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Committee D02 on PETROLEUM PRODUCTS AND LUBRICANTS

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December 30, 2004

**TO: ASTM OIL SEAL COMPATIBILITY
SURVEILLANCE PANEL MEMBERS
AND GUESTS**

Attached for your review and comments are the unconfirmed minutes of the ASTM Oil Seal Compatibility Surveillance Panel meeting held in Warrendale, PA on August 25, 2004. Please direct any corrections or comments to my attention at the address listed above.

Respectfully submitted,

Breanna Bomback, Secretary
ASTM Oil Seal Compatibility
Surveillance Panel

Attachments

UNCONFIRMED MINUTES OF ASTM D02. B03
ASTM OIL SEAL COMPATIBILITY SURVEILLANCE PANEL
August 25, 2004

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The ASTM Oil Seal Compatibility Surveillance Panel met on August 25, 2004, at the PRI building in Warrendale, Pennsylvania. A total of nine voting members and five guests were present, and one voting member joined via teleconference. An attendance list is included as Attachment 1.

Call to Order

Claire Whitton called the meeting to order at 1:15 p.m. and reviewed the agenda, a copy of which is included as Attachment 2. Notes from the discussion of these agenda items follow.

Membership Review

There were no membership comments - the roster was circulated and any membership changes should have been noted.

D5662 Method Ballot

Claire Whitton explained that, due to the timing constraints of the 2004 rebalot time frame, only minor wording changes would be made to the D5662 procedure. Page 2 of Attachment 2 contains some suggested minor changes which the group reviewed, made comments/corrections to, and agreed upon.

Action items –

- 1.) Breanna Bomback will e-mail a list of additional suggested minor changes to the D5662 procedure to Claire Whitton, Don Lind and Becky Grinfield for review.
- 2.) Don Lind will forward the text of a precision statement to Claire Whitton for review.
- 3.) The TMC will forward a standard deviation calculation (using “n-1”) because the calculation that is currently included in section 8.7.3 does not appear to be correct.

Reference Oil Acceptance Bands

Frank Farber gave a presentation, which is included as Attachment 3, and indicated that the presentation updates can be found out on their website. In summary, his report reviewed 776 operationally valid OSCT reference oil tests from 2 test labs using 3 elastomers (FL - 22 batches, PA -13 batches, and NI - 13 batches), from January 2000 to July 2004. During this time period, no OSCT reference oil tests failed the current reference acceptance bands. This shows that the current process is not screening for differences in the reference oils, and it is allowing significant overlap between elastomer types. The report also points out that OSCT is the only TMC monitored test that does not have specific acceptance bands per reference oil.

The report then shows 9 graphs of reference oil performance differences (% elongation change (PELA), shore average hardness (SAHA), % volume change (PVCA)) in 2 oils (oil 160-1 and oil 161-1) on each elastomer type (FL, PA, NI). These graphs were followed by 6 graphs of elastomer performance differences (PELA, SAHA, PVCA) 160-1 and 161-1, FL and PA. From this data, the TMC proposed that new reference bands be calculated based on the mean and standard deviation of each reference oil and elastomer type. They used a Shewhart Severity K value that would “give a reasonable level of error detection without increasing rejection rates significantly”. A “K” value of 2.0 was chosen, and 18 graphs were included that show the current reference bands versus the proposed new reference bands calculated using $K = 2.0$ in each case scenario (for each performance parameter (PELA, SAHA, PVCA) from each of the 3 elastomers (FL, PA, NI), in each of the 2 ref oils (oil 160-1, oil 161-1)). The final summary sheet shows that if new reference bands were calculated using a “K” factor of 2, and they were imposed on all of the data in this report, that a rejection rate of 7% would result (54 fails out of 776 runs).

Following Frank’s presentation, Jerry Gropp presented a proposal which can be found as Attachment 4. This proposal outlines a process for “precertification” of all batches of elastomer by the Central Parts Distributor (CPD) prior to shipment to the labs and would verify that the batch is suitable for use in D5662 testing. Jerry indicated that he felt that a process for evaluating and approving new batches of elastomer should be put in place before new reference oil acceptance bands were established. This process could also help eliminate some of the elastomer batch to batch variation problems.

Reference Oil Acceptance Bands (con't)

After Jerry's presentation, group discussion transpired over potential concerns about the immediate implementation of these new reference bands, and about how we could implement an elastomer precertification process, with or without our CPD, TEI. Becky Grinfield suggested that she and Diane Misich have a meeting to discuss possible elastomer precertification processes, and that she speak with John Knight of TEI, and then get back to our group with some possible elastomer precertification scenarios. The labs felt that the implementation of a precertification process is absolutely necessary before the reference oil acceptance bands are changed, in order to eliminate the possibility of labs failing reference oil tests due to batch to batch variations in the elastomer.

Action items –

- 1.) Becky will give their meeting date to Claire within one week; Claire will then set a group teleconference date 2 weeks after Becky and Diane meet to discuss the prequalification process.

Frank Farber then made a motion to have the panel accept a “K” value of 2.0 for calculation of new OSCT reference bands, and that these new limits become effective September 30, 2004. Bill Sullivan seconded the motion.

Both Jerry Gropp and Becky Grinfield expressed a reluctance to support this motion unless, at the same time, we could implement a method to verify the quality/consistency of each new batch of elastomer. At this point, the group voted on the motion:

5 members in favor, 2 against, 0 abstained.

Action items –

- 1.) A TMC memo will be issued outlining the new reference bands, and stating that they will be effective September 30, 2004.
- 2.) Frank stated that the TMC will work diligently to review any test results that are obtained on new “first time” batches of elastomer in order to quickly identify unexpected failures that could be related to batch to batch variances.

Replacement Reference Oils

It was noted that we are getting very low on all reference oils.

Action items –

- 1.) TMC to attempt to contact the suppliers directly.

Future Method Improvements

The panel did not really discuss many of the items on this slide. Time was running out, and it was mentioned that a lot of these suggestions will be part of the D5662 Procedure revision, which we need to start looking at in depth in the near future.

Adjournment

The meeting was concluded at 3:15 p.m. The next meeting has not yet been set.

OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date: _____

Initials	M = Member V = Visitor	Name	Company & Address	Phone / FAX / e-Mail
<i>Claire</i> <i>Wes</i> <i>Hick</i>	M	Claire Whitton Chairperson	Ethyl Petroleum Additives, Inc. 500 Spring Street (23219) P.O. Box 2158 Richmond, VA 23218-2158	Phone: 804-788-5052 FAX: 804-788-6243 e-Mail: claire_whitton@ethyl.com
	M	Barb Berzinis	AutoResearch Labs 14750 Wallace Avenue Harvey, IL 60426	Phone: 708-210-0429 FAX: 708-210-0078 e-Mail: ali.wallace@cwixmail.com
<i>Bomb</i>	M	Breanna Bomback	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-5097 FAX: 440-943-8994 440-347-1555 e-Mail: bmbc_@lubrizol.com
	M	Tom Bryson	Mack Trucks 13302 Pennsylvania Ave. Hagerstown, MD 21742	Phone: 301-790-5454 FAX: 301-790-5605 e-Mail: tom.bryson@macktrucks.com
	M	Juan Buitrago	Chevron Oronite Co. 100 Chevron Way Richmond, CA 94802	Phone: 510-242-1161 FAX: 510-242-3392 e-Mail: jabu@chevron.com
	M	Harold Chambers	Visteon Corporation Cube: SE60-063 6100 Mercury Drive Dearborn, MI 48126	Phone: 313-755-0124 FAX: 313-755-0124 e-Mail: hchamber@visteon.com
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	M	Hector DeLaFuente	Southwest Research Institute 6220 Culebra Road San Antonio, TX 78228	Phone: 210-522-5996 FAX: 210-680-1777 e-Mail: hdelafuente@swri.edu
	M	Boris Dinzborg	CR Industries 900 N. State Elgin, IL 60120	Phone: 847-742-7840 FAX: 847-742-7845 e-Mail:

OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date:

<i>present</i>	V	Frank Farber	Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206	Phone: FAX: e-Mail:	412-365-1030 412-365-1047 fmf@imc.astm.org; cmo.edu
	V	John Flaherty	GM PT Ecorse & Wiard Roads Ypsilanti, MI 48197	Phone: FAX: e-Mail:	734-481-7252 734-481-6990 john.flaherty@gm.com
<i>present by phone</i>	M	Rebecca Grinfield	Southwest Research Institute P.O. Drawer 28510 San Antonio, TX 78228-0510	Phone: FAX: e-Mail:	210-522-3652 210-522-5907 bgrinfield@swri.org
	M	Larry Grona	EG&G automotive Research 5404 Bandera Road San Antonio, TX 78238-1993	Phone: FAX: e-Mail:	210-684-2310 210-681-8300 larry_grona@egginc.com
<i>present</i>	M	Jerry Gropp	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliff, OH 44092	Phone: FAX: e-Mail:	440-347-1223 440-347-5337 jlg@lubrizol.com
	M	Tom Jacobson	Infineum USA L.P. 1900 E. Linden Avenue Linden, NJ 07036	Phone: FAX: e-Mail:	908-474-3031 908-474-3597 tom.jacobson@infineum.com
<i>DKM</i>	V	Kathy Jahn - retired Diane K Misick	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: FAX: e-Mail:	440-943-1200, ext 8558 440-347-8034 440-943-9006 347-8003 brb@lubrizol.com dkmlubrizol.com
	V	Tracey King	Daimler Chrysler Corporation GIMS 482-00-13 800 Chrysler Drive Auburn Hills, MI	Phone: FAX: e-Mail:	248-584-5628 248-584-7490 teki@daimlerchrysler.com
<i>Remove</i>	M	Gita Krishnaswamy	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliff, OH 44092	Phone: FAX: e-Mail:	440-347-4022 440-943-5337 gkri@lubrizol.com

OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date: _____

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M	Don Lind	Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206	Phone: FAX: e-Mail:	412-365-1034 412-365-1047 dml@ ethy estm- ethy cmu.edu
M	Jim Linden	GM R&D 480-106-160 30500 Mound Road Warren, MI 48090	Phone: FAX: e-Mail:	810-986-1888 810-986-2094 james.l.linden@gm.com
M	Thelma Marougy	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48037	Phone: FAX: e-Mail:	248-354-6985 248-354-2736 thelmaemarougy@eaton.com
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M	Dale Muyskens	Eaton Corporation P.O. Box 4013 Kalamazoo, MI 49003-4013	Phone: FAX: e-Mail:	616-342-3416 616-342-3574 daleemuyskens@eaton.com
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OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date: _____

V	Tony Skrobul	Equilon Enterprises LLC 333 Hwy 6 South Houston, TX 77082-3101	Phone: FAX: e-Mail:	281-544-9226 281-544-8150 dpskrobul@equilon.com
M	Dale Smith	PARC Technical Services 100 William Pitt Way Pittsburgh, PA 15238	Phone: FAX: e-Mail:	412-826-5051 412-826-5443 dps@uspor.net dpsm,th@parcotech.com
M	Bill Sullivan	ExxonMobil Company P.O. Box 3140 Edison, NJ 08818	Phone: FAX: e-Mail:	732-321-3351 732-321-6064 william_t_sullivan@email.mobil.com
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M	Jack Zakarian	Chevron Products 100 Chevron Way Richmond, CA 94802	Phone: FAX: e-Mail:	510-242-3595 510-242-3758 jaza@chevron.com

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Don Bartlett NV Lubrizol 440-347-2388
Chris Schenkenberg NV Lubrizol 440-347-2927
Brigid Koehler NV SWRI 210-522-3588
B

OSCT (D5662) SP Meeting Agenda

August 25, 2004

- Call to Order / Review Membership
- D5662 Method Ballot
 - Minor wording changes
- Reference Oil Acceptance Bands
- Replacement Reference Oils
- Future Method Improvements

D5662 Method Ballot

- Due this year
- Minor wording changes only to allow rebalot in 2004
- Other changes/improvements to be incorporated via information letter and/or rewrite & rebalot in 2005.



Suggested Minor Changes

6.1.2.1 *Calibration*— Calibrate the tension testing machine annually. Annual calibration shall be performed by the manufacturer outside source, using NIST traceable standards.

7.2 The CPD is responsible for maintaining the numbering and tracking system for the seal elastomer batches used. Certain specific information concerning these reference materials is available only to the CPD. This information is used to ensure batch-to-batch consistency.

7.2.1 Information and location of the current CPD is also available from the TMC.

7.3 Specific reference seal elastomers used are a nitrile (NI), a polyacrylate (PA), and a fluoroelastomer (FL). Notation of the numbering system is established by the TMC as follows:

[Type] Y— X

Future Method Improvements

- Reduce frequency of reference oil tests
- Reduce number of test specimens
- Improve elongation measurement definition
- Define maximum number of allowable outliers

OSCT Data Review / Reference Oil Acceptance Bands

August 2004

OSCT Data Review

- 776 Operationally Valid Reference Oil Tests during the period of 20000101 – 20040700 were reviewed
- Number of Labs = 2
- Number of Batches:
 - FL: 22
 - PA: 13
 - NI: 13

OSCT Data Review

- **Gross Differences**
 - Reference Oil Performance
 - Elastomer Types
- **Other Differences**
 - Elastomer Batch Variations
 - Lab Differences

OSCT

Reference Acceptance Bands

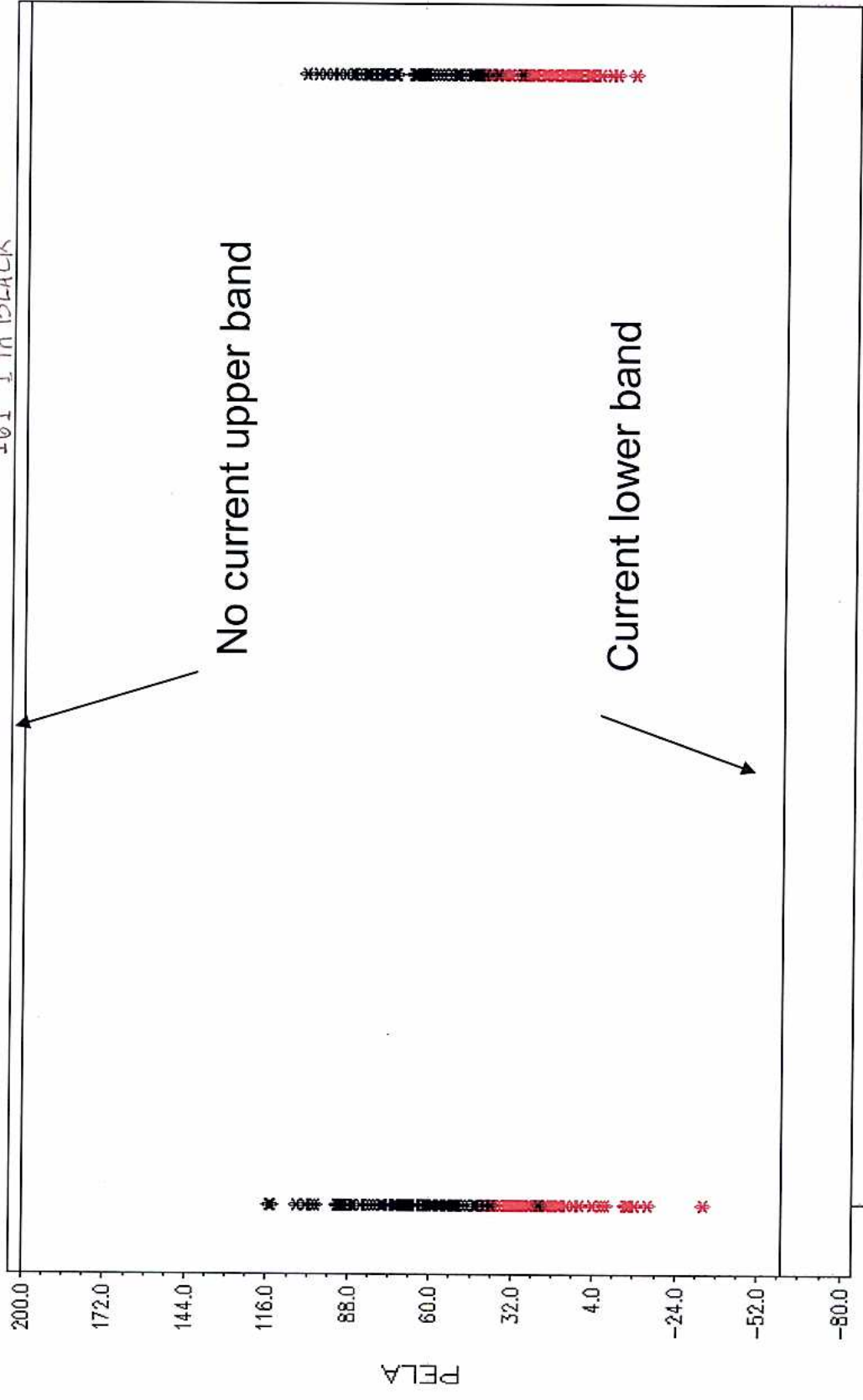
- **Current Reference Acceptance Bands**
 - Do not screen for differences in reference oils
 - Allow significant overlap between elastomer types
 - During period of 20000101 – 20040700, No OSCT reference oil tests failed acceptance bands
- OSCT is only TMC monitored test that does not have specific acceptance bands per reference oil

Reference Oil Performance Differences

- The following graphs show how reference oil performance differs with a given elastomer type.
 - The only notable exception is Shore Hardness for the Fluoroelastomer. *(the 2 oils show values that are intermixed)*

OSCT Data (20000101 - 20040700)

