



**Kia Motors America, Inc.**  
**Corporate Headquarters**

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August 25, 2017

**VIA FEDERAL EXPRESS**

Stephen Wood, Acting Chief Counsel  
Office of Chief Counsel (NCC-100)  
National Highway Traffic Safety Administration  
West Building, W41-326  
1200 New Jersey Avenue, S.E.  
Washington D.C. 20590

Re: **Special Order Directed to Kia Motors America, Inc.**  
**In re: RQ17-003, Kia Theta II Engine Recalls**

Dear Mr. Wood:

This response is provided to NHTSA as specified by NHTSA's Special Order regarding RQ17-003 dated June 23, 2017 which was sent to Kia Motors America ("KMA") to investigate the timeliness and scope of KMA's Theta II engine recalls and its compliance with NHTSA reporting requirements.

The Special Order provides that a response to the requested information is due by August 25, 2017 based on a reasonably diligent search and investigation by KMA. KMA has in turn communicated regularly with NHTSA's Office of Chief Counsel regarding the status of its responsive work and requested limited extensions in areas where it can determine that further work will be required after that date. KMA is committed to complying with those agreed-on extensions. In addition, in spite of its diligent efforts to date and while complying with the instructions of the Special Order, KMA recognizes that additional information and documents may later be identified by it or the other companies from which it has been seeking information pursuant to the instructions of the Special Order. Since KMA is complying with the requirements of the Special Order, KMA is not waiving its right to produce any later identified information and documents. KMA will in fact promptly provide such information and documents to NHTSA when obtained.

KMA has collected documents and information responsive to this Special Order through June 23, 2017. Information and documents have been collected directly from all relevant KMA departments and specifically identified individuals. In addition, as requested by the Special Order, KMA has sought information and documents from Kia Motors Corporation ("KMC"), Kia Motors Manufacturing Georgia ("KMMG"), Kia Canada, Inc. ("KCI"), Hyundai Motor Company ("HMC") for various plant specific information, Hyundai Motor Manufacturing

Alabama (“HMMA”) and Hyundai Translead (“Translead”). The collection of information and documents from the Hyundai Motor Company and Kia Motors Corporation (“HKMC”) and any of the other Hyundai related entities was coordinated and led by the attorneys for HKMC. KMA has specifically coordinated with counsel for each of these companies to assure the maximum cooperation possible.

KMA further notes that another governmental agency is looking into the same or similar issues as are covered by this Special Order, but through different requests and procedures. KMA recognizes that additional information and documents may be identified as a result of those requests and procedures and further commits to providing such later identified information and documents to NHTSA to the extent permitted by the other agency.

For clarity, KMA further notes that anyone reading dates in these responses and related documents should do so with an awareness of the large time differences between Korea and either the U.S. West or East Coasts, and also the impact of the International Dateline in the mid-Pacific. As a consequence, an event which may appear based on documents to have occurred on two different dates and times depending on location may in fact have occurred on a single date or time.

**REQUEST NO. 1:**

Provide a detailed narrative describing Kia's understanding of the production of Theta II engines at Hyundai Motor Manufacturing Alabama (HMMA). This response should include a description of the manufacturing processes, quality control, cleaning and maintenance schedules and practices, what products are produced on each production line for all vehicle manufacturers using any variant of a Theta II engine (to the extent known), the dates that Theta II engines were produced at this facility for Kia, and all information relating to engines produced for Kia. To the extent that these processes, practices, or operations changed during HMMA's production of Theta II engines, explain Kia's understanding of the change(s) made, the reason(s) for the change(s), and the date(s) any change was made.

**RESPONSE TO REQUEST NO. 1:**

It is Kia's understanding that HMMA's manufacturing and assembly processes are materially the same as KMC's manufacturing and assembly processes at its manufacturing and assembly facility in Hwasung, South Korea, described below.

It is Kia's understanding that HMMA's quality control procedures were, except as noted immediately below, at all times materially the same as the quality control procedures implemented by KMC at its Hwasung manufacturing and assembly facility.

It is Kia's understanding that HMMA incorporated a “wet blast” procedure into its crankshaft machining process in 2012 and 2013 to ensure that any residual burrs produced by the crankshaft was removed so as not to impact oil circulation.

Kia interprets the question regarding cleaning and maintenance schedules and practices to ask for such practices as they apply to a production facility as a whole and not to specific engine parts cleaning processes incorporated into the engine assembly process which would be classified as quality control. As so interpreted, Kia understands that HMMA maintained cleaning and maintenance schedules and practices materially the same as those maintained by Kia at its Hwasung facility, as described below.

The following variants of the Theta II engine were assembled by HMMA for Kia at HMMA's facility in Alabama during the indicated years:

- (a) Theta II engine types: 2.4L MPI, 2.4L GDI, 2.0L T-GDI, 2.4L GDI Improved, and 2.0L Theta T-GDI Improved
- (b) Production dates: October 2009 – Present

KMA requested this information from HKMC Legal. They obtained and provided the information from HMMA to KMA.

#### **REQUEST NO. 2:**

For any Theta II engines sold, leased, offered for sale or lease, or otherwise made available to Kia consumers in the United States (including as replacement equipment) but produced at a facility other than HMMA, identify the name and location of the facility and provide a detailed narrative description with the same information as requested in Request 1 for HMMA.

#### **RESPONSE TO REQUEST NO. 2:**

The facilities in addition to HMMA which manufacture and assemble Theta II engines installed in Kia vehicles sold in the United States include the Hwasung, Asan and Ulsan facilities in South Korea.

#### **Hwasung, South Korea**

The Hwasung facility is operated by KMC. The Hwasung facility maintains five main engine assembly lines, one of which produces the Theta II engine installed in vehicles sold to consumers in the United States. The Theta II engine assembly process incorporates sub-assembly lines for the crankshaft, piston and cylinder head. The assembly lines are automated excepting the point in the assembly process for manual mounting procedures of SLAT conveyor, GDI fuel pump assembly and exterior parts, which follow substantial engine assembly.

Engine blocks are machined to an assembly-ready condition, the main bearing is fitted, the crank and CPS wheel assembly are added, pistons and connecting rods are placed and attached to the crankshaft, ladder frame is assembled, the cylinder head is attached, the timing chain and oil pan are assembled, and spark plugs installed. At completion of upper engine assembly, leak testing is performed, the fly wheel assembly is added, crank rotation is tested, electronic parts are tested,

oil is introduced to the assembled engine and oil pressure is tested. Upon attachment of the exhaust manifold, engine assembly is complete and the engine is transported to the warehouse for storage. No material changes to the assembly process have been implemented.

In preparation for the engine assembly process, the cylinder block is de-burred with a high pressure water jet (450 ~ 500 BAR) in the machining line. The crankshaft is "wet blasted" after drilling of oil holes to remaining burrs. There are three washing processes of engine parts prior to the engine assembly process. All parts are visually inspected on the engine assembly line to determine that they are clean and free of debris.

Quality control at the Hwasung facility is monitored and maintained pursuant to written guidelines. These guidelines direct inspections and evaluation of the assembly process on a per shift, daily, weekly, and monthly basis. During each shift, employees dedicated to quality control, inspect and report on each step of the assembly process described above to ensure proper performance of each piece of automated machinery and bolt torque accuracy. One time per shift, an inspection is conducted to confirm accurate bearing installation and oil clearances. A daily report is generated to document inspections and results. Daily inspections are conducted to evaluate the performance of the block, head, and crank shaft machining processes.

Kia interprets the question regarding cleaning and maintenance schedules and practices to ask for such practices as they apply to its production facility as a whole and not to specific engine parts cleaning processes incorporated into the engine assembly process which would be classified as quality control. As so interpreted, Kia developed and maintained written cleaning and maintenance schedules and practices at the Hwasung facility. These consisted of detailed written cleaning and maintenance instructions to employees regarding the precise manner and frequency of cleaning and maintaining on specific schedules applicable not only to the machinery of the production assembly line but also to the interior and exterior of the facility as a whole.

KMC assembled at the Hwasung facility, for sale, lease or availability in the United States, the following variants of the Theta II engine in the indicated years:

- (a) Theta II engine types: 2.0L MPI, 2.4L GDI, 2.0L T-GDI, 2.4L MPI, 2.4L GDI Improved, 2.0L T-GDI Improved
- (b) Production dates: May 2008 – Present

### **Asan, South Korea**

It is Kia's understanding that HMC's manufacturing and assembly processes at Asan were materially the same as KMC's manufacturing and assembly processes at its Hwasung facility, described above.

It is Kia's understanding that HMC's quality control procedures at Asan were also materially the same as KMC's quality control procedures at its Hwasung facility, described above.

Kia interprets the question regarding cleaning and maintenance schedules and practices to ask for such practices as they apply to a production plant as a whole and not to specific engine parts cleaning processes incorporated into the engine assembly process which would be classified as quality control. As so interpreted, Kia understands that HMC maintained cleaning and maintenance schedules and practices at its Asan facility which were materially the same as those maintained by Kia at its Hwasung facility, as described above.

It is Kia's understanding that the following variants of the Theta II engine were assembled by HMC at its Asan facility in the indicated years for sale, lease or availability in the United States:

- (a) Theta II engine types: 2.4 MPI/HEV
- (b) Production dates: July 2010 – July 2015

### **Ulsan, South Korea**

It is Kia's understanding that HMC's manufacturing and assembly processes at its Ulsan facility were materially the same as KMC's manufacturing and assembly processes at its Hwasung facility, described above.

It is Kia's understanding that HMC's quality control procedures at Ulsan were also materially the same as KMC's quality control procedures at its Hwasung facility, described above.

Kia interprets the question regarding cleaning and maintenance schedules and practices to ask for such practices as they apply to a production facility as a whole and not to specific engine parts cleaning processes incorporated into the engine assembly process which would be classified as quality control. As so interpreted, Kia understands that HMC maintained cleaning and maintenance schedules and practices at its Ulsan facility which were materially the same as those maintained by KMC at its Hwasung facility, as described above.

It is Kia's understanding that the following variants of the Theta II engine were assembled by HMC at its Ulsan facility during the indicated years for sale, lease or availability in the United States:

- (a) Theta II engine types: 2.4L MPI
- (b) Production dates: May 2010 – July 2013

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC and the various engine plants to KMA.

### **REQUEST NO. 3:**

Identify by name, job title, and division or work group the individual(s) responsible for quality control of the Theta II production line(s) for Kia at HMMA and all other facilities where Theta II engines for Kia are, or were, produced from the beginning of Theta II production through the present. Also state each such individuals' work phone number, work email address,

production facility name and location, employer, and dates of responsibility for quality control. If responsibility was/is divided between shifts or another sub-categorization, so state and provide shift or category responsibility information.

