



## Test Monitoring Center

@ Carnegie Mellon University  
6555 Penn Avenue, Pittsburgh, PA 15206, USA

<http://astmtmc.cmu.edu>  
412-365-1000

MEMORANDUM: 18-008  
DATE: May 1, 2018  
TO: Wes Venhoff, Chairman, L-37 Surveillance Panel  
FROM: Dylan Beck *Dylan Beck*  
SUBJECT: L-37 Rater Calibration from October 1, 2017 through March 31, 2018

Attached is a summary of L-37 rater calibration activity this period.

DJB/djb/mem18-008.djb.doc

cc: Frank Farber

Jeff Clark

Scott Parke

L-37 Surveillance Panel

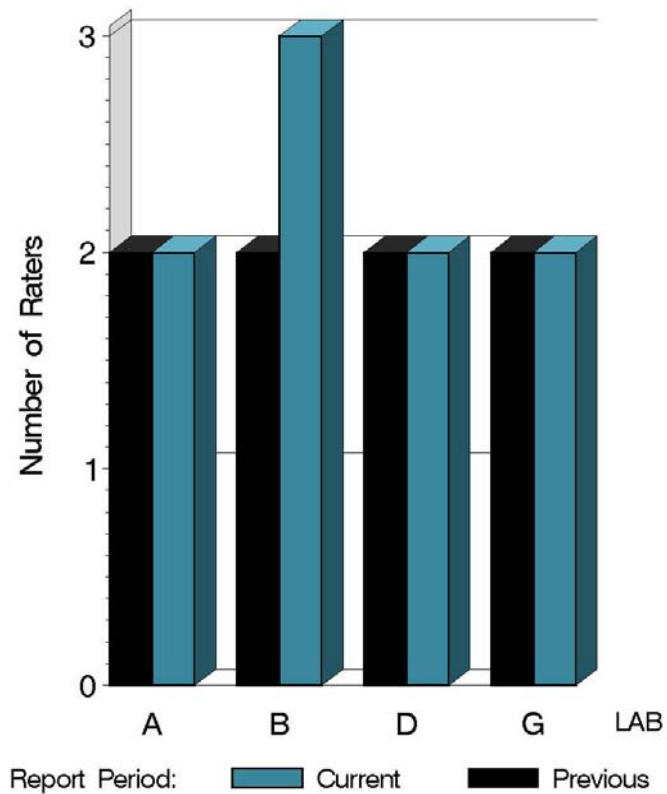
<http://www.astmtmc.cmu.edu/ftp/docs/gear/137rc/semiannualreports/137rc-04-2018.pdf>

Distribution: email

# L-37 Rater Calibration

	Reporting Data	Calibrated on 3-31-18
Number of Labs	4	4
Number of Raters	9	9

BY-LAB RATER DISTRIBUTION



10:41:50 30APR2018

# L-37 Rater Calibration

## Test Distribution by Validity

		Totals	
		Last Period	This Period
Accepted for calibration	AC	10	10
Rejected (Mild)	OC	0	1
Rejected (Severe)	OC	2	3
Rejected (Multiple)	OC	0	0
Rejected (Precision)	OC	0	0
Workshop data	AG	9	24
<hr/>			
Total		21	38

# L-37 Rater Calibration

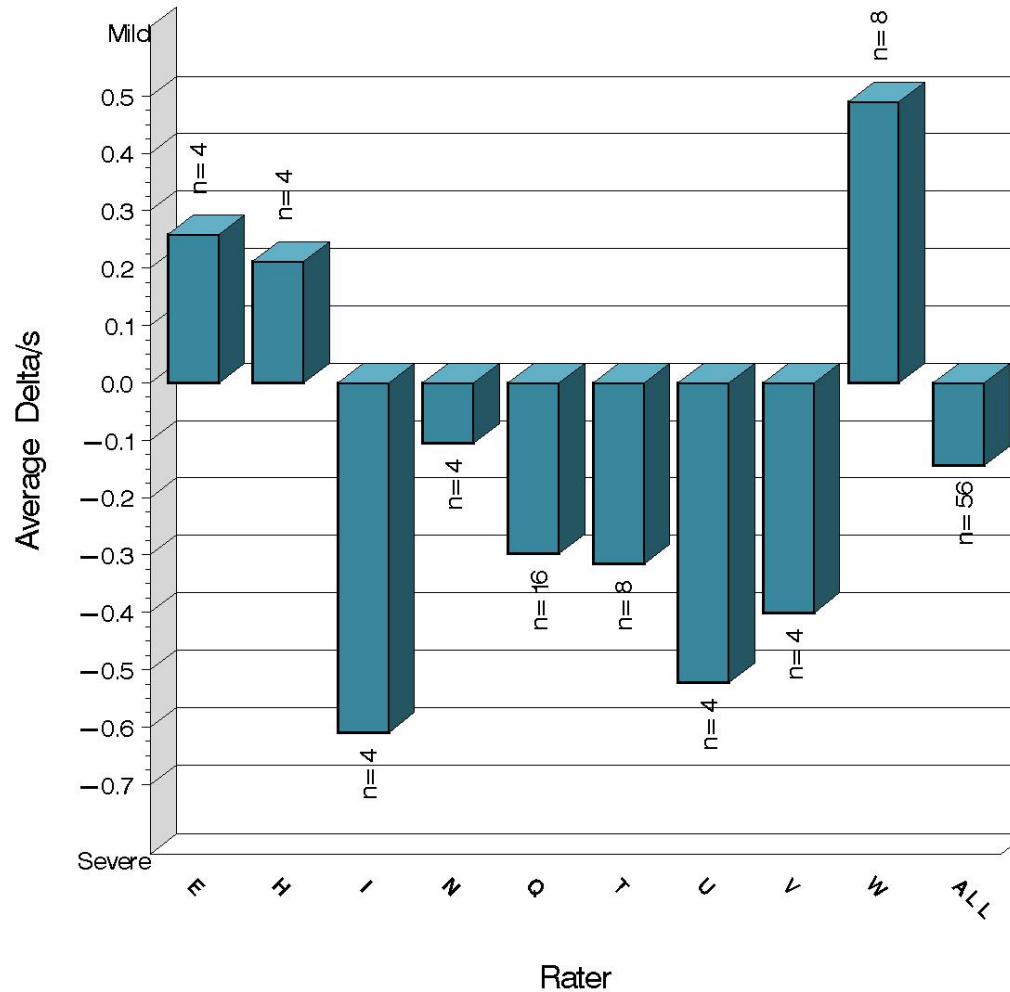
Rater	N	RIDG		RIPP		SPIT		WEAR	
		Avg Yi	STD*	Avg Yi	STD*	Avg Yi	STD*	Avg Yi	STD*
E	4	0.258	1.166	-0.545	0.991	0.594	0.657	0.599	0.400
H	4	0.212	0.846	-0.329	0.507	-0.152	0.376	0.111	0.673
I	4	-0.609	0.798	0.464	0.411	0.215	0.175	-0.300	0.215
N	4	-0.105	0.871	0.299	0.400	0.342	0.267	0.360	0.719
Q	12	-0.311	1.221	0.180	0.890	-0.006	0.314	0.174	0.892
T	8	-0.315	1.319	-0.412	1.061	-0.373	1.191	-0.433	1.372
U	4	-0.522	0.699	-0.927	0.862	0.328	0.189	-0.027	0.337
V	4	-0.400	0.328	-0.662	0.174	-0.154	0.178	-0.187	0.353
W	8	0.490	0.706	0.681	0.786	0.276	0.407	0.257	1.301
ALL	56	-0.144	0.995	-0.048	0.886	0.082	0.583	0.064	0.891

\* Due to the small number of ratings per pinion, the standard deviation of the Yi values is given in place of a pooled standard deviation.

