



Fuji Heavy Industries U.S.A., Inc.
c/o Subaru of America
Subaru Plaza
PO Box 6000
Cherry Hill, NJ 08034-6000
856-488-8500
856-488-9279 fax

Maurice Arcangeli
Safety Activities Manager
Government Relations
Direct Dial: (856) 488-3115
Fax: (856) 488-8669
E-mail: marcangeli@subaru.com

May 14, 2009
Ref. No.: GR09-020

Mr. Thomas Cooper
Chief, Vehicle Integrity Division,
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue SE, Room W48-314
Washington, DC 20590

Re: NVS-212pco/PE09-017 2002-2004 Subaru WRX and STI Fuel Line Leakage

Dear Mr. Cooper,

This letter and enclosures are a partial response by Subaru of America, Inc. (Subaru, SOA) to your letter concerning the NHTSA's Preliminary Evaluation (PE09-017, March 23, 2009) investigation of allegations of a fuel line leakage in MY 2002-2004 Subaru Impreza WRX and WRX STI vehicles. As agreed earlier, this letter provides Subaru responses to information Requests 1 through 13. Responses to Requests 8 and 13, although submitted are not complete. We will be providing additional information as soon as possible, hopefully in the next 2-3 weeks.

Response to the additional request, PE09-017 made on March 25, 2009 request 1, will not be submitted on May 22, 2009. We are uncertain when the pressure-time profile data will be available because it needs to be measured on an actual vehicle which has not been acquired yet.

As requested in your letter, our response is provided after repeating, verbatim, the applicable request which is in bold text.

1. **State within the body of the response letter, by model and model year, the total number of subject vehicles Subaru has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Subaru, state the following:**
 - a. **Make;**
 - b. **Model;**
 - c. **Model Year (MY);**
 - d. **Vehicle identification number (VIN);**
 - e. **Date of manufacture ("DOB" in "yyyy/mm/dd" date format);**

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- f. Date warranty coverage commenced ("WSD" in "yyyy/mm/dd" date format) or "Unsold" if not sold;
- g. The State (ST) in the United States where the vehicle was originally sold or leased (or delivered for sale or lease); and
- h. Engine size and aspiration ("ENGINE" i.e. 2.0L Turbo, 2.0L non-Turbo, 2.5L non-Turbo, 2.5L Turbo etc...).

Provide this table in Microsoft Access 2000, or a compatible format, entitled "PRODUCTION DATA."

Subaru has manufactured the following numbers of 2002-2004 Subaru WRX and WRX STI and 2002-2004 all other model of Subaru's for sale or lease in the U.S.:

Model Year	IMPREZA			FORESTER		LEGACY/OUTBACK/BAJA		BAJA	TOTAL
	WRX	WRX-STI	Non-turbo	Non-turbo	Turbo	Non-turbo	(*1) 3.0L Non-turbo	Turbo	
2002MY	35,304	-	25,090	55,755	-	72,363	16,870	-	205,382
2003MY	15,394	-	8,437	66,771	-	86,221	14,241	-	191,064
2004MY	18,039	7,405	13,937	52,149	11,174	50,329	12,065	1,084	166,182
TOTAL	68,737	7,405	47,464	174,675	11,174	208,943	43,176	1,084	562,628

Note:

(*1) There exists none of 3.0L BAJA vehicles.

This information was obtained on April 16, 2009. The Legacy/Outback/Baja vehicles are produced at the Lafayette, Indiana plant. The Impreza and Forester are produced at the Ota, Gunma plant located in Japan.

Enclosed on Disc 1 is an Access file named "PRODUCTION DATA" with the requested information by VIN.

2. State within the body of the response letter, the number of each of the following, received by Subaru, or of which Subaru 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/fire, 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 (including own vehicle); and
 - e. Third-party arbitration proceedings where Subaru is or was a party to the arbitration; and
 - f. Lawsuits, both pending and closed, in which Subaru is or was a defendant or codefendant.

For subparts "a" through "d," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which both a crash complaint and a crash related property damage claim are being reported are to be counted as a property damage report with the crash report, the field report and the consumer complaint identified as a "DUP"). The hierarchal order

shall be in the reverse order as outlined in subparts "a" through "d". Also, identify the "top level" report as "VOQ DUP" if it is a duplicate of an ODI consumer complaint-VOQ.

