



Test Monitoring Center

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MEMORANDUM: 04-060
DATE: August 23, 2004
TO: Sequence III Surveillance Panel
FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*
SUBJECT: Sequence IIIG/IIIGA Reference Oil 438 Test Target Update

On May 26, 2004, the Sequence III Surveillance Panel approved a motion to revise the test targets on 438 based upon all the data available to date in the LTMS. As part of the motion, the panel also approved a plan to update the targets when 30 and 35 data points on this oil become available. The TMC has a total of 30 data points available at this time and the revised targets based upon this data are shown in the following table:

Parameter	Mean	Standard Deviation
PVIS	4.5706	0.1768
WPD	3.20	0.33
ACLW	2.8814	0.2082
MRV	9.8277	0.16646

Any applicable severity adjustments were applied to the data prior to target generation. (The MRV targets are no longer severity-adjusted since the Sequence III panel decided to halt the use of IIIGA severity adjustments until a better method for handling reference oil 435 can be found.) The data used to generate these targets is shown in Tables 1 & 2. Table 1 shows unadjusted data. Table 2 shows severity-adjusted data, with the adjusted parameters shown in red. The above test targets; as well as the severity-adjusted data used to generate them; the raw test targets, the initial test targets, and the preliminary targets from the matrix (which were never used in the IIIG LTMS) for reference oil 438 are shown in the following figures. Figure 1 shows the PVIS data in transformed units. Figure 2 shows the PVIS data in original units. Figure 3 shows the WPD data in original units. Figures 4 and 5 show the ACLW data in transformed and original units, respectively. Figures 6 and 7 show the Sequence IIIGA MRV data in transformed and original units, respectively. These new test targets are effective for all tests completed on or after September 1, 2004.

MTK/mtk

Attachments

c: John L. Zalar, TMC
<ftp://www.astmtmc.cmu.edu/docs/gas/sequenceiii/memos/mem04-060.pdf>

Distribution: Electronic Mail

Table 1 – Unadjusted Data

Testkey	LTMS		Ind	Val	LTMS Date	Time	PVIS	PVISTI	ACLW	ACLWTI	WPD	MRV	MRVTI	OilCon
	Lab	App												
47950	E	1	438	AC	10/14/2003	1:06	106.1	4.664382	17.4	2.8565	2.84	18147	9.8063	3.66
49885	E	1	438	AC	3/20/2004	0:33	110.5	4.705016	17.5	2.8622	2.99	21721	9.986	3.87
49886	E	1	438	AC	8/8/2004	0:23	96.2	4.566429	15	2.7081	3.24	20966	9.9507	3.35
47910	G	2	438	AO	8/12/2003	0:16	132.6	4.887337	16.8	2.8214	3.68	23700	10.0732	4.27
47911	G	2	438	AO	8/12/2003	0:21	143.2	4.964242	15.3	2.7279	2.85	30400	10.3222	4.33
47913	G	3	438	OO	8/12/2003	0:26	91.7	4.518522	15.6	2.7473	4.17	19000	9.8522	3.41
47914	G	5	438	AO	8/12/2003	0:36	120.6	4.792479	20.8	3.035	3	20500	9.9282	3.87
48577	G	3	438	AC	8/12/2003	5:13	138.5	4.93087	22.1	3.0956	3.01	26800	10.1962	4.19
48578	G	4	438	AC	11/28/2003	3:53	101.1	4.61611	18.3	2.9069	3.46	19900	9.8985	3.74
49515	G	2	438	AC	5/3/2004	1:09	86	4.454347	14.1	2.6462	3.33	16500	9.7111	3.19
49516	G	1	438	AC	7/18/2004	11:20	111.8	4.716712	22.8	3.1268	3.11	14100	9.5539	3.47
47941	D	1	438	AC	8/12/2003	0:52	70.7	4.258446	14.7	2.6878	3.04	15435	9.6444	3.23
49064	D	1	438	AC	5/24/2004	16:26	81.1	4.395683	19.8	2.9857	3.02	16526	9.7127	3.02
47921	B	1	438	AC	8/12/2003	0:29	81.9	4.405499	19.3	2.9601	2.62	16300	9.6989	2.97
47922	B	3	438	AC	8/12/2003	0:46	74.5	4.310799	19	2.9444	3.1	14800	9.6024	2.63
47923	B	2	438	OC	11/19/2003	6:36	77.7	4.352855	30.8	3.4275	3.18	16100	9.6866	2.78
49069	B	2	438	AC	11/26/2003	7:03	92.9	4.531524	17.1	2.8391	3.24	16400	9.705	3.12
49070	B	1	438	AC	6/11/2004	6:44	88.3	4.48074	19	2.9444	3.42	17600	9.7757	2.9
47930	F	1	438	AC	8/12/2003	0:41	96.6	4.570579	17.6	2.8679	3.72	18620	9.832	3.66
47932	F	1	438	AC	1/13/2004	5:55	77	4.343805	19.7	2.9806	3.85	16449	9.708	3.38
47893	A	1	438	AO	8/12/2003	0:13	102.3	4.62791	14.4	2.6672	3.04	19300	9.8679	3.62
47894	A	3	438	AO	8/12/2003	0:18	111.7	4.715817	21.2	3.054	3.14	20500	9.9282	3.47
47895	A	2	438	AO	8/12/2003	0:32	88.6	4.484132	22	3.091	3.08	16700	9.7232	3.32
47896	A	1	438	AO	8/12/2003	0:34	90.5	4.50535	21.4	3.0634	3.26	18000	9.7981	3.28
47897	A	5	438	AC	8/12/2003	0:49	98.1	4.585987	14	2.6391	2.88	18100	9.8037	3.61
48585	A	6	438	AC	8/14/2003	1:42	86.8	4.463607	17.2	2.8449	3.25	16900	9.7351	3.06
48586	A	1	438	AC	11/1/2003	16:42	96.2	4.566429	17.6	2.8679	3.17	18200	9.8092	3.55
49075	A	4	438	AC	12/30/2003	10:18	86.4	4.458988	13.5	2.6027	3.26	17200	9.7527	2.98
49708	A	3	438	AC	4/14/2004	10:08	108.6	4.687671	15.8	2.76	2.79	20800	9.9427	3.22
50458	A	1	438	AC	5/27/2004	11:33	95.1	4.554929	12.8	2.5494	3.14	18500	9.8255	3.02

