Certificate of Analysis

THE RIGHT CHEMICALS
THE RIGHT CHEMISTRY®

Requisition # 0303878
P.O. # ~~DR852~~ 336642 EEC
J.G. 10/7/03

Platinum wire, 1.0mm (0.04in) dia, hard, 99.95% (metals basis)

Stock Number: 10285
Lot Number: E02M19

Analysis

Pt	99.99 %	Ag	ND	Mg	1	Mo	ND	Ca	ND	P	ND
Pd	72	Cd	ND	Pb	ND	Cu	5	Zr	ND	Re	ND
Rh	13	As	ND	Sn	11	Zn	ND	Sm	ND	S	ND
Ir	14	Te	ND	Cr	ND	Ti	ND	W	ND	Ta	ND
Ru	28	B	ND	Si	ND	Co	ND	Ga	ND		
Os	ND	Sb	ND	Fe	6	Ni	ND	In	ND		
Au	ND	Mn	ND	Bi	ND	Al	ND	Ba	ND		

Values are given in ppm unless otherwise noted
ND indicates not detected.

Certified by:

Paul V Connolly

Quality Control

Alfa Aesar®
A Johnson Matthey Company

ISO 9002

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10/6/03

10/6/03 1000 Cell #1 (medium A) pushed the control wire further down into cell Removed the Ref from cell #3

1030 Added platinum wire to cell #3
1035 Added platinum wire to cell #4
1045 Added platinum wire to cell #2
1115 Added platinum wire to cell #1
1120 Added new Ref to cell #3.

10/6/03

Date	Time	PostgateC No Cl-	Voltage
10/7/03	1215	Ref to Control wire	-0.154 vdc
		Ref to Control Coupon	-0.242 vdc
		Ref to Test wire	-0.155
		Ref to Test Coupon	-0.235
Date	Time	PostgateC No Cl-	Voltage
10/7/03	1330	Ref to Control wire	-0.154 vdc
		Ref to Control Coupon	-0.243
		Ref to Test wire	-0.156
		Ref to Test Coupon	-0.236
Date	Time	PostgateC No Cl-	Voltage
10/7/03	1450	Ref to Control wire	-0.157 vdc
		Ref to Control Coupon	-0.243
		Ref to Test wire	-0.158
		Ref to Test Coupon	-0.236
Date	Time	PostgateC No Cl-	Voltage
10/8/03	0730	Ref to Control wire	-0.141 vdc
		Ref to Control Coupon	-0.234
		Ref to Test wire	-0.142
		Ref to Test Coupon	-0.233
Date	Time	PostgateC No Cl-	Voltage
10/8/03	0830	Ref to Control wire	-0.141 vdc
		Ref to Control Coupon	-0.234
		Ref to Test wire	-0.143
		Ref to Test Coupon	-0.233
Date	Time	PostgateC No Cl-	Voltage
10/8/03	0930	Ref to Control wire	-0.142 vdc
		Ref to Control Coupon	-0.235
		Ref to Test wire	-0.144
		Ref to Test Coupon	-0.233
Date	Time	PostgateC No Cl-	Voltage
10/8/03	1135	Ref to Control wire	-0.145 vdc
		Ref to Control Coupon	-0.231
		Ref to Test wire	-0.149
		Ref to Test Coupon	-0.231

Date	Time	Medium A	Voltage
10/6/03	1120	Ref to Control wire	-0.387 vdc
		Ref to Control Coupon	-0.612
		Ref to Test wire	-0.322
		Ref to Test Coupon	-0.523
Date	Time	Medium A	Voltage
10/6/03	1130	Ref to Control wire	-0.388 vdc
		Ref to Control Coupon	-0.613
		Ref to Test wire	-0.322
		Ref to Test Coupon	-0.522
Date	Time	Medium A	Voltage
10/6/03	1230	Ref to Control wire	-0.389 vdc
		Ref to Control Coupon	-0.614
		Ref to Test wire	-0.321
		Ref to Test Coupon	-0.523
Date	Time	Medium A	Voltage
10/6/03	1400	Ref to Control wire	-0.389 vdc
		Ref to Control Coupon	-0.613
		Ref to Test wire	-0.321
		Ref to Test Coupon	-0.523
Date	Time	Medium A	Voltage
10/7/03	0830	Ref to Control wire	-0.311 vdc
		Ref to Control Coupon	-0.365
		Ref to Test wire	-0.283
		Ref to Test Coupon	-0.484
Date	Time	Medium A	Voltage
10/7/03	0900	Ref to Control wire	-0.308 vdc
		Ref to Control Coupon	-0.364
		Ref to Test wire	-0.281
		Ref to Test Coupon	-0.480
Date	Time	Medium A	Voltage
10/7/03	1000	Ref to Control wire	-0.334 vdc
		Ref to Control Coupon	-0.376
		Ref to Test wire	-0.287
		Ref to Test Coupon	-0.491
Date	Time	Medium A	Voltage
10/7/03	1130	Ref to Control wire	-0.338 vdc
		Ref to Control Coupon	-0.380
		Ref to Test wire	-0.292
		Ref to Test Coupon	-0.496
Date	Time	Medium A	Voltage
10/7/03	1230	Ref to Control wire	-0.341 vdc
		Ref to Control Coupon	-0.383
		Ref to Test wire	-0.293
		Ref to Test Coupon	-0.496.496
Date	Time	Medium A	Voltage
10/6/03	1400	Ref to Control wire	-0.355 vdc
		Ref to Control Coupon	-0.400
		Ref to Test wire	-0.302
		Ref to Test Coupon	-0.501
Date	Time	Medium A	Voltage
10/6/03	0830	Ref to Control wire	-0.352 vdc
		Ref to Control Coupon	-0.399
		Ref to Test wire	-0.303
		Ref to Test Coupon	-0.503
Date	Time	Medium A	Voltage
10/6/03	0930	Ref to Control wire	-0.355 vdc
		Ref to Control Coupon	-0.403
		Ref to Test wire	-0.303
		Ref to Test Coupon	-0.502
Date	Time	Medium A	Voltage
10/6/03	1130	Ref to Control wire	-0.343 vdc
		Ref to Control Coupon	-0.376
		Ref to Test wire	-0.278
		Ref to Test Coupon	-0.502

Date	Time	PostgateC 0.5M Cl-	Voltage
10/6/03	1125	Ref to Control wire	+.012 Vdc
		Ref to Control Coupon	-.035
		Ref to Test wire	+.014
		Ref to Test Coupon	-.035
10/6/03	1135	Ref to Control wire	-.110 Vdc
		Ref to Control Coupon	-.171
		Ref to Test wire	-.109
		Ref to Test Coupon	-.172
10/6/03	1235	Ref to Control wire	-0.115 Vdc
		Ref to Control Coupon	-0.173
		Ref to Test wire	-0.114
		Ref to Test Coupon	-0.173
10/6/03	1400	Ref to Control wire	-0.120 Vdc
		Ref to Control Coupon	-0.175
		Ref to Test wire	-0.119
		Ref to Test Coupon	-0.175
10/7/03	0800	Ref to Control wire	-0.080 Vdc
		Ref to Control Coupon	-0.137
		Ref to Test wire	-0.081
		Ref to Test Coupon	-0.144
10/7/03	0900	Ref to Control wire	-0.077 Vdc
		Ref to Control Coupon	-0.133 Vdc
		Ref to Test wire	-0.078 Vdc
		Ref to Test Coupon	-0.146 Vdc
10/7/03	1000	Ref to Control wire	-0.074 Vdc
		Ref to Control Coupon	-0.132
		Ref to Test wire	-0.075
		Ref to Test Coupon	-0.148
10/7/03	1215	Ref to Control wire	-0.076 Vdc
		Ref to Control Coupon	-0.137
		Ref to Test wire	-0.077
		Ref to Test Coupon	-0.155
10/7/03	1320	Ref to Control wire	-0.080 Vdc
		Ref to Control Coupon	-0.139
		Ref to Test wire	-0.080
		Ref to Test Coupon	-0.157
10/7/03	1450	Ref to Control wire	-0.086 Vdc
		Ref to Control Coupon	-0.145
		Ref to Test wire	-0.086
		Ref to Test Coupon	-0.159
10/8/03	0730	Ref to Control wire	-0.065 Vdc
		Ref to Control Coupon	-0.146 Vdc
		Ref to Test wire	-0.065
		Ref to Test Coupon	-0.150
10/8/03	0830	Ref to Control wire	-0.076 Vdc
		Ref to Control Coupon	-0.147
		Ref to Test wire	-0.076
		Ref to Test Coupon	-0.159
10/8/03	0930	Ref to Control wire	-0.084 Vdc
		Ref to Control Coupon	-0.148 Vdc
		Ref to Test wire	-0.084
		Ref to Test Coupon	-0.160
10/8/03	1134	Ref to Control wire	-0.092 Vdc
		Ref to Control Coupon	-0.145
		Ref to Test wire	-0.093
		Ref to Test Coupon	-0.159

