Test Monitoring Center
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ASTM D02.B6 Semi-Annual Report Two-Stroke-Cycle Reference Oil Testing

April 2013

Two-Stroke-Cycle Oil Testing Executive Summary

- One laboratory Calibrated in all Test Types
  - TC1, TC2 & TC3
  - Sufficient Oil inventories for the next 2-3 years

Calibrated Labs and Stands*

Test	Labs	Stands
TC1	1	1
TC2	1	1
TC3	1	1

*As of 3/31/2013

Test Activity Levels

- October 1, 2012 – March 31, 2013

Sequence Tests

Test Status	Validity Code	TC1	TC2	TC3
Acceptable for Calibration	AC	1	2	2
Run for Candidate Evaluation	AG	1	2	N/A
Operationally Invalid Candidate Evaluation Test	LG	3	0	0
Total		**5**	**4**	**2**

Lost Tests*

Test Status	Cause	TC1	TC2	TC3
Invalid	Ran Fuel to Oil Ratio outside procedure limit	2	0	0
Invalid	Candidate Evaluation Test Run on Stand out of Calibration	1	0	0

*Invalid and aborted tests

Test Severity

- October 1, 2012 – March 31, 2013

Test Severity

- TC Sequence 1
  - SRS Severe.
  - APV Mild.
    - Charts shown in Appendix 1.a.
- TC Sequence 2
  - Results from Both Passing and Failing oil on or near target.
    - Charts shown in Appendix 1.b.

Test Severity

- TC Sequence 3
  - Two results, both acceptable. Test performing at historical levels.
    - Charts shown in Appendix 1.c.

Information Letters

- October 1, 2012 – March 31, 2013

Information Letters*

Test	Date	IL	Topic
			No information letters issued this period

*Available from TMC Website

Reference Oil Inventory

- Actions, Re-blends, Inventories and Estimated Life

Reference Oil Re-blends

- Oils with ~ 2 years or less supply
  - No oils with less than 2 year supply
  - 606-1 and 605-1 estimated life 2 – 3 years.
    - Continue to monitor usage.

Return

Reference Oil Inventory Estimated Life

Oil	Tests	Original Blend Amount	Quantity Shipped in last 6 months	TMC Inventory	Lab Inventory	Estimated Life
600-1	TC2R, TC2C	55	2	44	1.75	5+years
601-1	TC3	110	0.5	41	0.5	5+ years
602-1	TC2R	7	1	2.588	0.5	2.5 years
604-1	TC2R	55	1	38.5	0.5	5+ years
605-1	TC3R	51	6	31	2	2.5 years
606-1	TC1C, TC1R	60	8	31	6	2.5 years

Additonal Information

- April 1, 2012 –
  September 30, 2012

Additional Information

- Available on TMC Website:
  - Live Reference Test Data Bases
  - Surveillance Panel Meeting Minutes
  - Test Area Alarm Logs
  - Complete Test Area Timelines
  - LTMS Manual

- www.astmtmc.cmu.edu

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Appendix 1
Two-Stroke-Cycle Reference Oil Testing Control Charts

