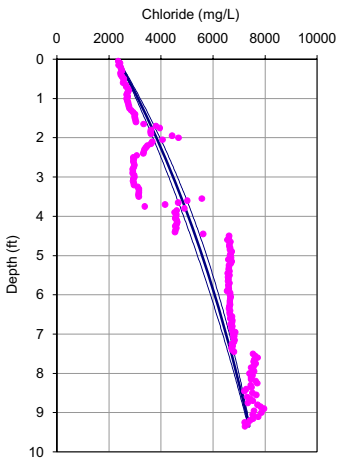
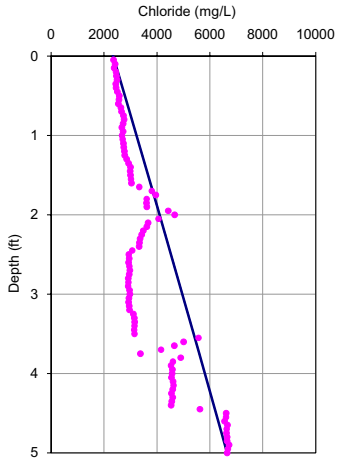
OL-GP-30076-4



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

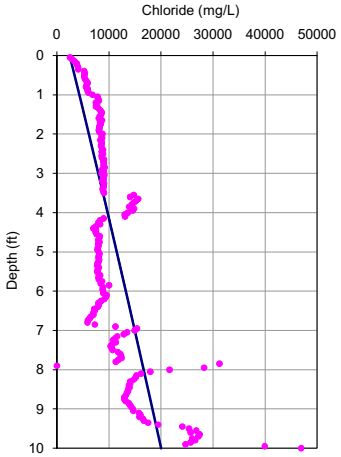
OL-GP-30076-4



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

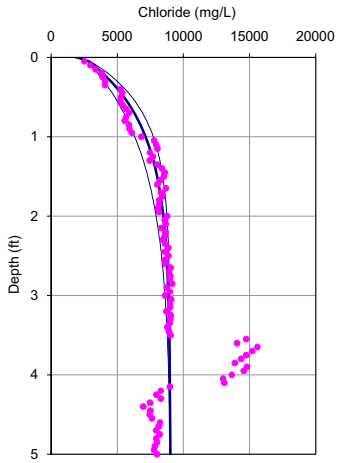
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2343	2343
Cl (mg/L)	7600	6650
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		
V(cm/yr)	-0.77	-0.10
q (cm/yr)	-0.50	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.68	0.66

OL-GP-30077



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

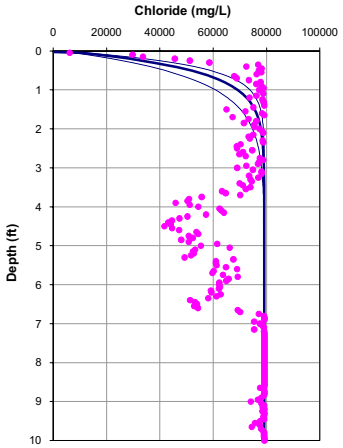
OL-GP-30077



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -7.5 cm/year

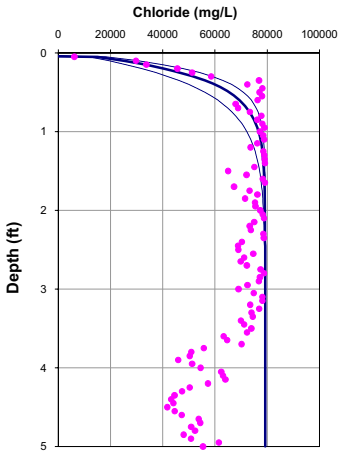
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2446	2446
Cl (mg/L)	20000	9000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		
V(cm/yr)	-0.10	-11.48
q (cm/yr)	-0.07	-7.46
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.67	0.77

OL-GP-40074



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

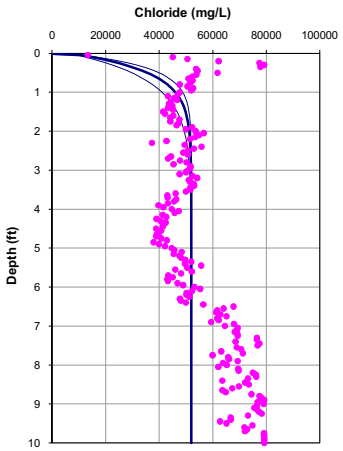
OL-GP-40074



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

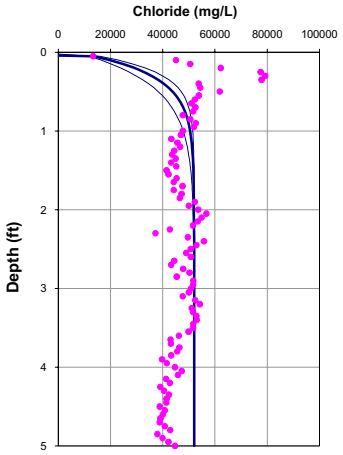
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3124	3124
Cl (mg/L)	79200	79200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-GP-40074A



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

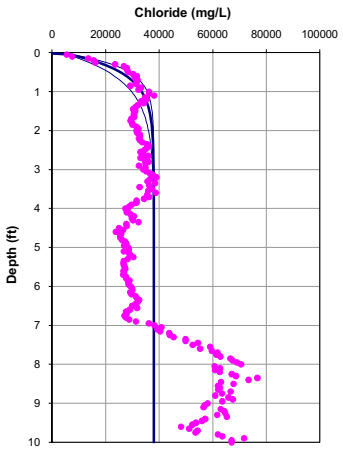
OL-GP-40074A



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

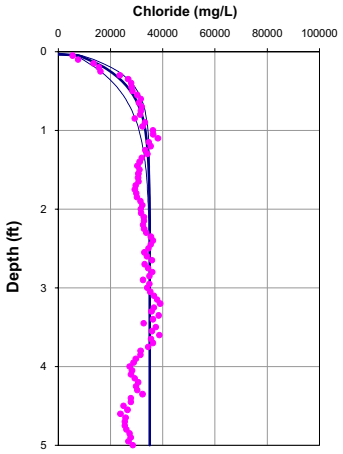
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	6717	6717
Cl (mg/L)	52000	52000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-GP-40075



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

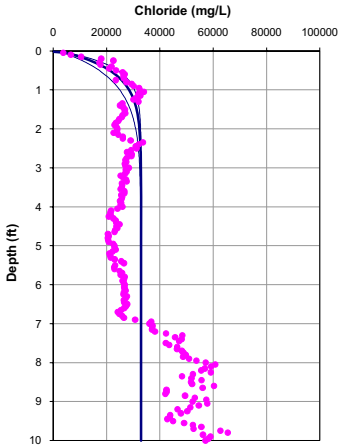
OL-GP-40075



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -29.6 cm/year

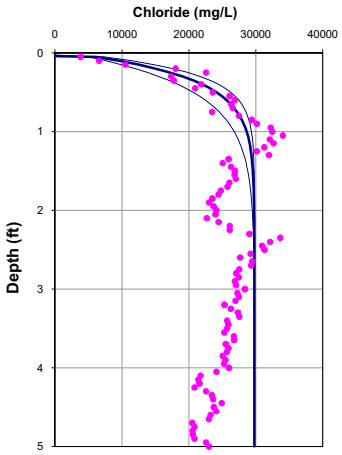
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3539	3539
Cl (mg/L)	38000	35050
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-39.47
q (cm/yr)	-37.50	-29.60
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.13

OL-GP-40076



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -33.0 cm/year

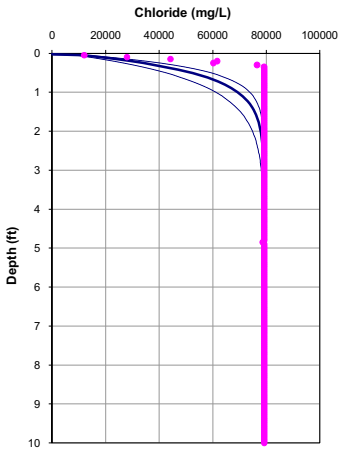
OL-GP-40076



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -33.5 cm/year

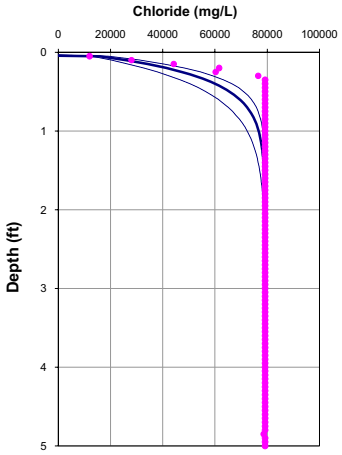
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2071	2071
Cl (mg/L)	33000	29800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-44.00	-44.67
q (cm/yr)	-33.00	-33.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.91	1.18

OL-GP-40076A



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

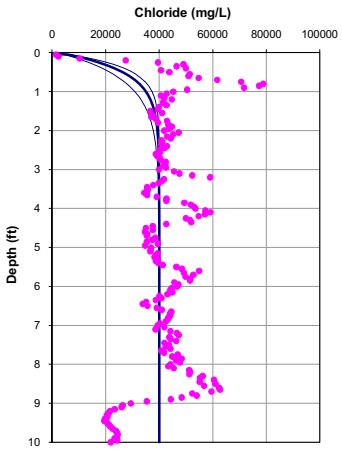
OL-GP-40076A



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

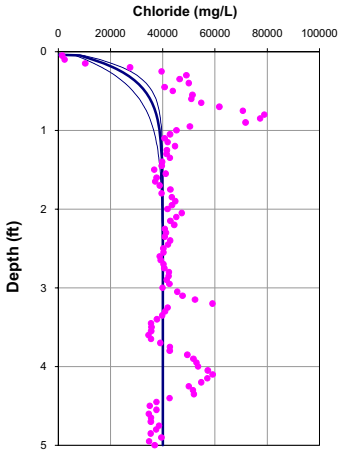
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	4329	4329
Cl (mg/L)	79200	79200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-GP-40077



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

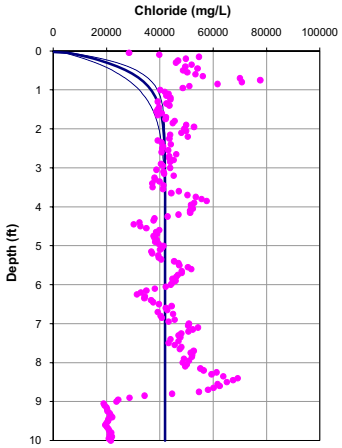
OL-GP-40077



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

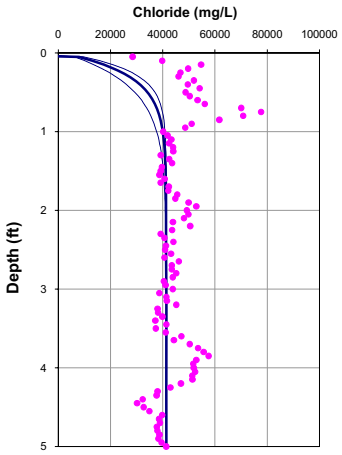
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2400	2400
Cl (mg/L)	40000	40000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-GP-40078



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

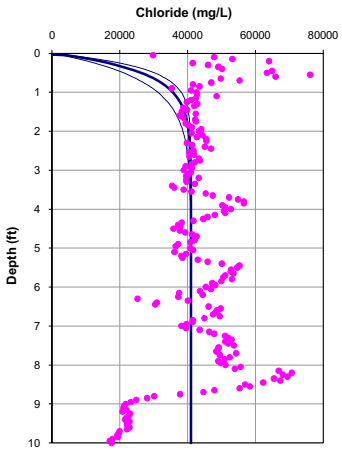
OL-GP-40078



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

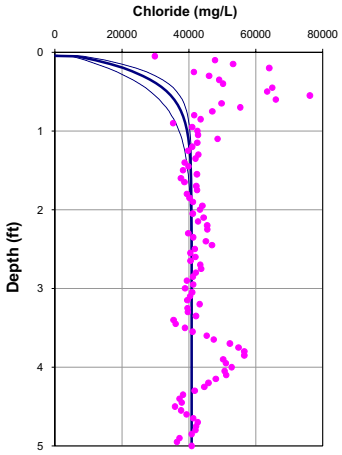
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1700	1700
Cl (mg/L)	42000	41332
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-GP-40079



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

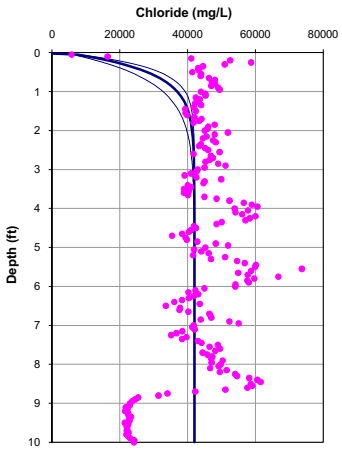
OL-GP-40079



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

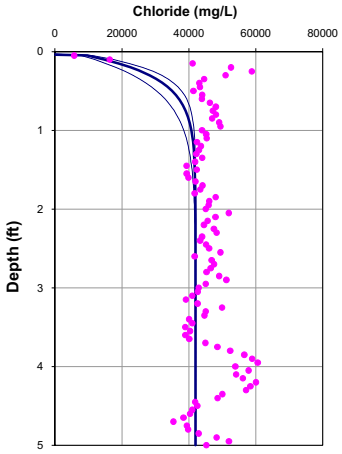
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	41000	40812
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-GP-40079A



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

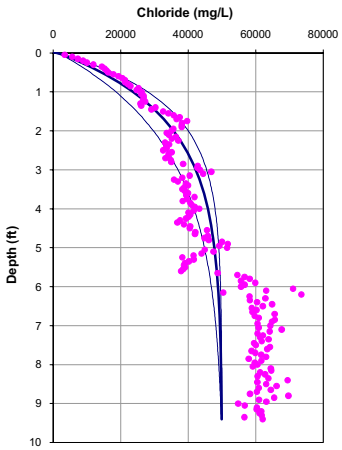
OL-GP-40079A



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

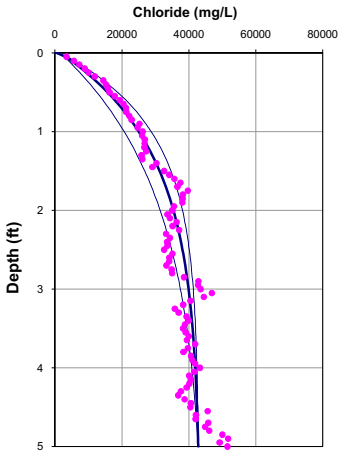
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3633	3633
Cl (mg/L)	42000	42000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-GP-40080



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.3 cm/year

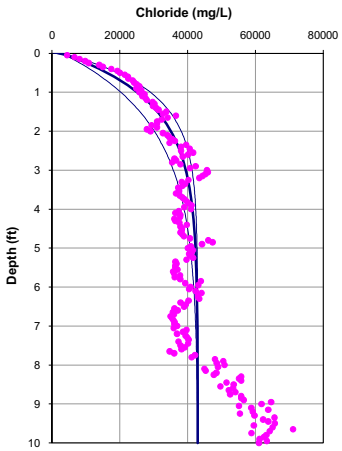
OL-GP-40080



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -6.3 cm/year

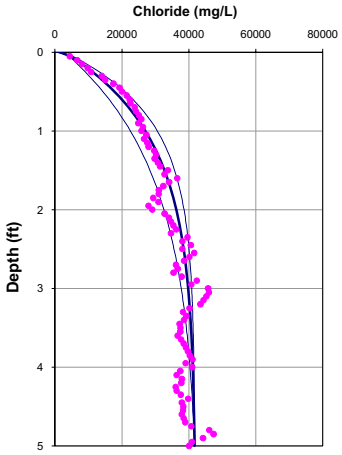
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1572	1572
Cl (mg/L)	50000	42800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-7.00	-8.44
q (cm/yr)	-5.25	-6.33
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.96	0.86

OL-GP-40081



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -7.6 cm/year

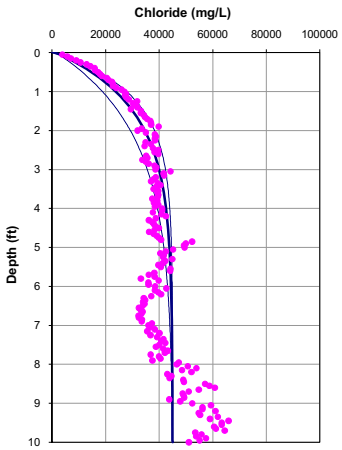
OL-GP-40081



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.5 cm/year

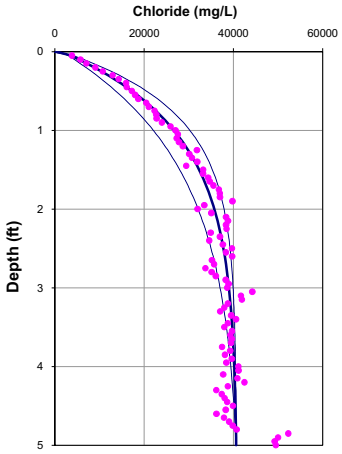
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2885	2885
Cl (mg/L)	43000	41700
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-10.10	-10.00
q (cm/yr)	-7.58	-7.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.04	0.87

OL-GP-40082



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -6.5 cm/year

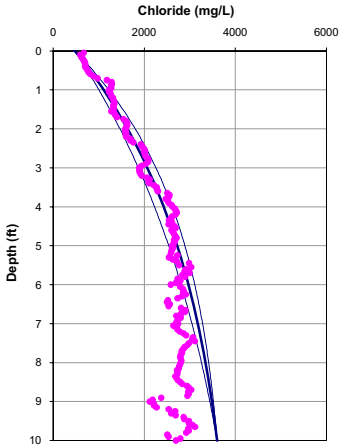
OL-GP-40082



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -8.0 cm/year

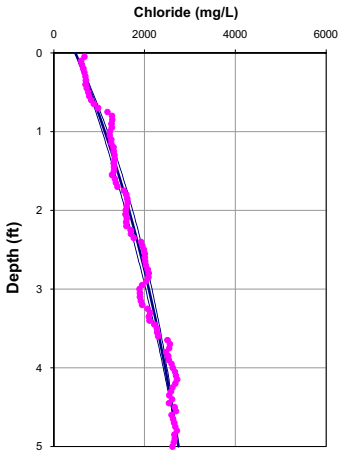
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1587	1587
Cl (mg/L)	45000	40600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-8.61	-10.71
q (cm/yr)	-6.45	-8.03
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.00	0.88

