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Test Monitoring Center

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ASTM D02.B2 Semi-Annual Report Heavy Duty Reference Oil Testing

Fall 2025

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Heavy Duty Testing

Executive Summary

- ▶ **Test Issues**
 - T8 to ISBVIS correlation test planning
 - FVTW development work continues
 - ISB Camshaft pitting issue being worked

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Calibrated Labs and Stands*

Test	Labs	Stands		Test	Labs	Stands
1K	2	2		EOAT	1	1
1N	1	1		RFWT	1	1
1P	1	1		T-8/E	1	1
1R	0	0		T-11	2	3
C13	4	6		T-12/T-12A	2/2	2/2
COAT	3	3		T-13	4	5
ISB	3	8		DD13	2	2
ISM	4	5				
ISBV108	5	8				
ISBV156	5	8				

*As of 9/30/2025

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SCOTE 1K

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1 K Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	2
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		2

1 K Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

1 K Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

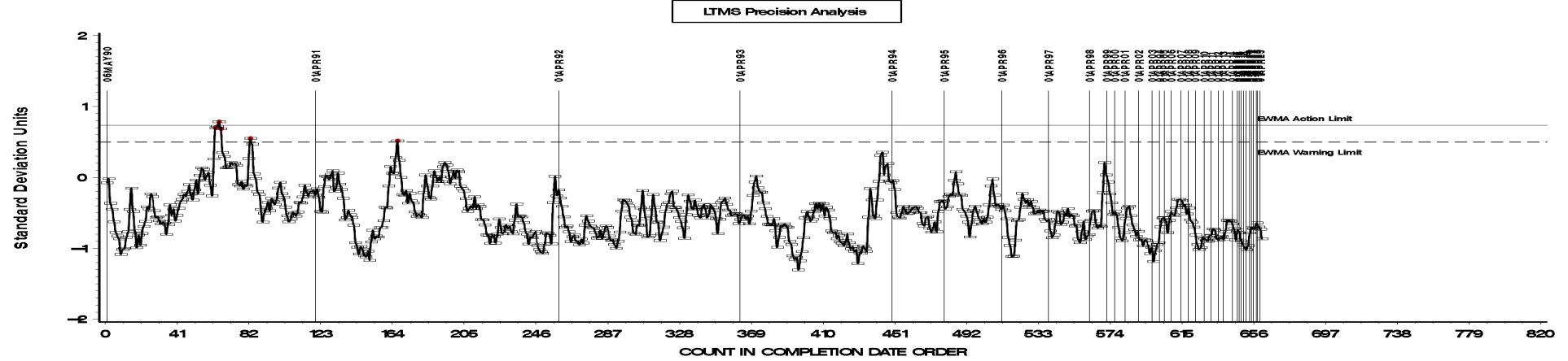
*Invalid and aborted tests

1 K Test Severity

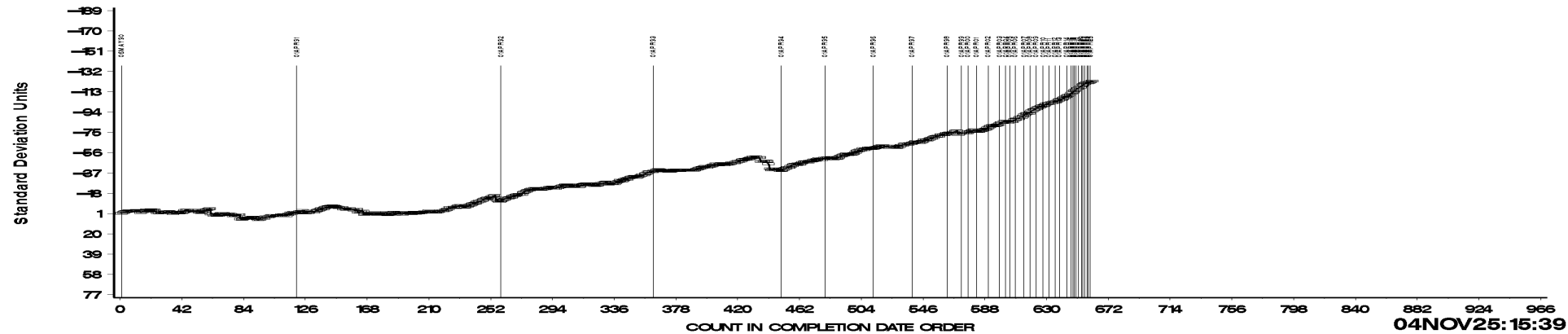
- ▶ BSOC and TGF in severity warning alarm mild direction
- ▶ ETOC, TLHC, WDK are in control

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LTMS Severity Analysis

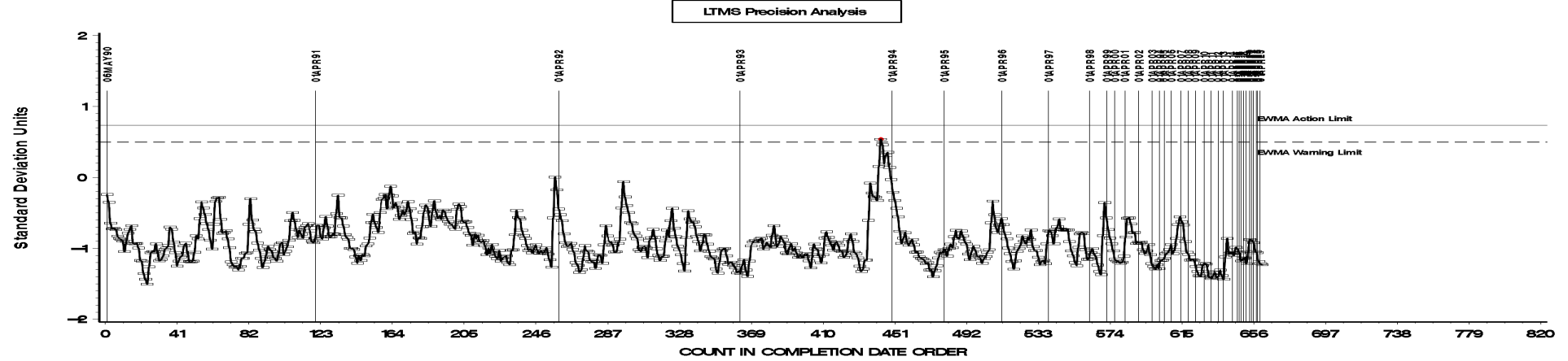


CUSUM Severity Analysis

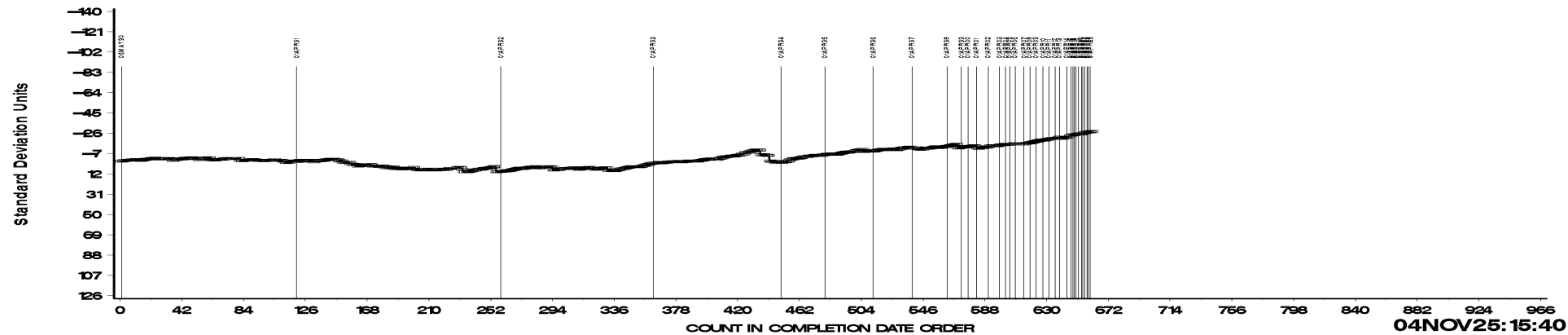


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LTMS Severity Analysis

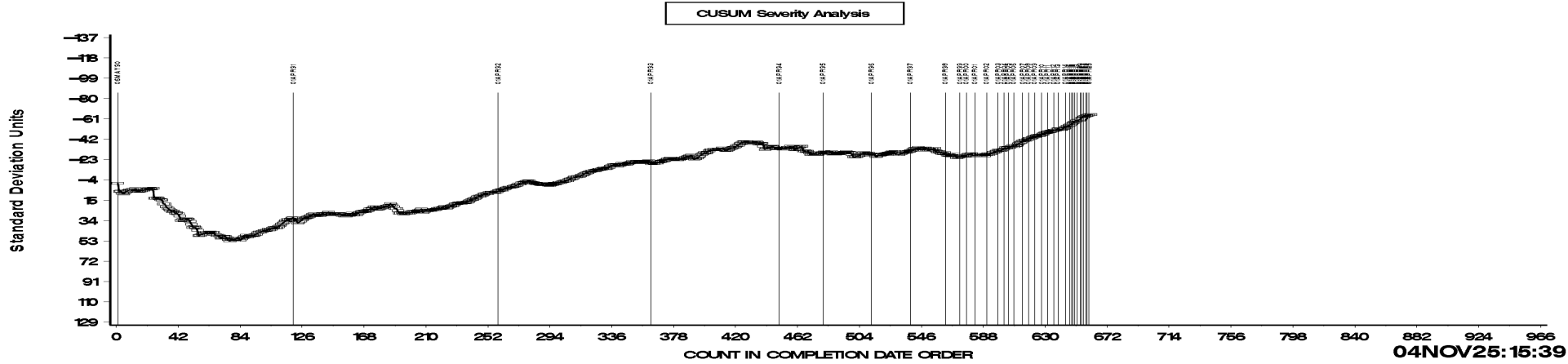
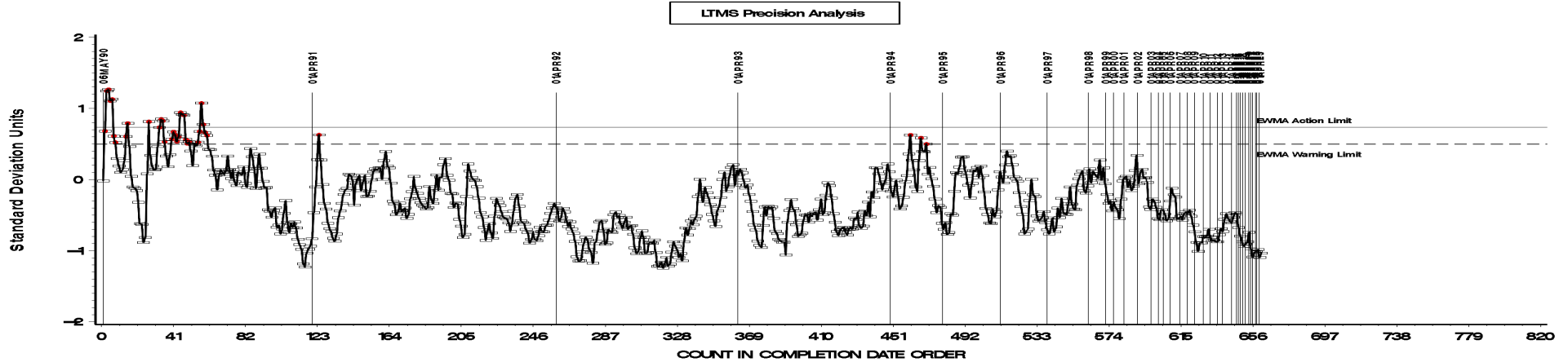
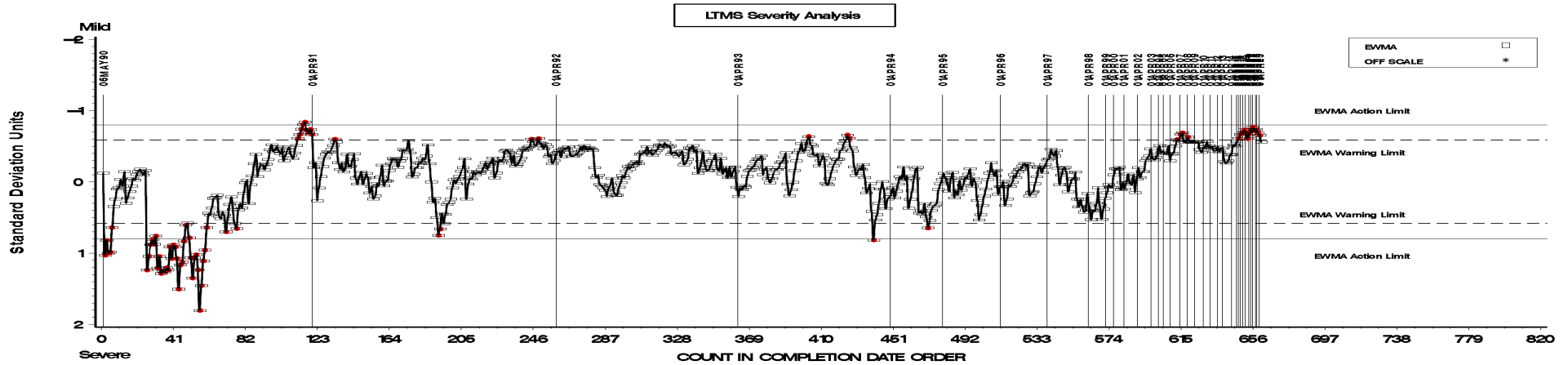


CUSUM Severity Analysis



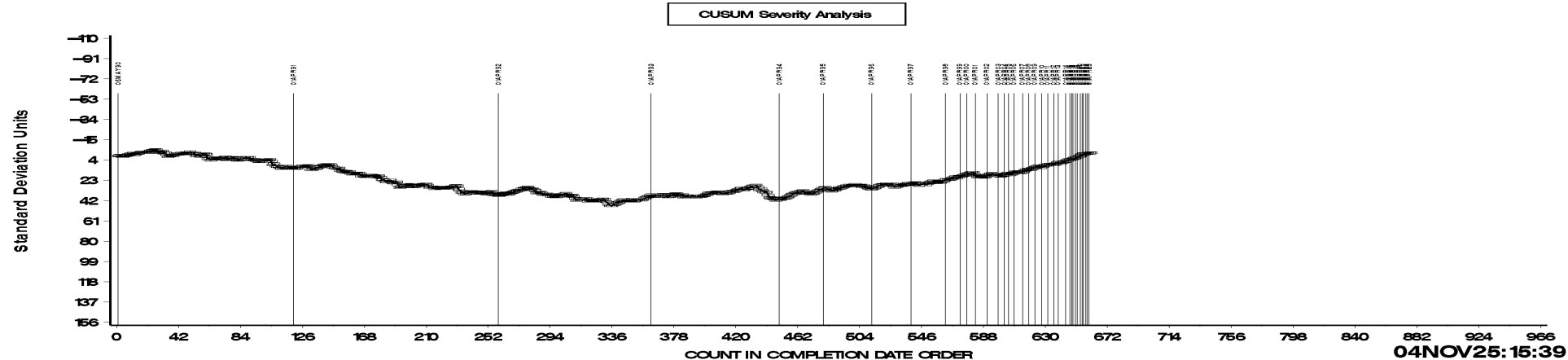
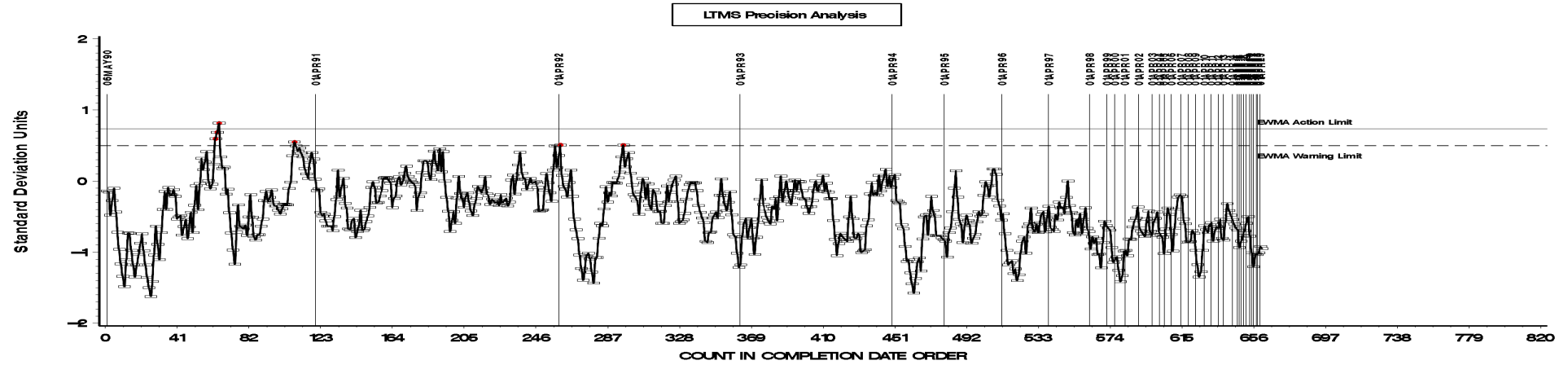
CATERPILLAR 1K INDUSTRY OPERATIONALLY VALID DATA

FINAL TGF

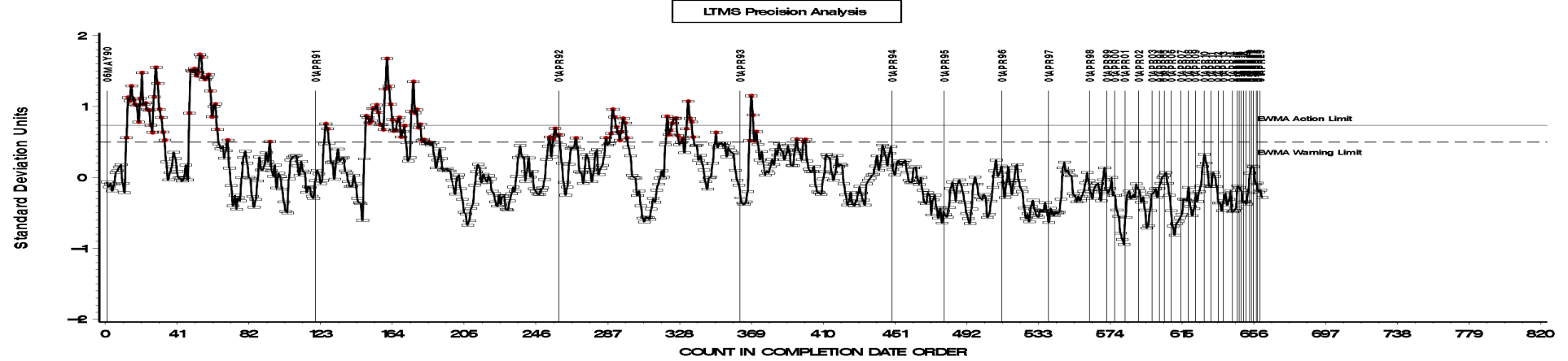


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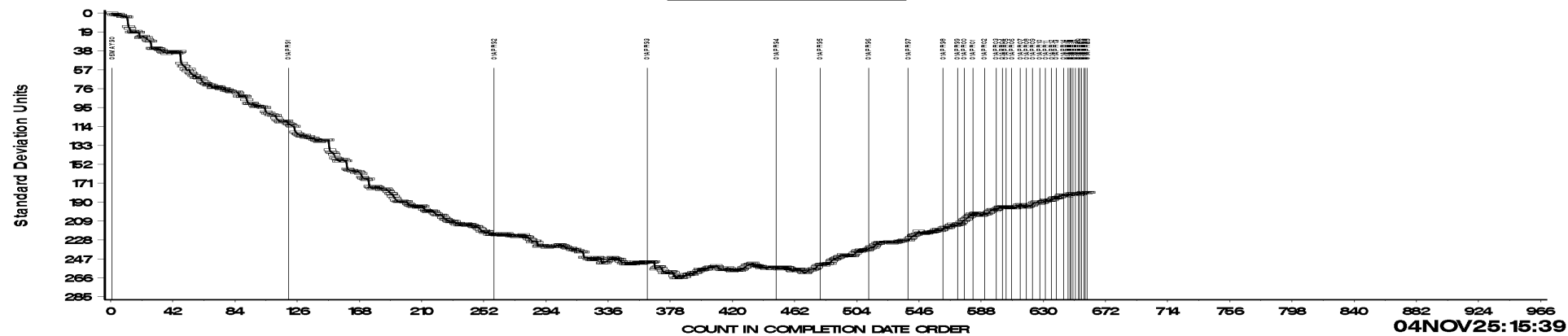
LTMS Severity Analysis



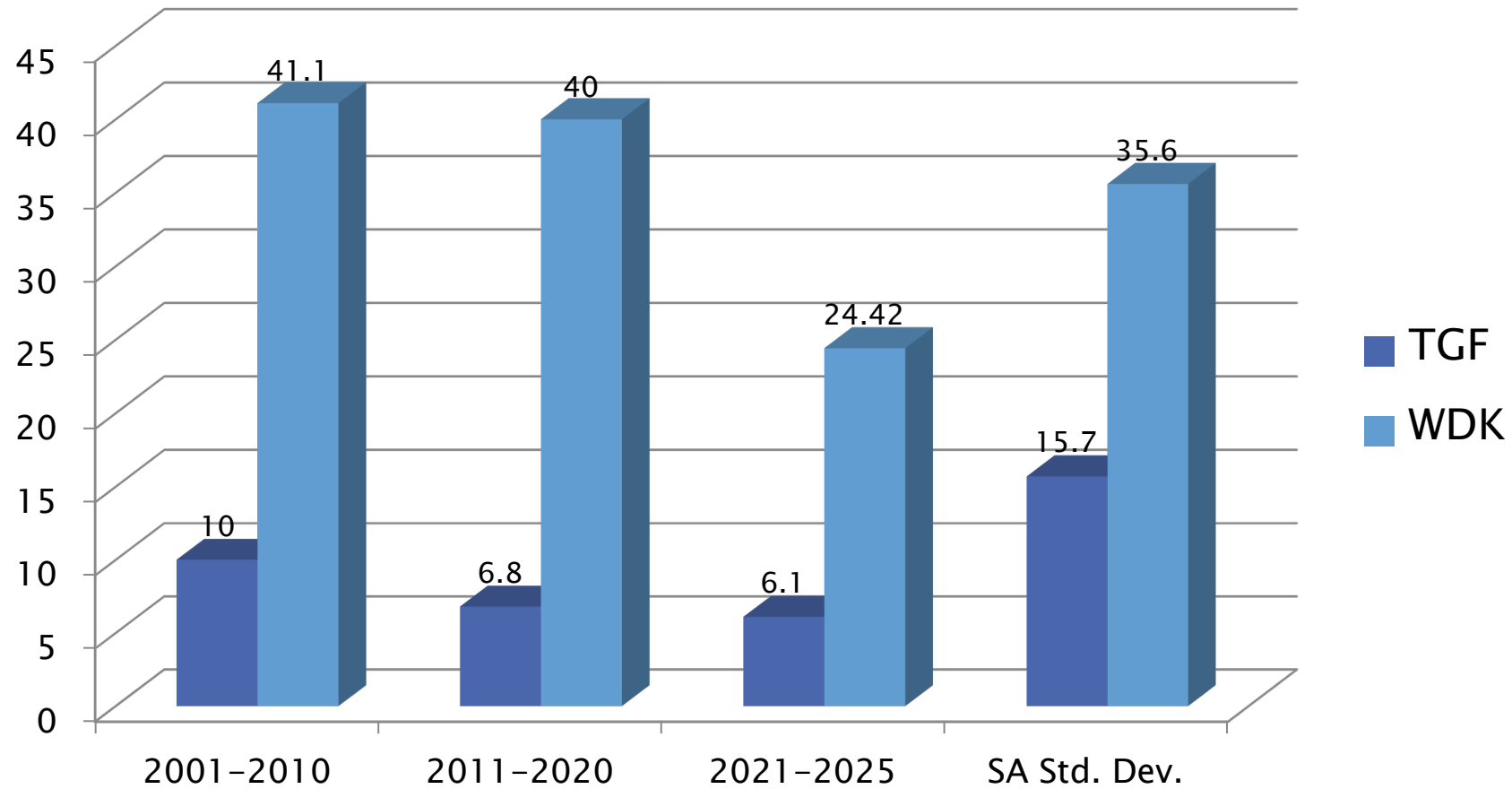
LTMS Severity Analysis



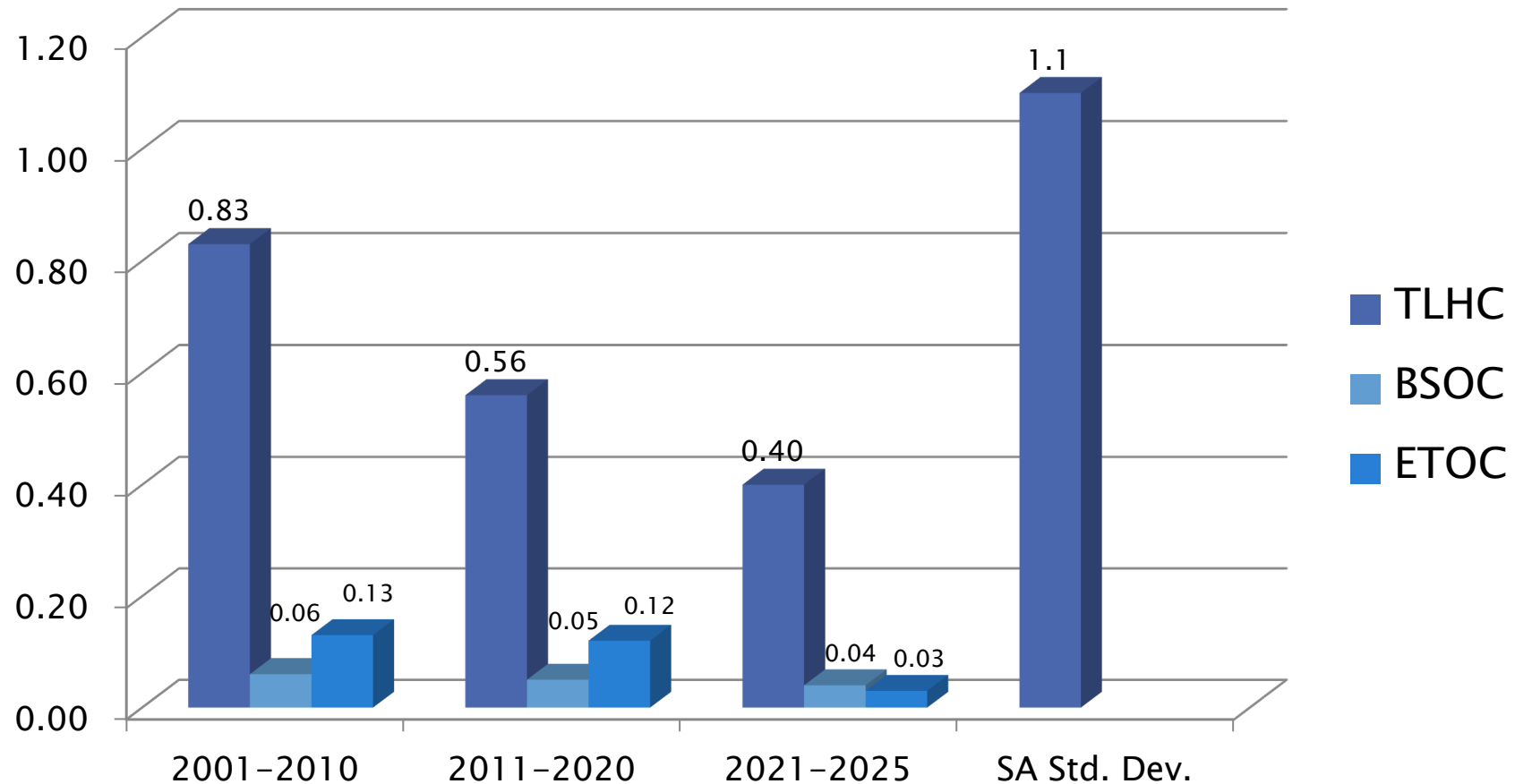
CUSUM Severity Analysis



1 K Precision Estimates



1 K Precision Estimates



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SCOTE 1 N

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1 N Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Informational	NN	0
Total		0

1 N Failed Tests

Failed Parameter	Number of Tests
No Failed Tests	0
Total	0

1 N Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

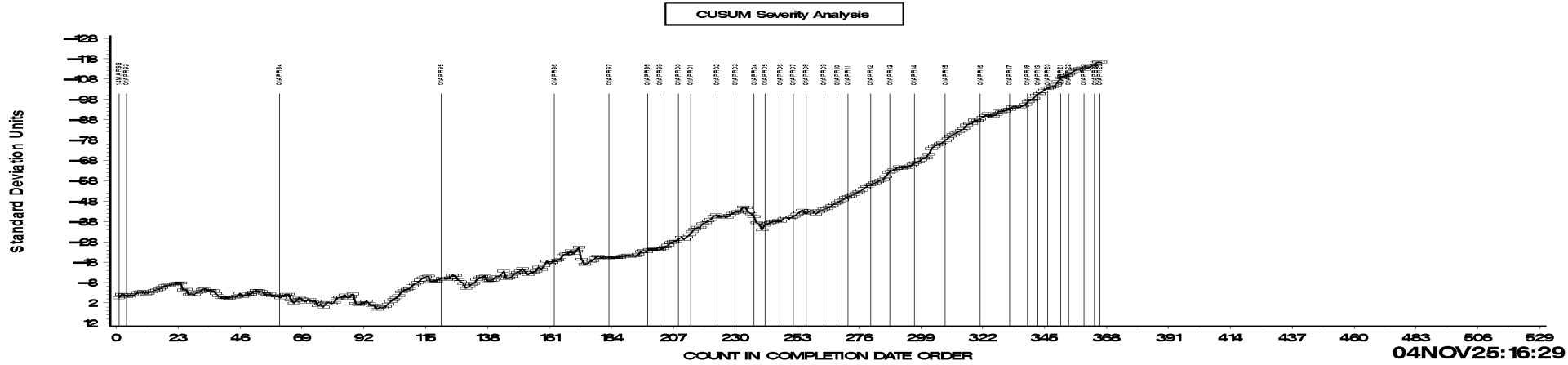
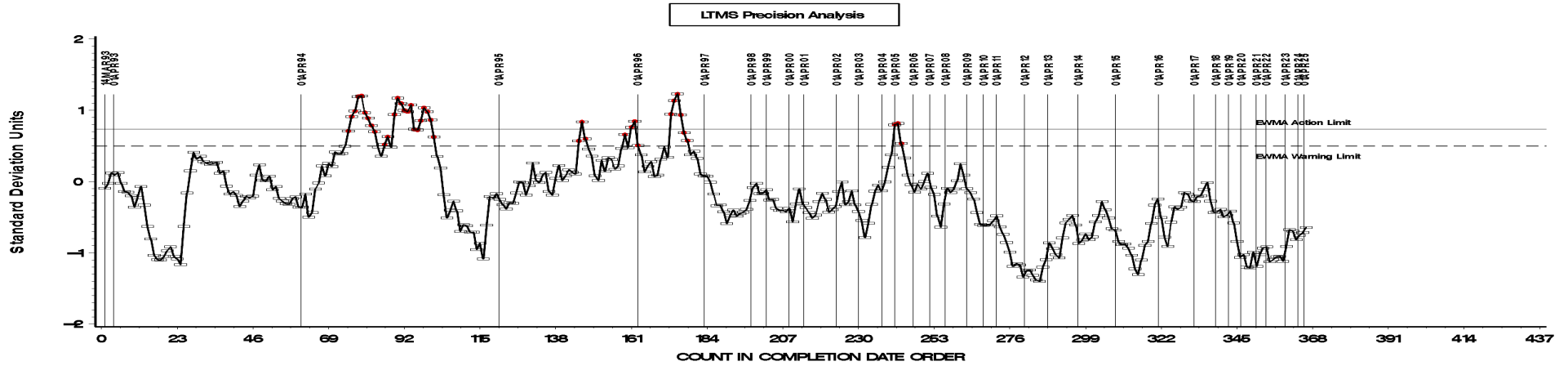
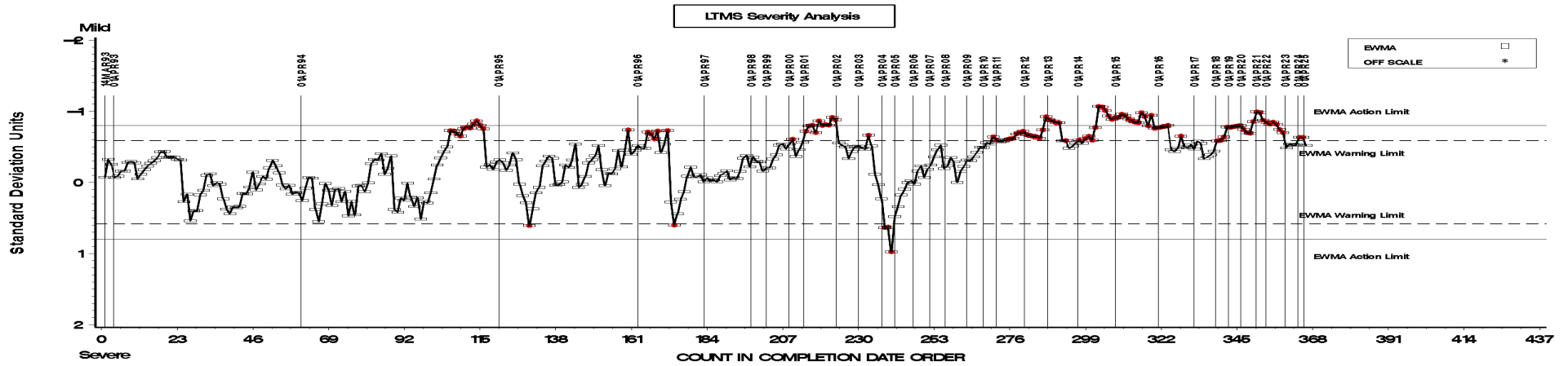
*Invalid and aborted tests

1 N Test Severity

- ▶ As no 1N tests were conducted during this period, no statement about test severity can be made.

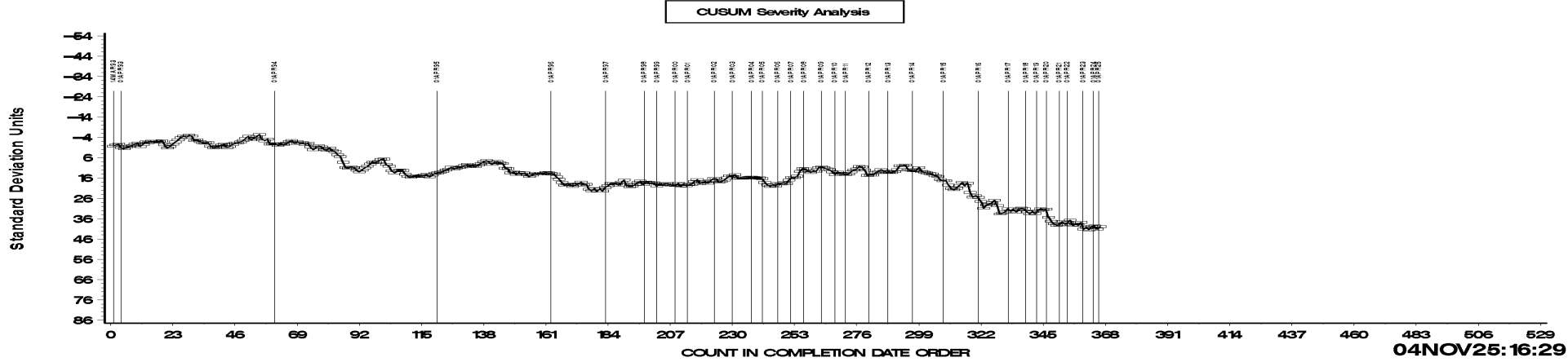
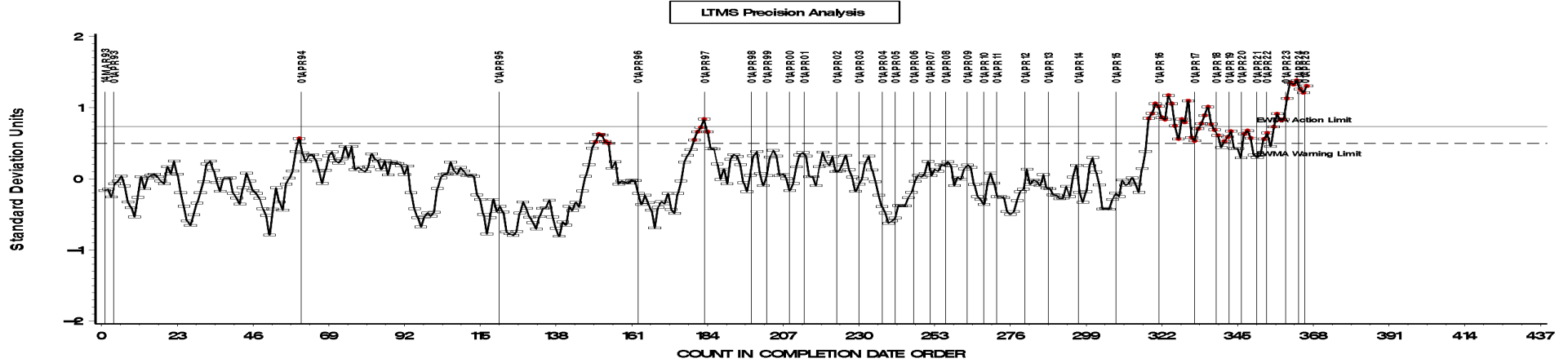
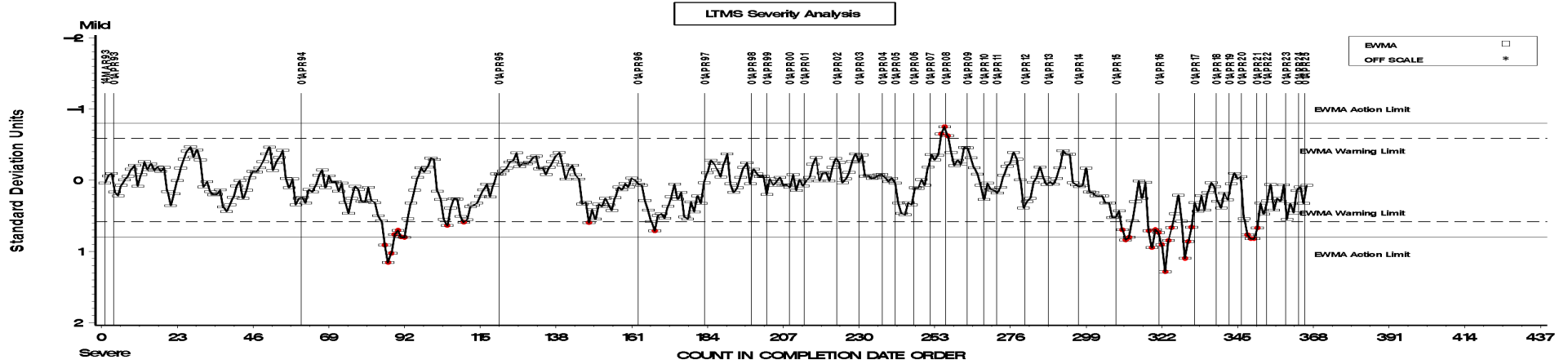
CATERPILLAR 1N INDUSTRY OPERATIONALLY VALID DATA

BSOC



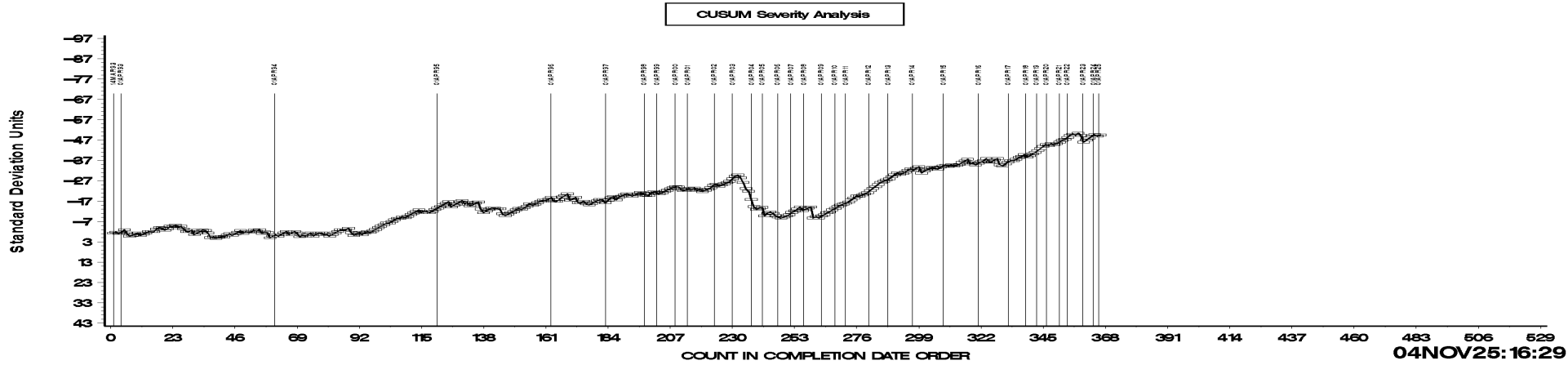
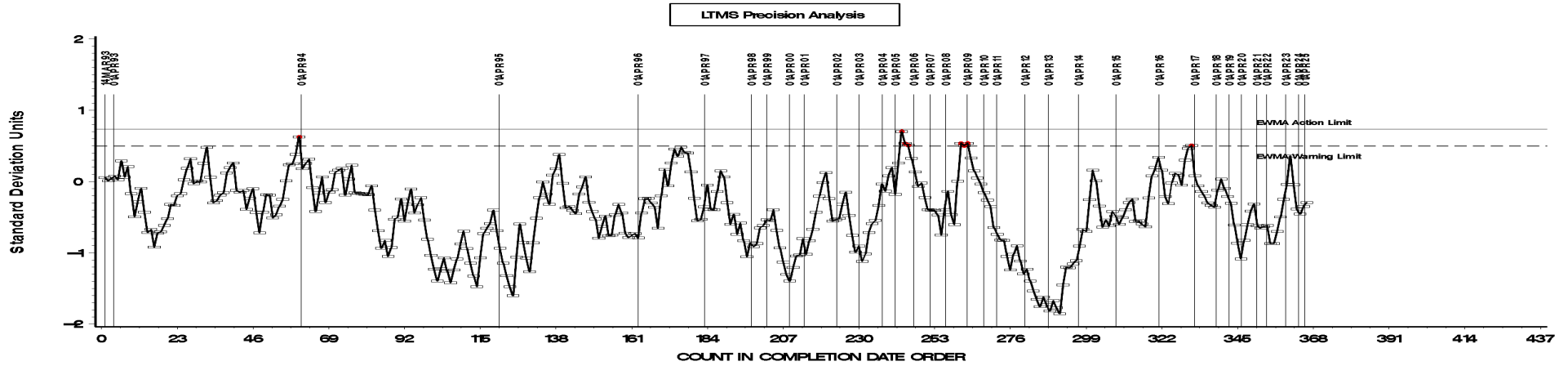
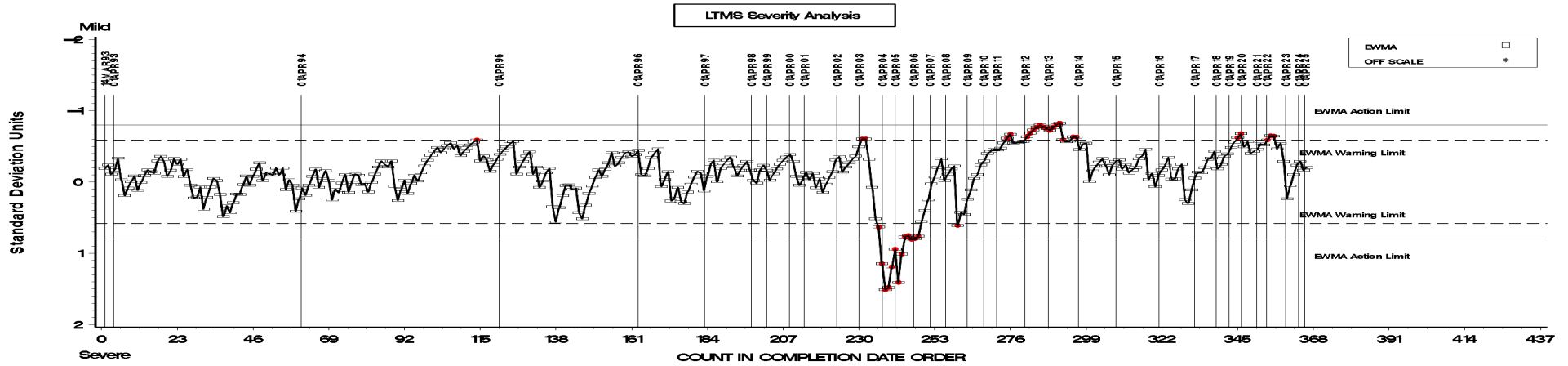
CATERPILLAR 1N INDUSTRY OPERATIONALLY VALID DATA

FINAL CORRECTED TGF

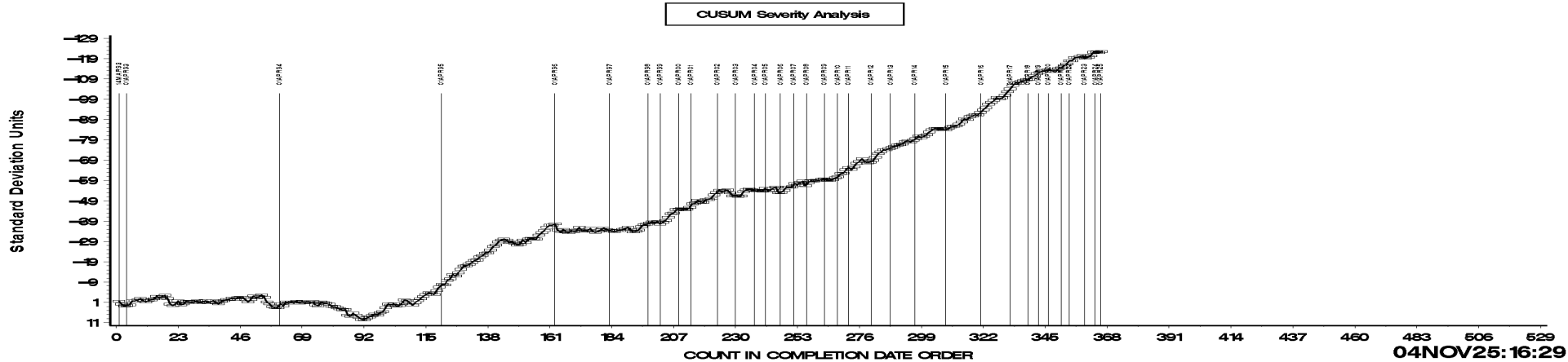


CATERPILLAR 1N INDUSTRY OPERATIONALLY VALID DATA

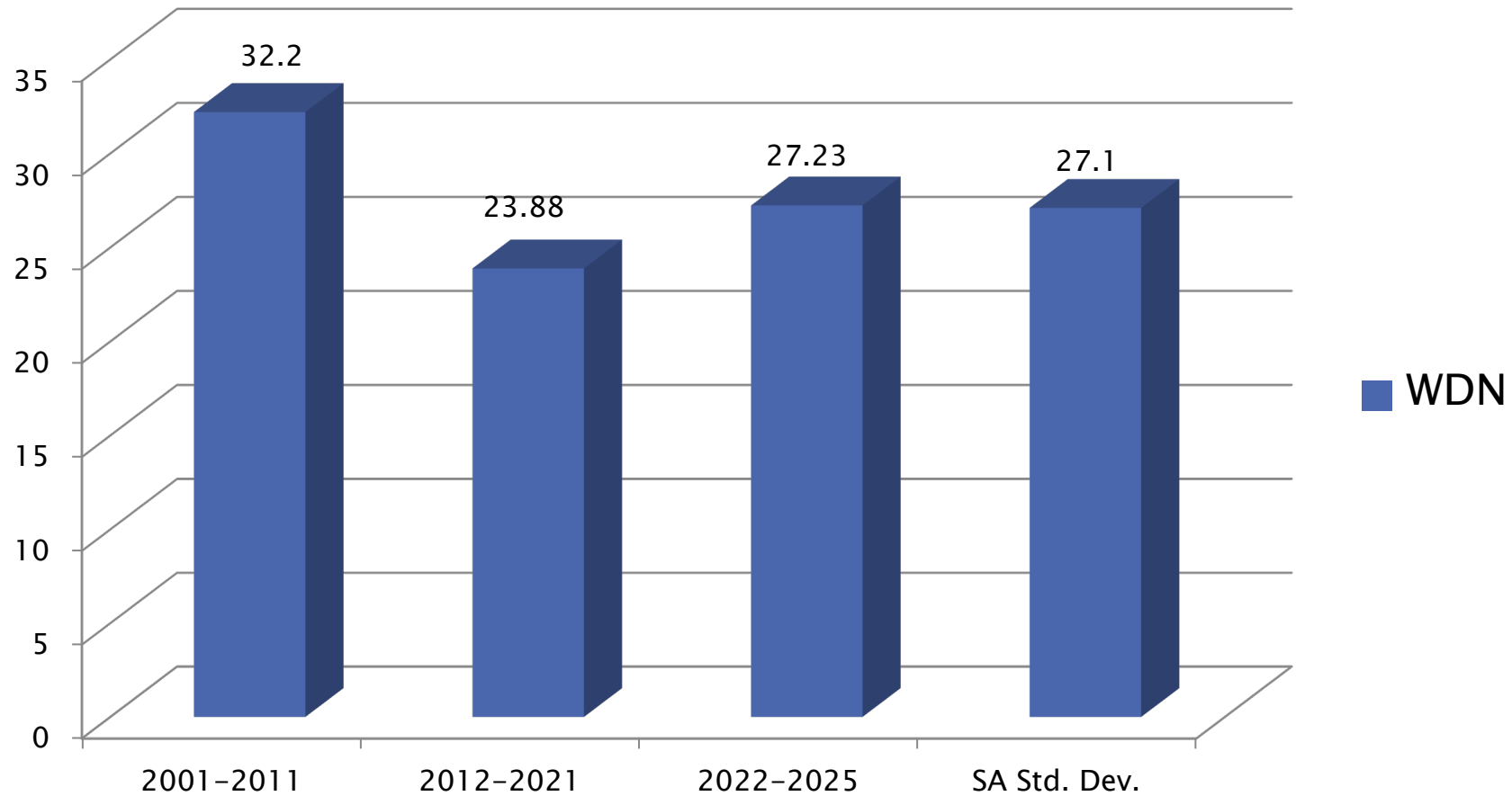
Top Land Heavy Carbon



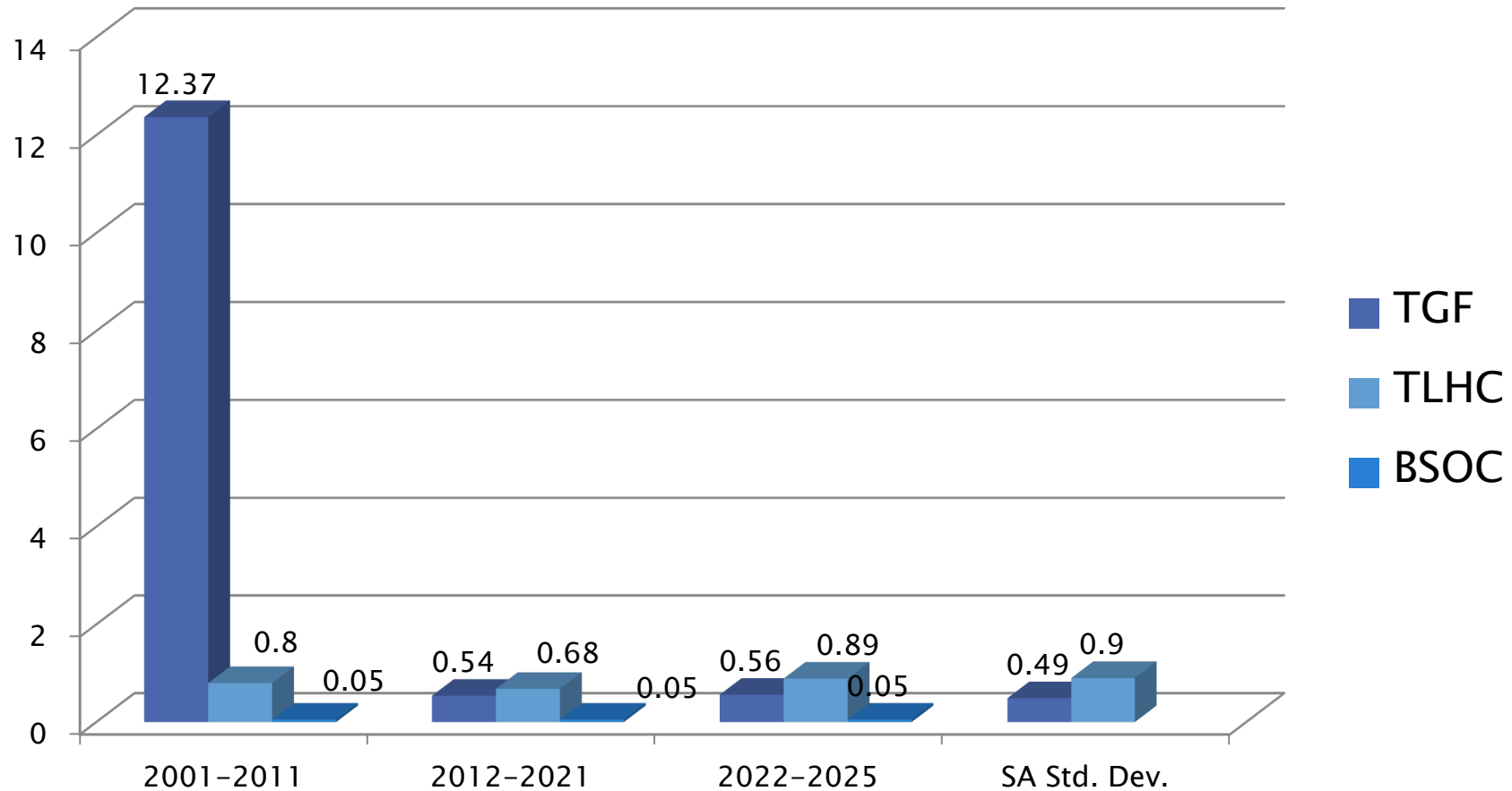
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1 N Precision Estimates



1 N Precision Estimates



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SCOTE 1 P

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1 P Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		0

1 P Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

1 P Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

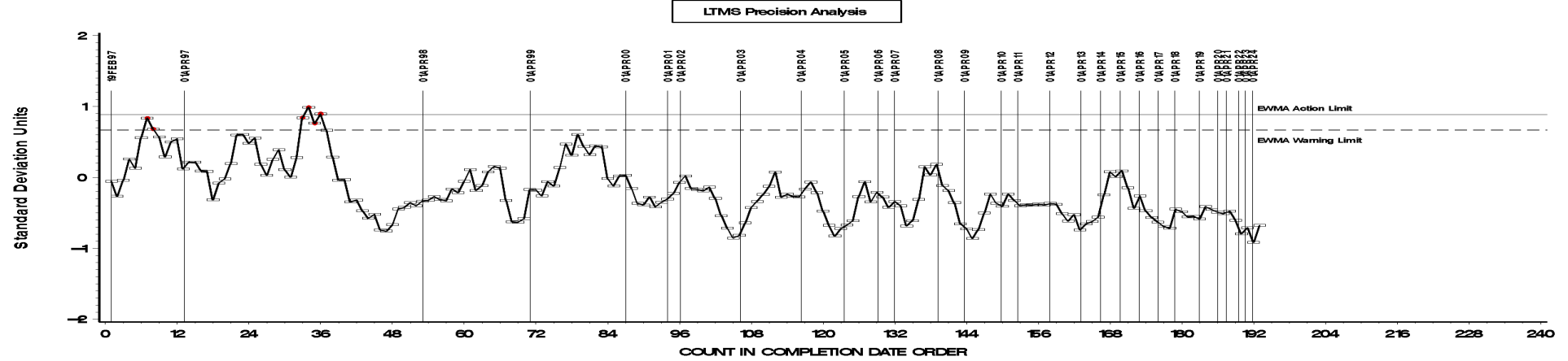
*Invalid and aborted tests

1 P Test Severity

- ▶ As no 1P tests were conducted during this period, no statement about test severity can be made.

