

COMBINED STATE BINDER GROUP ROUND ROBIN 2012-3 SUMMARY B
PG 64-22

| Supplier Number | Rotational Viscosity (Pa.s) @135°C | DSR Original (kPa) @64°C | DSR RTFO (kPa) @64°C | DSR PAV (kPa) @25°C | Mass Loss (%) @163°C | BBR S-value (MPa) @-12°C | BBR m-value @-12°C |
|----------------------|------------------------------------|--------------------------|----------------------|---------------------|----------------------|--------------------------|--------------------|
| IADOT | 0.420 | 1.37 | 3.22 | 3970 | -0.166 | 209 | 0.321 |
| MNDOT | 0.425 | 1.30 | 2.99 | 4120 | -0.075 | 165 | 0.317 |
| NCSPC | | | | | | | |
| NDDOT | 0.413 | 1.40 | 3.28 | 4541 | -0.187 | 204 | 0.323 |
| NEDOR | 0.360 | 1.41 | 3.68 | 4300 | -0.049 | 220 | 0.324 |
| SDDOT | 0.396 | 1.41 | 3.48 | 4815 | -0.126 | 233 | 0.323 |
| UW | 0.628 | 1.40 | 3.57 | 4245 | -0.210 | 204 | 0.339 |
| WISDOT | | | | | | | |
| 07 | | | | | | | |
| 12 | 0.409 | 1.44 | 3.40 | 4952 | -0.237 | | |
| 29 | 0.438 | 1.48 | 3.91 | 3972 | -0.181 | 192 | 0.348 |
| 35 | 0.412 | 1.45 | 3.45 | 4150 | -0.145 | 210 | 0.329 |
| 37 | 0.450 | 1.39 | 3.35 | 4518 | -0.153 | 196 | 0.339 |
| 42 | | | | | | | |
| 43 | 0.422 | 1.35 | 3.17 | 4050 | -0.124 | 205 | 0.343 |
| 49 | 0.417 | 1.36 | 3.47 | 4440 | -0.173 | 207 | 0.339 |
| 60 | 0.420 | 1.35 | 2.96 | 4320 | -0.195 | 204 | 0.327 |
| 65 | 0.415 | 1.39 | 3.46 | 3934 | -0.137 | 205 | 0.330 |
| 69 | 0.423 | 1.27 | 2.77 | 4534 | -0.161 | 201 | 0.340 |
| 70 | 0.405 | 1.43 | 3.33 | 4495 | -0.154 | 187 | 0.332 |
| 77 | 0.420 | 1.50 | 3.61 | 4380 | -0.152 | 190 | 0.330 |
| 83 | 0.423 | 1.34 | 3.20 | 4068 | -0.186 | 201 | 0.341 |
| 95 | 0.421 | 1.40 | 3.24 | 4480 | -0.171 | 214 | 0.342 |
| A | 0.402 | 1.38 | 3.38 | 3959 | -0.169 | 209 | 0.335 |
| B | 0.415 | 1.48 | 3.82 | 4109 | -0.103 | 208 | 0.333 |
| C | 0.428 | 1.38 | 3.53 | 4506 | -0.169 | 223 | 0.322 |
| E | 0.414 | 1.37 | 3.32 | 4506 | -0.183 | 195 | 0.335 |
| F | 0.430 | 1.39 | 3.51 | 3,950 | -0.153 | 213 | 0.329 |
| J | 0.427 | 1.31 | 3.34 | 4450 | -0.199 | 213 | 0.331 |
| L | 0.455 | 1.45 | 3.43 | 4722 | -0.131 | 221 | 0.328 |
| M | 0.461 | 1.52 | 3.57 | 4358 | -0.185 | 223 | 0.321 |
| O | 0.424 | 1.27 | 3.59 | 3,555 | -0.191 | 196 | 0.332 |
| P | 0.399 | 1.38 | 3.54 | 4264 | -0.178 | 206 | 0.335 |
| Q | 0.433 | 1.42 | 3.41 | 4034 | -0.131 | 199 | 0.334 |
| S | 0.442 | 1.39 | 3.48 | 4385 | -0.223 | 192 | 0.332 |
| U | 0.429 | 1.35 | 3.27 | 4363 | -0.158 | 195 | 0.339 |
| V | 0.413 | 1.39 | 3.43 | 3937 | -0.174 | 204 | 0.333 |
| Average | 0.427 | 1.39 | 3.40 | 4,284 | -0.161 | 204 | 0.332 |
| Std. Dev. | 0.0405 | 0.0589 | 0.2293 | 295.72 | 0.0387 | 12.82 | 0.0074 |
| Coef. of Var. | 9.480 | 4.233 | 6.747 | 6.903 | 23.961 | 6.272 | 2.225 |

