



**Combined State Binder
Group**

Method of Acceptance for
Asphalt Binders

Round Robin 2004-1
Summary A

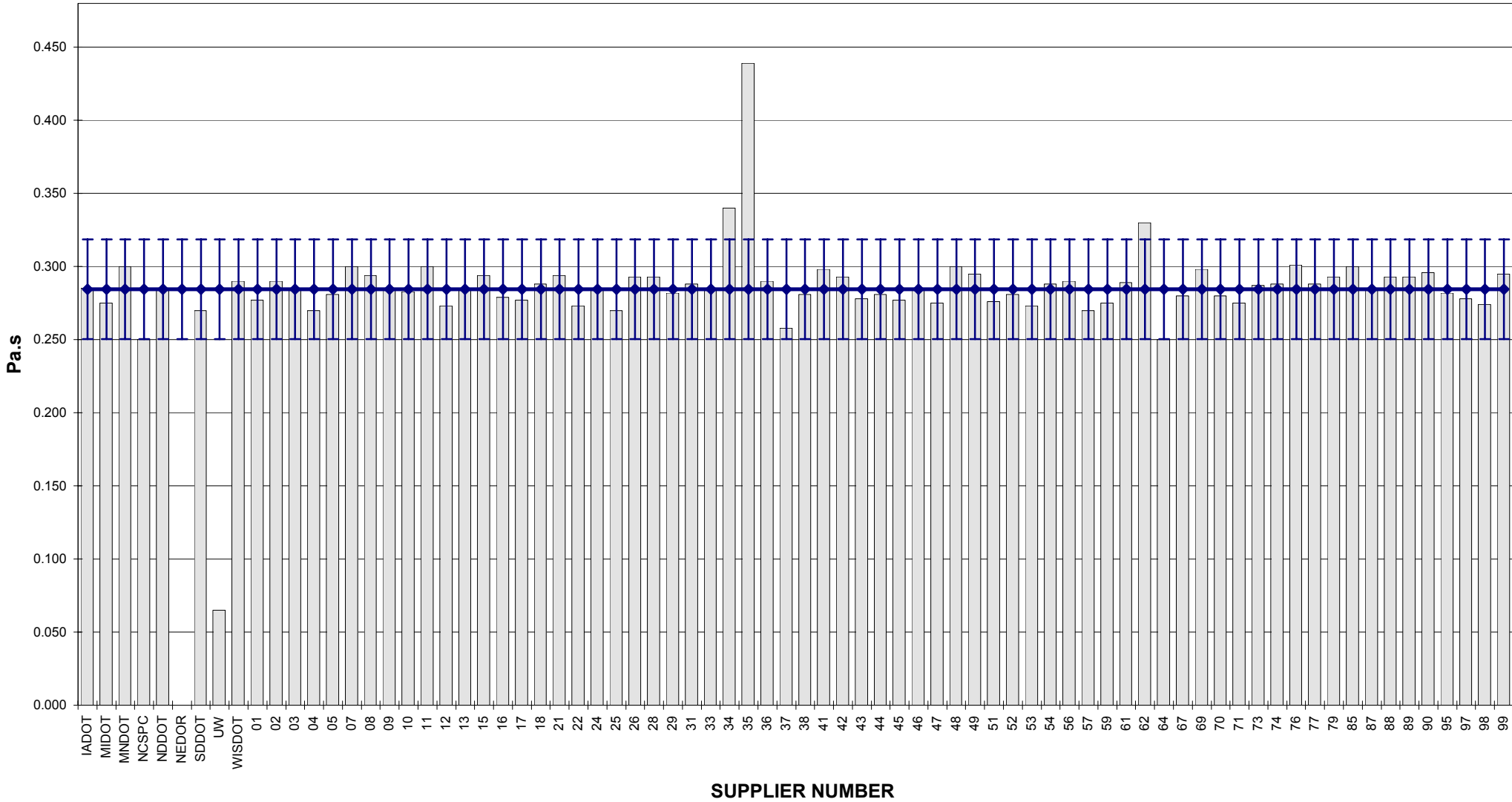
**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A
PG 58-28**