**RESPONSE TO REQUEST NO. 3:**

Below is a chart which identifies the individuals responsible for quality control of the Theta II production lines at HMMA, Hwasung, Asan and Ulsan:

| <b>Plant / Location</b>                             | <b>Individual(s) Responsible</b>                                                                                                                                                                                                         | <b>Date of Responsibility</b> |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Hyundai Motor Manufacturing Alabama (HMMA), Alabama | <b>Yu, Jong-Gyu, Director (retired)</b><br><u>Employer:</u> Hyundai Motor Company<br><u>Work Phone No.:</u> N/A<br><u>Email:</u> N/A                                                                                                     | 2/1/2009—7/31/2014            |
|                                                     | <b>Lee, Chang-Sung</b> , Deputy General Manager, HMMA Quality Control<br><u>Employer:</u> Hyundai Motor Manufacturing Alabama<br><u>Work Phone No:</u> 1-334-387-8470<br><u>Email:</u> ChangSung.Lee@hmmausa.com                         | 8/1/2014—present              |
| Hwasung, South Korea                                | <b>Yoon, Yeo-Seop</b> , General Manager, Engine Quality Control Dept.<br><u>Employer:</u> Kia Motors Corporation<br><u>Work Phone No:</u> +82 031-359-5551<br><u>Email:</u> <a href="mailto:ysyoon@kia.com">ysyoon@kia.com</a>           | 03/01/2007—10/14/2009         |
|                                                     | <b>Kim, Jank-Sik</b> , General Manager, Engine Quality Control Dept.<br><u>Employer:</u> Kia Motors Corporation<br><u>Work Phone No:</u> +82 031-359-5577<br><u>Email:</u> <a href="mailto:jskimsfc@kia.com">jskimsfc@kia.com</a>        | 10/15/2009—8/19/2015          |
|                                                     | <b>Lee, Hwa-Seong</b> , Deputy General Manager, Engine Quality Control Dept.<br><u>Employer:</u> Kia Motors Corporation<br><u>Work Phone No.:</u> +82 031-359-6104<br><u>Email:</u> <a href="mailto:lhs2711@kia.com">lhs2711@kia.com</a> | 8/20/2015—present             |
| Ulsan, South Korea                                  | <b>Rhee, Kang-Seok</b> , Director, Engine Quality Management Dept.<br><u>Employer:</u> Hyundai Motor Company<br><u>Work Phone No.:</u> +82 052-215-2041                                                                                  | 7/25/2009—7/12/2012           |

| Plant / Location  | Individual(s) Responsible                                                                                                                                                                                                                                     | Date of Responsibility                    |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
|                   | <u>Email</u> : <a href="mailto:ksrhee@hyundai.com">ksrhee@hyundai.com</a>                                                                                                                                                                                     |                                           |
|                   | <b>Kim, Sang-Yeol</b> , Director, Engine Quality Management Dept.<br><u>Employer</u> : Hyundai Motor Company<br><u>Work Phone No.</u> : +82 052-215-2063<br><u>Email</u> : <a href="mailto:7800058@hyundai.com">7800058@hyundai.com</a>                       | 12/7/2012—11/11/2013                      |
|                   | <b>Chang, Sung-Ki</b> , General Manager, Engine Quality Management Dept.<br><u>Employer</u> : Hyundai Motor Company<br><u>Work Phone No.</u> : +82 041-530-7301<br><u>Email</u> : <a href="mailto:sk.chang@hyundai.com">sk.chang@hyundai.com</a>              | 11/11/2013—1/2/2015                       |
|                   | <b>Woo, Yong-Seop</b> , General Manager, Engine Quality Management Dept.<br><u>Employer</u> : Hyundai Motor Company<br><u>Work Phone No.</u> : +82 052-215-6101<br><u>Email</u> : <a href="mailto:yswoo0229@hyundai.com">yswoo0229@hyundai.com</a>            | 1/2/2015—present                          |
| Asan, South Korea | <b>Keum, Soo-Geun</b> , General Manager, Asan Engine Quality Control Dept. (Retired)<br><u>Employer</u> : Hyundai Motor Company<br><u>Work Phone No.</u> : N/A<br><u>Email</u> : N/A                                                                          | 12/1/2003—1/14/2010<br>5/25/2010—1/1/2012 |
|                   | <b>Kim, Gyu-Sung</b> , General Manager, Asan Engine Quality Control Dept. (transferred)<br><u>Employer</u> : Hyundai Motor Company<br><u>Work Phone No.</u> : +82-043-530-7847<br><u>Email</u> : <a href="mailto:7604833@hyundai.com">7604833@hyundai.com</a> | 1/15/2010—5/24/2010                       |
|                   | <b>Oh, Eung-Gyun</b> , General Manager, Engine Quality Control Dept.<br><u>Employer</u> : Hyundai Motor Company<br><u>Work Phone No.</u> : +82-041-530-7302<br><u>Email</u> : <a href="mailto:7494258@hyundai.com">7494258@hyundai.com</a>                    | 1/16/2012—4/25/2016                       |
|                   | <b>Do, Yang-Su</b> , General Manager, Asan Engine Quality Control Dept.<br><u>Employer</u> : Hyundai Motor Company                                                                                                                                            | 4/26/2016—7/10/2017                       |

| Plant / Location | Individual(s) Responsible                                                                                                                                                                                                             | Date of Responsibility |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
|                  | Work Phone No.: +82-010-2610-5332<br>Email: <a href="mailto:9268514@hyundai.com">9268514@hyundai.com</a>                                                                                                                              |                        |
|                  | <b>Chang, Sung-Ki</b> , General Manager,<br>Asan Engine Quality Control Dept.<br><u>Employer</u> : Hyundai Motor Company<br>Work Phone No.: +82-041-530-7301<br>Email: <a href="mailto:sk.chang@hyundai.com">sk.chang@hyundai.com</a> | 7/10/2017—present      |

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC and the various engine plants to KMA.

**REQUEST NO. 4:**

State, by model and model year, the number of subject vehicles Kia has manufactured for sale or lease in the United States and current U.S. territories and possessions. Separately, for each subject vehicle manufactured to date by Kia, provide a table that states the following:

- a. Vehicle identification number (VIN);
- b. Vehicle's make, model, and model year;
- c. Date of manufacture;
- d. Date warranty coverage commenced;
- e. Engine type installed as original equipment (e.g., 2.0L, 2.4L, 2.4L Hybrid);
- f. Where the engine was manufactured (e.g., Alabama, South Korea, other);
- g. Vehicle eligible for recall 17V-224 (yes/no);
- h. Date 17V-224 remedy performed (if performed);
- i. Whether 17V-224 remedy performed (if performed) was engine inspection only or engine replacement, and if replacement where the engine was manufactured (e.g. Alabama, South Korea);
- j. Vehicle eligible for subject extended warranty (yes/no);
- k. Date subject extended warranty performed (if performed) ; and
- l. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

For items "h" through "k" indicate the manufacturing plant for the replacement subject component. Clearly explain how the plant of origin is identified (e.g., variation in part number). Provide the table in Microsoft Access 2010, or a compatible format, with the title "PRODUCTION DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

**RESPONSE TO REQUEST NO. 4:**

A chart summarizing the total number of Kia vehicles equipped with Theta II engines broken down by model and model year is being provided electronically. A listing of these vehicles is provided on the data collection file under the category "PRODUCTION DATA" and is submitted contemporaneously with this response.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA.

**REQUEST NO. 5:**

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

For subparts "a" through "g" 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).

Describe in detail the search methods and search criteria used by Kia to identify the items in response to this Request.

**RESPONSE TO REQUEST NO. 5:**

A chart summarizing the total number of Consumer Assistance Center Case Reports ("CA"), Field Reports, Technical Assistance Center Case Reports, Arbitrations and Lawsuits is being submitted electronically.

KMA's search included all CA's, Field Reports and Techline Reports generated through June 23, 2017 that mentioned the words "engine" OR "oil" OR "short block" OR "long block" OR "connecting rod" OR "rod bearing". In light of the limited time in which to respond to this request, KMA did not attempt to further narrow its production, which likely includes documents

that are ultimately not related to the “defect” at issue. Due to the broad definition of “defect” KMA erred on the side of caution and its search and production in response to this request was expansive and over-inclusive. With respect to CA reports, KMA is unable to extract incident date information in an automated manner from the source system. A manual review of each CA report would be required to obtain this information. KMA has, however, included the incident date where an assessment has been made.

As to lawsuits and arbitrations, KMA’s search identified all Complaints involving the subject vehicles equipped with a Theta II engine of which KMA received notice on or before June 23, 2017. Those Complaints were then reviewed and those responsive to this Request have been provided.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 6:**

Provide a table that states, separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 5, the following information:

- a. Kia's file number or other identifier used;
- b. The category of the item, as identified in Request No. 5 (i.e., consumer complaint, field report, etc.);
- c. Vehicle owner or fleet name (and fleet contact person), street address, email 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 crash is alleged;
- j. Whether a fire is alleged;
- k. Whether property damage is alleged;
- l. Number of alleged injuries, if any;
- m. Number of alleged fatalities, if any;
- n. For Request 5, items “c” through “g,” a summary description of the alleged problem and causal and contributing factors, and Kia’s assessment of the problem, with a summary of the significant underlying facts and evidence;
- o. Caption of associated legal proceeding(s) (if applicable) including case number and party names
- p. Court where associated legal proceeding(s) was filed (if applicable);
- q. Date on which associated legal proceeding(s) was filed (if applicable);
- r. Resolution of associated legal proceeding(s) (if applicable); and
- s. Date of resolution of associated legal proceeding(s) (if applicable).

Provide this information in Microsoft Access 2010, or a compatible format, with the title "COMPLAINT DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

**RESPONSE TO REQUEST NO. 6:**

A listing of all potentially responsive communications is provided on the data collection file under the category "COMPLAINT DATA" and is submitted contemporaneously with this response.<sup>1</sup>

The information to respond to this Request was provided by KMA.

**REQUEST NO. 7:**

Produce copies of all documents related to each item within the scope of Request No. 5. This shall include litigation documents including, but not limited to, depositions and discovery. Organize and provide the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Kia used for organizing the documents.

**RESPONSE TO REQUEST NO. 7:**

Pursuant to the extensions granted to KMA by the Office of Chief Counsel on August 18, 2017 and August 23, 2017, CA Report Attachments stored off-site for Calendar Years 2008-2014 and those stored on-site for Calendar Years 2015-2017 which are still being reviewed to confirm the absence of confidential documents, are not being provided by the due date of this response but will be provided on September 8, 2017. All other copies of the documents identified in response to Request No. 5 are being provided electronically and submitted contemporaneously with this response. The documents responsive to this Request are identified in the index required by Instruction 11(f) and categorized under the column "Document Type" with the categories: Consumer Assistance Center Case Report, Consumer Assistance Center Report Attachment, Techline Assistance, Techline Assistance Attachment, and Litigation.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 8:**

State, by model and model year, a total count for each of the following categories of claims, that have been paid by Kia to date that relate to, or may relate to, the 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

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<sup>1</sup> KMA notes that this request calls for the identification of property damage allegations as opposed to the number of property damage claims (as defined by 49 CFR 579.4 (c)) required by Request No. 5.

accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Additionally, provide a table that states separately for each such claim the following information:

- a. Kia's claim number;
- b. Vehicle owner or fleet name (and fleet contact person), street address, email address and telephone number;
- c. Vehicle model and model year;
- d. Vehicle's VIN;
- e. Repair date;
- f. Vehicle mileage at time of repair;
- g. Repairing dealer's or facility's name, telephone number, and city and state or ZIP code;
- h. Labor operation number(s) and description;
- i. Problem code(s) and description;
- j. Diagnostic trouble code(s);
- k. Replacement part number(s) and description(s);
- l. Concern stated by customer;
- m. Cause as stated on the repair order;
- n. Correction as stated on the repair order; and
- o. Additional comments, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2010, or a compatible format, with the title "WARRANTY DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

Also provide copies of any supplemental authorization document(s) required to process each claim identified in response to this question.

#### **RESPONSE TO REQUEST NO. 8:**

A list of the warranty claims and goodwill claims approved by the KMA Consumer Affairs Department identified as a result of the search identified in Kia's response to Request No. 9 is provided on the data collection file under the category "WARRANTY DATA 1" AND "WARRANTY DATA 2" and is submitted contemporaneously with this response.

The information to respond to this Request was provided by KMA.

#### **REQUEST NO. 9:**

Describe in detail the search methods and search criteria used by Kia to identify the claims in response to Request No. 8, including the labor operations, problem codes, diagnostic trouble codes, part numbers and any other pertinent parameters used.

**RESPONSE TO REQUEST NO. 9:**

KMA searched for all warranty claims through June 23, 2017, for the part numbers identified in its response to Request No. 20 and provided all claims without any limitations. KMA also searched for all goodwill claims approved by KMA's Consumer Affairs Department through June 23, 2017.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 10:**

Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions, diagnostic trouble codes and diagnostic trouble code descriptions applicable to the defect in the subject vehicles. State whether the diagnostic trouble codes are automatically reported to the warranty database electronically or manually entered into the warranty database by a claims administrator.

**RESPONSE TO REQUEST NO. 10:**

A list of the labor operations, problem codes and diagnostic trouble codes (DTCs) is being provided electronically and submitted contemporaneously with this response.

Since June 2014, the DTCs have been automatically entered electronically. Prior to that time, DTCs were manually entered into the warranty claim.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 11:**

State, by model and model year, the terms of the new vehicle warranty coverage offered by Kia on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Also state any additional warranty coverage that may have been offered (e.g., extended warranty, warranty to subsequent owners).

