



A Program of ASTM International

# **Test Monitoring Center**

<http://astmtmc.cmu.edu>

## ASTM Reference Testing Semi-Annual Report D7216 EOEC

Fall 2019

# EOEC Test Activity\*

Test Status		Fluoroelast.	Nitrile	Polyacrylate	Silicone	VAMAC	Total
Acceptable Calibration Test	AC	60	59	64	61	77	321
Failed Calibration Test	OC	1	0	1	2	2	6
Operationally Invalid, by lab	LC	0	0	0	0	0	0
Operationally Invalid, by TMC	RC	0	0	0	0	0	0
Aborted	XC	0	0	0	0	0	0
Donated – SL107	AG, OG	35	35	39	35	35	179
<b>Total</b>		<b>96</b>	<b>94</b>	<b>104</b>	<b>98</b>	<b>114</b>	<b>506</b>

\*April 1, 2019 – September 30, 2019

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# EOEC Lost Tests\*

Status	Cause	#
	No invalidated or lost EOEC tests reported this period.	0
<b>Total</b>		<b>0</b>

\*Invalid and aborted calibration tests

# EOEC Test Severity

## ▶ Fluoroelastomer (FKM)

Parameter	Period Mean $\Delta$ /s	Status
Volume Change	-0.07	On-target
Points Hardness Change	0.04	On-target
Tensile Strength Change	-0.03	On-target
Elongation Change	-0.83	Mild

# EOEC Test Severity

## ▶ Nitrile (NBR)

Parameter	Period Mean $\Delta$ /s	Status
Volume Change	1.97	Severe
Points Hardness Change	0.49	Severe
Tensile Strength Change	-0.78	Mild
Elongation Change	-0.11	Mild

# EOEC Test Severity

## ▶ Polyacrylate (ACM)

Parameter	Period Mean $\Delta/s$	Status
Volume Change	2.11	Severe
Points Hardness Change	0.16	Severe
Tensile Strength Change	0.05	On-target
Elongation Change	0.84	Severe

# EOEC Test Severity

## ▶ Silicone (VMQ)

Parameter	Period Mean $\Delta/s$	Status
Volume Change	0.84	Severe
Points Hardness Change	-0.56	Mild
Tensile Strength Change	-0.04	On-target
Elongation Change	-0.60	Mild

# EOEC Test Severity

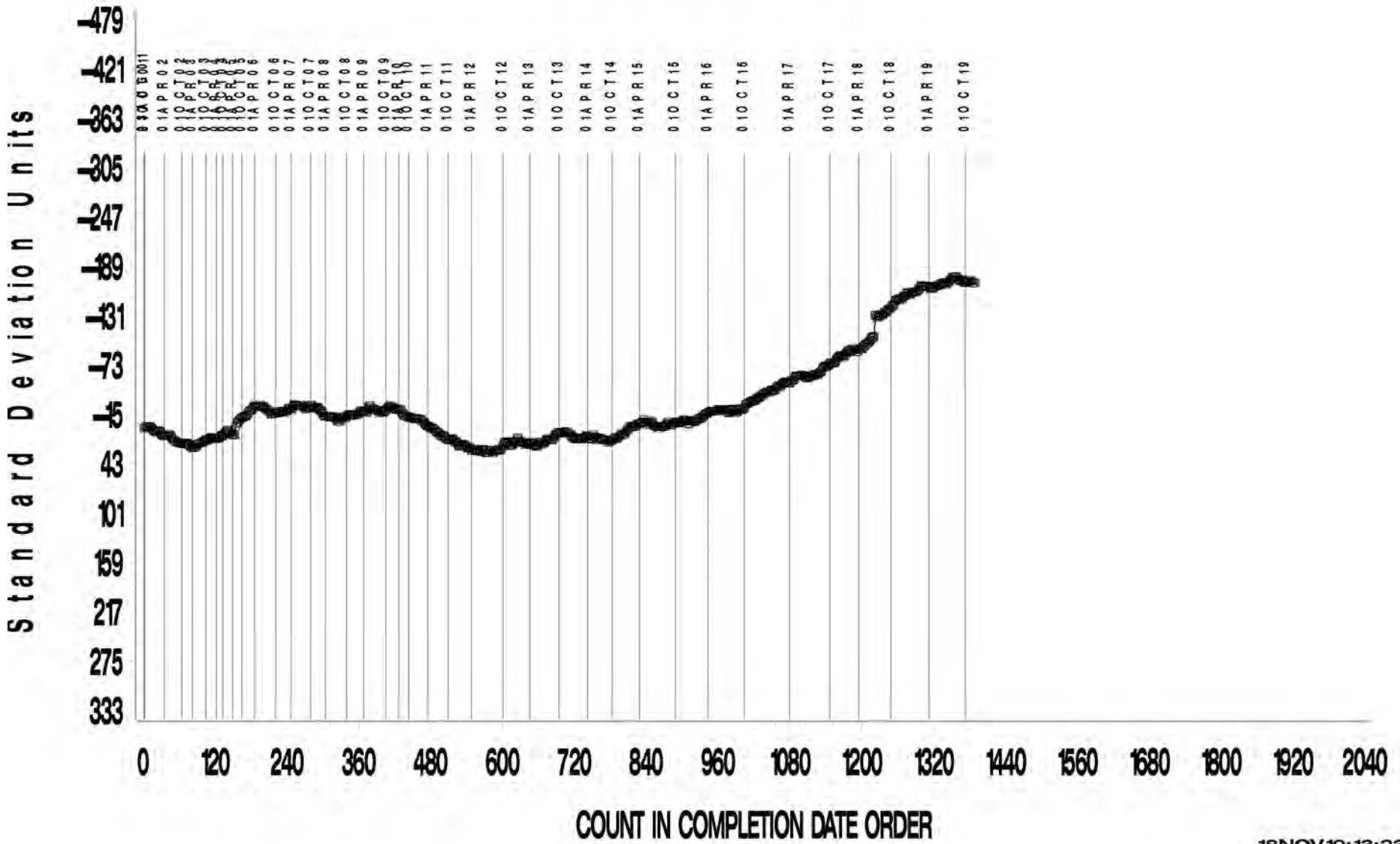
## ▶ VAMAC (MAC)

Parameter	Period Mean $\Delta/s$	Status
Volume Change	0.44	Severe
Points Hardness Change	-1.61	Mild
Tensile Strength Change	-0.40	Mild
Elongation Change	-0.33	Mild



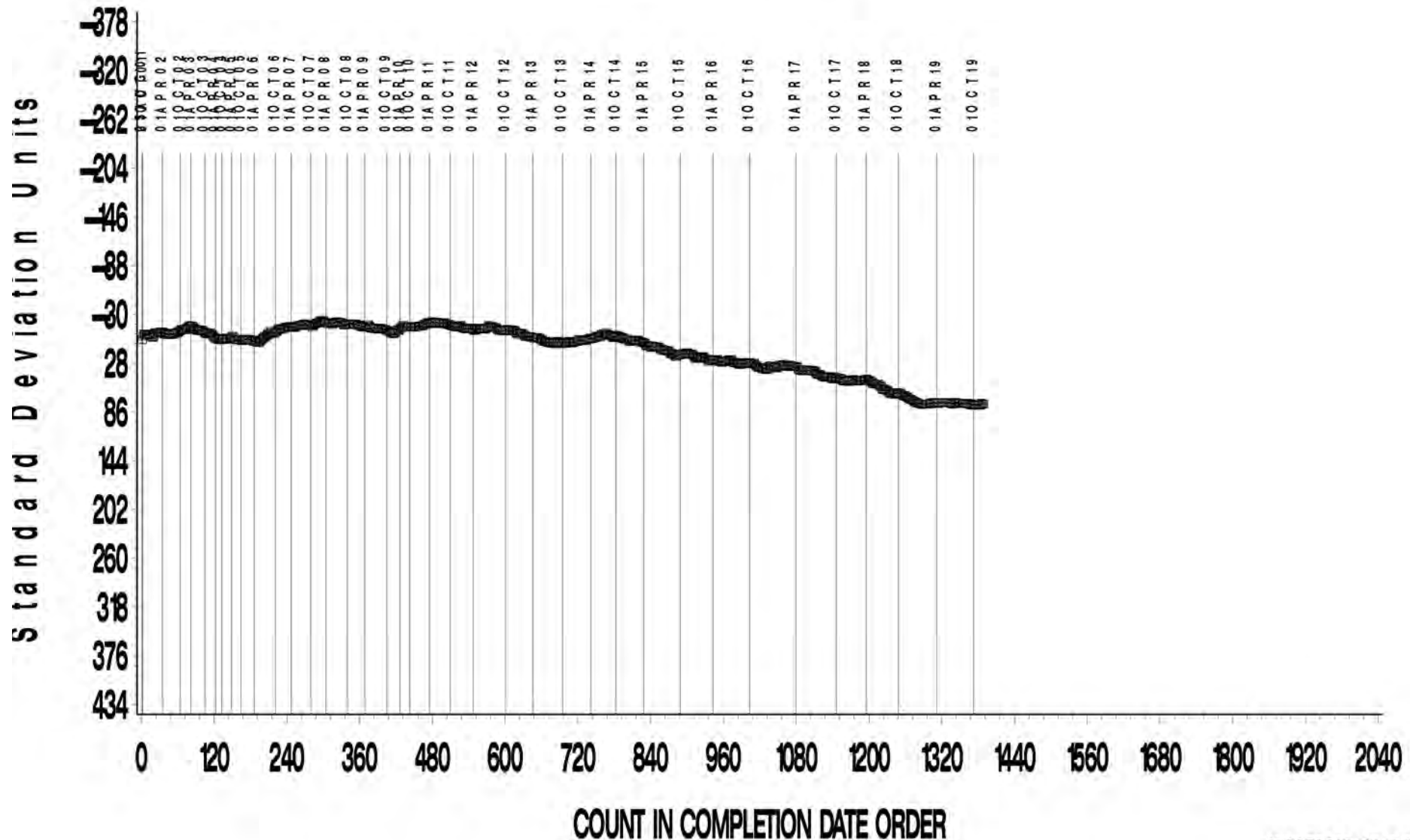
FLUROELASTOMER VOLUME CHANGE AVG.

