



Kia America, Inc.
Corporate Headquarters
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VIA ELECTRONIC SUBMISSION

July 20, 2022

Stephen A. Ridella, Ph. D, Office Director
Office of Defects Investigation
U.S. Department of Transportation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, S.E.
Washington D.C. 20590

Re: **Engineering Evaluation (EA21-003);
Non-Crash Fires (MY) 2012-2015 Kia Rio and 2011 Kia Sorento**

Dear Dr. Ridella:

This letter contains Kia's supplemental responses to Request No. 2-9, 12-17 and 19 of your letter dated April 25, 2019 (Reference NEF-103ndo/EA21-003) pursuant to the latest extension granted by Peter Kivett on Kia on July 5, 2022.

REQUEST NO. 1:

State, by model and model year, the number of subject vehicles, separately by subject scope and subject recall vehicles, Kia has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Kia, state the following:

- a. Vehicle identification number (17-character VIN);
- b. Make;
- c. Model;
- d. Model Year;
- e. Engine (by type, displacement and company engine code);
- f. Whether the recall vehicle is covered by Recall(s) 15V-568, 17V-226, 20V-746, and/or 21V-727 and/or the Knock Sensor Detection System (KSDS) campaign(s) (e.g., Campaign # PI1802), and if so, specifically identify the recall(s) and/or campaign;
- g. Remedy/repair date(s) of vehicle for each the above-mentioned recall(s)
- h. Remedy/repair date(s) of vehicle for KSDS campaign;
- i. Date of manufacture (MM/DD/YYYY);
- j. Date warranty coverage commenced (MM/DD/YYYY); and
- k. The State in the United States where the vehicle was originally sold or leased, or delivered for sale or lease (postal abbreviation).

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

For each vehicle model, provide a separate table in Microsoft Access 2010, or a compatible format, entitled “PRODUCTION DATA [Scope or Recall Vehicles].” A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

RESPONSE TO REQUEST NO. 1:

A chart summarizing the total number of Subject Vehicles broken down by model and model year is being provided. **TAB 1.** A list of these vehicles is provided in Microsoft Access and titled “PRODUCTION DATA_SCOPE VEHICLES” and “PRODUCTION DATA_RECALLED VEHICLES” and is submitted contemporaneously with this response.

The source of the information submitted in response to this request is both Kia America, Inc. and Kia Corporation.

REQUEST NO. 2:

State, by model, model year, the number of each of the following, received by Kia, or of which Kia is otherwise aware, which relate to, or may relate to, any of the alleged defects in the subject scope vehicles:

- a. Consumer complaints, including those from fleet operators;
- b. Field reports, including dealer field reports;
- c. Reports involving a fire, crash, injury or fatality;
- d. Property damage claims;
- e. Third-party arbitration proceedings where Kia is or was a party to the arbitration; and
- f. Lawsuits, mediations, or arbitrations both pending and closed, in which Kia is or was a defendant, codefendant, or respondent.

For subparts “a” through “f,” state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items “c” through “f,” provide 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. For items “e” and “f” identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

RESPONSE TO REQUEST NO. 2:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 2:

A chart summarizing the total of each of the items requested in 2(a) through (f) for the subject scope vehicles is submitted contemporaneously with this response. **TAB 15.** Kia's assessments are included in the Request Number Two Data files submitted in response to Request No. 4.

The source of the information submitted in response to this request is both Kia America, Inc.

REQUEST NO. 3:

State, by model, model year, the number of each of the following, received by Kia, or of which Kia is otherwise aware, which relate to, or may relate to, any of the alleged defects in the subject recall vehicles:

- a. Consumer complaints, including those from fleet operators;
- b. Field reports, including dealer field reports;
- c. Reports involving a fire, crash, injury or fatality;
- d. Property damage claims;
- e. Third-party arbitration proceedings where Kia is or was a party to the arbitration; and
- f. Lawsuits, mediations, or arbitrations both pending and closed, in which Kia is or was a defendant, codefendant, or respondent.