Robert Parks 10/8/03

Date	Time	PostgateC + Slime	Voltage
10/6/03	1145	Ref to Control wire	-.197 Vdc
		Ref to Control Coupon	-.234
		Ref to Test wire	-.190
		Ref to Test Coupon	-.227
10/6/03	1130	Ref to Control wire	-.124 Vdc
		Ref to Control Coupon	-.203
		Ref to Test wire	-.126
		Ref to Test Coupon	-.164
10/6/03	1430	Ref to Control wire	-.133 Vdc
		Ref to Control Coupon	-.234
		Ref to Test wire	-.134
		Ref to Test Coupon	-.227
10/6/03	1400	Ref to Control wire	-0.134 Vdc
		Ref to Control Coupon	-0.234
		Ref to Test wire	-0.136
		Ref to Test Coupon	-0.227
10/7/03	0800	Ref to Control wire	-0.124 Vdc
		Ref to Control Coupon	-0.214
		Ref to Test wire	-0.126
		Ref to Test Coupon	-0.203
10/7/03	0900	Ref to Control wire	-0.122 Vdc
		Ref to Control Coupon	-0.210
		Ref to Test wire	-0.123
		Ref to Test Coupon	-0.203
10/7/03	1000	Ref to Control wire	-0.121 Vdc
		Ref to Control Coupon	-0.201
		Ref to Test wire	-0.123
		Ref to Test Coupon	-0.203
10/7/03	1215	Ref to Control wire	-0.124 Vdc
		Ref to Control Coupon	-0.214
		Ref to Test wire	-0.126
		Ref to Test Coupon	-0.203
10/7/03	1320	Ref to Control wire	-0.126 Vdc
		Ref to Control Coupon	-0.214
		Ref to Test wire	-0.127
		Ref to Test Coupon	-0.203
10/7/03	1450	Ref to Control wire	-0.126 Vdc
		Ref to Control Coupon	-0.214
		Ref to Test wire	-0.127
		Ref to Test Coupon	-0.203
10/8/03	0730	Ref to Control wire	-0.122 Vdc
		Ref to Control Coupon	-0.210
		Ref to Test wire	-0.123
		Ref to Test Coupon	-0.203
10/8/03	0830	Ref to Control wire	-0.123 Vdc
		Ref to Control Coupon	-0.210
		Ref to Test wire	-0.124
		Ref to Test Coupon	-0.203
10/8/03	0930	Ref to Control wire	-0.123 Vdc
		Ref to Control Coupon	-0.210
		Ref to Test wire	-0.124
		Ref to Test Coupon	-0.203
10/8/03	1135	Ref to Control wire	-0.121 Vdc
		Ref to Control Coupon	-0.201
		Ref to Test wire	-0.123
		Ref to Test Coupon	-0.203

Date	Time	Medium A	Voltage
10/8/03	1300	Ref to Control wire	-0.349 vdc
		Ref to Control Coupon	-0.401
		Ref to Test wire	-0.286
		Ref to Test Coupon	-0.500
		Ref to platnium wire	-0.088
10/8/03	1415	Ref to Control wire	-0.348 vdc
		Ref to Control Coupon	-0.402
		Ref to Test wire	-0.286
		Ref to Test Coupon	-0.499
		Ref to platnium wire	-0.102
10/9/03	0800	Ref to Control wire	-0.358 vdc
		Ref to Control Coupon	-0.407
		Ref to Test wire	-0.300
		Ref to Test Coupon	-0.499
		Ref to platnium wire	-0.161
10/9/03	1000	Ref to Control wire	-0.355 vdc
		Ref to Control Coupon	-0.410
		Ref to Test wire	-0.301
		Ref to Test Coupon	-0.498
		Ref to platnium wire	-0.165
10/9/03	1100	Ref to Control wire	-0.359 vdc
		Ref to Control Coupon	-0.410
		Ref to Test wire	-0.302
		Ref to Test Coupon	-0.502
		Ref to platnium wire	-0.162
10/9/03	1215	Ref to Control wire	-0.357 vdc
		Ref to Control Coupon	-0.411
		Ref to Test wire	-0.304
		Ref to Test Coupon	-0.505
		Ref to platnium wire	-0.170
10/9/03	1300	Ref to Control wire	-0.357 vdc
		Ref to Control Coupon	-0.412
		Ref to Test wire	-0.305
		Ref to Test Coupon	-0.505
		Ref to platnium wire	-0.171

Date	Time	Medium A	Voltage
10/9/03	1410	Ref to Control wire	-0.359 vdc
		Ref to Control Coupon	-0.413
		Ref to Test wire	-0.309
		Ref to Test Coupon	-0.508
		Ref to platnium wire	-0.174
10/10/03	0800	Ref to Control wire	-0.362 vdc
		Ref to Control Coupon	-0.418
		Ref to Test wire	-0.311
		Ref to Test Coupon	-0.505
		Ref to platnium wire	-0.201
10/10/03	0900	Ref to Control wire	-0.362 vdc
		Ref to Control Coupon	-0.419
		Ref to Test wire	-0.312
		Ref to Test Coupon	-0.505
		Ref to platnium wire	-0.203
10/10/03	1000	Ref to Control wire	-0.362 vdc
		Ref to Control Coupon	-0.419
		Ref to Test wire	-0.312
		Ref to Test Coupon	-0.505
		Ref to platnium wire	-0.203
10/10/03	1100	Ref to Control wire	-0.361 vdc
		Ref to Control Coupon	-0.421
		Ref to Test wire	-0.313
		Ref to Test Coupon	-0.507
		Ref to platnium wire	-0.205
10/10/03	1230	Ref to Control wire	-0.359 vdc
		Ref to Control Coupon	-0.421
		Ref to Test wire	-0.311
		Ref to Test Coupon	-0.507
		Ref to platnium wire	-0.206
10/10/03	1330	Ref to Control wire	-0.359 vdc
		Ref to Control Coupon	-0.421
		Ref to Test wire	-0.312
		Ref to Test Coupon	-0.508
		Ref to platnium wire	-0.206

Date	Time	PostgateC No Cl-	Voltage
10/8/03	1300	Ref to Control wire	-0.199 vdc
		Ref to Control Coupon	-0.231
		Ref to Test wire	-0.150
		Ref to Test Coupon	-0.230
		Ref to platnium wire	-0.070
10/8/03	1415	Ref to Control wire	-0.152 vdc
		Ref to Control Coupon	-0.232
		Ref to Test wire	-0.152
		Ref to Test Coupon	-0.231
		Ref to platnium wire	-0.083
10/9/03	0900	Ref to Control wire	-0.137 vdc
		Ref to Control Coupon	-0.231
		Ref to Test wire	-0.138
		Ref to Test Coupon	-0.231
		Ref to platnium wire	-0.090
10/9/03	1000	Ref to Control wire	-0.141 vdc
		Ref to Control Coupon	-0.233
		Ref to Test wire	-0.142
		Ref to Test Coupon	-0.233
		Ref to platnium wire	-0.104
10/9/03	1100	Ref to Control wire	-0.144 vdc
		Ref to Control Coupon	-0.235
		Ref to Test wire	-0.146
		Ref to Test Coupon	-0.235
		Ref to platnium wire	-0.110
10/9/03	1215	Ref to Control wire	-0.147 vdc
		Ref to Control Coupon	-0.235
		Ref to Test wire	-0.146
		Ref to Test Coupon	-0.235
		Ref to platnium wire	-0.115
10/9/03	1300	Ref to Control wire	-0.150 vdc
		Ref to Control Coupon	-0.236
		Ref to Test wire	-0.151
		Ref to Test Coupon	-0.236
		Ref to platnium wire	-0.118