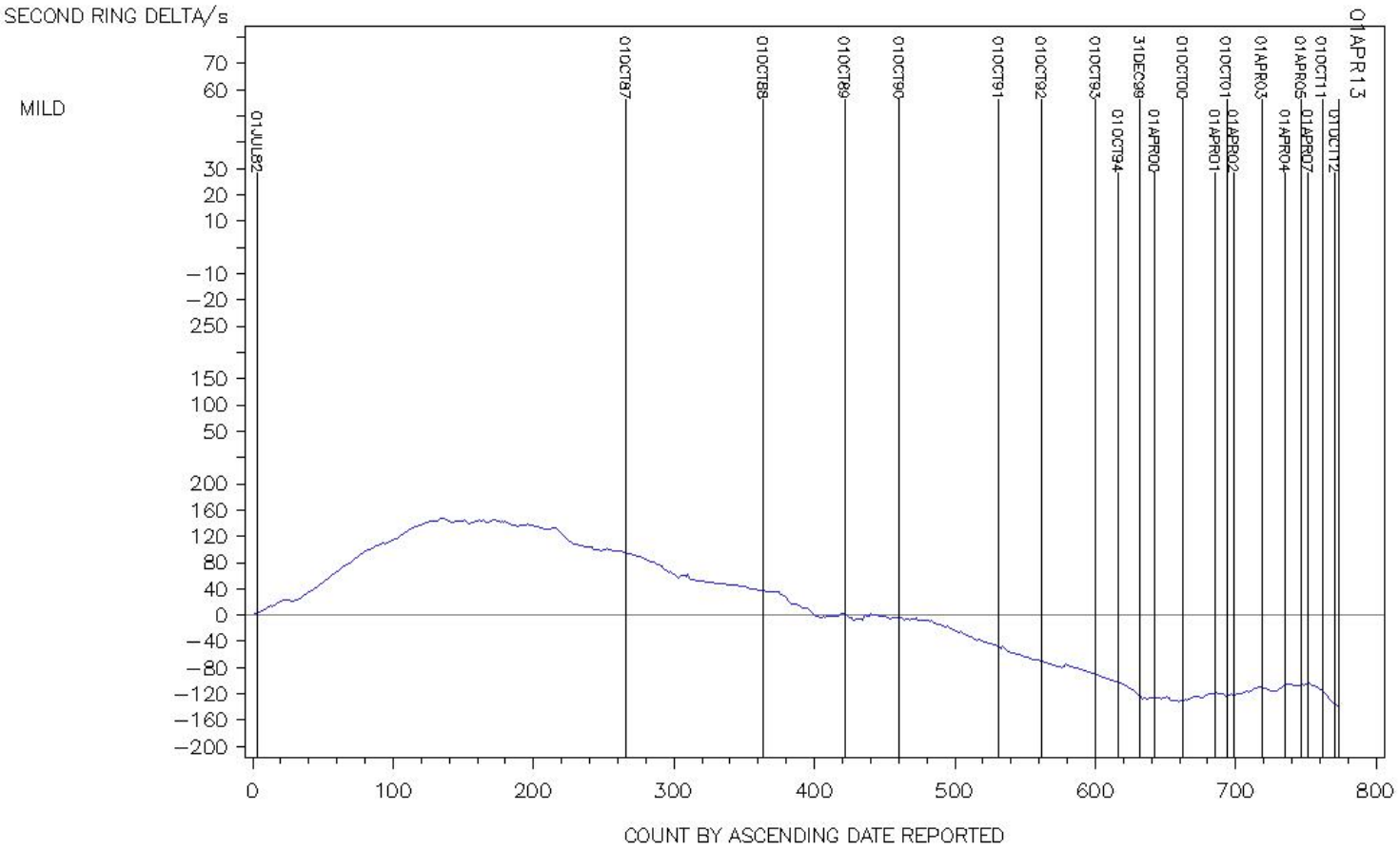
April 2013

Appendix 1.a
TC Sequence 1 Charts

- CuSum

FIGURE 1

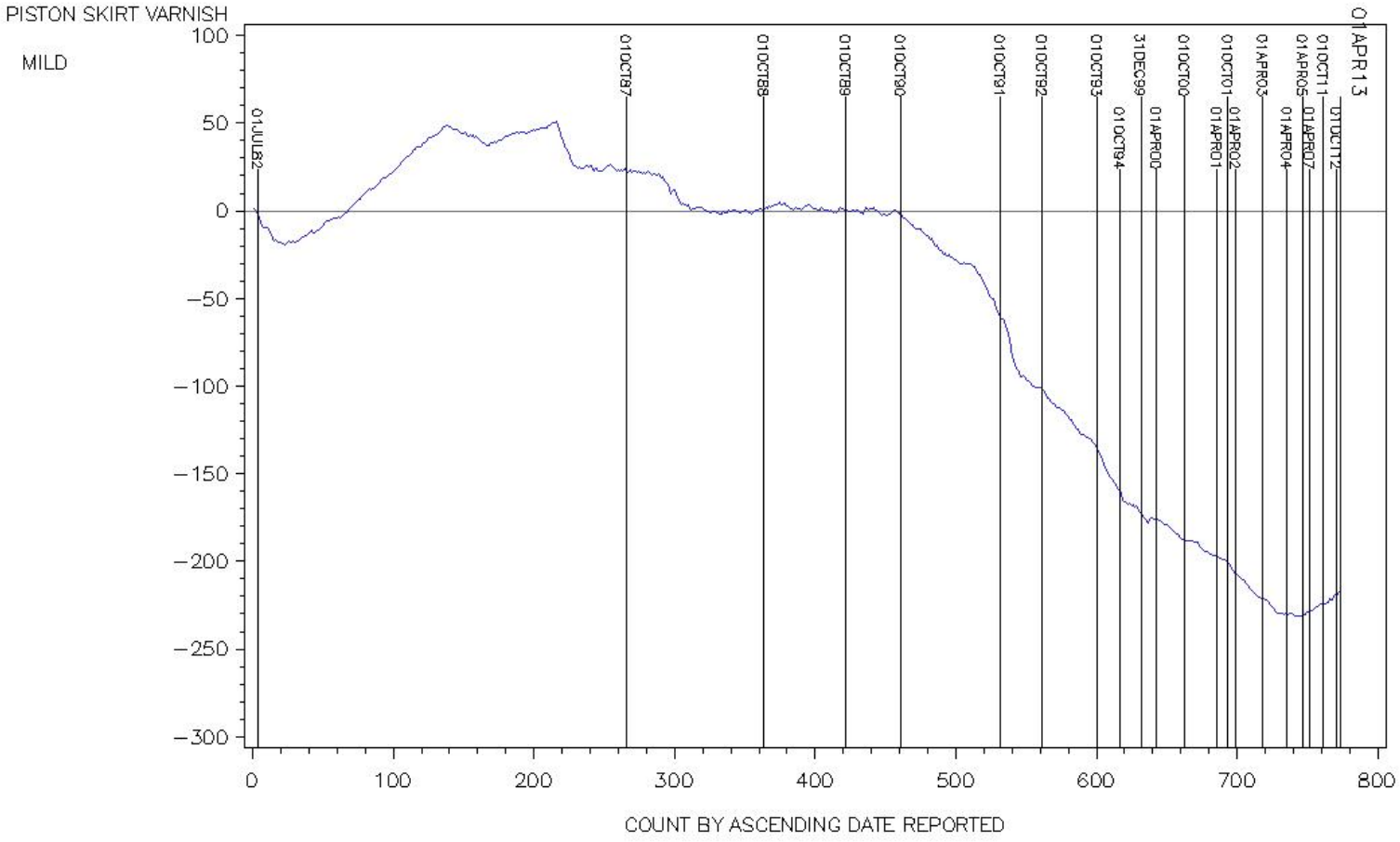
TWO–STROKE–CYCLE
RING STICKING TEST (D 4857)
CUSUM PLOT OF SECOND RING STICKING
Using Updated Targets after 4/1/00



Test Targets Based on Data Reported Prior to 10/16/90 for Refence Oil 600
Tests Targets for Reference Oil 606 is the Mean of the Data Used to Develop the Correction Factor

FIGURE 2

TWO–STROKE–CYCLE
RING STICKING TEST (D 4857)
CUSUM PLOT OF PISTON SKIRT VARNISH
Using Updated Targets After 4/1/00



TEST TARGETS BASED ON DATA REPORTED PRIOR TO 10/16/90 for Reference Oil 600
Tests Targets for Reference Oil 606 is the Mean of the Data Used to Develop the Correction Factor

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Appendix 1.b
TC Sequence 2 Charts

