

IIH Task Force Conference Call December 30, 2014

Attendees:

Chrysler: Haiying Tang, Jeff Betz

Intertek: Adison Schweitzer, Charlie Leverett, Bill Buscher

Lubrizol: George Szappanos, Michael Conrad, Kevin OMalley

Afton: Ed Altman

SwRI: Karin Haumann, Sid Clark, Pat Lang

Ashland: Amol Savant

Infineum: Mike McMillan, Doyle Boese

Shell: Scott Lindholm

IMTS: Dave Passmore

OHT: Matt Bowden, Jason Bowden

TMC: Rich Grundza

Karin started the call indicating she had sent an agenda prior to the meeting.

Karin reviewed the efforts performed at Afton and Lubrizol, switching the O2 sensors from bank to bank and Ed Altman and George reported the AFR offset remained on the corresponding bank after performing the switch and using other O2 sensors.

Karin indicated the labs still needed to confirm their in-house filtration capabilities as required for the engine with some labs still using the factory air box.

Karin updated everyone on plans to conduct a Round Robin Piston Rating Exercise.

Karin next reviewed concerns about labs working directly with IMTS to request what amount of Cylinder Head Seed Materials would be required for each laboratory internal inventory to comfortably work into the Core exchange and turn around program.

Labs should submit their requirements to IMTS ASAP.

Karin reviewed the data in the attached presentation with the group, discussing the testing performed at SwRI using the new thermocouple location for temperature control of the engine oil gallery just below the filter / oil cooler adaptor as recommended by Lubrizol. The changes to this data included running the exhaust backpressure at 4.5kPa.

Karin summarized the data on the slides indicating slide 4 included a right axis showing controller positioning during the test. (Amol commented the controller was actually running at 80 – 85% closed to which Karin responded correct).

Karin commented the next two slides showed the Sump and Oil Pump temperatures were added to the Lubrizol graph in Black to stand out from the other data.

George commented the data shows the temperature control target of 151 was a good choice for REO2.

The group discussed the problem at Afton with tapping the main oil gallery and possibly switching from 1/8 NPT to 1/16 NPT threaded fitting for the thermocouple. Amol recommended a fitting he identified that still uses a 1/8 thermocouple.

The group discussed oil assignments for Intertek and Karin informed the group SwRI was already running 434-1 and had 20 hours on the test. The group discussed repeat runs for each lab and finally decided Intertek would run REO2 on their alternate thermocouple set point run.

In conclusion Karin commented the new control location and temperature set points fell within the ranges of all the other prove-out tests.

The group discussed start times for Intertek and when Afton might be able to start after their building maintenance.

Scott Lindholm commented the numbers look decent and Afton will start a run on 434-1 after January 12th. The group again discussed running 434-1 at Intertek with the final resolution after comments from Rich about shipping restraints over the Holidays. Bill Buscher commented about communications with Chrysler during ASTM. Haiying commented she would like to see additional runs at Intertek and would like to see them run EO2 prior to the AOAP meeting. Addison indicated he would run REO2.

Ed Altman indicated he would start the Afton test ASAP upon return and completion of building maintenance.

The group also discussed throttle fluctuations and ECU interactions. Jeff Betz recommended labs swapping ECU's to help investigate the problems as the control algorithms should be the same. George commented the problem goes away when he switches back to the phaser control ECU. Jeff will address the issue upon return from the holiday break.

Labs agreed to send Jeff ECU's to flash as spares to help investigate the issues commenting the same control algorithm is in each ECU. Jeff asked Intertek to send a spare ECU to Lubrizol to assist in trouble shooting the problems. Karin commented about her work with Chrysler Controls Engineering and George suggested sending his trouble ECU to SwRI for continued evaluation.

Sid commented about past experiences and the importance of getting the correct control programming and someone being responsible for keeping that safe for the life of the test.

The group also discussed oil pan calculations and agreed labs could generate slopes based on their calculations to determine oil consumption. George will send data to SwRI to determine the calculations based on George's emails.