CUSUM Severity Analysis



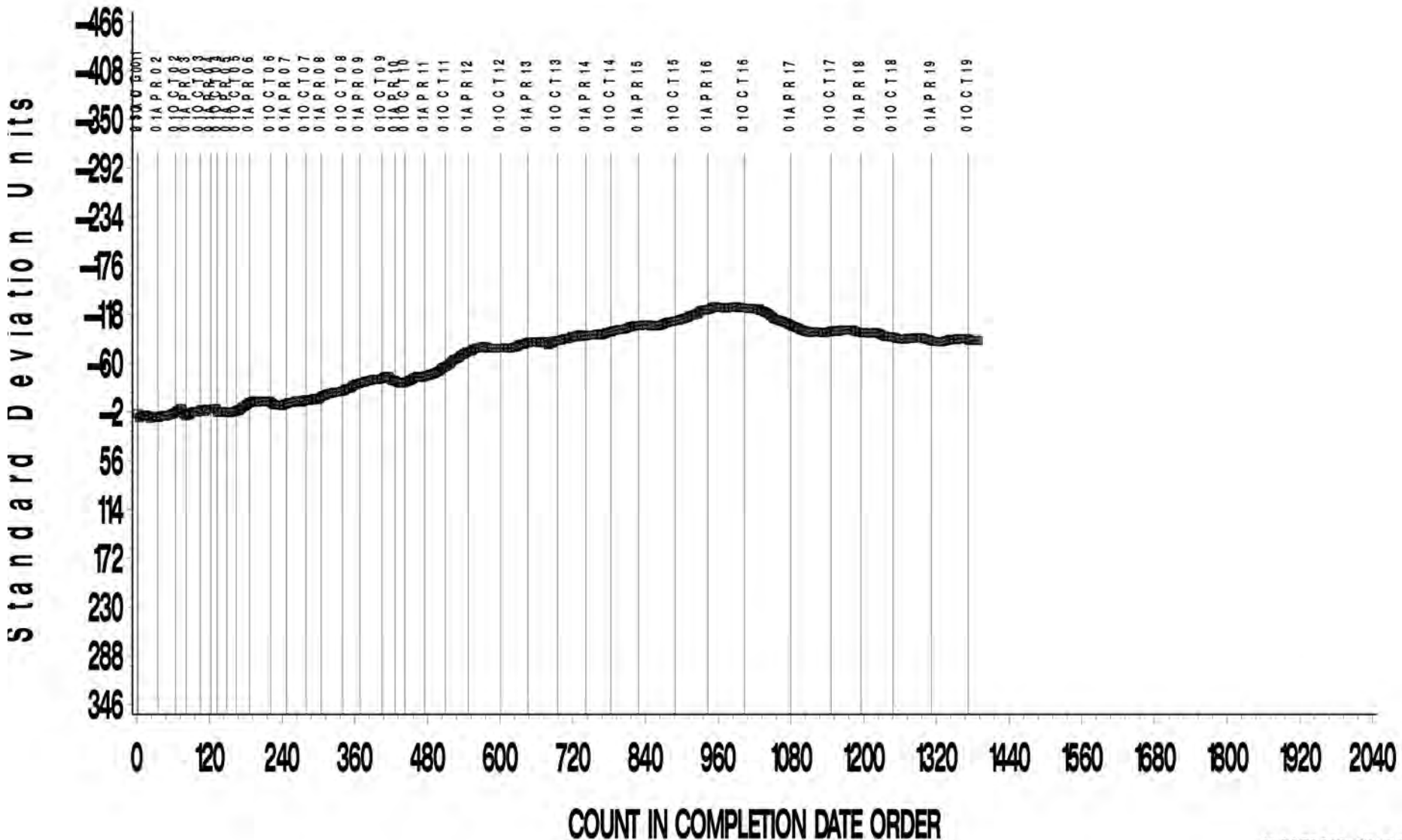
FLUOROELASTOMER POINTS HARDNESS CHANGE

CUSUM Severity Analysis



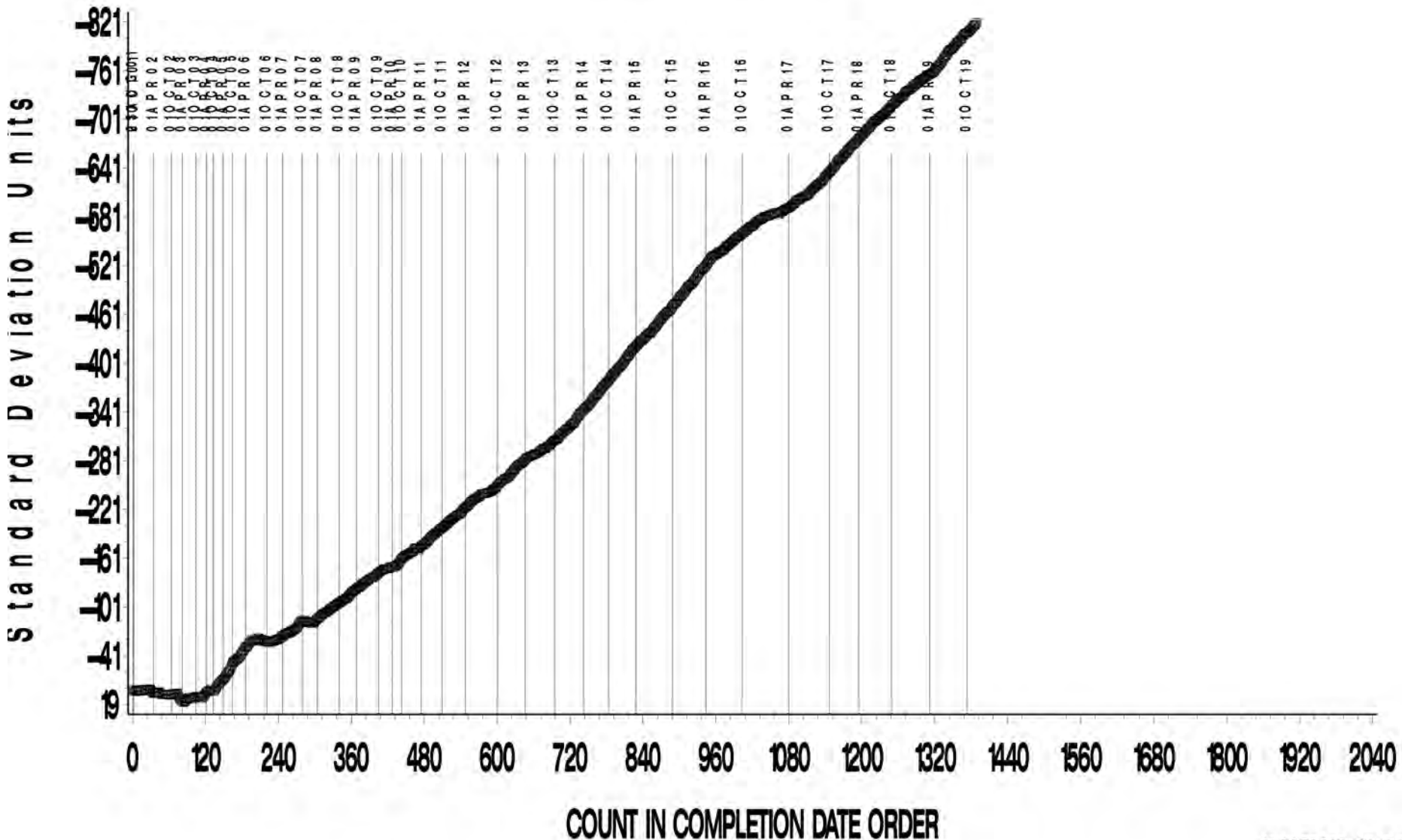
FLUROELASTOMER TENSILE STRENGTH CHANGE

CUSUM Severity Analysis



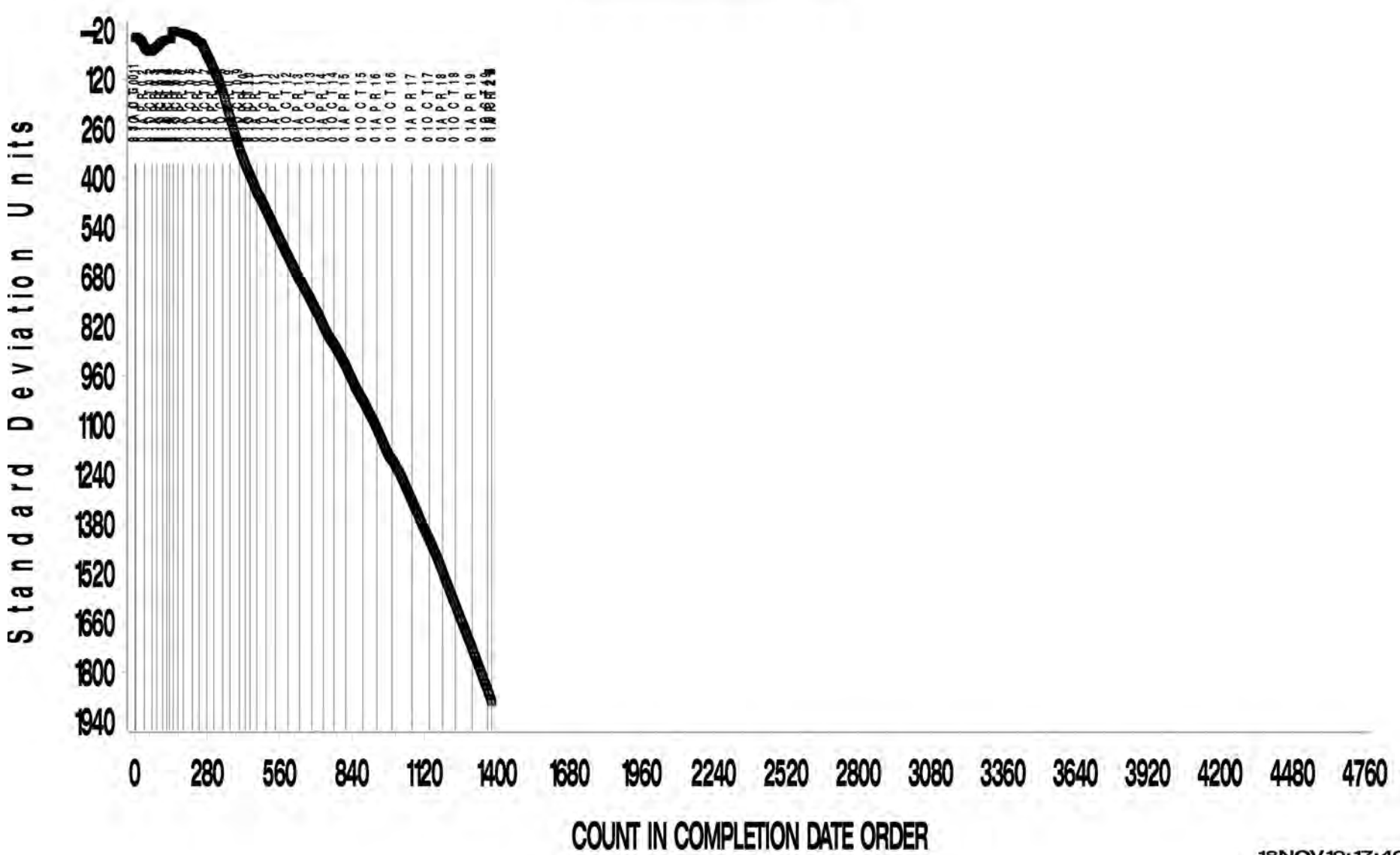
FLUROELASTOMER ELONGATION CHANGE AVG.