OL-GP-40107



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

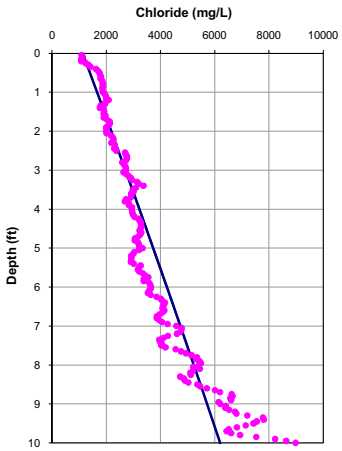
OL-GP-40107



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.4 cm/year

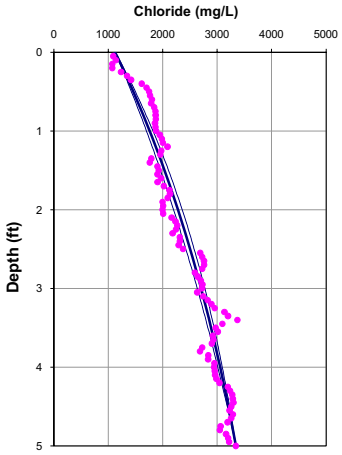
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	477	477
Cl (mg/L)	3600	2750
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-1.88	-1.88
q (cm/yr)	-1.41	-1.41
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.83	0.80

OL-GP-40108



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

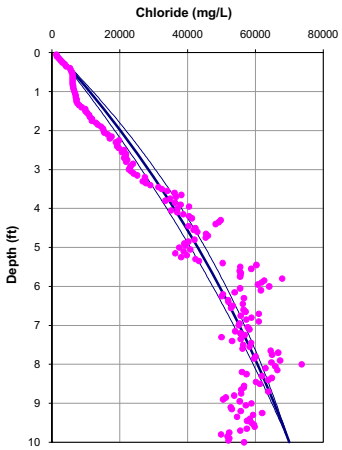
OL-GP-40108



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.4 cm/year

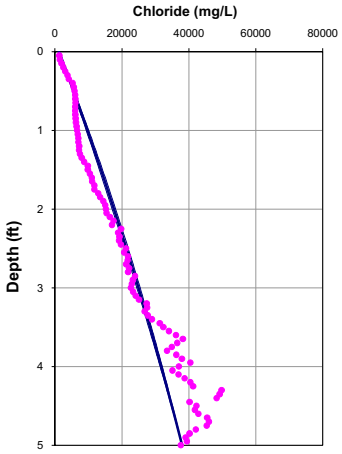
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1129	1129
Cl (mg/L)	6200	3343
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-1.89
q (cm/yr)	-0.08	-1.41
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.80

OL-GP-40109



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.6 cm/year

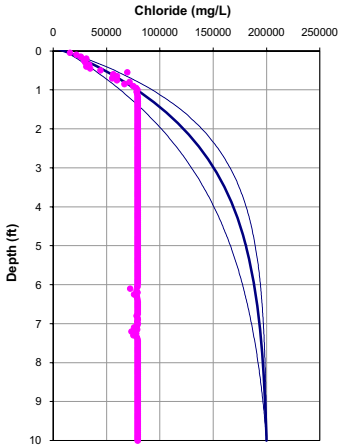
OL-GP-40109



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.6 cm/year

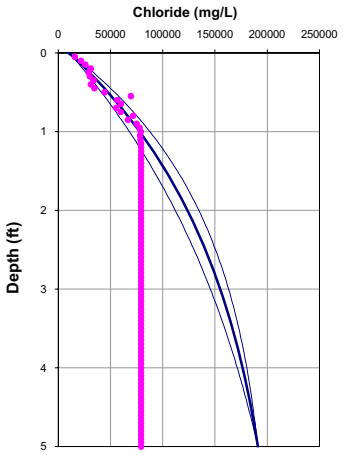
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1155	1155
Cl (mg/L)	70000	38000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.85	-0.74
q (cm/yr)	-0.64	-0.55
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.81	0.79

OL-GP-40110



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -3.5 cm/year

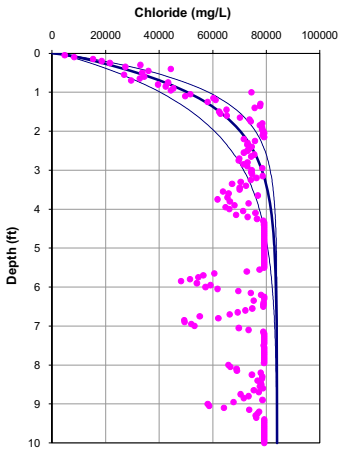
OL-GP-40110



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.8 cm/year

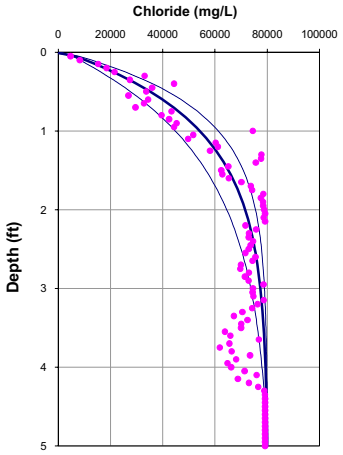
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	10703	10703
Cl (mg/L)	200000	191000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-4.71	-3.73
q (cm/yr)	-3.53	-2.80
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.90	0.82

OL-GP-40110A



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -8.6 cm/year

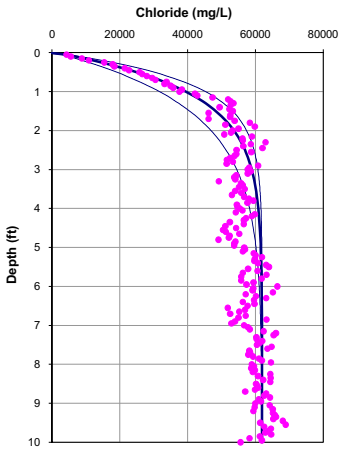
OL-GP-40110A



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -8.7 cm/year

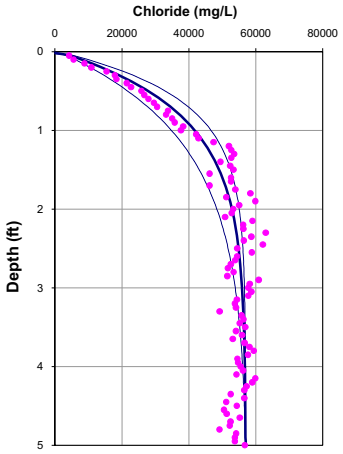
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2499	2499
Cl (mg/L)	84000	80000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-11.48	-11.58
q (cm/yr)	-8.61	-8.68
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.08	0.89

OL-GP-40114



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -10.1 cm/year

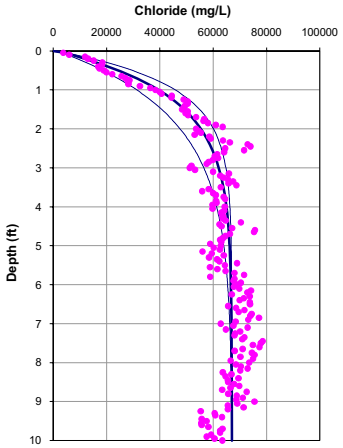
OL-GP-40114



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -10.6 cm/year

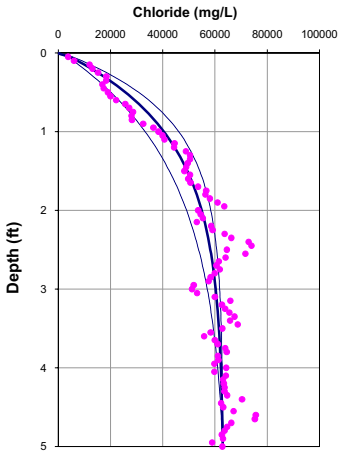
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1108	1108
Cl (mg/L)	62000	56950
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-13.42	-14.12
q (cm/yr)	-10.07	-10.59
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.13	0.91

OL-GP-40115



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -8.3 cm/year

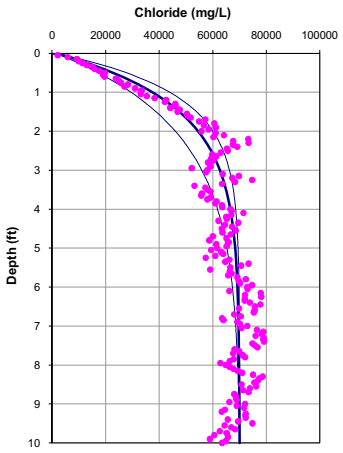
OL-GP-40115



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.8 cm/year

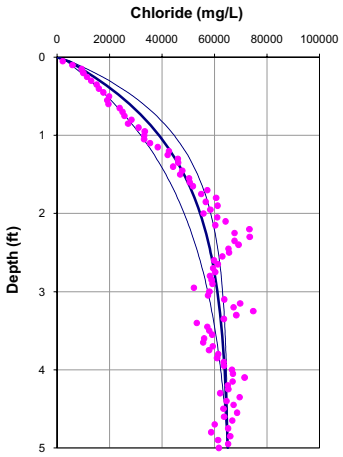
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1508	1508
Cl (mg/L)	67000	63000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-11.04	-10.39
q (cm/yr)	-8.28	-7.79
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.07	0.88

OL-GP-40116



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -6.8 cm/year

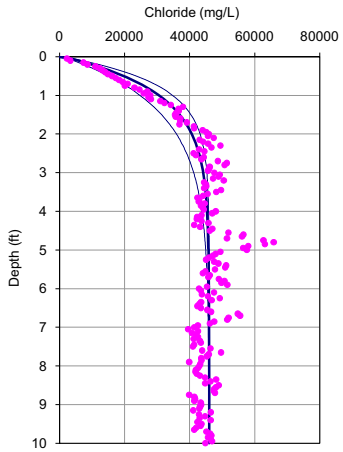
OL-GP-40116



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -6.7 cm/year

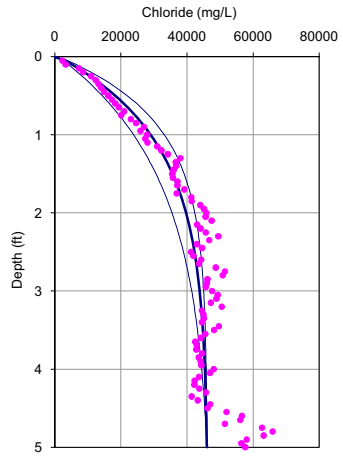
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1514	1514
Cl (mg/L)	70000	65000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-9.03	-8.99
q (cm/yr)	-6.77	-6.74
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.01	0.86

OL-GP-40117



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -11.1 cm/year

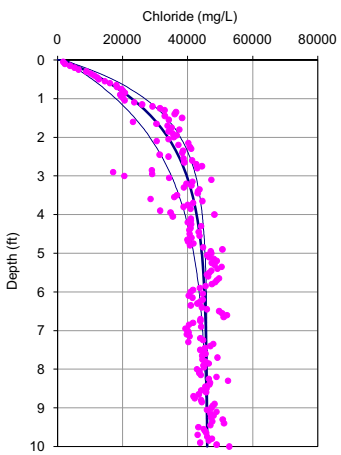
OL-GP-40117



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.5 cm/year

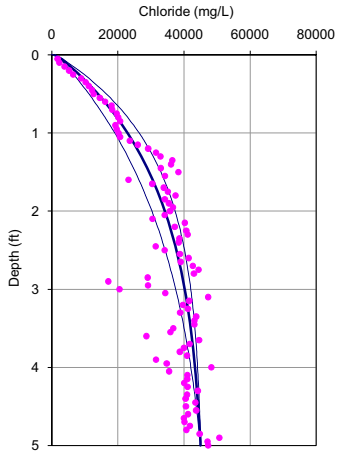
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1102	1102
Cl (mg/L)	46000	46000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-14.86	-10.00
q (cm/yr)	-11.14	-7.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.16	0.87

OL-GP-40118



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.7 cm/year

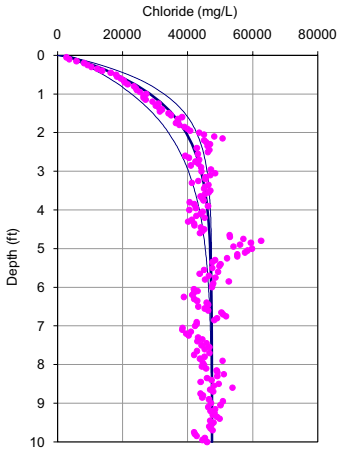
OL-GP-40118



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -4.8 cm/year

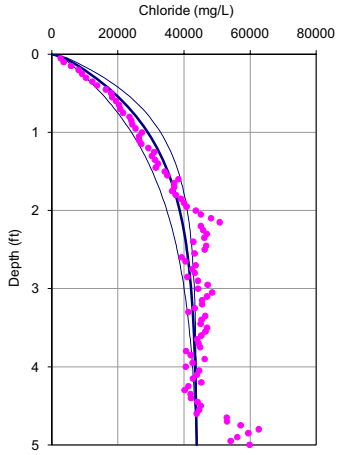
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1455	1455
Cl (mg/L)	46000	45000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-7.63	-6.44
q (cm/yr)	-5.72	-4.83
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.98	0.84

OL-GP-40119



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -8.3 cm/year

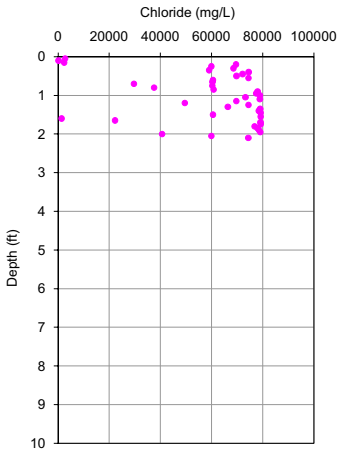
OL-GP-40119



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -8.2 cm/year

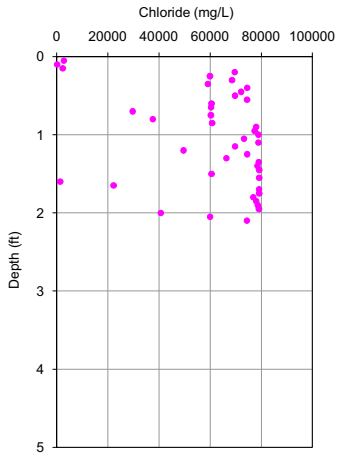
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1974	1974
Cl (mg/L)	47500	43800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-11.12	-10.87
q (cm/yr)	-8.34	-8.15
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.07	0.88

OL-GP-40123



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = NA cm/year

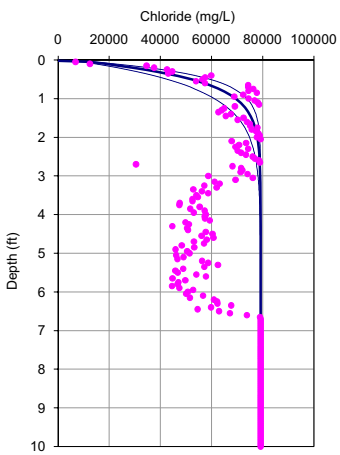
OL-GP-40123



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

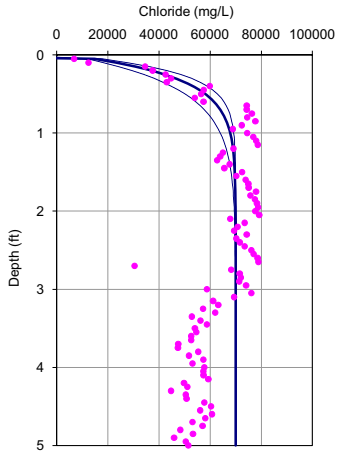
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	72	72
Cl (mg/L)	74386	74386
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-6.74	-4.97
q (cm/yr)	-5.06	-3.72
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.96	0.83

OL-GP-40143



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

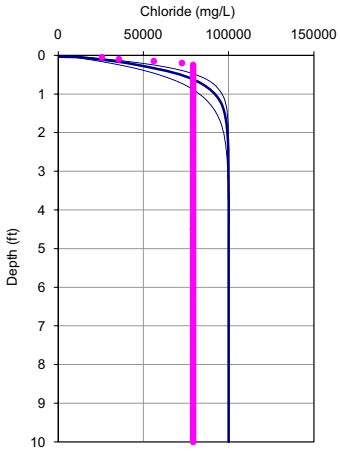
OL-GP-40143



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

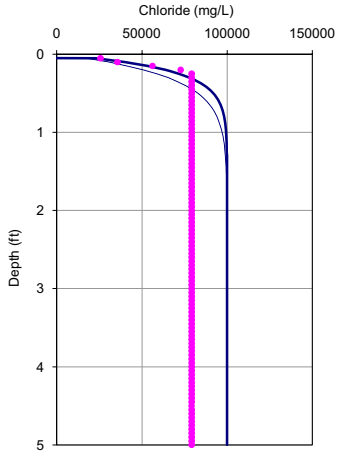
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	4583	4583
Cl (mg/L)	79200	70000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-GP-40144



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

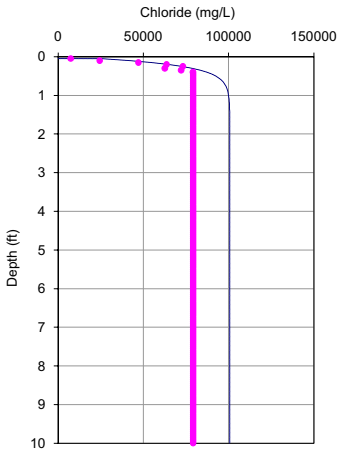
OL-GP-40144



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

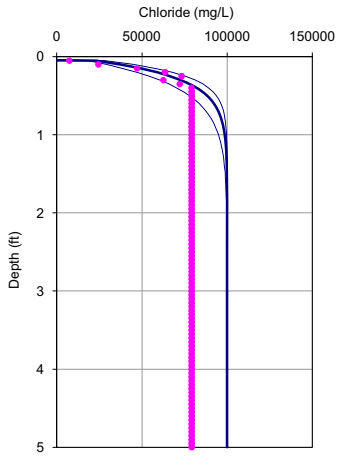
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1000	1000
Cl (mg/L)	100000	100000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-100.00	-100.00
q (cm/yr)	-75.00	-75.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	-0.01	-0.01
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	3.33	1.67

OL-GP-40145



Porosity = 0.75
Dispersion length = 0.0 feet
Upwelling Velocity = <-37.5 cm/year

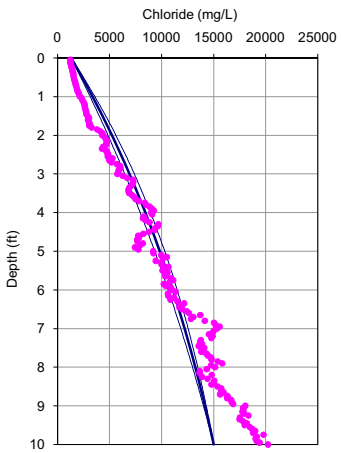
OL-GP-40145



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

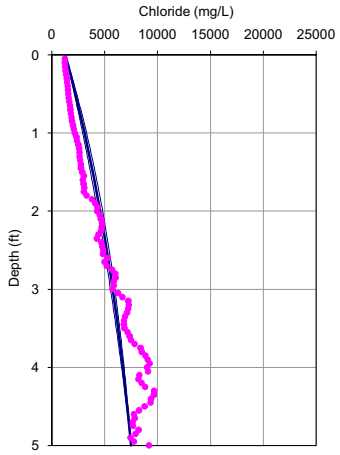
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	5020	5020
Cl (mg/L)	100000	100000
L(ft)	1	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-70.00	-70.00
q (cm/yr)	-52.50	-52.50
dispersion length (ft)	0.01	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.01	0.11
V(ft/d)	-0.01	-0.01
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.84	1.40