Sid will insert the required information into the Chrysler IIIH Engine Assembly Manual with assistance from Lubrizol and others to have it ready by the AOAP meeting, starting the first week of January.

Again Karin recommended the labs contact IMTS to submit orders for their inventory requirements of Cylinder Head Seed materials to comfortably work into the core exchange and turn around times.

Karin reminded everyone we are still watching oil pressure delta pressures and Chrysler would like to discuss the Task Force Recommendations for Matrix Readiness.

The group agreed the next call will be:
January 6, 2015 at 10:00am Eastern.

This is a compilation from notes recorded during the call, with comments from member participants during the Draft Review. Certain subjects may not necessarily be in exact order; however, they are believed to represent an accurate account of the call. If anyone feels changes or additional content may be necessary, please contact Sid Clark @ 586-873-1255 or Sidney.Clark@swri.org

Thanks, Sid



IIIH Task Force Conference Call
Oronite



IIIH REO2 Run With New Thermocouple Location

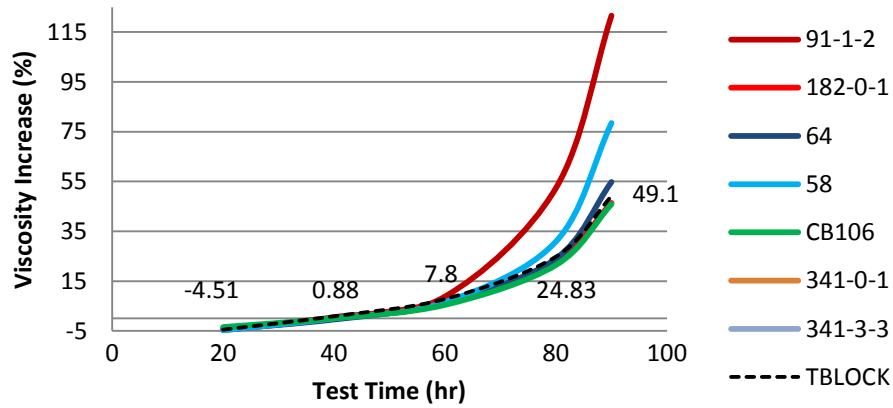
December 30, 2014

Test Summary

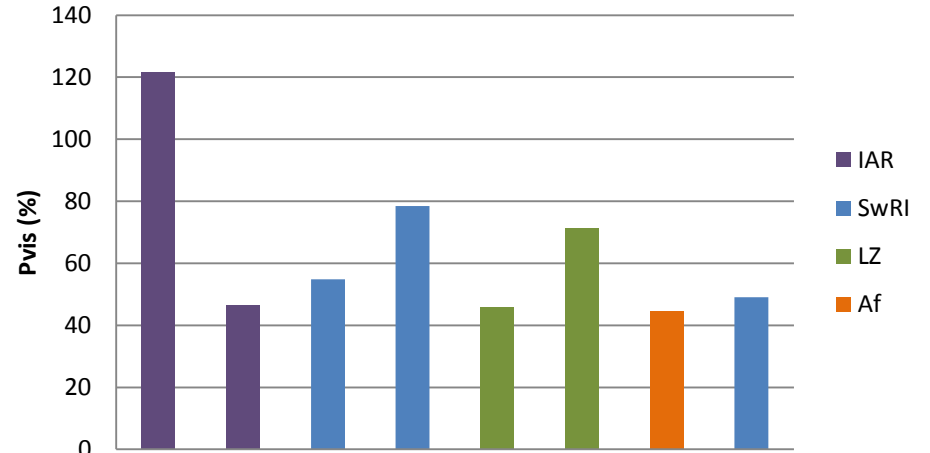
- Controlled oil temperature to the new thermocouple location in the block to 151 deg C
- Ran test at 4.5 kPa exhaust back pressure