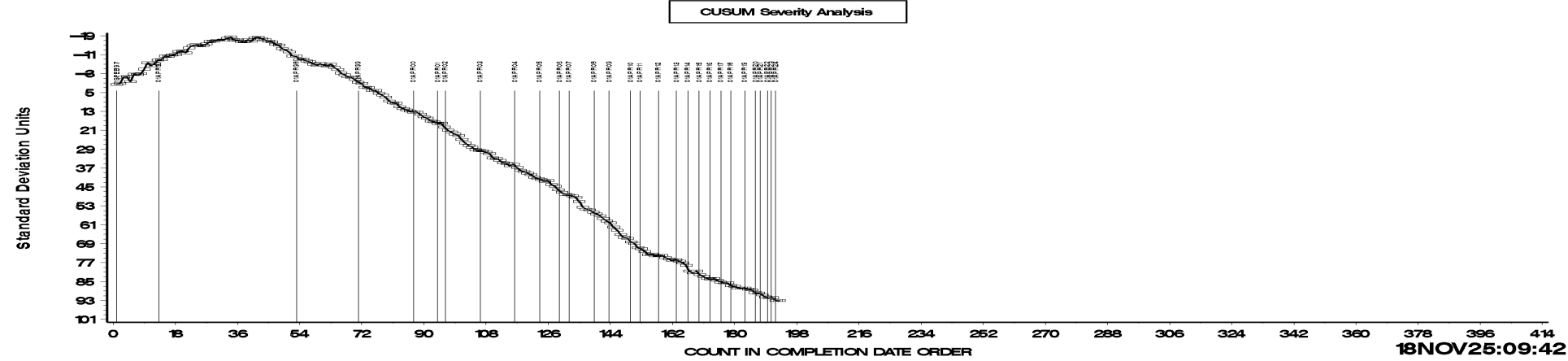
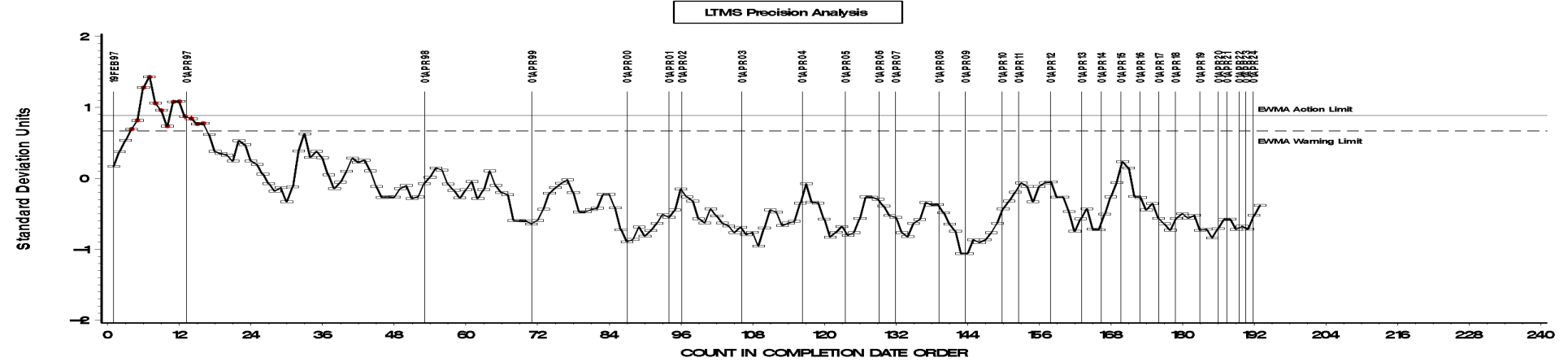
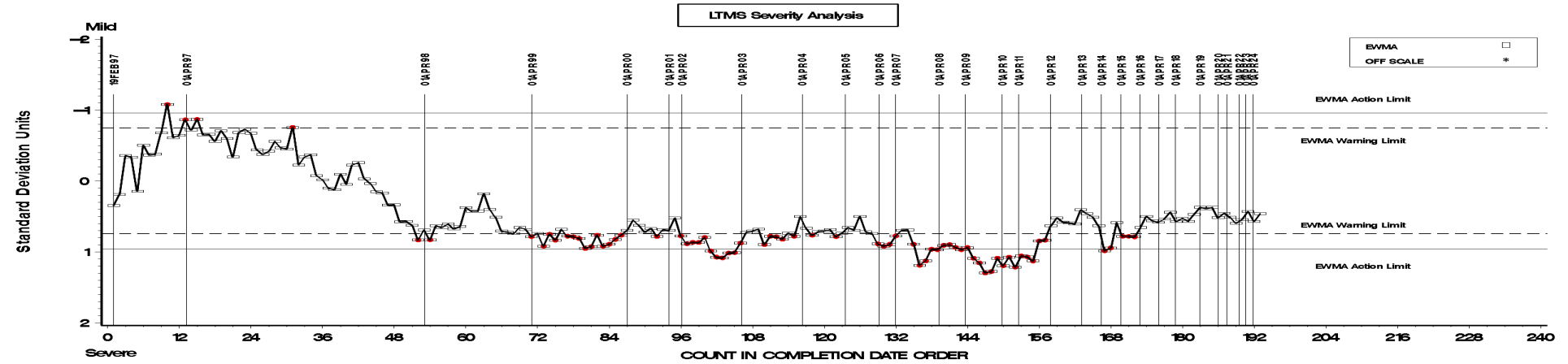
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LTMS Severity Analysis



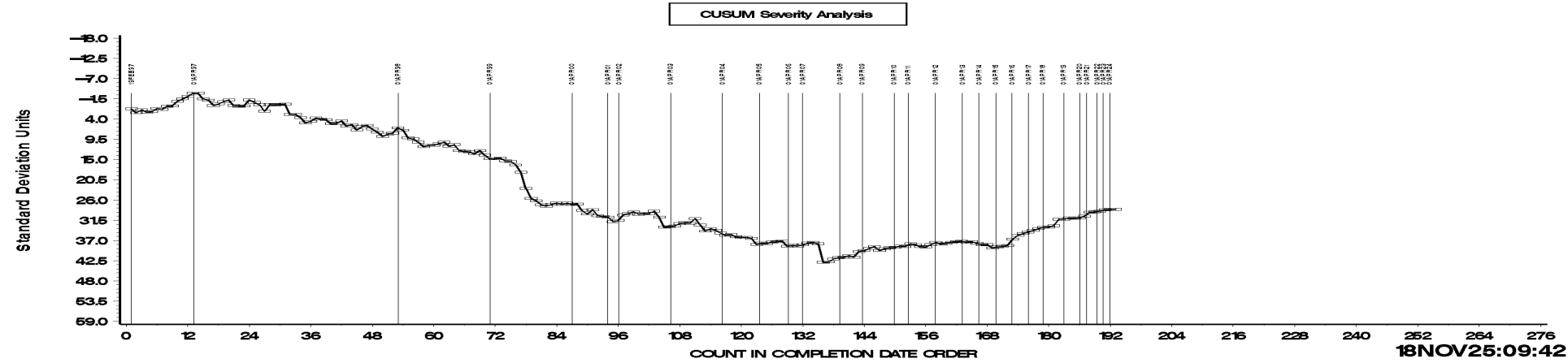
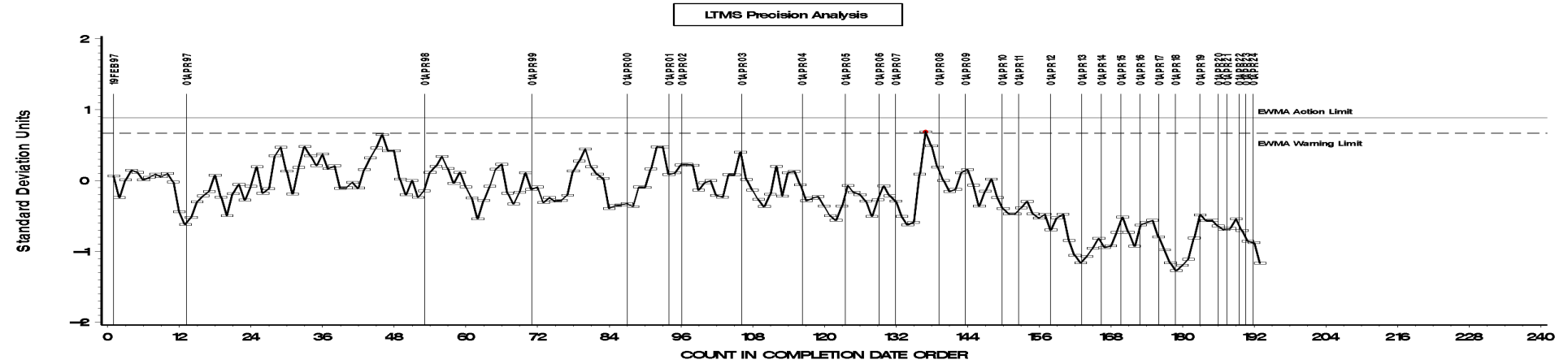
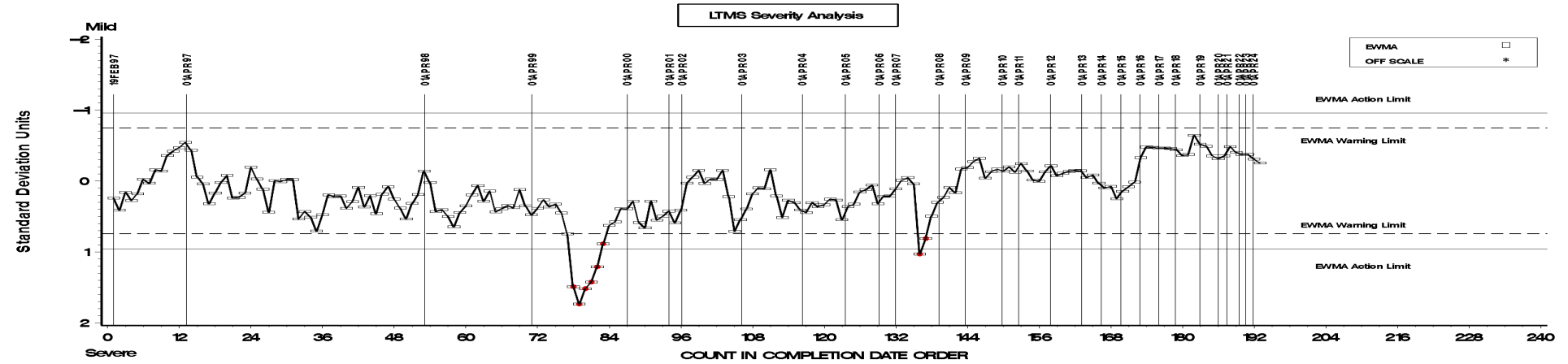
CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

OIL CONSUMPTION



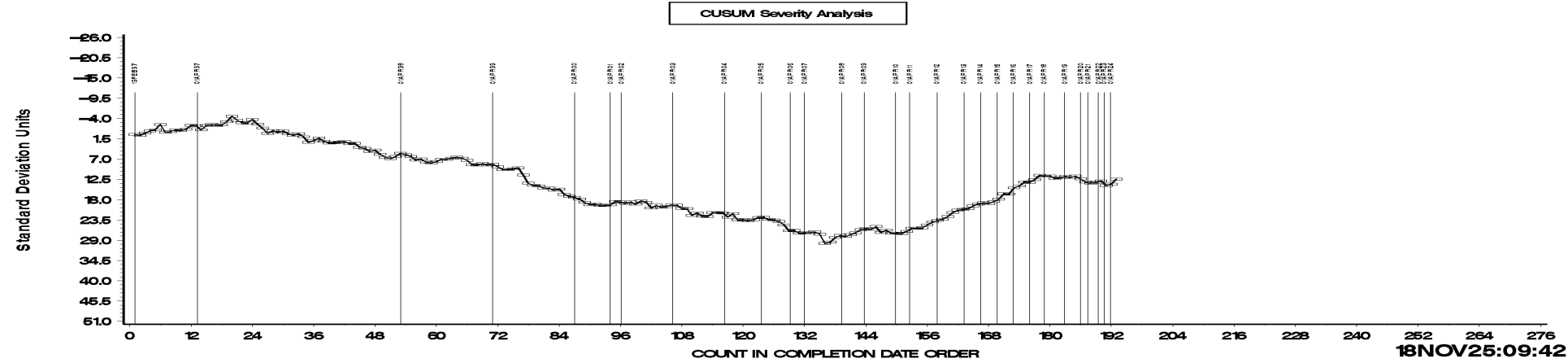
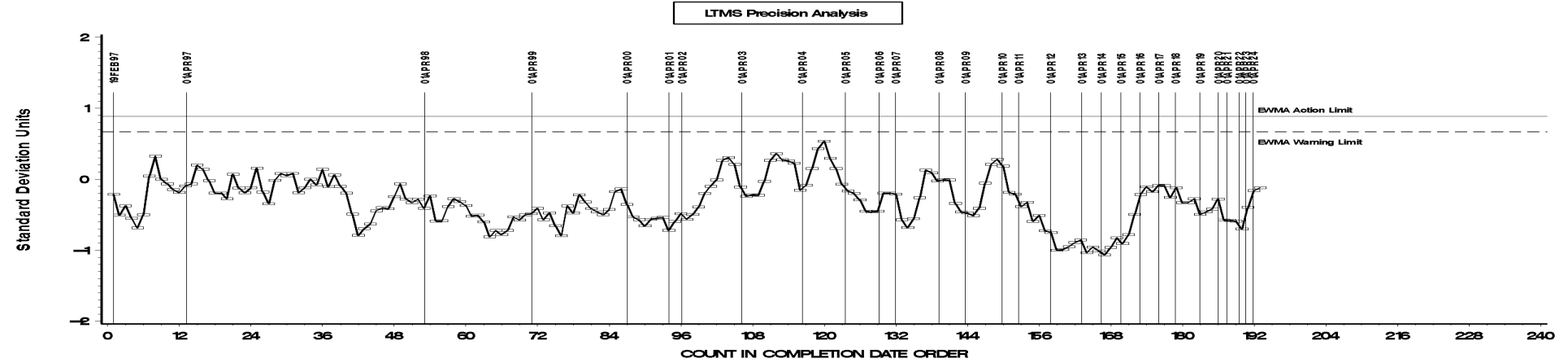
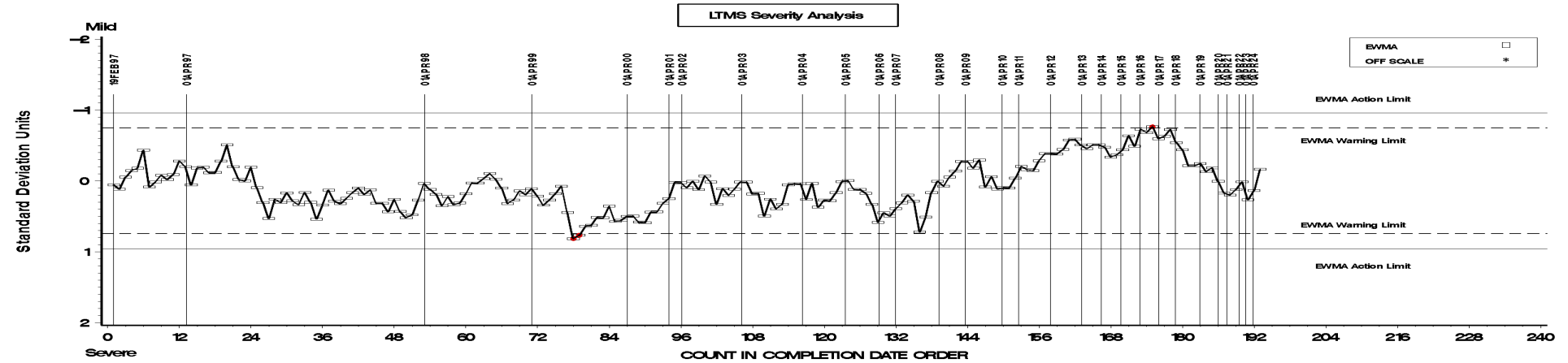
CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

TOP GROOVE CARBON



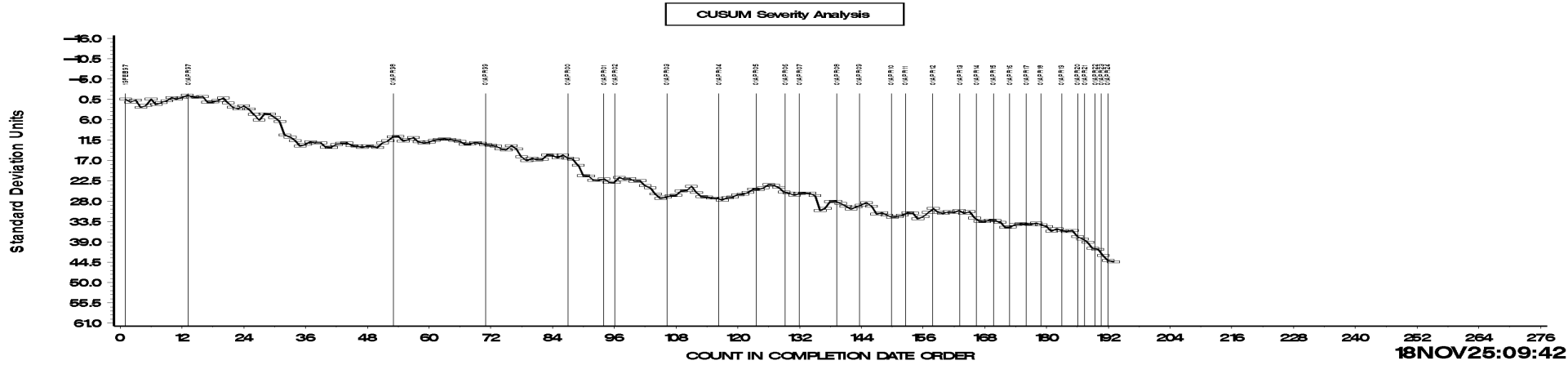
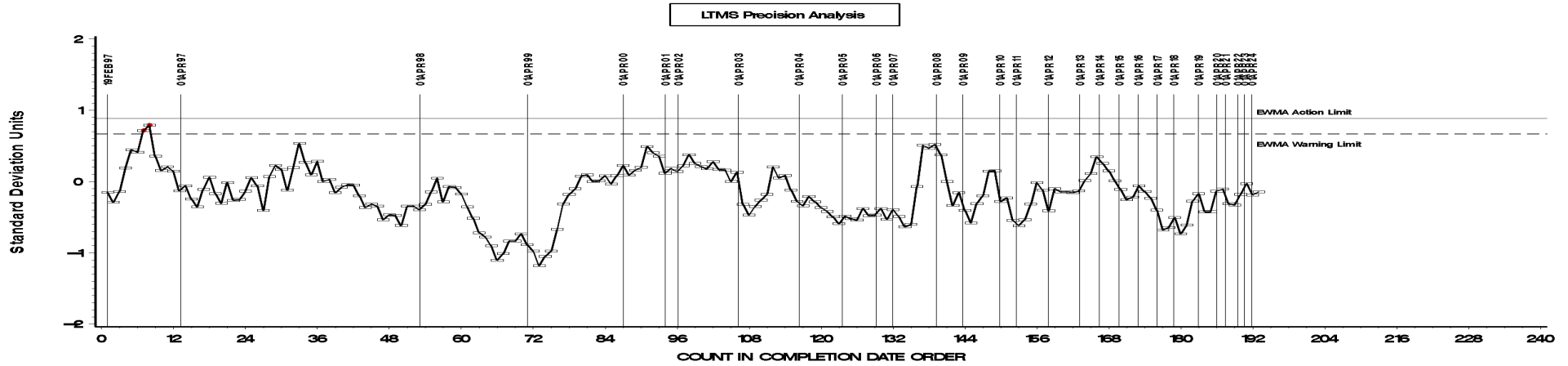
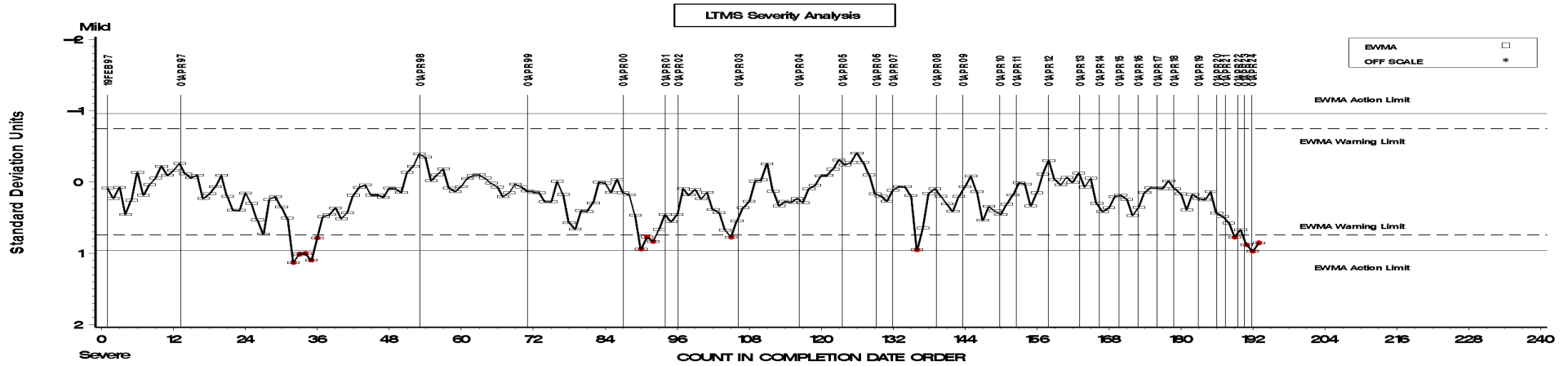
CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

TOP LAND CARBON

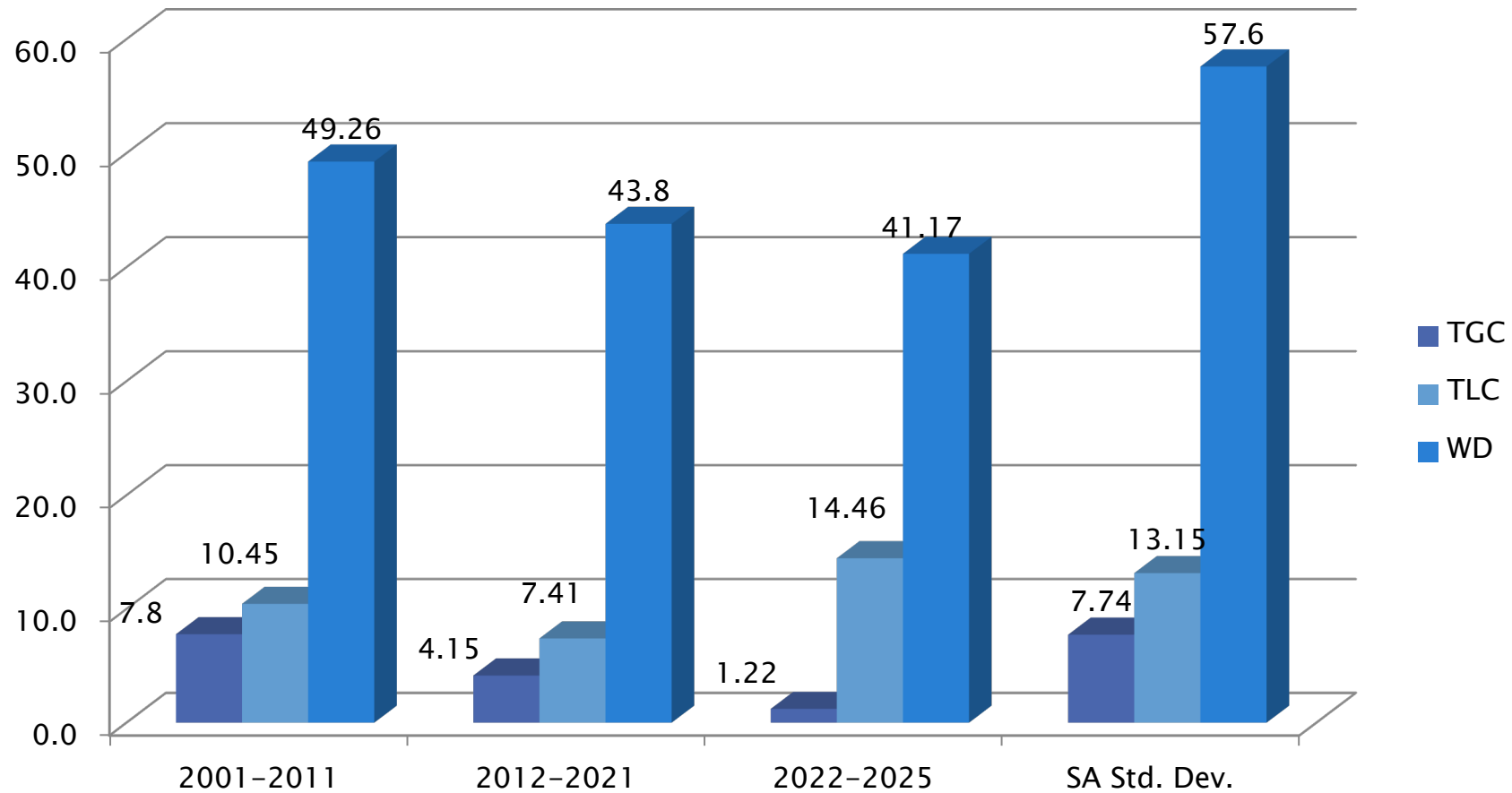


CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

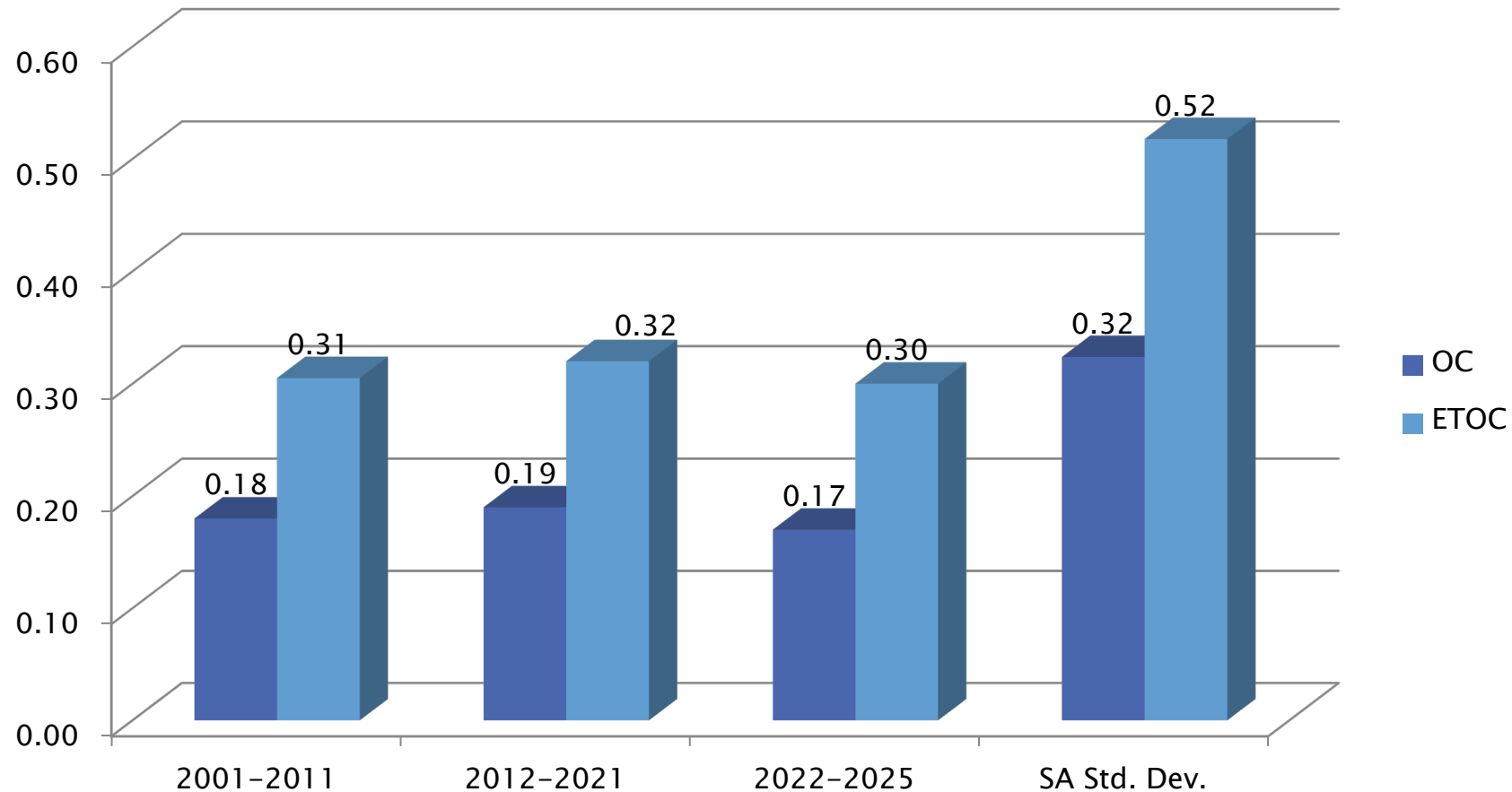
WEIGHTED TOTAL DEMERITS



1 P Precision Estimates



1 P Precision Estimates



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SCOTE 1 R

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1 R Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		0

1 R Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

1 R Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

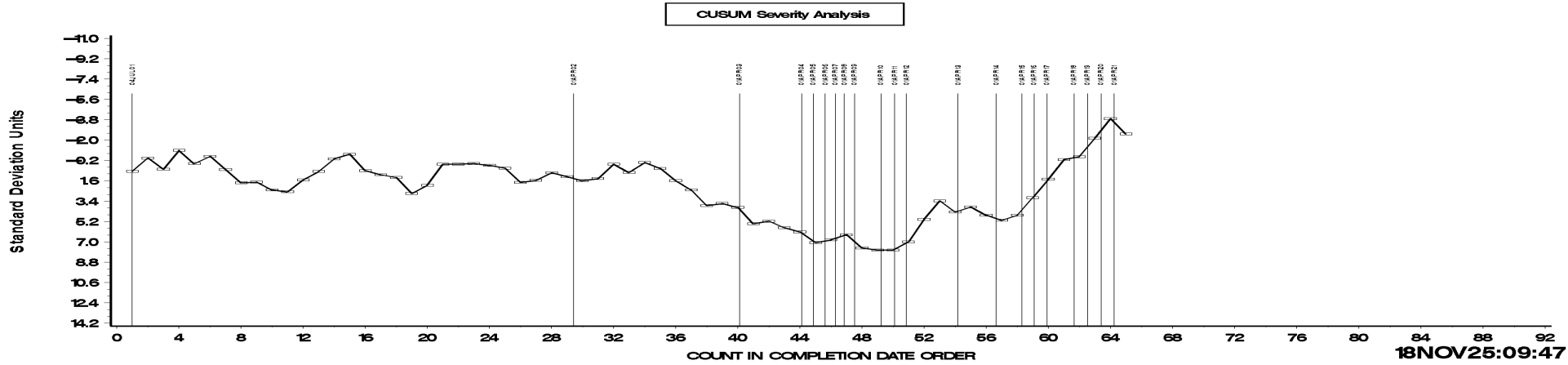
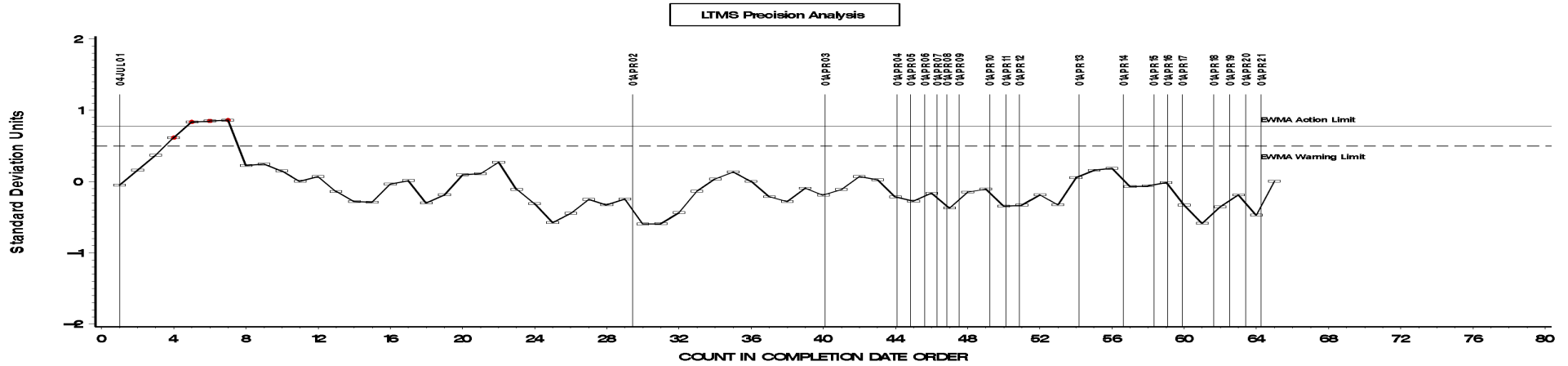
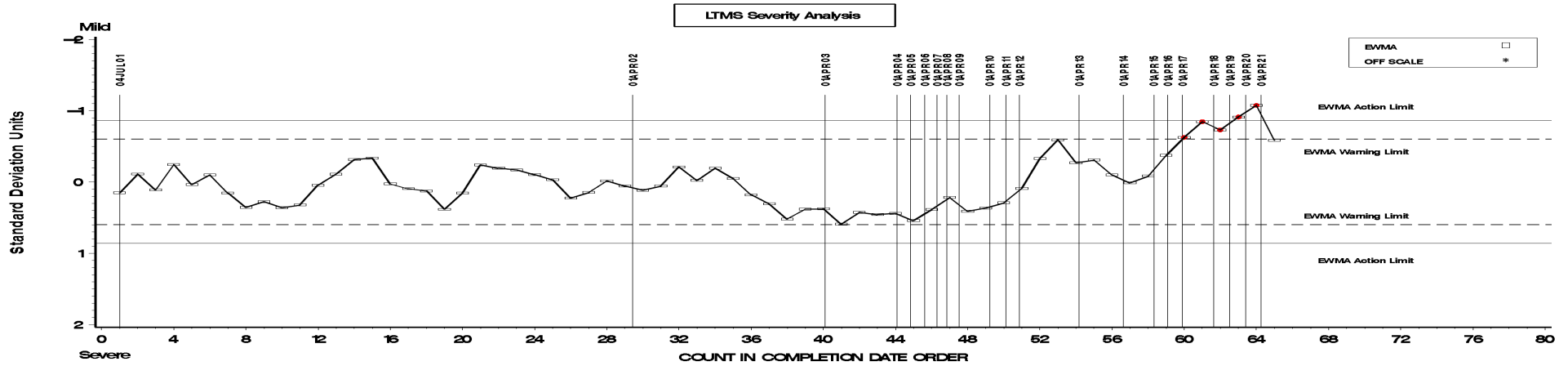
*Invalid and aborted tests

1 R Test Severity

- ▶ As no 1R tests were conducted during this period, no statement about test severity can be made.