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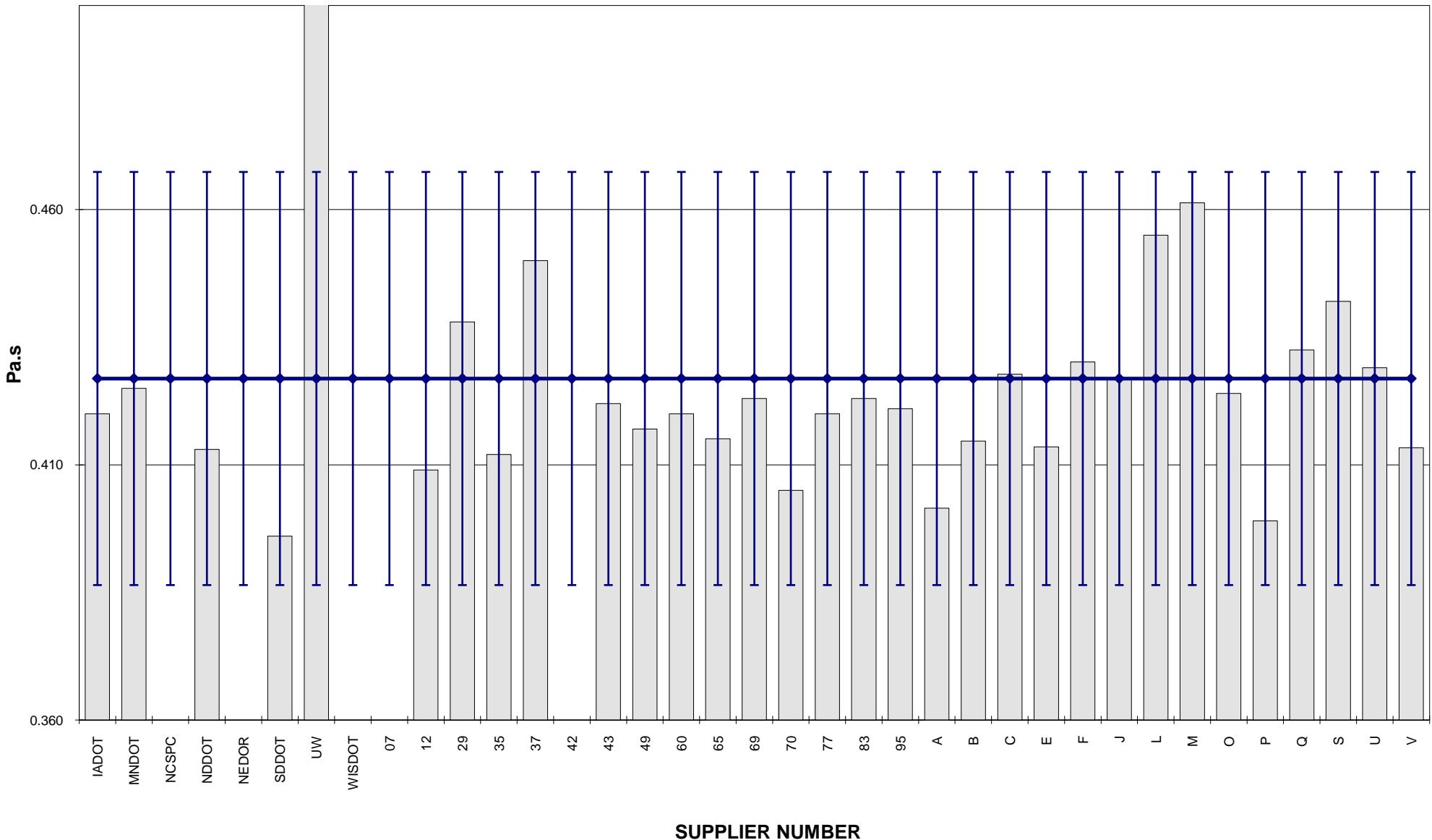
| A | Rot. Visc. | ODSR | RTFO DSR | PAVDSR | Mass Loss | S-value | m-value |
|----------|------------|------|----------|--------|-----------|---------|---------|
| 19 | 0.402 | 1.38 | 3.42 | 3949 | -0.170 | 211 | 0.336 |
| 51 | 0.404 | 1.36 | 3.44 | 4091 | -0.173 | 213 | 0.331 |
| 97 | 0.400 | 1.38 | 3.28 | 3780 | -0.163 | 202 | 0.341 |
| 98 | 0.400 | 1.40 | 3.38 | 4017 | -0.168 | 210 | 0.333 |
| Average | 0.402 | 1.38 | 3.38 | 3,959 | -0.169 | 209 | 0.335 |
| B | | | | | | | |
| 01 | 0.407 | 1.44 | 3.94 | 4014 | -0.091 | 210 | 0.335 |
| 17 | 0.415 | 1.50 | 3.78 | 4337 | -0.107 | 203 | 0.336 |
| 45 | 0.422 | 1.49 | 3.74 | 3975 | -0.111 | 210 | 0.328 |
| Average | 0.415 | 1.48 | 3.82 | 4,109 | -0.103 | 208 | 0.333 |
| C | | | | | | | |
| 28 | 0.429 | 1.38 | 3.33 | 4720 | -0.190 | 228 | 0.319 |
| 66 | 0.416 | 1.32 | 3.61 | 4504 | -0.164 | 210 | 0.326 |
| 90 | 0.440 | 1.42 | 3.62 | 4418 | -0.209 | 230 | 0.320 |
| 99 | 0.426 | 1.40 | 3.54 | 4382 | -0.113 | 223 | 0.324 |
| Average | 0.428 | 1.38 | 3.53 | 4506 | -0.169 | 223 | 0.322 |
| E | | | | | | | |
| 15 | 0.416 | 1.37 | 3.36 | 4696 | -0.185 | 199 | 0.334 |
| 89 | 0.411 | 1.36 | 3.27 | 4315 | -0.180 | 191 | 0.335 |
| Average | 0.414 | 1.37 | 3.32 | 4506 | -0.183 | 195 | 0.335 |
| F | | | | | | | |
| 02 | 0.435 | 1.41 | 3.39 | 3855 | -0.203 | 226 | 0.331 |
