ASTM Test Monitoring Center

6555 Penn Avenue
Pittsburgh, PA 15206-4489

MEMORANDUM: 04-001

DATE: January 6, 2004

TO: Gordon R. Farnsworth, Chairman, Sequence VG Surveillance Panel

FROM: Richard Grundza

SUBJECT: Sequence VG Reference Oil Tests Statistics, Reference Oil 1006-2

The following are the statistics for Sequence VG reference oil 1006-2, based on twenty test results. These targets are effective for reference oil tests completing on or after January 5, 2004.

Parameter	Mean	Standard Deviation
AES	8.69	0.42
RAC	9.41	0.16
AEV	9.25	0.11
APV	8.54	0.13
OSCR	0.918	0.649
HSR	None Allowed	

Figures 1 through 5 plot the results by laboratory and the Shewhart acceptance ranges for AES, RAC, AEV, APV and OSCR, respectively. Hot stuck ring data was not plotted since no hot stuck rings are allowed and no tests exhibited hot ring sticking. Please note that laboratory results in Figures 1 through 5 have not been severity adjusted. Figure 6 summarizes the reported results, uncorrected, while Figure 7 tabulates the severity adjusted results, used to calculate the targets. All results are in reported units except Oil Screen Clogging (OSCR), which has been transformed using $\ln(1+result)$ transformation.

Attachments

REG/reg

c: Sequence VG Surveillance Panel
   Sequence VG Test Engineers
   John Zalar, TMC
   Frank Farber, TMC
   ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencev/memos/mem04-001.pdf

Distribution: email

Figure 1

Sequence VG (Reference Oil 1006-2)
Test Target Data Set and Shewart Severity Limits

