



# Test Monitoring Center

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MEMORANDUM: 04-019

DATE: April 7, 2004

TO: Wim van Dam, Chairman, Mack Test Surveillance Panel

FROM: Jeff Clark

SUBJECT: T-8 Reference Testing for the April 2004 ASTM Report Period

The following is a summary of T-8 reference oil tests that were completed during the April 2004 ASTM period, which began October 1, 2003 and ended March 31, 2004.

The following table summarizes the status of the reference oil tests completed this ASTM report period:

Test Description	TMC Validity Code	Number of Tests
Operationally and Statistically Acceptable	AC	1
Failed Acceptance Criteria	OC	0
Operationally Invalid	RC	0
Aborted	XC	0
Total		1

## Severity and Precision:

Figure 1, 2, and 3 (attached) show the current industry severity and precision EWMA control charts and the industry cusum chart for viscosity increase at 3.8% soot (VI38), relative viscosity at 4.8%, 50% loss (RV48), and relative viscosity at 4.8%, 100% loss (RV2). All three parameters are currently within the industry severity and precision limits. The lack of test activity prevents any commentary on severity trends.

Since testing frequency is low, an estimate of precision by ASTM period will not be presented. Instead, the TMC will provide yearly pooled (across all reference oils) standard deviation as an estimate of test precision as shown in the following table.

**T-8 Pooled Precision By Year**

Parameter	1999	2000	2001	2002	2003
df	15	7*	10	9	5
VI38	0.73	0.68	0.64	0.54	0.81
RV48	0.20	0.18	0.25	0.23	0.26
RV2	0.22	0.20	0.27	0.26	0.29

\*df = 6 for RV48 and RV2

No estimate is yet available for 2004. Precision in recent years shows slight degradation versus historical levels. However, the reduction in test activity prohibits any conclusions from being drawn. Note, the degrees of freedom (df) equals  $\Sigma(\text{no. obs. per oil} - 1)$ .

Reference Oils:

The table below shows the current reference oil test targets.

Parameter	Reference Oil	N	Mean	S
VI38	1004-3	30	4.57	0.90
RV48			2.07	0.26
RV2			2.21	0.27

Information Letters:

T-8 Information Letter 03-1, Sequence No. 12, was issued October 24, 2003. This information letter detailed the cleaning solvent specification.

Laboratory Visits:

No TMC laboratory visits were conducted this ASTM period.

Additional Information:

The T-8 industry database, LTMS plots, industry alarm log, and timeline may all be accessed from the TMC home page at [www.astmtmc.cmu.edu](http://www.astmtmc.cmu.edu).

