



COMMITTEE D02 on PETROLEUM PRODUCTS, LIQUID FUELS, AND LUBRICANTS

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**Sequence VIII Surveillance Panel Meeting Minutes
March 30, 2016
San Antonio, Texas
Southwest Research Conference Room 209**

**Minutes recorded by Patrick Lang
Direct any comments or corrections to:
patrick.lang@swri.org**

Chairman Patrick Lang called the meeting to order at 8:00 AM

Agenda can be found as attachment #1.

Membership changes:

Attendance list can be found as attachment #2.

- Tracey King will be replaced by Mark Overaker (Haltermann Solutions).
- Fred Gerhart will be replaced by Antony Hendrix (SwRI)
- Jerry Brys would be the voting member for George Szappanos of LZ for this meeting

Chairman Lang introduced Anthony Hendrix as the replacement project manager for the Sequence VIII Test at SwRI.

Chairman Lang requested the minutes reflect acknowledgement of Fred Gerhart's many years of service to the Sequence VIII Test. His leadership as chairman of the surveillance panel and his many contributions to the test are recognized and appreciated.

Acceptance of minutes:

A motion was made to accept the following conference call minutes:

1. 12/21/15 - Bearing Task Force

2. 1/11/16 - Bearing Task Force
3. 1/29/16 - Surveillance Panel (correction to the items 1 and 2, change year from 2016 to 2015).
4. 2/5/16 - Bearing Task Force

Motion approved unanimously

Status of the 08-15 Connecting Rod Bearing Situation:

Chairman Lang gave a brief update of the status of the 08-15 bearing batch investigations. A discussion transpired; excerpts are as follows:

Group had a call with Federal Mogul and discussed the possibility of changing the powder concentration in an attempt to adjust severity. Federal Mogul analysis states that the powder level is within the limits and that they are not willing to change the powder concentration because they can't guarantee that they can't target one end of the spec since the spec is so narrow.

Discussed with Federal Mogul the difference between broaching vs. boring. The boring process is more modern but there is also a change in the surface finish between the two methods; this could change test results.

Another item discussed with Federal Mogul was the size of the powder resulting from the sifter. Federal Mogul was confident that the particle size was consistent and that the size variation within their spec doesn't make a difference in bearing performance.

Andy Ritchie commented that he doesn't want to change powder ratio. We have looked at different options.

SwRI presented some new information obtained from SEM analysis of the bearings (attachment #3).

8-15 bearing showed more "specs" / "dots" than on previous batch of bearings. It is not known the significance of this observation.

Larger black dots were determined to be voids from lead pull out.

Mark Sutherland from TEI stated that Federal Mogul manufacturing process has significant history. Nothing changed in last 3 batches and only this latest batch, 8-15, has the results been affected.

A question was brought up on the quantity of bearings that should be made. Some thought a smaller batch may be less risky. Minimum that can be made is 1000 to 1500 bearings. Current batch is approximately 2200.

Andy Ritchie stated that he would rather have a good sized batch.

Jerry Brys suggested we should look into even a larger batch.

Others cautioned on how many we have made due to the possibility of money lost if they don't perform well and have to be rejected.

Mark Sutherland of TEI stated that Federal Mogul is not willing to make a small batch.

A comment was brought up regarding the possibility of lead smearing (lead pull-out) being the reason for the bearing performance. According to Federal Mogul the bearings are checked for this and this batch met the acceptance criteria.

A question was brought up regarding the potential of running another oil to further assess the bearing weigh loss offset since the current reference oils are not seeing the same magnitude of severity shift; oil 1009 was a suggested.

Andy Ritchie commented that we need to be thinking about what we will do if the new batch is the same (don't perform correctly). Could we make a correction factor work? Maybe another oil would help the possibility of a correction factor working.

Bob Campbell suggested that the HTCBT test could be investigated to see if the results would correlate to the Sequence VIII test if the new bearings don't perform properly. Bob will send the chairman some information.

Motion:

The Surveillance Panel instructs the Central Parts Distributor (TEI) to place order for another bearing batch without making any changes to the manufacturing process. The batch quantity will not be reduced; a normal batch quantity of 2000 pieces will be targeted.

Tony Hendrix/Bill Buscher

Motion passed with a vote of 13/0/1

More discussions took place on the possibility of bringing oil 1009 into the mix.