**RESPONSE TO REQUEST NO. 11:**

The following new vehicle warranty coverages offered by Kia apply to each of the subject vehicles and details of these coverages are outlined in the Warranty and Consumer Information Manual provided with each new Kia vehicle:

**Basic Limited Warranty Coverage**

Applies to all components for 60 months or 60,000 miles from the Date of First Service (the first date a vehicle is placed into service), whichever comes first, excluding wear and maintenance

items or items specifically excluded as exceptions, and is fully transferrable to subsequent owners. Exceptions include:

- Damage due to factors beyond Kia's control such as misuse, accidents, modification, environmental damage or damage caused by the installation of improperly sized components;
- Damage due to lack of maintenance or the use of the wrong fuel, oil or lubricants;
- Service Adjustments which are covered for the first 12 months or 12,000 miles from the Date of First Service and are defined as minor repairs not usually associated with the replacement of parts;
- Air Conditioner Refrigerant Charge which is covered for the first 12 months from the Date of First Service regardless of mileage;
- Audio, Entertainment or Navigation system which is covered for the first 36 months or 36,000 miles, whichever occurs first, from the Date of First Service;
- Original Equipment Battery which is covered by a limited warranty period of 24 months from the Date of First Service, regardless of mileage;
- Brake and clutch linings if they fail to function properly during normal use are covered for the first 12 months or 12,000 miles from the Date of First Service; and
- Paint repairs due to non-impact discoloration, fading, cracking, chipping or flaking are covered for the first 36 months or 36,000 miles, whichever occurs first, from the Date of First Service

#### Powertrain Coverage

Applies to Original Owners (first retail purchaser or lessee), is not transferable to subsequent owners and does not apply to vehicles placed into commercial service. Powertrain coverage begins upon expiration of the 60 month/60,000 mile Basic Limited Warranty Coverage. It covers the following components for up to 120 months or 100,000 miles from the Date of First Service, and does not cover normal wear and tear, maintenance, or items defined as exceptions which are stated above in reference to the Basic Limited Warranty Coverage:

- In the Engine: cylinder block, cylinder head and all internal parts, timing gear, seals and gaskets, valve cover, flywheel, oil pump, water pump and turbo charger
  - In the Transaxle: transmission case and all internal parts, torque converter, drive shafts, universal joints, front hubs, bearings, seals and gaskets
  - In the Axles: axle shafts and C-V joints (couplings), seals, hubs and wheel bearings
  - In the Transmission: transmission case, transfer case, torque converter and all internal parts, seals and gaskets
  - In the Differentials: front and rear differential assemblies, cases, all internal parts, seals and gaskets
  - In the Propeller Shafts: Drive shafts, universal joints

#### Anti-Perforation Coverage

Covers perforation for 60 months or 100,000 miles from the Date of First Service (the first date a vehicle is placed into service), whichever comes first, excluding items specifically excluded as exceptions, and is fully transferrable to subsequent owners. Exceptions include:

- Perforation due to corrosion caused by industrial fallout, accident, damage, abuse, vehicle modifications or damaging or corrosive cargo; Surface corrosion not resulting in perforation;
- Perforation due to corrosion in a component that is not a body sheet metal component, specifically excluding exhaust components; and
- Damage from the installation of parts not approved by Kia.

#### Federal or California Emission Control Warranty

Warrants that the vehicle conforms to the applicable regulations of the U.S. Environmental Protection Agency (EPA) for either the period of 24 months or 24,000 miles whichever occurs first or 96 months or 80,000 miles whichever occurs first, depending upon the part, from the Date of First Service. It specifically excludes repairs necessary due to accidents, misuse, lack of proper maintenance, or improper repairs. Pursuant to the Clean Air Act, coverage also provides a remedy if the vehicle fails to pass an EPA-approved emission short test in the first 24 months or 24,000 miles from the Date of First Service or 96 months or 80,000 miles, whichever occurs first, if the failure is due to a part listed with coverage for that time period.

In California or any other state that adopts California's emission warranty provision, Kia vehicles certified for sale are warranted to meet the California anti-smog standards and repairs will be covered if a Kia vehicle fails a Smog Check inspection or if any emission-related part is defective for 36 months or 50,000 miles, whichever occurs first. Certain emissions-related parts are covered for 84 months or 70,000 miles, whichever occurs first. Emissions components on Super Ultra Low Emission Vehicles (SULEV) or Partial Zero Emission Vehicles (PZEV) are covered for 15 years or 150,000 miles, whichever occurs first.

#### Replacement Parts and Accessories

Covers Kia Genuine new or remanufactured replacement parts and Kia Accessories supplied from Kia Motors America, Inc. and sold by an Authorized Kia Dealer for the greater of either the duration of the applicable warranty or the first 12 months or 12,000 miles from the date of installation. Over the counter parts or accessory purchases are covered for 12 months and unlimited miles from the date of purchase. Damage due to accidents, misuse, alterations, negligence, improper repairs, environmental issues, and normal wear and tear or deterioration is not covered.

#### Extended Warranty:

KMA extended the warranty coverage on the Engine Short Block Assembly (engine block, crankshaft and bearings, connecting rods and bearings and pistons) on the subject vehicles listed below to 10 years or 120,000 miles, whichever occurs first, from the Date of First Service to any original or subsequent vehicle owner for connecting rod and bearing wear that can lead to engine failure evidenced by the development of a knocking noise detectable as engine RPMs increase.

- 2011-2014 Optima 2.4L GDI and 2.0L Turbo GDI (June 2016)
- 2012-2014 Sorento 2.4L GDI (August 2016)
- 2011-2014 Sportage 2.4L GDI and 2.0L Turbo GDI (August 2016)

These warranty extensions were superseded by safety recall SC147 for the above models, except the following for which the warranty extensions continue in effect under the same terms and conditions:

- 2014 Optima 2.4L GDI or 2.0L Turbo GDI manufactured in Korea; and
- 2014 Sportage 2.4L GDI or 2.0L Turbo GDI

The information to respond to this Request was provided by KMA.

**REQUEST NO. 12:**

Produce copies of all documents (e.g., engine diagnostic worksheets, photographs of engines, copies of oil change receipts, descriptions and/or stories provided by dealers or vehicle owners, Kia's response to the request, including stating reason for denial if request was denied or approval if request was approved) related to dealer or vehicle owner requests for warranty or goodwill coverage for failed, damaged, broken, or otherwise inoperative engines.

Provide a table that separately, for each such request, states the following:

- a. Kia's claim or identification number;
- b. The category of the item;
- c. Vehicle owner or fleet name (and fleet contact person), street address, email address and telephone number;
- d. Vehicle's VIN;
- e. Vehicle's model and model year;
- f. Request date;
- g. Vehicle mileage at time of request;
- h. Associated requesting dealer's or facility's name, telephone number, and city and state or ZIP code,
- i. Date reported;
- j. State whether the request was approved or denied;
- k. Whether the vehicle was involved in a crash; and
- l. Decision or rationale for whether request was approved or denied.

Provide this information in Microsoft Access 2010, or a compatible format, with a title "ENGINE REQUEST DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

**RESPONSE TO REQUEST NO. 12:**

A list of the requested information is being provided on a data collection file under the category “ENGINE REQUEST DATA” and is submitted contemporaneously with this response.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 13:**

Describe in detail the process by which any dealer had, has, or may have had restrictions on full or partial engine replacement or repairs related to the subject defect. Describe any programs, restrictions, or qualifications required by HMMA<sup>2</sup> and/or Kia limiting a dealer in replacing subject components, and further state the date on which each such restriction or limitation became effective, the date on which each such restriction or limitation ceased to be in effect (if it ceased), how such effective/cessation dates were communicated to dealers, and what entity placed the restriction, qualification, or other limitation. If restrictions, qualification, or other limitations were communicated to dealers in writing provide a copy of the communication, or other documents, including any variations on the same communication or document (except variation as to recipient).

**RESPONSE TO REQUEST NO. 13:**

Prior to October 2015, Kia dealers primarily obtained authorization for full or partial engine replacements through their assigned District Parts and Service Manager (DPSM) unless they were designated a DSA (Dealer Self-Authorization) Dealer Level A, in which case no DPSM authorization was required.

Beginning on July 7, 2015, pursuant to a pilot program instituted in the Western Region of the United States, Kia dealers who were not designated DSA (Dealer Self Authorization) Level A, were required by KMA to contact Techline instead of a DPSM to obtain a Prior Work Authorization (PWA) before undertaking any warranty engine replacement. KMA extended the pilot program to the entire United States effective October 5, 2015. Kia dealers designated DSA Level A were and are not required to obtain a PWA before undertaking a warranty engine replacement. The requirement of prior distributor approval of repair/replacement was imposed by the vehicle manufacturer. Additional limitations on dealer warranty repair/replacement of engines included the manufacturer’s warranty requirement of evidence of purchaser’s compliance with proper vehicle maintenance at intervals as set out in the Owner’s Manual.

The requirement for a Techline PWA for non-DSA Level A dealers terminated on May 26, 2017, with regard to all vehicles covered by the Theta II engine recall which failed the recall inspection. Should a vehicle covered by the Theta II engine recall pass the recall inspection but

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<sup>2</sup> It is Kia’s belief that the reference to HMMA in this request is a typographical error and was intended to identify KMA. The response is provided with that understanding.

require engine replacement for some other reason, Techline PWA policy applies even for DSA Level A dealers.

The requirement for a Techline PWA for non-DSA Level A dealers remains in effect for all engine replacement repairs on vehicles not included in the Theta II engine recall.

Effective dates and cessation dates were communicated to dealers in writing, by Warranty Bulletin and Web DCS communications posted at Kdealer.com.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 14:**

Produce copies of all service, warranty, extended warranty, goodwill, and other documents that relate to, or may relate to, the defect in the subject vehicles, that Kia 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 Kia is planning to issue within the next 120 days. Describe in detail the search methods and search criteria used by Kia to identify the items in response to this Request.

**RESPONSE TO REQUEST NO. 14:**

Copies of communications responsive to this Request are being provided electronically and are submitted contemporaneously with this response.

KMA searched for all TSBs, campaign and warranty extension documents and other field communications applicable to the subject vehicles equipped with Theta II engines which were issued through June 23, 2017 that relate or may relate to the defect.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 15:**

Describe in detail any internal and/or external audits, assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, for this request "actions") that relate to, or may relate to, the defect that have been conducted, are being conducted, are planned, or are being planned by, or for, Kia. 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 action and objective of the action;
- e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action;
- f. A brief summary of the findings and/or conclusions resulting from the action;
- g. Copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. This includes, but is not limited to, all documentation for design of experiments (including any presentations, reports, or documents related to same), all Fault Tree Analyses and supporting documents conducted for Theta II engine failure, and all design and process Failure Mode and Effects Analysis (FMEA) that refers or relates to Theta II engine failures.

Organize the documents chronologically by action. Provide all reports, presentations, and any and all other documents that relate to an analysis of root cause or root causes of the defect, and state the date (MM/DD/YY or MM/YY if DD is unknown) the report, presentation, or other document was created, where possible.

For analyses of individual subject components, full or partial, recovered from the field, provide all photographs, metallurgical analysis, conclusions, and any and all other relevant documents. Identify the subject component by the VIN number of the vehicle from which it was harvested.

#### **RESPONSE TO REQUEST NO. 15:**

A chart summarizing the actions conducted by Kia or at Kia's request, including any supporting documents, is being produced electronically and submitted contemporaneously with this response. Kia notes that while the actions conducted by the Task Force Team (TFT) were not specifically conducted or requested by Kia, it is Kia's understanding that the TFT was created to address manufacturing deviations in relation to all the production facilities and thus their actions have been included as an "action" in response to this request.<sup>3</sup> Additionally, Hyundai Translead routinely conducts visual inspections and at times breakdowns of engines in Kia vehicles. To the extent the subject Kia vehicles were equipped with Theta II engines, analyses of Theta II engines, which were conducted by Hyundai Translead have also been included.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC, HMMA and Hyundai Translead to KMA. Information was also provided by KMA.

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<sup>3</sup> Since the TFT was tasked with the responsibility of addressing all types of manufacturing issues, the documents provided include information relating to non-Theta II engines. The Korean language PowerPoints produced in response to this request have been translated to English. However, for the supporting documents embedded in said Korean language PowerPoints, only information relating to Theta II engines has been translated due to the significant amount of documents which exist.

