



Test Monitoring Center

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MEMORANDUM: 08-019
DATE: April 3, 2008
TO: Jim Moritz, Chairman, Cummins Surveillance Panel
FROM: Jeff Clark
SUBJECT: ISM Calibration Testing for the April 2008 ASTM Report Period

The following is a summary of ISM reference oil tests completed during the April 2008 ASTM report period, which began on October 1, 2007 and ended on March 31, 2008.

Test Status	TMC Validity Code	Number of Tests
Acceptable Calibration Test	AC	2
Failed Calibration Test (LTMS Criteria)	OC	0
Operationally Invalid Test	LC	0
Aborted	XC	1
Total		3

One test was aborted during break-in due to a failed wrist pin bushing.

Severity and Precision:

With only two chartable tests, it is difficult to offer commentary regarding trends for this ASTM period. Commentary is thus restricted to only the current control chart status of the test parameters.

Figure 1 (attached) shows the current industry EWMA severity, EWMA precision, and cusum charts for Crosshead Weight Loss (CWL). CWL is within control chart limits.

Figure 2 (attached) shows the current industry EWMA severity, EWMA precision, and cusum charts for Filter Plugging Delta P (FPD). FPD is currently within control chart limits.

Figure 3 (attached) shows the current industry EWMA severity, EWMA precision, and cusum charts for Average Sludge Rating (ASR). ASR is currently within control chart limits.

Figure 4 (attached) shows the current industry EWMA severity, EWMA precision, and cusum charts for Injector Adjusting Screw Weight Loss (IAS). IAS is currently within control chart limits.

Precision estimates will be presented on an annual basis, in the table below. The 2007 precision estimate for CWL shows some degradation in comparison to previous levels. FPD and ASR are within historical levels, and IAS shows some improvement. No estimate is yet available for 2008.

ISM Precision Estimates

Parameter	2004	2005	2006	2007	2008
df	6	2	4	9	
CWL	1.4	0.5	0.7	1.9	
FPD (ln units)	0.4227	0.2561	0.1166	0.3736	
ASR	0.13	0.15	0.15	0.13	
IAS	7.0	5.0	5.4	4.0	

Reference Oils:

The current reference oil test targets are shown below:

Oils	N	Parameter	Mean (cSt)	S
830-2	21	CWL	5.1	1.5
		FPD	2.5209	0.3274
		ASR	9.0	0.15
		IAS	29.5	5.7

To date, 27 tests have been run on oil 830-2. The TMC will advise the panel of a potential test target update once 30 tests have been completed. The table below shows supply levels of oil 830-2.

Oils	TMC Inventory (gallons)	Lab Inventory (# of samples)	Estimated Life (years)
830-2	1819	10	5+

Information Letters:

No ISM Information Letters were issued this period.

TMC Laboratory Visits:

No laboratory visits were conducted this period.

Quality Index:

No Quality Index deviations were issued this ASTM period.

Additional Information:

The ISM timeline is attached as Figure 5. The ISM database and alarm logs can be accessed on the TMC's homepage. If you have any questions on how to access this information, contact the TMC.