CUSUM Severity Analysis



REFERENCE NITRILE VOLUME CHANGE AVERAGE

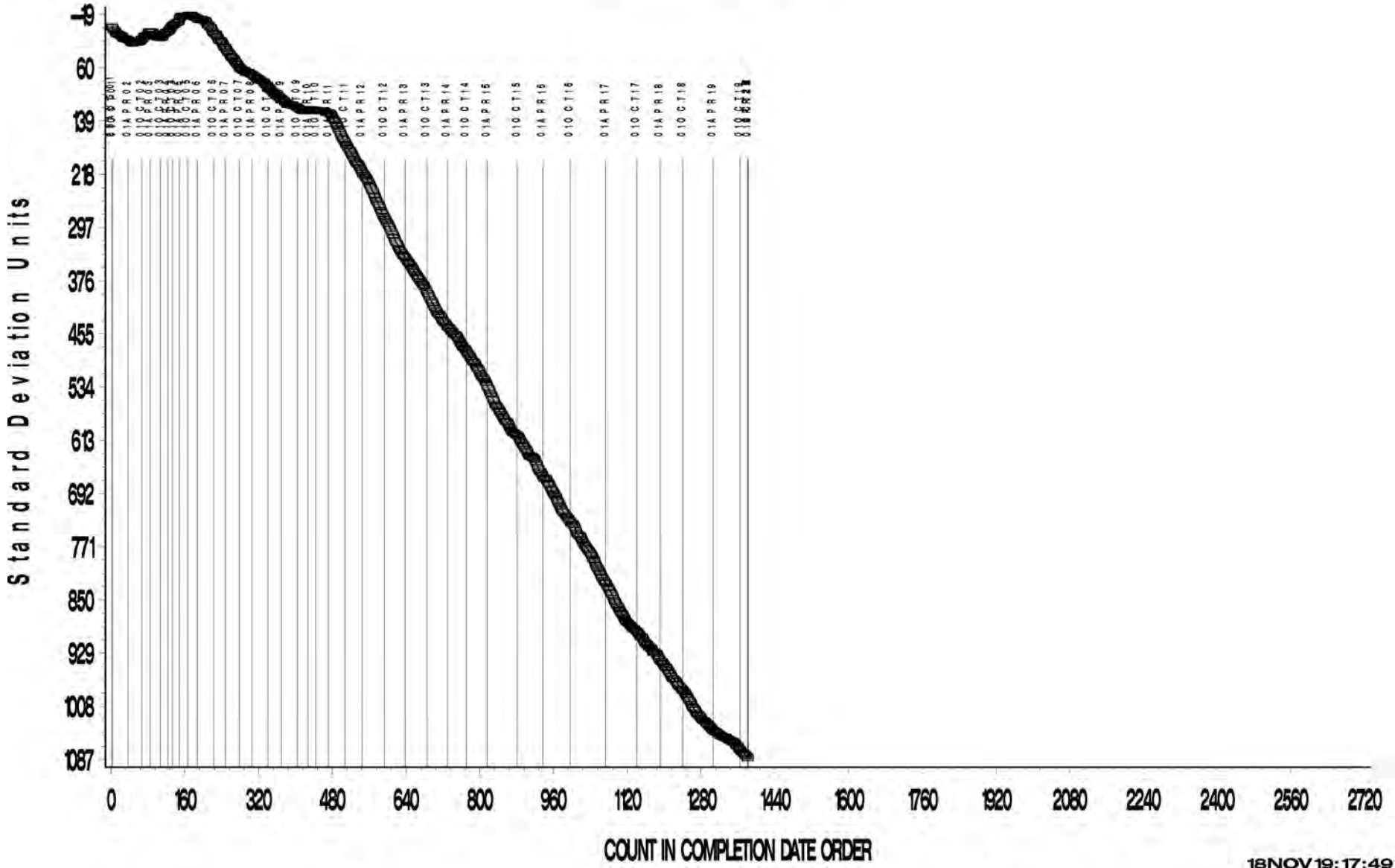
CUSUM Severity Analysis





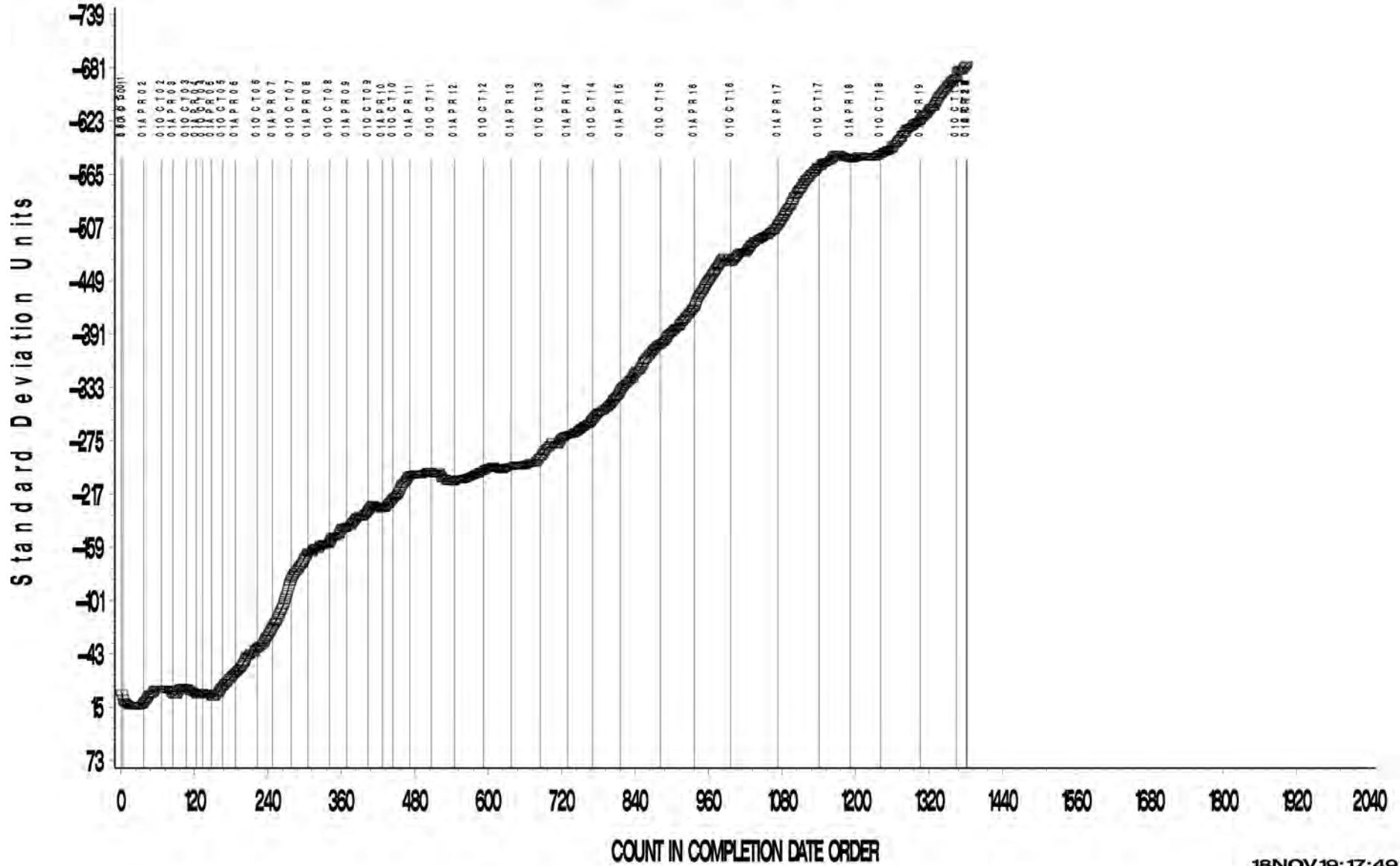
REFERENCE NITRILE POINTS HARDNESS CHANGE AVERAGE

CUSUM Severity Analysis



REFERENCE NITRILE TENSILE STRENGTH CHANGE AVERAGE

CUSUM Severity Analysis



REFERENCE NITRILE ELONGATION CHANGE AVERAGE

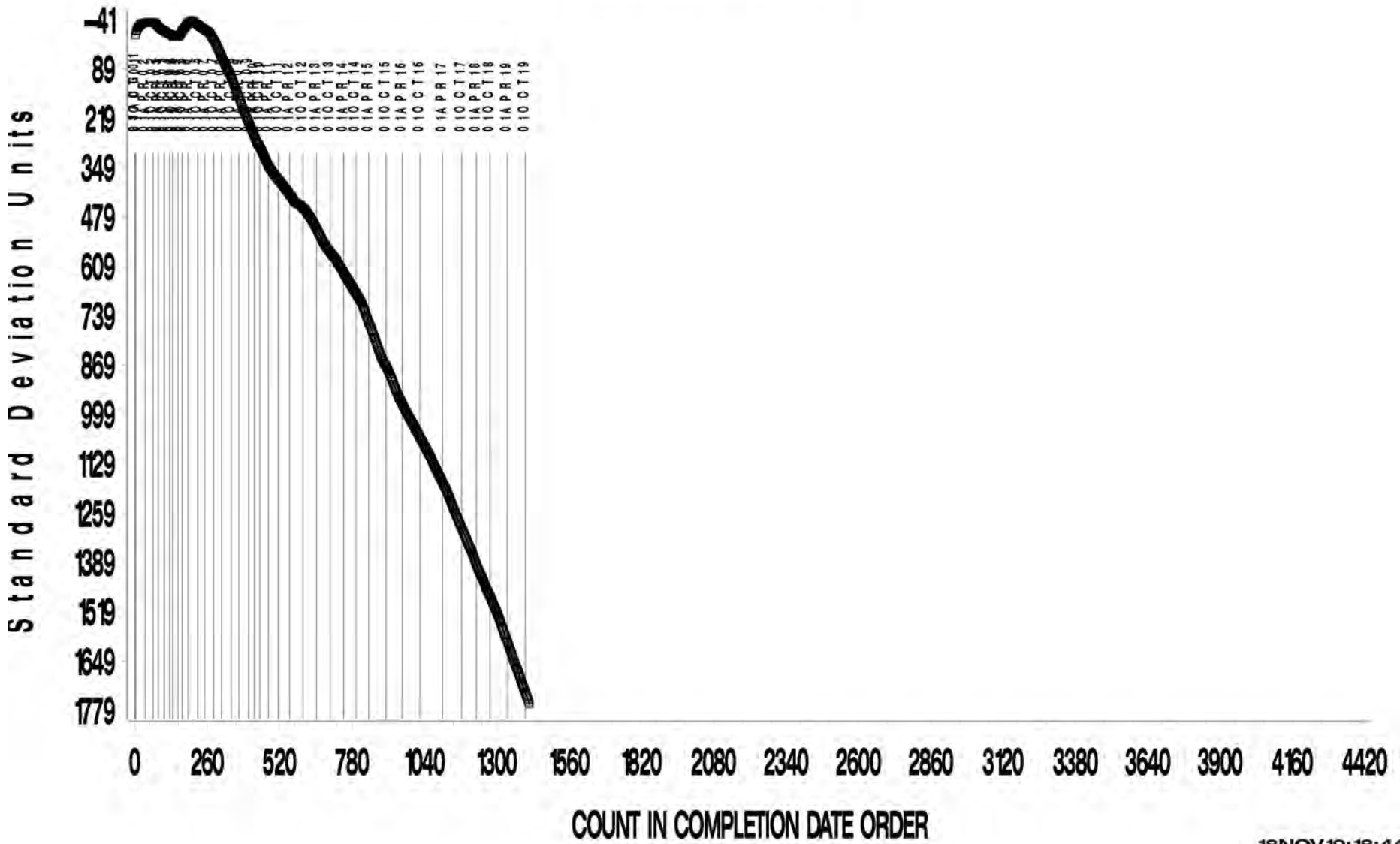
CUSUM Severity Analysis





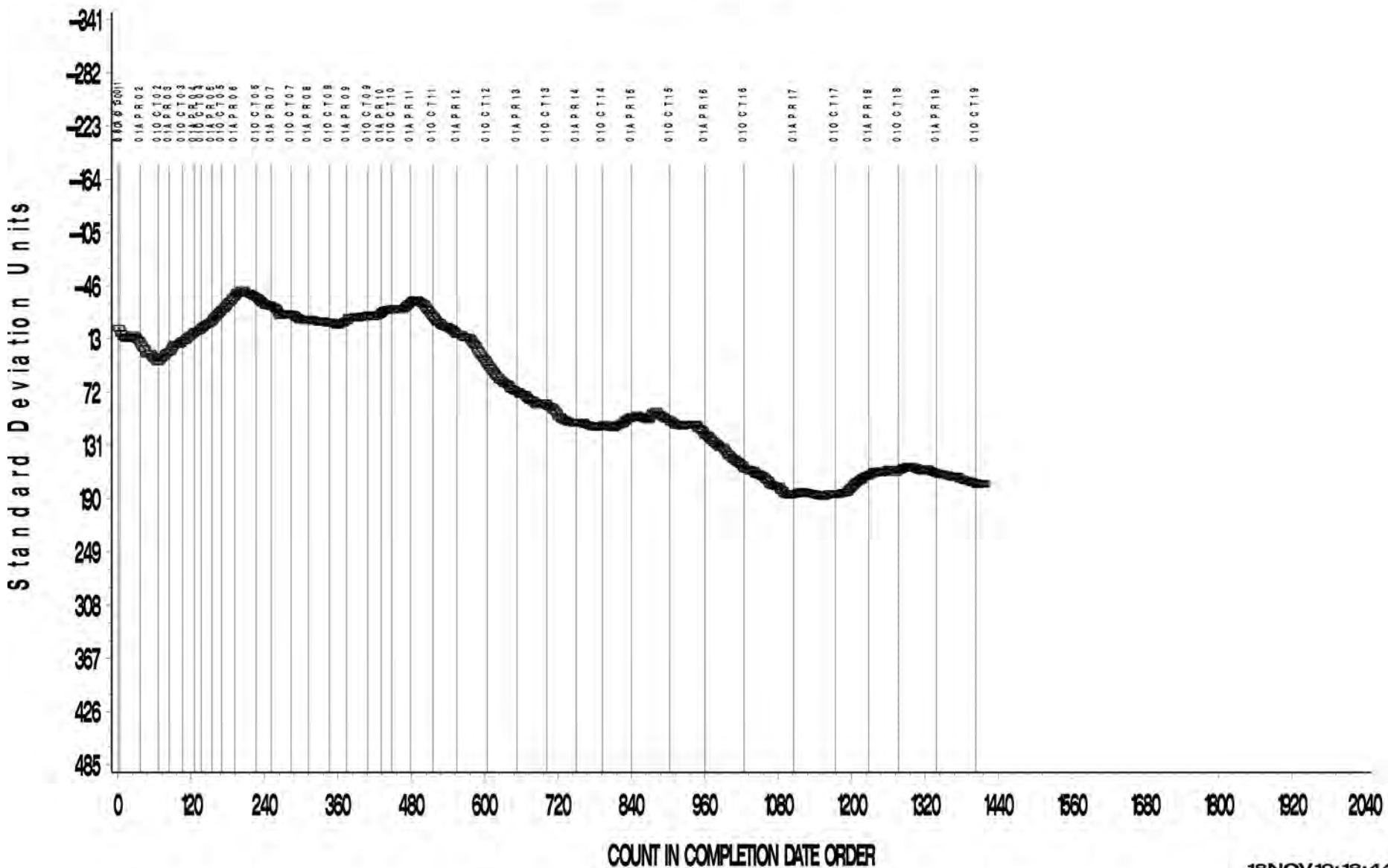
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CUSUM Severity Analysis