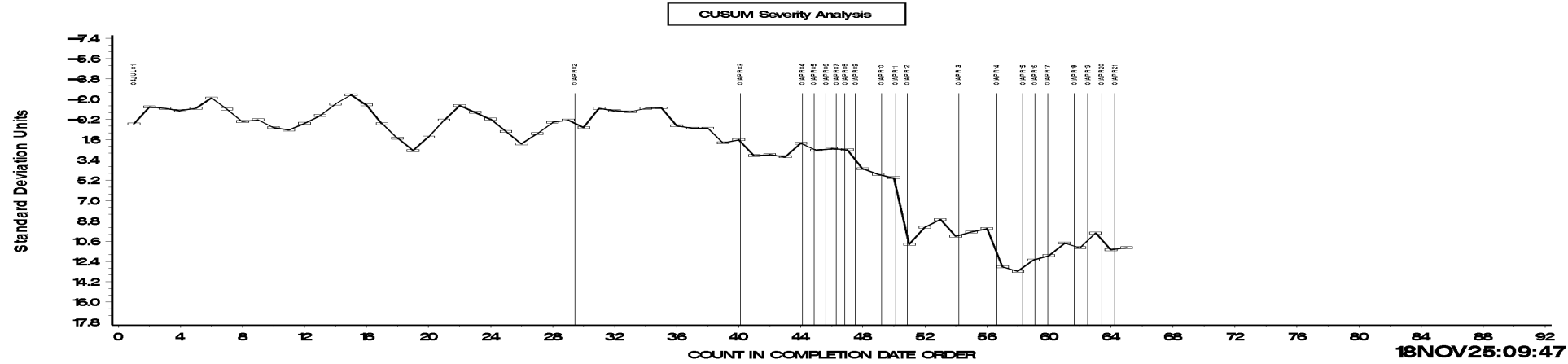
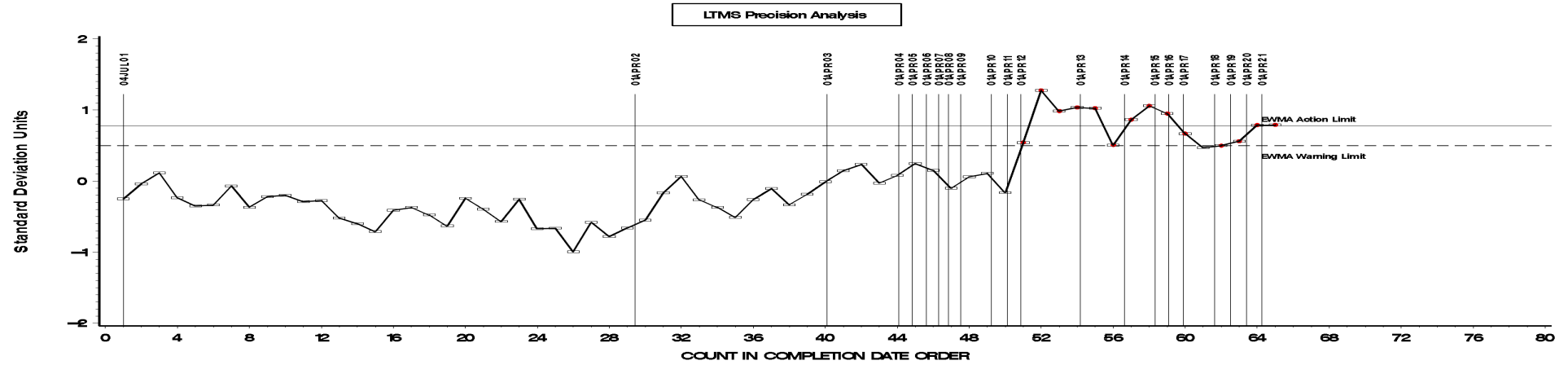
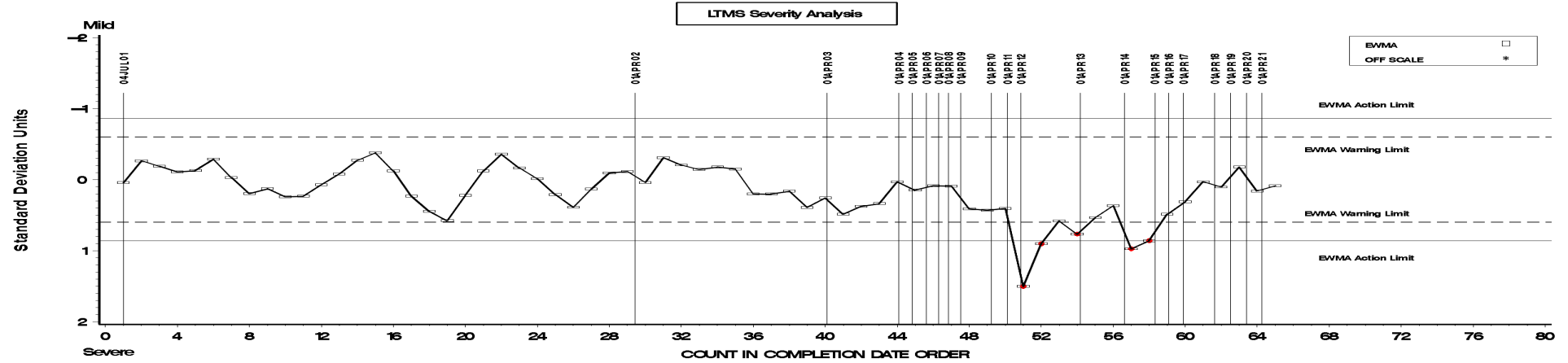
CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA

FINAL BOTOC

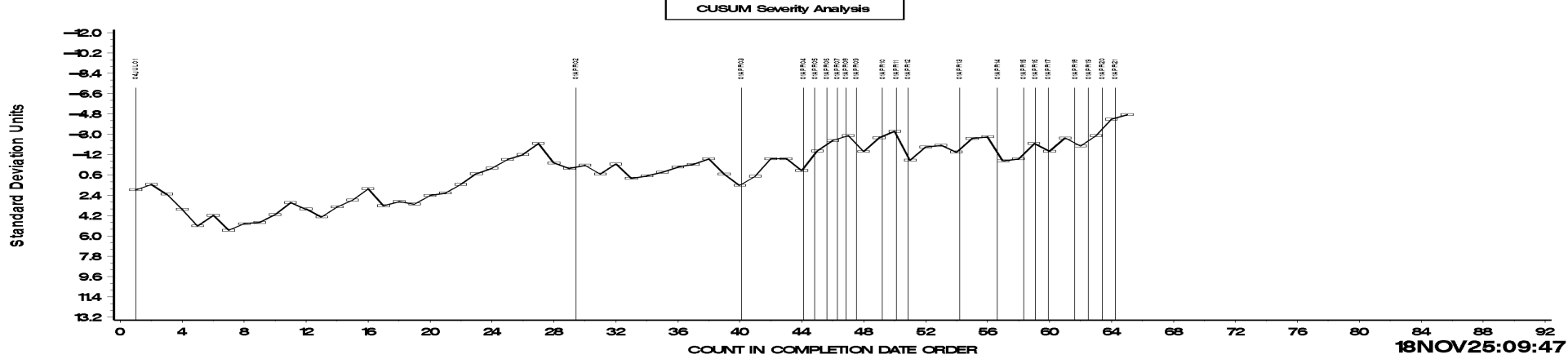
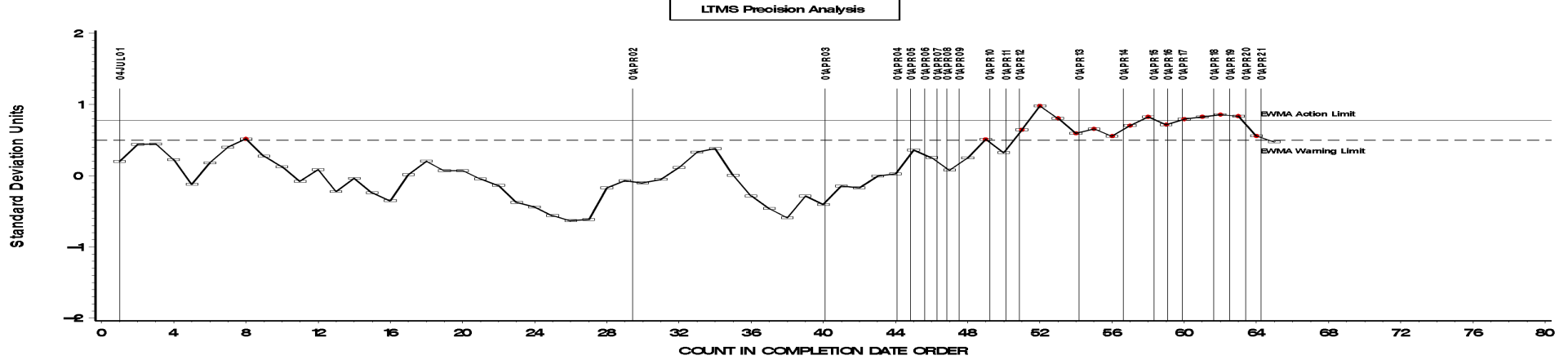
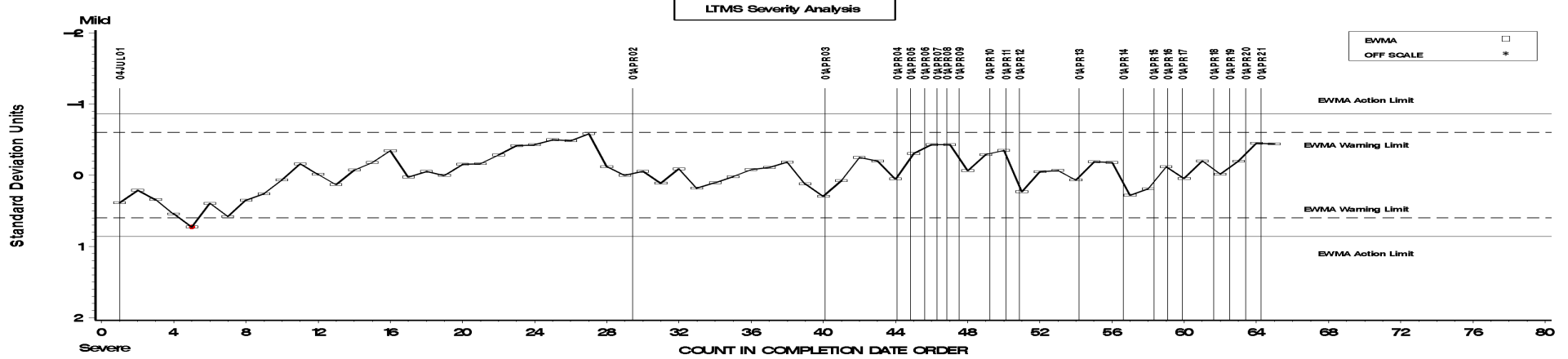


CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA

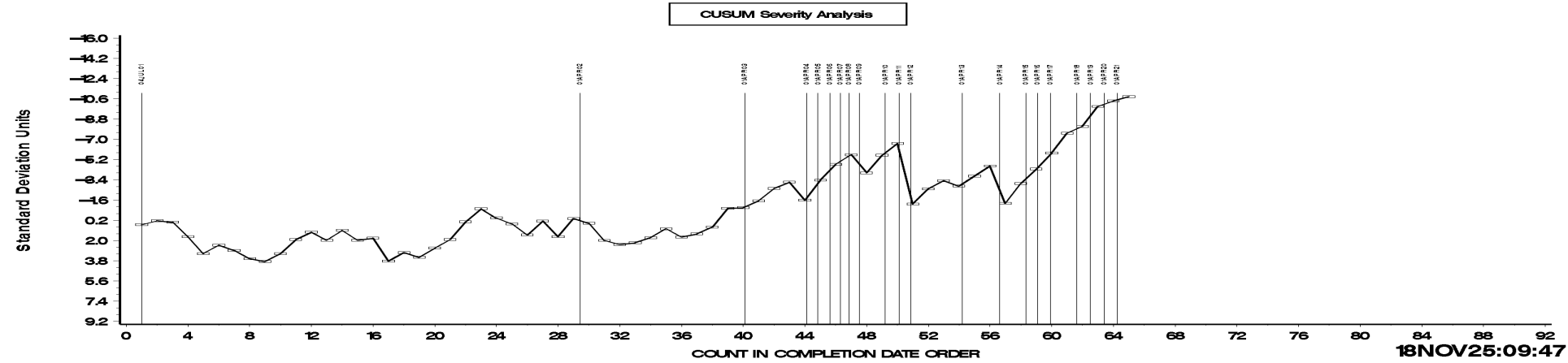
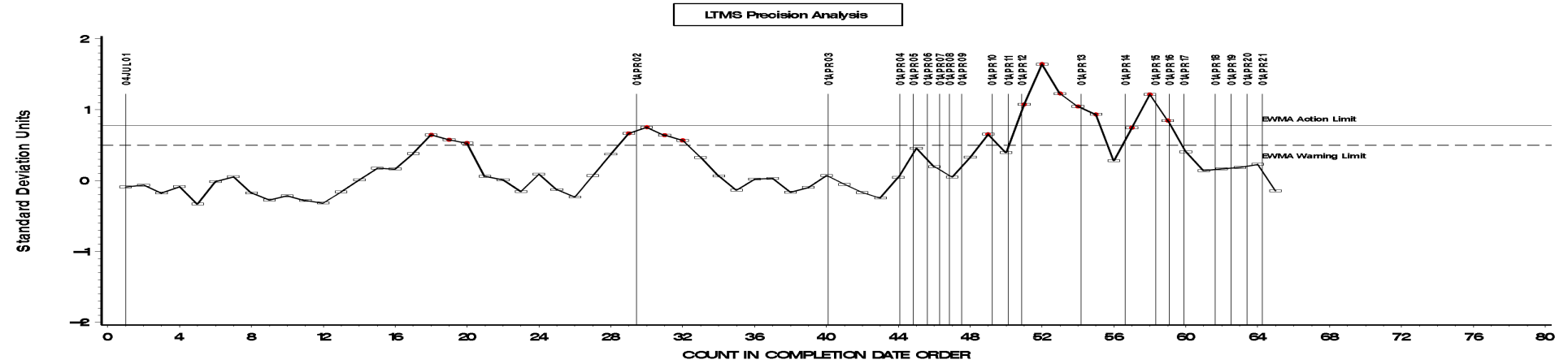
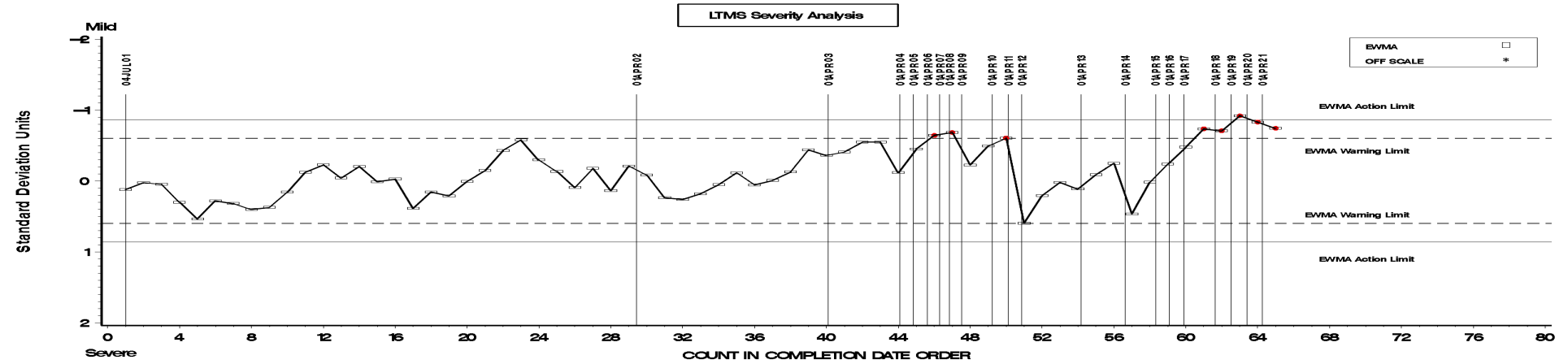
FINAL EOTOC (g/h)



FINAL TOP GROOVE CARBON (DEMERITS)

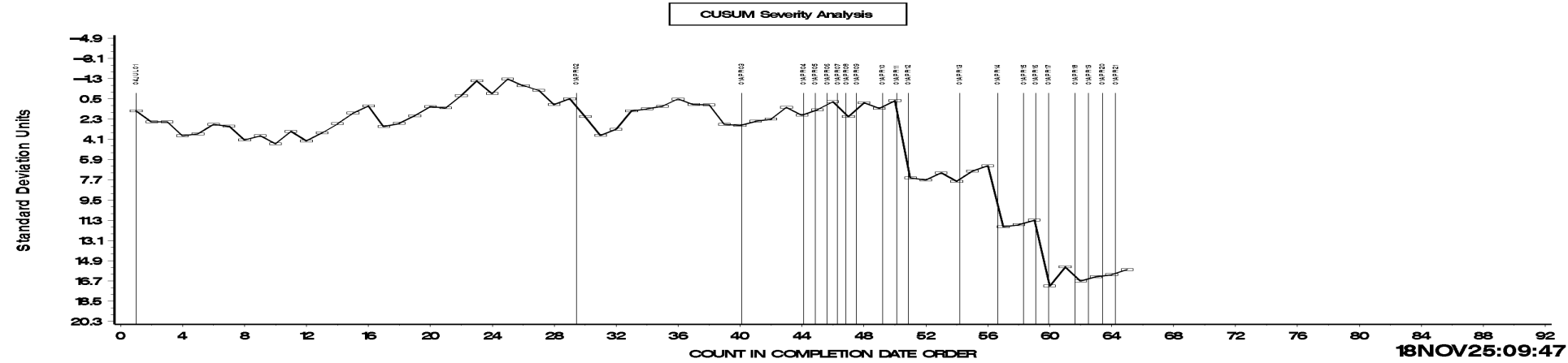
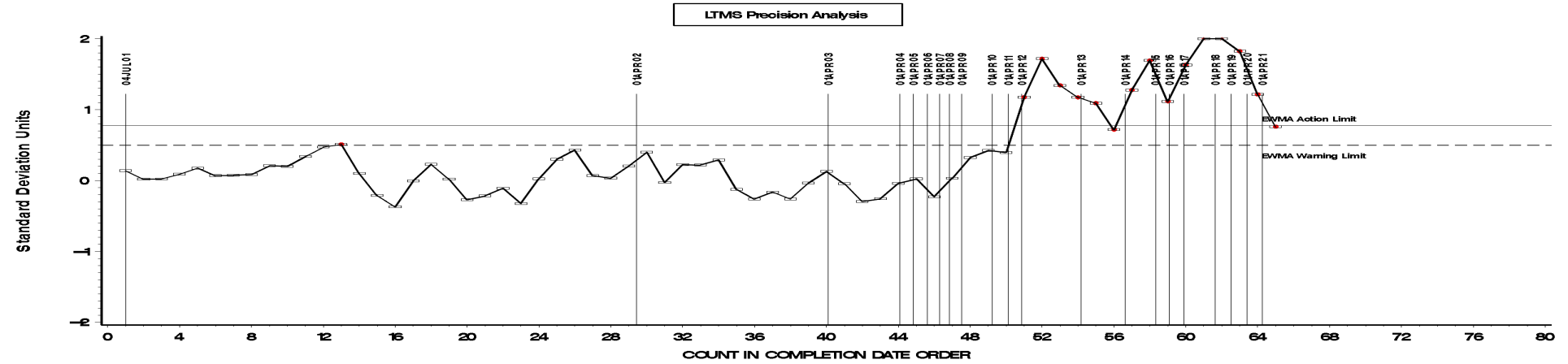
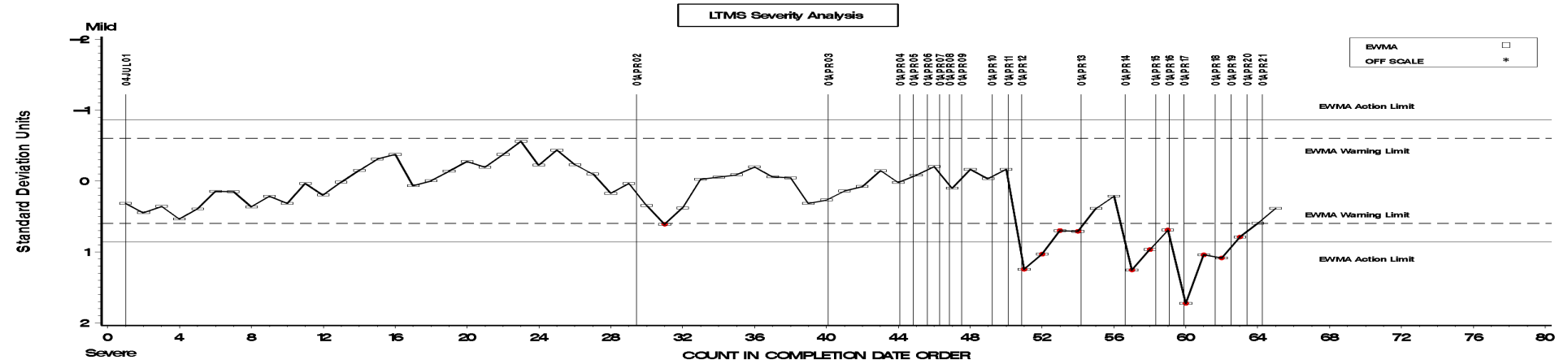


FINAL TOP LAND CARBON (DEMERITS)

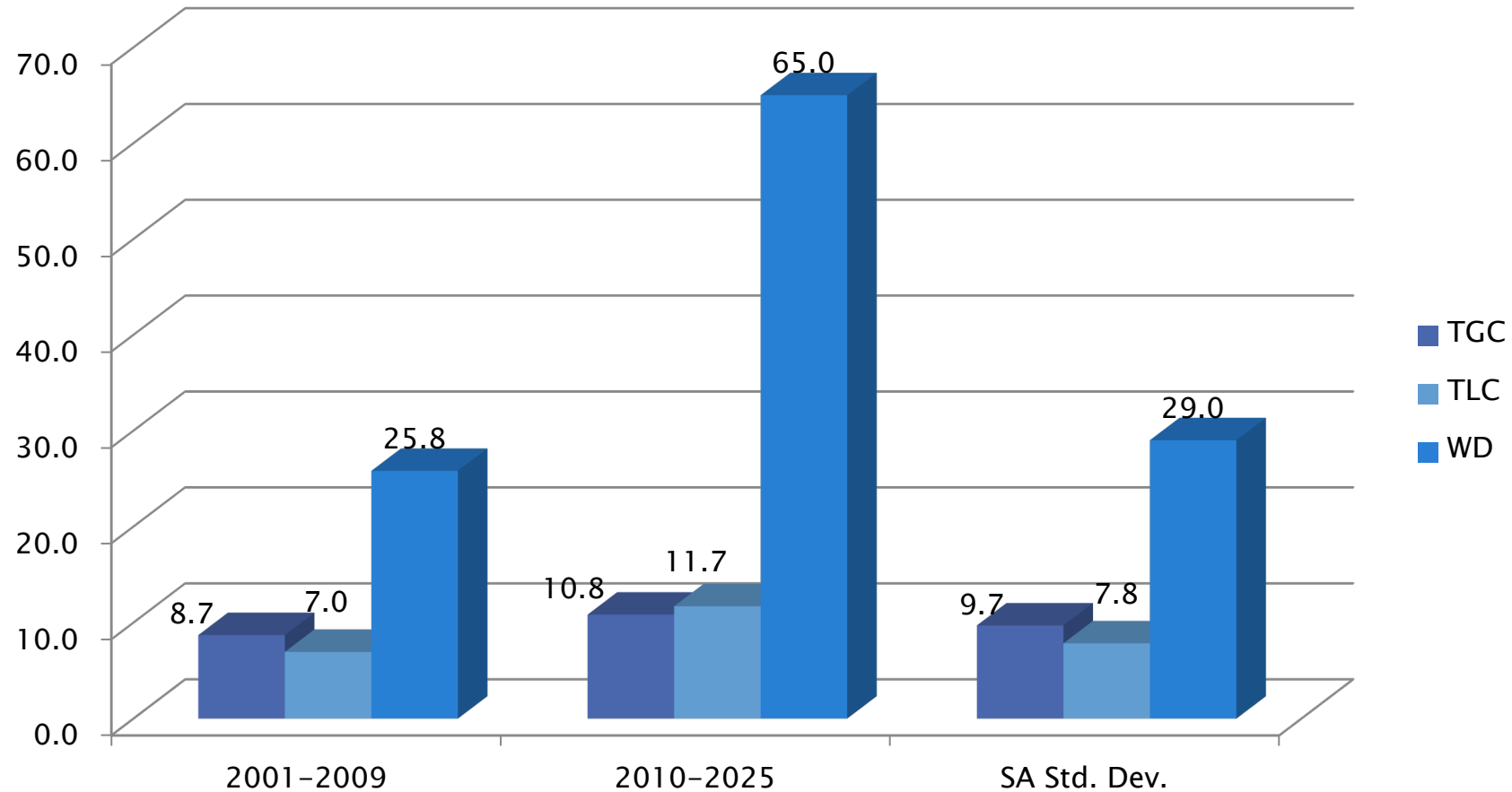


CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA

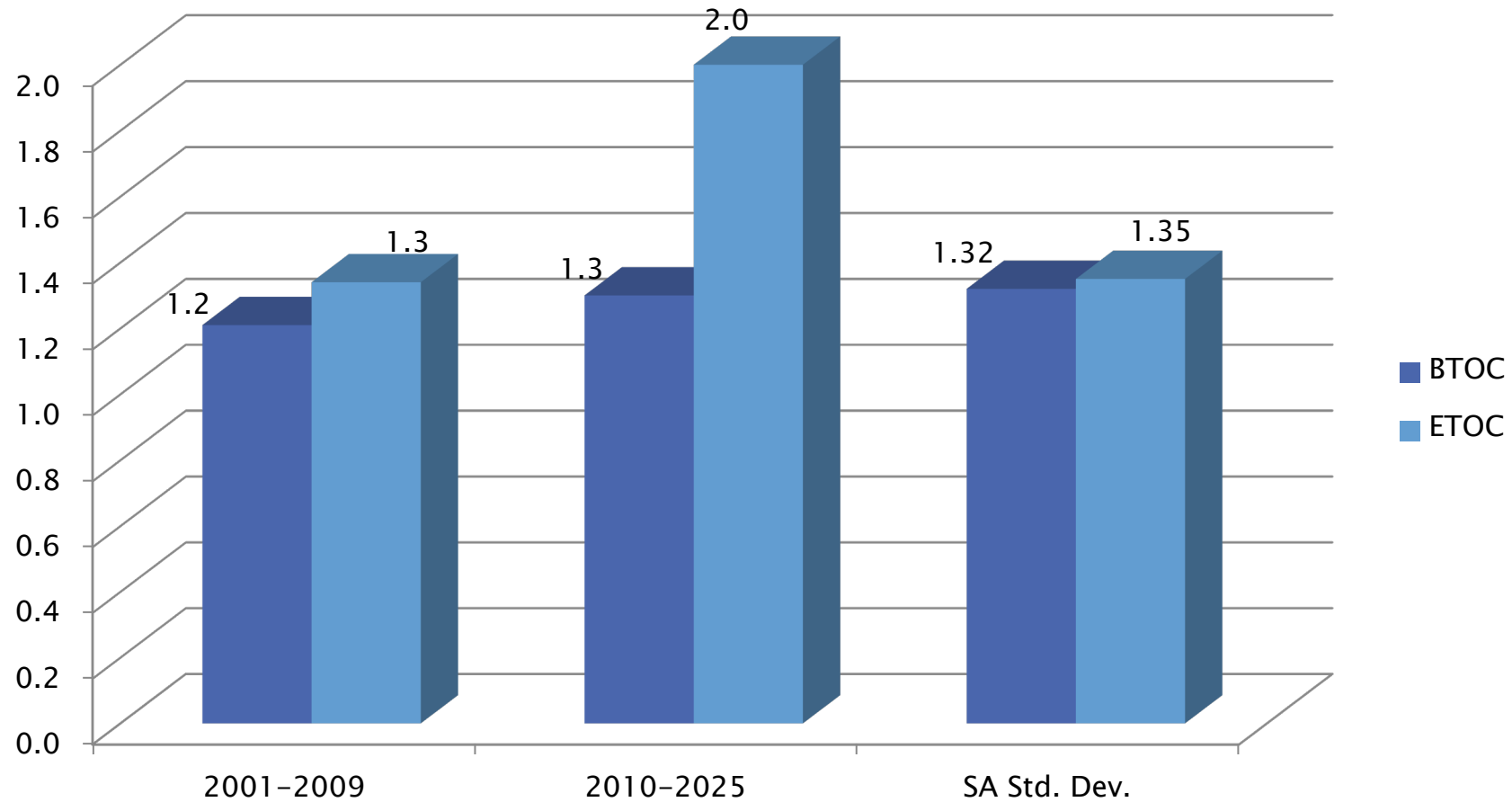
FINAL WEIGHTED TOTAL DEMERITS (DEMERITS)



1 R Precision Estimates



1 R Precision Estimates



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CAT C13

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Test Monitoring Center
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C13 Test Activity

Test Status	Validity Code	C13
Acceptable Calibration Test	AC	6
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		6

C13 Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

C13 Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

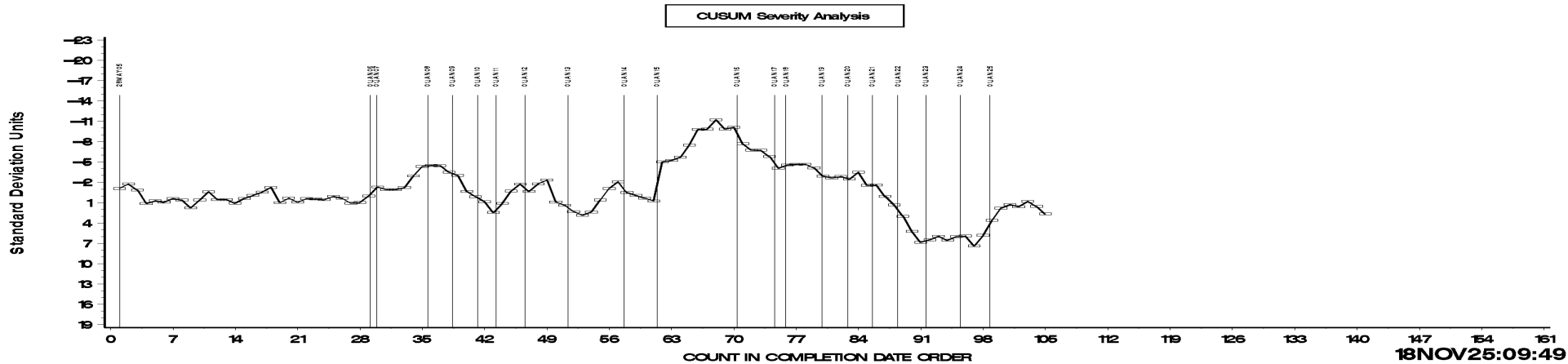
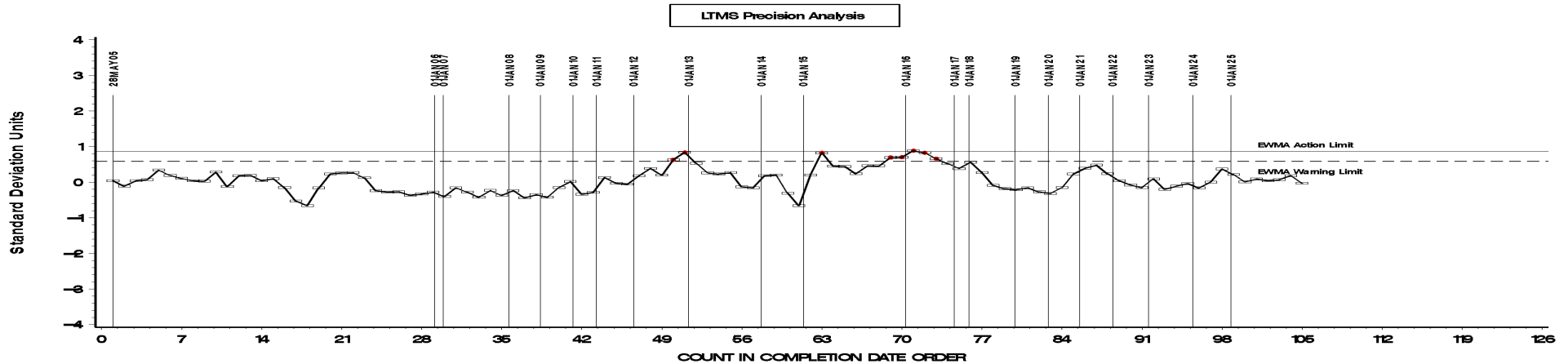
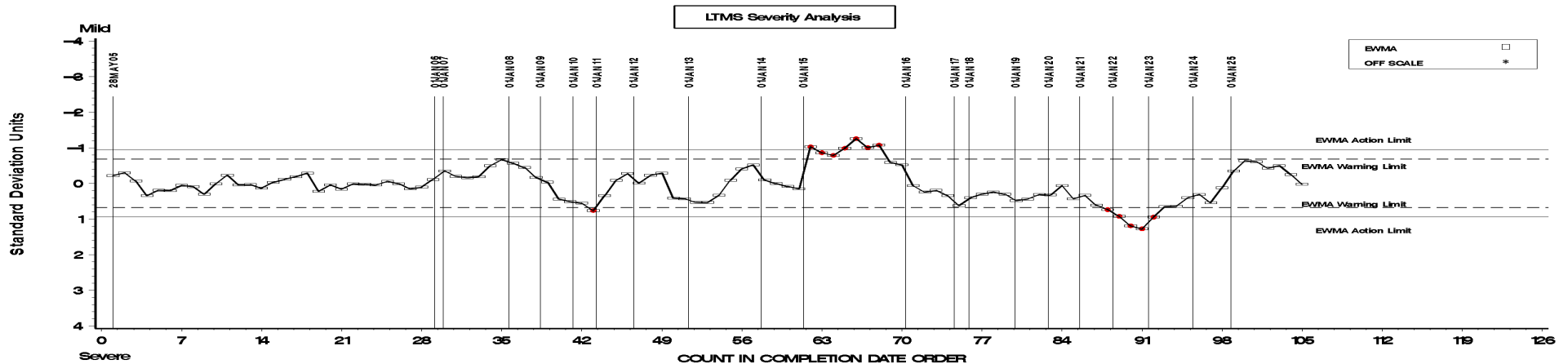
*Invalid and aborted tests

C13 Test Severity

- ▶ TGC is in severity warning alarm in the mild direction.
- ▶ 2RTC is in severity warning alarm in the severe direction.
- ▶ 2RTC is in precision action alarm.
- ▶ All other parameters are in control

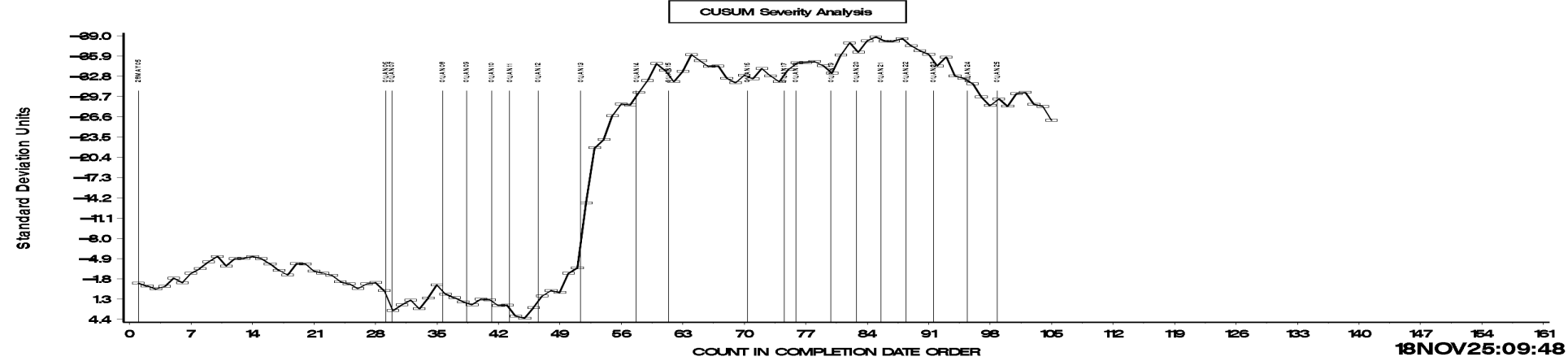
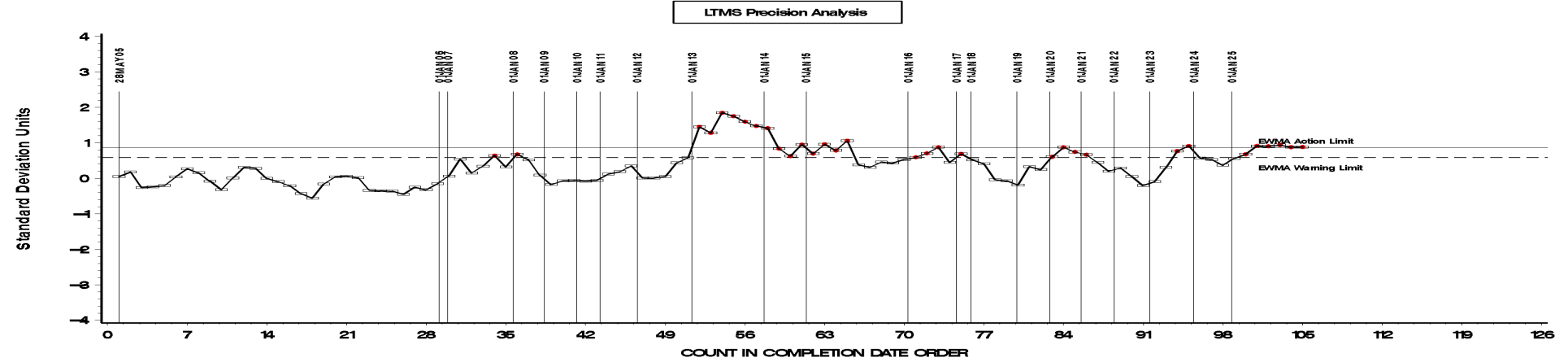
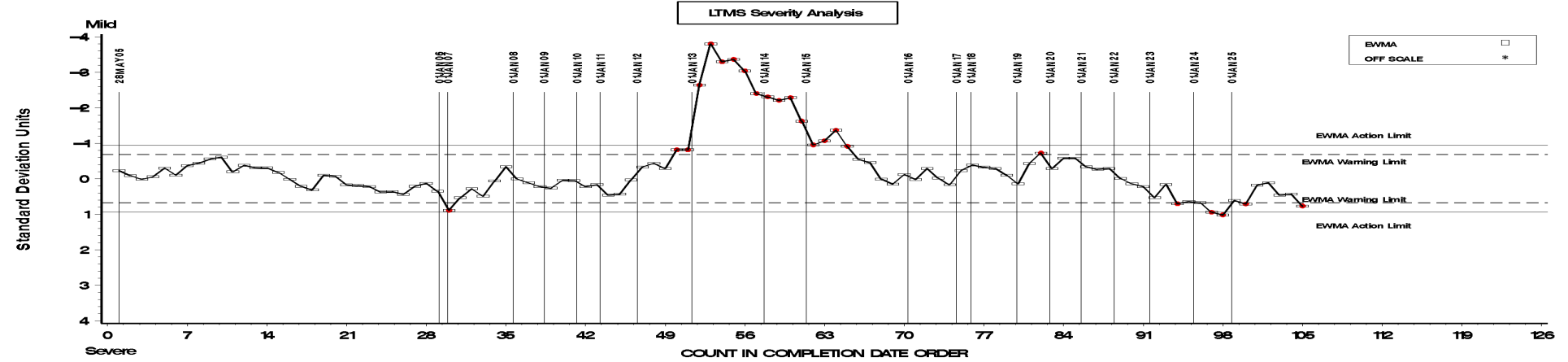
C13 INDUSTRY OPERATIONALLY VALID DATA

OIL CONS. DELTA — FINAL RESULT



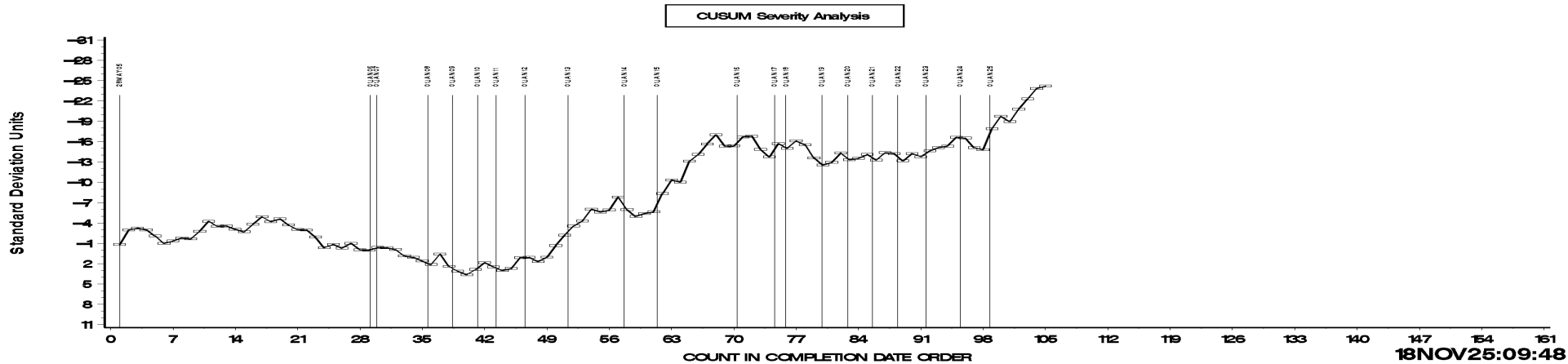
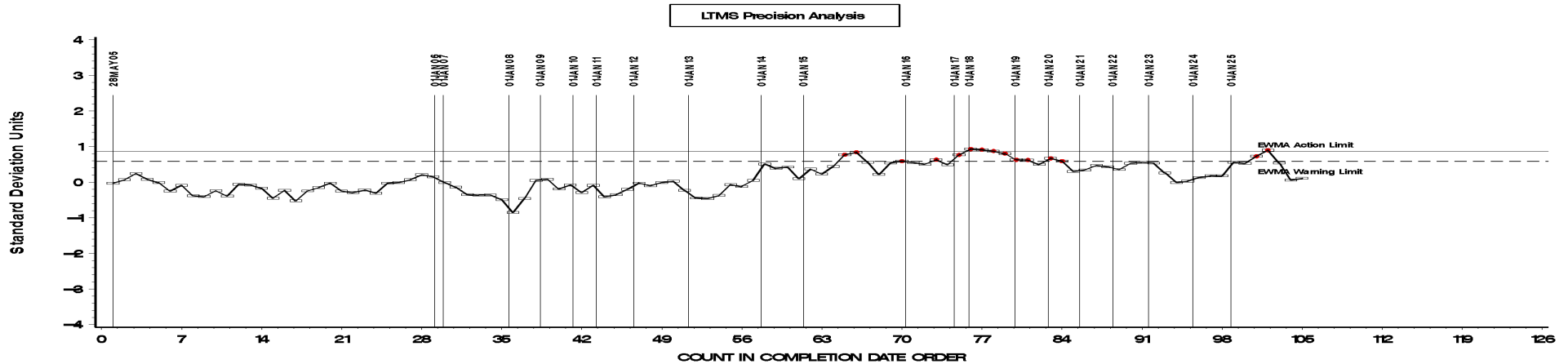
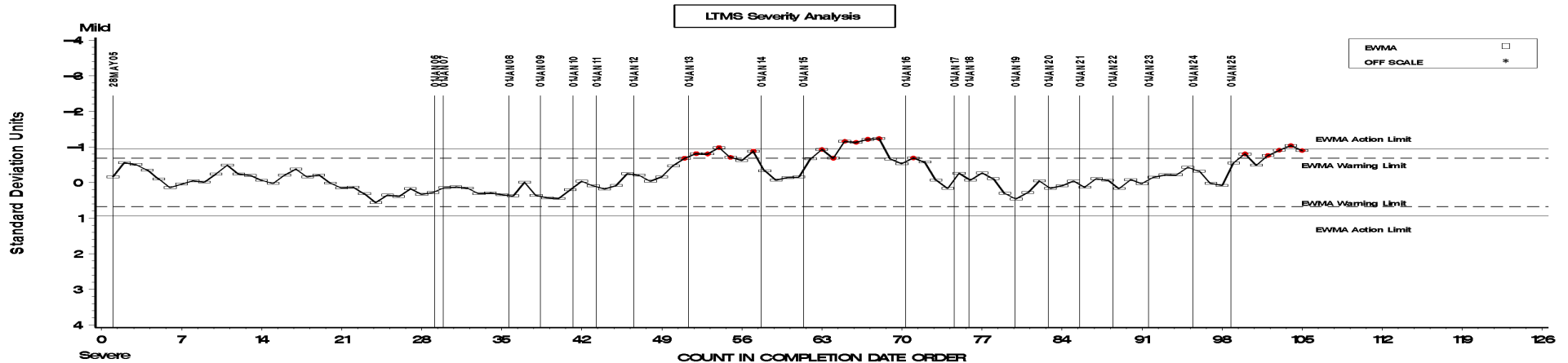
C13 INDUSTRY OPERATIONALLY VALID DATA

2ND RING TOP CARBON AVG. —FINAL RESULT



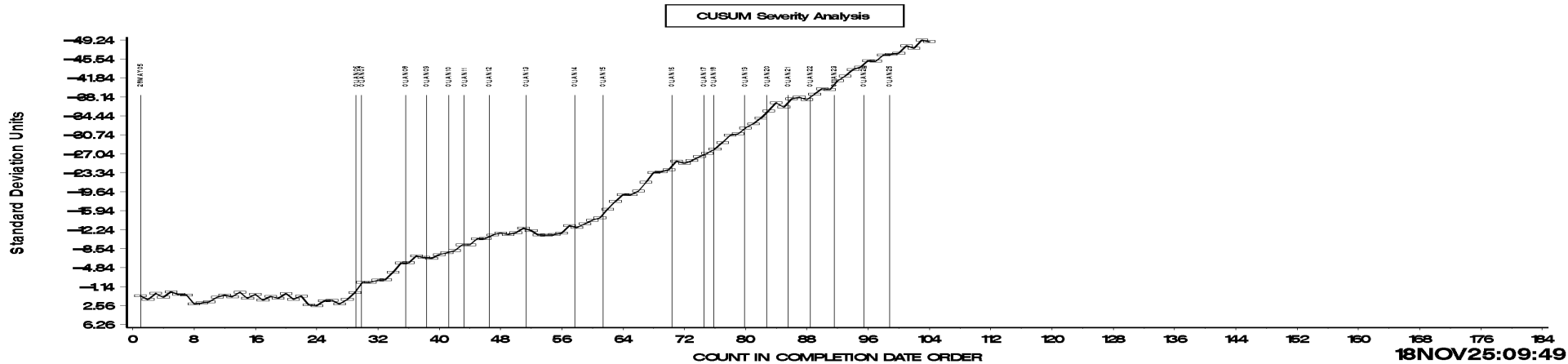
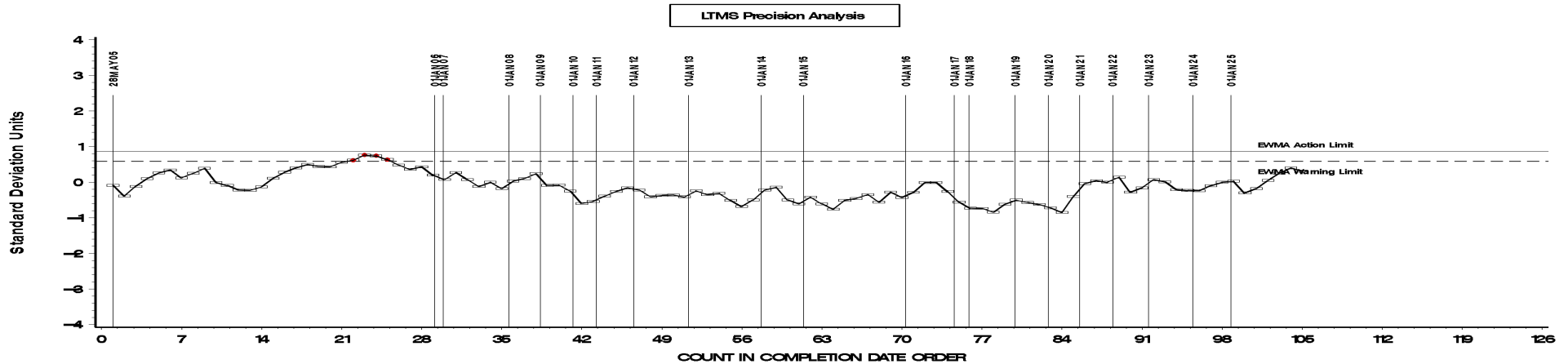
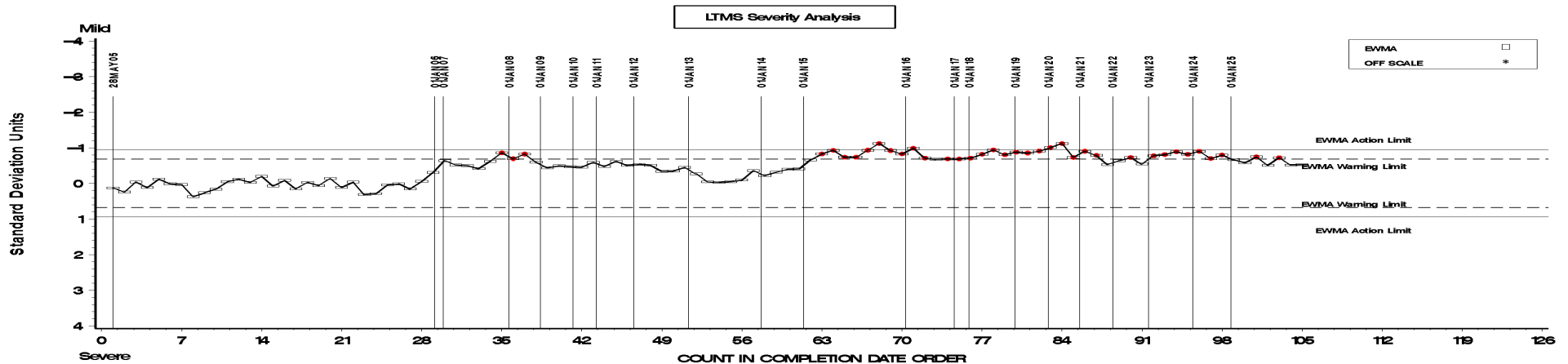
C13 INDUSTRY OPERATIONALLY VALID DATA

TOP GROOVE CARBON AVG — FINAL RESULT

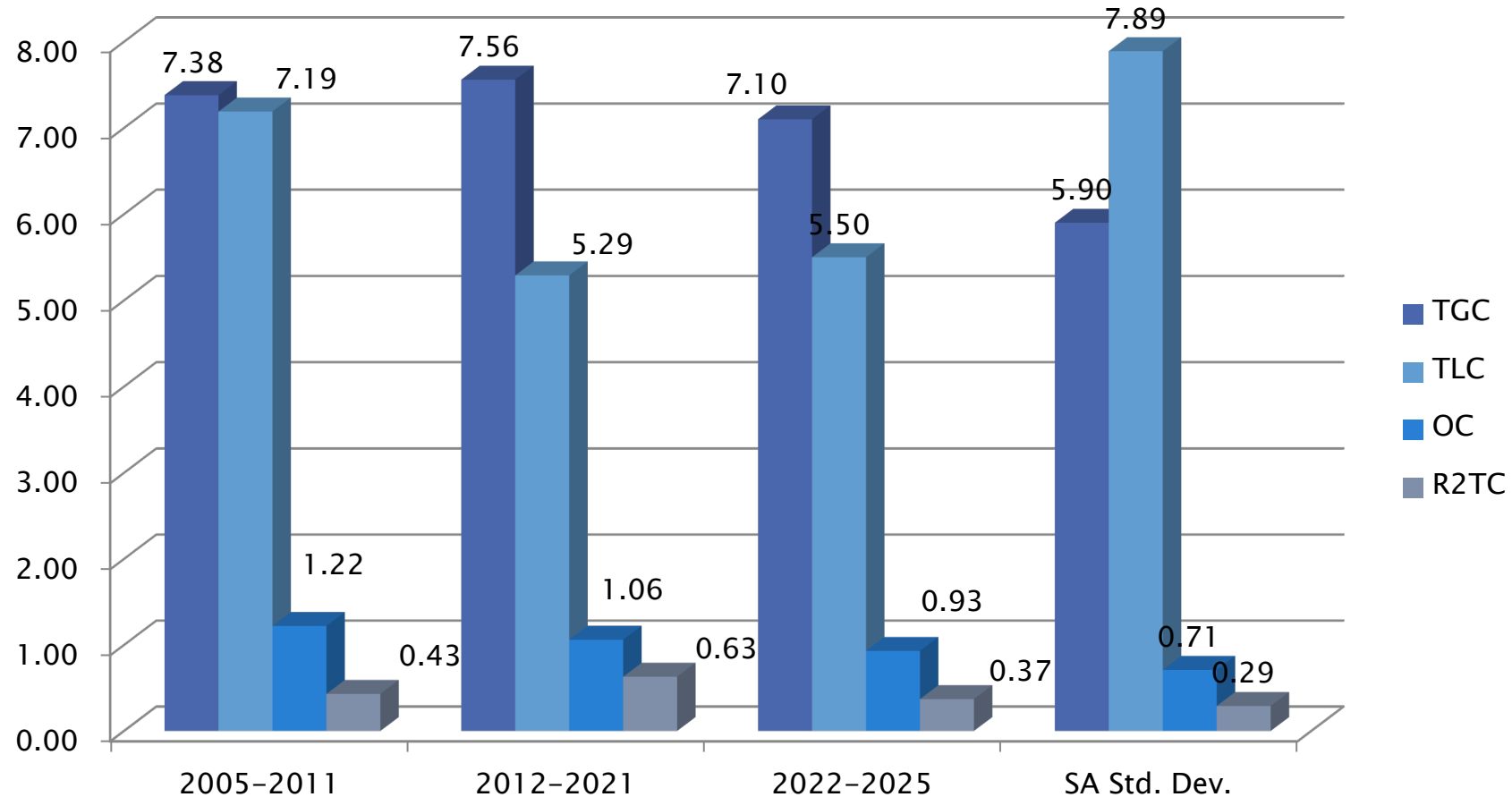


C13 INDUSTRY OPERATIONALLY VALID DATA

TOP LAND CARBON AVG. —FINAL RESULT



C13 Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



C13 Oil Aeration (COAT)

»» October 2025

Test Monitoring Center
<https://www.astmtmc.org>



COAT Test Activity

Test Status	Validity Code	COAT
Acceptable Calibration Test	AC	4
Failed Calibration Test	OC	1
Operationally Invalid	LC	0
Aborted	XC	0
Informational	NN	4
Total		9