| 11 | 0.413 | 1.40 | 3.44 | 3889 | -0.219 | 231 | 0.328 |
| 29 | 0.432 | 1.39 | 3.60 | 4383 | -0.208 | 231 | 0.324 |
| 34 | 0.441 | 1.39 | 3.32 | 4025 | -0.157 | 213 | 0.327 |
| 48 | 0.420 | 1.38 | 3.15 | 3861 | -0.015 | 203 | 0.330 |
| 56 | 0.435 | 1.39 | 3.83 | 3817 | -0.133 | 193 | 0.332 |
| 62 | 0.435 | 1.39 | 3.83 | 3817 | -0.133 | 193 | 0.332 |
| Average | 0.430 | 1.39 | 3.51 | 3,950 | -0.153 | 213 | 0.329 |
| J | | | | | | | |
| 05 | 0.425 | 1.32 | 3.35 | 4207 | -0.187 | 209 | 0.333 |
| 08 | 0.424 | 1.34 | 3.42 | 4336 | -0.181 | 205 | 0.327 |
| 22 | 0.424 | 1.38 | 3.34 | 4424 | -0.185 | 204 | 0.334 |
| 31 | | | | | | | |
| 39 | 0.424 | 1.36 | 3.30 | 4368 | -0.185 | 204 | 0.332 |
| 41 | 0.426 | 1.36 | 3.41 | 4296 | -0.183 | 213 | 0.328 |
| 44 | 0.425 | 1.37 | 3.38 | 4367 | -0.181 | 203 | 0.329 |
| 52 | 0.425 | 1.38 | 3.30 | 4427 | -0.188 | 198 | 0.331 |
| 87 | 0.427 | 1.30 | 3.32 | 4280 | -0.183 | 219 | 0.332 |
| Average | 0.427 | 1.31 | 3.34 | 4450 | -0.199 | 213 | 0.331 |
| L | | | | | | | |
| 25 | 0.440 | 1.38 | 3.60 | 4465 | -0.104 | 204 | 0.334 |
| 59 | 0.470 | 1.51 | 3.26 | 4979 | -0.157 | 237 | 0.322 |
| Average | 0.455 | 1.45 | 3.43 | 4722 | -0.131 | 221 | 0.328 |
| M | | | | | | | |
| 04 | 0.455 | 1.52 | 3.56 | 4359 | -0.198 | 221 | 0.323 |
| 47 | 0.463 | 1.52 | 3.58 | 4367 | -0.173 | 222 | 0.322 |
| 57 | 0.466 | 1.53 | 3.56 | 4349 | -0.183 | 225 | 0.319 |
