

Oil Seal Compatibility Test (OSCT) Surveillance Panel Meeting Minutes

November 13, 2019

Don Bell

Participants listed on attachment in Appendix.

An OSCT Surveillance Panel Skype meeting at SWRI in Ann Arbor, MI was called to order by D. Bell at 2:31 pm on 11/13/2019, and the agenda was reviewed.

The 12 OSCT Surveillance Panel voting member list was reviewed and deemed well representative of industry members, so no changes were proposed.

A motion made by A. Goyal and 2nd by M. Cabaj was unanimously approved with 10 votes to approve the OSCT meeting minutes posted to the TMC website for 8/7/2019.

The polyacrylate (PA) qualification status and Test Engineering Institute's (TEI) elastomer inventory were reviewed.

- PA 364 Approved, TEI has 130 slabs
 Labs to run TMC 171 side-by-side as non-jeopardy oil
- PA365 Both labs C and G submitted passing qualification results to TMC.

PA365			
		Lab C	Lab G
169 Oil	Approval Run	146755-OSCT	135111-OSCT
	Accompanying Reference	146754-OSCT	135109-OSCT

A motion made by D. Bell and 2nd by B. Grinfield was unanimously approved to effective immediately approve PA365 for candidate testing. TEI has 278 approved slabs of PA365 for sale.

- PA366 TEI has 281 non-approved slabs, and sent slabs for qualification testing just recently. Labs were encouraged to conduct qualification testing and submit results to TMC.
- PA367 Lab C submitted passing results for PA367, so Lab G will submit data shortly to TMC.

PA367			
		Lab C	Lab G
169 Oil	Approval Run	149543-OSCT	
	Accompanying Reference	149542-OSCT	

- PA368 TEI encouraged to place order for this lot.

The fluoroelastomer (FL) qualification status and Test Engineering Institute's (TEI) elastomer inventory were reviewed.

- FL410 Both labs submitted passing qualification data to TMC.

FL410			
		Lab C	Lab G
169 Oil	Approval Run	146756-OSCT	143114-OSCT
	Accompanying Reference	143060-OSCT	143113-OSCT

A motion made by B. Grinfield and 2nd by M. Lopez was unanimously approved with 10 votes to effective immediately approve FL410. TEI has 178 approved slabs for sale for candidate testing.

- FL411 TEI has 200 unapproved slabs. Lab C encouraged to submit qualification data since Lab G has passing data.

FL411			
		Lab C	Lab G
169 Oil	Approval Run		145328-OSCT
	Accompanying Reference		145328-OSCT

- FL412 TEI ordered back in 8/2019, so they will determine if FL412 has arrived to be shipped out for qualification testing.

The nitrile (NI) qualification status and TEI's elastomer inventory was reviewed.

- NI350 Approved, TEI has 139 slabs
- NI351 Lab C submitted passing qualification results to TMC.

NI351			
		Lab C	Lab G
170 Oil	Approval Run	138344-OSCT	
	Accompanying Reference	143054-OSCT	
169 Oil	Approval Run	143059-OSCT	
	Accompanying Reference	143054-OSCT	

A motion made by D. Bell and 2nd by D. Rabinowitz was unanimously approved to effective immediately approve NI351 for candidate testing. TEI has 278 approved slabs of NI351 for sale.

TMC provided data on the relatively new reference oil, TMC 171.

The following data is fluoroelastomer with TMC 171:

testkey	lab	ltmslab	val	Ind	ltmsdate	CHART	com1	com2	com3	com4	PVCA	SAHA	PELA	EBC			
145319-OSCT	EG	G	NI	171	20191028	N	171	INFO RUN			3.4	1	-46.2	FL407			
145319-OSCT	EG	G	NI	171	20191011	N	171	INFO RUN			2.1	-2	-55.8	FL407			
145318-OSCT	EG	G	NI	171	20190927	N	INFO RUN	171			6.4	1	-50.1	FL407			
145325-OSCT	EG	G	NI	171	20190913	N	171	INFO RUN			5.8	0	-43.7	FL407			
143107-OSCT	EG	G	MI	171	20190531	N	FL407	APPROVAL	PVCAH	SAHAH	3.5	1	-41.9	FL407			
143108-OSCT	EG	G	MI	171	20190531	N	FL408	APPROVAL	SAHAH	PVCAH	3.6	2	-42.7	FL408			
143109-OSCT	EG	G	MI	171	20190531	N	FL409	APPROVAL	PVCAH		3.9	0	-40.4	FL409			
143103-OSCT	EG	G	MI	171	20190429	N	FL407	APPROVAL	BAD REF		3.4	0	-33.9	FL407			
143104-OSCT	EG	G	MI	171	20190429	N	FL408	APPROVAL	BAD REF		3.6	1	-40.1	FL408			
143105-OSCT	EG	G	MI	171	20190429	N	FL409	APPROVAL	BAD REF		3	1	-38.9	FL409			
143106-OSCT	EG	G	OC	171	20190429	Y	FL407	REF	PELAL	PVCAH	3.5	0	-53.9	FL406			
127584-OSCT	EG	G	AC	171	20190408	Y	PREVIOUS	UPLOAD	ERROR		2.1	-1	-49.2	FL406			
127581-OSCT	EG	G	OC	171	20190301	Y	SAHAL	PVCAH			3.5	-2	-48	FL406			
127577-OSCT	EG	G	NI	171	20180614	N	171	INFO RUN			1.8	-1	-47.4	FL405			
127595-OSCT	LZ	B	NI	171	20180406	N	171	INFO RUN			1.4	-1	-39.6	FL403			
146767-OSCT	SR	C	NI	171	20191104	N	171	INFO RUN			1.6	0	-38.5	FL409			
146768-OSCT	SR	C	NI	171	20191025	N	171	INFO RUN			1.3	0	-50.7	FL408			
143073-OSCT	SR	C	NI	171	20191011	N	171	INFO RUN			1.6	4	-58.9	FL408			
143069-OSCT	SR	C	NI	171	20190923	N	171	INFO RUN			1.2	5	-51.9	FL408			
143070-OSCT	SR	C	NI	171	20190910	N	171	INFO RUN			1.2	3	-46.4	FL407			
135237-OSCT	SR	C	OC	171	20190627	Y	PELAL				1.4	0	-56.2	FL407			
143068-OSCT	SR	C	NI	171	20190627	N	171	INFO RUN			1.4	2	-49.6	FL407			
143068-OSCT	SR	C	NI	171	20190625	N	171	INFO RUN			1.4	3	-50	FL407			
143063-OSCT	SR	C	MI	171	20190607	N	FL407	APPROVAL	SAHAH		1.3	3	-44	FL407			
143064-OSCT	SR	C	MI	171	20190607	N	FL408	APPROVAL	SAHAH		1.2	3	-45.2	FL408			
143065-OSCT	SR	C	MI	171	20190607	N	FL409	APPROVAL	SAHAH		1.4	4	-45.1	FL409			
135236-OSCT	SR	C	OC	171	20190408	Y	PELAL				1.3	0	-57.2	FL406			
135235-OSCT	SR	C	AC	171	20190307	Y					1.4	-1	-50.2	FL406			
127587-OSCT	SR	C	AC	171	20181029	Y					1.5	-1	-44.7	FL405			
127586-OSCT	SR	C	NI	171	20180407	N	171	INFO RUN			1.2	0	-40.8	FL404			
											Average	2.343	0.633	-46.707	N Size	30	
											Std.	1.310	1.640	6.188			
											160-1	Average	2.053	1.6	-47.65	N Size	141
											Targets	Std.	0.4075	1.36	5.506		

