road Motorcycle Limited Warranty Policy, which is applicable to all of the subject motorcycles.

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, Suzuki. For each such action, provide the following information:
 - a. Action title or identifier;

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- 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 action activities, findings and/or conclusions.

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.

Following is a description of all actions that may relate to the alleged defect in the subject motorcycles that have been conducted, are being conducted, are planned, or are being planned by, or for, Suzuki.

- (1) a. Durability testing conducted during motorcycle development
 - b. Refer to Table 1 in Attachment E.
 - c. Refer to Table 1 in Attachment E.
 - d. Table 1 in Attachment E summarizes durability testing that was conducted prior to introduction of the VL1500 in the 1998 model year and prior to minor changes that were introduced in the 2000 model year and 2005 model year. A total of 12 durability tests were conducted. The testing consisted primarily of testing conducted on a chassis dynamometer using simulated road load horsepower.
 - e. The testing was conducted by Suzuki Motor Corporation's ("SMC's") quality assurance division.
 - f. No problems were found during the testing.
- (2) a. Emissions certification durability testing
 - b. Refer to Table 2 in Attachment E.
 - c. Refer to Table 2 in Attachment E.
 - d. Table 2 in Attachment E summarizes durability testing that was conducted to demonstrate compliance with California Air Resources Board emissions standards. The compliance demonstration consisted of motorcycle operation on a chassis dynamometer, with periodic emissions tests.

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- e. The testing was conducted by SMC's motorcycle design division.
 - f. No problems were found during the testing.
- (3) a. Collection of replaced fuel tanks from the field
- b. This investigation was started on June 30, 2005.
 - c. This investigation was completed on July 11, 2005.
 - d. Subsequent to being notified about the PE05-031 investigation, SMC requested Suzuki distributors in the United States and Europe to collect fuel tanks that were replaced due to alleged fuel leakage.
 - e. The investigation was conducted by SMC's quality assurance division.
 - f. Table 3 in Attachment E contains information about 6 VL1500 fuel tanks that have been collected by Suzuki to date. Attachment E also contains photographs of the fuel tanks that were collected (Note: The photographs are also provided on the enclosed CD-ROM in a Microsoft Excel file entitled "VL1500 Tank Photos"). Copies of correspondence relating to the fuel tank collection program are not being provided because the correspondence does not contain any significant information beyond what is summarized in Table 3.
- (4) a. Investigation of fuel tank assembly process
- b. This investigation was started on July 5, 2005.
 - c. This investigation was completed on July 5, 2005.
 - d. Subsequent to being notified about the PE05-031 investigation, SMC investigated the fuel tank assembly process to confirm that there were no changes in the assembly process or any assembly problems that might have contributed to the alleged defect.
 - e. The investigation was conducted by SMC's quality assurance division.
 - f. No changes in the assembly process or assembly problems that might have contributed to the alleged defect were identified.
- (5) a. Investigation of fuel seepage from collected fuel tank
- b. This investigation was started on August 3, 2005.

- c. This investigation was completed on August 4, 2005.
- d. The objective of this investigation was to gather information about the amount and nature of fuel seepage that could occur from fuel tanks that were replaced due to fuel seepage.
- e. This investigation was conducted by SMC's quality assurance division.
- f. SMC installed a collected fuel tank with a hairline crack on a test motorcycle to evaluate fuel seepage. SMC found that slight fuel seepage can occur in the area of the hairline crack when the motorcycle is operated at highway speeds. As the motorcycle continues to be ridden, the wind causes the fuel to dry. During simulated city riding, fuel seepage can travel along the fuel tank flange. By the time the seepage reaches the rear part of the fuel tank flange, however, the fuel dries.

In addition to the actions described above, the following actions have been initiated but have not yet been completed.

(6) a. Fuel tank stress investigation

- b. This investigation was started on July 11, 2005.
- c. SMC expects to complete this investigation by September 30, 2005.
- d. This investigation involves measuring stress on the fuel tank under various operating conditions to gain a better understanding of the mechanism of crack formation.
- e. This investigation is being conducted by SMC's quality assurance division and motorcycle design division.
- f. SMC measured stress on the fuel tank near the front fuel tank mounting location and found that stress can occur due to resonant vibration. When SMC measured the stress on additional motorcycles, they found that the stress distribution can vary for different motorcycles. Thus far, SMC has not been able to identify the mechanism of crack formation, however. SMC is continuing to investigate stress for different motorcycle frame/fuel tank combinations and different operating conditions.

(7) a. Motorcycle durability testing

- b. This testing was started on July 21, 2005.