Rich Grundza reported the targets for the Sequence VIII reference oils:

1009	13.8 target, Std dev 2.14
1006-2	17.5 target, Std dev 4.23
704	8.3 target, Std dev 2.32

It was suggested that 1 to 2 tests be run on 1009 oil using the 08-15 bearings to see how these bearings react to another reference oil. The panel was interested in seeing if it would help produce a nice linear curve and help determine an appropriate severity adjustment.

Intertek and SwRI both agreed to run a test on oil 1009.

CPD Report:

Mark Sutherland reported that all critical parts are available from TEI.

TMC report:

Reference Oil inventory

128 gallons of 704-1 remaining which is approximately 62 tests.

3000 gallons of 1006-2 remaining in TMC inventory.

New Business:

See previous discussion above regarding the 08-15 bearing batch.

Review of Scope and objectives:

No additions or changes made.

It was suggested that we or the surveillance chair update the API on Seq. VIII status. Also come up with plan in case the new bearing batch is the same as the current batch.

Next Meeting:

The next meeting will be at the call of the chairman.

Adjournment:

The meeting was adjourned at 09:25 AM.

Attachment 1

**Sequence VIII Surveillance Panel Meeting Agenda
March 30, 2016**

Sequence VIII Surveillance Panel Meeting Agenda
Southwest Research Institute
Building 209 CR 313
San Antonio, Texas
Wednesday March 30, 2016
8:00 AM to 9:30 AM

1. Welcome
2. Membership Changes
 - a. Tracey King replaced with Mark Overaker of Haltermann
 - b. Fred Gerhart replaced with Anthony Hendrix of SwRI
3. Motion and Action Item Recorder
4. Acceptance of conference call minutes from the following dates:
 - a. 12/21/15 - Bearing Task Force
 - b. 1/11/16 - Bearing Task Force
 - c. 1/29/16 - Surveillance Panel (correction to the items 1 and 2, change year from 2016 to 2015).
 - d. 2/5/16 - Bearing Task Force
5. CPD Report
 - a. Update on New Bearing Batch
 - i. Discussion with Federal Mogul on options (Chairman)
 - ii. Motion to move forward with next batch without changing the manufacturing process.
 - b. Critical parts availability – crankshafts, connecting rods, camshafts (TEI)

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6. TMC Report

- a. Industry severity and precision trends prior to attempted introduction of the 08-15 bearing batch
- b. Reference oil inventory

7. New Business

- a. Consider re-introduction of REO 1009 (Previous Target of 13.8) to replace oil 704-1 since 1009 is newer technology.
- b. Find current technology reference oil (GF-6)

8. Review of Scope and Objectives

9. Next Meeting

10. Adjournment

SEQUENCE VIII SURVEILLANCE PANEL SCOPE AND OBJECTIVES

SCOPE

The Sequence VIII Surveillance Panel is responsible for the surveillance of the Sequence VIII test procedure (ASTM D 6709-14). This panel works in conjunction with Test Engineering Inc. (TEI) who supplies the test hardware. Improvements in the test operation, test monitoring, and test validation will be accomplished through continual communications with the test hardware supplier, the ASTM Test Monitoring Center, the Technical Guidance Committee, and the ACC Monitoring Agency. The panel will maintain an up-to-date evaluation of the precision of the VIII reference oils and will report this precision and test severity levels to D02.BO.01 Oil Classification Panel and section. These combined efforts will help to assure that the Sequence VIII test method will continue to provide the industry with a precise method for evaluating a lubricant's ability to protect against copper-lead bearing weight loss and to evaluate the viscosity stability of multi-viscosity-grade oils.

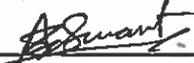
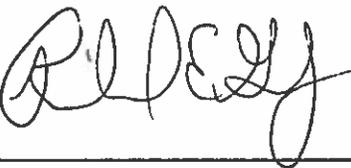
OBJECTIVES

CPD to contact Federal Mogul on an annual basis about viability of continued bearing production and report back to SP chair.	Ongoing
Request reference oils with performance close to 26mg TBWL	Ongoing