Table 2 – Severity Adjusted Data

Testkey	LTMS		LTMS		Ind	Val	LTMS Date	Time	PVIS	PVISTI	ACLW	ACLWTI	WPD	MRV	MRVTI	OilCon
	Lab	App	Lab	App												
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47914	G	5	G	5	438	AO	8/12/2003	0:36	120.6	4.792479	20.8	3.035	3	20500	9.9282	3.87
48577	G	3	G	3	438	AC	8/12/2003	5:13	138.5	4.93087	22.1	3.0956	3.01	26800	10.1962	4.19
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Figure 1

Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

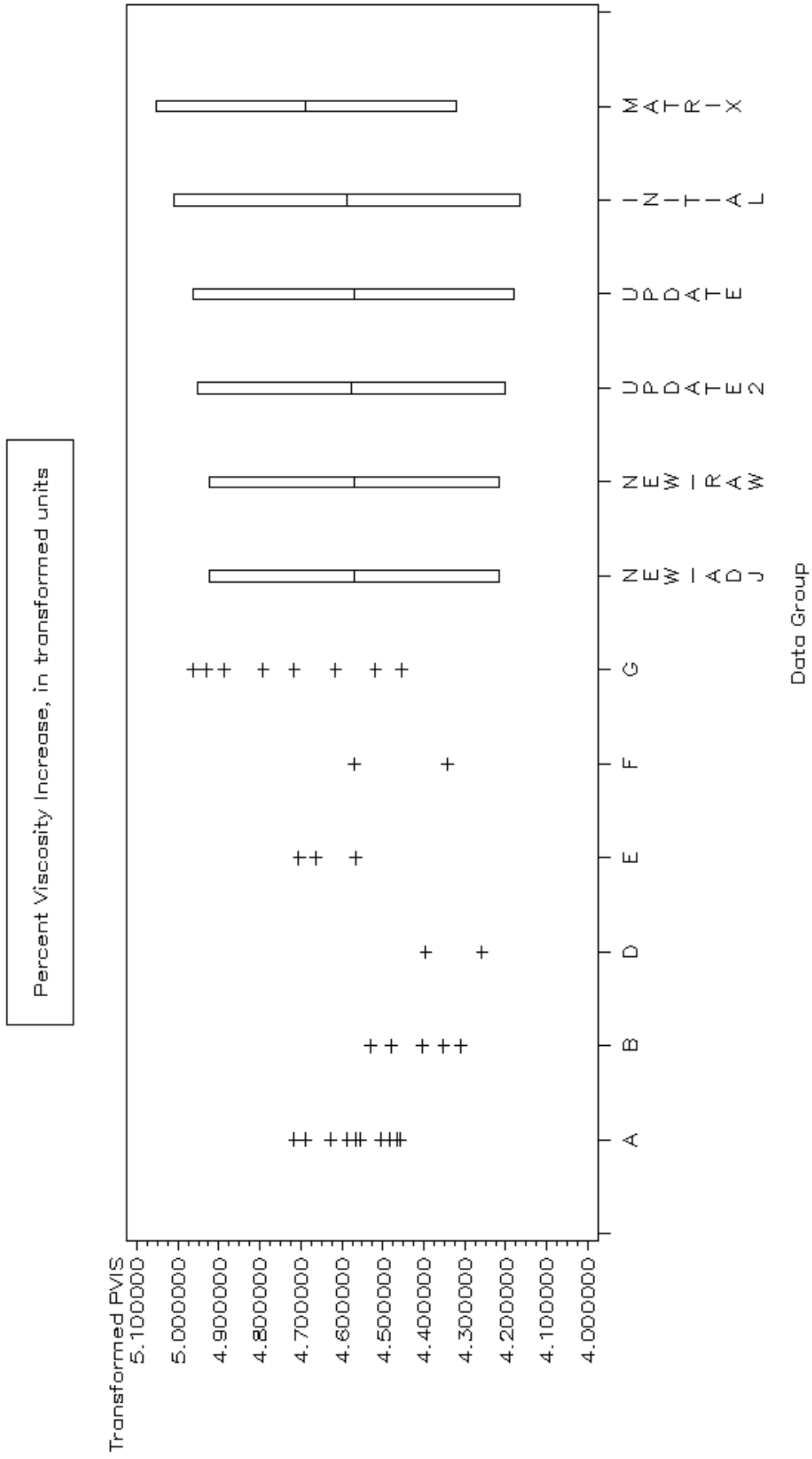


Figure 2

Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

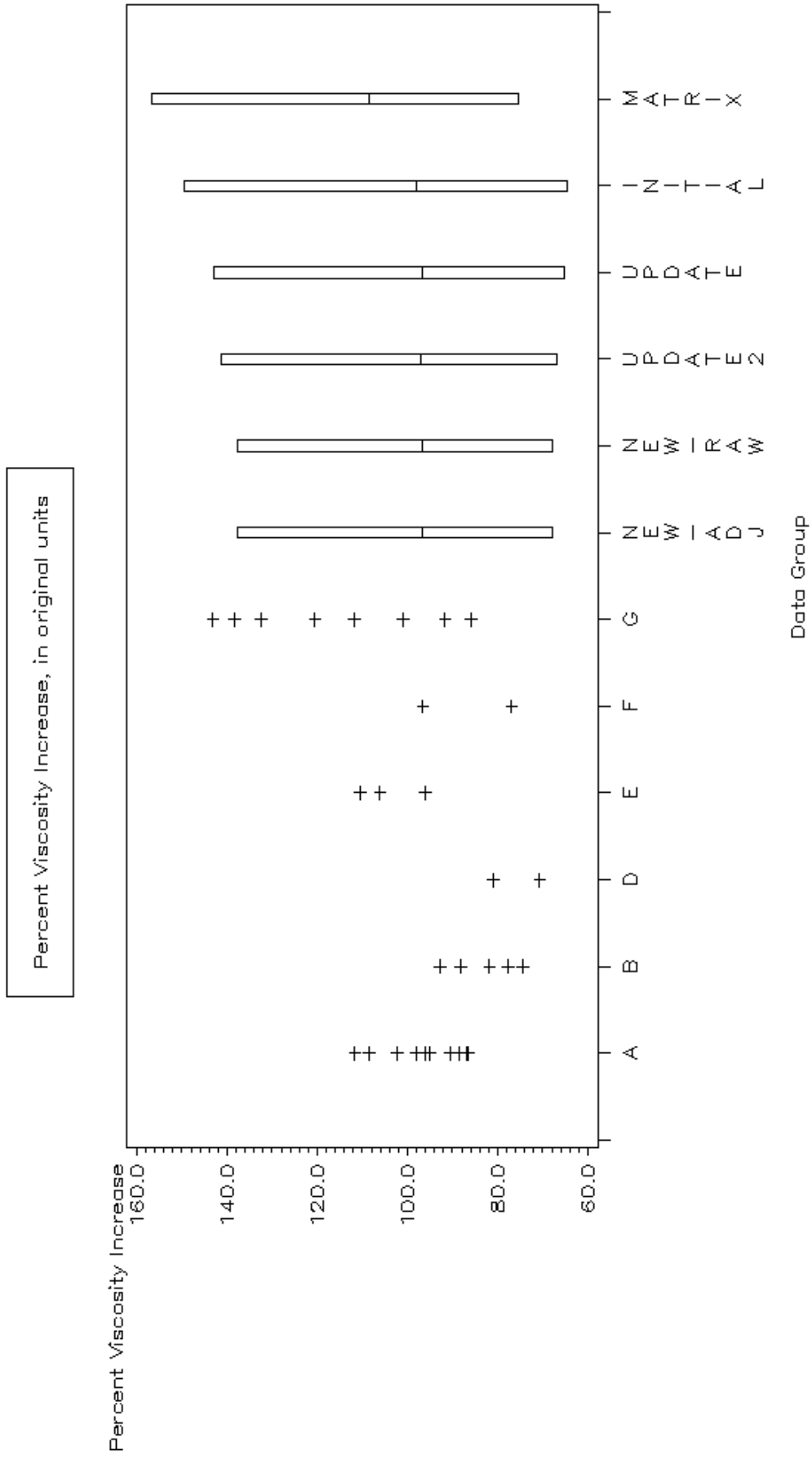


Figure 3

Sequence IIIG Reference Oil 438 Test Target Data Set and Shewhart Bands

