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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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December 3, 2004

Please forward any comments to:
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Unconfirmed Minutes from the ASTM Sequence VIII Surveillance Panel Held in San Antonio, TX November 17, 2004

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Call to Order

Chairman Fred Gerhart opened the Surveillance Panel (SP) and the agenda was distributed and is shown in Attachment #1. The panel agreed to start the meeting ahead of its scheduled start time (2:00 PM). The meeting was called to order at 1:10 pm.

Select Action Item and Motion Recorder

Bill Busher of Southwest Research Institute, volunteered to be the action item and motion recorder. These are shown in Attachment #2

Charlie Leverett of PerkinElmer recorded the minutes. Membership changes were:

Clayton Knight for TEI
 Timothy Miranda for Castrol Tech Center

Charlie agreed to update the information for Sid Clark, revisions will be made on next sign-in sheet issued. The sign-in sheet for this meeting is shown in Attachment # 3.

Approval of Minutes

No meeting minutes needed approval. Once these minutes are posted the secretary will inform all members and others currently on the mailing list by Email of these postings. Please forward any comments to :

charlie.leverett@perkinelmer.com

A copy of all VIII SP minutes may be found on the TMC web site:

<ftp://ftp.astmtmc.cmu.edu/docs/gas/sequenceviii/>

Any questions concerning the access of these documents should be directed to TMC.

TMC Report

Mike Kasimirsky presented the Semiannual Reports for the Sequence VIII. The time period for this report is April 1, 2004 – September 30, 2004. A complete copy of this and previous reports may be viewed at the following link

<ftp://ftp.astmtmc.cmu.edu/docs/gas/sequenceviii/semiannualreports/>

A summary of this report is:

- Laboratory/Stand distribution shows three labs.

Calibration Start Outcomes	TMC Validity Code	No. of Tests
Operationally and Statistically Acceptable	AC	11
Failed Acceptance Criteria	OC	1
Stand/Engine failed to successfully calibrate, engine abandoned and data pulled	MC	0
Operationally Invalid (Laboratory Judgment)	LC	3
Operationally Invalid (Laboratory & TMC Judgment)	RC	0
Aborted	XC	1
Total		16

There was some discussion on why Strip-Viscosity was not considered a “Critical Parameter” and Severity Adjustments applied. It was determined that we should review the LTMS which Mike did “real time” . After his review it was decided by the Panel that no action was to be taken.

The Panel also discuss a possible mild trend in the Seq. VIII BWL due to the loss of Pb in the bearing material. The final determination was the Q-sum plot from TMC may show a possible mild trend, yet the plot showing BWL verses Pb in the storage fluid is inconclusive.

A comment was make that the loss of Pb would cause a severe shift and Charlie gave some background information on studies done in late 1980 and early 1990. The explanation was that the loss of Pb will produce a mild trend due to the fact that oxidation attacks the Pb in the bearing causing BWL and if none or little is present the BWL will be mild, also with the loss of lead voids form below the bearing surface which allow the bearing to retain more lubricant and decrease the normal mechanical BWL. Further discussion on bearings and a report of Pb in the storage fluid is shown in the CPD report. A question was asked concerning the composition of the H-24 alloy, a comparison between H-35 and H-24, it is shown in Attachment # 4

Mike's report was approved.

RSI Report

No report was given at meeting, the Chairman had sent the latest RSI report to the SP in an Email. Fred prepared a couple of slides concerning Candidate Activity Sept. 02-Sept. 04 and Pass/Fail for the last 6 months as well as historical. These are shown in Attachment # 5

CPD Report

Clayton Knight and Zack Bishop of TEI gave this report.

A summary of this report is shown below, the full report is shown in Attachment # 6.

- Review of 11-93 bearings by lot was shown
- A review of the TEI Bearing Storage was given **see discussion below*
- Soliciting of Labs for an annual parts order for 2005

Discussion:

After the presentation by TEI on bearing storage the Panel discussed what steps it would recommend to TEI concerning bearing storage.