Date	Time	PostgateC No Cl-	Voltage
10/9/03	1410	Ref to Control wire	-0.150 vdc
		Ref to Control Coupon	-0.237
		Ref to Test wire	-0.155
		Ref to Test Coupon	-0.237
		Ref to platnium wire	-0.122
10/10/03	0800	Ref to Control wire	-0.134 vdc
		Ref to Control Coupon	-0.232 vdc
		Ref to Test wire	-0.136 vdc
		Ref to Test Coupon	-0.232 vdc
		Ref to platnium wire	-0.100 vdc
10/10/03	0900	Ref to Control wire	-0.136 vdc
		Ref to Control Coupon	-0.232
		Ref to Test wire	-0.136
		Ref to Test Coupon	-0.232
		Ref to platnium wire	-0.107
10/10/03	1000	Ref to Control wire	-0.140 vdc
		Ref to Control Coupon	-0.232
		Ref to Test wire	-0.141
		Ref to Test Coupon	-0.232
		Ref to platnium wire	-0.112
10/10/03	1100	Ref to Control wire	-0.144 vdc
		Ref to Control Coupon	-0.233
		Ref to Test wire	-0.141
		Ref to Test Coupon	-0.232
		Ref to platnium wire	-0.118
10/10/03	1230	Ref to Control wire	-0.147 vdc
		Ref to Control Coupon	-0.232
		Ref to Test wire	-0.148
		Ref to Test Coupon	-0.232
		Ref to platnium wire	-0.123
10/10/03	1330	Ref to Control wire	-0.150 vdc
		Ref to Control Coupon	-0.233
		Ref to Test wire	-0.151
		Ref to Test Coupon	-0.232
		Ref to platnium wire	-0.127

Date	Time	PostgateC + Slime	Voltage
10/8/03	1300	Ref to Control wire	-0.138 vdc
		Ref to Control Coupon	-0.318
		Ref to Test wire	-0.130
		Ref to Test Coupon	-0.307
		Ref to platinum wire	-0.143
10/9/03	1415	Ref to Control wire	-0.133 vdc
		Ref to Control Coupon	-0.318
		Ref to Test wire	-0.137
		Ref to Test Coupon	-0.317
		Ref to platinum wire	-0.163
10/10/03	0800	Ref to Control wire	-0.134 vdc
		Ref to Control Coupon	-0.313
		Ref to Test wire	-0.137
		Ref to Test Coupon	-0.307
		Ref to platinum wire	-0.135
10/6/03	1000	Ref to Control wire	-0.137 vdc
		Ref to Control Coupon	-0.314
		Ref to Test wire	-0.130
		Ref to Test Coupon	-0.304
		Ref to platinum wire	-0.143
10/10/03	1100	Ref to Control wire	-0.139 vdc
		Ref to Control Coupon	-0.316
		Ref to Test wire	-0.138
		Ref to Test Coupon	-0.313
		Ref to platinum wire	-0.144
10/6/03	1615	Ref to Control wire	-0.133 vdc
		Ref to Control Coupon	-0.317
		Ref to Test wire	-0.137
		Ref to Test Coupon	-0.315
		Ref to platinum wire	-0.141
10/10/03	1330	Ref to Control wire	-0.137 vdc
		Ref to Control Coupon	-0.320
		Ref to Test wire	-0.134
		Ref to Test Coupon	-0.315
		Ref to platinum wire	-0.140
10/6/03	1330	Ref to Control wire	-0.137 vdc
		Ref to Control Coupon	-0.320
		Ref to Test wire	-0.134
		Ref to Test Coupon	-0.315
		Ref to platinum wire	-0.140
10/9/03	1430	Ref to Control wire	-0.138 vdc
		Ref to Control Coupon	-0.319
		Ref to Test wire	-0.134
		Ref to Test Coupon	-0.310
		Ref to platinum wire	-0.138
10/10/03	0800	Ref to Control wire	-0.134 vdc
		Ref to Control Coupon	-0.317
		Ref to Test wire	-0.134
		Ref to Test Coupon	-0.309
		Ref to platinum wire	-0.137
10/6/03	1300	Ref to Control wire	-0.133 vdc
		Ref to Control Coupon	-0.319
		Ref to Test wire	-0.135
		Ref to Test Coupon	-0.312
		Ref to platinum wire	-0.138
10/10/03	1100	Ref to Control wire	-0.139 vdc
		Ref to Control Coupon	-0.319
		Ref to Test wire	-0.137
		Ref to Test Coupon	-0.314
		Ref to platinum wire	-0.144
10/6/03	1615	Ref to Control wire	-0.133 vdc
		Ref to Control Coupon	-0.317
		Ref to Test wire	-0.135
		Ref to Test Coupon	-0.314
		Ref to platinum wire	-0.141
10/10/03	1330	Ref to Control wire	-0.137 vdc
		Ref to Control Coupon	-0.320
		Ref to Test wire	-0.134
		Ref to Test Coupon	-0.315
		Ref to platinum wire	-0.140
10/6/03	1330	Ref to Control wire	-0.137 vdc
		Ref to Control Coupon	-0.320
		Ref to Test wire	-0.134
		Ref to Test Coupon	-0.315
		Ref to platinum wire	-0.140

Ryan 10/10/03

Date	Time	PostgateC 0.5M Cl	Voltage
10/8/03	1300	Ref to Control wire	-0.097 vdc
		Ref to Control Coupon	-0.148
		Ref to Test wire	-0.115
		Ref to Test Coupon	-0.161
		Ref to platnium wire	-0.070
10/8/03	1415	Ref to Control wire	-0.100 vdc
		Ref to Control Coupon	-0.148
		Ref to Test wire	-0.100
		Ref to Test Coupon	-0.161
		Ref to platnium wire	-0.073
10/9/03	0800	Ref to Control wire	-0.100 vdc
		Ref to Control Coupon	-0.144
		Ref to Test wire	-0.067
		Ref to Test Coupon	-0.133
		Ref to platnium wire	-0.036
10/9/03	1000	Ref to Control wire	-0.087 vdc
		Ref to Control Coupon	-0.146
		Ref to Test wire	-0.086
		Ref to Test Coupon	-0.155
		Ref to platnium wire	-0.060
10/9/03	1100	Ref to Control wire	-0.092 vdc
		Ref to Control Coupon	-0.148
		Ref to Test wire	-0.091
		Ref to Test Coupon	-0.152
		Ref to platnium wire	-0.067
10/9/03	1215	Ref to Control wire	-0.096 vdc
		Ref to Control Coupon	-0.150
		Ref to Test wire	-0.096
		Ref to Test Coupon	-0.161
		Ref to platnium wire	-0.073
10/6/03	1300	Ref to Control wire	-0.099 vdc
		Ref to Control Coupon	-0.151
		Ref to Test wire	-0.098
		Ref to Test Coupon	-0.162
		Ref to platnium wire	-0.076

Date	Time	PostgateC 0.5M Cl	Voltage
10/9/03	1410	Ref to Control wire	-0.109 vdc
		Ref to Control Coupon	-0.152
		Ref to Test wire	-0.102
		Ref to Test Coupon	-0.165
		Ref to platnium wire	-0.081
10/10/03	0800	Ref to Control wire	-0.094 vdc
		Ref to Control Coupon	-0.149
		Ref to Test wire	-0.095
		Ref to Test Coupon	-0.158
		Ref to platnium wire	-0.050
10/10/03	0900	Ref to Control wire	-0.084 vdc
		Ref to Control Coupon	-0.150
		Ref to Test wire	-0.084
		Ref to Test Coupon	-0.154
		Ref to platnium wire	-0.063
10/10/03	1000	Ref to Control wire	-0.090 vdc
		Ref to Control Coupon	-0.151
		Ref to Test wire	-0.090
		Ref to Test Coupon	-0.160
		Ref to platnium wire	-0.070
10/10/03	1100	Ref to Control wire	-0.095 vdc
		Ref to Control Coupon	-0.152
		Ref to Test wire	-0.096
		Ref to Test Coupon	-0.161
		Ref to platnium wire	-0.077
10/10/03	1230	Ref to Control wire	-0.100 vdc
		Ref to Control Coupon	-0.153
		Ref to Test wire	-0.100
		Ref to Test Coupon	-0.161
		Ref to platnium wire	-0.083
10/10/03	1330	Ref to Control wire	-0.103 vdc
		Ref to Control Coupon	-0.153
		Ref to Test wire	-0.103
		Ref to Test Coupon	-0.163
		Ref to platnium wire	-0.087

