

Lower Minnesota River Oxygen Dynamics Assessments

APPENDIX B

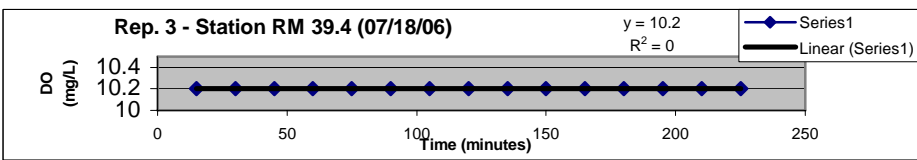
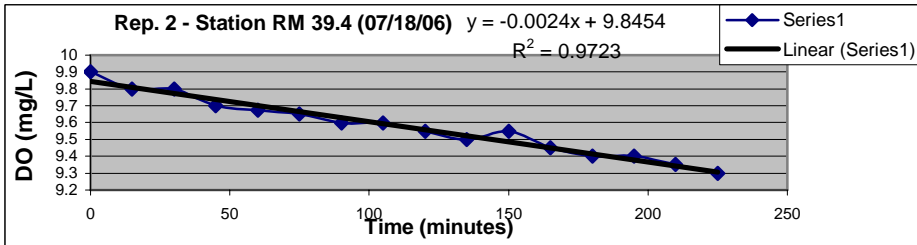
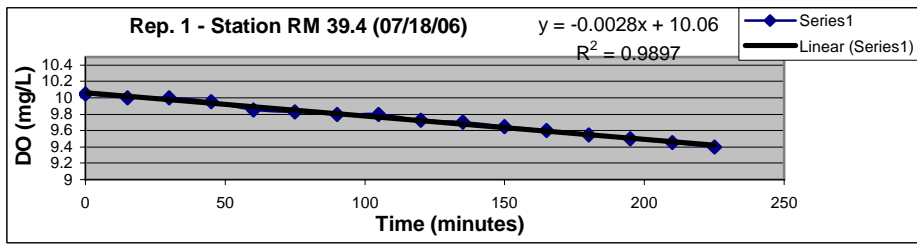
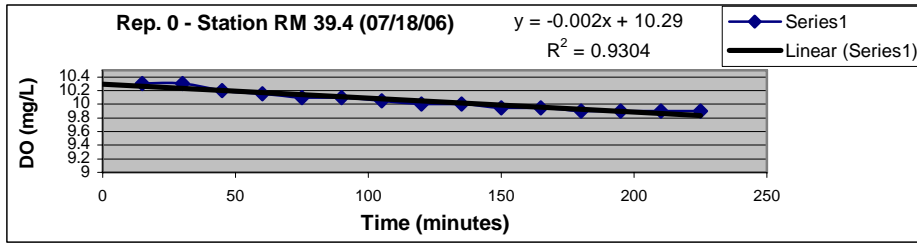
***In situ* SEDIMENT OXYGEN DEMAND**

FIGURE B-1
STATION RM 39.4 - MINNESOTA RIVER
SEDIMENT OXYGEN DEMAND - JULY 18, 2006

Time	Minutes	Rep 0	Rep 1	Rep 2	Rep 3	
1530	0		10.05	9.9	10.3	1530 reading dropped
1545	15	10.3	10	9.8	10.2	possible resuspension
1600	30	10.3	10	9.8	10.2	
1615	45	10.2	9.95	9.7	10.2	
1630	60	10.15	9.85	9.675	10.2	
1645	75	10.1	9.825	9.65	10.2	
1700	90	10.1	9.8	9.6	10.2	
1715	105	10.05	9.8	9.6	10.2	
1730	120	10	9.725	9.55	10.2	
1745	135	10	9.7	9.5	10.2	
1800	150	9.95	9.65	9.55	10.2	
1815	165	9.95	9.6	9.45	10.2	
1830	180	9.9	9.55	9.4	10.2	
1845	195	9.9	9.5	9.4	10.2	
1900	210	9.9	9.45	9.35	10.2	
1915	225	9.9	9.4	9.3	10.2	

