December 30, 2019

California Department of Motor Vehicles
Occupational Licensing Compliance Section
P.O. Box 932342 (MS S441)
Sacramento, CA 94232-3420

Re: Autonomous Mode Disengagements for Reporting Year 2019

To Whom It May Concern:

Pursuant to California Code of Regulations, Title 13, Article 3.7, § 227.46, Tesla, Inc. ("Tesla" or the "Company"), submits for the preceding reporting year (December 1, 2018, to November 30, 2019) (hereinafter, the "Reporting Year 2019") a summary of disengagements of autonomous mode in Tesla's autonomous vehicles ("AVs") that participated in the Autonomous Vehicle Tester Program ("AVT") administered by the California Department of Motor Vehicles (the "DMV").

For Reporting Year 2019, Tesla briefly tested an autonomous vehicle in autonomous mode on public roads in California. In April, we operated one vehicle in autonomous mode to record one demo run on a 12.2-mile route around Tesla's Palo Alto headquarters. The route covered surface streets and highways. We did not experience any autonomous mode disengagements during this run and, as a result, do not have any disengagements to report for Reporting Year 2019.

For background on how Tesla develops software capability, first, using industry best practices, we perform hardware and software in-the-loop testing, system-level and regression testing, simulations, test track and/or on-road testing (not autonomous), and a battery of cross-functional reviews, hazard analysis, risks assessments, and failure modes and effects analysis. Second, we rely heavily on fleet learning. Tesla is the only participant in the AVT program with a fleet of customer-owned vehicles in the hundreds of thousands. Virtually all customers consent to Tesla running developmental feature software, including for AV capability, in "shadow mode" during their normal driving operation. Features in "shadow mode" run silently in the background without actuating any vehicle controls whatsoever, which enables Tesla to test how features will perform in real-world driving conditions before we deploy them to the customer fleet. As a result, we are able to collect billions of miles of anonymized driving data remotely over the air, including on targeted roadways and in driving situations that we later use to train AV features to perform safely, consistently, and predictably.

This holistic approach allows Tesla to continuously improve Autopilot today as much as it allows us to develop AV features for tomorrow. As you know, Autopilot is our advanced driver-assistance system

that is representative of SAE Level 2 automation ("SAE L2"). Autopilot is not an autonomous system and does not make our vehicles autonomous. To date, Tesla's worldwide customer fleet has driven billions of miles with Autopilot engaged. Anonymized fleet data shows that Autopilot significantly increases overall occupant safety and far exceeds the status quo. In the 3rd quarter of 2019 alone, our customers registered one collision for every 4.34 million miles driven with Autopilot engaged. For comparison in that same time period, our customers registered one collision for every 2.70 million miles driven without Autopilot engaged but with our active safety features engaged. Compared to the national average, NHTSA's most recent data shows one collision for every 498,000 miles driven. These numbers are representative quarter after quarter.

We look forward to continued collaboration with the DMV. Should the DMV have any questions or comments regarding this submission, please feel free to contact me at erwilliams@tesla.com.

Sincerely,

Eric C. Williams
Managing Counsel, Regulatory