Ryan 10/10/03

Date	Time	Medium A	Voltage
10/10/03	1430	Control wire to Ref	-0.360 vdc
		Control Coupon to Ref	-0.434
		Test wire to Ref	-0.313
		Test Coupon to Ref	-0.508
		Platnium wire to Ref	-0.319
10/10/03	1530	Control wire to Ref	-0.361 vdc
		Control Coupon to Ref	-0.436
		Test wire to Ref	-0.313
		Test Coupon to Ref	-0.504
		Platnium wire to Ref	-0.320
10/10/03	0730	Control wire to Ref	-0.337 vdc
		Control Coupon to Ref	-0.433
		Test wire to Ref	-0.303
		Test Coupon to Ref	-0.513
		Platnium wire to Ref	-0.304
10/10/03	0930	Control wire to Ref	-0.337 vdc
		Control Coupon to Ref	-0.424
		Test wire to Ref	-0.314
		Test Coupon to Ref	-0.513
		Platnium wire to Ref	-0.314
10/10/03	1030	Control wire to Ref	-0.334 vdc
		Control Coupon to Ref	-0.433
		Test wire to Ref	-0.300
		Test Coupon to Ref	-0.513
		Platnium wire to Ref	-0.312
10/10/03	0430	Control wire to Ref	-0.334 vdc
		Control Coupon to Ref	-0.433
		Test wire to Ref	-0.300
		Test Coupon to Ref	-0.513
		Platnium wire to Ref	-0.312
10/10/03	1330	Control wire to Ref	-0.354 vdc
		Control Coupon to Ref	-0.434
		Test wire to Ref	-0.305
		Test Coupon to Ref	-0.516
		Platnium wire to Ref	-0.307

Date	Time	Medium A	Voltage
10/13/03	1430	Control wire to Ref	-0.355 vdc
		Control Coupon to Ref	-0.438
		Test wire to Ref	-0.303
		Test Coupon to Ref	-0.516
		Platnium wire to Ref	-0.305
10/14/03	0830	Control wire to Ref	-0.364 vdc
		Control Coupon to Ref	-0.440
		Test wire to Ref	-0.313
		Test Coupon to Ref	-0.511
		Platnium wire to Ref	-0.309
10/14/03	0430	Control wire to Ref	-0.364 vdc
		Control Coupon to Ref	-0.440
		Test wire to Ref	-0.313
		Test Coupon to Ref	-0.513
		Platnium wire to Ref	-0.313
10/14/03	1037	Control wire to Ref	-0.363 vdc
		Control Coupon to Ref	-0.441
		Test wire to Ref	-0.311
		Test Coupon to Ref	-0.513
		Platnium wire to Ref	-0.311
10/15/03	1345	Control wire to Ref	-0.358 vdc
		Control Coupon to Ref	-0.442
		Test wire to Ref	-0.308
		Test Coupon to Ref	-0.515
		Platnium wire to Ref	-0.311

Date	Time	Medium A	Voltage
10/15/03	0830	Control wire to Ref	-0.354 vdc
		Control Coupon to Ref	-0.434
		Test wire to Ref	-0.303
		Test Coupon to Ref	-0.515
		Platnium wire to Ref	-0.303
10/14/03	1800	Control wire to Ref	-0.363 vdc
		Control Coupon to Ref	-0.446
		Test wire to Ref	-0.311
		Test Coupon to Ref	-0.516
		Platnium wire to Ref	-0.314
10/14/03	1037	Control wire to Ref	-0.363 vdc
		Control Coupon to Ref	-0.441
		Test wire to Ref	-0.311
		Test Coupon to Ref	-0.513
		Platnium wire to Ref	-0.311

10/14/03

10/15/03

Date	Time	PostgateC No Cl-	Voltage
10/10/03	1430	Control wire to Ref	-0.153 vdc
		Control Coupon to Ref	-0.232
		Test wire to Ref	-0.154
		Test Coupon to Ref	-0.232
		Platnium wire to Ref	-0.129
10/10/03	1530	Control wire to Ref	-0.153 vdc
		Control Coupon to Ref	-0.232
		Test wire to Ref	-0.155
		Test Coupon to Ref	-0.232
		Platnium wire to Ref	-0.132
10/13/03	0730	Control wire to Ref	-0.109 vdc
		Control Coupon to Ref	-0.221
		Test wire to Ref	-0.106
		Test Coupon to Ref	-0.221
		Platnium wire to Ref	-0.073
10/13/03	0850	Control wire to Ref	-0.112 vdc
		Control Coupon to Ref	-0.222
		Test wire to Ref	-0.114
		Test Coupon to Ref	-0.221
		Platnium wire to Ref	-0.086
10/13/03	0930	Control wire to Ref	-0.121 vdc
		Control Coupon to Ref	-0.222
		Test wire to Ref	-0.122
		Test Coupon to Ref	-0.221
		Platnium wire to Ref	-0.095
10/13/03	1230	Control wire to Ref	-0.138 vdc
		Control Coupon to Ref	-0.224
		Test wire to Ref	-0.135
		Test Coupon to Ref	-0.224
		Platnium wire to Ref	-0.118
10/13/03	1330	Control wire to Ref	-0.143 vdc
		Control Coupon to Ref	-0.225
		Test wire to Ref	-0.143
		Test Coupon to Ref	-0.225
		Platnium wire to Ref	-0.133

Date	Time	PostgateC No Cl-	Voltage
10/14/03	0830	Control wire to Ref	-0.122 vdc
		Control Coupon to Ref	-0.219
		Test wire to Ref	-0.123
		Test Coupon to Ref	-0.219
		Platnium wire to Ref	-0.094
10/14/03	0930	Control wire to Ref	-0.126 vdc
		Control Coupon to Ref	-0.220
		Test wire to Ref	-0.127
		Test Coupon to Ref	-0.219
		Platnium wire to Ref	-0.100
10/14/03	1037	Control wire to Ref	-0.132 vdc
		Control Coupon to Ref	-0.220
		Test wire to Ref	-0.132
		Test Coupon to Ref	-0.220
		Platnium wire to Ref	-0.103
10/14/03	1300	Control wire to Ref	-0.140 vdc
		Control Coupon to Ref	-0.223
		Test wire to Ref	-0.142
		Test Coupon to Ref	-0.222
		Platnium wire to Ref	-0.116
10/15/03	0820	Control wire to Ref	-0.095 vdc
		Control Coupon to Ref	-0.199
		Test wire to Ref	-0.097
		Test Coupon to Ref	-0.199
		Platnium wire to Ref	-0.092
10/15/03	1215	Control wire to Ref	-0.117 vdc
		Control Coupon to Ref	-0.207
		Test wire to Ref	-0.119
		Test Coupon to Ref	-0.207
		Platnium wire to Ref	-0.079

10/15/03

PostgateC + Slime	Voltage
Control wire to Ref	-0.113
Control Coupon to Ref	-0.203
Test wire to Ref	-0.116
Test Coupon to Ref	-0.200
Platinium wire to Ref	-0.073