OL-GP-40148



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

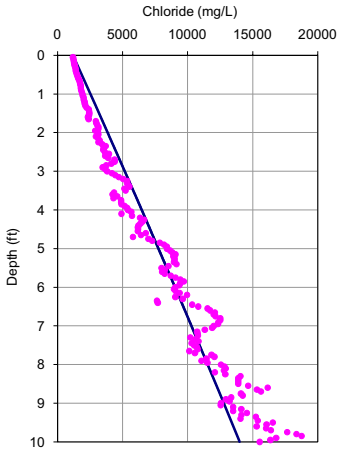
OL-GP-40148



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

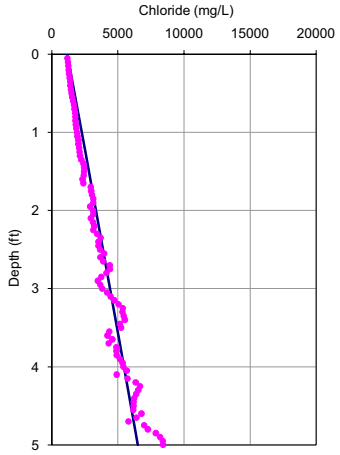
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1288	1288
Cl (mg/L)	15000	7500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.97	-2.04
q (cm/yr)	-0.73	-1.53
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.81	0.80

OL-GP-40149



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

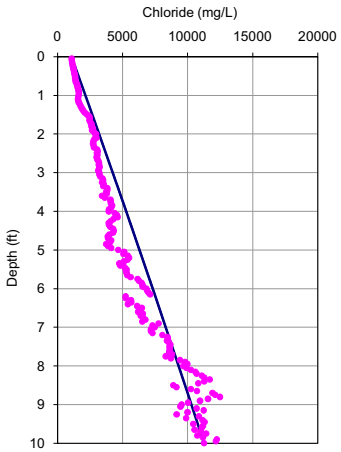
OL-GP-40149



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

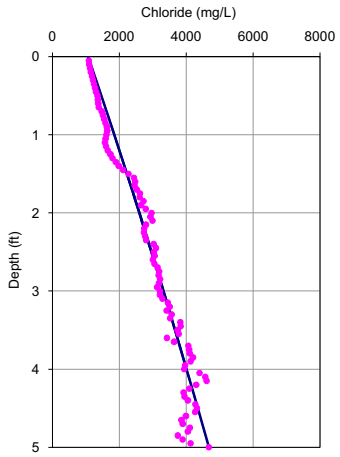
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1180	1180
Cl (mg/L)	14000	6500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.08	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40150



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

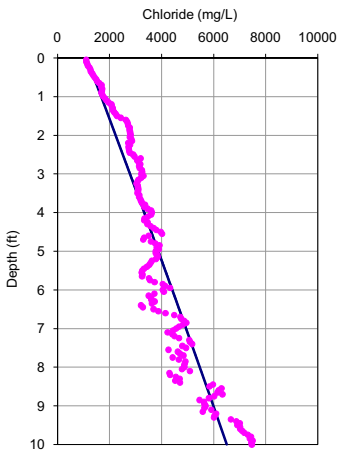
OL-GP-40150



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.3 cm/year

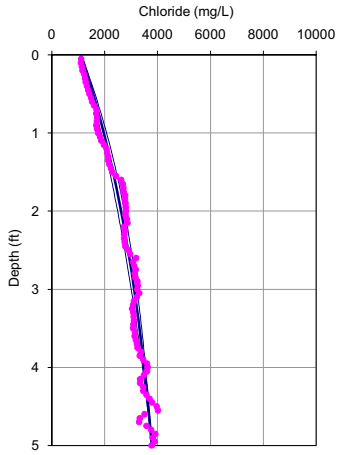
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1072	1072
Cl (mg/L)	11259	4674
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.37
q (cm/yr)	-0.08	-0.28
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40151



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

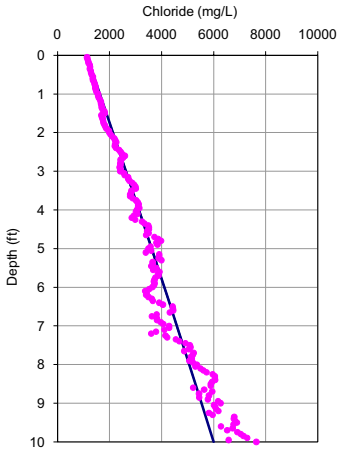
OL-GP-40151



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.0 cm/year

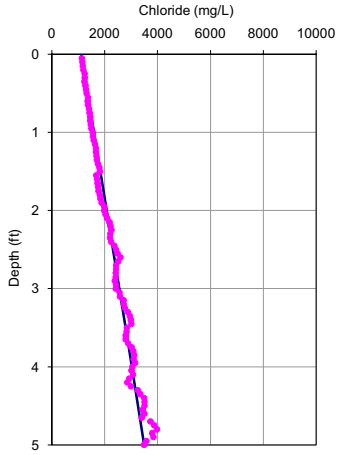
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1107	1107
Cl (mg/L)	6500	3779
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-2.66
q (cm/yr)	-0.08	-2.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.81

OL-GP-40152



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

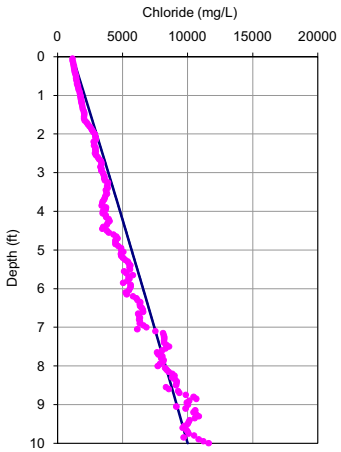
OL-GP-40152



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

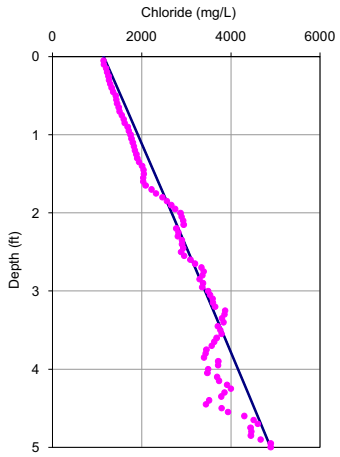
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1108	1108
Cl (mg/L)	6000	3488
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.13
q (cm/yr)	-0.08	-0.10
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40153



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

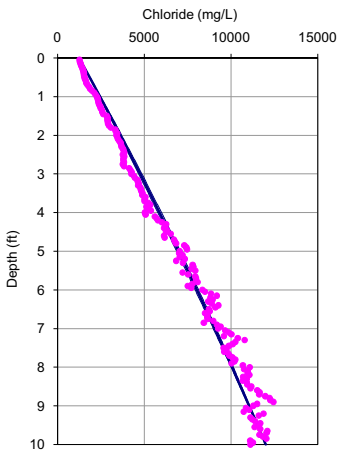
OL-GP-40153



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

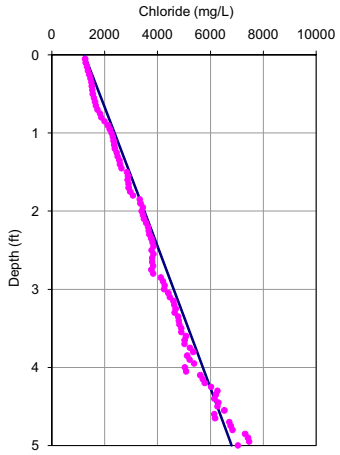
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1153	1153
Cl (mg/L)	10000	4893
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.08	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40154



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

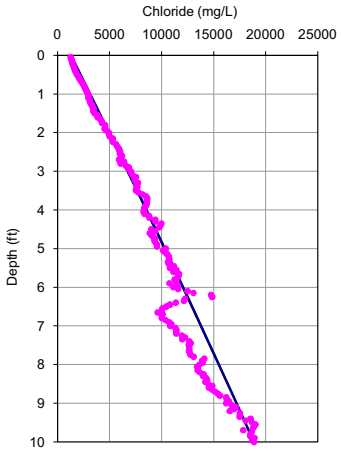
OL-GP-40154



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

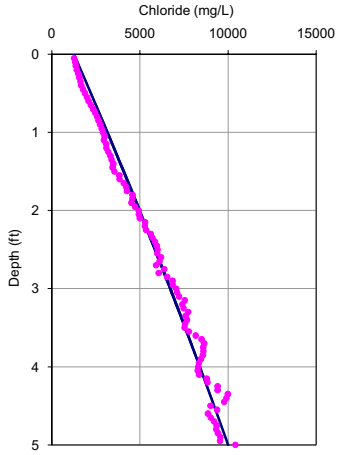
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1239	1239
Cl (mg/L)	12000	6800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.25	-0.10
q (cm/yr)	-0.19	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40155



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

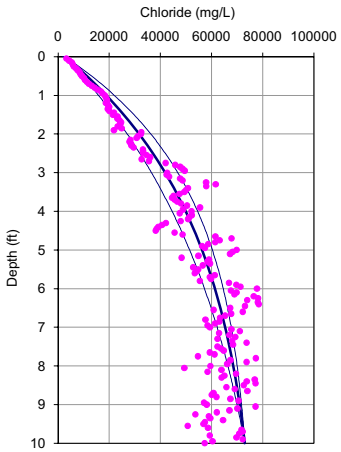
OL-GP-40155



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.3 cm/year

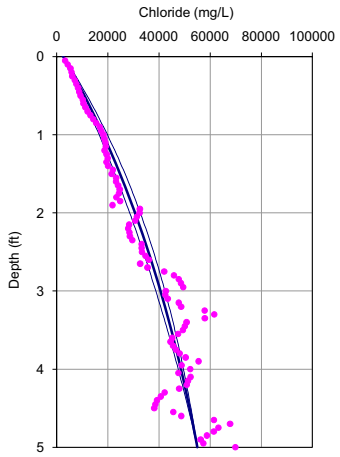
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1267	1267
Cl (mg/L)	18875	10000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.38
q (cm/yr)	-0.08	-0.29
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40156



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -1.8 cm/year

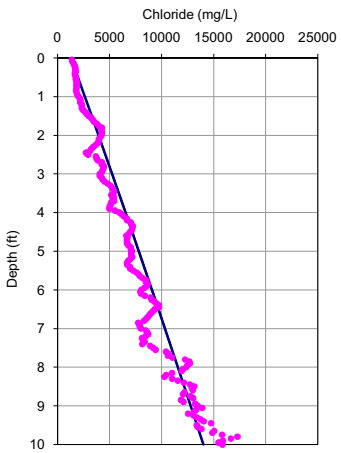
OL-GP-40156



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

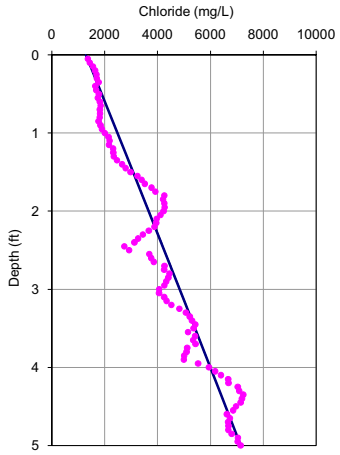
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2676	2676
Cl (mg/L)	73000	55000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-2.36	-2.13
q (cm/yr)	-1.77	-1.60
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.84	0.80

OL-GP-40157



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

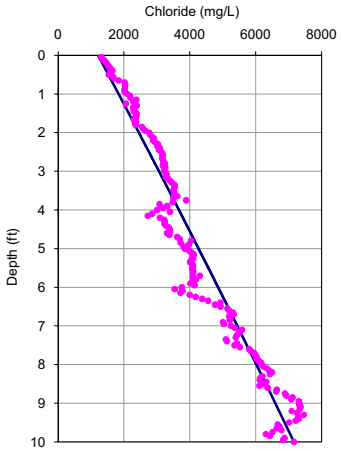
OL-GP-40157



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

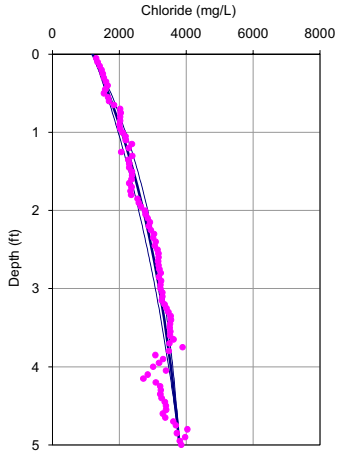
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1285	1285
Cl (mg/L)	14000	7140
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.08	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40158



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

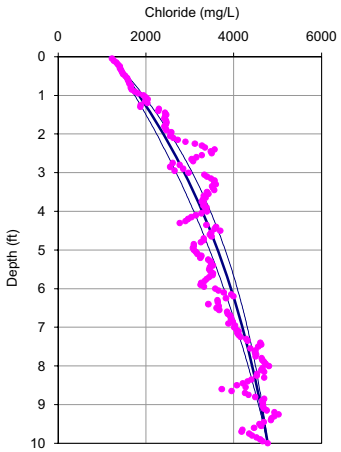
OL-GP-40158



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

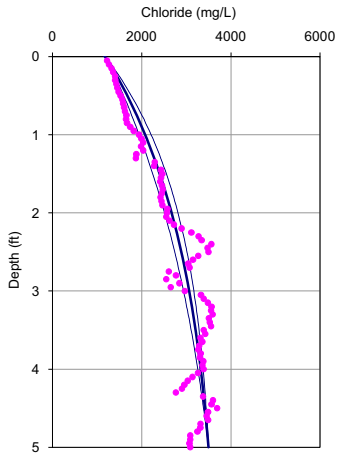
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1213	1213
Cl (mg/L)	7163	3800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-2.93
q (cm/yr)	-0.08	-2.20
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.81

OL-GP-40159



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

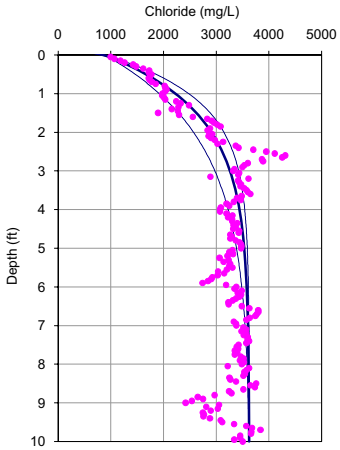
OL-GP-40159



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -3.0 cm/year

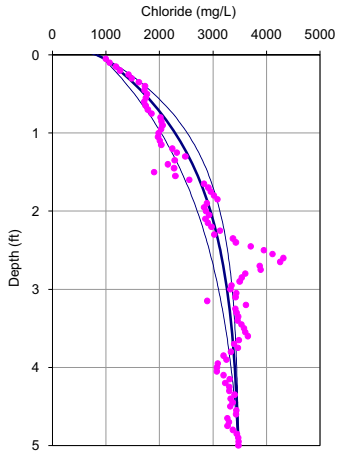
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1192	1192
Cl (mg/L)	4773	3500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-1.51	-4.00
q (cm/yr)	-1.13	-3.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.82	0.82

OL-GP-40160



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -6.0 cm/year

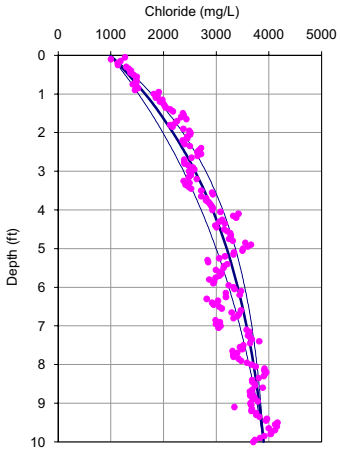
OL-GP-40160



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -5.8 cm/year

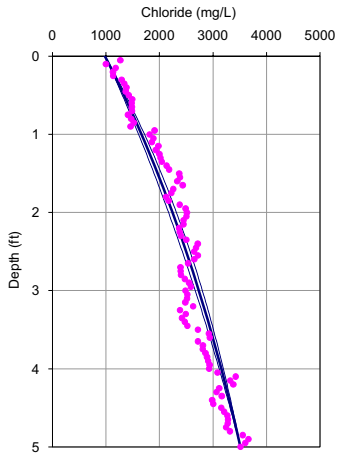
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	881	881
Cl (mg/L)	3625	3474
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-7.94	-7.75
q (cm/yr)	-5.96	-5.81
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.99	0.85

OL-GP-40161



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -1.7 cm/year

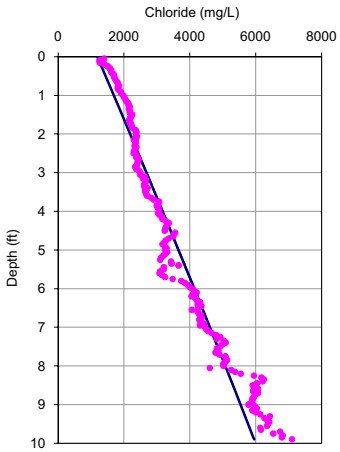
OL-GP-40161



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.2 cm/year

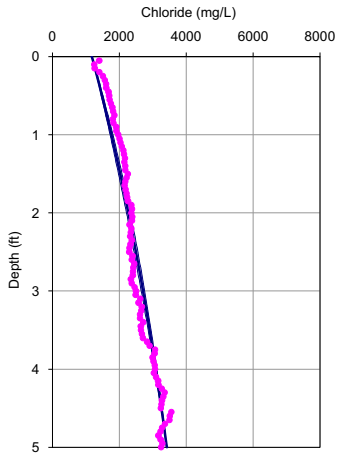
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	986	986
Cl (mg/L)	3900	3512
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-2.32	-1.54
q (cm/yr)	-1.74	-1.15
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.84	0.80

OL-GP-40162



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

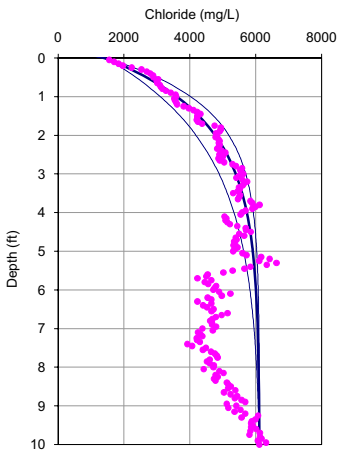
OL-GP-40162



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.0 cm/year

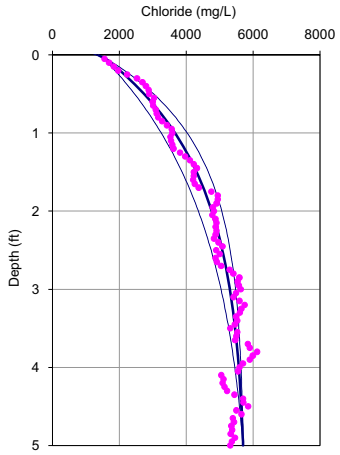
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1185	1185
Cl (mg/L)	6000	3420
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-1.35
q (cm/yr)	-0.08	-1.01
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.80