Oil in (160-1, 161-1) AND ELASTOMER = PA *** Oil 160-1 in RED
161-1 in BLACK



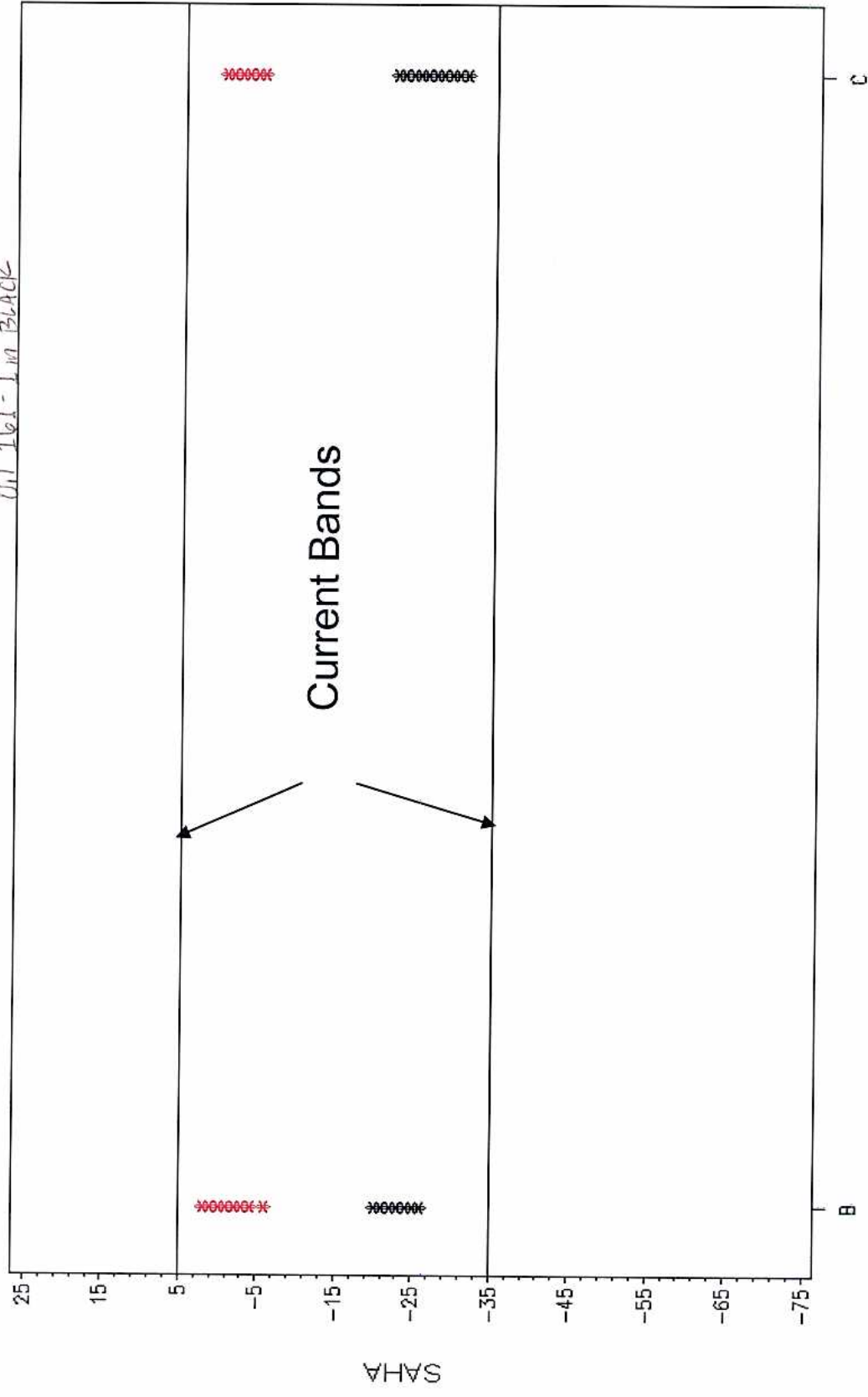
C

B

ltrim:lob

OSCT Data (20000101 - 20040700)

Oil in (160-1, 161-1) AND ELASTOMER = PA *** Oil 160-1 in RED
Oil 161-1 in BLACK

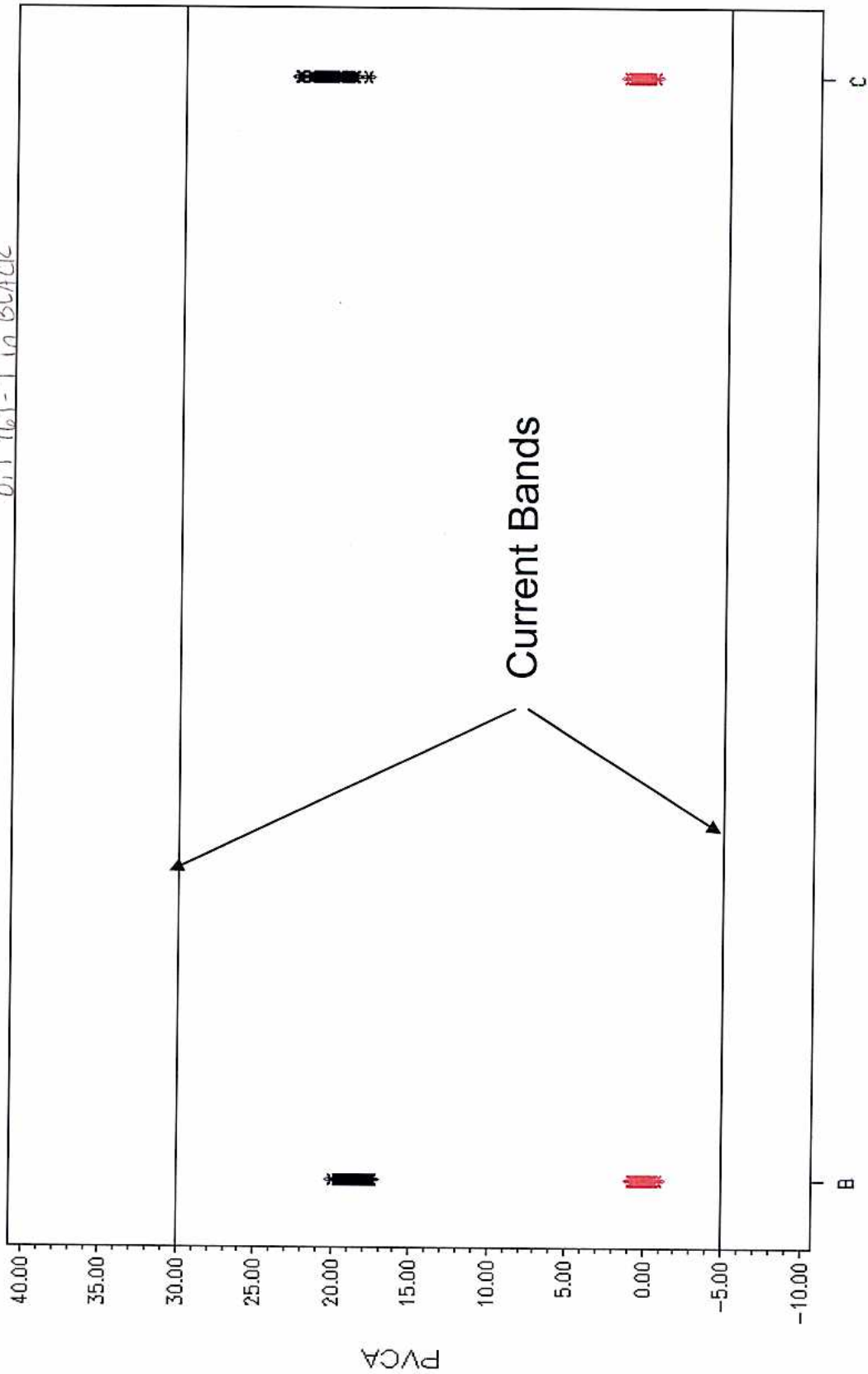


itrms/lab

OSCT Data (20000101 - 20040700)

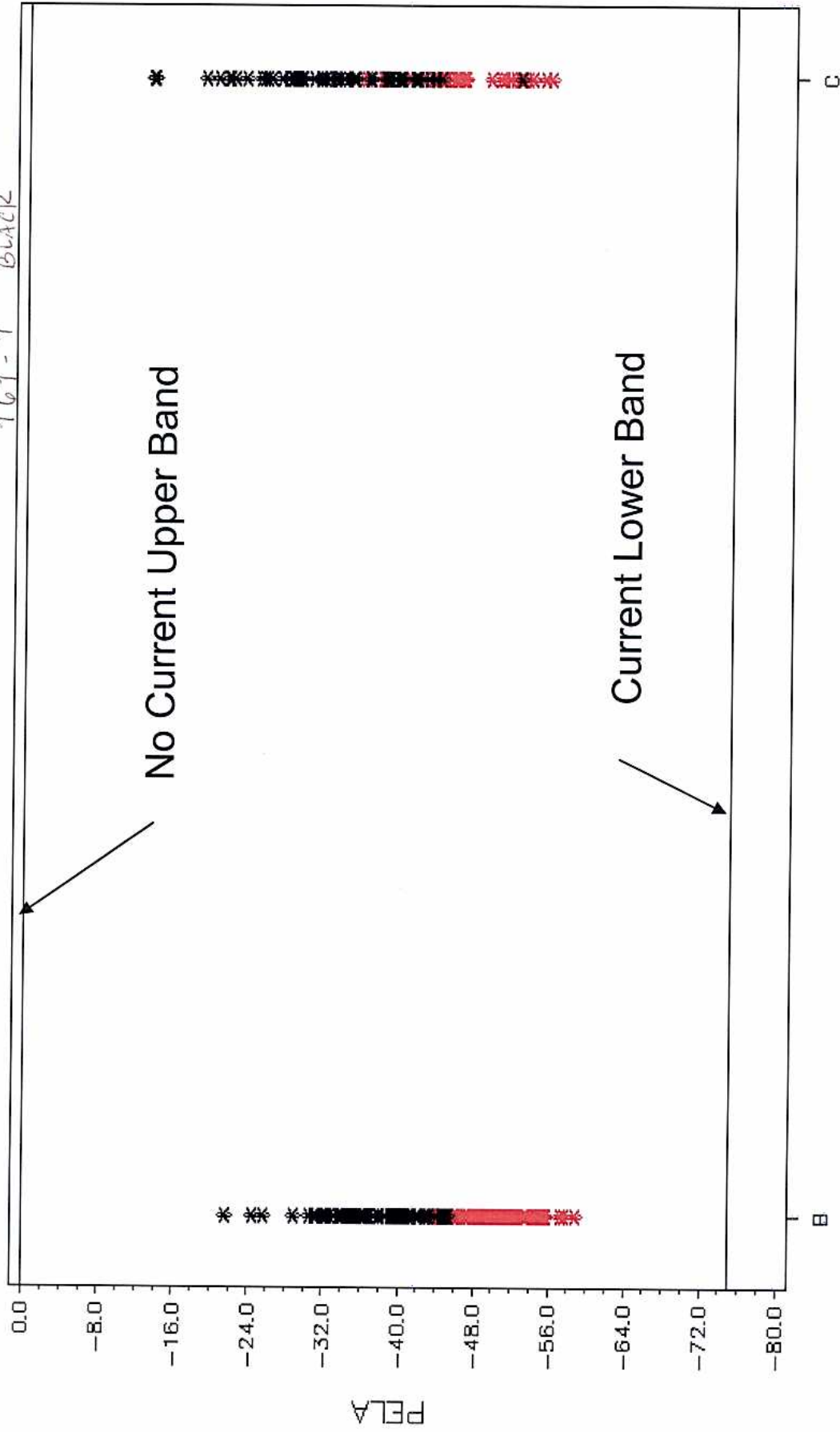
Oil in (160-1, 161-1) AND ELASTOMER = PA *** Oil 160-1 in RED

Oil 161-1 in BLACK

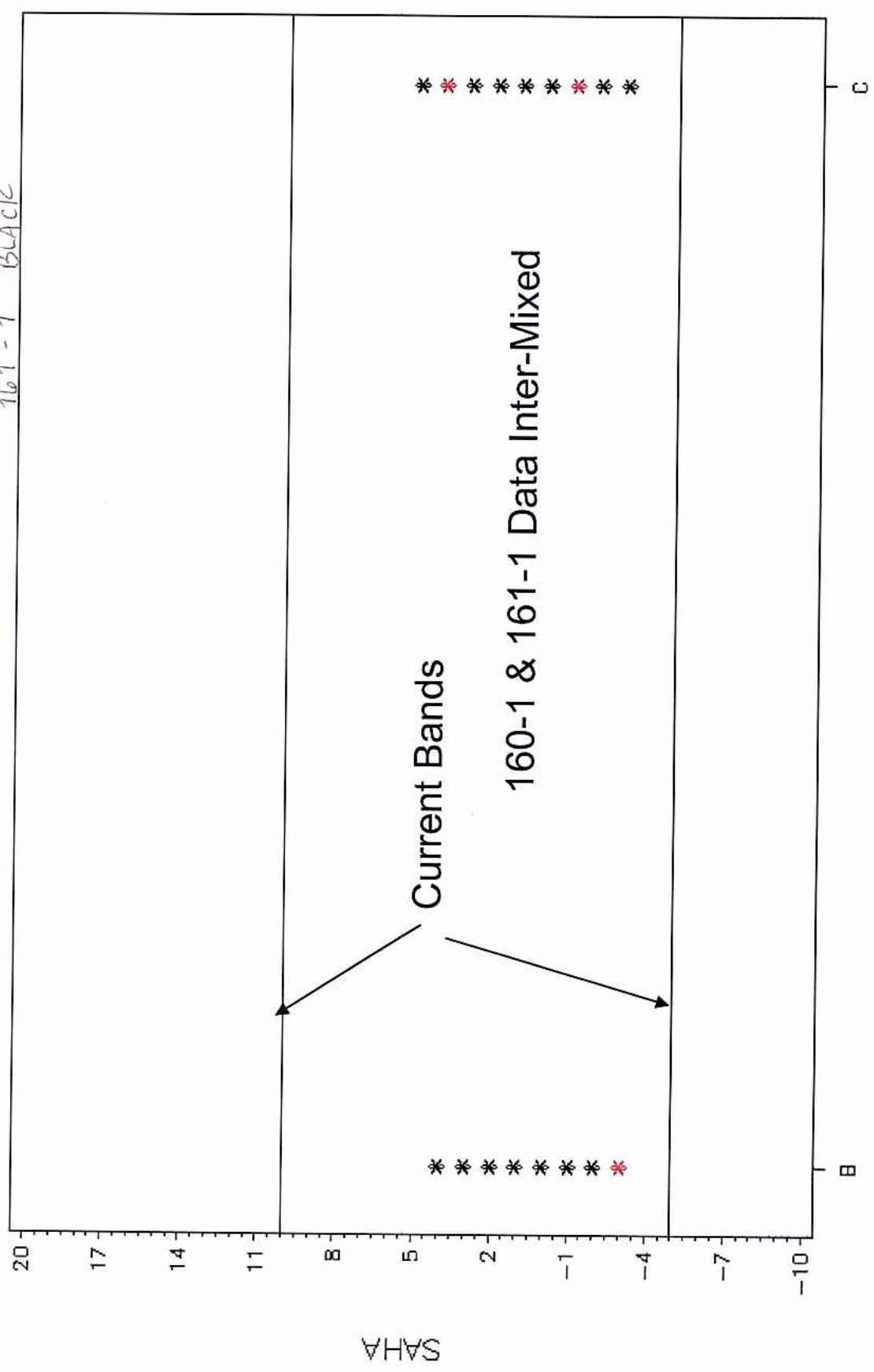


OSCT Data (20000101 - 20040700)

Oil in(160-1, 161-1) AND Elastomer = FL *** Oil 160-1 in RED
161-1 in BLACK

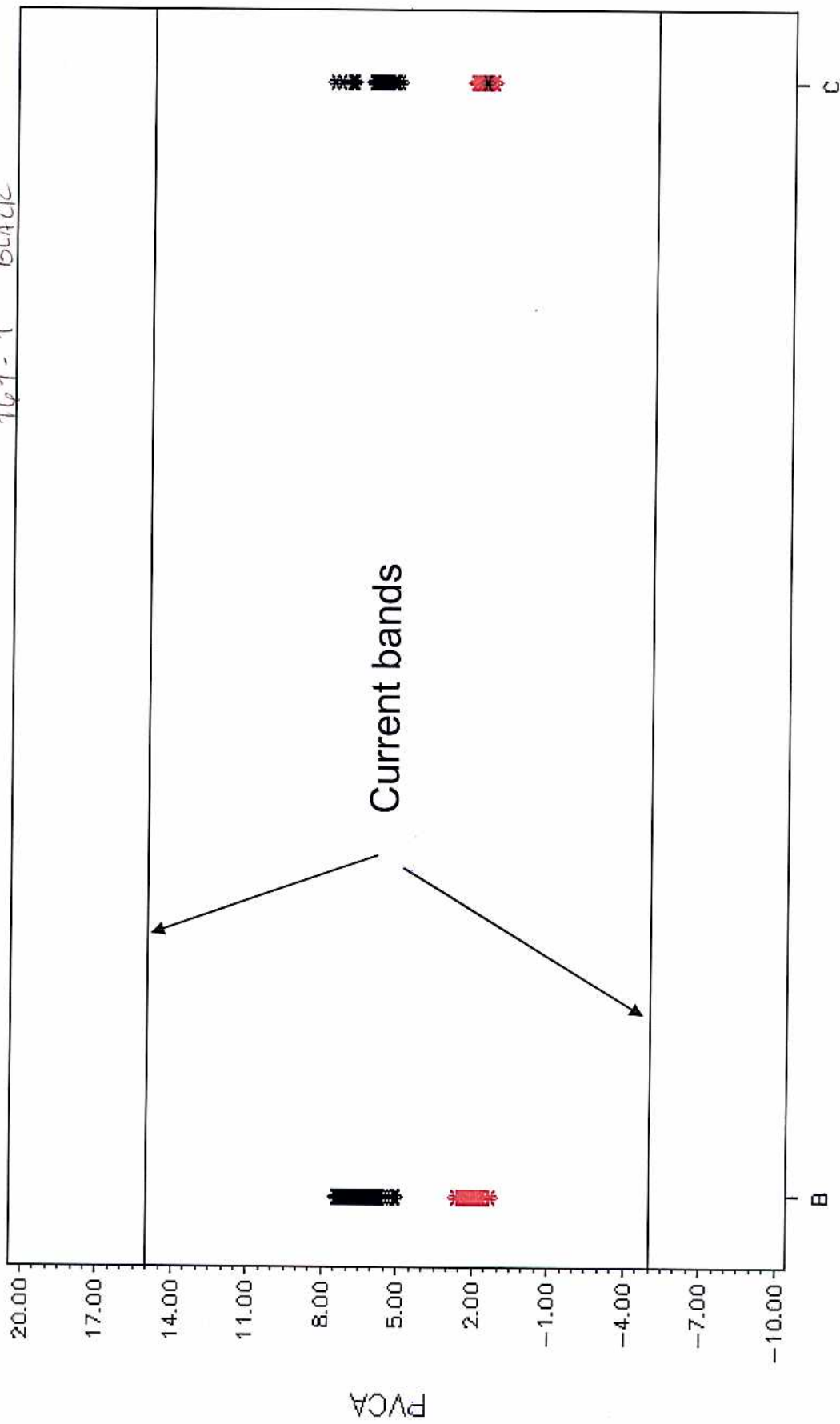


OSCT Data (20000101 - 20040700)
Oil in(160-1, 161-1) AND Elastomer = FL *** Oil 160-1 in RED
161-1 BLACK



OSCT Data (20000101 - 20040700)