Date	Time	PostgateC + Slime	Voltage
10/15/03	1430	Control wire to Ref	-0.111
		Control Coupon to Ref	-0.220
		Test wire to Ref	-0.145
		Test Coupon to Ref	-0.215
		Platinium wire to Ref	-0.141
Date	Time	PostgateC + Slime	Voltage
10/15/03	1500	Control wire to Ref	-0.142
		Control Coupon to Ref	-0.220
		Test wire to Ref	-0.143
		Test Coupon to Ref	-0.214
		Platinium wire to Ref	-0.141
Date	Time	PostgateC + Slime	Voltage
10/15/03	0700	Control wire to Ref	-0.075
		Control Coupon to Ref	-0.211
		Test wire to Ref	-0.083
		Test Coupon to Ref	-0.146
		Platinium wire to Ref	-0.052
Date	Time	PostgateC + Slime	Voltage
10/15/03	0830	Control wire to Ref	-0.065
		Control Coupon to Ref	-0.203
		Test wire to Ref	-0.041
		Test Coupon to Ref	-0.147
		Platinium wire to Ref	-0.055
Date	Time	PostgateC + Slime	Voltage
10/15/03	0930	Control wire to Ref	-0.043
		Control Coupon to Ref	-0.206
		Test wire to Ref	-0.046
		Test Coupon to Ref	-0.146
		Platinium wire to Ref	-0.054
Date	Time	PostgateC + Slime	Voltage
10/15/03	1000	Control wire to Ref	-0.101
		Control Coupon to Ref	-0.206
		Test wire to Ref	-0.116
		Test Coupon to Ref	-0.200
		Platinium wire to Ref	-0.072
Date	Time	PostgateC + Slime	Voltage
10/15/03	1030	Control wire to Ref	-0.102
		Control Coupon to Ref	-0.201
		Test wire to Ref	-0.115
		Test Coupon to Ref	-0.195
		Platinium wire to Ref	-0.070
Date	Time	PostgateC + Slime	Voltage
10/15/03	1100	Control wire to Ref	-0.052
		Control Coupon to Ref	-0.162
		Test wire to Ref	-0.054
		Test Coupon to Ref	-0.163
		Platinium wire to Ref	-0.044
Date	Time	PostgateC + Slime	Voltage
10/15/03	1130	Control wire to Ref	-0.052
		Control Coupon to Ref	-0.158
		Test wire to Ref	-0.058
		Test Coupon to Ref	-0.163
		Platinium wire to Ref	-0.070

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Date	Time	PostgateC 0.5M Cl	Voltage
10/14/03	1430	Control wire to Ref	-0.105
		Control Coupon to Ref	-0.154
		Test wire to Ref	-0.103
		Test Coupon to Ref	-0.162
		Platinium wire to Ref	-0.090
Date	Time	PostgateC 0.5M Cl	Voltage
10/14/03	1500	Control wire to Ref	-0.107
		Control Coupon to Ref	-0.154
		Test wire to Ref	-0.101
		Test Coupon to Ref	-0.164
		Platinium wire to Ref	-0.090
Date	Time	PostgateC 0.5M Cl	Voltage
10/14/03	0730	Control wire to Ref	-0.052
		Control Coupon to Ref	-0.136
		Test wire to Ref	-0.096
		Test Coupon to Ref	-0.146
		Platinium wire to Ref	-0.036
Date	Time	PostgateC 0.5M Cl	Voltage
10/14/03	0830	Control wire to Ref	-0.064
		Control Coupon to Ref	-0.138
		Test wire to Ref	-0.070
		Test Coupon to Ref	-0.147
		Platinium wire to Ref	-0.050
Date	Time	PostgateC 0.5M Cl	Voltage
10/14/03	0930	Control wire to Ref	-0.040
		Control Coupon to Ref	-0.140
		Test wire to Ref	-0.044
		Test Coupon to Ref	-0.148
		Platinium wire to Ref	-0.054
Date	Time	PostgateC 0.5M Cl	Voltage
10/14/03	1000	Control wire to Ref	-0.041
		Control Coupon to Ref	-0.133
		Test wire to Ref	-0.041
		Test Coupon to Ref	-0.138
		Platinium wire to Ref	-0.043
Date	Time	PostgateC 0.5M Cl	Voltage
10/14/03	1030	Control wire to Ref	-0.049
		Control Coupon to Ref	-0.145
		Test wire to Ref	-0.049
		Test Coupon to Ref	-0.153
		Platinium wire to Ref	-0.076

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From Page 46.— Examination of the coupon, sensors and deposits.

The Picture Files are stored in note book directory electronically. The file lists are as follows (alfabetic order):

- d8261_testSensor_BCleaning
- d8262_TestSensor_BCleaning2
- d8263_ControlSensor_BCleaning
- d8264_ControlSensor_BCleaning2
- d8269_Test_Coupon_TestCell_BCleaning
- d8270_Test_Coupn_TestCell_BCleaning2
- d8271_ControlCoupon_TestCell_BCLeaning
- d8272_ControlCoupon_TestCell_BCleaning2
- d8273_Wire_TestCell_BCleaning
- d8274_NoiseWire_TestCell_BCleaning
- d8275_NoiseWire1_TestCellBCleaning
- d8276_TestCoupon_ControlCell_BCleaning
- d8277_TestCoupon_ControlCell_BCleanig
- d8278_NoiseWire_ControlCell_BCleanig
- d8279_NoiseWire1_ControlCellBCleaning
- d8281_Test_Sensor_Removed_Deposit_Picture
- d8333_testSensor_afterCLeaning
- d8334_TestSensor_afterCleaning_immersed section
- d8335_testCoupon_TestCell_aftercleaning
- d8336_testCoupon_TestCell_aftercleaning_tip
- d8337_testCoupon_TestCell_aftercleaning_side
- d8338_control_coupn_TestCell_afterCleaning
- d8339_control_coupon_TestCell_afterCleaning_tip
- d8340_controlCoupon_TestCell_afterCleaning_side
- d8341_wire_TestCell_afterCleaning
- d8342_wire_TestCell_afterCleaning_tip
- d8343_wire_TestCell_afterCleaning_middle
- d8379_Contro_Sensor_ControlCell_AfterCleaning
- d8380_Control_Sensor_ControlCell_AfterCleaning
- d8381_TestCoupon__ControlCell_AfterCleaning
- d8382_TestCoupon_ControlCell_AfterCleaning
- d8470_TestCoupon_ControlCell_Above_WaterLine_34cm_fromBottom_flat
- d8471_TestCoupon_COntrolCell_Above_WaterLine_30cm_from_bottom_side
- d8472_TestCoupon_ControlCell_Above_waterline_34cm_from_bottom_edge
- Jfs3233_Test_Sensor_Deposit_Particle2_EDS
- jfs3233_Test_Sensor_Deposit_Particle2_EDS_Number
- Jfs3234_test_sensor_deposit_overall_EDS
- jfs3234_Test_sensor_deposit_overall_EDS_number
- jfs3235_testcoupon_tescell_surface_EDS_Number
- Jfs3235_TestCoupon_testcell_surface_EDS
- Jfs3236_controlcoupon_testcell_furface_EDS
- jfs3236_controlCoupon_testcell_surface_EDS_Number
- P8220041_Test_Setup_frontView
- P8220043_Control_Cell_a
- P8220044_Test_Setup
- P8220045_Test_Cell
- P8220046_Control_cell
- P8220047_Dummy_cell
- P8220048_testCell_Head
- P8220051_Test_Cell_Head_After_Testb
- P8220052_Test_Cell_Head_After_Test
- s6492_test_sensor_deposits_x20SEM
- s6493_test_sensor_deposit_particle1_x8000SEM
- s6494_test_sensor_deposit_particle1_x3000SEM
- s6495_test_sensor_deposit_particle2_x500SEM
- s6496_testCoupon_testcell_surface_x500SEM
- s6497_testCoupon_testCell_surface_x8000SEM
- s6498_TestCoupon_testCell_surface_x8000SEM2
- s6499_TestCoupon_testCell_surface_x2000SEM
- s6500_TestCoupon_TestCell_Surface_x8000SEM3
- s6501_ControlCoupon_testCell_Surface_x2000SEM
- s6502_ControlCoupon_testCell_Surface_x2000SEM2
- s6503_ControlCoupon_TestCell_Surface_x8000SEM