JAC/jac/mem04-019.jac.doc

## Attachments

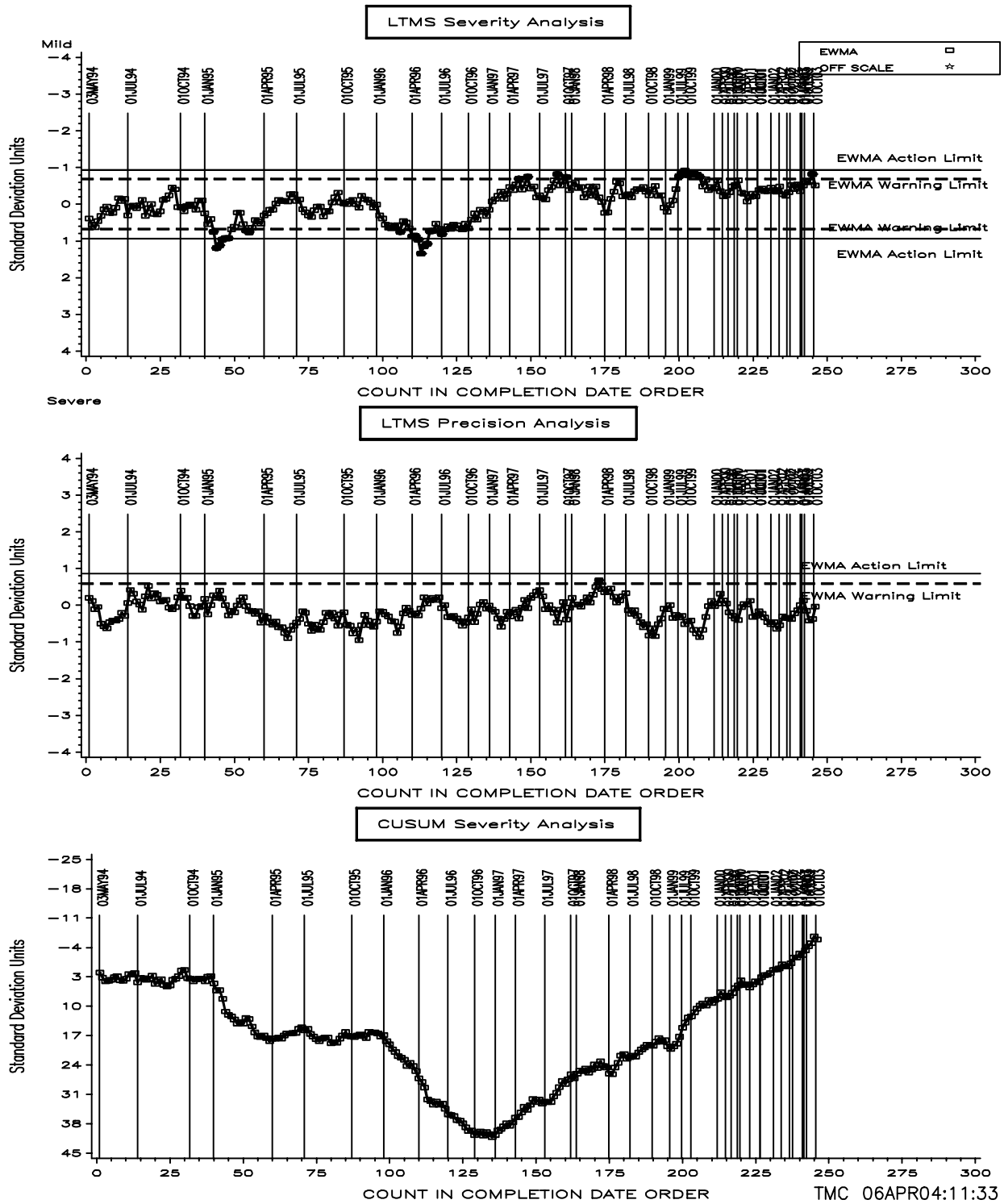
c: J.L. Zalar, TMC  
 F.M. Farber, TMC  
 Mack Test Surveillance Panel  
<ftp://ftp.astmtmc.cmu.edu/docs/diesel/mack/semiannualreports/t8-04-2004.pdf>

