

## OSCT (ASTM D5662) Surveillance Panel Meeting Minutes

BRTRC Warren, MI

Don Bell

11/3/2010

The attendance list is attached for review.

A motion was unanimously approved (10 approvals) that was made by J. McGlone and 2<sup>nd</sup> by A. Comfort to approve the previous OSCT Surveillance Panel meeting minutes from 8/11/2010 that is available on the TMC website.

There are multiple baths available at both Lz and SWRI with no known related "stand" bath problems. Over the past month there have been three D5662 warning alarms that have come to the attention of the OSCT chairman regarding poor precision. The data does not suggest there are any issues with the test labs or elastomer batch. TMC will continue to closely monitor the data and consider lab visits only if warranted.

Both test labs have a sufficient quantity of elastomer batches for D5662 testing.

### Polyacrylate (PA):

PA-342 consisting of ~300 slabs was approved 5/2010 and Test Engineering Institute (TEI) has 136 slabs. A new lot of PA has also been ordered by TEI. A recently received new lot, PA-343, also consisting of 300 slabs has been sent out to both labs for qualification testing.

### Nitrile (NI):

A ~300 slab batch of nitrile, NI-336, was approved in 9/2010 and sent out to the test labs for candidate testing. TEI also placed an order for a new lot of NI from Freudenberg.

### Fluoroelastomer (FL):

The most recent lot of fluoroelastomer, FL-379, was approved on 7/30/2010 and TEI depleted their inventory of this lot. The newest lot of fluoroelastomer, FL-380, consisting of 200 slabs has completed the qualification testing and the data from both labs was reviewed. The attached qualification data in TMC ref oils TMC 160-1 and 161-1 were deemed acceptable by the Panel. The following motion was passed unanimously made by J. Gropp and 2<sup>nd</sup> by T. Marougy. Motion: Effective immediately, FL380 is approved for D5662 testing. TEI has been informed to release FL-380 for sale to the test labs as ordered.

For supply security, we would like to obtain an alternate supplier for elastomers. The Chairman sent out an industry inquiry to determine potential seal suppliers of their interest in supplying D5662 test slabs as per the attached elastomer limits:

|                                   | PA          | FL                | NI          |
|-----------------------------------|-------------|-------------------|-------------|
| Hardness Points                   | 75-85       | 75-85             | 70-75       |
| % Elongation                      | 80-120      | 150 min, 200 typ. | 350-550     |
| Tensile Strength, kg/cm2          | 65-100      | 95 min., 106 typ. | 120-170     |
| Sp gravity                        | 1.385-1.405 | 2.09-2.12         | 1.490-1.510 |
| Rheometer plot of time vs. torque | Must pass   | Must pass         | Must pass   |

Thus far, we have only received an interest from BRUSS (Germany) and Parker Hannifin (USA). The Chairman will send the inquiry letter to TEI, who will send it on to ArvinMeritor for sending out to other major US seal suppliers, such as SKF and Federal Mogul, to determine their interest in supplying tests slabs for D5662. The Panel developed a list of questions for potential alternate seal suppliers to make sure they can meet our demands.

The current supplier of TMC reference oil 161-1 can no longer supply this oil due to component unavailability, and the TMC inventory is almost depleted. In May 2010, the Panel approved the use of an alternate J2360 qualified reference oil from the same supplier and will refer to it as TMC-169. TMC now has 5 drums of TMC 169 and has sent some to both labs to initiate side-by-side testing to gather seal data until the TCM 161 is depleted and then new acceptance bands can be established.

Motion to adjourn was made by T. Marougy and 2nd by J. Gropp was unanimously approved at 1:47 pm on 11/3/2010.

OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date: Nov. 3, 2010

| Initials    | V = Voting<br>NV = Non-voting | Name                           | Company & Address  | Phone / FAX / e-Mail   |
|-------------|-------------------------------|--------------------------------|--|--|
| <i>DB</i>   | V                             | Don Bell<br><i>Chairperson</i> | Afton Chemical Corp.<br>500 Spring Street<br>Richmond, VA 23219                                      | Phone: 804-788-6332<br>FAX: 804-788-6243<br>e-Mail: don.bell@aftonchemical.com     |
|             | NV                            | Ed Akucewicz                   | The Lubrizol Corporation<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092                              | Phone: 440-347-2415<br>FAX: 440-347-4713<br>e-Mail: Edward.akucewicz@lubrizol.com  |
|             | NV                            | Zack Bishop                    | TEI  | Phone:<br>FAX: zbishop@tei-net.com,<br>e-Mail: zrbis@sbcglobal.net                 |
|             | NV                            | Tom Bryson                     | Volvo Powertrain N.A.<br>Powertrain Division<br>13302 Pennsylvania Ave.<br>Hagerstown, MD 21742-2675 | Phone: 301-790-5454<br>FAX:<br>e-Mail: Thomas.bryson@volvoc.com                    |
| <i>A.C.</i> | V                             | Allen Comfort                  | US Army TACOM<br>RDTA-DP/MS 110<br>6501 E. 11 Mile Road<br>Warren, MI 48307-5000                     | Phone: 586-574-4225<br>FAX: 586-282-4244<br>e-Mail: Allen.s.comfort@us.army.mil    |
| <i>JD</i>   | V                             | John D'harte                   | American Axle<br>1 Dauch Drive<br>Detroit, MI 48211  | Phone: 313-758-4687<br>FAX: 313-758-4237<br>e-Mail: dhartej@aaam.com               |
| <i>BD</i>   | NV                            | Bridget Dwornick               | US Army REEGOM/TARDEC<br>RDTA-DP/210 MS 110<br>6501 E 11 Mile Road<br>Warren, MI 48397-5000          | Phone: 586-282-4221<br>FAX: 586-282-4244<br>e-Mail: Bridget.dwornick@us.army.mil   |
|             | NV                            | Stephen Eliot                  | ExxonMobil<br>18486 Lanier Island Square<br>Leesburg, VA 20176                                       | Phone: 703-669-9916<br>FAX: 703-669-9917<br>e-Mail: Stephen.w.eliot@exxonmobil.com |
|             | NV                            | Frank Farber                   | Test Monitoring Center<br>6555 Penn Avenue<br>Pittsburgh, PA 15206                                   | Phone: 412-365-1030<br>FAX: 412-365-1047<br>e-Mail: fmf@astrtmc.cmu.edu            |

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|--|-------------------------------|--------------------------------|---|--|
| <i>PHB</i>                             | NV                            | Hong Gao                       | ConocoPhillips<br>1000 S. Pine Street<br>Ponca City, OK 74602                                 | Phone: 580-767-2126<br>FAX: 580-767-4534<br>e-Mail: Hong.gao@concoPhillips.com       |
|  | NV                            | Andrew Gelder                  | Afton Chemical Corp.<br>London Rd.<br>Bracknell, Berkshire RG12 2UW<br>United Kingdom         | Phone: 44-1344-35-6524<br>FAX:<br>e-Mail: Andrew.gelder@aftonchemical.com            |
|  | NV                            | Rick Graziano                  | The Lubrizol Corporation<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092                       | Phone: 440-347-2051<br>FAX: 440-347-5337<br>e-Mail: rpg@lubrizol.com                 |
| <i>GH</i>                              | NV                            | G. Greene                      | Lubrizol<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092                                       | Phone: 440-347-2394<br>FAX:<br>e-Mail: ggre@lubrizol.com                             |
| <i>Mike Birke called in for Betty.</i> | V                             | Rebecca Grinfield              | Southwest Research Institute<br>P.O. Drawer 28510<br>San Antonio, TX 78228-0510               | Phone: 210-522-3652<br>FAX: 210-522-5907<br>e-Mail: bgrinfield@swri.org              |
| <i>JJA</i>                             | V                             | Jerry Gropp                    | The Lubrizol Corporation<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092                       | Phone: 440-347-1223<br>FAX: 440-347-5337<br>e-Mail: jlg@lubrizol.com                 |
|  | V                             | Mike Haire                     | Chevron Global Lubricants<br>100 Chevron Way, rm 71-7302<br>Richmond, CA 94802                | Phone: 510-242-2740<br>FAX: 510-242-3758<br>e-Mail: mhaire@chevron.com               |
|  | NV                            | Larry Hamilton                 | Lubrizol<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092                                       | Phone: 440-347-2326<br>FAX:<br>e-Mail: Larry.hamilton@lubrizol.com                   |
| <i>SSH</i>                             | NV                            | Sam Higuchi<br><i>Love you</i> | Afton Chemical Corp.<br>500 Spring Street (23219)<br>P.O. Box 2158<br>Richmond, VA 23218-2158 | Phone: 804-788-5375<br>FAX: 804-788-6358<br>e-Mail: Samuel.higuchi@aftonchemical.com |