Average water temperature 28.7 C

End cal ck 1940 hrs 7.1 7 7 7 Winkler 7.0 & 7.05



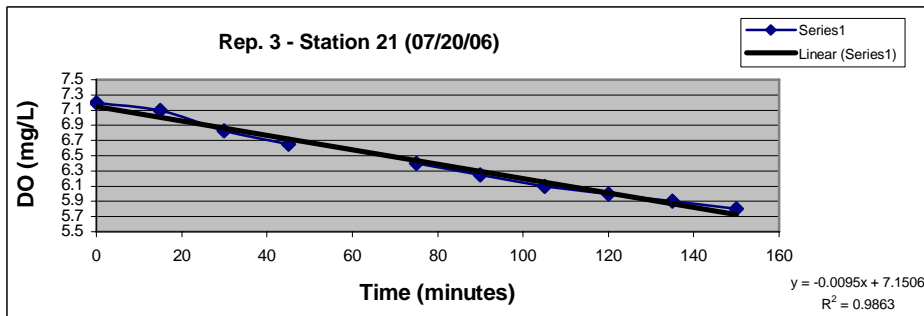
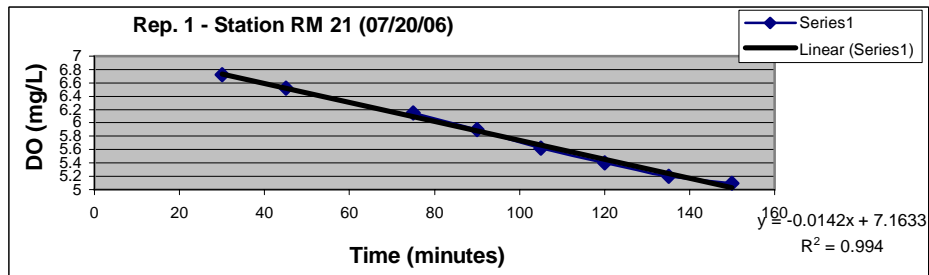
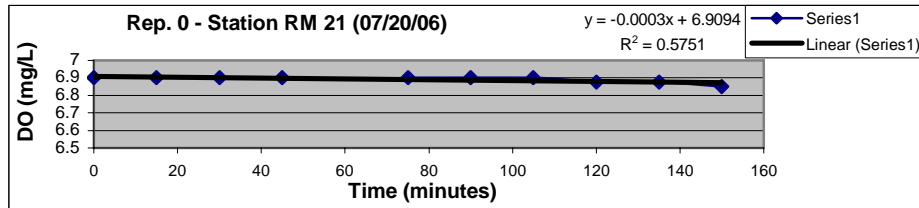
**FIGURE B-2
STATION RM 21 - MINNESOTA RIVER
SEDIMENT OXYGEN DEMAND
JULY 20, 2006**

Time	Minutes	Rep 0	Rep 1	Rep 2	Rep 3
1305	0	6.9	6.75	7.05	7.2
1320	15	6.9	7	7	7.1
1335	30	6.9	6.725	7	6.825
1350	45	6.9	6.525	7	6.65
1405	60			*	
1420	75	6.9	6.15	7	6.4
1435	90	6.9	5.9	7	6.25
1450	105	6.9	5.625	7	6.1
1505	120	6.875	5.4	7.1	6
1520	135	6.875	5.2	7.4	5.9
1535	150	6.85	5.1	7.5	5.8

