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Issued: January 26, 2009
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Unapproved Minutes of the November 13, 2008 Sequence VID Surveillance Panel meeting.

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The meeting was called to order at 1:00 PM by Chairman Charlie Leverett.

Agenda

The Agenda is Attachment 1. The attendance list is Attachment 2.

Bill Buscher is the Motions and Actions Recorder. The Motions and Actions are Attachment 3.

The minutes from the 10.21.2008 meeting are posted and were approved unanimously.

Action Item Review

- A. The Statistical Group will review BL Shift (BLB vs. BLA) after the Precision Matrix Phase II is completed. Open pending Phase II of Precision Matrix
- B. The Statistical Group will review outlier criteria after the Precision Matrix Phase II is completed. Open pending Phase II of Precision Matrix
- C. George presented recommendation on excitation voltage at load cell. This is Attachment 4.

Motion – The excitation voltage to the load-cell shall vary no more than 0.01% from the nominal value during the course of a test (1mV for a 10v supply). Labs to record the voltage by capturing the voltage magnitude using an analog input channel and reporting the value along with the other test's general parameters.

George Szappanos / Dwight Bowden / Passed with 7 For, 0 Against, 4 Waive

Action Item – Motion listed above to be implemented at the independent labs prior to the start of phase 1 of the BOI/VGRA Precision Matrix and at the dependant labs prior to the start of phase 2 of the BOI/VGRA Precision Matrix.

Old Business

- A. The BL2 oil should ship to labs the week of 11.20.2008, 27,000 gallons.

Action Item – Determine requirements for the next batch of BL by the next Surveillance Panel meeting.

- B. The 20 engines built at the November 3-6 workshop have been shipped.
- C. The 100 new engines should arrive by the end of the year.
- D. The precision matrix memorandum of agreement is due 11.17.2008. The ASTM will then issue invoices.

New Business

- A. The Scope and Objectives have been updated. This is Attachment 5.
- B. The data dictionary is in beta testing, then will be released.
- C. Jo Martinez gave a presentation on data provided by SwRI. This is Attachment 6. Based on the data review, SwRI was approved for testing for the precision matrix. This recommendation will pass forward to the PCEOCP.

Motion – Accept the Statistical Group’s recommendation to move forward with the BOI/VGRA Precision Matrix, based upon the review of SwRI’s prove-out testing, and forward the recommendation to the PCEOCP.

Charlie Leverett / Jim Linden / Passed Unanimously

- D. There will be a survey of the labs for the number of available stands.
- E. The precision matrix run order has been selected. Proposal 2 was recommended.

Motion – Accept the Statistical Group’s Proposal 2 for the BOI/VGRA Precision Matrix run order and forward the proposal to the PCEOCP.

Mark Sutherland / Andy Ritchie / Passed Unanimously

- F. The next meeting will be in the middle of the first portion of the precision matrix. The matrix will begin when the MOA is signed and all funds received. This is projected to be the end of the year.

The meeting was adjourned at 2:22 PM

Sequence VI Surveillance Panel Meeting

November 13, 2008 (Thursday)

1:00 – 5:00

GM Tech Center Warren MI

Agenda

1.0) Roll Call

2.0) Approval of minutes

2.1) Approve the minutes from **10/21/08**, these are posted on the TMC web site.

3.0) Action Item Review

3.1.) The Statistical Group will review BL Shift (BLB vs. BLA) after the Precision Matrix Phase II is completed. **Open pending Phase II of Precision Matrix**

3.2.) The Statistical Group will review outlier criteria after the Precision Matrix Phase II is completed. **Open pending Phase II of Precision Matrix**

3.3) George to present recommendation on excitation voltage at load cell

4.) Old Business

4.1) Last update (11/06/08) from John Zalar is Blend 2 of Baseline should be shipped to the labs November 20th.

4.2) 20 engines were assembled at the workshop held at Intertek **November 3-6.**

4.3) OHT proposal on engine supply – Update from OHT on 100 engine purchase.

4.4) Review of ACC Template Update

4.5) Precision Matrix Update –

a. MOA to trade groups went out 11/12/08, I have not seen it but was told it is out. Return date 11/17/08, again this as heard. Can anyone confirm?

5.) New Business

5.1) VID Data Dictionary Release – In process estimated release to DCC group for beta testing 11/XX/08, with possible release date of November 20, 2008.