**OIL SEAL COMPATIBILITY SURVEILLANCE PANEL**

Date: Nov. 3, 2006

| Initials   | V = Voting<br>NV = Non-voting | Name            | Company & Address   | Phone / FAX / e-Mail  |
|------------|-------------------------------|-----------------|---|---|
|            | NV                            | Matt Jackson    | Southwest Research Institute<br>P.O. Drawer 28510<br>San Antonio, TX 78228-0510               | Phone: 210-522-6981<br>FAX: 210-684-7523<br>e-Mail: Matt.jackson@swri.org         |
| <i>WAK</i> | NV                            | Bill Kearney    | Afton Chemical Corp<br>Southfield, MI   | Phone: 248-350-0640<br>FAX:<br>e-Mail: Bill.kearney@aftonchemical.com             |
| <i>JK</i>  | NV<br><i>on phone</i>         | Jennifer Keiter | The Lubrizol Corporation<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092                       | Phone: 440-347-8034<br>FAX: 440-347-8003<br>e-Mail: Jennifer.keiten@lubrizol.com  |
| <i>PK</i>  | NV                            | Brian Koehler   | Southwest Research Institute<br>P.O. Drawer 28510<br>San Antonio, TX 78228-0510               | Phone: 210-522-3588<br>FAX: 210-684-7523<br>e-Mail: bkoehler@swri.org             |
|            | NV                            | Peter Kamp      | Lubrizol Corp.<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092                                 | Phone: 440-347-4422<br>FAX: 440-347-2878<br>e-Mail: pvk@lubrizol.com              |
|            | NV                            | Percy Kanga     | ExxonMobil<br>600 Billingsport Rd.<br>Paulsboro, NJ 08066                                     | Phone: 856-224-2094<br>FAX: 856-224-3613<br>e-Mail: Percy.r.kanga@exxonmobil.com  |
| <i>CK</i>  | V<br><i>on phone</i>          | Clayton Knight  | Test Engineering Institute<br>12718 Cimarron Path<br>San Antonio, TX 78249                    | Phone: 210-690-1958<br>FAX: 210-877-0228<br>e-Mail: cknight@tel-net.com           |
| <i>CK</i>  | NV                            | Cory Koglin     | Afton Chemical Corp.<br>500 Spring Street (23219)<br>P.O. Box 2158<br>Richmond, VA 23218-2158 | Phone: 804-788-5305<br>FAX: 804-788-6358<br>e-Mail: cory.koglin@aftonchemical.com |
| <i>DL</i>  | NV                            | Don Lind        | Test Monitoring Center<br>6555 Penn Avenue<br>Pittsburgh, PA 15206                            | Phone: 412-365-1034<br>FAX: 412-365-1047<br>e-Mail: dml@astmtmc.cmu.edu           |