- Keep current storage in place for now (Original containers filled with EF-411 covered in Argon)
- Send a set of bearings to FM for analysis, they should be able to determine how much Pb is still present.
- Report FM bearing analysis to the SP once available.
- Inquire with multiple bearing supplies to see if additional rod bearings may be produced.

We also had a discussion on “Critical Parts”, what the CPD was expected to supply and introduction of new parts. The determinations below were made:

- The Panel ask that the CPD supply all parts (critical and non-critical) necessary to run the CLR engine used in ASTM Sequence VIII testing.
- The Panel is to be advised of any new parts (critical and non-critical) before introduced.

At this time it is unknown if the Seq. VIII will be in GF-5, the understanding is if a bench test is developed that correlates to the Seq. VIII BWL it would most likely replace this engine test. Due to this the Panel needs to determine if hardware maybe available for GF-5.

A motion as made and approved to support 0.010” oversize pistons. *See details of this motion/action item in Attachment #2 item 3.*

Discussion

Mike Kasmirsky noted the cost difference between over size pistons and new liners needs to be considered, before production of these pistons.

An action item was made by the Panel that the CPD should survey the Labs to see if there is interest in production of these pistons. *See details of this action item in Attachment #2 item 4.*

Old Business

1.) The Panel decided to no longer consider the introduction of a Category GF-4. *See details of this motion/action item in Attachment #2 item 5.*

New Business

- 1.) The Panel had a brief discussion on the need for L-38 fuel and the use of dye in leaded fuel. Since this Panel no longer handles L-38 business it was suggested that anyone interested in obtaining L-38 fuel should contact the supplier (Chevron/Phillips).
- 2.) Recently TMC requested all Surveillance Panels review the specification recent adopted for solvent, this Panel did review and agreed to revise as done in previous Surveillance Panels. A motion was made and passed. *See details of this motion/action item in Attachment #2 item 6.*
- 3.) The chair agreed to table agenda items 7c, 7d, 7f, and 7g. An attempt will be made by the chair to handle these tabled items by email.
- 4.) Item 7e (Reference Oil Usage) was discussed and a motion made and passed. *See details of this motion/action item in Attachment #2 item 6.*

- 5.) A mistake in D 6709 concerning the fuel flow mean value was noted and a motion was made and passed to correct this information. *See details of this motion/action item in Attachment #2 item 8.*

Review of Scope and Objectives

The Sequence VIII Scope and Objectives as revised at the 11/17/04 meeting and are shown in Attachment #7.

Next Meeting

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

Adjournment

The meeting adjourned at 3:50 pm

Sequence VIII November 2004 Surveillance Panel Agenda
San Antonio, Texas
Southwest Research Institute
November 17, 2004 - 2 PM

1. Call to Order - Fred Gerhart
2. Secretary Items - Charlie Leverett
 - a. Motion and Action Items Recorder
 - b. Any Membership Changes?
 - c. Attendance Sign-in
3. TMC Report - Mike Kasimirsky
 - a. Lost calibration tests
Trending historical?
Causes?
 - b. Severity and precision
TBWL
Stripped Viscosity
4. RSI Report
 - a. Total tests registered in industry by calendar year for 2002, 2003, and 2004
 - b. Current pass rate
5. Parts Issues
 - a. Status of Lead in Bearing Storage Oil. Can anything else be done to prevent or slow down the leaching of the lead from the test bearing into the storage oil? Report by TEI
 - b. Life of test discussion - (possibility of replacement with a bench test for GF-5).
 - c. Any need for a 0.010" oversize piston to extend the life of cylinder sleeves?
 - d. What parts does the panel need for the CPD to provide for the life of this test?
 - e. Parts Availability
 - i. Critical parts- connecting rod, crankshaft, connecting rod test bearings. Any others?
 - ii. Non-critical parts but a must have - camshaft bearings (standard and undersize), main bearings (standard and undersize), pistons, cylinder liners, ring sets, gaskets. Any others?
 - iii. Future orders - TEI

6. Old Business

- a. GF4 Cat Oil - so far no samples have been submitted for consideration.