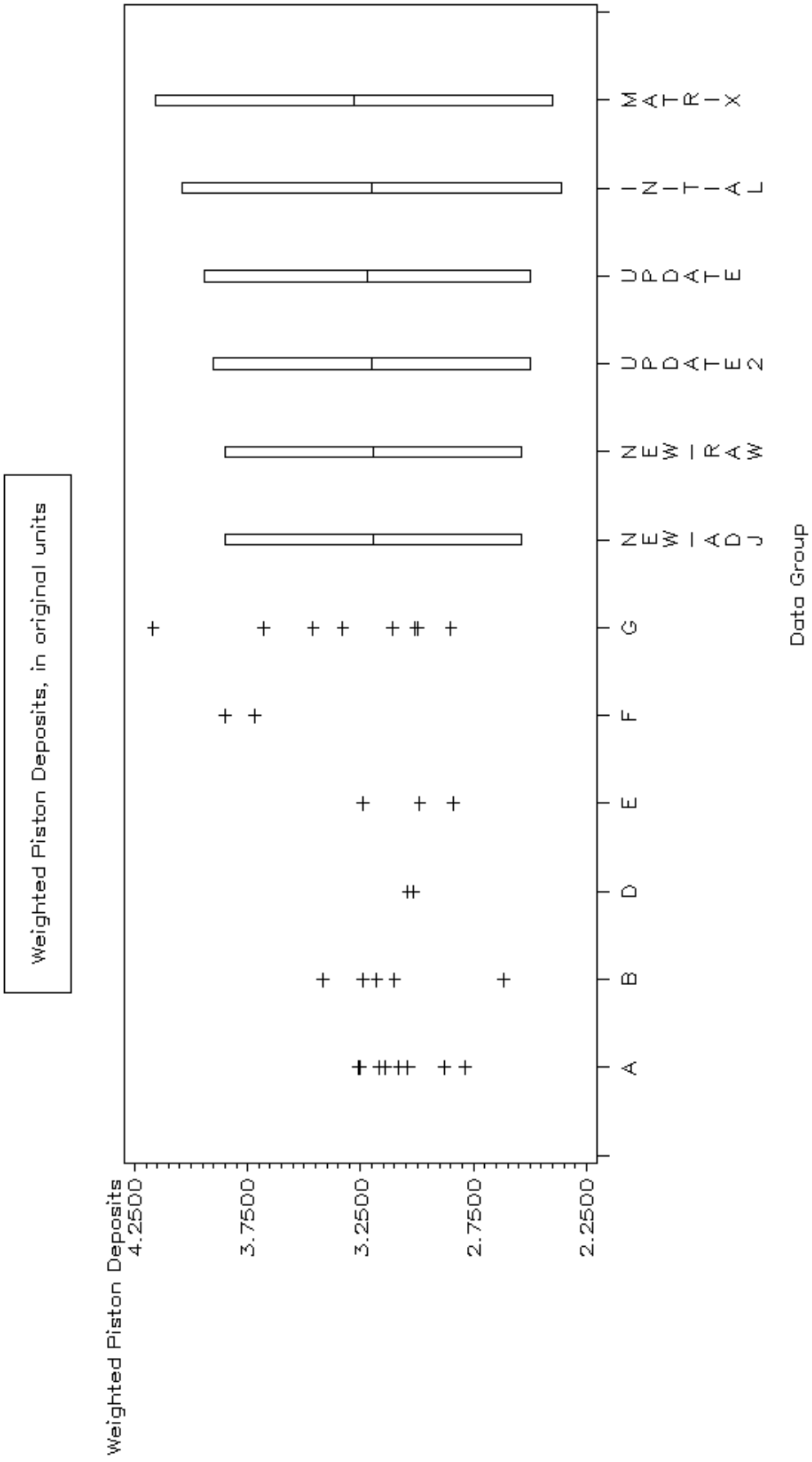


Figure 5

Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

Average Camshaft & Lifter Wear, in original units

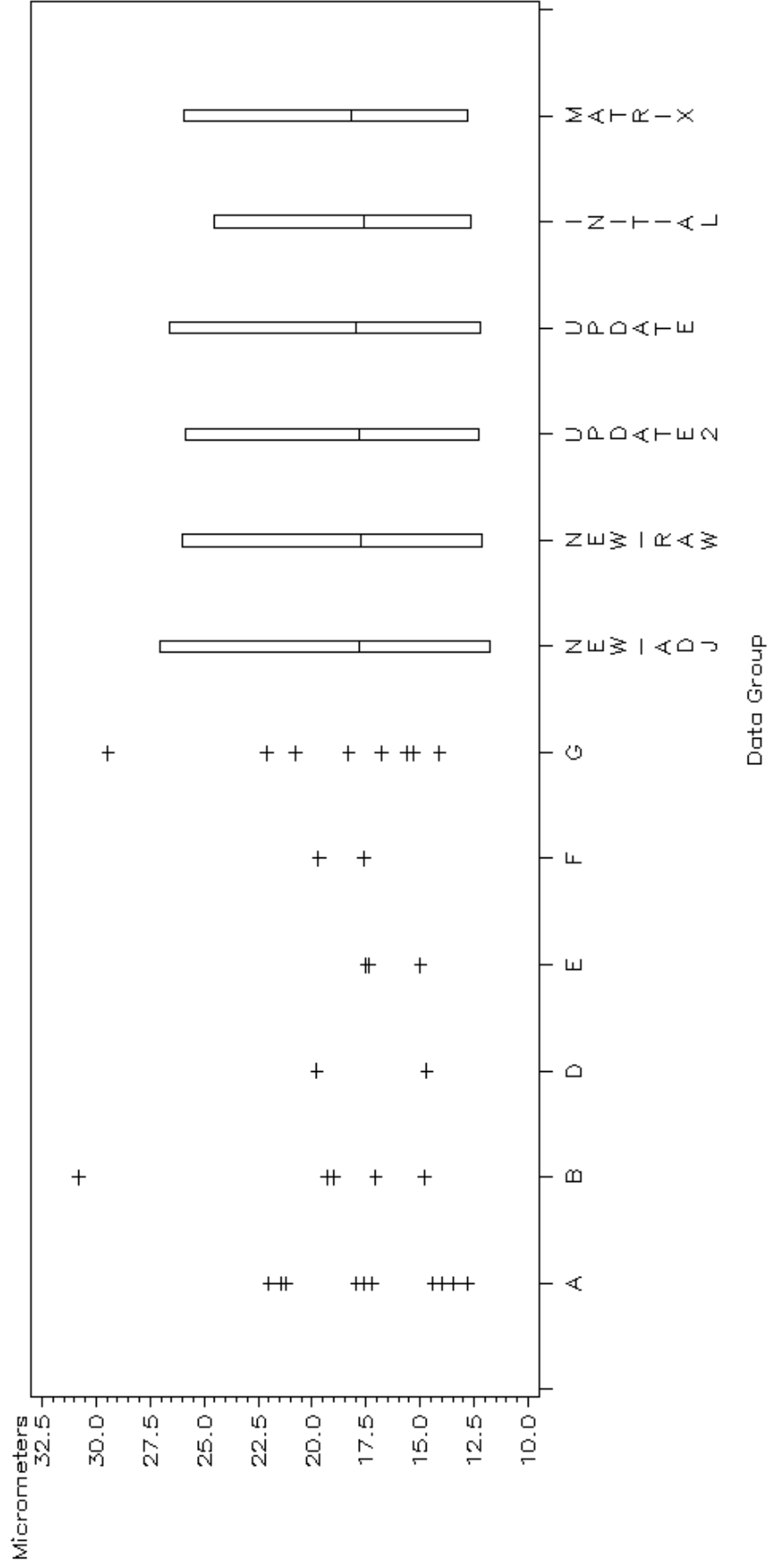
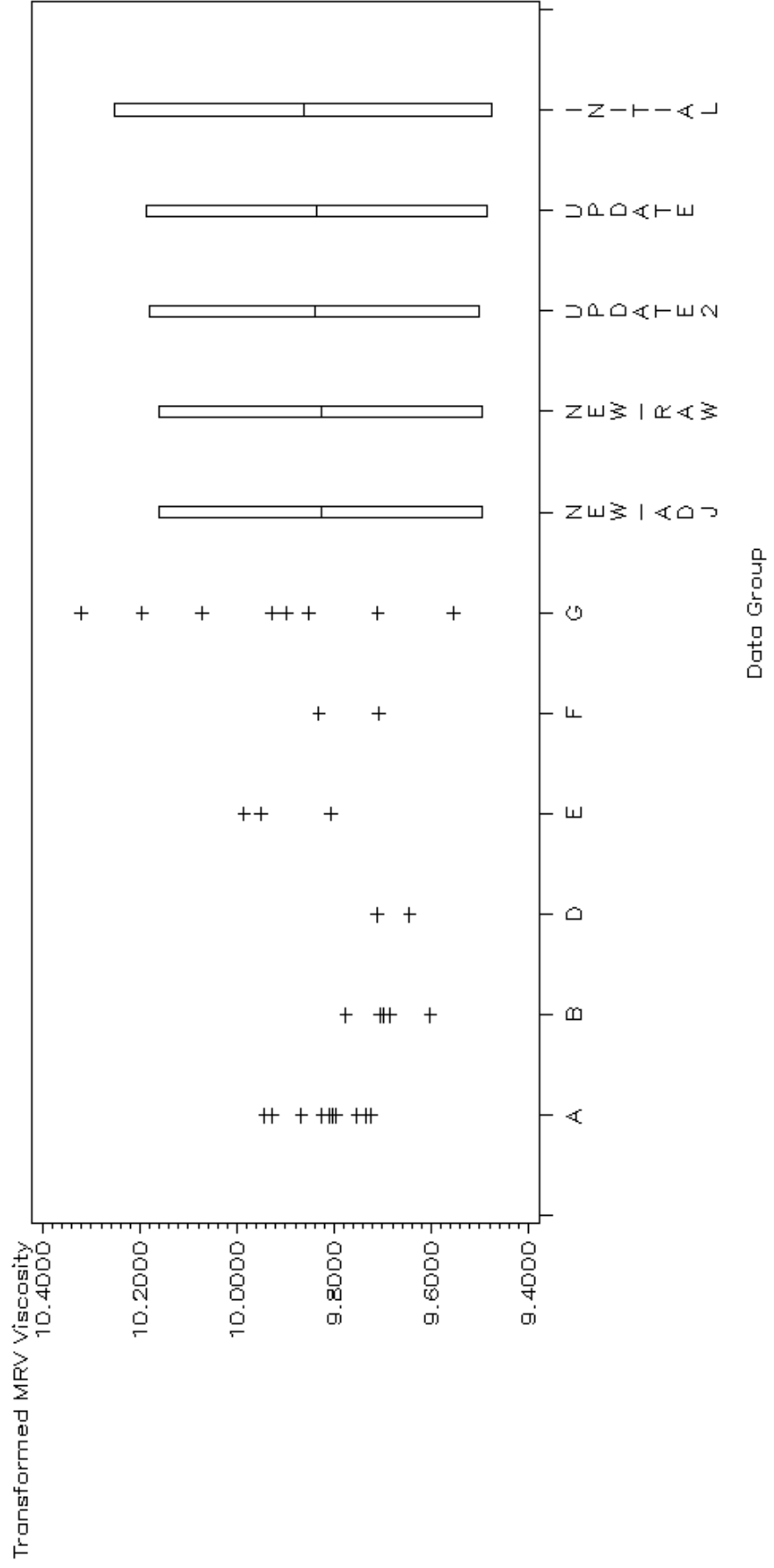


Figure 6

Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

Mini Rotary Viscometer Viscosity, in transformed units



Sequence III G Reference Oil 438
Test Target Data Set and Shewhart Bands

Mini Rotary Viscometer Viscosity, in original units