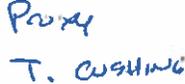
Attachment 2

Attendance List

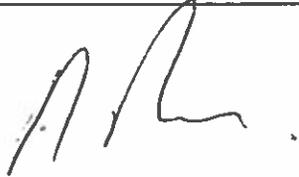
**ASTM SEQUENCE VIII SURVEILLANCE PANEL
VOTING MEMBERSHIP ATTENDANCE RECORD**

Name	Address	Attendance
Alfonso, Adrian	Intertek 5404 Bandera Road San Antonio, TX 78238 Phone:210-647-9429 adrian.alfonso@intertek.com	
Bowden, Jason	OH Technologies, Inc. P.O. Box 5039 Mentor, OH 44061-5039 Phone: 440-354-7007 Fax: 440-354-7080 dhbowden@ohtech.com	
Caudill, Timothy	Valvoline 21st and Front Streets Ashland, KY 41101 Phone: 606-329-1960 ext 5708 Fax: 606-329-2044 Ticaudill@ashland.com	Represented by Amol Savant 
Glaenzer, David	Afton Chemical 500 Spring Street P.O. Box 2158 Richmond, VA 23218 Phone: 804-788-5214 Fax: 804-788-6358 Dave.Glaenzer@aftonchemical.com	
Grundza, Rich	ASTM/TMC 6555 Penn Ave Pittsburgh, PA 15206-4489 Phone: 412-365-1031 Fax: 412-365-1047 reg@astmtmc.cmu.edu	
Hsu, Jeff	Shell KARIN HAUMANN for: Jeff Hsu	
Overaker, Mark	Haltermann Solutions 2800 15635 Jacintoport Orange, TX 77654 Houston, TX 77015 Phone No: 409-337-4487 332-376-2202 Fax No: mhoveraker@jhaltermann.com	
Hendrix, Anthony	Southwest Research Institute 6220 Culebra Road P.O. Box 28510 San Antonio, TX 78228-0510 Phone: 210-522-3720 Fax: 210-684-7523 ahendrix@swri.org	

**ASTM SEQUENCE VIII SURVEILLANCE PANEL
VOTING MEMBERSHIP ATTENDANCE RECORD**

Name	Address	Attendance
Knight, Clayton	Test Engineering Inc. 12718 Cimarron Path San Antonio, TX 78249-3423 Phone: 210-690-1958 Fax: 210-690-1959 cknight@tei-net.com	
Kowalski, Teri	Toyota Motor North America, Inc. 1555 Woodridge Ann Arbor, Mi 48105 Phone: 734-995-4032 Cell: 734-355-8082 Fax: 734-995-9049 teri.kowalski@tema.toyota.com	
Matthews, Bruce	GM Powertrain Mail Code 483-730-472 823 Jocelyn Avenue Pontiac, MI 48340 Phone: 248-830-9197 Fax: 248-857-4441 bruce.matthews@gm.com	
Salvesen, Clifford	ExxonMobil 600 BILLINGSPOFF RD PAULSBORO, NJ 08060 clifford.r.salvesen@exxonmobil.com	
Tang, Haiying	Chrysler Phone: Fax: haiying.tang@fcagroup.com	
Sinha Kaustav	Chevron Oronite Company LLC Phone: 713-432-6642 Fax: Kaustav.Sinha@chevron.com	
Marks, Brian	BP Lubricants USA 1500 Valley Rd Wayne, NJ 07470 Phone: Fax: Brian.Marks@BP.com	

**ASTM SEQUENCE VIII SURVEILLANCE PANEL
VOTING MEMBERSHIP ATTENDANCE RECORD**

Name	Address	Attendance
Ramono, Ron	Ford Motor Company Diagnostic Service Center II Room 410 1800 Fairlane Drive Allen Park, MI 48101 Phone: 313-845-4068 Fax: 313-323-8042 rromano@ford.com	
Ritchie, Andy	Infineum P.O. Box 735 1900 East Linden Ave. Linden, NJ 07036-0735 Phone: 908-474-2097 Fax: 908-474-3637 andrew.ritchie@infineum.com	
Szappanos, George	Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092 Phone: 440-347-2631 Fax: 440-347-4096 George.Szappanos@lubrizol.com	