COAT Failed Tests

Failed Parameter	Number of Tests
AAVE Ei Level 3	1
Total	1

COAT Lost Tests*

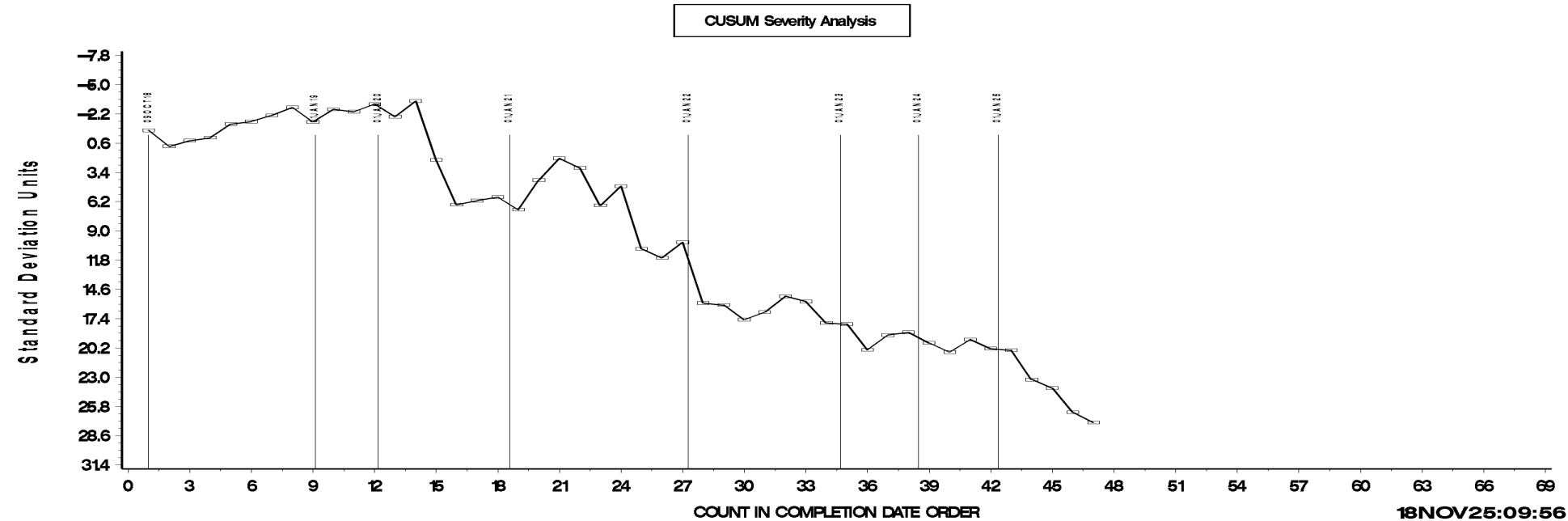
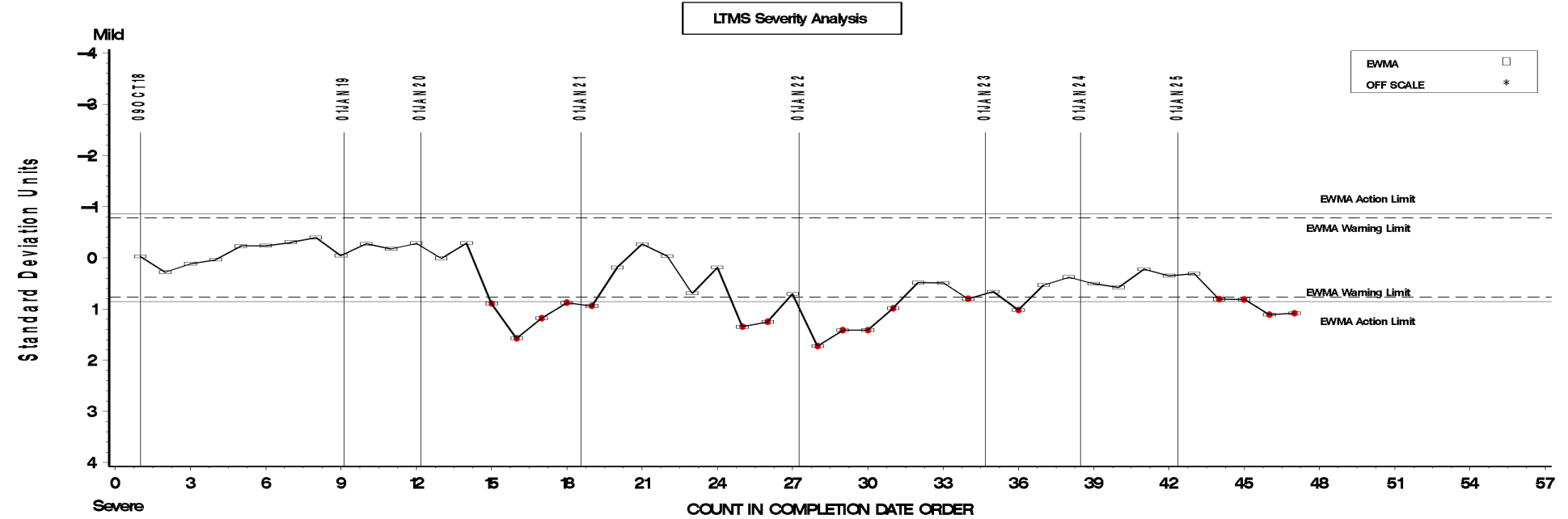
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

COAT Test Severity

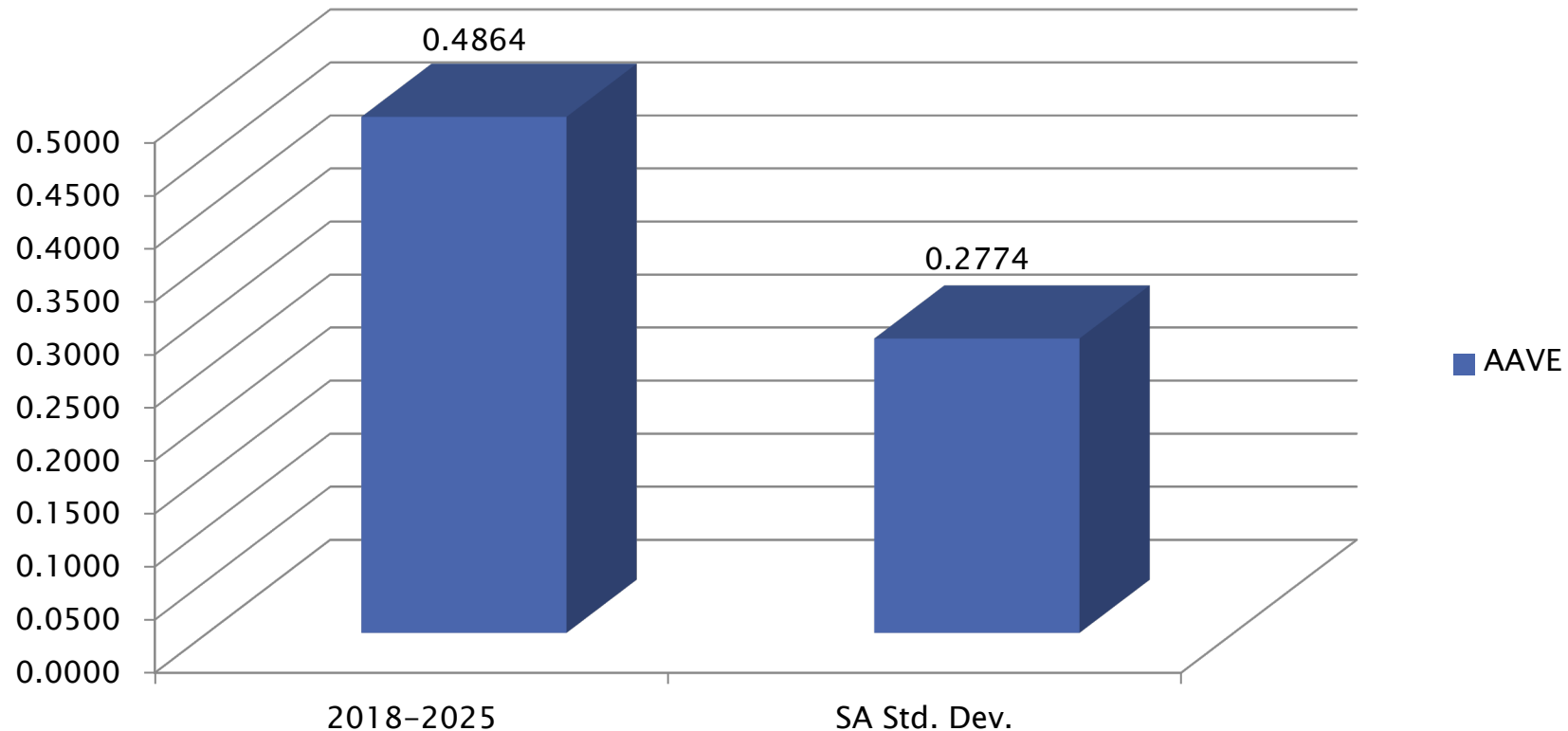
- ▶ AAVE is in severity action alarm in the severe direction.

CORRECTED AVERAGE OIL AERATION OVER TEST HOURS 40 —50



COAT Precision Estimate

AAVE



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Test Monitoring Center
<https://www.astmtmc.org>



Daimler DD13 Scuffing Test

»» October 2025

Test Monitoring Center
<https://www.astmtmc.org>



DD13 Test Activity

Test Status	Validity Code	COAT
Acceptable Calibration Test	AC	1
Failed Calibration Test	OC	5
Operationally Invalid	LC	0
Aborted	XC	0
Total		6

DD13 Failed Tests

Failed Parameter	Number of Tests
HRS2 Mild	2
HRS2 Severe	2
Zi Level 2 Exceeded	1
Total	5

DD13 Lost Tests*

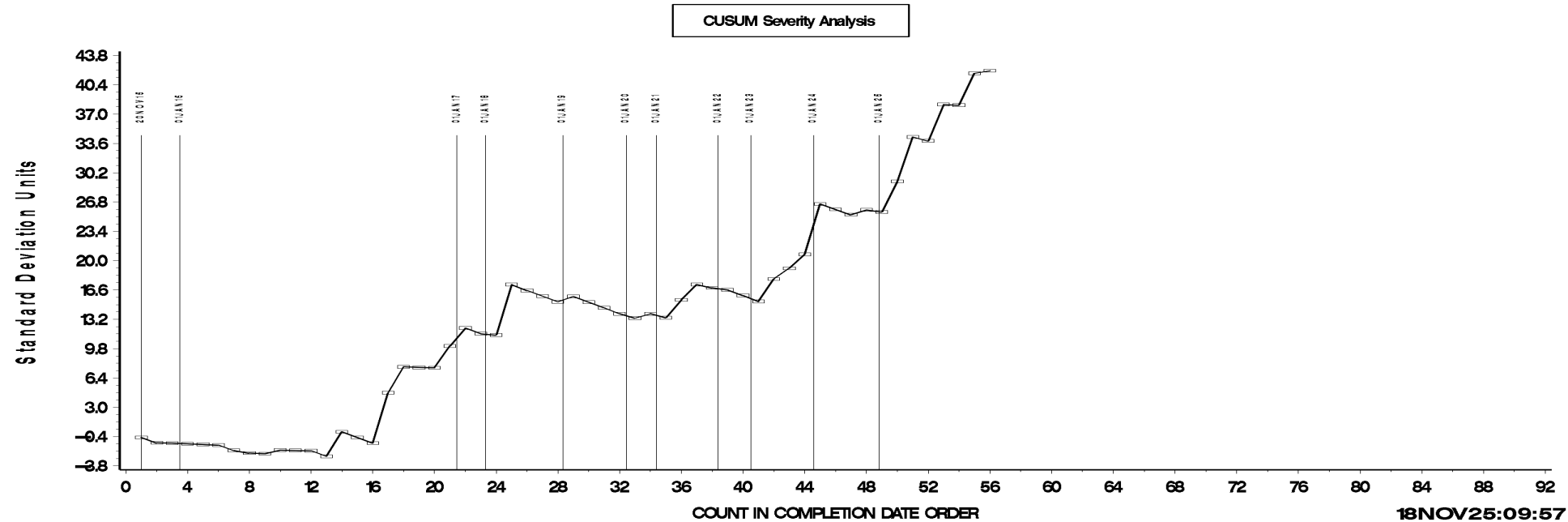
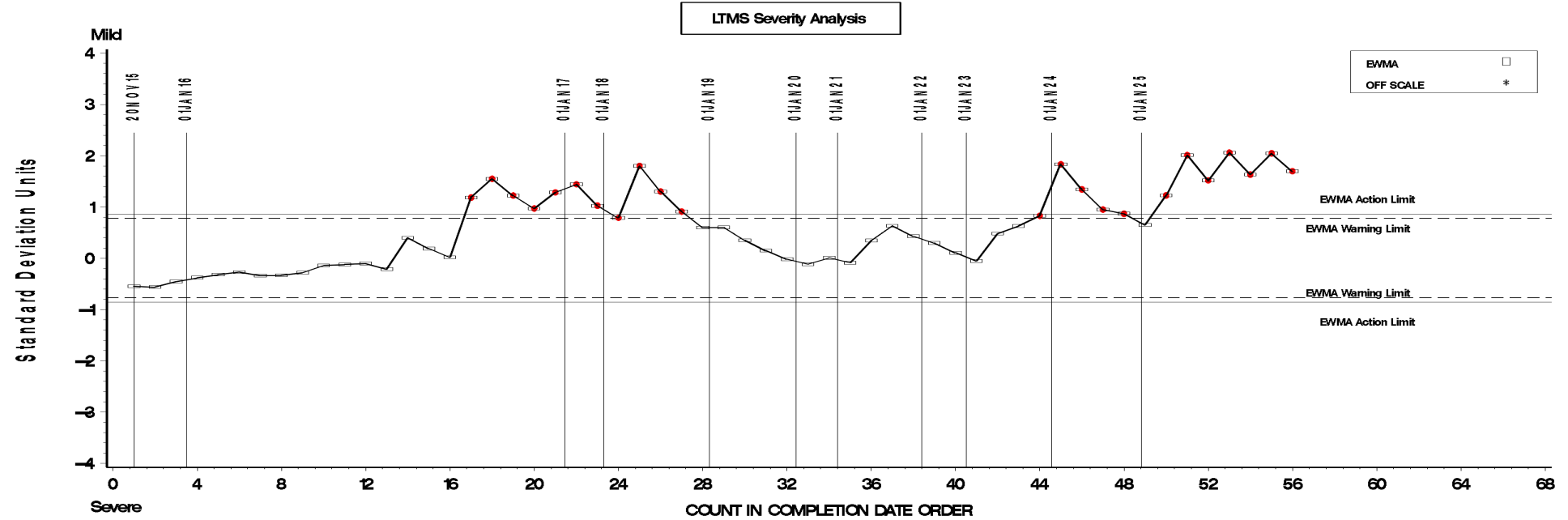
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

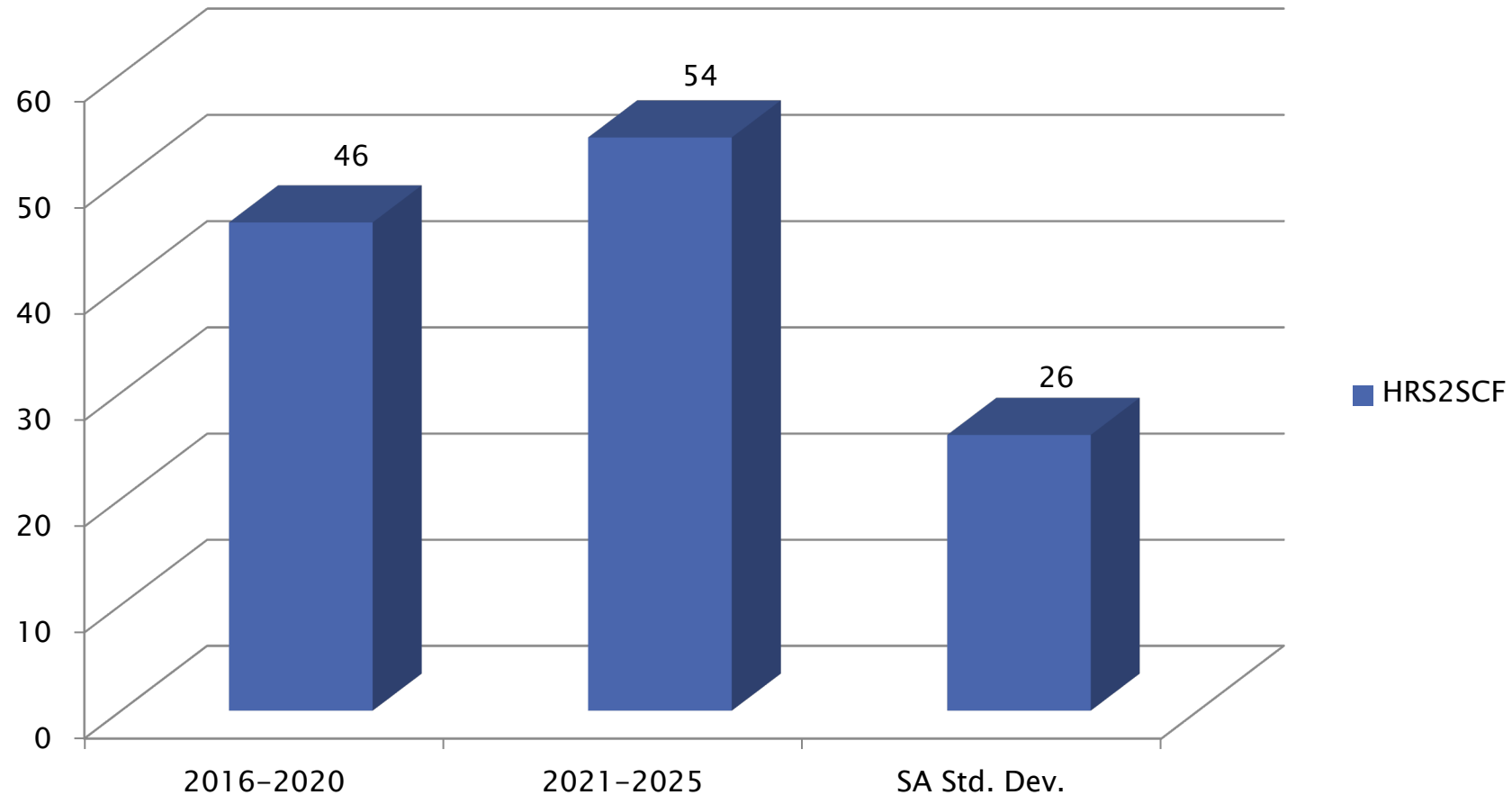
DD13 Test Severity

- ▶ HRS2 is in severity action alarm in the mild direction.

FNL. ORIG. UNIT HOURS TO SCUFF



DD13 Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



EOAT

»» October 2025

Test Monitoring Center
<https://www.astmtmc.org>



EOAT Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		0

EOAT Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

EOAT Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

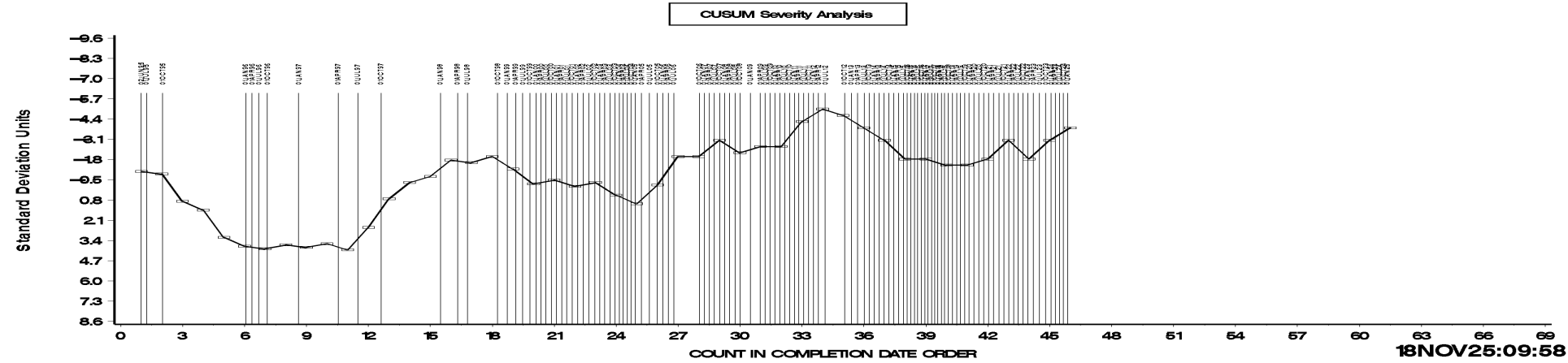
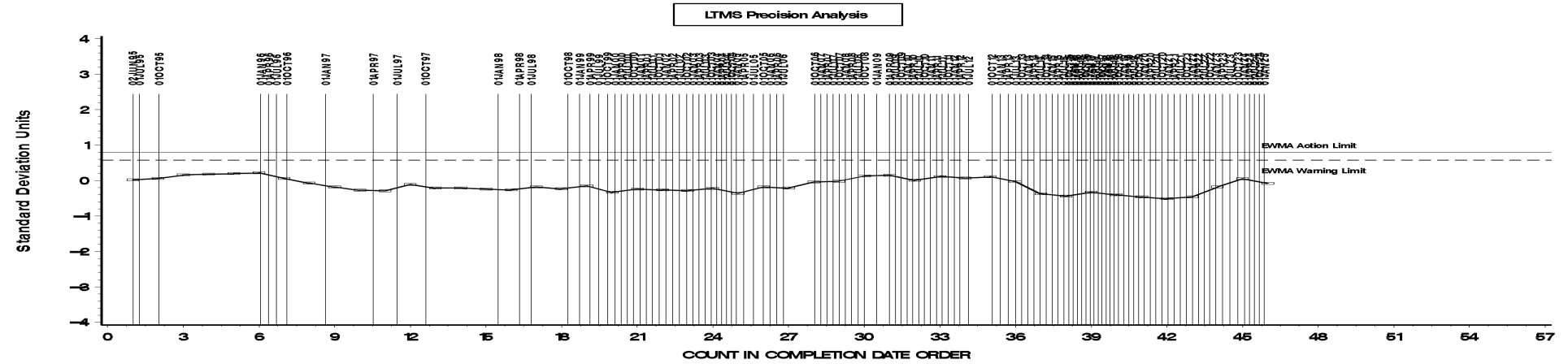
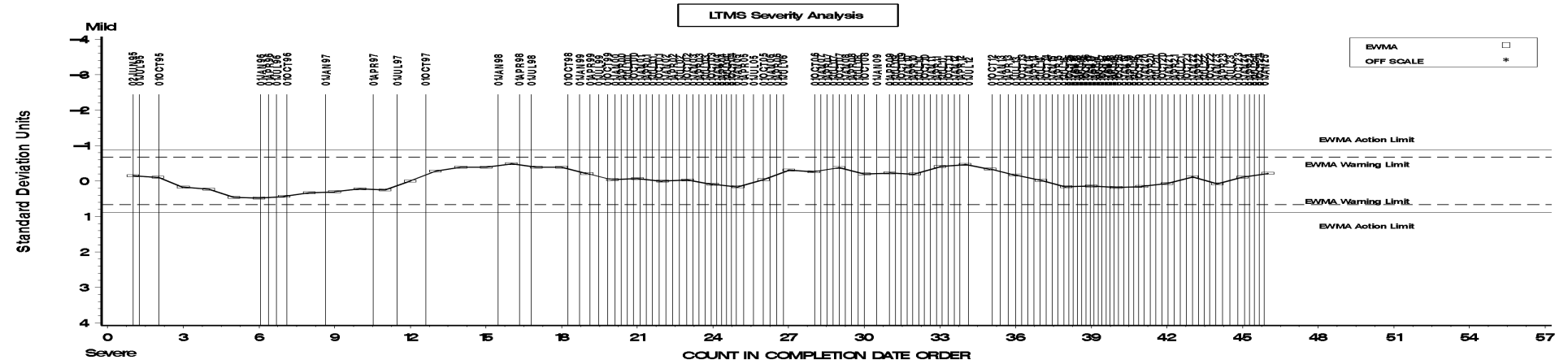
*Invalid and aborted tests

EOAT Test Severity

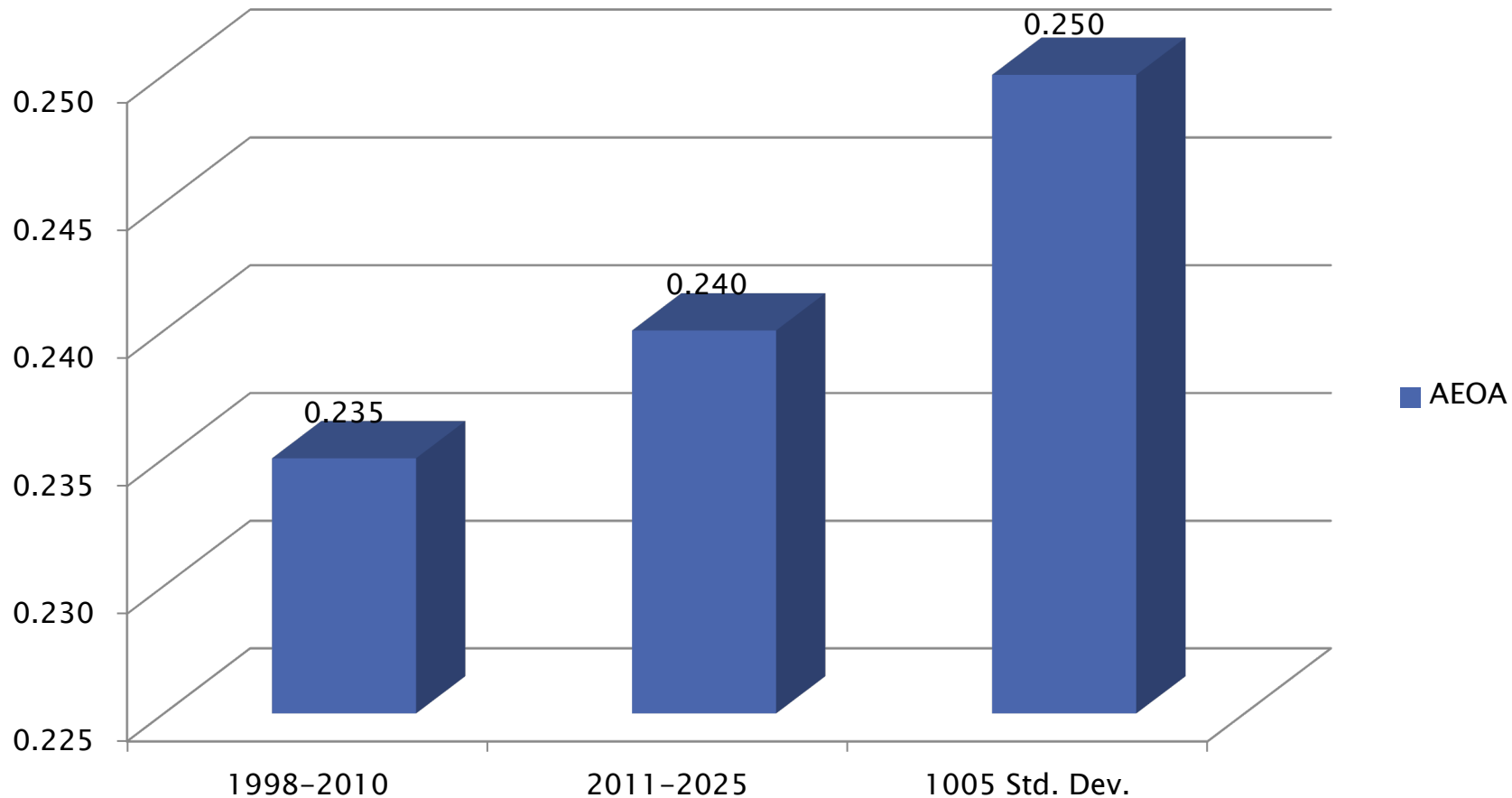
- ▶ As no EOAT tests were conducted during this period, no statement about test severity can be made.

EOAT INDUSTRY OPERATIONALLY VALID DATA

ENGINE OIL AERATION



EOAT Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



Cummins ISB

»» October 2025

Test Monitoring Center
<https://www.astmtmc.org>



ISB Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	6
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		6

ISB Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

ISB Lost Tests*

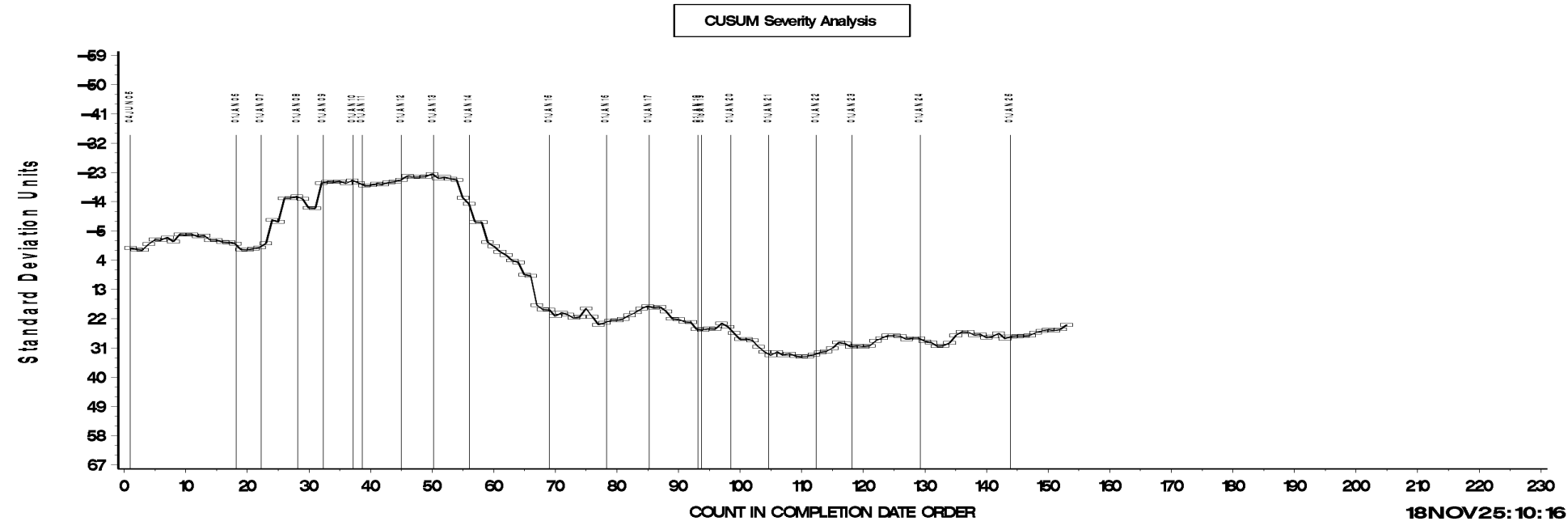
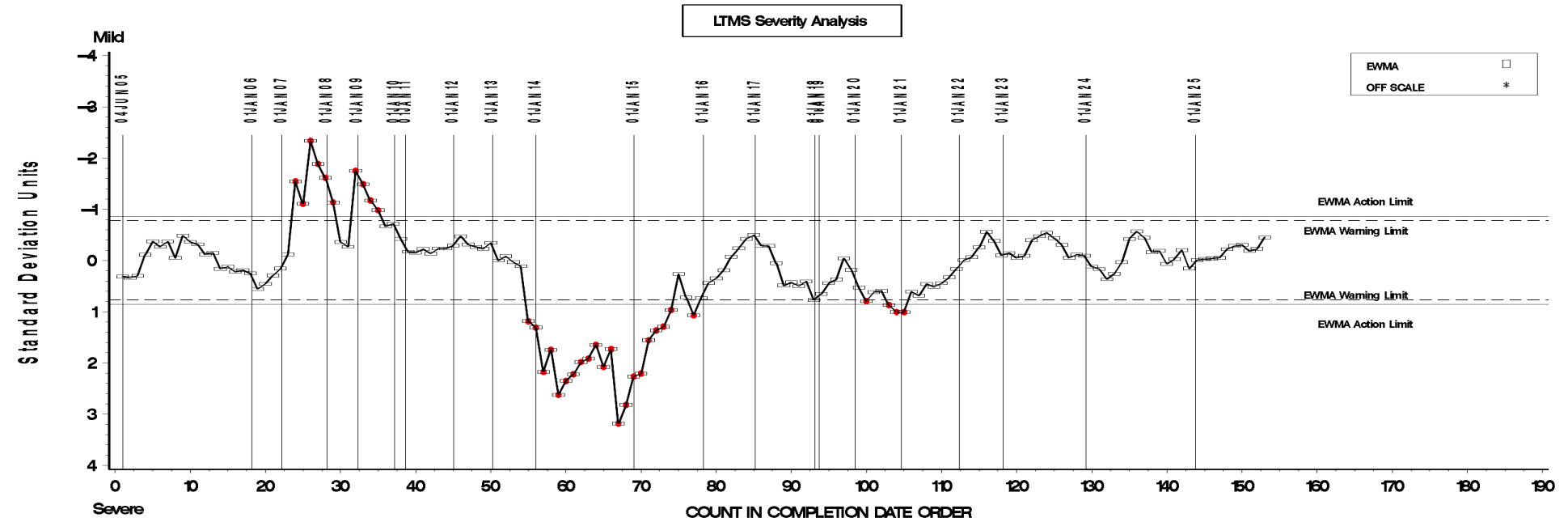
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

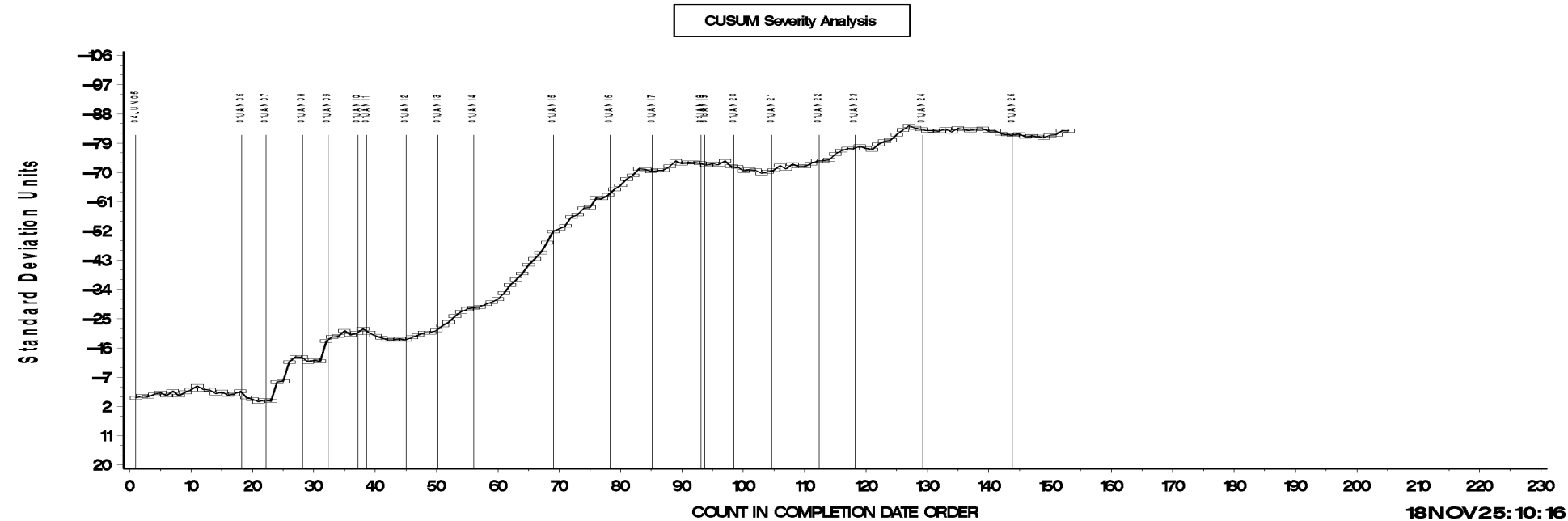
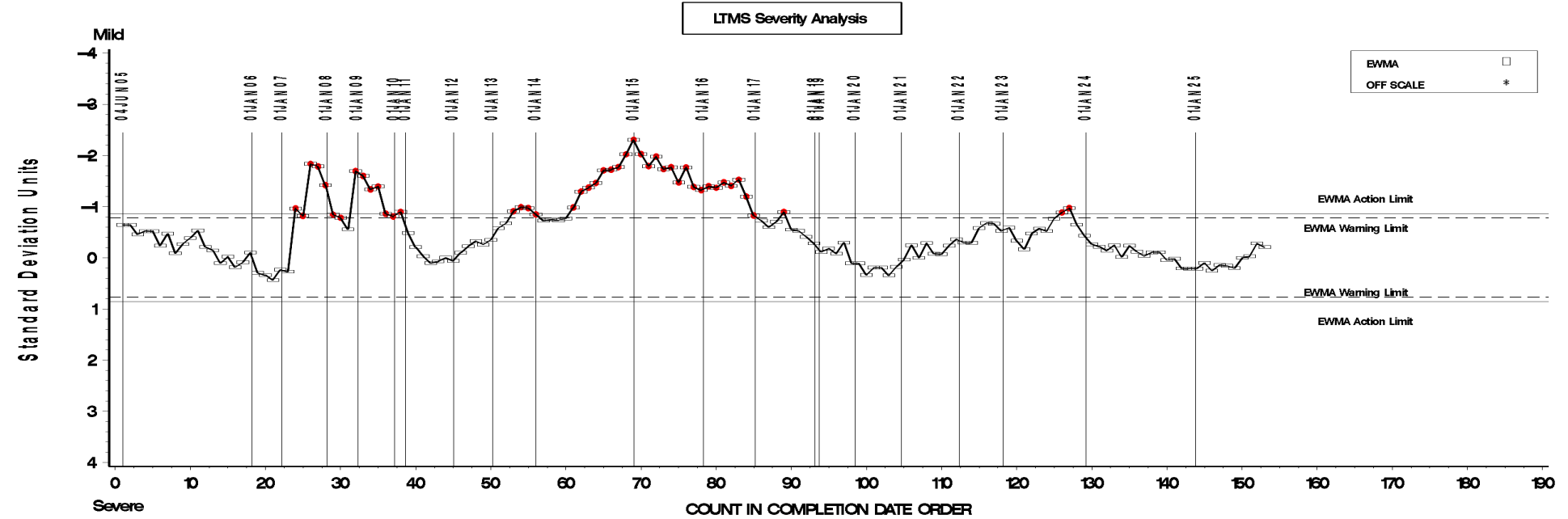
ISB Test Severity

- ▶ ACSW and ATWL are in control.

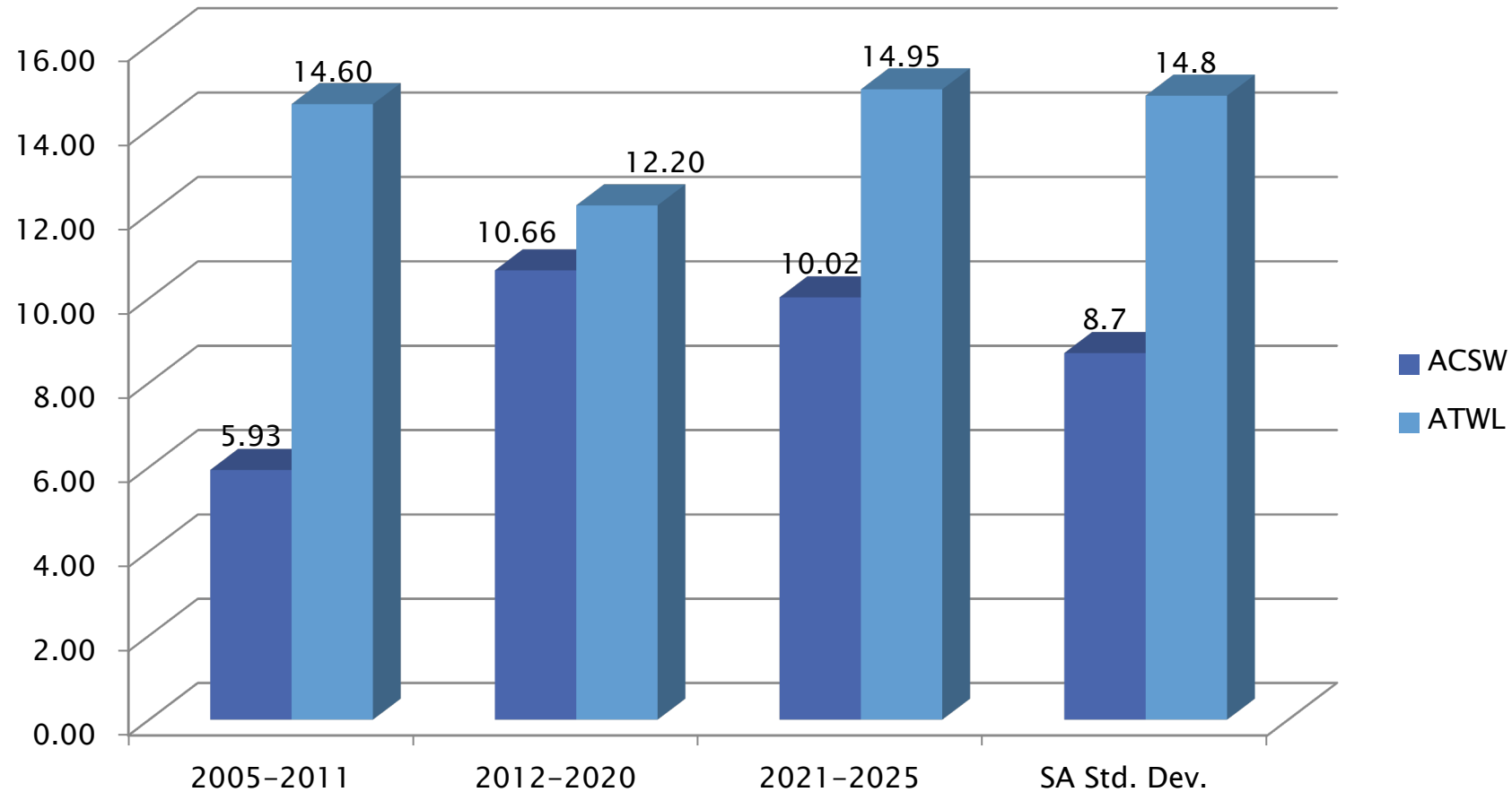
TRANS FINAL AVG CAMSHAFT WEAR



TRANS FINAL AVG TAPPET WEIGHT LOSS



ISB Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



Cummins ISM

»» October 2025

Test Monitoring Center
<https://www.astmtmc.org>



ISM Test Activity

Test Status	Validity Code	#
Acceptable Calibration	AC	1
Failed Calibration	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		1

ISM Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

ISM Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

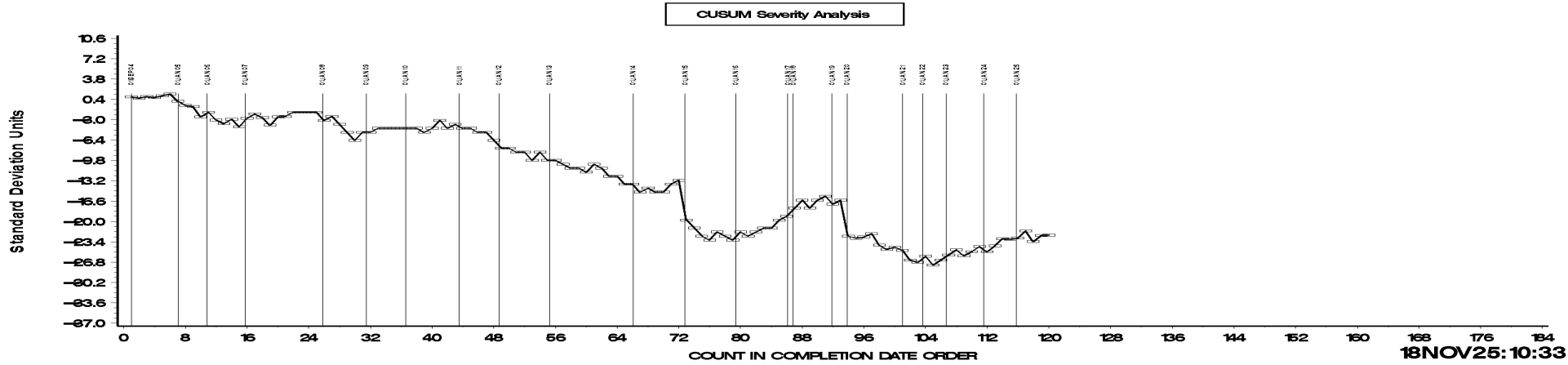
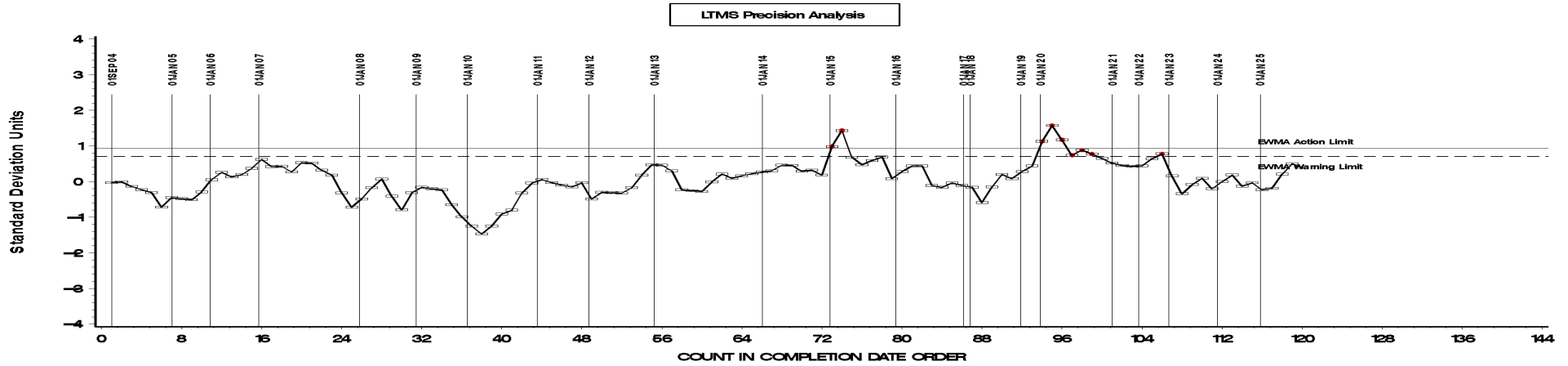
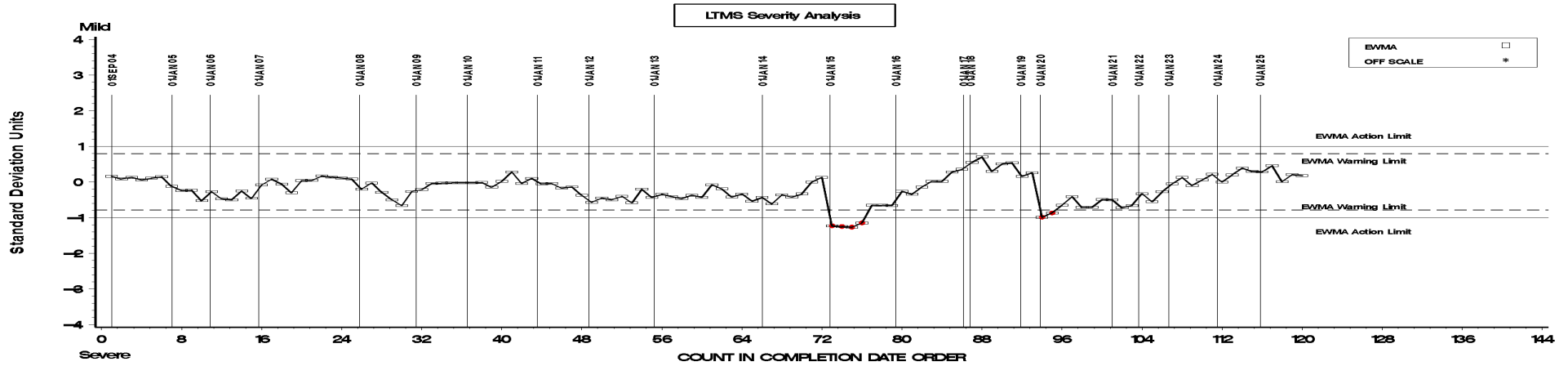
*Invalid and aborted tests

ISM Test Severity

- ▶ IAS is in severity action alarm in the severe direction.
- ▶ All other parameters are in control but FPD nearing severity warning alarm in mild direction.