7. New Business

- a. Adjustment to solvent specification.
- b. Dye in leaded fuel?
- c. Rocker cover air flow measurement
- d. Oil system connections during run-in
- e. Reference oil usage
- f. Crankshaft position during oil drains
- g. Oil filter change/cleaning
- h. Any others?

8. Review Scope and Objectives

9. Next Meeting

10. Adjournment

Sequence VIII Surveillance Panel

November 17, 2004

2:00PM – 5:00PM

San Antonio, Texas

Motions and Action Items

As Recorded at the Meeting by Bill Buscher

1. Action Item – CPD to send a bearing set sample to the bearing supplier to have it analyzed for composition. This data will be used to help determine the best way to store the remaining bearing sets in the future.
2. Action Item – CPD to inquire with multiple bearing suppliers to see if additional connecting rod bearing sets can be manufactured.
3. Motion – Surveillance Panel to support the usage of a 0.010” oversize piston to extend the life of cylinder sleeves.
Mike Kasimirsky / Gordon Farnsworth / Passed unanimously
4. Action Item – CPD to survey the laboratories to see if there is enough interest in 0.010” oversize pistons to necessitate manufacturing them.
5. Action Item – Surveillance Panel chairman will report that the surveillance panel discussed the need to pursue a GF-4 category oil and decided that at this time it is not necessary.
6. Motion – The mineral spirits requirement will only require that the aromatic content, flash point and color requirements of ASTM D 235, Type II, Class C solvent must be met. Laboratories will use the Certificate of Analysis documentation for each batch to verify that these requirements have been met.
Mike Kasimirsky / Gordon Farnsworth / Passed unanimously
7. Action Item – Surveillance Panel chairman to email the recommendations for motion from agenda items 7.c, 7.d, 7.f and 7.g for further review and potential e-ballot. A conference call will be scheduled for Thursday, 12/16/04.

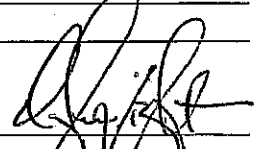
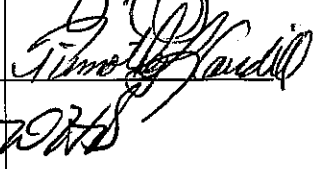

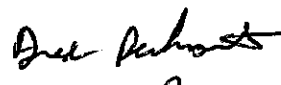
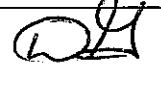
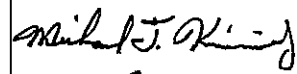

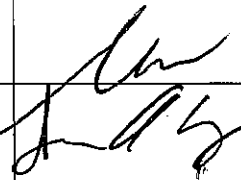
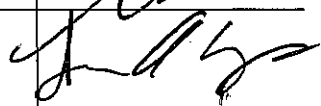
8. Motion – TMC to immediately suspend the usage of reference oil 1006-2. Oils 704-1 and 1009 are to be issued at a rate of 1:2 until 20 operationally valid tests on reference oil 1009 exist in the database, at which time equal usage of all three reference oils will resume.