In addition, for subparts "d" through "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.

This information was gathered from current internal files and databases by several departments within Subaru during the weeks of April 6-30, 2009.

	<u>2002-2004 WRX/STI</u>	<u>2002-2004 All Other Models</u>
a. Consumer complaints:	716	108
b. Field reports:	18	43
c. Reports involving a crash with		
fire:	1	0
injury:	0	0
fatality:	0	0
d. Property damage claims:	1	0
g. Third party arbitration proceedings:	0	0
h. Lawsuits:	1	0

Enclosed on Disc 1 is an Access file named "VOQ DUP" with the requested information by VIN. These are vehicles that NHTSA has a VOQ of and the owner contacted Subaru with reference to fuel smell.

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:
- Subaru's file number or other identifier used;
 - The category of the item, as identified in Request No. 2 (i.e., consumer complaint (CC), field report (FR), crash/fire/injury or fatal report (CFIFR), property damage claims (PDC, third-party arbitration (TPA) or lawsuits (LS));
 - Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
 - Vehicle's VIN;
 - Vehicle's make, model and model year;
 - Vehicle's mileage at time of incident;
 - Incident date ("IDATE" in "yyyy/mm/dd" date format);
 - Report or claim date ("RDATE" in "yyyy/mm/dd" date format);
 - Whether a crash is alleged;
 - Whether property damage is alleged;
 - Number of alleged injuries, if any;
 - Number of alleged fatalities, if any, and
 - Duplication if any (to any of the Request No. 2, subparts "a" through "d" items or to itself (earliest incident date take precedence)

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA."

Enclosed on Disc 1 is an Access file named "REQUEST NUMBER TWO DATA" with the requested information for a. through m. listed by sequential VIN.

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 Subaru used for organizing the documents.

Enclosed on Disc 2 are the copies of the documents which were extracted from the Subaru Customer Dealer Services (consumer complaints) data and the Quality Monitoring Report (field reports) system.

Please see Attachment 4 for lawsuit Case.

5. State within the body of the response letter, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Subaru 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. Subaru's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Repair date ("RDATE" in "dd/mm/yyyy" date format);
- 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. Comment, if any, by dealer/technician relating to claim and/or repair; and
- l. If repaired per the procedures as identified in the subject TSB.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA."

Enclosed on Disc 1 is an Access file named "WARRANTY DATA" with the requested information for a. through l. listed by sequential VIN.

<u>Claim Category</u>	<u>2002-2004 WRX/WRX STI</u>	<u>2002-2004 All Vehicles Excluding WRX/STI</u>
Warranty claims	489	16
Extended warranty claims ('SAS')	479	24
Policy adjustments (Goodwill)	743	16

Definitions for h:

Labor operation# 442121-MFI Fuel Injector Delivery Pipe R&R
Labor operation# 442141-MFI Fuel Delivery/Return Hose &/or Damper R&R
Labor operation# 442161-MFI One Fuel Injector, Holder, Plate/Seal R&R
Labor operation# 451311-Intake Duct, R&R
Labor operation# 461301-Fuel/Evaporative Hoses/Clamps R&R
Labor operation# 461321-Fuel Delivery Return/Evaporative Pipe R&R
Labor operation# 461331-Fuel/ Evaporative Pipe/Hose R&R

6. Describe in detail the search criteria used by Subaru 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 (including the subject component) offered by Subaru 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 Subaru 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.

Initially, Subaru used a combination of failed part (3 letters) and trouble codes (2 numbers) to select applicable warranty claims by problem code. For this response, the following problem codes were used:

<u>Problem Code</u>	<u>Failed Part Code Description</u>	<u>Trouble Code Description</u>
DEB	Fuel Delivery/Return Pipe	Cracked, Improperly casted/drilled, leaking-fuel
DEC	Fuel Delivery/Return Hose	Split, cut, leaking-fuel
DED	Fuel Line Hose Clamp	broken, improper contact seating
DEU	Fuel Injector Delivery Pipe	Cracked, Improperly casted/drilled, porous casting
DFL	Fuel Delivery Pipe O-ring	Cracked, Improper contact/seating, leaking-fuel