ISM INDUSTRY OPERATIONALLY VALID DATA

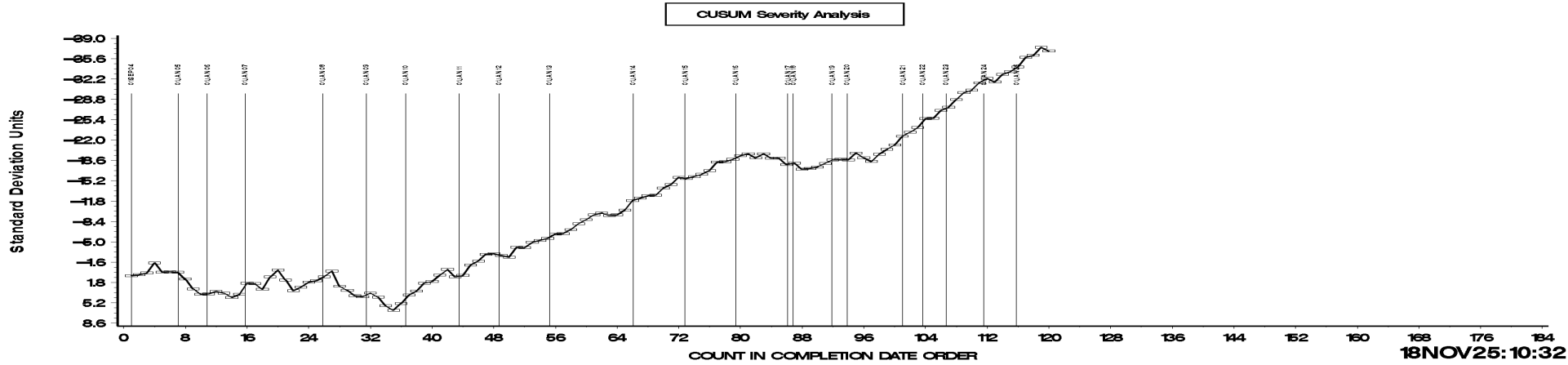
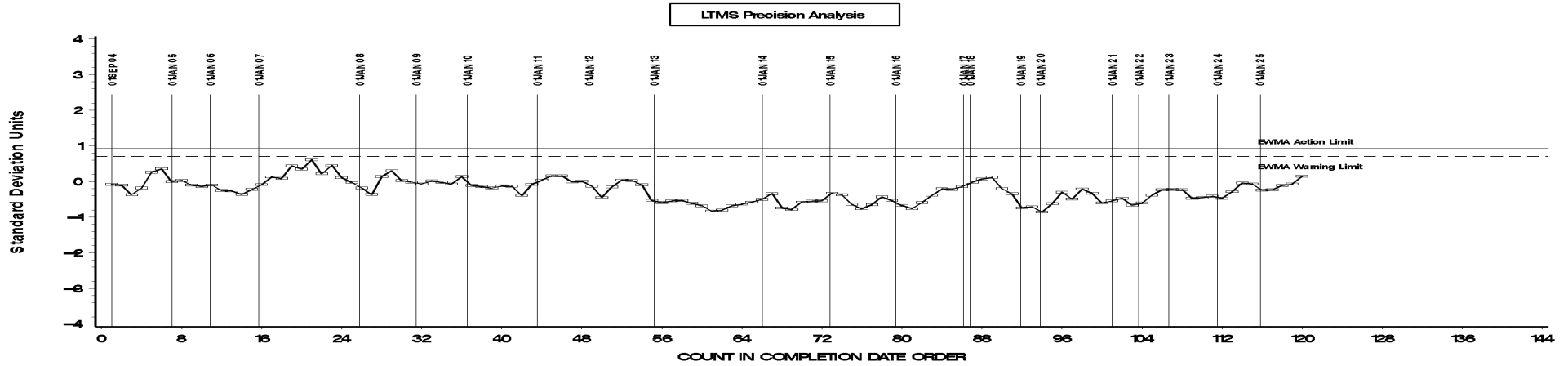
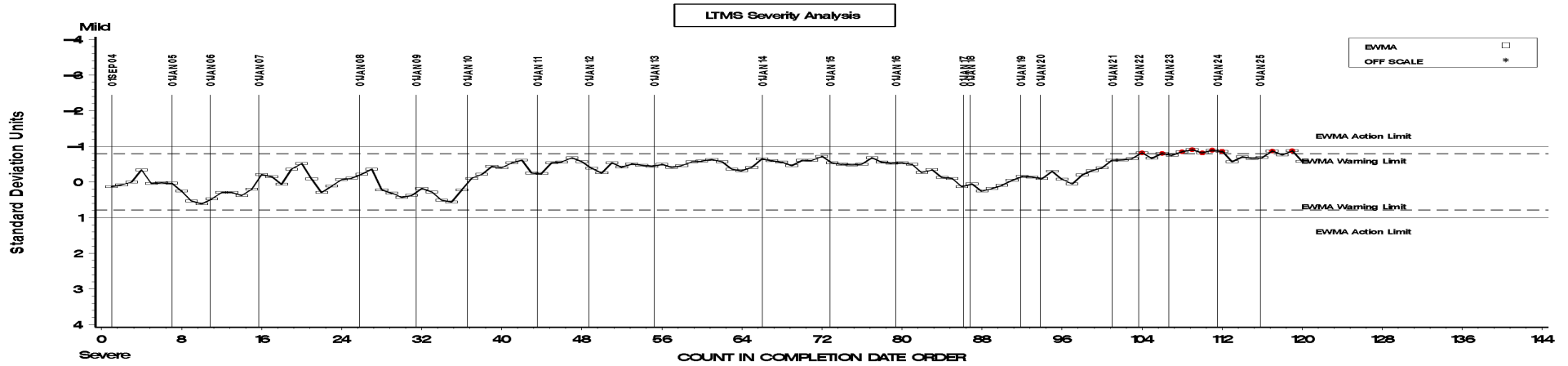
AVERAGE SLUDGE RATING



ISM INDUSTRY OPERATIONALLY VALID DATA



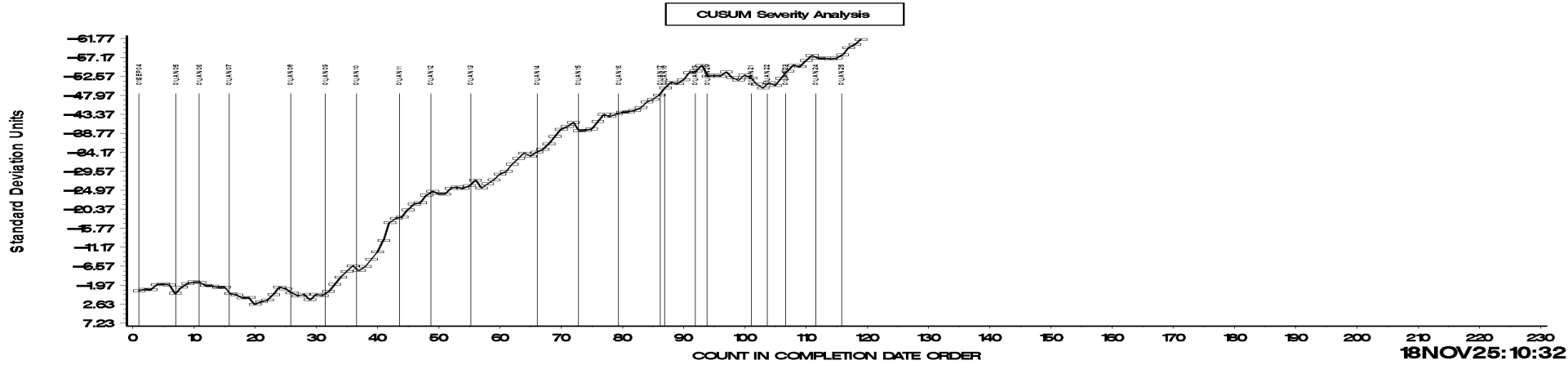
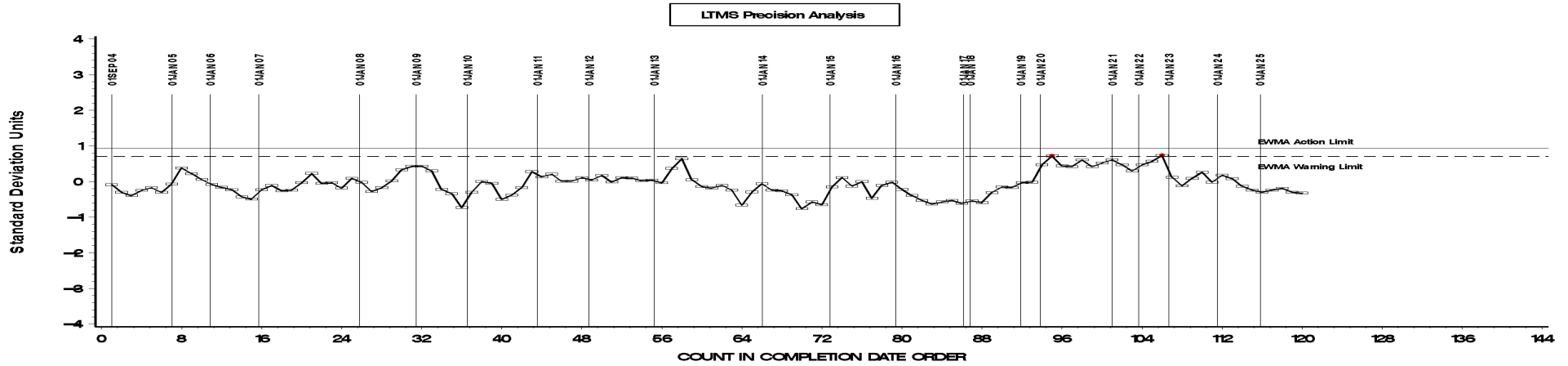
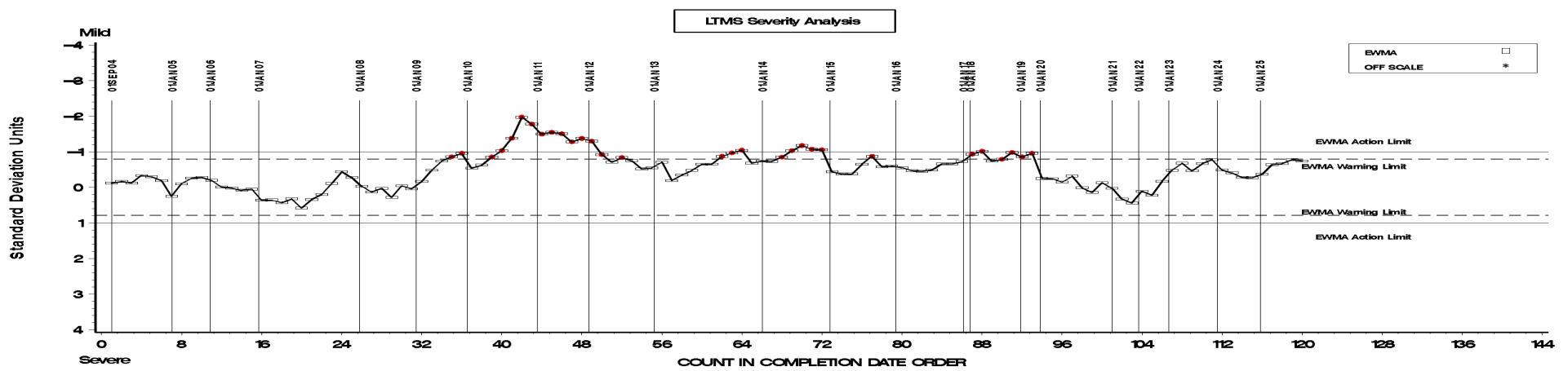
CROSSHEAD WEIGHT LOSS ADJUSTED TO 3.9 % SOOT



ISM INDUSTRY OPERATIONALLY VALID DATA

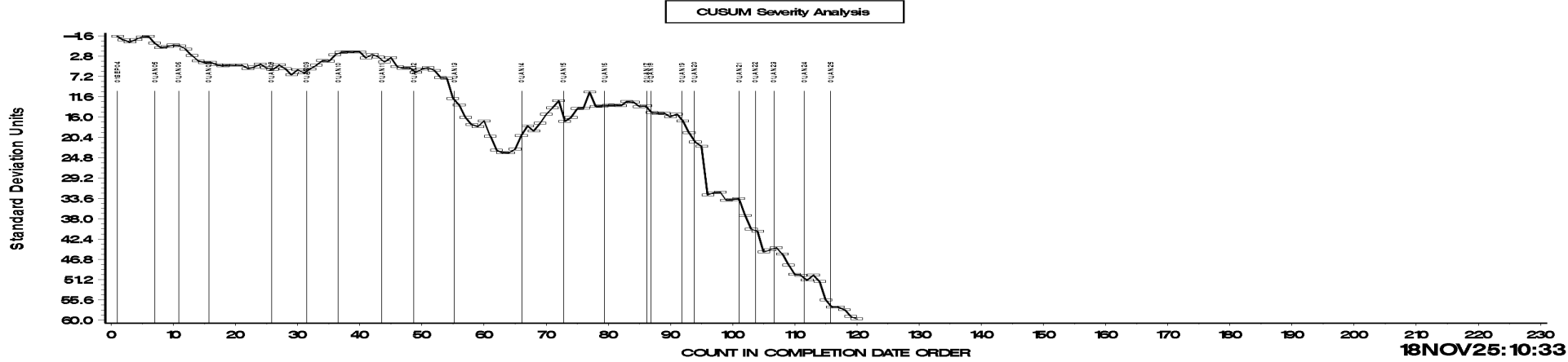
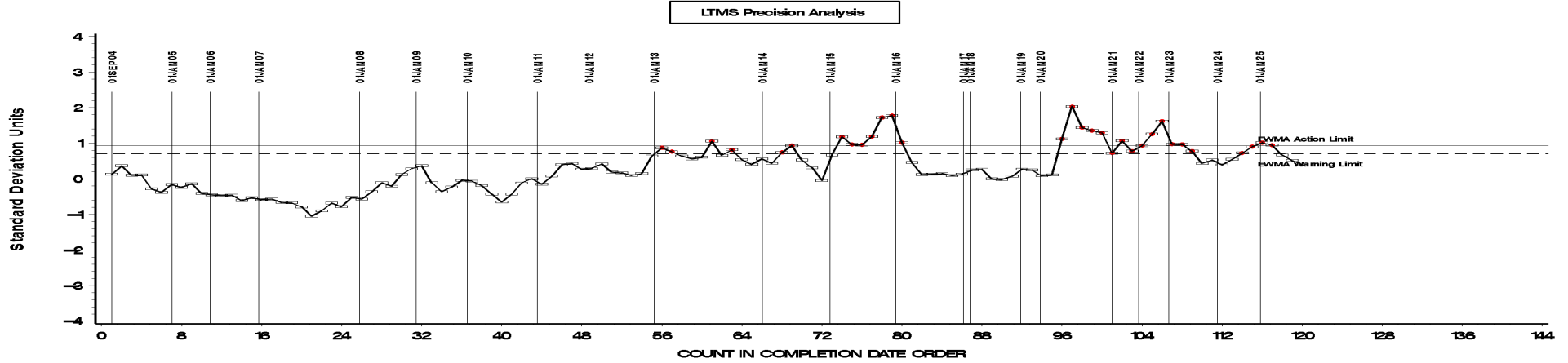
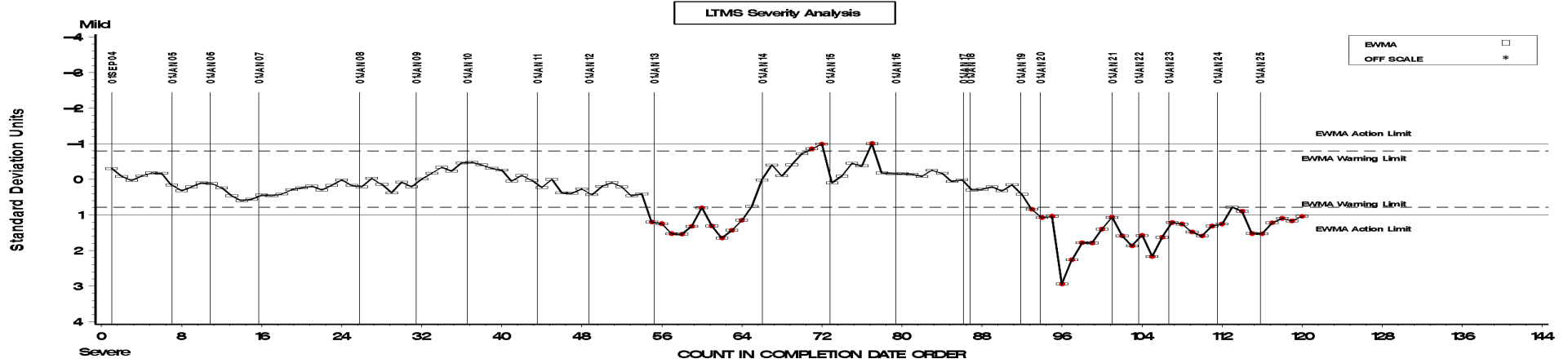


OIL FILTER DELTA PRESSURE

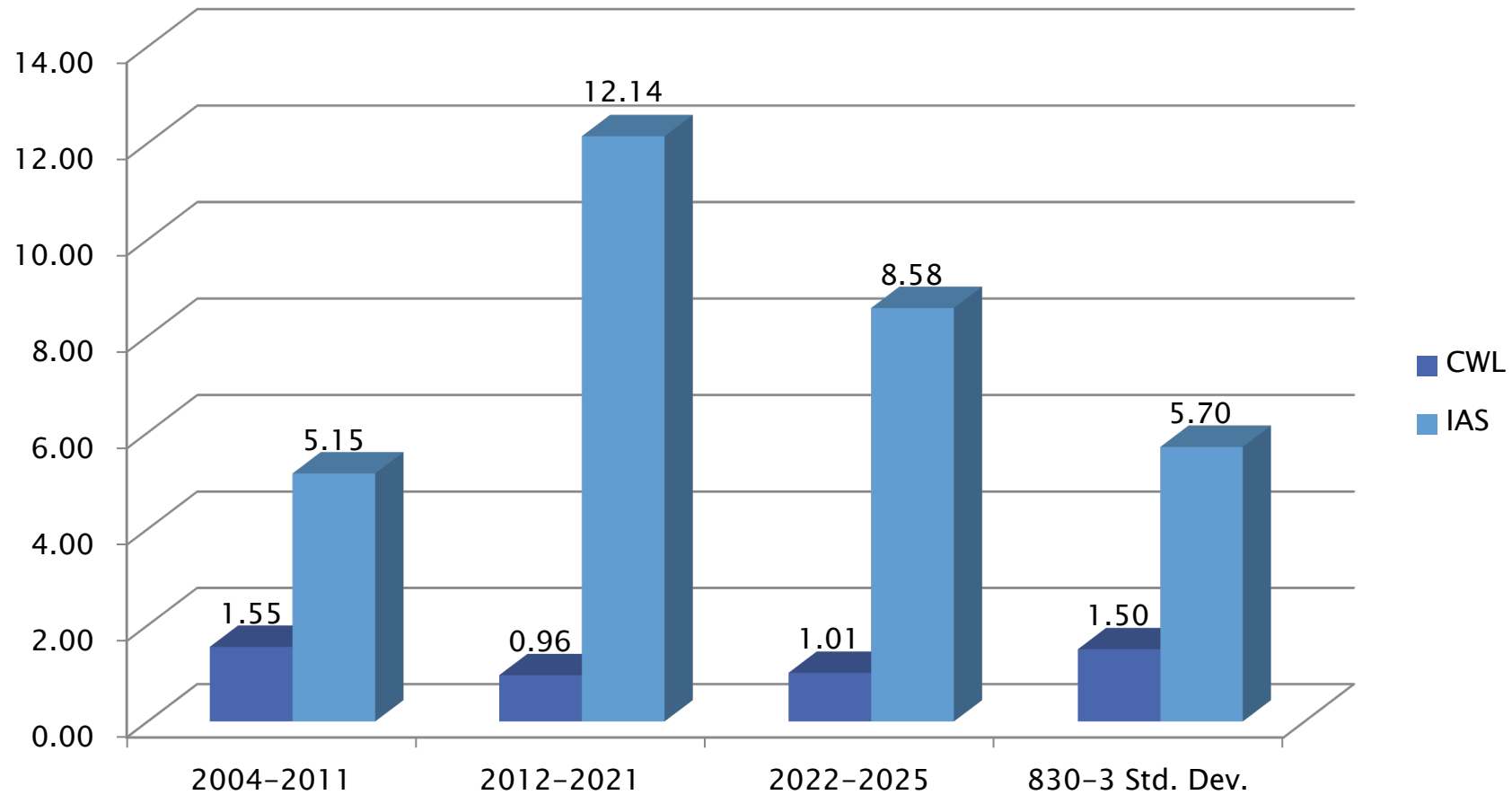


ISM INDUSTRY OPERATIONALLY VALID DATA

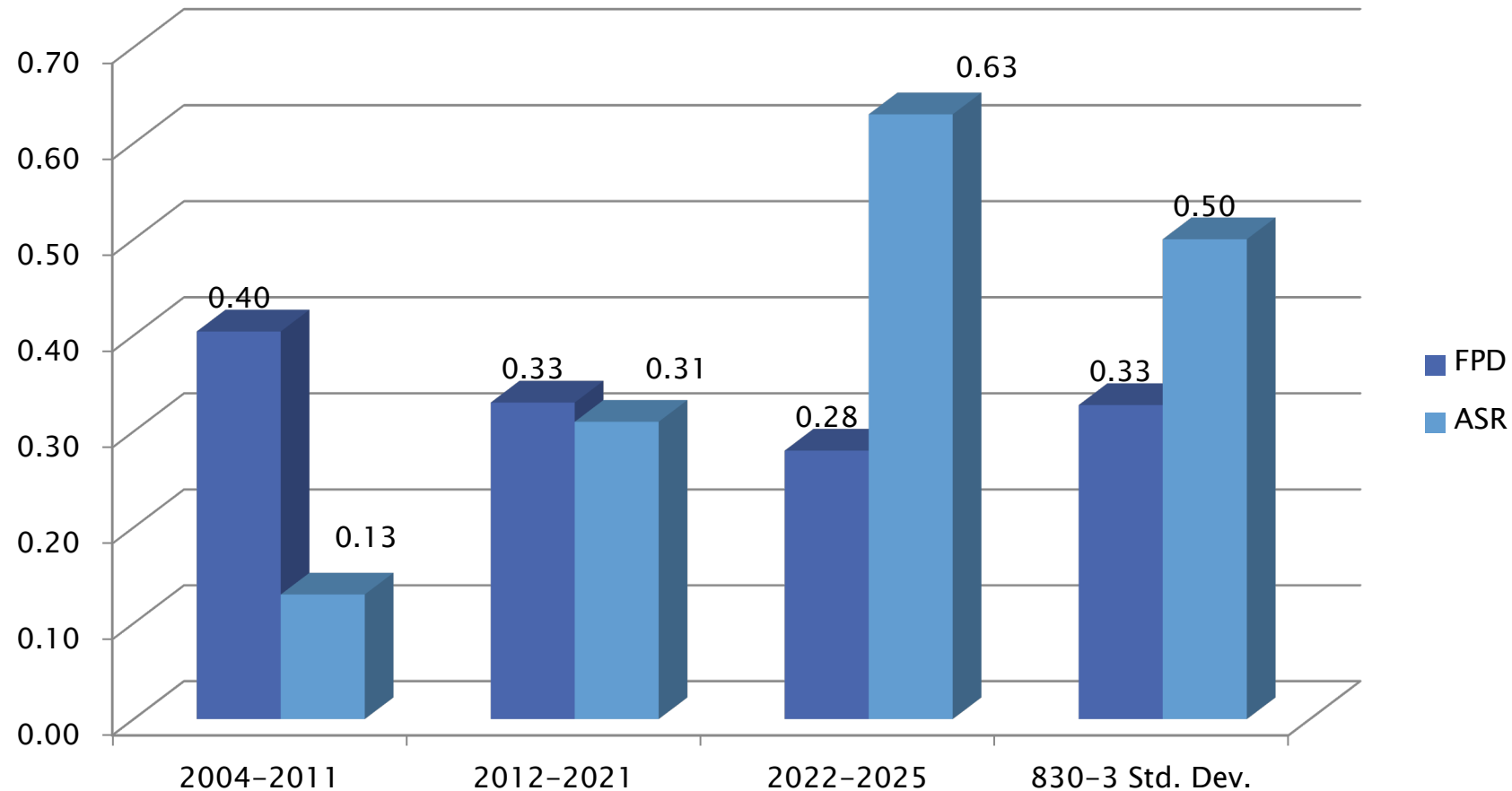
INJECTOR SCREW WEIGHT LOSS ADJUSTED TO 3.9% SOOT



ISM Precision Estimates



ISM Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



Cummins ISBV108

➤➤ October 2025

Test Monitoring Center
<https://www.astmtmc.org>



ISBV108 Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	6
Failed Calibration Test	OC	1
Operationally Invalid	LC	1
Aborted	XC	0
Total		8

ISBV108 Failed Tests

Failed Parameter	Number of Tests
El Level 3 SOOT Mild	1
Total	1

ISBV108 Lost Tests*

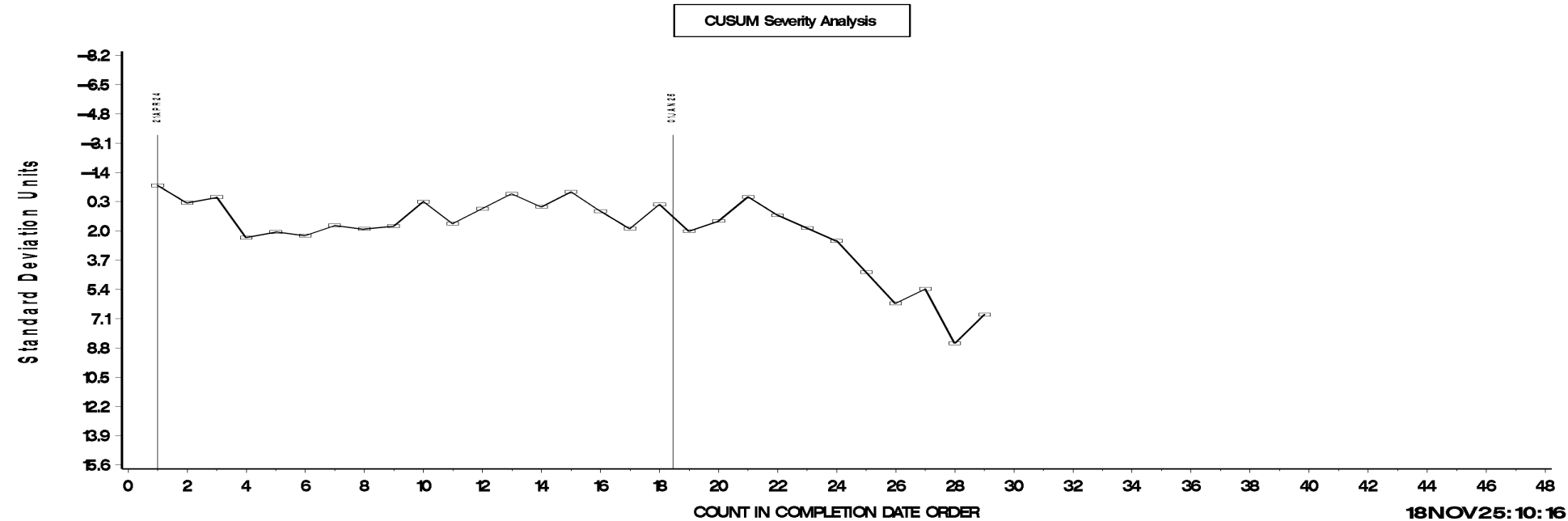
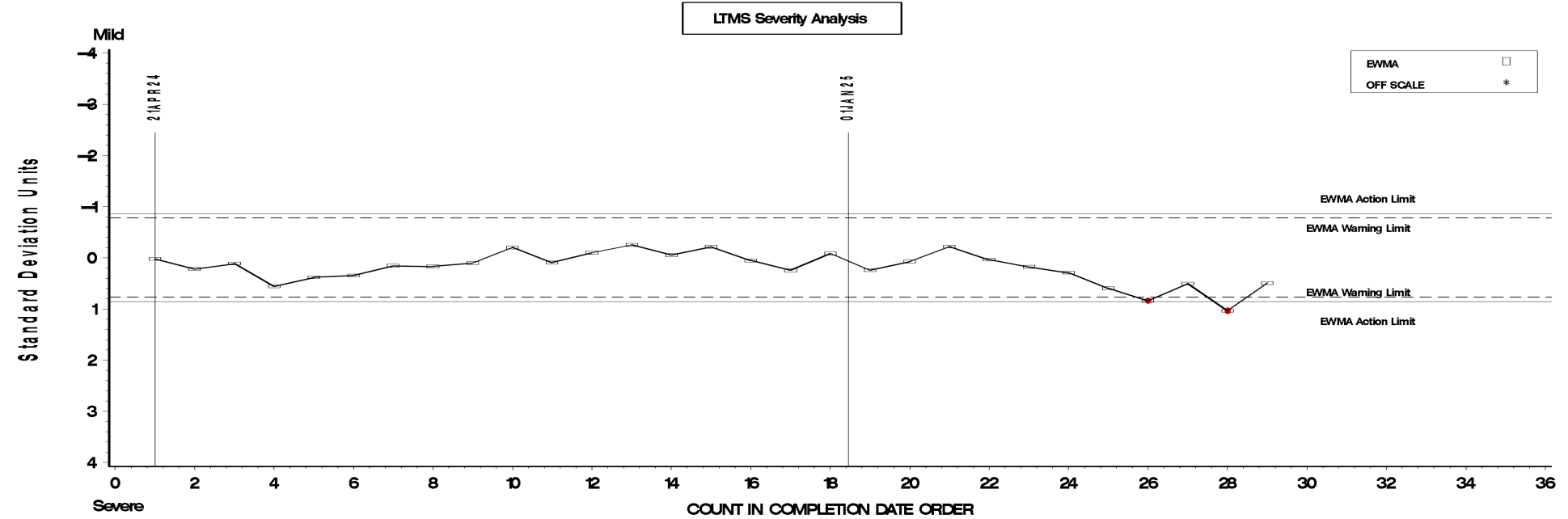
Status	Cause	#
Invalid	Missed 108 Hour Soot Window	1
Aborted	No aborted tests	0
Total		1

*Invalid and aborted tests

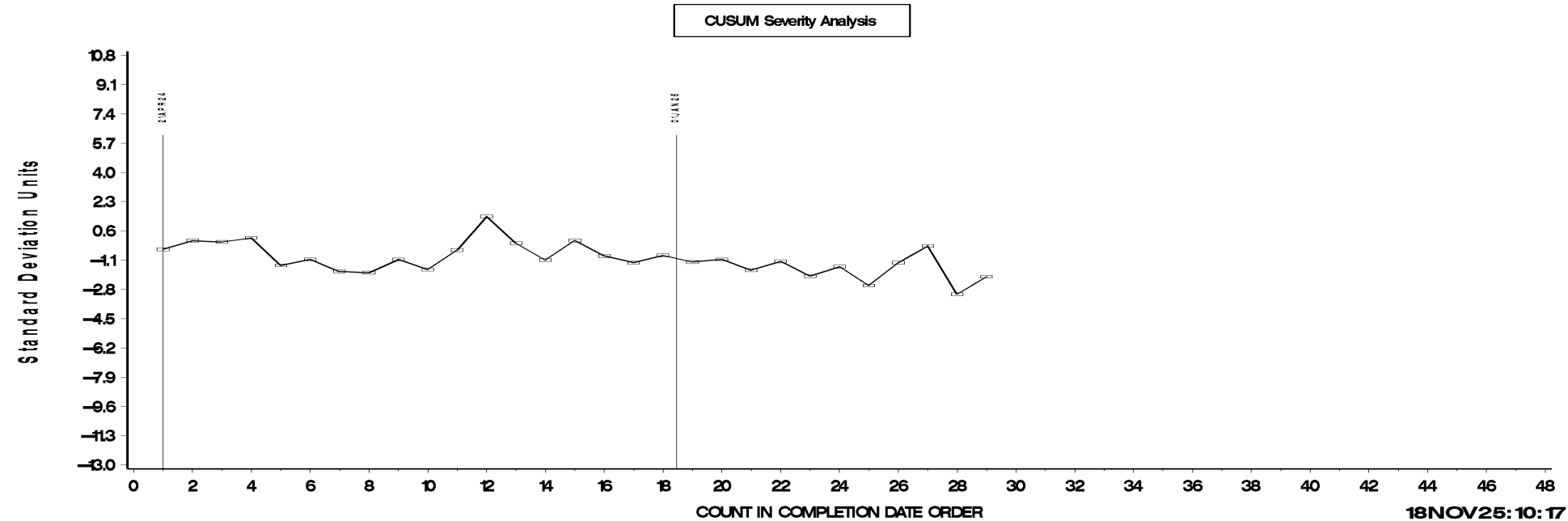
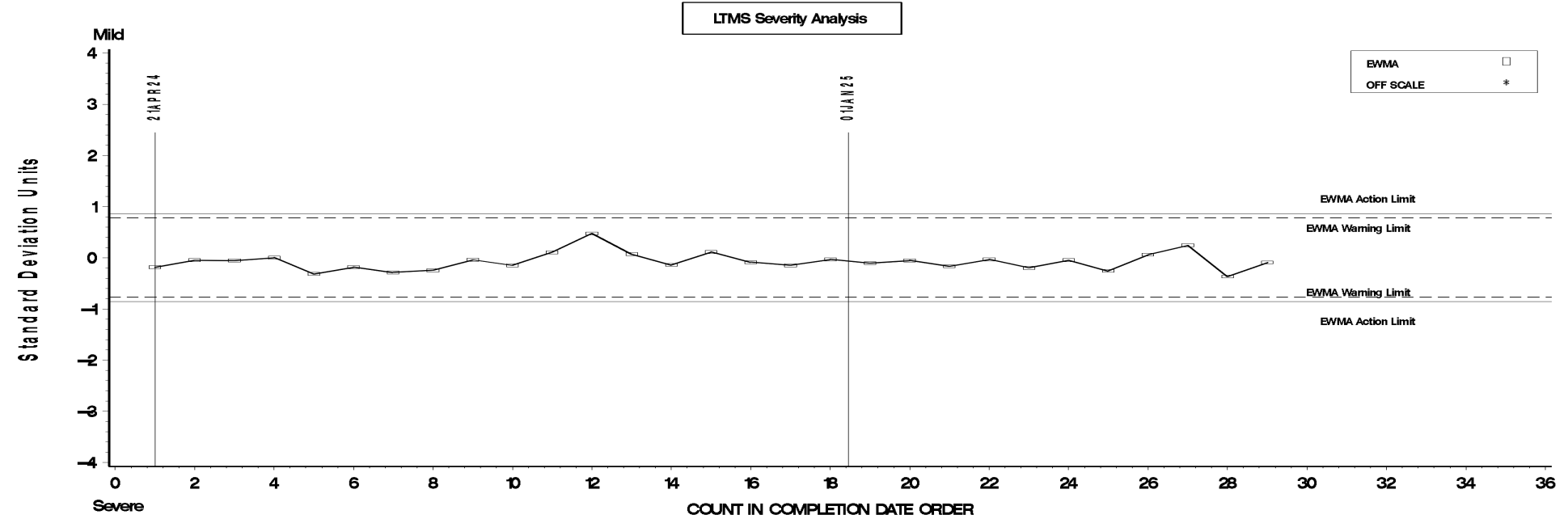
ISBV108 Test Severity

- ▶ All parameters are in control

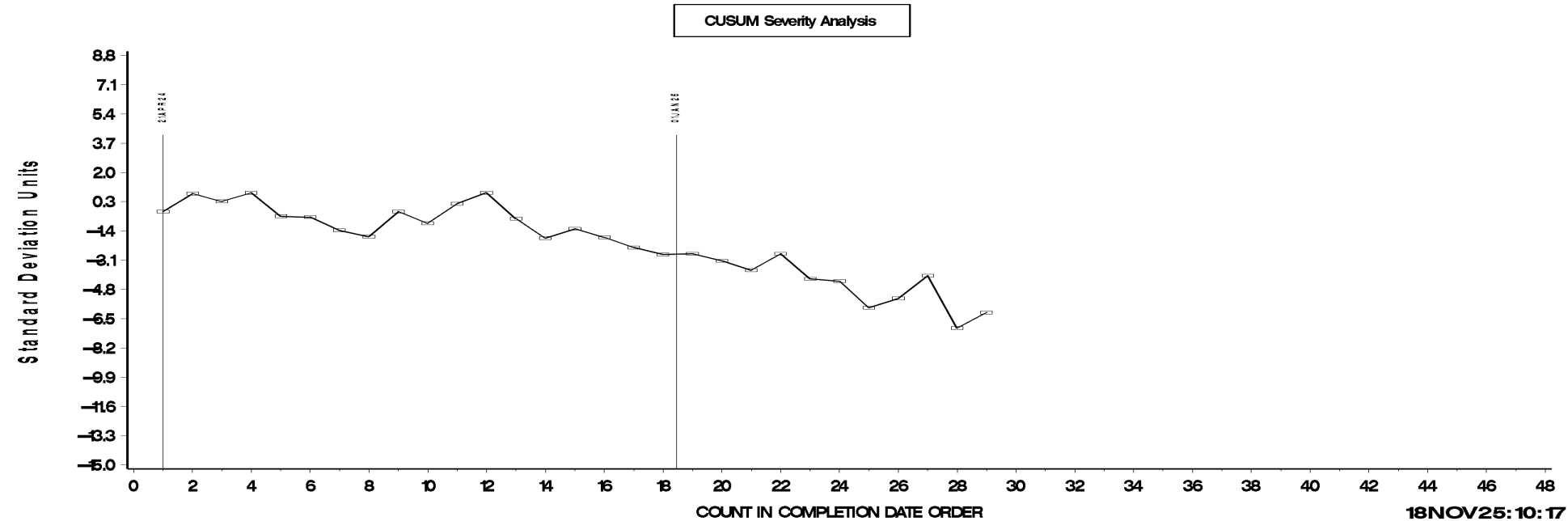
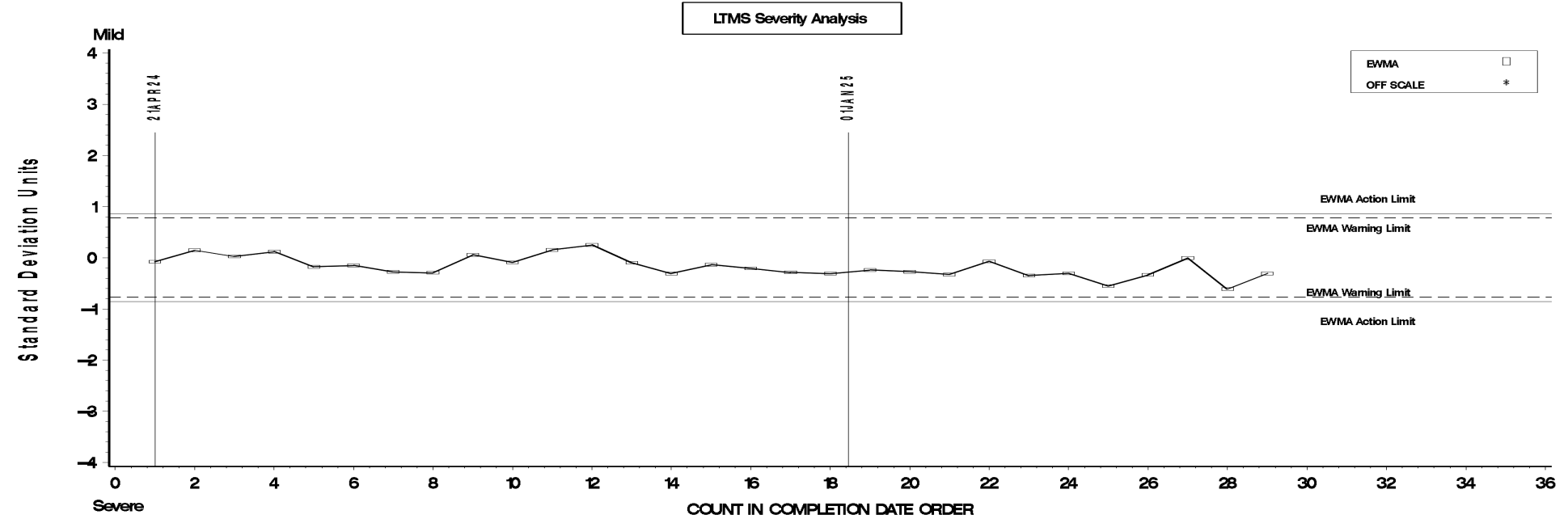
FINAL MRV VISCOSITY [NM, SOLID, FROZEN, <, >]



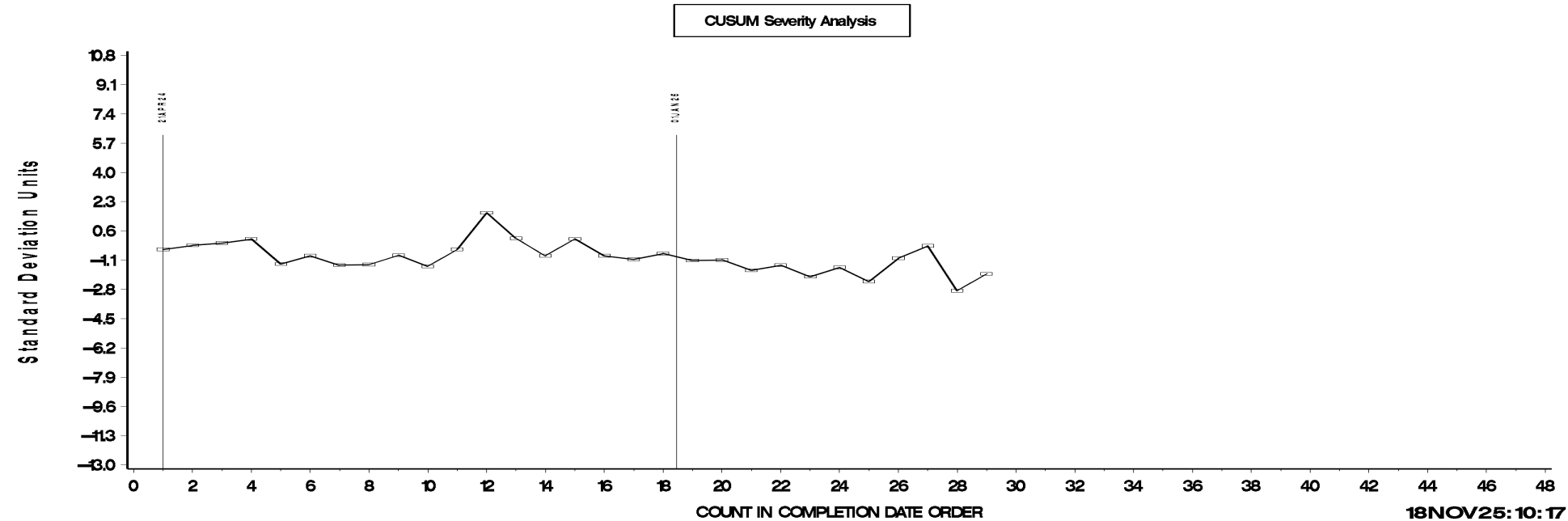
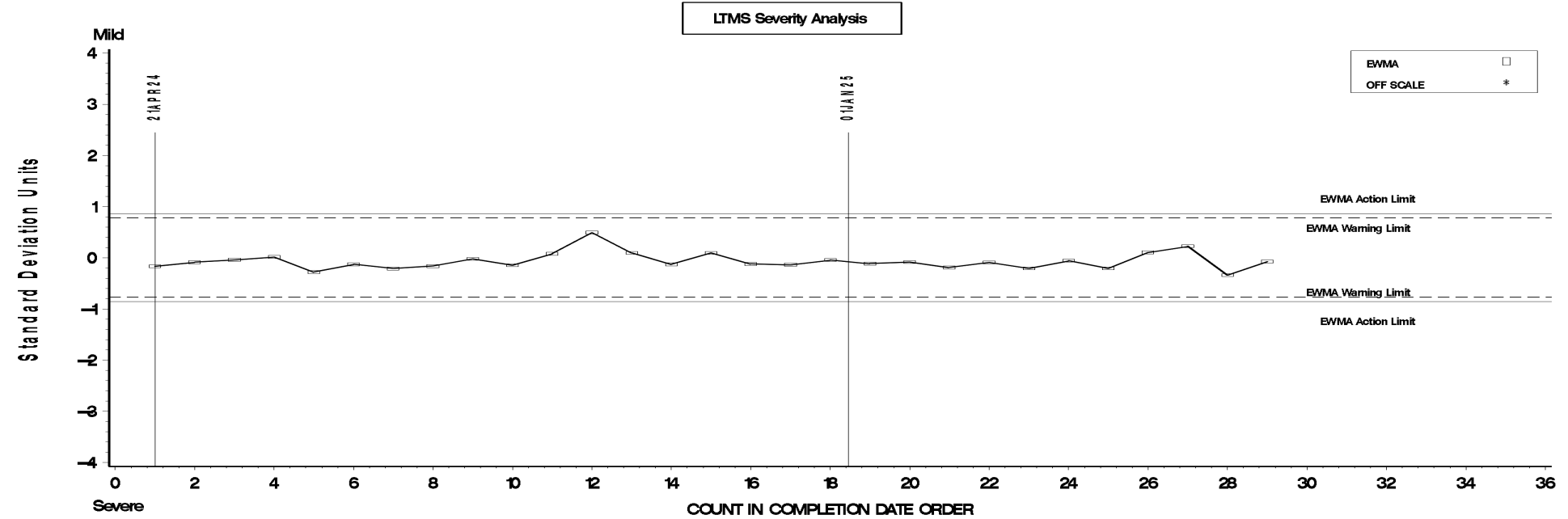
FINAL SOOT % AT 12 cSt [$>$]



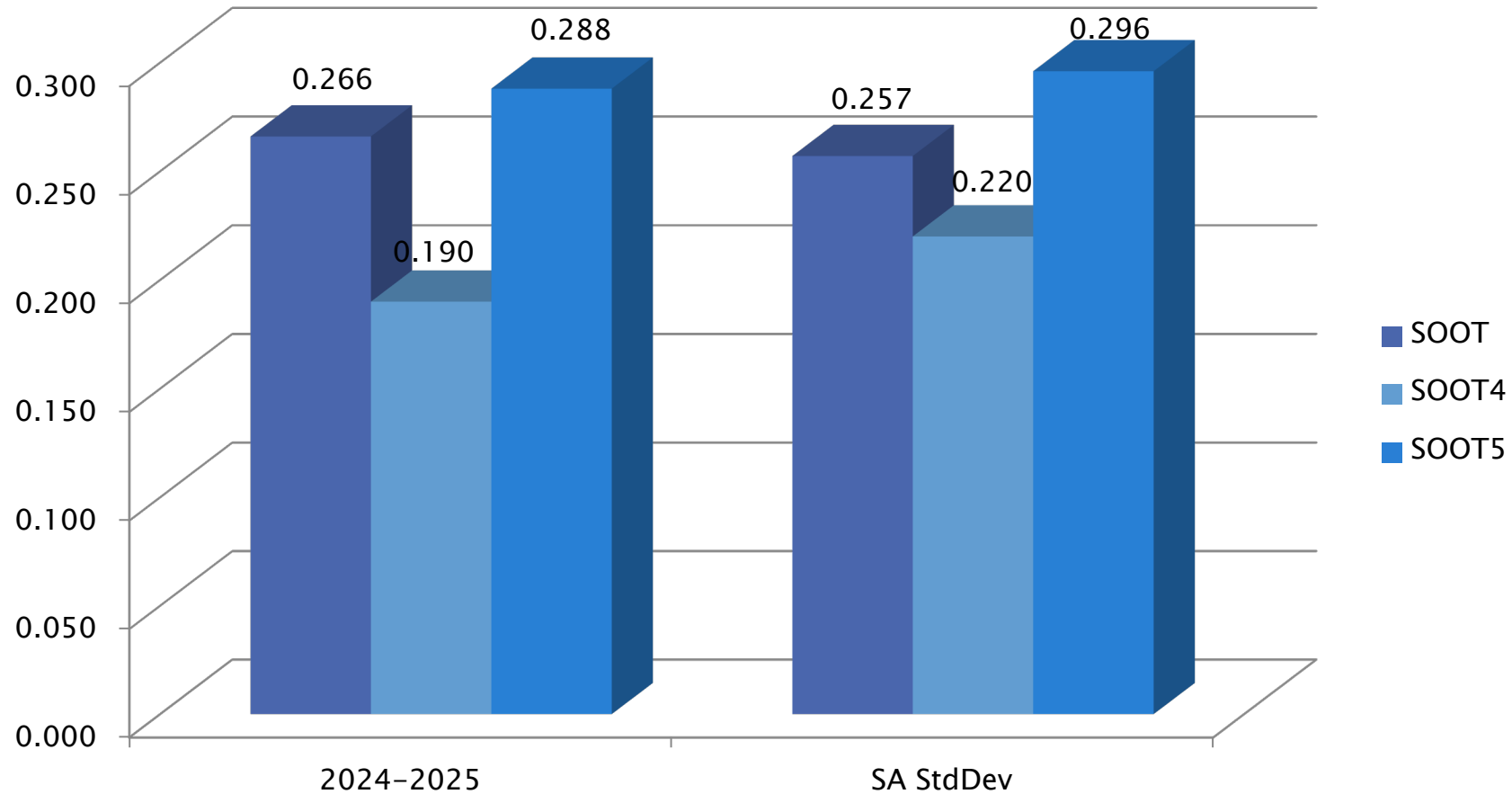
FINAL SOOT % AT 4 cSt [>]



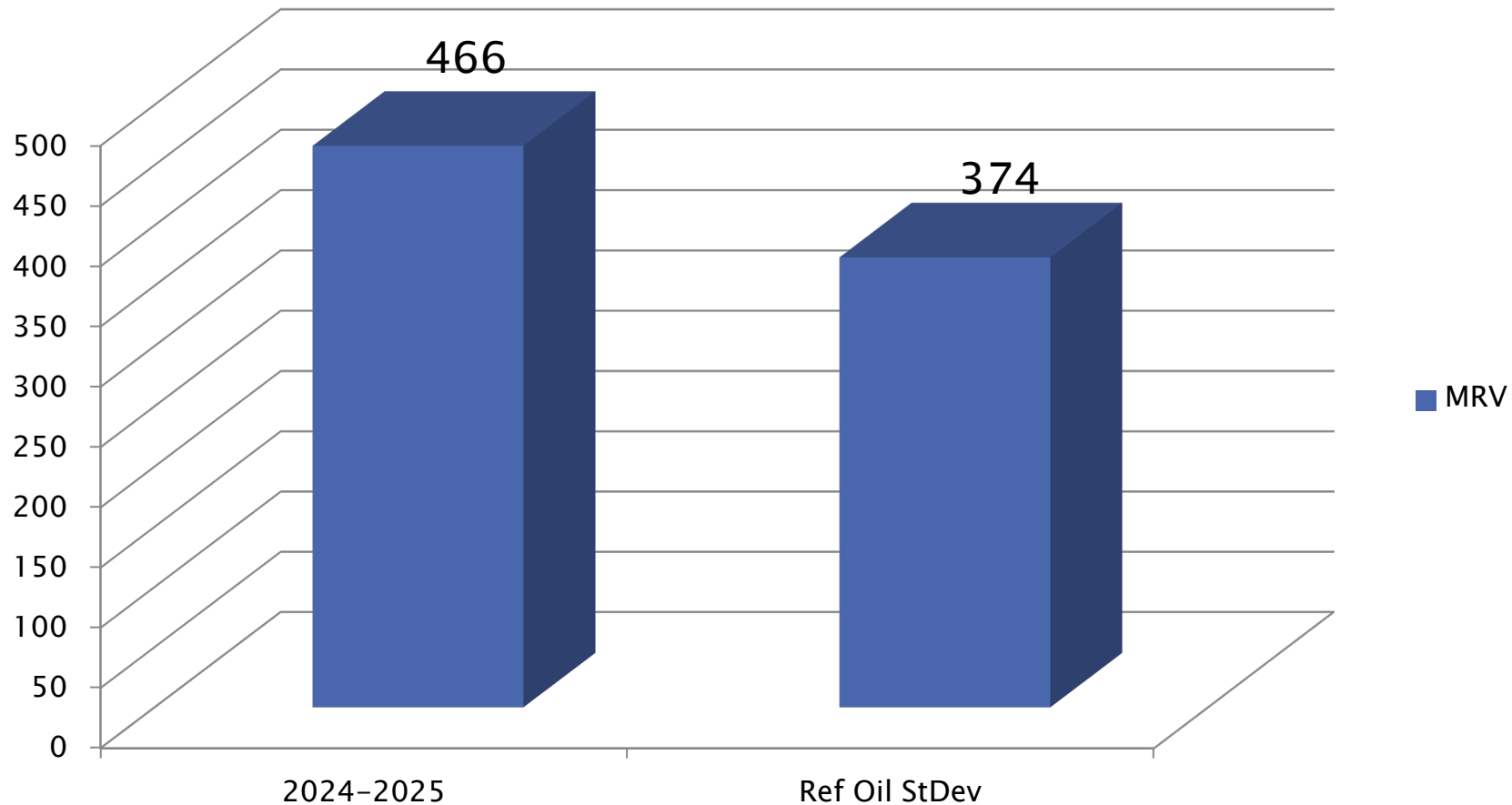
FINAL SOOT % AT 15 cSt [>]



