



Test Monitoring Center

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412-365-1000

MEMORANDUM: 09-021

DATE: April 16, 2009

TO: Jim McCord, Chairman, SCOTE Surveillance Panel

FROM: Jeff Clark

SUBJECT: SCOTE Calibration Testing for the April 2009 ASTM Report Period

The following is a summary of 1K, 1N, 1M-PC, 1P, and 1R reference oil tests completed during the April 2008 ASTM report period, which began on October 1, 2008 and ended on March 31, 2009.

Test Status	TMC Validity Code	Number of Tests				
		1K	1N	1M-PC	1P	1R
Acceptable Calibration Test	AC	1	3	4	2	0
Failed Calibration Test (LTMS Criteria)	OC	0	1	0	0	0
Operationally Invalid Test	RC or LC	0	0	0	0	0
Aborted	XC	0	0	0	0	0
Total		1	4	4	2	0

The failed 1N test was due to mild Top Land Heavy Carbon.

1K Severity:

While Top Groove Fill (TGF) is currently within control chart limits, it still appears to be in the midst of a long term mild trend. Weighted Demerits (WDK), Top Land Heavy Carbon (TLHC), and End of Test Oil Consumption (ETOC) are all currently within control chart limits and are not exhibiting any pronounced severity trends. Brake Specific Oil Consumption (BSOC) is currently in an EWMA severity warning alarm, in the mild direction. Figures 1 through 5, show the current industry EWMA severity, EWMA precision, and cusum charts for TGF, WDK, TLHC, BSOC, and ETOC respectively.

1N Severity:

Top Groove Fill (TGF) is currently in an industry action alarm, in the mild direction; a mild trend that has continued since 2005. Top Land Heavy Carbon (TLHC) is within control chart limits and it appears that the mild trend that began in 2001 may have abated. Weighted Demerits (WDN), and Brake Specific Oil Consumption (BSOC) are currently within control chart limits and are not exhibiting any pronounced severity trends. Figures 6 through 9 show the current industry EWMA severity, EWMA precision, and cusum charts for TGF, WDK, TLHC, and BSOC respectively.

1M-PC Severity:

Top Groove Fill (TGF) and Weighted Deposits (WTD) are both currently within industry control chart limits and are not exhibiting any pronounced severity trends. Figures 10 and 11 show the current industry EWMA severity and cusum charts for TGF and WTD, respectively.

1P Severity:

Top Groove Carbon (TGC), and Weighted Deposits (WD) are currently within control chart limits and are not exhibiting any pronounced severity trends. Top Land Carbon (TLC) is within control chart limits, but is starting to show some evidence of a mild trend. Both Oil Consumption (OC) and End of Test Oil Consumption (ETOC) are in industry alarms in the severe direction and both have been in these trends for much of the test history. Figures 12 through 16 show the current industry EWMA severity, EWMA precision, and cusum charts for TGC, TLC, WD, OC, and ETOC respectively.

1R Severity:

Weighted Deposits (WD), Top Groove Carbon (TGC), Beginning of Test Oil Consumption (BTOC), and End of Test Oil Consumption (ETOC) are currently within control chart limits and are not exhibiting any pronounced severity trends. Top Land Carbon (TLC) is in an industry warning alarm, in the mild direction, which appears to be a continuation of the trend that began in 2002. Figures 17 through 21, show the current industry EWMA severity, EWMA precision, and cusum charts for WD, TGC, TLC, BTOC, and ETOC respectively.

Reference Test Precision Estimates:

Current test activity levels do not support an evaluation of test precision for the 1K, 1N, 1P, and 1R tests. Precision estimates for the 1M-PC will be provided on an annual basis and are shown in the table below. The 2008 1M-PC precision estimate shows precision for both TGF and WD to be comparable to recent years.

1M-PC Precision Estimates

Parameter	2005	2006	2007	2008	2009
Df	18	12	10	7	
TGF	15.0	17.7	19.1	18.6	
WD	93.7	41.6	47.1	38.7	

Reference Oil Supply:

The table below shows current reference oil inventories. Based upon these levels, no action regarding reference oil supply is necessary at this time.

Reference Oil Inventory and Estimated Life

Oil	Tests	TMC Inventory ^A	Lab Inventory ^B	Estimated Life ^C
809-1	1K, 1N	2708	8	5+ years
811-1	1K, 1N	9	2	0.5 years
811-2	1K, 1N	1505	5	5+ years
820-3	1R	1542	0	5+ years
873-2	1M-PC	348	8	5 years
1004-3	1N, 1P	29	3	1 year
1005-2	1P, 1R	75	6	1 year

^AInventories are expressed in gallons.

^BTest sample count at active laboratories.

^CTime estimate is based on most recent activity levels.

Information Letters:

No 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 period.

Additional Information:

The SCOTE databases, timelines, and alarm logs can be accessed from the links in the following table. If you have any questions about this information, please contact the TMC.

SCOTE Surveillance Panel Information Links

Test Area	Information Link
1K	ftp://ftp.astmtmc.cmu.edu/refdata/diesel/1k/data/
1N	ftp://ftp.astmtmc.cmu.edu/refdata/diesel/1n/data/
1M-PC	ftp://ftp.astmtmc.cmu.edu/refdata/diesel/1m/data/
1P	ftp://ftp.astmtmc.cmu.edu/refdata/diesel/1p/data/
1R	ftp://ftp.astmtmc.cmu.edu/refdata/diesel/1r/data/

JAC/jac/mem09-021.jac.doc

Attachments

c: J.L. Zalar, TMC

F.M. Farber, TMC

SCOTE Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/diesel/scote/semiannualreports/SCOTE-04-2009.pdf>