# L-37 Rater Calibration

## RIDGING

Severity as Measured by Delta/s

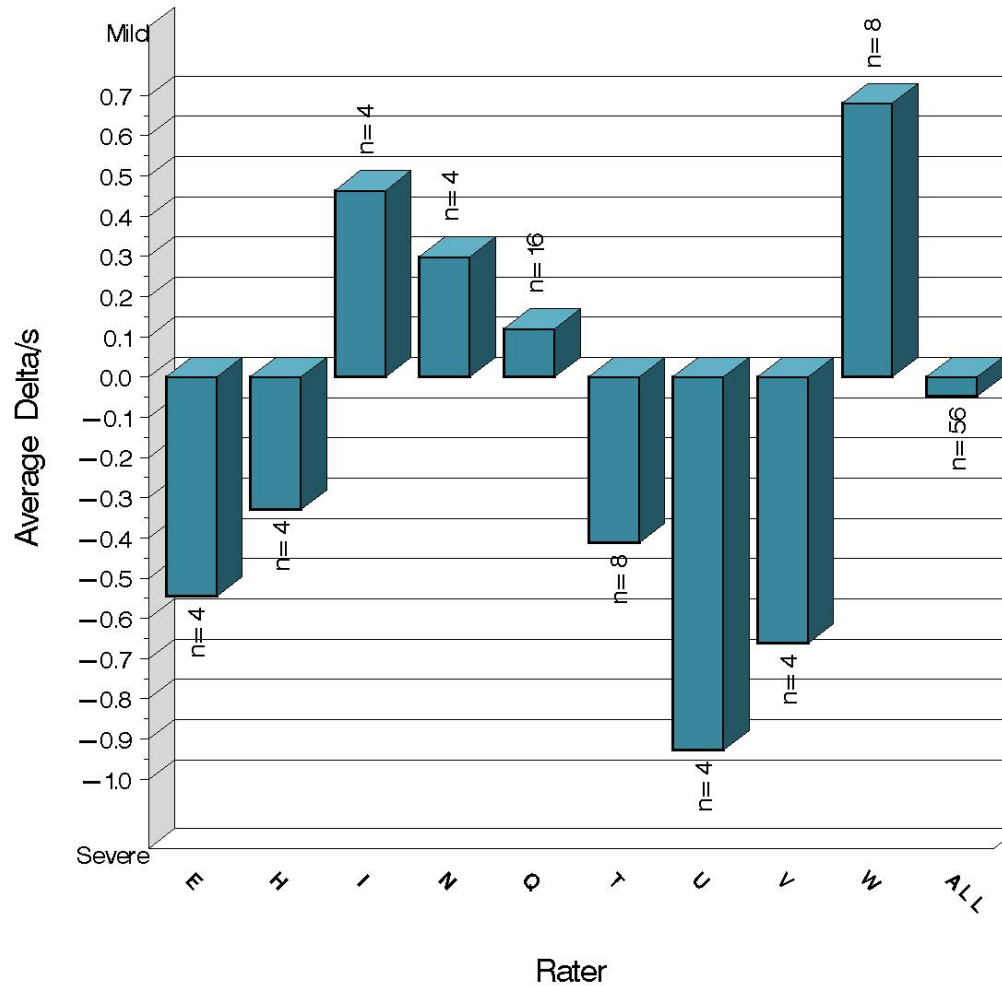


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# L-37 Rater Calibration

## RIPPLING

Severity as Measured by Delta/s

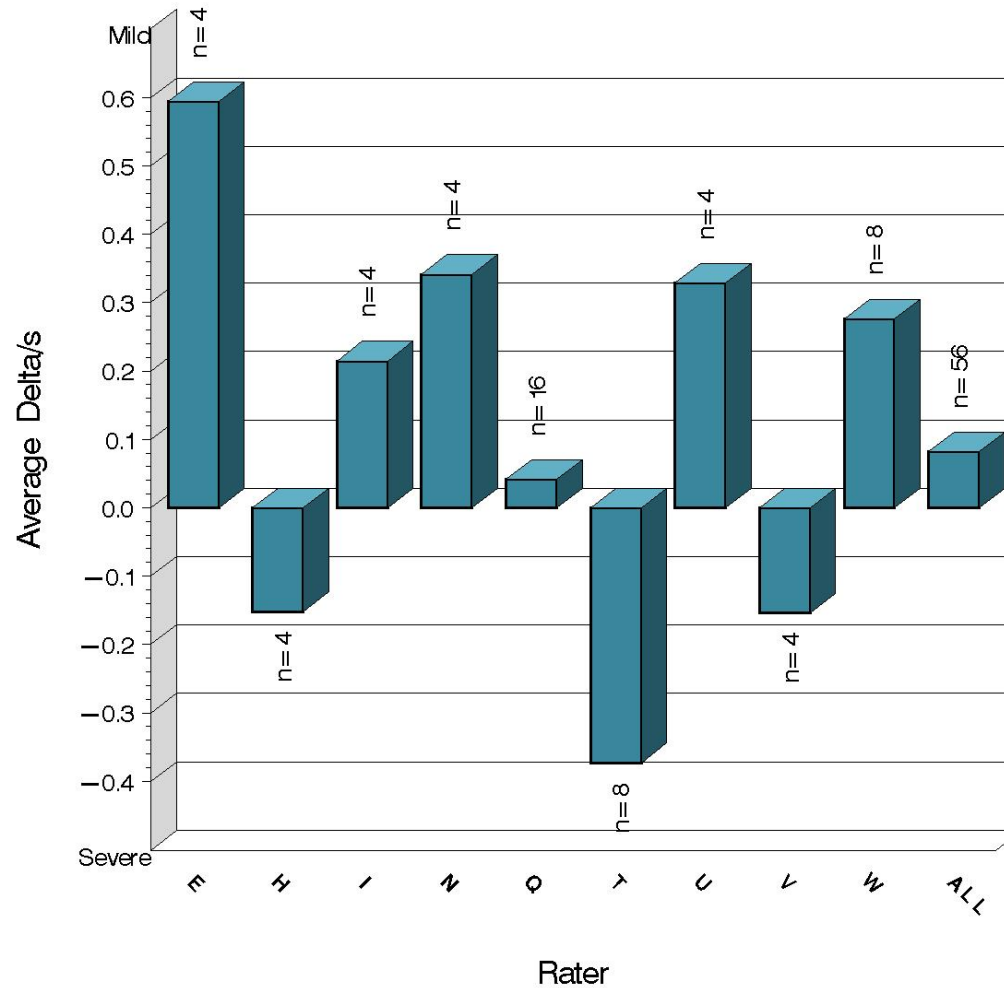


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# L-37 Rater Calibration

## SPITTING

Severity as Measured by Delta/s

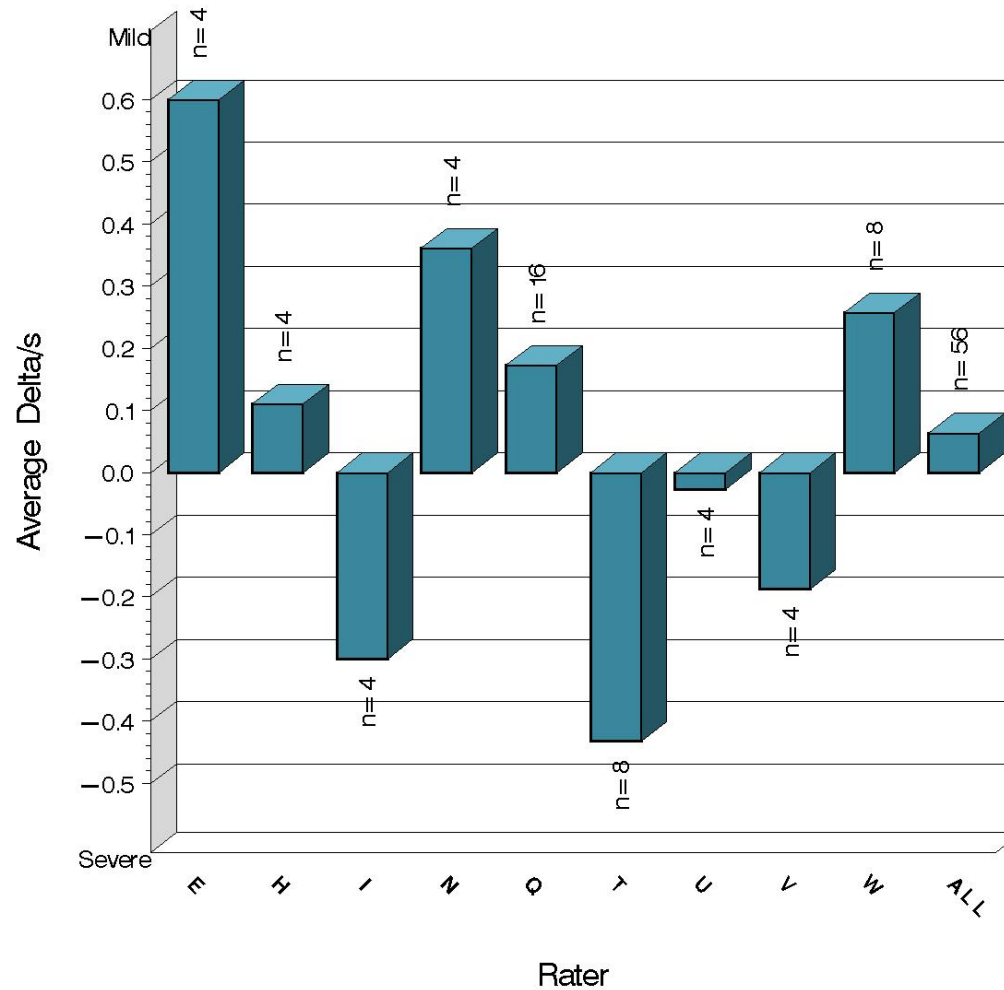


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# L-37 Rater Calibration

## WEAR

Severity as Measured by Delta/s



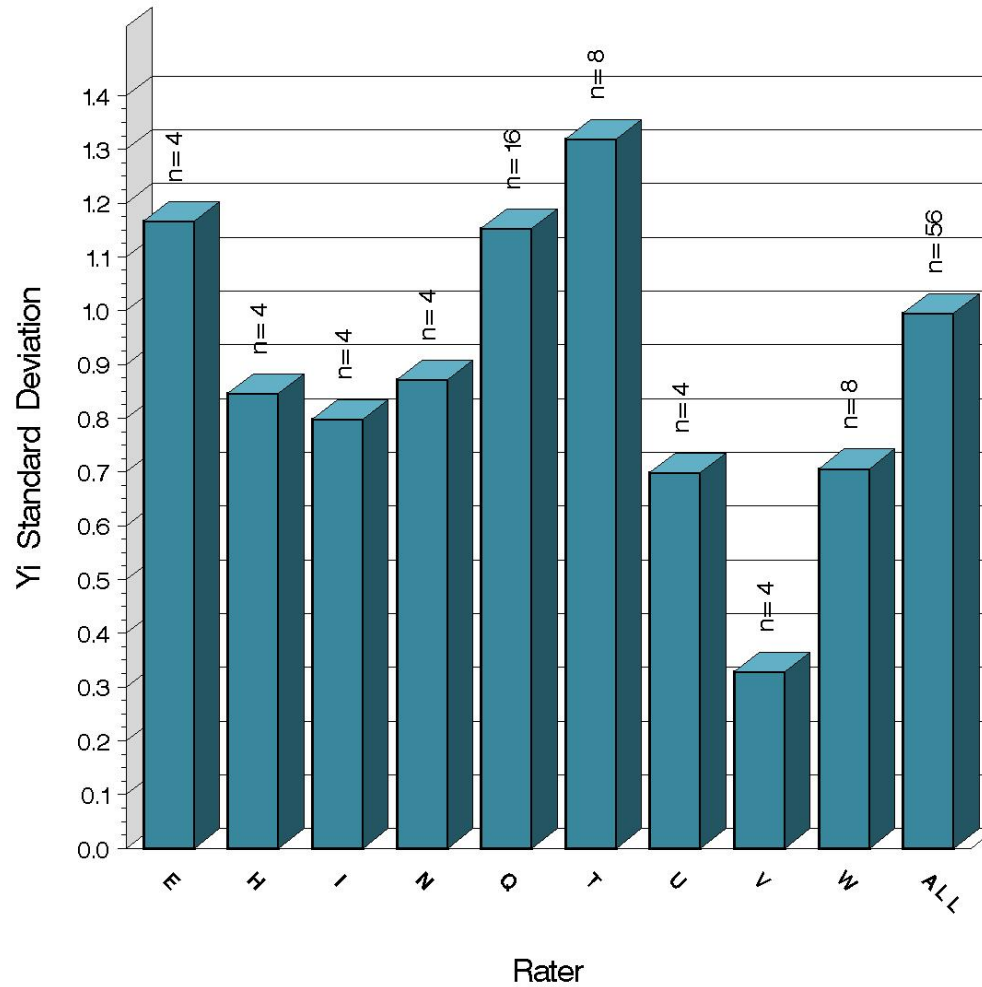
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# L-37 Rater Calibration