5.2.) Statistical Groups review of the SwRI Prove-out testing. **The VI SP needs to forward a recommendation to the PCEOCP to go forward or not with the precision matrix.**

Here is a presentation on the data review prepared by Jo Martinez;



Matrix V + SW
Follow-up.ppt

5.3) Review of Sequence VI Scope & Objectives.

5.4) VID Test Stand Availability survey due in by 11/14

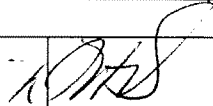


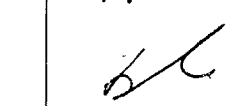




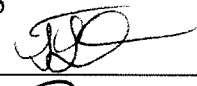
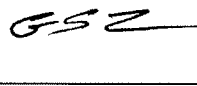


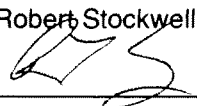
5.5) Review Statistical Groups recommended Precision Matrix Run Order

6.) Next Meeting

6.1) At the Call of the Chairman

7.) Meeting Adjourned

ASTM SEQUENCE VI SURVEILLANCE PANEL

Name	Address	Phone/Fax/Email	Attendance
Bowden, Dwight Voting Member	OH Technologies, Inc. P.O. Box 5039 Mentor, OH 44061-5039	Phone: 440-354-7007 Fax: 440-354-7080 dhbowden@ohtech.com	
Jim Linden Voting Member	General Motors Research & Development 30500 Mound Rd./MC 480-106-160 Warren, MI 48090-9055	Phone: 586-986-1888 james.l.linden@gm.com	
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Miranda, Timothy Voting Member	BP Castrol Lubricants USA 1500 Valley Road Wayne, NJ 07470	Phone: 973-305-3334 Timothy.Miranda@bp.com	NO CONFERENCE CALL PHONES
Mosher, Mark Voting Member	ExxonMobil 600 Billingsport Road Paulsboro, NJ 08066	Phone: 856-224-2132 Fax: 856-224-3628 mark_r_mosher@exxonmobil.com	
Caudill, Timothy Voting Member	Ashland, Inc. 21st and Front Streets Ashland, KY 41101	Phone: 606-329-5700 1960 x5708 Fax: 606-329-3009 Tcaudill@ashland.com	
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Glaenger, David Voting Member	Afton Research Center 500 Spring Street Richmond, VA 23218	Phone: 804-788-5214 Fax: 804-788-6358 Dave_Glaenger@ethyl.com	
Tracey King Voting Member	Chrysler	Phone: Fax: tek1@chrysler.com	
Sutherland, Mark Voting Member	Chevron Oronite Company LLC 4502 Centerview Ste. 210 San Antonio, TX 78228	Phone: 731-5605 Fax: 731-5621 msut@chevrontexaco.com	See attached
Robert Stockwell	ConocoPhillips Lubricants R&D Passenger Car Engine Oil	office 580-767-6894 Robert.T.Stockwell@conocophillips.com	



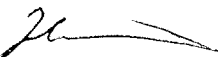




ASTM SEQUENCE VI SURVEILLANCE PANEL

Name	Address	Phone/Fax/Email	Attendance

Guest Present at meeting

JO MARTINEZ	OKM/AE 100 Chevron Way Richmond, CA Consultant	510 242 5563	<i>JM</i>
Gordon Farnsworth	71 Buck Rd, Warrington Pa. InFineum	215-491-1216	<i>GPF</i>
Doyle Boese	1900 E. Linden Ave, Linden, NJ OH TECHNOLOGIES INC.	908-474-3176 07636 440.354.7007	<i>DB</i>
JASON BOWEN	9300 Progress Pkwy. / P.O. Box 5039 OH TECHNOLOGIES INC.	44061-5039 440.35.7007	<i>JB</i>
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Ben Wilhu	"	210-522-5911	<i>BWBresuria</i>
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Jerry Wang	Oronite	jwdy@chevron.com	

Sequence VIB/D Surveillance Panel
November 13, 2008
1:00PM – 5:00PM
GM Technical Center
Warren, MI

Motions and Action Items

As Recorded at the Meeting by Bill Buscher

1. Motion – The excitation voltage to the load-cell shall vary no more than 0.01% from the nominal value during the course of a test (1mV for a 10v supply). Labs to record the voltage by capturing the voltage magnitude using an analog input channel and reporting the value along with the other test's general parameters.

