Emory River Samples
Collected July 31, 2006

	In-Situ pH	Lab pH	Alkalinity mg/L CaCO3	TSS mg/L	TDS mg/L
Emory River					
EMR 1.9	7.5	8.55	108		
ERM 2.1	7.5	8.57	108		
ERM 2.3	7.4	8.55	104		
ERM 2.5	7.5	8.55	105		
ERM 2.7	7.4	8.52	107		
Flyash sluice	6.1	7.65	113	8.27	0.32
Bottom Ash	7.4	8.35	108	0.011	0.26
Ashpond	7.5	8.35	112	0.006	0.26

Second Round of Samples Collected from Ashpond on August 16, 2006

Initial pH 8

Ashpond Discharge Flowrate: 43.49 MGD

Pump Capacity
Coal Yard Runoff Pumps 1.37 MGD 950 gpm 1368000 gallons/day
(This flow is included in the 43.49)

Dredge Cell Flow
10 year-24 hour storm event
Peak Flow 45.2 MGD 70 cfs 45239040 gallons/day
Total Flow 11.4 MGD 1523000 cf 11392040 gallons
Note: Design for Total Flow

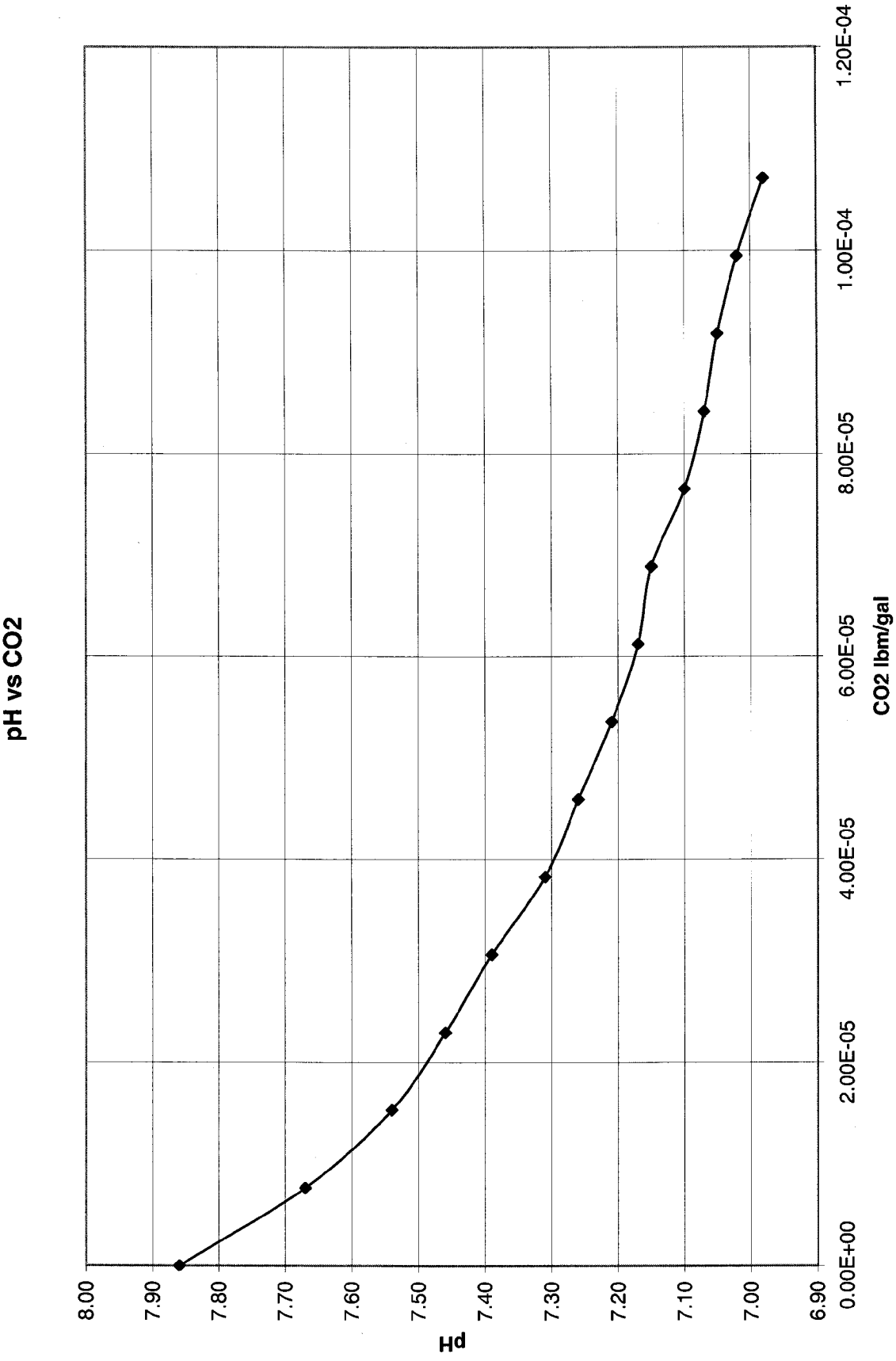
Design Flowrate 56.25 MGD (Ashpond Discharge+Dredge Cell Flow)