| Average | 0.461 | 1.52 | 3.57 | 4358 | -0.185 | 223 | 0.321 |
| O | | | | | | | |
| 76 | 0.425 | 1.29 | 3.40 | 3890 | -0.204 | 206 | 0.331 |
| 85 | 0.423 | 1.25 | 3.78 | 3220 | -0.178 | 185 | 0.333 |
| Average | 0.424 | 1.27 | 3.59 | 3555 | -0.191 | 196 | 0.332 |
| P | | | | | | | |
| 30 | 0.400 | 1.40 | 3.48 | 4242 | -0.171 | 201 | 0.334 |
| 71 | 0.400 | 1.37 | 3.44 | 4248 | -0.171 | 206 | 0.336 |
| 73 | 0.397 | 1.37 | 3.69 | 4301 | -0.192 | 210 | 0.336 |
| Average | 0.399 | 1.38 | 3.54 | 4264 | -0.178 | 206 | 0.335 |
| Q | | | | | | | |
| 23 | 0.434 | 1.37 | 3.41 | 4132 | -0.131 | 200 | 0.335 |
| 93 | 0.431 | 1.47 | 3.40 | 3936 | -0.131 | 198 | 0.332 |
| Average | 0.433 | 1.42 | 3.41 | 4034 | -0.131 | 199 | 0.334 |
| S | | | | | | | |
| 53 | 0.439 | 1.39 | 3.37 | 4420 | -0.249 | 190 | 0.331 |
| 64 | 0.445 | 1.39 | 3.58 | 4350 | -0.196 | 193 | 0.332 |
| Average | 0.442 | 1.39 | 3.48 | 4385 | -0.223 | 192 | 0.332 |
| U | | | | | | | |
| 13 | 0.418 | 1.39 | 3.38 | 4155 | -0.153 | 191 | 0.335 |
| 24 | 0.440 | 1.31 | 3.16 | 4570 | -0.163 | 198 | 0.342 |
| Average | 0.429 | 1.35 | 3.27 | 4363 | -0.158 | 195 | 0.339 |
| V | | | | | | | |
| 58 | 0.412 | 1.41 | 3.43 | 4070 | -0.177 | 203 | 0.333 |
| 78 | 0.412 | 1.39 | 3.45 | 4040 | -0.173 | 202 | 0.334 |
| 81 | 0.416 | 1.38 | 3.41 | 3700 | -0.173 | 206 | 0.332 |
| Average | 0.413 | 1.39 | 3.43 | 3937 | -0.174 | 204 | 0.333 |