Distribution: Email

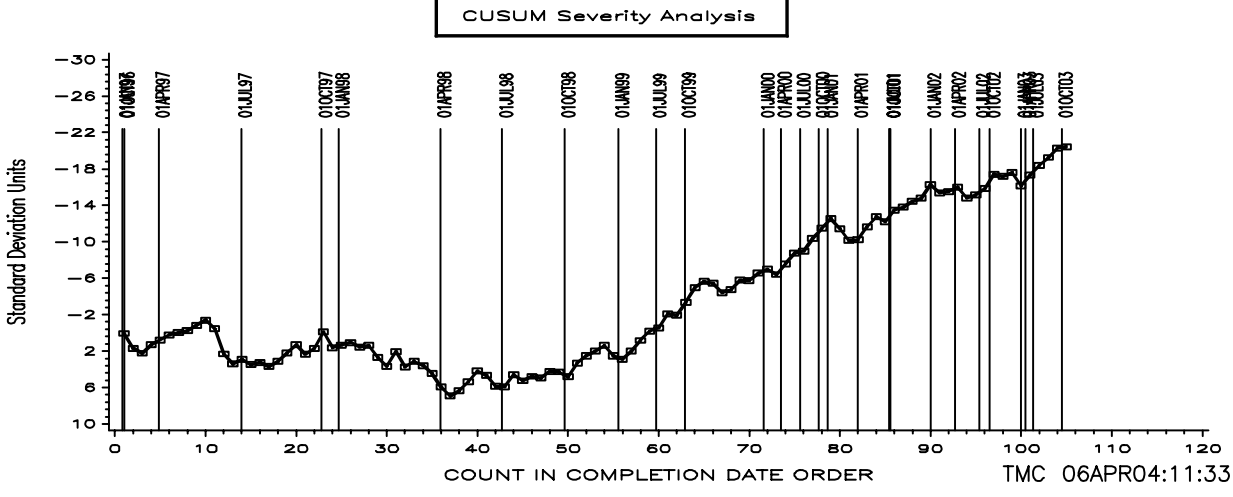
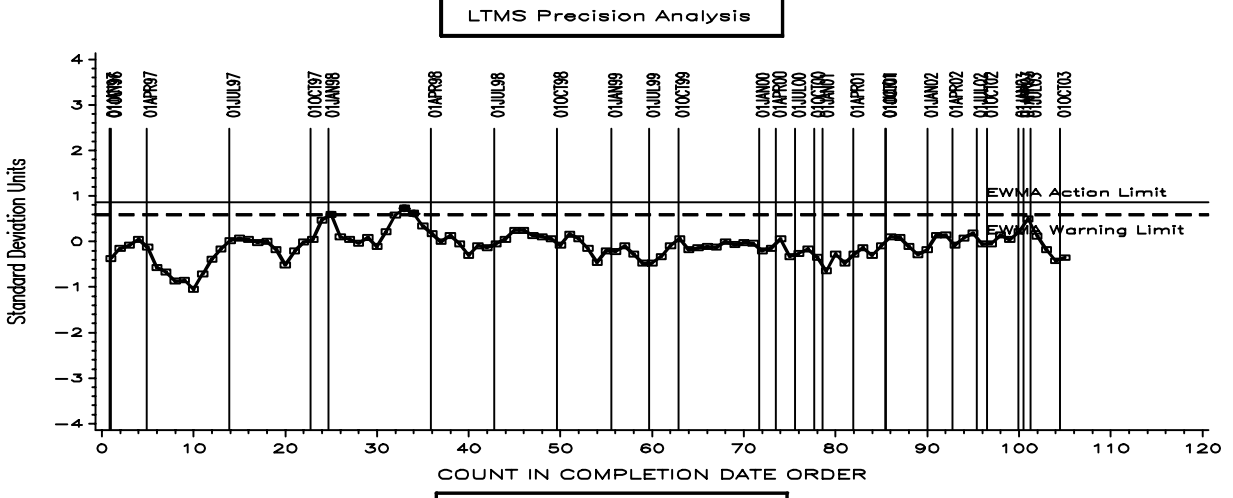
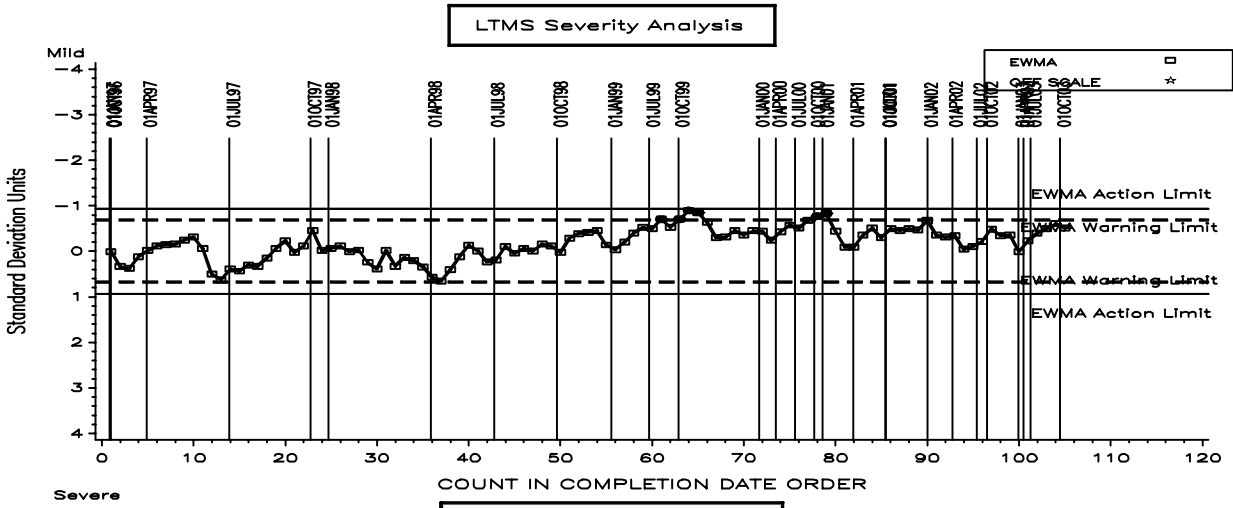
# Figure 1

## T-8/T-8E INDUSTRY OPERATIONALLY VALID DATA

VISCOSITY INCREASE AT 3.8% SOOT



**Figure 2**  
T-8/T-8E INDUSTRY OPERATIONALLY VALID DATA  
RELATIVE VISCOSITY AT 4.8% (50% LOSS)



**Figure 3**  
T-8/T-8E INDUSTRY OPERATIONALLY VALID DATA  
REFERENCE RELATIVE VISCOSITY AT 4.8% (100% LOSS)