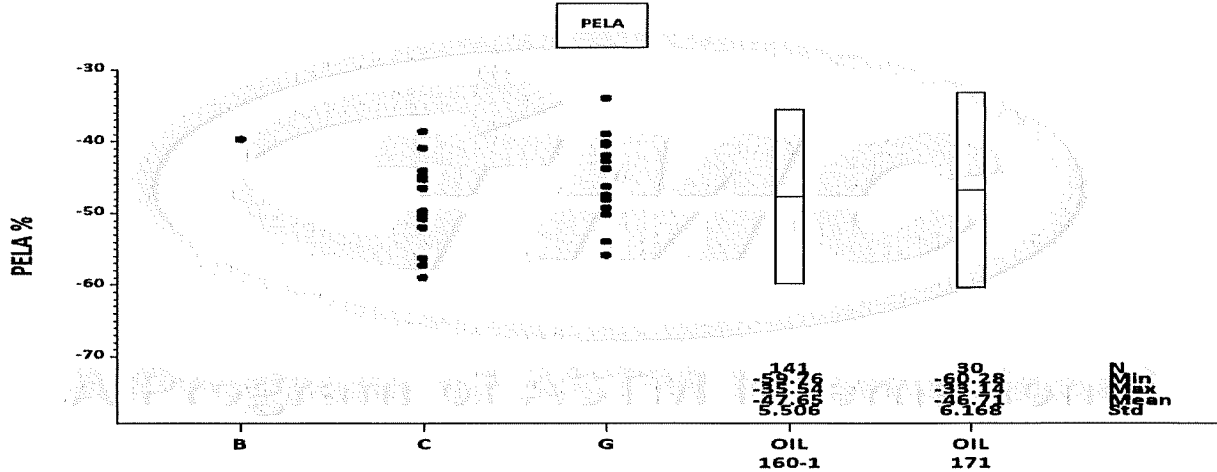
The following data is polyacrylate with TMC 171:

Lab G to verify the 3 results noted below.