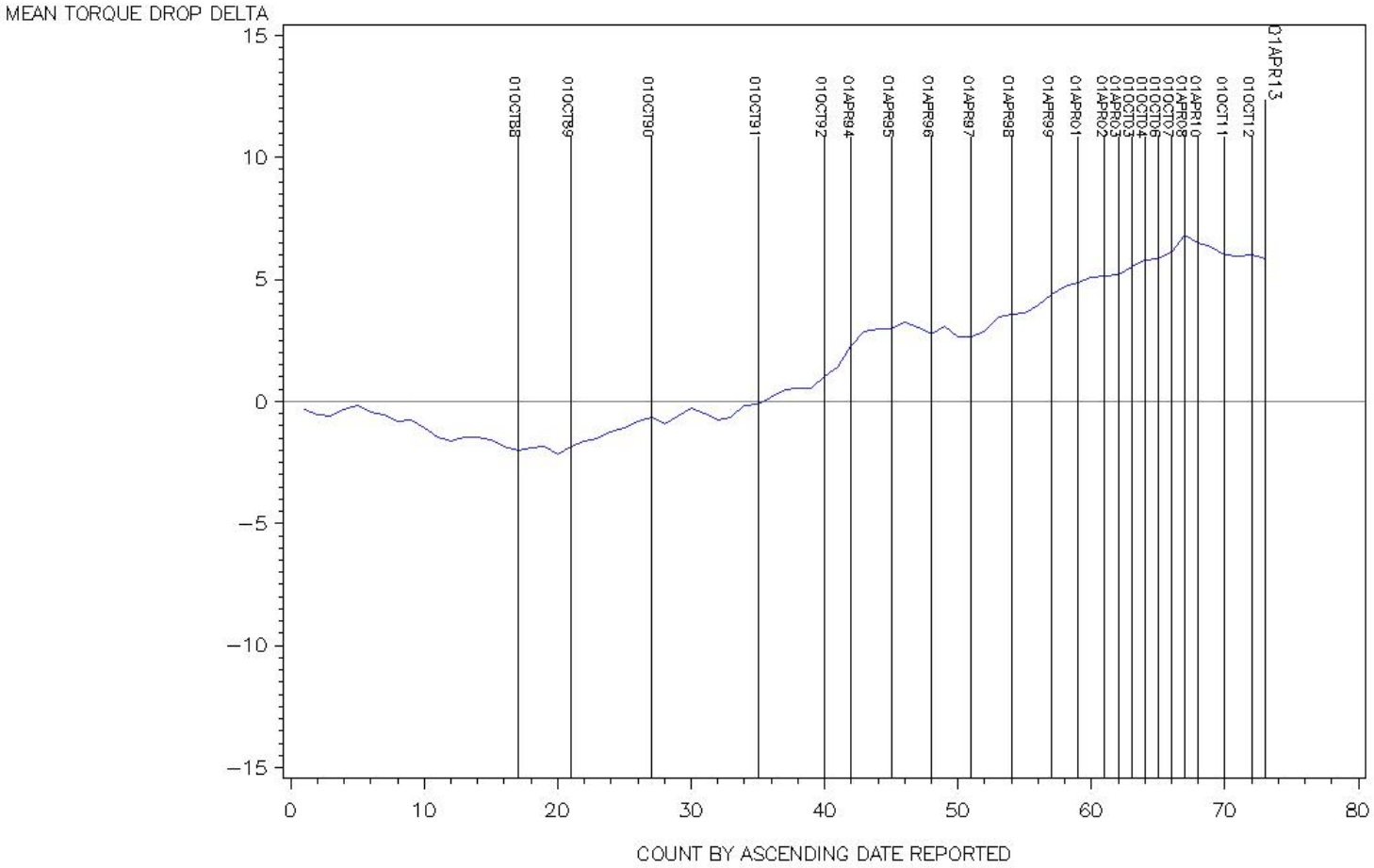
- CuSum

FIGURE 3

TWO–STROKE–CYCLE

STANDARD TEST METHOD FOR DETERMINATION OF LUBRICITY OF TWO STROKE CYCLE GASOLINE ENGINE LUBRICANTS (D 4863)

MEAN TORQUE DROP OF OIL VI–EE, (TMC 604) RELATIVE TO VID (TMC 600)