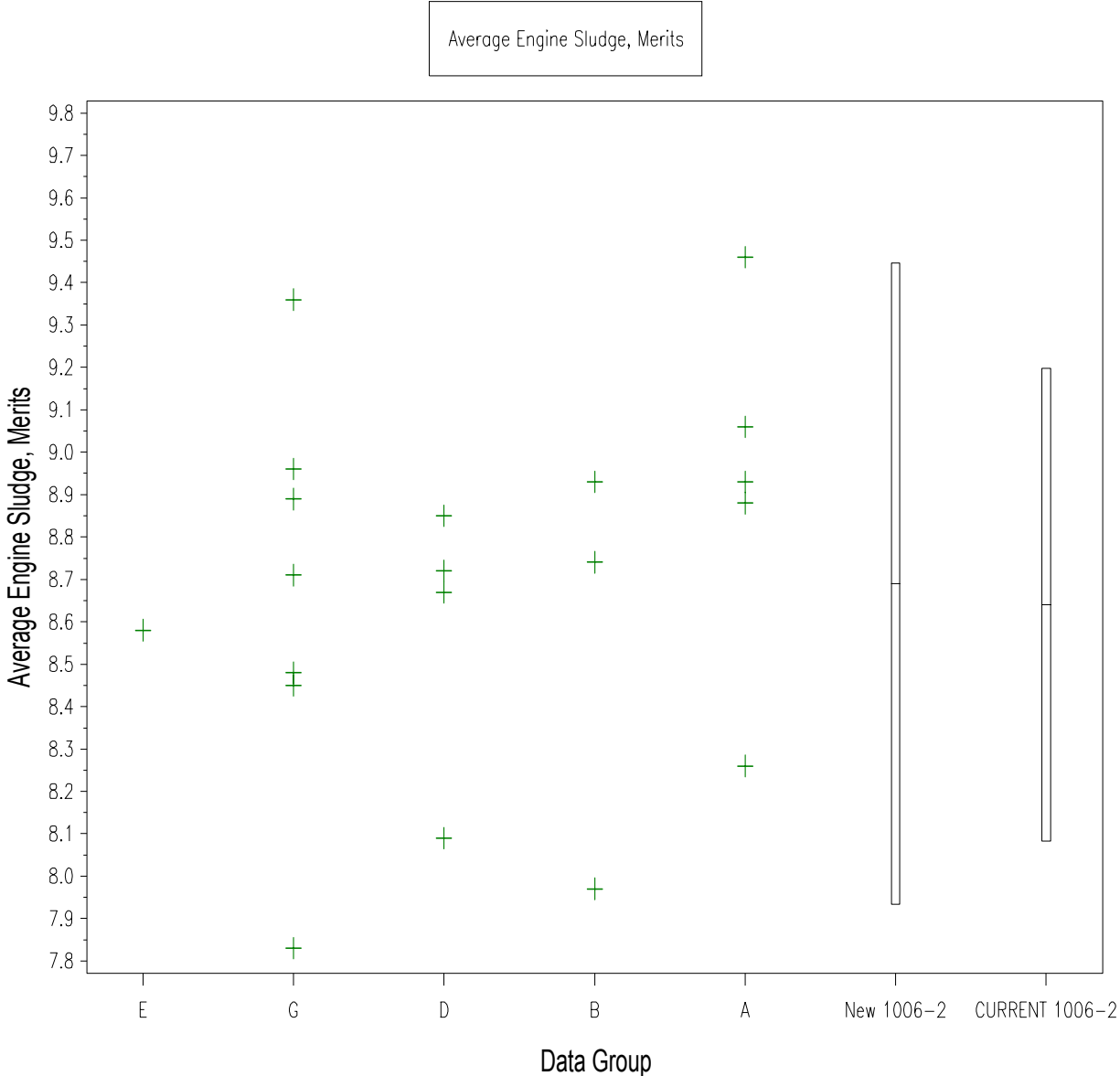Average Engine Sludge, Merits

Figure 2

Sequence VG (Reference Oil 1006−2)