For subparts "a" through "f," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "f," provide 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. For items "e" and "f" identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

RESPONSE TO REQUEST NO. 3:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 3:

A chart summarizing the total of each of the items requested in 2(a) through (f) for the subject

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

recall vehicles is submitted contemporaneously with this response. **TAB 16.** Kia's assessments are included in the Request Number Two Data files submitted in response to Request No. 4.

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 4:

Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2 or No. 3, state the following information:

- a. Kia's file number or other identifier used;
- b. The category of the item, as identified in Request No. 2 or 3 (i.e., consumer complaint, field report, etc.);
- c. Vehicle owner or fleet name (and fleet contact person), email address and telephone number (please use distinct fields for each data type);
- d. Vehicle owner or fleet street address, city, state (postal abbreviation), and ZIP code (please use distinct fields for each data type);
- e. Vehicle's 17-character VIN;
- f. Vehicle's make, model and model year (please use distinct fields for each data type);
- g. Vehicle's mileage at time of incident;
- h. Incident date (MM/DD/YYYY);
- i. Report or claim date (MM/DD/YYYY);
- j. Whether a crash is alleged;
- k. Whether a fire is alleged;
- l. Whether property damage is alleged;
- m. Number of alleged injuries, if any; and
- n. Number of alleged fatalities, if any.

For this request, provide the information separately for subject scope vehicles and subject recall vehicles in Microsoft Access 2010, or a compatible format, entitled "REQUEST NUMBER TWO DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

RESPONSE TO REQUEST NO. 4:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 4:

A separate list of the responsive communications for the subject scope and subject recall vehicles is provided under the category "REQUEST NUMBER TWO DATA" and is submitted contemporaneously with this response.

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 5:

Produce copies of all documents related to each item within the scope of Request No. 2 and No. 3. Organize the documents, using Kia's file number in Request No. 4, separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Kia used for organizing the documents. Describe in detail the search methods and search criteria used by Kia to identify the items in response to Request No. 2 and No. 3.

For this request, provide the information separately for subject scope vehicles and subject recall vehicles.

RESPONSE TO REQUEST NO. 5:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 5:

Copies of the documents responsive to Request Nos. 2 and 3 are organized electronically in folders titled by Subject Scope Vehicles and Subject Recall Vehicles. Each folder contains copies of the responsive Consumer Assistance Center Case Reports (CA's), Technical Assistance Center Case Reports (Techlines), Field Reports, Lawsuits & Arbitrations, including documents related to those cases, if any. Any document associated with a particular Kia file is named by the file number assigned to it by Kia as identified in Request No 4(a).

Kia's search included all CA's, Field Reports and Techline Reports generated from April 1, 2019 through April 25, 2022 that were TREAD coded for fire. In addition, separate searches using the words "smoke" and "flame", "smoke" and "melt", "smoke" and "burn", and "melt" and "burn" were also conducted. Those cases were then reviewed for responsiveness. With respect to CA reports, Kia is not always able to extract incident date information in an automated manner from the source system. Kia has included incident date information where it can be discerned based on its review of the case any other available data. As to lawsuits and arbitrations, Kia's search included Complaints, Claims and Arbitrations involving an allegation of engine compartment fires in the subject scope and subject recall vehicles of which Kia received notice of from April 1, 2019 through April 25, 2022. Those cases were then reviewed to determine whether any of the engine compartment fire may have been caused by or alleged to have been caused by an engine failure. Kia notes that it has included incidents where there may be insufficient facts to either conclude that the fire was due to an engine failure or not.