Supplier Number	Rotational Viscosity (Pa.s) @135°C	DSR Original (kPa) @58°C	DSR RTFO (kPa) @58°C	DSR PAV (kPa) @19°C	Mass Loss (%) @163°C	BBR S-value (MPa) @-18°C	BBR m-value @-18°C	DTT Strain (%) @-18°C	DTT Stress (MPa) @-18°C	CRITICAL CRACK TEMP (°C)
IADOT	0.285	1.31	3.20	3,834	-0.419	232	0.326			
MIDOT	0.275	1.27	3.28	4,072	-0.446	233	0.331			
MNDOT	0.300	1.40	3.62	4,102	-0.400	215	0.327			
NCSPC	0.250	1.08	2.53	2,191	-0.528	210	0.326			
NDDOT	0.285	1.27	3.13	3,775	-0.433	226	0.333			
NEDOR		1.39	3.50	4,487	-0.374	204	0.326			
SDDOT	0.270	1.43	3.53	4,039	-0.329	218	0.337			
UW	0.065	1.28								
WISDOT	0.290	1.24	3.02	3,210	-0.329	213	0.337	1.46	4.37	-29.5
01	0.277	1.32	3.54	3,444	-0.343	210	0.333			
02	0.290	1.23	3.07	3,398	-0.413	197	0.330			
03	0.285	1.52	3.64	4,291	-0.342	217	0.341			
04	0.270	1.19	3.10	3,710	-0.310	228	0.328			
05	0.281	1.26	3.26	3,873	-0.422	207	0.322			
07	0.300	1.36	2.97	4,585	-0.429	215	0.334			
08	0.294	1.29	3.31	3,679	-0.452	211	0.326			
09	0.285	1.43	3.62	3,050	-0.364	231	0.333			
10	0.283	1.31	3.34	4,094	-0.444	207	0.331			
11	0.300	1.20	2.84	3,357	-0.421	208	0.332			
12	0.273	1.28	3.00	3,924	-0.486	224	0.332			
13	0.285	1.51	3.87	4,246	-0.373	229	0.335			
15	0.294	1.30	3.39	4,170	-0.483	223	0.324			
16	0.279	1.26	3.32	4,219	-0.437	222	0.323			
17	0.277	1.29	3.39	3,714	-0.363	218	0.334			
18	0.288	1.23	3.33	3,890	-0.449	219	0.332			
21	0.294	1.25	3.24	3,995	-0.461	233	0.317			
22	0.273	1.36	3.08	3,012	-0.493	220	0.333			
24	0.284	1.36	3.49	4,149	-0.349	211	0.337	1.52	3.96	-29.8
25	0.270	1.25	3.33	3,342	-0.414	211	0.329			
26	0.293	1.32	3.39	3,760	-0.493	233	0.327			
28	0.293	1.22	3.23	3,994	-0.452	227	0.317			
29	0.282	1.28	3.29	4,824	-0.407	248	0.318			
31	0.288	1.27	3.31	3,889	-0.326	209	0.334			
33	0.285	1.38	3.61	4,104	-0.374	236	0.322			
34	0.340	1.31	3.00	2,816	-0.503	217	0.329			
35	0.439	1.24	3.40	4,368	-0.312	234	0.311			
36	0.290	1.31	3.41	3,805	-0.514	235	0.328			
37	0.258	1.15	3.23	3,637	-0.415	224	0.323			
38	0.281	1.29	3.21	3,641	-0.305	208	0.328			
41	0.298	1.26	3.36	3,685	-0.466	211	0.333			
42	0.293	1.24	3.35	3,859	-0.560	237	0.323			
43	0.278	1.33	3.32	3,884	-0.394	207	0.351			
44	0.281	1.33	3.35	4,104	-0.446	219	0.331			
45	0.277	1.34	3.38	3,998	-0.372	225	0.332			
46	0.285	1.27	3.47	3,894	-0.424	226	0.330			
47	0.275	1.28	3.11	3,680	-0.440	235	0.327			
48	0.300	1.24	2.75	2,230	-0.395	234	0.324			
49	0.295	1.28	3.07	3,894	-0.442	228	0.325			
51	0.276	1.29	3.31	4,170	-0.425	236	0.335			
52	0.281	1.27	3.32	3,864	-0.314	212	0.333			
53	0.273	1.14	2.91	3,887	-0.299	212	0.331			
54	0.288	1.25	3.19	3,674	-0.404	218	0.339			
56	0.290	1.28	3.27	2,266	-0.450	214	0.337			
57	0.270	1.22	3.59	3,888	-0.403	222	0.334	1.50	4.06	
59	0.275	1.27	3.22	3,629	-0.388	212	0.330			
61	0.289	1.33	3.51	3,692	-0.514	221	0.319			
62	0.330	1.26	3.22	2,599	-0.412	218	0.334			
64	0.250	1.33	3.19	3,756	-0.405	217	0.327			
67	0.280	1.39	3.75	4,480	-0.446	198	0.353			
69	0.298	1.38	3.05	4,532	-0.480	225	0.334	1.69	4.90	-32.4
70	0.280	1.30	3.17	3,830	-0.400	195	0.335			
71	0.275	1.35	3.81	3,822	-0.540	232	0.341			
73	0.287	1.39	3.41	3,788	-0.290	235	0.337			
74	0.288	1.31	3.30	4,139	-0.452	220	0.330			
76	0.301	1.24	3.51	2,334	-0.438	239	0.315			
77	0.288	1.27	3.32	3,817	-0.441	225	0.325			
79	0.293	1.30	3.42	4,402	-0.445	208	0.331			
85	0.300	1.23	2.91	1,621	-0.466	226	0.319			
87	0.285	1.25	3.79	4,237	-0.446	224	0.333			
88	0.293	1.27	3.25	3,817	-0.445	221	0.336			
89	0.293	1.29	3.46	4,179	-0.526	222	0.323			
90	0.296	1.21	3.26	4,065	-0.478	231	0.318			
95	0.282	1.29	3.32	3,837	-0.400	217	0.346			
97	0.278	1.25	3.19	4,151	-0.442	229	0.335			
98	0.274	1.24	3.15	4,324	-0.436	236	0.334			
99	0.295	1.24	3.21	3,817	-0.453	230	0.316			
Average	0.2845	1.2901	3.2959	3,767.13	-0.4211	221.07	0.3299	1.543	4.32	
Std. Dev.	0.0340	0.0725	0.2378	586.75	0.0602	10.89	0.0077	0.101	0.42	
Coef. of Var.	11.950	5.620	7.215	15.576	14.307	4.925	2.320	6.577	9.78	

COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A

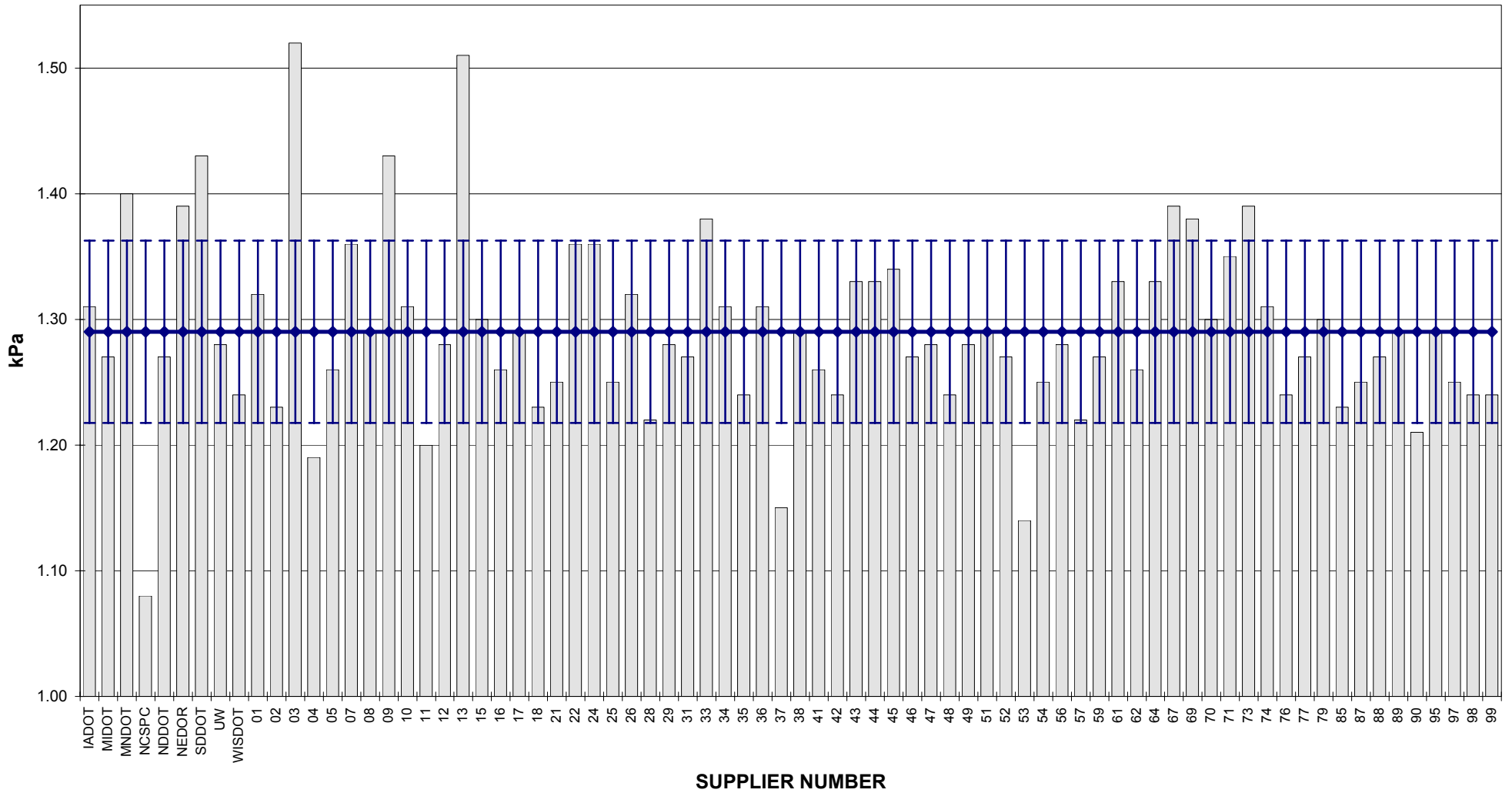
PG 58-28

ROTATIONAL VISCOSITY