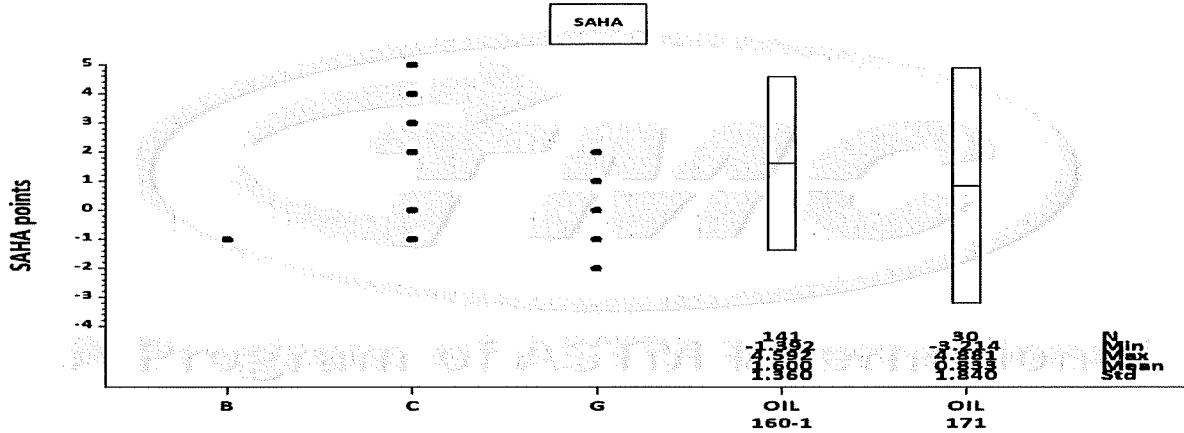
testkey	lab	ltmslab	val	Ind	ltmsdate	CHART	com1	com2	com3	com4	PVCA	SAHA	PELA	EBC			
127578-OSCT	EG	G	NI	171	20180614	N	171	INFO RUN			0.1	0	36.1	PA362			
127580-OSCT	EG	G	OC	171	20190211	Y	PVCAH				0.5	0	20	PA362			
127582-OSCT	EG	G	MI	171	20190218	N	PA364	APPROVAL	PVCAH		1.1	0	34.1	PA384			
127583-OSCT	EG	G	MI	171	20190218	N	PA363	APPROVAL	171 OIL	PVCAH	1.1	-1	31.2	PA363			
143100-OSCT	EG	G	NI	171	20190429	N	PA363	APPROVAL			0.2	1	-5.1	PA363			
143101-OSCT	EG	G	MI	171	20190429	N	PA364	APPROVAL	SAHAL		-0.1	-1	43.7	PA364			
143102-OSCT	EG	G	AC	171	20190429	Y	PA364	REF			-0.7	0	41.7	PA362			
143110-OSCT	EG	G	NI	171	20190621	N	PA364	APPROVAL			0.1	1	31.6	PA364			
143111-OSCT	EG	G	MI	171	20190621	N	PA361	APPROVAL	SAHAL		-0.7	-1	17.8	PA361			
145314-OSCT	EG	G	NI	171	20190621	N	PA385	APPROVAL			0.3	1	31	PA385			
145324-OSCT	EG	G	NI	171	20190905	N	171	INFO RUN			13.7	-15	27.7	PA360			
145317-OSCT	EG	G	NI	171	20190927	N	INFO RUN	171			13.8	-14	32.8	PA360			
145320-OSCT	EG	G	NI	171	20191028	N	171	INFO RUN			-0.5	0	27.4	PA360			
127596-OSCT	LZ	B	NI	171	20180406	N	171	INFO RUN			-0.5	1	0	PA358			
127585-OSCT	SR	C	NI	171	20180716	N	171	INFO RUN			-0.3	0	36.4	PA362			
127588-OSCT	SR	C	AC	171	20181117	Y					-0.6	0	19.8	PA362			
127589-OSCT	SR	C	AC	171	20190119	Y					-0.4	0	38.1	PA362			
127590-OSCT	SR	C	AC	171	20190201	Y					-0.4	0	34.4	PA362			
127591-OSCT	SR	C	AC	171	20190211	Y					-0.5	0	24.9	PA362			
127592-OSCT	SR	C	NI	171	20190325	N	PA363	APPROVAL			-0.2	1	31	PA363			
135234-OSCT	SR	C	NI	171	20190325	N	PA364	APPROVAL			0	0	24.4	PA364			
143062-OSCT	SR	C	AC	171	20190503	Y					0.4	0	-2.1	PA360			
135238-OSCT	SR	C	AC	171	20190506	Y					-0.8	1	10.7	PA360			
135239-OSCT	SR	C	MI	171	20190506	N	PA361	APPROVAL	SAHAL	PVCAL	-1.4	-2	31.8	PA361			
143067-OSCT	SR	C	NI	171	20190709	N	171	INFO RUN			1.2	-3	23	PA362			
146774-OSCT	SR	C	NI	171	20190905	N	171	INFO RUN			-1	0	18.3	PA363			
143071-OSCT	SR	C	NI	171	20190913	N	171	INFO RUN			0.6	0	25.8	PA363			
143072-OSCT	SR	C	NI	171	20190926	N	171	INFO RUN			0.6	1	27.2	PA363			
146765-OSCT	SR	C	NI	171	20191012	N	171	INFO RUN			-0.7	2	20.3	PA363			
146768-OSCT	SR	C	NI	171	20191101	N	171	INFO RUN			-0.5	1	19	PA363			
											Average	0.607	-0.600	25.063	N Size	30	
											Std.	3.574	3.827	12.026			
											160-1	Average	0.343	-1.8	23.04	N Size	144
											Targets	Std.	0.4473	1.16	14.283		

Verify these results

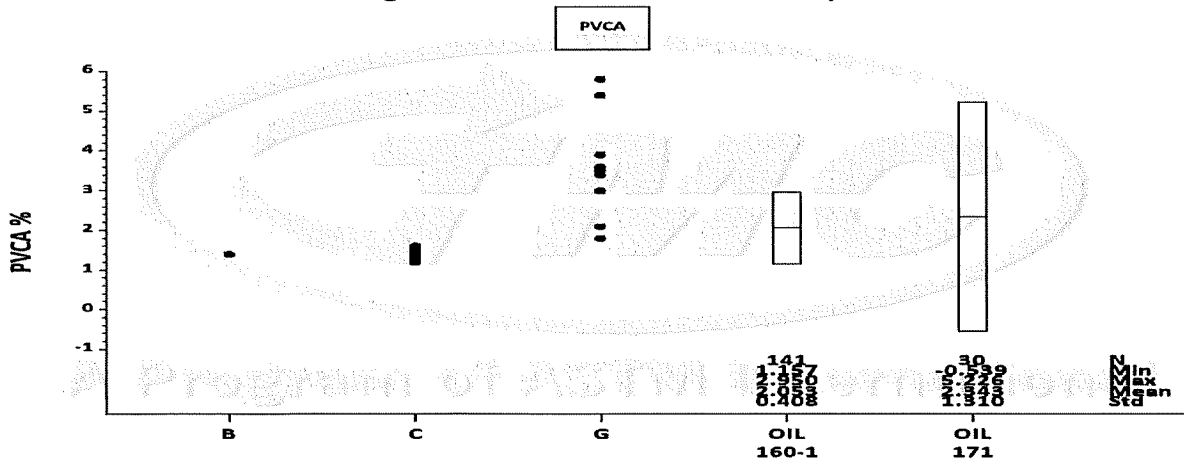
OSCT Reference Oil 171
FL Elastomer
Test Target Data Set and Shewart Severity Limits