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 6:

State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Kia to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

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

- a. Kia's claim number;
- b. Vehicle owner or fleet name (and fleet contact person), email address and telephone number (please use distinct fields for each data type);
- c. Vehicle owner or fleet street address, city, state (postal abbreviation), and ZIP code (please use distinct fields for each data type);
- d. 17-character VIN;
- e. Repair date (MM/DD/YYYY);
- f. Vehicle mileage at time of repair;
- g. Repairing dealer's or facility's name, telephone number, city and state or ZIP code (please use distinct fields for each data type);
- h. Labor operation number(s);
- i. Problem code(s);
- 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, entitled "WARRANTY DATA_Scope Vehicles." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

RESPONSE TO REQUEST NO. 6:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 6:

A list of warranty claims identified as a result of the search specified in Kia's response to Request No. 8 is provided under the category "WARRANTY DATA_SCOPE VEHICLES". In addition, Kia is also providing a list of goodwill claims approved by Kia's Consumer Affairs Department under the category "WARRANTY DATA 2_SCOPE VEHICLES." Both Access files are submitted concurrently with this response.

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 7:

State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Kia to date that relate to, or may relate to, the alleged defect in the subject recall vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

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

- a. Kia's claim number;
- b. Vehicle owner or fleet name (and fleet contact person), email address and telephone number (please use distinct fields for each data type);
- c. Vehicle owner or fleet street address, city, state (postal abbreviation), and ZIP code (please use distinct fields for each data type);
- d. 17-character VIN;
- e. Repair date (MM/DD/YYYY);
- f. Vehicle mileage at time of repair;
- g. Repairing dealer's or facility's name, telephone number, city and state or ZIP code (please use distinct fields for each data type);
- h. Labor operation number(s);
- i. Problem code(s);
- 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, entitled "WARRANTY DATA_Recall Vehicles." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

RESPONSE TO REQUEST NO. 7:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 7:

A list of warranty claims identified as a result of the search specified in Kia's response to Request No. 8 is provided under the category "WARRANTY DATA_RECALL

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

VEHICLES.” In addition, Kia is also providing a list of goodwill claims approved by Kia’s Consumer Affairs Department under the category “WARRANTY DATA 2_RECALL VEHICLES.” Both Access files are submitted concurrently with this response.

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 8:

Describe in detail the search methods and search criteria used by Kia to identify the claims in response to Request No. 6 and 7, including the labor operations, problem codes, part numbers and any other pertinent parameters used.

RESPONSE TO REQUEST NO. 8:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 8:

The Warranty claims are not specifically coded for fire. As a result, Kia searched for all repair/replacement warranty claims related to the engine from April 1, 2019 through April 25, 2019 applicable to the subject scope and subject recall vehicles. A key word search using the terms “fire,” “melt,” “smoke,” “flame” or “burn” was conducted. A review of records resulting from that initial search identified claims that were clearly non-responsive and thus additional searches were conducted to exclude claims that were clearly non-responsive such as the following: claims where the word “fire” appeared in the context of “misfire”, “firestone”, “firewall”; “bulb burnt or burned out or “burned up” with no other obvious indication of a thermal event; claims involving oil consumption (e.g., “burning a lot of oil”) or excessive smoke from exhaust claims. The remaining claims were reviewed to determine whether the engine fire was caused by, may have been caused by or were alleged to have been caused by an engine failure. If the claim identified an engine fire but it was unclear from the technician notes whether the engine fire was caused or may have been caused by an engine failure, it was included within the response.

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 9:

Provide a list of all labor operations, labor operation descriptions, problem codes and problem code descriptions applicable to the alleged defects in the subject vehicles.

RESPONSE TO REQUEST NO. 9:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 9:

The labor operation codes and labor operation descriptions have been included as part of the warranty claim data submitted in response to Request Nos. 6 and 7.

In your letter you requested that Kia provides its “problem code” information. Kia refers to the “problem code” as the “cause code” which carries a letter “C” and reflects the technician’s evaluation of the cause of the problem. You also requested that Kia provide information regarding the “concerns stated by the customer.” These are commonly referred to as “nature codes” and carry the “N” designation. These reflect the service writer’s or technician’s understanding of the customer’s concern and are included in the claim data submitted in response to Request Nos. 6 and 7.

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 10:

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). Describe any extended warranty coverage option(s) that Kia offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.