Distribution: Email

FIGURE 1
CATERPILLAR 1K INDUSTRY OPERATIONALLY VALID DATA

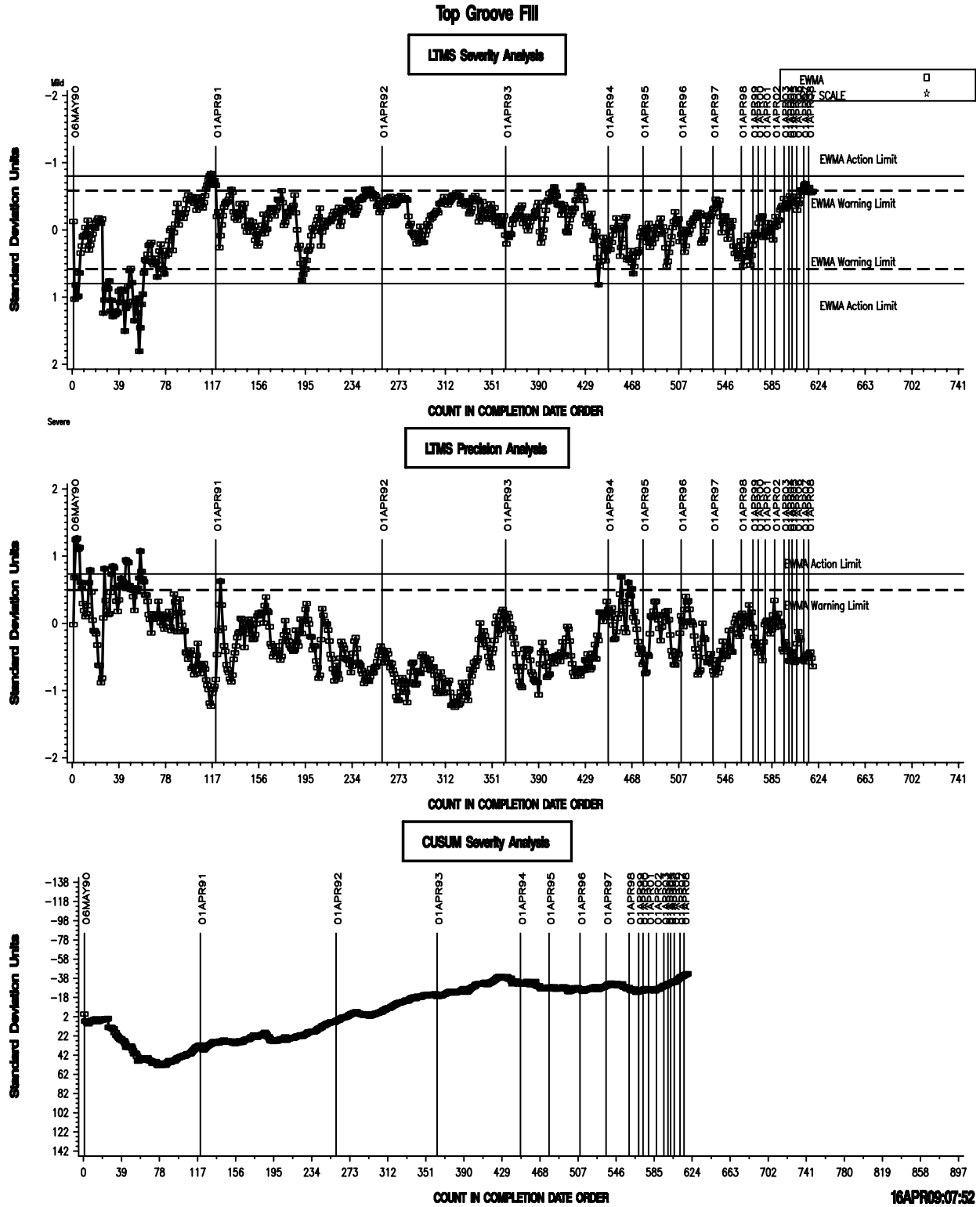


FIGURE 2
CATERPILLAR 1K INDUSTRY OPERATIONALLY VALID DATA

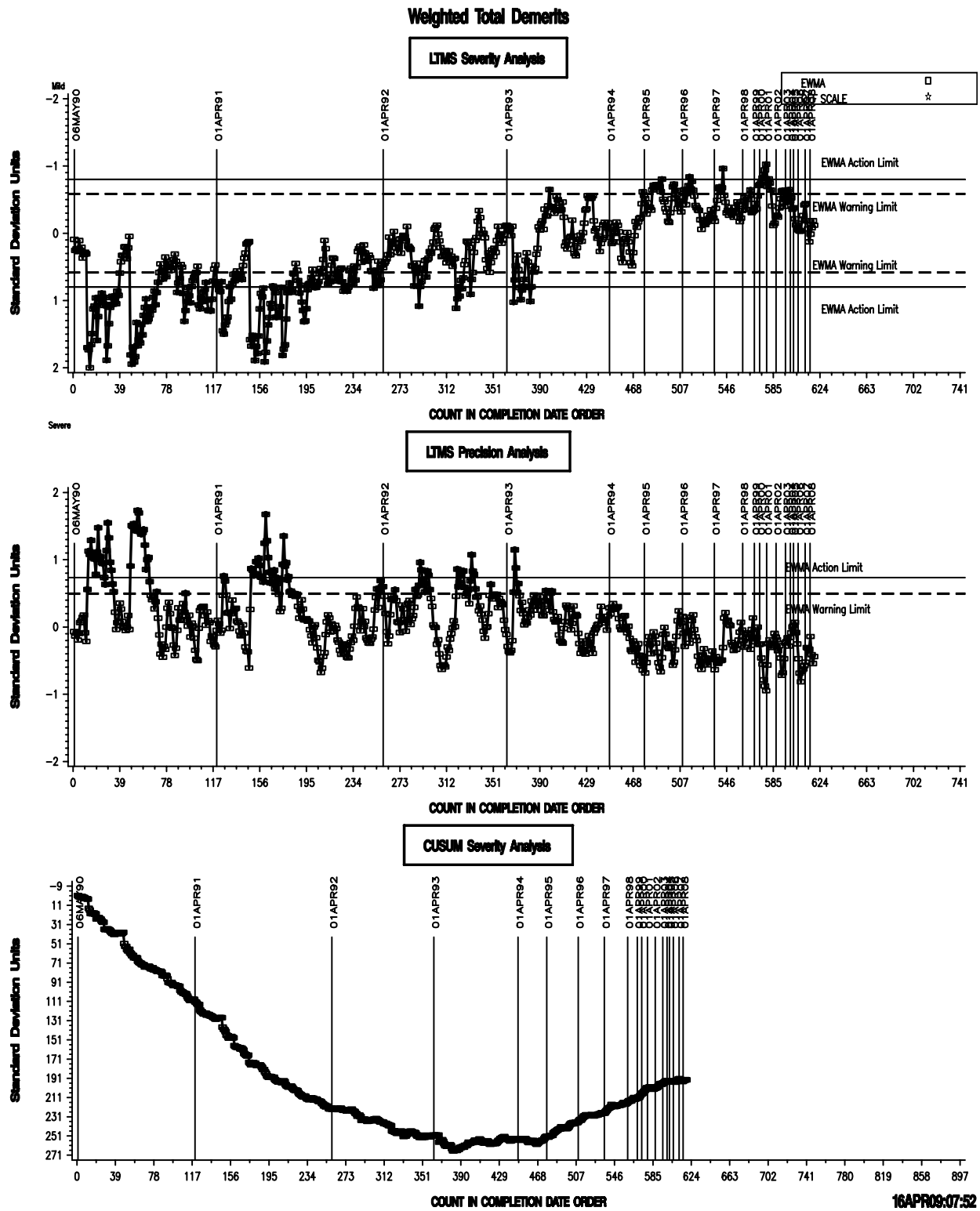


FIGURE 3
CATERPILLAR 1K INDUSTRY OPERATIONALLY VALID DATA

FINAL TRANSFORMED TOP LAND HEAVY CARBON

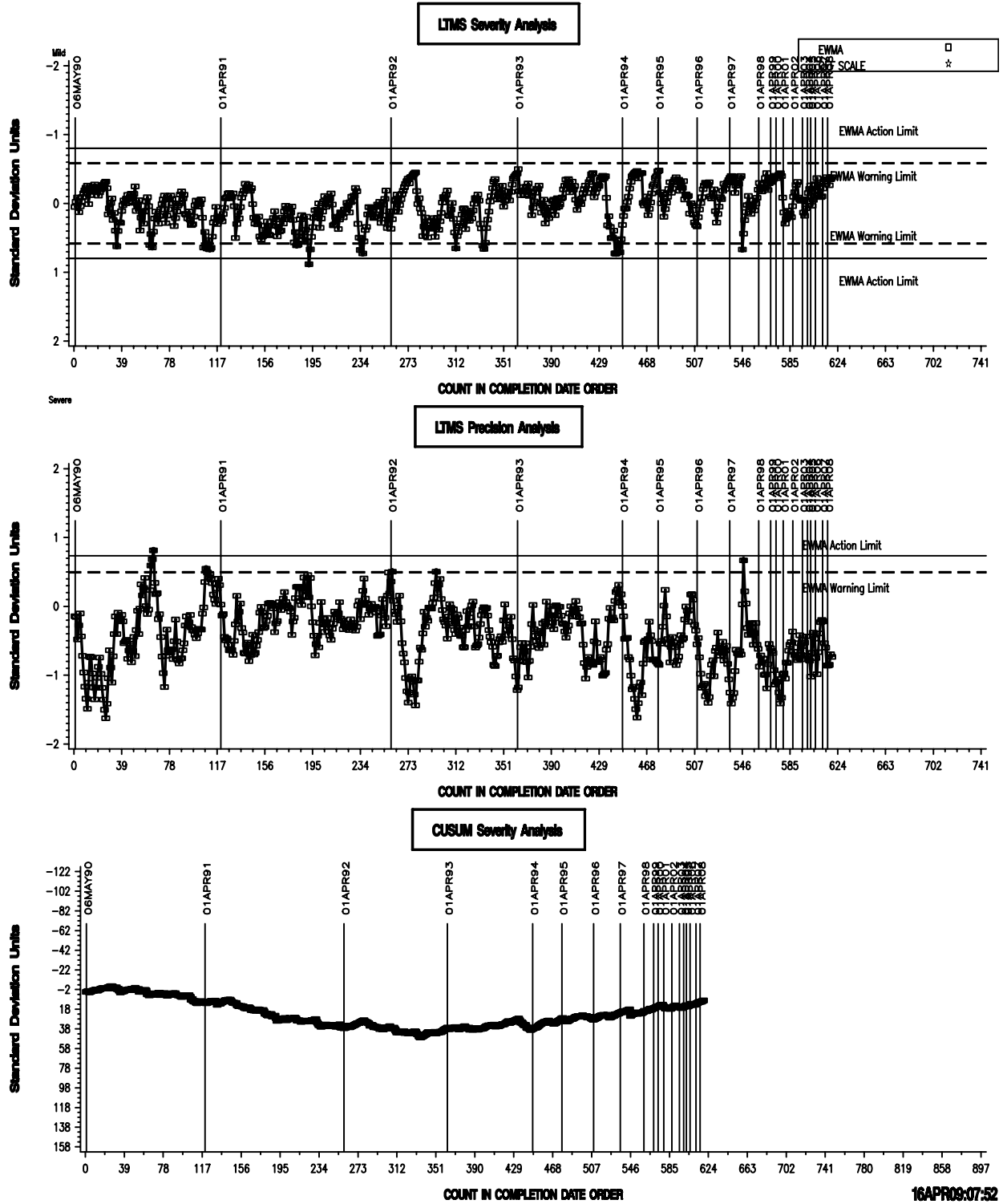


FIGURE 4
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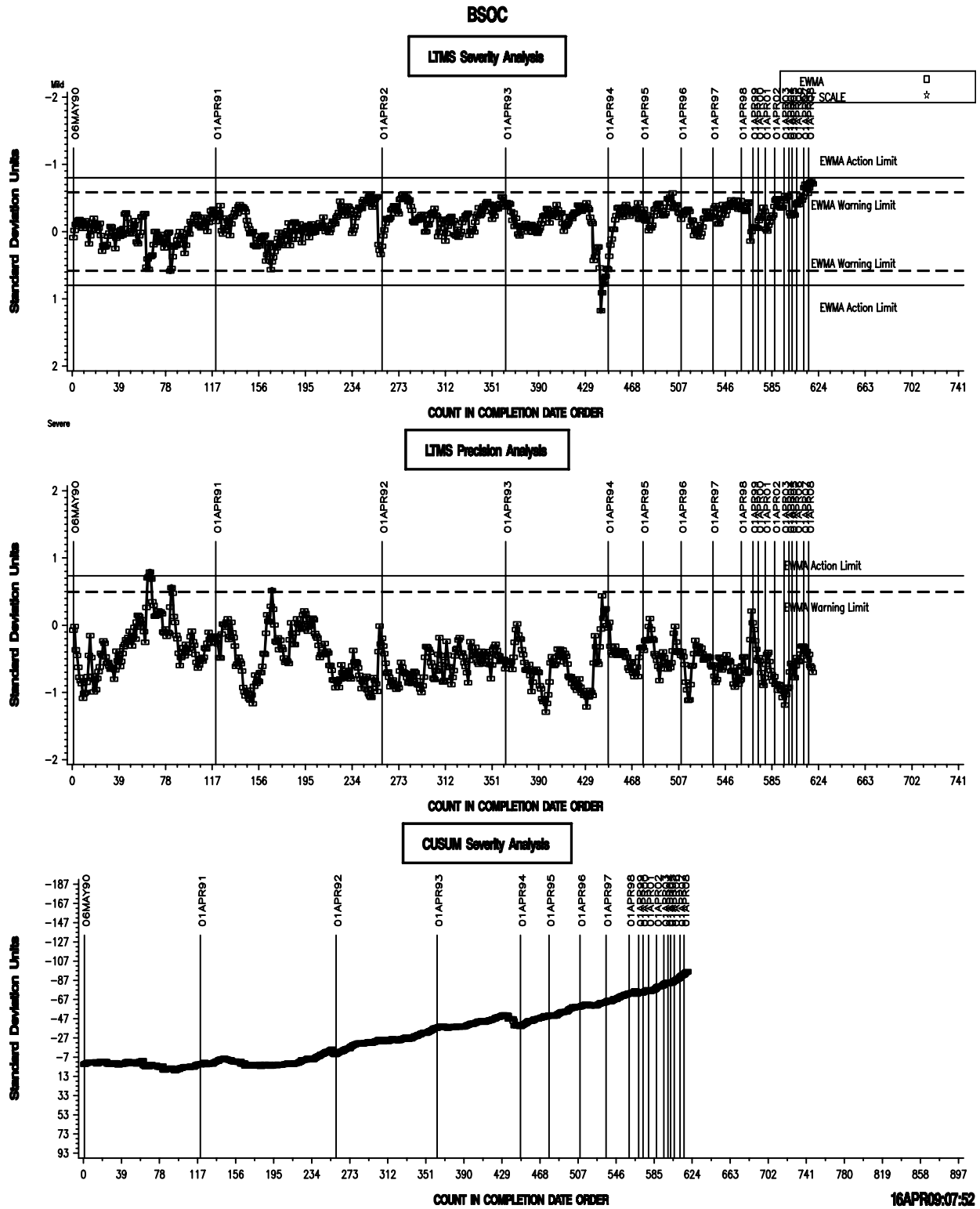


FIGURE 5
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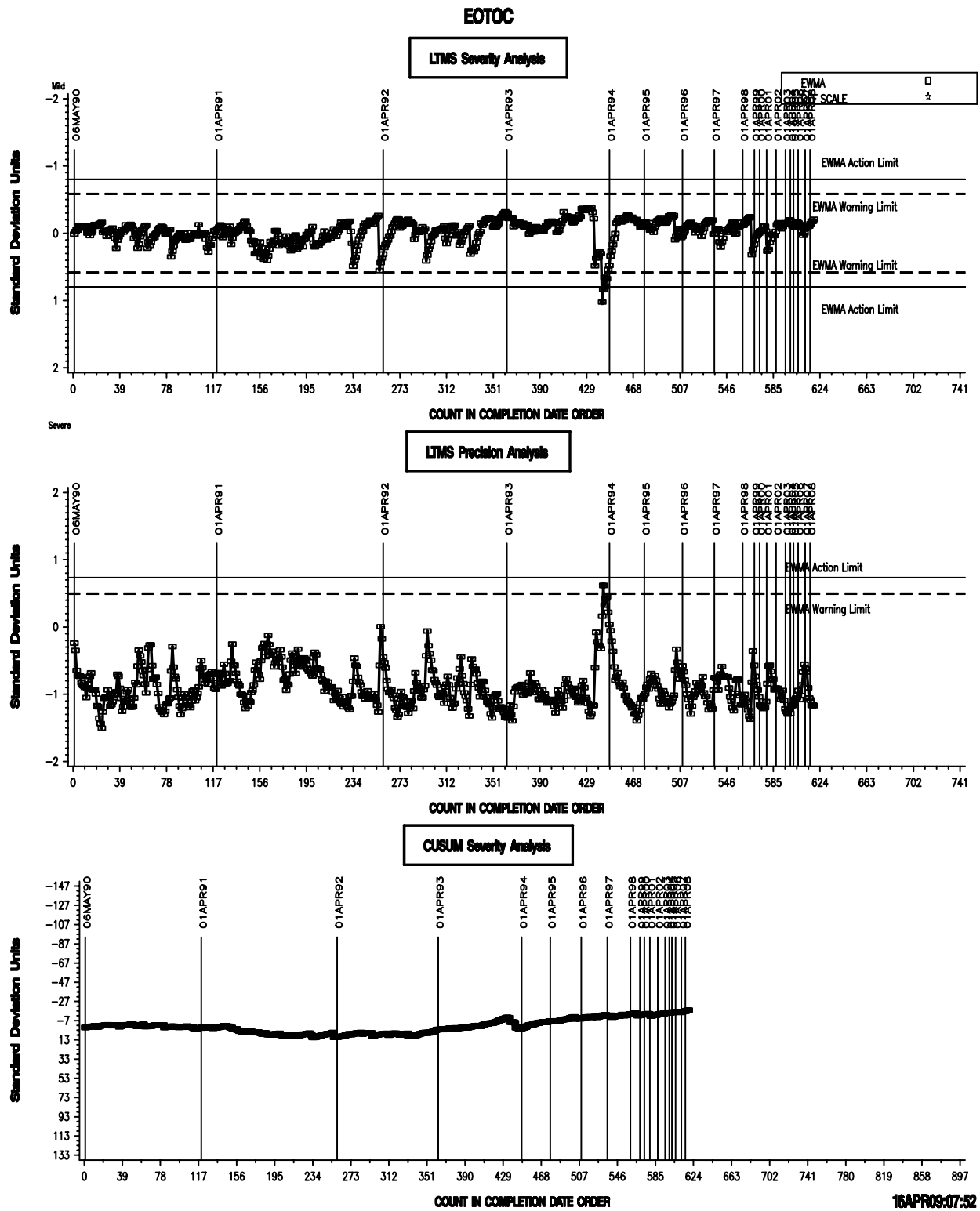


FIGURE 6
CATERPILLAR 1N INDUSTRY OPERATIONALLY VALID DATA

Top Groove Fill

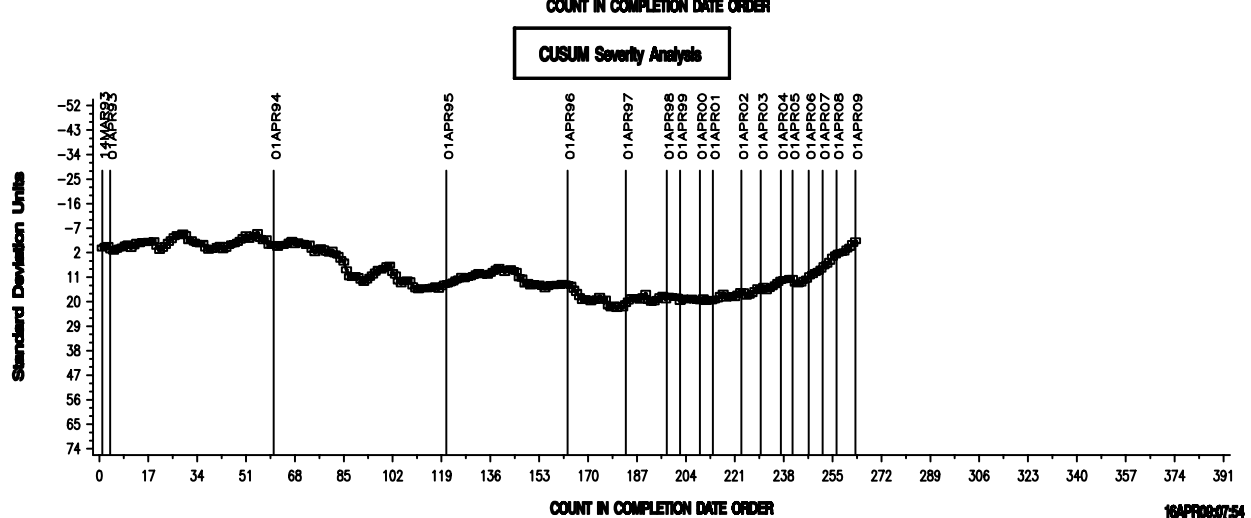
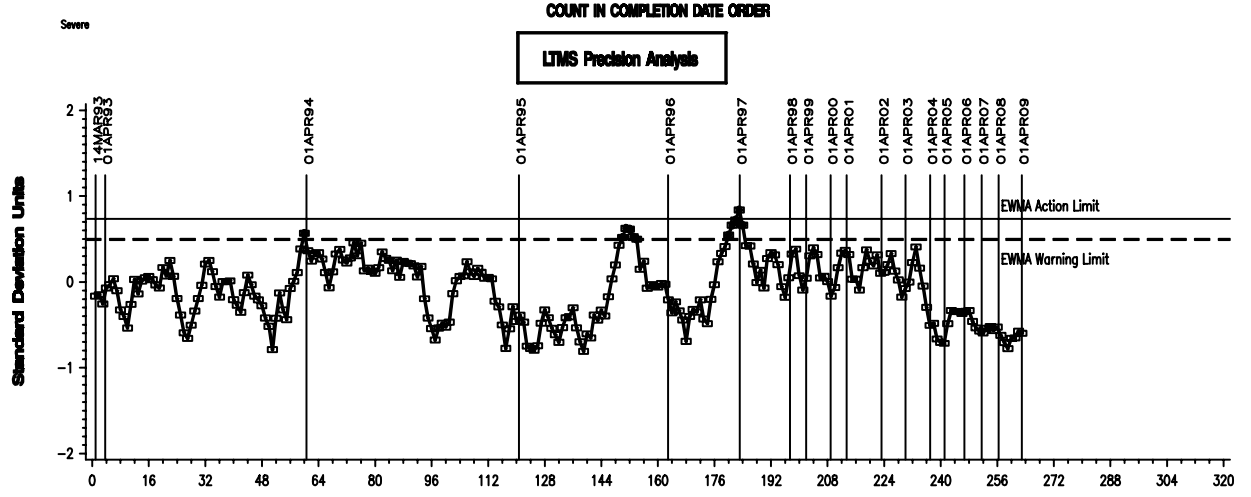
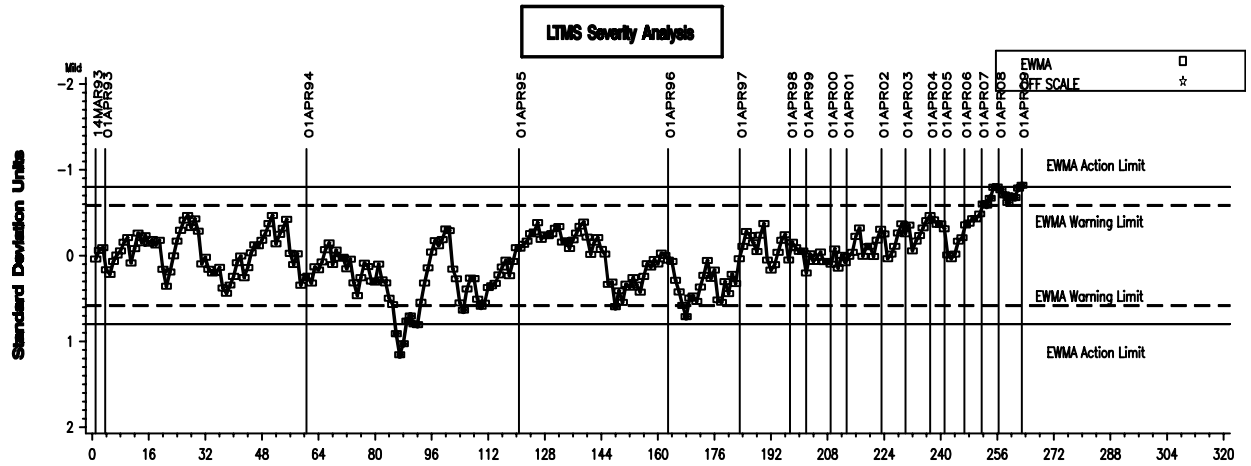


