

## Sequence III Surveillance Panel

September 05, 2014

14:00 EDT

### Agenda

#### 1.0) Attendance

The attendance is shown in **Attachment 1**.

#### 2.0) Approval of minutes

2.1) The minutes of the May 20, 2014 conference call were approved without objection.

#### 3.0) Action Item Review

##### **3.1) Stats Group review IIIF RO 433-2 targets (old business).**

This will be covered under old business.

##### **3.2) Calibration requirements for Sunnen hone machine (old business).**

This will be covered under old business.

#### 4.0) Old Business

##### **4.1) Review of RO runs made with 7<sup>th</sup> run pistons/rings.**

Rich Grundza presented the data (**Attachment 2**). Five labs donated tests to examine extending block life to 7th and 8th runs. Some of the results, especially PVIS, may be of some concern though it may simply be reflective of the current state of the test. After review and discussion of the data, a motion was made:

**Motion:** To accept 7th and 8th run pistons and rings for IIIG testing (Brys, Bowden), effective upon notice from OHT that hardware is available. Labs are required to run an acceptable reference test on 7th run size parts before introducing for candidate testing. The motion passed 11-0-2.

##### **Action Items:**

- 1. Rich Grundza to update the build manual accordingly.*
- 2. Chair Glaenzer to notify, when received from OHT, the industry of hardware availability.*

#### **4.2) Review Stats Group report on IIF RO 433-2 targets.**

Kevin O'Malley reviewed the report, shown in **Attachment 3**. The group requests additional 433-2 data to clarify whether the situation is reference oil related and whether it is truly a consistent issue across labs. There will be more data available in the near future through normal referencing activity. This issue will be re-examined at the next face-to-face meeting, with new data included.

#### **Action Items:**

- 3. Rich Grundza will notify the stats group when Lab G has completed the 433-2 run.*
- 4. Stats Group to re-do the analysis with new data included; to be presented at the next meeting.*

#### **4.3) Review calibration requirements for Sunnen honing machine.**

Charlie Leverett and Bruce Matthews have been researching this item. Bruce's summary and recommendation are shown in **Attachment 4**. The goal is to make sure Sunnen can support the annual calibration of honing machines. The cal dyno is somewhat sensitive/fragile and shipping is an obstacle. Scheduling a Sunnen technician to perform the cal has also been difficult for the labs.

Motion: To change the Seq. III engine build manual(s) to remove the requirement for the cal to be performed by a Sunnen tech and allow lab personnel to perform the cal. (Matthews, Leverett). This is effective 9/5/14. The motion passed unanimously.

#### **Action Item:**

- 5. Rich Grundza to update the build manual accordingly.*

#### **4.4) Previously rejected cylinder heads still at Chevy Performance.**

Dave Glaenzer informed the panel that previously rejected heads (minor gasket surface scratches) have been repaired and put into service with all such heads being completely in-spec. The heads will be distributed accordingly to the previous purchase allocations and will be properly documented.

**POST MEETING NOTE:** *Chair Glaenzer confirmed that the decked head serial numbers will be available and the heads will have a distinctive marking. This will be the last material shipped from Chevy Performance.*

#### **Action Item:**

- 6. Dave Glaenzer will add an Agenda Item for October 21 to discuss third use of Stellite Seat heads.*
- 7. Dave Glaenzer will survey labs and Chevy Performance prior to October 21 meeting to determine critical material available for life of test.*

#### **4.5) Sequence IIIH Task Force activities.**

The IIIH TF had a call earlier in the day and are now meeting roughly once a week. It is expected to have four labs, totaling six stands in the matrix. Prove out runs and lab visitations will begin in the near future. The draft procedure will be sent to test labs soon as well. It was also noted that there was an engine build workshop held recently.

#### **5.0) Review Scope and Objectives**

These will be reviewed at next face to face meeting.

#### **6.0) Next Meeting**

The next meeting is scheduled for Tuesday, October 21. There will be a Sequence IIIH Task Force meeting at 08:00, which will be followed by Sequence III Surveillance Panel Meeting. The meetings will be held at Southwest Research, San Antonio, Texas.

#### **8.0) Meeting Adjourned**

The meeting adjourned at 3:05 pm.