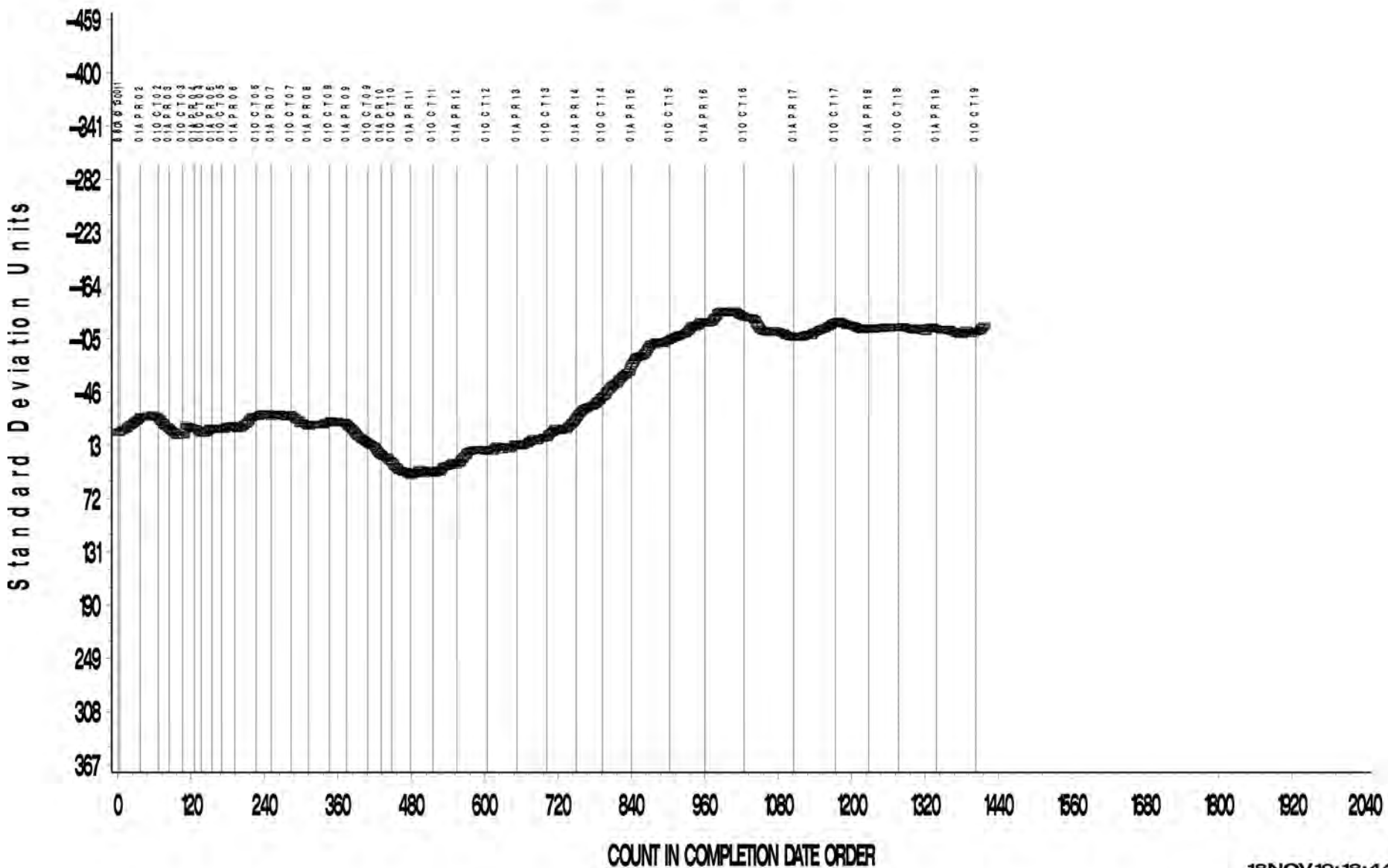
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CUSUM Severity Analysis



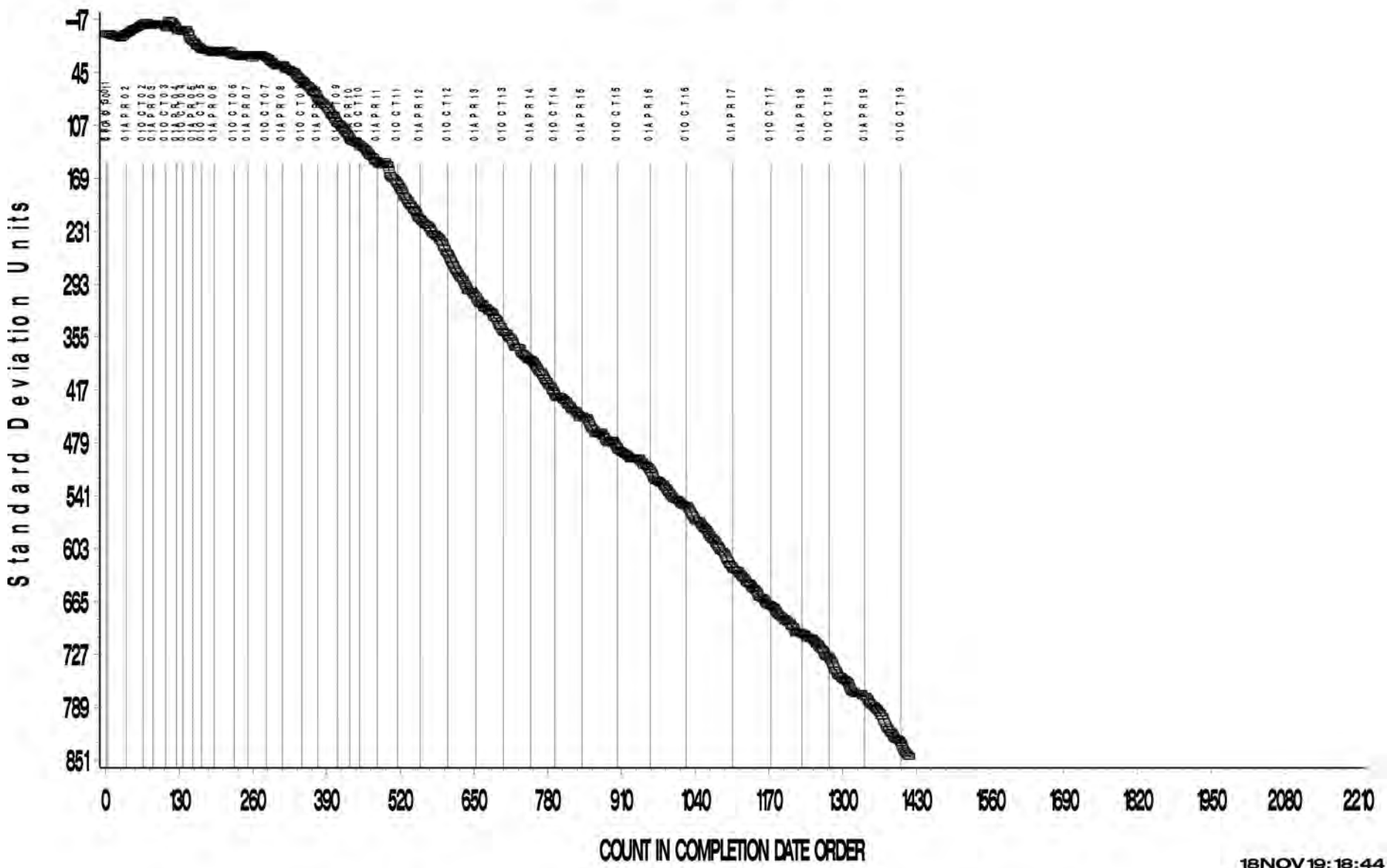
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CUSUM Severity Analysis



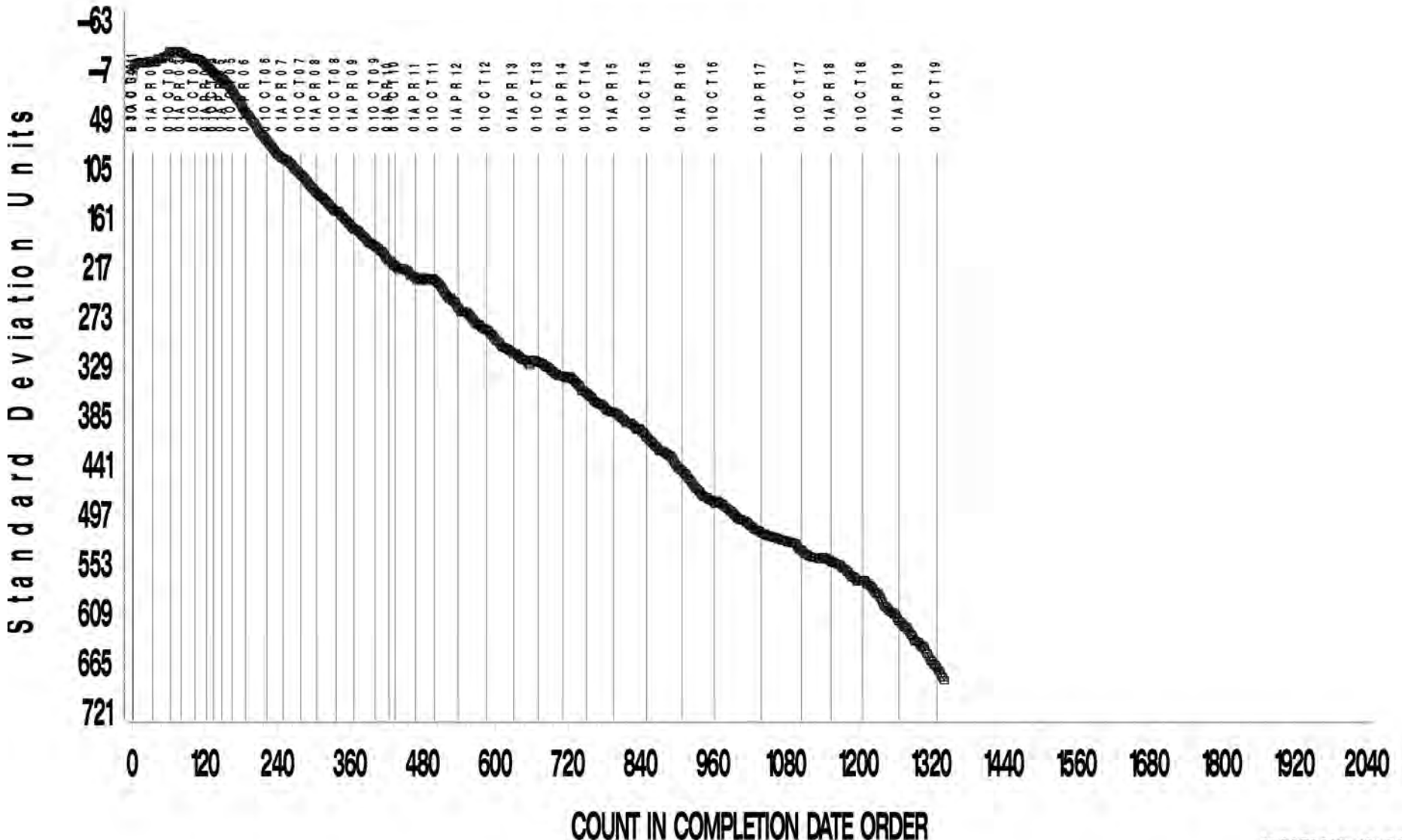
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CUSUM Severity Analysis