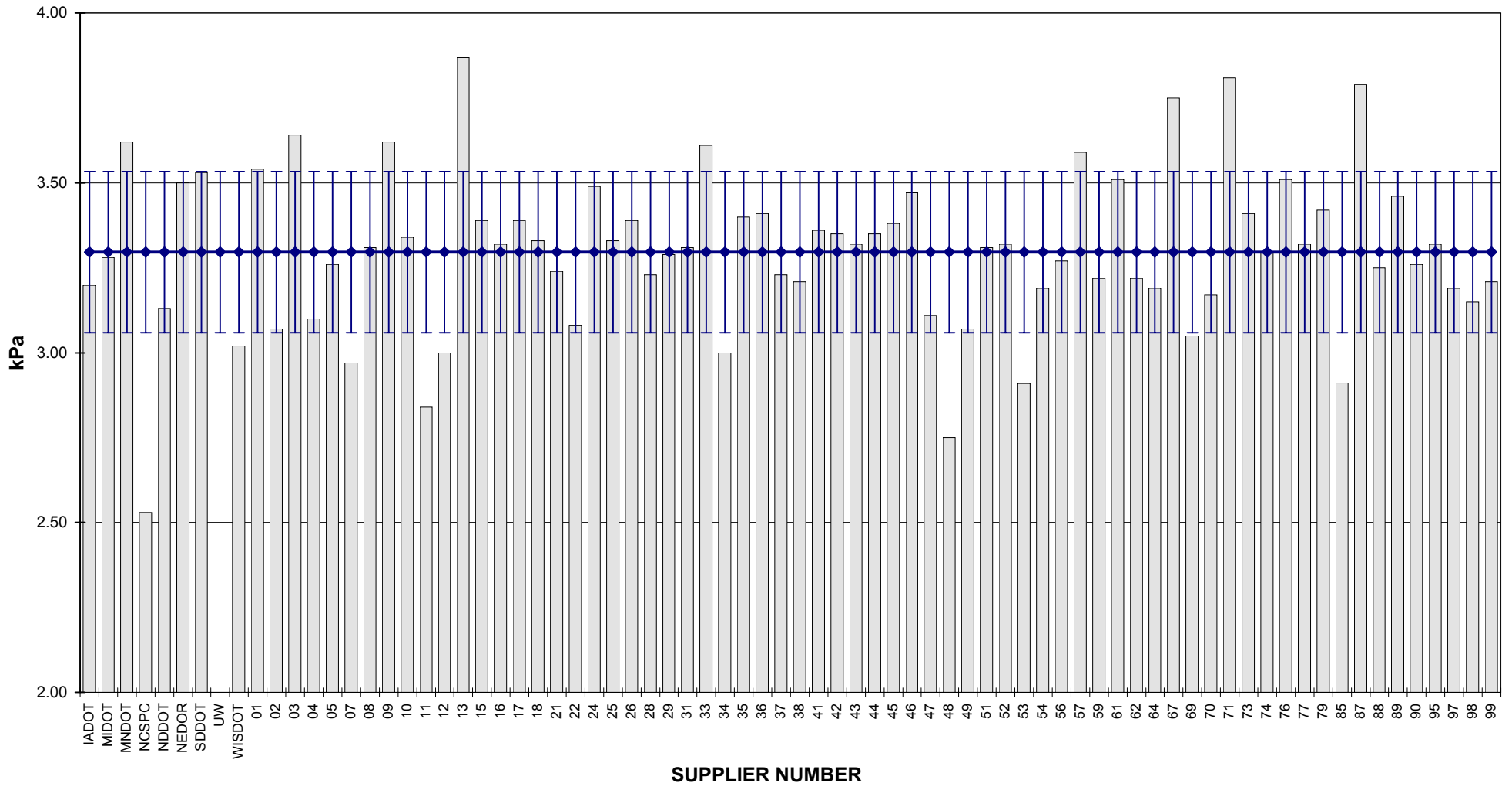
COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A
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DSR - ORIGINAL