FIGURE 7
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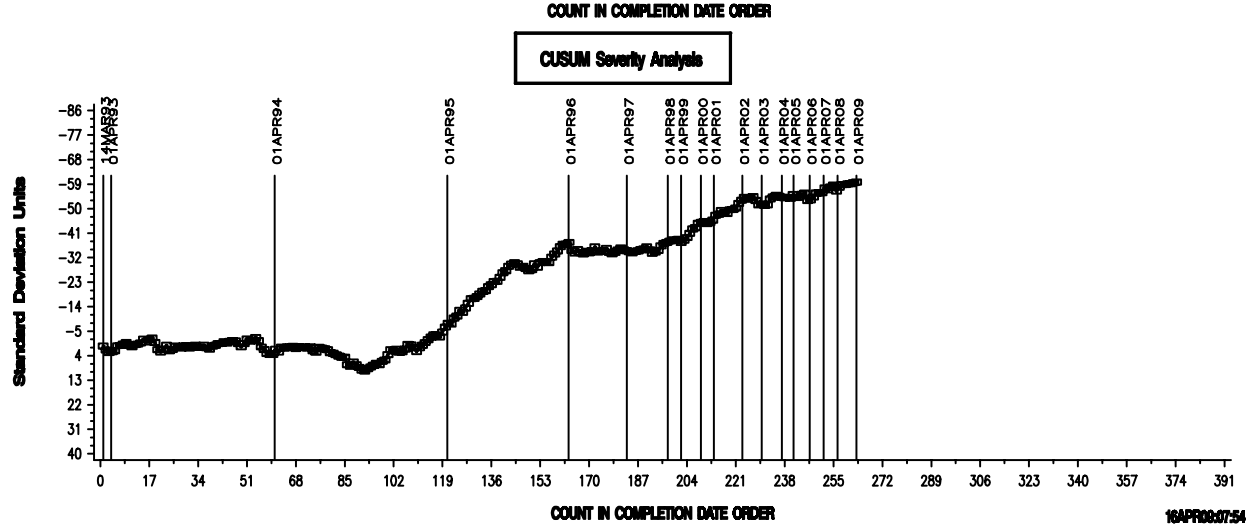
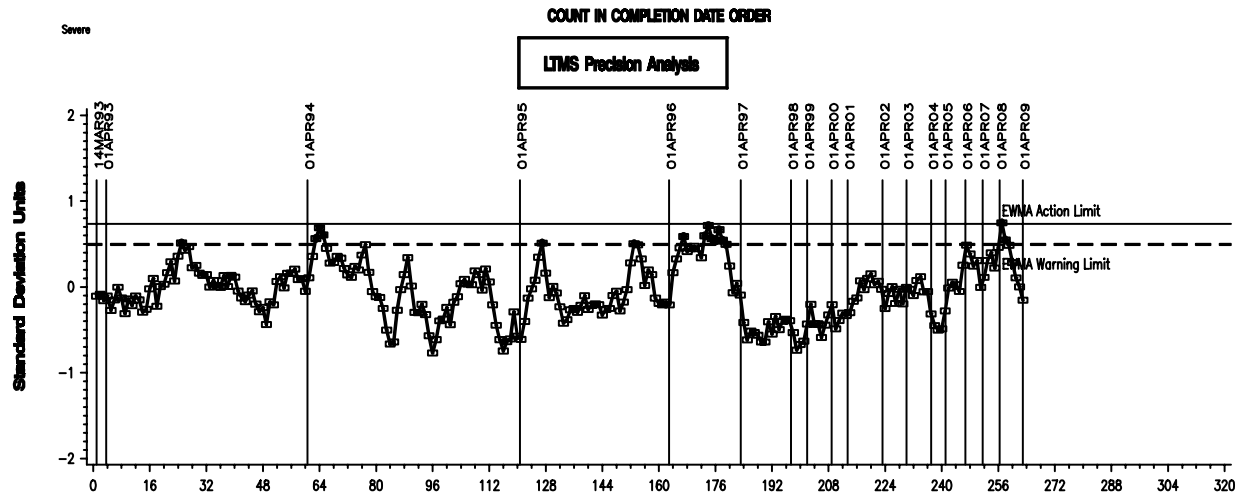
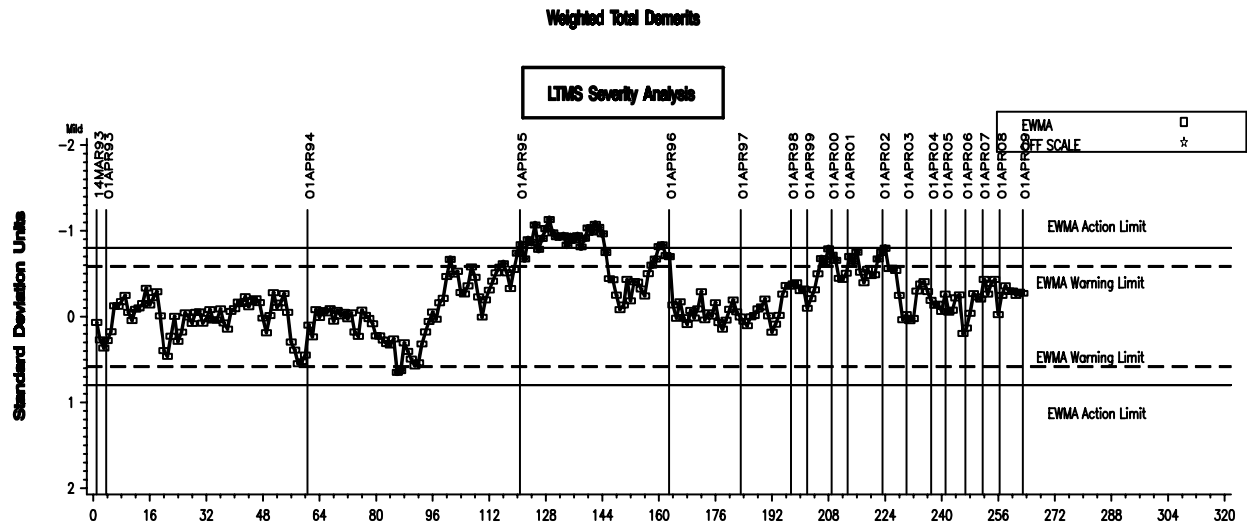


FIGURE 8
CATERPILLAR 1N INDUSTRY OPERATIONALLY VALID DATA
FINAL TRANSFORMED TOP LAND HEAVY CARBON

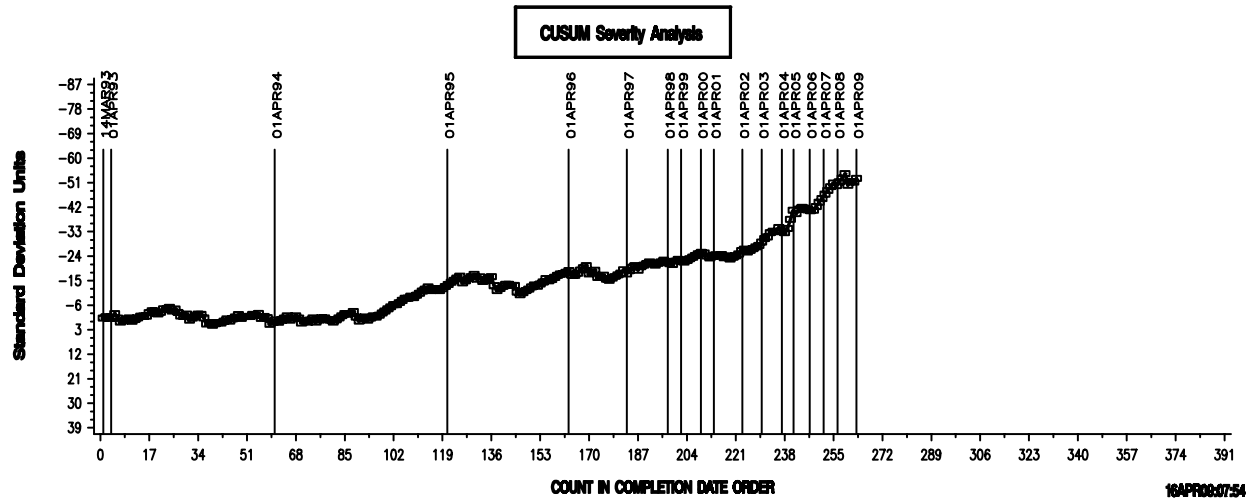
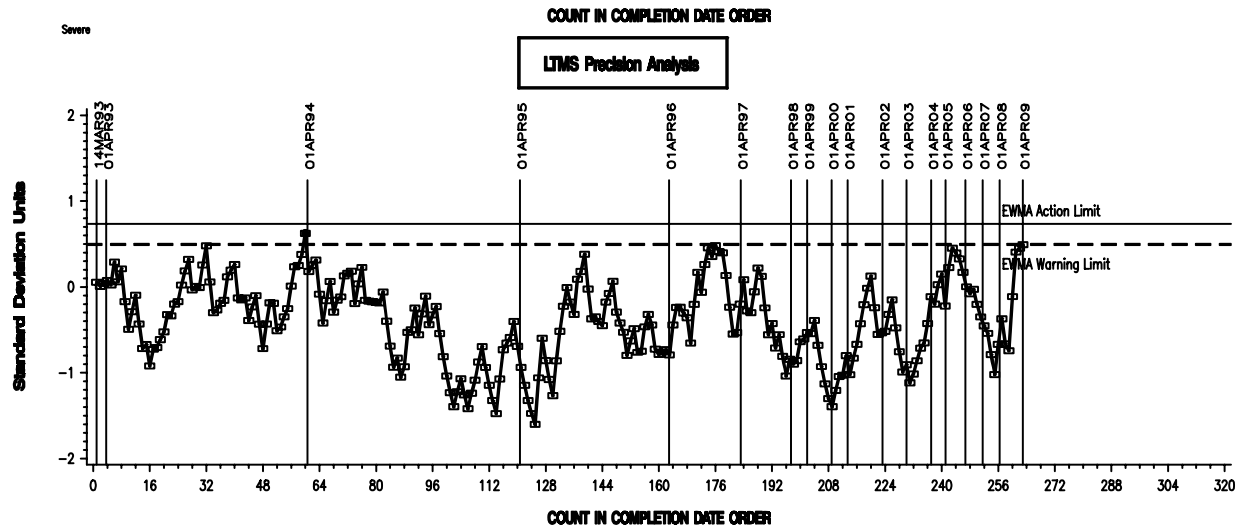
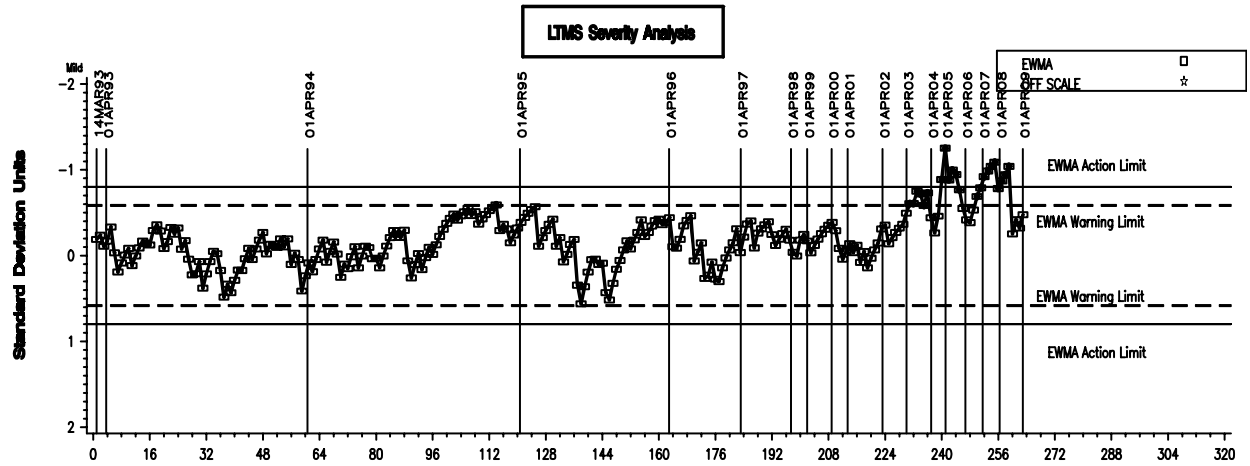


