**Opinions of Mr. Pochron’s experts, Ms. Mathias, and Mr. Manuel (ESI)**

In an investigative report dated March 22, 2024 Ms. Mathias and Mr. Manuel provided an opinion that the forces experienced in the subject crash are comparable to benign, non-injurious everyday activities, and that these forces were below the tolerance for injury. The basis for Ms. Mathias’ and Mr. Manuel’s opinions was primarily their comparison of the forces of the crash to those of everyday activities, such as transit use, running or getting in/out of a vehicle, and citation to studies involving real world and staged crashes, human volunteers, cadavers and anthropomorphic test devices, cherry picked from the literature to obscure the well-established actual risk of injury from the subject crash

Ms. Mathias’ and Mr. Manuel’s substantive conclusions can be summarized as follows:

* The subject crash was a sideswipe crash and the occupants experienced mostly a longitudinal acceleration with some minimal vertical and lateral acceleration components.
* The impact speed of train car 1262 was about 7.4 mph.
* The maximum longitudinal delta V for train car 1266 was 3.7 to 4.4 mph and the maximum longitudinal acceleration for train car 1266 was 1.1 to 2.0 g.
* The occupant kinematics described in the testimony of Mr. Pochron and Mr. Brown are not consistent with the video footage of the subject crash and the expected physics of it.
* Their report listed twenty-seven publications/studies and the supplied reference file contained forty-one publications/studies.

The Rail Equipment Incident Report indicated the incident occurred in the University Park yard at milepost 31.3. Train 705 was traveling on Track 2 when it derailed into Train 140 which was stopped on track 3. The recorded speed of Train 705 was nine mph. Prior to the incident occurring, the student assistant conductor and the in-charge conductor got off the train and went to the 2/3 switch. The student assistant conductor threw the switch when only five of the six cars were south of the switch and prior to the sixth/final car (car 1262).

The Tabular Data Report for car # 1262 indicated a maximum speed of 10.4 mph prior to the incident occurring. There were some minor fluctuations in speed and then attained a consistent 8.7 mph beginning at the time stamp of 18:15:44.0. At the time stamp of 18:15:45.0 the speed dropped to 5.6 mph and remained so until the time stamp at 18:15:45.9 and then decreased to 1.2 mph at 18:15:46.0 and reached 0 mph at 18:15:47.0.