Oil in(160-1, 161-1) AND Elastomer = FL *** Oil 160-1 in RED
161-1 in BLACK

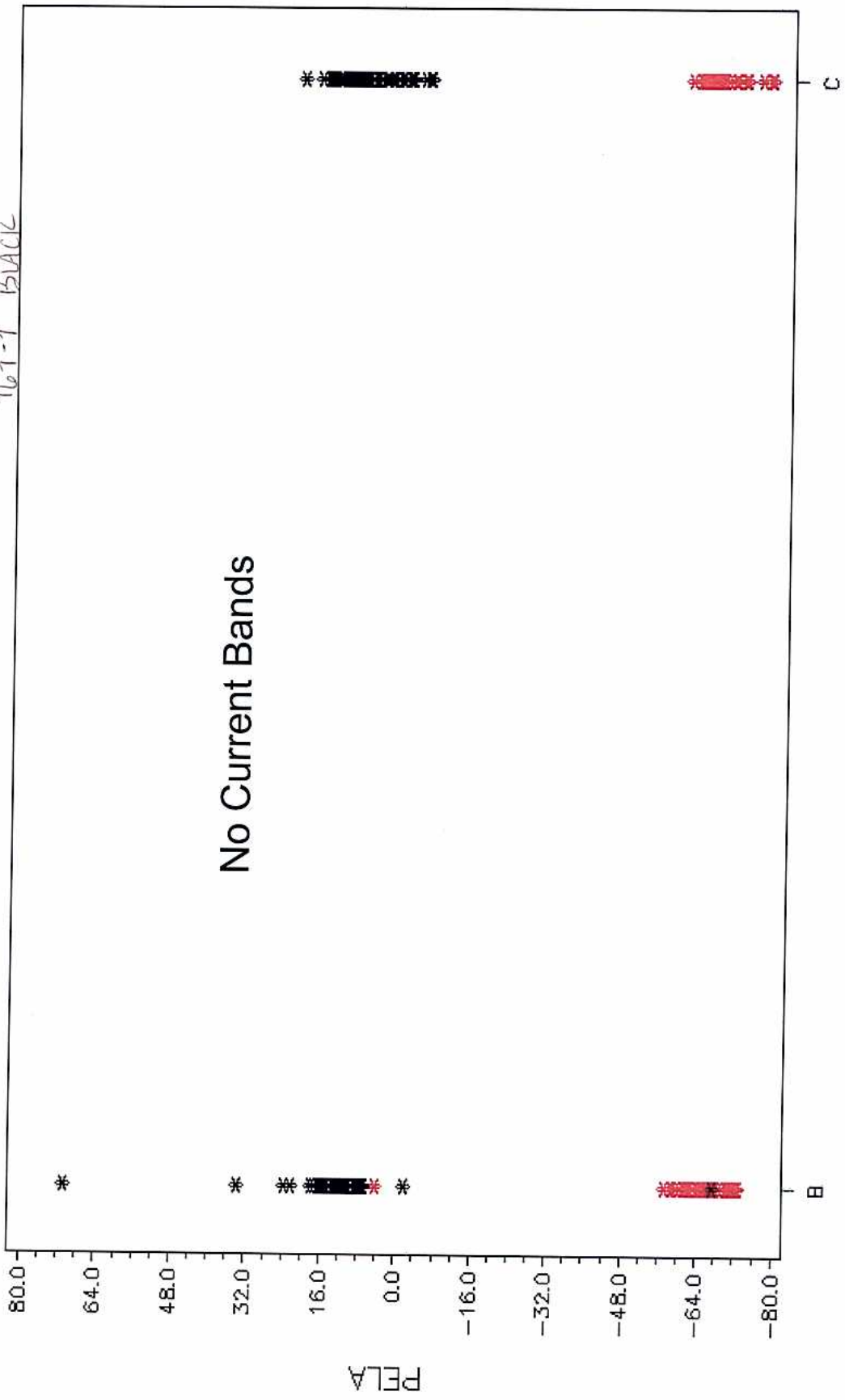


Itemslab

OSCT Data (20000101 - 20040700)

Oil in (161-1, 162) AND Elastomer = NI *** Oil 162 in RED

161-1 BLACK

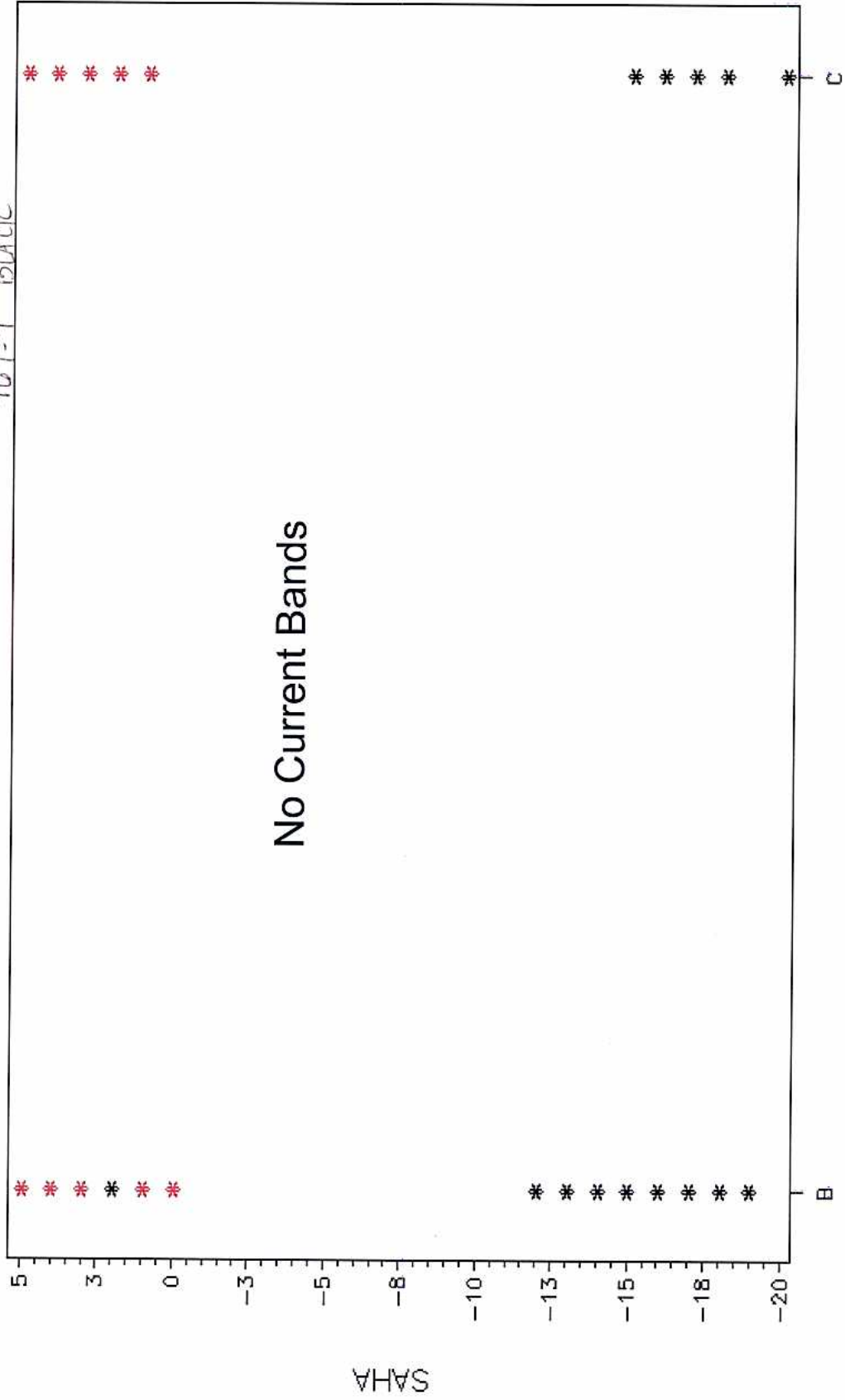


Itmslab

OSCT Data (20000101 - 20040700)

Oil in (161-1, 162) AND Elastomer = NI *** Oil 162 in RED

161-1 BLACK

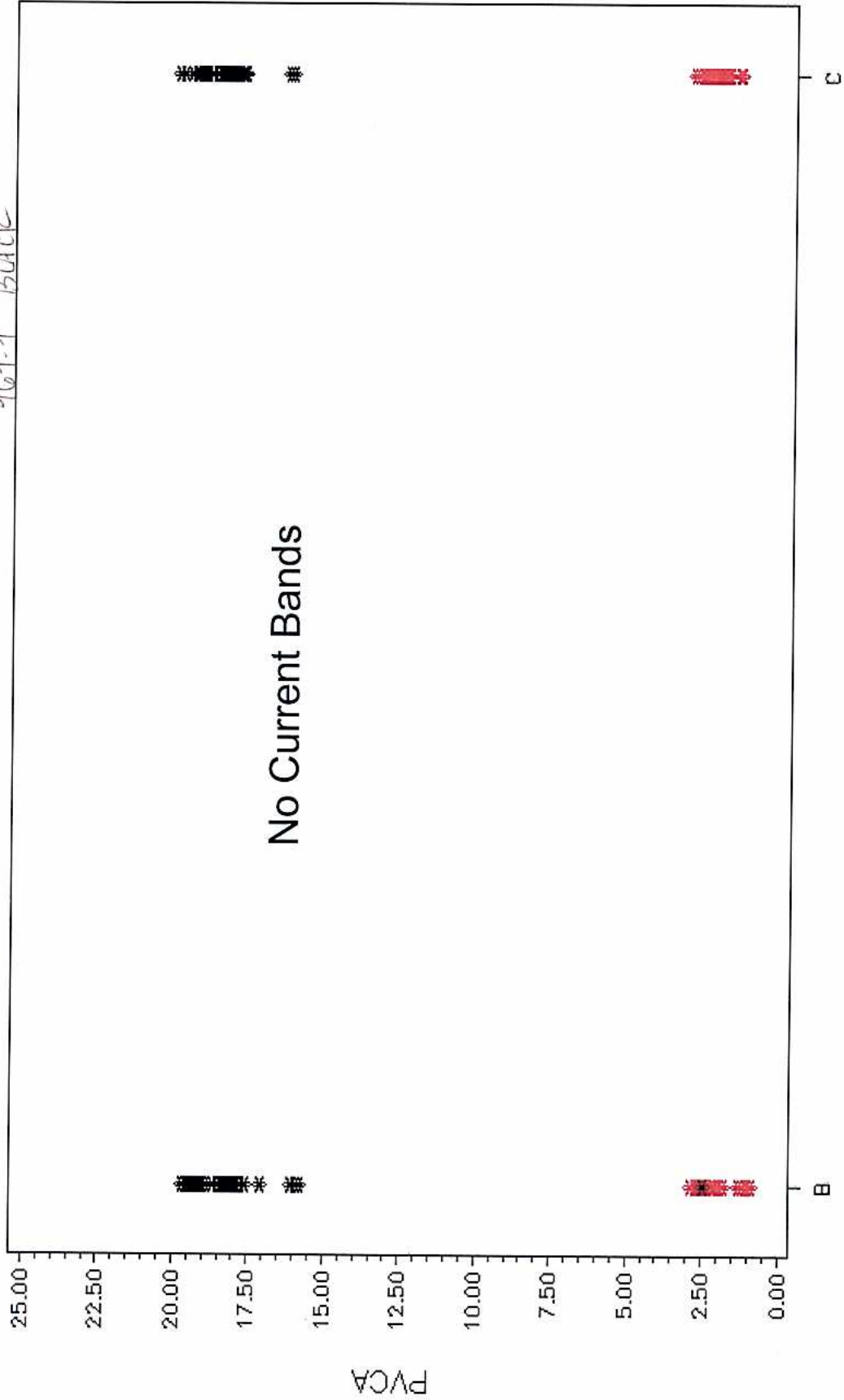


Itmslab

OSCT Data (20000101 - 20040700)

Oil in (161-1, 162) AND Elastomer = NI *** Oil 162 in RED

161-1 BACK



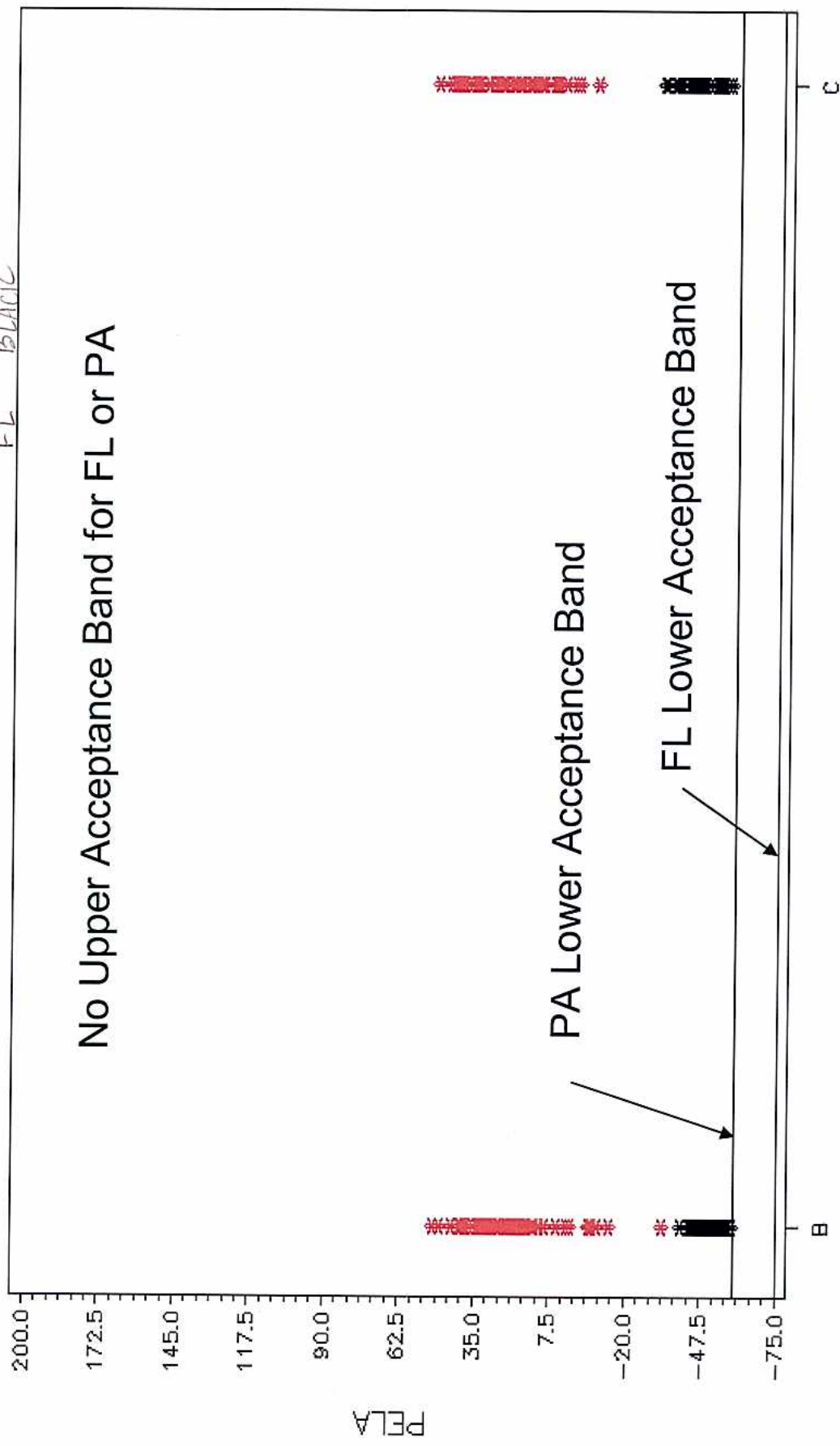
Itmslab

Elastomer Performance Differences

- The following graphs show test result differences using a given reference oil with FL & PA
 - The only exception being Shore Hardness for oil 160-1

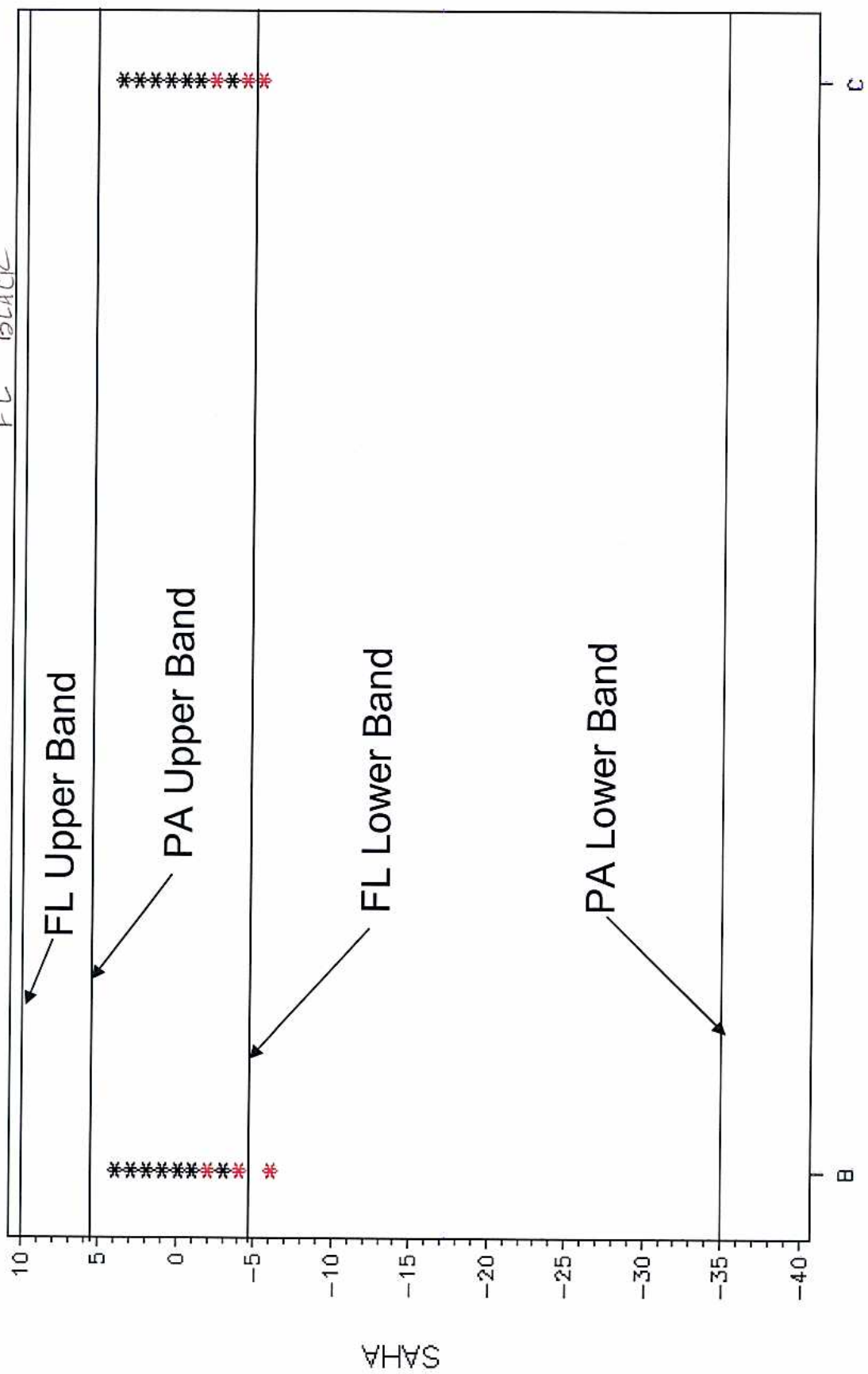
OSCT Data (20000101 - 20040700)