JAC/jac/mem08-0xx.jac.doc

Attachments

c: J.L. Zalar, TMC

F.M. Farber, TMC

Cummins Surveillance Panel

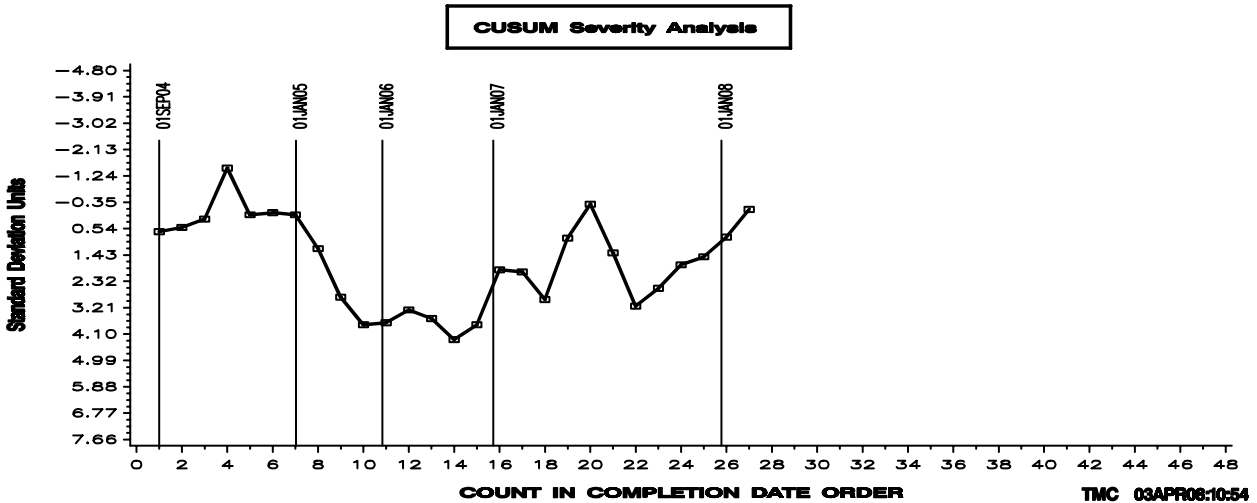