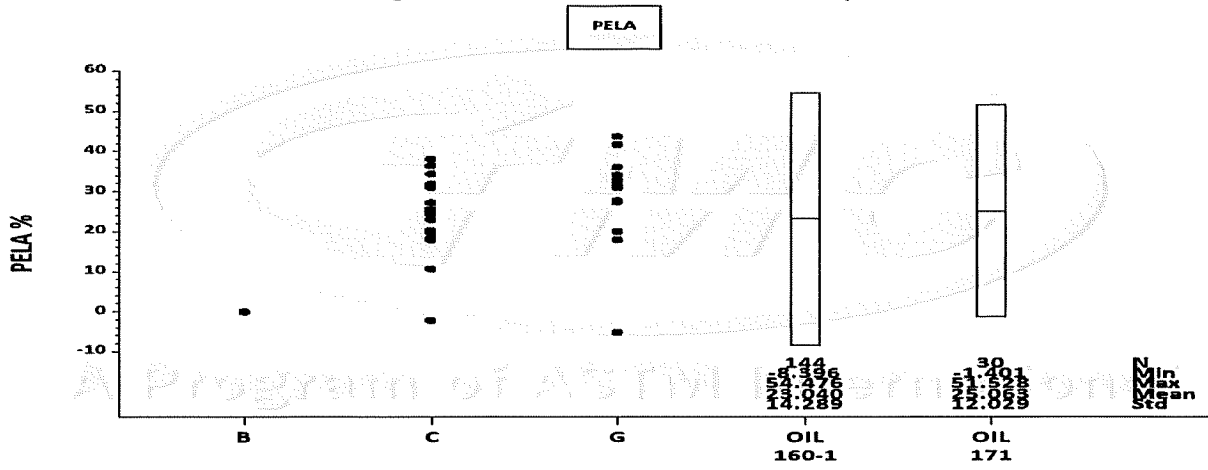
OSCT Reference Oil 171
FL Elastomer
Test Target Data Set and Shewart Severity Limits



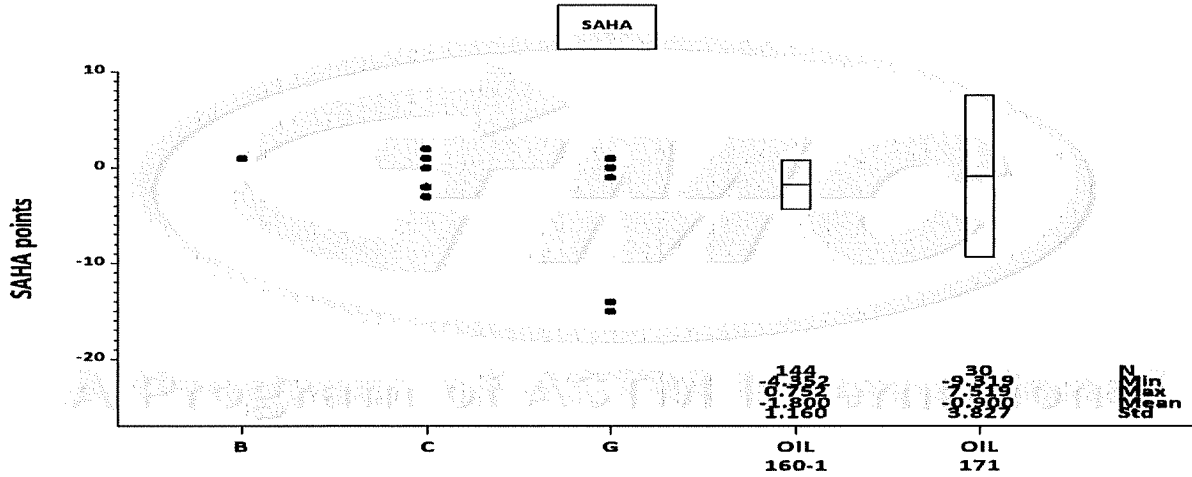
OSCT Reference Oil 171
FL Elastomer
Test Target Data Set and Shewart Severity Limits