ISBV108 Precision Estimates



ISBV108 Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



Cummins ISBV156

»» October 2025

Test Monitoring Center
<https://www.astmtmc.org>



ISBV1 56 Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	7
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		7

ISBV1 56 Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

ISBV1 56 Lost Tests*

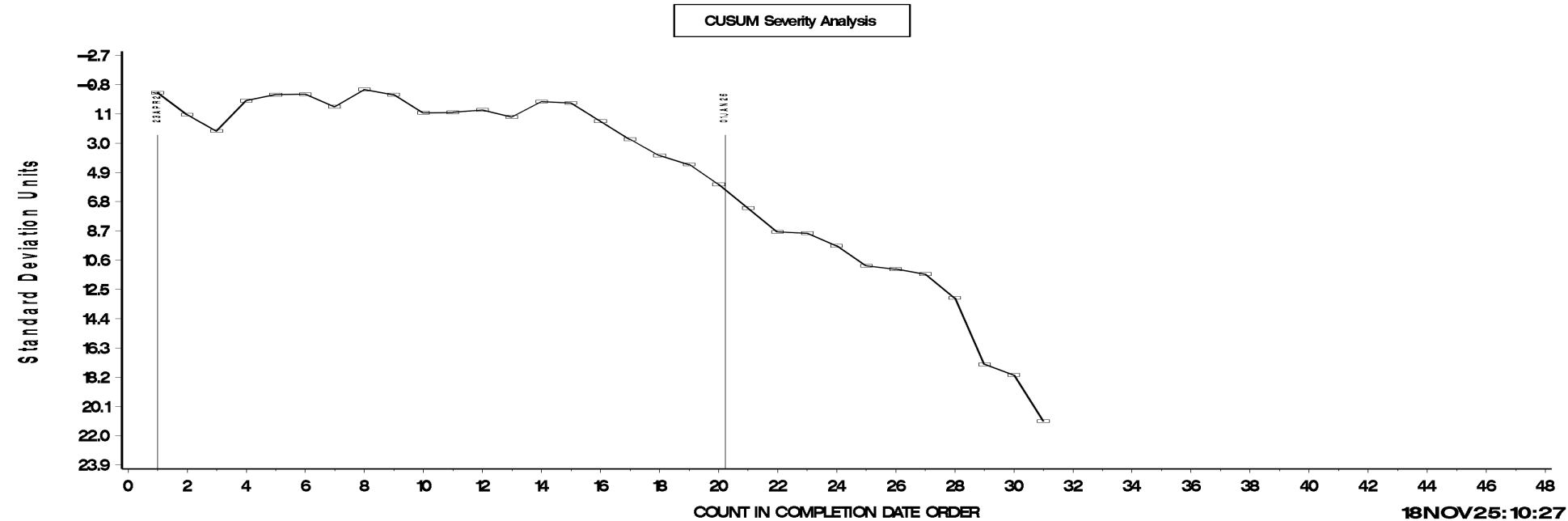
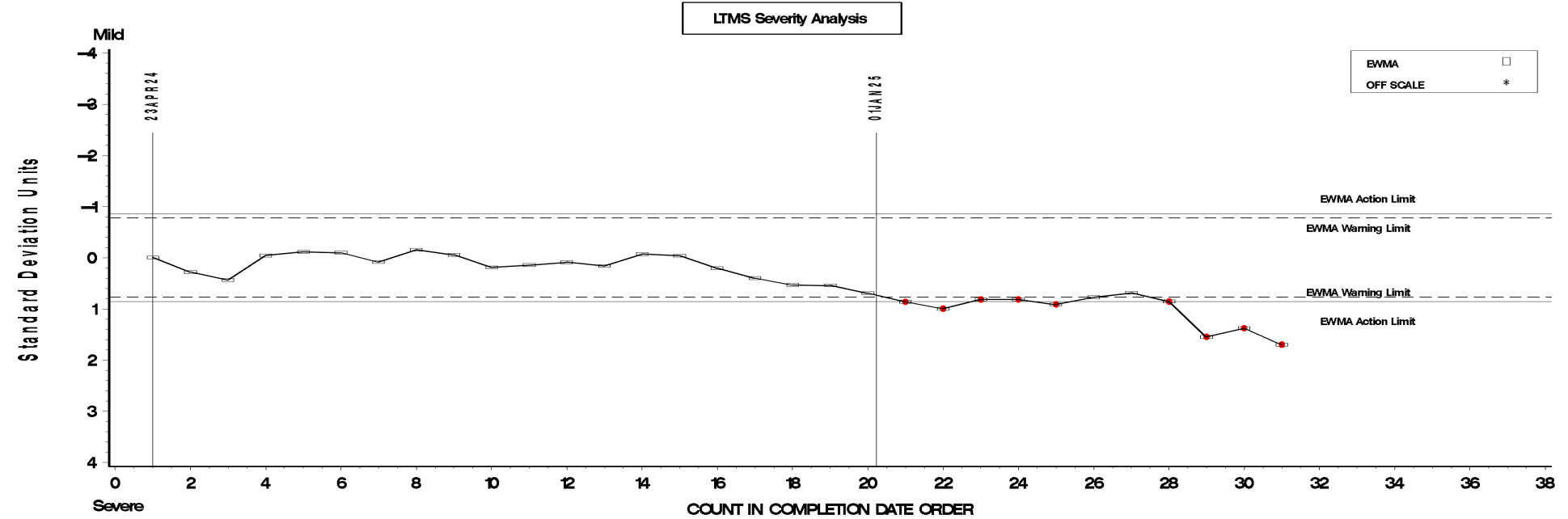
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

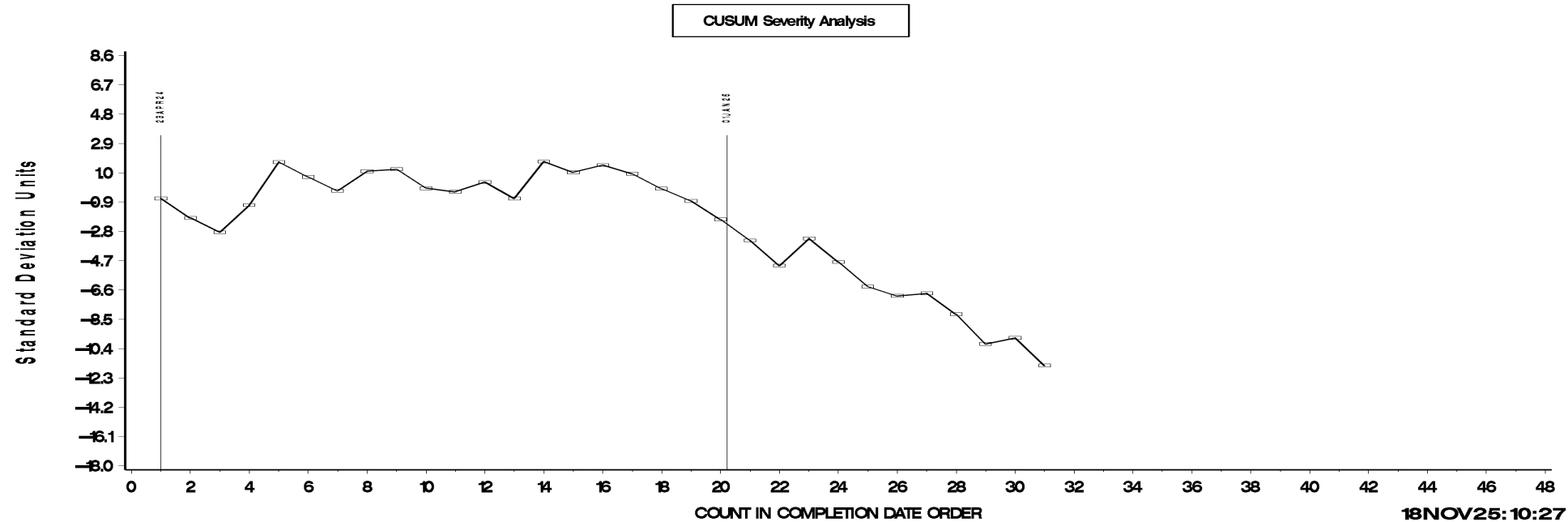
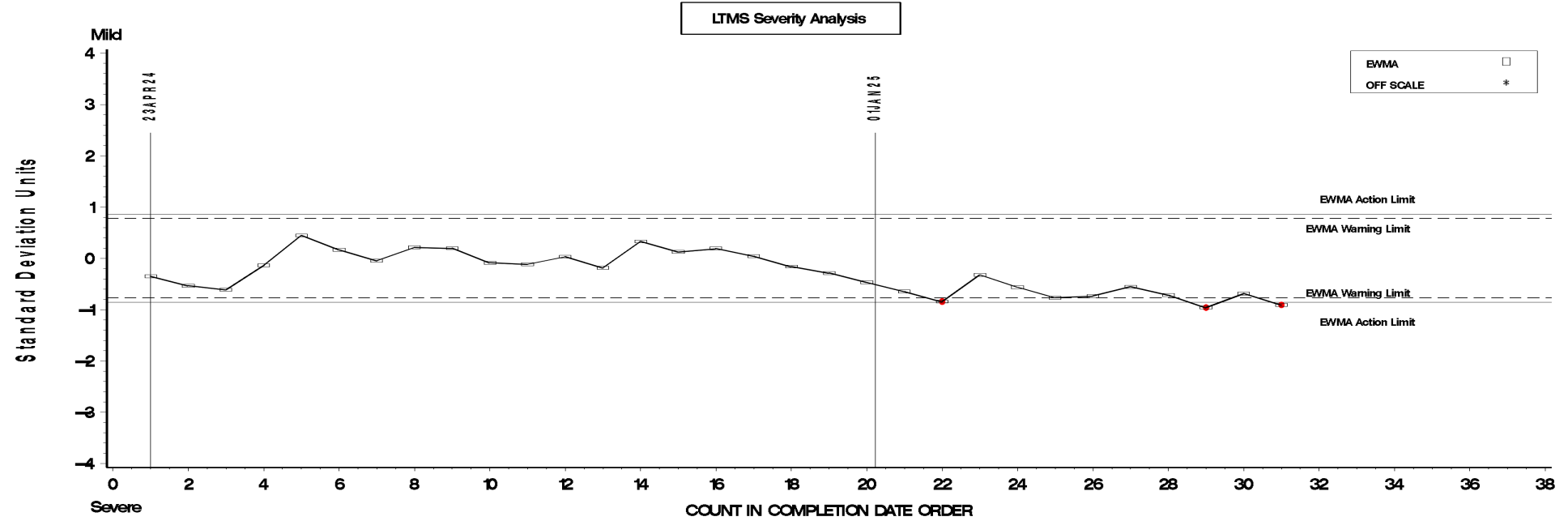
ISBV1 56 Test Severity

- ▶ All parameters are in severity action alarm in the severe direction.

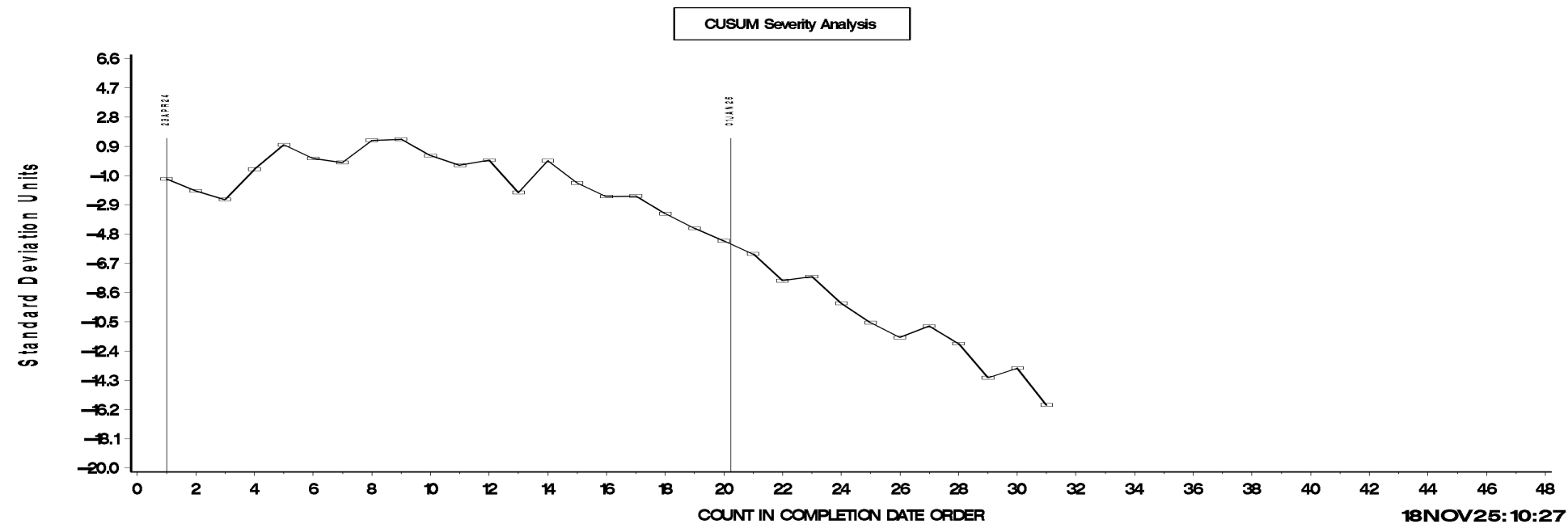
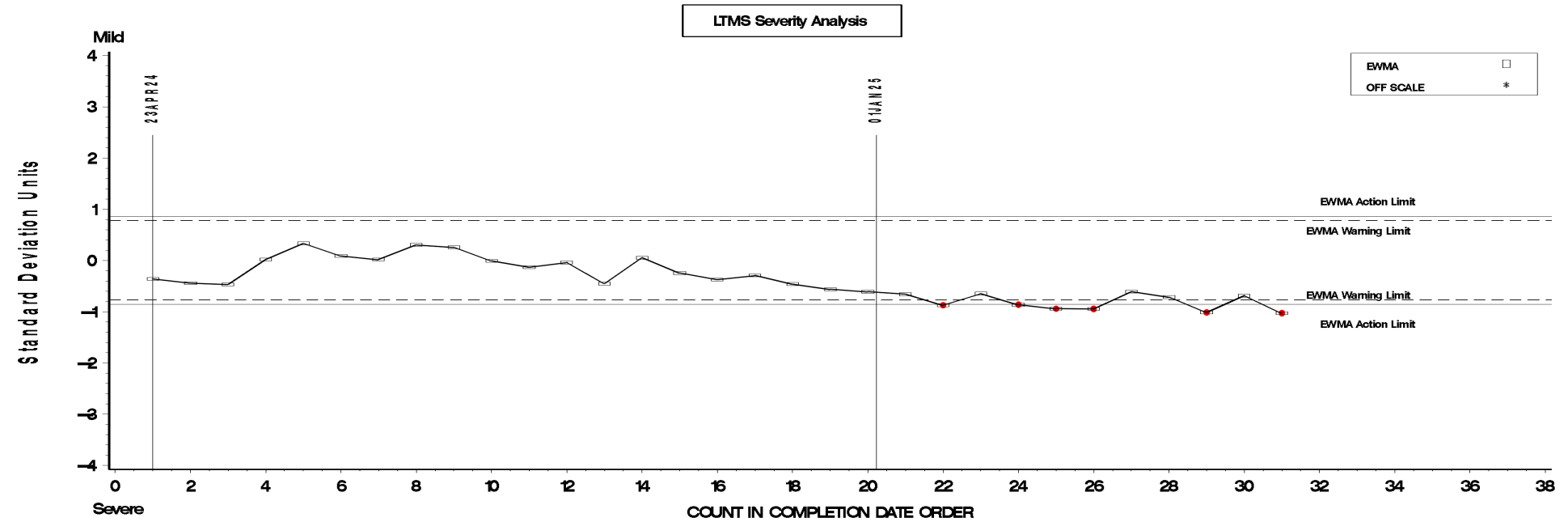
FINAL MRV VISCOSITY [NM, SOLID, FROZEN, <, >]



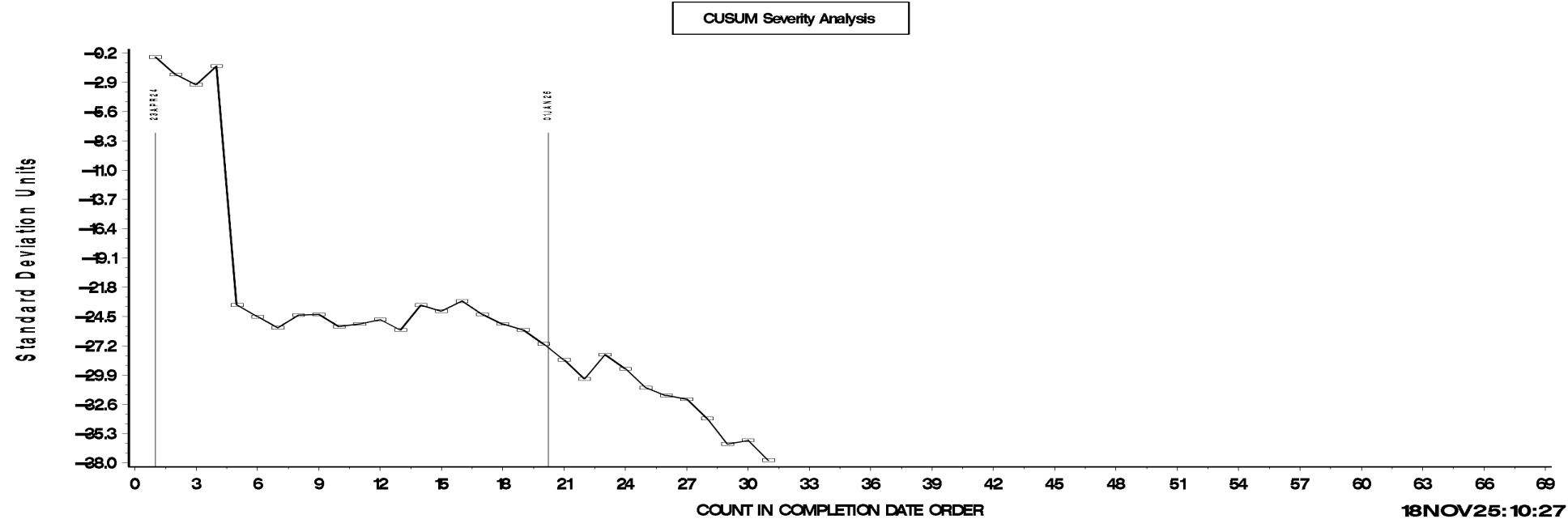
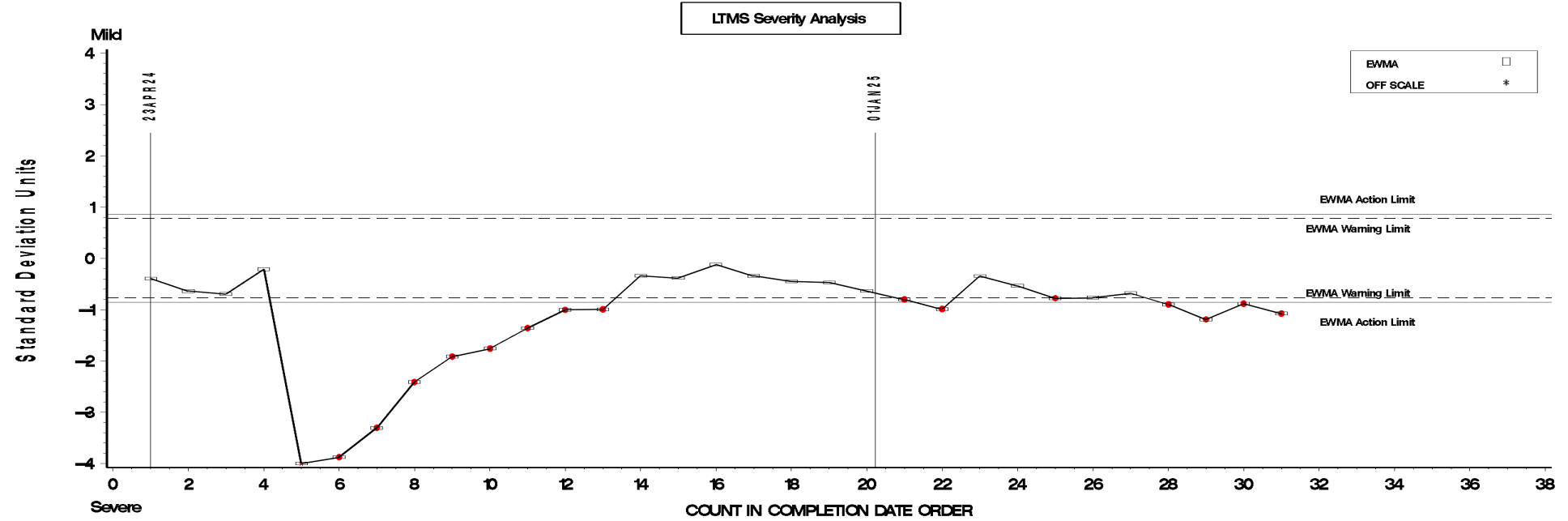
FINAL SOOT % AT 12 cSt [>]



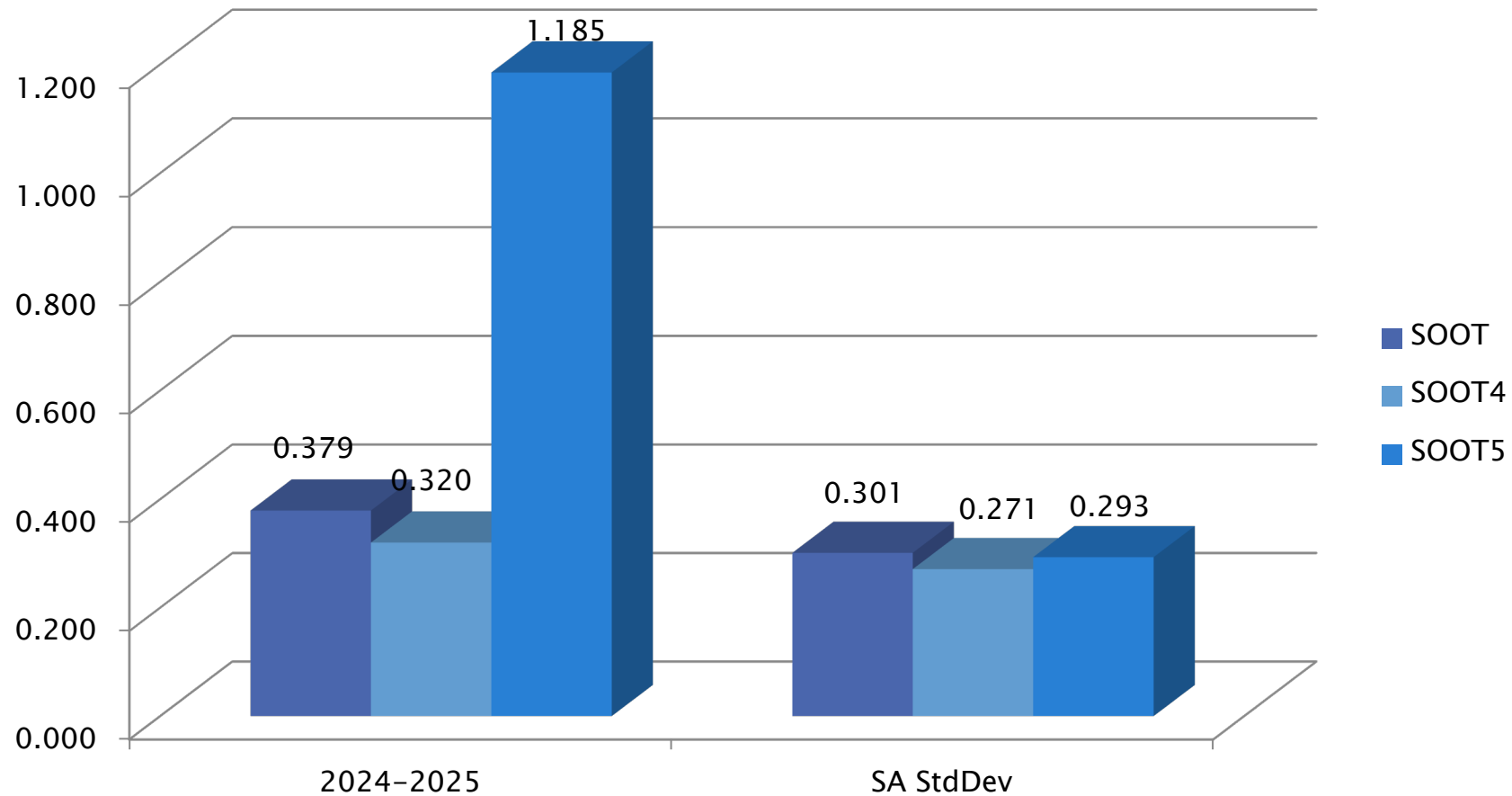
FINAL SOOT % AT 4 cSt [>]



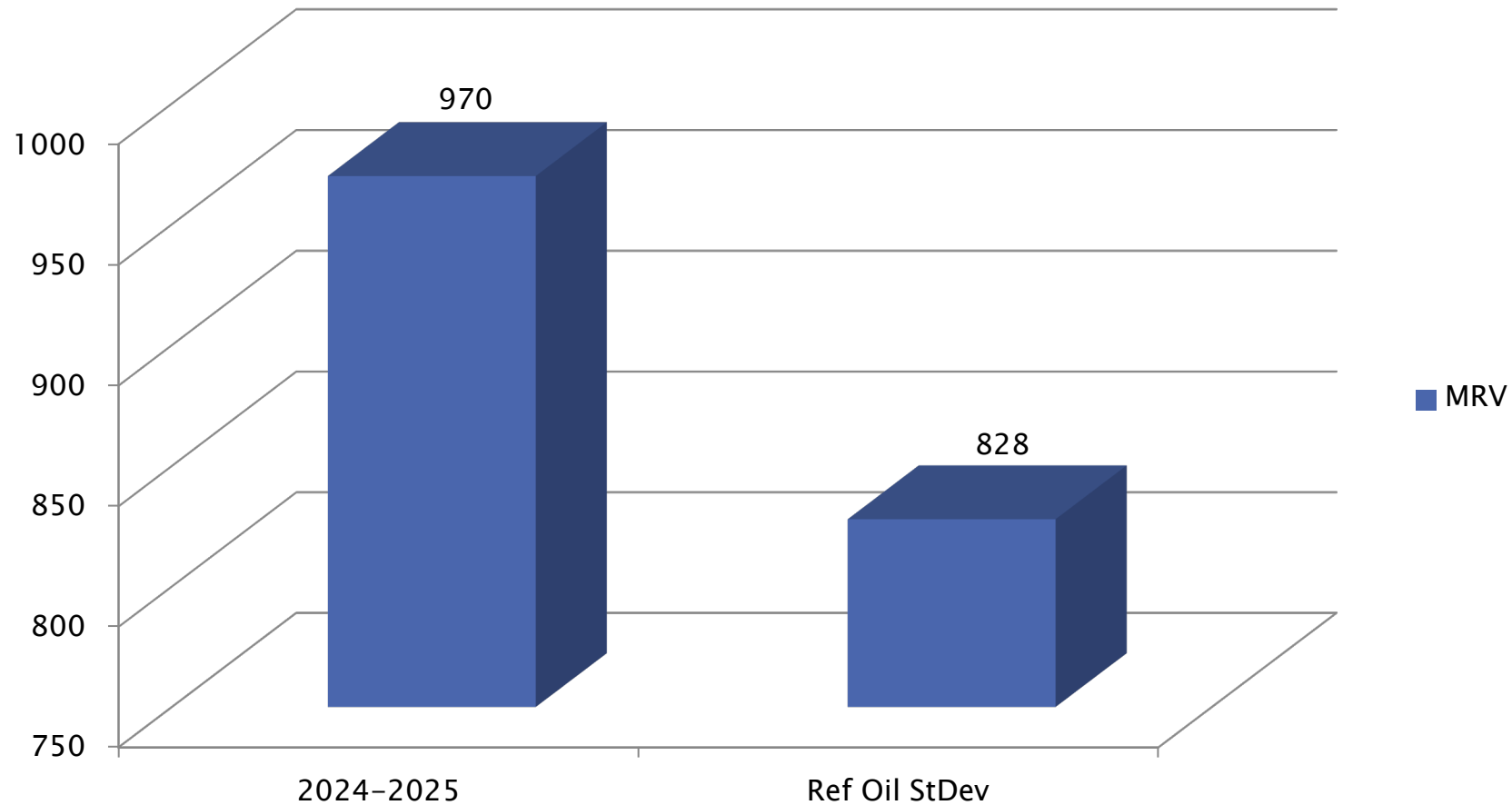
FINAL SOOT % AT 15 cSt [>]



ISBV1 56 Precision Estimates



ISBV1 56 Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



RFWT

»» October 2025

Test Monitoring Center
<https://www.astmtmc.org>



RFWT Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		0

RFWT Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

RFWT Lost Tests*

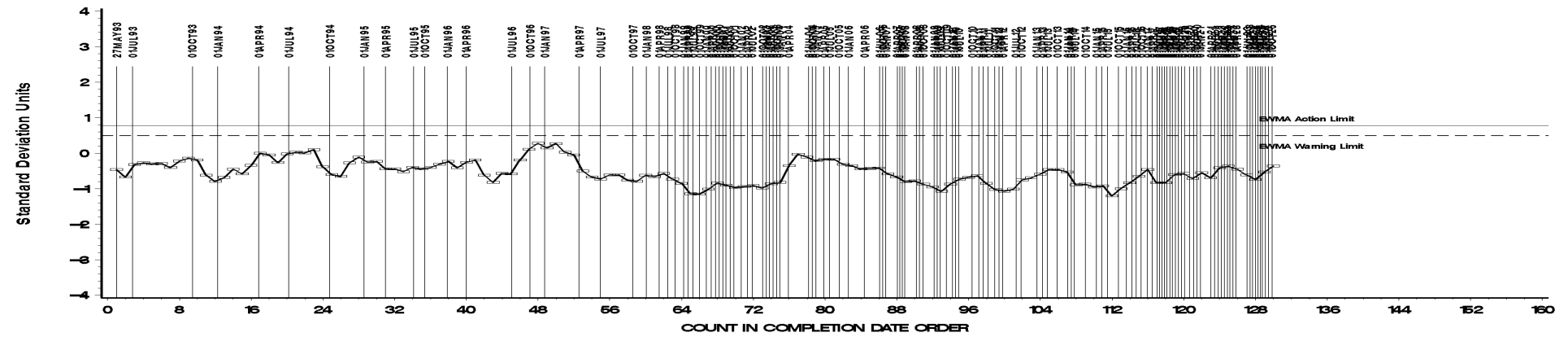
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

RFWT Test Severity

- ▶ As no RFWT tests were conducted during this period, no statement about test severity can be made.

LTMS Severity Analysis

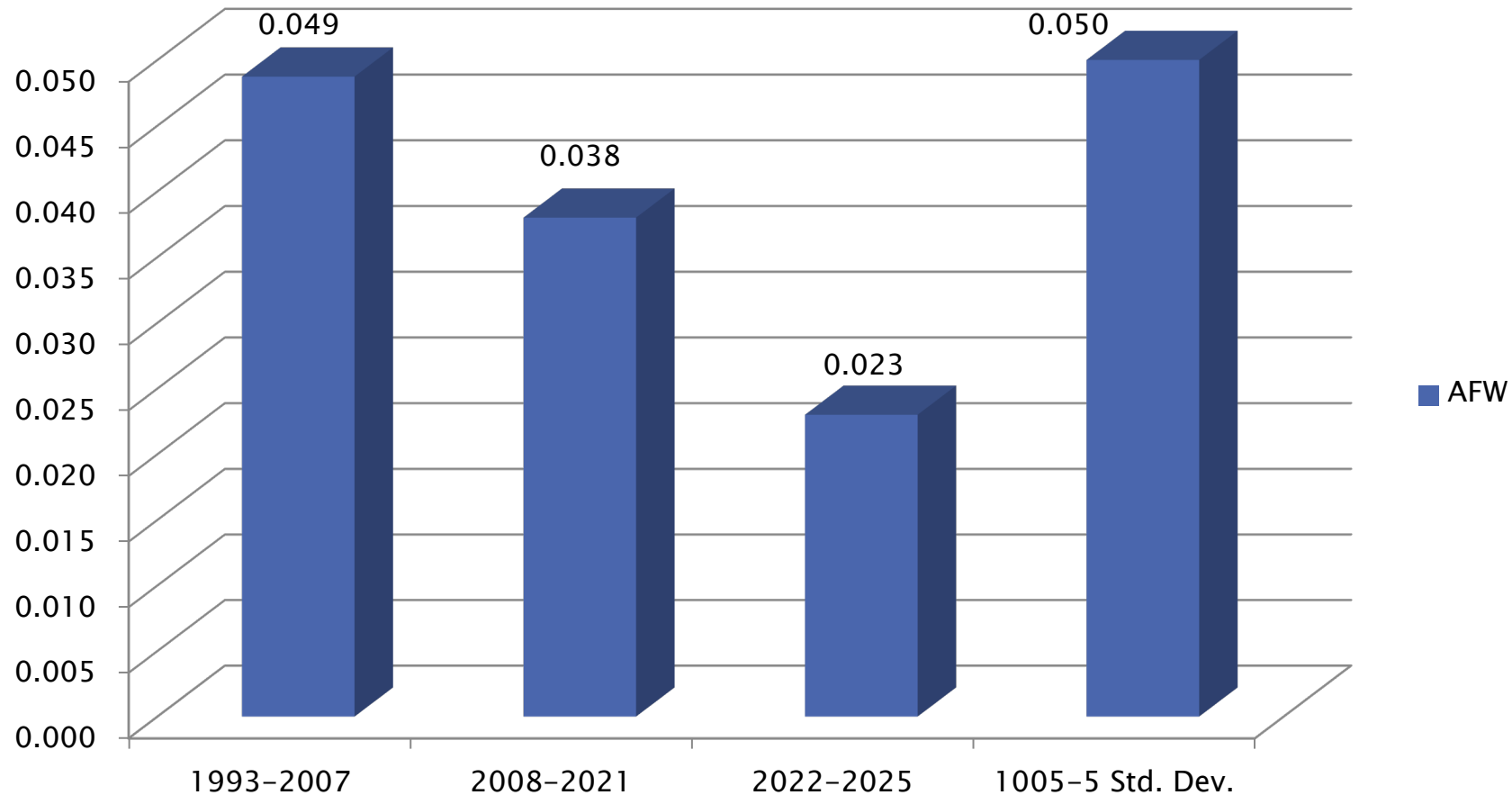


Standard Deviation Units

COUNT IN COMPLETION DATE ORDER

18NOV25:10:43

RFWT Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



Mack T-8/T-8E

»» October 2025

Test Monitoring Center
<https://www.astmtmc.org>



T-8/T-8E Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	1
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		1

T-8/T8-E Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

T-8/T8-E Lost Tests*

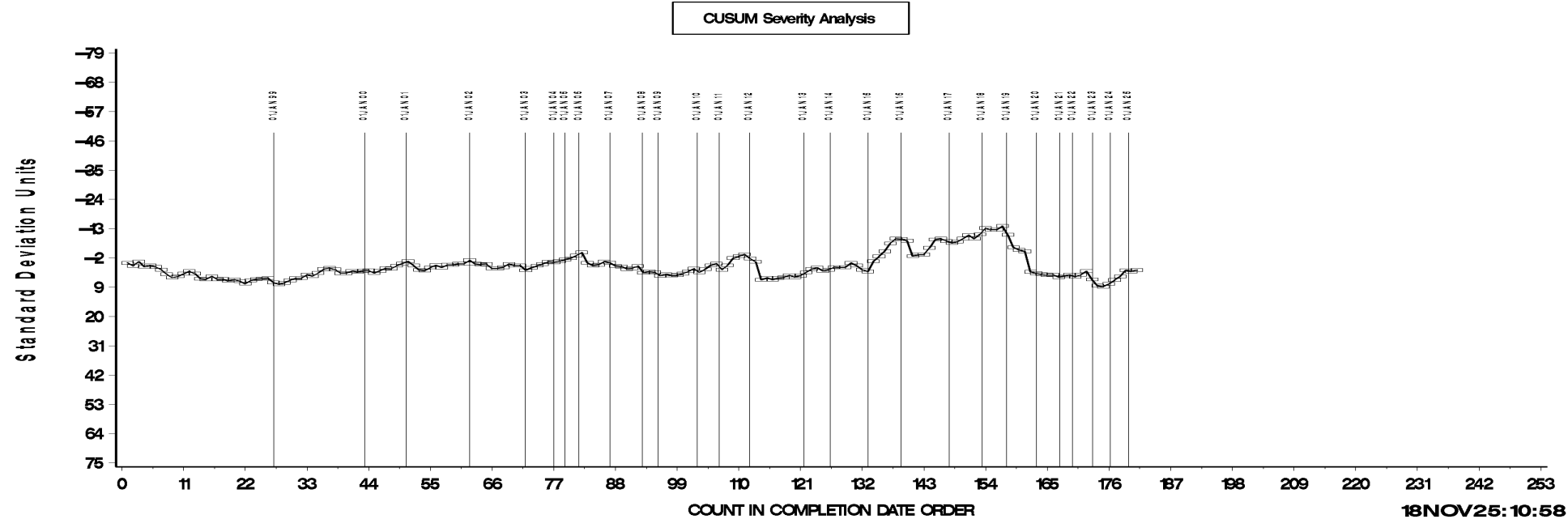
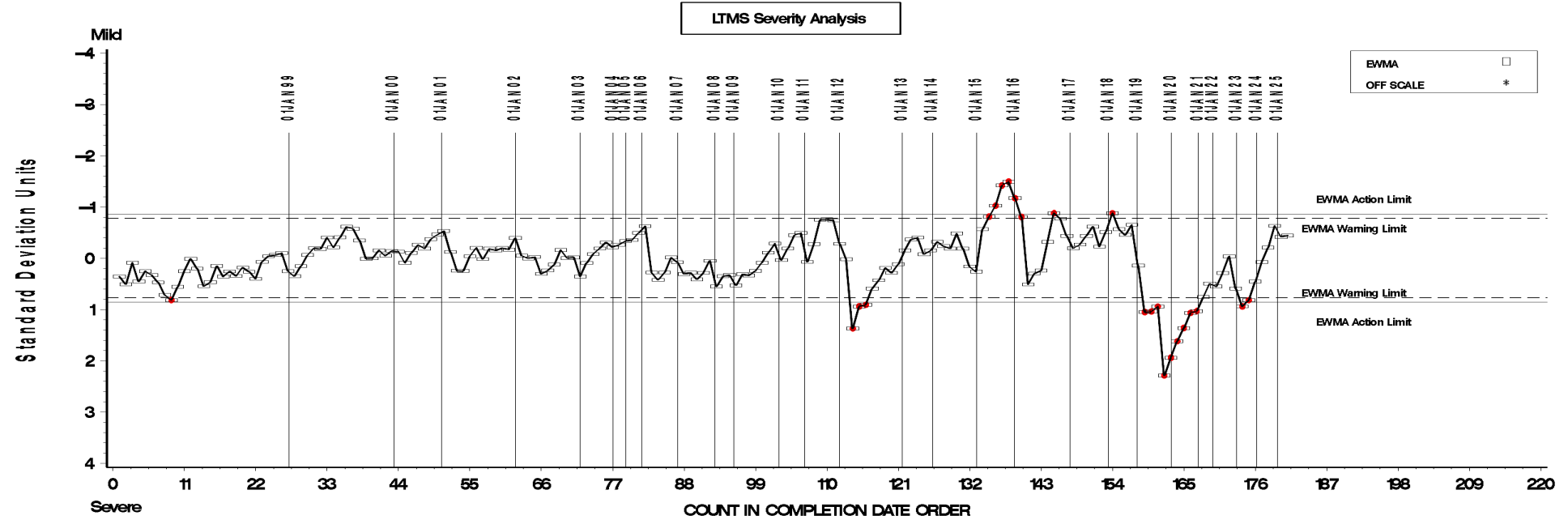
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

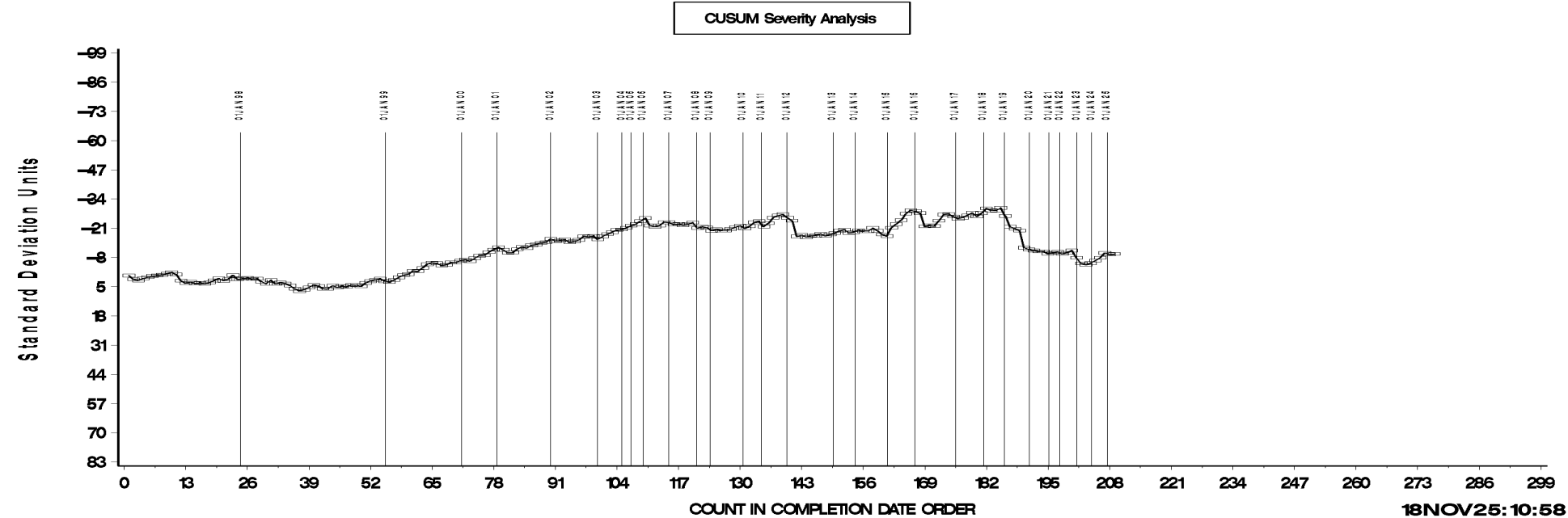
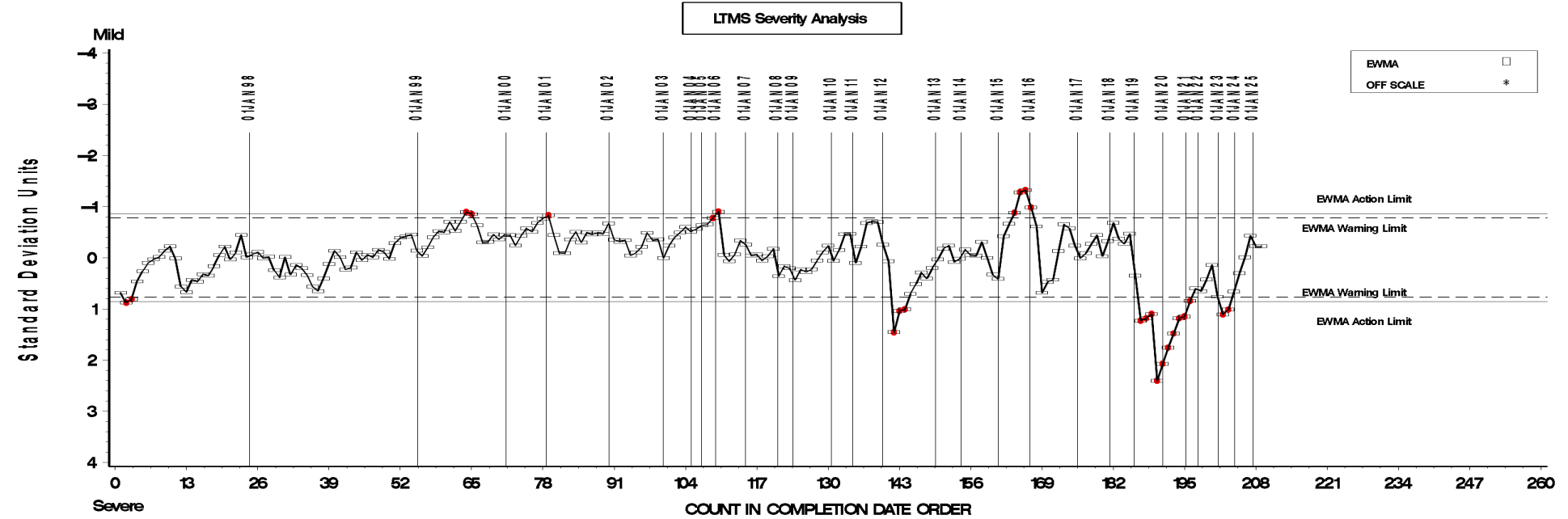
T-8/T-8E Test Severity

- ▶ VI38 is in severity action alarm in the mild direction.
- ▶ RV2 and RV48 are in control.