## RIDGING

Precision as Measured by Yi STD

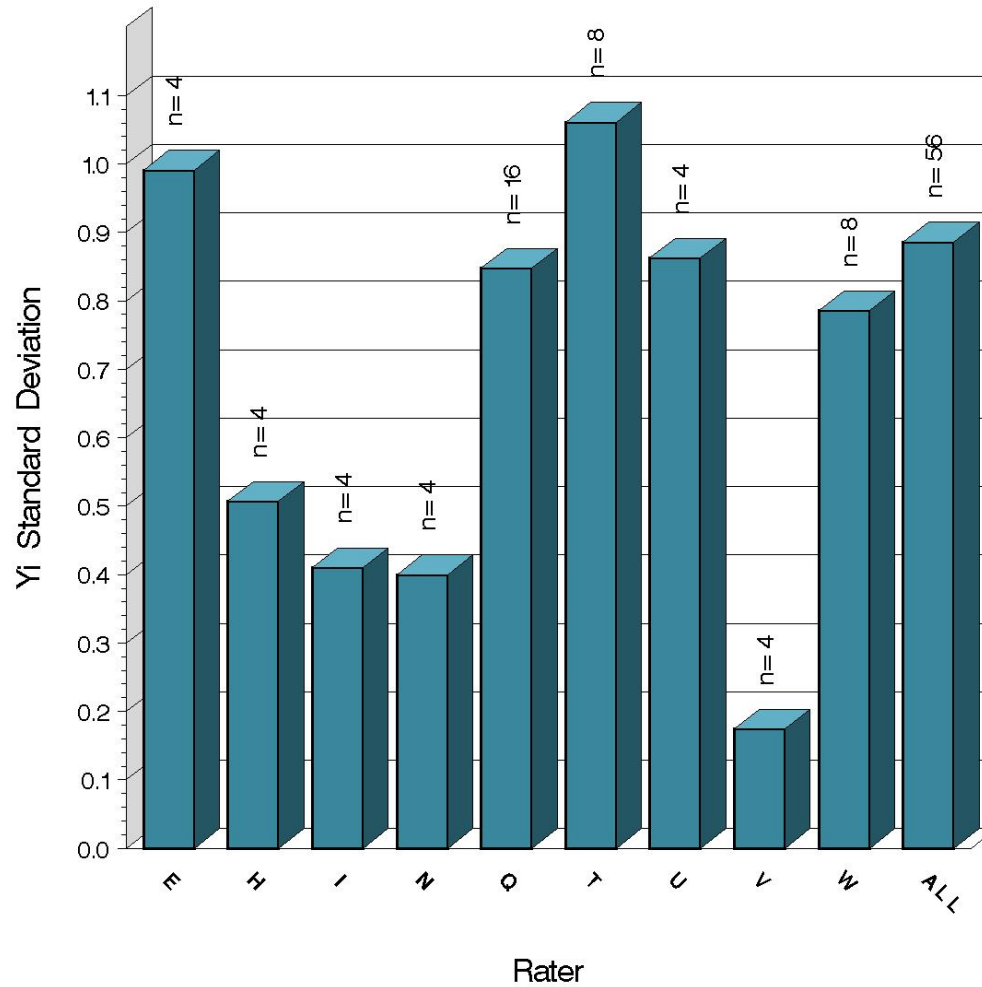


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# L-37 Rater Calibration

## RIPPLING

Precision as Measured by Yi STD

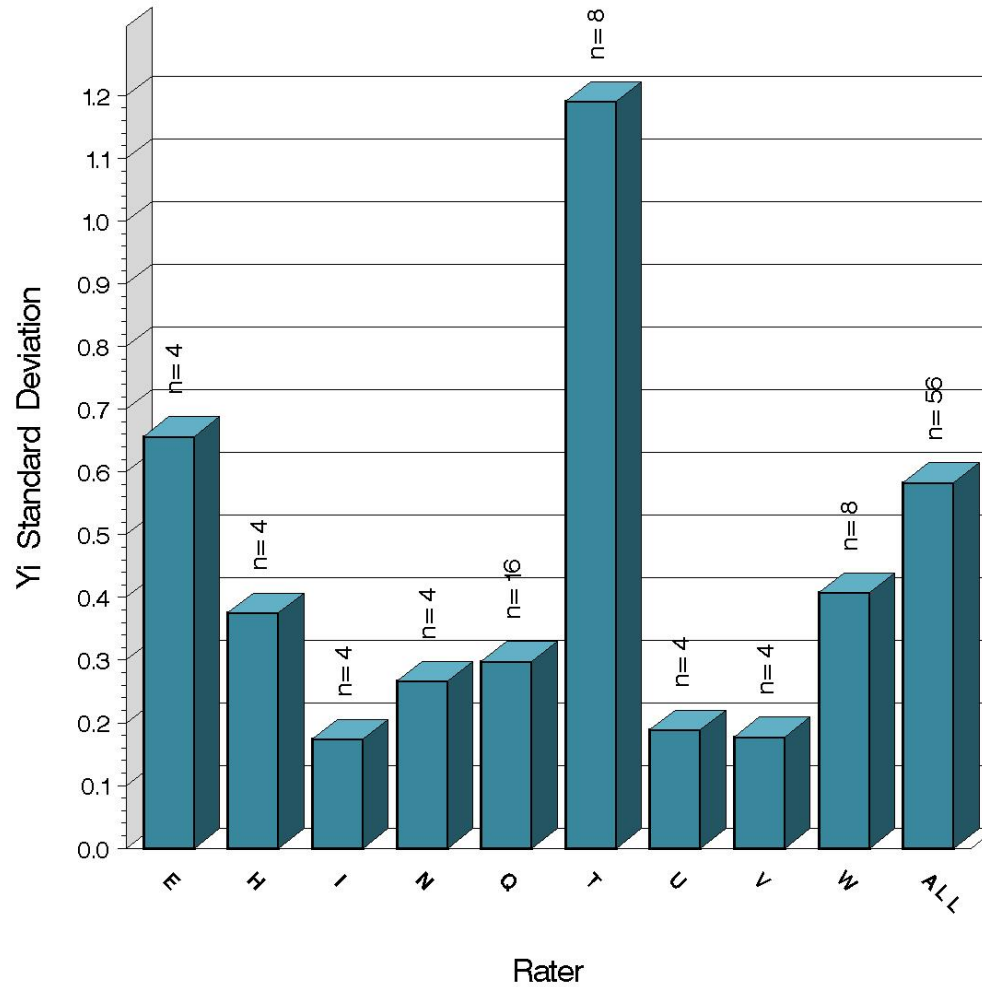


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# L-37 Rater Calibration

## SPITTING

Precision as Measured by Yi STD

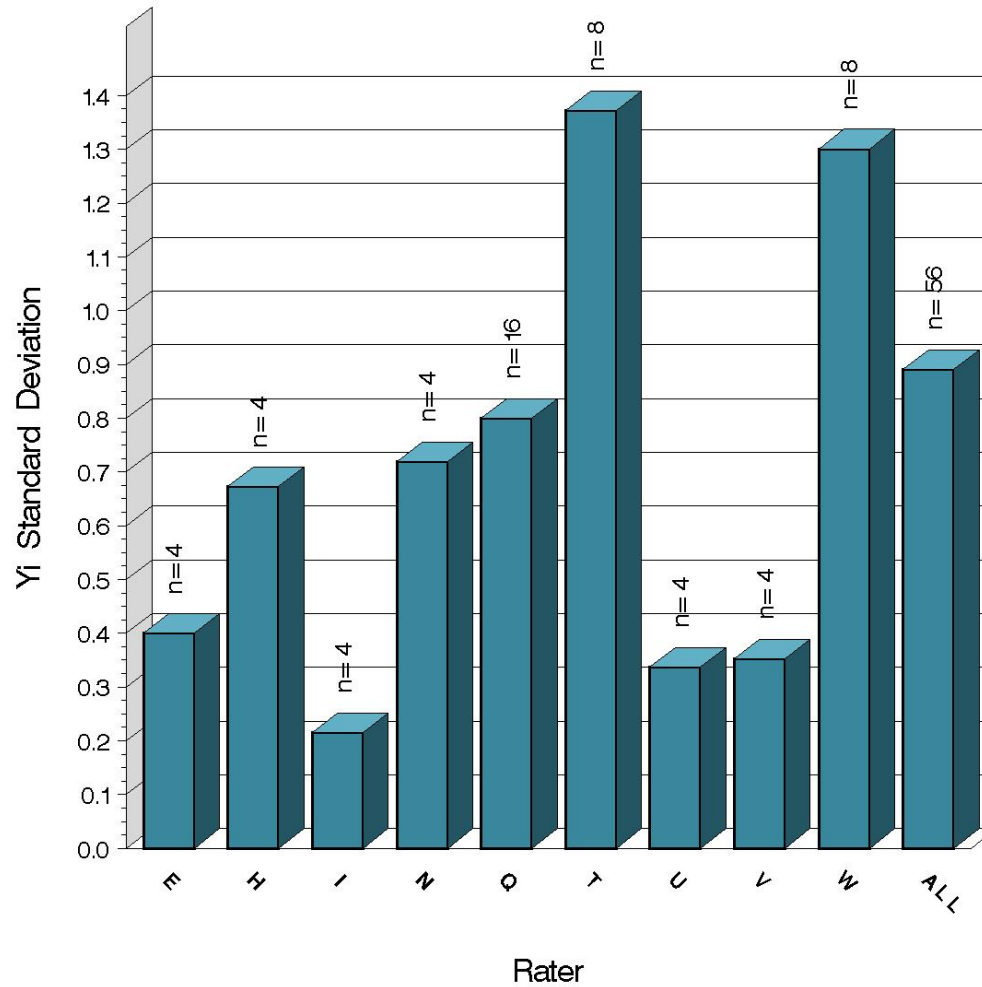


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# L-37 Rater Calibration

## WEAR

Precision as Measured by Yi STD