Elastomers = PA and FL for Oil = 160-1 *** PA in RED
FL in BLACK



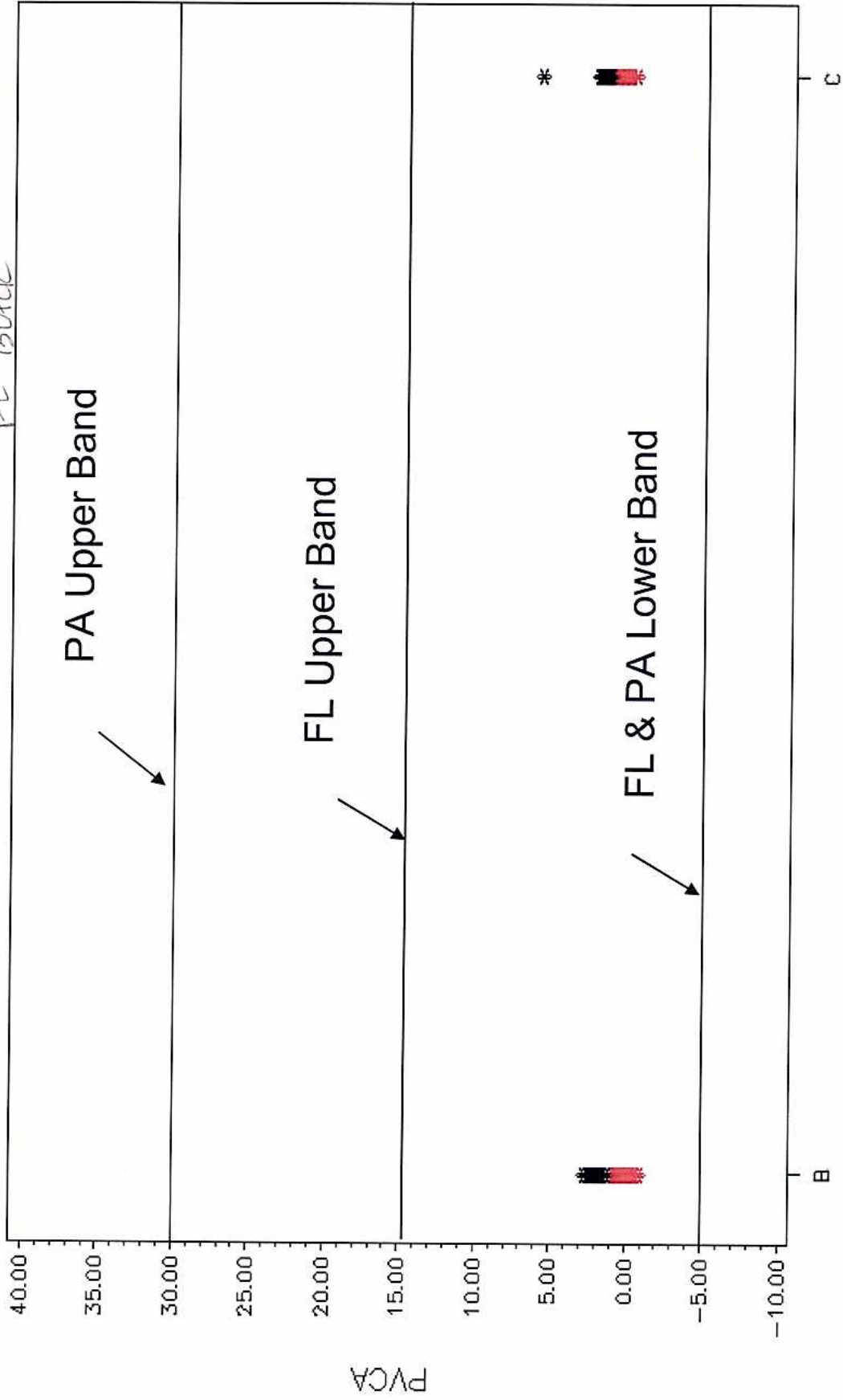
OSCT Data (20000101 - 20040700)

Elastomers = PA and FL for Oil = 160-1 *** PA in RED
FL BLACK



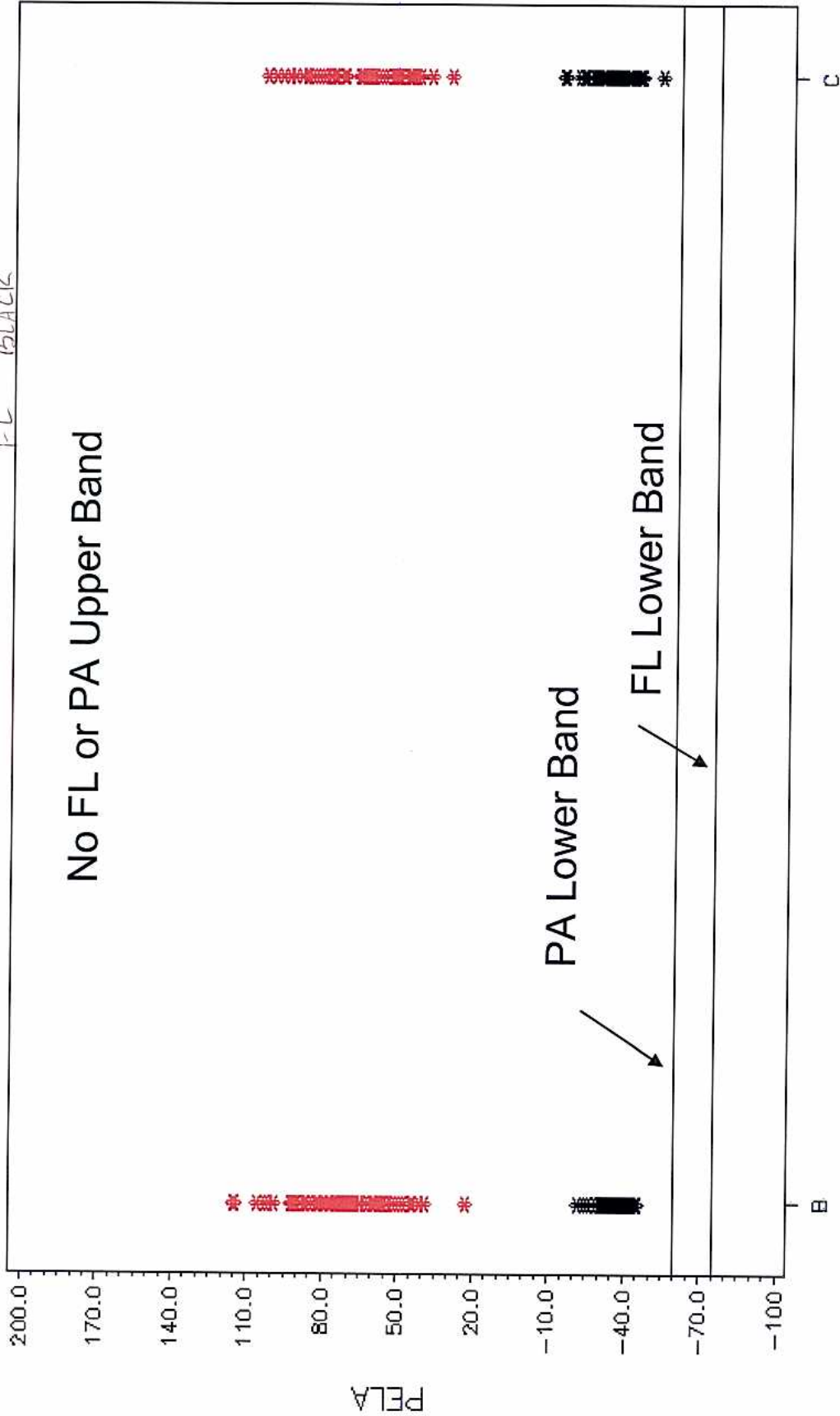
OSCT Data (20000101 - 20040700)

Elastomers = PA and FL for Oil = 160-1 *** PA in RED
FL in BLACK



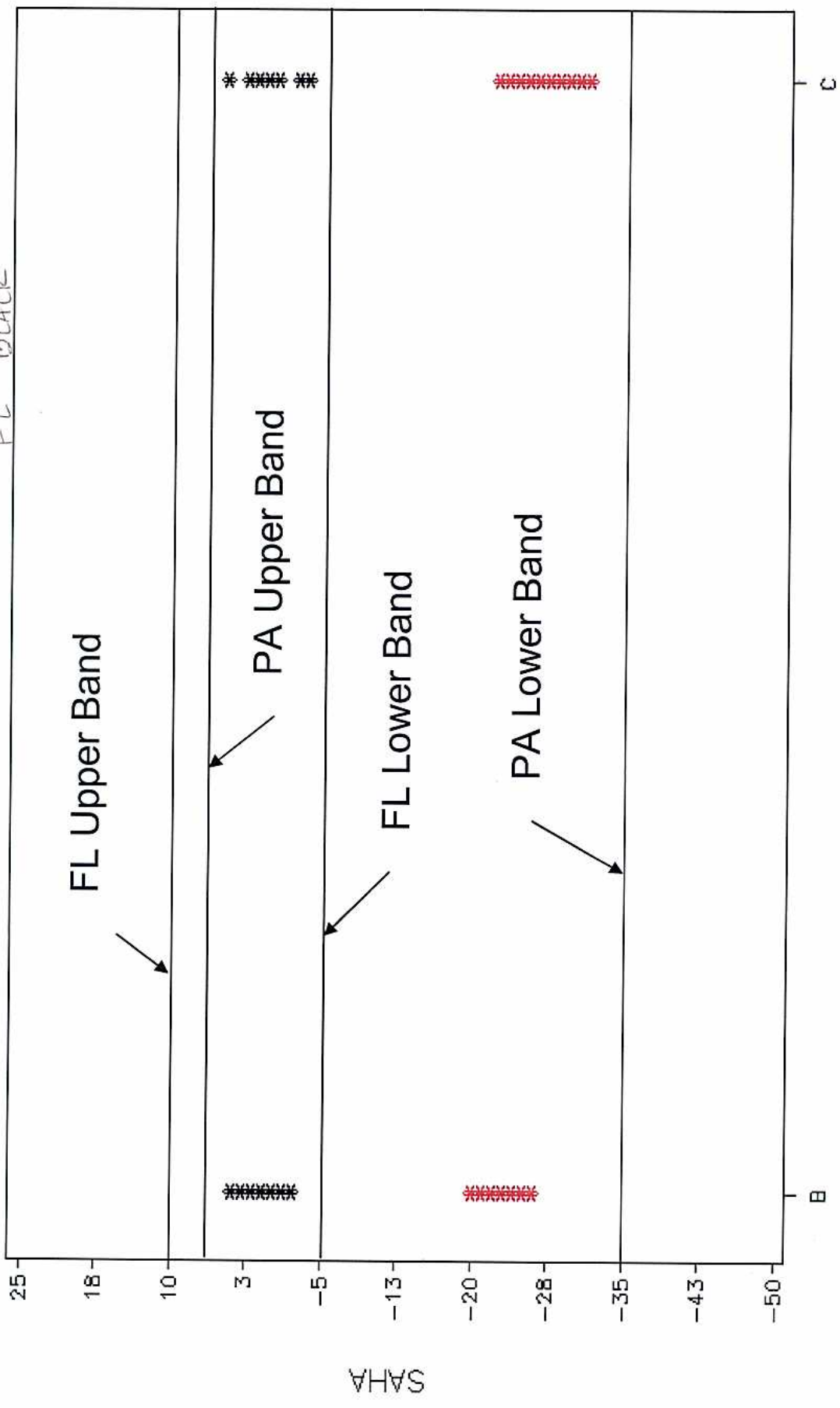
OSCT Data (20000101 - 20040700)

Elastomers = PA and FL for Oil 161 -1 *** PA in RED
FL BLACK



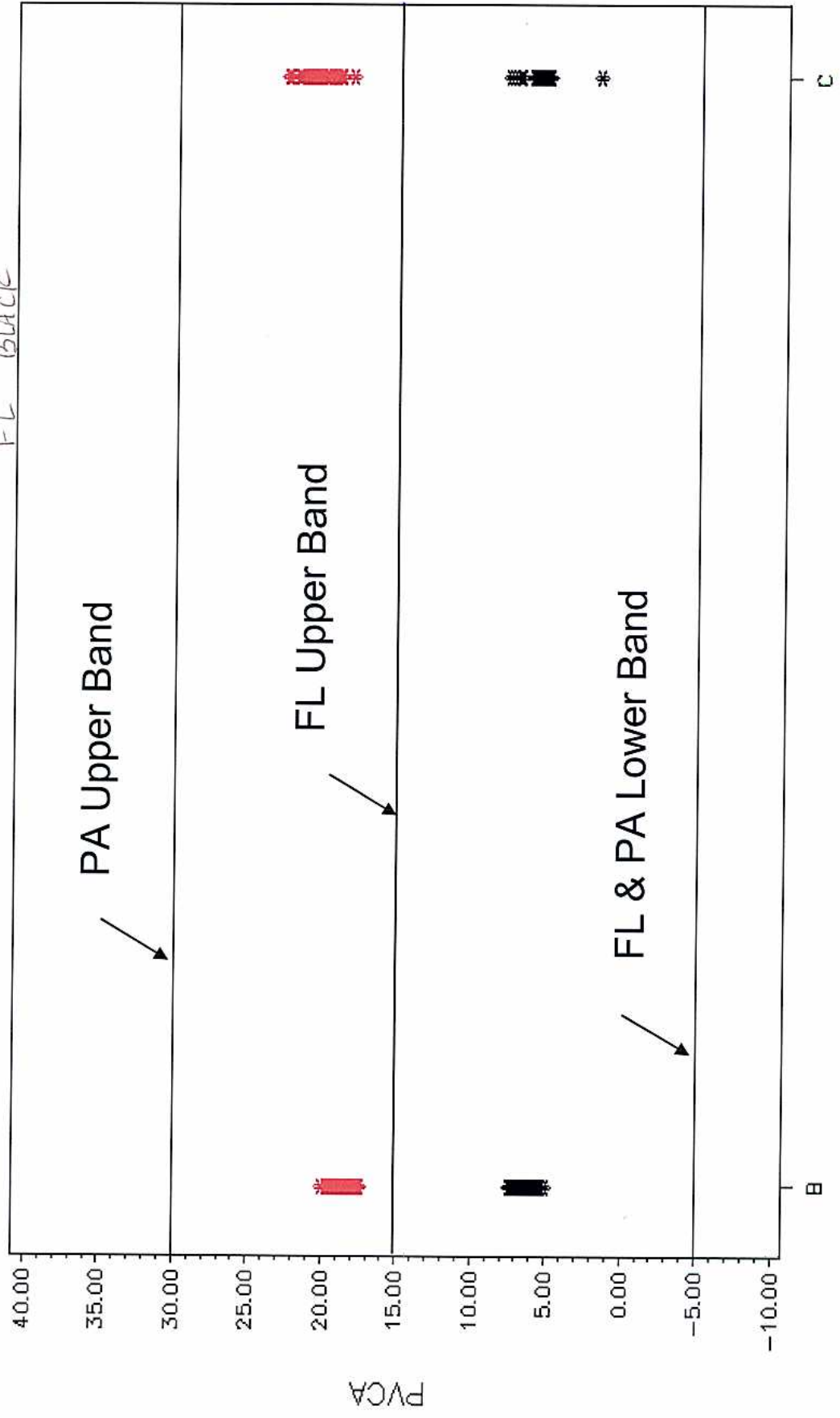
OSCT Data (20000101 - 20040700)

Elastomers = PA and FL for Oil 161-1 *** PA in RED
FL BLACK



OSCT Data (20000101 - 20040700)

Elastomers = PA and FL for Oil 161-1 *** PA in RED
FL BLACK

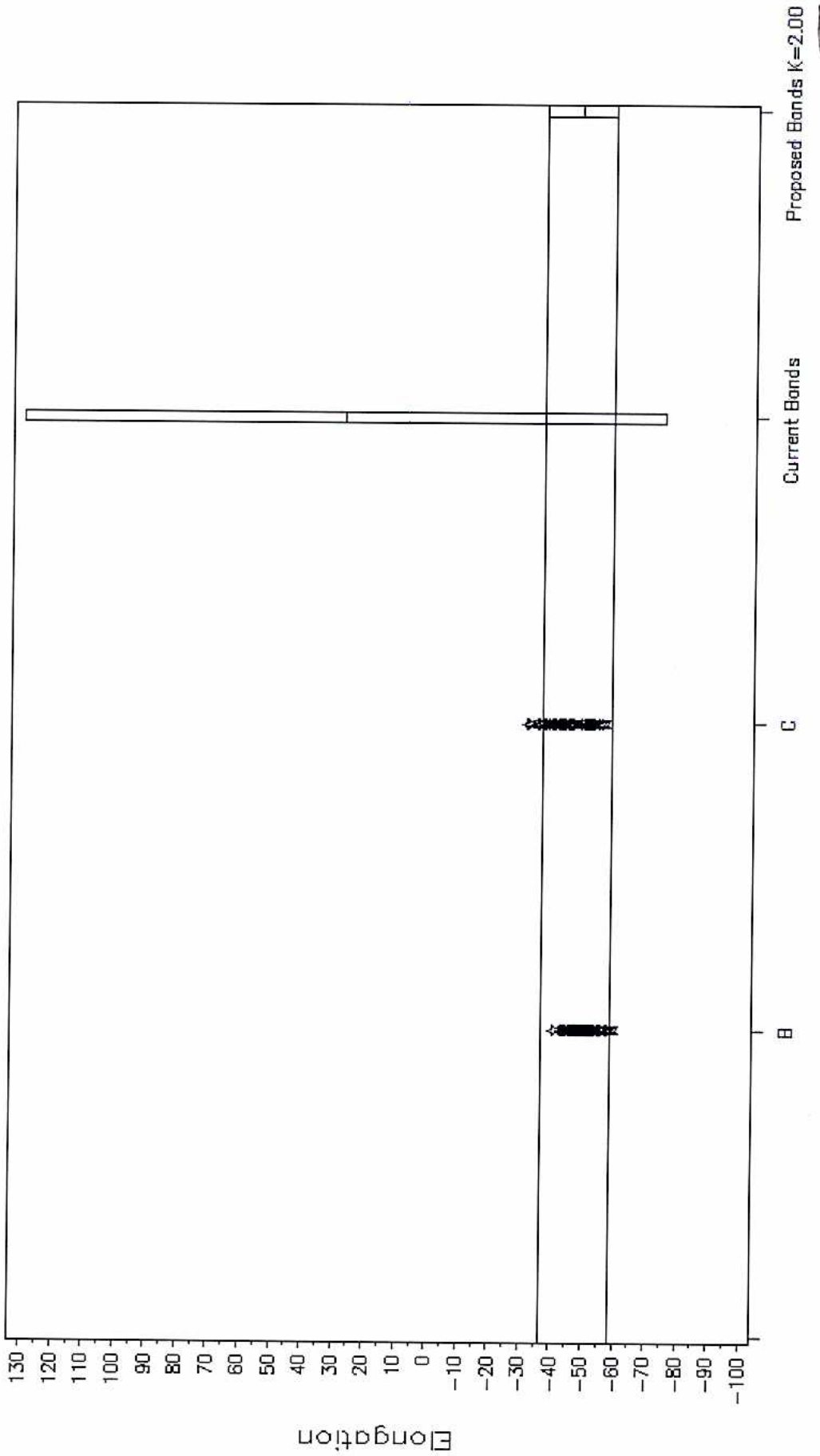


New Band Proposal

- Determine bands based on mean and standard deviation of each reference oil and elastomer type
 - Use a Shewhart Severity K value to give a reasonable level of error detection without increasing rejection rates significantly