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- d8473_TestCoupon_ControlCell_Location
- d8474_TestSensor_pits_near_top
- d8475_testSensor_pits_one_wire_Lower_top
- d8476_testSensor_pits_one_wire_top
- d8477_testSensor_pits_top
- DSCN0457_TestCell
- DSCN0459_TestCell2
- DSCN0460_TestCell3_enlarged
- DSCN0461_TestCell4_Enlarged
- DSCN0462_Control-Sensor
- Jfs3232_Test_Sensor_Deposit_Particle1_EDS
- jfs3232_Test_Sensor_Deposit_Particle1_EDS_Number
- Jfs3233_Test_Sensor_Deposit_Particle2_EDS
- jfs3233_Test_Sensor_Deposit_Particle2_EDS_Number
- Jfs3234_test_sensor_deposit_overall_EDS
- jfs3234_Test_sensor_deposit_overall_EDS_number
- jfs3235_testcoupon_tescell_surface_EDS_Number
- Jfs3235_TestCoupon_testcell_surface_EDS
- Jfs3236_controlcoupon_testcell_furface_EDS
- jfs3236_controlCoupon_testcell_surface_EDS_Number
- P8220041_Test_Setup_frontView
- P8220043_Control_Cell_a
- P8220044_Test_Setup
- P8220045_Test_Cell
- P8220046_Control_cell
- P8220047_Dummy_cell
- P8220048_testCell_Head
- P8220051_Test_Cell_Head_After_Testb
- P8220052_Test_Cell_Head_After_Test
- s6492_test_sensor_deposits_x20SEM
- s6493_test_sensor_deposit_particle1_x8000SEM
- s6494_test_sensor_deposit_particle1_x3000SEM

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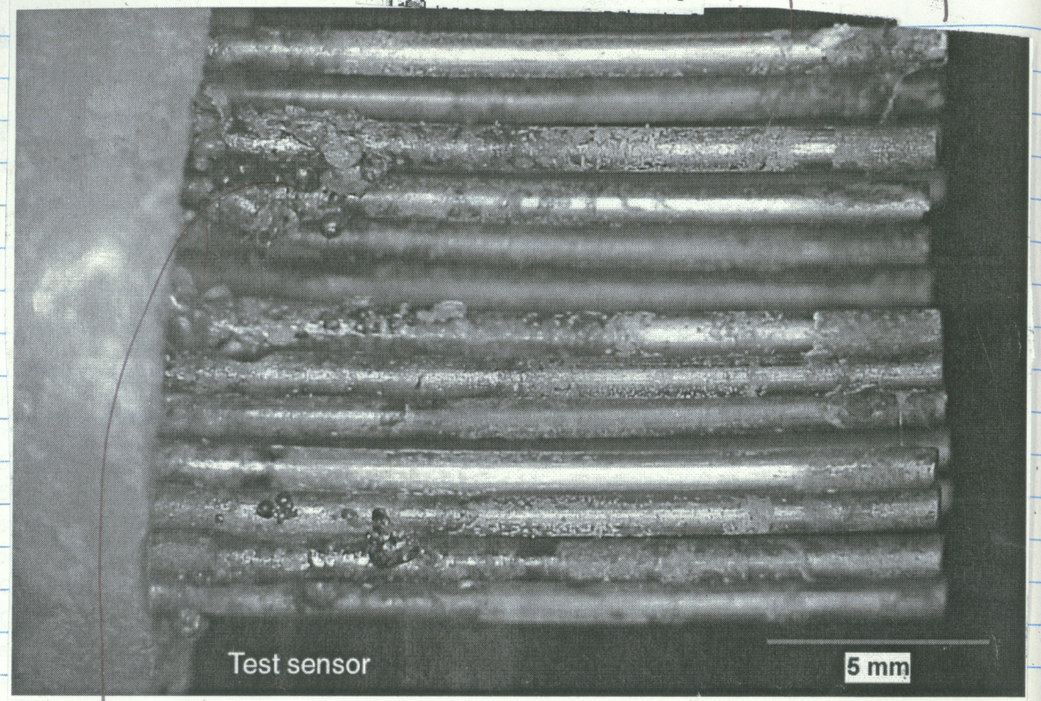
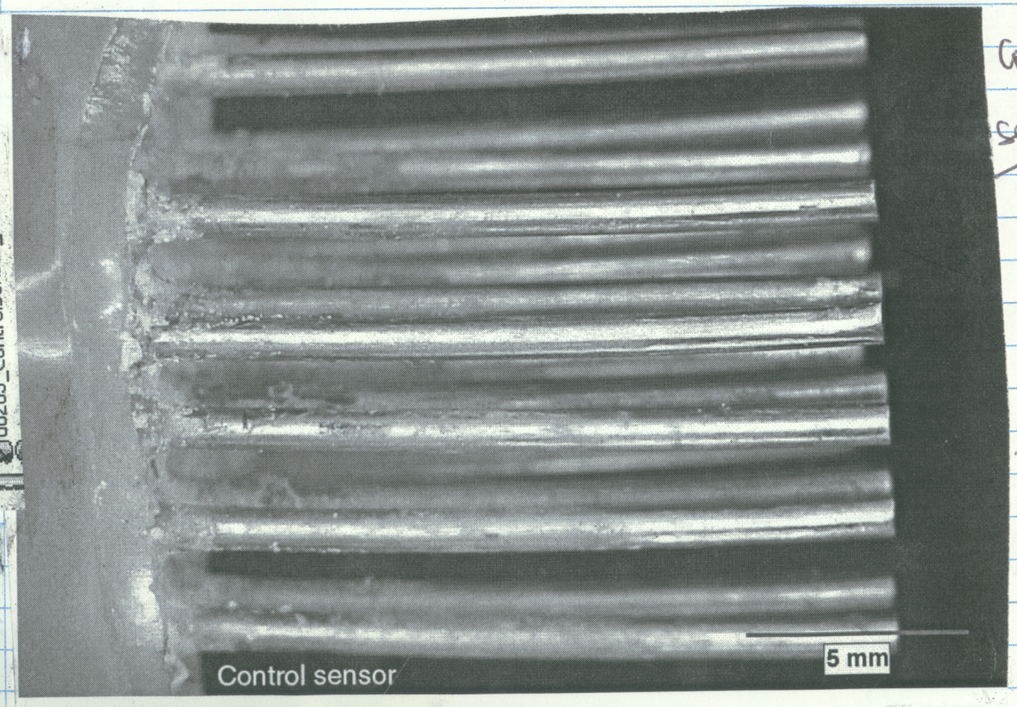
File:
d8261_testSensor_BCleaning

immersion depth



round black ball-like stuff.