PVis Results

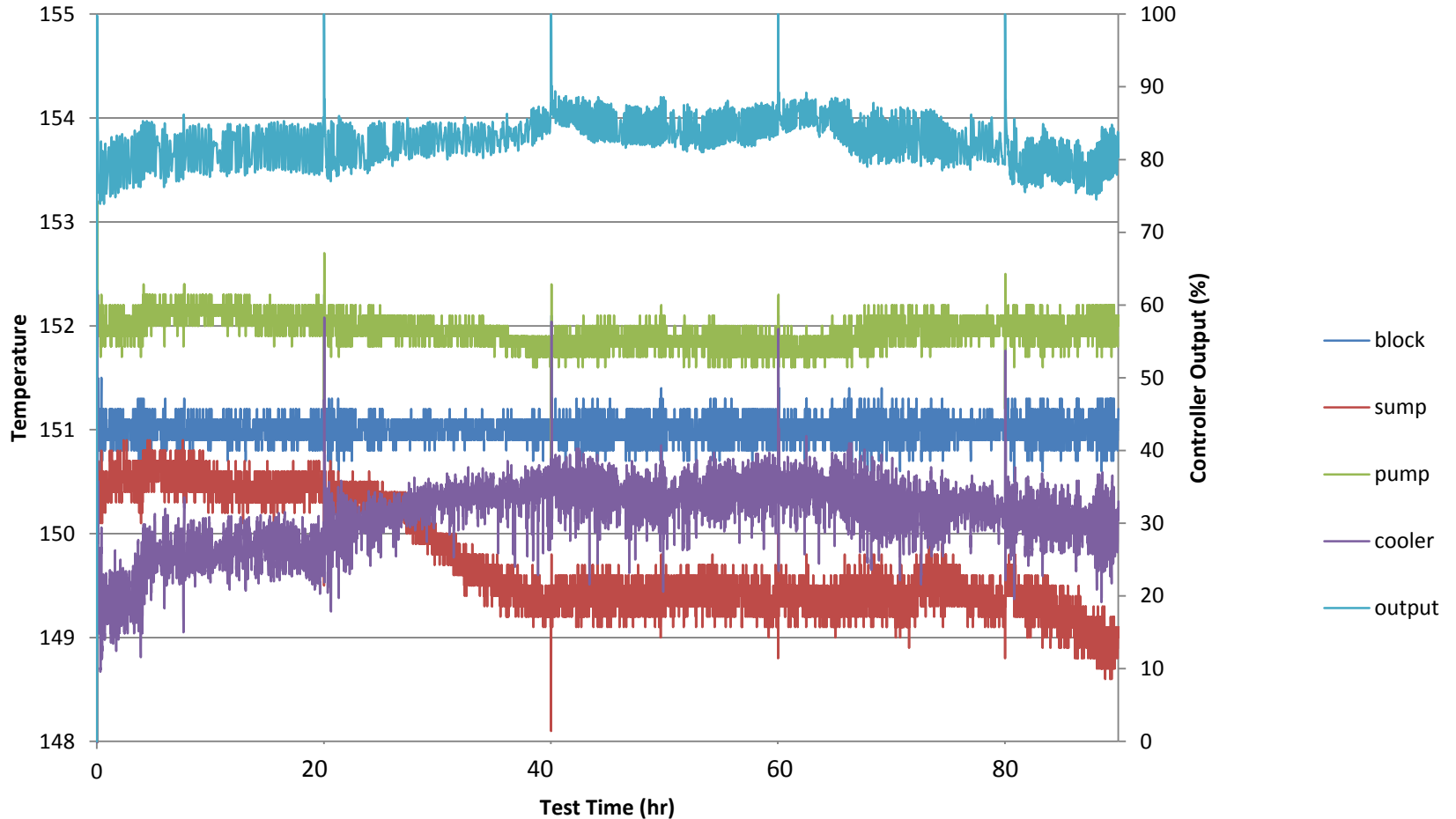
PVis - REO2



REO2 Prove-out PVis



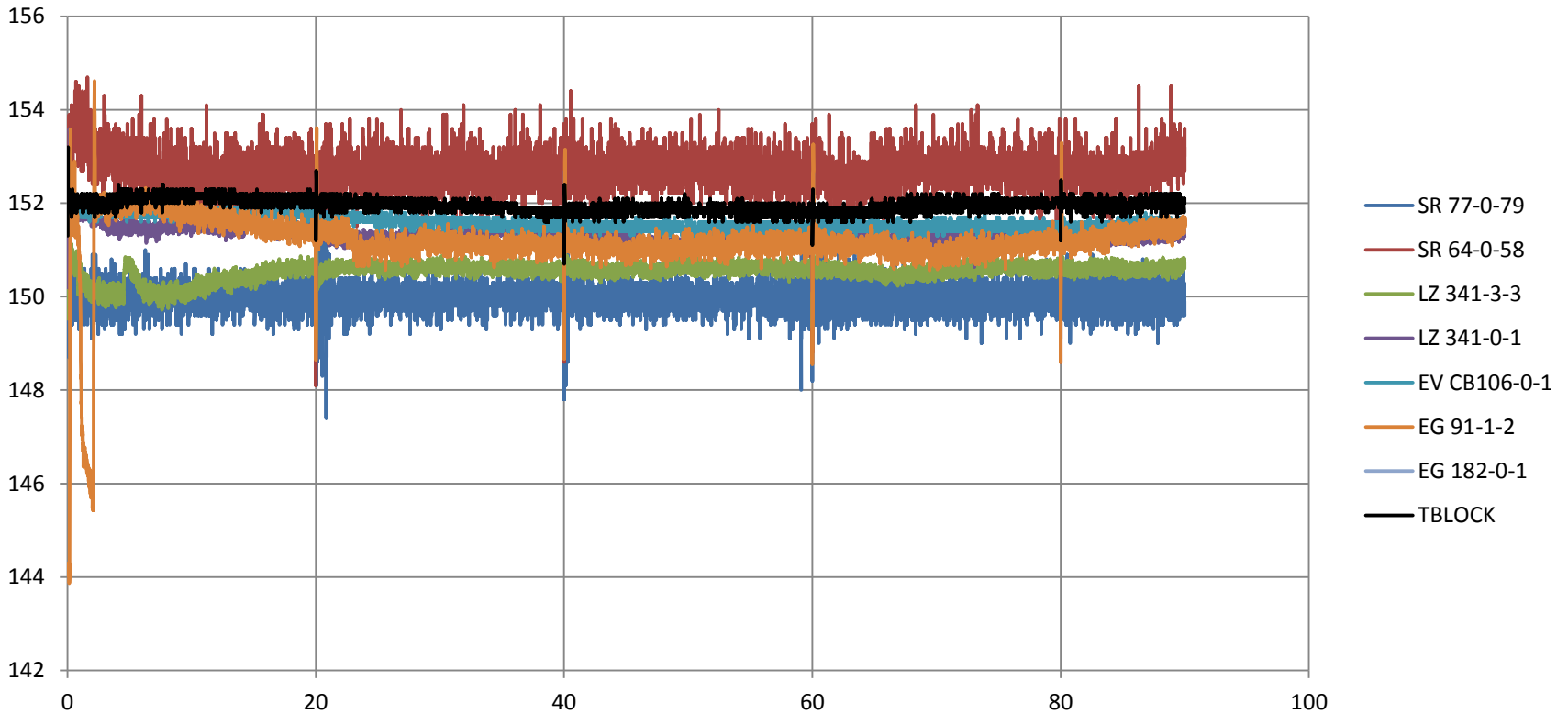
Oil Temperatures