OL-GP-40163



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.4 cm/year

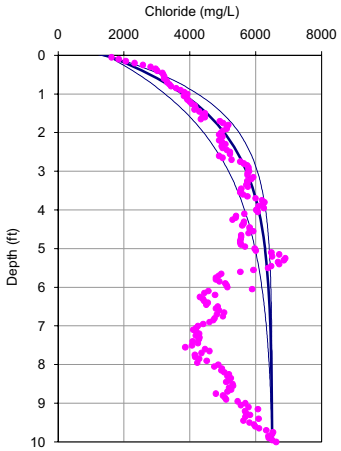
OL-GP-40163



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -5.4 cm/year

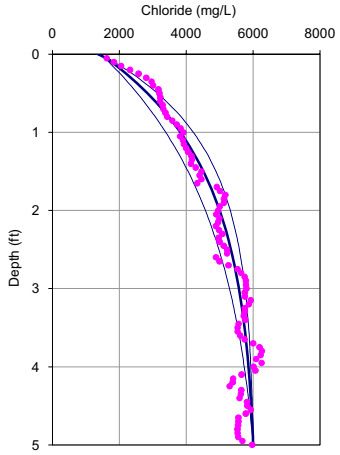
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1432	1432
Cl (mg/L)	6113	5700
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-7.20	-7.20
q (cm/yr)	-5.40	-5.40
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.97	0.85

OL-GP-40163-A



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.4 cm/year

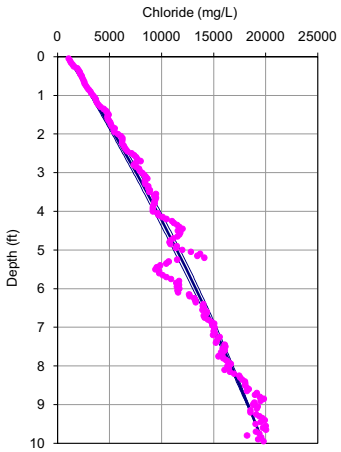
OL-GP-40163-A



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -5.4 cm/year

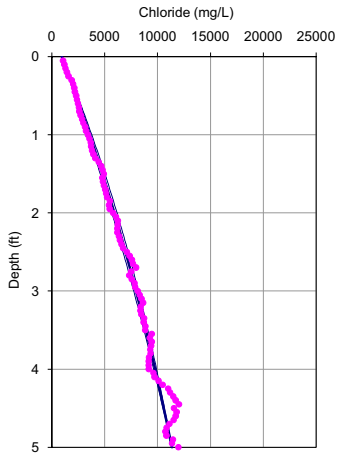
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1449	1449
Cl (mg/L)	6500	6000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-7.18	-7.18
q (cm/yr)	-5.39	-5.38
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.97	0.85

OL-GP-40164.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

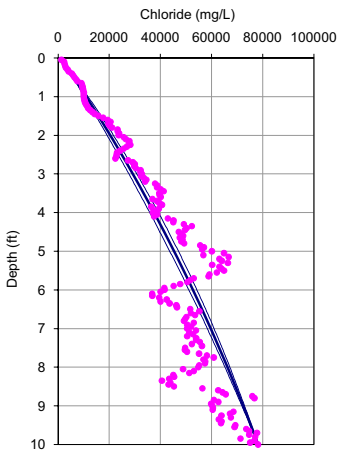
OL-GP-40164.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.9 cm/year

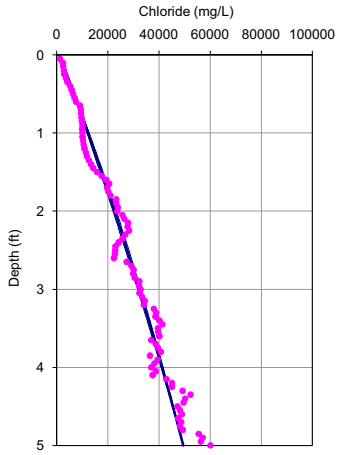
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	957	957
Cl (mg/L)	19799	11350
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.44	-1.22
q (cm/yr)	-0.33	-0.91
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.80

OL-GP-40165.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

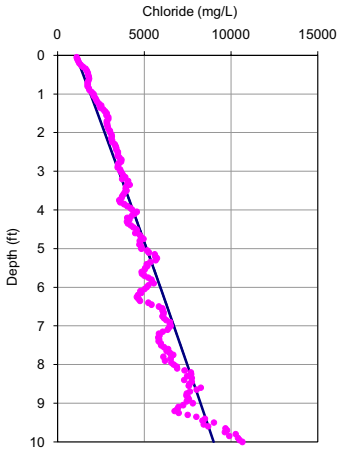
OL-GP-40165.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.5 cm/year

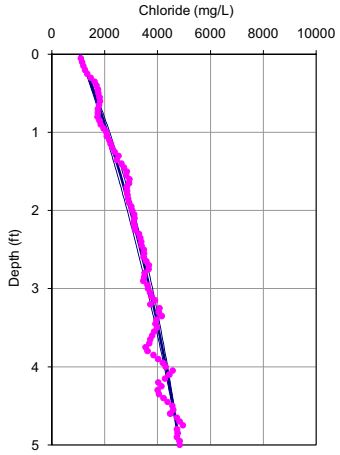
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1034	1034
Cl (mg/L)	78194	49500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.58	-0.72
q (cm/yr)	-0.43	-0.54
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.79

OL-GP-40166



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

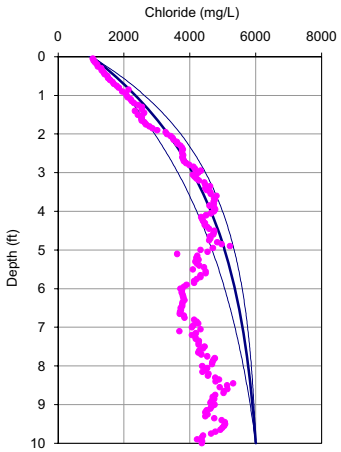
OL-GP-40166



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.3 cm/year

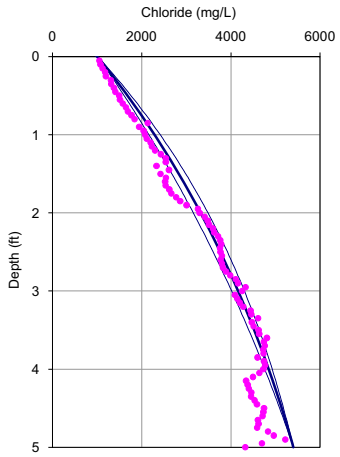
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1065	1065
Cl (mg/L)	9000	4835
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-1.67
q (cm/yr)	-0.08	-1.25
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.80

OL-GP-40167.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -2.3 cm/year

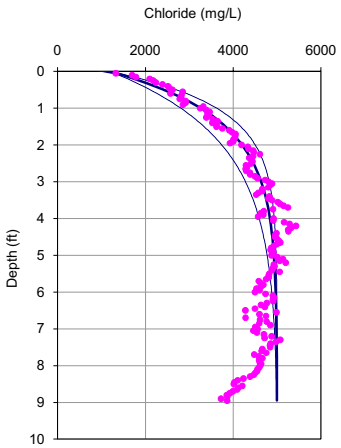
OL-GP-40167.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

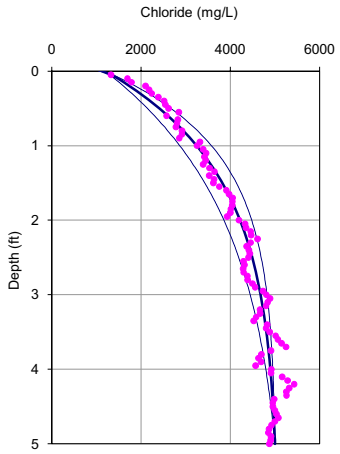
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1015	1015
Cl (mg/L)	6000	5400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-3.00	-2.00
q (cm/yr)	-2.25	-1.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.86	0.80

OL-GP-40168.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -7.1 cm/year

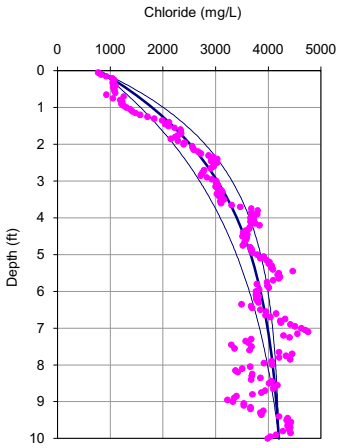
OL-GP-40168.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -5.7 cm/year

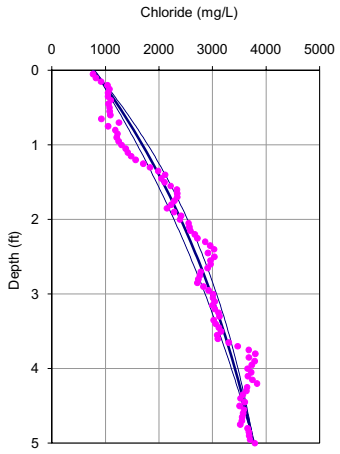
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1196	1196
Cl (mg/L)	5000	5000
L(ft)	9.65	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-9.50	-7.61
q (cm/yr)	-7.13	-5.71
dispersion length (ft)	0.29	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.29	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.01	0.85

OL-GP-40169.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -2.6 cm/year

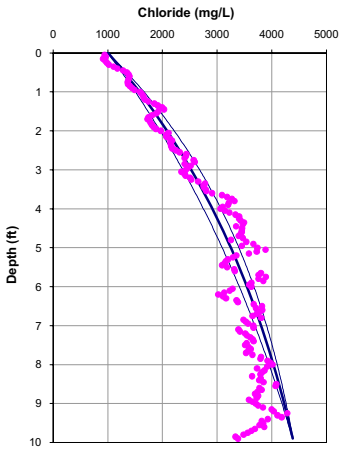
OL-GP-40169.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.7 cm/year

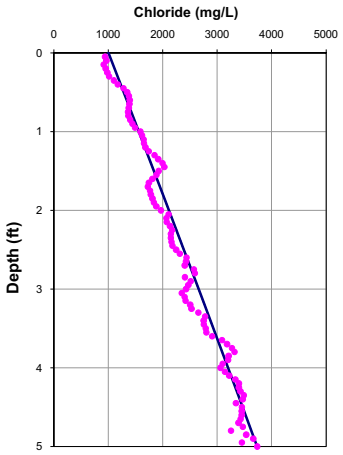
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	786	786
Cl (mg/L)	4200	3770
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-3.52	-2.29
q (cm/yr)	-2.64	-1.72
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.87	0.80

OL-GP-40170.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -1.0 cm/year

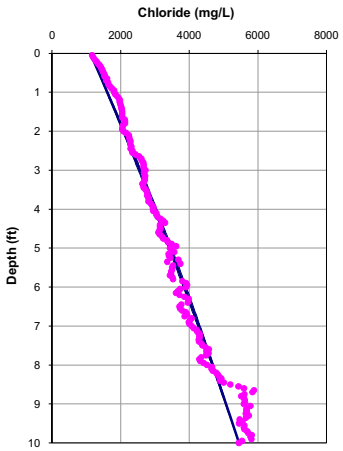
OL-GP-40170.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

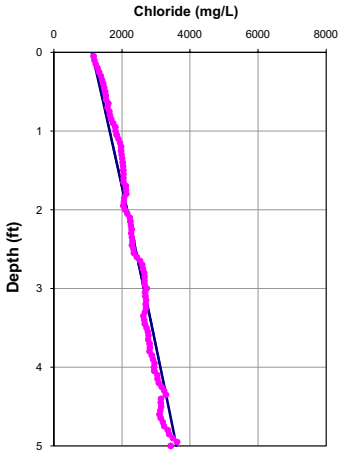
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1003	1003
Cl (mg/L)	4400	3735
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-1.31	-0.10
q (cm/yr)	-0.99	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.82	0.79

OL-GP-40171.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

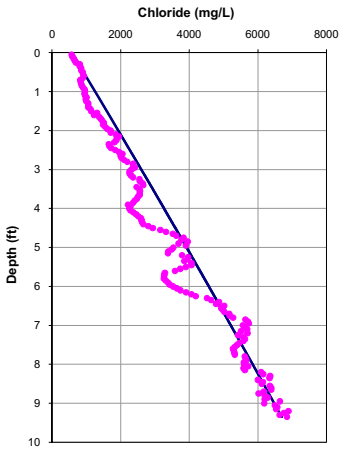
OL-GP-40171.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

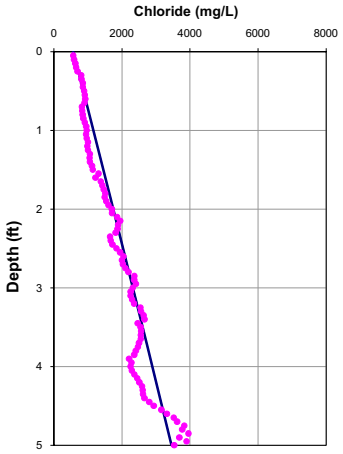
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1116	1116
Cl (mg/L)	5445	3600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.29	-0.26
q (cm/yr)	-0.22	-0.19
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40172.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

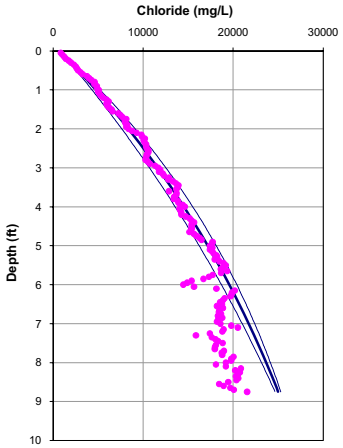
OL-GP-40172.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

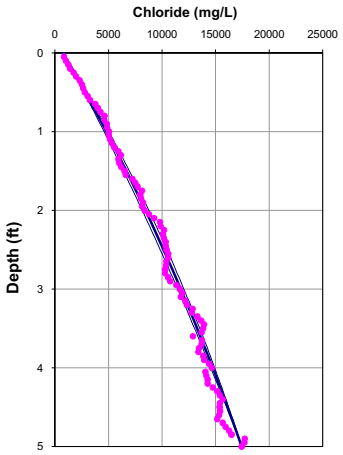
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	572	572
Cl (mg/L)	7100	3460
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.08	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40173.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

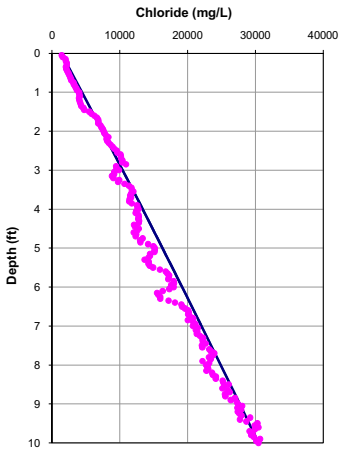
OL-GP-40173.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.7 cm/year

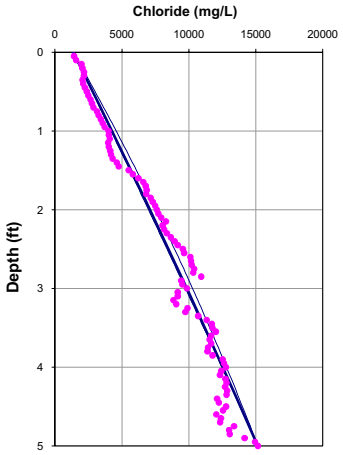
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	759	759
Cl (mg/L)	27000	17431
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-1.00	-0.96
q (cm/yr)	-0.75	-0.72
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.81	0.79

OL-GP-40174.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

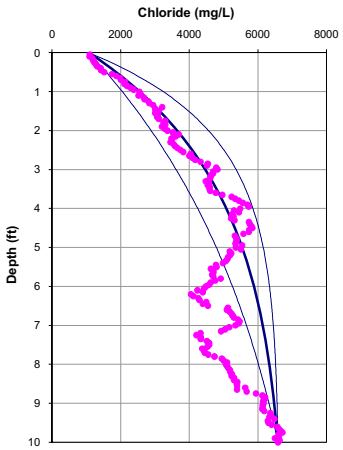
OL-GP-40174.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

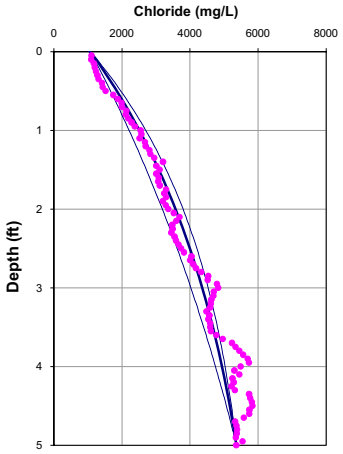
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1362	1362
Cl (mg/L)	30461	15150
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.25
q (cm/yr)	-0.08	-0.19
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40175.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -2.3 cm/year

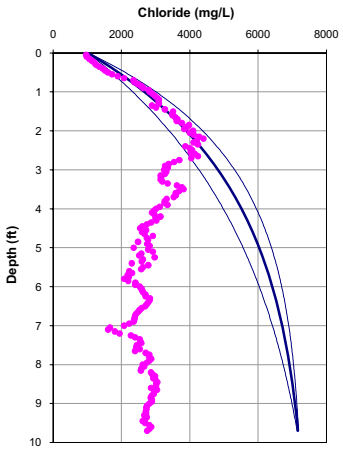
OL-GP-40175.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

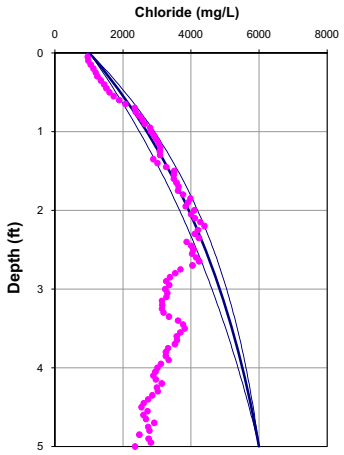
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1074	1074
Cl (mg/L)	6585	5370
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-3.00	-2.94
q (cm/yr)	-2.25	-2.21
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.86	0.81

OL-GP-40176.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -2.3 cm/year

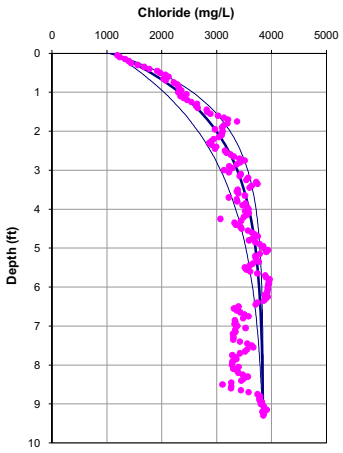
OL-GP-40176.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.3 cm/year

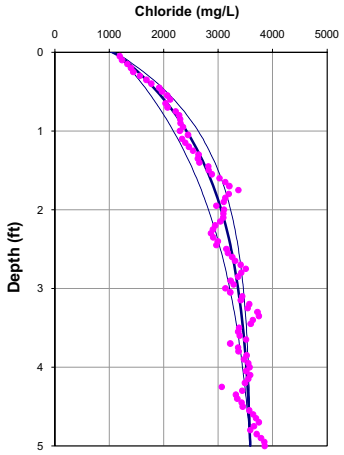
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1018	1018
Cl (mg/L)	7200	6000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-3.00	-3.00
q (cm/yr)	-2.25	-2.25
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.86	0.81