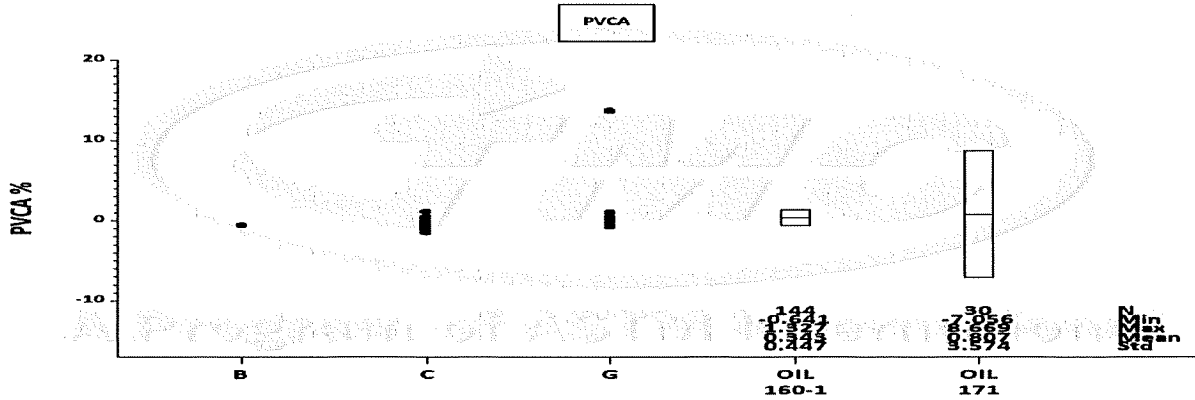
OSCT Reference Oil 171
PA Elastomer
Test Target Data Set and Shewart Severity Limits



OSCT Reference Oil 171
PA Elastomer
Test Target Data Set and Shewart Severity Limits



OSCT Reference Oil 171
PA Elastomer
Test Target Data Set and Shewart Severity Limits



Observations Made When Reviewing the Data:

PA Results:

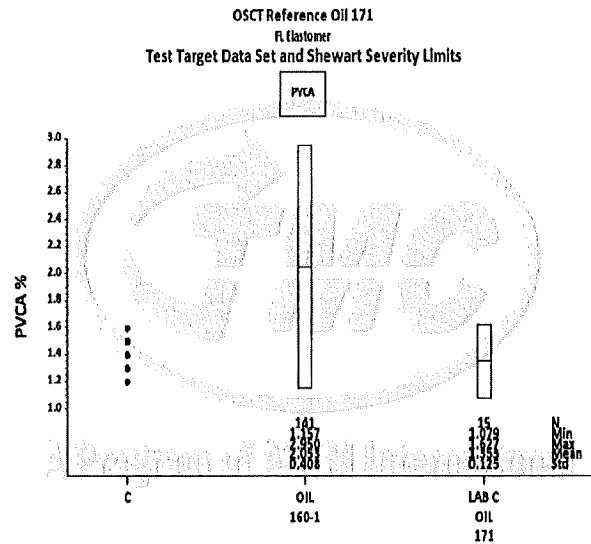
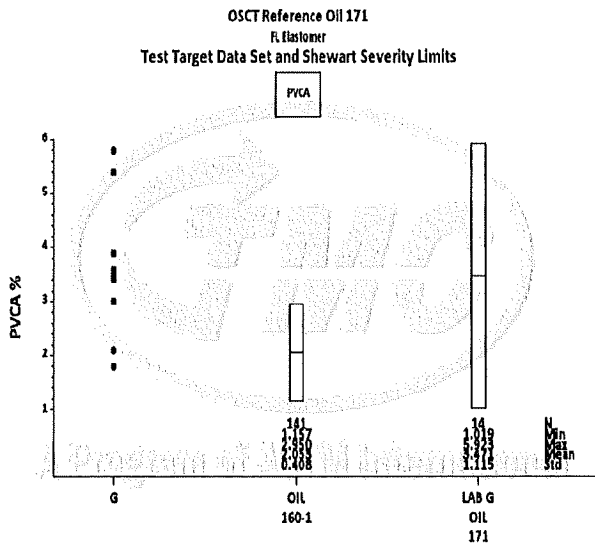
- Lab G should verify the PVCA and SAHA results of tests 145324-OSCT, and 145317-OSCT
- Lab B should verify the PELA results of test 127596-OSCT

FL Results:

- Lab G and Lab C are getting consistently different results for FL PVCA and SAHA
 - (More plots to follow)

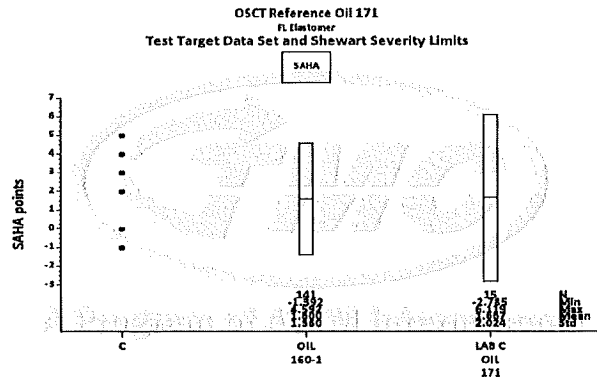
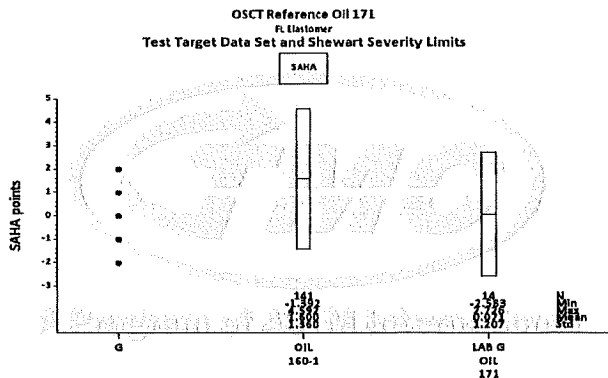


There is a consistent difference between Lab G's and Lab C's FL results for PVCA and SAHA