Fred Gerhart / Mike Kasimirsky / Passed unanimously

9. Motion – Revise fuel flow in Table 2 of the Sequence VIII test procedure to read 2.25 kg/hr.

Charlie Leverett / Dave Glaenzer / Passed unanimously

**ASTM L-38 / SEQUENCE VIII SURVEILLANCE PANEL
MEMBERSHIP LIST**

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Glaenger, David	Ethyl Research Center <i>Afton Chemical</i> 500 Spring Street P.O. Box 2158 Richmond, VA 23218	Phone: 804-788-5214 Fax: 804-788-6358 Dave_Glaenger@ethyl.com dave.glaenger@aftonchemical.com	
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Leverett, Charlie	PerkinElmer Automotive Research 5404 Bandera Road San Antonio, TX 78238	Phone: 210-647-9422 Fax: 210-523-4607 charlie.leverett@perkinelmer.com	
Miranda, Timothy	Castrol Tech Center 240 Centennial Ave Piscataway, NJ 08854	Phone: 732-960-3634 Fax: 732-686-4039 Timothy.Miranda@Castrol.com	
Brys, Jerry	Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-7631 Fax: 440-347-4096 jabs@lubrizol.com	
Sutherland, Mark	Chevron Oronite Company LLC 4502 Centerview Ste. 210 San Antonio, TX 78228	Phone: 731-5605 Fax: 731-5621 MSUT@chevrontexaco.com	

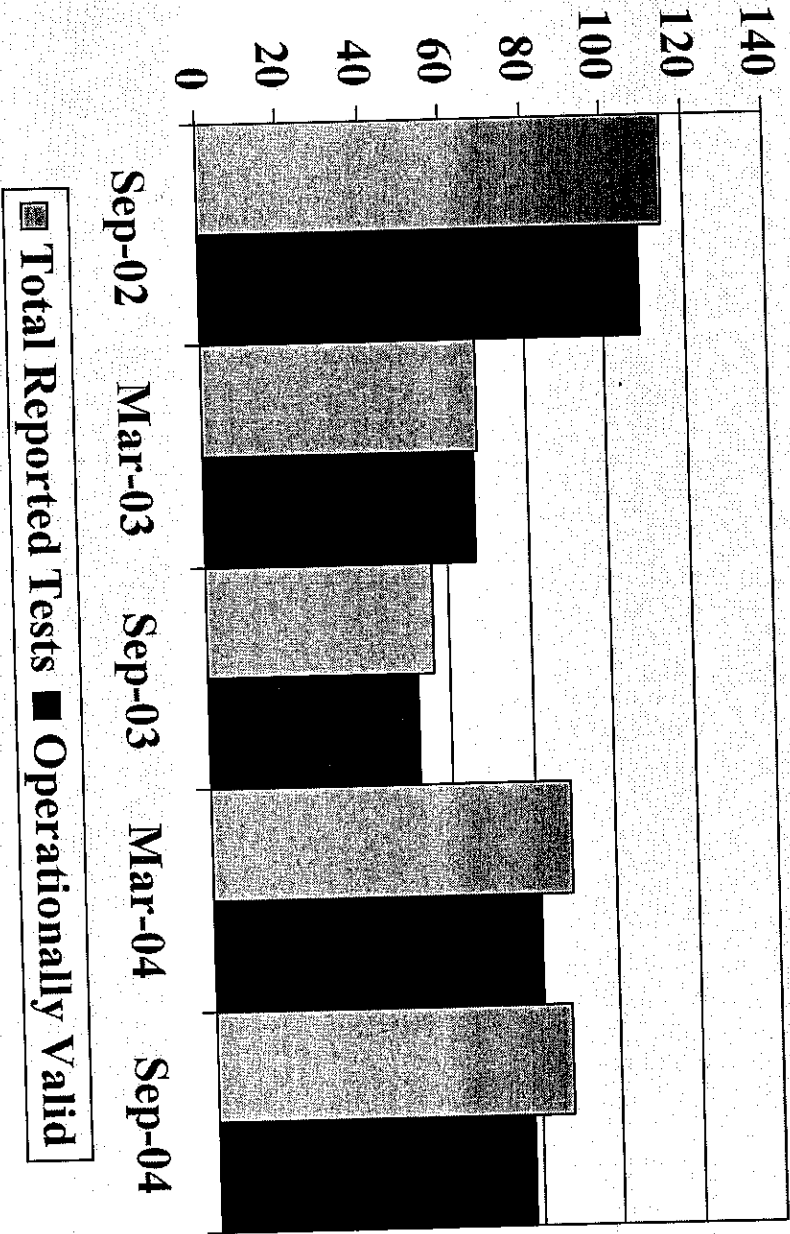
New address starting 1-4-5
BP Castrol
1500 Valley Road
Wayne, NJ 07470
P 973-305-3334
P 973-686-4039
Em Timothy.Miranda@BP.com