Trouble Codes

01	Broken
02	Cracked
03	Split, poor stitching, poor fit
05	Missing
10	Warped, excess run-out
12	Scored, scratched
16	Frayed, cut
19	Fluid Spillage
20	Tolerance incorrect
22	Blocked, clogged
24	Slipping
27	Improperly cast, drilled
28	Porous casting
29	Improper contact, seating
33	Leaking-vacuum
34	Leaking-oil or grease
35	Leaking coolant or water
36	Leaking-exhaust or air
37	Leaking-fuel
39	Open
42	Output incorrect
48	Modification
51	Poor weld, solder
88	Improper adjustment

For 2002-2004 models, there are the following warranty coverages:

<u>Warranty</u>	<u>Years Limitation</u>	<u>Mileage Limitation</u>
New Car Warranty	3	36,000

Seat Belt Warranty*	Useful Life of Vehicle	Unlimited
Powertrain Warranty*	5	60,000
Rust Perforation Warranty*	5	Unlimited
Parts and Accessories*	1	Unlimited

*- Not applicable to the alleged defect

The only optional coverage offered by Subaru are extended service contract plans under the Subaru Added Security (SAS) Program. There are two general plan categories: "Classic" and "Gold Plus". Within each category, there are 3 possible deductibles (\$100, \$50, \$0) and eight (8) possible plan year/mileage terms (3/45000; 4/60,000; 6/60,000; 6/80,000; 5/100,000; 6/100,000; 7/100,000). This yields 24 possible plans.

"Classic plans cover nearly 1000 parts in all major component areas, including engine, transmission, drivetrains, front suspension, steering, brakes, electrical, cooling and fuel systems and air conditioning. Also provides towing and rental car reimbursement for covered repairs."

"Gold Plus plans include all Classic plan coverage plus hundreds more parts. In fact they provide essentially the same "bumper-to-bumper" coverage as the basic factory warranty. Only a few maintenance items and body parts are not covered. The Gold Plus plan also reimburses for lodging and meals when a breakdown interrupts your out-of-town travel, plus: 24-hour emergency roadside assistance, \$100 allowance for "Sign & Drive" dispatched towing, jump start, tire change, gasoline delivery, locksmith service, road hazard tire protection, computerized trip routing, dealer locator service and travel assistance."

As of May 6, 2009 Subaru had the following number of subject vehicles with the indicated service plans:

WRX/STI – Year/Mileage (x1000)

2002		2003		2004	
12/98	1	24/24	3	48/48	1
12/12	5	36/36	2	60/98	3
24/24	40	48/48	1	72/60	5
36/36	17	60/60	2	72/80	7
36/45	25	60/98	3	72/98	2
36/98	4	72/60	3		
42/60	12	72/80	5		
42/80	3	72/98	5		
48/48	29	84/98	4		
48/60	28				
48/80	7				
60/60	78				
60/80	2				
60/98	72				
72/60	93				
72/80	178				
72/98	84				
84/98	85				
TOTAL	763		27		18

All other 2002-2004 vehicles (excluding WRX/STI) - Year/Mileage (x1000)

2002		2003		2004	
36/45	1	60/60	2	36/100	1
60/60	1	60/100	2	42/60	1
60/100	2	72/60	2	48/80	1
72/60	1	72/80	2	60/100	2
72/80	6	84/100	2	72/80	3
84/100	4			72/100	1
				84/100	1

TOTAL 15 10 10

7. Produce copies by model and engine size/aspiration, of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles (all issued revisions), that Subaru 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 Subaru is planning to issue within the next 120 days.

Please see Attachment 7, Technical Service Bulletin 09-36-03

8. Describe by model and engine size/aspiration, 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, Subaru. Include any assessment or limitations associated with the utilization of a constant tension hose clamp, using a double clamp system or orienting the clamps (or changing the head design) such that they can be assessable for adjustments without major disassembly. For each such action, provide the following information (in chronological order):

- Action title or identifier;
- The actual or planned start date;
- The actual or expected end date;
- Brief summary of the subject and objective of the action;
- Engineering group(s)/supplier(s) responsible for designing and for conducting the action;
- A brief summary of the findings and/or conclusions resulting from the action, and
- Model and engine size/aspiration.

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.

Please see Attachment 8a and 8b.

Subaru planned the 4 actions below.