OL-GP-40177.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.0 cm/year

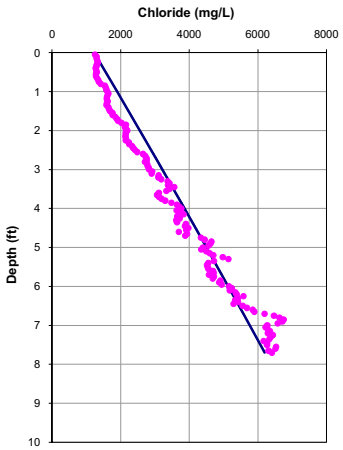
OL-GP-40177.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -5.5 cm/year

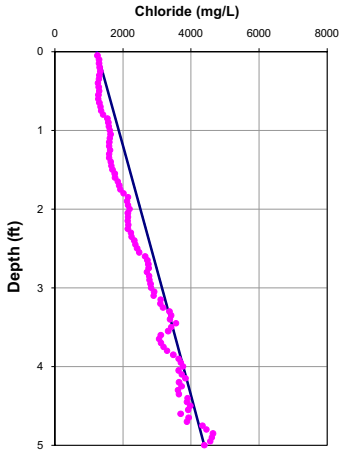
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1108	1108
Cl (mg/L)	3850	3590
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-6.61	-7.33
q (cm/yr)	-4.96	-5.49
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.95	0.85

OL-GP-40178.DAT



Porosity = 0.75
Dispersion length = 0.2 feet
Upwelling Velocity = ~0 cm/year

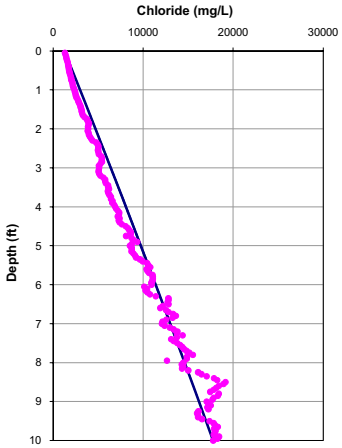
OL-GP-40178.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

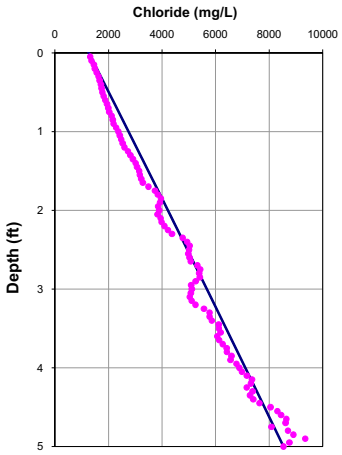
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1231	1231
Cl (mg/L)	6200	4393
L(ft)	7.7	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.08	-0.08
dispersion length (ft)	0.20	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.20	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40179.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

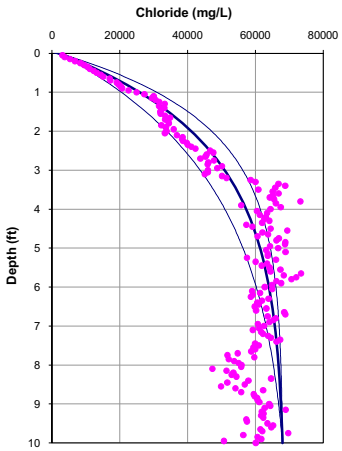
OL-GP-40179.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

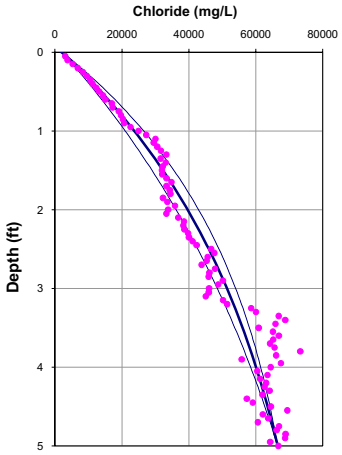
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1264	1264
Cl (mg/L)	17782	8531
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.08	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-40180.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -3.6 cm/year

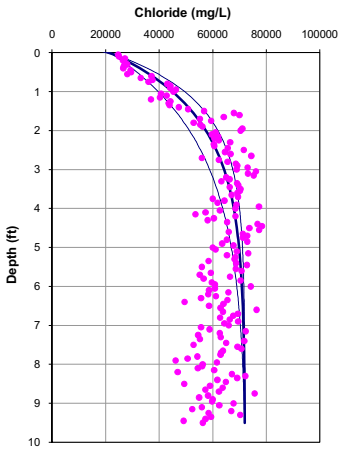
OL-GP-40180.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

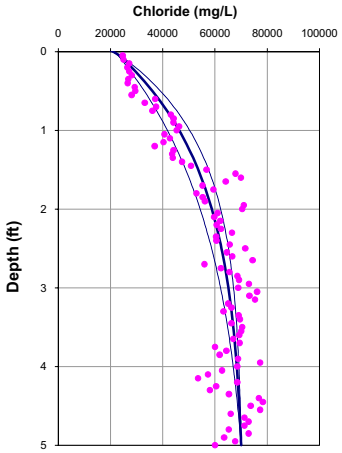
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2173	2173
Cl (mg/L)	68000	66500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-4.76	-2.94
q (cm/yr)	-3.57	-2.20
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.91	0.81

OL-GP-40181.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.3 cm/year

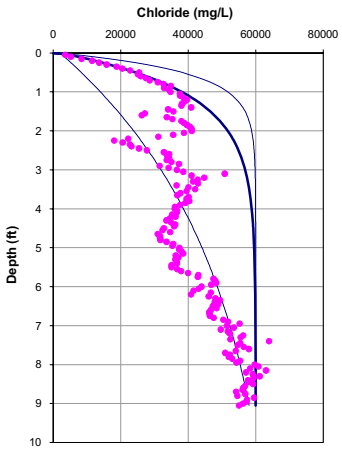
OL-GP-40181.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -5.1 cm/year

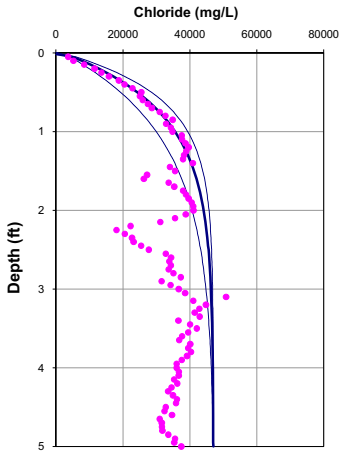
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	21702	21702
Cl (mg/L)	72000	70000
L(ft)	9.65	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-7.07	-6.85
q (cm/yr)	-5.30	-5.14
dispersion length (ft)	0.29	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.29	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.96	0.85

OL-GP-40182.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -9.8 cm/year

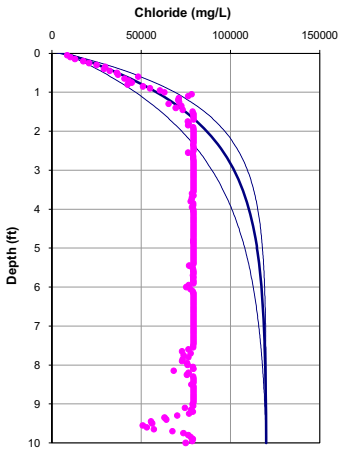
OL-GP-40182.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -11.3 cm/year

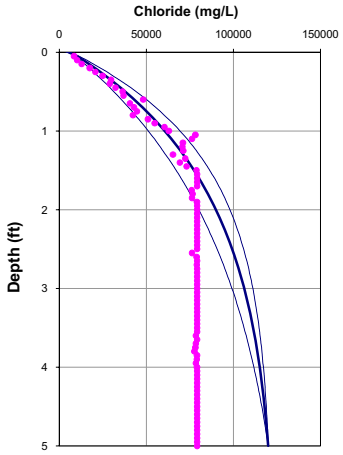
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2036	2036
Cl (mg/L)	60000	47000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-13.00	-15.00
q (cm/yr)	-9.75	-11.25
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.12	0.92

OL-GP-40183



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.3 cm/year

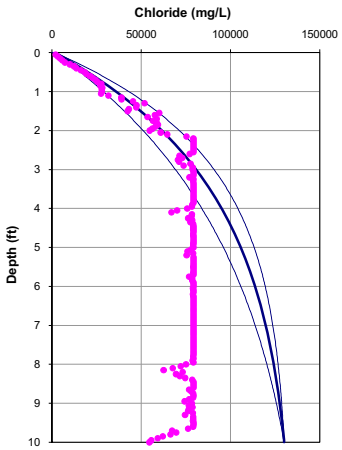
OL-GP-40183



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -4.5 cm/year

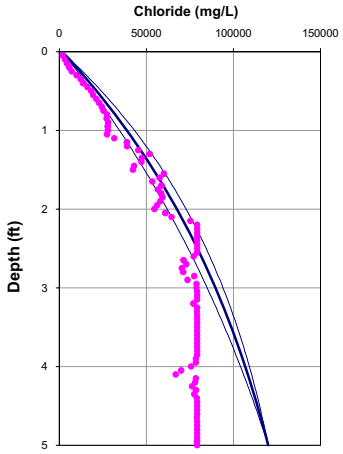
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	6962	6962
Cl (mg/L)	120000	120000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-7.00	-6.00
q (cm/yr)	-5.25	-4.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.96	0.84

OL-GP-40183.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -2.3 cm/year

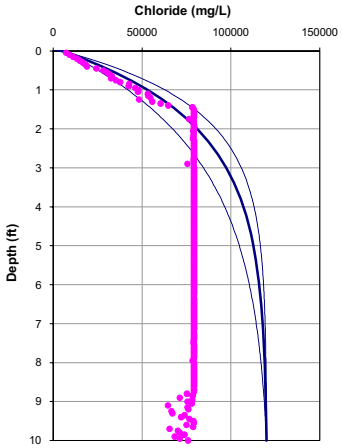
OL-GP-40183.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

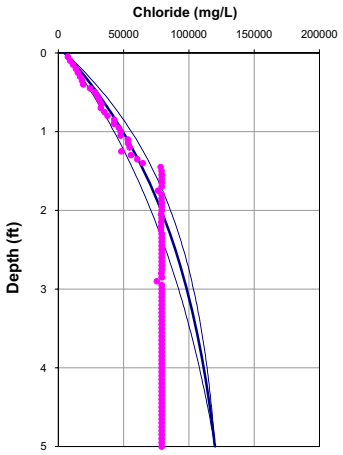
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1619	1619
Cl (mg/L)	130000	120000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-3.00	-2.50
q (cm/yr)	-2.25	-1.88
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.86	0.81

OL-GP-40184



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -4.5 cm/year

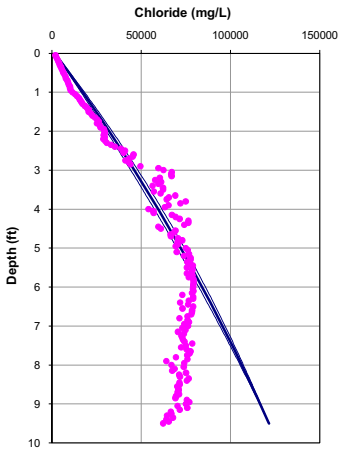
OL-GP-40184



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -3.0 cm/year

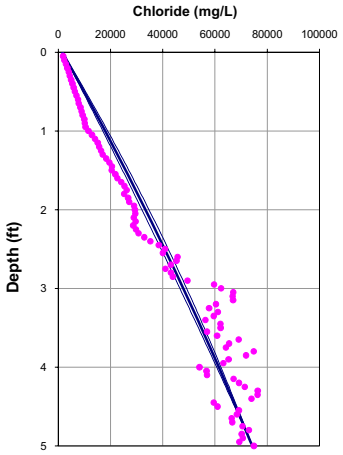
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	5276	5276
Cl (mg/L)	120000	120000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-6.00	-4.00
q (cm/yr)	-4.50	-3.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.94	0.82

OL-GP-40184.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

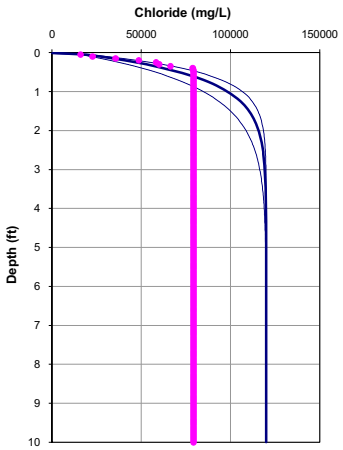
OL-GP-40184.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

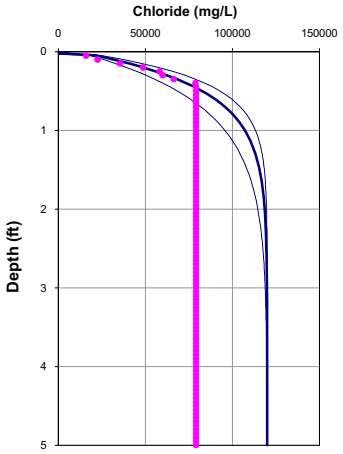
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1604	1604
Cl (mg/L)	120000	74286
L(ft)	9.35	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.50	-0.58
q (cm/yr)	-0.38	-0.44
dispersion length (ft)	0.28	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.28	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.79

OL-GP-40185



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -22.5 cm/year

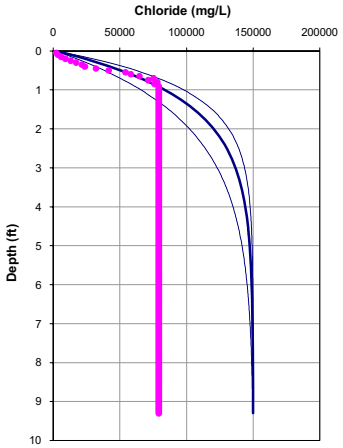
OL-GP-40185



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -19.5 cm/year

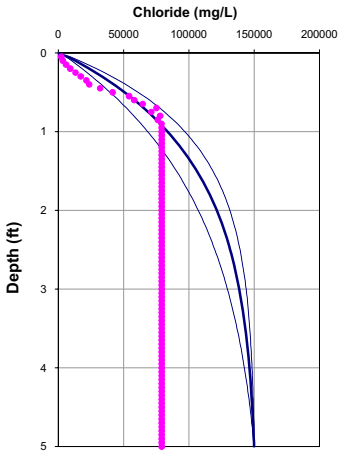
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	10701	10701
Cl (mg/L)	120000	120000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-30.00	-26.00
q (cm/yr)	-22.50	-19.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.55	1.01

OL-GP-40185.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -7.5 cm/year

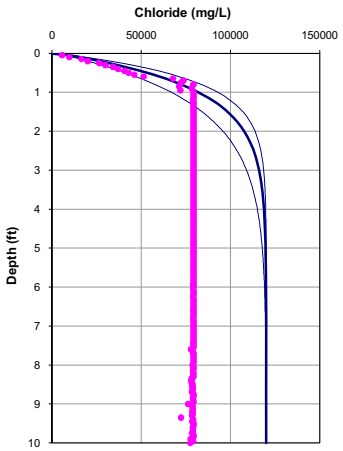
OL-GP-40185.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -6.0 cm/year

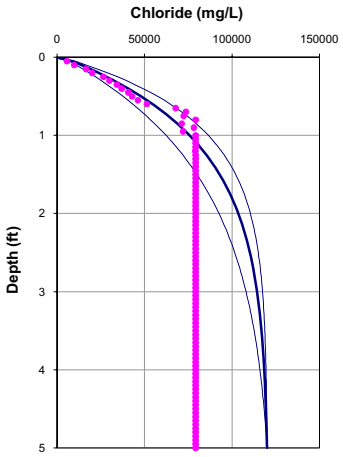
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1713	1713
Cl (mg/L)	150000	150000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-10.00	-8.00
q (cm/yr)	-7.50	-6.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.04	0.86

OL-GP-40186



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -12.0 cm/year

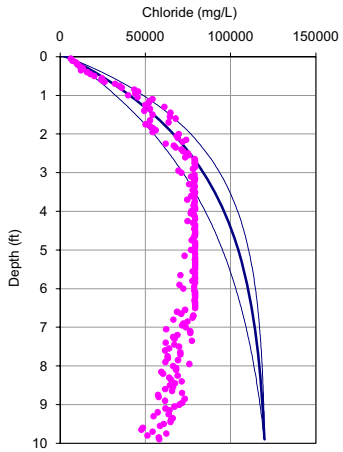
OL-GP-40186



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.5 cm/year

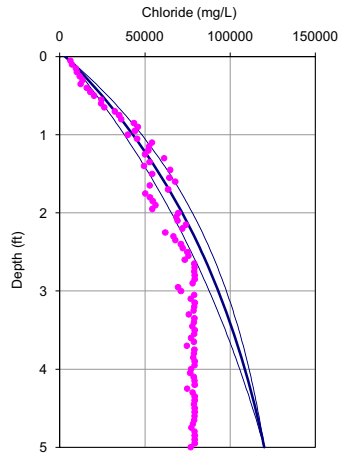
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3178	3178
Cl (mg/L)	120000	120000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-16.00	-10.00
q (cm/yr)	-12.00	-7.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.19	0.87

OL-GP-40186.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -3.0 cm/year

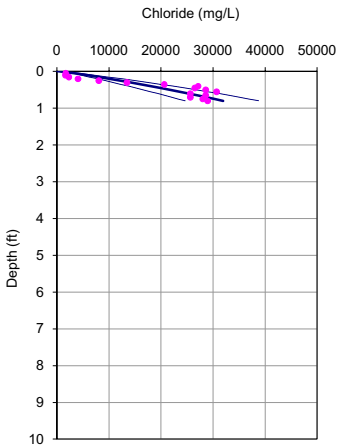
OL-GP-40186.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.3 cm/year

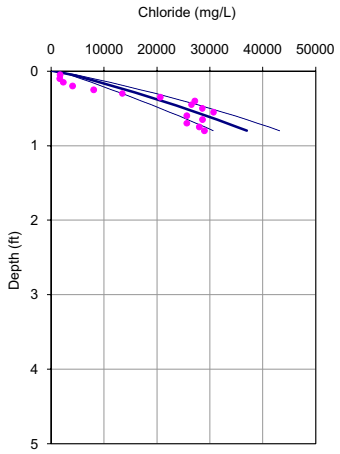
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3672	3672
Cl (mg/L)	120000	120000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-3.97	-3.00
q (cm/yr)	-2.98	-2.25
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.89	0.81

OL-GP-40187.DAT



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -3.8 cm/year

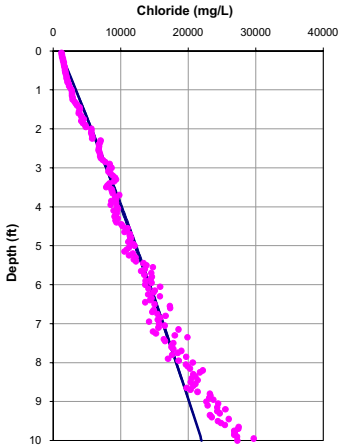
OL-GP-40187.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -3.8 cm/year