Test Target Data Set and Shewart Severity Limits
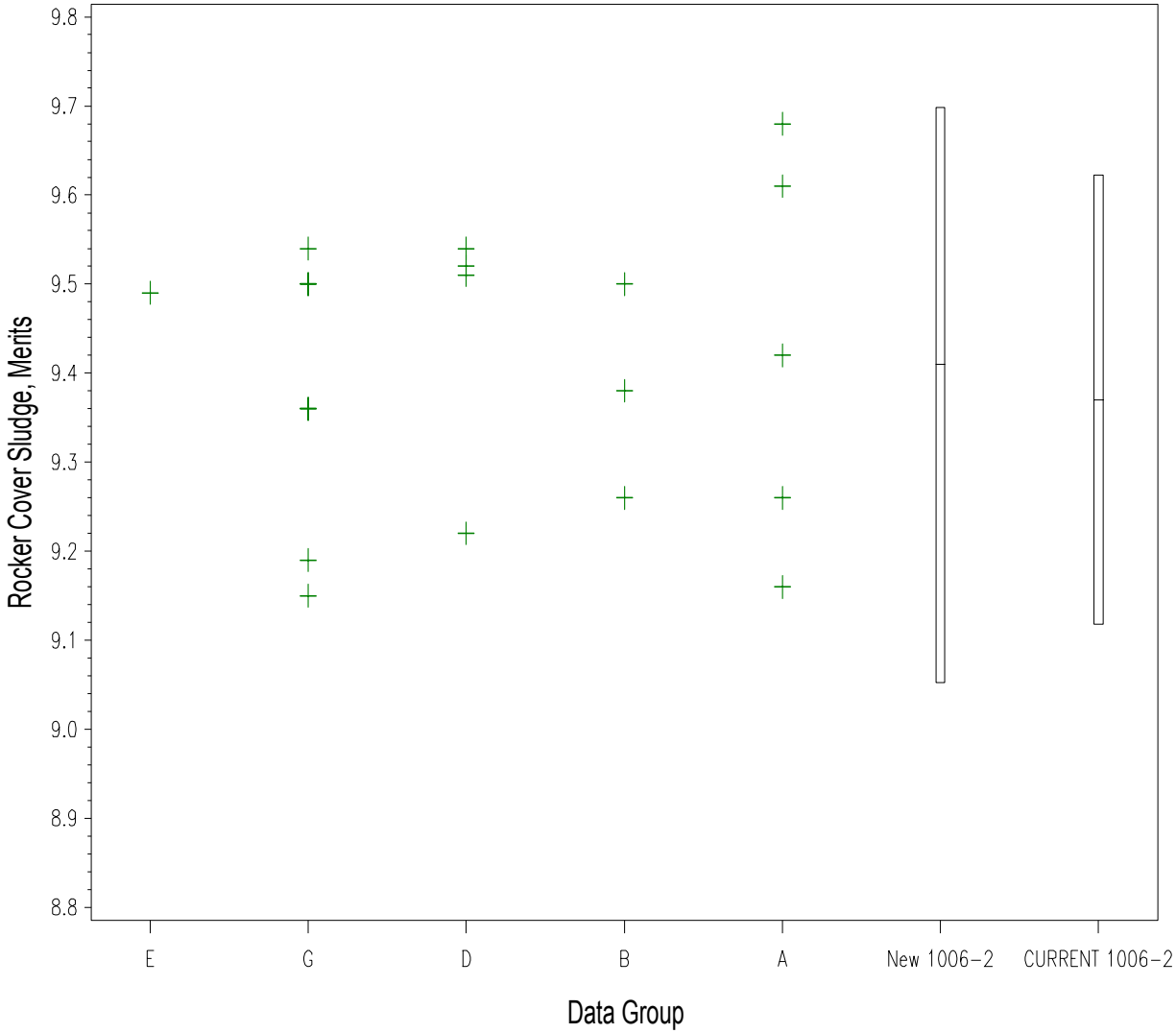
Rocker Cover Sludge, Merits