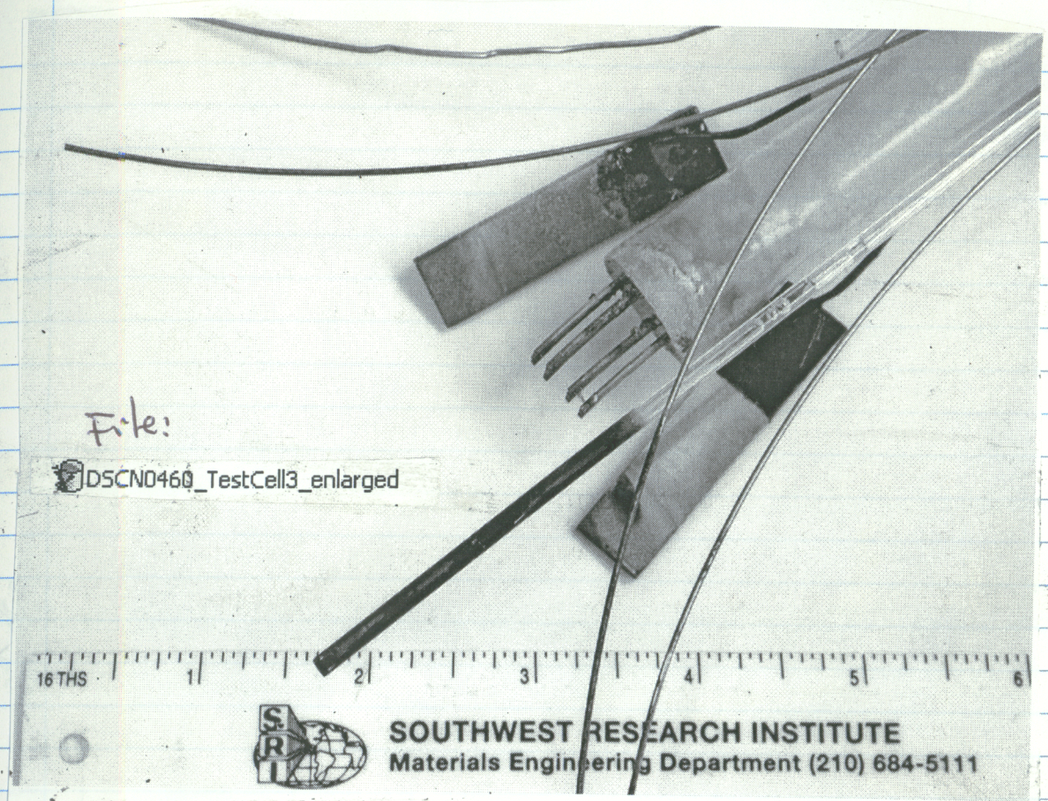
File:
d8263_ControlSensor_BCleaning



Control sensor

micro stop starts here.

File:
DSCN0460_TestCell3_enlarged



File:
d8269_Test_Coupon_TestCell_BCleaning

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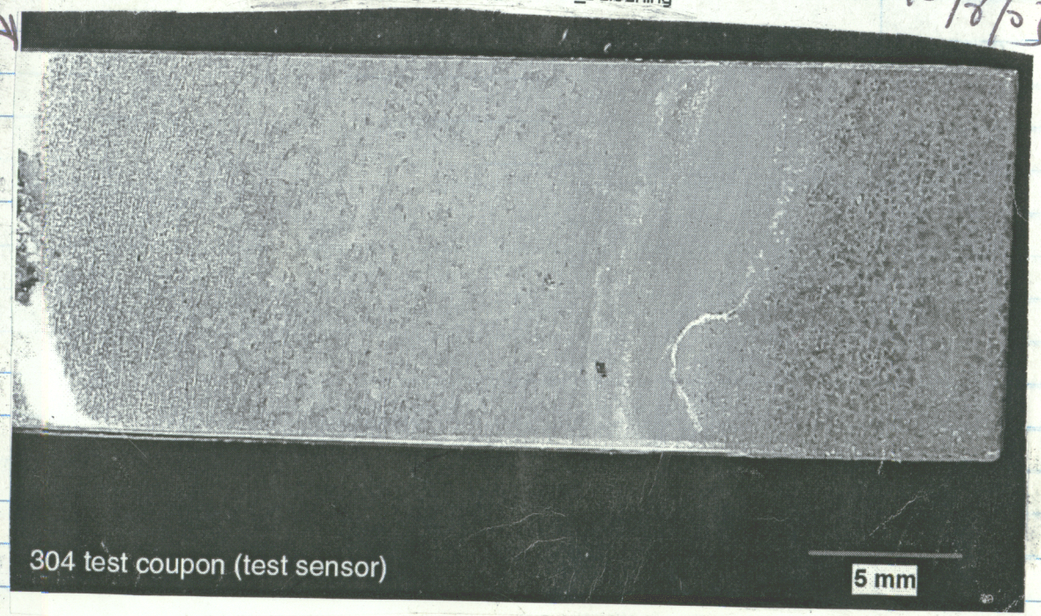

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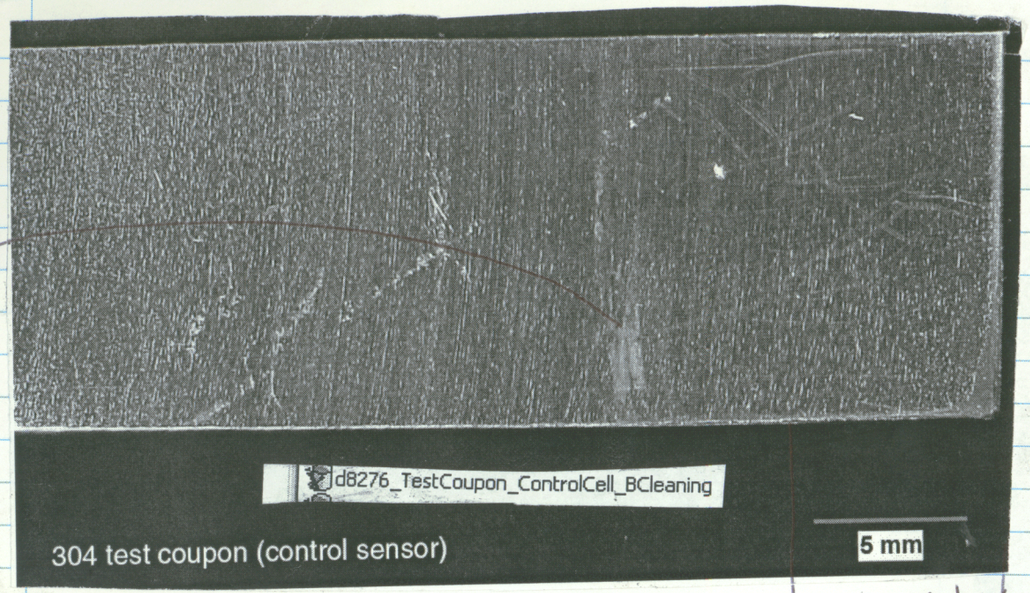
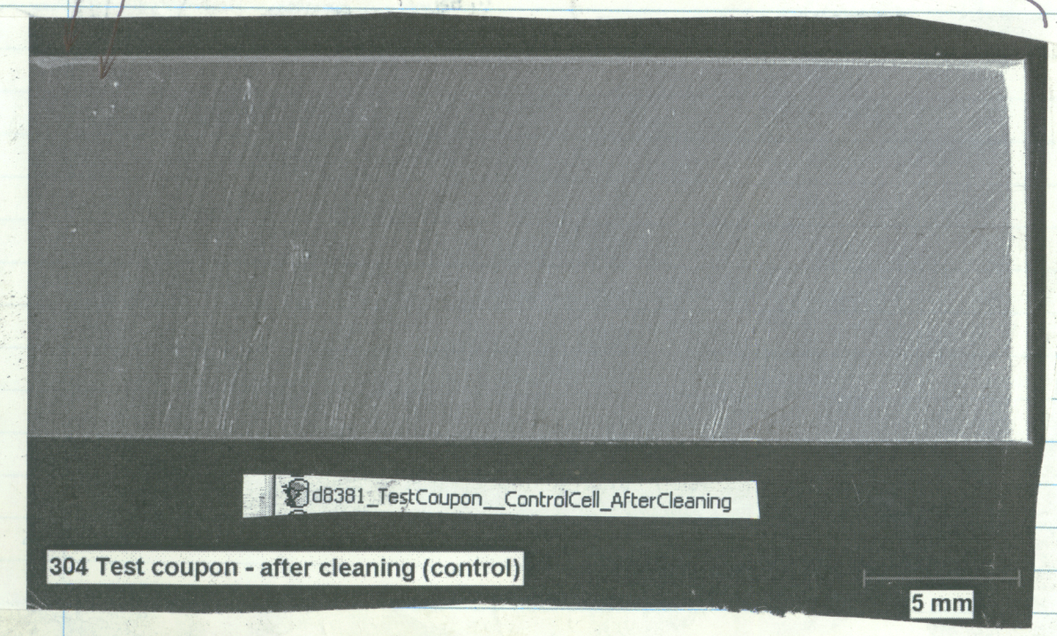
some deposits