REFERENCE SILICON VOLUME CHANGE AVERAGE

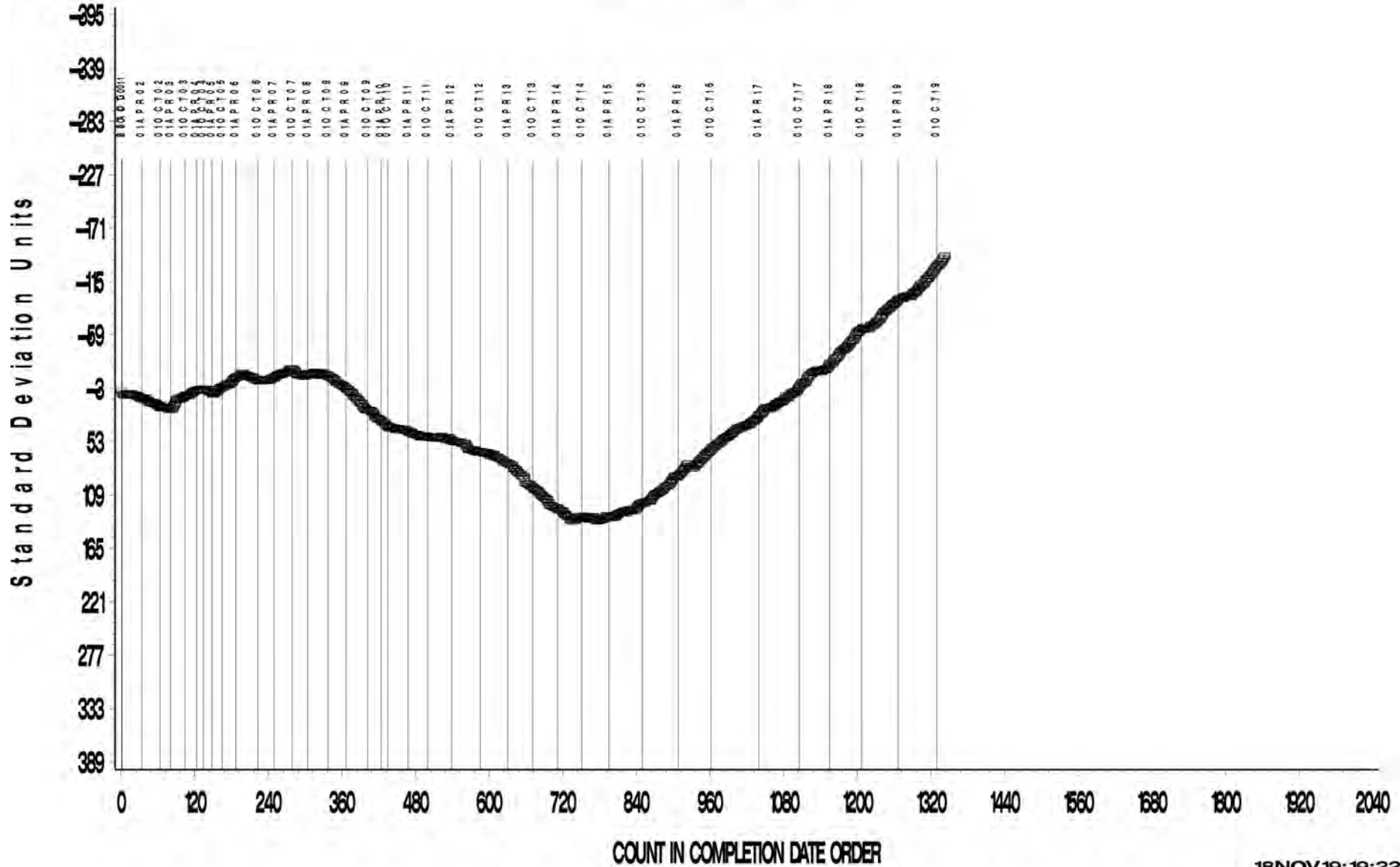
CUSUM Severity Analysis





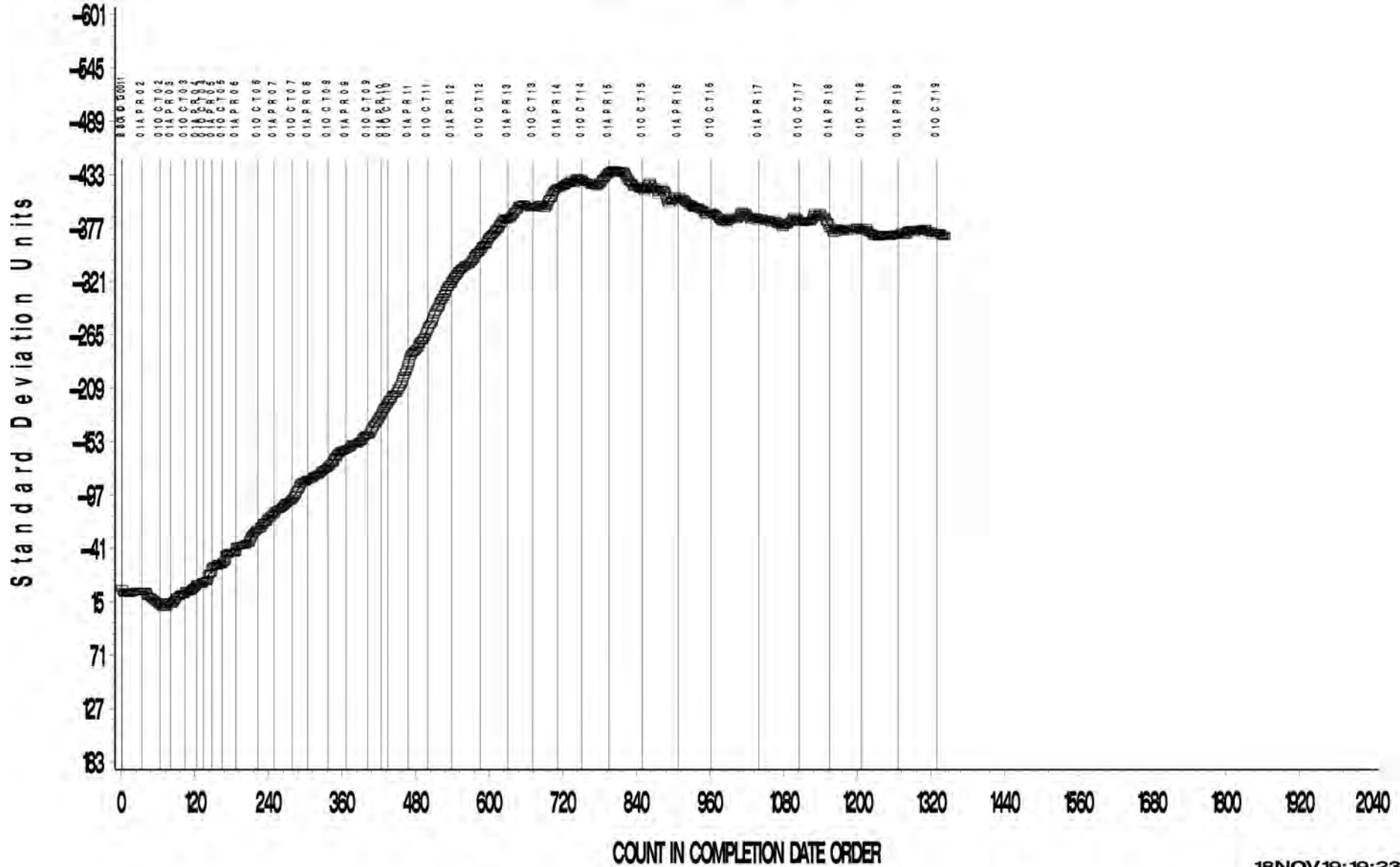
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CUSUM Severity Analysis



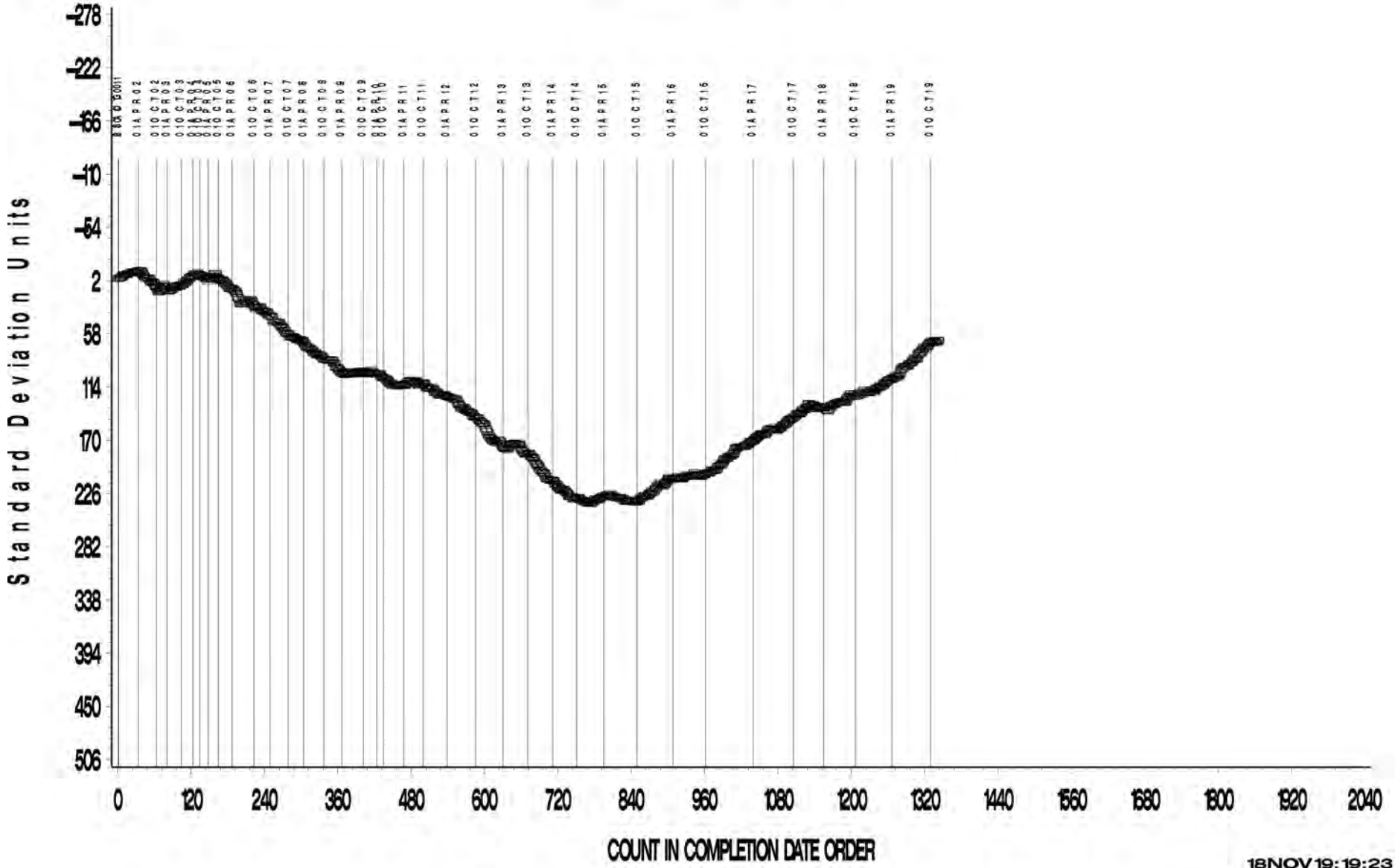
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CUSUM Severity Analysis