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# L-37 Rater Calibration

## SUMMARY OF SEVERITY & PRECISION

### Severity

Industry rater severity for WEAR, RIDG, and SPIT have all remained within the action limit during this period. RIPP started out exceeding the action limit this period but has since returned to within limits.

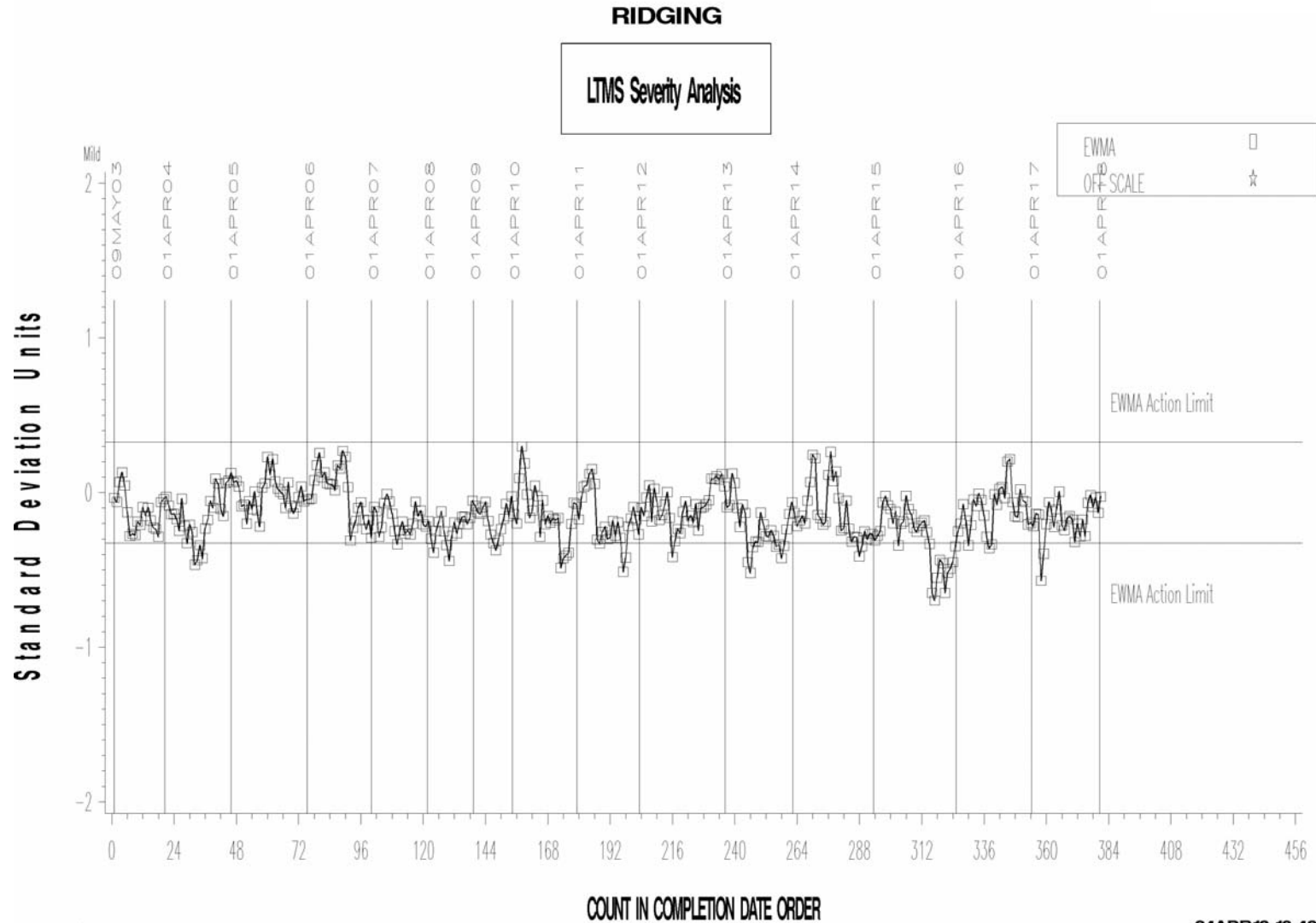
### Precision

Industry precision for all parameters remained within limits throughout the period.

Industry rater control charts follow.

