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### **DD13 Scuffing Test ASTM Taskforce**

• December 15, 2015

### **Proposed Matrix for Precision Discovery**

	LZ	SWRI	Intertek
Test 1	Oil X – Completed	Oil C	Oil X – Completed
	Engine #1	Engine #1	Engine #1
Test 2	Oil C	Oil X	Oil C
	Engine #2	Engine #2	Engine #2
Test 3	Oil X	Oil C	Oil C
	Engine #2	Engine #2	Engine #1
Test 4	Oil C	Oil X	Oil X
	Engine #1	Engine #1	Engine #2

- Proposal to run these tests in order to acquire data to define test precision
- Allows for complete data set for analysis with proposed enhanced procedure

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# Summary: Lab Visit [December 10<sup>th</sup>, 2015]

- DD13 Stand Inspections 12/10/15 Attendees Present:
- Jacob Goodale Intertek
- Suzanne Neal Daimler
- Patrick Joyce Lubrizol
- Martin Thompson SwRi
- Jim McCord SwRi
- Jose Starling SwRi
- Jim Gutzwiller Infineum

## Summary: Lab Visit [December 10<sup>th</sup>, 2015]

#### Difference by lab

#### **SwRi**

- Engine coolant is used to heat the incoming air to the turbo
- 3 way engine coolant bypass valve is still active through PID control
- Large modine Charge air cooler (T12 cooler)

#### **Intertek**

- Oil sample valve located on heat exchanger
- · Labs agreed that this location should be uniform, Location to be decided upon

#### <u>Lubrizol</u>

Automated control of coolant flow

#### **Other Discussions**

- Warmup overshoot limits, what is an acceptable range of overshoot for oil and coolant temperatures, what are the effects on severity?
- Acceptable limits for overshoot during the load change.