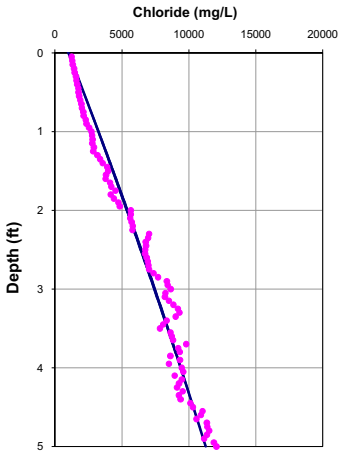
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1403	1403
Cl (mg/L)	100000	100000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-5.00	-5.00
q (cm/yr)	-3.75	-3.75
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.91	0.83

OL-GP-50026



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

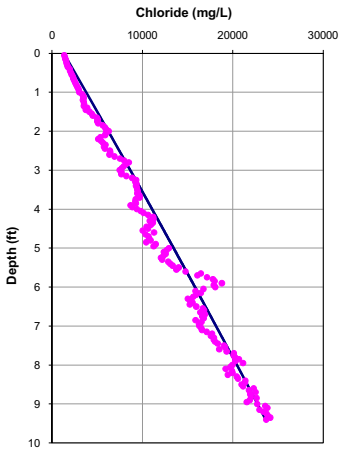
OL-GP-50026



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.3 cm/year

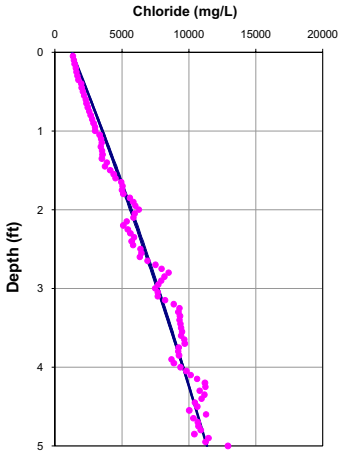
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1000	1000
Cl (mg/L)	22000	11250
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.25	-0.44
q (cm/yr)	-0.19	-0.33
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50027



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

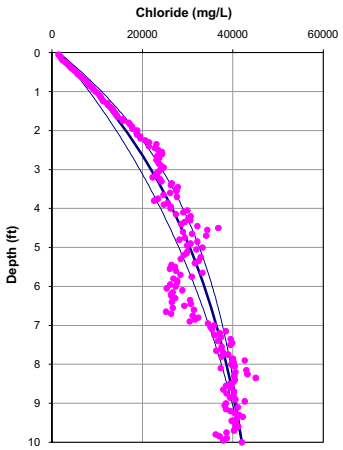
OL-GP-50027



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

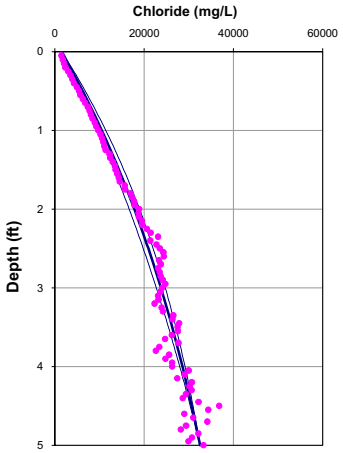
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1283	1283
Cl (mg/L)	25000	11350
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.57
q (cm/yr)	-0.08	-0.43
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50028



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

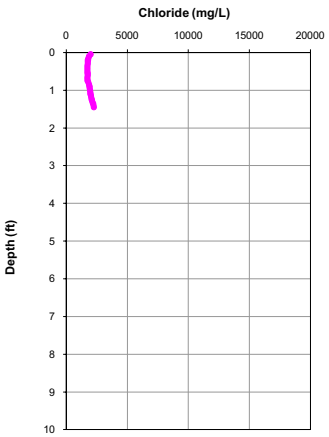
OL-GP-50028



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

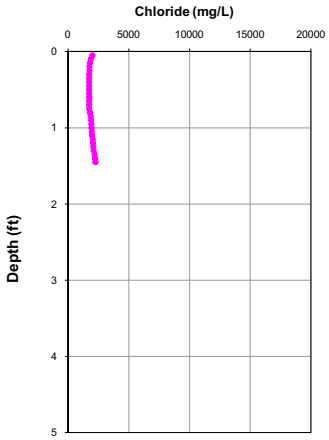
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1491	1491
Cl (mg/L)	41989	32500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-1.84	-1.99
q (cm/yr)	-1.38	-1.49
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.83	0.80

OL-GP-50036



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

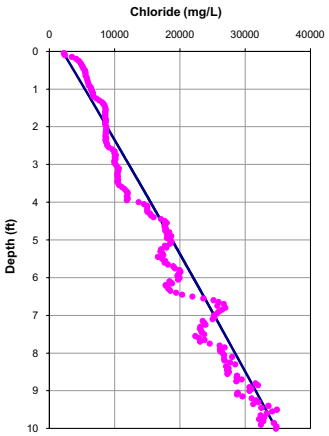
OL-GP-50036



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

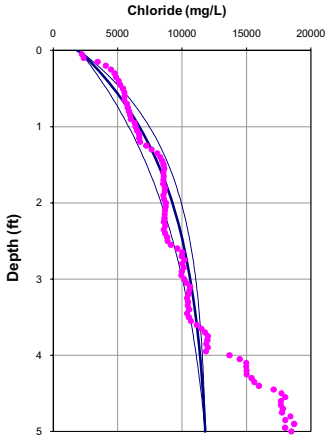
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2240	2240
Cl (mg/L)	2258	2258
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	1983661559.34
q (cm/yr)	-0.08	1487746169.50
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	178303.45
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	17501987.52

OL-GP-50037



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

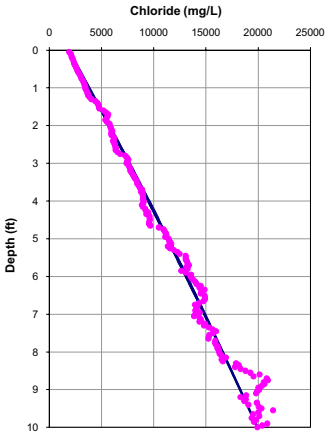
OL-GP-50037



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -4.6 cm/year

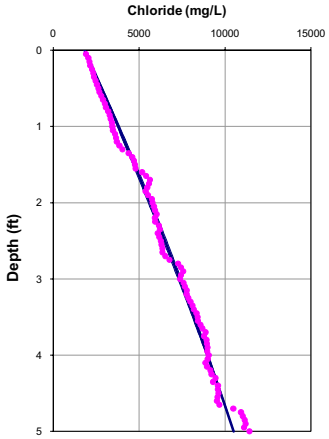
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1993	1993
Cl (mg/L)	34729	11800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-6.11
q (cm/yr)	-0.08	-4.58
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.84

OL-GP-50038



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.1 cm/year

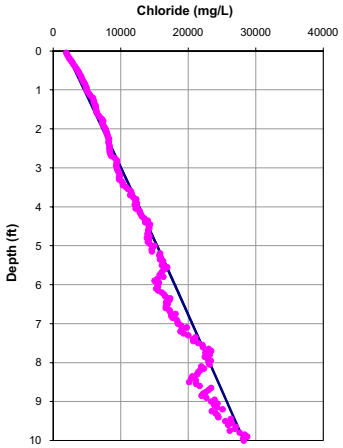
OL-GP-50038



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

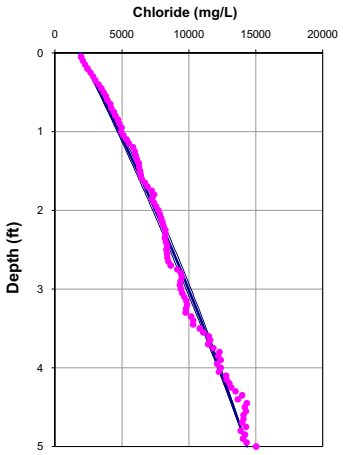
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1833	1833
Cl (mg/L)	19918	10500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.19	-0.59
q (cm/yr)	-0.14	-0.44
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50039



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

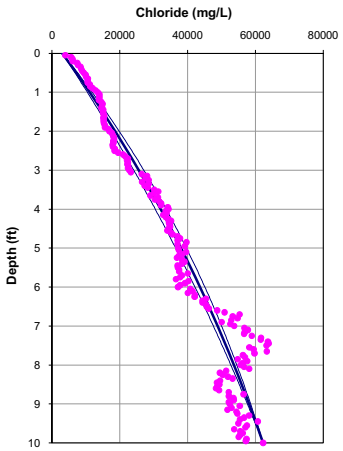
OL-GP-50039



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.6 cm/year

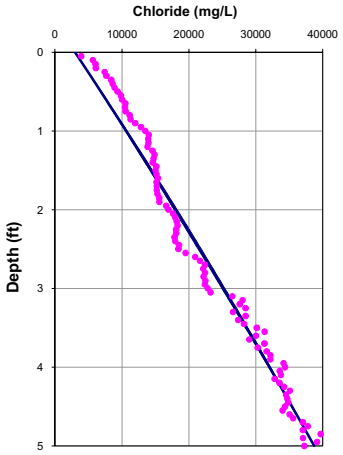
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1835	1835
Cl (mg/L)	28235	14350
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.82
q (cm/yr)	-0.08	-0.61
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50040



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

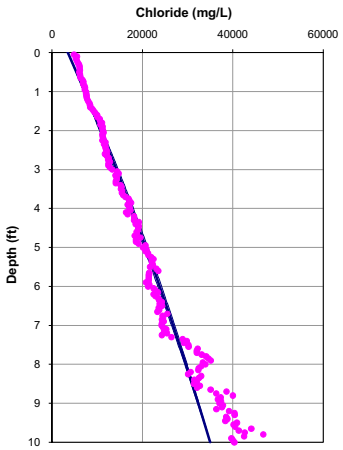
OL-GP-50040



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

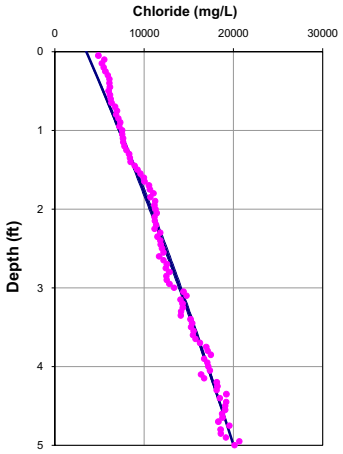
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3000	3000
Cl (mg/L)	62289	38700
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.71	-0.33
q (cm/yr)	-0.54	-0.25
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.79

OL-GP-50041



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

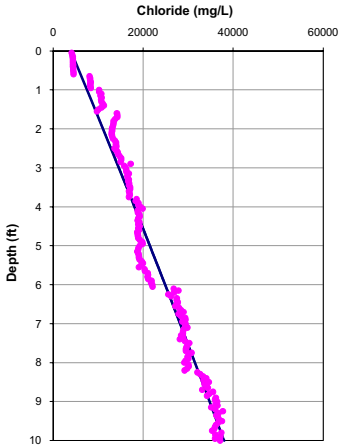
OL-GP-50041



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

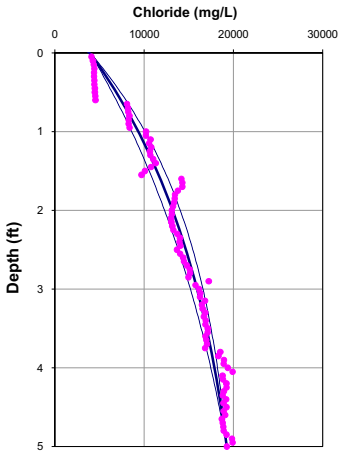
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3500	3500
Cl (mg/L)	35000	20000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.37	-0.59
q (cm/yr)	-0.28	-0.45
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50042



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

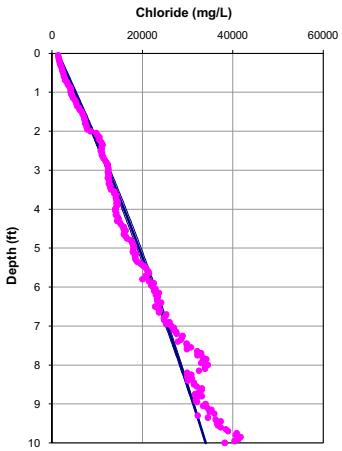
OL-GP-50042



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

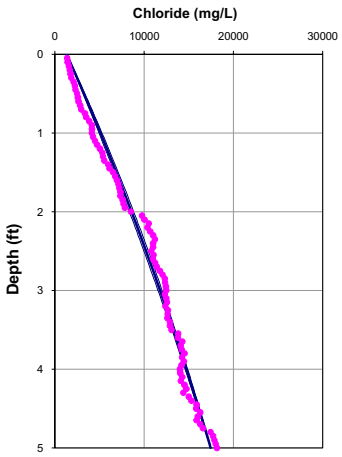
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3932	3932
Cl (mg/L)	38000	19260
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.12	-3.31
q (cm/yr)	-0.09	-2.49
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.81

OL-GP-50043



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

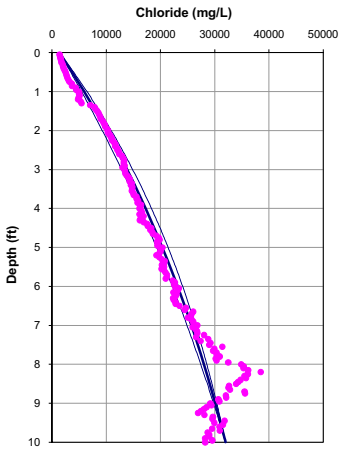
OL-GP-50043



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.6 cm/year

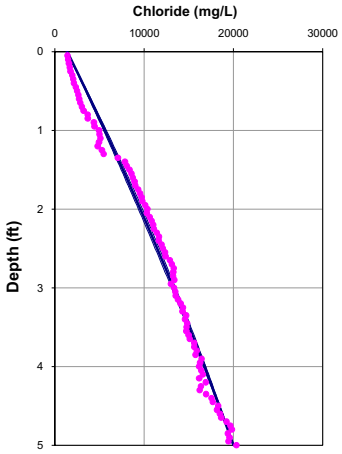
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1311	1311
Cl (mg/L)	34000	17436
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		17436
V(cm/yr)	-0.37	-0.79
q (cm/yr)	-0.28	-0.59
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50044



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

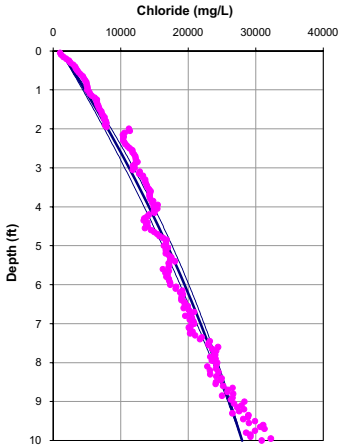
OL-GP-50044



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.5 cm/year

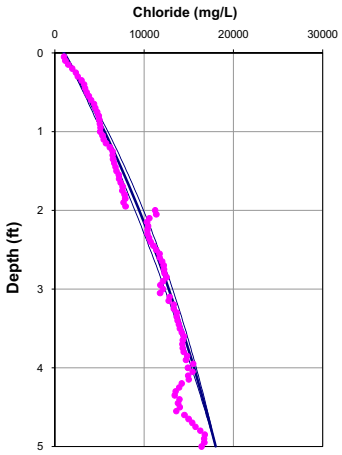
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1346	1346
Cl (mg/L)	32000	20000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.95	-0.64
q (cm/yr)	-0.71	-0.48
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.81	0.79

OL-GP-50045



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

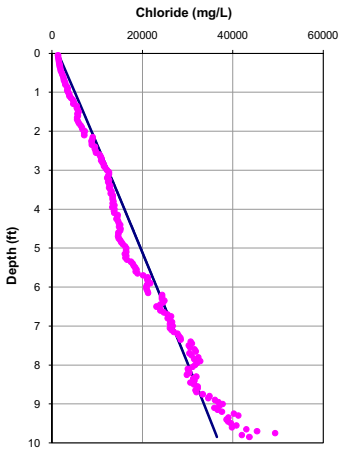
OL-GP-50045



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.1 cm/year

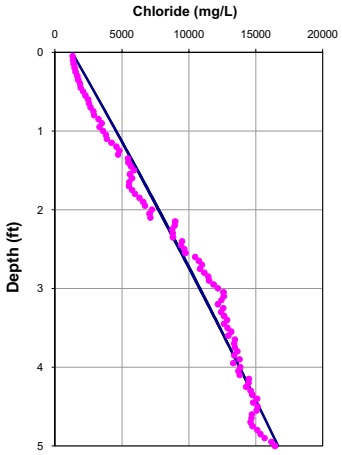
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1035	1035
Cl (mg/L)	28000	18000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.69	-1.50
q (cm/yr)	-0.52	-1.13
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.80

OL-GP-50046



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

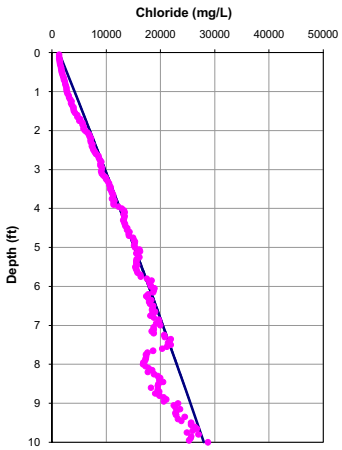
OL-GP-50046



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

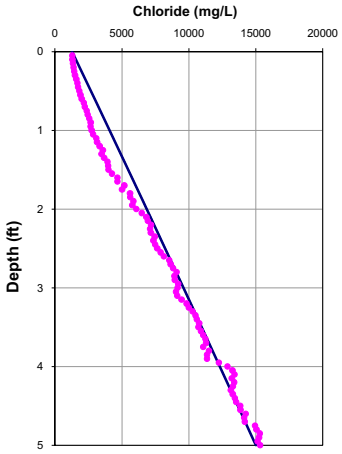
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1277	1277
Cl (mg/L)	37000	16658
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		16658
V(cm/yr)	-0.10	-0.32
q (cm/yr)	-0.08	-0.24
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50047



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.1 cm/year

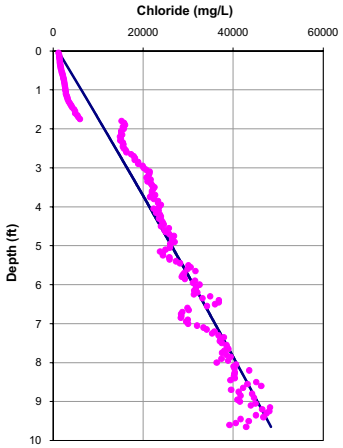
OL-GP-50047



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

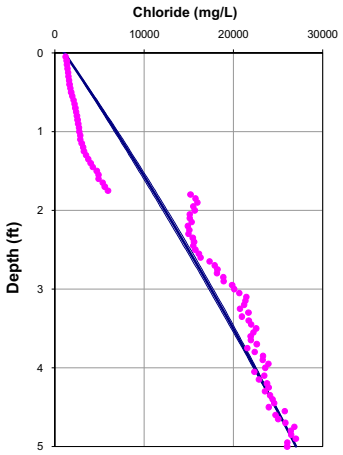
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1276	1276
Cl (mg/L)	28000	15000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		15000
V(cm/yr)	-0.16	-0.10
q (cm/yr)	-0.12	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50048