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

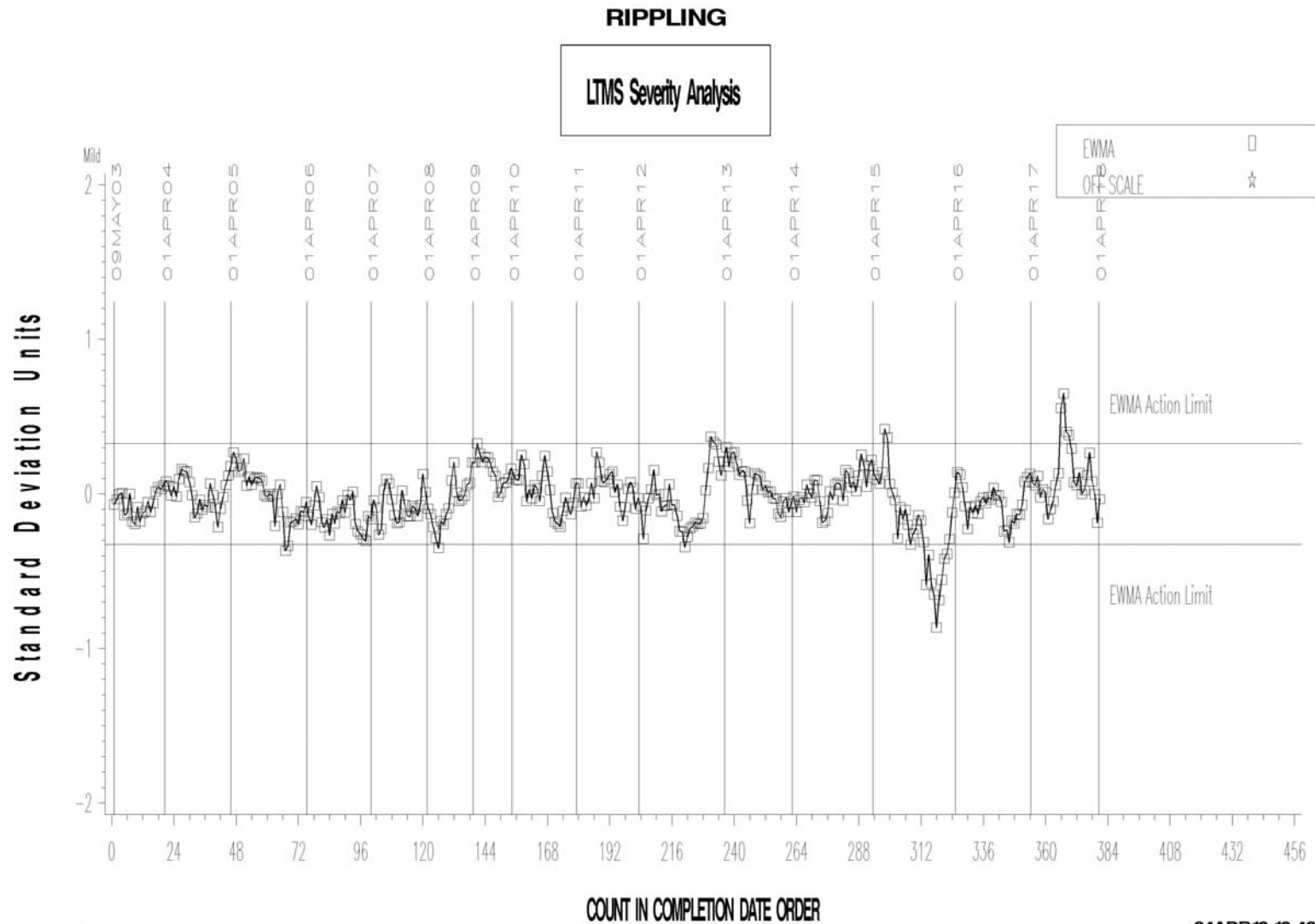


Severity

24APR18: 10:43

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

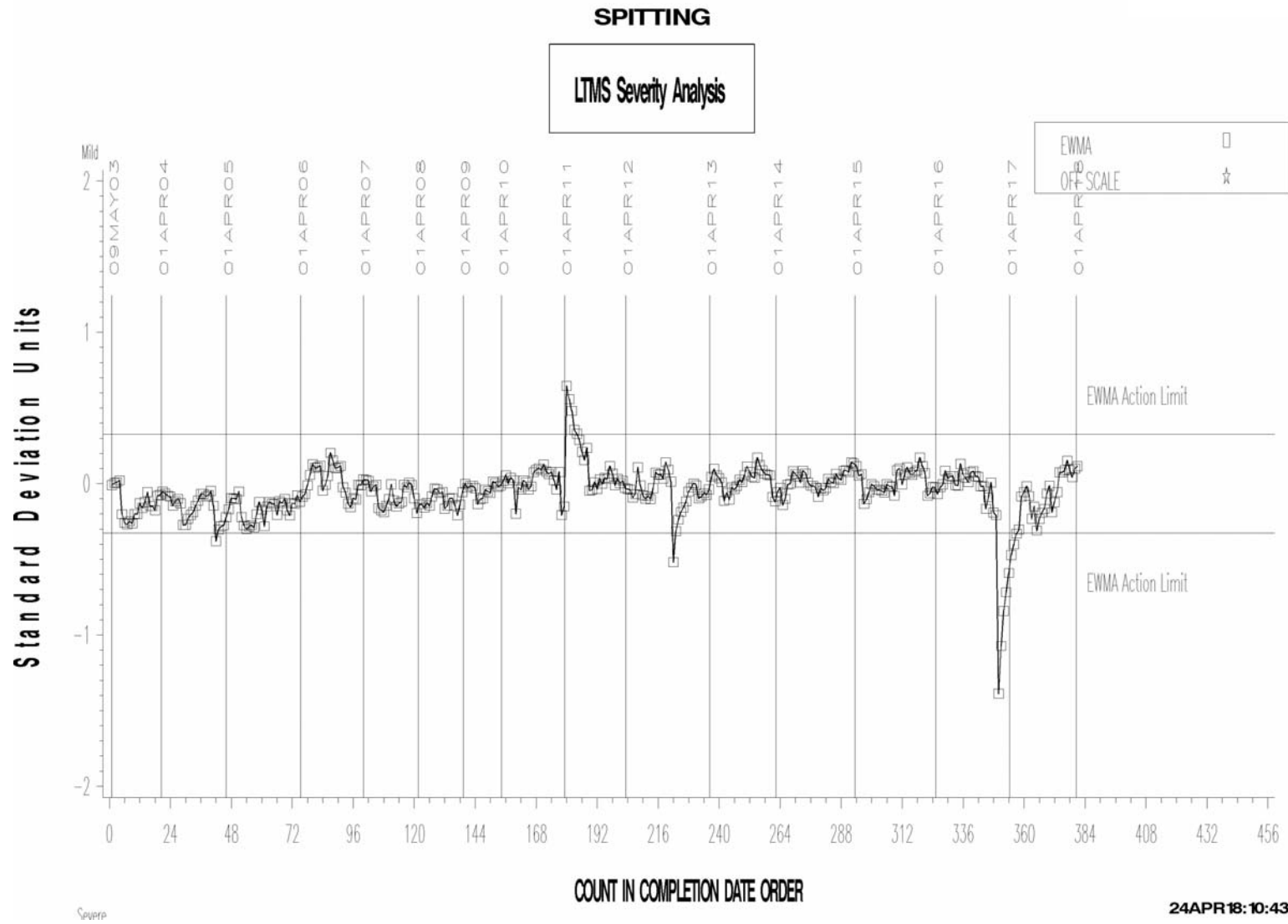


Severn

24APR18: 10:43

# L-37 Rater Calibration

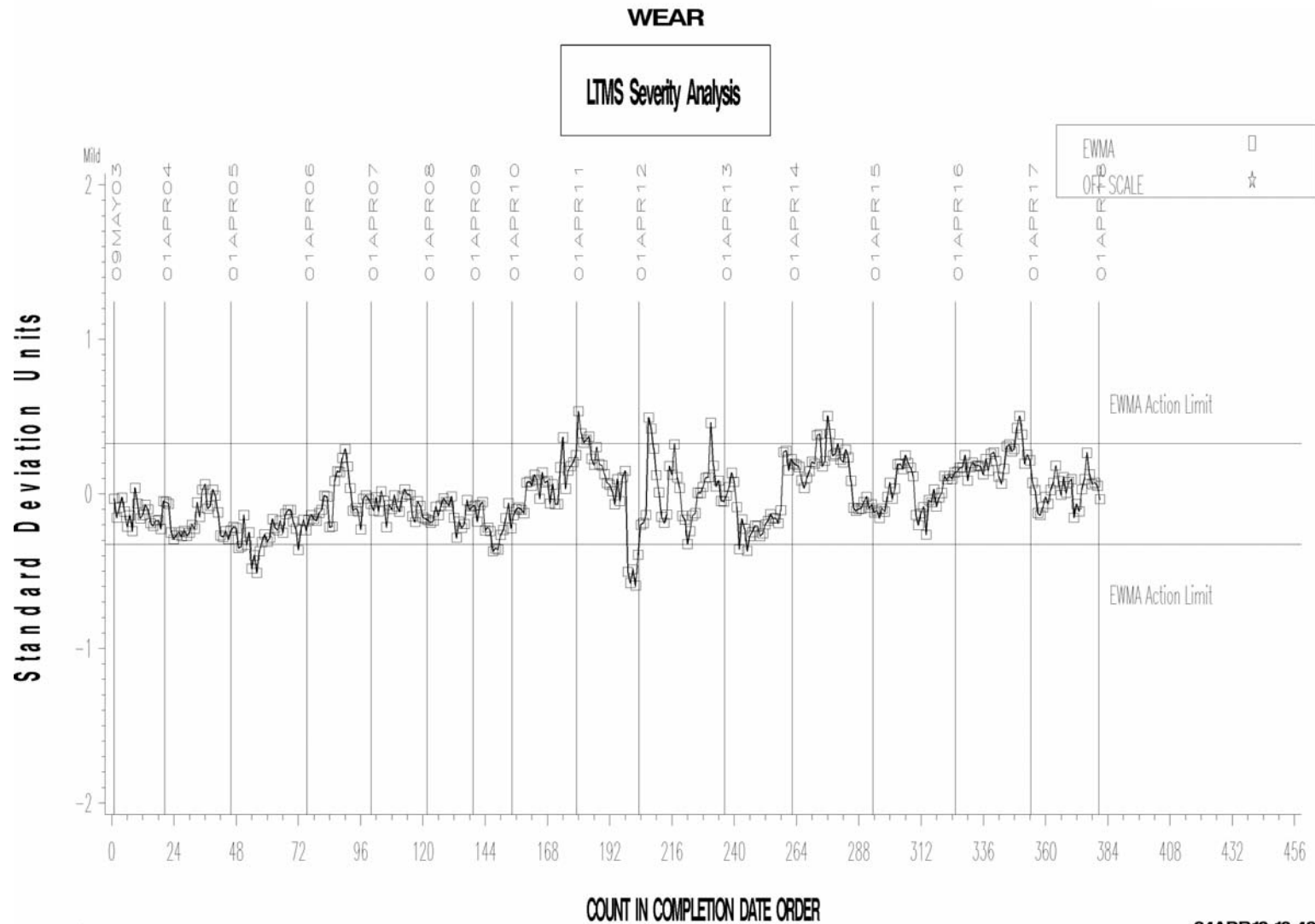
L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA





# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

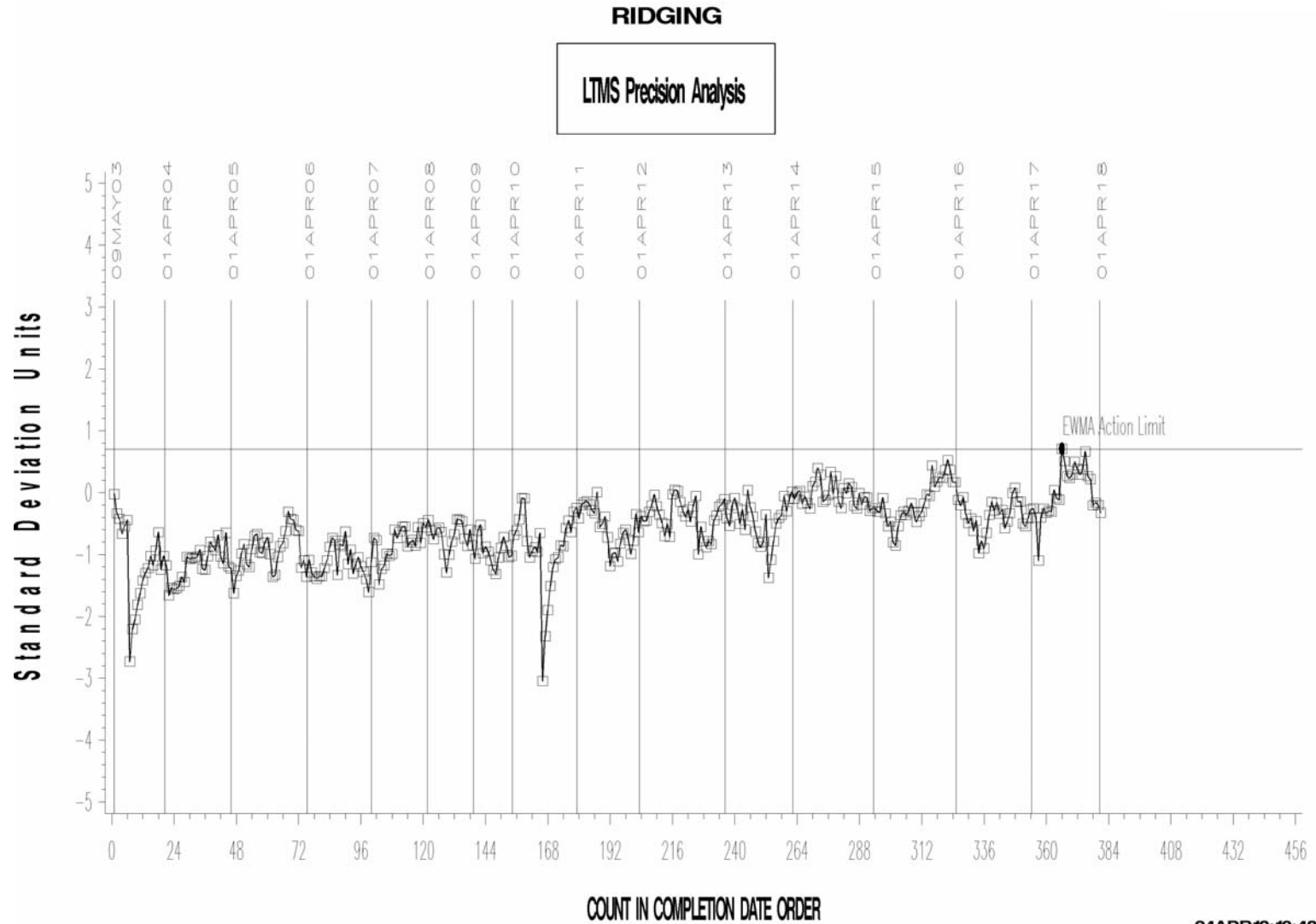


Severn

24APR18: 10:43

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA



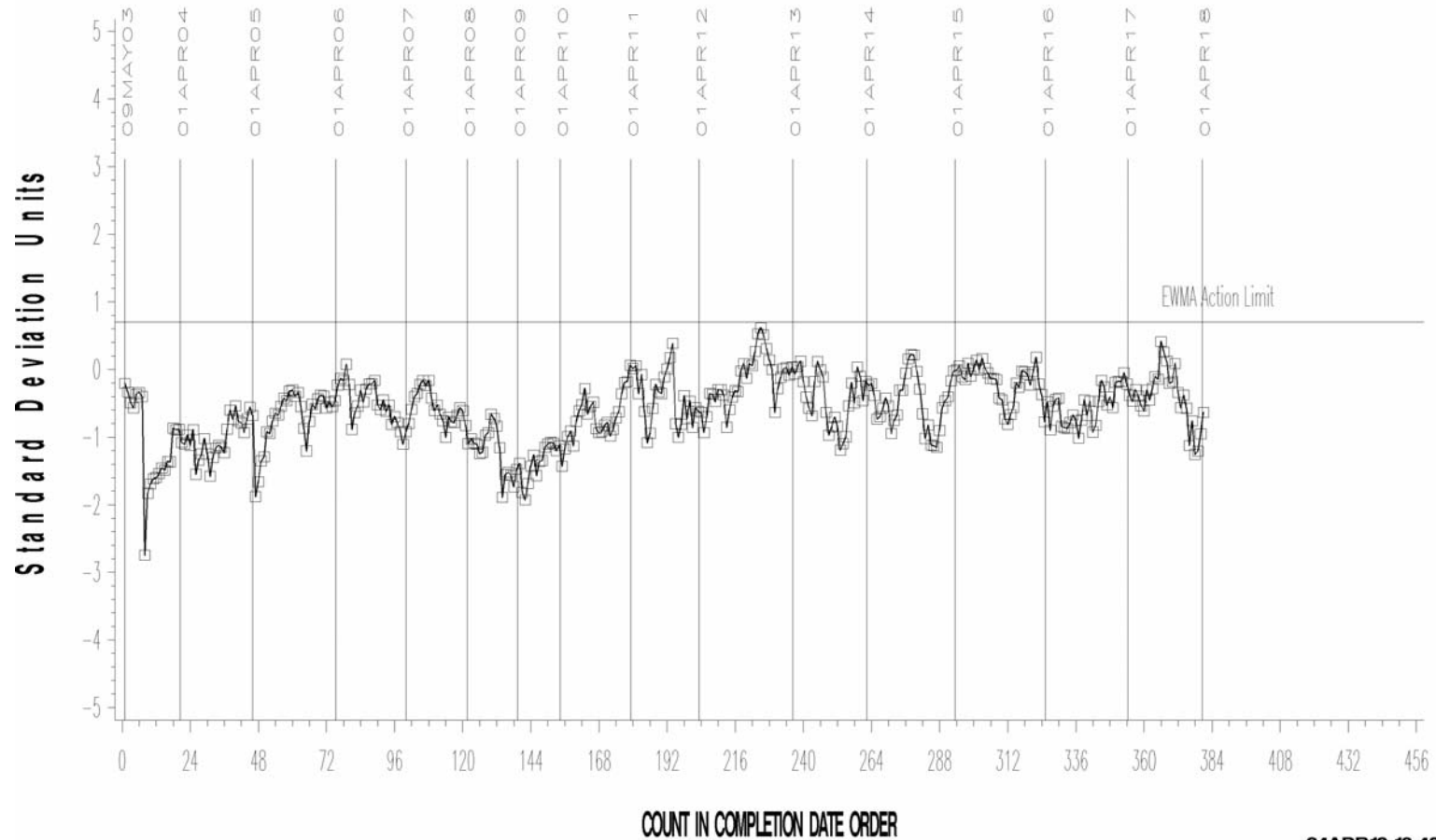
24APR18: 10:48

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIPPLING

LTMS Precision Analysis



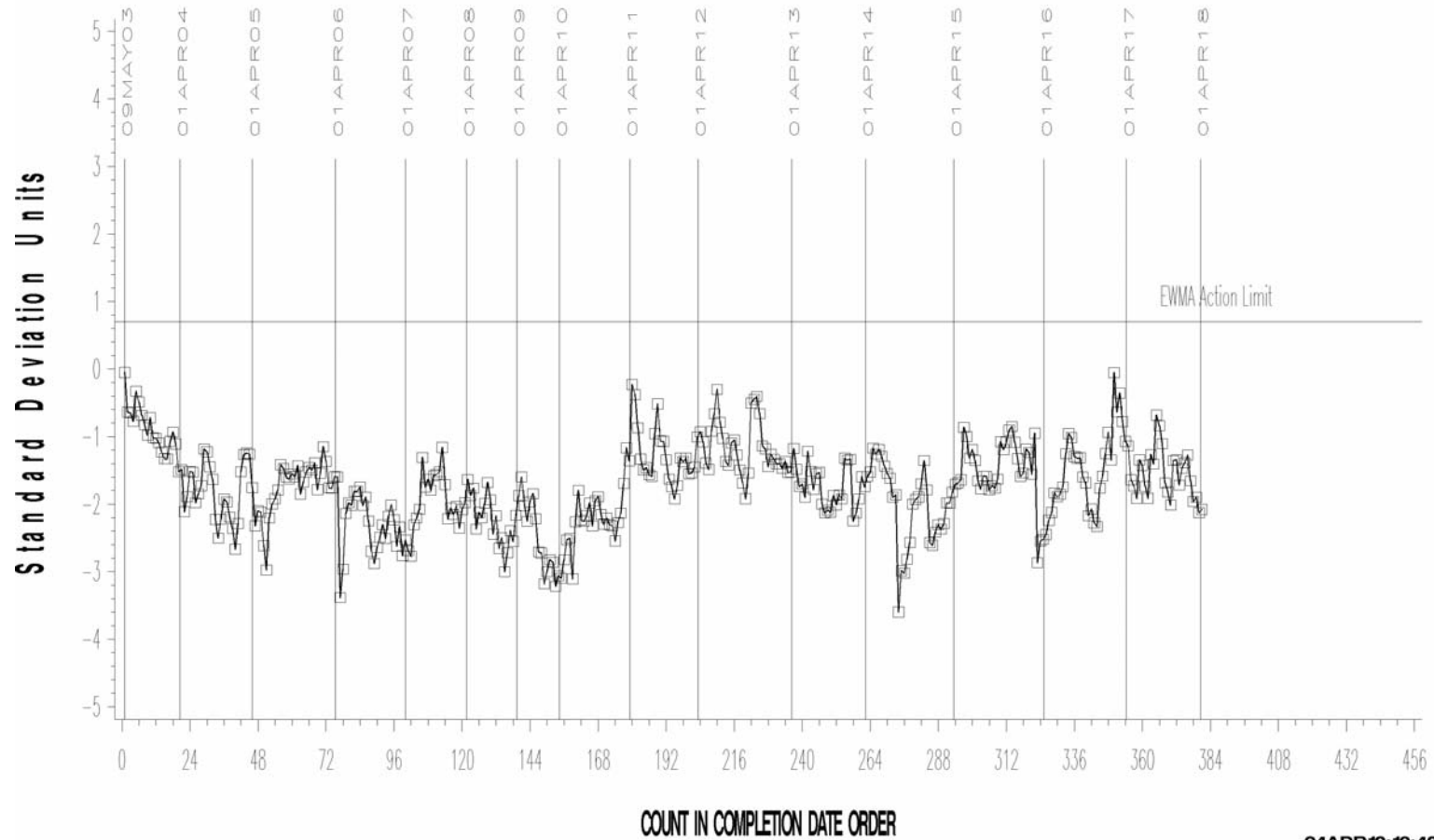
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