RESPONSE TO REQUEST NO. 10:

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

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

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

A list of extended warranty programs applicable to the engine in the subject vehicles is attached. **TAB 2.**

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 11:

Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject scope 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.

RESPONSE TO REQUEST NO. 11:

Copies of the documents responsive to this request are provided. **TABS 3-10.**

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 12:

Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, “actions”) that relate to, or may relate to, the alleged defects in the subject scope vehicles 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 subject and objective of the action;
- e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action;
and
- f. A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

RESPONSE TO REQUEST NO. 12:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 12:

Other than Tab G previously produced to NHTSA on October 31, 2018 in response to Request No. 8 of DP18-003, there are no additional “actions” responsive to this request.

The source of the information submitted in response to this request is Kia America, Inc. and Kia Corporation.

REQUEST NO. 13:

Describe all modifications or changes made by, or on behalf of, Kia in the design, material composition, manufacture, quality control, supply, or installation of the components, from the start of production to date, in the subject scope vehicles and either directly or indirectly reduce or mitigate the risk of fire or thermal events. For each such modification or change, provide the following information:

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

- a. The date or approximate date on which the modification or change was incorporated into vehicle production;
- b. A detailed description of the modification or change;
- c. The reason(s) for the modification or change;
- d. The part number(s) (service and engineering) of the original component;
- e. The part number(s) (service and engineering) of the modified component;
- f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
- g. When the modified component was made available as a service component; and
- h. Whether the modified component can be interchanged with earlier production components.

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

RESPONSE TO REQUEST NO. 13:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 13:

There are no modifications or changes responsive to this request.

The source of the information submitted in response to this request is Kia Corporation.

REQUEST NO. 14:

Furnish Kia's assessment of the alleged defects in the subject scope vehicles, including:

- a. The root cause and all contributory factor(s);
- b. The failure mechanism(s);
- c. The failure mode(s);
- d. The risk to motor vehicle safety that it poses;
- e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring; and
- f. The VOQ reports referenced in this inquiry.

RESPONSE TO REQUEST NO. 14:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 14 (a)-(f):

Pursuant to the Information Request made by ODI, Kia has provided data relating to non-collision engine compartment fires due to engine failure. The term “fire” as defined in 49 CFR Part 579.4 includes thermal events such as smoking and melting. Consequently, the data provided includes customer vehicles that did not experience a fire as it is commonly understood by the public. Despite the Agency’s broad definition of fire, Kia’s complaint rate for the Subject Scope Vehicles when assessed collectively or on an engine-by-engine basis remains low.

Kia’s assessment focuses on customer complaints, as they tend to be the primary source for which information can be gleaned regarding a customer’s experience in relation to the Alleged Defect—non-collision vehicle fires that may have originated in the engine compartment, which were either caused by, or were alleged to have been caused by an engine failure. Based on this review, Kia has identified a total of 75 complaints for the Subject Scope Vehicles reflecting an overall complaint-rate of 0.025% on vehicles spanning up to 13 years in service.

The Subject Scope Vehicles are equipped with 3 different engine-types: the 1.6 L Gamma GDI (installed in the 2012 through 2015MY Rio), the 2.4L Theta II MPI, and the 3.5L Lambda II MPI (both installed in the 2011MY Sorento). Below is a summary of the complaint data by model, model year and engine type.

| Model/MY | Engine Type | Vehicle Population | No. of Complaints | Complaint Rate/ 100K Vehicles |
|-----------------|--------------------|---------------------------|--------------------------|--------------------------------------|
| Rio 12-15MY | Gamma 1.6L GDI | 137,480 | 34 | 25 |
| Sorento 11MY | Theta II 2.4L MPI | 106,418 | 30 | 28 |
| | Lambda II 3.5L MPI | 61,120 | 11 | 18 |
| TOTAL | | 305,018 | 75 | 25 |

When evaluated individually, the complaint rates for these vehicles are below the 45/100k threshold identified by NHTSA during its November 20, 2020 meeting with Kia. Based on our understanding, the rates of the Subject Scope Vehicles are also below or comparable to the 30/100K complaint rate which NHTSA has previously identified as within the normal range of other vehicle manufacturers within the industry.¹