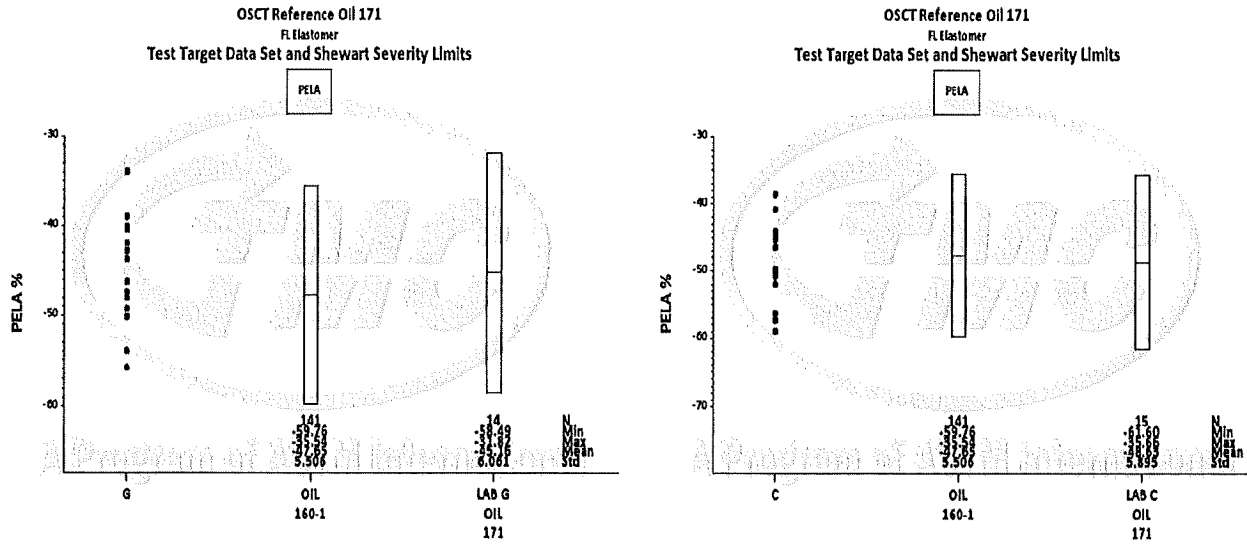


Lab G and C need to investigate their individual techniques for measuring FL PVCA and SAHA since both labs are getting consistently different results.

There is a consistent difference between Lab G's and Lab C's FL results for PELA and SAHA



PELA results between lab G and C are more agreeable

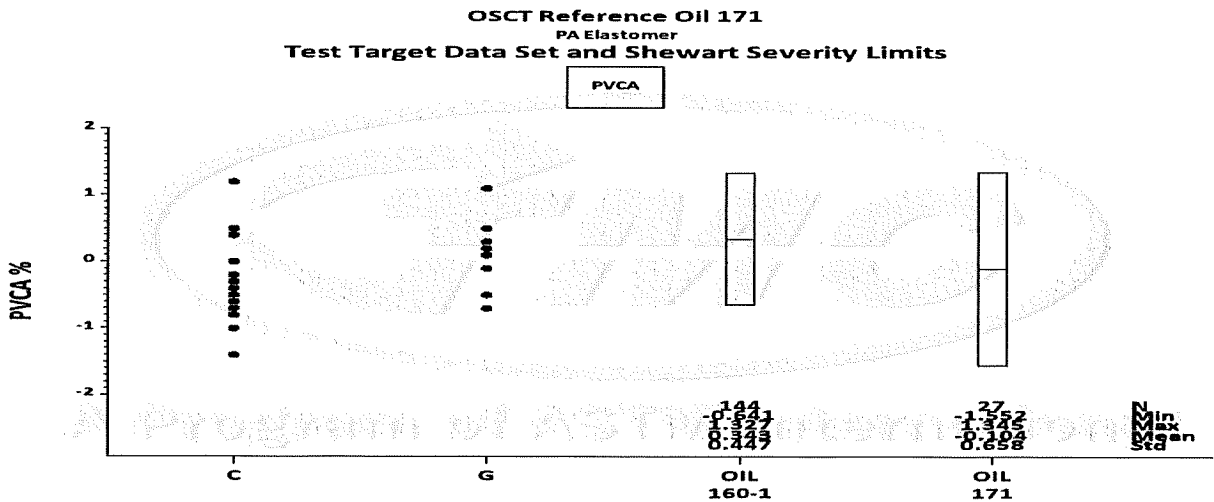
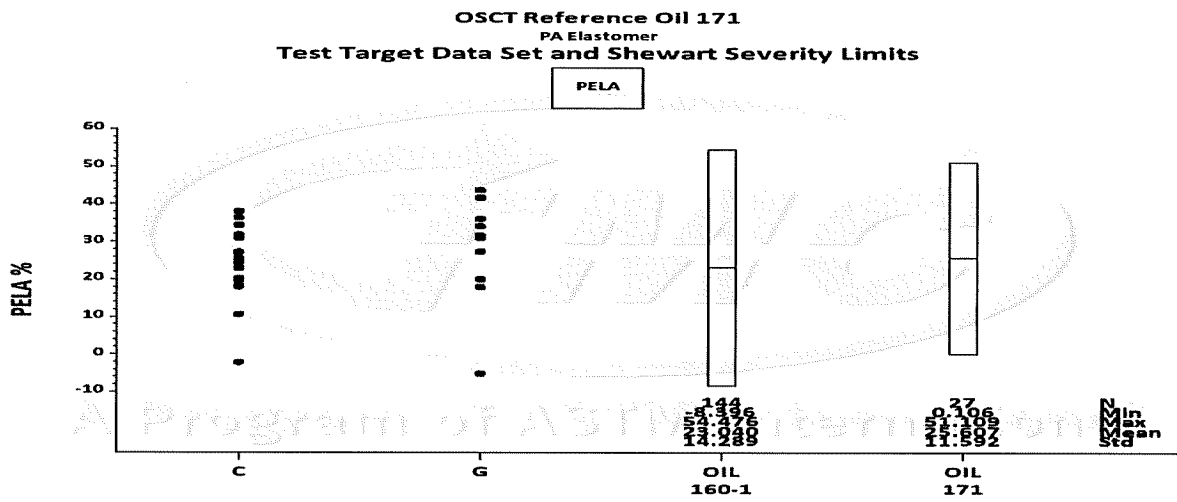
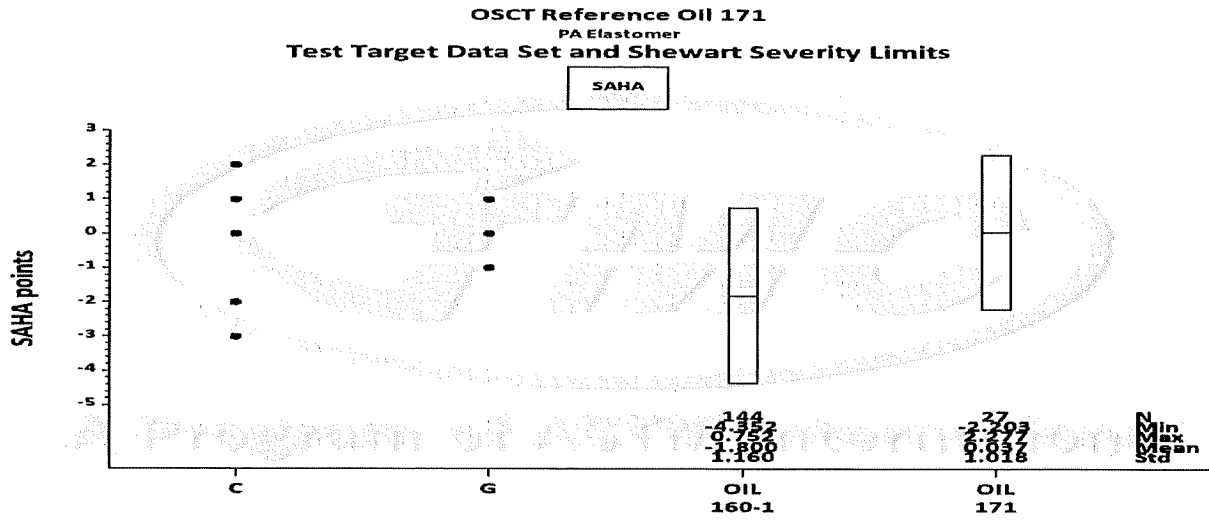


