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August 24, 2004
Ref. No.: GR04-044

Ms. Kathleen C. DeMeter, Director
Office of Defects Investigation NVS-214
National Highway Traffic Safety Administration
400 Seventh Street, SW
Washington, DC 20590

RE: NVS-214SS - EA03-024 Subaru WRX

Dear Ms. DeMeter:

This letter and appendices are in response to questions 8 through 12 of your letter dated July 16, 2004 concerning the Agency's Engineering Analysis request (EA03-024) for additional information regarding allegations of extended stopping distance in 2002 and 2003 Subaru Impreza WRX vehicles. Per my telephone agreement with Mr. Richard Boyd, we will provide the responses to questions 1 through 5 by September 10, 2004. Appendices that we considered to contain "confidential" data have been sent to the Office of Chief Counsel and removed from this response.

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

6. **Concerning Subaru Technical Services Case Report with Journals, Case No. 554565, state the final status of this case report, including ROs, photographs, etc. File://C:\WINDOWS\TEMP\~002.htm.**

Response 6:

Subaru Technical Services Case Reports are opened when a Subaru dealer calls the Tech Help Line for assistance in the diagnosis of a condition on a vehicle. The Tech Help Line is a service to Subaru dealers to assist them in properly diagnosing a problem. The personnel manning the Tech Help Line try to assist the dealer in checking the right area of the vehicle for the symptoms reported by the dealer. The dealer does not always complete a Quality Monitoring Report for such issues. The dealer is not "required" to provide ROs, photographs or other information for the Subaru Technical Services Case Report and none are available for this case. However, in this instance, there was a Warranty Claim submitted (and also included on our Warranty Data submitted with this our previous

response GA04-019 dated April 7, 2004). Please refer to claim 8967111 for VIN ~~88888888~~ which indicated that the front ABS sensor was replaced.

7. **Subaru Service Quality Monitoring Reports, Record ID 9979 refers to "separate emails." Those e-mails are missing. Please discuss what changes in engine vacuum affect the power brake booster. Include ROs, photographs, etc. The apparent address along the bottom the page was:**
File://C:\WINDOWS\TEMP~002.htm.

Response 7:

We have attached copies of the "separate e-mails" from our files that were referred to in the Subaru Service Quality Monitoring Report 9979. These e-mails are attached as Appendix 7. Based on recent warranty data, the replacement of the ABS ECU/Hydraulic Assembly resolved the customer complaint. The brake booster, which is mechanically attached to the master cylinder, provides vacuum assist to the brake pedal. Manifold vacuum provides the negative pressure to one side of a diaphragm that is connected to the brake pedal linkage. Atmospheric pressure then assists in pedal application. A check valve in the vacuum line traps vacuum in the vacuum assist booster unit. This ensures booster operation even when manifold vacuum is low. Manifold vacuum is considered low (higher pressure) when there is high load (open throttle) on the engine and conversely considered high (more negative pressure) under decelerating conditions (throttle closed).

8. **Subaru Technical Services Case Report with Journals, Case No. 567822: Please explain what "F/Frame data showed 158 MPS" refers to? What is "F/Frame?" How is this information accessed with the Select Monitor?**

Response 8:

F/Frame refers to "Freeze/Frame". Freeze/Frame data sets in ECU memory when a trouble code sets in the memory of the Engine Control Unit (ECU). In this particular case report, the dealer reported that the Freeze/Frame data showed 158 MPH as the vehicle speed when the trouble code 41 set in the ECU memory. The dealer also reported that the car has aftermarket tires, wheels, calipers and rotors installed.

The Subaru Select Monitor is connected to the On Board Diagnostic (OBD) connector under the dashboard of the vehicle to access the ECU memory.

9. **Very few of the Subaru Service Quality Monitoring Reports, Subaru Technical to each Service Case Reports, or Complete SAMI Case Reports discuss the conclusions made about the owner complaint. Please discuss each**

report and the information gathered, reported, the final disposition of the vehicle, the financial compensation made to the owner, etc.

Response 9:

Subaru Service Quality Monitoring Reports, Subaru Technical Service Case Reports or SAMI Case Reports are not designed to provide conclusions concerning a technical issue or customer complaint. Quality Monitoring Reports are designed to call attention to a specific issue that the reporter considers a new problem, an unusual problem or a problem on which the reporter needs assistance in resolving (i.e.; a customer complaint that the dealer is unable to duplicate). Subaru Technical Service Case Reports are designed to record the information associated with a dealer technician's request for assistance in diagnosing a complaint/symptom. This information indicates to the Subaru of America, Inc. Service Department where the field information may not be complete or adequate to assist a dealer in repairing a vehicle to identify where additional field information might be necessary. Each of the Quality Monitoring Reports and Subaru Technical Service Case Reports are self explanatory.