**REQUEST NO. 16:**

Describe all modifications or changes made in the design, material composition, manufacture, quality control, supply, or installation of the Theta II engine for Kia, from the start of production to date, which relate to, or may relate to, the defect. For each such modification or change, provide the following information:

- a. A detailed description of the modification or change;
- b. The reason(s) for the modification or change, including the underlying rationale and purpose of the design change;
- c. The individuals who participated in the decision to make the modification or change, including whether those individuals were employees of Hyundai, Kia, or both;
- d. When the decision to modify or change was made;
- e. The objectives of implementing the modification or change, and any follow-up study, evaluation, inquiry, investigation, analysis, and/or testing that was conducted to determine whether the change or modification accomplished or otherwise met the identified objectives;
- f. The part number(s) (service and engineering) of the original component;
- g. The part number(s) (service and engineering) of the modified component;
- h. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
- i. When the modified component was made available as a service component; and
- j. Whether the modified component can be interchanged with earlier production components.

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

**RESPONSE TO REQUEST NO. 16:**

Pursuant to the extension granted to KMA by the Office of Chief Counsel on August 24, 2017, Kia will provide an updated chart which will include its response to 16(i) by September 8, 2017.

A chart summarizing the modifications and/or changes made in the design, material composition, manufacture, quality control, supply, or installation of the Theta II engines is being provided electronically and submitted contemporaneously with this response.

Kia is aware of four (4) modification and/or changes for HMMA plant facility and two (2) modifications and/or changes for the Hwasung plant facility that may be incorporated into vehicle production within the next 120 days. These modifications/changes are identified in the

summary chart as line items 115-118 under the “HMMA” tab and line items 162 and 163 under the “Hwasung” tab.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC and the engine plants to KMA.

**REQUEST NO. 17:**

Provide all documents that refer or relate to changes in production or production processes of the Theta II engine, including the rationale for such change.

**RESPONSE TO REQUEST NO. 17:**

Copies of documents responsive to this request are being produced electronically and submitted contemporaneously with this response.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC and the engine plants to KMA.

**REQUEST NO. 18:**

Identify and describe any changes contemplated, proposed, considered or begun, but which were not implemented, to address the defect other than those that you may have identified in your response to Request No. 16. For each such instance, identify the individuals who participated in the consideration, evaluation, and decision-making process; the objectives of the change; and any follow-up study or testing that was conducted, by Kia or any other entity or individual known to Kia, to determine whether the change would have accomplished or otherwise met the identified objective(s).

**RESPONSE TO REQUEST NO. 18:**

On January 21, 2012, an engineering order (C2GDE026) was issued to propose a change to the engine oil specification for the 2.4 MPI and GDI engines from 5W20 oil to 5W30 oil to improve oil film bearing lubrication by maintaining oil viscosity under high temperatures and high speeds. The proposed change was reviewed and evaluated for performance, durability, fuel efficiency and emissions. Based on the evaluation, it was determined any anticipated benefits were uncertain. The decision was made not to proceed with the change, and a subsequent engineering order (C2GCE167) was issued to maintain the existing specification of 5W20 oil. The individuals who participated in the consideration, evaluation and decision-making process included Gasoline Engine Design Team members, Suh, Seung Woo (engineer), Kim, Hyun Ho (part leader), and Lee, Hae Chang (senior engineer).

On December 12, 2013, an engineering order (C2GDE469) was issued proposing the addition of an oil hole at the small end of the conrod to increase lubrication to the bearing. A separate

engineering order (C2GDE478) was issued on December 17, 2013 proposing a change to the small end of the conrod bush material and improving the roughness regulation to the piston DLC pin. The objective of both proposed changes was to address engine noise caused by friction of the piston pin against the bush bearing. These changes were not implemented after engine durability tests showed wearing of the piston pin's DLC coating which increased the clearance between the pin and bearing. This increased clearance created knocking noise from the engine due to the pin striking the bearing. The individuals who participated in the consideration, evaluation and decision-making process of C2GDE469 included Gasoline Engine Design Team members Kim, Tae Sun (research engineer) and Kim, Hyun Ho (part leader). The individuals who participated in the consideration, evaluation and decision-making process of C2GDE478 included Gasoline Engine Design Team members Shin, Jeong Soo (research engineer) and Kim, Hyun Ho (part leader).

On April 15, 2015, an engineering order (C2GFE127) was issued which proposed to change the shape at the connecting rod's seating face that comes in contact with the bolt. The objective of the change was to reduce the amount of machining required at the connecting rod's seating face. The change was not incorporated into production because the connecting rod's seating face with the proposed shape change resulted in the creation of sharp burrs. The individuals who participated in the consideration, evaluation and decision-making process of C2GFE127 included Powertrain Design Improvement Team members Shim, Hyun Soo (research engineer) and Kim, Gyu Hwan (team leader).

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA.

**REQUEST NO. 19:**

Provide the following information regarding the subject component by engine type (2.0L, 2.4L and 2.4L hybrid):

- a. A schematic of the engine oil lubrication system; and
- b. A detailed description of the engine oil lubrication system.

**RESPONSE TO REQUEST NO. 19:**

Schematics of the engine oil lubrication system are provided electronically and submitted contemporaneously with this response.

The configurations of the lubrication circuit for the Theta engine family, including port fuel-injected (MPI), direct injected (GDI), and turbocharged direct injected (T-GDI) engines, as well as engines for hybrid-electric vehicles (HEV), are the same except that the T-GDI engine has an additional oil route for lubrication of the turbocharger bearing.

The schematic which is provided in response to this request reflects that engine oil is drawn from the oil pan (1) by the oil pump (2) and is supplied to each part of the engine through the oil route. The engine oil passes through the oil filter (3) and the oil cooler (4) to remove dirt in the oil and to control the oil temperature. Oil is supplied to the balance shaft module (BSM) bearing (4) for lubrication of balance shafts, and oil is supplied to the main gallery (5), which is a long cylindrical oil chamber in the cylinder block. It is then distributed to each part for lubrication or for actuating hydraulic devices. From the main gallery, oil is supplied to the main bearing (6), conrod bearing (7), and piston cooling jet (8) at each cylinder. Oil is supplied to the timing/BSM chain tensioner (9,10), to the cylinder head (12) for control of the intake and exhaust continuously variable valve timing (CVVT) mechanisms (15,16), and to the camshaft journals (17,18). As indicated above, an additional oil route for the T-GDI turbocharger bearing (11) is added.

The difference between the referenced "Theta II" and "Theta II Improved" engine is the change from a hydraulically actuated intake CVVT to an electrically actuated one. The oil control valve for the intake camshaft is removed, and oil is supplied for lubricating the bearing system of the electric CVVT actuator. This was done to improve fuel efficiency.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA.

**REQUEST NO. 20:**

State the number of each of the following components that Kia 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 component engine assembly;
- b. Subject component connecting rod;
- c. Subject component connecting rod bearing;
- d. Subject component crankshaft;
- e. Subject component long block; and
- f. Subject component short block.

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

Also state by make, model and model year, any other vehicles of which Kia is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

**RESPONSE TO REQUEST NO. 20:**

Charts identifying part sales and supplier information are being provided electronically and are submitted contemporaneously with this response.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. KMA also provided information for this response.

**REQUEST NO. 21:**

Identify what the process for making defect determinations was at the time 17V-224 was issued. If any change(s) were made, or considered but not adopted, to the process between September 10, 2015 and the time 17V-224 was issued, explain the change(s) and the reason for the change(s). Provide any supporting documents relating to such changes, or changes considered but not adopted.

**RESPONSE TO REQUEST NO. 21:**

Special Order Request Nos. 21 through 23 asks for various aspects of the same information. Request No. 21 requests the process for defect determinations between September 10, 2015 and March 21, 2017 with changes. Request No. 22 requests the KMA “policies, practices and procedures” for making defect determinations during the time period when the Theta II engine was being designed and produced, which starts with approximately May 2010 – 2011 depending on the model, and continuing to today. Request No. 23 seeks whether Kia had adequate information chains to make recall determinations regarding the Theta II engine. To provide a coherent explanation of the Kia recall process, and as it relates to the Theta II engine, the information for all three Requests is provided in response to Request No. 21.

Kia’s procedures for addressing safety recall decision-making as of September 2015 were driven by its prior history of communications with and guidance from NHTSA, dating back to Kia’s first major involvement with the Office of Defects Investigations (ODI) in 1999.

During late 1999 meetings at NHTSA headquarters in Washington, D.C., ODI initiated discussions to open a working relationship with KMA regarding procedures for potential safety defect issues. ODI stated that their interest was due to Kia’s increasing sales in the U.S. KMA’s new general manager responsible for legal engineering and regulatory matters, J.S. (Jurassic) Park<sup>4</sup>, requested guidance from ODI regarding how KMA should view and analyze potential safety issues. He also sought guidance on NHTSA’s preferred communications with Kia, considering HMC’s purchase of a substantial share of KMA’s parent, KMC. In total, KMA identified that its goal was to optimize Kia’s new relationship with NHTSA while complying

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<sup>4</sup> Mr. Park had previously been KMC’s Senior Executive Coordinator for Service at KMA and left KMC and was hired by KMA to become Director, Product Litigation and Regulatory Compliance in the KMA Legal Department. He was subsequently promoted to Executive Director.

with the mandate of the Federal Highway and Motor Vehicle Safety Act that recalls be conducted when components or conditions presented an “unreasonable risk to highway safety.”

Based on that guidance, Kia improved existing and created new internal procedures to evaluate potential safety defect issues. That is, although KMC remained responsible for safety defect recall decisions, NHTSA imposed on KMA increased responsibilities for reporting and responding to NHTSA. These procedures focused in three directions. The first was for KMA to look at the individual reports in NHTSA’s VOQ database regarding specific Kia vehicles and components for indications that a safety issue might be present. To facilitate such evaluations, KMA began building its own database of knowledge of how NHTSA evaluated safety issues regarding a wide range of manufacturers and components, so KMA could itself evaluate how it should look at such issues/components. The second direction was for KMA’s legal regulatory compliance department to look proactively within KMA’s field data which identified quality issues which could implicate safety concerns. The departments that were brought into this evaluation process generally included customer communications (Consumer Affairs), warranty and goodwill claims (Warranty), dealer communications regarding service matters (Techline), communications from KMA’s field personnel (e.g. Field Technical Specialists, District Parts and Service Managers, Regional Parts and Service Managers), and information received through legal claims and lawsuits (by the Legal Department) regarding product defect claims. The third direction was for Mr. Park to regularly communicate to the Senior Executive Coordinator assigned by KMC to KMA for quality, including regulatory and recall issues. Such assigned coordinators have generally held their positions for a 4-5 year term. They have regularly provided information and guidance to KMC from KMA’s inside and outside regulatory counsel through KMA’s Legal Department on potential safety recall issues, as well receiving evaluations of technical and engineering issues to assist in preventing unreasonable risks to highway safety. The coordinator has in turn assisted KMA by receiving feedback from KMC on engineering information as well as field information from other countries. This included, for example, the effects of cold weather conditions in Canada or Russia and of hot weather conditions in the Middle East and how those might impact Kia models sold in the U.S.

Over time, these procedures and practices were upgraded. One of the most significant changes resulted from the passage of the TREAD Act by the U.S. Congress and the promulgation of the Early Warning reporting regulations by NHTSA in 2002. To comply with the regulations and provide NHTSA with the numerous categories of required field information, new software needed to be developed at KMA to collect field data and permit drill down into the underlying information. As KMA developed a better understanding of its research needs, it also used the concepts developed for such TREAD reporting to create more robust systems for its own use to look for potential quality and safety issues. For example, software improvements to the Customer Assistance system were implemented to allow for more flexible search procedures to help flag and analyze customer complaint issues for safety concerns.