REO2 Oil Pump Temps

Oil Pump Temp
Deg C

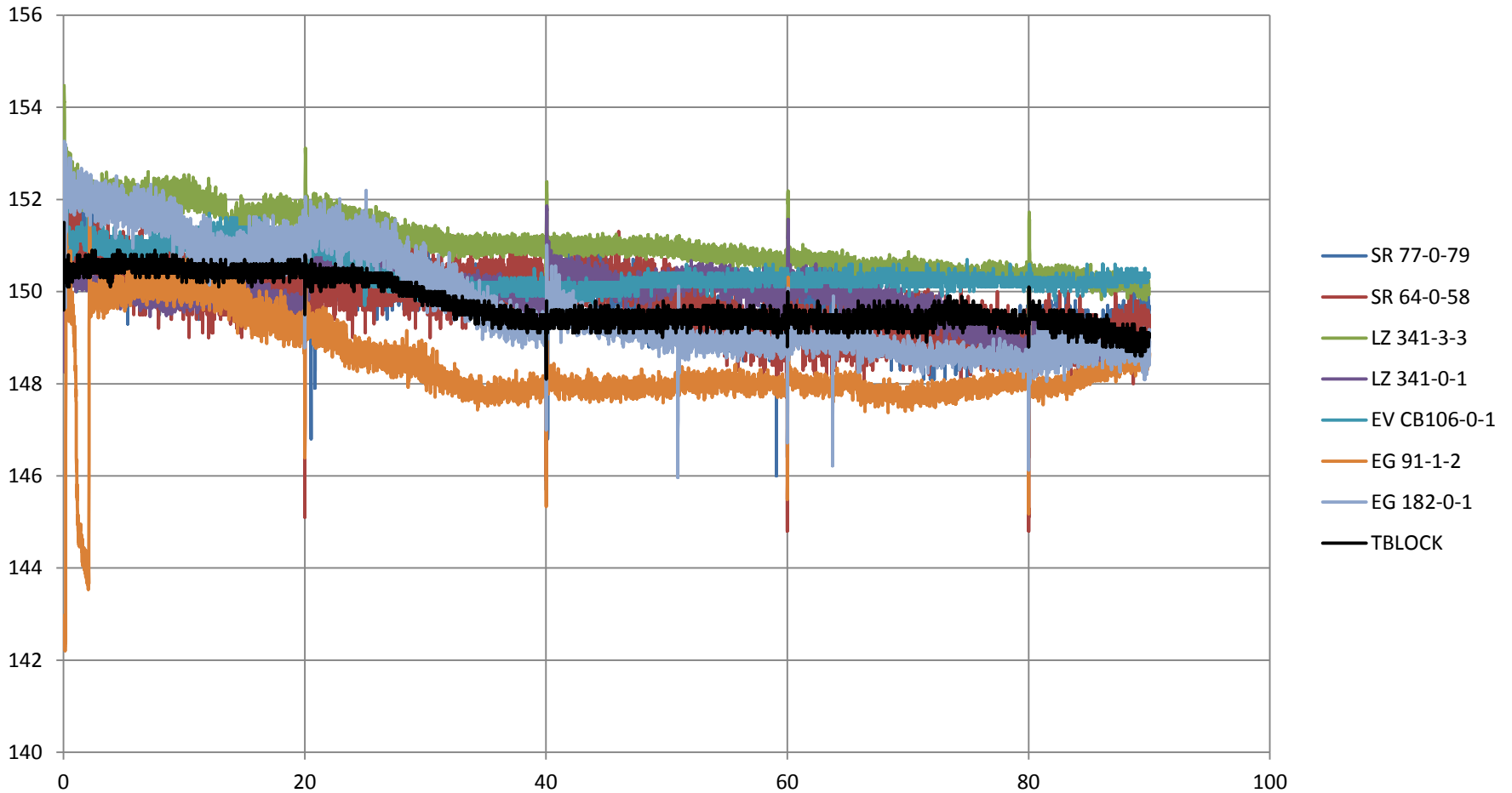
REO2 only



REO2 Sump Temps

Oil Sump Temp
Deg C

REO2 only



Conclusion

- Uncontrolled temps do not differ from tests with the original control point.
- Pvis results did not vary with new control point.