Pounds of CO2/day 6027.02

Tons/day 3.01

Tons/day (90% Efficiency) 3.35

Inflate by 15% 3.9


pH vs CO2
pH
8.00
7.90
7.80
7.70
7.60
7.50
7.40
7.30
7.20
7.10
7.00
6.90
0.00E+00
2.00E-05
4.00E-05
6.00E-05
8.00E-05
1.00E-04
1.20E-04
CO2 lbm/gal

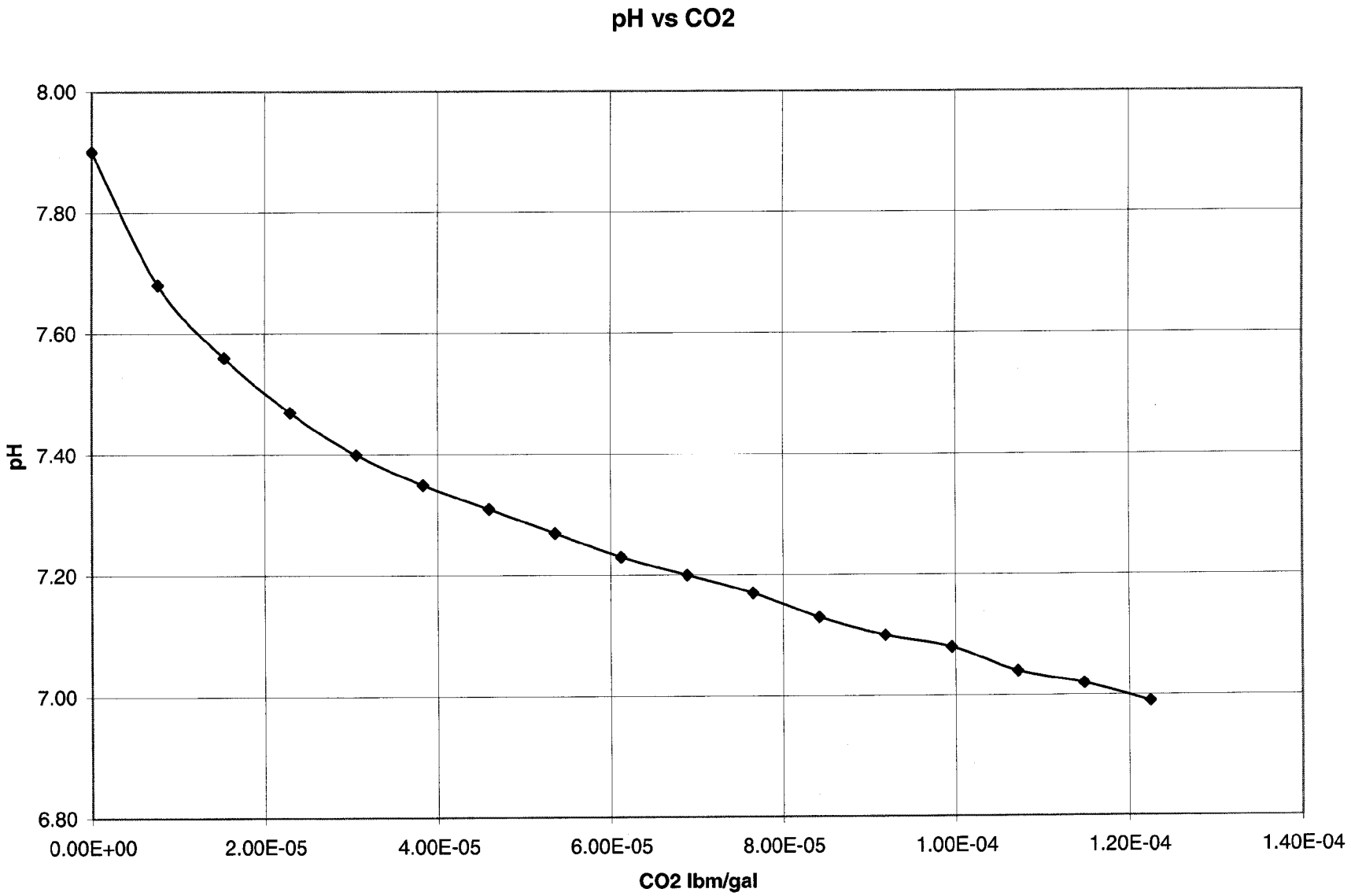
CO2 44.01 g/mol

0.1 ml 0.5 N NaOH
2.4 ml CO2 sat Water

0.021 N CO2 0.010 M CO2

Sample 50 ml

Vol		CO2		pH
ml	mmol	mg	lbm/gal	
0.0	0.000	0.00	0.00E+00	7.86
0.1	0.001	0.05	7.65E-06	7.67
0.2	0.002	0.09	1.53E-05	7.54
0.3	0.003	0.14	2.30E-05	7.46
0.4	0.004	0.18	3.06E-05	7.39
0.5	0.005	0.23	3.83E-05	7.31
0.6	0.006	0.28	4.59E-05	7.26
0.7	0.007	0.32	5.36E-05	7.21
0.8	0.008	0.37	6.12E-05	7.17
0.9	0.009	0.41	6.89E-05	7.15
1.0	0.010	0.46	7.65E-05	7.10
1.1	0.011	0.50	8.42E-05	7.07
1.2	0.013	0.55	9.18E-05	7.05
1.3	0.014	0.60	9.95E-05	7.02
1.4	0.015	0.64	1.07E-04	6.98