REFERENCE SILICON ELONGATION CHANGE AVERAGE

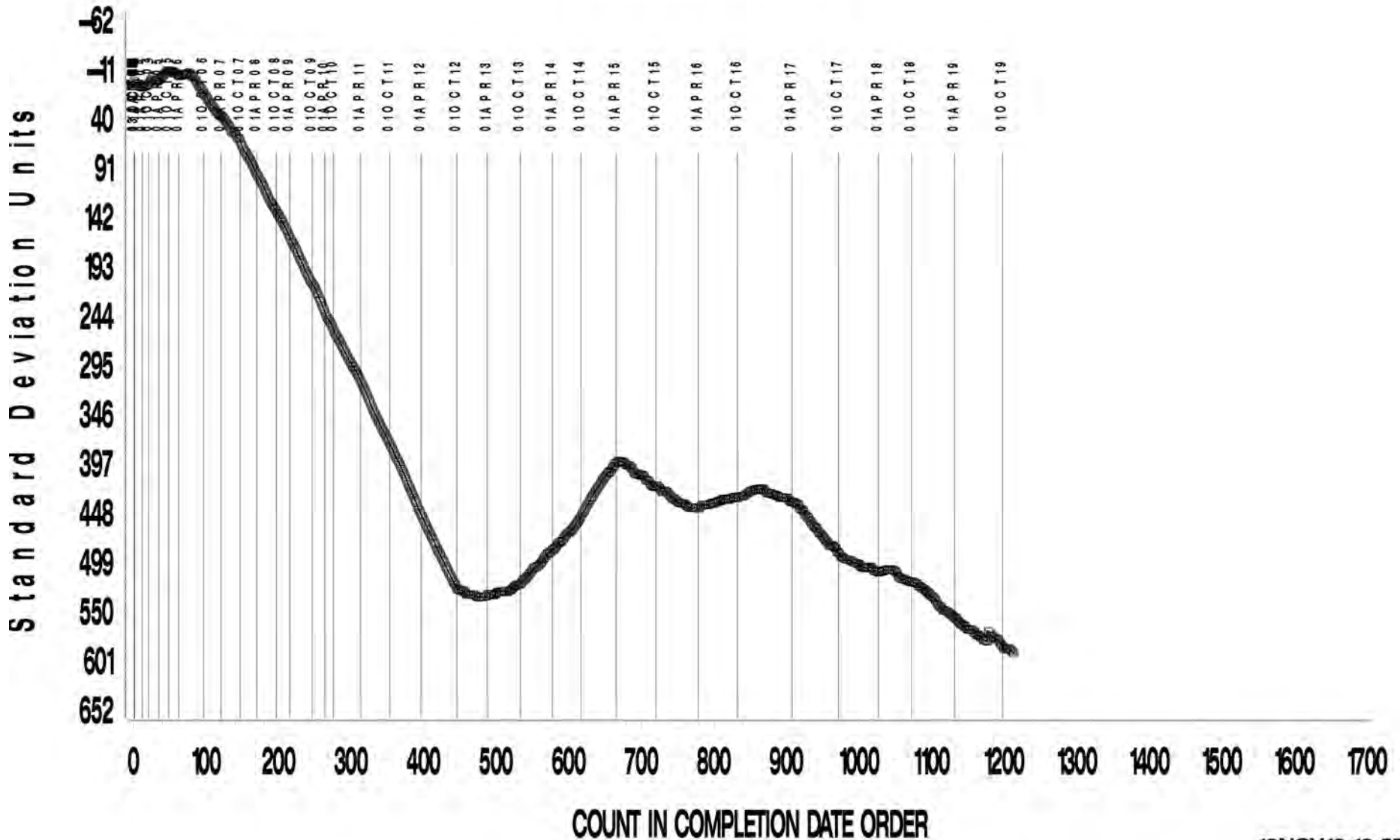
CUSUM Severity Analysis





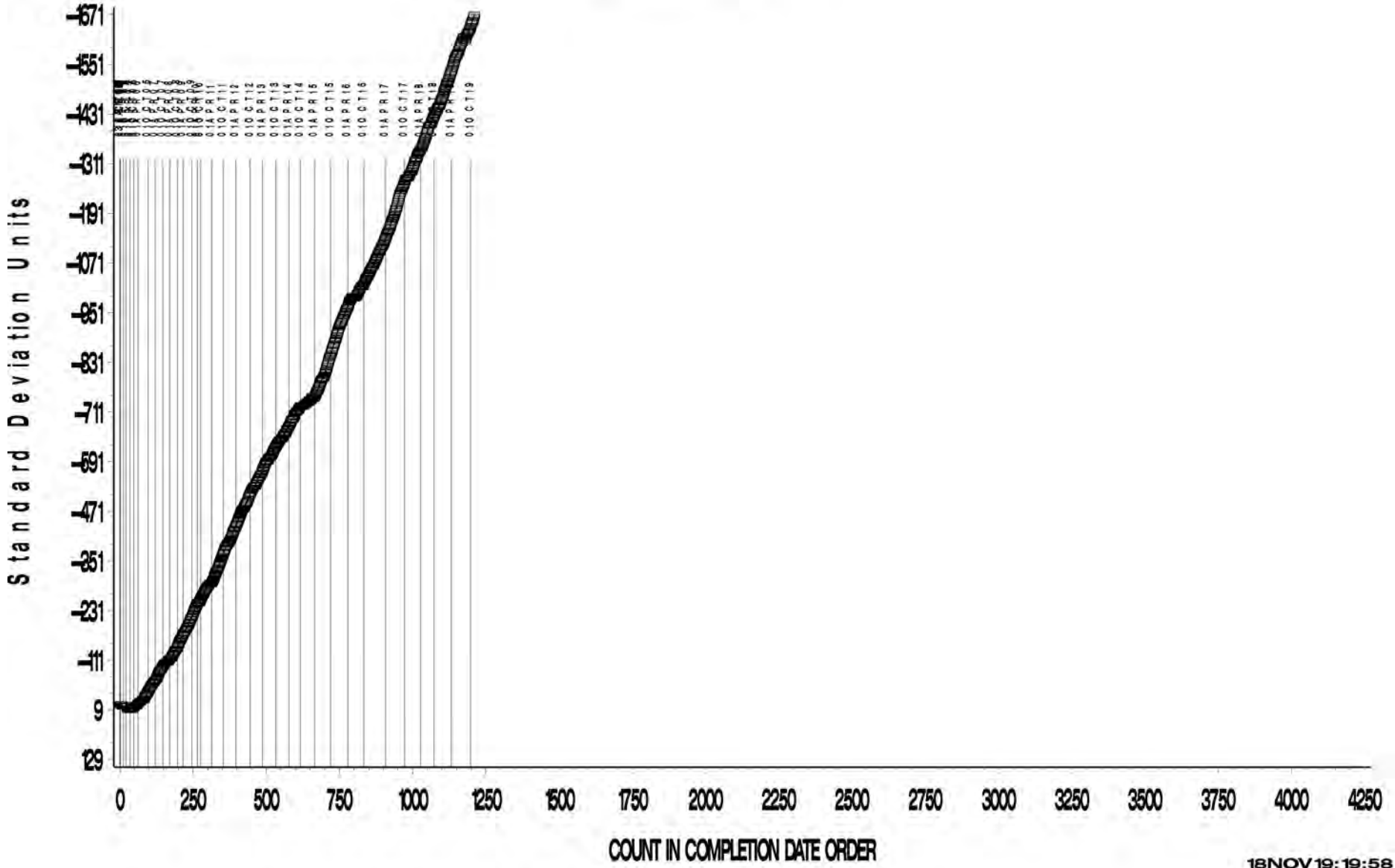
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CUSUM Severity Analysis



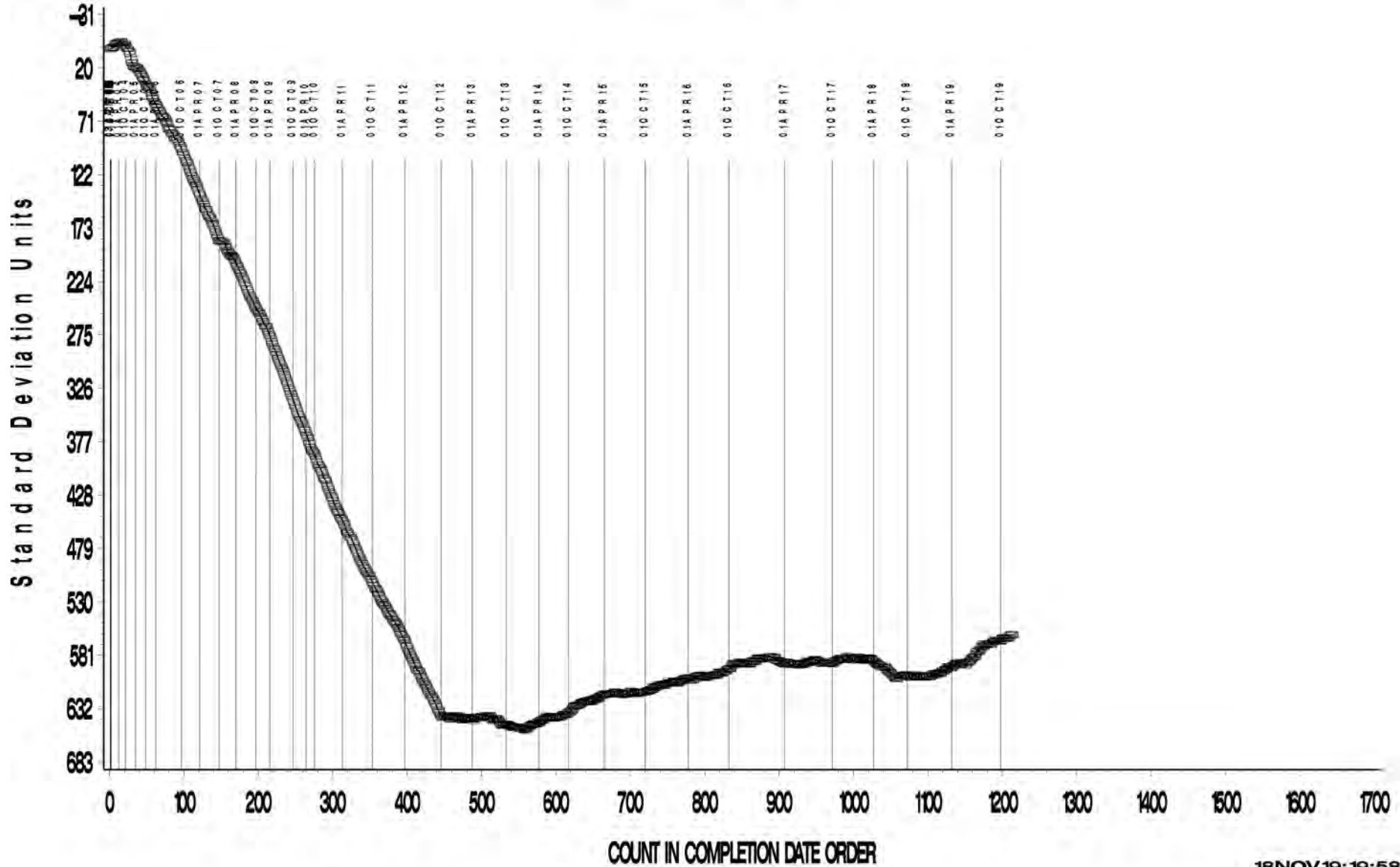
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CUSUM Severity Analysis