FIGURE 9
CATERPILLAR 1N INDUSTRY OPERATIONALLY VALID DATA

BSOC

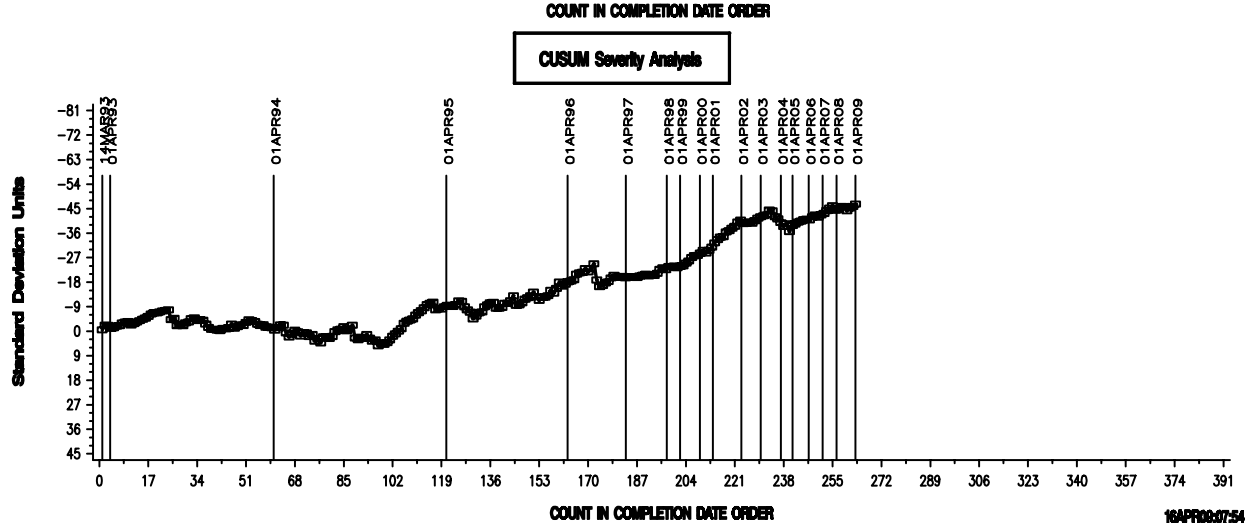
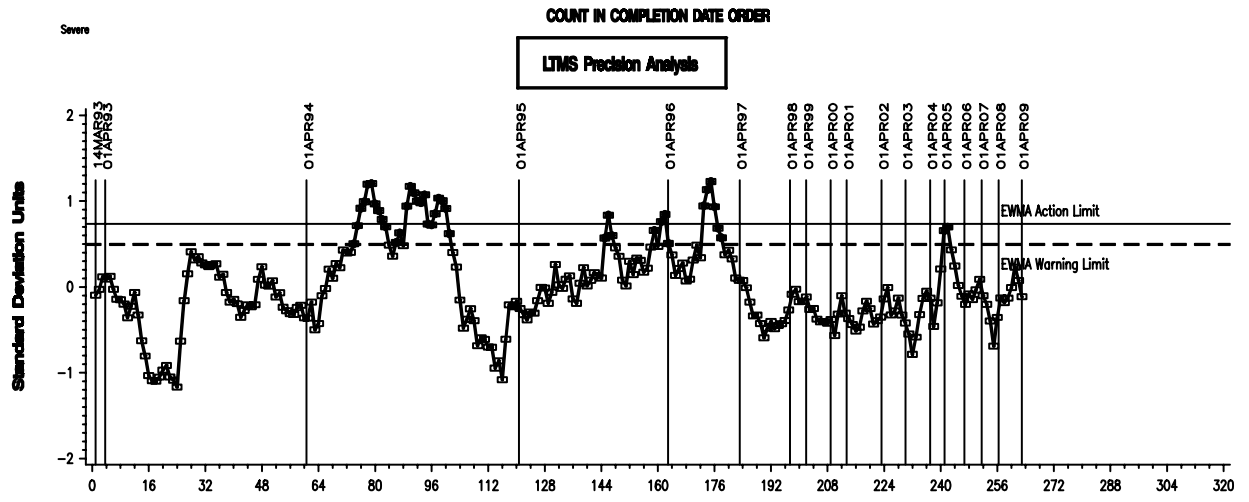
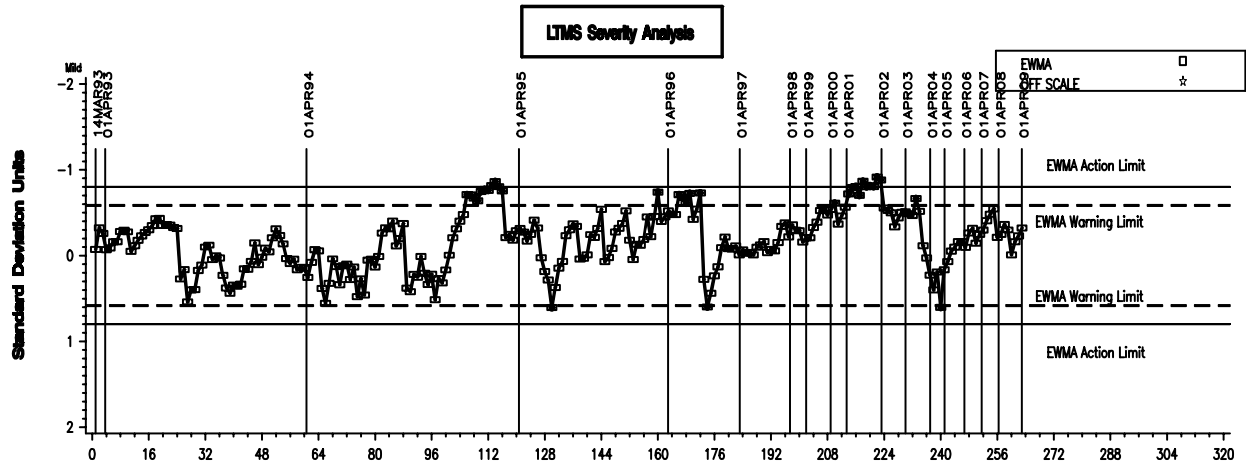


FIGURE 10
CATERPILLAR 1M-PC INDUSTRY OPERATIONALLY VALID DATA

FINAL TOP GROOVE FILLING

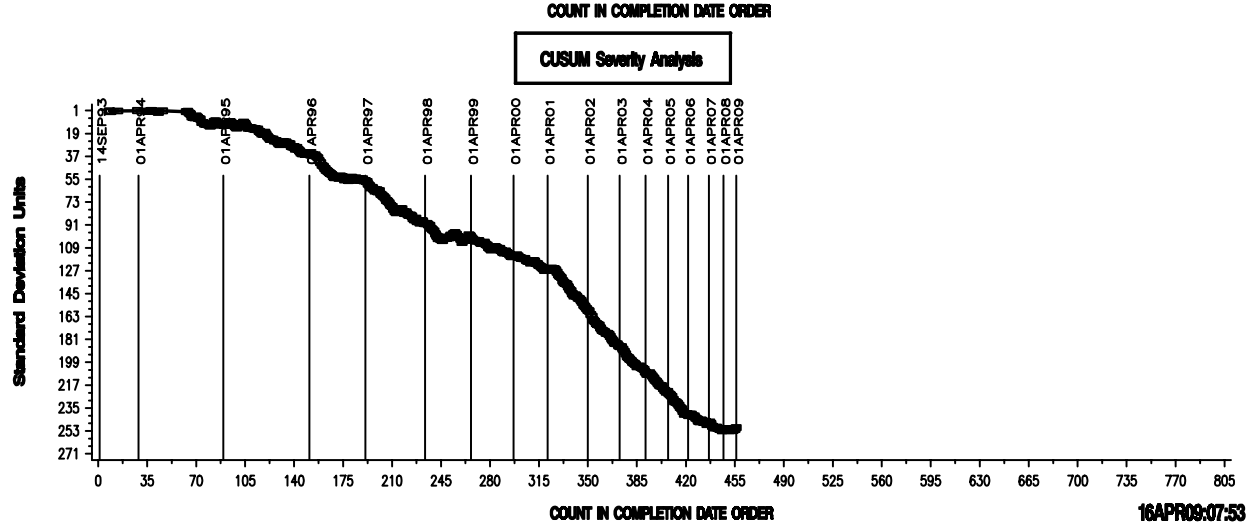
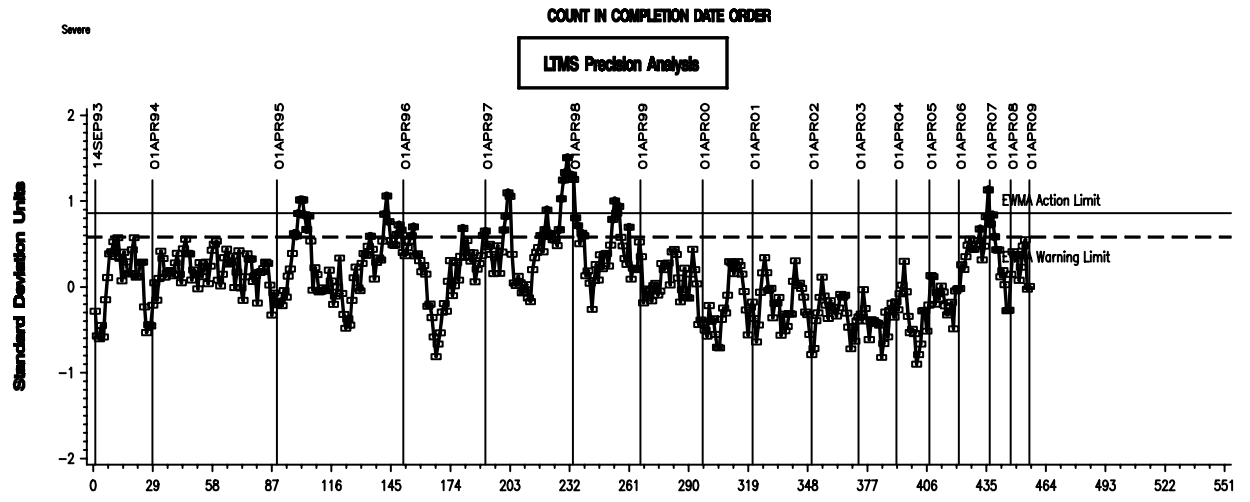
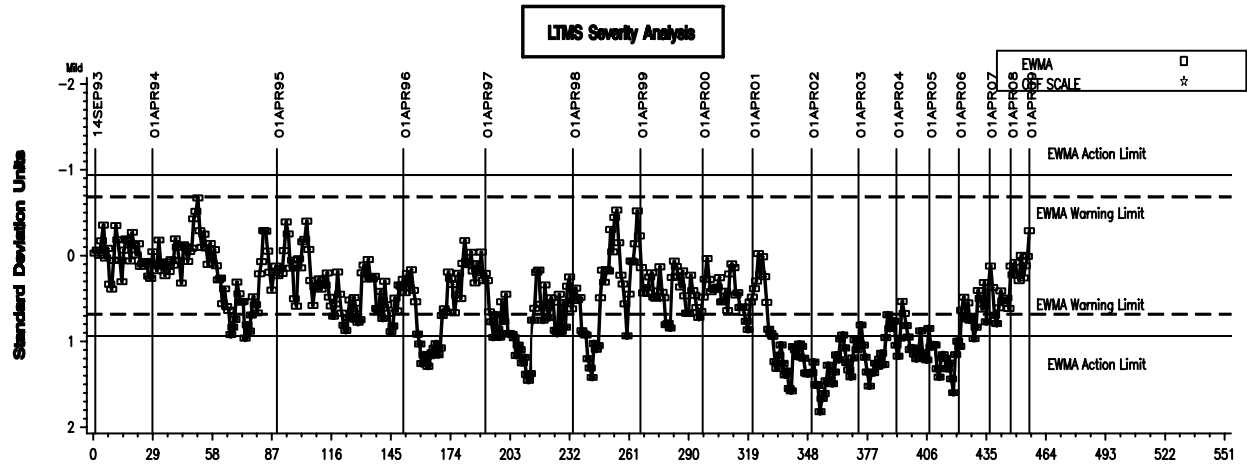