Figure 3

Sequence VG (Reference Oil 1006−2)
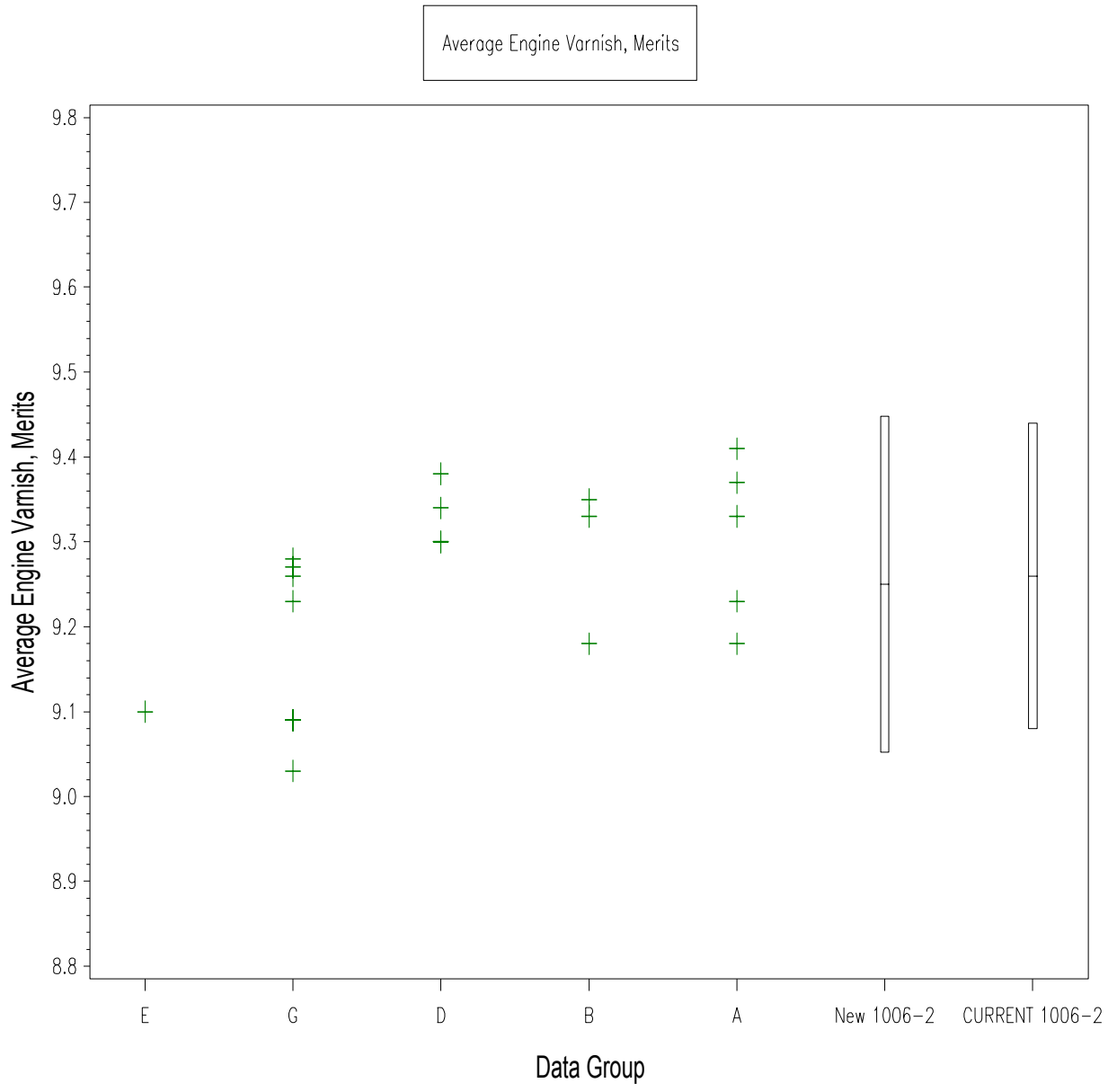Test Target Data Set and Shewart Severity Limits