George Szappanos / Dwight Bowden / Passed with 7 For, 0 Against, 4 Waive

2. Action Item – Motion listed above to be implemented at the independent labs prior to the start of phase 1 of the BOI/VGRA Precision Matrix and at the dependant labs prior to the start of phase 2 of the BOI/VGRA Precision Matrix.
3. Action Item – Determine requirements for the next batch of BL by the next Surveillance Panel meeting.
4. Motion – Accept the Statistical Group's recommendation to move forward with the BOI/VGRA Precision Matrix, based upon the review of SwRI's prove-out testing, and forward the recommendation to the PCEOCP.

Charlie Leverett / Jim Linden / Passed Unanimously

5. Motion – Accept the Statistical Group's Proposal 2 for the BOI/VGRA Precision Matrix run order and forward the proposal to the PCEOCP.

Mark Sutherland / Andy Ritchie / Passed Unanimously

6. Action Item – Chairman to issue a letter to the PCEOCP addressing the two motions listed above.
7. Action Item – Chairman to schedule the next Surveillance Panel meeting midway into phase 1 of the BOI/VGRA Precision Matrix.



Seq VI Load-Cell excitation voltage specification recommendation

Monday, November 10, 2008

Why is a specification needed?

- The type of strain gage (load cell) specified by the seq-VI procedure requires a power supply to provide excitation voltage (10vdc)
- The output of the strain gage is a function of not only the load (strain) on the device, but also the excitation voltage
- Output sensitivity is specified as “X” mv per V of excitation; typically on order of about 3mV/V
- Therefore, the output is DIRECTLY proportional to the power supply voltage – any fluctuation translates directly into an error in the measurement of load
- This is unlike *amplified* load transducers or pressure transducers that can accommodate a very wide range of input voltage with no effect on output

What is important in the power supply spec

- “accuracy” (how close to set voltage) is non-issue since it’s calibrated out
- line/load regulation not significant due to constant load
- Ripple is averaged out
- Repeatability is primary issue.
- Temperature has the largest impact on the output of the power supply (like most instrumentation)
- Known as “temperature coefficient” – how much %change per degree C
- A typical “run of the mill” power supply, such as what might be used for pressure transducers or PCM power can have a temperature coefficient as high as 0.1% per °C. Again, that translates directly into measurement error.
- A 5 degree shift can have a ½% effect on Torque!

Seq VI precedents...

- There are currently specifications on temperature variation allowance for...
 - the load cell
 - Temp sensitivity allowance is 0.001% per °C (6.4.2.1)
 - $\pm 6^{\circ}\text{C}$ (12° delta) temperature variation allowance (6.4.2.3)
 - Therefore, acceptable deviation is **0.012% of torque reading**
 - the fuel meter
 - temp sensitivity is 0.0002% per °C (per Micromotion [spec sheet](#))
 - 4°C temperature variation allowance (Table 3)
 - Therefore, acceptable deviation is **0.0008% of fuel reading**
- Therefore, the load-cell power supply should have a specification on par with these
 - The worst of the two is 0.012%
 - What the heck, let's round it to 0.01% (still pretty darn tight)
 - Translates to 1mV tolerance on 10 volts

Typical values for precision power supplies

Acopian Series A Linear Regulated	0.0150% per °C	0.7°C
Sorensen XG, XTR series	0.0100% per °C	1.0°C
Analog Devices strain gage module	0.0025% per °C	4.0°C
Dataforth 5B strain gage module	0.0015% per °C	7.0°C
Linear Technologies precision reference	0.0005% per °C	20.0°C

To produce no more than a 0.01% error, the temperature allowance for each power supply is shown in red.

For power supplies exposed to large ambient temperature fluctuations (non air-conditioned environments), most of the above supplies would not meet the 0.01% specification.

Motion -

- The excitation voltage to the load-cell shall vary no more than 0.01% from the nominal value during the course of a test (1mV for a 10v supply)
- Labs to record the voltage by capturing the voltage magnitude using an analog input channel and reporting the value along with the other test's general parameters

ASTM Sequence VIB Surveillance Panel Scope and Objectives

Scope:

The Sequence VI Surveillance Panel is responsible for the surveillance and continued improvement of the Sequence VI test documented in the current ASTM Standard D6837 for the VIB **and the VID** as each is updated by the Information Letter System. Improvements in test operation test monitoring and test validation will be accomplished through continual communication with the Test Sponsor, ASTM Test Monitoring Center, Central Parts Distributor, ASTM B.O1, and the Passenger Car Engine Oil Classification Panel. Actions to improve the process will be recommended when deemed appropriate based on input from the aforementioned. The panel will review development and correlation of updated test procedures with previous test procedures. This process will provide the best possible test procedure for evaluating automotive lubricant performance with respect to the lubricant's ability to provide fuel economy benefits.