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| Initials  | V = Voting<br>NV = Non-voting | Name            | Company & Address   | Phone / FAX / e-Mail  |
|---|-------------------------------|-----------------|---|---|
|   | NV                            | WenTong Lu      | Research Institute of Petroleum Processing<br>No 18 XueYuan Road<br>PO Box 914-19<br>Beijing 100083<br>P.R. China | Phone: 011-86-10-8236-8743<br>FAX: 011-86-10-6231-1290<br>e-Mail: Luwt.shky@sinopec.com |
|    | V                             | Thelma Marougy  | Eaton Corporation<br>26201 Northwestern Highway<br>Southfield, MI 48037   | Phone: 248-226-6985<br>FAX: 248-226-1739<br>e-Mail: thelmaemarougy@eaton.com            |
|   | NV                            | John Mattern    | The Lubrizol Corporation<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092   | Phone: 440-347-8034<br>FAX: 440-347-8003<br>e-Mail: john.mattern@lubrizol.com           |
|    | V                             | Bruce McGlone   | Arvin Meritor<br>2135 West Maple<br>Troy, MI 48084  | Phone: 248-435-9929<br>FAX: 248-435-6602<br>e-Mail: Bruce.McGlone@arvinmeritor.com      |
|   | NV                            | Donna Mosher    | Eaton Corporation<br>13100 E. Michigan Avenue<br>Galesburg, MI 49053  | Phone: 269-342-3039<br>FAX: 269-746-6039<br>e-Mail: donnamosher@eaton.com               |
|   | NV                            | Troy Muransky   | Arvin Meritor<br>2135 West Maple Rd.<br>Troy, MI 48084  | Phone: 248-435-1409<br>FAX: 248 435-6602<br>e-Mail: Troy.muransky@arvinmeritor.com      |
|  | V                             | Scott Parke     | ASTM Test Monitoring Center<br>6555 Penn Avenue<br>Pittsburgh, PA 15206   | Phone: 412-365-1033<br>FAX: 412-365-1047<br>e-Mail: sdp@astmtmc.cmu.edu                 |
|   | NV                            | Chris Prengaman | Lubrizol<br>29400 Lakeland Blvd.<br>Wickliffe, OH 44092   | Phone: 440-347-4225<br>FAX:<br>e-Mail: CRPR@Lubrizol.com                                |