C. Leverett
02/18/93

SAE Bearing Compounds	Cu (copper)	Pb (lead)	Sn (tin)	Ag (silver)	Zn (zinc)	P (phosphorus)	Fe (iron)
480 (H-35)	60-70	30-40	.50	1.5	-	-	.35
49 (H-24)	73-79	21-27	.50*	-	-	-	.35

* Tin max. may be raised to 1.25%
Reference Volume 1 SAE Handbook, Section 10.35

Candidate Test Activity



November 18, 2004

Candidate Pass/Fail

Parameter	Limit	N	Number Passed	Pass Percent
Total Bearing Weight Loss	26.0	86	59	68.60

Last 6 months

Parameter	Limit	N	Number Passed	Pass Percent
Total Bearing Weight Loss	26.0	716	540	75.42

Historical

Both of these data sets have 2 months lag

November 18, 2004

CPD Report to Sequence VIII Surveillance Panel November 17, 2004

- 11-93 Rod Bearing Batches
 - Lot Codes 10, 11, 12, 13, 14 and 15
 - Currently using Lot Code 10
 - Inventory (as of 11/12/2004)
 - Lot 10 = 203 sets
 - Lot 11 = 345 sets
 - Lot 12 = 427 sets
 - Lot 13 = 425 sets
 - Lot 14 = 400 sets
 - Lot 15 = 170 sets



TEST ENGINEERING, INC.

**CPD Report to
Sequence VIII Surveillance Panel
November 17, 2004**

- **11-93 Rod Bearing Storage Study**
 - Bearings stored in Argon since March 2002
 - One set (Set “A”) was not stored in Argon
 - Set “A” was washed in Pentane on 9/3/2004 and re-packaged in fresh EF-411 (Lot Codes 10, 11, 13, 14 and 15) and placed in Argon storage. Lot Code 12 washed in Pentane, re-packaged in fresh EF-411 but not placed in Argon storage.