Also over time, personnel increases were implemented in the legal regulatory compliance team in KMA’s Legal Department to strengthen KMA’s ability to evaluate safety issues, including new staff to collect and report TREAD data and an increased engineering staff to do more of the

needed sophisticated product defect analyses when potentially complex safety issues control units were observed. Such engineers developed more sophisticated abilities to evaluate electronic control units, starting with airbag units and increasing to the other now numerous control units which are currently used to operate modern vehicles. Consistent with that, KMA strengthened its outside counsel legal support to provide detailed legal regulatory compliance analyses of the engineering and technical issues being considered by KMA. KMA also created a Product Quality Group within Service with additional engineers to identify and analyze more complex quality issues than could be done by dealerships or KMA District or Regional Parts and Service Managers. These Product Quality engineers also helped identify quality issues with safety implications for reporting to KMC through Quality Information Reports (QIRs). These engineers typically investigated component issues, based often on a single event, and so Product Quality was often in a position to communicate incident results and requests for assistance to KMC early in a production cycle.

In addition, the Toyota recall crisis and NHTSA's evolving response to those issues were noted by Kia as significant in NHTSA's desire to ensure that U.S. Distributors were closely involved with their foreign manufacturers in the recall decision making process. Thus, Mr. Park increased his communications on the most significant issues with KMC on possible recall issues. The coordinator stationed at KMA also was encouraged to provide more detailed communications with KMC's Quality Assurance Division, HKMC's Quality Strategy Group (also known as Quality Strategy Team or "QST") and KMC Overseas Service Department to assist in recall decision making.

Besides these ongoing improvements, a significant additional upgrade occurred to Kia's overall recall decision-making process in March 2012. Because of NHTSA concerns that Kia needed to be aggressive in drilling down into potential safety issues, KMA and KMC representatives requested and then attended an evaluation meeting at NHTSA in March 2012 with a primary goal for Kia to review all its procedures with NHTSA. That meeting involved a broad range of exchange of information by both sides. Some of the major elements which Kia provided to NHTSA in March 2012 included the following messages:

- The Kia recall evaluation process involves a wide range of departments at both KMA and KMC developing and sharing information to evaluate potential safety defects. It is focused on gathering the maximum amount of information potentially available and its goal is to build a solid engineering basis for any decision, and for that decision to be broadly understood and accepted.
- KMC has independent access to U.S. field information including KMA's warranty claims and NHTSA VOQs and consistently evaluates potential safety defect issues for the United States. These evaluations are at times done independently by KMC, but they are often done in parallel with KMA's evaluations, with each company searching for safety risk indications. KMC undertakes similar evaluations of its operations in other countries, sharing its learning with KMA as appropriate. Thus, KMA and KMC have separate potential starting pathways to conduct potential safety evaluations for the U.S.

Manufacturing plants, suppliers, KMA Quality Engineers, and the R&D Center also feed issues into the evaluation process.

- By 2012, KMC had assigned a senior executive in Quality Assurance in Korea with the responsibility for safety recall decisions. His role has been and is collaborative, and also involves soliciting additional information and understandings from various KMC departments and KMA. This typically results in wide agreement as to the proper course of action for an issue. This communication process is also typically informal and often fast moving, frequently based on telephone and other transitory communications over the approximate 16-19 date/hour time difference (or 8 – 11 hours if you are just looking at a clock ) between KMC and KMA<sup>5</sup>.
- Kia identified it is aware of NHTSA's desire to have various manufacturers who failed to be responsive to NHTSA's concerns to shift decision-making for recalls to the U.S. However, Kia's integrated and inclusive system is designed to avoid the issues about which NHTSA is concerned. To ensure that Kia was responsive to NHTSA's concerns, Kia had already opened chains of communication so that recall decisions would not get buried or lost at the foreign manufacturer level.
- KMA has no recall evaluation communication "silos." KMA's goal and procedures focused on an integrated system where all departments share information with the legal regulatory compliance department, and through group meetings to discuss potential safety issues.
- All such KMA departments are empowered to cross-communicate with each other to raise and discuss potential safety issues they were seeing.
- The legal regulatory compliance department integrates litigation and claim information into safety defect evaluations, avoiding the problem of manufacturers who segregated litigation from regulatory issues.
- KMA seeks an evaluation of any potential safety concern by outside counsel advising KMA on how NHTSA addressed the same or similar issues with other manufacturers.
- KMA's field analysis work is continuously integrated through communications with a coordinator assigned by KMC to KMA in the U.S. whose role is to facilitate communications on potential safety and quality issues between the two companies.
- Consistent with NHTSA goals, KMA can and does provide the initiative for a recall decision based on KMA's field analysis work.

The responding guidance from NHTSA included the following:

- NHTSA expects Kia to perform their basic recall determination evaluation based on the number of field claims received and the injury risk severity of those claims.
- KMA should be aware in real time of VOQs posted by NHTSA regarding Kia vehicles.
- KMA should be constantly reviewing -- on a broad scale covering all the TREAD component and event categories -- all quality issues to look for potential safety defects.

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<sup>5</sup> As referenced previously, in addition to the large time difference between Korea and either the West Coast or, worse, the East Coast of the U.S., the International Dateline halfway across the Pacific Ocean causes events to be reported in documents as occurring on one [later] date in Korea while that is a different [earlier] date in the U.S.

- KMA should be reviewing all field data in parallel with NHTSA's review of Kia's TREAD data to seek out potential issues for safety defect analyses.
- When a potential safety defect is identified, KMA should drill down into the data and look for customer and dealer details which might show a safety related defect.
- Once Kia considers a potential safety issue, even if it decides that no safety recall action is needed, it should provide for updating of its data to flag an issue if it begins to grow or get worse. Kia should be aggressive in deciding how frequently or continuously to conduct such updates.
- When NHTSA contacts Kia regarding a component or event type, NHTSA expects Kia to generally have already identified and analyzed those issues;<sup>6</sup> NHTSA expects KMA to work on both the engineering side and the legal side to determine if certain types of defects or problems meet the "unreasonable risk to highway safety" standard.
- NHTSA expects Kia to increase its communications with NHTSA on an ongoing informal basis to identify potential issues and to get guidance from NHTSA.

In addition to following NHTSA's guidance, Kia thereafter immediately implemented internal policies at both KMC and KMA to seek to optimize their review of potential safety issues for both continuity and thoroughness. On the KMA side, this included having all the field departments work on a deeper team basis to evaluate potential safety issues as well as adding to the engineering staff available to do deep evaluations of potential safety issues. On the KMC side, the improvements included a long term commitment to expand the number and qualifications of engineers in the KMC's Quality Division to evaluate potential safety issues in the U.S. and other countries. In all cases, the key people involved in Kia's recall evaluations had the knowledge that regular or continuing internal pro-active investigations were required.

#### Kia's Procedures for Review of Potential Safety Issues Involving the Theta II Engine.

NHTSA has requested that Kia provide the procedures it had in place to review potential safety issues involving the Theta II engine during its production. The Theta II engine became part of Kia's products with vehicle models introduced during early 2010 and 2011, with the Optima starting production in May 2011 (2012 MY) for sale in the U.S. that Fall. Kia followed its normal field data review procedures with these model vehicles and no potential safety issues were identified with the Theta II engines during the first years of production.

KMA's investigation in response to NHTSA's Special Order directed certain inquiries to KMC and the attorneys at HKMC. KMA has learned the first indication that KMC became aware HMC was evaluating a potential safety issue regarding the Theta II engine was on about July 21, 2015. Specifically, that HMC had started an analysis of all HKMC vehicle models with a NHTSA VOQ analysis on or about that date. On about July 29, 2015, KMC began a Theta engine connecting rod claim rate analysis for the XMa Sorento, QF Optima and TF Optima. On about September 4, 2015, as part of an evaluation meeting regarding NHTSA's Hyundai Sonata

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<sup>6</sup> As NHTSA has subsequently accelerated its evaluation processes, KMA must at least still be able to immediately respond to new issues based on phone calls and emails from ODI.

recall request, QST shared a Theta II engine analysis PowerPoint with KMC. KMC was made aware of Hyundai's decision to initiate a recall.

On about September 11, 2015, QST proposed an extended warranty for the Optima QF considering the low claims rate for that model. KMC thereafter began evaluating the QF model claims for vehicles manufactured at KMMG utilizing Theta II engines supplied by HMMA. On September 25, 2015, KMC Quality Assurance was advised by QST of issues related to the Theta II engine including especially the material of the connecting rod bearing and certain of its dimensions. QST proposed that KMC consider an extended warranty for the Optima. KMC thereafter completed a full review of all issues including a QF field action review. The head of the KMC Quality Division decided on about October 6, 2015 that an underlying production problem was the basis of the Sonata recall and that no warranty extension was warranted, but that Kia would monitor the field data. That decision was communicated to various departments and KMA on about October 13, 2015. KMC also decided based on information received from HMC and HMMA that the Theta II engine for the QF involved a production issue and that the warranty claims rate was extremely low and consistent with a difference in production between the Optima and Sonata. KMC Quality Assurance decided that the claims data would be monitored for a possible warranty extension with a further complete review to occur in June 2016.

On the KMA side, its first information of a potential safety recall was at the time Hyundai made its recall decision in September 2015, with an indication that Hyundai would be filing a 573 notice. KMA therefore began a field data review for the Optima with engines manufactured by HMMA. Hyundai filed its 573 on September 10, 2015. KMA identified an engine replacement warranty claims rate of 0.3% for the Optima QF Theta II engine supplied by HMMA to KMMG. That rate identified by KMA was below the frequency level for recall consideration under ODI policies when addressing a potential stalling issue. KMA further determined that there were no accidents, fatalities or injuries related to the engine issue, and that the descriptions of customer occurrences indicated that drivers were able to leave the roadway and reach an adequate location to seek assistance. Given the combination of an extremely low frequency rate and no indication of any severity situations, KMA provided its evaluation to KMC that a recall was not warranted. KMA also noted that the Hyundai recall was based on a warranty claim rate of 1.5%, which KMA understood could be a basis for a NHTSA recall request for stalling.

Additional investigation efforts have identified that KMA caused inquiries to be made to KMMG, which in turn contacted HMMA, to seek information regarding production issues for the Optima compared with the Sonata. KMA eventually received information that all Kia engines for the 2012 Optima had been built on one engine line, while the Sonata engines had been built on both lines. Additional information was received at some point in time that a wet blast process was also introduced on each of the production lines, although at different times. Sufficient information was received to conclude that there was a reasonable basis in the production differences between the Sonata and Optima for the difference in warranty claim rates. The warranty claim rate for the Optima was shared by the coordinator with KMC Quality Assurance, KMC Overseas Service and the Quality Strategy Group. KMA's current information

is incomplete, but it expects to be able to provide a thorough description of the line 1/line 2 and wet blast issues by September 8<sup>th</sup>.

Thus, both KMC Quality Division and KMA concluded independently at the time that there was a significant warranty rate difference between the Sonata and Optima Theta II GDI engines, that this was attributable to the difference in engine production/cleaning, and that the Optima claim rate was too low on the frequency-severity scale to consider a safety recall action.

#### Overview of Potential Safety Recall Evaluation

In summary, the basic NHTSA formulation is to look for frequency of claims and compare that with the injury risk severity of those claims. For KMA, this means starting from KMA's evaluation of field issues, providing that evaluation to various KMC departments with responsibilities regarding recall issues, frequently exchanging several cycles of information between KMA and KMC, and then having KMC go through its evaluation levels, including comparing field information for Korea and other countries. The more unique factors with the Theta II engine were NHTSA's ongoing discussions with Hyundai due to Hyundai's existing Consent Order, the degree to which those were shared with KMC or treated as a separate Hyundai-NHTSA issue, and the fact that Hyundai's recall issue had an atypical engine production element.