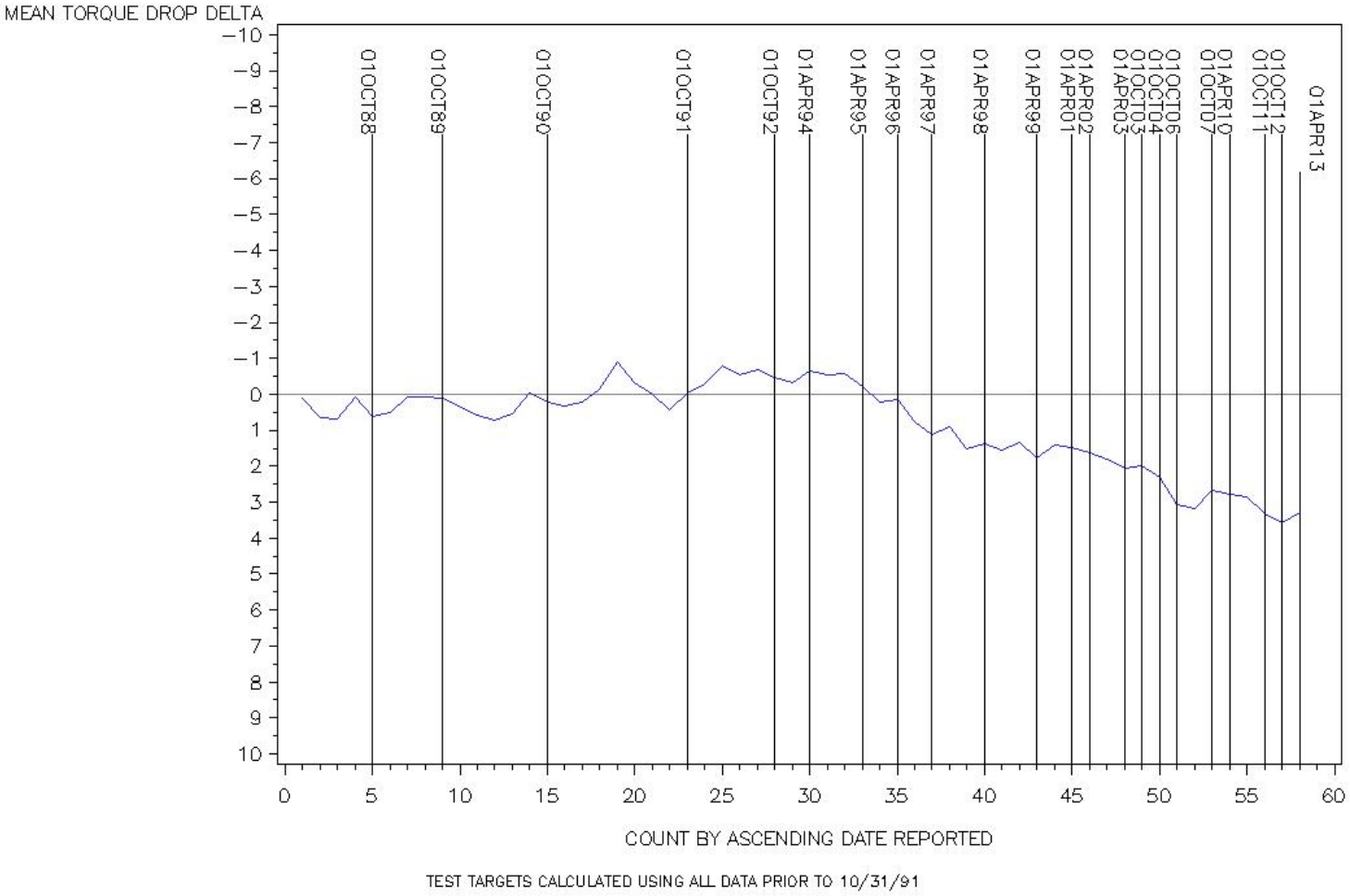
TEST TARGETS BASED ON ALL TESTS REPORTED PRIOR TO 10/31/91

FIGURE 4

TWO–STROKE–CYCLE

STANDARD TEST METHOD FOR DETERMINATION OF LUBRICITY
OF TWO STROKE CYCLE GASOLINE ENGINE LUBRICANTS (D 4863)

MEAN TORQUE DROP OF OIL VI–G, (TMC 602) RELATIVE TO VI–D (TMC 600)