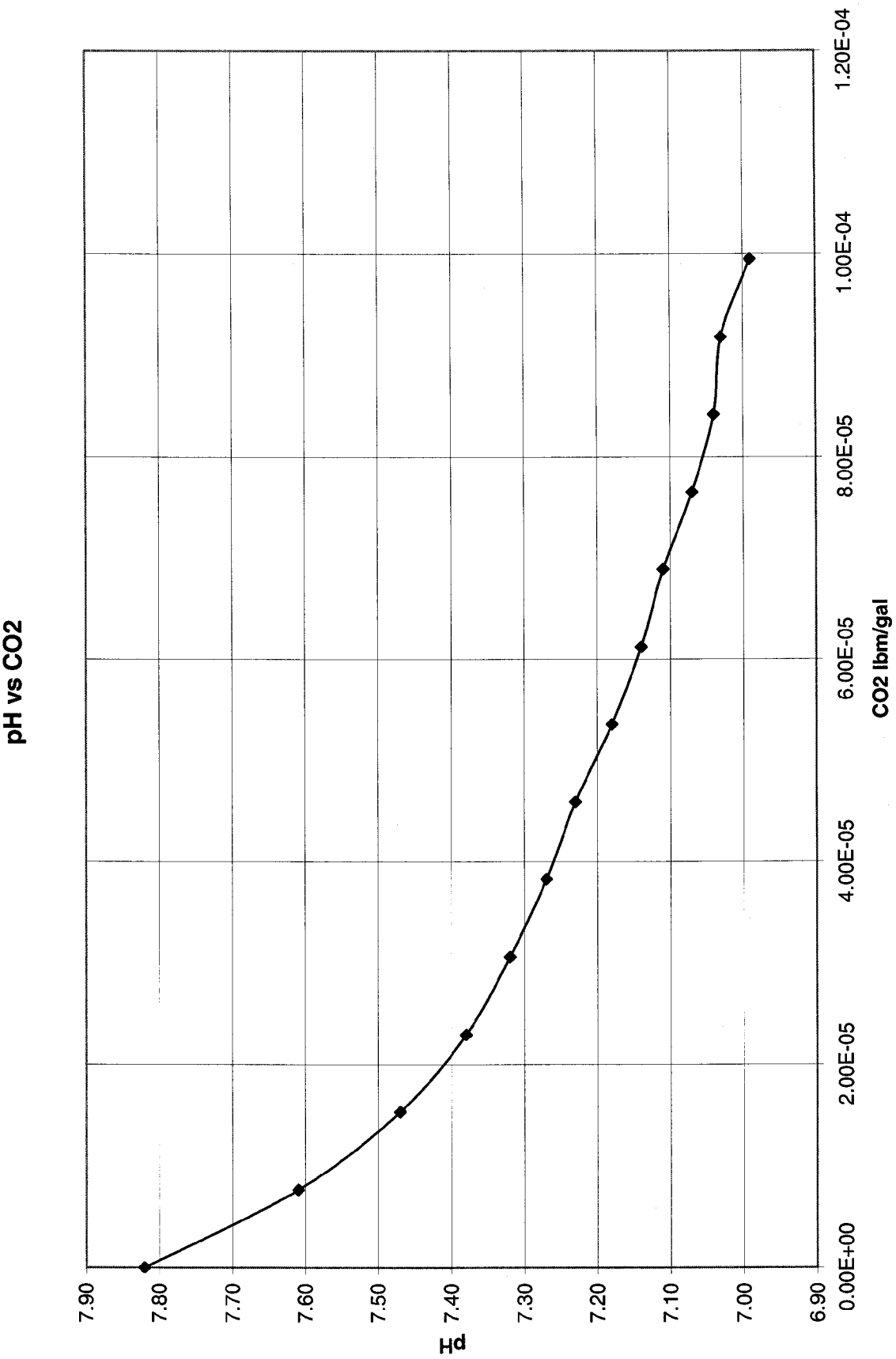
CO2 44.01 g/mol

0.1 ml 0.5 N NaOH
2.4 ml CO2 sat Water

0.021 N CO2 0.010 M CO2

Sample 50 ml

Vol		CO2		pH
ml	mmol	mg	lbm/gal	
0.0	0.000	0.00	0.00E+00	7.90
0.1	0.001	0.05	7.65E-06	7.68
0.2	0.002	0.09	1.53E-05	7.56
0.3	0.003	0.14	2.30E-05	7.47
0.4	0.004	0.18	3.06E-05	7.40
0.5	0.005	0.23	3.83E-05	7.35
0.6	0.006	0.28	4.59E-05	7.31
0.7	0.007	0.32	5.36E-05	7.27
0.8	0.008	0.37	6.12E-05	7.23
0.9	0.009	0.41	6.89E-05	7.20
1.0	0.010	0.46	7.65E-05	7.17
1.1	0.011	0.50	8.42E-05	7.13
1.2	0.013	0.55	9.18E-05	7.10
1.3	0.014	0.60	9.95E-05	7.08
1.4	0.015	0.64	1.07E-04	7.04
1.5	0.016	0.69	1.15E-04	7.02
1.6	0.017	0.73	1.22E-04	6.99


pH vs CO2
pH
7.90
7.80
7.70
7.60
7.50
7.40
7.30
7.20
7.10
7.00
6.90
0.00E+00
2.00E-05
4.00E-05
6.00E-05
8.00E-05
1.00E-04
1.20E-04
CO2 lbm/gal

