

Sequence IVB Surveillance Panel Teleconference Minutes

Tuesday January 15, 2019

9:30 a.m. EST

1.0) **Attendance**

See attachment 1 for a list of attendees.

See attachment 2 for agenda.

3.0) **Review of Reference Tests With Extended Breakin**

The panel reviewed the results from seven tests run on Reference oils 1012 and 300 using the extended (50 h cyclic) break in procedure (Attachment 3). After review and discussion, the panel agreed to allow BOI-VGRA testing to begin. The panel discussed whether to recondition an engine that experiences lobe failure or replace the engine while running the BOI-VGRA matrix. Both labs and the test sponsor felt that reconditioning the engine would be acceptable and the panel did not disagree with that proposal

4.0) **Introduction of reference oil 300-1**

The panel discussed how to introduce the reblend of reference oil 300. It was agreed to introduce 300-1 using current reference oil 300 targets through routine referencing and reference oil 300-1 assigned with the normal distribution. Results are to be reviewed as they are completed.

5.0) **Next Meeting**

To be held at the call of the chair.

6.0) **Motions and Action Items**

See attachment 4 for motions and action items taken during this meeting.

7.0) **Meeting Adjourned**

The meeting adjourned at 10:50 a.m.

**MEMBERSHIP
SEQUENCE IV SURVEILLANCE PANEL**

Attachment 1

January 15, 2019

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Subject: SG Updated IVB Extended Break-In Analysis
Date: Monday, January 14, 2019 5:16:00 PM
Attachments: [Sequence IVB Extended Break-In Analysis 010819.pdf](#)

Sequence IV Surveillance Panel Members,

An updated Sequence IVB extended break-in analysis, from the industry statisticians group, is attached for tomorrow's conference call. The agenda items for tomorrow's conference call are included below:

1. Review results from 3rd and 4th BOI/VGRA matrix stand reference tests with REO 300 (run 1 engine w/ extended break-in).
2. Review of SG's analysis on the 7 reference tests (3 REO 1012 and 4 REO 1012) conducted on run 1 engines w/ extended break-in.
3. Recommendation to BOI/VGRA Task Force to proceed with the Sequence IVB BOI/VGRA matrix.
4. Update on Intertek's routine reference test being conducted on run 2 engine w/ extended break-in.
5. Discussion on introduction of REO 300-1.

Regards,

William A. Buscher III
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Sequence IVB Extended Break-In FEWMEOT Analysis

