

## Chronology of Principal Events

February, 2016	<p>SMC received one Field Technical Information Report (FTIR) from Suzuki Motor of America, Inc. (SMAI) concerning fuel odor from a Suzuki Kizashi vehicle due to a fuel tank crack. SMC received a second FTIR from SMAI concerning Malfunction Indicator Lamp (MIL) illumination in a Suzuki Kizashi vehicle. Both incidents occurred in Wichita, Kansas.</p> <p>SMC's investigation revealed that sand had accumulated in the carbon canister filter and carbon canister, there was high air flow resistance in the carbon canister vent line, and a significant amount of sand had accumulated on the upper surface of the fuel tank.</p> <p>SMC became aware that there are many rough roads in Wichita where it is easy to generate clouds of sand while driving. SMC also learned that there was a flood in July 2015. SMC was unable to find the route of sand entry or the root cause of the problem.</p>
March to June, 2016	<p>SMC conducted an investigation to determine (1) whether the collected parts (from the canister vent line to the canister) could cause the fuel tank crack, and (2) whether muddy water entered into the canister when driving on flooded roads.</p> <p>SMC installed collected parts on a test vehicle and measured internal fuel tank pressure changes using simulated driving modes. SMC then conducted a fuel tank durability test by applying the positive and negative pressure changes observed during the test vehicle driving. By applying the fuel tank durability test result to the simulated driving mode, SMC estimated that the fuel tank crack occurred at about 34,000 miles.</p> <p>SMC's testing produced no water entry into the canister filter or canister. The testing also showed that it would take approximately 125,000 miles of driving to replicate the sand accumulation seen in the incident vehicles.</p> <p>During this period, SMC received a third FTIR involving a vehicle in Omaha, Nebraska. SMC found that the fuel tank of the vehicle had been replaced under Recall 14V-464. SMC also learned that sand was clogged in an air duct hose at the rear differential where it is difficult for sand to enter in a normal situation.</p> <p>SMC surmised that the three FTIRs resulted from some sort of natural disaster that could not be reproduced by SMC's tests.</p>
July, 2016	SMC received a fourth FTIR from SMAI (vehicle in Wichita, Kansas).

August, 2016	SMC received from SMAI a fifth FTIR (vehicle in Springfield, Missouri) and a sixth FTIR (vehicle in Sioux Falls, South Dakota). Since SMC had now received FTIRs from areas outside of Wichita, which did not have reports of natural disasters, SMC began to rethink the possibility of other factors causing the reported incidents.
February, 2017	SMC received a seventh FTIR from SMAI (vehicle in Wichita, Kansas).
March, 2017	SMC received an eighth FTIR from SMAI (vehicle in Wichita, Kansas).
October, 2017	<p>SMC received a ninth FTIR from SMAI (vehicle in Wichita, Kansas). SMC thought that there might be some unique factors causing incidents in Wichita, as six out of nine FTIRs involved vehicles in Wichita. SMC determined that an investigation at a test site in Wichita was necessary because the sand accumulation in SMC's "Dust Road Test" did not correspond with the sand accumulation in incident vehicles.</p> <p>SMC was concerned that winter weather conditions in Wichita (snow-covered ground) may make it difficult to reproduce incidents, so it was decided to postpone testing until the next spring season.</p>
April, 2018	<p>SMC operated test vehicles in Wichita to evaluate the sand accumulation volume in the canister filter and checked customer vehicles selected at random. It was found that the volume of sand in the canister filter from driving on rough roads only was much greater than the sand volume in the collected canister filters from incident vehicles. SMC also found that the sand volume of some customer vehicles was much greater than the sand volume from SMC's "Dust Road Test" vehicle.</p> <p>SMC observed that the Wichita sand is very fine (like flour) and a cloud of sand easily appears around the vehicle when driving on rough roads. SMC judged that the problem of filter clogging was not attributable to a natural disaster but rather was due to driving on rough roads.</p>
June to July, 2018	SMC studied computer simulation of air flow around the wheel housing where the canister vent hose is located, to find the route of sand entry. SMC noticed that air was entering from the space between the rear fender lining and the wheel housing. SMC also noticed that the volume of sand entering this area could be reduced by plugging this space.
August, 2018	SMC verified that the air entry route around the canister vent line inlet observed by applying wind to the test vehicle using a fan was consistent with the air entry route observed during computer simulation. SMC decided to make trial parts to cover the space between the rear fender

	lining and the wheel housing. SMC decided to conduct further testing in the U.S.
September to October, 2018	SMC conducted driving tests in Wichita to confirm the sand entry route between the rear fender lining and wheel housing. SMC also found that the very fine sand could pass through the rear fender lining made of non-woven fabric.
October 25, 2018	SMC recognized that the number of FTIRS for the reported problem had slightly exceeded the number of FTIRs reported for Recall 14V-464, and decided to report the identified problem as a safety-related defect, even though the reported incidents were clustered around discrete geographical areas and there remain no clear indications of the root cause or an appropriate remedy.