Objectives Target Date

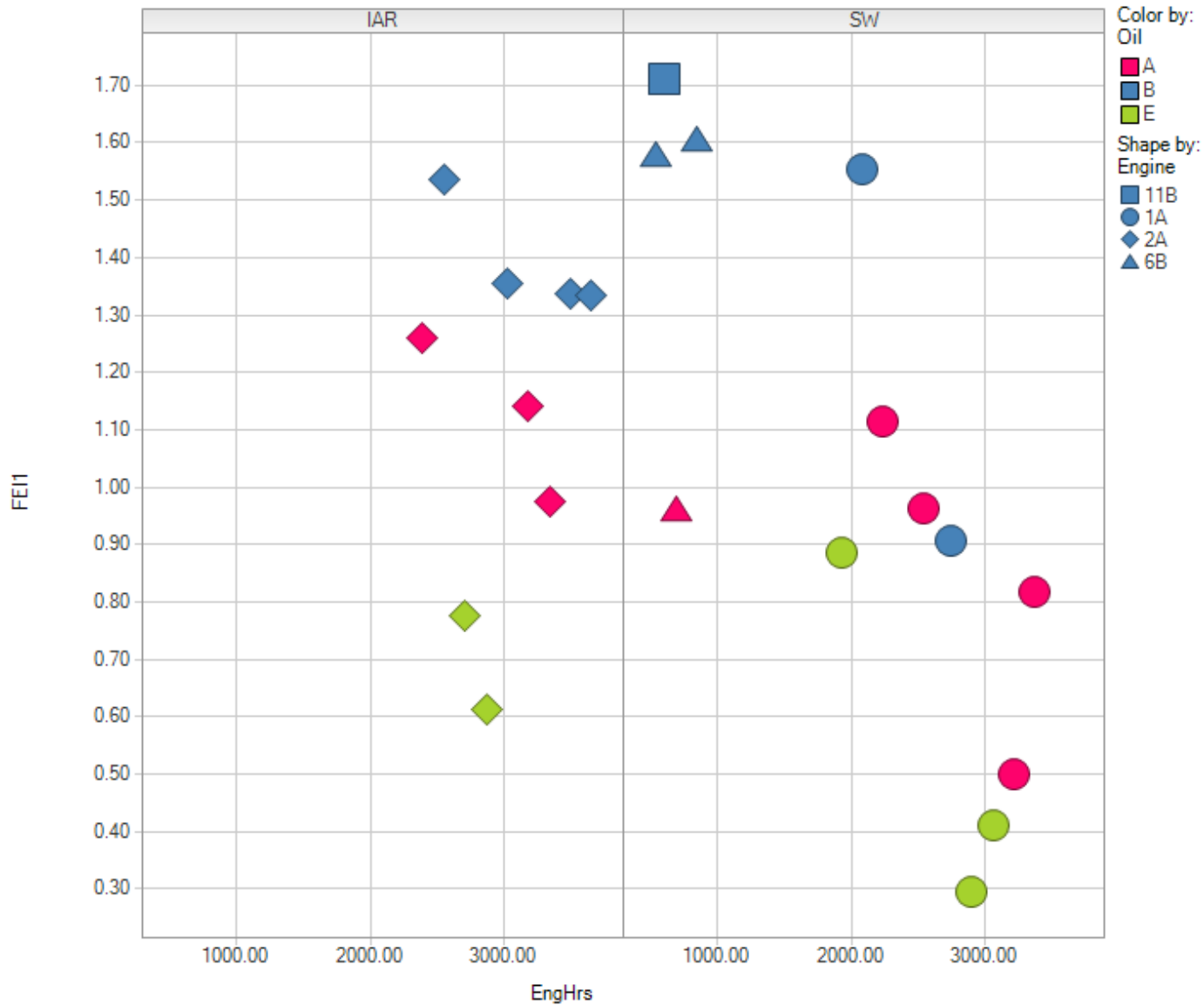
Review of VID Precision Matrix Data	February 2009
Issue VID ASTM Research Report	June 2009
Blend 3 of Baseline and Baseline Flush oils	June 2009
Work with ASTM Facilitator to complete ASTM Standard for VID	November 2009