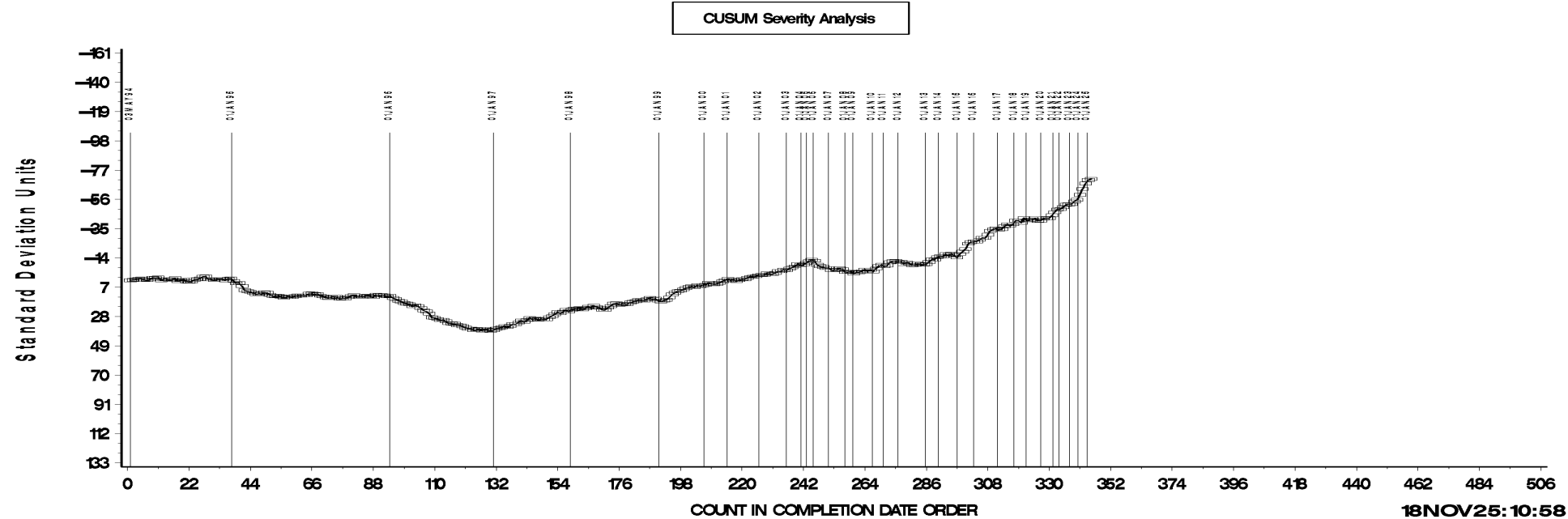
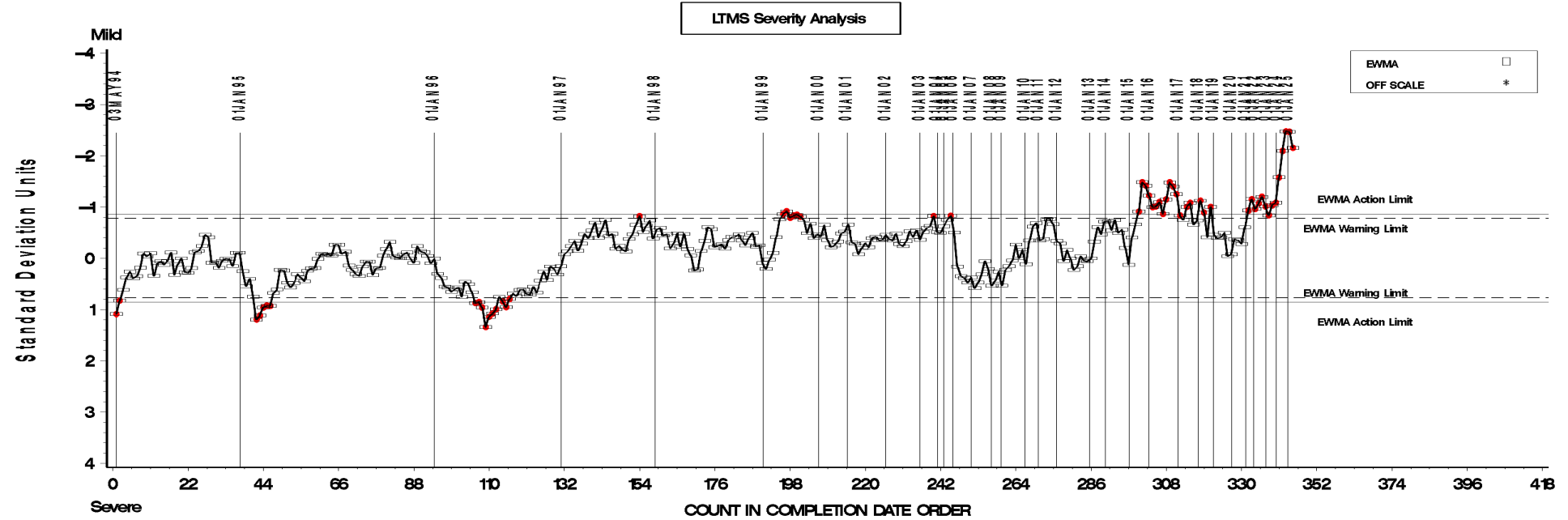
RELATIVE VISCOSITY @ 4.8% (100% LOSS)



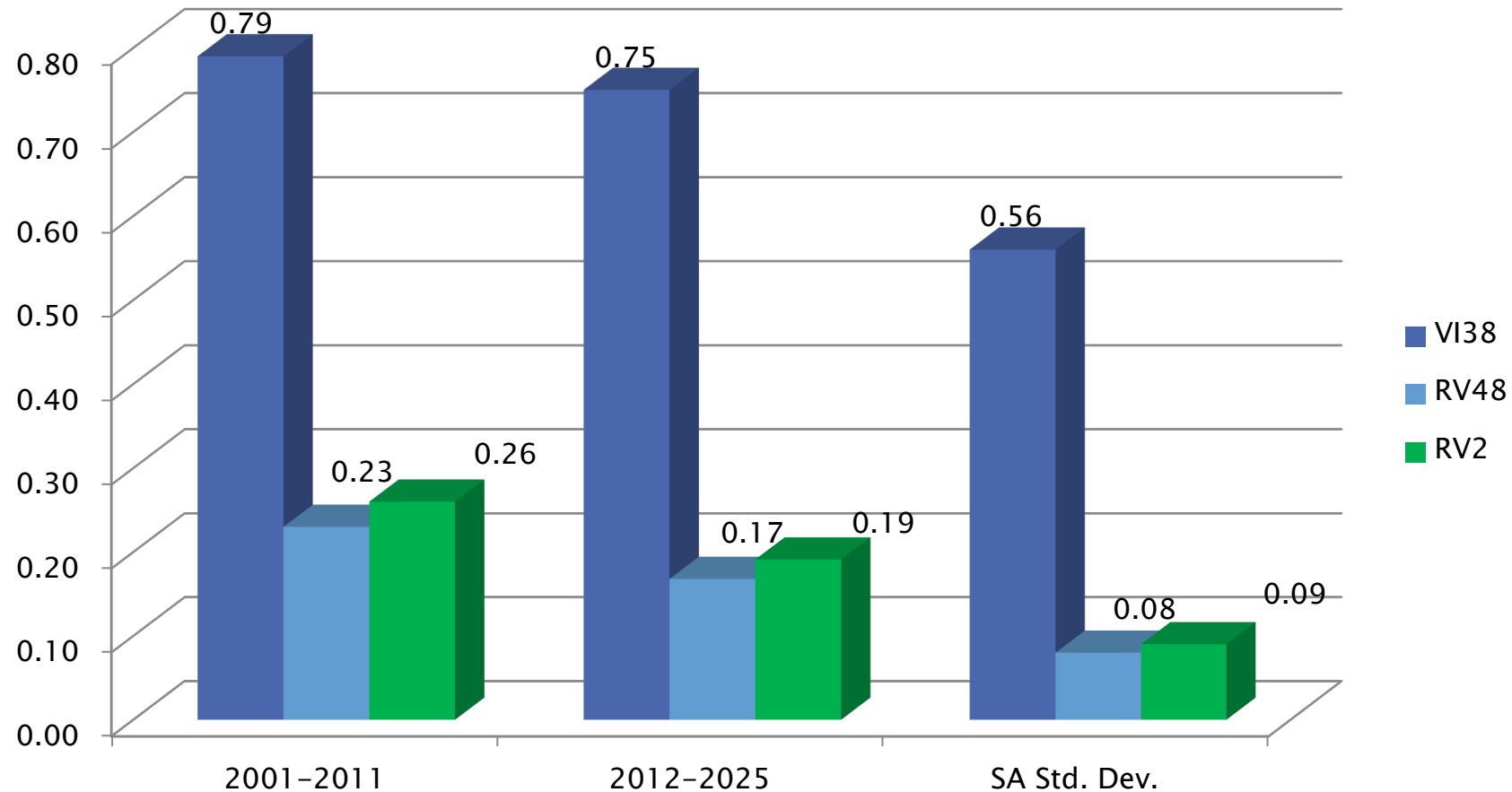
RELATIVE VISCOSITY @ 4.8% (50% LOSS)



VISCOSITY INCR @ 3.8% SOOT



T-8/E Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



Mack T-11

»» October 2025

T-11 Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	2
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		2

T-11 Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

T-11 Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

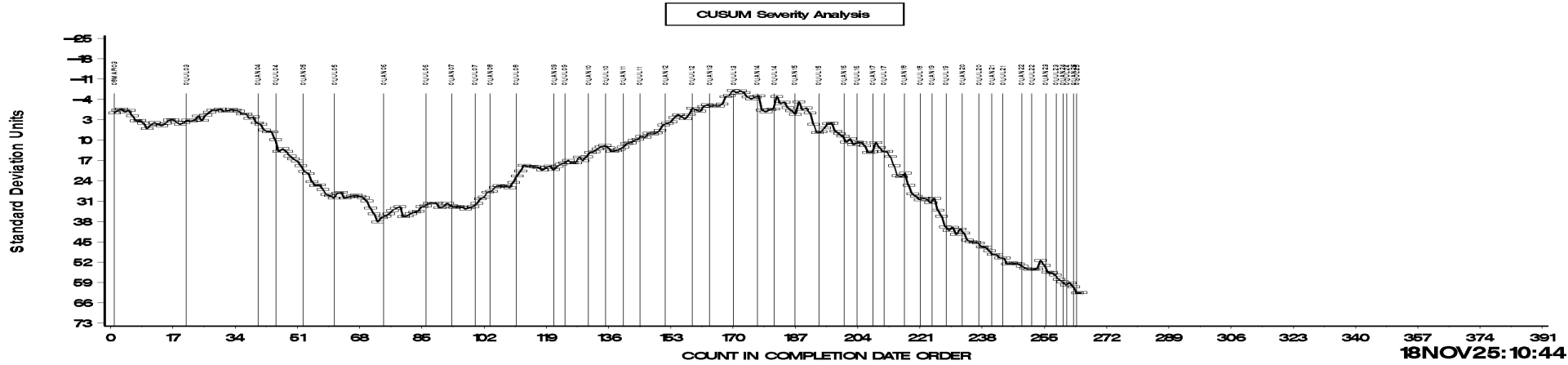
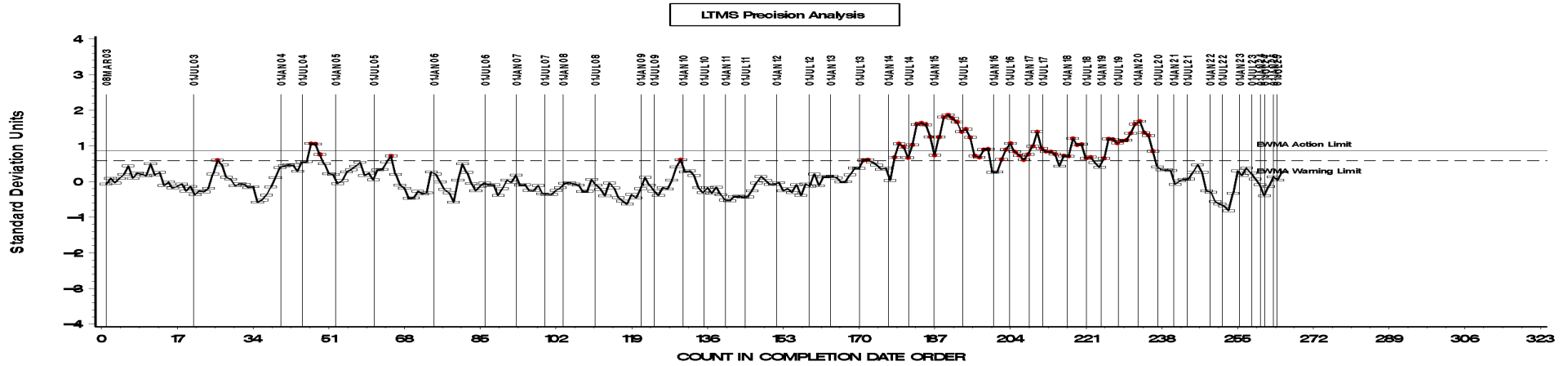
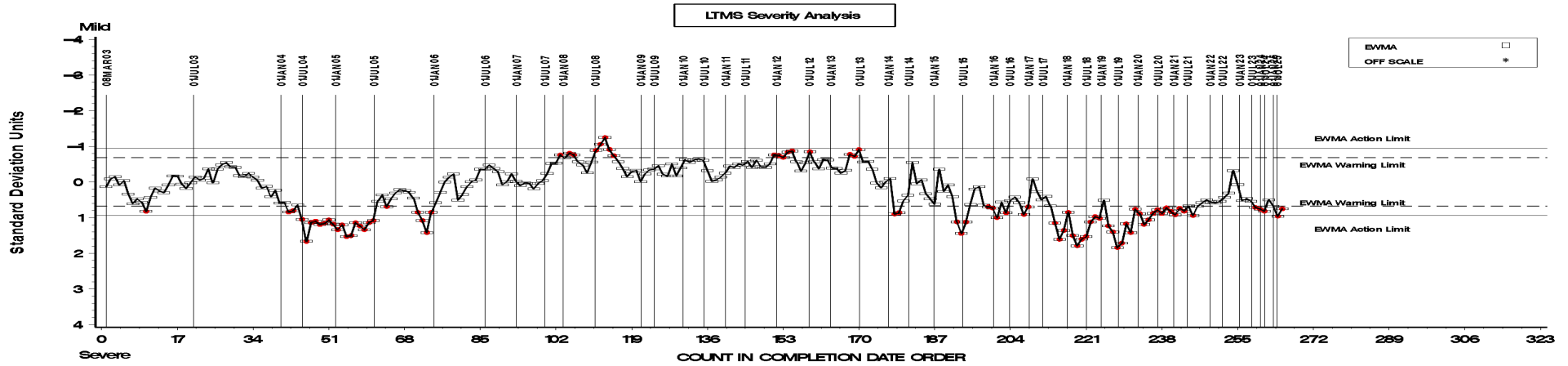
T-11 Test Severity

- ▶ SOOT and SOOT5 are in control.
- ▶ MRV in severity warning alarm in the severe direction
- ▶ SOOT4 is in severity action alarm in the severe direction. SOOT4 also in precision action alarm.

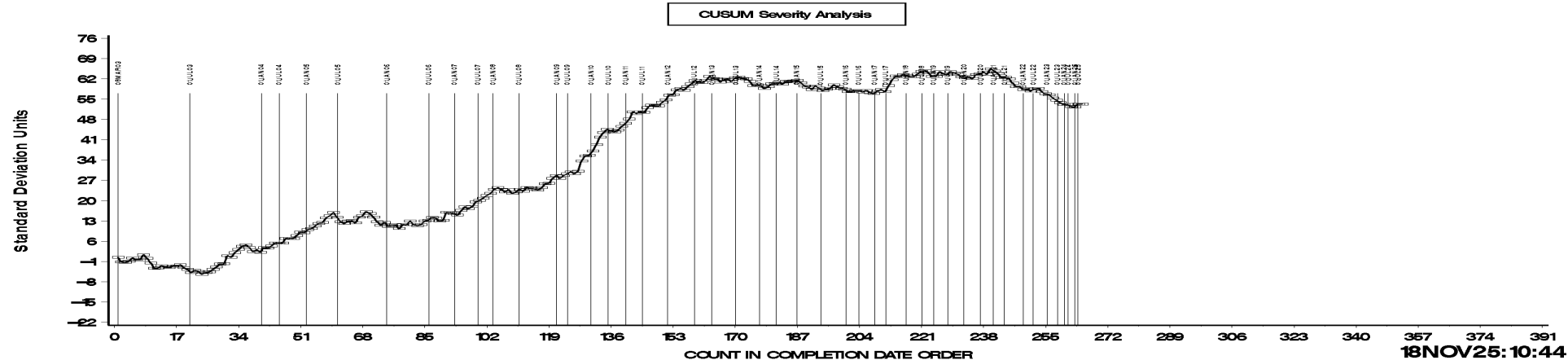
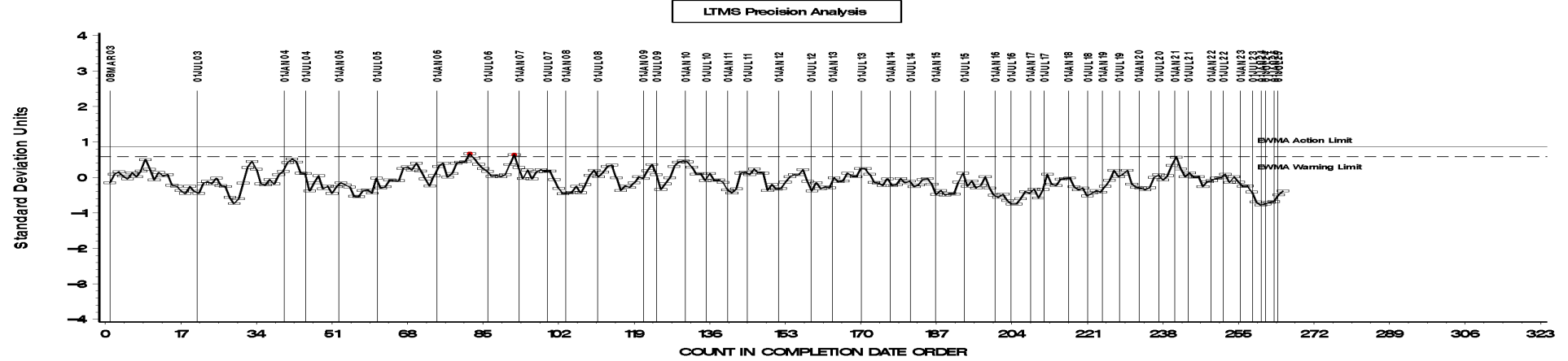
T-41 INDUSTRY OPERATIONALLY VALID DATA



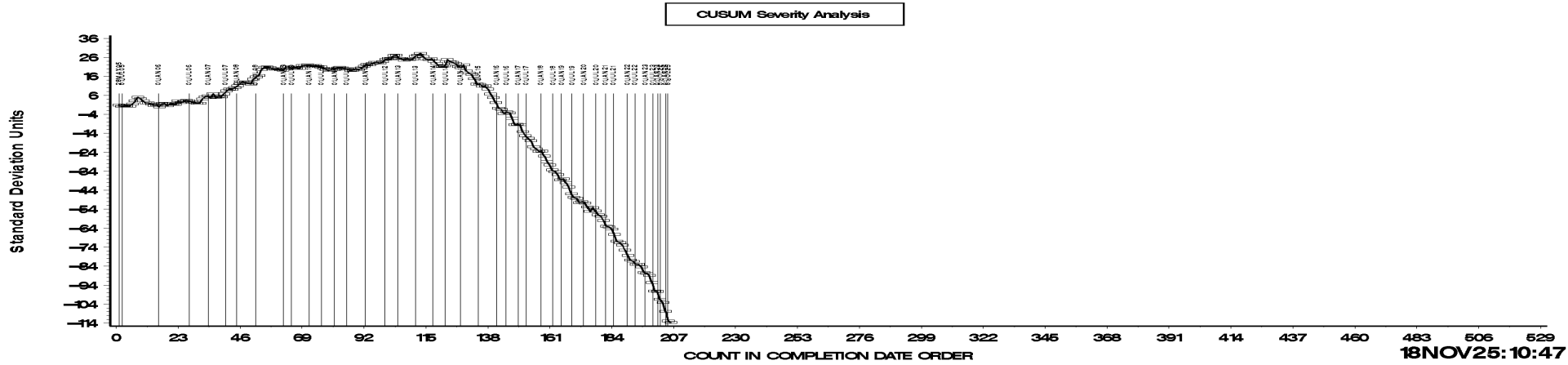
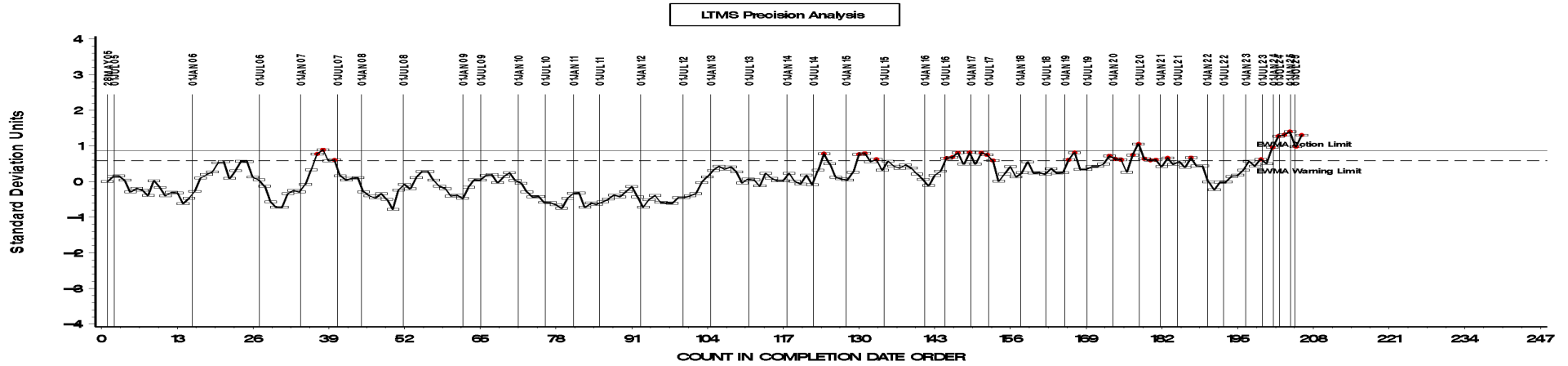
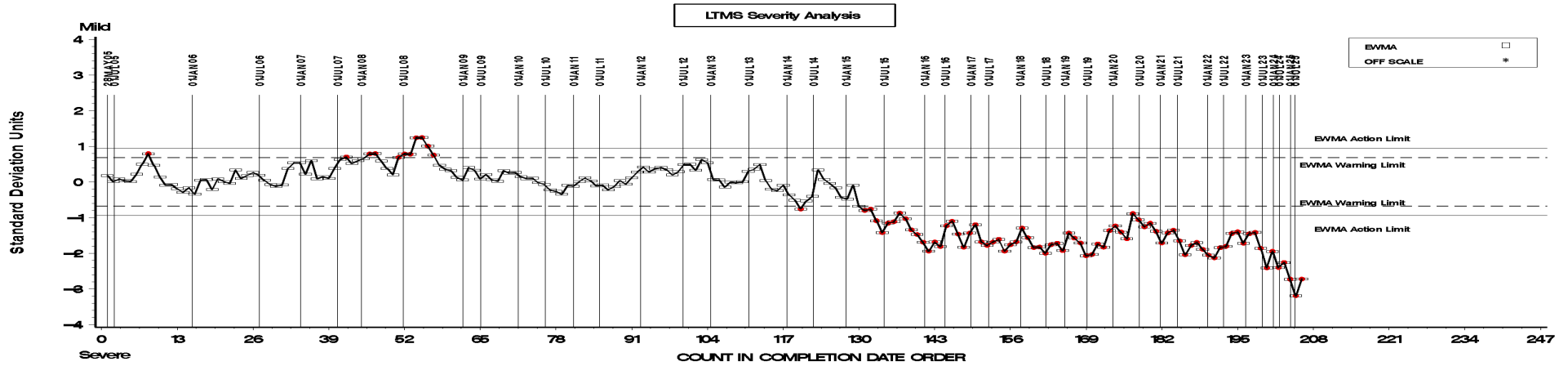
MRV VISCOSITY



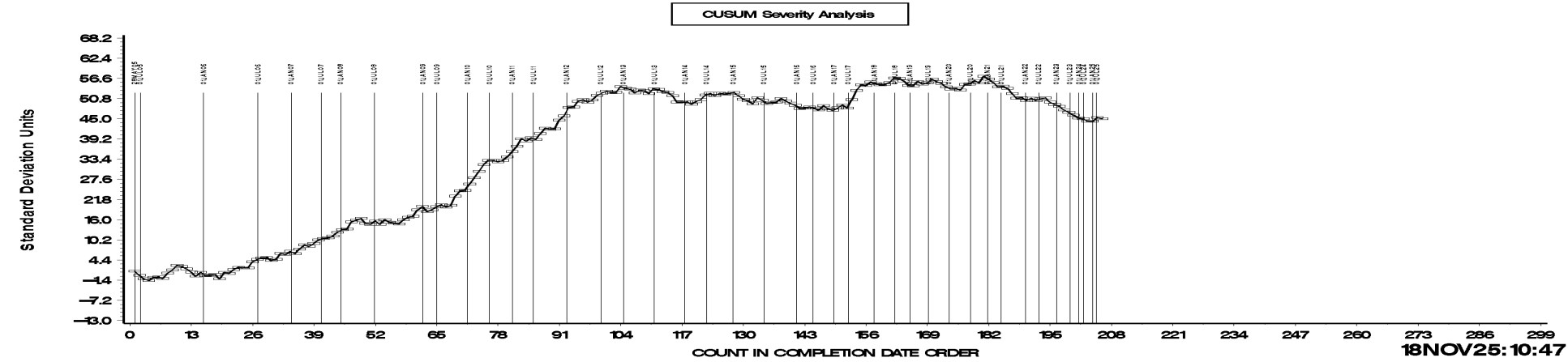
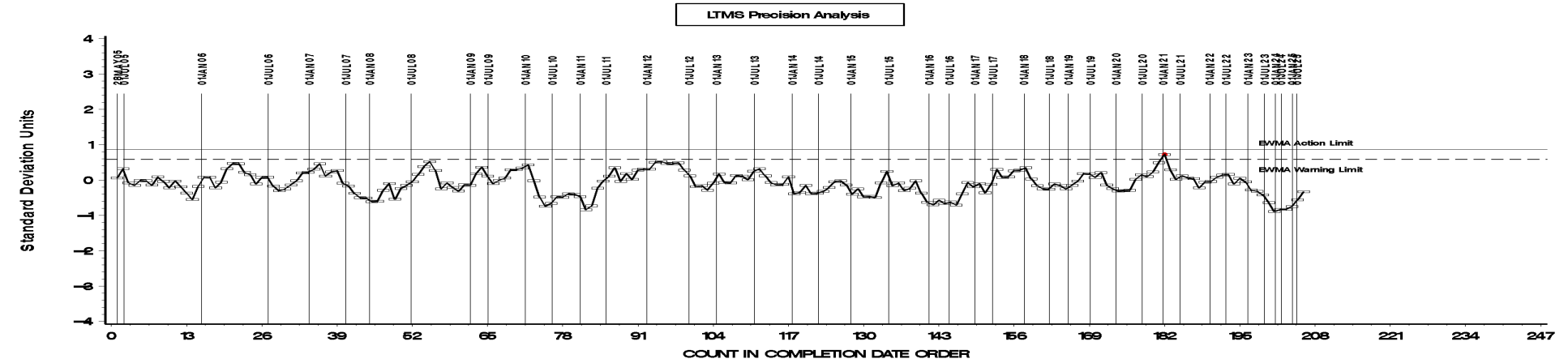
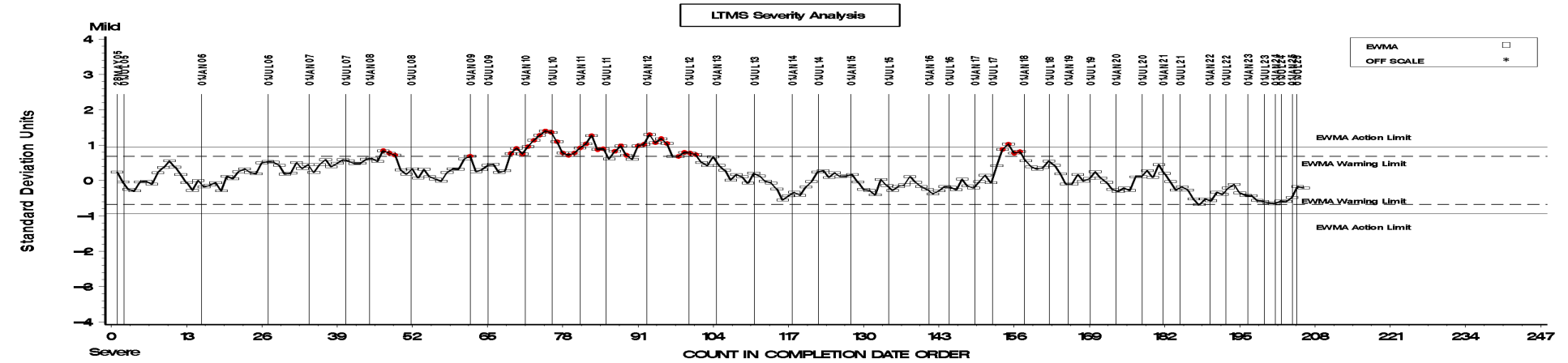
LTMS Severity Analysis



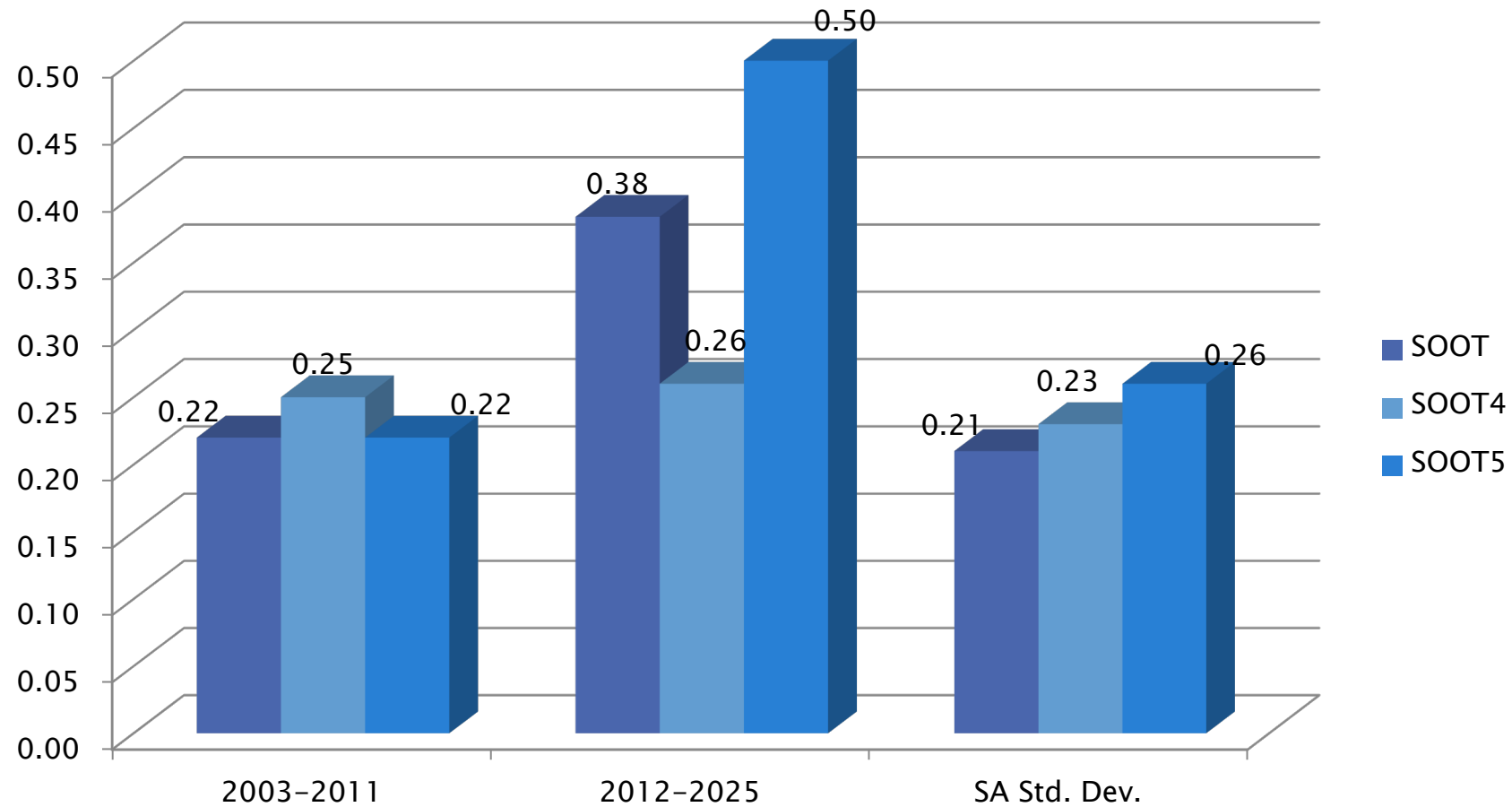
SOOT @ 4 cSt — FINAL RESULT



SOOT @ 15 cSt — FINAL RESULT

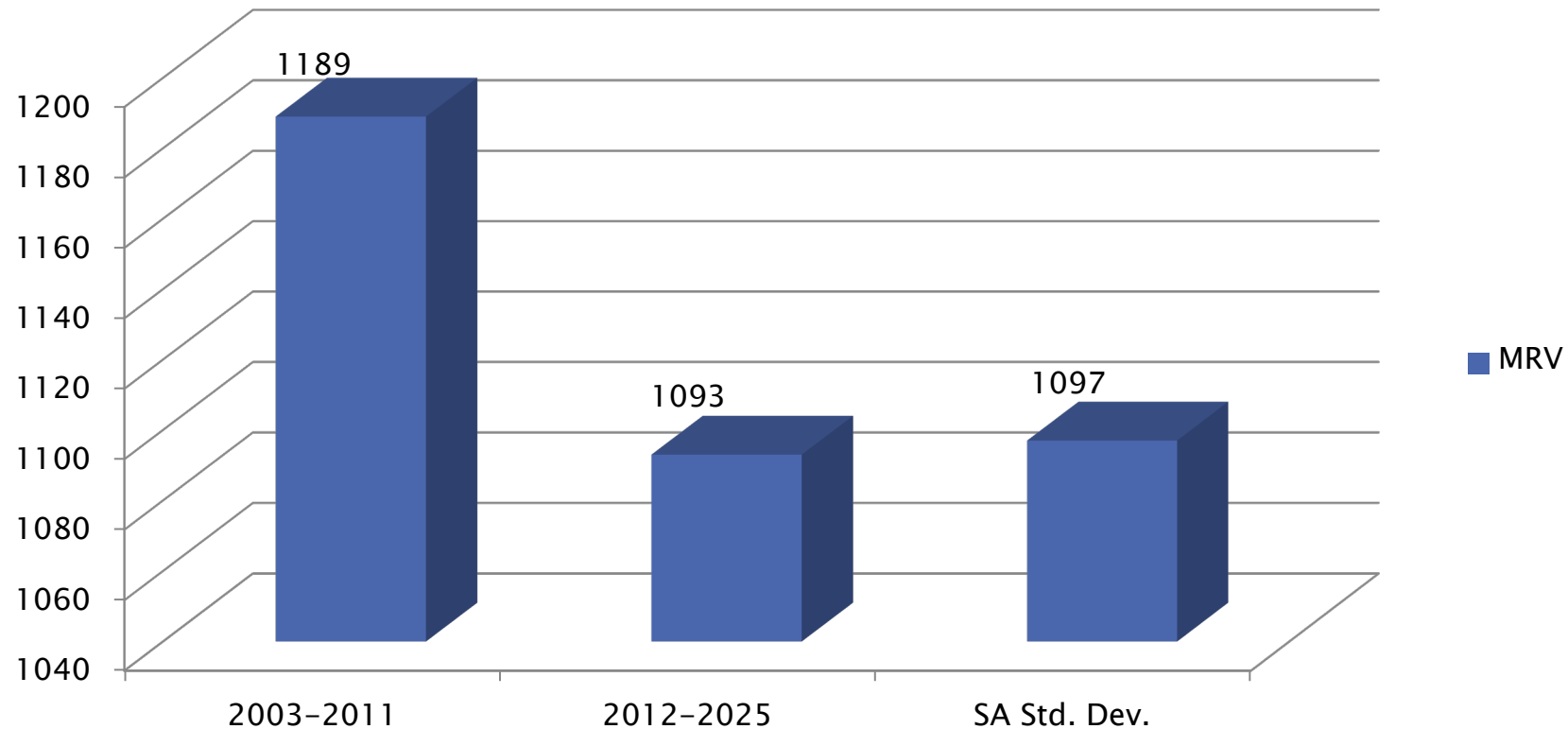


T-11 Precision Estimates



T-11 Precision Estimates

MRV



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Mack T-12

»» October 2025

T-12 Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	2
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		2

T-12 Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

T-12 Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

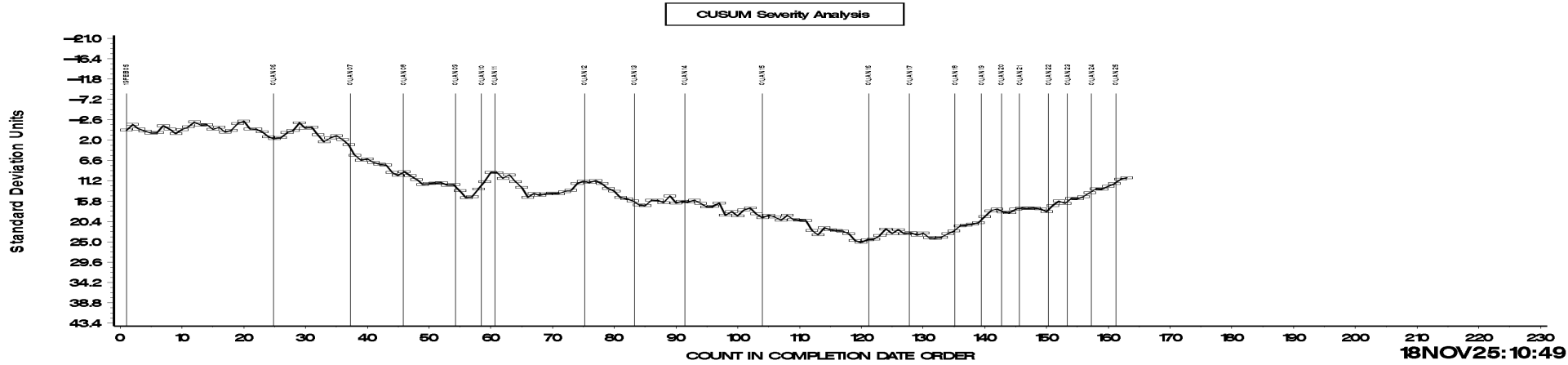
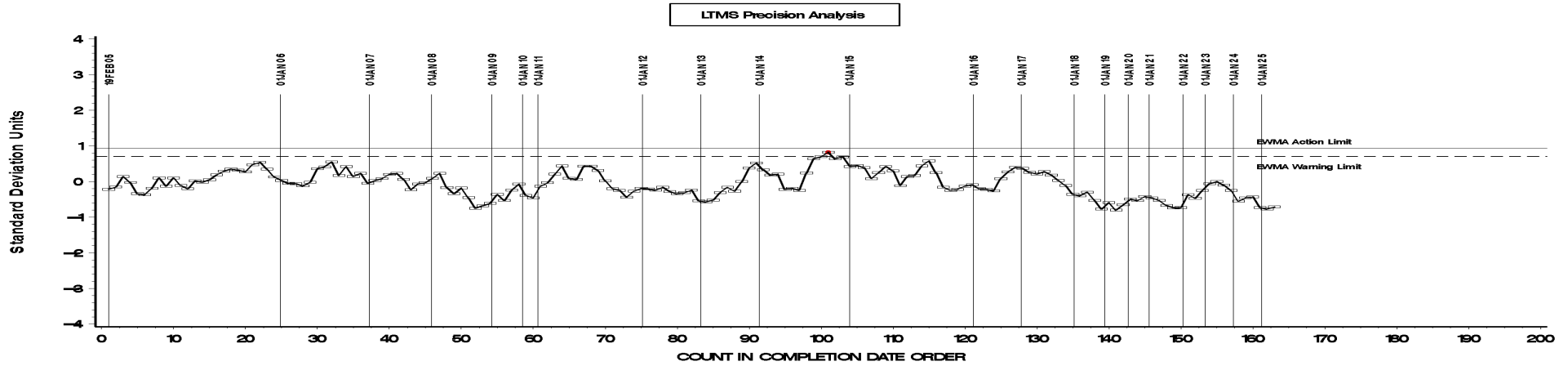
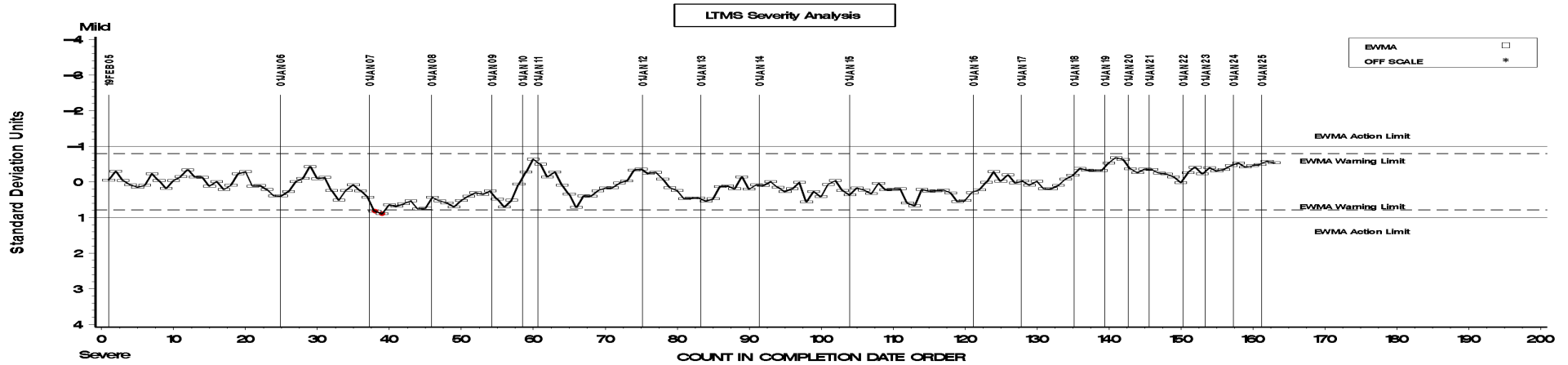
*Invalid and aborted tests

T-12 Test Severity

- ▶ PB is in precision warning alarm.
- ▶ All other parameters are in control.

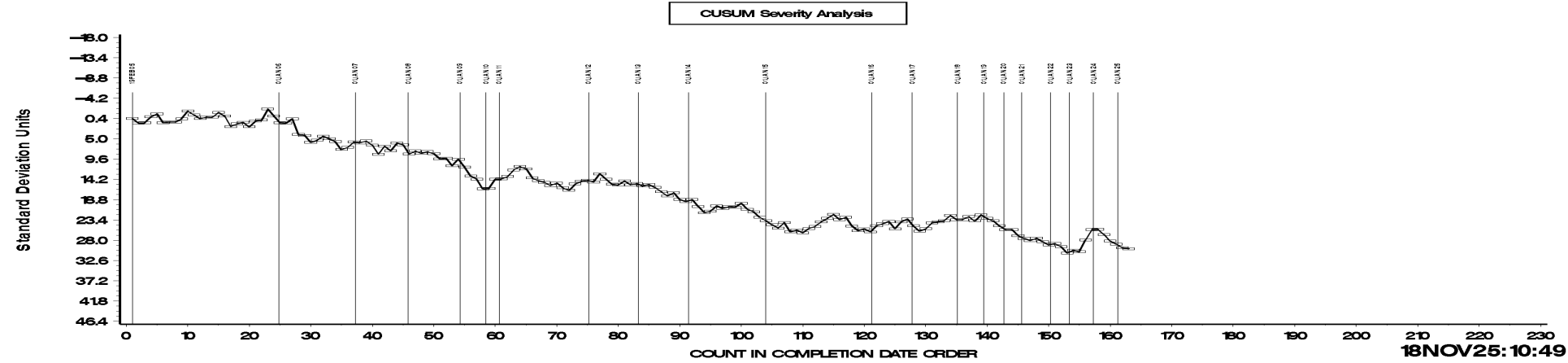
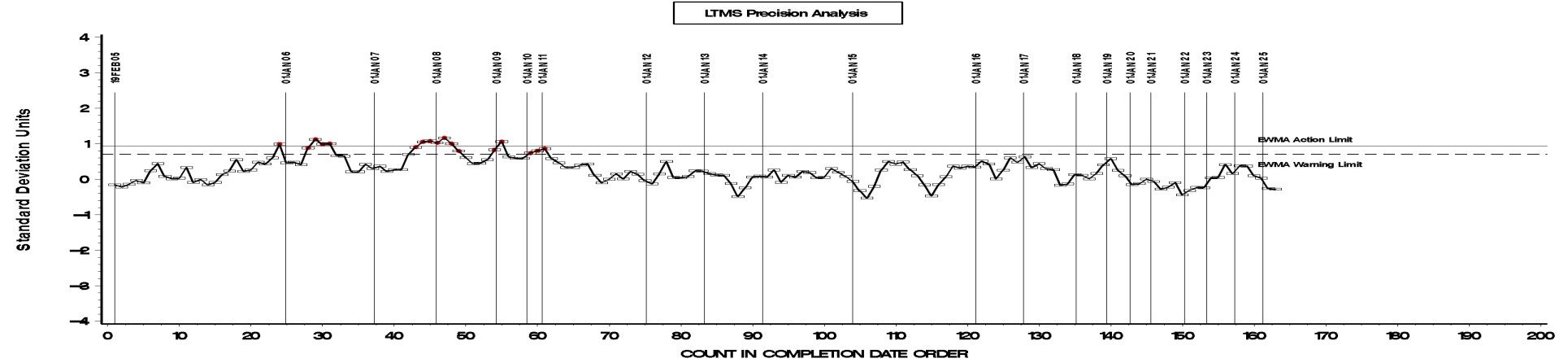
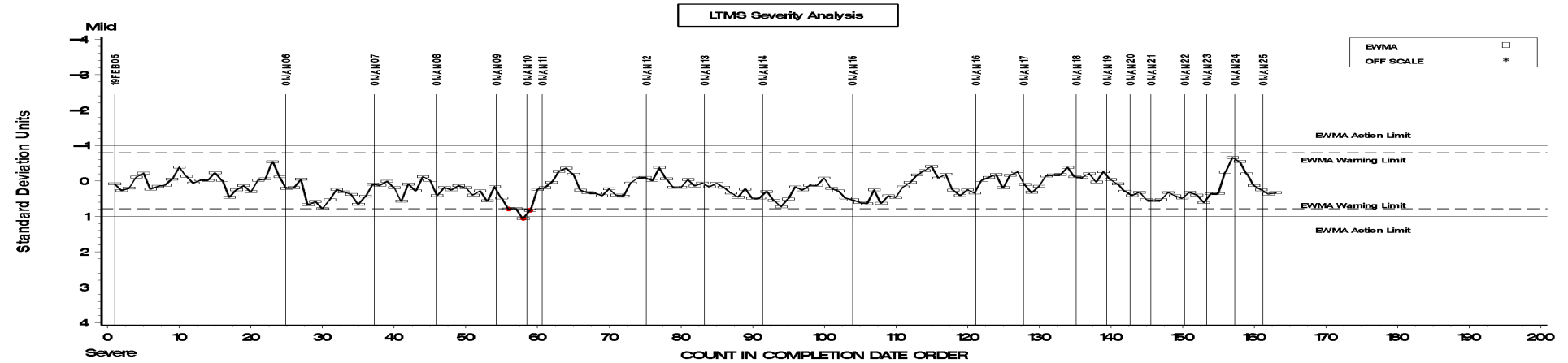
MACK T-42 INDUSTRY OPERATIONALLY VALID DATA

AVG. CYLINDER LINER WEAR (CLW)



MACK T-42 INDUSTRY OPERATIONALLY VALID DATA

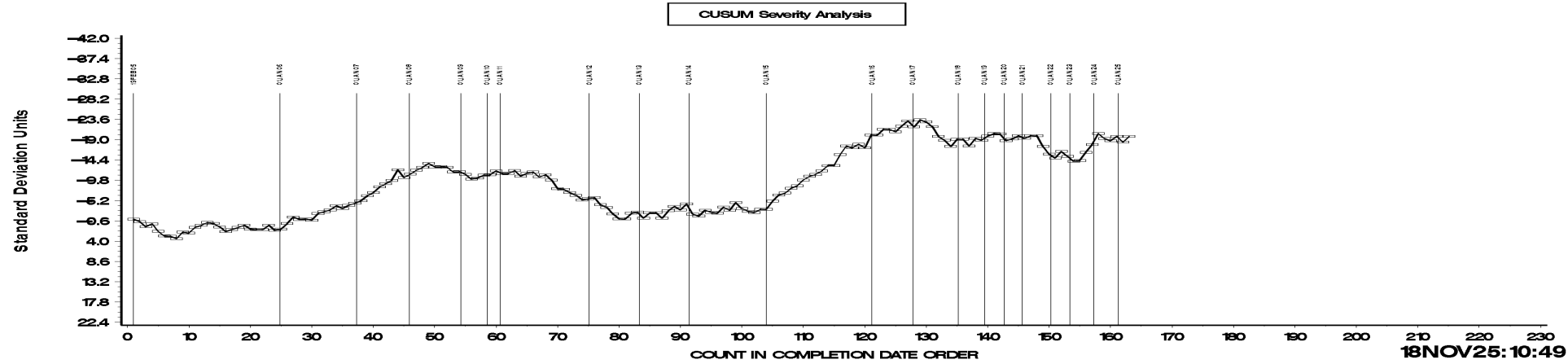
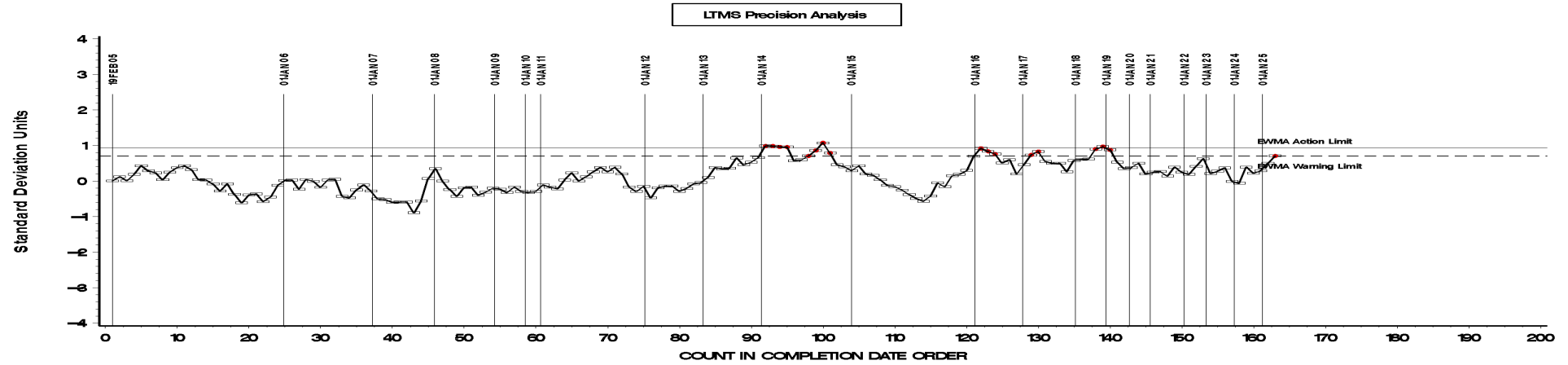
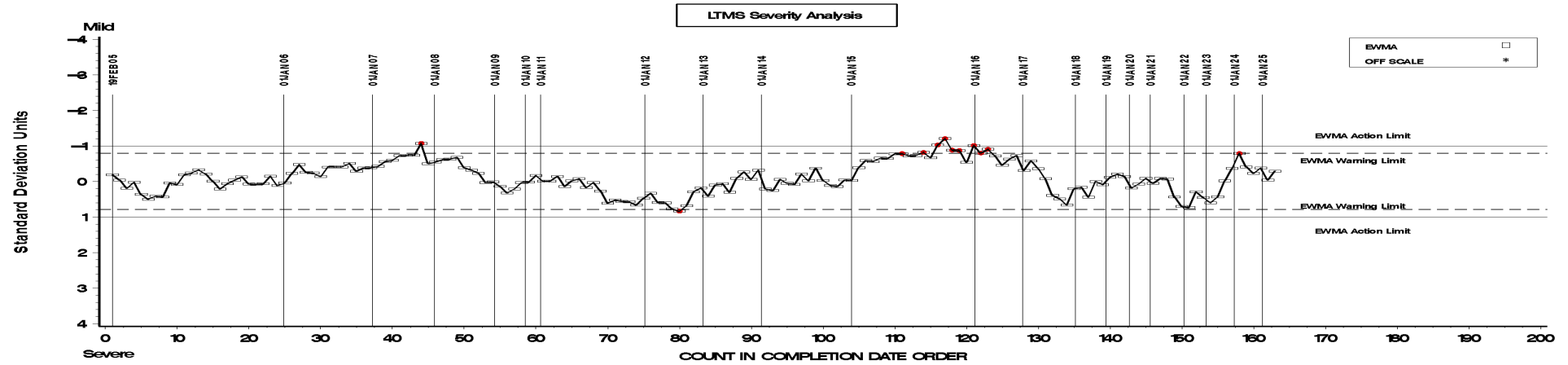
FINAL TRANS. RES. OIL CONSUMPTION