OSCT Data 20000101 - 20040700

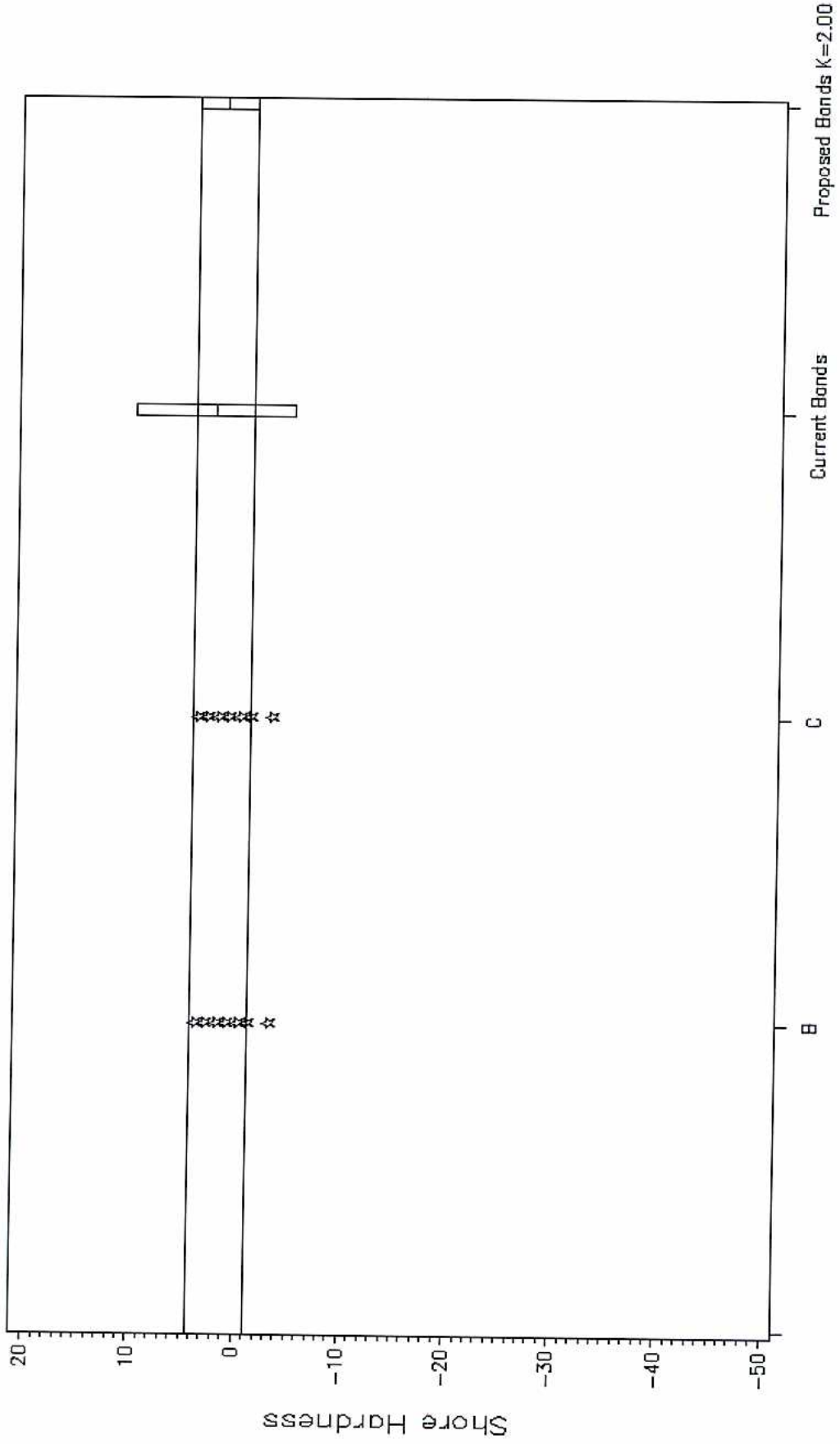
Fluoroelastomer / 160-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700

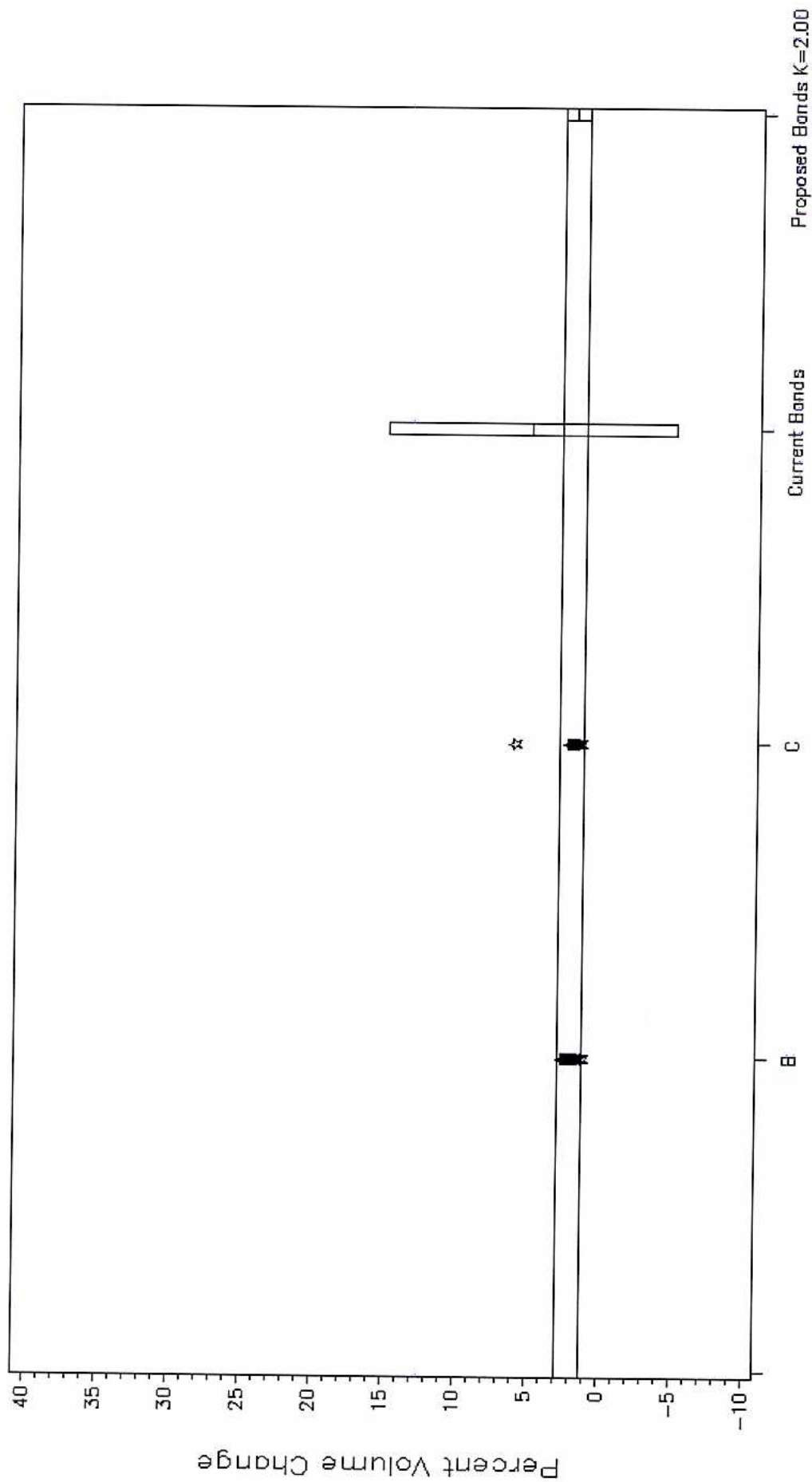
Fluoroelastomer / 160-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700

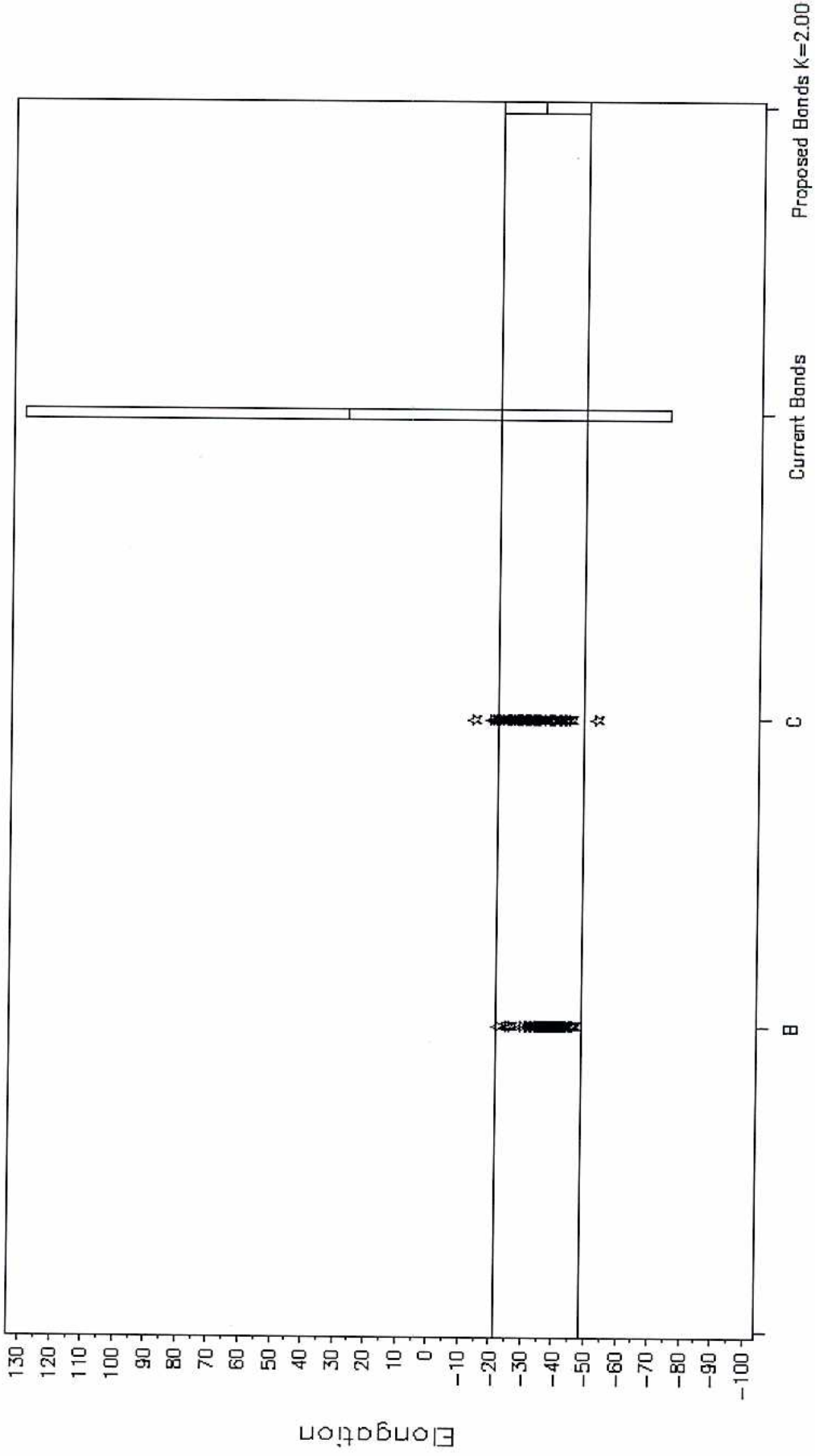
Fluoroelastomer / 160-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700

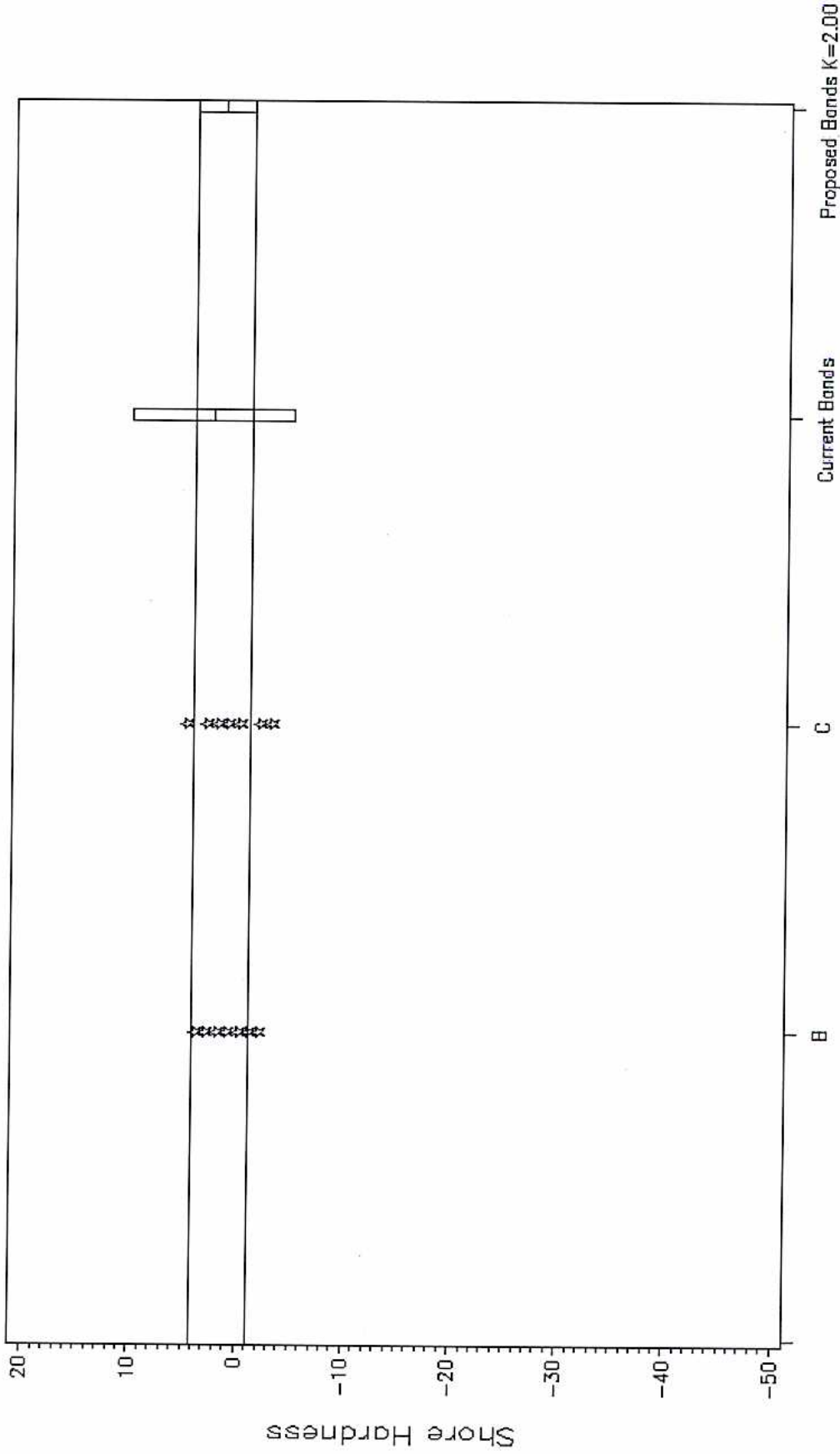
Fluoroelastomer / 161-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700