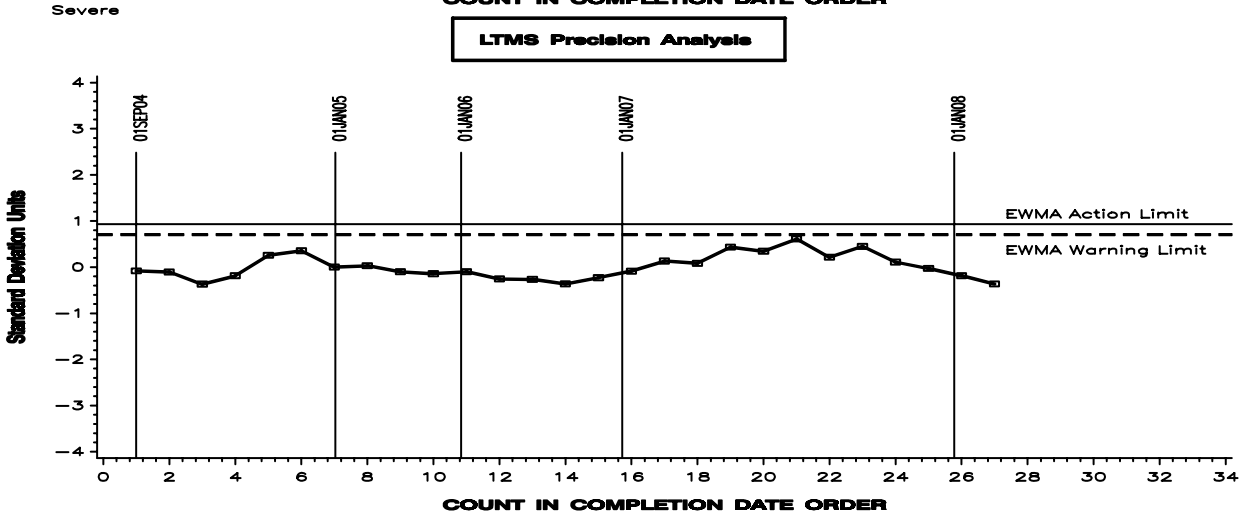
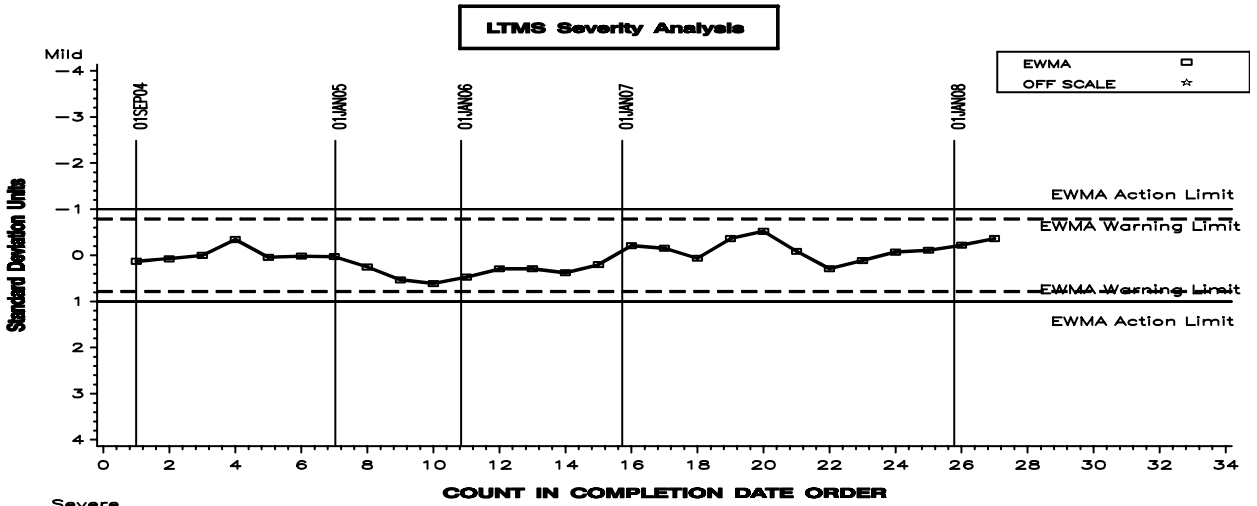
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Distribution: Email