FIGURE 11
CATERPILLAR 1M-PC INDUSTRY OPERATIONALLY VALID DATA

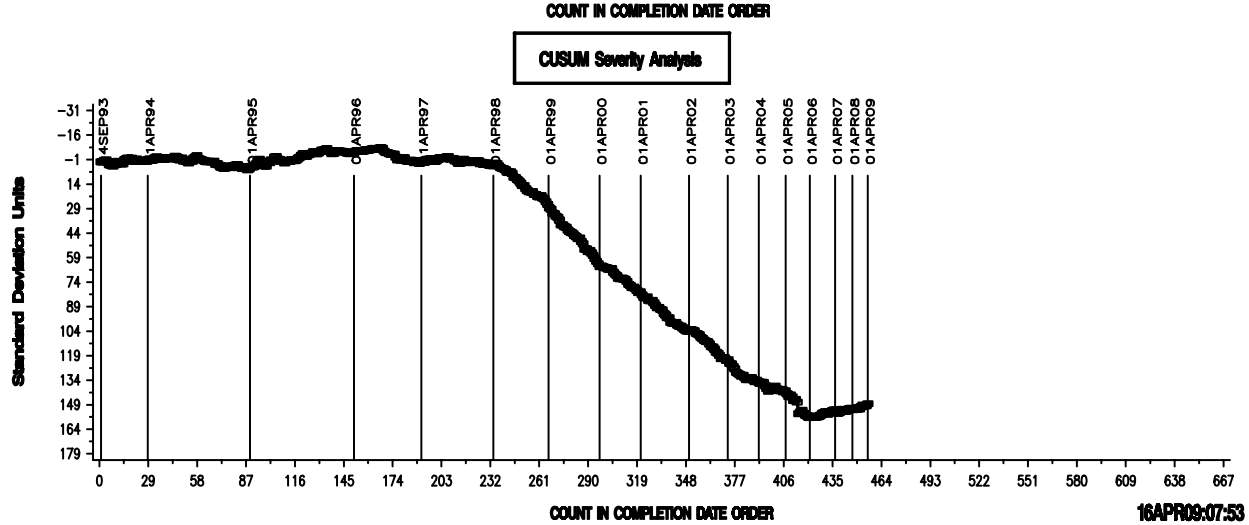
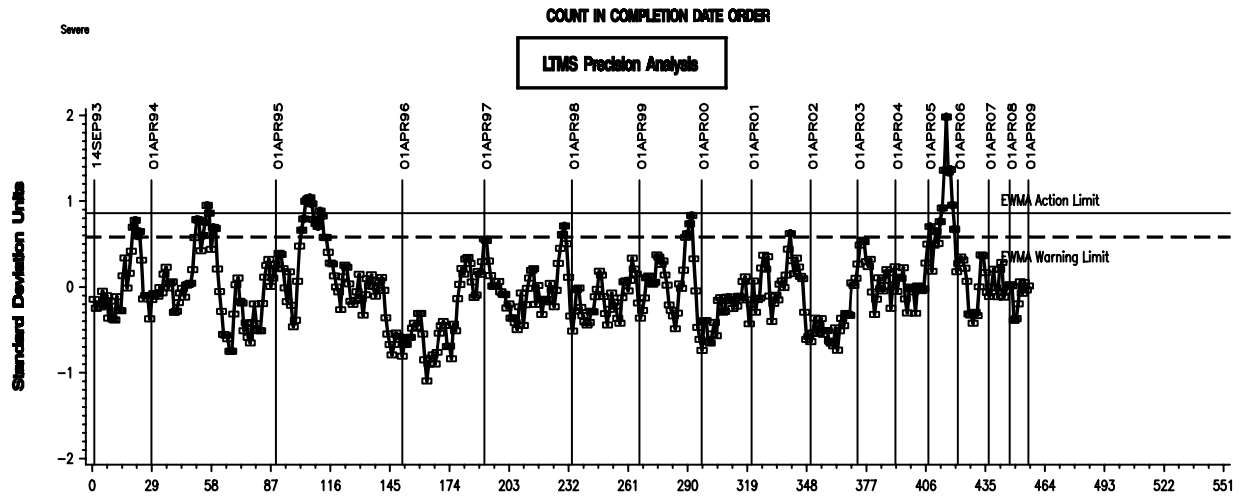
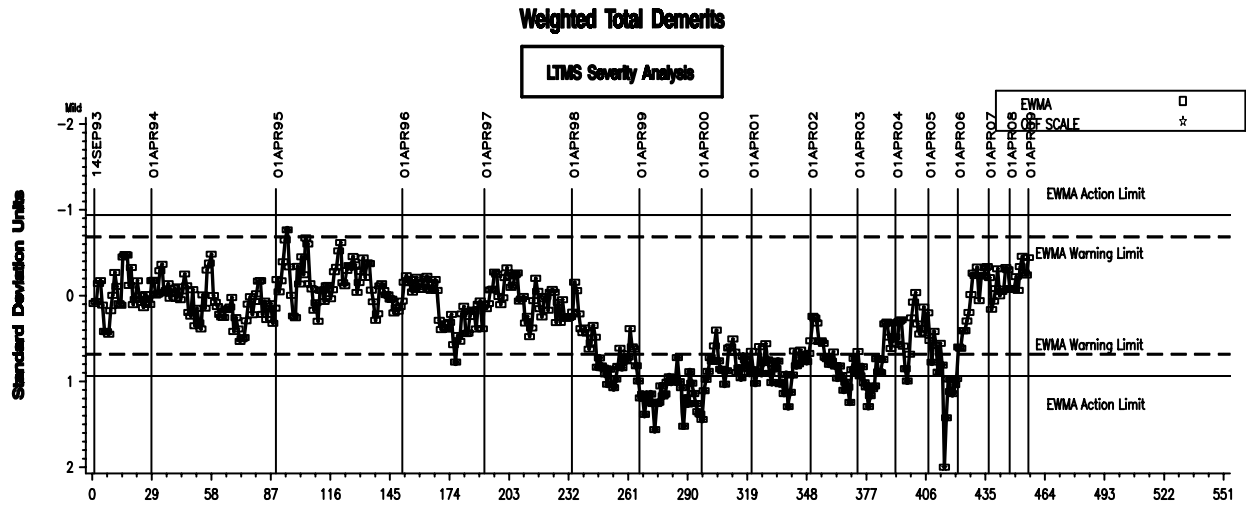


FIGURE 12
CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

TOP GROOVE CARBON

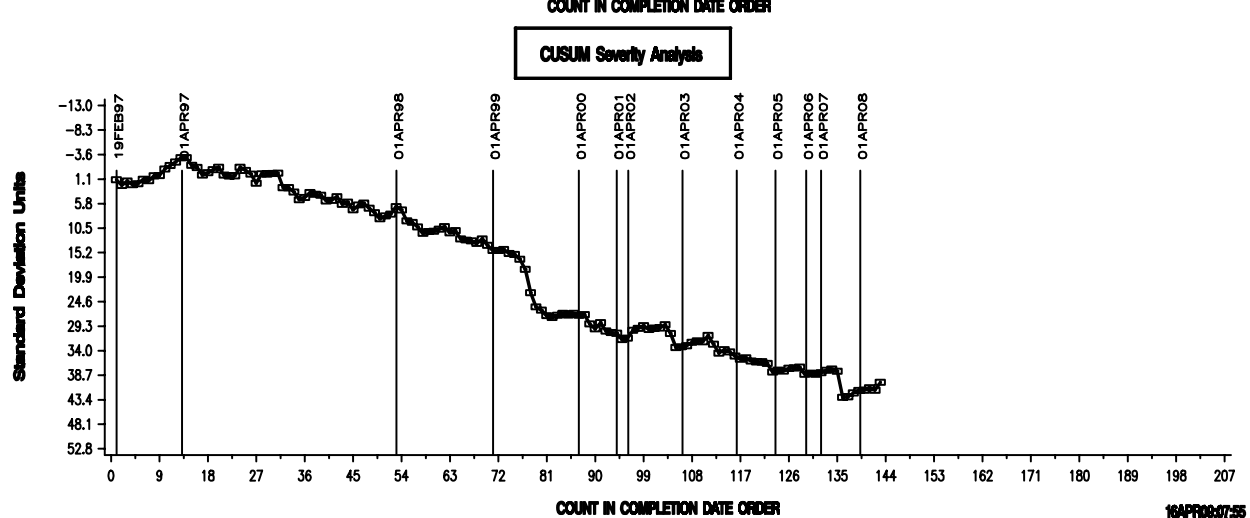
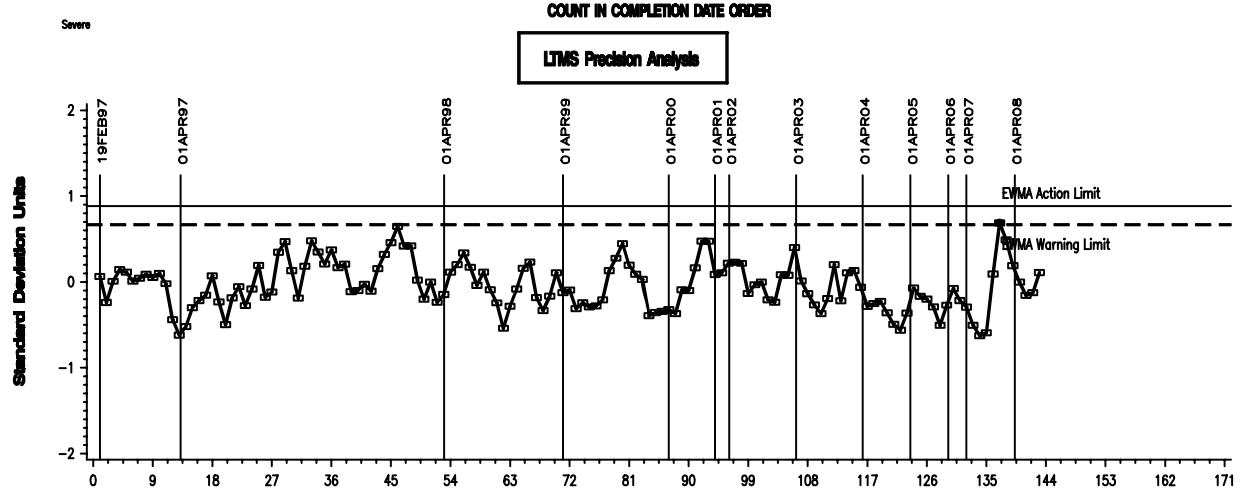
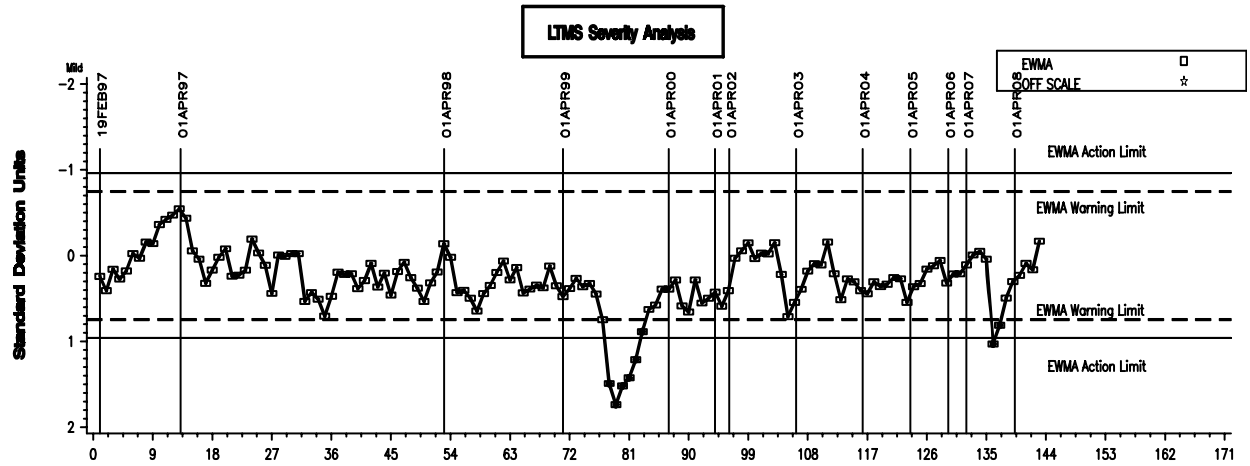


FIGURE 13
CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

TOP LAND CARBON

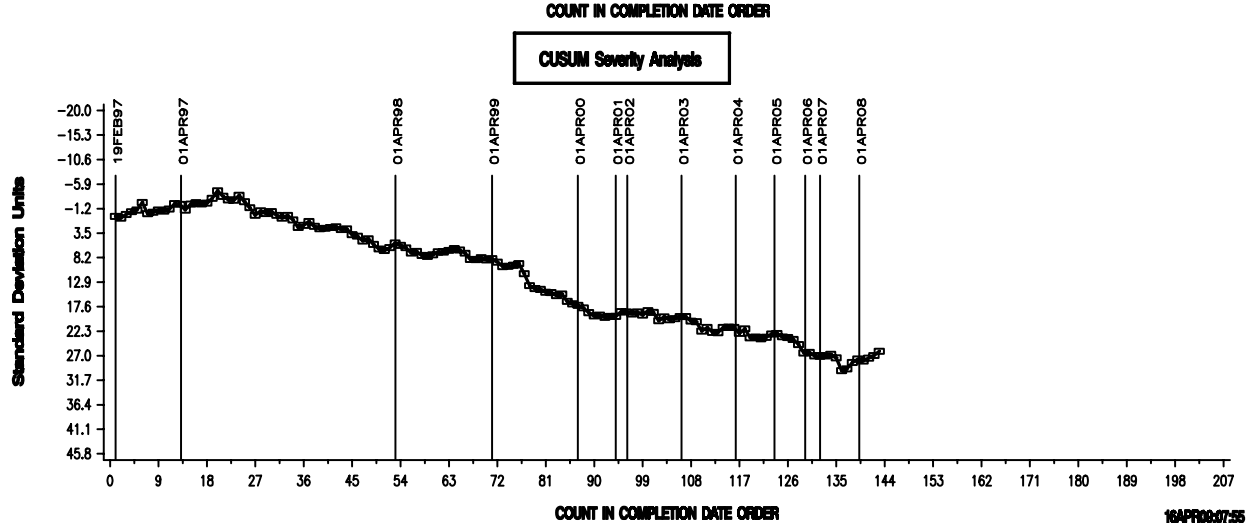
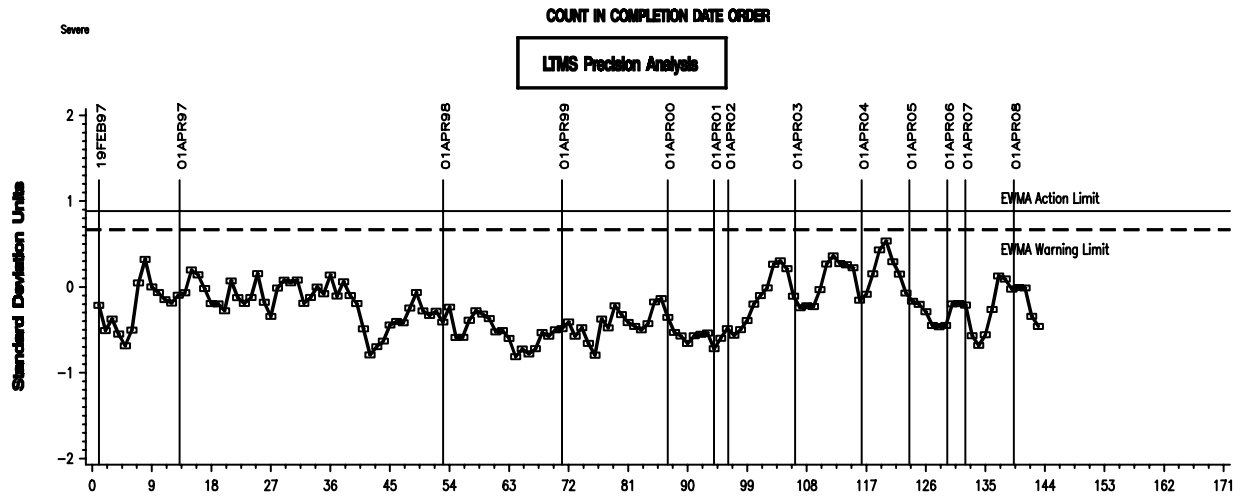
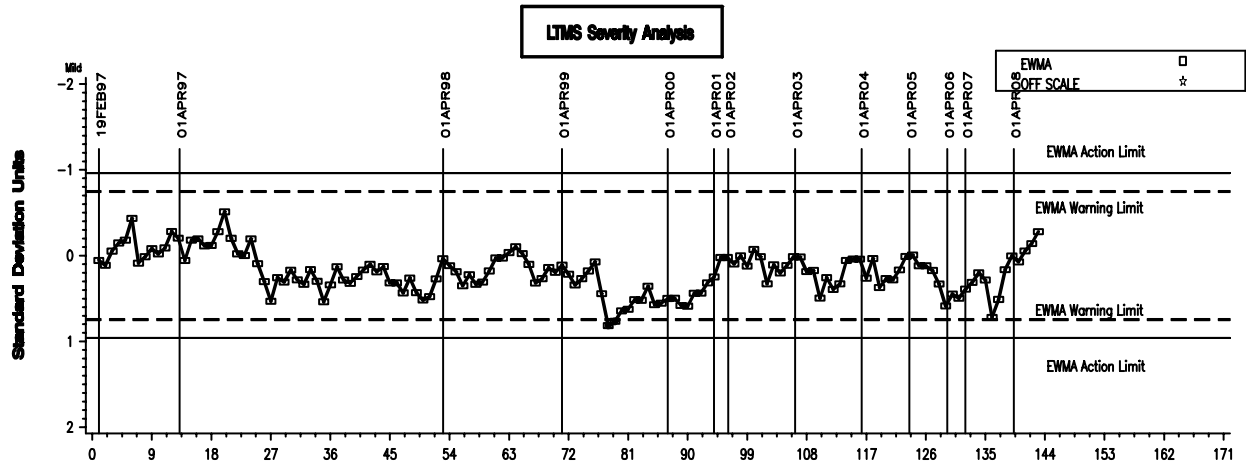