Observations Made When Reviewing the Data:

PA Results:

- Lab G should verify the results of tests 145324-OSCT, and 145317-OSCT
- Lab B should verify the PELA results of test 127596-OSCT

- **What if these results were excluded?**



TMC was requested to compile QSUM charts.

TMC 155-1 Industry Reference Annual Testing:

Lab C was requested to submit their annual (Oct 2019) industry reference oil, TMC 155-1, test results for PA and FL to TMC since Lab G already submitted passing data. Once all results are received, TMC will graph them for the Panel against J2360 limits for review by the Panel to ensure the test is in control.

testkey	lmslab	testnumber	val	ind	lmsdate	lmslime	dtcomp	dtcalexp	CHART	com1	com2	PVCA	SAHA	PELA	BATHNUM	ETYP
131596-OSCT	G	B1	NI	155-1	20190913	10:30	20190913	N/A	N	155-1 FL	INFO RUN	5.80	0	-43.7	B1	FL
120859-OSCT	C	2	NI	155-1	20190905	09:00	20190905	N/A	N	155-1 PA		-0.20	0	17.8	2	PA
131595-OSCT	G	B1	NI	155-1	20190905	14:00	20190905	N/A	N	155-1 PA	INFO RUN	13.70	-15	27.7	B1	PA
131158-OSCT	G	B1	NI	155-1	20181207	11:00	20181207	N/A	N	155-1REF	INFO RUN	1.00	-1	46.7	B1	PA
131159-OSCT	G	B1	NI	155-1	20181207	11:00	20181207	N/A	N	155-1	INFO RUN	2.50	0	-48.9	B1	FL
120857-OSCT	C	1	NI	155-1	20171221	10:15	20171221	N/A	N	155-1 PA	INFO RUN	0.30	-2	23.2	1	PA
120858-OSCT	C	1	NI	155-1	20171221	12:15	20171221	N/A	N	155-1 FL	INFO RUN	1.40	3	-47.2	1	FL

A motion made by B. Grinfield and 2nd by T. Muransky was unanimously approved with 10 votes to adjourn the OSCT Panel meeting at 3:02 pm on 11/13/2019.