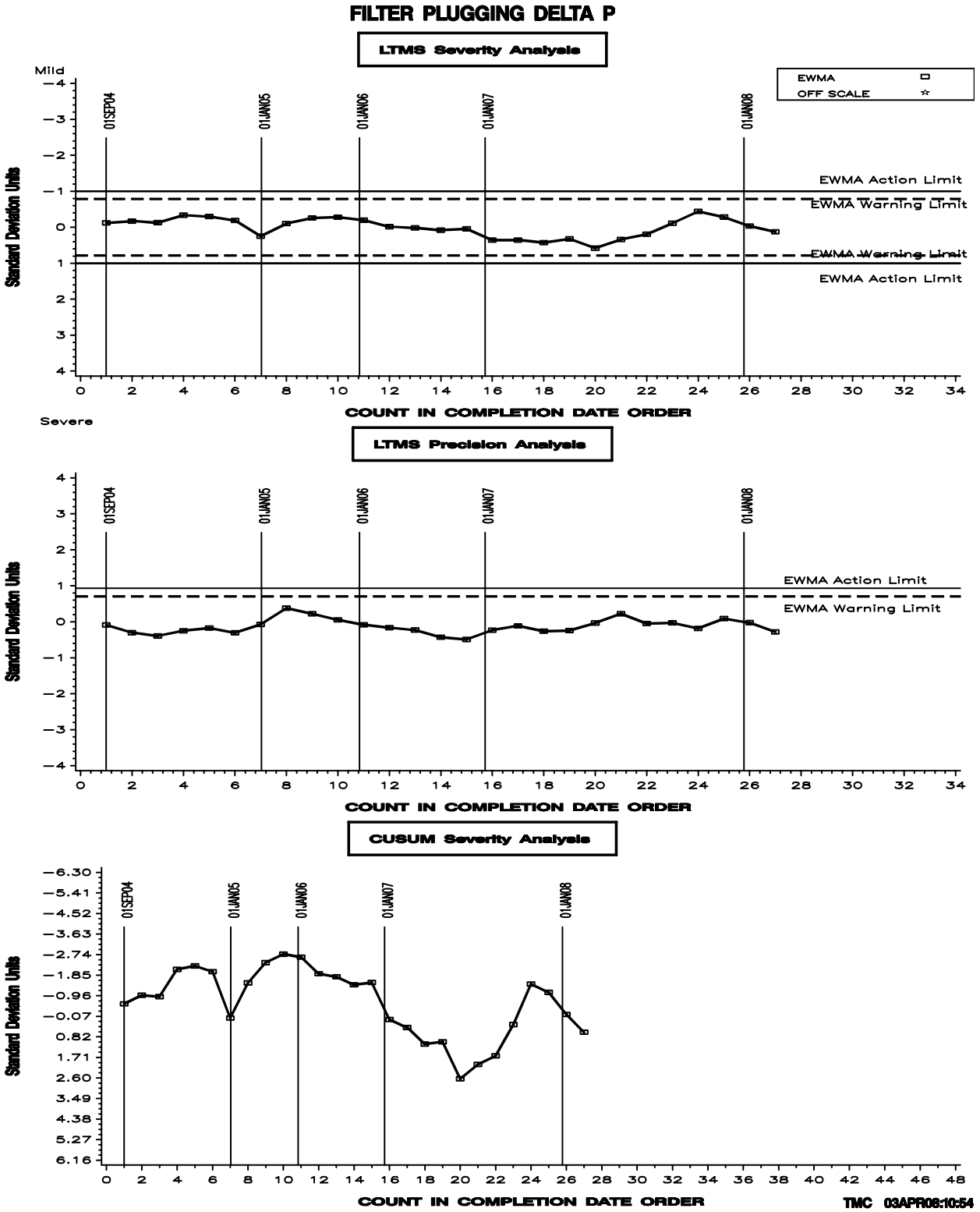
FIGURE 1

ISM INDUSTRY OPERATIONALLY VALID DATA

CROSSHEAD WEIGHT LOSS ADJUSTED TO 3.9 % SOOT



**FIGURE 2
ISM INDUSTRY OPERATIONALLY VALID DATA**