The overall KMA to KMC general process can be concisely described as follows:

- Daily review of NHTSA VOQs regarding Kia vehicles including follow up and tracking for matching Consumer Affairs ("CA") files.
- Ongoing collection and review of all field information collected at KMA including CA files, warranty claims (warranty and goodwill), fleet quality reports, dealer communications (Techline), field reports, Product Quality engineering reports, Quality Information Reports ("QIRs") from KMA to KMC, lawsuits and legal claims.
- Follow up inspections of in-use customer and employee vehicles by KMA to develop a complete understanding of their technical and engineering condition.
- Review of TREAD data.
- Review of litigation and claim matters including expert or other specialized information.
- Possible simultaneous KMC evaluation of U.S. field data.
- Once potential safety defect issue is identified, cross-check with other departments for the same condition.
- Engineers conduct evaluations of KMA data to look for defect trends.
- Interdepartmental meetings under the supervision of Executive Director of Product Litigation and Regulatory Compliance to evaluate potential safety defects.
- Consultation with outside regulatory counsel regarding NHTSA policies and practices in evaluating specific potential defect issues, including review of opening and closing PEs and EAs and/or research re FMVSS and Federal Register histories.
  - Outside regulatory counsel consult with Office of Chief Counsel.
- As appropriate, the Executive Director of Product Litigation and Regulatory Compliance will discuss developing issues with the responsible coordinator

- All of these steps are independent of the work of the Product Quality Group at KMA which among other actions is responsible for generating Quality Information Requests to KMC. Any QIR may independently resolve a quality/safety issue.
- The coordinator advises a group of KMC departments on developments, typically including the HKMC Quality Strategy Group (also often referred to as the Quality Strategy Team], the KMC Overseas Service Department, and the KMC Quality Assurance Group. The KMC Quality Assurance Group would then assign the issue to one of the Quality Assurance Teams for evaluation. As of September 2015, one of the Quality Assurance Teams was for Powertrain.
- The assigned KMC Quality Assurance Team had the authority to research and investigate a potential safety issue. The investigation would involve the expertise of the relevant supplier, if a component or an assembly was at issue. Similarly, if a production issue was present, the quality engineers from the relevant production plant would be consulted. QST had members assigned to both Hyundai and Kia issues, and they would evaluate the safety and potential recall issues from KMC's perspective and evaluate if the issue might affect or have previously affected a sister company. As needed, they would also evaluate the possibility of recalls in Korea or other nations as well as administrative recall issues. One of the KMC departments would also begin to do an evaluation of U.S. data to analyze possible defect trends.
- In most cases, substantial efforts would be expended among KMA, the coordinator, the KMC departments and others (e.g., suppliers or manufacturing plants) before a firm understanding of the issue and a response was reached.
- KMC could decide to resolve the potential safety defect issue on its own. Otherwise, KMA would at some point make a recommendation to KMC as to a resolution. This recommendation from KMA could come quickly or take considerable time, and could involve many layers of evaluation and monitoring. These efforts are not typically reflected in formal document processing but rather are focused on cooperative information sharing and evaluations.

A decision to recall would eventually be referred up to the Vice President of the KMC Quality Division, but before then, the various communicating departments would try to reach agreement on resolving any issue which was particularly important or difficult.

Structurally, the Vice President of the KMC Quality Division would have the responsibility to make a recall decision and/or propose another type of field action. The key report to him in the recall decision evaluation process at KMC was the head of the Quality Assurance Group. Once presented with an issue, he typically assigned issues to the Powertrain Quality Assurance Team or one of the numbered Quality Assurance Teams (those other teams were organized on a plant basis). The head of the Quality Assurance Group might then further have one of his teams evaluate the issue, and then he would refer a recommendation up to the Vice President of the KMC Quality Division. In parallel, the Overseas Service Group would evaluate the data and the components from their viewpoint and consult with Quality Assurance. Also involved in the process was the Quality Strategy Team, which administers all recalls worldwide and helps direct

the flow of decisions, but also has responsibilities to evaluate prior and/or future recall actions by HMC.

As part of the decision-making by the Vice President of the KMC Quality Division, he would review all of the inputs which had been received from lower levels and would often consult with those departments as needed, including especially the Quality Strategy Team for coordination and implementation purposes, as well as communicating with the Senior Executive Vice President of the HKMC Quality Division.

It is important to note that in any given case, information could be developed and shared as needed, and there could be many loop backs to obtain additional information or conduct testing or evaluations. This narrative merely explains the Kia structure for making recall decisions.

#### Change in KMC/HKMC Recall Decision Making

In February 2016, HKMC's -- and thus KMC's -- organization for addressing recall decisions changed in relation to Powertrain issues. A Group decision was reached to better integrate powertrain and electrical issues in light of the developing age of artificial intelligence vehicles, and to also integrate the decisions for such issues for both Hyundai and Kia. An Electronics & Powertrain Quality Division was created to address quality issues for the powertrain function. This meant that the recall decisions process would no longer be directed up through the Vice President for KMC Quality Division, but instead would go to the HKMC Electrical Powertrain Division for evaluation. Final approval would come from the Executive Vice President of the HKMC Quality Division. Thus, his decision making period would have included the approval of warranty extensions for the Optima in June 2016 and the Sorento and Sportage in August 2016, as well as recall 17V224 on March 31, 2017.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA.

#### **REQUEST NO. 22:**

Provide a detailed narrative explanation of the processes, policies, practices, and/or procedures Kia Motors America had in place during the full time period that Theta II engines were being designed and produced for Kia to ensure that Kia Motors America had the necessary information from Kia Motors Corporation and Hyundai, from which Kia Motors America could adequately and timely make safety defect determinations regarding vehicles and equipment sold, leased or offered for sale or lease, in the United States.

#### **RESPONSE TO REQUEST NO. 22:**

KMA's response to Request No. 21 provides an integrated statement regarding KMA's and Kia's recall decision making processes and as it applies to the Theta II engine and thus includes the information requested in response to Request No. 22.

**REQUEST NO. 23:**

Provide a detailed narrative explanation of the processes, policies, practices, and/or procedures Kia had in place during the full time period that Theta II engines were being designed and produced for Kia to ensure that Kia had adequate internal information and channels of communication from which to adequately and timely make safety defect determinations regarding vehicles and equipment sold, leased, or offered for sale or lease, in the United States.

**RESPONSE TO REQUEST NO. 23:**

KMA's response to Request No. 21 provides an integrated statement regarding KMA's and Kia's recall decision making processes and as it applies to the Theta II engine and thus includes the information requested in response to Request No. 23.

**REQUEST NO. 24:**

To the extent not clearly, fully, and completely detailed in Kia's responses to other requests herein, provide a detailed narrative explanation of Kia Motors America's relationship, separately, with Kia Motors Corporation, Hyundai Motor America, Hyundai Motor Company, Hyundai Motor Group, and any other company or corporation that is part of the Hyundai Kia family of brands, as it relates to:

- a. Defect determinations; and
- b. The design, testing, material composition, manufacture, quality control, supply, installation, and analysis of Theta II engines.

**RESPONSE TO REQUEST NO. 24:**

KMA believes that items 24 a & b are appropriately covered in other responses to this Request. However, as Kia has discussed frequently with NHTSA, KMA is a direct marketplace competitor of HMA and their interactions are therefore highly limited, including regarding recall decision making and field actions. KMA only communicates on those issues as it would with another competitor. In addition, KMA is an importer and distributor and does not participate in or evaluate the design, testing, materials composition, manufacture quality control, supply, installation or analysis of the Theta II engines, except as their performance is reflected in U.S. field information. In that role, it can and does request information regarding the Theta II engine from time to time which might be provided by KMC from other Hyundai companies.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 25:**

In support of Kia's responses to Requests 22, 23 and 24, provide any charts, diagrams, plans, or other documents that show work-flow, communication-flow, or organization and/or reporting

structure as it relates to safety information collection and sharing within Kia Motors America, between Kia Motors America and Kia Motors Corporation, between Kia Motors America and Hyundai, and between Kia and Hyundai during the full time period that Theta II engines were being designed and produced for Kia.

**RESPONSE TO REQUEST NO. 25:**

There are no official company documents which are responsive to the Request. At NHTSA's request, KMA will create a chart that covers the overall Kia recall decision making process.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA.

**REQUEST NO. 26:**

Provide copies of any and all communications (documents, or otherwise) between Hyundai and Kia relating to the following:

- a. Any problems, corrections, changes or alterations, malfunctions, or other concerns relating to any production line(s) that produce(d) Theta II engines for Kia;
- b. Any problems, corrections, changes or alterations, malfunctions, or other concerns relating to any production line(s) that produce(d) Theta II engines for Hyundai;
- c. Any different procedures for assembly line(s) that produced Theta II engines for Kia versus assembly line(s) that produced Theta II engines for Hyundai;
- d. Connecting rod bearing failures in Theta II engines produced by HMMA that were installed in Kia vehicles;
- e. Hyundai's evaluation of a potential safety-related defect and determination that a safety-related defect existed in the vehicles identified in Hyundai's September 10, 2015 recall (15V-568), including but not limited to, Hyundai's decision to limit that recall to Theta II equipped Sonata's built between December 11, 2009 and April 12, 2012;
- f. The April 15, 2015 class action complaint filed against Hyundai in the Northern District of California containing allegations that the Theta II engines installed in certain Hyundai vehicles were defective;
- g. Hyundai's warranty extension program for MY 2011-2014 Sonata vehicles manufactured at HMMA;
- h. Kia's warranty, goodwill program, and other costs stemming from the defect;
- i. The June 2, 2016 class action complaint filed in the Central District of California containing allegations that the Theta II engines installed in certain Kia vehicles were defective;
- j. Kia's offer, made on or about June 10, 2016, to provide an extended warranty to owners of certain Theta II equipped Kia vehicles;
- k. Kia's assessment of the safety consequences, or the lack thereof, of the defect;

- l. Hyundai's assessment of the safety consequences, or lack thereof, of the defect in the various Theta II engines; and
- m. Allegations by any current or former Hyundai or Kia employee of a Theta II engine defect.

**RESPONSE TO REQUEST NO. 26:**

The response to this request is not complete. Pursuant to the extension granted to KMA by the Office of Chief Counsel on August 18, 2017, the remaining requested communications will be provided on September 8, 2017. Communications collected and identified thus far as being responsive to this request are being provided electronically and submitted contemporaneously with this response.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA and KMMG.

**REQUEST NO. 27:**

Provide an Excel spreadsheet containing an accounting of all meetings, including, but not limited to, in person meetings, conference calls, and web meetings, held between Kia and Hyundai relating to the defect including the date, time, place, participants invited and subject matter of the meeting.

**RESPONSE TO REQUEST NO. 27:**

The spreadsheet responsive to this request is being provided electronically and is submitted contemporaneously with this response.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA.

**REQUEST NO. 28:**

Describe in detail Kia Motors America's process for employees to report concerns regarding actual or potential safety-related defects or actual or potential noncompliance with Federal Motor Vehicle Safety Standards, along with Kia Motors America's process for evaluating such reports. Your answer should describe whether Kia employees outside the United States are able to report concerns to Kia Motors America using this process, or whether some alternative process is available for such employees.

**RESPONSE TO REQUEST NO. 28:**

KMA employees can directly communicate with employees in various departments who are tasked with monitoring vehicle performance or vehicle safety (e.g., Service, Consumer Affairs, Legal, etc.). All KMA employees have universal access to KMA's Legal Department Advice Request (LDAR) System to communicate to the Legal Department any concerns, including those relating to safety. To the extent a safety related concern is reported, the company prioritizes the evaluation of these concerns and directs an assessment to the appropriate engineering resources.

In addition to the above, all KMA employees have access to Kia Motors America, Ethics and Compliance Hotline which is hosted by a third party provider. The Hotline can be accessed on an anonymous basis if desired, by telephone or the Internet. Such reports are made available only to specific individuals within the company who are charged with evaluating the report, based on the type of concern reported. Reports received from KMA employees are initially concurrently evaluated by a member of the KMA Legal Department and Human Resources Department. Members of the legal department reviewing these reports have extensive experience in analyzing defect complaints and ensuring a response commensurate with the seriousness of the complaint.

Finally, while there is no process specifically set up for people outside the U.S., there is no geographic bar to reporting on the ethics hotline from outside of the U.S.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 29:**

Describe in detail any allegations of a defect made by any current or former Hyundai or Kia employee of a Theta II engine defect of which Kia was aware prior to March 31, 2017. Describe in detail the steps Kia took to evaluate those allegations, including the date(s) on which Kia learned of the allegations, the date(s) on which Kia took steps to evaluate the allegations, and Kia's evaluation of the allegations. Provide a copy of all related documents, including any documents created or collected by the employee or former employee and provided to Kia regarding the allegations. In the narrative, clearly identify and note the date that any such documents were received from an employee or former employee.

**RESPONSE TO REQUEST NO. 29:**

The only allegation of a Theta II engine defect made by a Kia or Hyundai employee of which Kia is aware is that made by [REDACTED]. Mr. [REDACTED] was employed as a member of HKMC's Quality Strategy Team between February and September of 2015. Mr. [REDACTED] allegation first came to Kia's attention when it was the subject of reports in the Korean media in September 2016.