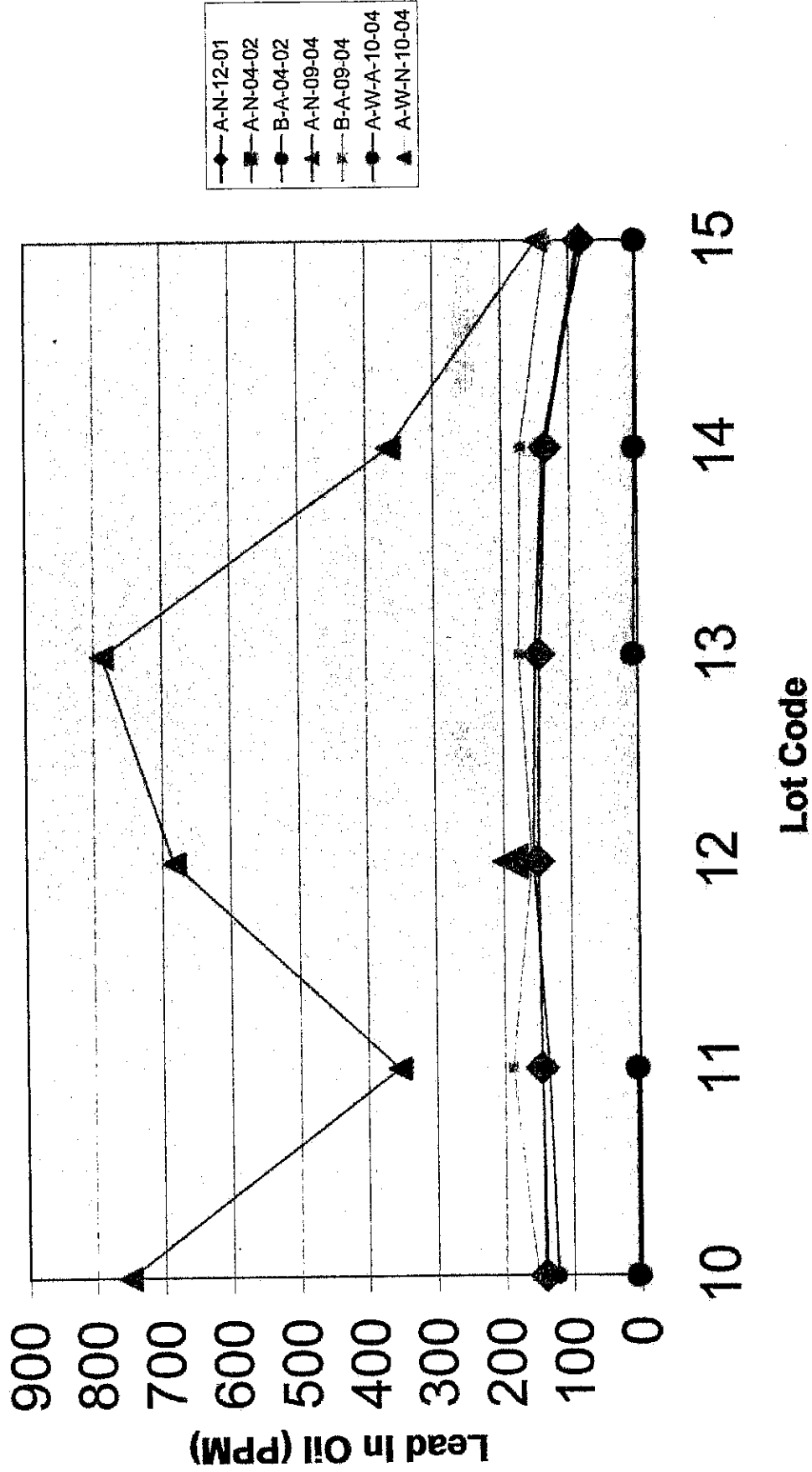


Lot Code	No Argon Set "A"	No Argon Set "A"	Argon Set "B"	No Argon Set "A"	Argon Set "B"	Argon Set "B"	Argon Set "A"	Argon Set "A"	Argon Set "A"	No Argon Set "A"	Argon Set "A"	Argon Set "A"	No Argon Set "A"
	12/4/2001 A-N-12-01	3/28/2002 A-N-04-02	3/8/2002 B-A-04-02	9/2/2004 A-N-09-04	9/2/2004 B-A-09-04	10/28/2004 A-W-A-10-04	10/28/2004 A-W-N-10-04	New EF411	New EF411	10/28/2004 A-W-N-10-04	10/28/2004 A-W-N-10-04	New EF411	New EF411
10	140	142	123	752	153	4	4						
11	145	145	135	354	188	4	4						
12	149	150	156	683	158								190
13	146	146	152	788	176	7							
14	135	138	140	366	173	4							
15	83	86	77	147	132	2							



TET ENGINEERING, INC.

Labeco Rod Bearings



CPD Report to Sequence VIII Surveillance Panel November 17, 2004

- **Annual Parts Order**
 - Letter will be mailed to labs soliciting Sequence VIII parts requirements for calendar year 2005. The letter will include a listing of parts currently in TEI inventory which are frequently ordered. Labs will be requested to submit their annual requirements along with a purchase order for payment.

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TEST ENGINEERING, INC.

Sequence VIII S.P. Scope

The Sequence VIII Surveillance Panel is responsible for the surveillance of the Sequence VIII test procedure (ASTM D 6709-03). 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.

November 18, 2004

Sequence VIII S.P. Objectives

Objective	Target Date for Completion
Continual monitoring of lead content in storage oil.	On Going
Ensure mandatory engine components to conduct testing until 2009	On Going

November 18, 2004