Kia is unable to identify the cause of the alleged engine compartment fires for approximately 63% of the complaints. This has occurred for a variety of reasons. In many instances, the

¹ The above data is based on a gap search performed from April 1, 2019 through April 25, 2022 to supplement information previously provided in response to the Agency’s earlier Defect Petition (DP18-003) and Preliminary Evaluation (PE19-004) requests. Kia reviewed its responses to those earlier requests and identified an additional 17 complaints applicable to the 2012-2015MY Rio equipped with the 1.6L Gamma engine, one (1) additional complaint for 2011MY Sorento equipped with a 2.4L Theta II MPI engine, and one (1) additional complaint for 2011MY Sorento equipped with the 3.5L Lambda II MPI engine. Including that data increases the overall complaint rate from 25/100K to 30/100K. Despite this slight increase, the overall rate remains objectively low and comparable to Kia’s peers.

vehicles were never made available for inspection because the vehicle was salvaged, sold at auction, or otherwise destroyed; failures occurred during COVID-19 travel restrictions; or the customer simply failed to cooperate with Kia to arrange an inspection (e.g., did not return phone calls, provide requested documentation, provide inspection dates, identify location of vehicle, etc.). In other instances where the vehicle was inspected, the consuming nature of the fire destroyed most, if not all of the available evidence making it impossible to identify a cause. This is frequently an obstacle when trying to investigate the cause and origin of any vehicle fire case.

When Kia's investigation efforts were able to identify a cause, the most common ignition source related to oil escaping from a hole within the engine block. In many of these scenarios, the customers reported hearing a noise, followed by smoke, inhibited performance (i.e., lost of motive power), or flames escaping from the engine compartment. This is a similar description to what other customers have provided when experiencing a connecting rod related engine failure.² In many instances where a cause could be identified, significant maintenance or repair deficiencies were also present. For example, in one case, the customer reported an engine related fire which Kia's post-fire inspection confirmed, was attributable to a hole-in-block. However, the customer was the 4th vehicle owner, and based on a review of the vehicle maintenance records, large gaps in the vehicle service intervals existed. In addition, Kia contacted the third-party repair facility which had recently repaired the vehicle and identified an engine leak coming from the oil pan, engine knocking, and very low levels of oil on the dipstick prior to the facility's service. These conditions suggest that the vehicle may have been improperly maintained or repaired—a contributing factor to the resulting fire incident. Kia also identified various customer complaints involving major lapses in time with regards to proper maintenance intervals prior to the alleged fire incident.

As a prior in detail in its prior response, Kia has expended substantial resources towards monitoring and investigation vehicle fire claims. Likewise, Kia consistently works collaboratively with its counterparts in Korea, Georgia and Mexico to evaluate the design and manufacture processes of its vehicles and to quickly identify safety issues and react accordingly. Here, Kia's evaluation has not identified a failure mechanism or failure mode with the Subject Scope Vehicles resulting from a manufacturing or design defect. Rather, its analysis suggests that the majority of the reported fire incidents³ are related to long-term vehicle maintenance issues which are likely attributable to the age of these vehicles and the high likelihood that they have been subjected to the care of multiple owners. This is consistent with the low level of

² Kia launched the Knock Sensor Detection System ("KSDS") Product Improvement Campaign in January 2021 for the 2011MY Sorento vehicles equipped with Theta II 2.4L MPI engines (part of the Subject Scope Vehicles). Some of the complaining customers were within the scope of the KSDS improvement but experienced a vehicle fire prior to having KSDS installed. Since KSDS was developed as a preventative measure to mitigate the risk of engine failure and in the worst case, scenario, engine fire due to connecting rod bearing wear, KSDS would have alerted those customers of the engine's condition well before the fire event. Thus, KSDS is intended to mitigate the risk of any future connecting rod bearing wear related hole-in-block fires.