Figure 4

Sequence VG (Reference Oil 1006-2)
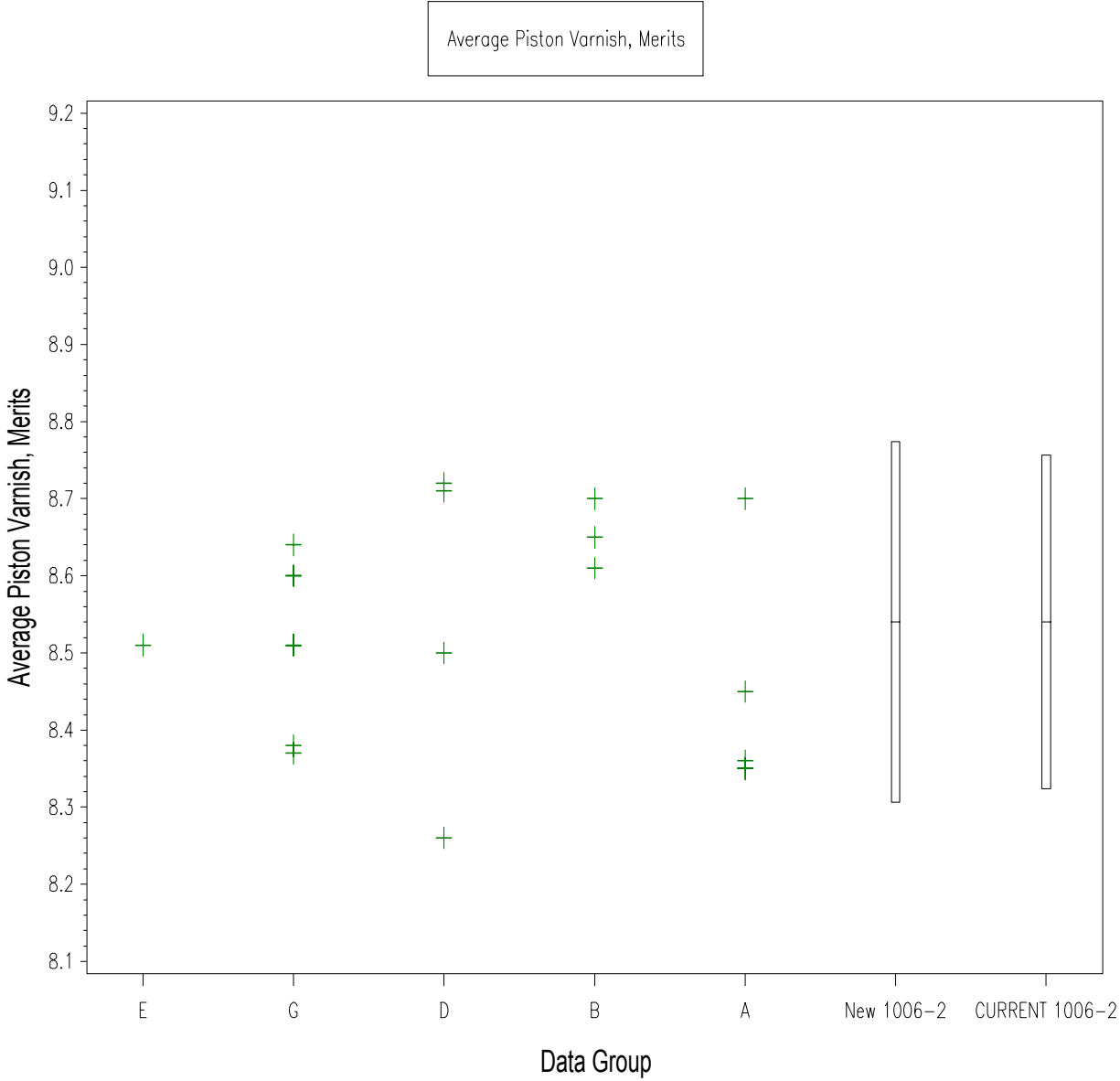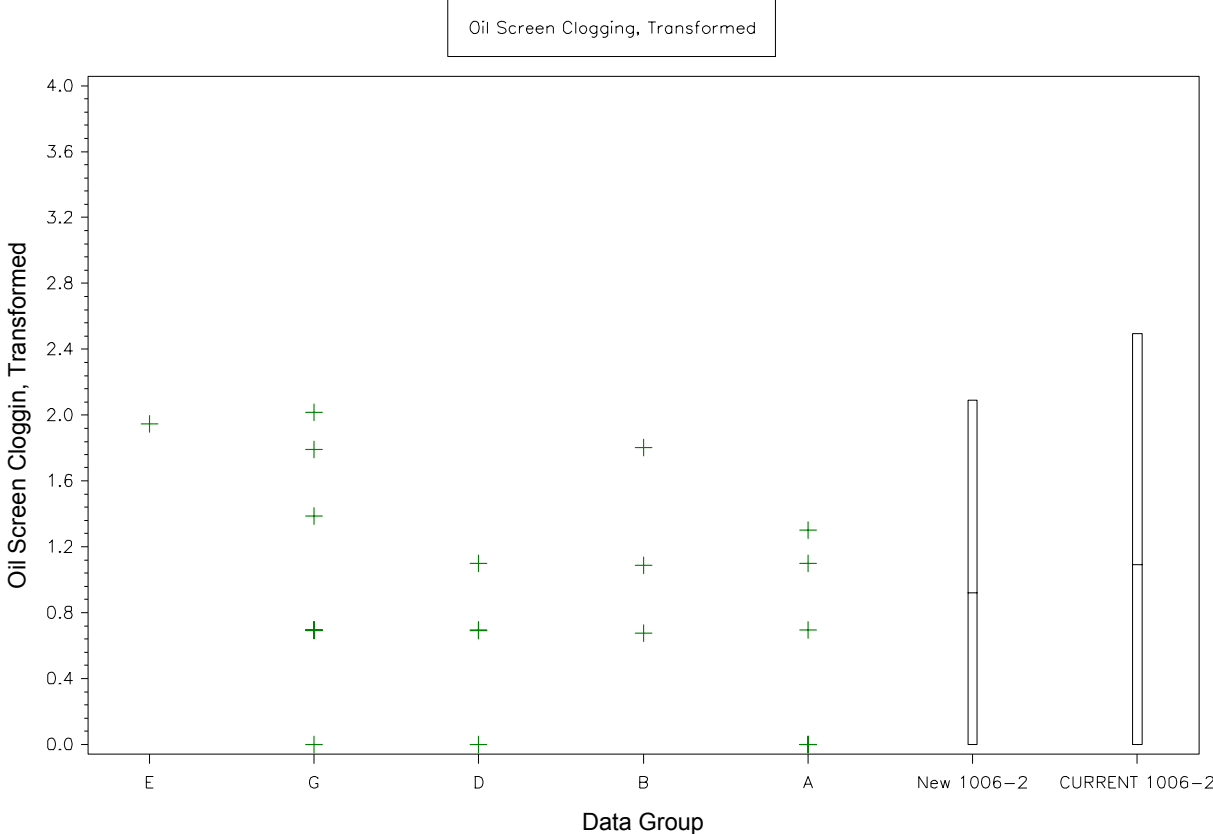Test Target Data Set and Shewart Severity Limits