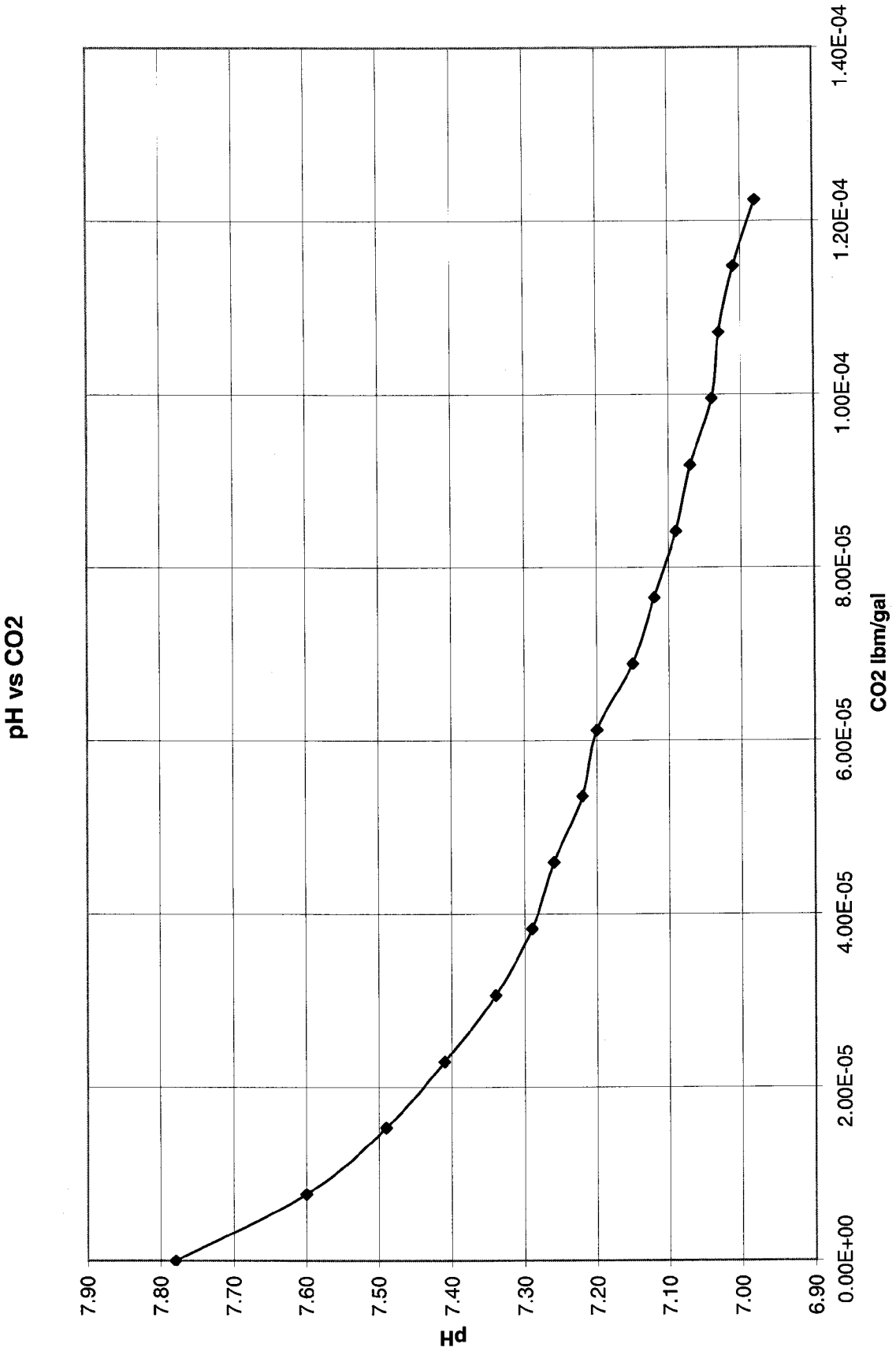
CO2 44.01 g/mol

0.1 ml 0.5 N NaOH
2.4 ml CO2 sat Water

0.021 N CO2 0.010 M CO2

Sample 50 ml

Vol		CO2		pH
ml	mmol	mg	lbm/gal	
0.0	0.000	0.00	0.00E+00	7.82
0.1	0.001	0.05	7.65E-06	7.61
0.2	0.002	0.09	1.53E-05	7.47
0.3	0.003	0.14	2.30E-05	7.38
0.4	0.004	0.18	3.06E-05	7.32
0.5	0.005	0.23	3.83E-05	7.27
0.6	0.006	0.28	4.59E-05	7.23
0.7	0.007	0.32	5.36E-05	7.18
0.8	0.008	0.37	6.12E-05	7.14
0.9	0.009	0.41	6.89E-05	7.11
1.0	0.010	0.46	7.65E-05	7.07
1.1	0.011	0.50	8.42E-05	7.04
1.2	0.013	0.55	9.18E-05	7.03
1.3	0.014	0.60	9.95E-05	6.99


pH vs CO2
pH
7.90
7.80
7.70
7.60
7.50
7.40
7.30
7.20
7.10
7.00
6.90
0.00E+00
2.00E-05
4.00E-05
6.00E-05
8.00E-05
1.00E-04
1.20E-04
1.40E-04
CO2 lbm/gal