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- c. SMC expects to complete this testing by September 30, 2005.
 - d. SMC decided to repeat the chassis dynamometer durability testing described in action (1) to see if there was any change from the previous results which showed no anomalies for 12 whole-vehicle durability tests and 3 emissions durability tests.
 - e. This testing is being conducted by SMC's quality assurance division.
 - f. Just prior to the end of durability testing on one test motorcycle, a small hairline crack and minute amount of fuel seepage were discovered. SMC is continuing this durability testing to try to identify the mechanism of crack formation.
- (8) a. Fuel tank component durability testing
- b. This testing was started on August 1, 2005.
 - c. SMC expects to complete this testing by September 30, 2005.
 - d. To investigate the mechanism of crack formation, SMC is conducting fuel tank component durability testing using a vibrator.
 - e. This testing is being conducted by SMC's quality assurance division and motorcycle design division.
 - f. This testing is ongoing.
- (9) a. Review of assembly line process at motorcycle production plant
- b. This investigation was started on August 22, 2005.
 - c. SMC expects to complete this investigation by August 31, 2005.
 - d. SMC is reviewing the motorcycle assembly process to determine whether any factors exist which could lead to crack formation and to determine whether any factors exist which could make certain vehicles more susceptible to crack formation.
 - e. This investigation is being conducted by SMC's quality assurance division and motorcycle design division.
 - f. This investigation is ongoing.

- (10) a. Fuel tank composition analysis
- b. This investigation was started on August 23, 2005.
 - c. SMC expects to complete this investigation by the beginning of September, 2005.
 - d. SMC is conducting a composition analysis on fuel tanks taken from the assembly plant parts supply and replacement parts supply to investigate whether there are any tank composition factors which may contribute to crack formation.
 - e. This investigation is being conducted by SMC's quality assurance division.
 - f. This investigation is ongoing.

The above information was provided by SMC's quality assurance division and motorcycle design division. The last date that information was gathered was August 24, 2005.

8. Describe all modifications or changes made by, or on behalf of, Suzuki in the design, material composition, manufacture and/or fabrication, quality control, supply, or installation of a subject component, from the start of production to date, which relate to, or may relate to, the alleged defect. 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 (service and engineering) of the original component;
 - e. The part number (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 Suzuki is aware of which may be incorporated into vehicle production within the next 120 days.

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Following is a description of all changes in the design, material composition, manufacture and/or fabrication, quality control, or installation of a subject component which may relate to the alleged defect in the subject vehicles.

(1) Commonization of front and rear fuel tank mounting bolts

- a. This change was incorporated into vehicle production in July, 1998.
- b. The specifications of the front fuel tank mounting bolts were changed to match the specifications of the rear fuel tank mounting bolts so that a common part could be used. The length of the front fuel tank mounting bolts changed from 25 mm to 30 mm, and the washer thickness changed from 1.2 mm to 1.6 mm.
- c. This change was made to simplify assembly.
- d. The part number (service and engineering) of the original component is 09116-06147.
- e. The part number (service and engineering) of the modified component is 09116-06172.
- f. The original component was withdrawn from production in July, 1998, but was not withdrawn from supply part sales.
- g. The modified component was made available as a supply part for the front mounting points of the VL1500 fuel tank in July, 1998.
- h. The original component and the modified component are interchangeable.

(2) Fuel tank shape change

- a. This change was incorporated into vehicle production in September, 1999, at the start of regular production for the 2000 model year.
- b. The shape of the bottom part of the fuel tank was changed. As a result of this change, fuel tank capacity was reduced from 15.5 liters to 15.0 liters.
- c. This change was made in conjunction with changes made to comply with a European homologation requirement concerning minimum clearance between the rear tire and other parts. The changes that were made to meet the European homologation requirement resulted in reduced clearance between the swing

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arm and the fuel tank. The shape of the bottom part of the fuel tank was changed to increase this clearance.

- d. The part number (service and engineering) of the fuel tank used for prior model year motorcycles is 44110-10F00.
- e. The part number (service and engineering) of the modified fuel tank is 44110-10F10.
- f. The previous-design fuel tank was withdrawn from production at the end of production for the 1999 model year, but was not withdrawn from supply part sales.
- g. The modified fuel tank was made available as a service component soon after the start of production for the 2000 model year.
- h. The modified fuel tank is not interchangeable with the fuel tank used on prior model year motorcycles.