Revised 11/13/08

Observations

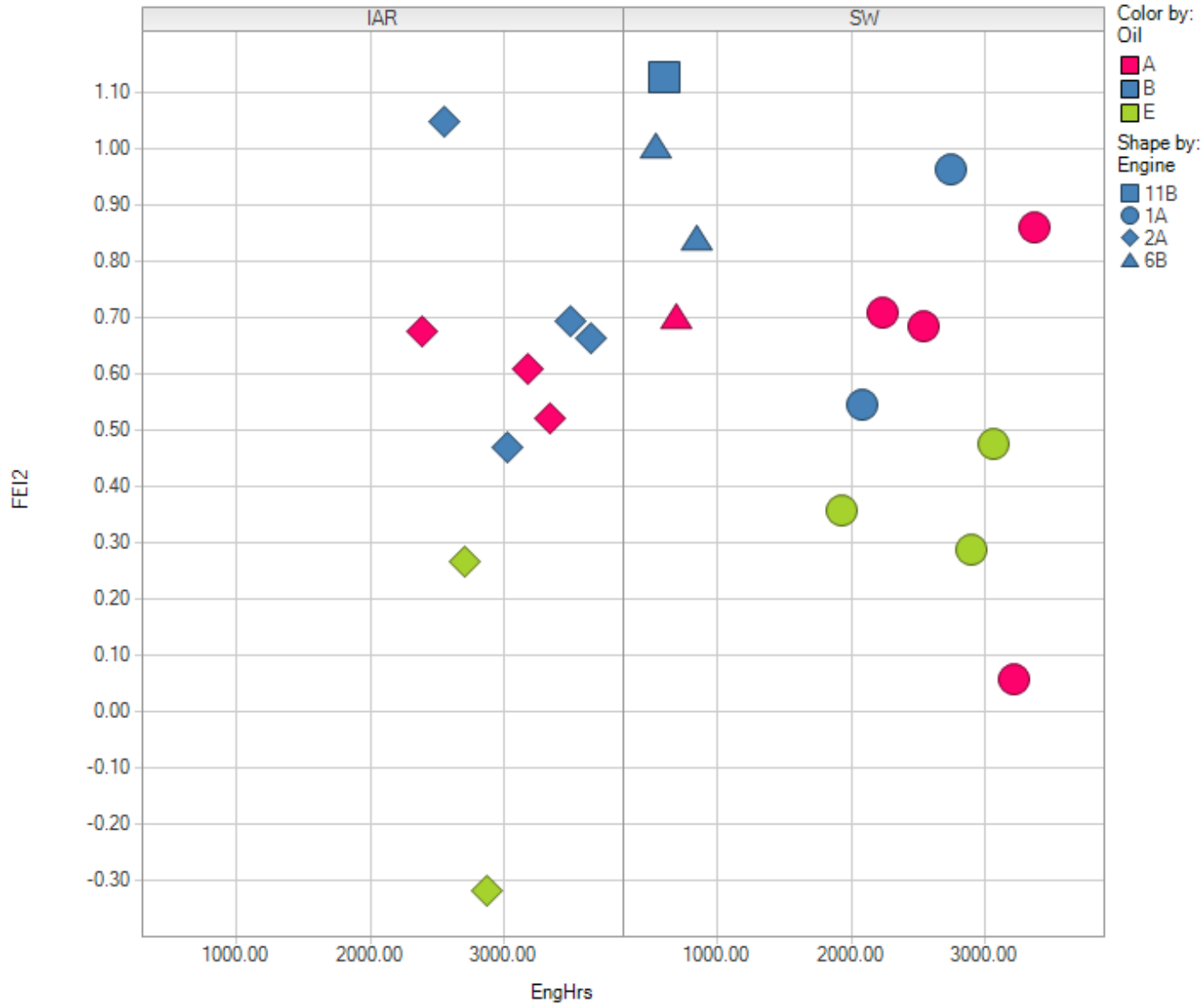
- Two oil B runs in 6B engine are on the average similar to the FEI1 of the 1st Oil B runs in Matrix V both in IAR and SW
- Looks like FEI1 discrimination between oils A and B is maintained
- BLB Shift is within the limits of -0.2% and 0.4%
- BL Fuel consumed standard deviation reduced in half at stages 7, 8 & 9 and are close to IAR standard deviation, about 40% improvement at stages 3, 4 & 5 for BL Before and about no improvement at stages 3, 4 & 5 for BL After