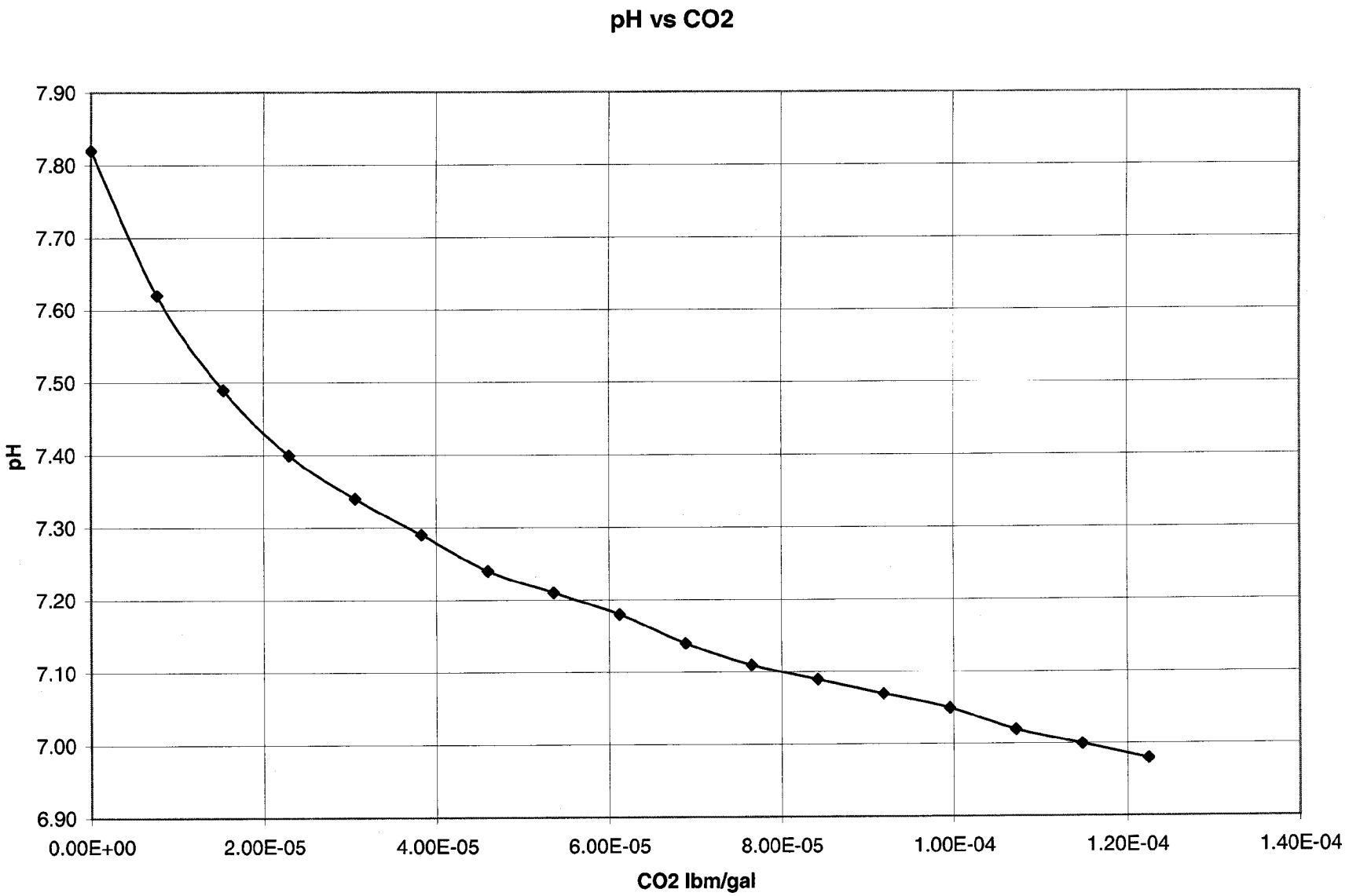
CO2 44.01 g/mol

0.1 ml 0.5 N NaOH
2.4 ml CO2 sat Water

0.021 N CO2 0.010 M CO2

Sample 50 ml

Vol ml	mmol	CO2 mg	lbm/gal	pH
0.0	0.000	0.00	0.00E+00	7.78
0.1	0.001	0.05	7.65E-06	7.60
0.2	0.002	0.09	1.53E-05	7.49
0.3	0.003	0.14	2.30E-05	7.41
0.4	0.004	0.18	3.06E-05	7.34
0.5	0.005	0.23	3.83E-05	7.29
0.6	0.006	0.28	4.59E-05	7.26
0.7	0.007	0.32	5.36E-05	7.22
0.8	0.008	0.37	6.12E-05	7.20
0.9	0.009	0.41	6.89E-05	7.15
1.0	0.010	0.46	7.65E-05	7.12
1.1	0.011	0.50	8.42E-05	7.09
1.2	0.013	0.55	9.18E-05	7.07
1.3	0.014	0.60	9.95E-05	7.04
1.4	0.015	0.64	1.07E-04	7.03
1.5	0.016	0.69	1.15E-04	7.01
1.6	0.017	0.73	1.22E-04	6.98