³ It is worth noting that these types of fires are an extreme result and that well before experiencing a fire, customers are generally warned of an impending engine failure both audibly and visually. These warnings include but are not limited to engine noise, Check Engine Light (CEL) or Malfunction Indicator Illumination (MIL), engine oil light illumination, persistent oil consumption issues, driveability issues, inability to start the vehicle, oil leaks, etc.

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

complaints reported and the fact that 87% of those complaints are for vehicles with over 60,000 miles. The 60,000 mile timeframe is generally when customers become primarily responsible for common repairs which Kia believes increases the risk of improper maintenance and/or repairs being performed by non-Kia dealerships or owners. Regardless, the complaint rate for the Subject Scope Vehicles and the lack of evidence of a design or manufacturing defect trend leads Kia to conclude that no unreasonable risk to motor vehicle safety exists.

Kia assessment of the VOQs referenced in your letter is submitted concurrently with this response. **TAB 17.**

REQUEST NO. 15:

Describe in detail and produce copies of any documents used to answer each item below relating to Knock Sensor Detection Software (KSDS):

- a. The validation process used to assure KSDS successfully recognizes the various field issues observed to date.
- b. How the threshold of detection for KSDS was determined to illuminate the vehicle's MIL and engage "Engine Protection Mode or Limp Home Mode".
- c. The specifics of "Engine Protection Mode" that KSDS will apply (e.g. specific torque, RPM limits, shifting characteristics)
- d. How long a typical engine can operate in "Engine Protection Mode" if warnings to the driver are ignored.

RESPONSE TO REQUEST NO. 15:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 15:

The information and documents responsive to this request are included in **TABS 18-19.**

The source of the information submitted in response to this request is Kia Corporation.

REQUEST NO. 16:

By vehicles model and model year, provide counts to answer each item below relating to Knock Sensor Detection Software (KSDS):

- a. Statistical projections of percentage of "false negatives" and "false positives" that KSDS provides.
- b. Engine failure/engine fire incidents after KSDS installation, with DTC P1326 found.
- c. Engine failure/engine fire incidents after KSDS installation, but no DTCs were triggered.

RESPONSE TO REQUEST NO. 16:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 16

a) Statistical projections of percentage of “false negatives” and “false positives” that KSDS provides.

As it relates to “false positives”, early on in the launch of KSDS for the Optima, Sportage and Sorento vehicles, Kia had identified a wiring signal interference from the PCM connector to the knock sensor which falsely induced the triggering of DTC P1326. This was identified after Kia dealers had reported vehicles with the DTC P1326 set but without connecting rod bearing wear damage to warrant an engine replacement. In order to address this false positive issue, Kia published a TSB in November 2018 instructing dealers to check for any wiring signal interference before determining whether an engine replacement would be necessary. See **TABS 22-26** for the initial TSB and subsequent revised TSBs. As a result, Kia has tracked “false positives” for the 2011-2014MY Optima, 2012-2014MY Sorento and 2011-2013MY Sportage (i.e., Subject Recall Vehicles as defined in the IR letter). Attached is a summary chart with that data. **TAB 27**. Kia notes that the data submitted is a compilation, not a statistical projection, of “false positives” data for the models identified above. Although Kia is not providing a statistical future projection of the “false positive” data, Kia believes that data provided is reliable because it includes accumulated data for the past 3 years, 5 months. Kia does not have similar data for the other Subject Vehicles within the scope of a KSDS campaign, as no such similar issue has been identified.