Average Piston Varnish, Merits

Figure 5

Sequence VG (Reference Oil 1006-2)
Test Target Data Set and Shewart Severity Limits

Oil Screen Clogging, Transformed

Figure 6

Lab	AES	RAC	AEV	APV	OSCR	HSR
A	8.26	9.16	9.37	8.35	0	0
B	8.74	9.38	9.18	8.61	1.3863	0
G	8.89	9.50	9.27	8.37	1.3863	0
A	8.88	9.26	9.33	8.45	0.6931	0
E	8.58	9.49	9.10	8.51	1.9459	0
G	8.96	9.50	9.09	8.51	1.7918	0
G	8.71	9.36	9.28	8.60	0.6931	0
B	7.97	9.26	9.33	8.65	2.3026	0
D	8.72	9.26	9.38	8.72	0	0
D	8.67	9.22	9.30	8.62	0.6931	0
A	9.46	9.68	9.41	8.70	0	0
G	8.88	9.15	9.23	8.51	0.6931	0
G	8.25	9.19	9.09	8.38	1.3863	0
B	8.93	9.50	9.35	8.70	1.6094	0
A	8.93	9.61	9.18	8.36	1.0986	0
D	8.09	9.28	9.30	8.71	0.6931	0
A	9.06	9.42	9.23	8.35	0.6931	0
G	9.36	9.54	9.03	8.64	0	0
G	8.89	9.36	9.18	8.60	0.6931	0
D	8.50	9.27	9.34	8.62	1.0986	0

Figure 7

Lab	AES	RAC	AEV	APV	OSCR	HSR
A	8.26	9.16	9.37	8.35	0.0000	0
B	8.74	9.38	9.18	8.61	0.6763	0
G	8.89	9.50	9.27	8.37	2.0163	0
A	8.88	9.26	9.33	8.45	1.3031	0
E	8.58	9.49	9.10	8.51	1.9459	0
G	8.96	9.50	9.09	8.51	1.7918	0
G	8.71	9.36	9.28	8.60	0.6931	0
B	7.97	9.26	9.33	8.65	1.8026	0
D	8.72	9.54	9.38	8.72	0	0
D	8.67	9.22	9.30	8.62	0.6931	0
A	9.46	9.68	9.41	8.70	0	0
G	8.48	9.15	9.23	8.51	0.6931	0
G	7.83	9.19	9.09	8.38	1.3863	0
B	8.93	9.50	9.35	8.70	1.0894	0
A	8.93	9.61	9.18	8.36	1.0986	0
D	8.09	9.52	9.30	8.71	0.6931	0
A	9.06	9.42	9.23	8.35	0.6931	0
G	9.36	9.54	9.03	8.64	0	0
G	8.45	9.36	9.26	8.60	0.6931	0
D	8.85	9.51	9.34	8.50	1.0986	0