FIGURE 14
CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

WEIGHTED TOTAL DEMERITS

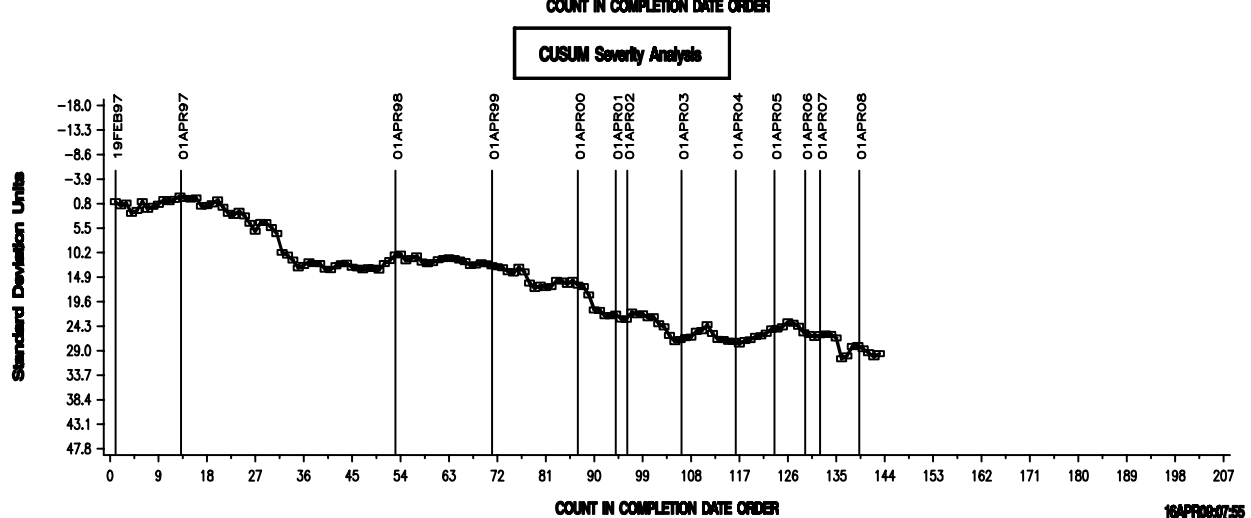
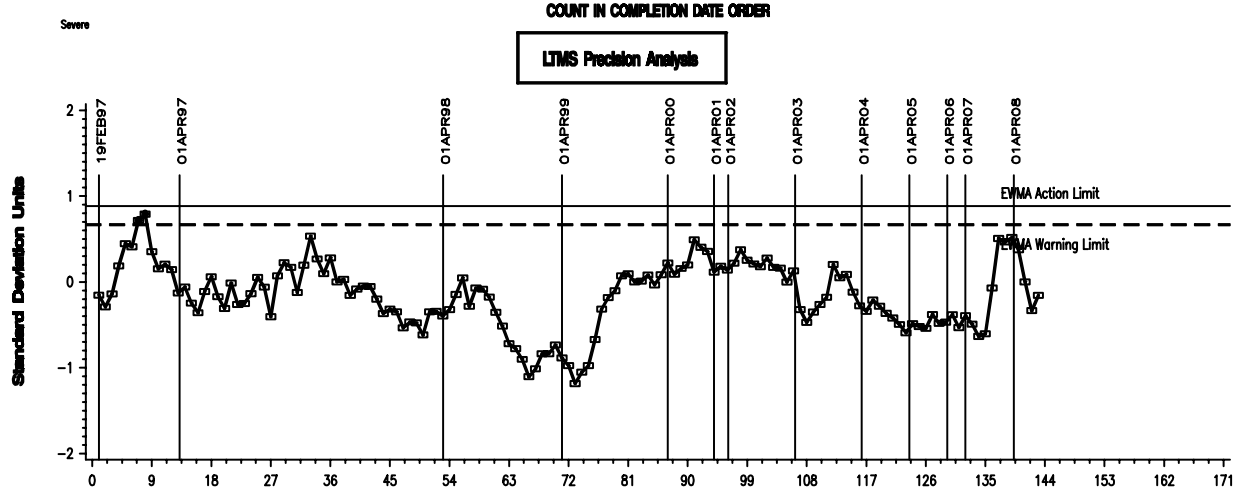
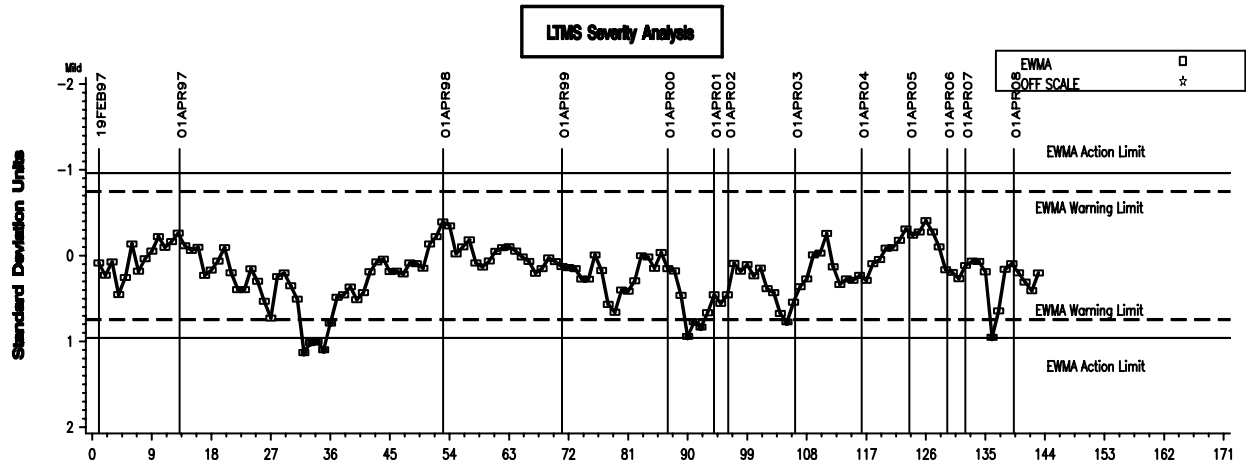


FIGURE 15
CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

OIL CONSUMPTION

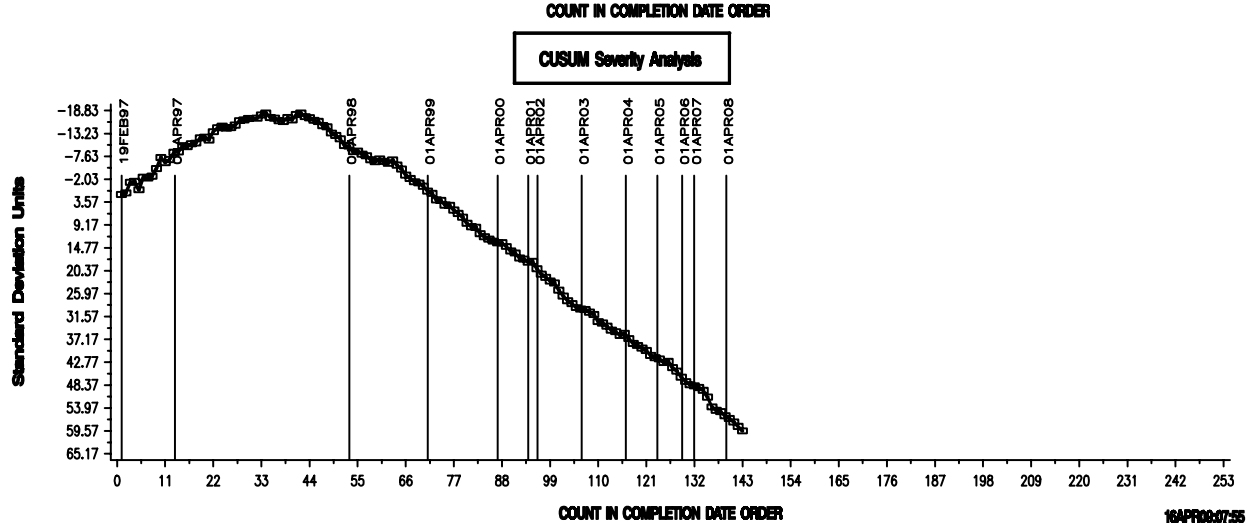
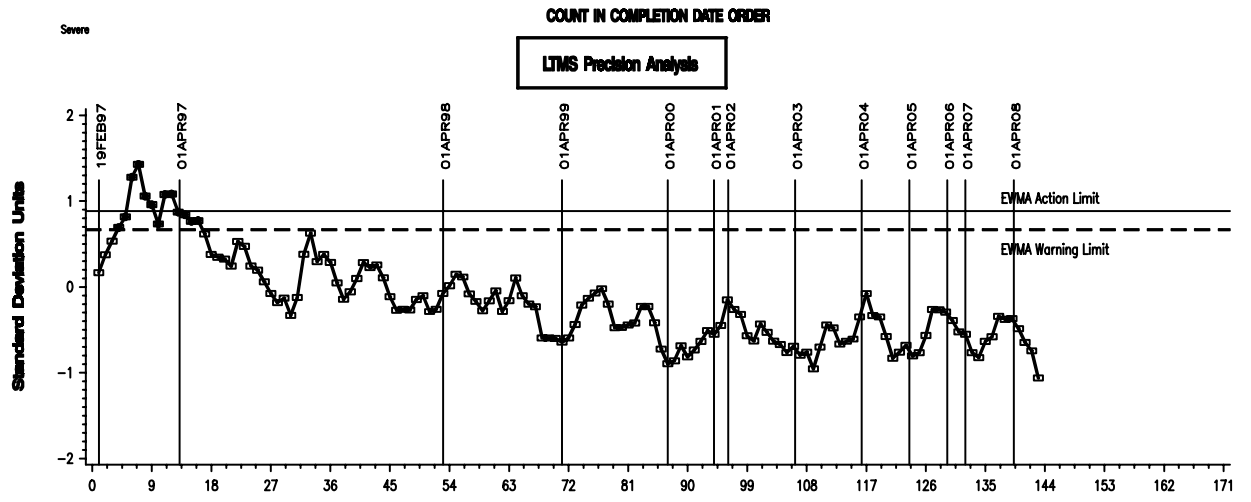
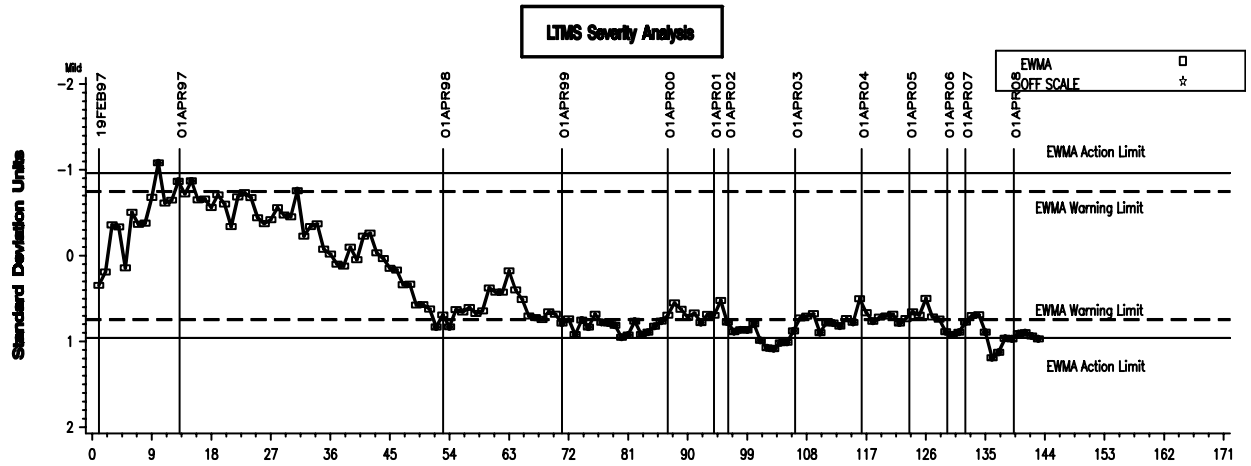