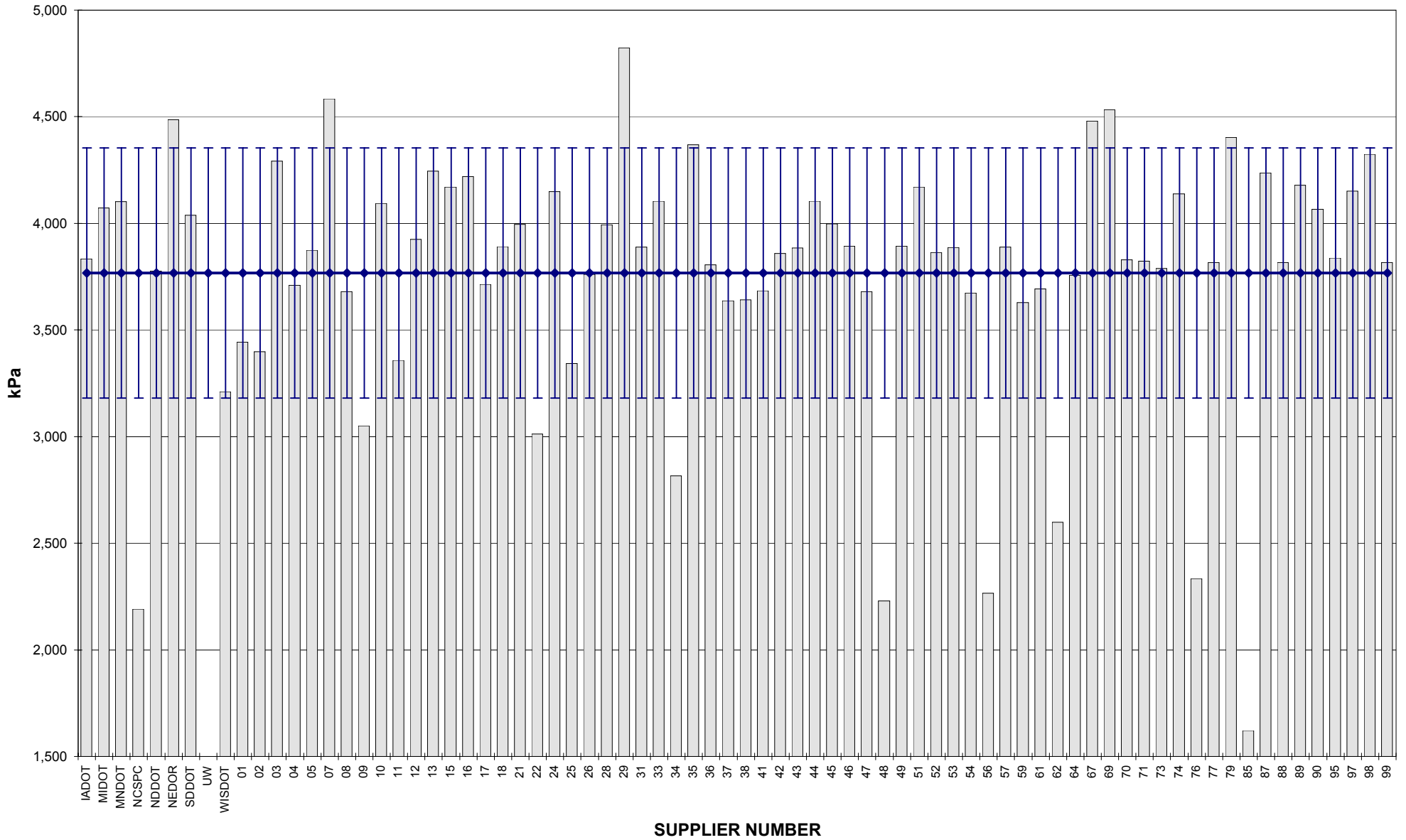


**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A
PG 58-28**

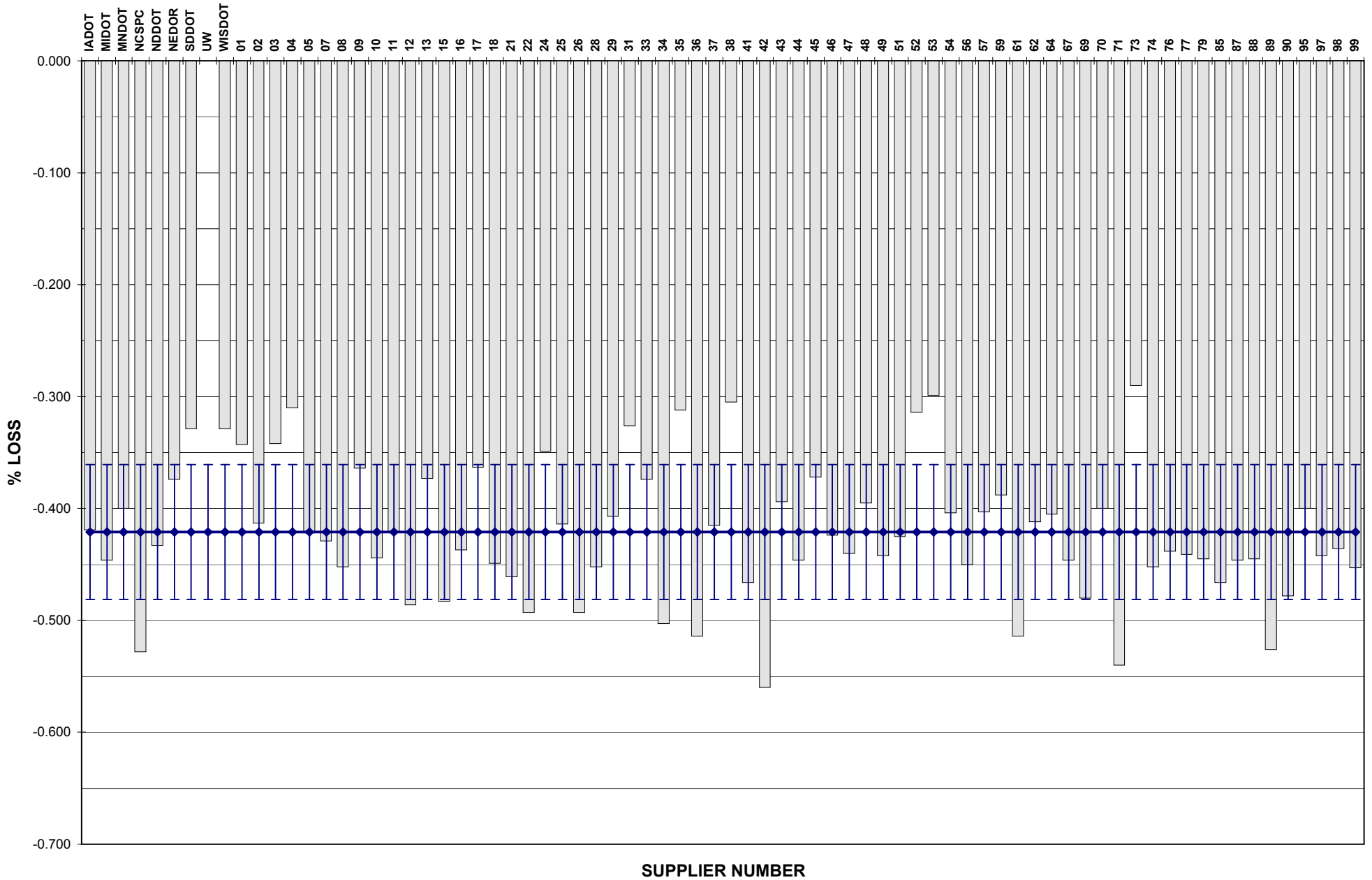