ATTACHMENT 1 TELECONFERENCE  
 ASTM Sequence III Surveillance Panel (20 Voting members)

date: 09/05/14

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Tracey King Haltermann Solutions MI USA	947-517-4107 <a href="mailto:tking@jhaltermann.com">tking@jhaltermann.com</a>	Voting Member	Present <input checked="" type="checkbox"/>	W
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Patrick Lang Southwest Research Institute 6220 Culebra Road P.O. Box 28510 San Antonio, TX 78228 USA	210-522-2820 210-684-7523 <a href="mailto:plang@swri.edu">plang@swri.edu</a>	Voting Member	Present <input checked="" type="checkbox"/>	Y

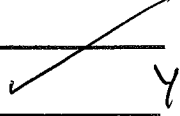
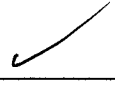
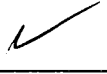

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ASTM Sequence III Surveillance Panel (20 Voting members)





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# ***Test Monitoring Center***

<http://astmtmc.cmu.edu>

ATTACHMENT 2

Results to Date on 7<sup>th</sup> Run Hardware

August 19, 2014

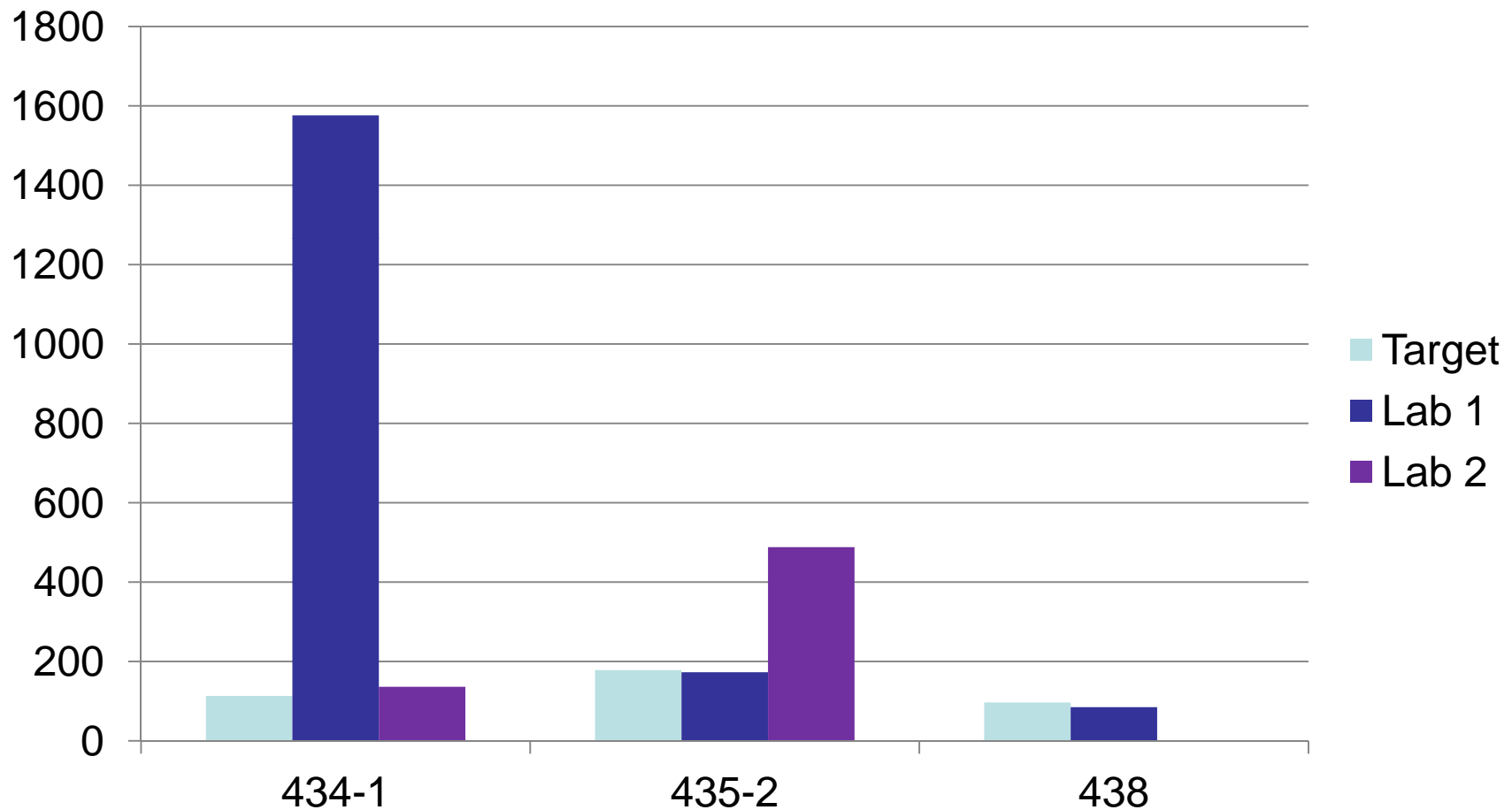
# Summary of Results to Date

- Five tests from five labs have been completed and reported.
- Results for PVIS, WPD, ACLW and Oil Consumption Tabulated on next slide.