*Diver confirmed
current eroding chamber
to-substrate seal - Rep. 2

Average water temperature 26.3 C

End cal ck 1535 hrs 6.75 6.65 6.7 6.7 Winkler 6.7 & 6.7



**FIGURE B-3
STATION RM 15 - MINNESOTA RIVER
SEDIMENT OXYGEN DEMAND - JULY 21, 2006**

Time	Minutes	Rep 0	Rep 1	Rep 2	Rep 3	
1100	0	7.2				
1115	15	7.1	6.8	6.8	6.65	
1130	30	7.15	6.8	6.8	6.65	
1145	45	7.1	6.7	6.6	6.65	
1200	60	7.1	6.7	6.5	6.7	
1215	75	7.15	6.525	6.425	6.75	
1230	90	6.95	6.425	6.35	6.8	
1245	105	7.1	6.35	6.3	6.8	
1300	120	7.1	6.275	6.2	6.85	
1315	135	7.1	6.2	6.1	6.9	
1330	150	7.1	6.1	6.025	6.8	*Diver fixed chamber-
1345	165	7.1	6	5.95	6.75	to-substrate seal - Rep 3
1400	180					at 1325 hrs.G19
1415	195	7.1	5.9	5.825	6.7	
1430	210	7	5.8	5.75	6.55	
1445	225	7	5.725	5.625	6.5	
1500	240					
1515	255				6.3	
1530	270	7			6.25	Avg. water temp. 25.8 C
1545	285	7			6.175	
1600	300	7				Winkler 7.35 & 7.35 Units 1 & 2
End cal ck 1600 hrs		7.25	7.25	7.3	7.15	Winkler 7.2 & 7.2 Units 0 & 3

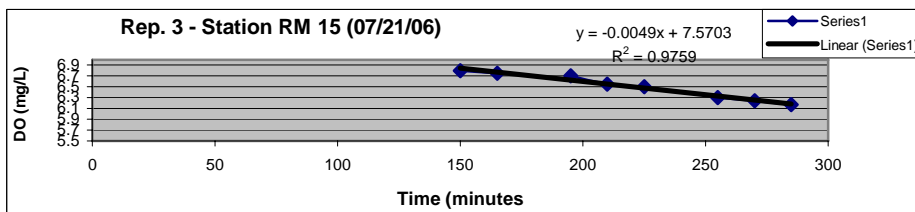
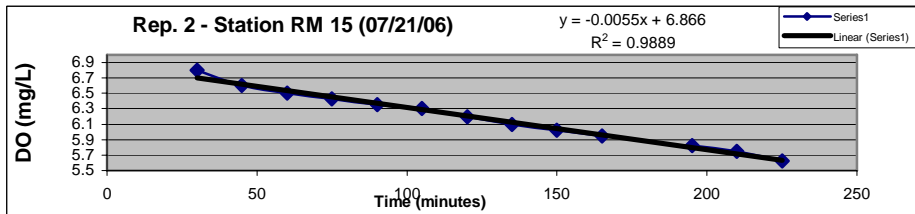
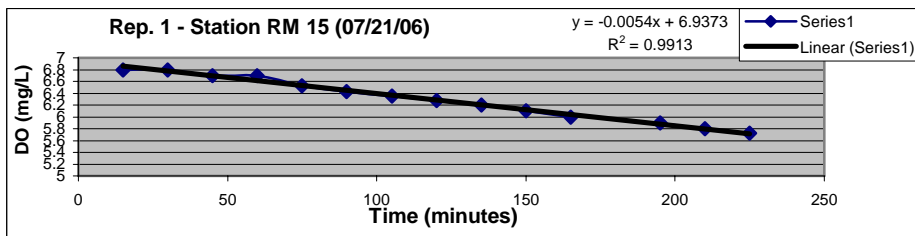
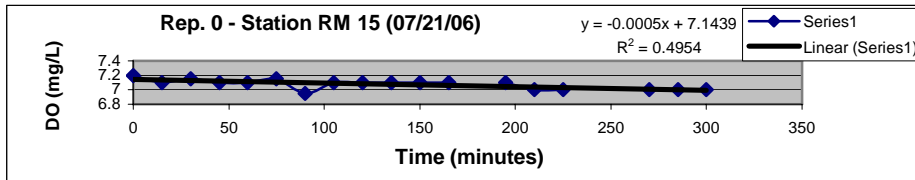


FIGURE B-4
STATION RM 11 - MINNESOTA RIVER
SEDIMENT OXYGEN DEMAND - JULY 22, 2006

Time	Minutes	Rep 0	Rep 1	Rep 2	Rep 3
1155	0	8.4	8.5	8.35	8.3
1210	15	8.45	8.4	8.25	8.2
1225	30	8.6	8.3	8.15	8.125
1240	45	8.55	8.3	8.1	8.05
1255	60	8.475	8.3	8	8
1310	75				
1325	90	8.4	8.2	7.825	7.8
1340	105	8.35	8.125	7.775	7.75
1355	120	8.275	8.125	7.675	7.7
1410	135	8.175	8	7.6	7.625
1425	150	8.025	8	7.5	7.55
1440	165	8	8	7.4	7.5
1455	180	7.95	7.95	7.325	7.425
1510	195	7.95	7.9	7.275	7.35
1525	210	7.9	7.825	7.2	7.3
1540	225	7.9	7.825	7.1	7.25
1555	240	8.35 ?	7.8	7	7.175
1610	255	7.85	7.725	6.9	7.1