DSR - RTFO



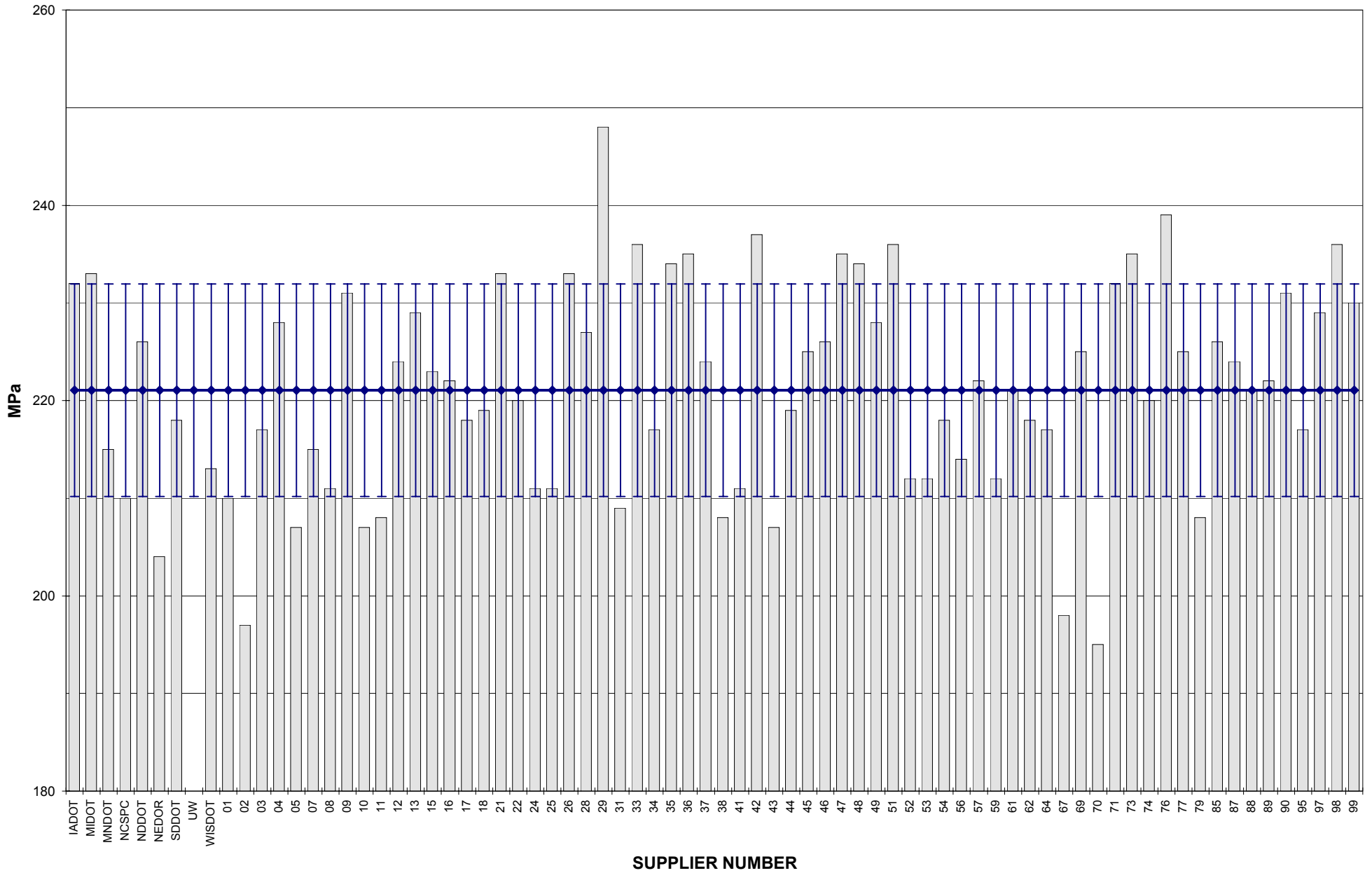
**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A
PG 58-28
DSR - PAV**