- Two of the five results were severe on PVIS. Two results were also mild on ACLW
- Results to date have been on reference oils 438, 435-2 and 434-1

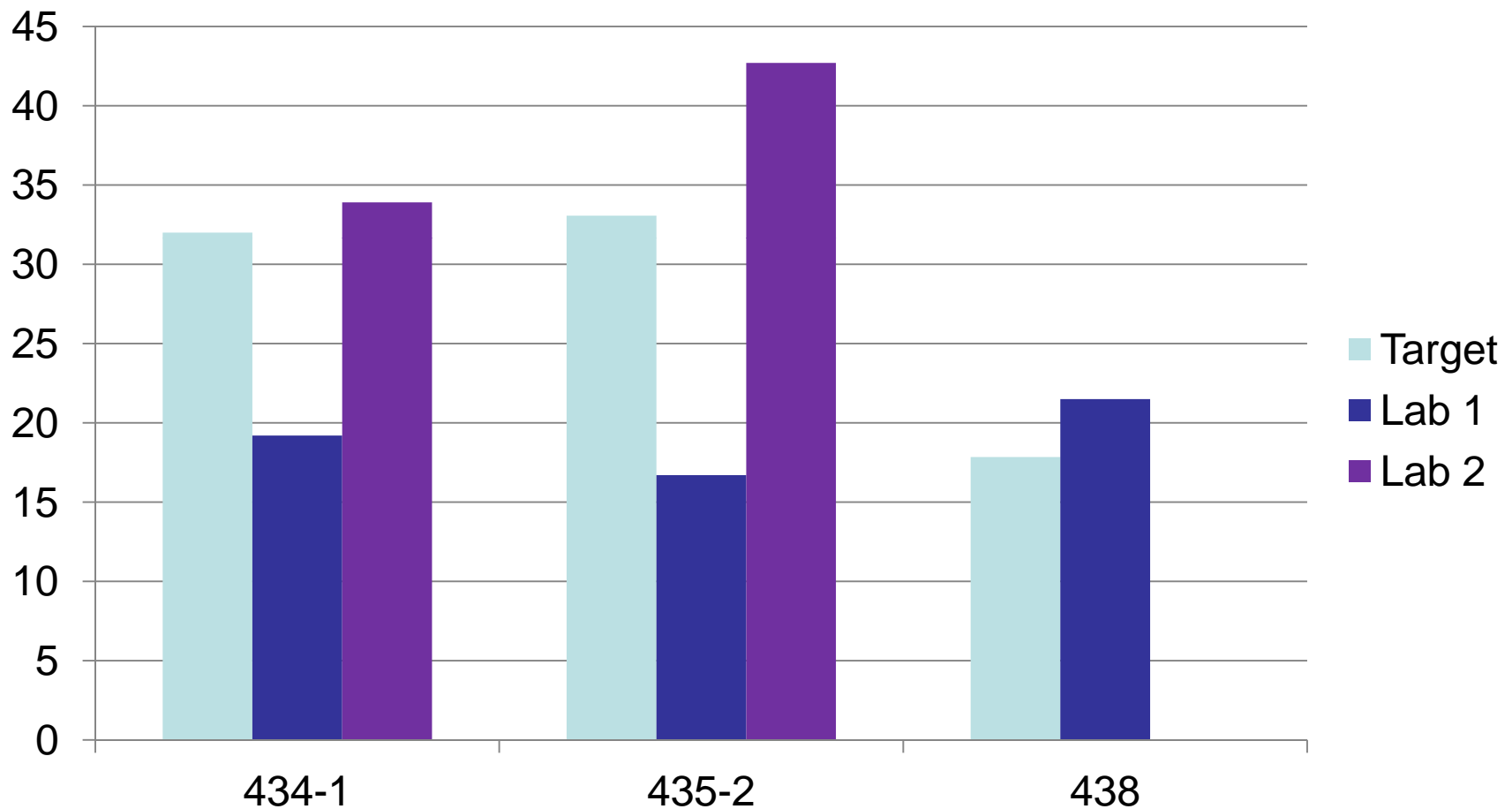
TESTKEY	LTMSLAB	LTMSAPP	IND	LTMSDATE	PVIS	PVISyi	WPD	WPDyi	ACLW	ACLWyi	OILCON
100614-IIIG	G	4	435-2	20140702	172.8	-0.1023	3.46	-0.2241	16.7	-2.9167	3.55
99114-IIIG	B	1	435-2	20140719	487.8	3.2497	3.06	-0.9138	42.7	1.0918	4.26
94773-IIIG	D	2	434-1	20140721	1575.2	6.8288	3.46	-1.3958	19.2	-2.5629	4.5
97095-IIIG	A	5	438	20140805	84.8	-0.737	3.14	-0.182	21.5	0.897	2.98
98844-IIIG	E	1	434-1	20140811	136.2	0.4852	4.86	0.2892	33.9	0.2896	4.14