**FIGURE 3
ISM INDUSTRY OPERATIONALLY VALID DATA**

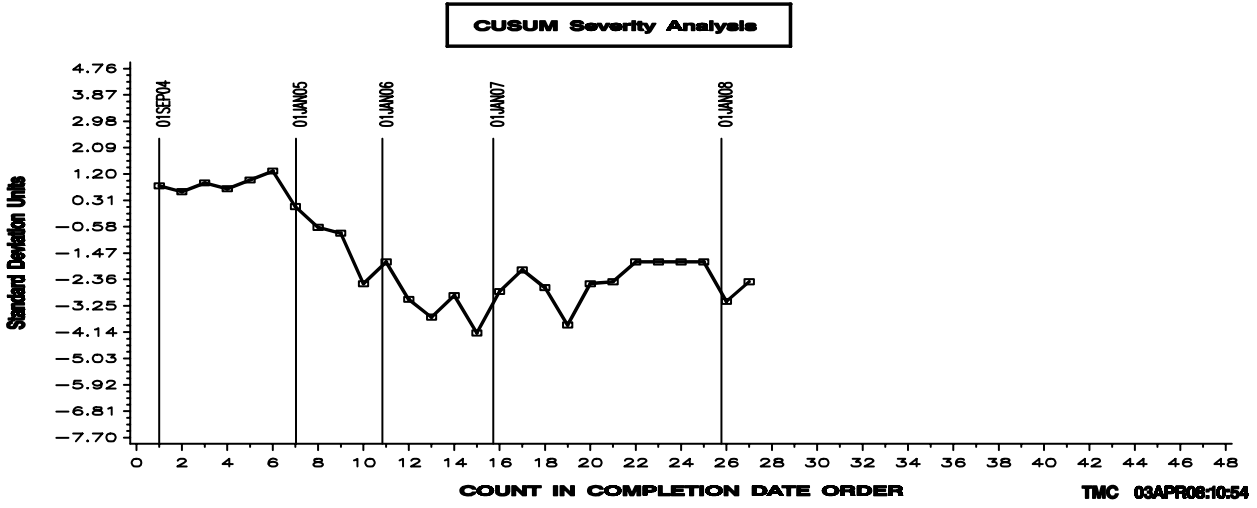
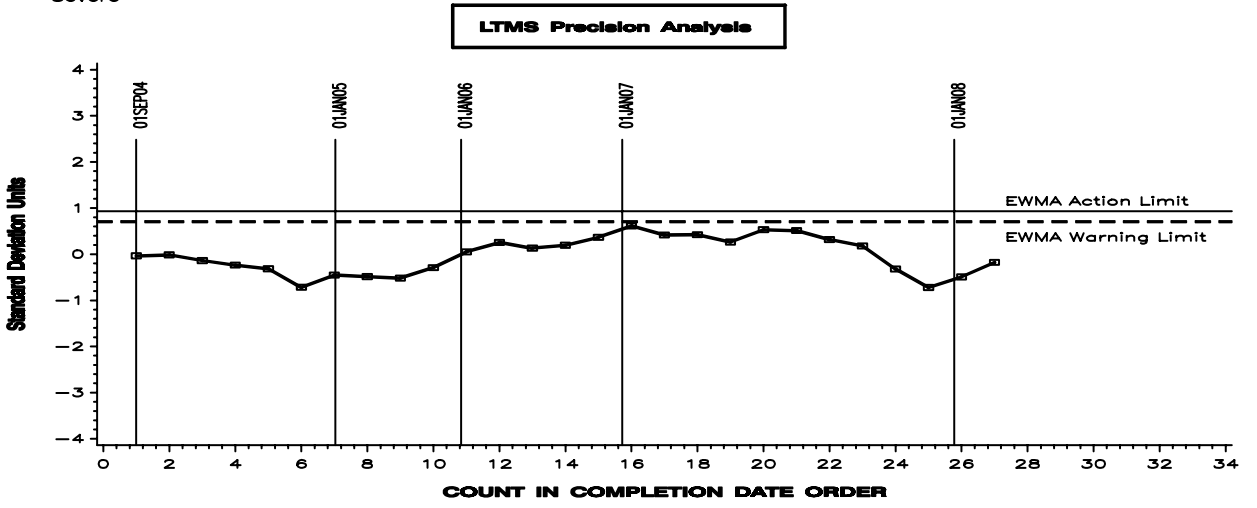
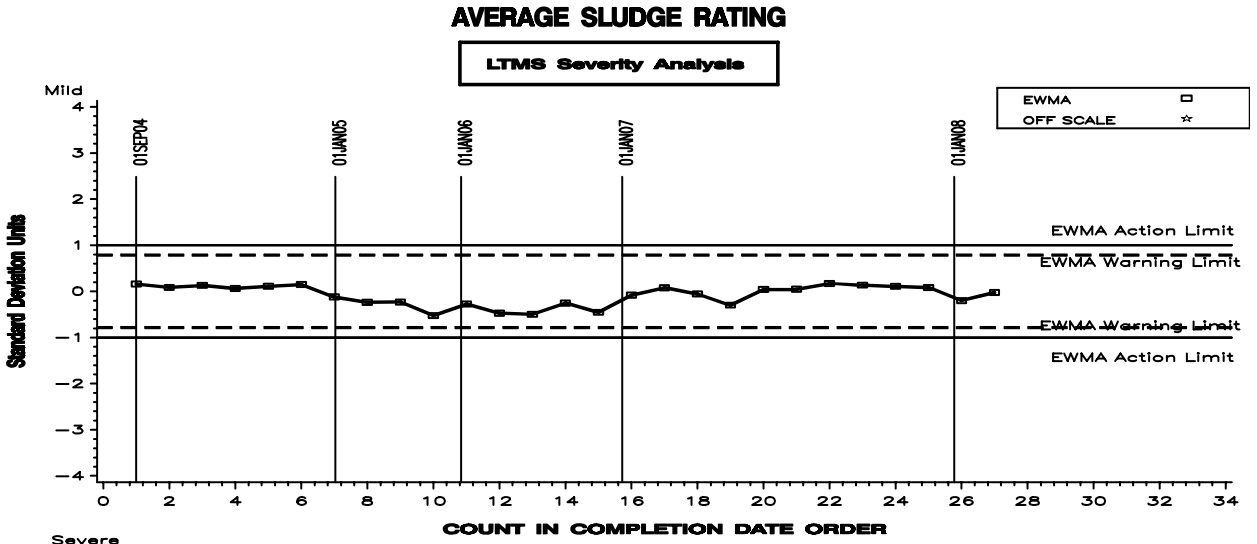