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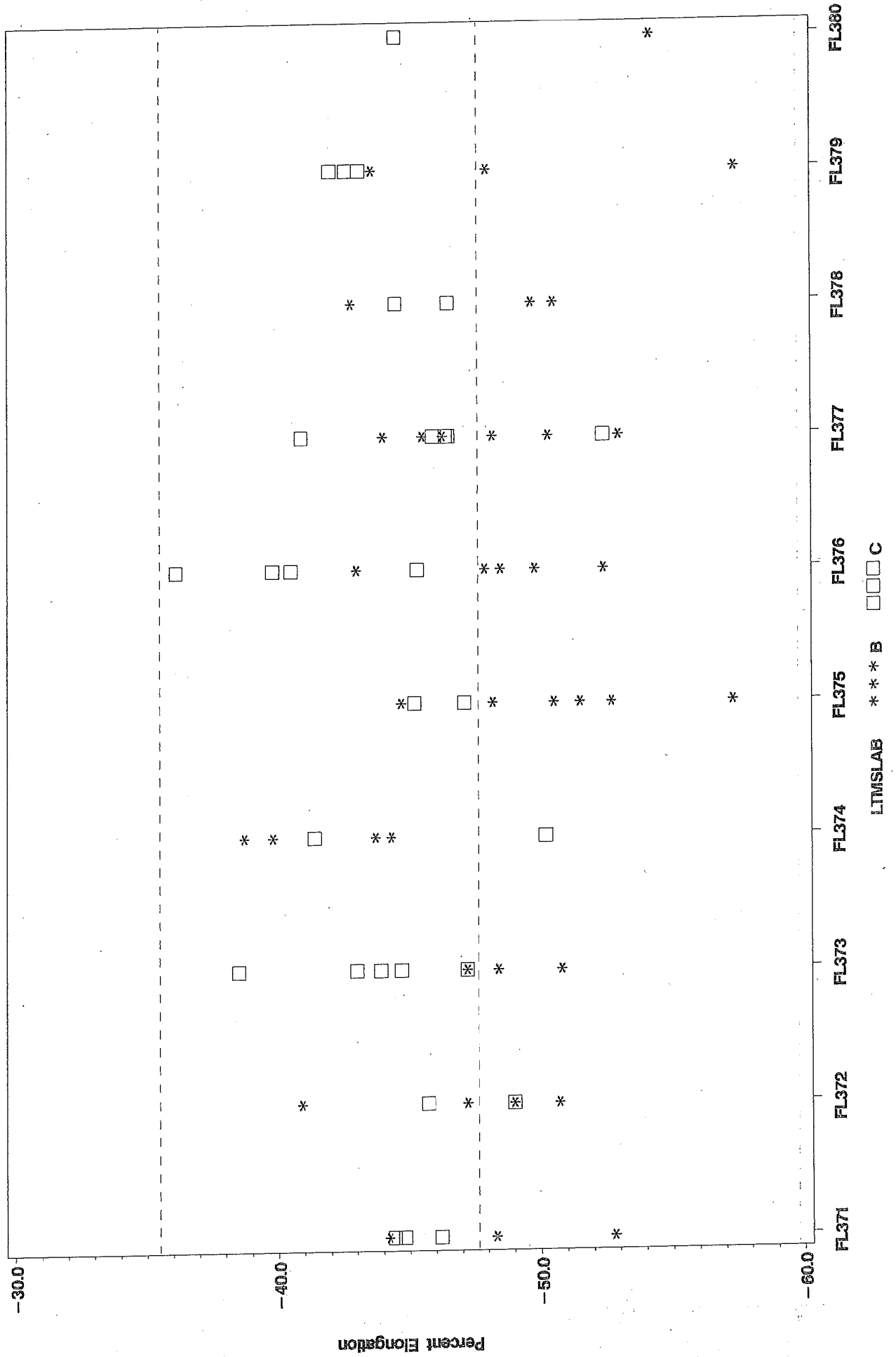
| Initials  | V = Voting<br>NV = Non-Voting | Name                 | Company & Address   | Phone / FAX / e-Mail  |
|---|-------------------------------|----------------------|---|---|
|  | V                             | Dale Smith           | PARC Technical Services<br>100 William Pitt Way<br>Pittsburgh, PA 15238   | Phone: 412-423-1120 x403<br>FAX: 412-826-5444<br>e-Mail: Dale.smith@intertek.com          |
|   | NV                            | HaiQing Song         | Research Institute of Petroleum Processing<br>No 18 XueYuan Road<br>PO Box 914-19<br>Beijing 100083<br>P.R. China         | Phone: 011-86-10-8236-8182<br>FAX: 011-86-10-6231-1290<br>e-Mail: songhq@ripp-sinopec.com |
|   | NV                            | Bill Sullivan        | Independent<br>5 Scheber Drive<br>Brick, NJ 08723   | Phone: 908-930-3512<br>FAX: 267-220-7750<br>e-Mail: wtsullivan@comcast.net                |
|   | NV                            | E. A. Hap Thompson   | Global PPL Stds. Association<br>404 Twin Oaks Lane<br>St. Johns, FL 32259   | Phone: 904-287-9596<br>FAX: 904-287-9596<br>e-Mail: hapjthom@aol.com                      |
|   | NV                            | Chintan Ved          | Ford<br>35500 Plymouth Road<br>Livonia, MI 48150  | Phone: 313-805-9495<br>FAX:<br>e-Mail: cved@ford.com                                      |
|   | NV                            | Luis A. Villahermosa | U.S. Army TARADec<br>AMSRD-TAR-D/210 MS110<br>6501 E. 11 Mile Road<br>Warren, MI 48397-5000                               | Phone: 586-282-4207<br>FAX: 586-282-4244<br>e-Mail: Luis.a.villahermosa@us.army.mil       |
|   | NV                            | JingChun Xie         | Lanzhou Lube Oil R&D Institute<br>No. 369 YuMen Street<br>XiGu District<br>Lanzhou 730060<br>GanSu Province<br>P.R. China | Phone: 011-86-931-793-3713<br>FAX: 011-86-139-9319-2560<br>e-Mail: xjc@lubardi.com.cn     |

NV WES VENDOR LUBRIZOL  
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 WVE@LUBRIZOL.COM