Based on media reports and materials published by Mr. [REDACTED], which consisted of edited internal documents, Kia understood Mr. [REDACTED] to be alleging that the Theta II engine suffered from a

design defect which Hyundai and Kia had failed to disclose and which Mr. [REDACTED] contended should have resulted in the recall of all Theta II engines. Mr. [REDACTED] referred to debris in engine oil and changes in the Theta II's connecting rod and connecting rod bearing as being indicative of the alleged design defect. Mr. [REDACTED] provided Kia with no documents to support his allegation.

When Mr. [REDACTED] made his allegations to the media in 2016, Kia was already aware of the claims rates and VOQs associated with Theta II engines manufactured by Hyundai for Kia vehicles and had been monitoring them while investigating their possible causes since September 2015. Kia's review of Mr. [REDACTED] 2016 design defect allegation concluded that it presented no facts which had not already been investigated by Kia or were not already a subject of Kia's continuing review.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information to respond to this request was also provided by KMA.

**REQUEST NO. 30:**

List each date between June 2015 and March 31, 2017 on which Kia's recall decision-making body discussed an actual or potential safety-related Theta II engine defect. For each date listed, provide a detailed explanation of the discussion and provide a copy of any presentation materials and any meeting notes.

**RESPONSE TO REQUEST NO. 30:**

As set forth in Kia's response to Request No. 21, Kia's recall evaluation process involves a wide range of departments at both KMA and KMC which develop and share information to evaluate potential safety defects and to permit KMC to determine whether a safety defect recall is appropriate in any given circumstance. Kia has no dedicated recall decision-making body.

There were several occasions in 2015, 2016, and 2017 on which the subject of actual or potential safety related Theta II issues were discussed by the responsible departments at KMA and KMC, as follows. Documentation of such discussions is produced contemporaneously.

On October 6, 2015, the Powertrain Quality Team summarized its review of Kia's field measures for the Optima (QF) following Hyundai's recall of the Sonata based on the Theta II con-rod bearing seizure issue. The review included a comparative analysis of Sonata '11-'12 MY and Optima '12 MY claims rates, and a comparison of NHTSA VOQs for both vehicles by the Quality Strategy Team. The review noted that Hyundai's 573 safety recall report identified the basis for the Sonata recall as the presence of metal debris generated by factory machining operations of the crankshaft during the period of production of the vehicles subject to the recall, and information provided by KMMG that production practices for the line which produced engines for the Optima differed from those on the line which produced the engines for the Sonatas subject to the recall. The review concluded that continuous monitoring of the QF model was appropriate.

On October 13, 2015, KMC's Quality Assurance Group also summarized its review of improvement measures in relation to North America Theta engine noise. The review summarizes the Hyundai Sonata YFa engine recall by MY and number of affected vehicles, identifies con-rod bearing wear and seizure due to lack of structural robustness and poor customer oil maintenance practices as causes of engine noise, compares high YFa claims rates with lower Optima QF claims rates, and provides details of improvements in con-rod materials and structure as remedies. The review states the bases for continuing field monitoring of the QF engine, and recommends further review June 30, 2016 for determination of a potential field remedy.

On May 10, 2016, a video conference was held in which the Quality Strategy Team, KMC's Overseas Technology Team and the Powertrain Quality Assurance Team 2 participated to consider and review a proposed warranty extension for the Optima QF, including at the request of the Overseas Service Technology Team a review of Kia's field action plan and potential recall of certain Optima QF model years following the Sonata YFa recall. The contents of the review presented at the video conference included a summary of Kia vehicles incorporating the Theta II engine, a thorough review of claims rates and seizure occurrences by model, mileage and period of use, expressed concern that a recall of the Optima QF would expand to an unwarranted recall of other Kia vehicles, and concluded that maintenance of general warranty repair with a subsequent review of a warranty repair extension was the optimal course of action.

On May 20, 2016, a video conference with supporting graphic presentation took place in which the Overseas Technical Team, KMMG Quality Assurance, the Quality Strategy Team, and PT Engineering Design Improvement Team participated to consider and review the potential for a warranty extension for the Optima QF and TF. Each of the participating teams provided opinions and recommendations with regard to maintaining the existing field action and warranty extension for the Optima QF, and expanding the warranty extension to the Optima TF. The meeting resulted in no definitive conclusion due to the Overseas Technical Service Team's wish to consider the matter further.

On May 30, 2016, Je, Hae Dong (Quality Strategy Team General Manager), [REDACTED] (Quality Strategy Team General Manager), Cho, Suk Koo (PT Quality Group Director), and Lee, Cheol Gu (Overseas Technical Service Team General Manager) met online to consider the status of NHTSA VOQs for the Optima TF and QF and claims analysis, and the various recommendations raised at the previously summarized video conference. At the meeting's conclusion it was determined to proceed with a warranty extension for the Optima TF and QF for the 2011-2014 model years and to continue to closely monitor VOQs and claims rates.

On July 28, 2016, Jurassic Park (KMA) and Seung Min Lee (KMC Legal Counsel) participated in a meeting with Kia's outside legal counsel to discuss a pending class action related to the alleged Theta II design defect.

On December 14, 2016, Jurassic Park (KMA), Hyang Lee (Quality Strategy Group), SangYeon Kim (Quality Strategy Team), Suk Koo Cho (PT Quality Group) and Gwang Gyun Hong (PT

Quality Assurance Team 2) met to review and discuss customer complaints and Theta II VOQ statistics, by Theta II engine variant, month of occurrence, Kia model, model year, and potential safety/severity classification.

On February 23, 2017, management of Hyundai and KMC met to discuss the February 2017 NHTSA/Hyundai/KMA joint telephone conference.

On March 9, 2017, members from the Quality Strategy Group, PT Integration Development Group, PT Design Improvement Team, Gasoline Engine Development Group, Gasoline Engineering Design Team 2, PT Quality Assurance Teams 1 and 2 and others participated in a meeting to review and discuss Theta II engine claim rates by model year, by place of production, and by reference to dates of production improvements made.<sup>7</sup>

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA.

**REQUEST NO. 31:**

State the date on which Kia first became aware that Hyundai was investigating a potential safety-related defect in Theta II engines. Provide a detailed description of all information regarding the potential safety-related defect of which Kia was aware prior to September 10, 2015, along with any actions Kia took prior to September 10, 2015 to investigate whether a safety-related defect existed in Theta II engines installed in Kia vehicles.

**RESPONSE TO REQUEST NO. 31:**

Kia is still researching this issue and the details regarding the engine assembly line procedures and anticipates updating this response by September 8, 2017. KMC first became aware of some aspect of NHTSA's interest in the Theta II engine as a potential safety defect issue on or shortly after July 21, 2015, when HKMC began an all-vehicle VOQ analysis initiated by HMC. Thereafter, on about July 29, 2015, KMC conducted an XMa/QF/TF [Sorento/Optima US/Optima Korea] connecting rod defect rate analysis. Based on the low claims rates identified, KMC elected to take no further action.

After Hyundai decided to conduct a recall in September 2015, KMC again reviewed such data and identified a very low warranty claim rate. In September, QST identified engine issues underlying the Hyundai recall with Kia and asked whether Kia should consider a warranty extension program. By October 6, 2015, KMC had completed a further field action review for the Optima, confirmed to its satisfaction that no design issue was involved, and decided that no recall or other field action was warranted. KMC also determined that a warranty extension was not warranted at this time and scheduled a full review for no later than June 2016.

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<sup>7</sup> The names of the participants have been identified in the response to Request No. 27.

KMA first became aware of the Hyundai Sonata recall decision at about the time the decision was made, on about September 4, 2015. KMA promptly began a field data review and eventually reached the same conclusion that no action was warranted due to the extremely low KMA Optima warranty claim rate related to HMMA engines installed in KMMG vehicles. KMA specifically considered and rejected QST's suggestion to immediately initiate a warranty extension. KMA provided KMC with its recommendation to monitor future field data.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA.

**REQUEST NO. 32:**

Describe in detail the actions Kia took to "check[] Theta engine manufacturing process for Optima on separate assembly line and identifie[d] different procedures and no issues," as referenced in the "Chronology" section of Kia's March 31, 2017 DIR for 17V-224. Further, explain the "different procedures" identified that resulted in a determination that "no issues" existed.

**RESPONSE TO REQUEST NO. 32:**

Kia is still researching this issue and the details regarding the engine assembly line procedures and anticipates updating this response by September 8, 2017. To date, KMA has determined that, KMA caused contacts to be made with KMMG in mid-September 2015 to obtain information on the differences between the production elements for the Sonata and Optima. KMMG in turn contacted HMMA. In about late September 2015, KMA received feedback information that the Optima engine was manufactured on a single line, while the Sonata engine for the relevant time period was manufactured on both engine lines at HMMA. Additional information was received at some point identifying that the two engine lines had received wet-blasting equipment and procedures at different times, but it is currently unclear when the relevant personnel at KMA and KMC learned this.

Information for this request was provided by KMA and KMMG.

**REQUEST NO. 33:**

Describe how Kia learned, on May 5, 2016, "of Hyundai Sonata warranty extension program for next two model years after recall (2013MY-2014MY)," as referenced in the "Chronology" section of Kia's March 31, 2017 DIR for 17V-224.

**RESPONSE TO REQUEST NO. 33:**

KMC was aware by October 2015 that Hyundai was evaluating and/or planning on doing a warranty extension for additional Sonata model years in the U.S. Hyundai's warranty extension with a copy of the planned customer letter was reported by QST on May 5, 2016 Korea time,

which was May 4, 2016 in California to, among others, the KMC QA Team Leader, the KMC Overseas Service Engineering, the KMA Senior Executive Coordinator and KMA's Executive Director for regulatory matters. QST advised that Kia needed to do customer notification and warranty extension to forestall customer complaints.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA.

**REQUEST NO. 34:**

Describe in detail the steps that Kia took as part of "monitoring" the Theta II engines following Translead's identification of an "oil delivery issue" as referenced in the "Chronology" section of Kia's March 31, 2017 DIR for 17V-224.

**RESPONSE TO REQUEST NO 34:**

Hyundai Translead engine evaluations were provided to Kia in April 2016 which were then evaluated in the U.S. in coordination with other KMA field information. Consistent with that information and Hyundai's decision to initiate a warranty extension, field monitoring was intensified.

The process of monitoring is an ongoing activity, including a daily review of VOQs by multiple persons, as well as ongoing reviews by regulatory engineers, the CA department, and outside regulatory counsel, as directed. However, some highlights of this monitoring can be identified as:

- 4/11/16: CA/VOQ complaint count for 2011-2014MY Optima for engine failure
- 4/28/16: VOQ analysis for 2011-2014MY Optima, Sportage, Sorento
- 5/31/16: Engine replacement claim analysis for all engine types (Theta II, NU, Gamma, Beta, Lambda)
- 12/7/16: (1) warranty claim analysis for 11-16MY Optima, Sportage and Sorento and (2) VOQ count for Optima, Sportage and Sorento.

The information to respond to this Request was provided by KMA.

**REQUEST NO. 35:**

Explain in detail why Kia decided to extend "warranty coverage to all 2011-2014 MY Optima owners (original and used) with 2.0L and 2.4L GDI engines to 10 years or 120,000 miles," and later to MY 2011-2014 Sportage and 2012-2014 Sorento owners, as referenced in the "Chronology" section of Kia's March 31, 2017 DIR for 17V-224.

**RESPONSE TO REQUEST NO. 35:**

The background for the warranty extension was Kia's general understanding that Hyundai and NHTSA had agreed to certain warranty extensions as being appropriate due to lower claims rates for those models compared to the recalled vehicles. However, Kia's analysis of the situation was then reviewed based on the desired NHTSA frequency/severity analysis. Specifically, Kia understood that the frequency rate for the Optima was increasing, but that there had been no fatalities, no injuries and in fact no accidents. In addition, while a review of customer comments in VOQs, CA reports and dealer tech notes in warranty claims showed understandable unhappiness with the engine problems, it was also clear that there was a core outspoken set of comments which focused on the cost of repairs. In other words, customers were reporting dissatisfaction, whether in a purported safety complaint to NHTSA or to KMA Consumer Affairs Department, when they found that the engine repair would not be covered any longer under warranty. Experience has shown that the most credible complaints are from customers who will identify a potential safety issue when their vehicle is being repaired at the manufacturer's expense, and the least credible are those with a large expense outside warranty. In addition, experience has shown that customer complaints regarding stalling issues tend to be overstated and typically use comments such as "almost" "could have" "if" and so on. In relation to the Theta II engine, the level of even those comments was in fact limited. It was clear -- based on detailed reviews of such customer statements and Kia's experience with such issues -- that customers were getting sufficient warning and mobility to move their vehicles to a safe location where they could make their cell phone calls to Kia's 800 number or elsewhere for assistance.