FEI 1 – Matrix V + SW Follow-up



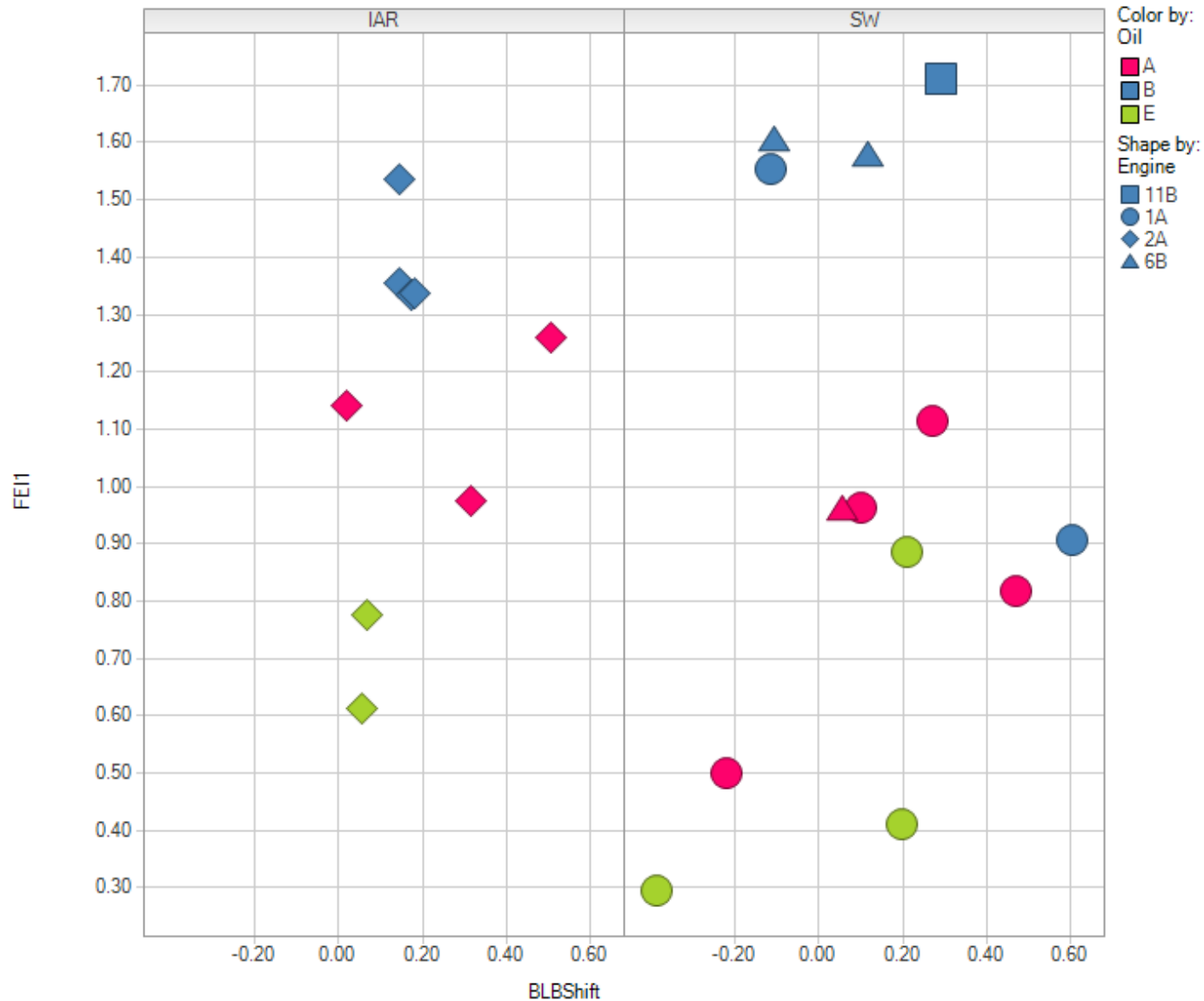
Assigned 1A and 2A as Matrix V engines for SW and IAR, resp.