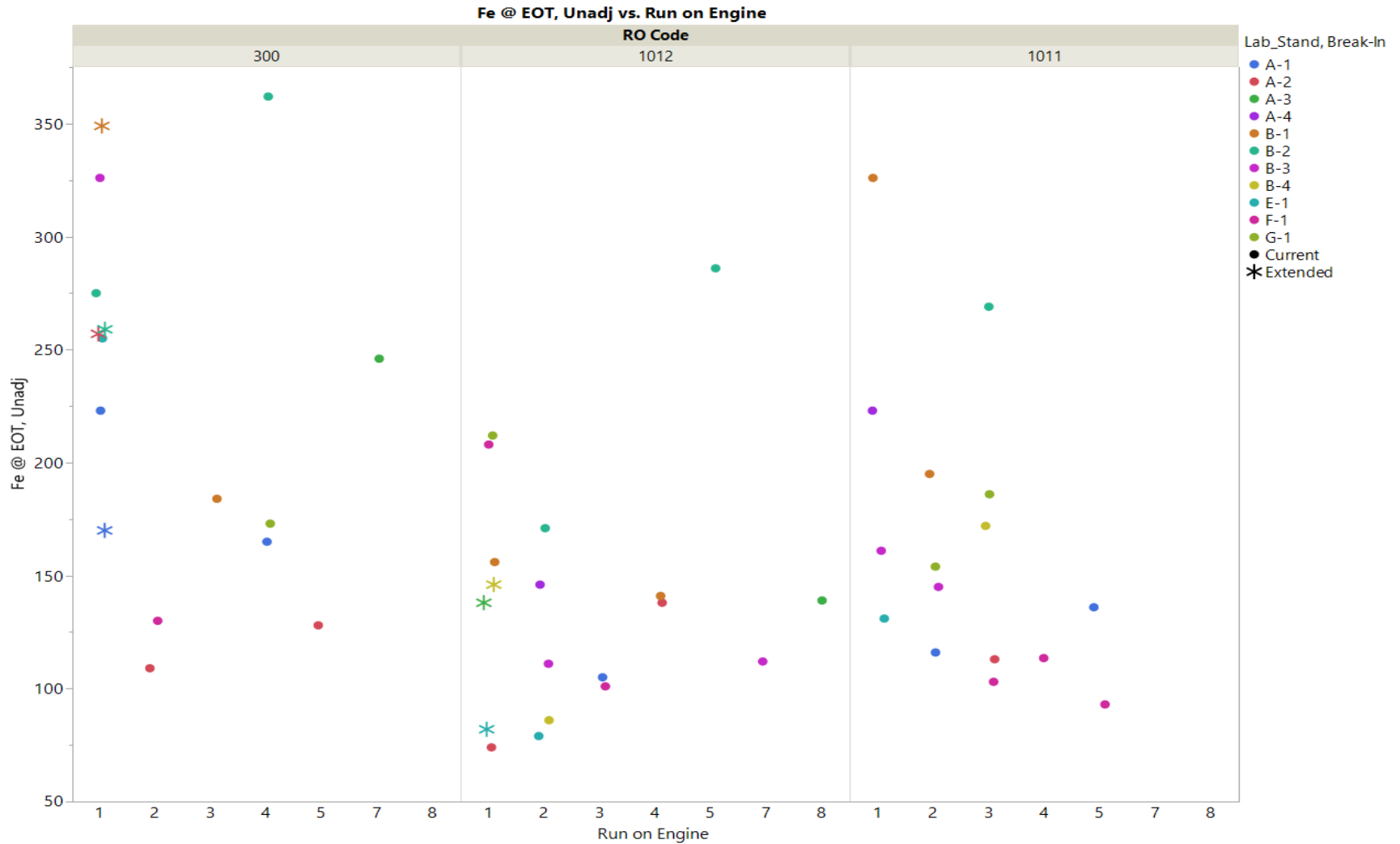
Statistics Group

Jan. 8, 2019

Statistics Group

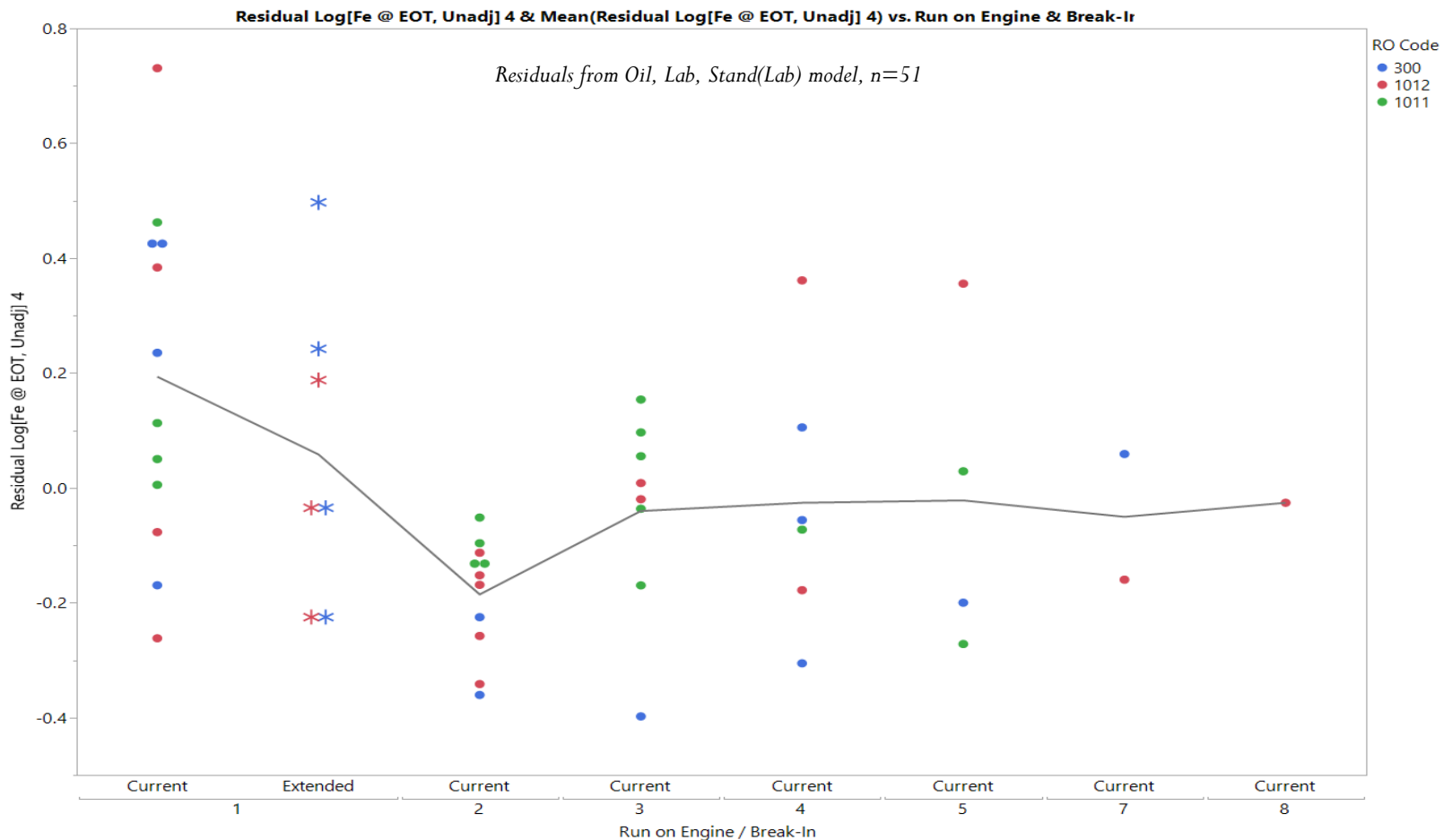
- Doyle Boese, Infineum
- Jo Martinez, Chevron Oronite
- Kevin O'Malley, Lubrizol
- Martin Chadwick, Intertek
- Min Chen, ExxonMobil
- Richard Grundza, TMC
- Lisa Dingwell, Afton
- Travis Kostan, SwRI

1012 (3) + 300 (4) Extended Break-in



Residuals by Run on Engine

- With Extended Break-in, Run 1 severity is directionally lower than current break-in



Severity with Extended Break-in

- With Extended Break-in, the difference between Run 1 and Run 3+ is estimated to be reduced by half, but the difference is not statistically significant with this small data set.

LnFe Model

Summary of Fit					
RSquare		0.737055			
RSquare Adj		0.624364			
Root Mean Square Error		0.250279			
Mean of Response		5.076614			
Observations (or Sum Wgts)		51			
Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Ratio	
Model	15	6.1454294	0.409695	6.5405	
Error	35	2.1923870	0.062640	Prob > F	
C. Total	50	8.3378163		<.0001*	
Effect Tests					
Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
Lab	4	4	1.3030285	5.2005	0.0021*
Stand[Lab]	6	6	1.2450023	3.3126	0.0109*
RO Code	2	2	1.4716436	11.7469	0.0001*
Break-In[Engine Run]	1	1	0.0688250	1.0987	0.3017
Engine Run	2	2	0.7038275	5.6181	0.0077*

Run, Break-In	LnFe LSMean	Fe LSMean	Difference from Run 3+
[1]Current	5.2408	189	42
[1]Extended	5.1054	165	19
[2]Current	4.8424	127	
[3+]Current	4.9861	146	

Sequence IV Surveillance Panel

January 15, 2019

8:30AM – 10:00AM (CST)

Conference Call

Motions and Action Items

As Recorded at the Meeting by Bill Buscher

1. Motion – Sequence IV surveillance panel recommends to the BOI/VGRA Task Force that the Sequence IVB is ready to proceed with the BOI/VGRA matrix.
Hirano-san / Ron Romano / Passed 13 – 0 – 2