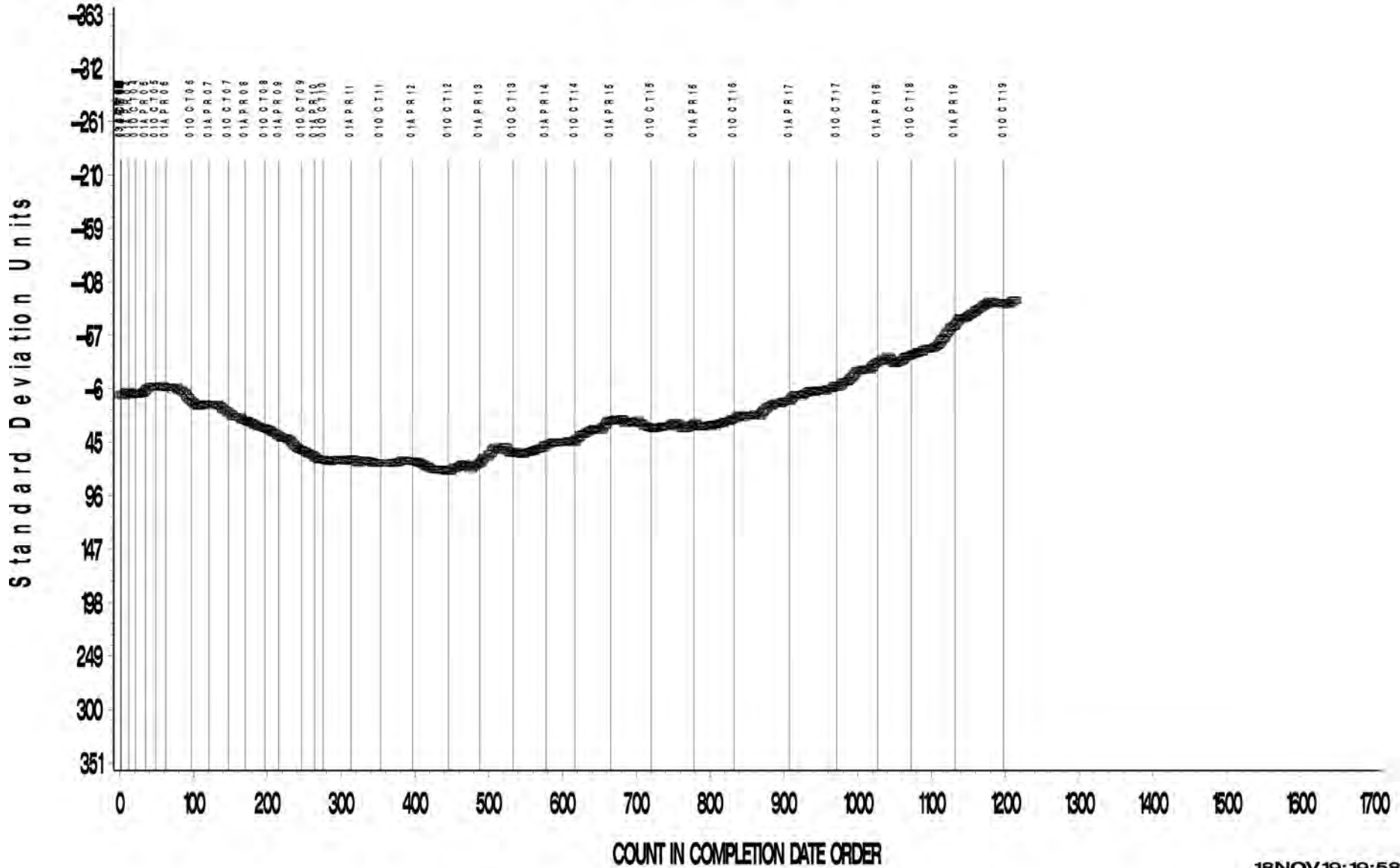
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CUSUM Severity Analysis