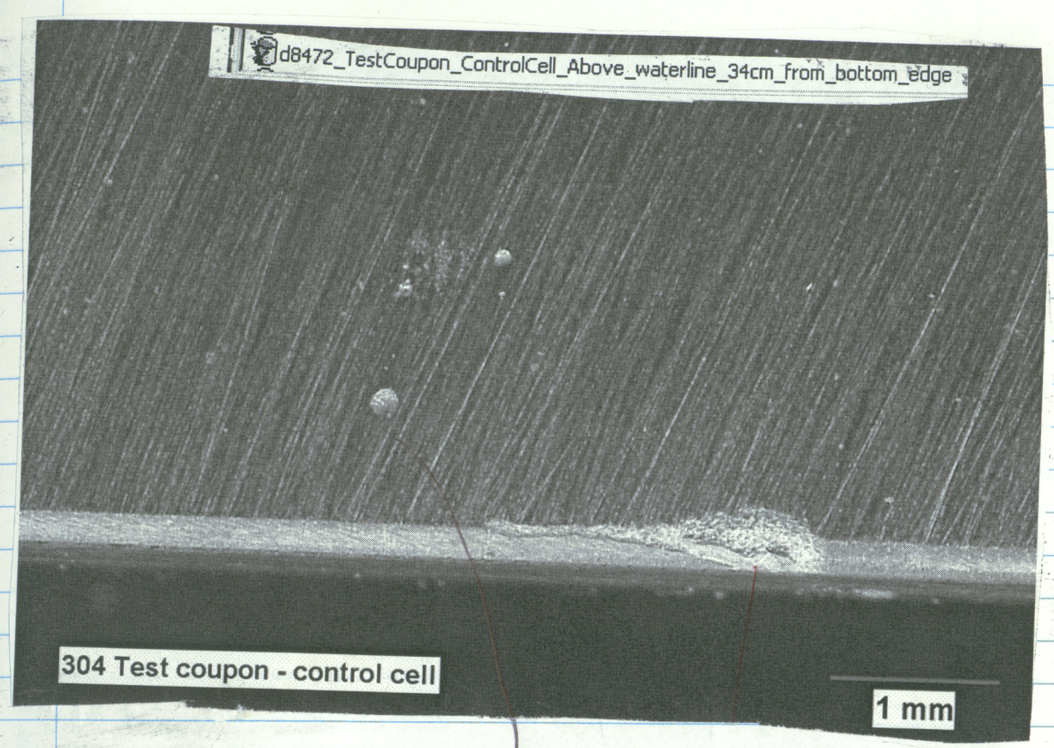
in Water

Pitting found
see page 105.

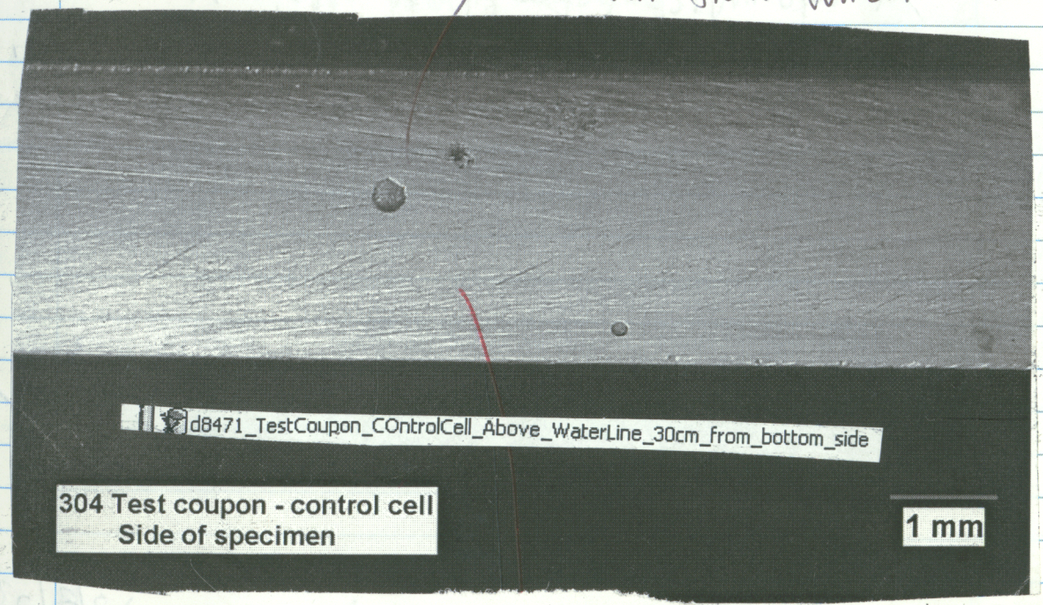
No pitting found.



J. Yost 10/8/03



Pitting found
far from water line.



J. Yost 10/8/03

No pitting found anywhere except

Because this coupon was anodically polarized to +296 mV$_{SCE}$ (see page 196, 171 Book 287). It is hard to say this was formed under the intended conditions.

Test Conclusions

1. No pitting found on any specimen immersed in the solution, including:
   304L coupons in the two cells. These coupons were coupled to the battery battery potential (TestCoupon_TestCell was exceptional because it was accidentally polarized during the experiment)
   304 Sensing wires of the two electrodes. These wires were coupled to the battery potential during the tests.
   304 EN sensor wires in the two cells. These wires were like freely immersed wires in the cell, no polarization, no coupling to other electrodes.

2. Pitting found on specimen in the air space.
   Pitting found in the air space for the TestCoupon_ControlCell. But not the TestCoupon_TestCell, even there were SRB in the TestCell.
   Pitting found near the epoxy (in the air apace) of the Test sensor in the test cell. But not the ControlSensor in the control cell.

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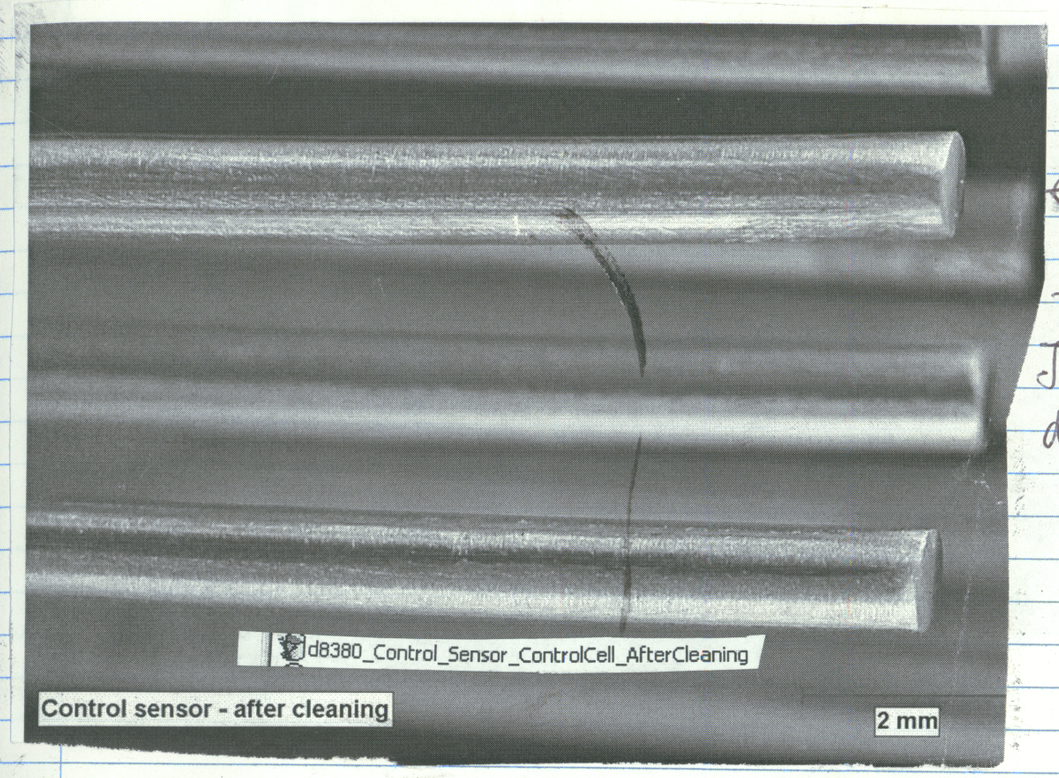

No pitting found anywhere on the wire.

No pitting found on this direction

* Also no pitting was found on the wires used for EN test. These wires were not coupled to higher potentials.

J.Y.G 10/8/03