FEI 2 – Matrix V + SW Follow-up



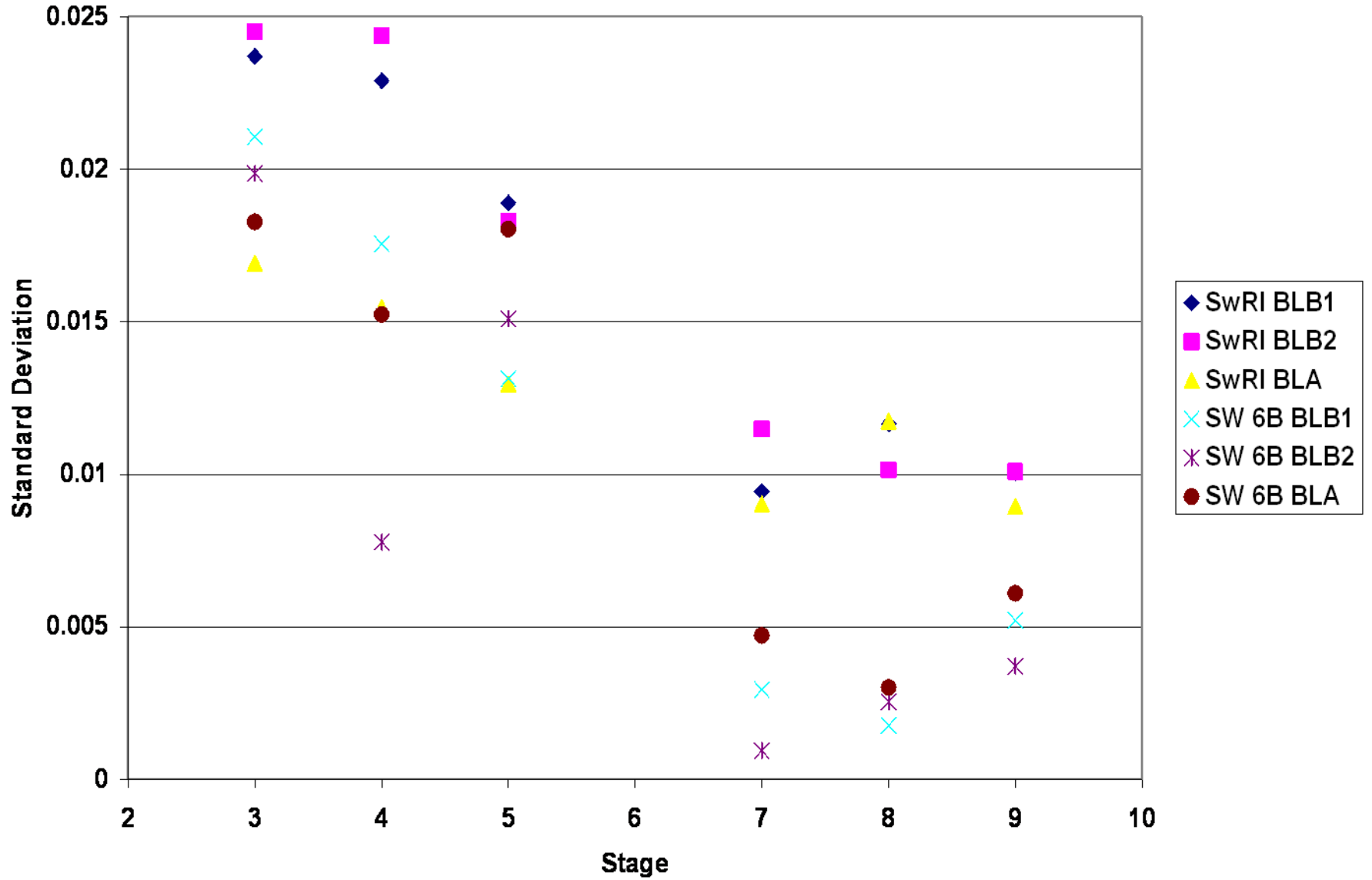
Assigned 1A and 2A
as Matrix V engines
for SW and IAR, resp.

BLB Shift – Matrix V + SW Follow-up



Assigned 1A and 2A
as Matrix V engines
for SW and IAR, resp.

BL Fuel Consumed (kg) Standard Deviation by Stage



BL Fuel Consumed (kg) Standard Deviation by Stage