**ASTM SEQUENCE VIII SURVEILLANCE PANEL
NON-VOTING MEMBERSHIP and GUESTS ATTENDANCE RECORD**

Name	Address	Phone/Fax/Email	Attendance
Leverett, Charlie	Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238 Phone: 210-647-9422 Fax: 210-523-4607 charlie.leverett@intertek.com		
Travis Kostan	SURI		✓
ROBERT STOCKWELL	ORONITE		✓
JO MARTINEZ	ORONITE	jomartinez@chevron.com 510 3425563	✓
AL LOPEZ	INTERTEK	al.lopez@intertek.com	✓
Kevin O'Malley	Lubrizol	KVOME@lubrizol.com	✓
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JERRY BRYS	LZ	SERONIE.BRYS@ LUBRIZOL.COM	✓
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Tim Cushing	GM	timcushing@gm.com	✓

Continued on next page

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WILLIAM BUSCHER INTERTEK william.buscher@intertek.com ✓

Attachment 3

Sequence VIII Bearing Analysis

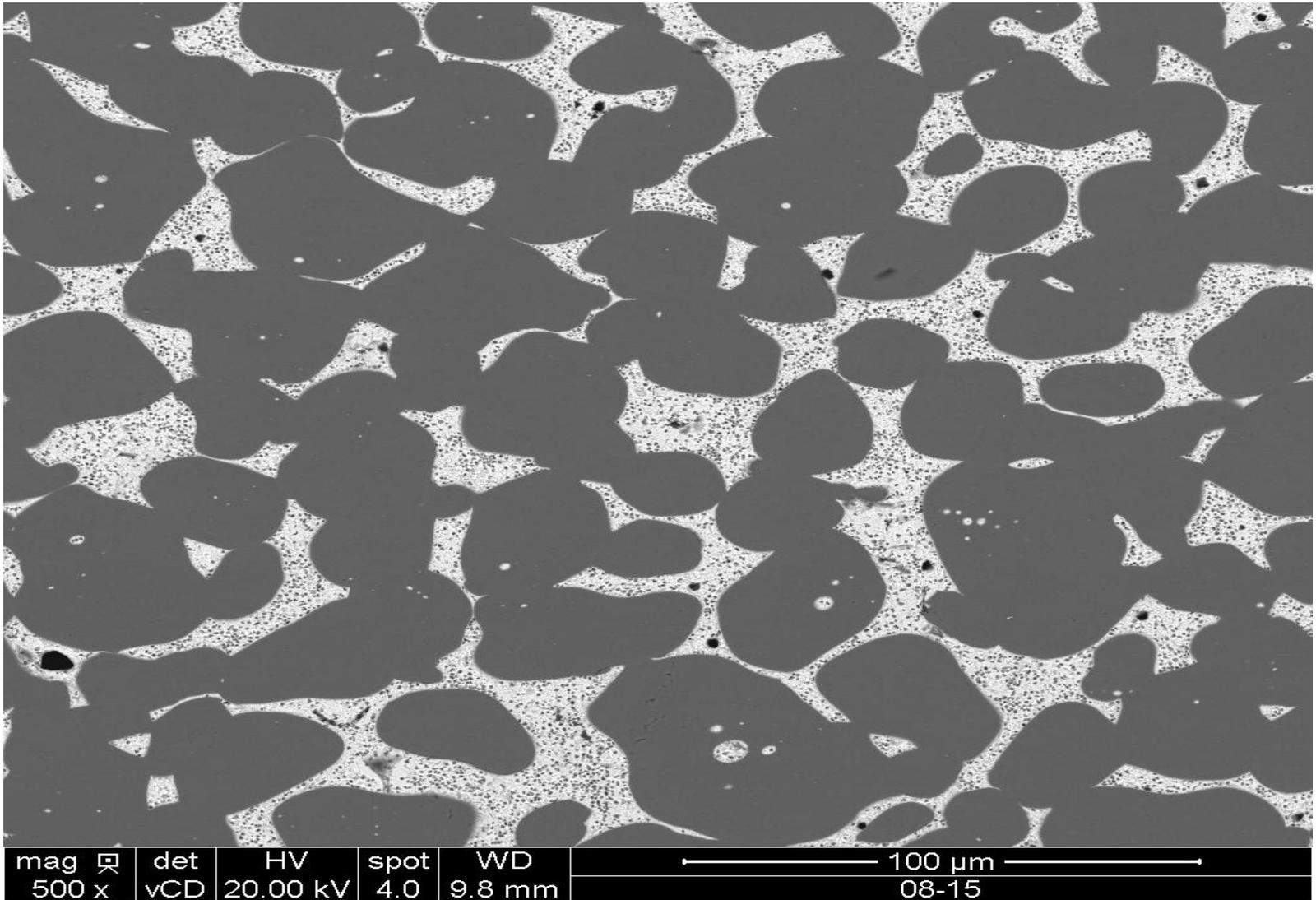
Sequence VIII Bearing Analysis