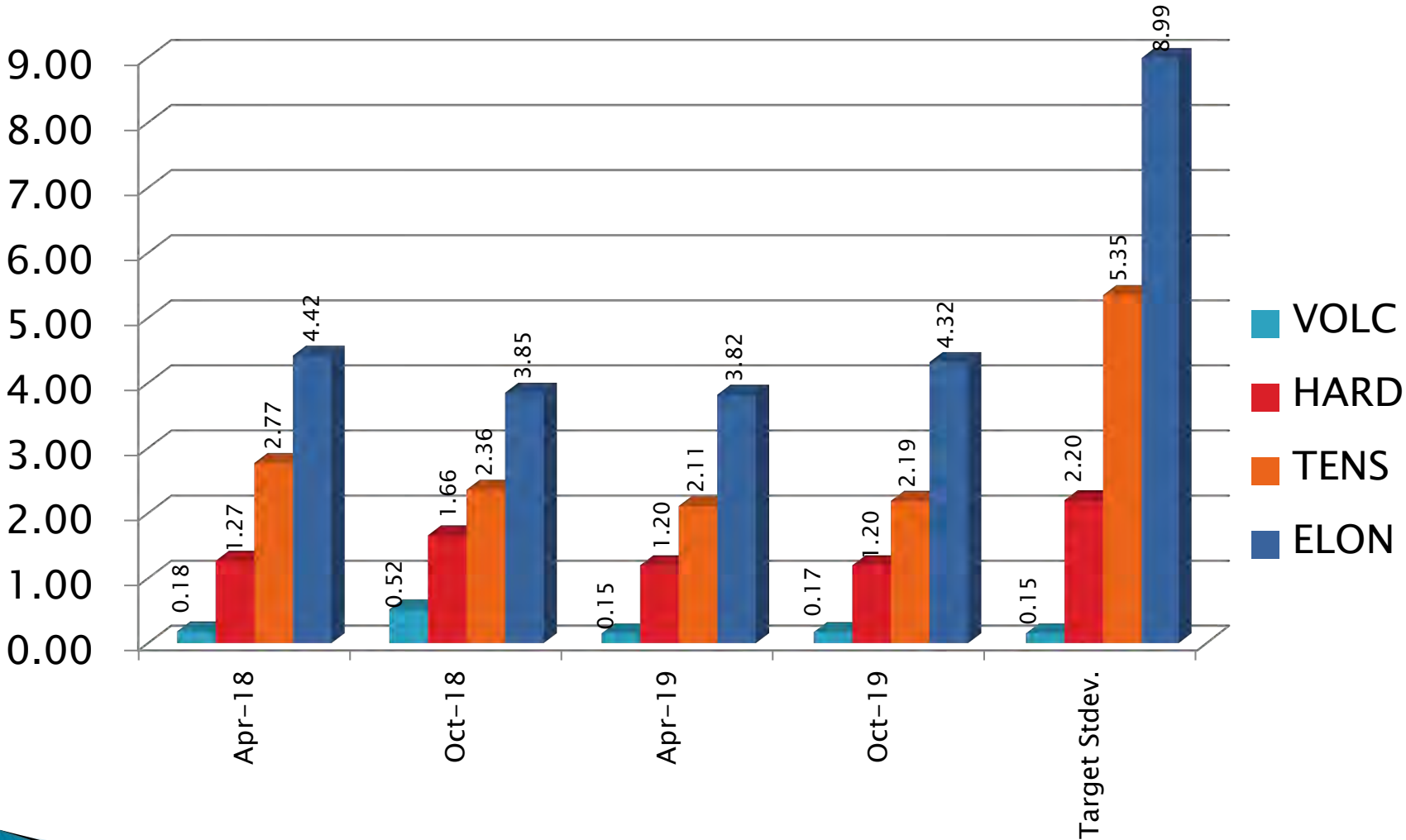


REFERENCE VAMAC G ELONGATION CHANGE AVERAGE

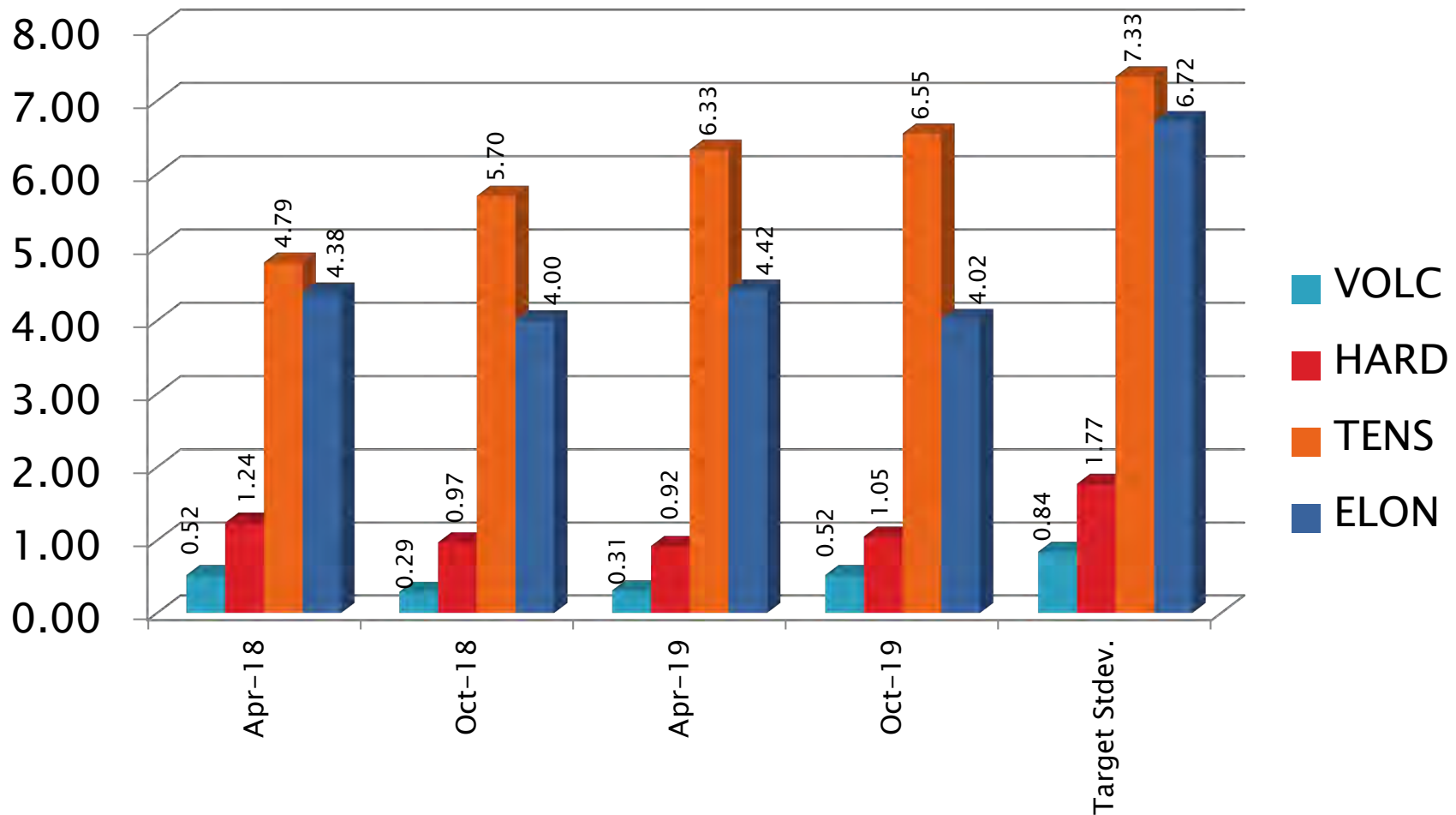
CUSUM Severity Analysis



# EOEC Precision Estimates - Fluoroelastomer

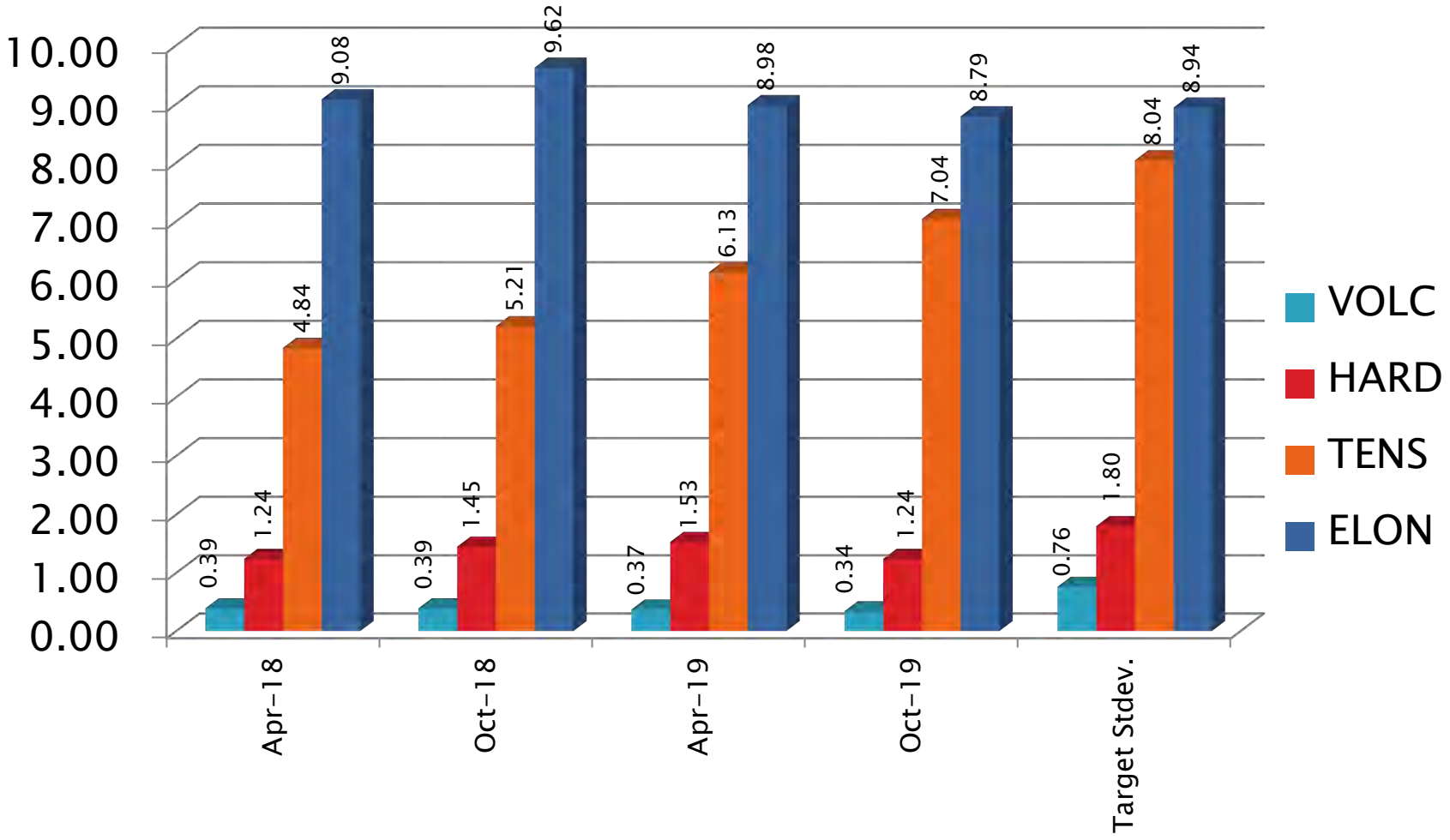


# EOEC Precision Estimates - Nitrile

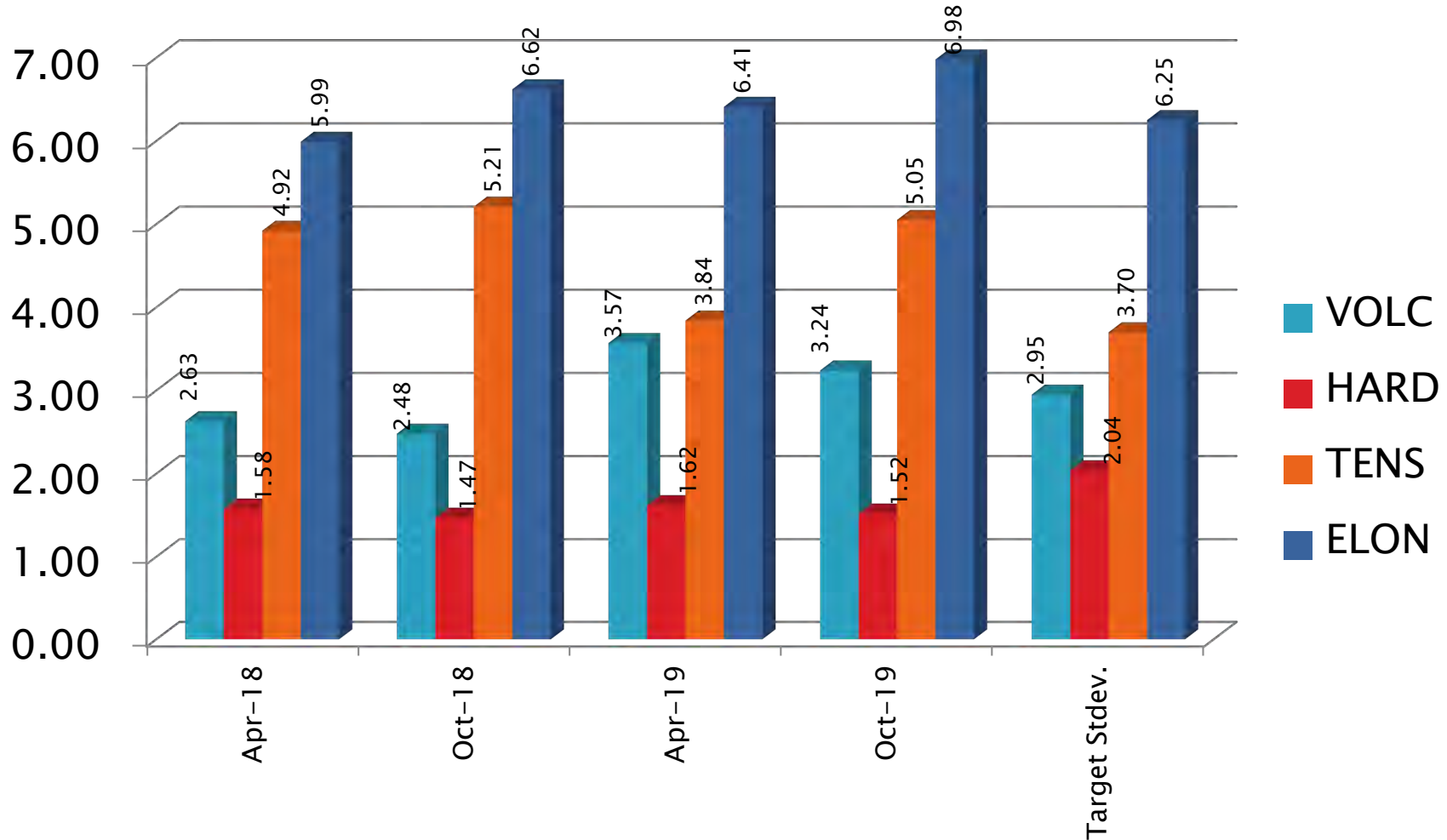




# EOEC Precision Estimates – Polyacrylate

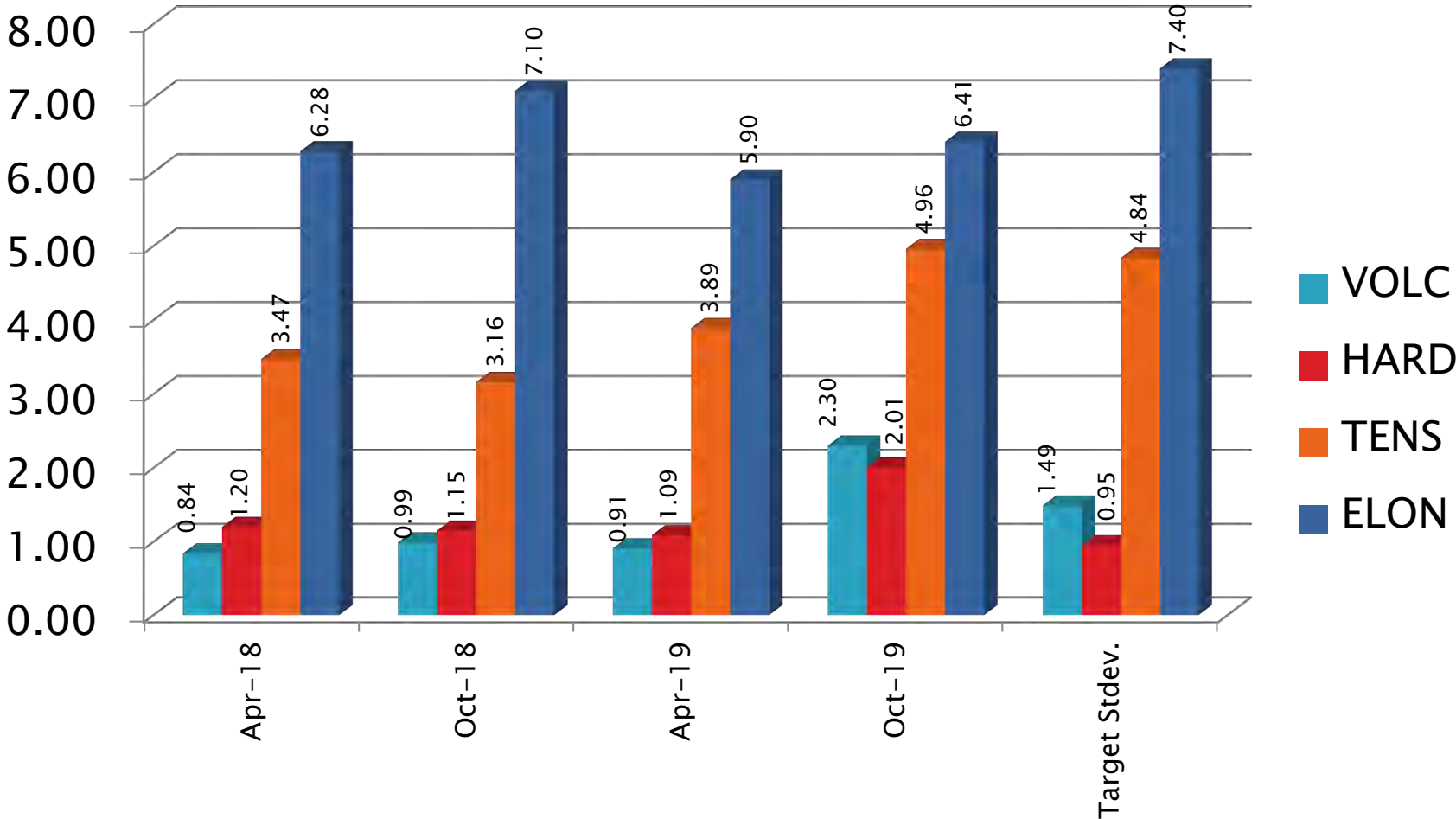


# EOEC Precision Estimates - Silicone





# EOEC Precision Estimates - VAMAC



# Information Letters\*

Test	Date	IL	Topic
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\*Available from TMC Website

# Reference Oil Inventory Estimated Life

Oil	TMC Inventory Gallons	Gallons Shipped Past 12 Months	Estimated Life
1006-2 <sup>A</sup>	55	456	< 3 Months
SL107 <sup>A, B</sup>	3759	108	5+ years

<sup>A</sup>TMC Inventory is used across several test methods

<sup>B</sup>1006 reblends are no longer available. SL107 is the replacement oil, targets pending approval.

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
- ▶ [www.astmtmc.cmu.edu](http://www.astmtmc.cmu.edu)



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