Results in red indicate results outside of the normal acceptance range

# Comparison of PVIS results to Target

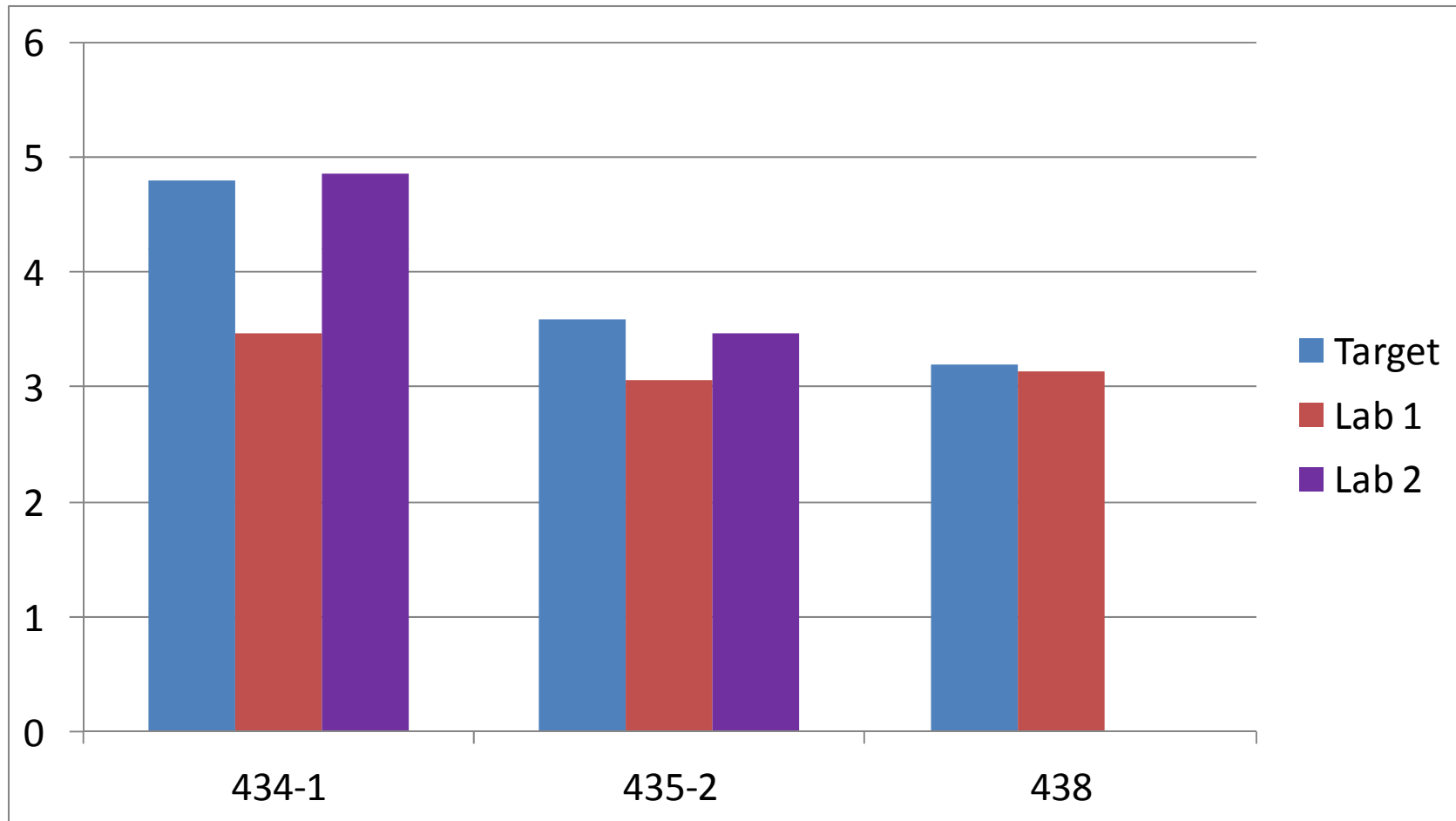


# Comparison of ACLW results to Target





# Comparison of WPD results to Target





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ATTACHMENT 3

# Sequence IIF RO 433-2 Review

Data Analyst Group

07/15/2014

## Data Analyst Group Participation

- Participated in 07/14/2014 Conference Call
  - Janet Buckingham, SWRI
  - Martin Chadwick, IAR
  - Todd Dvorak, Afton
  - Rich Grundza, TMC
  - Jo Martinez, Chevron Oronite
  - Kevin O'Malley, Lubrizol

## Background & Data Set

- The Sequence III SP has requested the Data Analyst Group review 433-2 as the result of a TMC review on reference oils.
- The data set reviewed was the IIF LTMS data file where CHARTHRS = Y and the last reported result was 20140708 (n=163).
- As 433-1 and 433-2 were both tested beginning 20130924, a smaller data set beginning at that time was also reviewed.