As it relates to statistical projections for “false negatives”, Kia does not have any such data compiled or projected as it has not identified any specific reason to collect such data. KSDS was specifically designed to prevent engine failures due to connecting rod bearing wear. Prior to the release of KSDS, Kia conducted extensive verification testing to make sure the system functioned as designed. See materials provided in response to Request 15(a). After the launch of KSDS, Kia collected failed engines and Hyundai Translead tore down approximately 6,500 Kia engines which showed actual conrod damage bearing damage thereby confirming the effectiveness of the system. Based on the pre-release verification testing conducted and the inspections performed on Kia engines installed with KSDS from the field, Kia has no reason to believe that “false negatives” have (or will) occur with any level of frequency for vehicles equipped with KSDS such that special tracking would be warranted.

b) Engine failure/engine fire incidents after KSDS installation with DTC P1326 found

The counts identified below are based on a review of customer complaint data which contain information identifying the date the alleged fire incident occurred. The incident date was then compared to the KSDS installation date to determine the number of vehicles that experienced an engine fire due to an engine failure as defined by the Alleged Defect and thus is not limited to hole in block fires. Available scan tool diagnostic data and/or repair order information was then reviewed to determine whether a DTC P1326 code was identified.

Kia identified a total of 322 post-KSDS engine fires through April 25, 2022 for the Subject Vehicles. Of the 322 post-KSDS engine fires, a registered DTC P1326 code was identified for 15 vehicles. Below is a breakdown of those 15 vehicles:

| Model | MY | Engine Type | Number |
|--------------|-----------|---------------------|---------------|
| Forte | 2013 | Theta II 2.4L MPI | 1 |
| Soul | 2014 | Nu 2.0L GDI | 2 |
| Soul | 2012 | Gamma 1.6L GDI | 1 |
| Soul | 2014 | Gamma 1.6L GDI | 1 |
| Optima | 2012 | Theta II 2.4L GDI | 2 |
| Optima | 2013 | Theta II 2.4L GDI | 4 |
| Optima | 2013 | Theta II 2.4L T-GDI | 2 |
| Optima | 2014 | Theta II 2.4L GDI | 2 |

c) Engine failure/engine fire incidents after KSDS installation with no DTCs found⁴

Of the total 322 post-KSDS engine fires, a registered DTC P1326 was not identified for 115 vehicles. Below is a breakdown of those 115 vehicles:

| Model | MY | Engine Type | Number |
|---------------|-----------|---------------------|---------------|
| Sorento | 2013 | Theta II 2.4L MPI | 2 |
| Optima Hybrid | 2013 | Theta II 2.4L MPI | 1 |
| Sportage | 2011 | Theta II 2.0L T-GDI | 3 |
| Sportage | 2013 | Theta II 2.0L T-GDI | 1 |
| Soul | 2014 | Nu 2.0L GDI | 6 |
| Soul | 2015 | Nu 2.0L GDI | 4 |
| Sorento | 2012 | Theta II 2.4L GDI | 6 |
| Soul | 2012 | Gamma 1.6L GDI | 1 |
| Soul | 2015 | Gamma 1.6L GDI | 2 |
| Soul | 2016 | Gamma 1.6L GDI | 7 |
| Optima | 2011 | Theta II 2.4L GDI | 4 |
| Optima | 2011 | Theta II 2.4L T-GDI | 1 |

⁴ Kia has confirmed with NHTSA that the phrase “no DTCs found” refers to no P1326 DTCs found.

| Model | MY | Engine Type | Number |
|--------------|-----------|---------------------|---------------|
| Optima | 2012 | Theta II 2.4L GDI | 17 |
| Optima | 2012 | Theta II 2.4L T-GDI | 9 |
| Optima | 2013 | Theta II 2.4L GDI | 28 |
| Optima | 2013 | Theta II 2.4L T-GDI | 7 |
| Optima | 2014 | Theta II 2.4L GDI | 13 |
| Optima | 2014 | Theta II 2.4L T-GDI | 3 |

d) Engine failure/engine fire incidents after KSDS installation where the existence or nonexistence of DTC P1326 is unknown due to significant fire damage