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

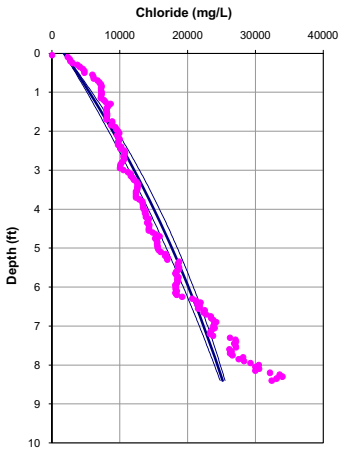
OL-GP-50048



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

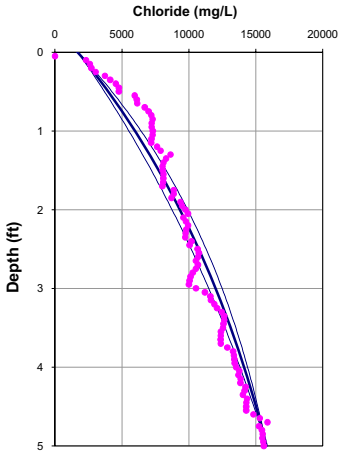
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1072	1072
Cl (mg/L)	50000	27000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.12	-0.53
q (cm/yr)	-0.09	-0.40
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-GP-50049



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.6 cm/year

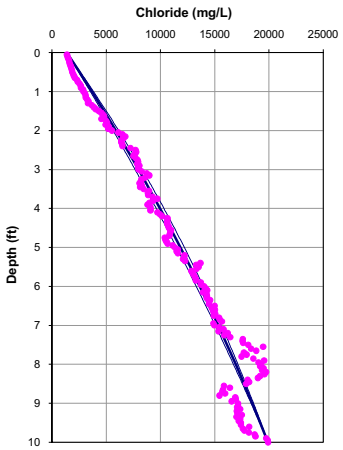
OL-GP-50049



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.7 cm/year

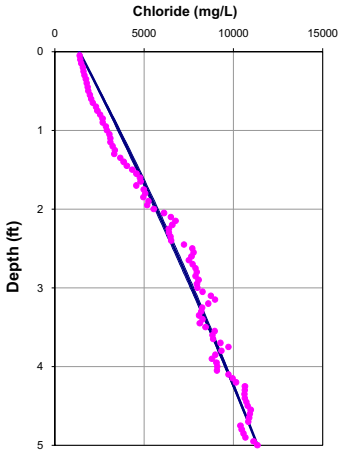
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1731	1731
Cl (mg/L)	28000	15800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.84	-2.23
q (cm/yr)	-0.63	-1.67
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.81	0.80

OL-GP-50050



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

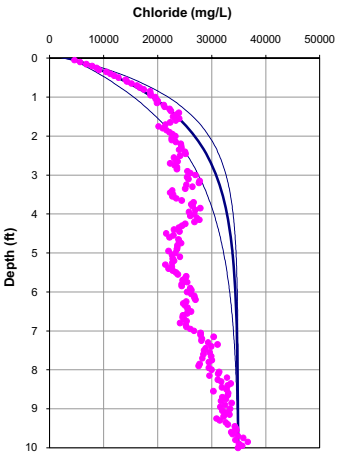
OL-GP-50050



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

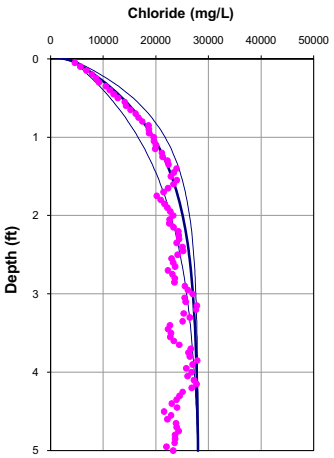
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1359	1359
Cl (mg/L)	19915	11342
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.50	-0.52
q (cm/yr)	-0.38	-0.39
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.79

OL-GP-50051



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -6.0 cm/year

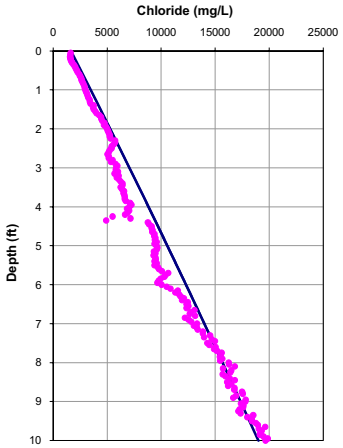
OL-GP-50051



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -8.3 cm/year

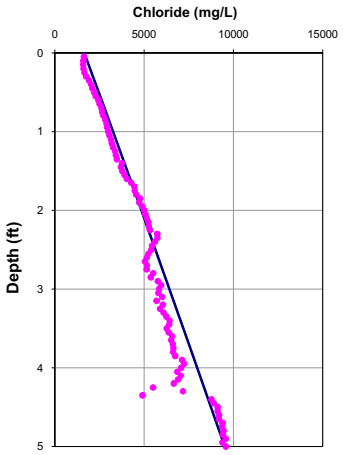
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3689	3689
Cl (mg/L)	34888	28000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-8.00	-11.00
q (cm/yr)	-6.00	-8.25
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.99	0.88

OL-GP-60119



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

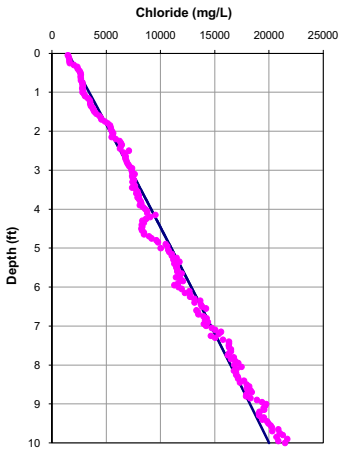
OL-GP-60119



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

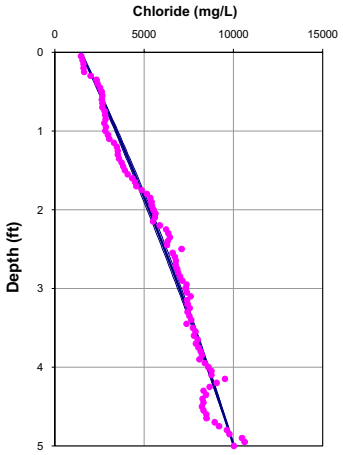
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1647	1647
Cl (mg/L)	19000	9500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-60120



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

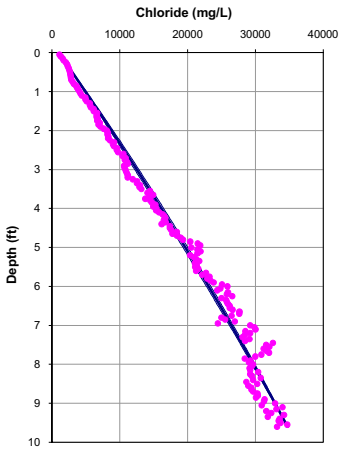
OL-GP-60120



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.5 cm/year

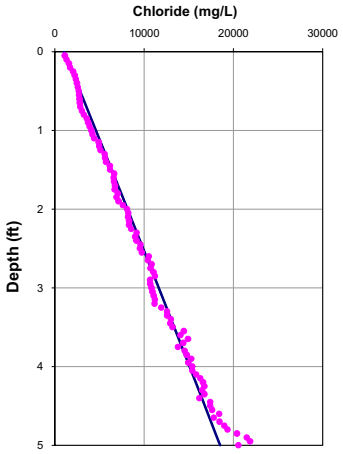
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1461	1461
Cl (mg/L)	20000	10017
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.66
q (cm/yr)	-0.07	-0.46
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60121



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

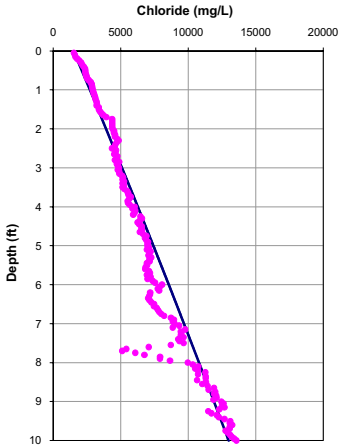
OL-GP-60121



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

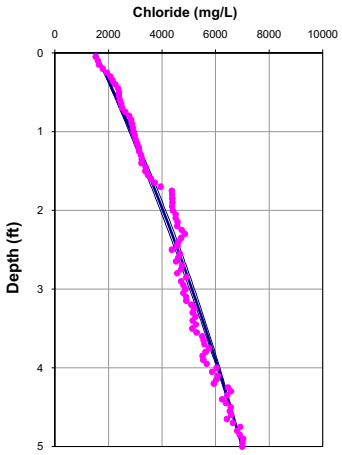
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1004	1004
Cl (mg/L)	36000	18500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.23	-0.10
q (cm/yr)	-0.16	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-60122



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

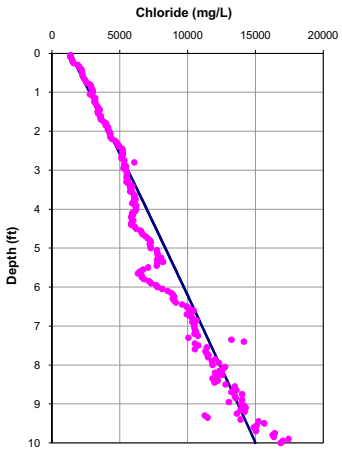
OL-GP-60122



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.6 cm/year

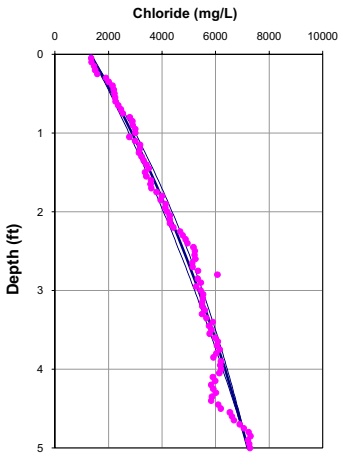
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1515	1515
Cl (mg/L)	13000	6988
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.87
q (cm/yr)	-0.07	-0.61
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60123



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

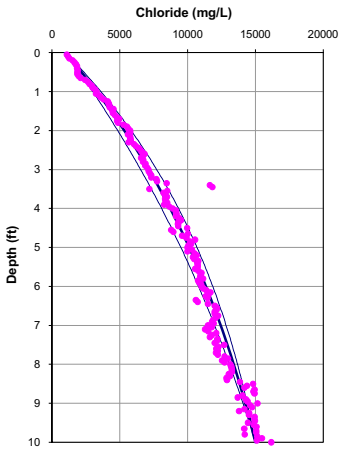
OL-GP-60123



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.9 cm/year

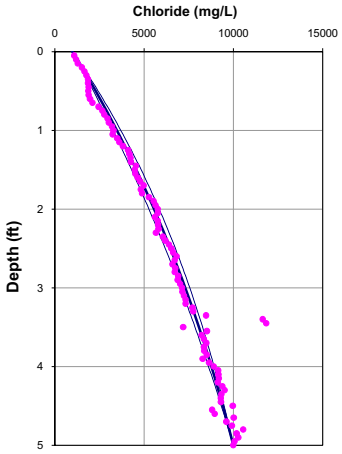
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1322	1322
Cl (mg/L)	15000	7200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-1.33
q (cm/yr)	-0.07	-0.93
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60124



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

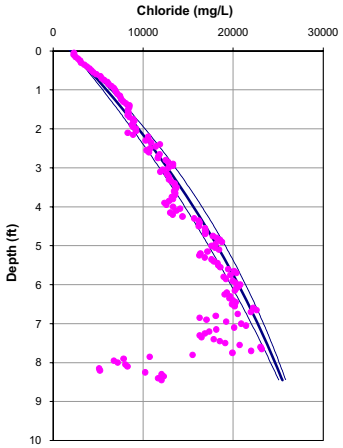
OL-GP-60124



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.1 cm/year

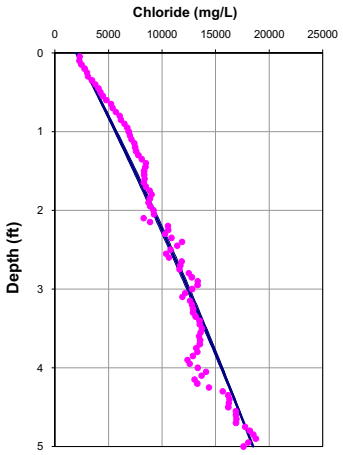
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	986	986
Cl (mg/L)	15000	9989
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.12	-1.55
q (cm/yr)	-0.79	-1.09
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.74

OL-GP-60125



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.6 cm/year

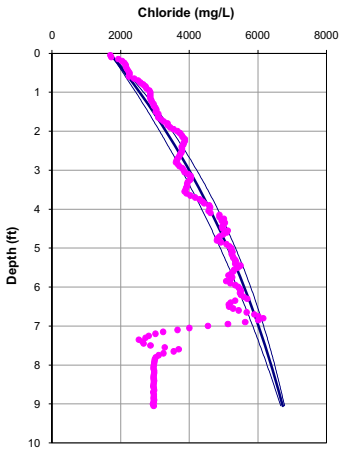
OL-GP-60125



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.3 cm/year

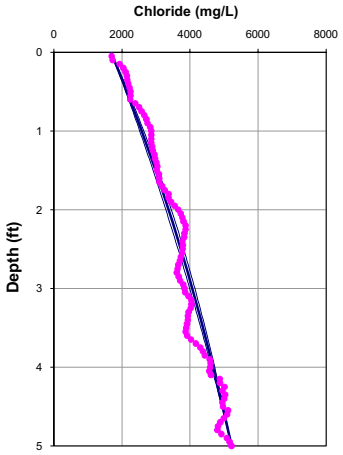
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2000	2000
Cl (mg/L)	28000	18500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.90	-0.49
q (cm/yr)	-0.63	-0.34
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.73

OL-GP-60125.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

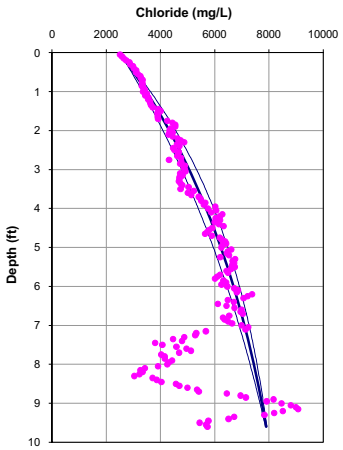
OL-GP-60125.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

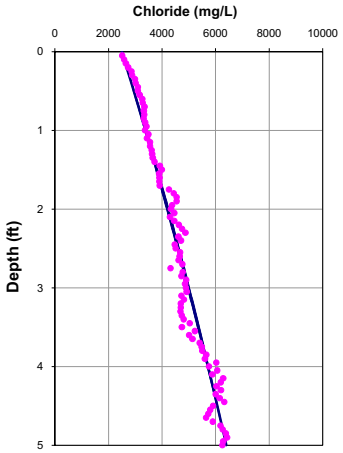
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1683	1683
Cl (mg/L)	7000	5221
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.10	-1.12
q (cm/yr)	-0.77	-0.78
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.73

OL-GP-60125-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.9 cm/year

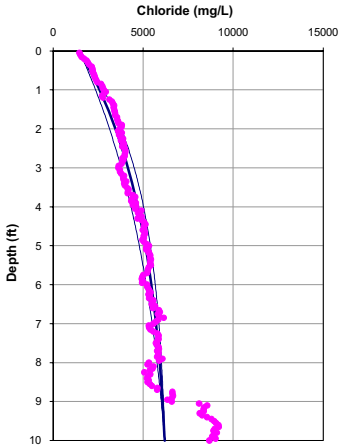
OL-GP-60125-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

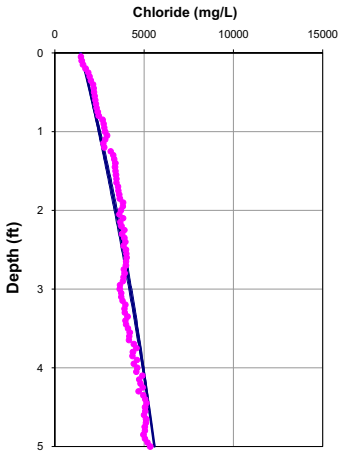
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2497	2497
Cl (mg/L)	8000	6400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.35	-0.55
q (cm/yr)	-0.94	-0.39
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.73

OL-GP-60126



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.6 cm/year

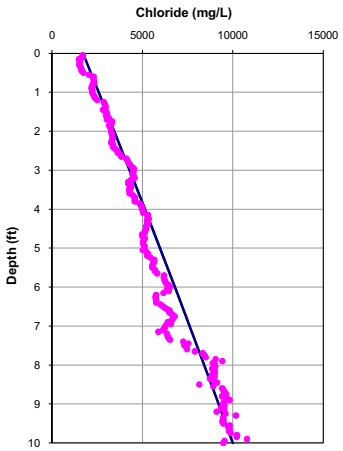
OL-GP-60126



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

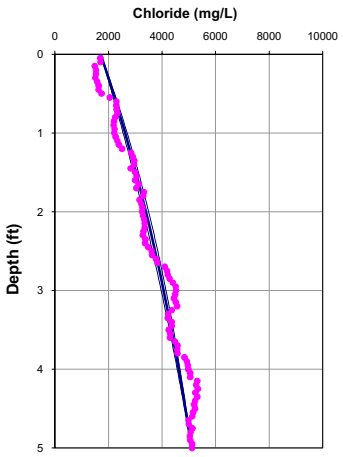
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1440	1440
Cl (mg/L)	6200	5570
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.30	-1.10
q (cm/yr)	-1.61	-0.77
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.73

OL-GP-60127



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

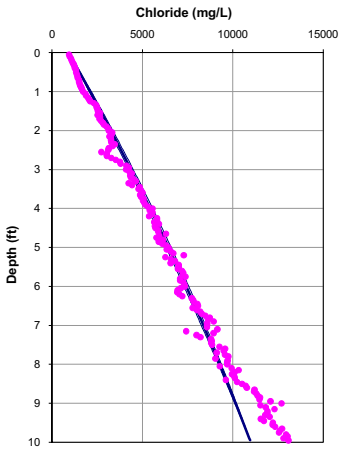
OL-GP-60127



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.0 cm/year

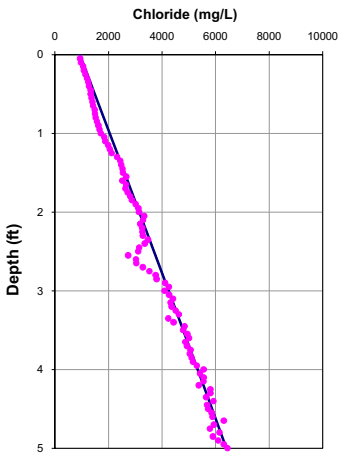
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1704	1704
Cl (mg/L)	10000	5100
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-1.42
q (cm/yr)	-0.07	-1.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60128