## Moving Forward

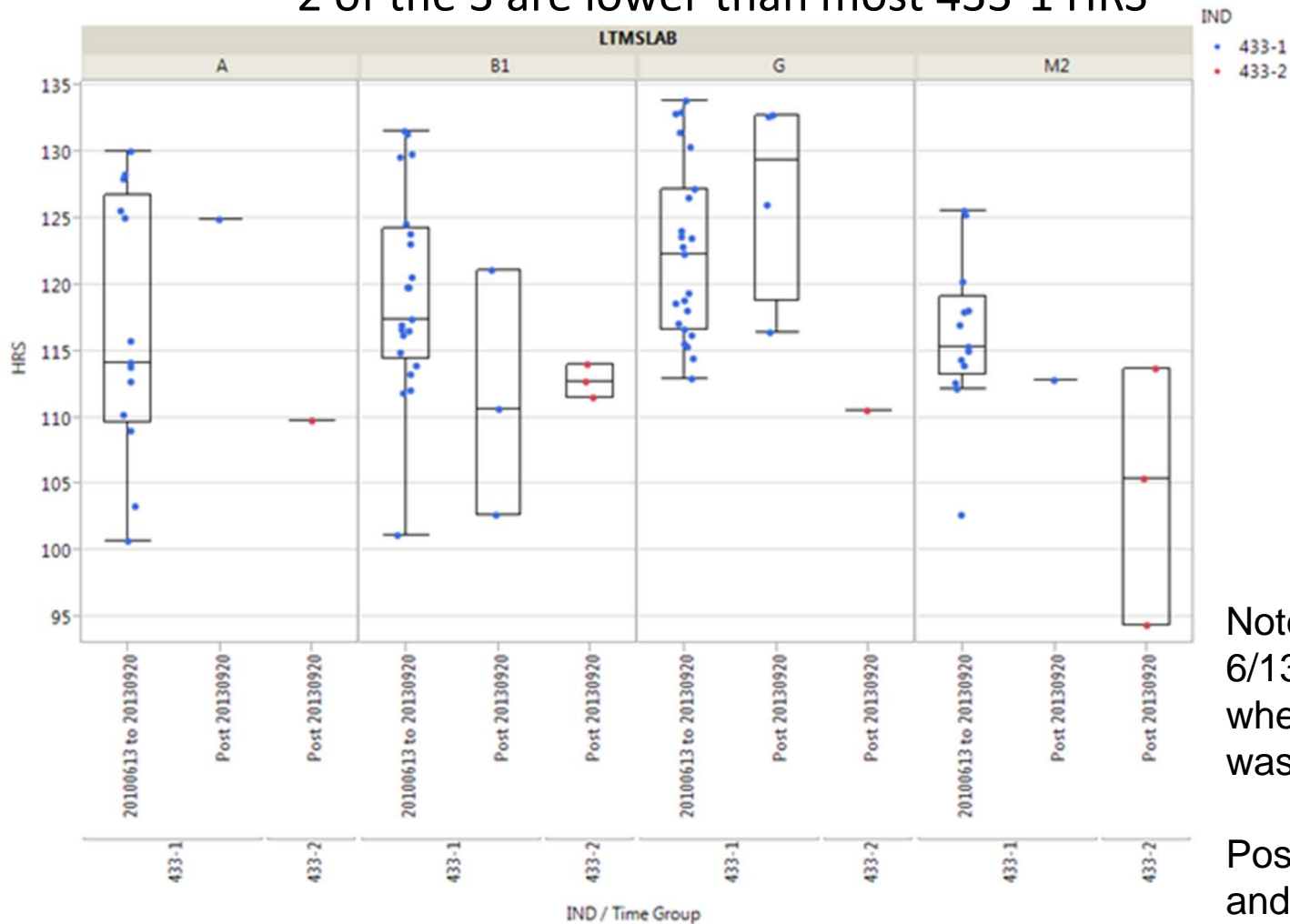
- While the group agrees that recent HRS performance appears to have shifted from historical performance and the viscosity of 433-2 is different from 433-1 there is insufficient evidence, at this time, to conclude that the HRS shift is oil related.
- The group requests additional 433-2 data to clarify the differences: a minimum of one, preferably two, additional 433-2 runs in both labs A and G. These labs have each produced only one 433-2 run to date (labs B1 and M2 have each produced three 433-2 runs).
  - If the SP chooses to obtain the additional data using live references it is important to note that if the differences are oil related there is an increased likelihood of failed references, precision alarms, and/or inappropriate severity adjustments while referencing with 433-2.

# Hours Over Time



# Comparison of 433-1 HOURS (6/13/10 to 9/20/13) to 433-2 HOURS

- Labs A & B1: 433-2 HRS are within the range of 433-1 HRS
- Lab G: 433-2 result is lower than observed range of 433-1 HRS
- Lab M2: 1 of the 3 433-2 HRS is lower than the observed range of 433-1 HRS;  
2 of the 3 are lower than most 433-1 HRS