Still, the number of customer complaints was increasing and it was predictable that the complaints would continue to grow for customer financial reasons as warranties expired, due first to vehicles now moving to second owners and the used vehicle customers not having the powertrain warranty, but also as vehicle powertrain warranties for original owners for 10 years/100,000 miles timed or mileage out. KMA determined that action was needed in order to preserve customer satisfaction. In addition to NHTSA's role in the extended warranty, an extended warranty was also recommended both by QST and then later KMA, and then agreed upon at KMC for June 2016, as the best way of reaching a large customer population with meaningful long term information -- including the importance of responding to engine noise deterioration to obtain an early predictable repair.

When claim rates for the Sorento and Sportage were identified as also rising, extended warranties were then also approved for those models in August 2016.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA. Information for this request was also provided by KMA.

**REQUEST NO. 36:**

Provide a detailed narrative explanation for the basis of Kia's statement in its March 31, 2017 DIR for 17V-224 that the estimated percent of the recall population with the defect is 2%.

**RESPONSE TO REQUEST NO. 36:**

The estimated 2% of the recall population with the defect was determined by KMC through a projection of stalling claims over a six (6) year vehicle usage time period. Below is a summary of that projection:

| <b>Model</b> | <b>Claim Rate</b> | <b>Use ~<br/>1 year</b> | <b>Use ~<br/>2 year</b> | <b>Use ~<br/>3 year</b> | <b>Use ~<br/>4 year</b> | <b>Use ~<br/>5 year</b> | <b>Use ~<br/>6 year</b> |
|--------------|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>QF</b>    | Volume            | 350,235                 | 350,235                 | 350,235                 | 350,235                 | 350,235                 | 350,235                 |
|              | Stall Cases       | 27                      | 108                     | 358                     | 677                     | 939                     | 953                     |
|              | %                 | 0.01%                   | 0.03%                   | 0.10%                   | 0.19%                   | 0.27%                   | 0.27%                   |
| <b>SL</b>    | Volume            | 9,938                   | 9,938                   | 9,938                   | 9,938                   | 9,938                   | 9,938                   |
|              | Stall Cases       | 1                       | 4                       | 9                       | 21                      | 38                      | 43                      |
|              | %                 | 0.01%                   | 0.04%                   | 0.09%                   | 0.21%                   | 0.38%                   | 0.43%                   |
| <b>TF</b>    | Volume            | 114,166                 | 114,166                 | 114,166                 | 114,166                 | 114,166                 | 114,166                 |
|              | Stall Cases       | 12                      | 27                      | 72                      | 209                     | 391                     | 507                     |
|              | %                 | 0.01%                   | 0.02%                   | 0.06%                   | 0.18%                   | 0.34%                   | 0.44%                   |
| <b>XMa</b>   | Volume            | 179,185                 | 179,185                 | 179,185                 | 179,185                 | 179,185                 | 179,185                 |
|              | Stall Cases       | 15                      | 41                      | 154                     | 335                     | 490                     | 522                     |
|              | %                 | 0.01%                   | 0.02%                   | 0.09%                   | 0.19%                   | 0.27%                   | 0.29%                   |
| <b>Total</b> | Volume            | <b>653,524</b>          | <b>653,524</b>          | <b>653,524</b>          | <b>653,524</b>          | <b>653,524</b>          | <b>653,524</b>          |
|              | Stall Cases       | <b>55</b>               | <b>180</b>              | <b>593</b>              | <b>1,242</b>            | <b>1,858</b>            | <b>2,025</b>            |
|              | %                 | <b>0.01%</b>            | <b>0.03%</b>            | <b>0.09%</b>            | <b>0.19%</b>            | <b>0.28%</b>            | <b>0.31%</b>            |

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA.

**REQUEST NO. 37:**

Provide a detailed narrative explanation of the Theta II engine defect resulting in the recall of approximately 171,000 vehicles in South Korea as announced by the South Korean Ministry of Land, Infrastructure (MOLIT) and Transport on April 7, 2017 including, but not limited to: a timeline of actions, communications, and events leading to the defect and recall decision beginning from the first report or awareness of a problem through the present; an explanation of efforts undertaken to identify and analyze the problem prior to determining a defect; and the root cause of the defect. Provide all supporting documentation and any documentation that was submitted to MOLIT.

**RESPONSE TO REQUEST NO. 37:**

In or about September of 2016, a former employee of Hyundai reported to the Korean media that the Theta II engine suffered from an undisclosed defect.

By letter dated October 10, 2016, the Korea Automobile Testing & Research Institute (“KATRI”) advised Hyundai Motor Company (“HMC”) and Kia Motors Corporation (“KMC”) (collectively “HKMC”) that it was initiating an investigation of reports of Theta II engine stalling events.<sup>8</sup> KATRI requested that it be provided with materials related to manufacturer investigations of domestic engine stalling events, including technical drawings, photos, customer complaints, vehicles and Theta II engine variants involved in incidents, domestic sales figures, and changes in engine design and materials.

On October 25, 2016, KMC submitted in reply domestic production data for Theta II engine equipped vehicles, the K5 (TF) (Optima), K7 (VG), and Sportage (SL). KMC noted that durability tests of the Theta II engine disclosed debris in the crank shaft due to cleanliness management problems in United States engine manufacturing plants, but that this problem did not affect domestically produced Theta II engines.

By letter dated October 26, 2016, KATRI requested HKMC to provide additional information identifying all vehicles equipped with the Theta II engine and dates of engine production, and with reference to the recall in the United States, identification of the vehicles affected by the recall, and specifically whether the Theta II MPI was produced in North America.

KMC responded by letter dated October 28, 2016, to KATRI and to the Ministry of Land Infrastructure and Transport (“MOLIT”), with production data for all Theta engines by engine classification (e.g., Theta II 2.4 GDI), engine designation (e.g., G4KJ), production period for each, and model vehicles in which installed, noting that the Theta II MPI was produced in North America but was not subject to U.S. recall.

By letter to HMC and KMC dated December 19, 2016, KATRI requested the following additional materials: production data for all Theta engines manufactured in the United States, by engine classification, engine variant or form, production periods for each, and numbers of each engine produced; all materials submitted to NHTSA in connection with the 2017 recall, including whether recalled vehicles had engine specifications identical to the recalled Hyundai Sonata; a statement of basis for the position that the Sonata recall in the United States was irrelevant to engines produced in Korea; instances in which Theta II engine fires co-occurred with engine damage; and customer complaints and repairs.

By letter dated December 30, 2016 and attachments, HKMC provided KATRI with production data for Theta II engines manufactured for Hyundai and Kia in both Korea and the United States by engine manufacturing plant, production period, vehicle type in which installed and numbers

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<sup>8</sup> Although the letterhead purports to be from Korea Transportation Safety Authority (“KoTSA”), that is the name of the parent organization for KATRI. KMC has advised KMA that in fact all communications were with KATRI, regardless of the letterhead used. Similarly, KATRI purported to communicate with the Hyundai Motor Group (“HMG”). HMG is not a legal corporate entity, but instead a conglomerate of businesses centered in the automotive section. Therefore, all such descriptions in this response refer to the Hyundai Motor Company and Kia Motors Corporation (collectively, “HKMC”).

of vehicles produced for each vehicle type. HKMC also provided engine repair summaries by vehicle identification number, Theta II engine type, production date, repair date and mileage.

By letter dated January 26, 2016, addressed to KATRI, HKMC provided supplemental information concerning Sonata and Optima production in the United States; number and type of vehicles subject to recall in the United States; numbers of engine inspections and engine exchanges pursuant to the US recall; a profile of customer complaints; cause of bearing failure analysis; a monthly claim analysis for the Hyundai Sonata and correlation with engine parts design/material changes; a summary of Korean and North American claims and involved vehicle types; a summary of Theta II parts design/material changes; and vehicle repair records by vehicle model and Theta II engine variant. HKMC reported that it was unable to provide data regarding co-occurrence of engine damage and engine fire, and stated that the comparison of engine failure rates with design/material changes reflected that cleanliness improvements in the manufacturing process was effective in lowering the claims rate where design and material changes were not.

By letter dated February 28, 2017, KATRI requested that HKMC provide, in connection with the U.S. Sonata recall and submissions to NHTSA, an explanation of the estimate of 2% of vehicle population as affected by defect, and whether any data existed to correlate instances of engine failure with illumination of the engine warning light. KATRI additionally requested U.S. and Korean Theta II engine production data with correlations of engine failure data; identification of vehicle models using the Theta II crank axis and comparison to other manufacturers; time of incorporation of wet blast procedure on U.S. and Korean engine production lines and production data for vehicles by engine variant before wet blast incorporation; explanation of differences between Theta II engine and improved Theta II engine, including a summary of any changes in crank axis and bearing design; and details (by vehicle identification number, mileage, engine variant, production date, claim date, and mileage) of all customer claims.

On March 15, 2017, HKMC responded with supporting data to KATRI. Throughout this dialogue, the low numbers of domestic complaints concerning Theta II engine failures in Kia vehicles sold in South Korea suggested that any engine issues were attributable only to irregular machining debris deposits. In light of Korean media and the Korean public's identification of Korean manufactured Theta II engines, and to assure Korean consumers that their concerns were being treated identically to those of U.S. consumers, KMC elected to recall all Optima [K5(TF)] 2.4L GDI and 2.0L (T) GDI, K7(VG) 2.4L GDI, and Sportage (SL) 2.0L (Turbo) GDI vehicles which had been manufactured in Korea between May 2010 and August 2013, February 2011 and August 2013, and March 2011 and August 2013, respectively.

On April 6, 2017, KMC delivered its Recall Report and Explanation to MOLIT. The report cites as the cause for the recall of the designated vehicles the presence of metallic engine debris caused by "unsatisfactory management of engine plant crank shaft oil hole machining equipment."

On April 28, 2017, HKMC reported in response to KATRI's inquiry of April 14, 2017, that metallic debris affecting the connecting rod bearing in the engines of the vehicles subject to recall which were manufactured at Kia's Hwasung plant, generated by oil hole drilling in the crankshaft, was improved in August 2013 by reducing the time between changes of the oil hole machining tool and the addition of an endoscope inspection process. HKMC noted that the Theta II U.S. recall in 2017 was unrelated to the basis for the Korea recall, as the former was attributable to uneven machining on the crank shaft pin surface, resulting in early bearing wear and engine noise.

KMA requested this information from HKMC Legal. They obtained and provided the information from KMC to KMA.

Affidavit of Mark Goldzweig in Support of Kia Motors America, Inc.'s Response to NHTSA  
Special Order RQ 17-003, Dated August 25, 2017

I, Mark Goldzweig, declare,

I am Executive Director and Associate General Counsel of Kia Motors America, Inc. (KMA) and am responsible for supporting the company in preparing its responses to NHTSA Special Order RQ 17-003. I have in coordination with other company in house and outside counsel, and based on my requests for support to counsel from other Kia and Hyundai Kia Motor Group companies, undertaken and directed inquiries reasonably calculated to assure that the answers and production of documents are complete and correct to the best of my ability. Since such inquiries have extended beyond KMA, I lack direct personal knowledge of all of the steps undertaken by counsel for such other companies, but we have worked diligently to assure that all information has been requested and, as necessary, followed up on. We have caused the documents requested by NHTSA to be searched for diligently and for information and documents responsive to this Special Order to be produced to NHTSA in a timely fashion in the formats requested by NHTSA.

Executed this 25<sup>th</sup> day of August, 2017 at Irvine, California. I declare under penalty of perjury of the laws of the United States that the foregoing is true and correct.



Mark Goldzweig