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SUMMARY B

PG 64-22

ROTATIONAL VISCOSITY

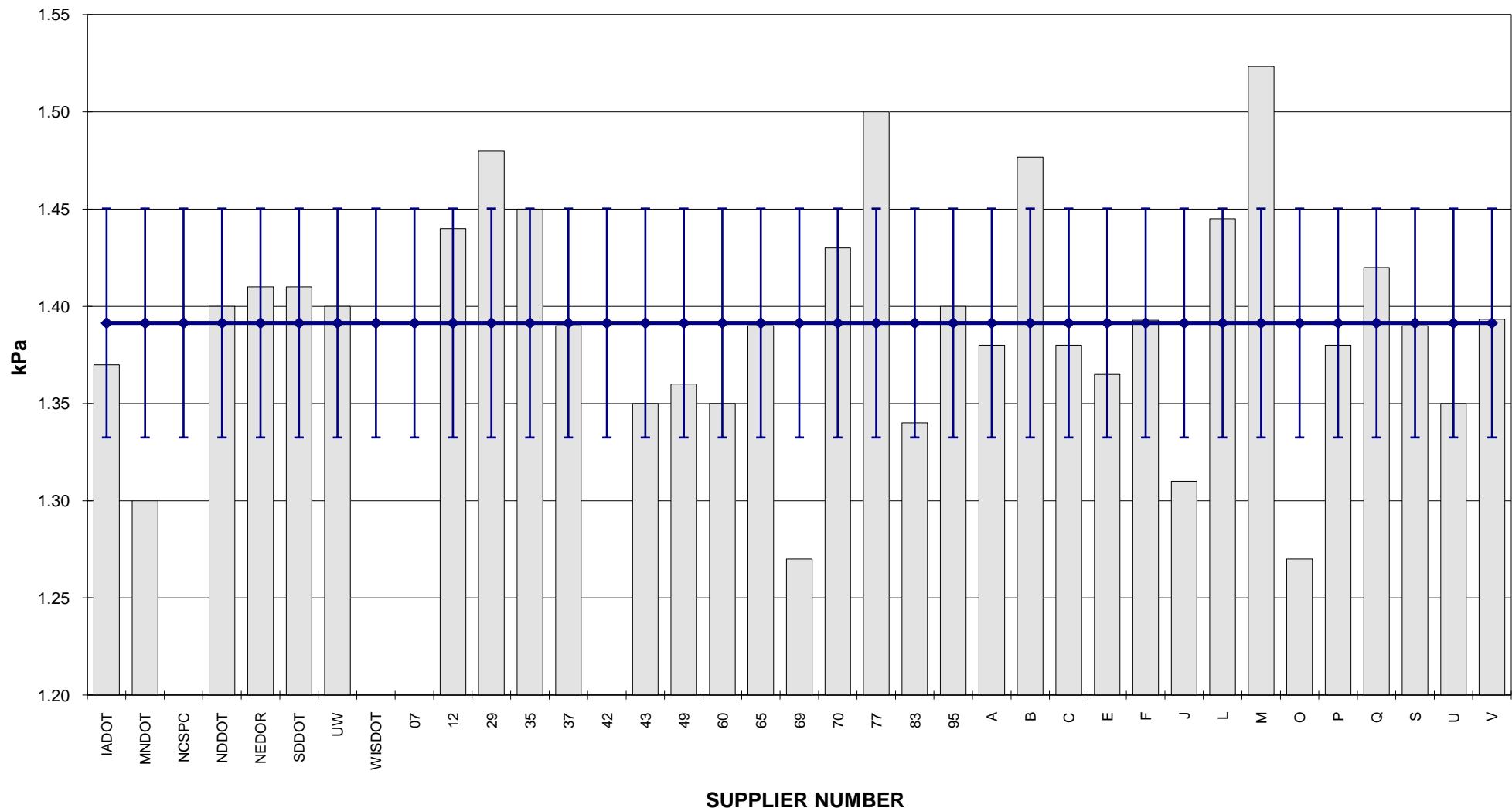


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DSR - ORIGINAL

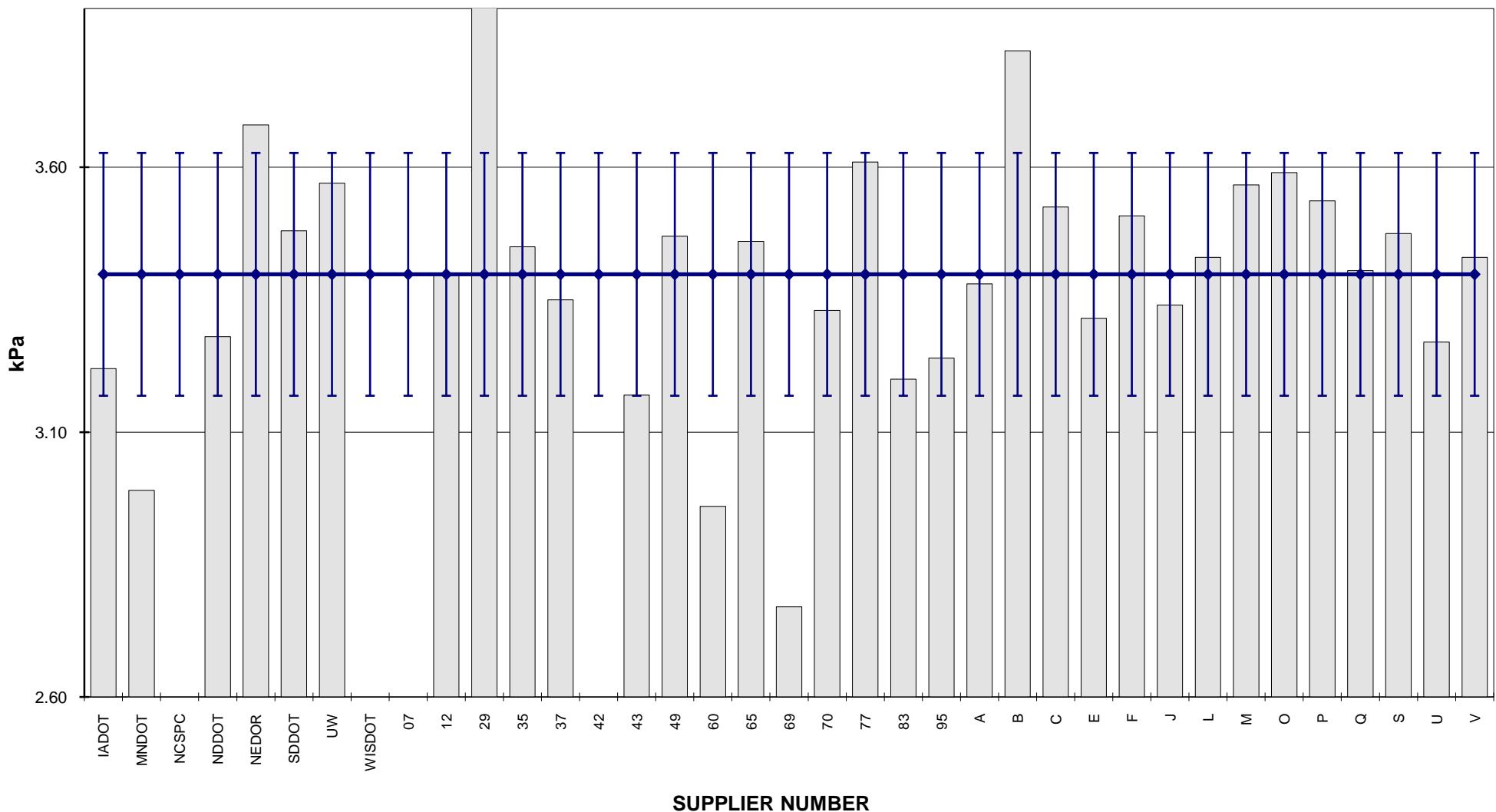