TEST TARGETS CALCULATED USING ALL DATA PRIOR TO 10/31/91

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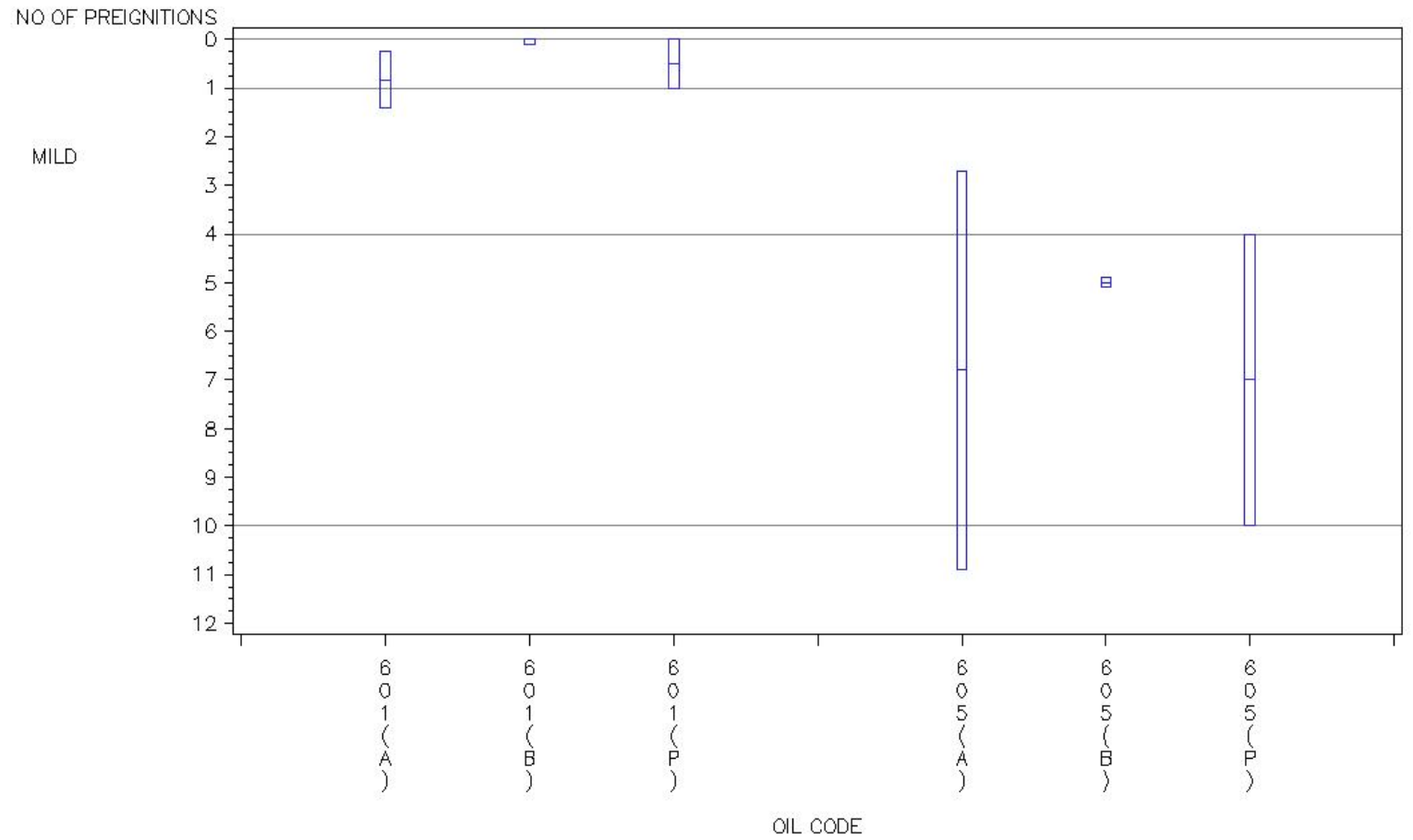
Appendix 1.c
TC Sequence 3 Charts

- Severity

FIGURE 5

TWO STROKE CYCLE PREIGNITION TEST
MEAN AND +/− 1 STANDARD DEVIATION BAND PLOT OF ACTUAL PREIGNITIONS
FOR ALL HISTORICAL DATA AND ASTM PERIOD ENDING 3/31/13



(A) AFTER OIL CODE REPRESENTS ALL HISTORICAL DATA
(B) AFTER OIL CODE REPRESENTS CURRENT ASTM REFERENCE PERIOD
(P) AFTER OIL CODE REPRESENTS LIMITS FOR STAND CALIBRATION GIVEN
IN STANDARD TEST PROCEDURE D−4858
TMC OIL CODE 605 = VI−NA, TMC OIL CODE 601 = VI−E

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