# OSCT (FL)

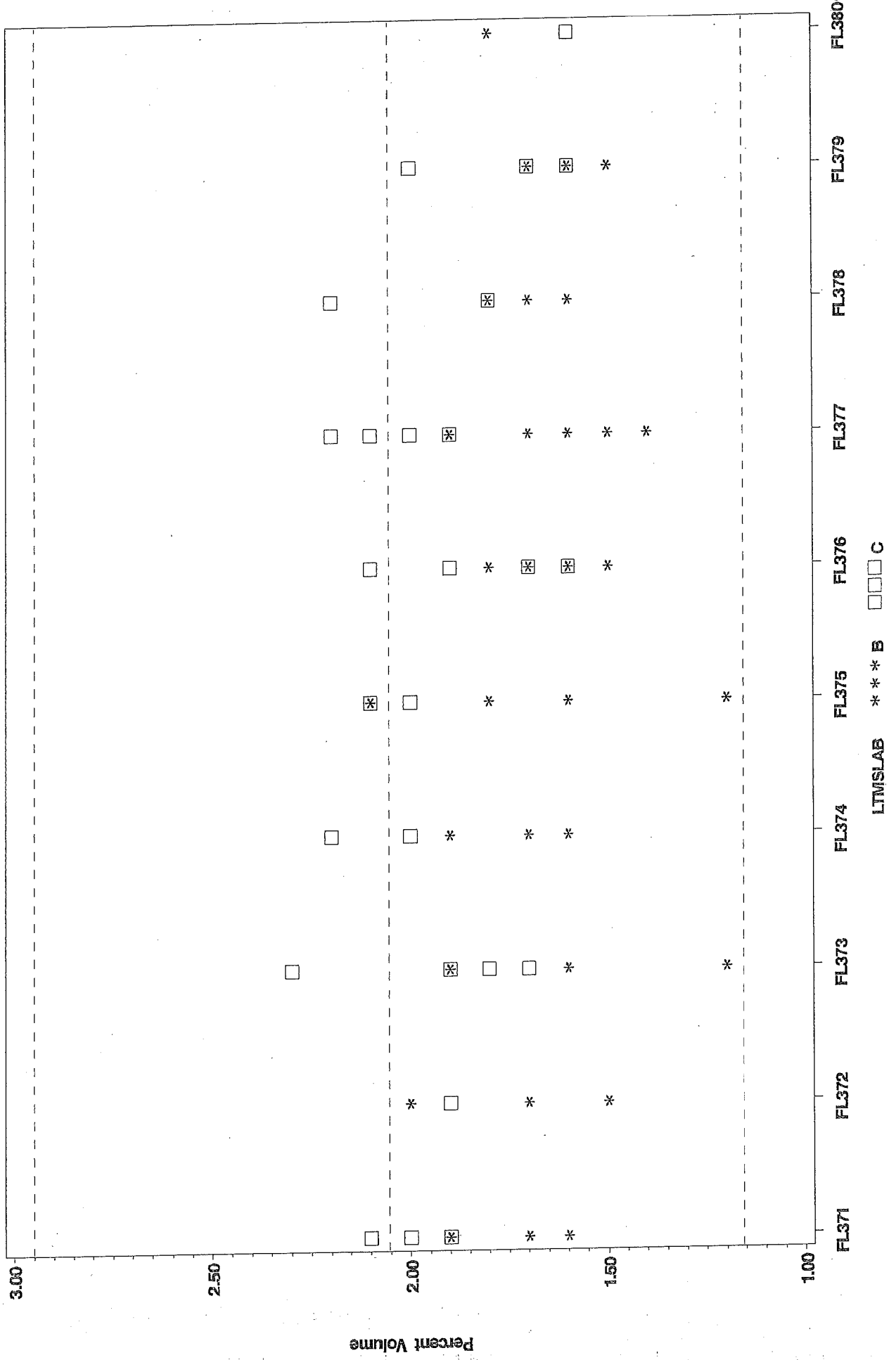
Reference Oil 160 -1 (Mean = -47.65)