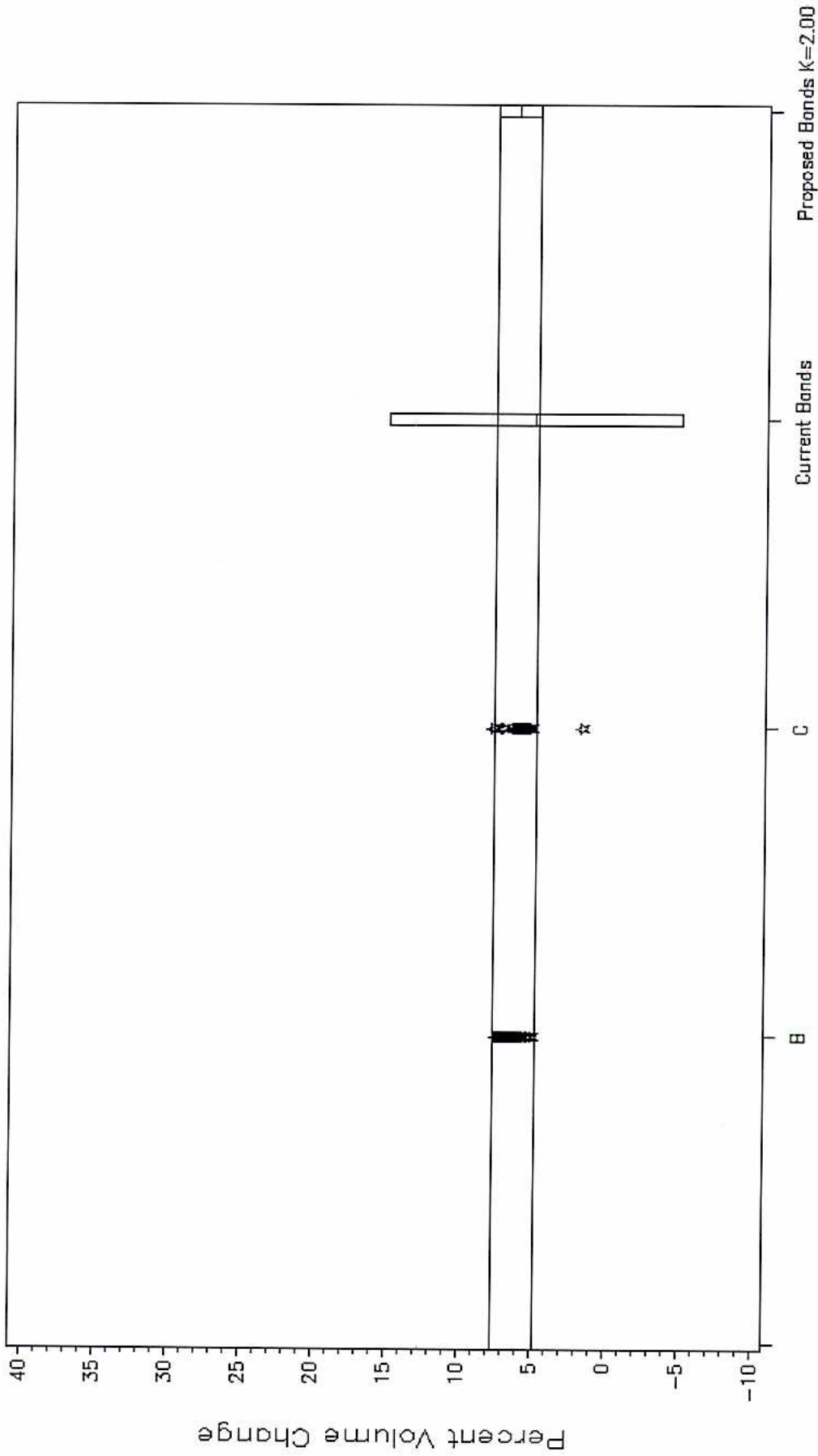
Fluoroelastomer / 161-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

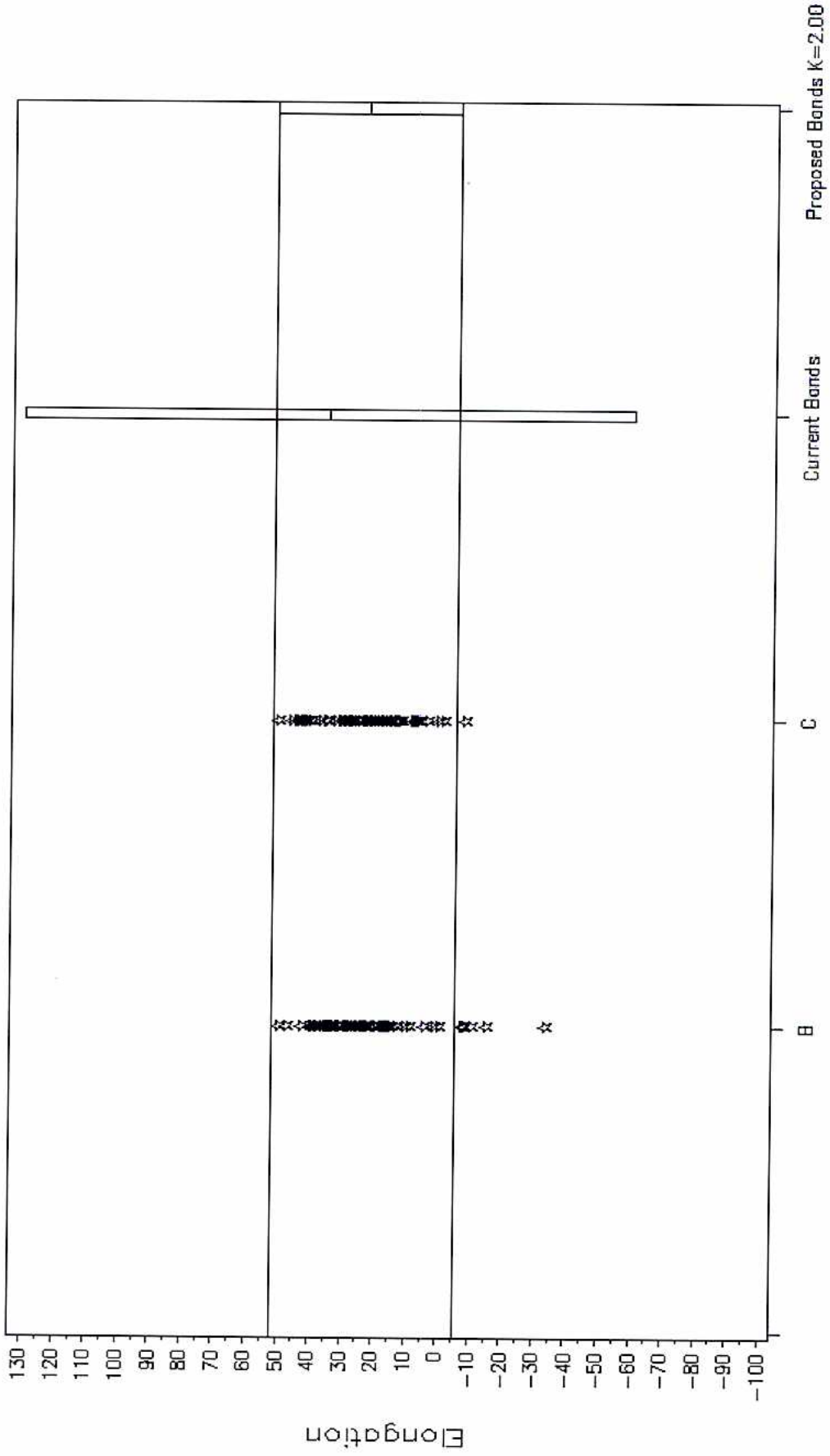
OSCT Data 20000101 - 20040700

Fluoroelastomer / 161-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

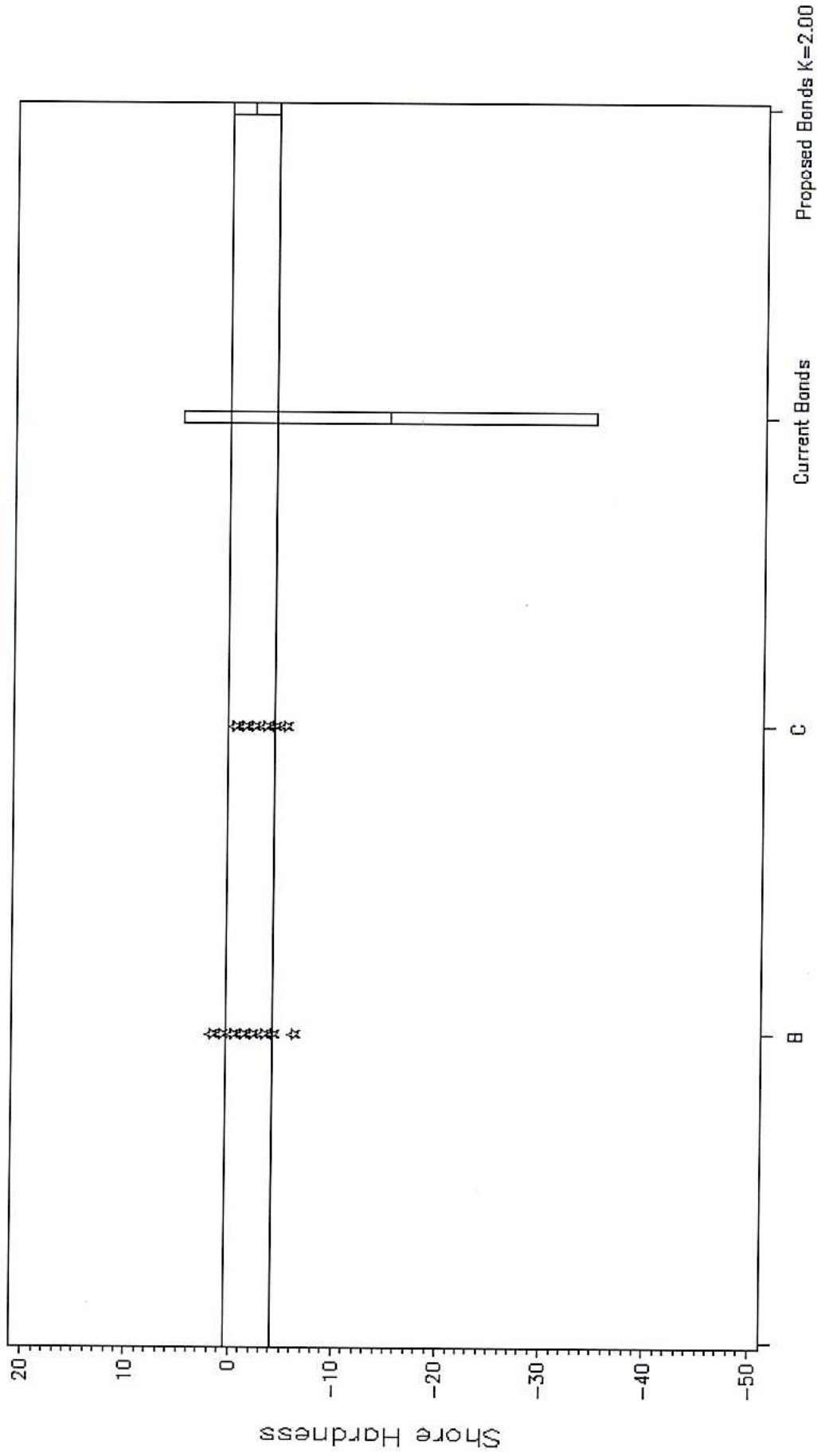
OSCT Data 20000101 - 20040700
Polyacrylate / 160-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

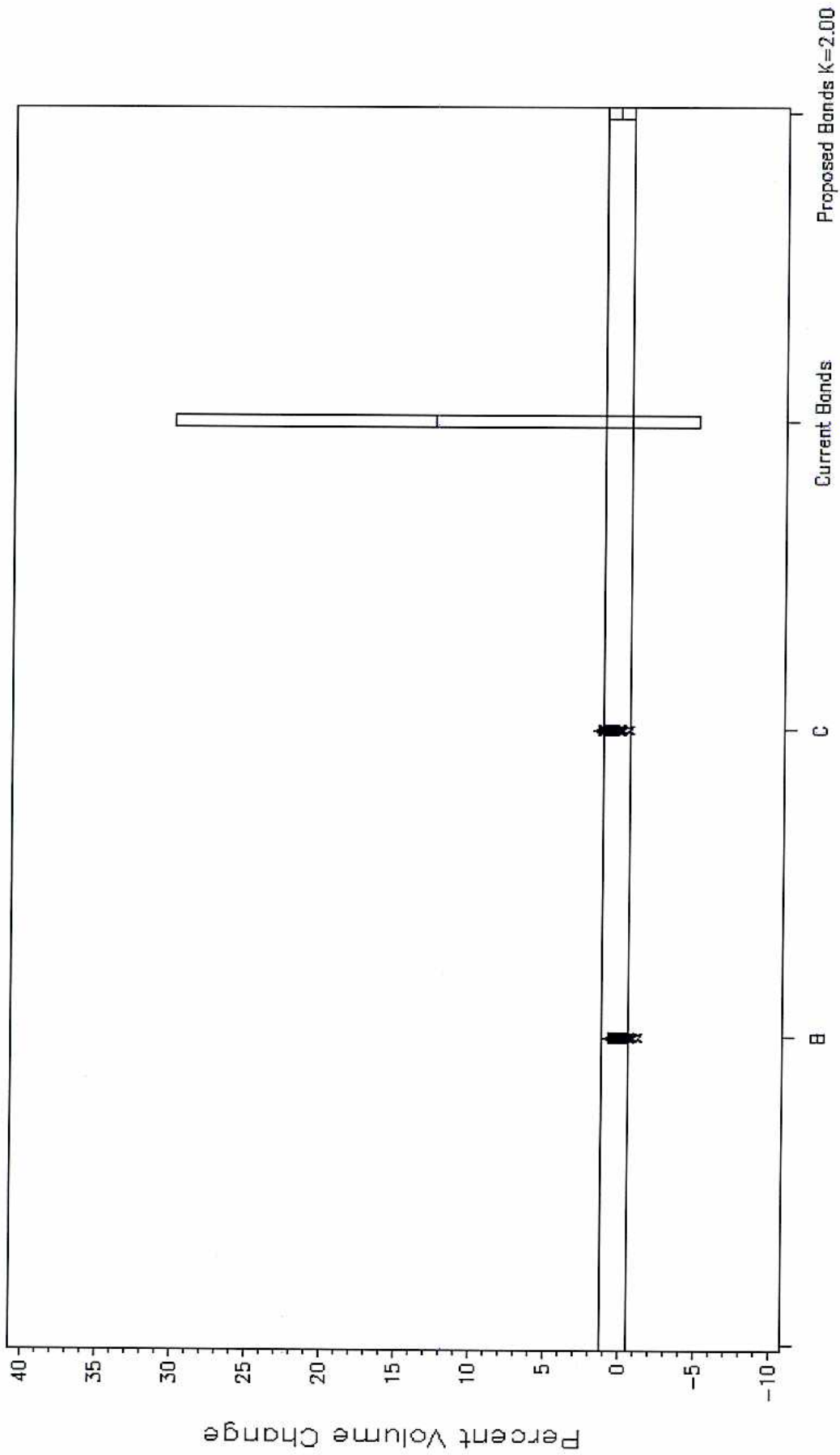
OSCT Data 20000101 - 20040700

Polyacrylate / 160-1



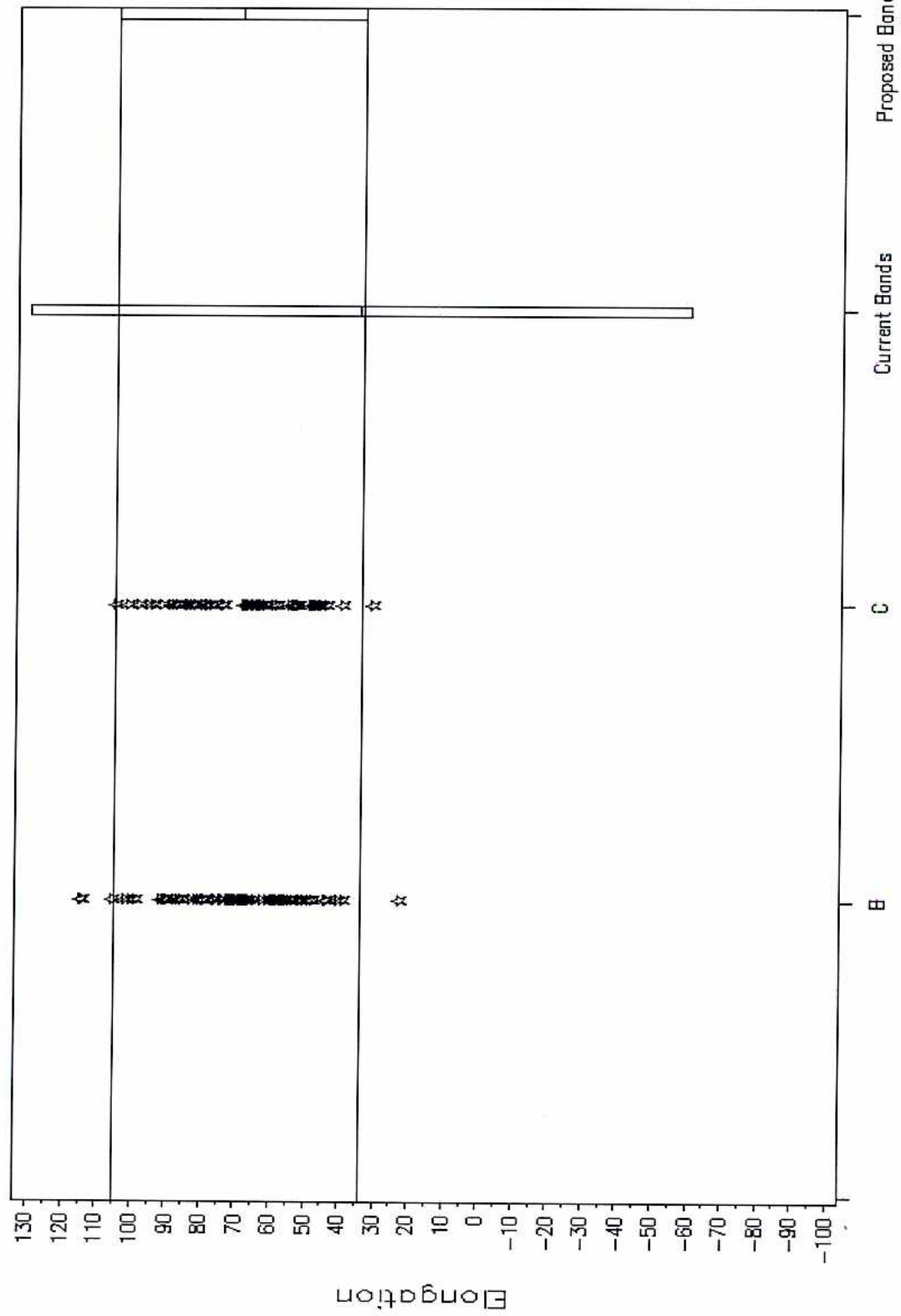
Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700
Polyacrylate / 160-1