SAMI (Subaru Asset Management and Interaction system) Case Reports are designed to identify customer complaint issues so that that we can facilitate the resolution of such complaints at field level. The non-technical personnel that receive customer complaints do not reach conclusions or try to resolve technical issues over the telephone. Cases are referred back to the dealer or the District Service Operations Manager for conclusion or resolution. We have attached Appendix 9 to provide the requested information for the SAMI Case Reports.

- 10. In SAMI Case Report, Case No. 531966, the seven pages of text describe the setup for the test/inspection, but do not address the results, please complete the information.**

Response 10:

The results of our inspection of this vehicle were included in Response 8f in our letter GA03-037 dated September 29, 2003.

- 11. In SAMI Case Report, Case No. 532724, the expected 25 pages of text are terminated after 21 pages. Please submit the rest of the pages and discuss the final conclusions, supply the final report, and the disposition of the buyback vehicle.**

Response 11:

We have attached another copy of this SAMI Case Report containing all 25 pages. The test results and final conclusions were also included in our Response 8f in our

letter GA03-037 dated September 29, 2003 and in our letter GA03-050 dated December 19, 2003 which reported the results of testing in Japan. This vehicle still remains at our test facility in Japan.

12. The following "Tech Notes" descriptions are truncated in mid-sentence. Provide the complete text.

Incomplete Tech Notes from WARRANTY_DATA.mdb	
Claim ID	Tech Notes
8631037	ONE DAY RENTAL. CUST REPORTS LOSS OF PEDAL WHEN DEPRESSING BRAKE PEDAL GOES TO FLOORBOARD. INSPECT AND ADVISE. EXTRA DIAG TIME TO DUPLICATE CONCERN DID NOT HAPPEN TILL VEHICLE WARMED UP. THEN EXTENDED STOP LIGHT. PEDAL PADE TO FLOOR. REPLACED THE BR
8648006	CUST. STATES WHEN IT SNOWS THE BRAKE PEDAL GOES TO THE FLOOR AND THERE IS NO BRAKES OR THE PEDAL WILL GRAB AND MAKE A HORRIBLE NOISE AND THE CAR WILL NOT STOP. ROAD TESTED VERIFIED NORMAL ABS OPERATION. CHECKED BRAKE SYS ON HOIST AND FLUID ALL
8781287	8 DAYS RENTAL VEHICLE ARRIVED UNSAFE BEFOR WEEKEND. 1.0 OLH NEC. INITIAL DIAGNOSIS WHICH INCLUDED MUCH ROAD TESTING TO DUPLICATE CONCERN INDICATED THAT RT FRNT WHEEL SPEED SENSOR WAS DROPPING OUT ON SCANNER READING AS COMPARED TO OTHER 2. N
8783071	CUSTOMER STATES BRAKES FEEL SOFTER THAN BEFORE CHECKED FLUID IN MASTER CYL-OK TEST DROVE PERFORMED PANIC STOP AT 65MPH COULD GET ABS TO COME ON AND CAR STOPPED VERY FAST SHUT CAR OFF PERFORMED BRAKE PEDAL TEST 3 PUMPS AT THE THIRD PUMP PEDAL
8825080	AT TIMES YOU CAN PUSH ON THE BRAKE PEDAL AND EXPERIENCE PEDAL PADE. ROAD TESTED WITH DSOM TANZER & CONFIRMED. REPLACED BOOSTER AS ADVISED. NO CHANGE. REPLACED MASTER CYLINDER-NO CHANGE. SUBARU ENGINEER CAME & HAD THE ELECTRONICS ON ABS MODULE REPL
8987111	CUSTOMER REQUEST TO CHECK BRAKES FEELS LIKE DRIVER NEEDS TO PRESS HARDER THAN SUPPOSE TO INABLE STOPPING TECH TEST DROVE CAR AND FOUND BRAKE PEDAL SOFT TECH INSPECTED. ASTER CYLINDER AND FOUND BRAKE FLUID LOW TOPPED FLUID OFF AND DETERMINED IT

Response 12:

The dealer technician comments on the claims listed above were more than 255 characters in length and therefore, would not fit the original NHTSA Access 2000 format. Mr. Shadle of NHTSA's ODI office asked us to change the format to "memo" and the whole text would fit the format. During this procedure, we discovered that the format of the Access tblWarrantyData previously provided to NHTSA in our letter GA04-019 dated April 7, 2004 had been shifted during the transition from Excel format to Access format. This caused the columns entitled "Part Number", "Part description", and "TechNotes" to be misaligned with the "ClaimID", and vehicle and dealer data in the rows going across. I have enclosed 2 copies of corrected "tblWarrantyData" Access files on CD's for your review.