FIGURE 16
CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

EOTOC

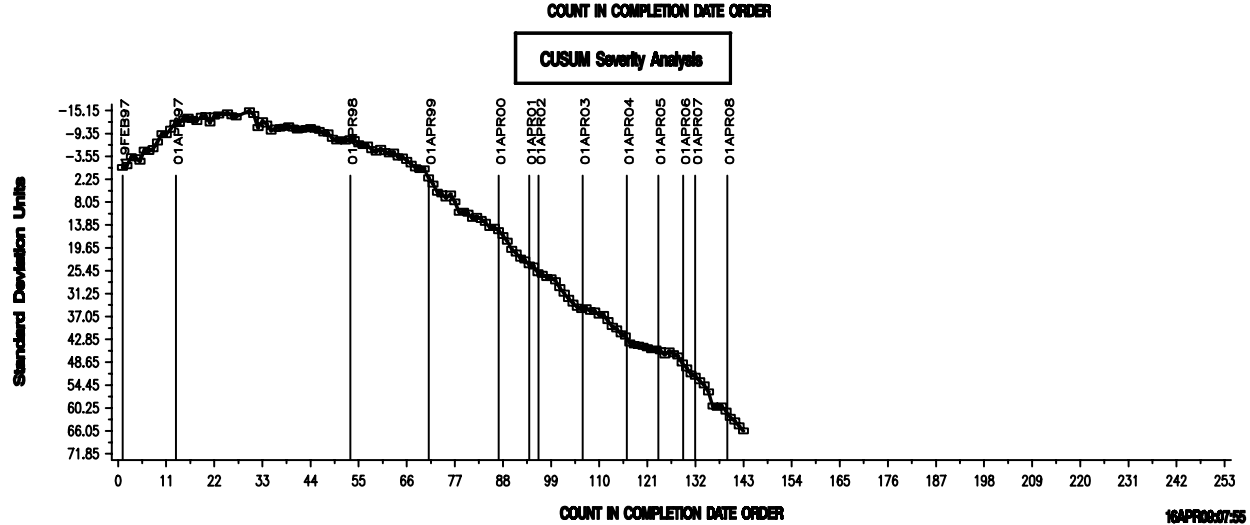
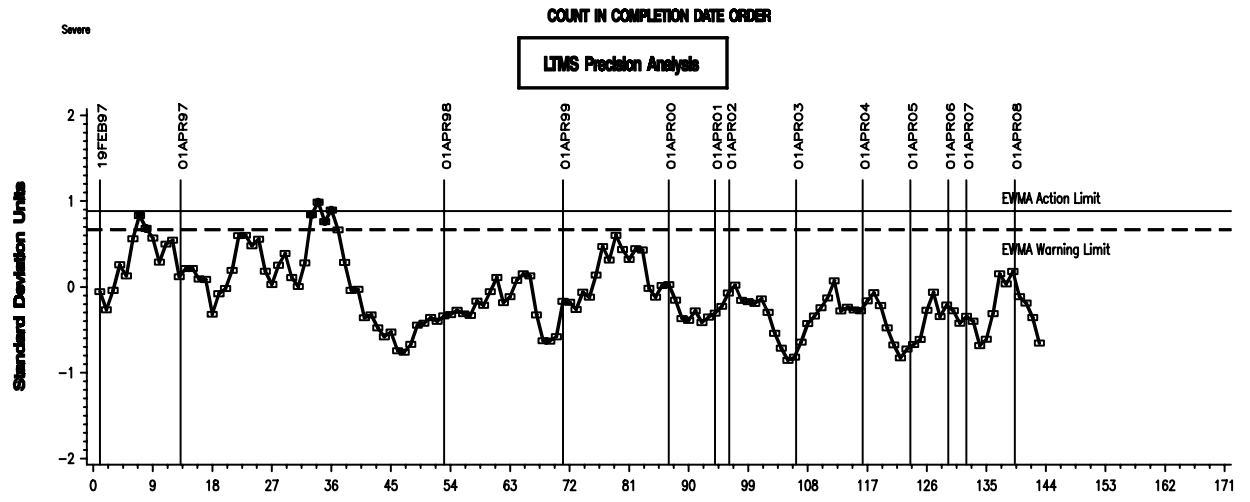
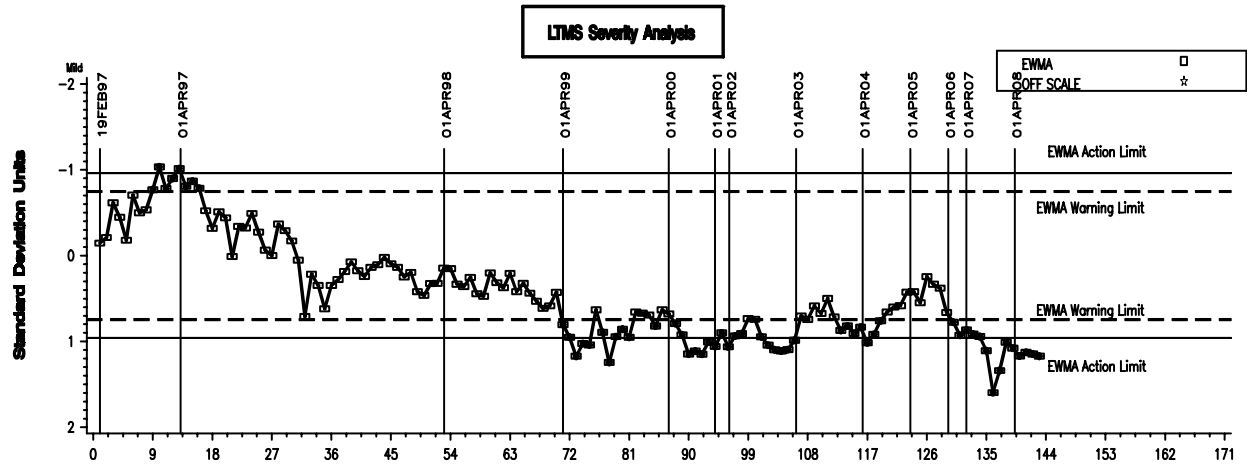


FIGURE 17
CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA
FINAL WEIGHTED TOTAL DEMERITS (DEMERITS)

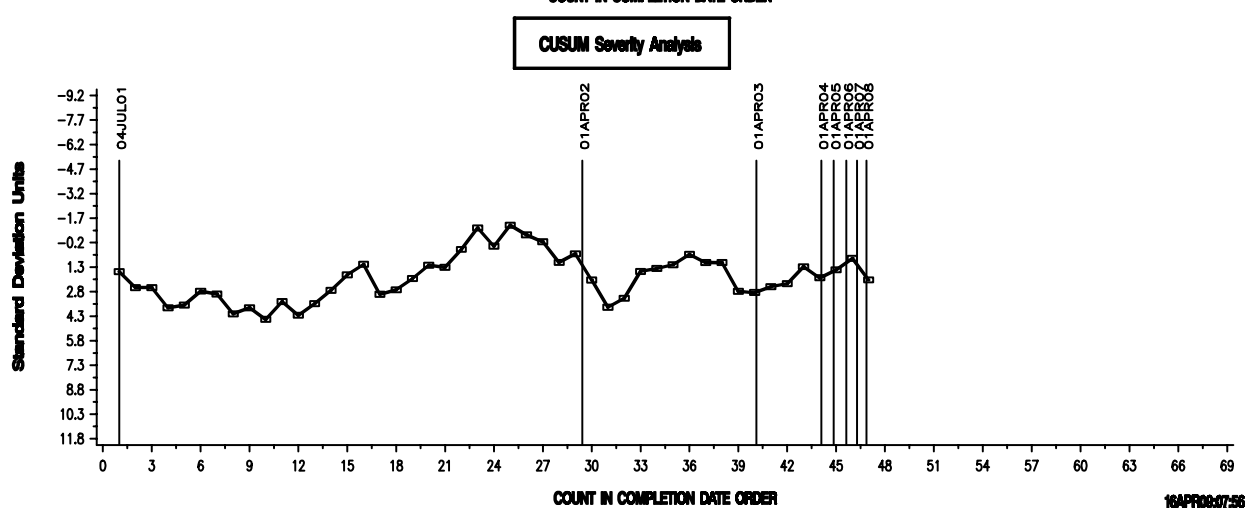
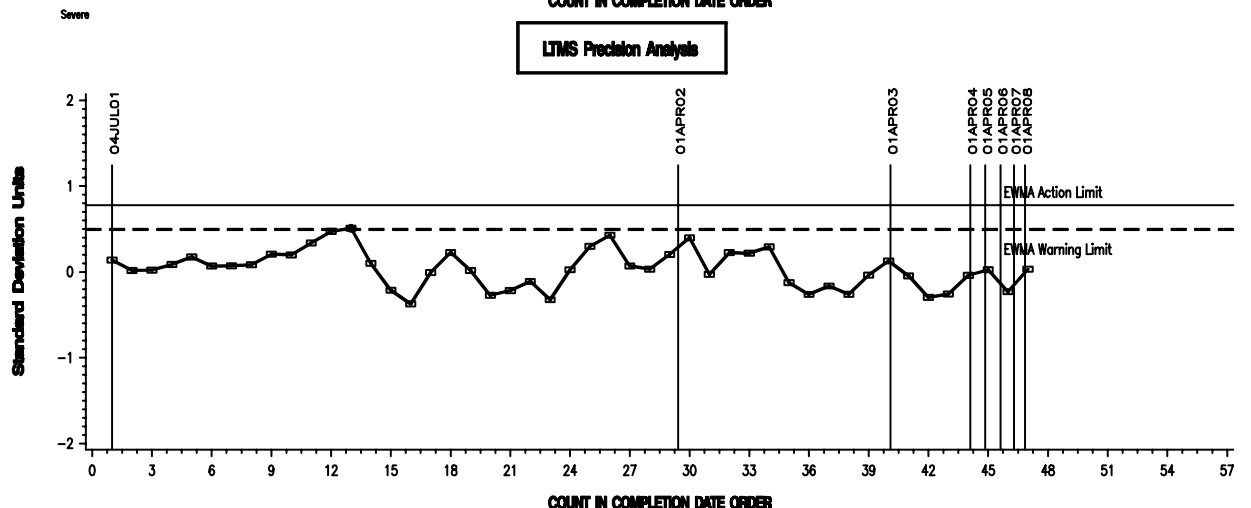
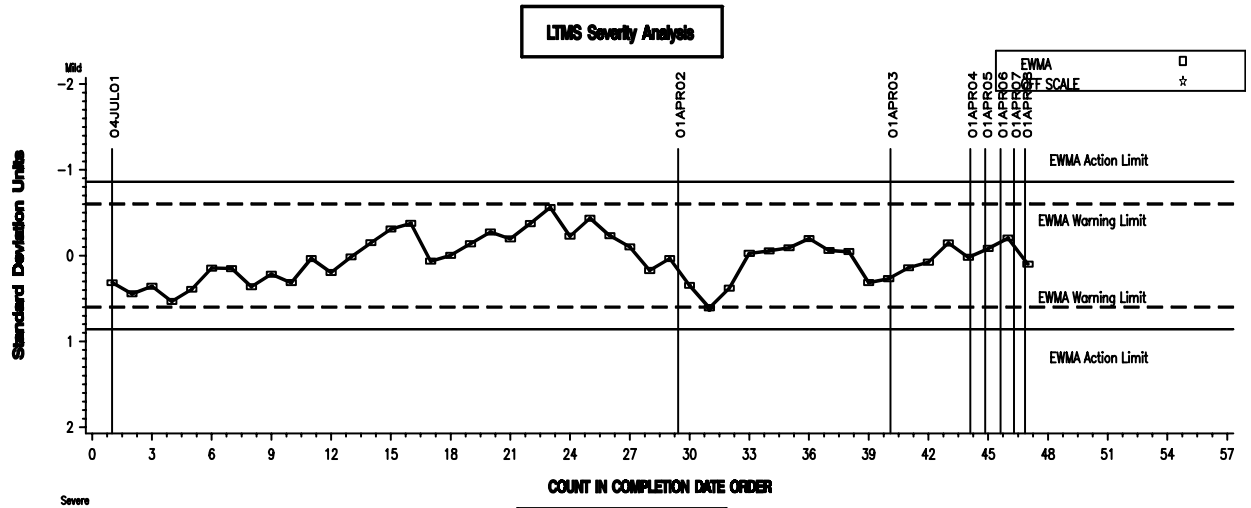


FIGURE 18
CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA
FINAL TOP GROOVE CARBON (DEMERITS)

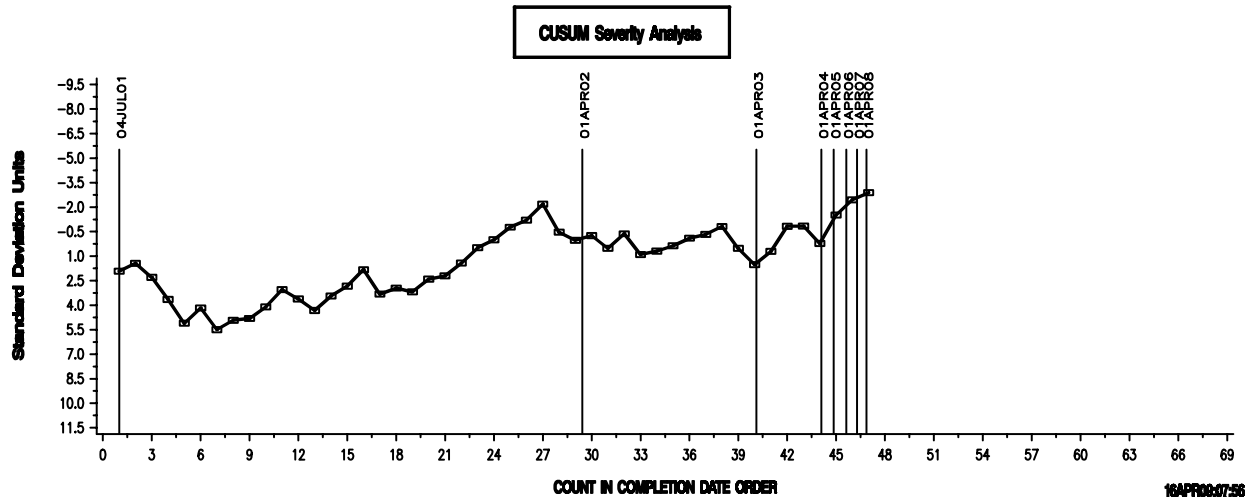
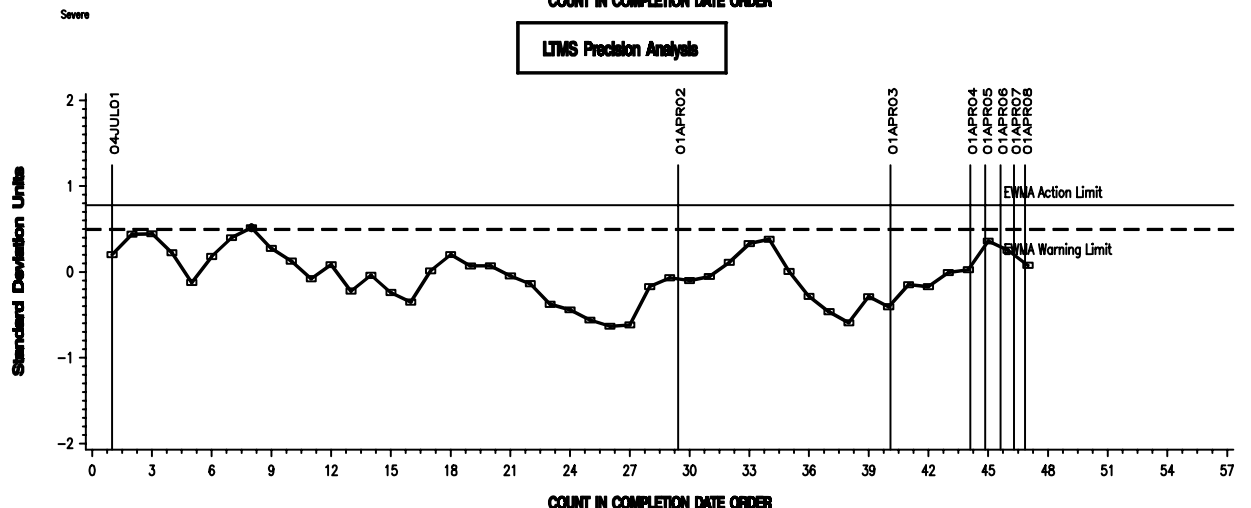
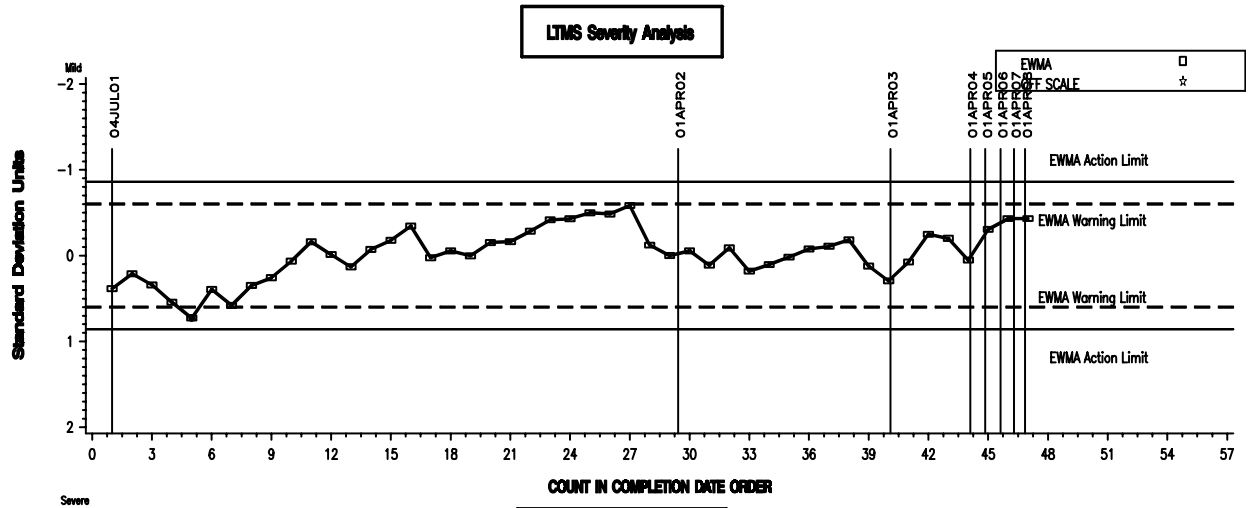