SPITTING

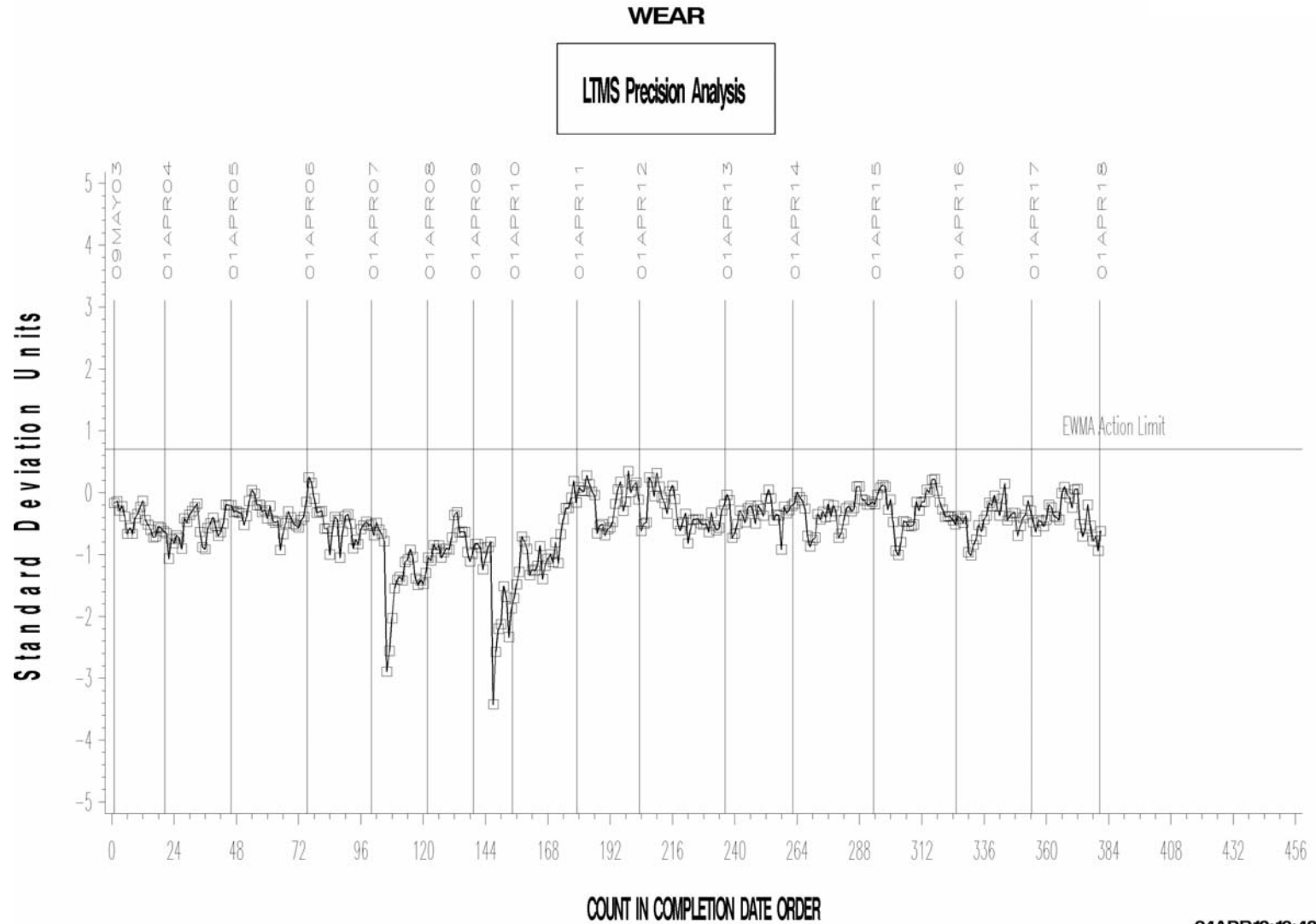
LTMS Precision Analysis



24APR18: 10:48

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA



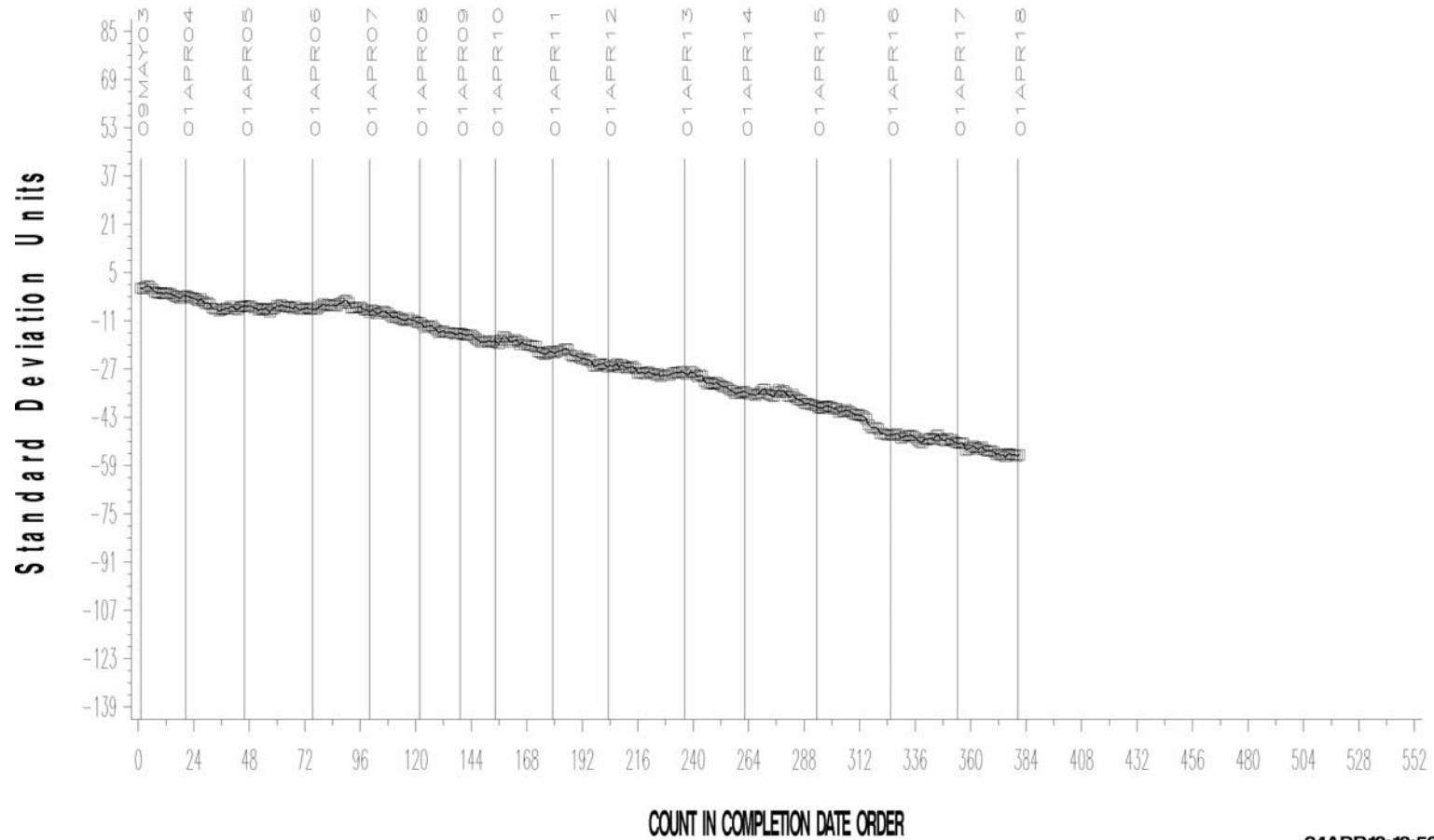
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