March 30, 2016

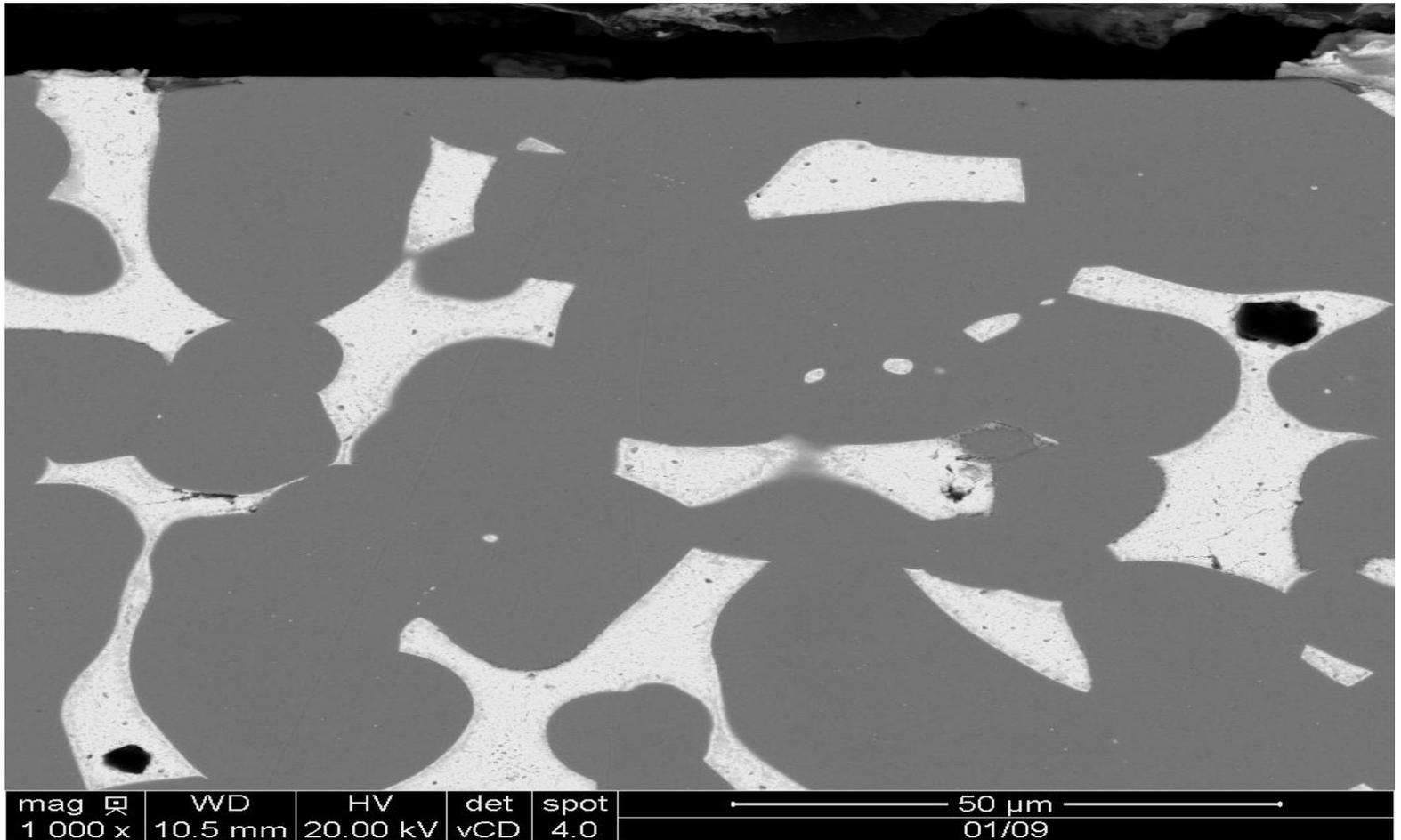
Prepared by Patrick Lang

SwRI

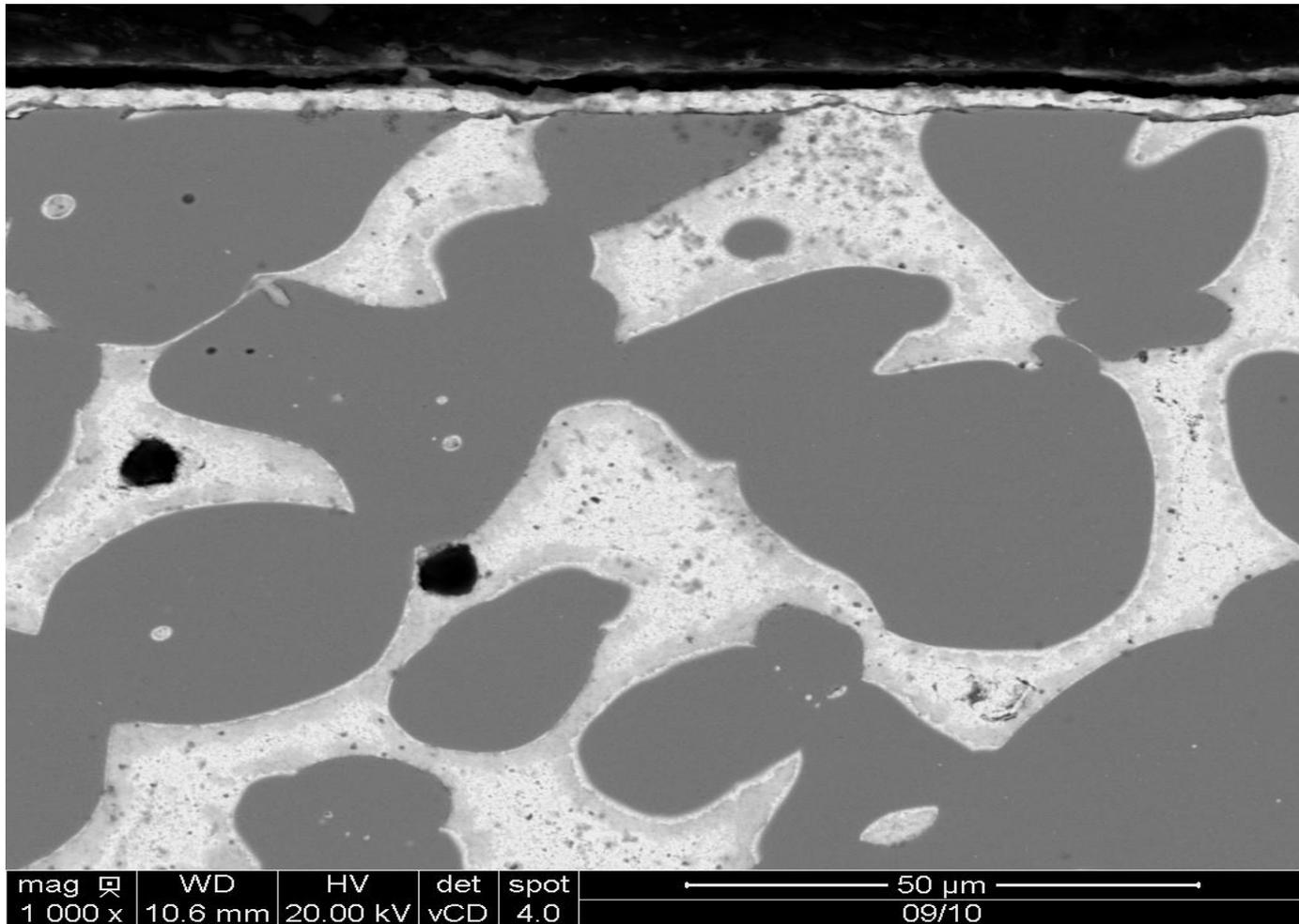
08-15 Bearing



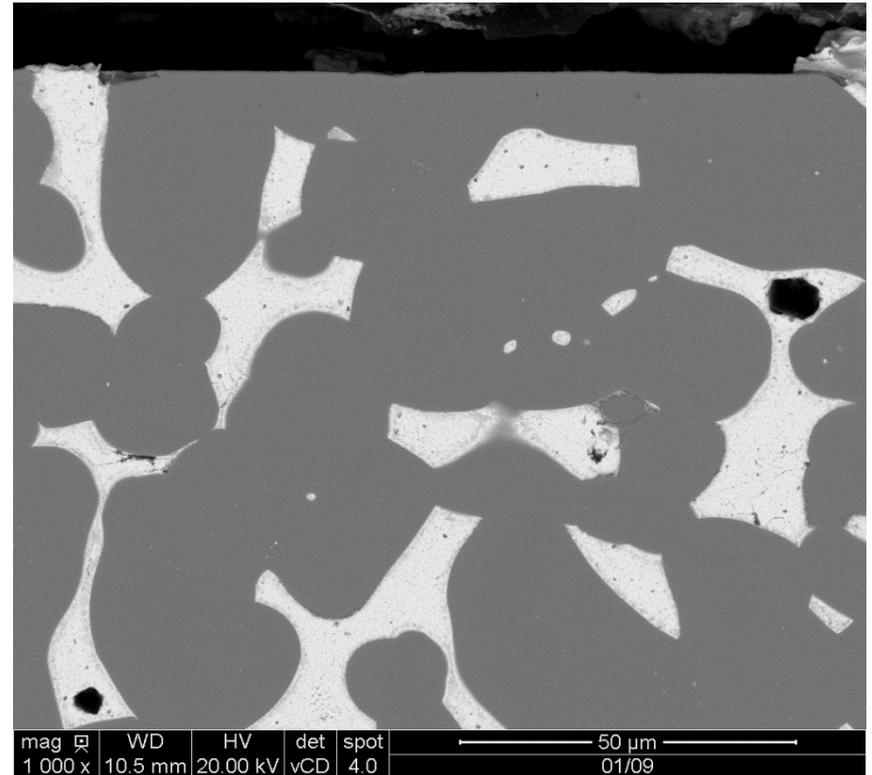
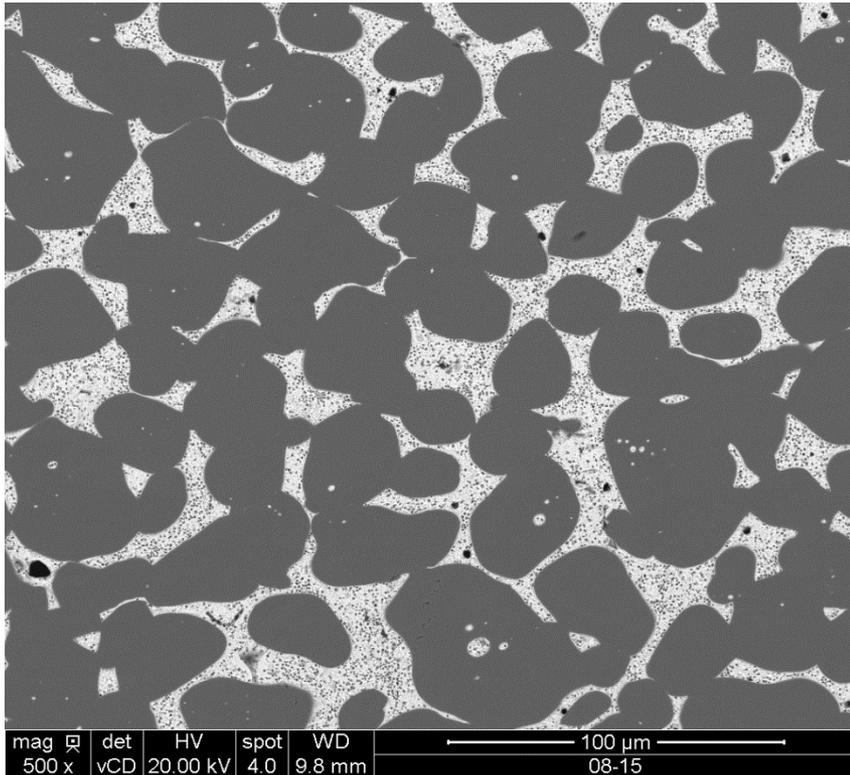
01/09 Bearing



09/10 Bearing



08-15 vs. 01/09



08/15 vs. 09/10