(3) Elimination of inner wall of fuel pick-up well

- a. This change was incorporated into vehicle production in April, 1999, at the start of trial production for the 2000 model year.
- b. The fuel pick-up well that is used inside the fuel tank to minimize the effects of fuel slosh was changed from a double-wall design to a single-wall design.
- c. This change was made to eliminate unnecessary parts.
- d.-h. This change was included with change (2) described above, which was implemented at the start of regular production for the 2000 model year. Refer to d.-h. above.

(4) Elimination of inner wall of fuel pick-up well for replacement fuel tanks

- a. This change was incorporated into production of replacement fuel tanks for 1998 and 1999 model year motorcycles in December, 2001.
- b. The fuel pick-up well that is used inside the fuel tank to minimize the effects of fuel slosh was changed from a double-wall design to a single-wall design.
- c. This change was made to commonize the design of the fuel pick-up well used in replacement tanks for 1998-1999 model year motorcycles with the design used for 2000 and later model year production.

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- d. The part number of the original fuel tank (service and engineering) is 44110-10F00.
- e. The part number of the modified fuel tank (service and engineering) is 44110-10F00.
- f. The previous-design fuel tank was withdrawn from production in December 2001, but was not withdrawn from supply part sales.
- g. This change applies only to replacement fuel tanks.
- h. The original fuel tank and the modified fuel tank are interchangeable.

(5) Modifications to accommodate change to fuel injection

- a. This change was incorporated into vehicle production in April, 2004, at the start of production for the 2005 model year.
- b. The basic configuration of the fuel tank was not changed. A fuel pump installation plate was added and the fuel gauge installation plate was eliminated.
- c. This change was made to accommodate changing the fuel delivery system to fuel injection.
- d. The part number (service and engineering) of the fuel tank used for prior model year motorcycles (2000-2004 model year) is 44110-10F10.
- e. The part number (service and engineering) of the modified fuel tank is 44110-10FA0.
- f. The previous-design fuel tank was withdrawn from production at the end of production for the 2004 model year, but was not withdrawn from supply part sales.
- g. The modified fuel tank was made available as a service component soon after the start of production for the 2005 model year.
- h. The modified fuel tank is not interchangeable with the fuel tank used on prior model year motorcycles.

The above information was provided by SMC's engineering administration division. The last date that information was gathered was August 22, 2005.

9. Separately, for each of the subject components - and listed by part number, part description, and month/year of sale - state the number of subject components Suzuki has sold.

Enclosed is a CD-ROM containing a table in Microsoft Access 2000 format entitled "PART SALES" which contains the requested information. The source of the data provided was ASMC's parts sales records, and the last date that information was gathered was July 13, 2005.

10. Furnish Suzuki's assessment of the alleged defect in the subject vehicles, including:
 - a. The causal or contributory factor(s) (including the vehicles intended use);
 - b. The failure mechanism(s);
 - c. The failure mode(s);
 - d. The risk to motor vehicle safety that it poses; and
 - e. What warnings, if any, the rider would have that the alleged defect was occurring or about to occur?

Suzuki is unable to provide a complete assessment of the alleged defect at this time because the causal factors, failure mechanism, etc. are still under investigation. When Suzuki's investigation has been completed, Suzuki will thoroughly review the results and will provide NHTSA with the investigation results and Suzuki's full assessment of the alleged defect in the subject vehicles. Following is Suzuki's assessment based on information that is currently available.

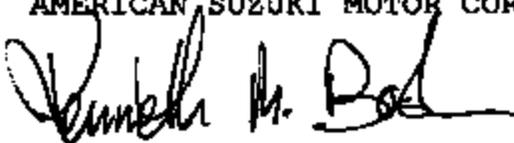
- a. Suzuki currently believes that the alleged defect could be a condition resulting from repeated stress due to resonant vibration. Suzuki is continuing to investigate contributory factors.
- b. To be provided.
- c. To be provided.
- d. Suzuki does not believe that the alleged defect poses a significant risk to motor vehicle safety. ASMC has received only one customer complaint (other than the Vehicle Owner Questionnaires provided by NHTSA), 18 dealer field reports, and 29 warranty claims which may relate to the alleged defect in the subject motorcycles. In addition, Suzuki is aware of no fires, accidents, or injuries associated with this condition.

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- e. If fuel seepage occurs, it is likely that rider will smell gasoline.

Suzuki's response is based on searches of documents where information responsive to the agency's request would normally be found, as well as consultation with personnel who could reasonably be expected to have such information. Consequently, Suzuki's search did not include "... all of its past and present officers and employees, whether assigned to its principal offices or any of its field or other locations, including 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 Suzuki (including all business units and persons previously referred to)..."

Sincerely,
AMERICAN SUZUKI MOTOR CORPORATION



Kenneth M. Bush
Associate Director
Government Relations