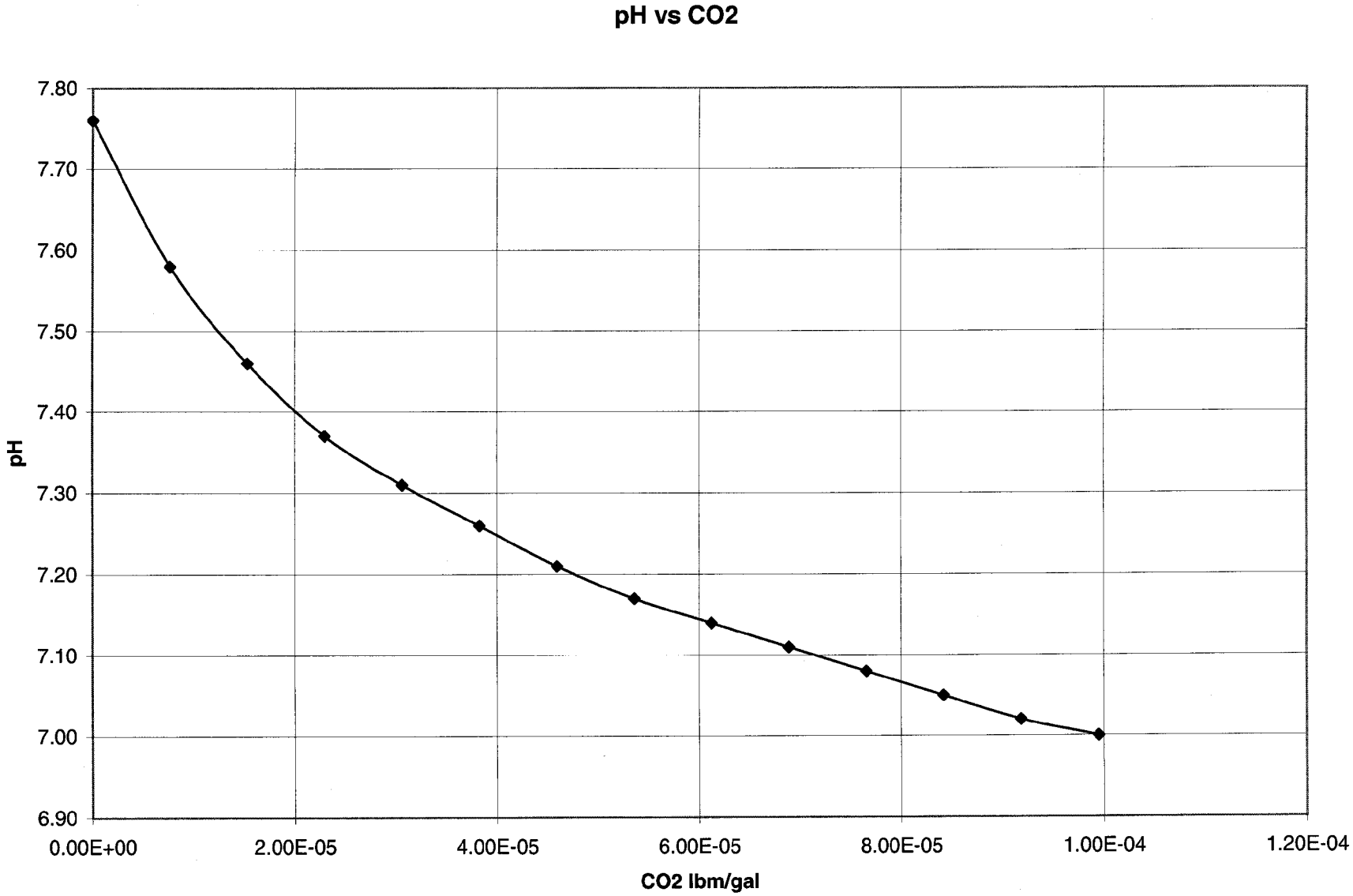
CO2 44.01 g/mol

0.1 ml 0.5 N NaOH
2.4 ml CO2 sat Water

0.021 N CO2 0.010 M CO2

Sample 50 ml

Vol		CO2		pH
ml	mmol	mg	lbm/gal	
0.0	0.000	0.00	0.00E+00	7.82
0.1	0.001	0.05	7.65E-06	7.62
0.2	0.002	0.09	1.53E-05	7.49
0.3	0.003	0.14	2.30E-05	7.40
0.4	0.004	0.18	3.06E-05	7.34
0.5	0.005	0.23	3.83E-05	7.29
0.6	0.006	0.28	4.59E-05	7.24
0.7	0.007	0.32	5.36E-05	7.21
0.8	0.008	0.37	6.12E-05	7.18
0.9	0.009	0.41	6.89E-05	7.14
1.0	0.010	0.46	7.65E-05	7.11
1.1	0.011	0.50	8.42E-05	7.09
1.2	0.013	0.55	9.18E-05	7.07
1.3	0.014	0.60	9.95E-05	7.05
1.4	0.015	0.64	1.07E-04	7.02
1.5	0.016	0.69	1.15E-04	7.00
1.6	0.017	0.73	1.22E-04	6.98