RIDGING

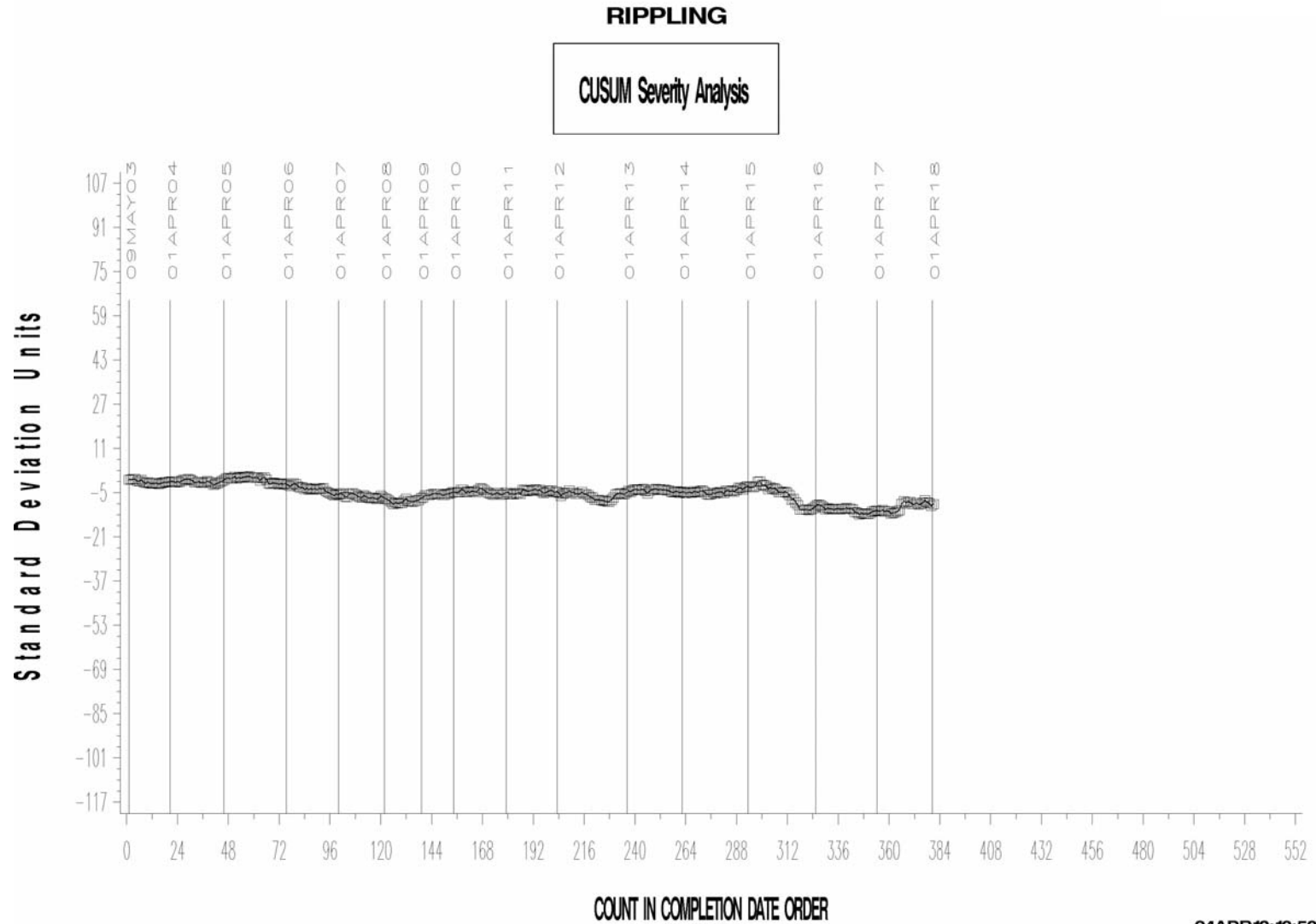
CUSUM Severity Analysis



24APR18: 10:50

# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA



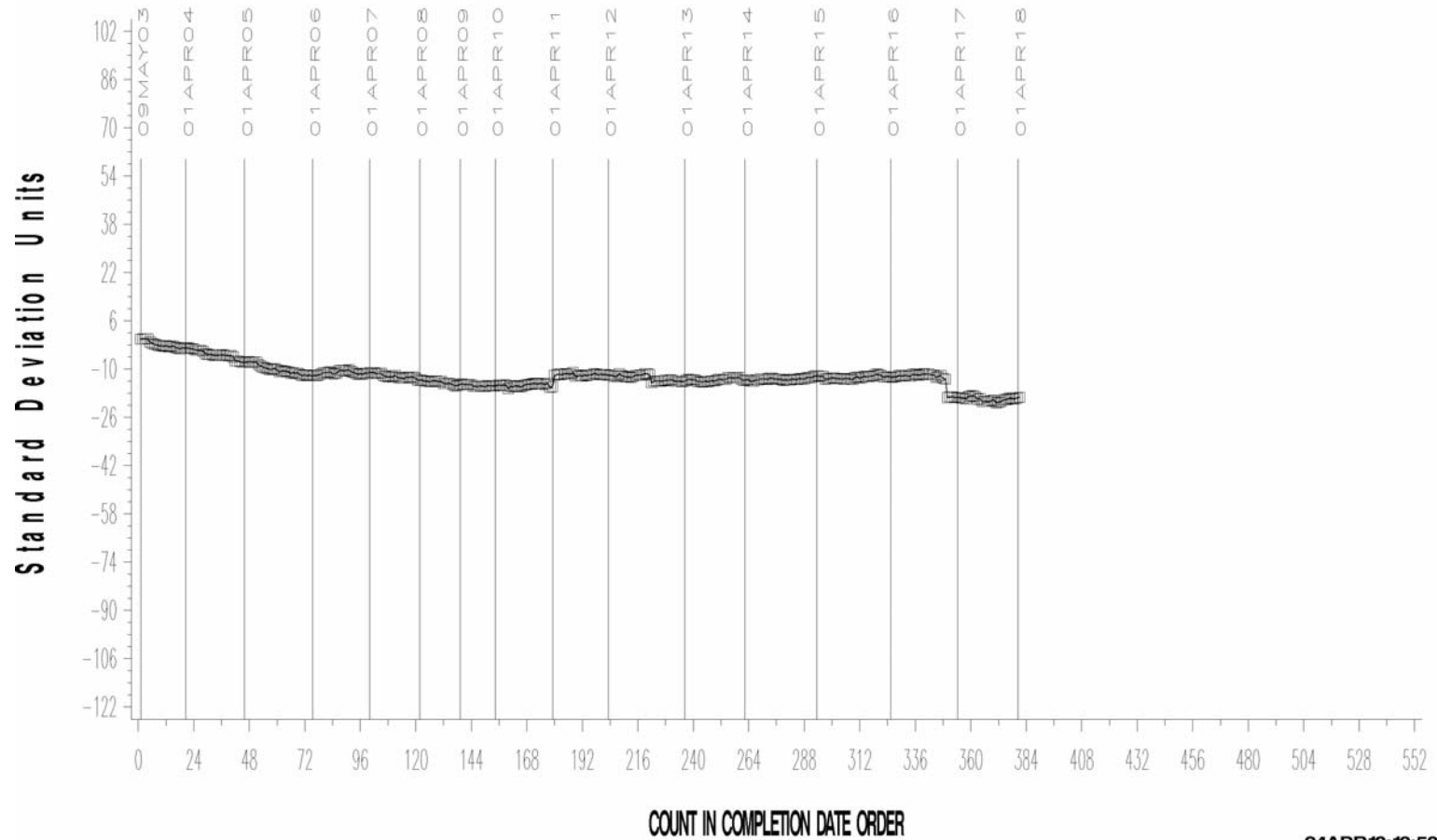
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# L-37 Rater Calibration

L-37 RATER CALIBRATION INDUSTRY OPERATIONALLY VALID DATA

SPITTING

CUSUM Severity Analysis

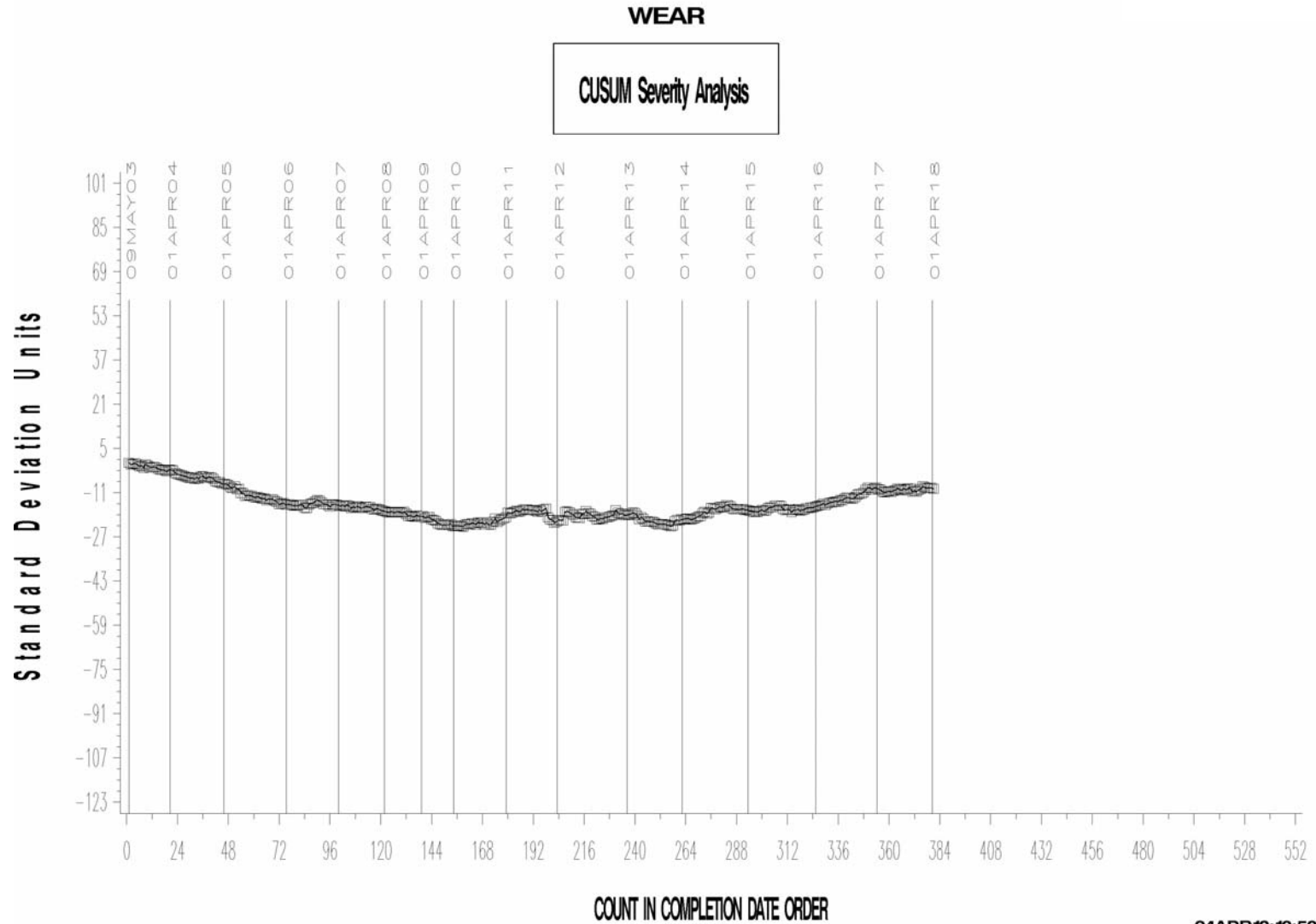


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24APR18: 10:50