Avg. water temp. 25.0 C

End cal ck 1625 hrs 7.45 7.25 7.5 7.5 Winkler 7.45 & 7.40

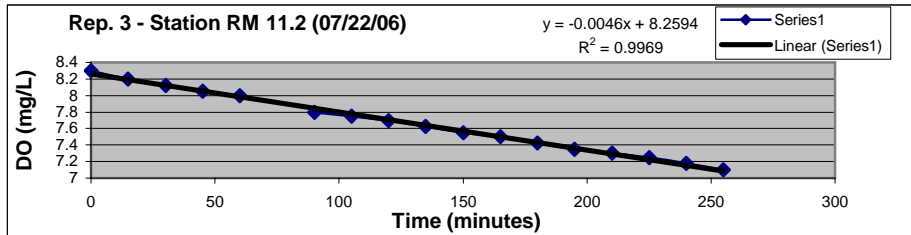
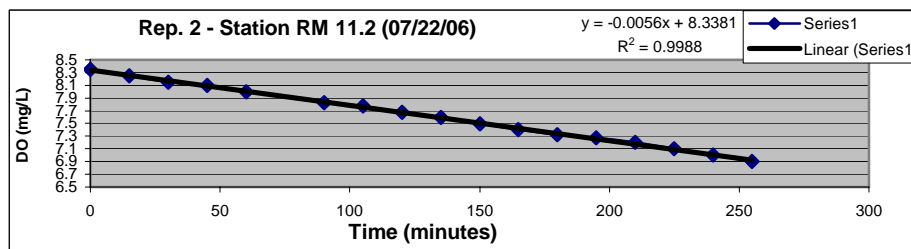
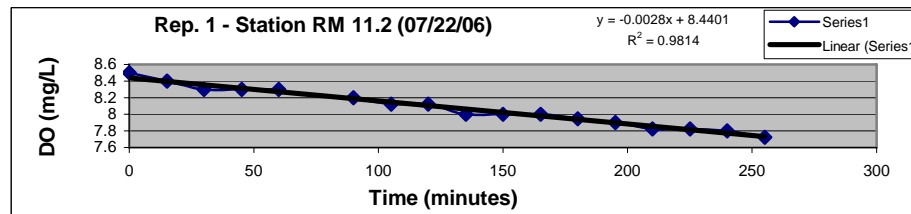
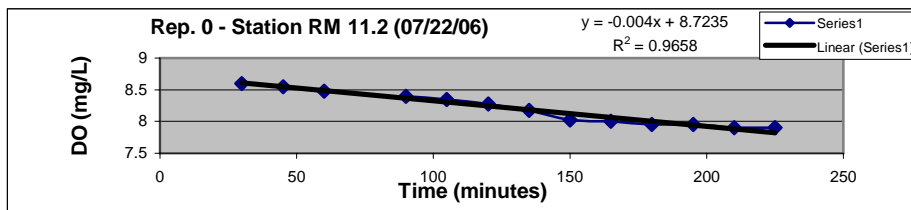


FIGURE B-5
STATION RM 6.5 - MINNESOTA RIVER
SEDIMENT OXYGEN DEMAND - JULY 23, 2006

Time	Minutes	Rep 0	Rep 1	Rep 2	Rep 3
1145	0	8.25		7.95	8.3
1200	15	8.25	8.25	7.825	8.2
1215	30	8.2	8.2	7.725	8.125
1230	45	8.2	8.1	7.6	8.05
1245	60	8.2	8	7.5	8
1300	75	8.2	7.95	7.4	
1315	90	8.175	7.85	7.3	7.8
1330	105	8.2	7.825	7.2	7.75
1345	120	8.1	7.8	7.1	7.7
1400	135	8.1	7.75	7	7.625
1415	150	8.1	7.7	6.9	7.55
1430	165	8.1	7.675	6.75	7.5
1445	180	8.025	7.625	6.75	7.425
1500	195	8	7.6	6.675	7.35
1515	210	8	7.5	6.6	7.3
1530	225	8	7.4	6.5	7.25