## Notes:

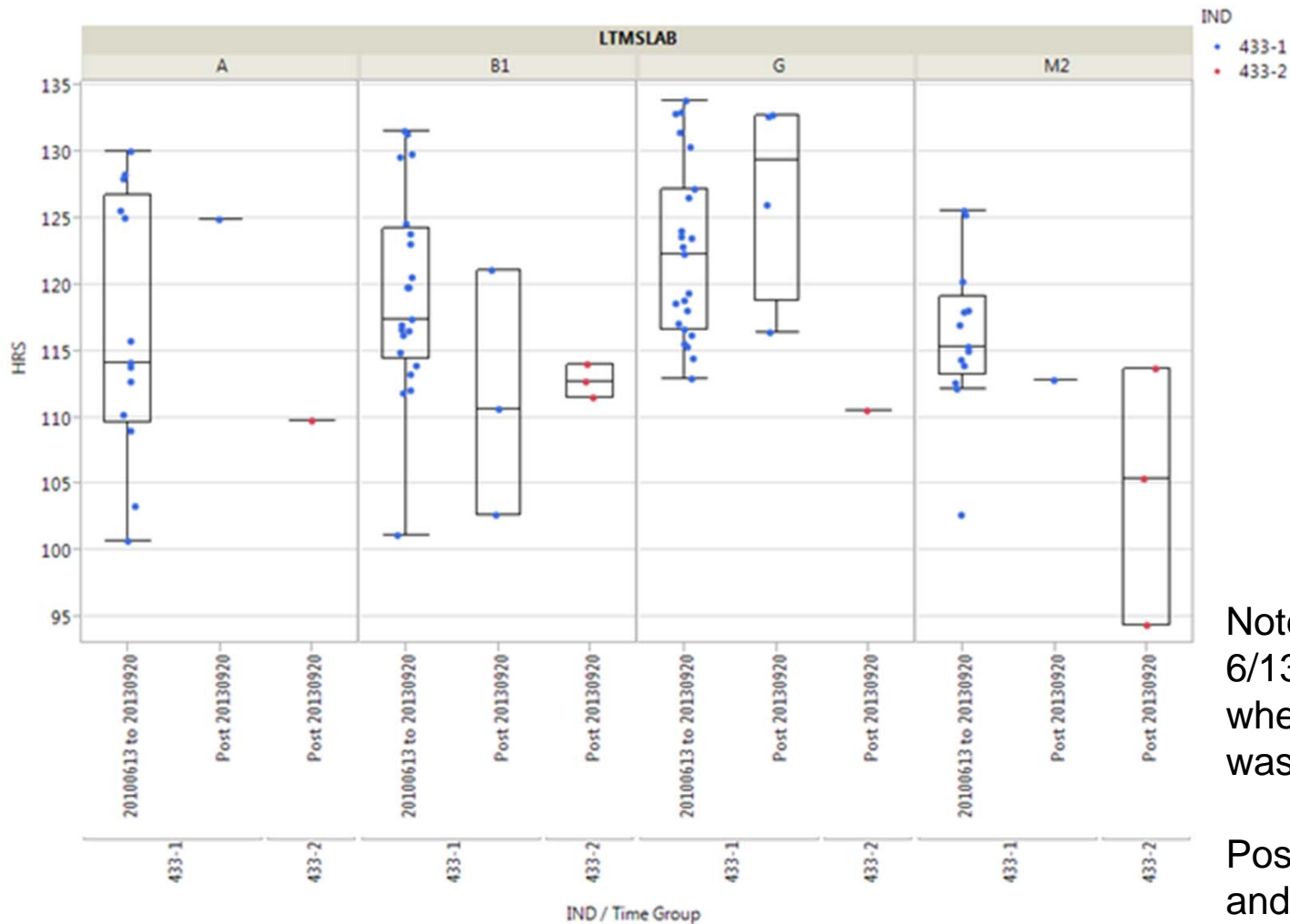
6/13/10: The cutoff used when the HRS calculation was developed

Post 9/20/13: Both 433-1 and 433-2 were tested



## Comparison of 433-2 HOURS to 433-1 HOURS Post 9/20/13

- Labs A & G: 433-2 HRS are lower than 433-1 HRS
- Lab B1: 433-2 HRS within range of 433-1 HRS
- Lab M2: 2 of the 3 433-2 HRS are lower than the 433-1 HRS