Percent Elongation Results VS Shewhart Limits

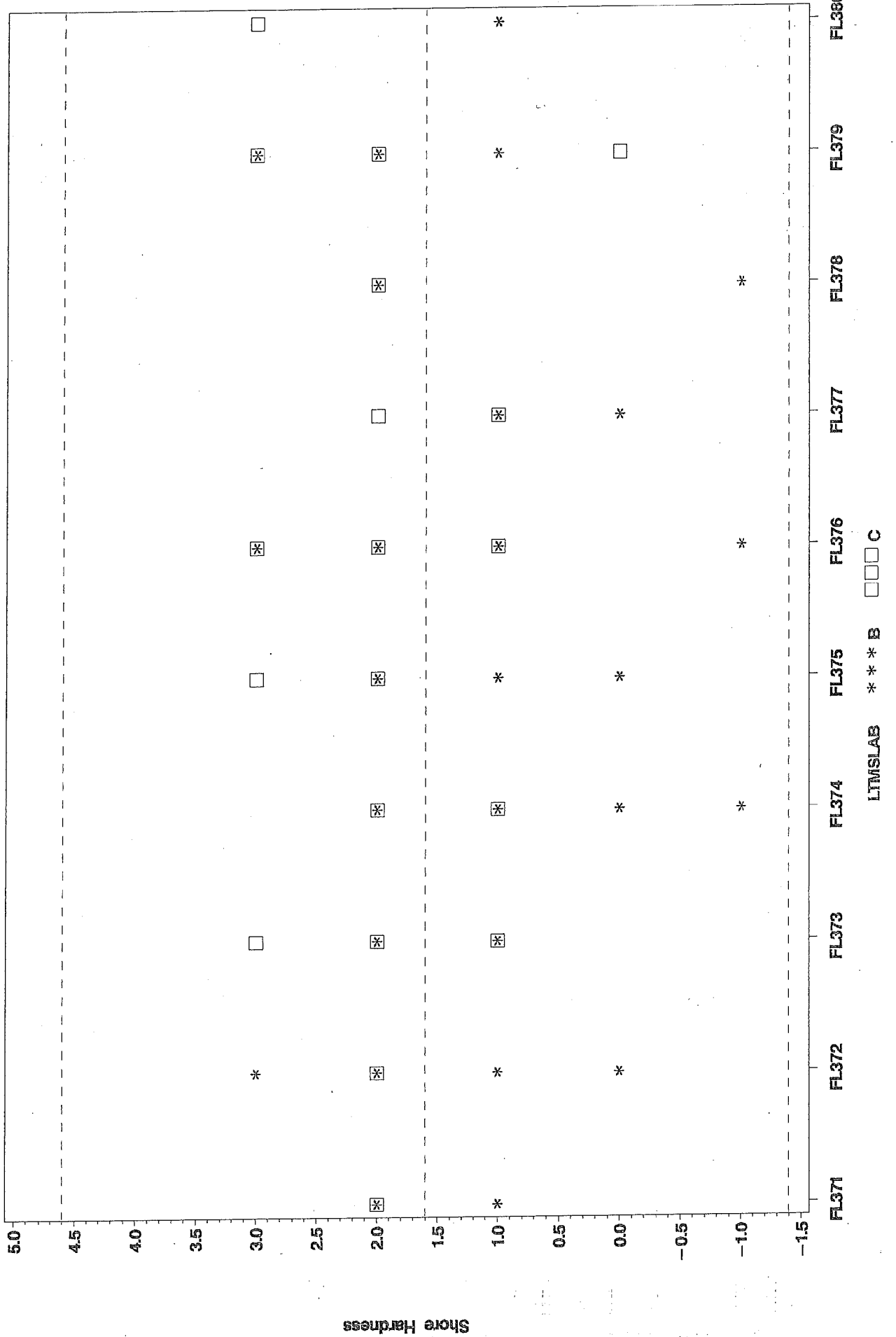




**OSCT (FL)**  
**Reference Oil 160 -1 (Mean = 2.053)**  
**Percent Volume Results VS Shewhart Severity Limits**



**OSCT (FL)**  
**Reference Oil 160-1 (Mean = 1.6)**  
**Shore Hardness Results