Avg. water temp. 25.8 C

End cal ck 1530 hrs 6.55 6.5 6.5 6.5 Winkler 6.55

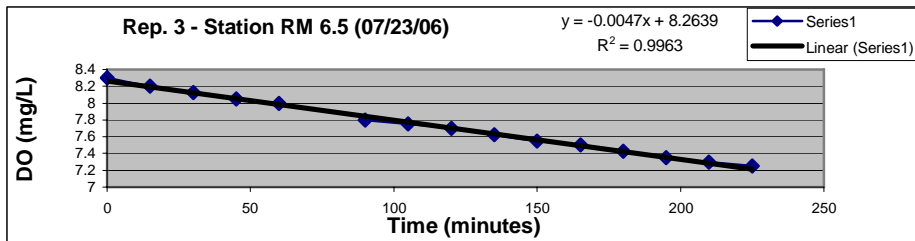
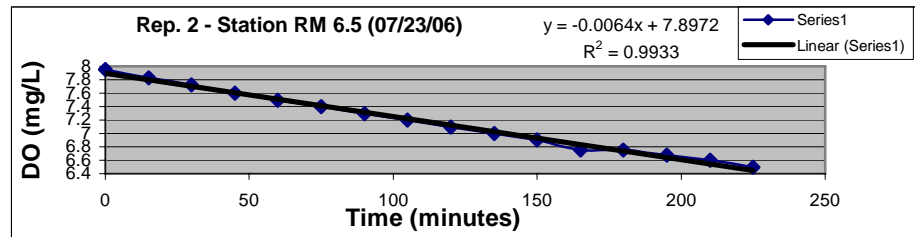
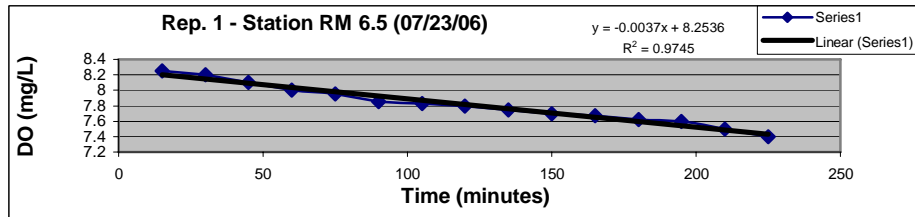
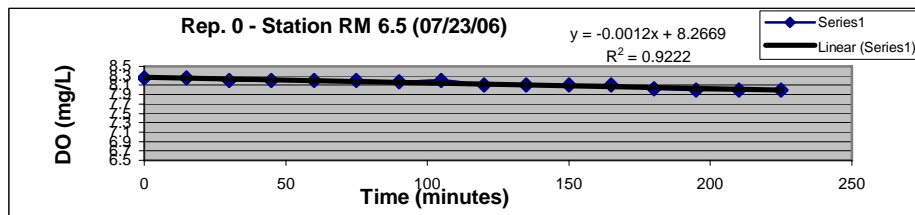


FIGURE B-6
STATION RM 1.0 - MINNESOTA RIVER
SEDIMENT OXYGEN DEMAND - July 24, 2006

Time	Minutes	Rep 0	Rep 1	Rep 2	Rep 3
1145	0	8.25		7.95	8.3
1200	15	8.25	8.25	7.825	8.2
1215	30	8.2	8.2	7.725	8.125
1230	45	8.2	8.1	7.6	8.05
1245	60	8.2	8	7.5	8
1300	75	8.2	7.95	7.4	
1315	90	8.175	7.85	7.3	7.8
1330	105	8.2	7.825	7.2	7.75
1345	120	8.1	7.8	7.1	7.7
1400	135	8.1	7.75	7	7.625
1415	150	8.1	7.7	6.9	7.55