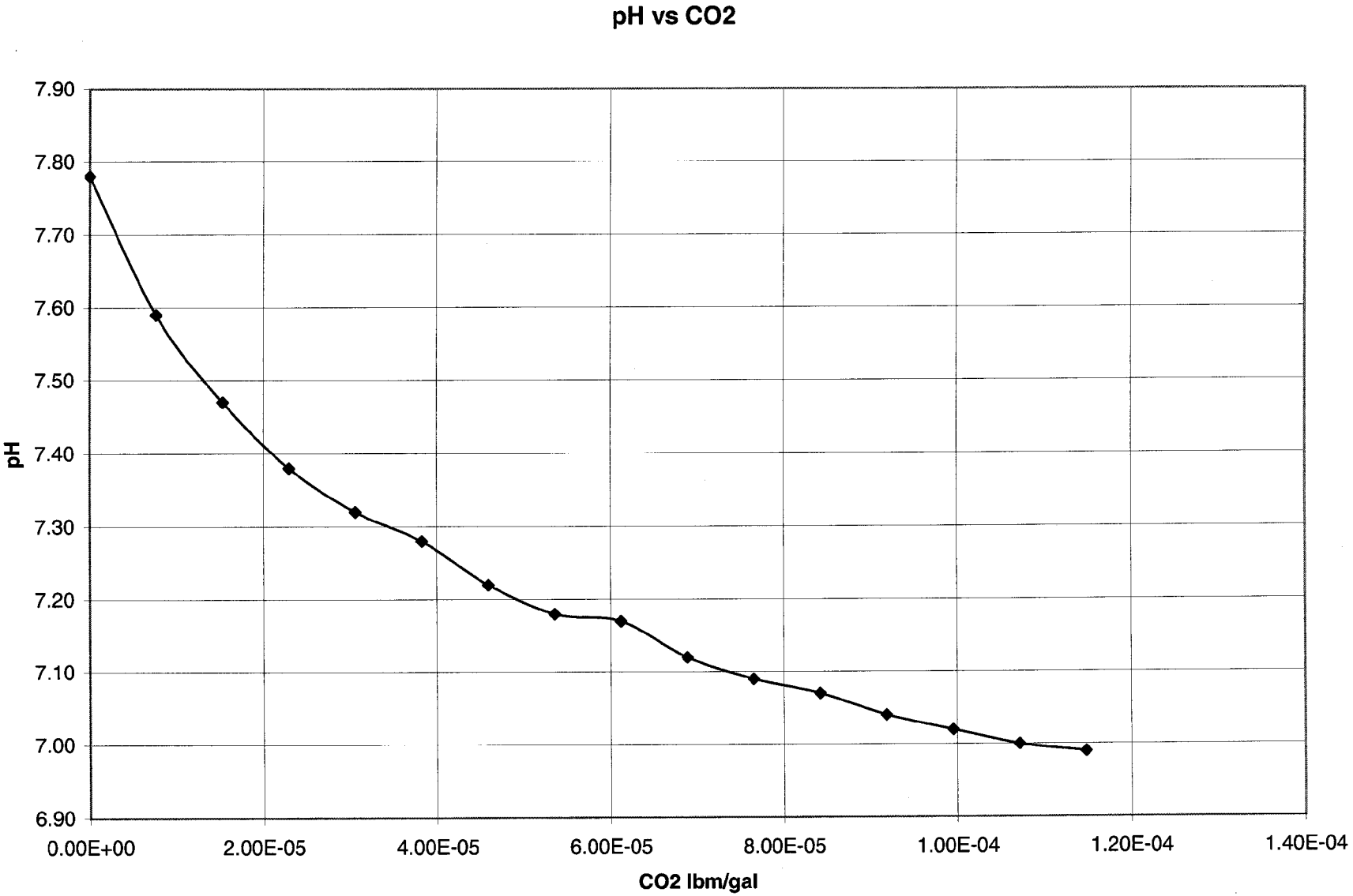
CO2 44.01 g/mol

0.1 ml 0.5 N NaOH
2.4 ml CO2 sat Water

0.021 N CO2 0.010 M CO2

Sample 50 ml

Vol		CO2		pH
ml	mmol	mg	lbm/gal	
0.0	0.000	0.00	0.00E+00	7.76
0.1	0.001	0.05	7.65E-06	7.58
0.2	0.002	0.09	1.53E-05	7.46
0.3	0.003	0.14	2.30E-05	7.37
0.4	0.004	0.18	3.06E-05	7.31
0.5	0.005	0.23	3.83E-05	7.26
0.6	0.006	0.28	4.59E-05	7.21
0.7	0.007	0.32	5.36E-05	7.17
0.8	0.008	0.37	6.12E-05	7.14
0.9	0.009	0.41	6.89E-05	7.11
1.0	0.010	0.46	7.65E-05	7.08
1.1	0.011	0.50	8.42E-05	7.05
1.2	0.013	0.55	9.18E-05	7.02
1.3	0.014	0.60	9.95E-05	7.00