COMBINED STATE BINDER GROUP ROUND ROBIN 2012-3

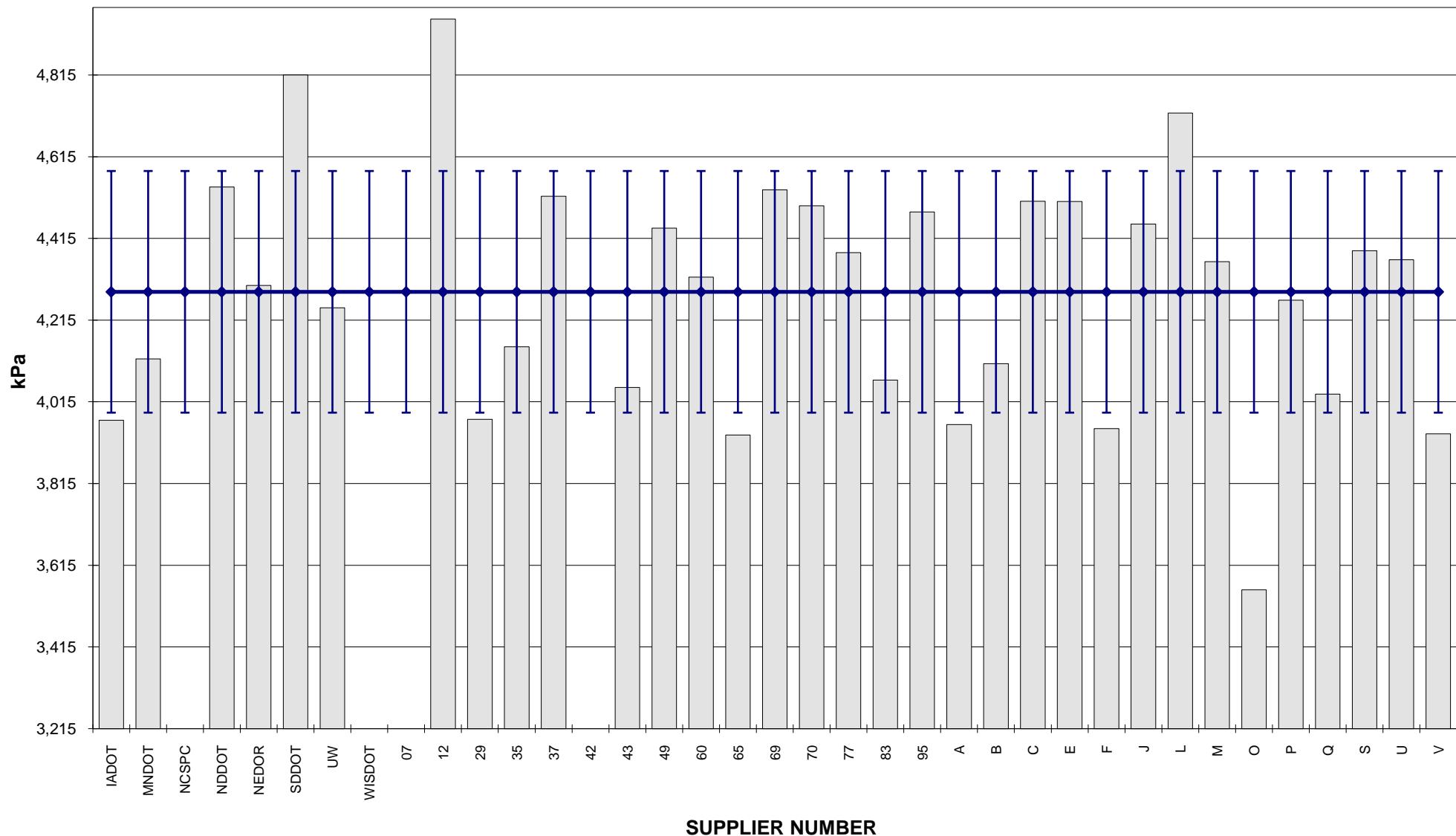
SUMMARY B

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DSR - RTFO



COMBINED STATE BINDER GROUP ROUND ROBIN 2012-3
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DSR - PAV