- (1) a: Analysis of video-taped vehicle.
b: April 3, 2009
c: April 24, 2009
d: Inspection of a complainant's '04MY STI: VOQ Ref. No.: 10256121 (VIN: JF1GD70674L514891)
e: Quality Assurance Dept., Fuji Heavy Industries, Ltd. (FHI), Fuji Heavy Industries, Ltd. U.S.A. (FUSA) and Subaru of America, Inc. (SOA).
f: Hoses and clamps of the fuel lines are original and fuel leak has stopped since February, 2009 when dealer removed the intake manifold to re-tighten the fuel hose clamps.
Location of fuel leakage is found at left rear of engine, which is different from the location of fuel leakage encountered on '02MY WRX vehicles. (Refer to the attached Attachment 8a.)
g: '04MY 2.5L Impreza STI vehicle equipped with turbocharged engine.
- (2) a: Analysis of the photos which were provided by NHTSA.
b: April 3, 2009
c: April 24, 2009
d: Engineering comment on the photos.
e: Quality Assurance Dept., Fuji Heavy Industries, Ltd. (FHI), Fuji Heavy Industries, Ltd. U.S.A. (FUSA) and Subaru of America, Inc. (SOA).
f: The photos indicate that the vehicle is a '02 or '03MY Impreza WRX judging from the components in the engine compartment and not a '04MY Impreza STI as labeled on the photo files. In addition, the red color of the intake manifold looks to have been painted after the vehicle was retailed. (Refer to the Attachment 8a.) Since painting can not be done without the intake manifold being removed, installation of the fuel hoses is not in original condition.
g: '02 or '03MY 2.5L Impreza WRX vehicle equipped with turbocharged engine.
- (3) a: Investigation of fuel lines on complainants' '04MY Impreza WRX & STI vehicles and '02MY WRX vehicle (VIN: JF1GD29632G [REDACTED]) which was investigated by NHTSA.
b: April 3, 2009
c: Undecided.
d: The fuel hoses were modified in length for improvement on '04MY Impreza. FHI will collect intake manifold assemblies with fuel lines fitted for investigation for duplication test.
e: Quality Assurance Dept., Fuji Heavy Industries, Ltd. (FHI), Fuji Heavy Industries, Ltd. U.S.A. (FUSA) and Subaru of America, Inc. (SOA).
f: Collection of parts is under planning.
g: '02 2.5L Impreza WRX and '04MY 2.5L Impreza STI vehicles, which are equipped with turbocharged engine.
- (4) a: Engineering idea of fuel line clamps of Subaru vehicles.
b: April 3, 2009
c: April 24, 2009
d: Report of engineering idea of fuel line clamps of Subaru vehicles.
e: Quality Assurance Dept., Fuji Heavy Industries, Ltd. (FHI).
f: Refer to the Attachment 8b.
g: All Subaru model vehicles.

Also, investigations of the complaint '04MY WRX/STI vehicles below and '02MY WRX (VIN: 2G [REDACTED]) are included in the response No.8 (3). Since availability schedule of the replacement parts and collection schedule are unknown, we are unable to determine the target date.

No	Data-No	VIN	Mileage	Incident Date	State
1	134	JF1GD29614G	NA	26-Jan-09	CO
2	136	JF1GD70654L	63954	16-Jan-09	NC
3	137	JF1GD70674L	65000	1-Jan-09	MI
4	138	JF1GG29684G	77000	12-Jan-09	OH
5	142	JF1GD29604G	42000	2-Jan-09	NM
6	156	JF1GD29624G	89107	3-Dec-08	WI
7	171	JF1GG29674G	58000	10-Dec-07	UT
8	175	JF1GD70624L	51000	29-Jan-07	PA
9	180	JF1GG29634G	40800	7-Dec-05	CO

9. Describe by model and by engine size/aspiration, all modifications or changes made by, or on behalf of Subaru, in the design, material composition, manufacturing, quality control, supply, or installation of the original part and the subject component, from the start of the MY2002 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 (in chronological order):

- The date or approximate date on which the modification or change was incorporated into vehicle production identifiable by MY, DOB or VIN in the "PRODUCTION DATA" table of Request No. 1;
- 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 Subaru is aware of which may be incorporated into vehicle production within the next 120 days.