Avg. water temp. 27.0 C

End cal ck 1430 hrs 6.9 6.8 Batteries failed 6.85 Winkler 6.55
before end cal

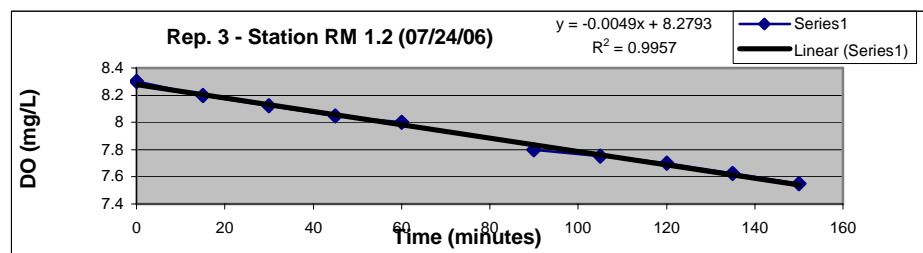
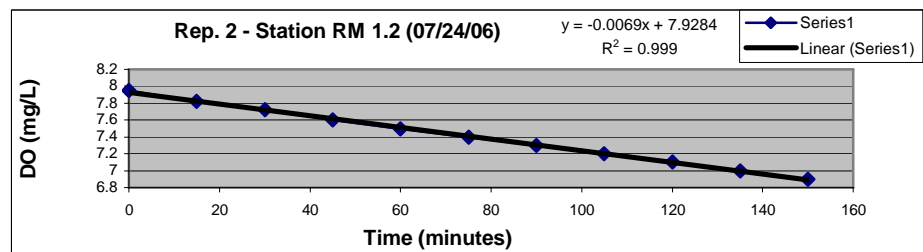
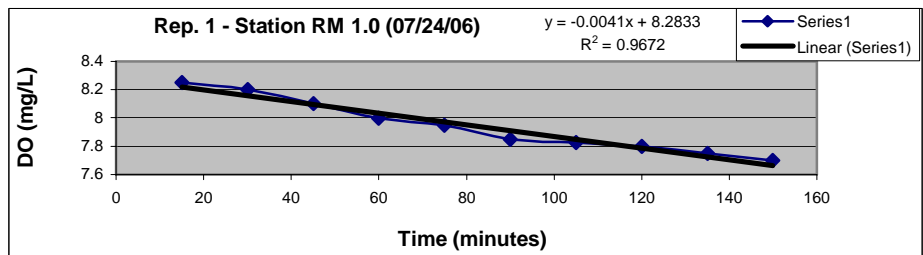
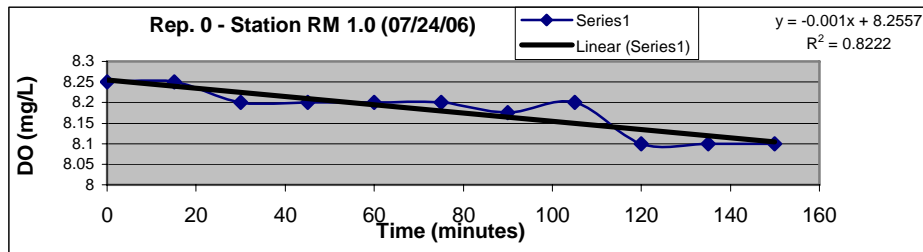


FIGURE B-7
STATION RM 11 - MINNESOTA RIVER
SEDIMENT OXYGEN DEMAN - SEPT. 04, 2006

Time	Minutes	Rep 0	Rep 1	Rep 2	Rep 3
1025	0	5.2	4.7	5.1	5.075
1040	15	5.2	4.6	5.1	5
1055	30	5.175	4.5	4.925	4.9
1110	45	5.15	4.425	4.85	4.8
1025	60	5.125	4.35	4.75	4.7
1140	75	5.1	4.225	4.575	4.625
1155	90	5.1	4.15	4.55	4.575
1210	105	5.1	4.05	4.5	4.5
1225	120	5.1	3.975	4.45	4.425
1240	135	5.1	3.9	4.35	4.325
1300	155	5.1	3.775	4.25	4.2
1310	165	5.075	3.7	4.175	4.175
1325	180	5.05	3.6	4.125	4.1