VS Shewhart Severity Limits**

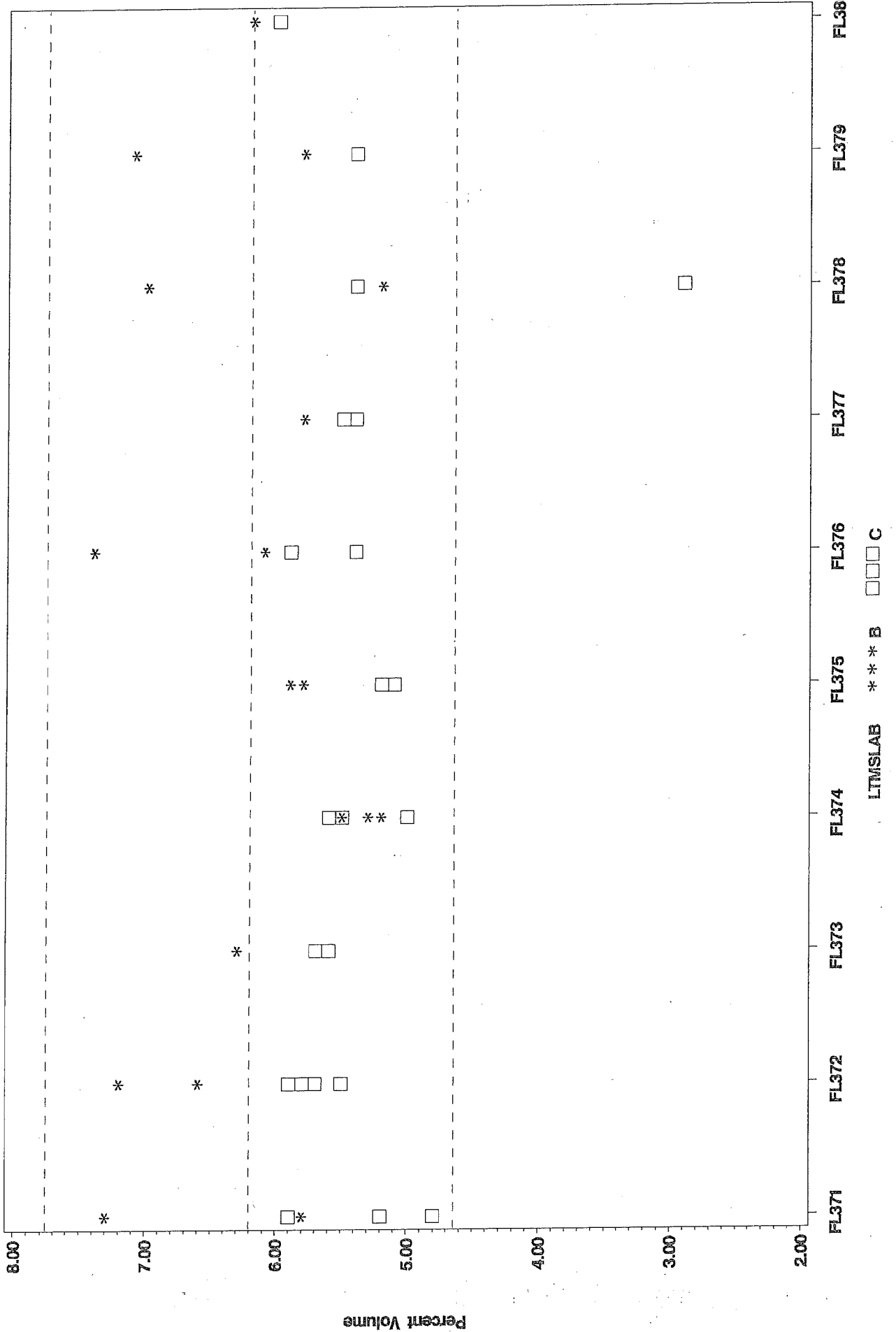




# OSCT (FL)

Reference Oil 161-1 (Mean = 6.199)

Percent Volume Results VS Shewhart Severity Limits



# OSCT (FL)

Reference Oil 161-1 (Mean = 1.6)

## Shore Hardness Results VS Shewhart Severity Limits