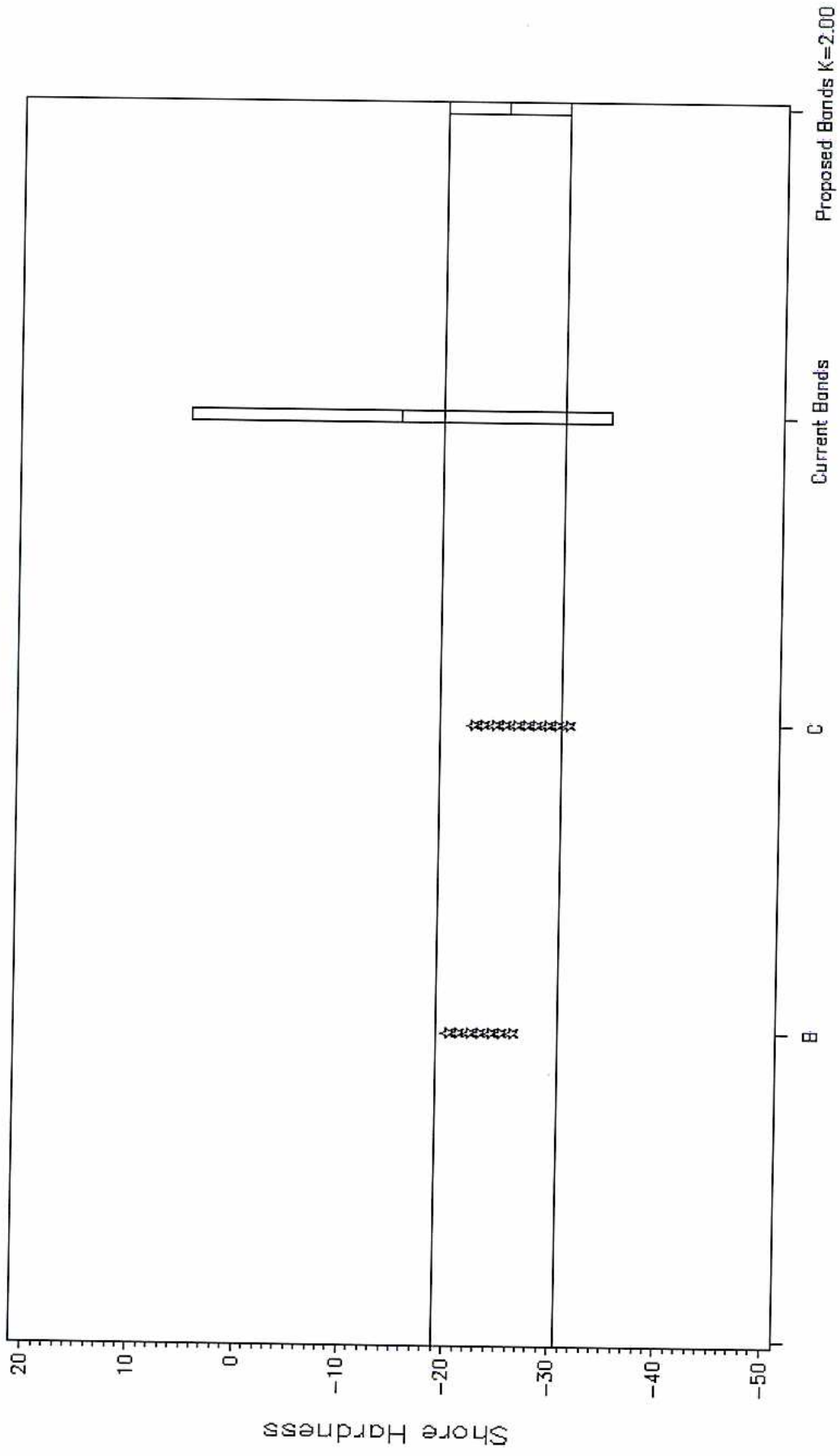
Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700
 Polyacrylate / 161-1



Note: Polyacrylate current band has no upper limit for elongation
 No current band exists for Nitrile

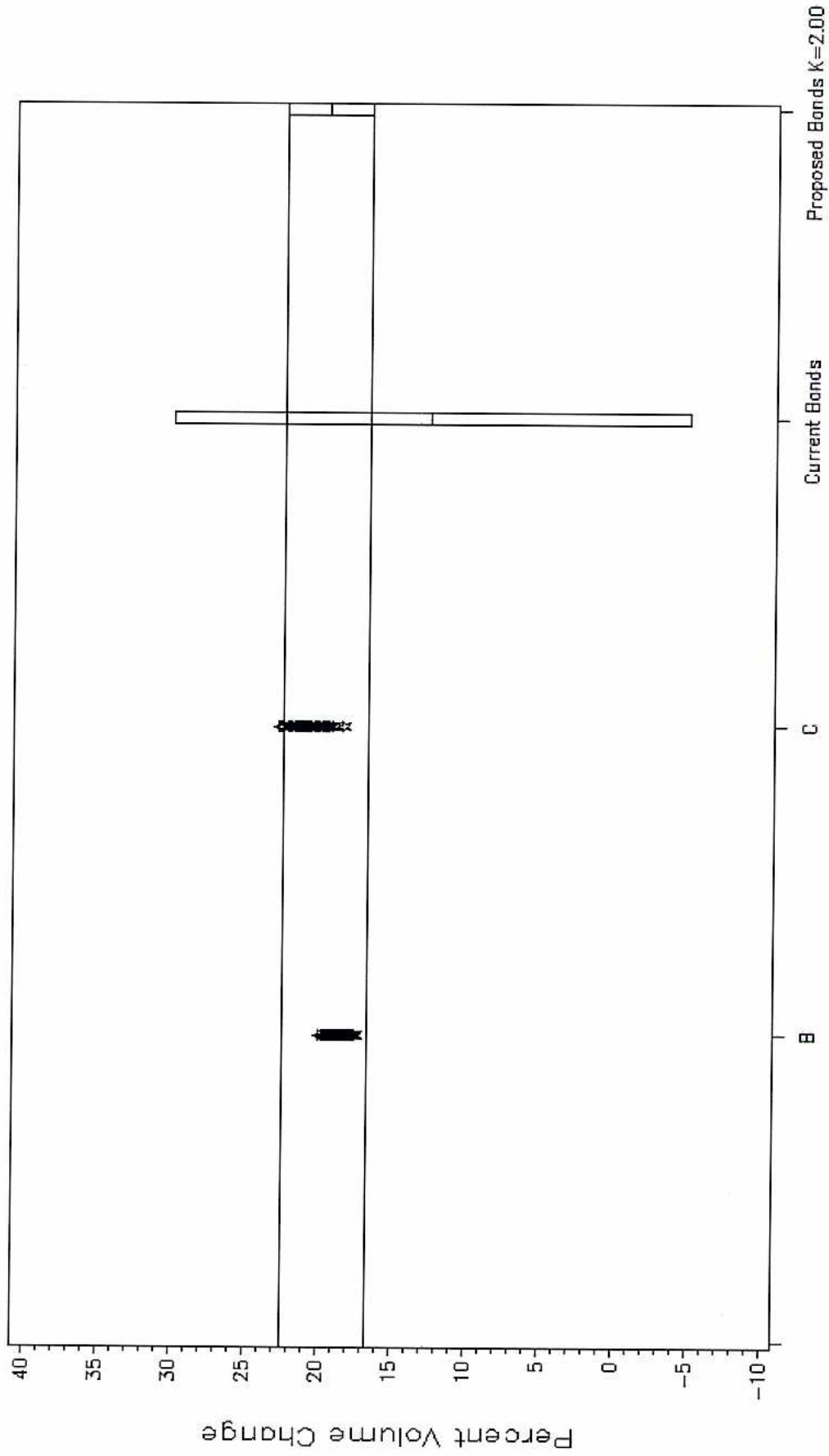
OSCT Data 20000101 - 20040700
Polyacrylate / 161-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700

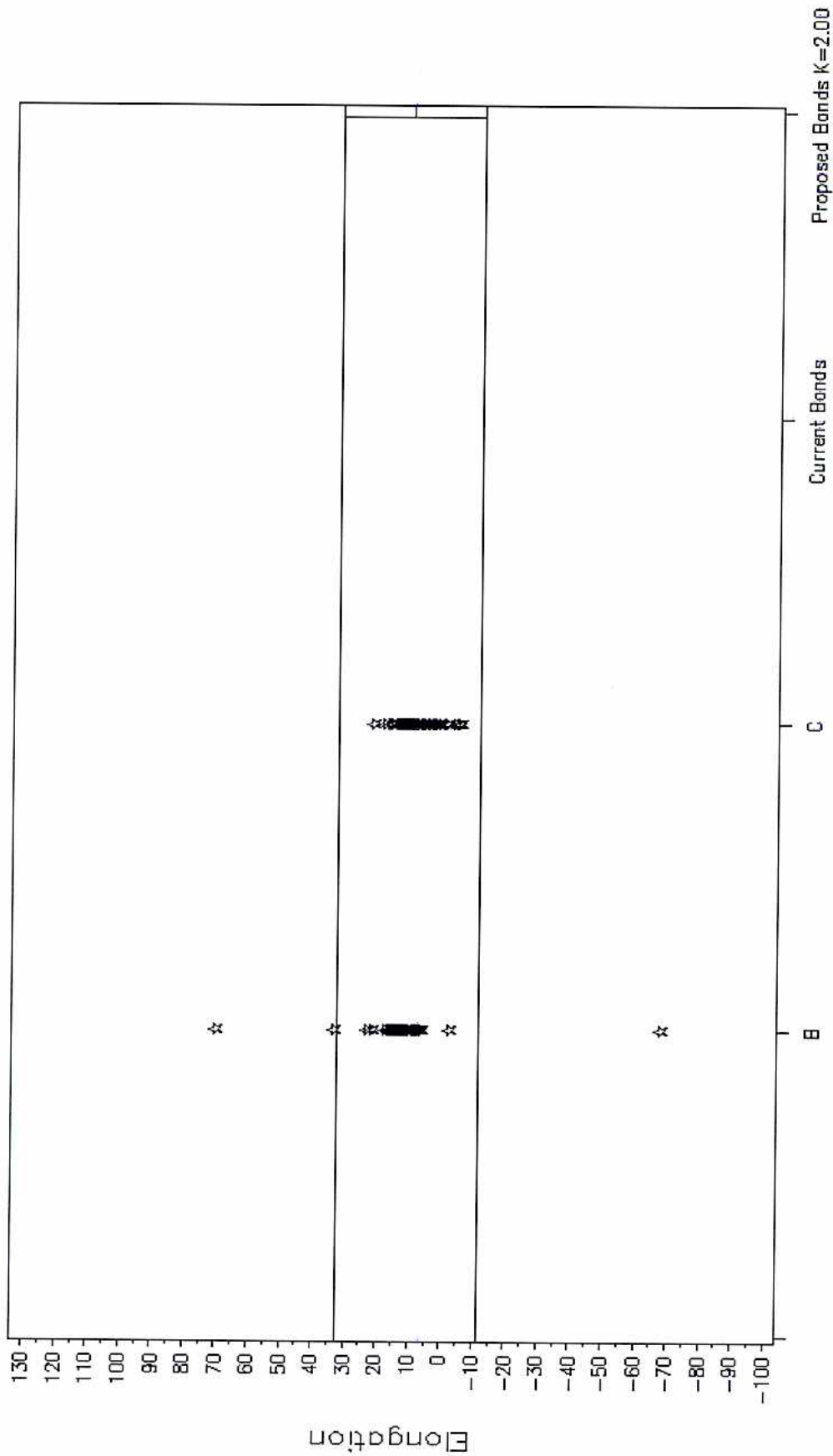
Polyacrylate / 161-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

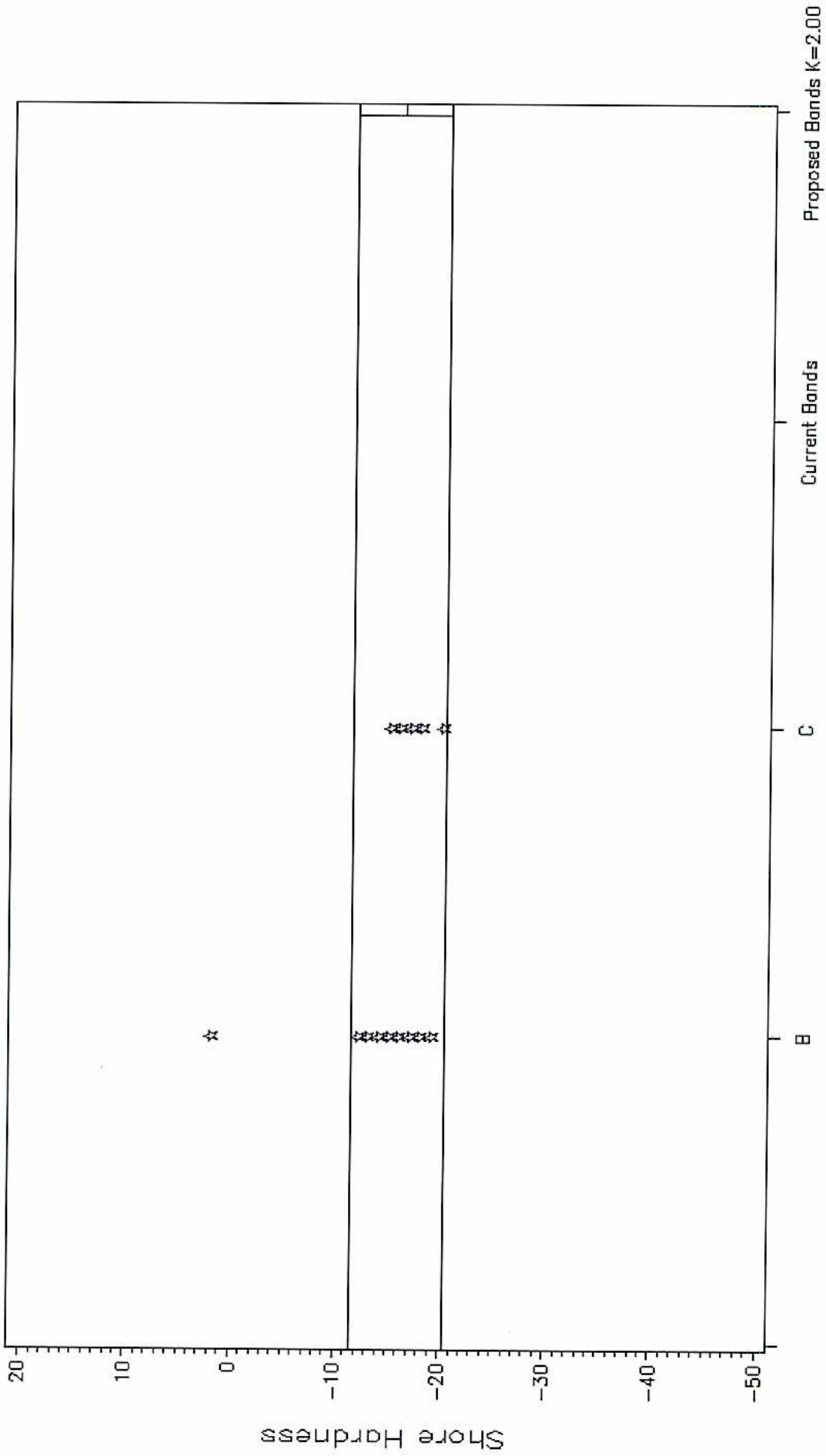
OSCT Data 20000101 - 20040700

Nitrile / 161-1



Note: Polyacrylate current bond has no upper limit for elongation
No current bond exists for Nitrile

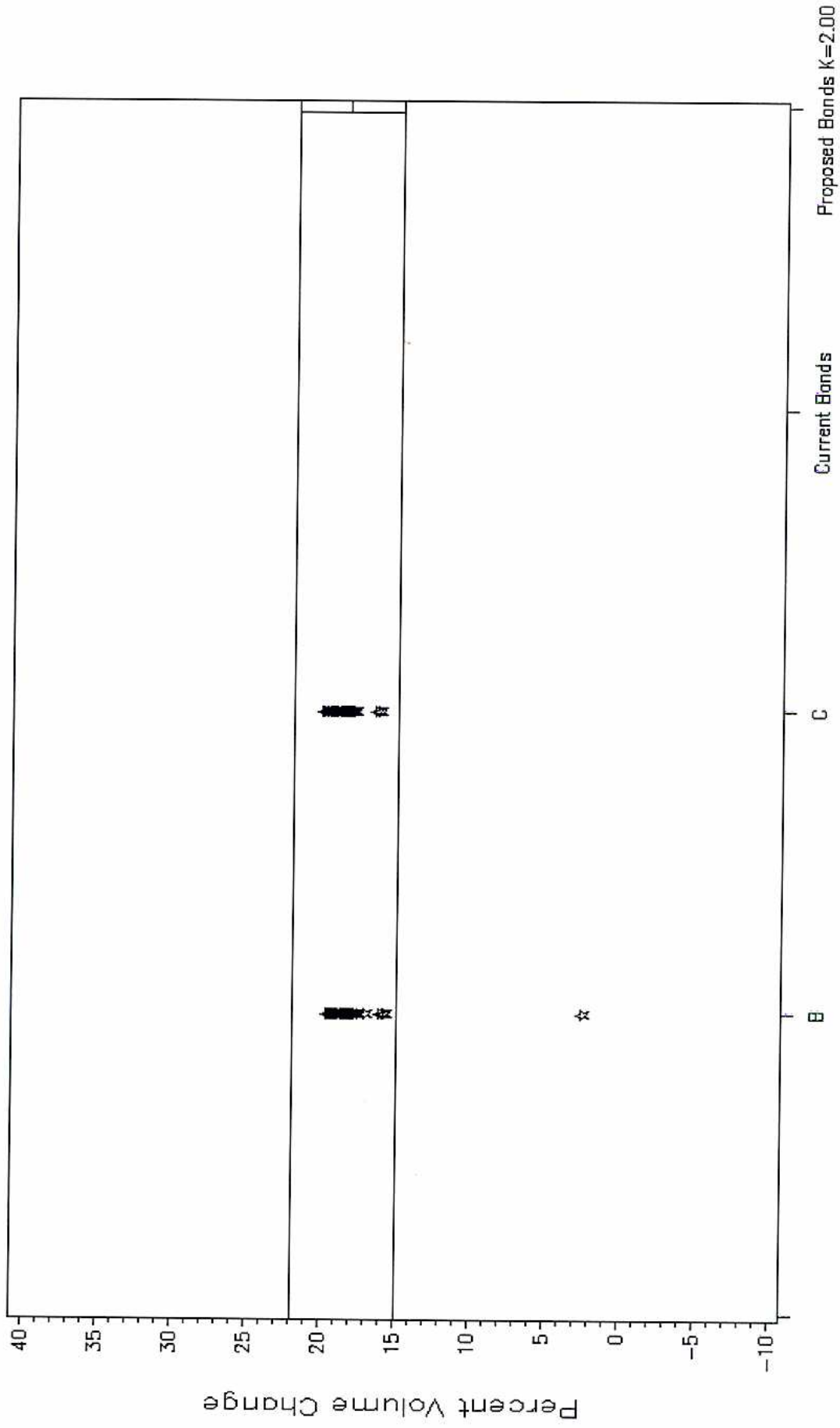
OSCT Data 20000101 - 20040700
Nitrile / 161-1