Please see attachment 9

10. Produce two each of the following (identified by model and engine size/aspiration):

- Exemplar samples of both the original MY2002-MY2004 designs and any subsequent design/mod of the subject component (including both tube sections to/from the rubber hose along with the fastener clamps) for both sides of the engine if different; and
- Field return samples of the subject component exhibiting the suspected failure mode.
 - New original parts (exemplar) have been sent to NHTSA for evaluation.
 - Field return samples are still being collected and will be available in the future.

11. State the number of subject component that Subaru has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year and engine size/aspiration of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable)

- Subject component; and
- Any kits that have been release, or developed, by Subaru for use in service repairs to the subject component/assembly.

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number).

Part Number	Component Name	09 YTD	2008	2007	2006	2005	2004	2003	2002
010408160	FLANGE BOLT	0	0	0	0	0	1	0	0
16600AA170	INJECTOR ASSY	359	1280	1900	1667	906	551	147	0
16605AA080	HLDR-FUEL INJECT	47	109	121	112	62	26	1	0
16611AA521	INJECTOR SUB ASSY	165	1186	1543	1908	1474	193	152	126
17533AA380	PIPE-FUEL RH	0	5	20	10	10	12	7	8
17533AA493	PIPE-FUEL RH	5	7	7	0	0			
17535AA344	PIPE-FUEL LH	6	7	0					
17535AA592	PIPE-FUEL LH	0	2	0	0	0			
17536AA372	PIPE-FUEL	3	3	0					
17544AA135	PIPE CP-FUEL RTN	566	961	1149					
17544AA353	PIPE CP-FUEL RTN	20	26						
22670AA252	REG ASSY-PRESS	35	95	80	57	36			
22670AA351	REG ASSY-PRESS	42	59	31	23	9	10	1	0
800506350	B & W AY-6X13X13	285	1133	944	629	611	350	278	119
801705050	S & W AY-5X10	14	49	42	50	16	9	0	0
805913050	HOSE CLP-13.5	2496	2369	1714	567	465	326	219	36
807707111	HOSE- 7.5X13X37X37	86	99	23	15	8	6	0	0
807707121	HOSE- 7.5X13X40X40	36	55	14	6	2	3	0	0
807707130	HOSE-7.5X13.5X64	1873	1602	1282	473	387	179	164	28
807707140	HOSE-7.5X13.5X94	1194	1792	1686	890	1053	1605	337	2
99074AA031	HOSE-FUEL	6	12	10	6	0	1	0	0

Please see Attachment 11 for application chart and Supplier Information.

12. Provide a description and graphic illustration of the fuel line/rail system as installed in the engines on each of the subject vehicles including the name and part numbers for each component of the fuel line system. Note the commonalities and differences (if any) between the normally aspired engine versus the turbocharged engine, between different engine sizes and between the left side (driver side) and right side fuel line/rail layout. Provide also the electronic version of the illustrations in Adobe pdf or other common graphical format (i.e. jpg etc...).

Please see attachment 12.

13. Furnish Subaru's assessment of the alleged defect in the subject vehicle, including:

- c. The causal or contributory factor(s);**
- d. The failure mechanism(s);**
- e. The failure mode(s);**
- f. The risk to motor vehicle safety that it poses;**
- g. 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; and**
- h. The reports included with this inquiry.**

Subaru believes that our initial assessment which was responded to in PE04-002 was correct. As described in our response No.8, fuel leak location of the 2004MY STI vehicle (VOQ Reference No. 10256121 (VIN: JF1GD70674L [REDACTED]) is different from the fuel odor location responded to in PE04-002. The cause of this complaint of this vehicle is apparently different from the cause of fuel odor complaints occurred on 2002 & 2003MY Impreza WRX model.

Subaru will collect dressed intake manifolds from this vehicle and other complained 2004MY vehicles for additional investigations.

While Subaru believes that our assessment of the 2002-2003MY Impreza WRX which was responded in our response of PE04-002 was correct, we will discuss the possibility of warranty extension since customer complaints of fuel odor occurred during this past winter. We will inform you of our results of our examination in the near future.

If there are any questions, please contact me at (856)488-3115.

Sincerely,



Maurice Arcangeli
Government Relations
Fuji Heavy Industries USA, Inc.

Cc: Jerry Plante

Enclosures