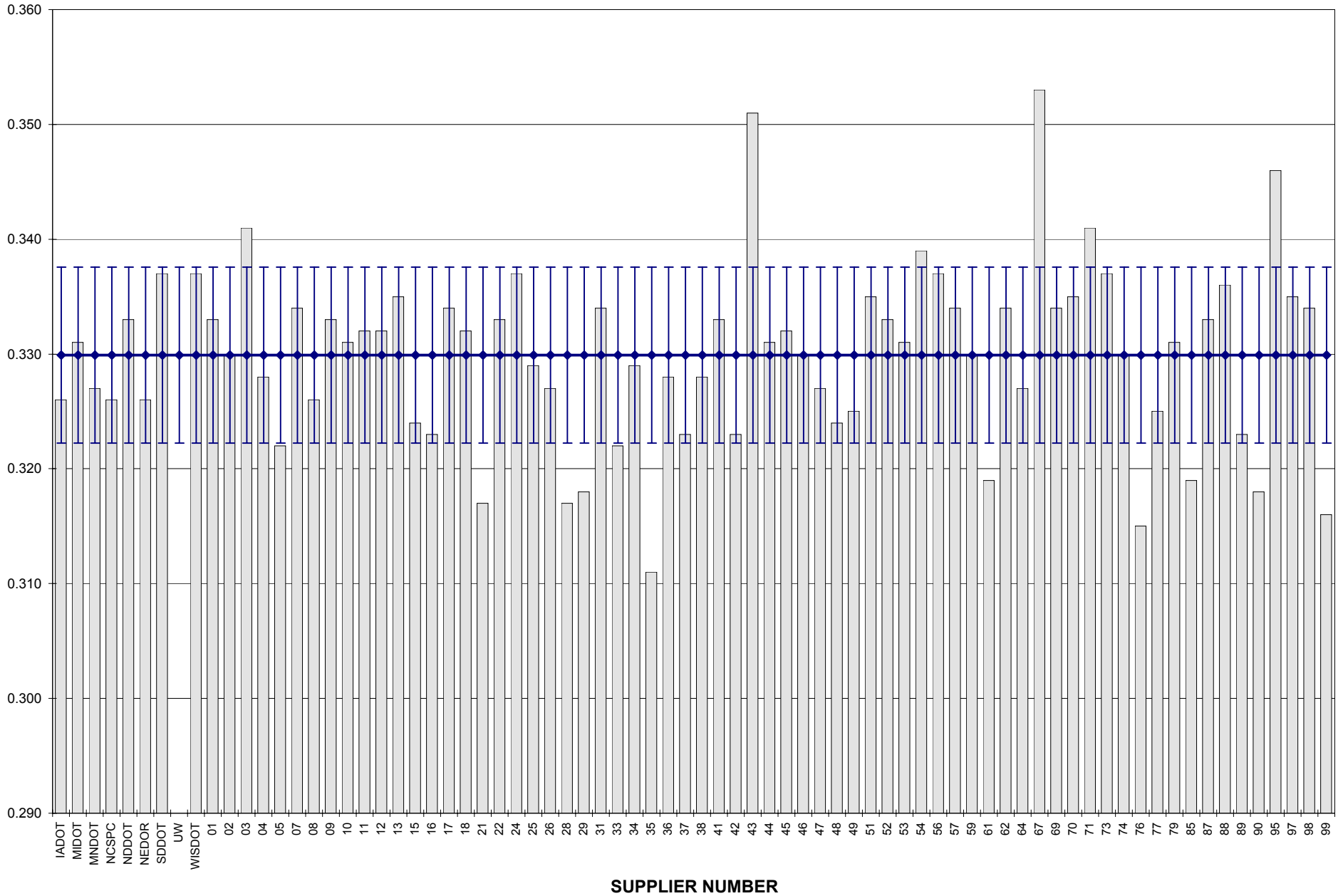
COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A
PG 58-28
RTFO MASS LOSS



COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A
PG 58-28
BBR STIFFNESS



COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A
PG 58-28
BBR m-VALUE



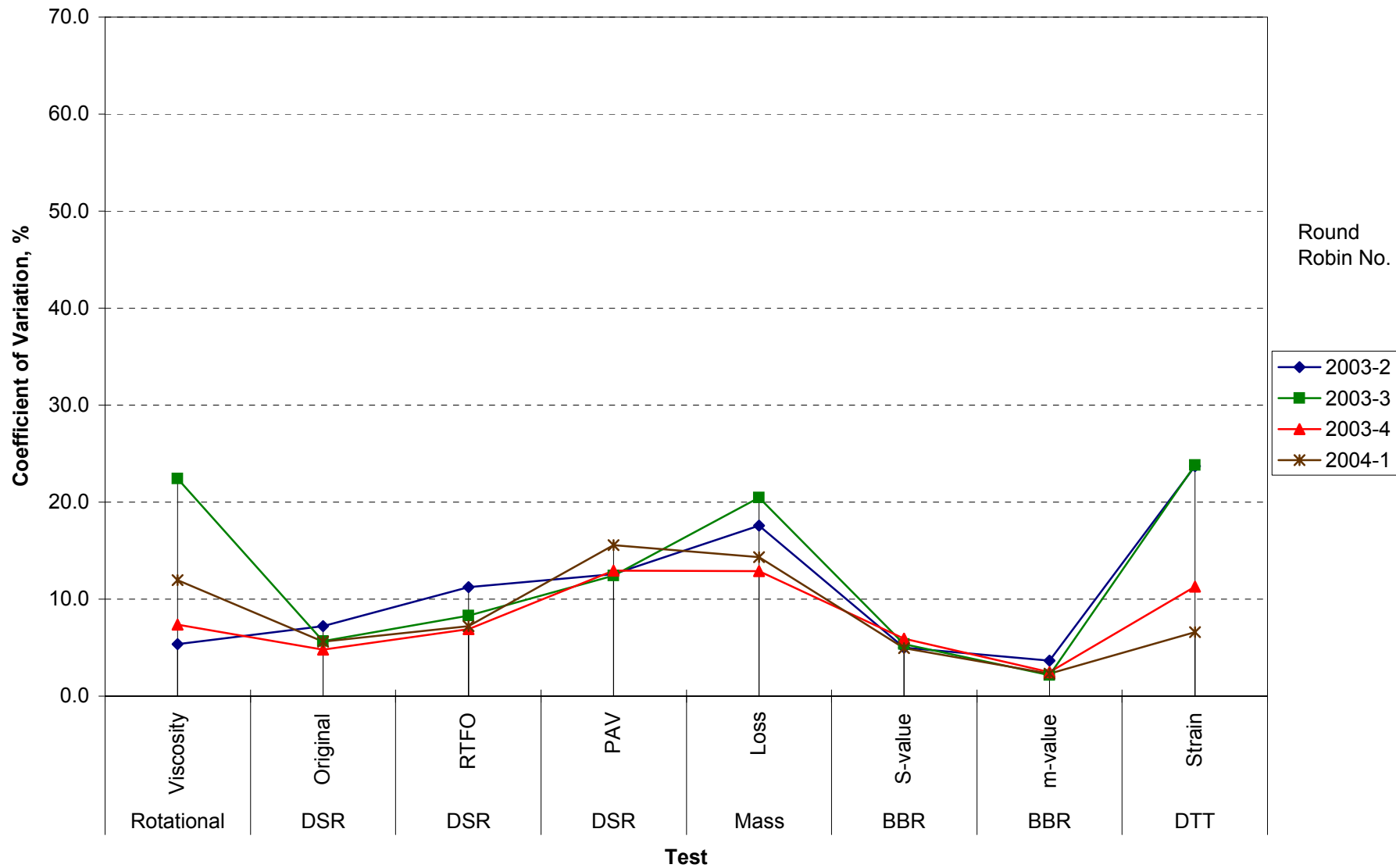
**COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A**

COEFFICIENT OF VARIATION

Round Robin No.	Number of Participants	Coefficient of Variation, %							
		Rotational Viscosity	DSR Original	DSR RTFO	DSR PAV	Mass Loss	BBR S-value	BBR m-value	DTT Strain
2003-2	79	5.370	7.212	11.241	12.592	17.575	5.008	3.669	23.695
2003-3	79	22.429	5.673	8.317	12.431	20.453	5.366	2.171	23.809
2003-4	78	7.395	4.807	6.881	12.916	12.861	5.9255	2.4853	11.264
2004-1	76	11.950	5.620	7.215	15.576	14.307	4.925	2.320	6.577

COMBINED STATE BINDER GROUP ROUND ROBIN 2004-1
SUMMARY A

COEFFICIENT OF VARIATION



STATISTICS WITH OUTLIERS REMOVED:

	Rotationa l Viscosity (Pa.s) @135°C	DSR Original (kPa) @58°C	DSR RTFO (kPa) @58°C	DSR PAV (kPa) @19°C	Mass Loss (%) @163°C	BBR S-value (MPa) @-18°C	BBR m-value @-18°C
Average	0.2840	1.2868	3.3062	3,902.81	-0.4211	221.07	0.3299
Std. Dev.	0.0109	0.0587	0.2218	365.45	0.0602	10.89	0.0077
Coef. of Var.	3.843	4.562	6.707	9.364	14.307	4.925	2.320