Respectfully Submitted,



Donald Bell/OSCT Chairman

Appendix

OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date: 11/13/2019

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
	NV	Nancy Aguirre	Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238	Phone: 210-647-9428 e-Mail: Nancy.AGUIRRE@intertek.com
RB	V	Rob Banas	ExxonMobil Lubricants and Specialties 114 Arcadia Park Drive Canton, GA 30114	Phone: 678-493-3930 e-Mail: Rob.a.banas@exxonmobil.com
DB	V	Dylan Beck	TMC 6555 Penn Ave. Pittsburgh, PA 15206	Phone: 412-365-1037 e-Mail: djb@astmtmc.cmu.edu
	V	Don Bell <i>Chairperson</i>	Afton Chemical Corp. 500 Spring Street Richmond, VA 23219	Phone: 804-788-6332 e-Mail: don.bell@aftonchemical.com
	NV	Jon Bolaney	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-7742 e-Mail: joby@lubrizol.com
MC	V	Mike Cabaj	McLaren/Linamar	Phone: 313-820-0119 e-Mail: Michael.cabaj@linamar.com
JAC	NV	Jeff Clark	TMC 6555 Penn Ave. Pittsburgh, PA 15206	Phone: 412-365-1032 e-Mail: jac@astmtmc.cmu.edu
A.C.	V	Allen Comfort	US Army CCDC-GVSC RDTA-DP/MS110 6501 E. 11 Mile Road Warren, MI 48307-5000	Phone: 586-282-4225 e-Mail: Allen.s.comfort.civ@mail.mil
	V	Vince Donndelinger	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-6589 e-Mail: Vince.donndelinger@lubrizol.com
	NV	Eric Donovan	Afton Chemical Ashland Technical Center 11289 Central Drive Ashland, VA	Phone: 804-788-5097 e-Mail: Eric.donovan@aftonchemical.com
	NV	Kristijan Drija	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	e-Mail: KRDR@lubrizol.com

AK NV Dan Horvath
Afton Chemical
2000 Central
Southland, PA
dan.horvath@aftonchemical.com

OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date:

11/13/19

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
	NV	Brian Foecking	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-349-2130 e-Mail: bjf@lubrizol.com
<i>[Signature]</i>	NV	Arjun Goyal	BASF 500 White Plains Road Tarrytown, NJ 10951	Phone: 914-785-2083 e-Mail: Arjun.goyal@basf.com
<i>[Signature]</i>	V	Rebecca Grinfield	Southwest Research Institute P.O. Drawer 28510 San Antonio, TX 78228-0510	Phone: 210-522-3652 e-Mail: bgrinfield@swri.org
<i>[Signature]</i>	NV	Derek Grosch	TEI	e-Mail: dgrosch@tei-net.com
	NV	Kimberly Gutierrez	Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238	e-Mail: kimberly.hernandez@intertek.com
	NV	Tisha Joy	BASF 500 White Plains Road Tarrytown, NJ 10951	Phone: 914-785-2206 e-Mail: Atisha.joy@basf.com
<i>[Signature]</i>	NV	Percy Kanga	ExxonMobil Research and Engineering 1545 Rte. 22 East Clinton, NJ 08801	Phone: 908-335-3780 e-Mail: Percy.r.kanga@exxonmobil.com
<i>[Signature]</i>	NV	Bill Kearney	Afton Chemical Corp Southfield, MI	Phone: 248-350-0640 e-Mail: Bill.kearney@aftonchemical.com
	V	Clayton Knight	Test Engineering Institute 12718 Cimarron Path San Antonio, TX 78249	Phone: 210-690-1958 e-Mail: cknight@tei-net.com
	NV	Tyler Kuchta	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH	Phone: 440-347-5868 e-Mail: Tyler.kuchta@lubrizol.com
	NV	Dan Lancotot	Test Engineering Institute 12718 Cimarron Path San Antonio, TX 78249	e-Mail: dlancotot@tei-net.com
<i>[Signature]</i>	NV	Anthony Lange	Intertek 5404 Bandera Rd. San Antonio, TX 78238	Phone: 210-634-1103 e-Mail: anthony.lange@intertek.com

OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date:

11/13/19

3 of

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
<i>ML</i>	V	Mike Lopez	Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238	e-Mail: mike.lopez@intertek.com
<i>Donna</i>	V	Donna Mosher	BASF 100 Park Ave. Florham Park, NJ	Phone: 269-217-1715 e-Mail: Donna.mosher@basf.com
<i>Troy</i>	V	Troy Muransky	AAM 1840 Holbrook Detroit, MI 48212	e-Mail: troy.muransky@aam.com
<i>DJR</i>	V	Daniel Rabinowitz	Meritor 2135 W. Maple Road Troy, MI 48084	Phone: 248-435-1544 e-Mail: Daniel.rabinowitz@meritor.com
<i>Matt</i>	NV	Matt Sangpeal	Afton Chemical Ashland Technical Center 11289 Central Drive Ashland, VA 23005	Phone: 804-788-5364 e-Mail: matt.sangpeal@aftonchemical.com
<i>Robert</i>	NV	Robert Slocum	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	e-Mail: robert.slocum@lubrizol.com
<i>Dale</i>	NV	Dale Smith	Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238	Phone: 412-855-6854 e-Mail: Dale.smith@intertek.com
<i>Wes</i>	NV	Wes Venhoff	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	e-Mail: Wes.venhoff@lubrizol.com
<i>Rebecca</i>	NV	Rebecca Warden	Southwest Research Institute P.O. Drawer 28510 San Antonio, TX 78228-0510	Phone: 210-522-6266 e-Mail: Rebecca.Warden@SWRI.org
	NV	Khaled Zreik	General Motors	Phone: 248-977-9214 e-Mail: Khaled.zreik@gm.com
<i>Amy</i>	NV	Amy Zyski	Dana Inc. 3939 Technology Drive Maumee, OH 43537	Phone: 419-887-3432 e-Mail: Amy.zyski@dana.com
<i>Jessica</i>	NV	Jessica LaBord	Meritor, Inc. 2135 W. Maple Rd Troy, MI 48084	248-872-3055 jessica.labord@meritor.com