Avg. water temp. 20.1 C

End cal ck 1625 hrs 7.5 7.5 7.6 7.6 Winkler 7.60 & 7.60

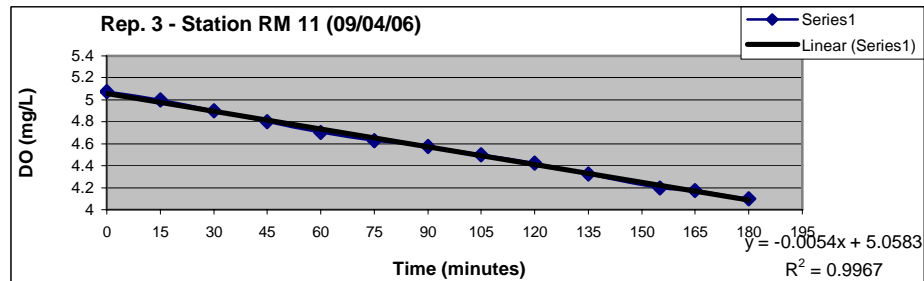
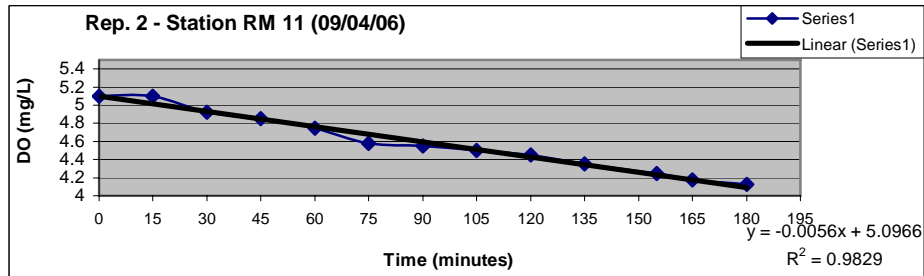
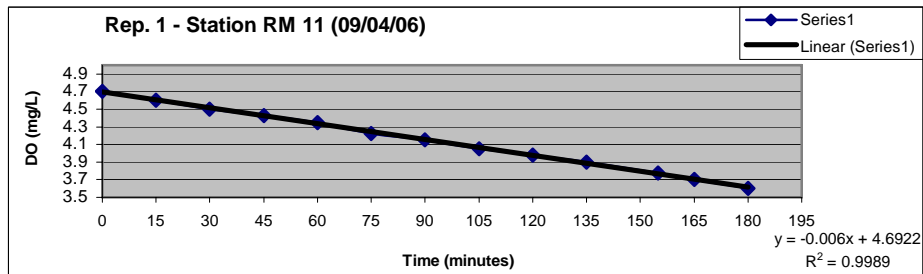
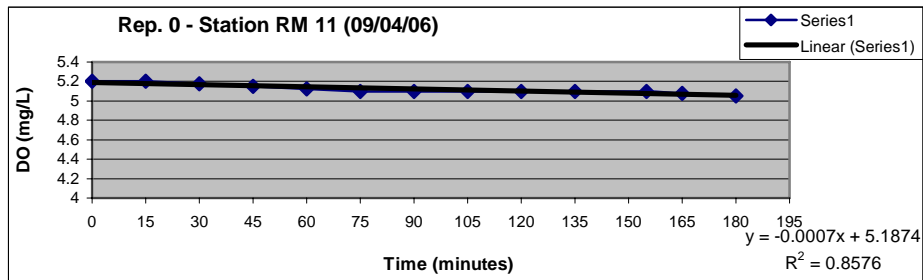


FIGURE B-9
STATION RM 21 - MINNESOTA RIVER
SEDIMENT OXYGEN DEMAND - SEPT. 01, 2006

Time	Minutes	Rep 0	Rep 1	Rep 2	Rep 3
1310	0	8.2	7.8	8.3	8.3
1325	15	8.125	7.7	8.125	8.2
1340	30	8.1	7.5	8	8.15
1355	45	8.075	7.5	7.9	8.1
1410	60	8	7.4	7.75	8
1425	75	8	7.3	7.625	7.9
1440	90	7.925	7.2	7.5	7.8
1455	105	7.925	7.1	7.325	7.7
1510	120	7.9	7	7.275	7.6
1525	135	7.825	6.9	7.15	7.5
1540	150	7.8	6.8	7.075	7.4

Average water temperature 22.9 C

End cal ck 1540 hrs 7.6 7.6 7.6 7.6 Winkler 7.60 & 7.65