MACK T-42 INDUSTRY OPERATIONALLY VALID DATA

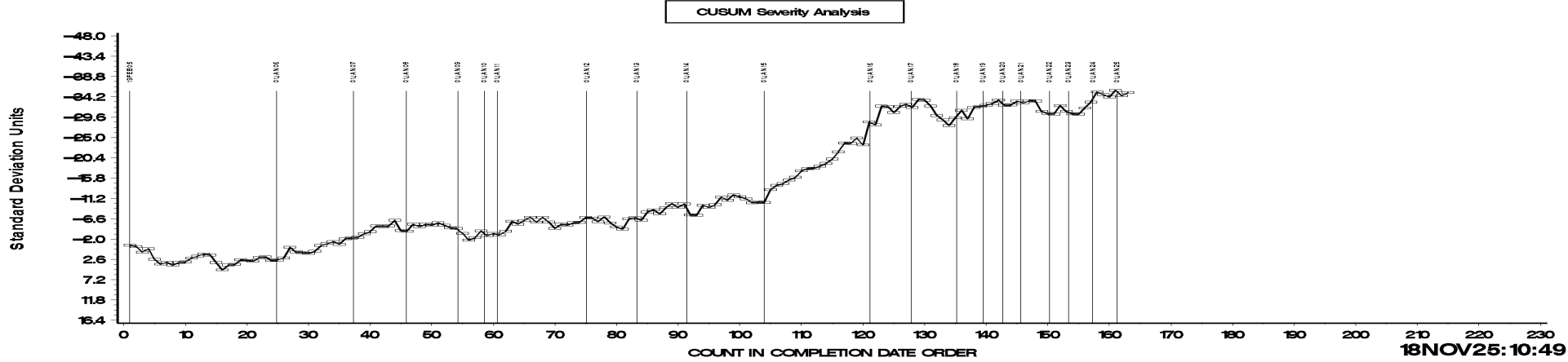
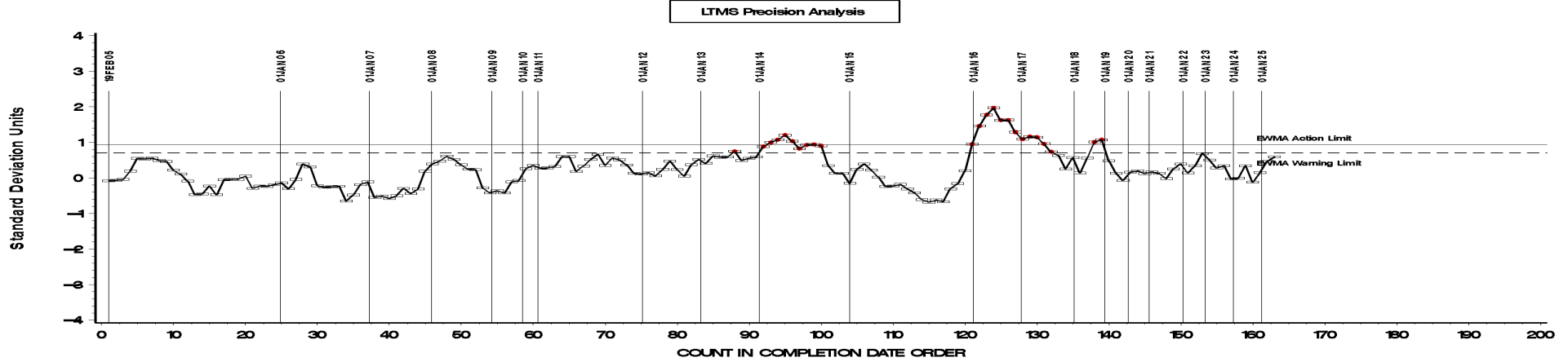
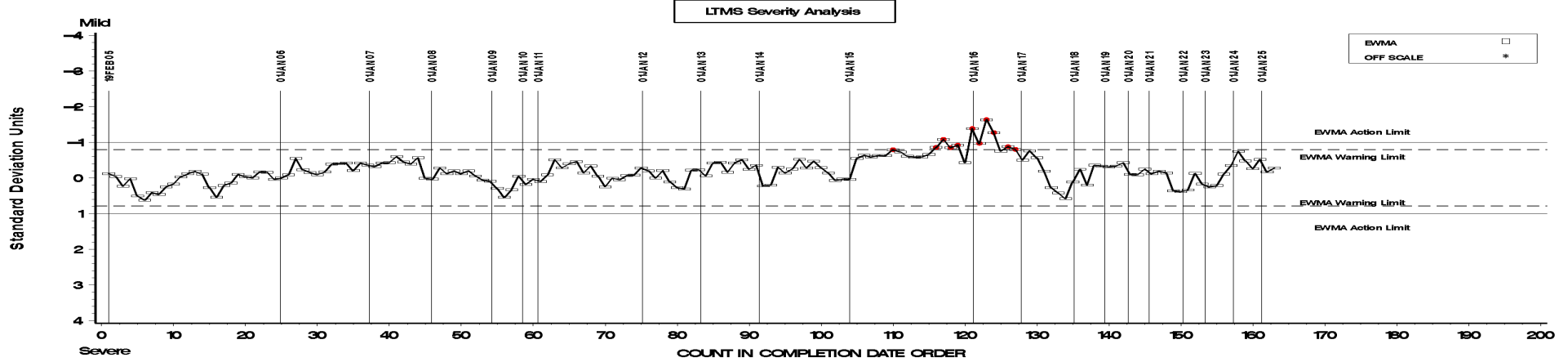


FINAL TRANS. RES. DELTA PB @ EOT



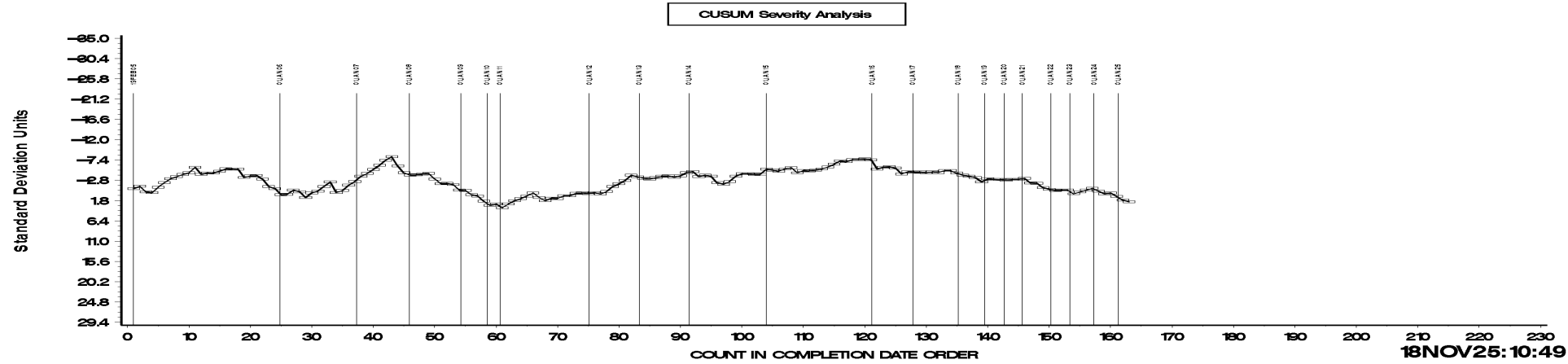
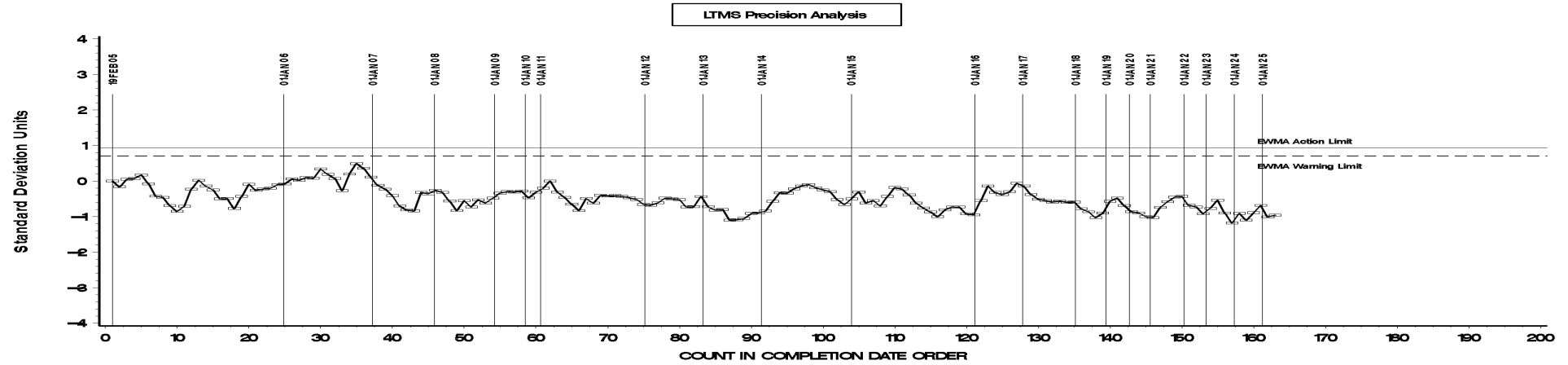
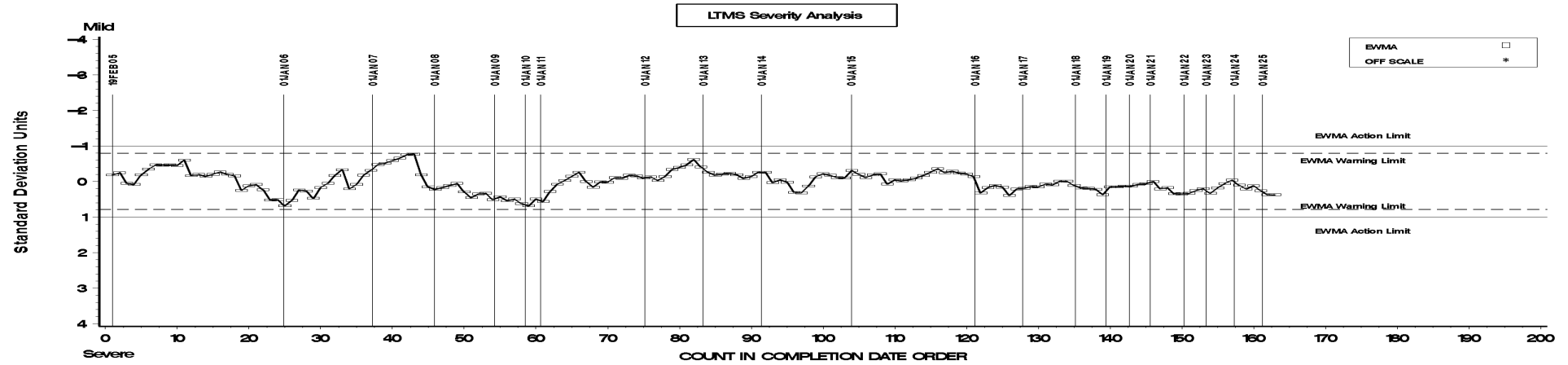
MACK T-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL TRANS. RES. DELTA PB 250-300H

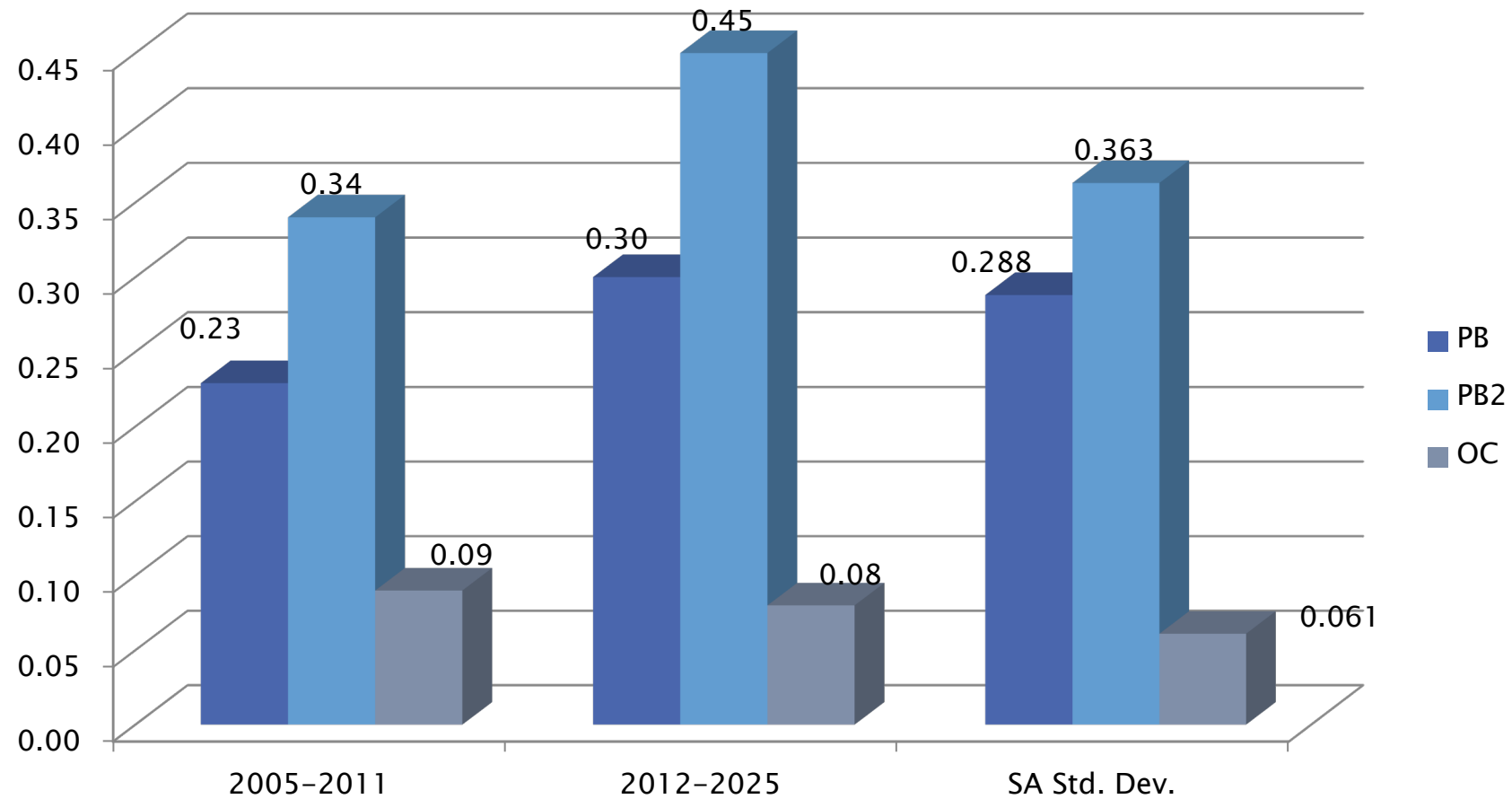


MACK T-42 INDUSTRY OPERATIONALLY VALID DATA

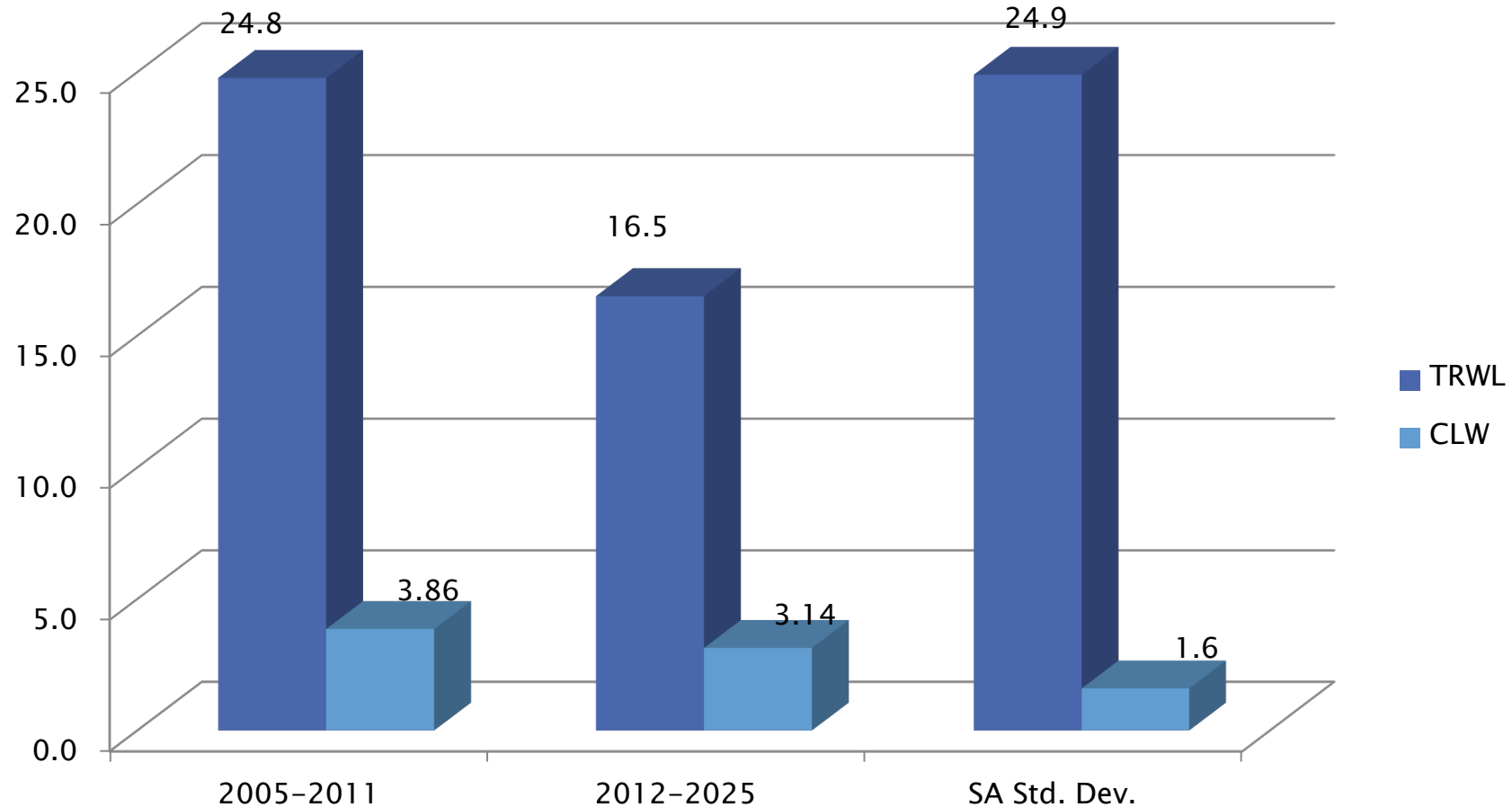
AVG. TOP RING WEIGHT LOSS (TRWL)



T-12 Precision Estimates



T-12 Precision Estimates



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Test Monitoring Center
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Mack T-12A

»» October 2025

Test Monitoring Center
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T-12A Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	2
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		2

T-12A Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

T-12A Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

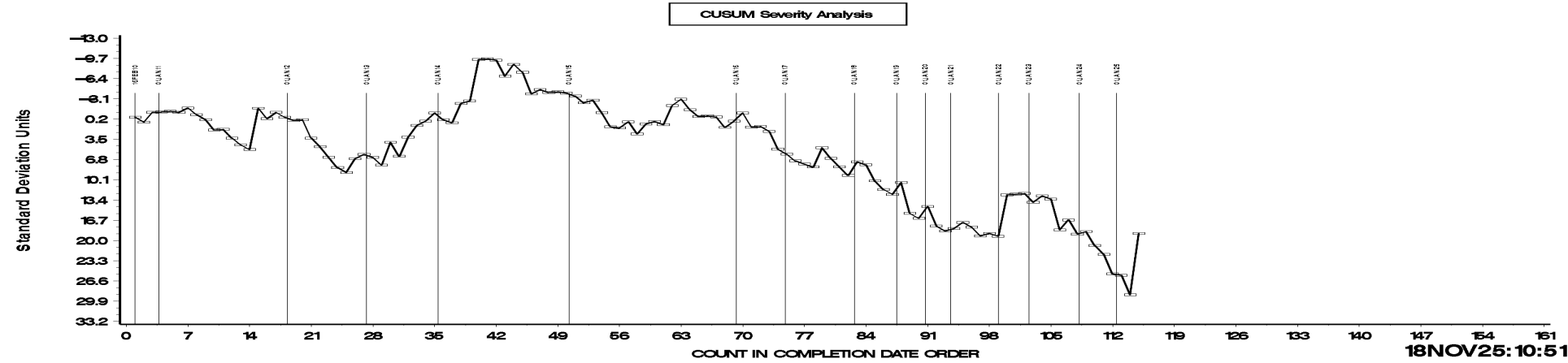
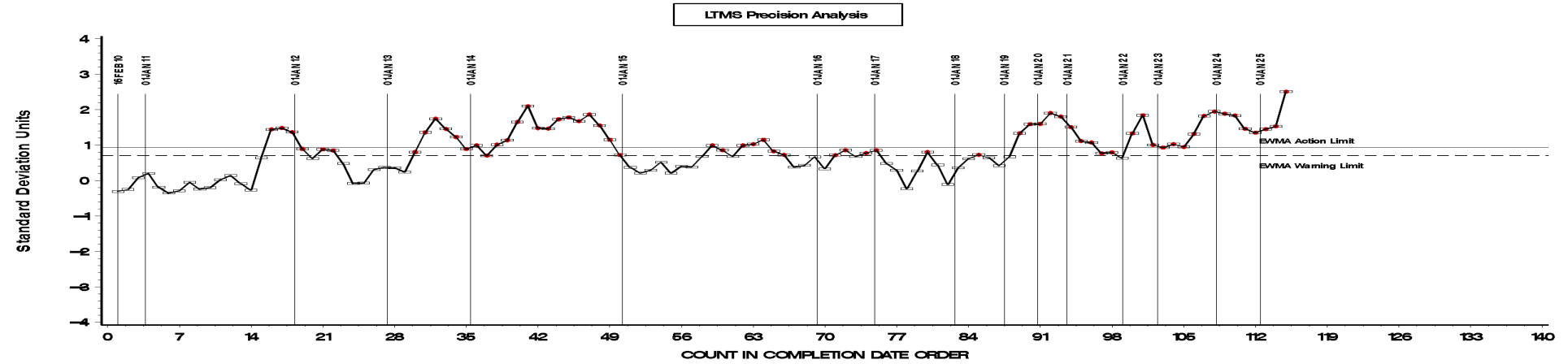
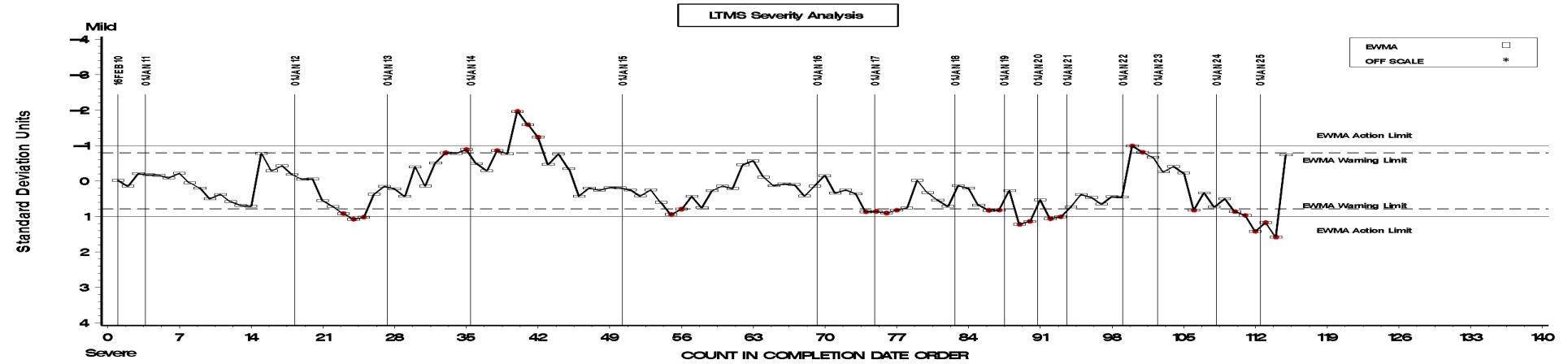
T-12A Test Severity

- ▶ MRV is in precision action alarm.

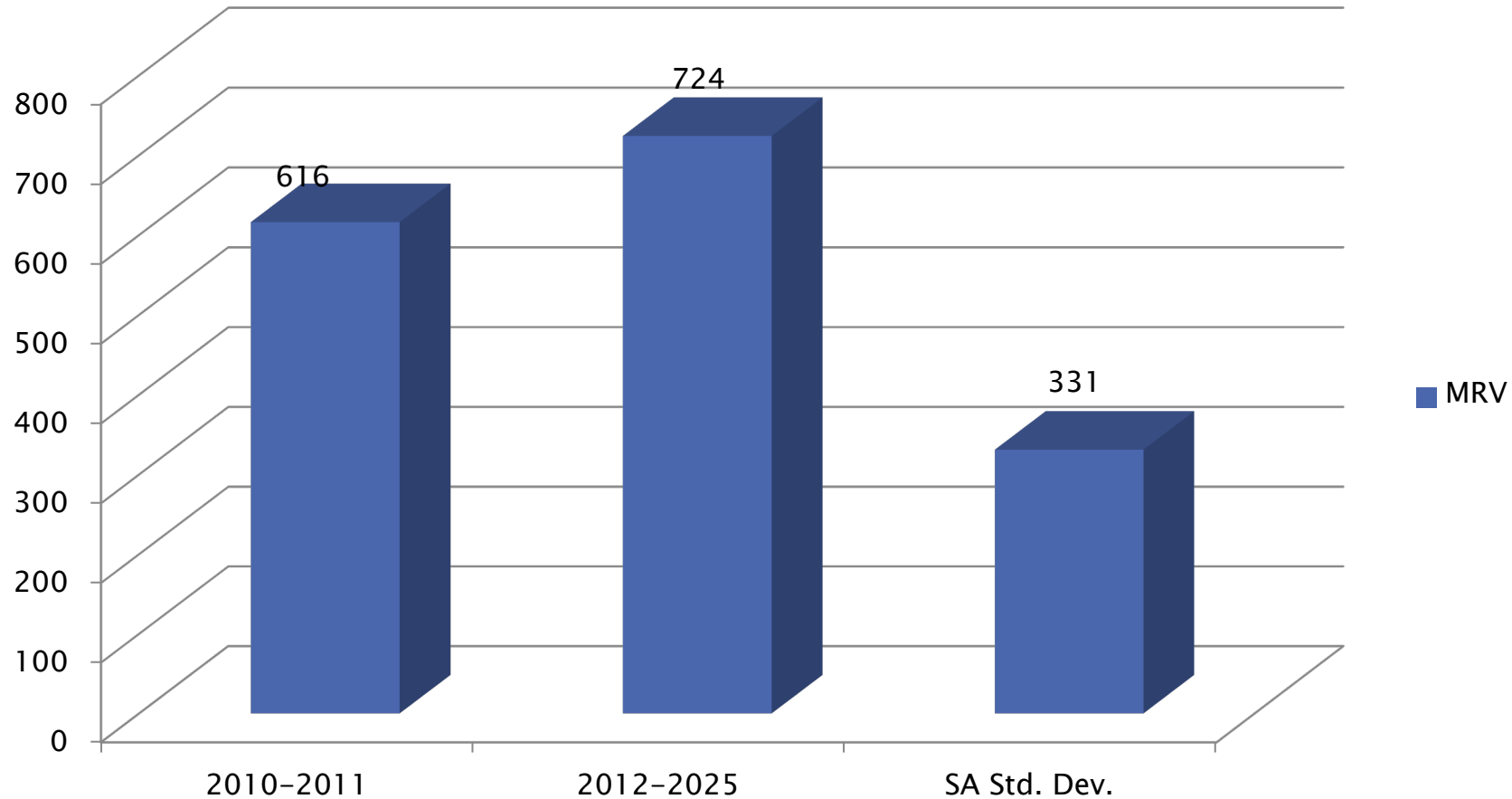
MACK T-12A INDUSTRY OPERATIONALLY VALID DATA



FINAL ORIGINAL UNIT MRV VISCOSITY [NM, SOLID, FROZEN, <, >]



T-12A Precision Estimates



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Mack T-13

»» October 2025

T-13 Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	4
Failed Calibration Test	OC	0
Operationally Invalid	LC	3
Aborted	XC	0
Total		7

T-13 Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

T-13 Lost Tests*

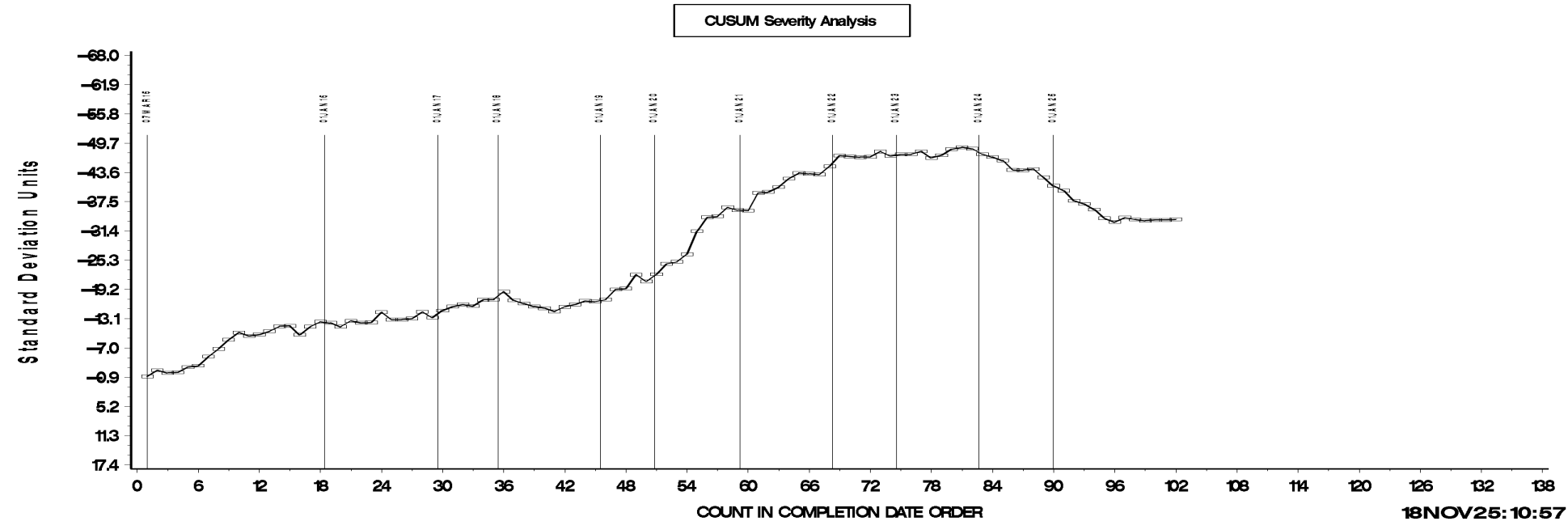
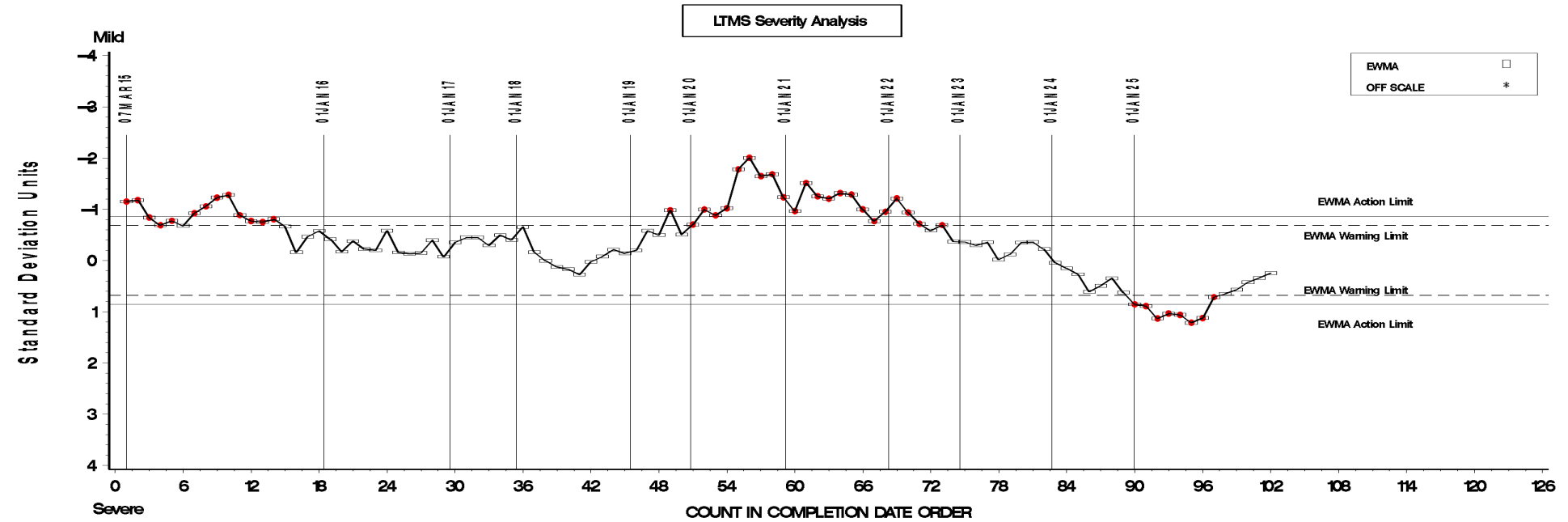
Status	Cause	#
Invalid	Test charge overage	1
Invalid	Charge air cooler leak	1
Invalid	Incorrect oil addition	1
Aborted	No aborted tests	0
Total		3

*Invalid and aborted tests

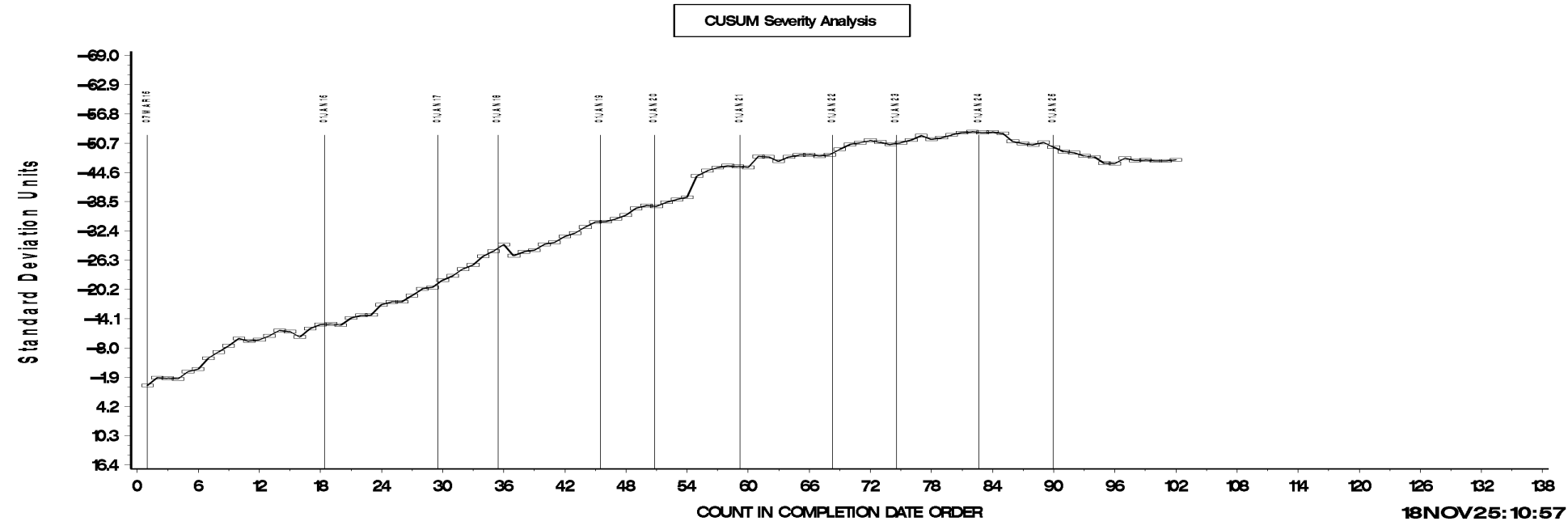
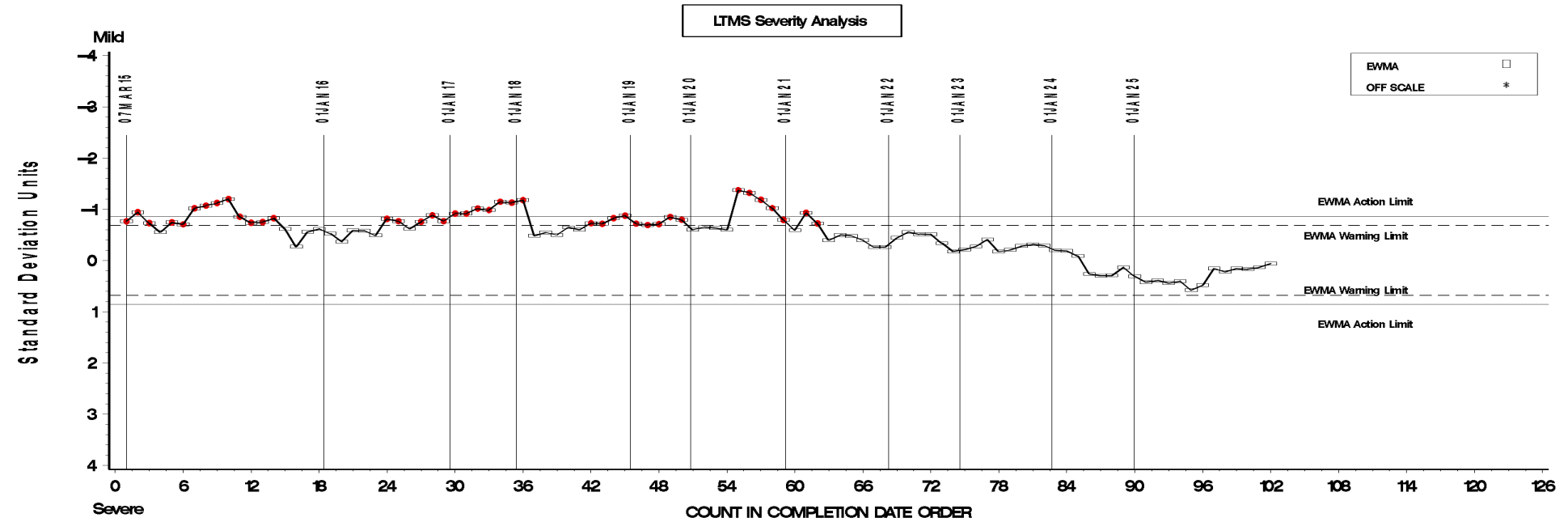
T-13 Test Severity

- ▶ IRPH and KV40 are in control

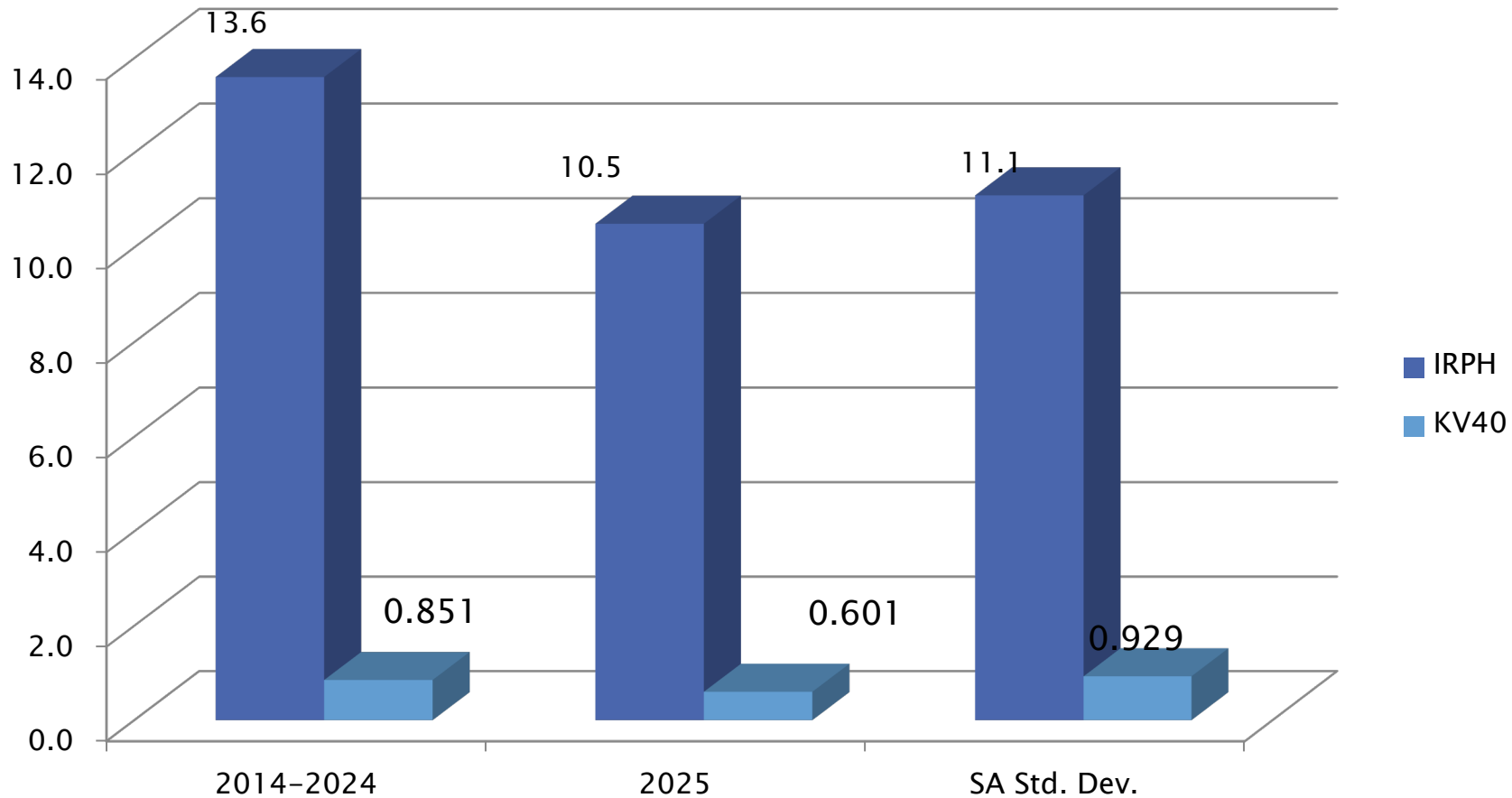
FINAL ORIGINAL PEAK HEIGHT IR AT EOT



FNL. ORIG. UNIT KINEMATIC VISCOSITY AT 40 DEG C % CHANGE 300-360 HRS



T-13 Precision Estimates



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Information Letters

»» April 1, 2025 – September 30, 2025

Test Monitoring Center
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Information Letters*

Test	Date	IL	Topic
ISB	5/7/25	25-2	New Average Tappet Mass Loss and Average Camshaft Wear Correction Factors
ISB	8/27/25	25-3	New Average Tappet Mass Loss Correction Factor

*Available from TMC Website

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Memos

➤➤ April 1, 2025 – September 30, 2025

Memos*

Date	Number	Topic
N/A	N/A	N/A

- No Memos in Current Period

*Available from TMC Website

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Reference Oil Inventory



Actions, Re-blends, Inventories
and Estimated Life

Reference Oil Reblends

- ▶ No current reference oil reblends being pursued

Reference Oil Inventory Estimated Life

<u>Original Blend</u>	<u>Section</u>	<u>Oil</u>	<u>Tests</u>	<u>Year</u>	<u>Blend Quantity</u>	<u>TMC Inventory</u>
809	HDEO	809-1	1K, 1N	1991	9134	1816
811	HDEO	811-2	1K, 1N	1995	1732	690
821	HDEO	821-4	T-12	2013	4495	1824
822	HDEO	822-2	1R, T-11, ISBV156	2013	4386	296
823	HDEO	823-1	T-13	2021	1421	850
824	HDEO	824	T-13	2024	881	625
830	HDEO	830-3	ISM	2016	2891	1930
831	HDEO	831-5	C13, ISB	2024	1884	1722
832	HDEO	832-1	COAT	2018	1951	1214
832	HDEO	832-2	COAT	2022	734	514
833	HDEO	833-1	COAT	2022	1248	110
833	HDEO	833-2	COAT	2022	1078	689
834	HDEO	834-1	ISBV108	2024	1499	1372

Reference Oil Inventory Estimated Life

<u>Original Blend</u>	<u>Section</u>	<u>Oil</u>	<u>Tests</u>	<u>Year</u>	<u>Blend Quantity</u>	<u>TMC Inventory</u>
835	HDEO	835	ISB	2024	867	355
864	HDEO	864-1	DD13	2016	1576	137
864	HDEO	864-2	DD13	2023	1491	1459
1005	HDEO	1005-5	1P, 1R, EOAT, RFTW, T-8E	2015	3826	232
1005	HDEO	1005-6	EOAT, COAT	2021	480	238
1005	HDEO	1005-7	1P, 1R, EOAT, RFTW, T-8E	2024	981	981
FVTW1	HDEO	FVTW1	FVTW	2021	1020	691
FVTW2	HDEO	FVTW2	FVTW	2021	1020	691
FVTW3	HDEO	FVTW3-1	FVTW	2022	753	543

LTMS Deviations

»» April 1, 2025 – September 30, 2025

LTMS Deviations

- No LTMS Deviations in Current Period

Historical Count of HD LTMS Deviations

Test	LTMS Deviations
1M-PC	2
1N	2
T-8/E	2
T-10A	1
T-12	1

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Quality Index Deviations

»» April 1, 2025 – September 30, 2025

Quality Index Deviations

- ▶ C13 – oil gallery temperature due to control valve issue

Quality Index Deviations

Historical Count of HD Quality Index Deviations

Test	Qi Deviations
1P	15
1R	1
ISM	3
C13	3
T-10A	1
T-11	3
T-12	8
T-13	3
COAT	6

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TMC Laboratory Visits

➤➤ April 1, 2025 – September 30, 2025

Test Monitoring Center
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TMC Lab Visits

Test	Number of Labs Visited
N/A	N/A

No lab visits were conducted during this reporting period.

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Test Area Timelines

➤➤ April 1, 2025 – September 30, 2025

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Test Area Timeline Additions*

Test	Date	IL/Memo	Topic
ISB	20250507	25-2	NEW AVERAGE TAPPET MASS LOSS AND AVERAGE CAMSHAFT WEAR CORRECTION FACTORS
ISB	20250827	25-3	NEW AVERAGE TAPPET MASS LOSS CORRECTION FACTOR

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*As of 9/30/25

Test Monitoring Center
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Miscellaneous Information

- ▶ Available on TMC Website:
 - Oil Assignment Request and Test File Upload
 - Live Reference Test Data Bases
 - Surveillance Panel Meeting Minutes
 - Test Area Alarm Logs
 - Complete Test Area Timelines
 - LTMS Manual
- ▶ <https://www.astmtmc.org>

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