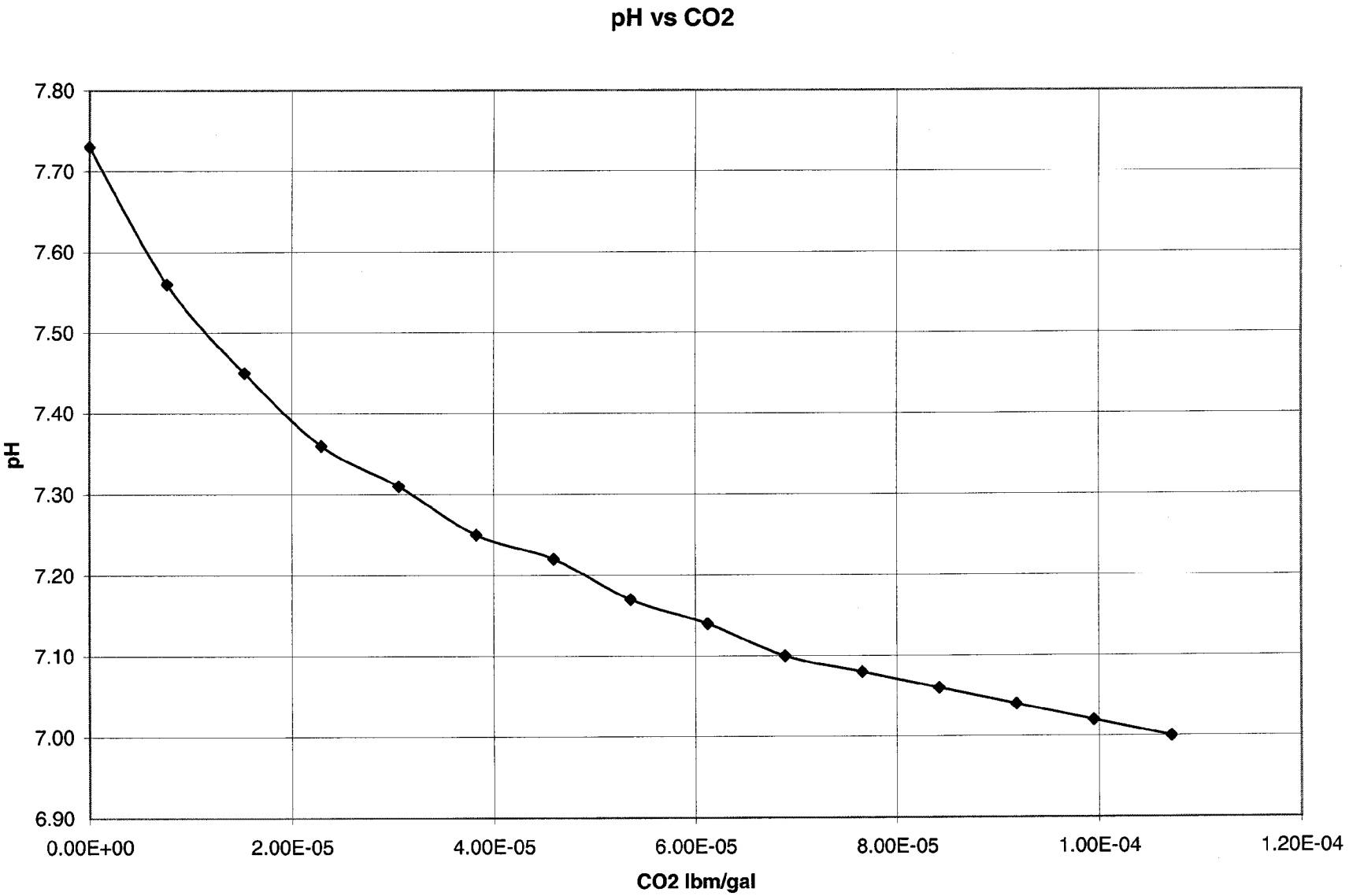
CO2 44.01 g/mol

0.1 ml 0.5 N NaOH
2.4 ml CO2 sat Water

0.021 N CO2 0.010 M CO2

Sample 50 ml

Vol		CO2		pH
ml	mmol	mg	lbm/gal	
0.0	0.000	0.00	0.00E+00	7.78
0.1	0.001	0.05	7.65E-06	7.59
0.2	0.002	0.09	1.53E-05	7.47
0.3	0.003	0.14	2.30E-05	7.38
0.4	0.004	0.18	3.06E-05	7.32
0.5	0.005	0.23	3.83E-05	7.28
0.6	0.006	0.28	4.59E-05	7.22
0.7	0.007	0.32	5.36E-05	7.18
0.8	0.008	0.37	6.12E-05	7.17
0.9	0.009	0.41	6.89E-05	7.12
1.0	0.010	0.46	7.65E-05	7.09
1.1	0.011	0.50	8.42E-05	7.07
1.2	0.013	0.55	9.18E-05	7.04
1.3	0.014	0.60	9.95E-05	7.02
1.4	0.015	0.64	1.07E-04	7.00
1.5	0.016	0.69	1.15E-04	6.99



CO2 44.01 g/mol

0.1 ml 0.5 N NaOH
2.4 ml CO2 sat Water

0.021 N CO2 0.010 M CO2

Sample 50 ml

Vol		CO2		pH
ml	mmol	mg	lbm/gal	
0.0	0.000	0.00	0.00E+00	7.73
0.1	0.001	0.05	7.65E-06	7.56
0.2	0.002	0.09	1.53E-05	7.45
0.3	0.003	0.14	2.30E-05	7.36
0.4	0.004	0.18	3.06E-05	7.31
0.5	0.005	0.23	3.83E-05	7.25
0.6	0.006	0.28	4.59E-05	7.22
0.7	0.007	0.32	5.36E-05	7.17
0.8	0.008	0.37	6.12E-05	7.14
0.9	0.009	0.41	6.89E-05	7.10
1.0	0.010	0.46	7.65E-05	7.08
1.1	0.011	0.50	8.42E-05	7.06
1.2	0.013	0.55	9.18E-05	7.04
1.3	0.014	0.60	9.95E-05	7.02
1.4	0.015	0.64	1.07E-04	7.00