FIGURE 4

ISM INDUSTRY OPERATIONALLY VALID DATA

INJECTOR SCREW WEIGHT LOSS ADJUSTED TO 3.9% SOOT

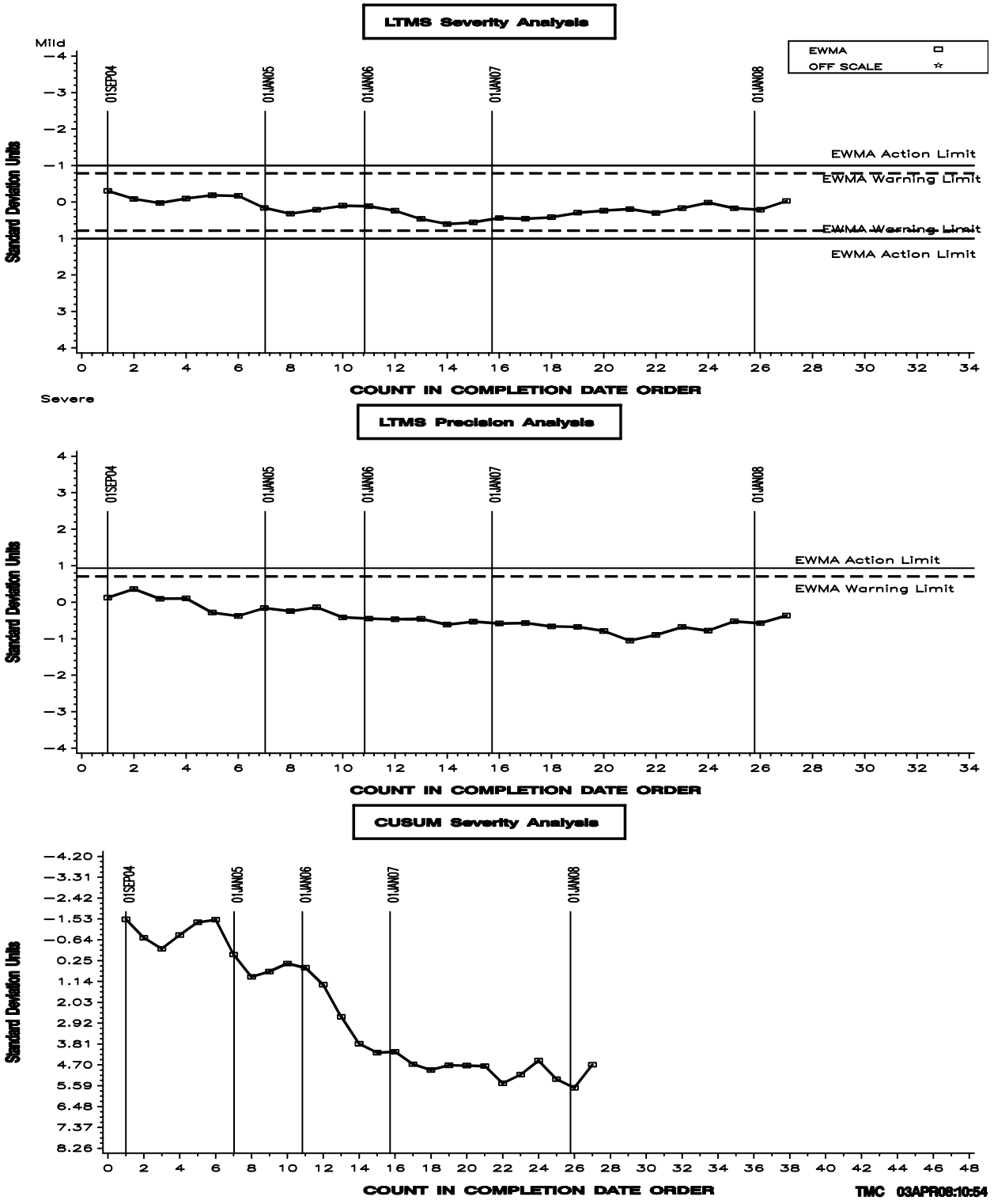


FIGURE 5

ISM Timeline

07:38 Wednesday, October 17, 2007 1

Obs	effective_date	info_letter_number	event
1	20040324		BEGINNING OF DEVELOPMENT AND DISCRIMINATION MINI-MATRIX
2	20050217		DECISION TO SCREEN INJECTOR ADJUSTING SCREWS FOR TOOLING MARKS.
3	20050322		COMPLETION OF MINI-MATRIX ANALYSIS AND IMPLEMENTATION OF SOOT ADJUSTMENTS FOR WEAR PARAMETERS
4	20050328		LTMS IMPLEMENTED
5	20051201		TEN-TEST TARGETS IMPLEMENTED FOR OIL 830-2
6	20070130	07-1	DRAFT 10 OF THE TEST PROCEDURE RELEASED.
7	20070208	07-1	DACA II REPORT USED FOR OPERATIONAL MEASUREMENT ACCURACY & PRECISION
8	20070208	07-1	D 129 REMOVED FROM LIST OF FUEL SULFUR MEASUREMENTS.
9	20070208	07-1	NON-INTERPRETABLE TESTS INCLUDED IN CALIBRATION PERIOD TEST COUNT.
10	20070402	07-2	CALIBRATION PERIOD SET AT 12 MONTHS OR 12 TESTS.
11	20070628		Industry correction factor of +19.1 mg implemented for Injector Adjusting Screw weight loss.
12	20070628		Industry correction factor of +1.7 mg implemented for Crosshead weight loss.
13	20070807		TWENTY-ONE TEST TARGETS IMPLEMENTED FOR OIL 830-2