Although not requested, Kia has included an additional category where the existence or non-existence of DTC P1326 could not be determined due to the significant amount of fire damage to the Electronic Control Unit. Of the total 322 post-KSDS engine fires, Kia was unable to determine the existence or non-existence of DTC P1326 in 192 of those vehicles. Below is a breakdown of those 192 vehicles:

| Model | MY | Engine Type | Number |
|---------------|-----------|---------------------|---------------|
| Sorento | 2011 | Theta II 2.4L MPI | 1 |
| Forte | 2014 | Nu 2.0L GDI | 4 |
| Forte | 2015 | Nu 2.0L GDI | 1 |
| Sorento | 2013 | Theta II 2.4L MPI | 2 |
| Optima Hybrid | 2011 | Theta II 2.4L MPI | 1 |
| Sportage | 2013 | Theta II 2.0L T-GDI | 1 |
| Optima HEV | 2017 | Nu 2.0L GDI | 1 |
| Soul | 2014 | Nu 2.0L GDI | 6 |
| Soul | 2015 | Nu 2.0L GDI | 3 |
| Sorento | 2012 | Theta II 2.4L GDI | 22 |
| Soul | 2012 | Gamma 1.6L GDI | 2 |
| Soul | 2013 | Gamma 1.6L GDI | 2 |
| Soul | 2014 | Gamma 1.6L GDI | 1 |
| Soul | 2015 | Gamma 1.6L GDI | 3 |
| Soul | 2016 | Gamma 1.6L GDI | 3 |
| Optima | 2011 | Theta II 2.4L GDI | 17 |
| Optima | 2011 | Theta II 2.4L T-GDI | 6 |
| Optima | 2012 | Theta II 2.4L GDI | 25 |
| Optima | 2012 | Theta II 2.4L T-GDI | 12 |
| Optima | 2013 | Theta II 2.4L GDI | 38 |
| Optima | 2013 | Theta II 2.4L T-GDI | 30 |
| Optima | 2014 | Theta II 2.4L GDI | 6 |
| Optima | 2014 | Theta II 2.4L T-GDI | 5 |

The source of the information submitted in response to this request is Kia America, Inc. and Kia Corporation.

REQUEST NO. 17:

Describe in detail the engine replacement claim procedures, past and present, under engine related customer campaigns, recalls, settlements or class action lawsuits. If procedure is different for specific vehicles or actions stated above, please state the vehicle, and what steps in the process are different.

RESPONSE TO REQUEST NO. 17:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 17:

Generally, engine replacement claim procedures, past and present, under engine-related customer campaigns, recalls, or class action lawsuit settlements (“actions”) require vehicle owners to present their vehicles to an authorized Kia dealer during normal operating hours, provide sufficient information to permit a proper identification and diagnosis of the engine’s failure to function and permit the dealer repair facility adequate time to perform the necessary repair subject to the terms, conditions and limitations of those engine-related actions if any, provided the vehicle’s repairs are covered by either the terms of the new vehicle warranty or any applicable extended warranty coverage. Please refer to Kia’s Response to Request No. 10 in which Kia’s new vehicle warranty coverage and any extended warranty coverage option Kia offered for the subject vehicles is outlined.

A chart describing the engine replacement procedures for engine related customer campaigns, recalls and class action lawsuit settlements is provided. **TAB 20**

The source of the information submitted in response to this request is Kia America, Inc.

REQUEST NO. 18:

Produce copies of any guidance to customers (beyond the new car owner’s manual), and other documents that relate to, or may relate to, engine oil consumption and the necessity of checking/adding oil between oil changes. 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.

RESPONSE TO REQUEST NO. 18:

Copies of the documents responsive to this request are provided. **TABS 11-14.**

The source of the information submitted in response to this request is Kia America, Inc.

Stephen A. Ridella, Office Director
Office of Defects Investigation
July 20, 2022

REQUEST NO. 19:

Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, “actions”) that relate to, or may relate to, benchmarked oil consumption of Kia engines vs competitor engines.

RESPONSE TO REQUEST NO. 19:

Pursuant to the extension granted by Peter Kivett on May 26, 2022, the response to this Request will be provided on July 6, 2022.

SUPPLEMENTAL RESPONSE TO REQUEST NO. 19:

The document responsive to this request is provided. **TAB 21**

The source of the information submitted in response to this request is Kia Corporation.

If you have any questions or if you need anything further, please do not hesitate to contact me.

Sincerely,