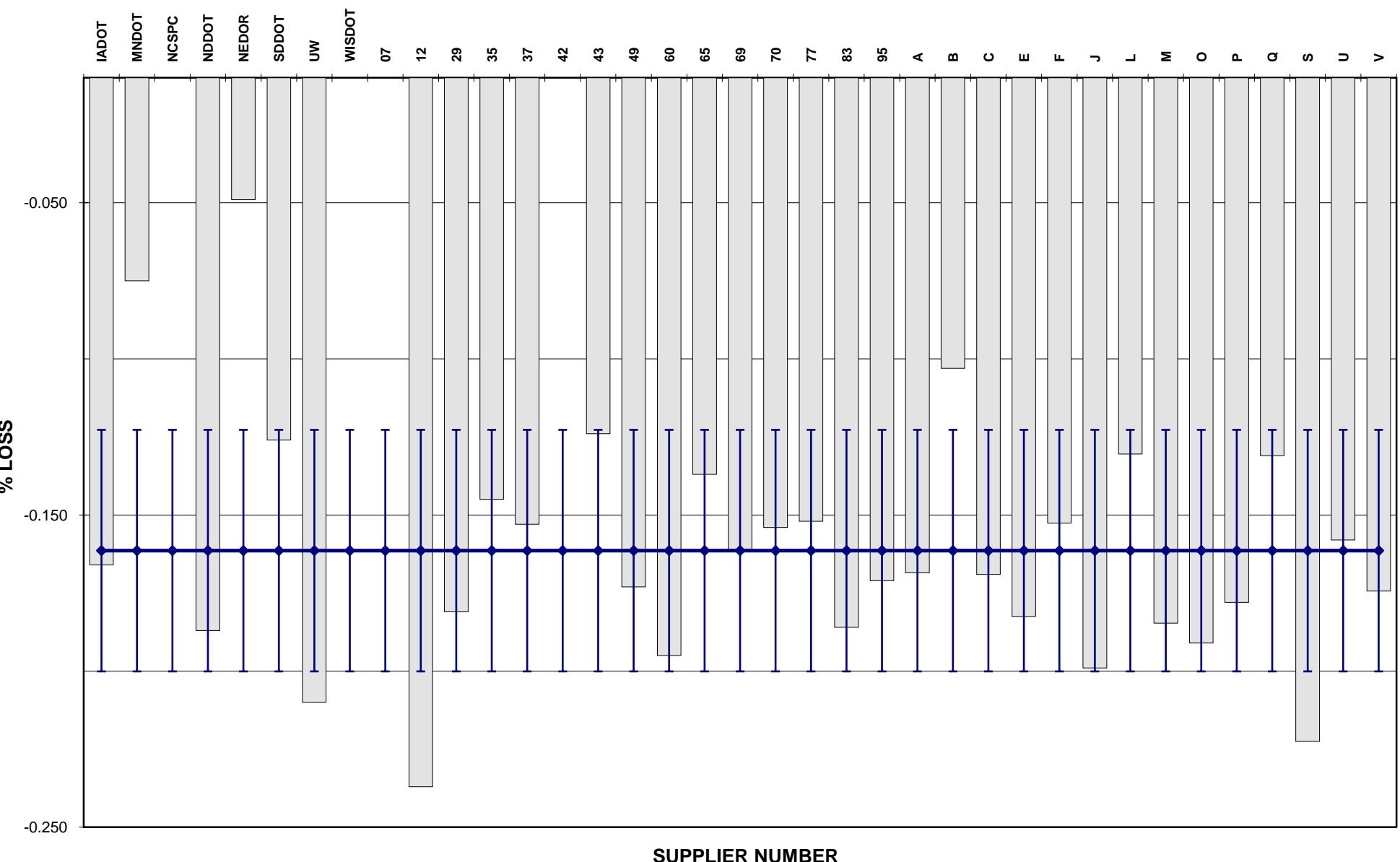


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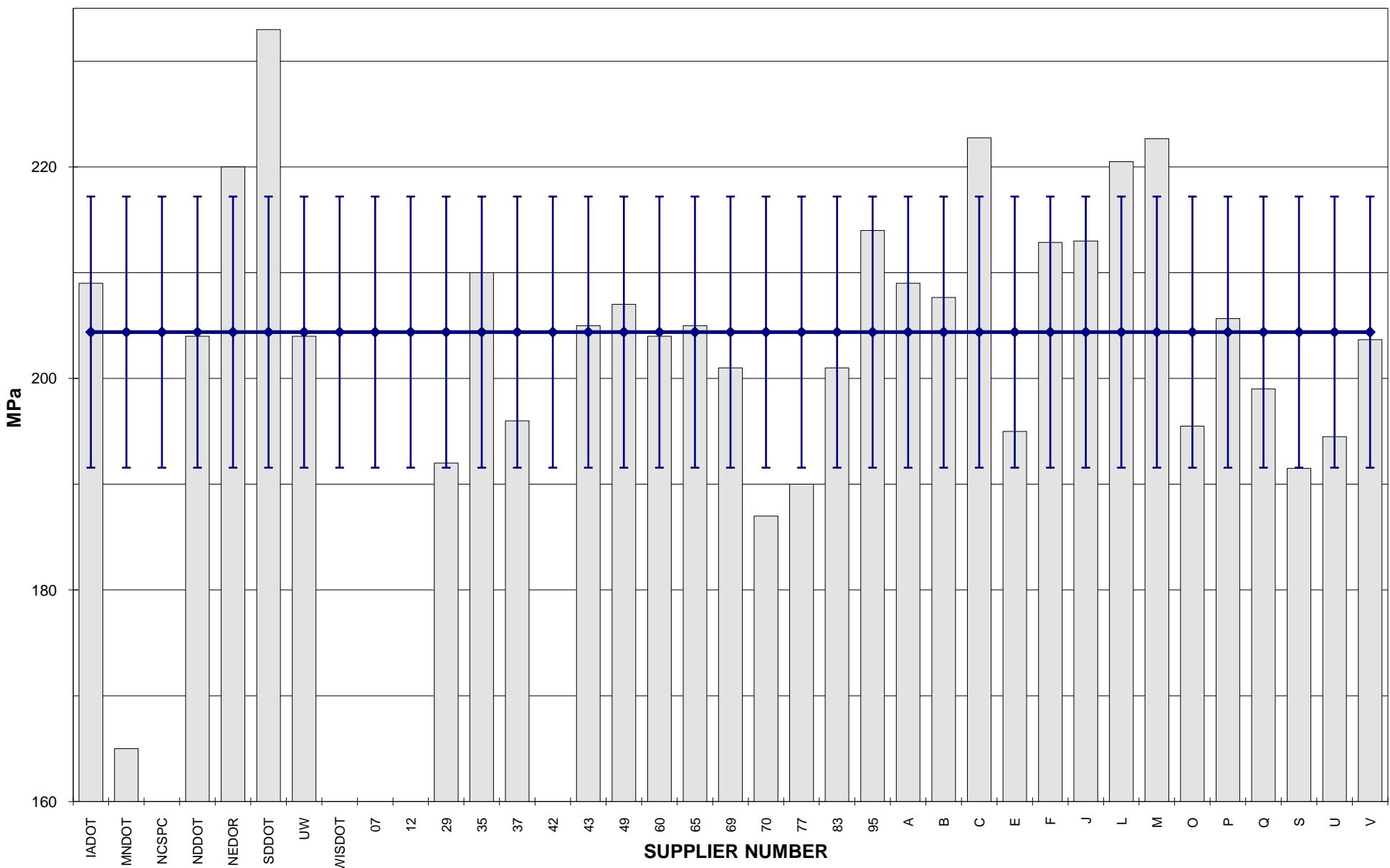
SUMMARY B

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RTFO MASS LOSS



COMBINED STATE BINDER GROUP ROUND ROBIN 2012-3
SUMMARY B
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BBR STIFFNESS



COMBINED STATE BINDER GROUP ROUND ROBIN 2012-3
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PG 64-22
BBR m-VALUE