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700

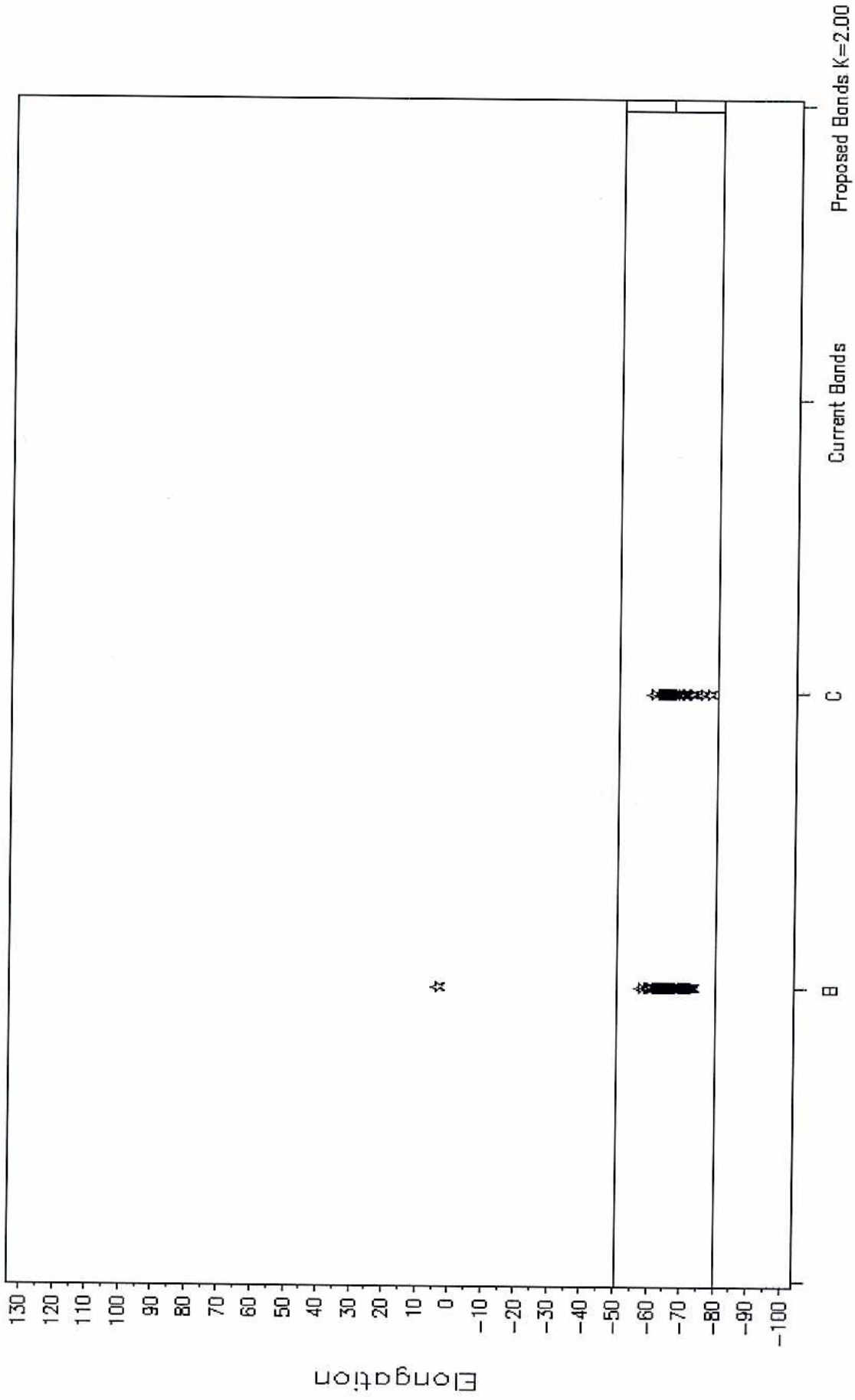
Nitrile / 161-1



Note: Polyacrylate current band has no upper limit for elongation.
No current band exists for Nitrile

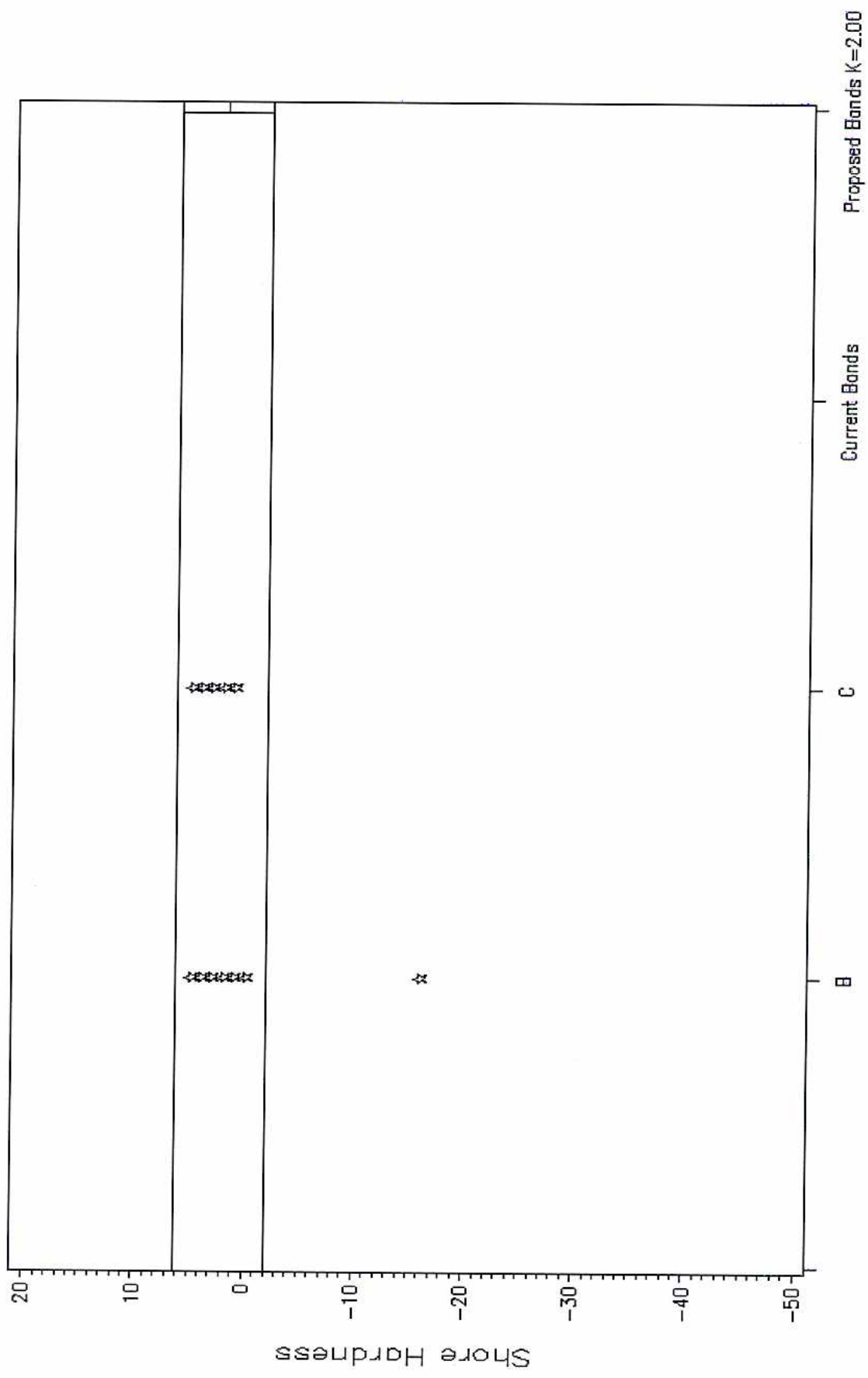
OSCT Data 20000101 - 20040700

Nitrile / 162



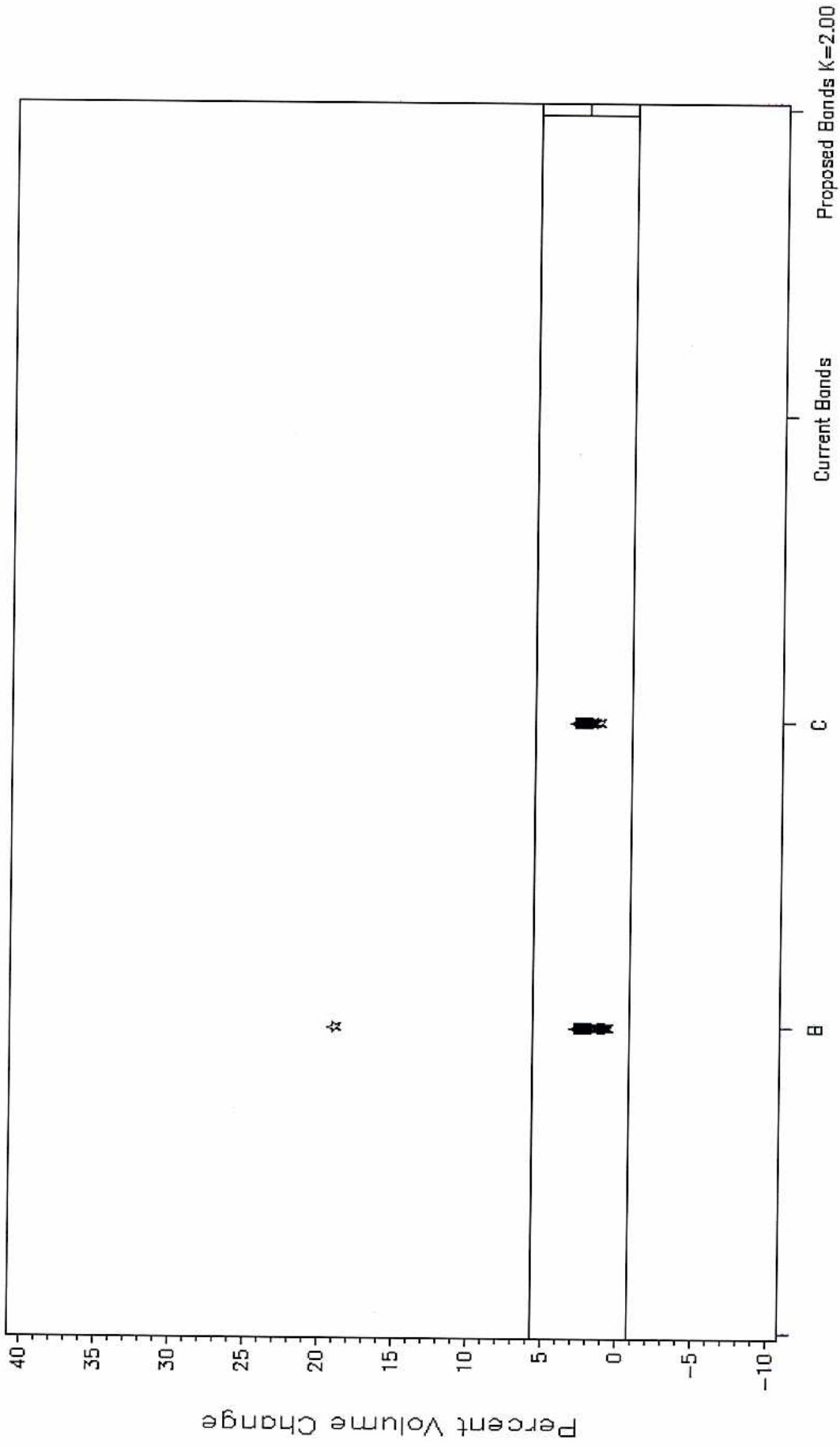
Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700
Nitrile / 162



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

OSCT Data 20000101 - 20040700
Nitrile / 162



Note: Polyacrylate current band has no upper limit for elongation
No current band exists for Nitrile

POST 20000101 OSCCT Data

CMIR	LTMSDATE	LTM SLAB	Oil	Elongation	Yi Values Volume Change	Shore Hardness	Parameter PELA	ID	Elastomer Batch Lab B	Times Run Lab C
34766	20000114	C	161-1	2.0001	-0.3812	0.3450	PELA	FL336	0	2
34789	20000228	C	161-1	2.0148	-0.0457	-1.1685	PELA	FL345	6	12
34794	20000313	C	161-1	0.1821	2.3585	-1.1685	PVCA	FL345	6	12
35738	20000911	C	161-1	2.1761	0.2338	0.3450	PELA	FL345	6	12
37394	20001023	C	160-1	2.9147	0.3442	0.2588	PELA	FL346	6	10
37395	20001106	C	160-1	2.2624	-0.4316	0.9921	PELA	FL346	6	10
37382	20001023	C	161-1	3.1877	-0.6328	0.3450	PELA	FL346	6	10
37384	20001106	C	161-1	3.1584	-0.2973	1.1017	PELA	FL346	6	10
38514	20001218	C	160-1	2.8060	-1.1589	0.9921	PELA	FL348	6	3
37397	20001218	C	161-1	2.0148	-0.4791	0.3450	PELA	FL348	4	4
40443	20010406	C	160-1	2.1899	-1.1589	0.9921	PELA	FL349	4	4
41621	20011026	B	160-1	0.2871	-0.6255	-3.4077	SAHA	FL350	18	8
40455	20010827	C	160-1	0.6858	9.6782	0.2588	PVCA	FL350	18	8
40464	20010827	C	161-1	-1.1814	-6.1682	2.6153	SAHA PVCA	FL350	18	8
40459	20011008	C	161-1	2.3813	-0.0457	0.3450	PELA	FL350	14	10
43313	20020916	C	161-1	-0.4190	-2.3306	-3.4388	SAHA PVCA	FL354	14	10
47114	20030505	B	161-1	-0.4044	1.0446	-2.6820	SAHA	FL355	22	18
45897	20030315	C	160-1	2.1899	-0.4316	-1.9411	PELA	FL355	22	18
46695	20030330	C	160-1	0.9939	0.3200	-3.4077	SAHA	FL355	22	18
43319	20021007	C	161-1	-1.3102	1.3102	-2.6820	SAHA	FL355	22	18
45907	20030315	C	161-1	-2.5303	-0.1296	1.1017	PELA	FL355	22	18
39085	20010315	B	161-1	-7.0997	-9.1549	8.1613	PELA SAHA PVCA	NI322	24	10
34005	20010315	B	162	9.3466	10.2525	-8.7313	PELA SAHA PVCA	NI322	24	10
48018	20030815	B	161-1	5.5128	0.5325	-0.4239	PELA	NI327	4	8
33987	20040202	B	161-1	2.1378	0.7396	-0.4239	PELA	NI328	18	6
34797	20000310	C	160-1	-0.5320	0.1619	-2.7325	SAHA	PA323	0	6
34765	20000108	C	161-1	0.2861	2.1207	-1.7865	PVCA	PA323	0	6
36504	20000427	B	160-1	-2.3075	-0.9725	3.3101	PELA SAHA	PA325	14	8
36508	20000519	B	160-1	-2.0847	-1.4355	1.5836	PELA	PA325	14	8
37177	20000804	B	160-1	0.2339	-0.5095	-3.5958	SAHA	PA325	14	8
37187	20000928	B	160-1	0.0390	-2.8245	-0.1428	PVCA	PA325	14	8
36512	20000629	B	160-1	-2.1195	-0.5095	1.5836	PELA	PA326	10	16
36516	20000703	B	160-1	-2.1892	-0.7410	1.5836	PELA	PA326	10	16
35346	20000703	B	161-1	2.5765	0.0064	0.3032	PELA	PA326	10	16
37711	20001211	B	160-1	-2.6209	-1.6670	2.4468	PELA SAHA	PA328	20	10
44727	20020708	B	160-1	-0.3927	-2.1300	1.5836	PVCA	PA328	20	10
44729	20020805	B	160-1	-0.5529	-2.1300	1.5836	PVCA	PA328	20	10
40468	20010829	C	161-1	-2.1280	1.1818	-1.4382	PELA	PA328	20	10
41626	20011029	B	160-1	-3.9299	-0.5095	1.5836	PELA	PA330	22	18
43290	20020301	B	161-1	-2.6063	-1.3846	0.9997	PELA	PA330	22	18
45572	20021015	C	161-1	2.0193	1.4461	-0.7417	PELA	PA330	22	18
46261	20030227	C	161-1	1.5241	1.7173	-2.1348	SAHA	PA331	4	8
46833	20030410	B	161-1	2.5596	-0.7308	0.3032	PELA	PA332	4	8
46701	20030401	C	160-1	-2.1474	0.3239	1.5836	PELA	PA332	14	18
43312	20020913	C	161-1	1.2765	2.0999	-1.7865	PVCA	PA332	14	18
47125	20030502	C	161-1	1.0908	1.7173	-2.1348	SAHA	PA332	14	18
49616	20031211	C	161-1	2.0587	0.0551	0.6515	PELA	PA333	34	14
47801	20031020	B	160-1	-0.9985	2.4306	-0.1428	PVCA	PA333	34	14
49480	20040129	C	160-1	0.4289	2.1065	0.7204	PVCA	PA334	6	8
49481	20040408	C	160-1	-0.5668	2.8936	-1.0061	PVCA	PA334	6	8
50287	20040527	C	160-1	0.2200	2.0602	-1.8693	PVCA	PA334	6	8
50290	20040603	C	160-1	0.9929	2.0139	-1.0061	PVCA	PA334	6	8
49472	20040408	C	161-1	-2.1280	-0.0145	0.6515	PELA	PA334	6	8
50273	20040603	C	161-1	0.5281	2.2111	-1.4382	PVCA	PA334	6	8

Overall Rejection Rate = 54/776

7%

FL Total 22
Fails 78

Elastomer Batch Breakdown
NI Total 13
Fails 3

PA Total 13
Fails 9

Effective with all batches of elastomer received by the Central Parts Distributor (CPD) on or after November 1, 2004, the CPD shall certify these batches of elastomer as being suitable for use in ASTM D5662 testing prior to distributing these materials to the industry. This certification process will consist of the following:

- 1) The CPD will schedule ASTM D5662 testing on the subject batch of elastomer at no less than two laboratories who are currently conducting this testing under the ASTM TMC monitoring process. In the event that only one such lab exists at the time that this evaluation is required, testing may be conducted at only that facility.
- 2) Testing will be conducted on all reference oils which are prescribed for use with that type of elastomer under the ASTM D5662 Method.
- 3) The results of all testing at all test labs participating in the evaluation process must fall within the current reference oil acceptance bands for that elastomer before that material may be distributed for use in testing under the ASTM D5662 Method. In the event that this criteria is not met, the CPD will contact the Chairman of the Oil Seal Surveillance Panel for further guidance.
- 4) The results of the above testing will be provided to the purchaser of these elastomers, at their request, prior to purchase.