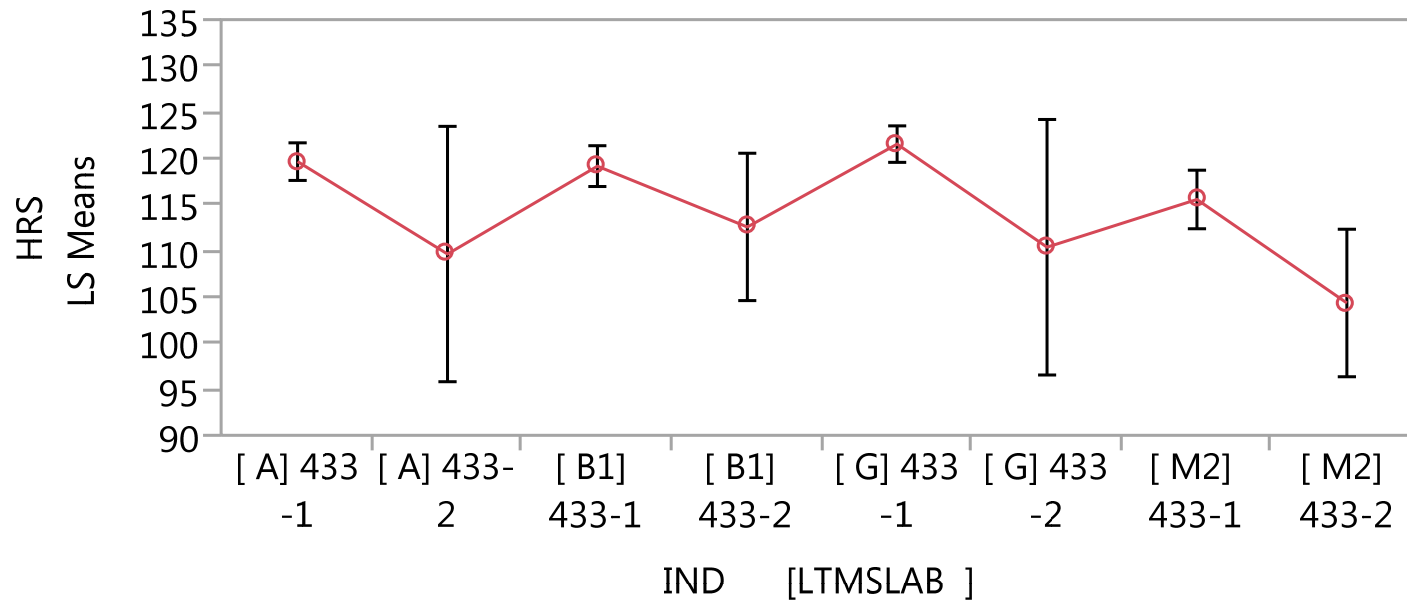


### Notes:

6/13/10: The cutoff used when the HRS calculation was developed

Post 9/20/13: Both 433-1 and 433-2 were tested

Though not statistically significant, 433-2 LSMeans are consistently lower than 433-1 within labs (n=161)



Least Squares Means Table	
Level	Least Sq Mean
[ A ] 433-1	119.79457
[ A ] 433-2	109.79000
[ B1 ] 433-1	119.30410
[ B1 ] 433-2	112.72333
[ G ] 433-1	121.69163
[ G ] 433-2	110.53000
[ M2 ] 433-1	115.69737
[ M2 ] 433-2	104.48667

# ATTACHMENT 4

**From:** [Jeff Clark](#)  
**Subject:** FW: IIIG Conference Call 9-4 Sunnen Honing Machine Calibration frequency/methodology update  
**Date:** Monday, September 08, 2014 10:42:19 AM

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From: Bruce S Matthews [<mailto:bruce.matthews@gm.com>]  
Subject: IIIG Conference Call 9-4 Sunnen Honing Machine Calibration frequency/methodology update

Charlie Leverett/Bruce Matthews report on Sunnen Honing machine calibration frequency/methodology.

Wes McCullough of Sunnen has had a vendor evaluate the current dyno design to determine whether there is a way to make the dyno more robust and more shipping friendly. This vendor was unable to suggest much in the way of improvements. Another vendor is also scheduled to review the calibration dyno soon and Wes will keep GM posted.

Unless the next vendor is able to propose significant improvements Wes suggests making no changes to the current dyno since it is only required for another 3 years.

Sunnen is comfortable with allowing the oil testing labs technicians perform the annual calibration so a Sunnen technician doesn't need to be scheduled. Sunnen expects the oil testing labs to pay for shipping of the calibration dyno.

GM proposes the IIIG Engine Build Manual, Section 2 sheet 10, be revised to reflect the change in the requirement for a qualified Sunnen Technician to perform the calibration.

GM expects the oil testing labs to work with Sunnen to schedule the calibration dyno and comply with the annual calibration requirements of the Sunnen CV-616.

Thank you  
Bruce Matthews  
248-830-9197  
GMPT Materials Engineering  
Engine oil