FIGURE 19
CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA
FINAL TOP LAND CARBON (DEMERITS)

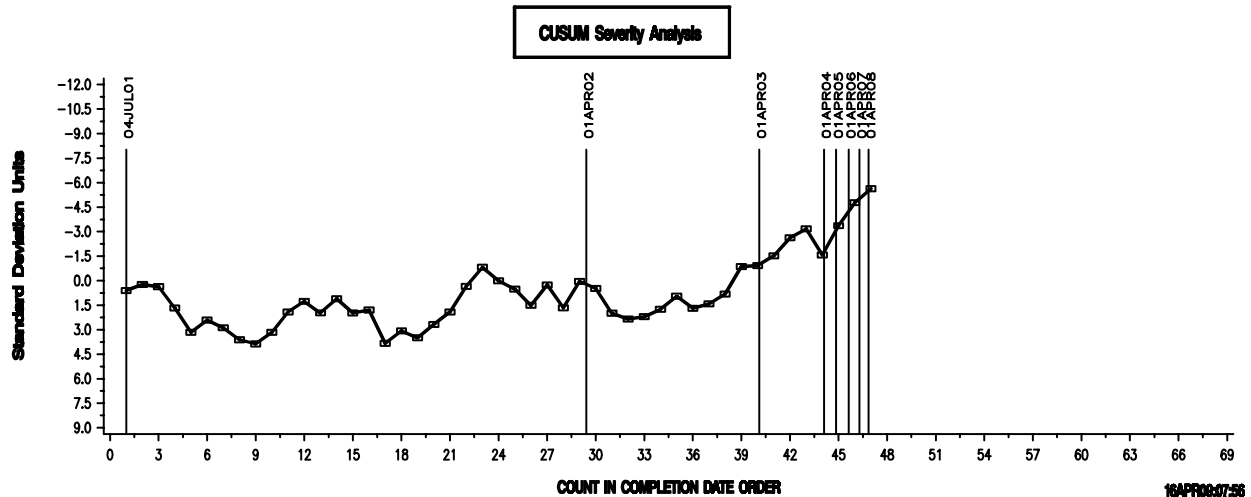
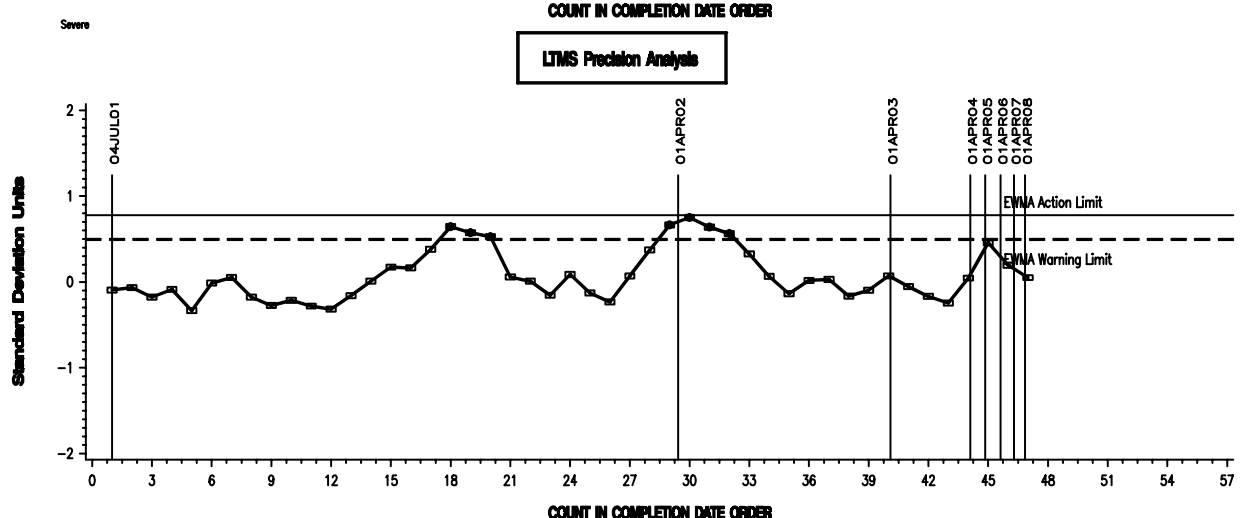
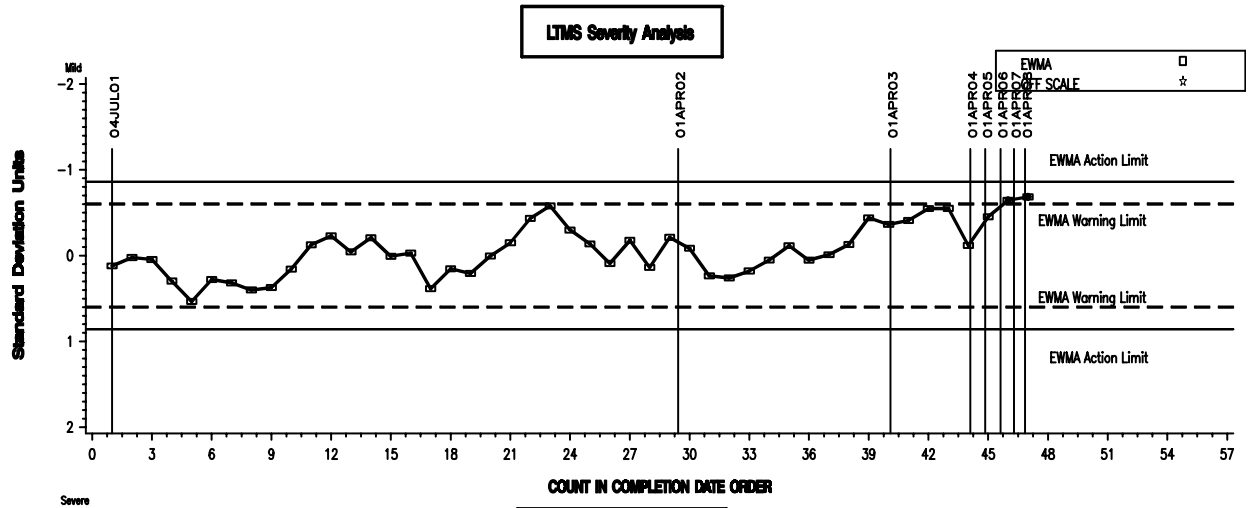


FIGURE 20
CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA

FINAL BOTOC

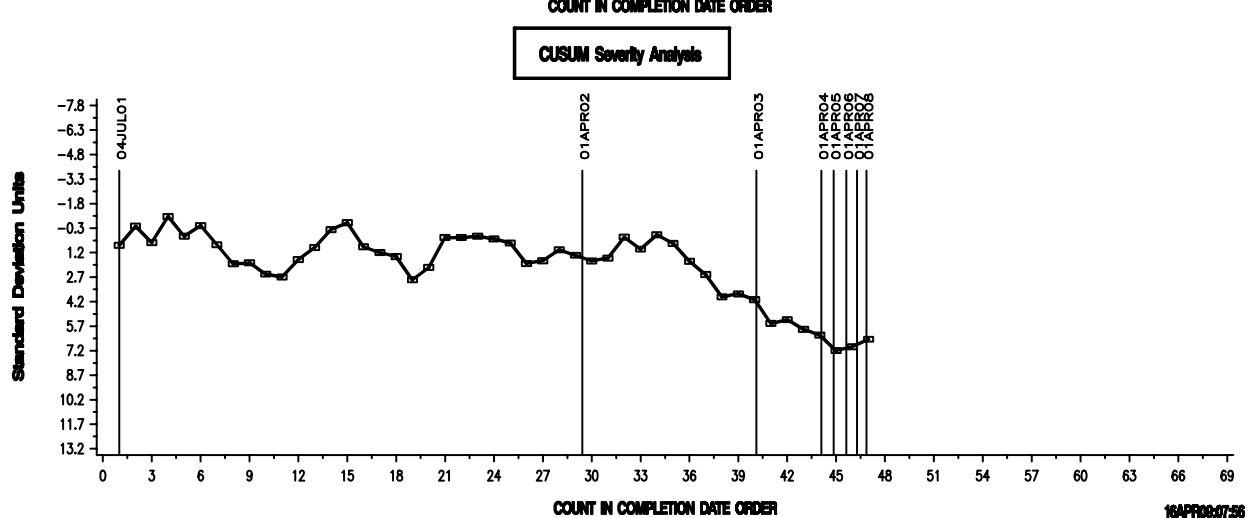
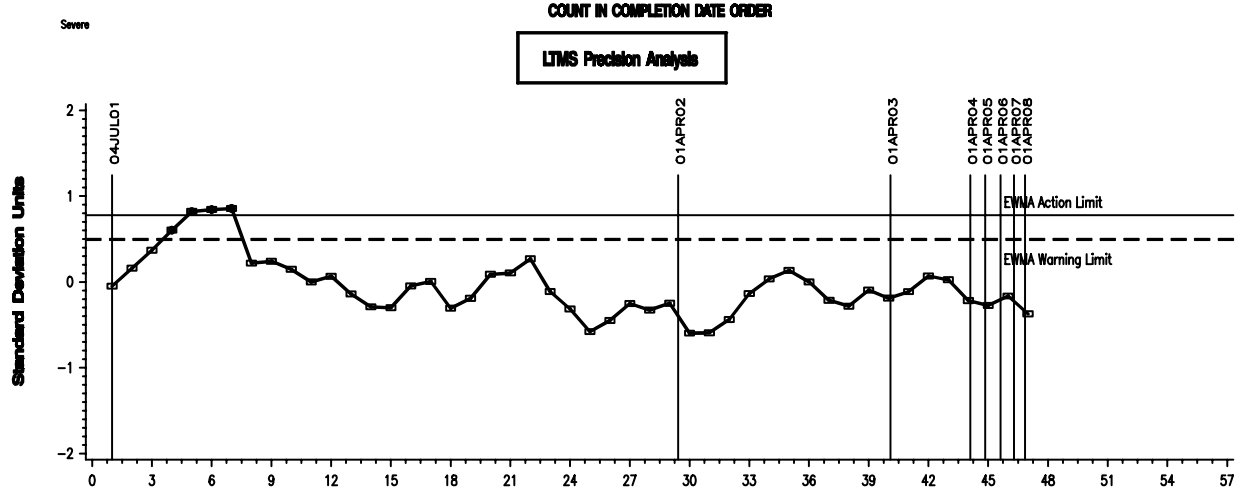
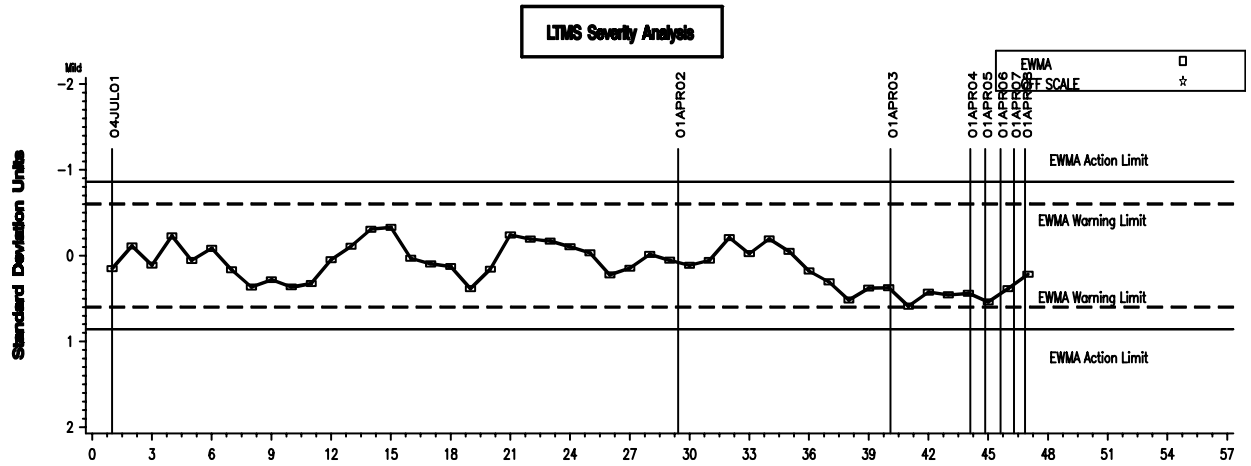


FIGURE 21
CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA