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

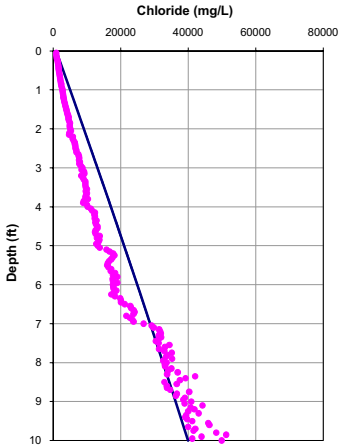
OL-GP-60128



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

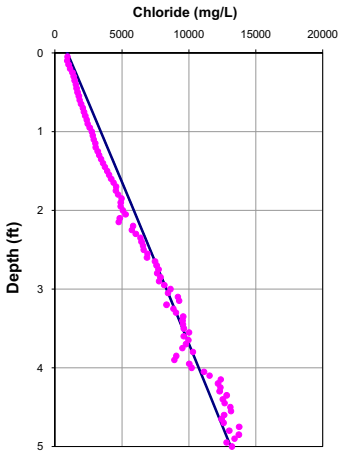
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	921	921
Cl (mg/L)	11000	6400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.34	-0.10
q (cm/yr)	-0.24	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-60129



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

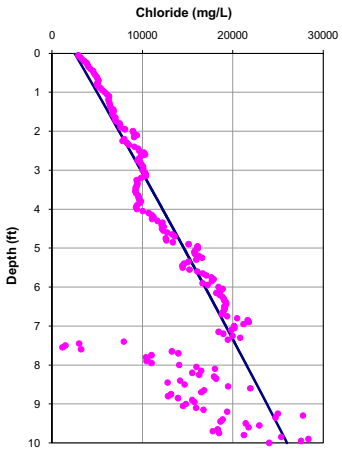
OL-GP-60129



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

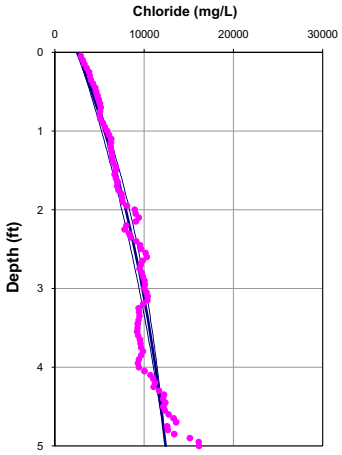
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	924	924
Cl (mg/L)	40000	13124
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		13124
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-60130



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

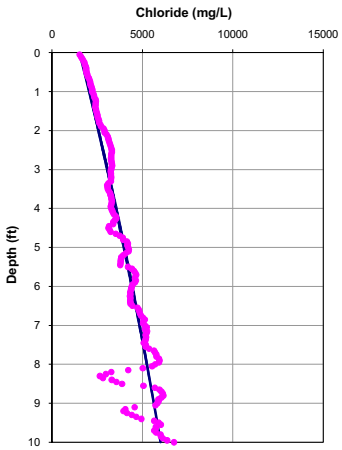
OL-GP-60130



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

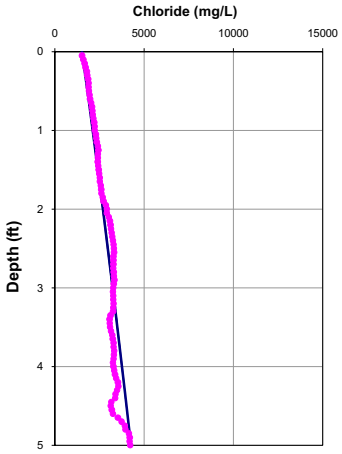
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2500	2500
Cl (mg/L)	26000	12400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-2.17
q (cm/yr)	-0.07	-1.52
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.74

OL-GP-60130.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

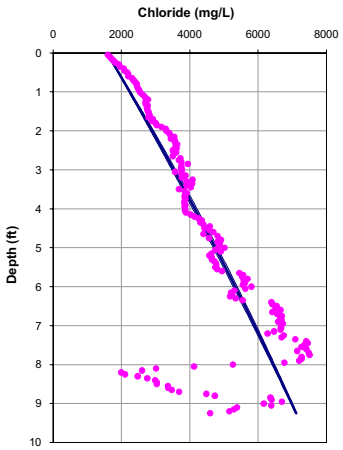
OL-GP-60130.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.3 cm/year

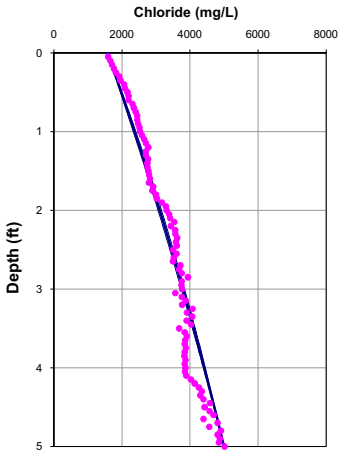
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1515	1515
Cl (mg/L)	6000	4250
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.36	-0.40
q (cm/yr)	-0.25	-0.28
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-60130-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

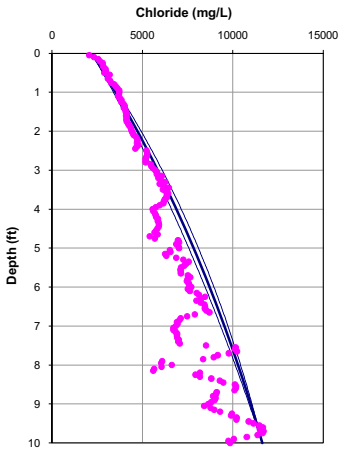
OL-GP-60130-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.5 cm/year

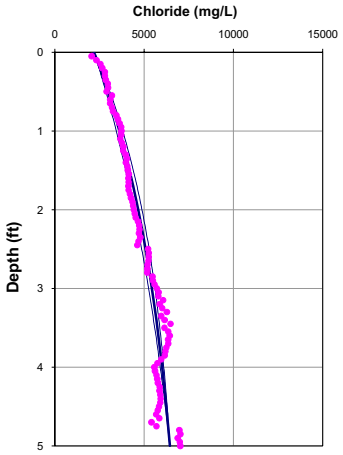
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1569	1569
Cl (mg/L)	7500	5000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.25	-0.71
q (cm/yr)	-0.18	-0.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.73

OL-GP-60131



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

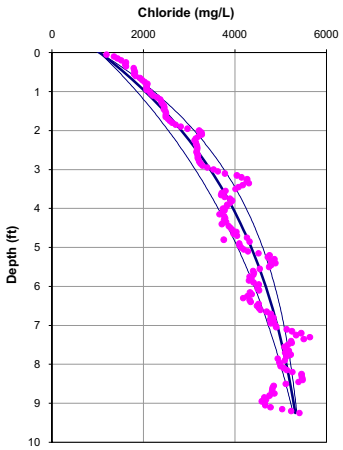
OL-GP-60131



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

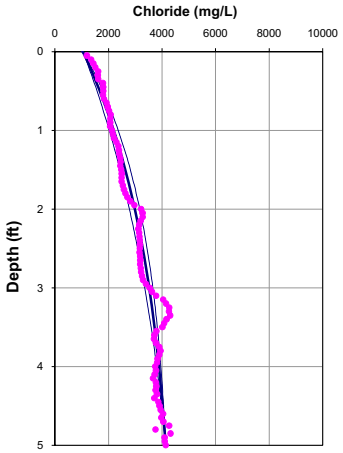
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2200	2200
Cl (mg/L)	11629	6430
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		6429.6
V(cm/yr)	-0.70	-2.69
q (cm/yr)	-0.49	-1.88
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.75

OL-GP-60132



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.5 cm/year

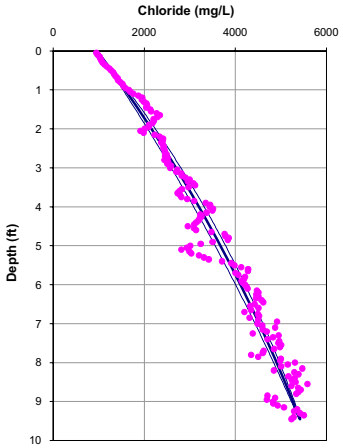
OL-GP-60132



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year

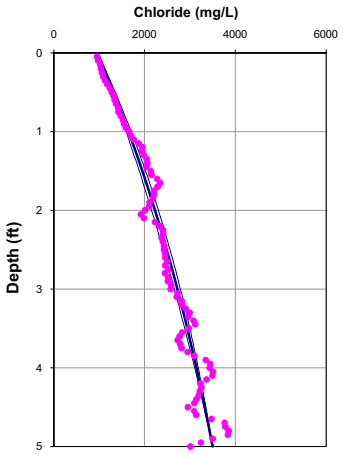
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1045	1045
Cl (mg/L)	5410	4135
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.13	-3.43
q (cm/yr)	-1.49	-2.40
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.75

OL-GP-60133



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

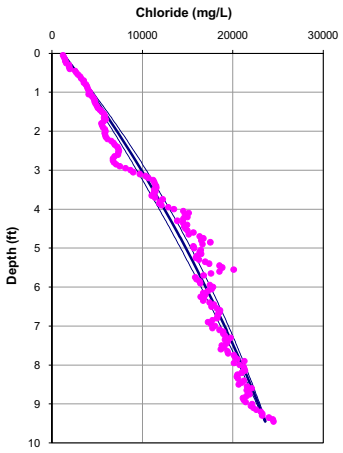
OL-GP-60133



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.0 cm/year

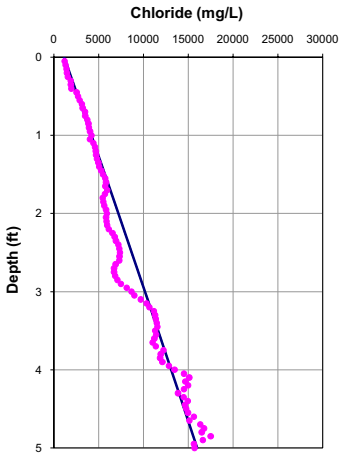
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	962	962
Cl (mg/L)	5600	3500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.60	-1.44
q (cm/yr)	-0.42	-1.01
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.73

OL-GP-60134



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

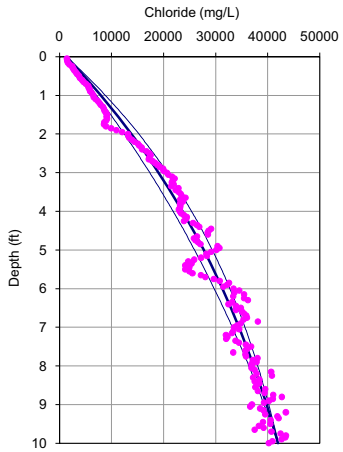
OL-GP-60134



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

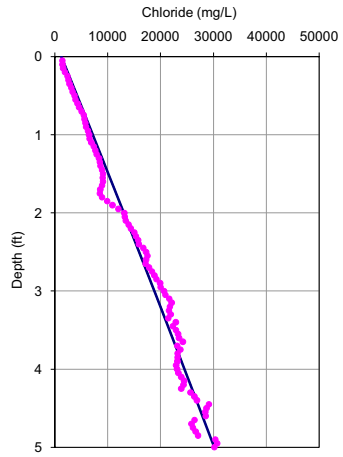
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1173	1173
Cl (mg/L)	24520	16000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.60	-0.10
q (cm/yr)	-0.42	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.72

OL-GP-60135



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

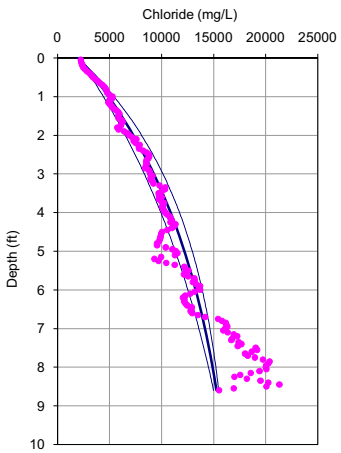
OL-GP-60135



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

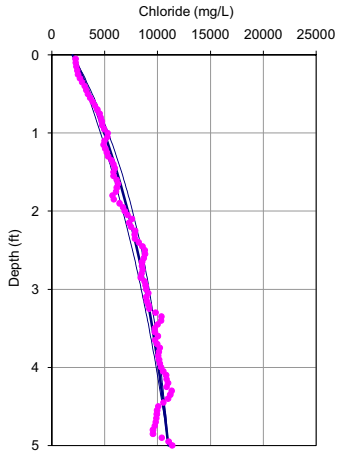
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1280	1280
Cl (mg/L)	42000	30158
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.10	-0.11
q (cm/yr)	-0.77	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.72

OL-GP-60136



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.3 cm/year

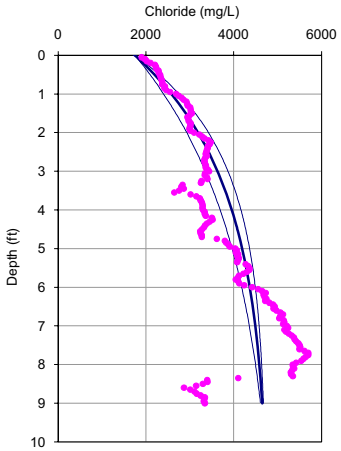
OL-GP-60136



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year

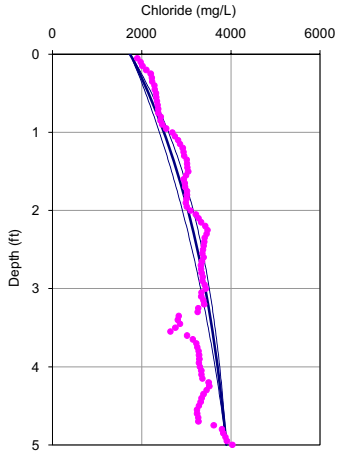
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2000	2000
Cl (mg/L)	16000	11021
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		11021
V(cm/yr)	-1.81	-2.58
q (cm/yr)	-1.26	-1.81
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.74

OL-GP-60136.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.1 cm/year

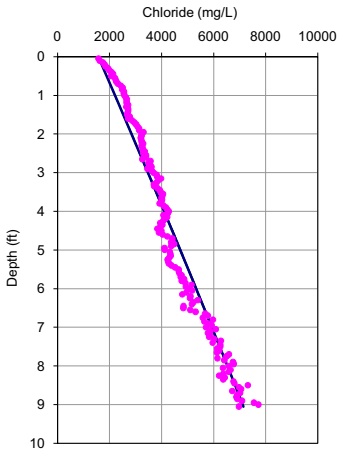
OL-GP-60136.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

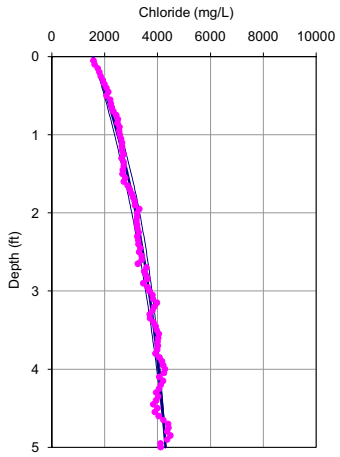
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1748	1748
Cl (mg/L)	4700	3900
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.00	-2.99
q (cm/yr)	-2.10	-2.09
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.80	0.75

OL-GP-60136-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

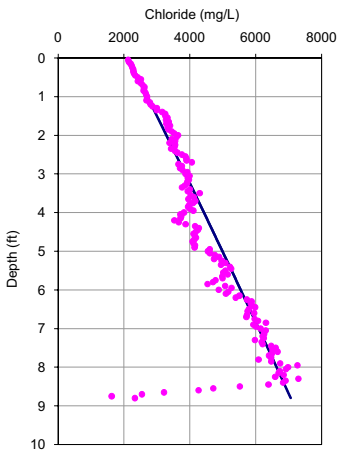
OL-GP-60136-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.0 cm/year

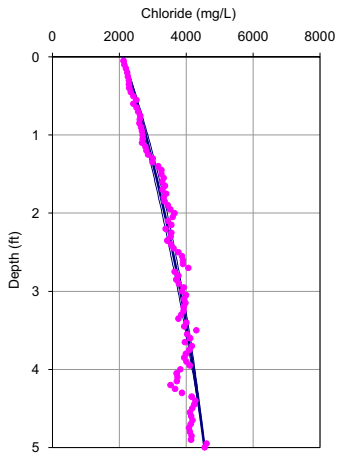
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1559	1559
Cl (mg/L)	7700	4303
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		4303
V(cm/yr)	-0.10	-2.82
q (cm/yr)	-0.07	-1.97
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.75

OL-GP-60136-B



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

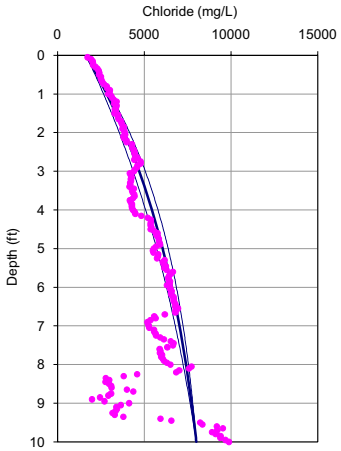
OL-GP-60136-B



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.1 cm/year

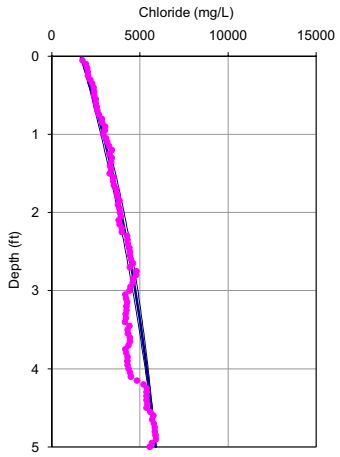
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2120	2120
Cl (mg/L)	7700	4550
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-1.56
q (cm/yr)	-0.07	-1.09
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.74

OL-GP-60137



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

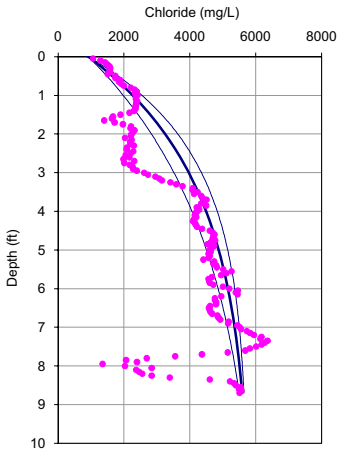
OL-GP-60137



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.4 cm/year

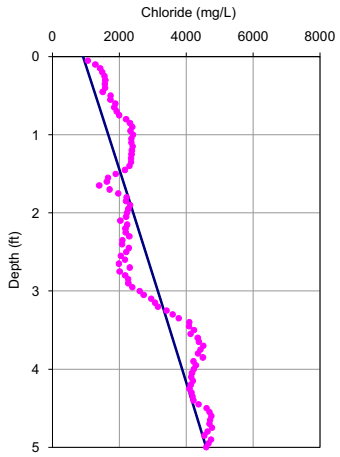
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1640	1640
Cl (mg/L)	8000	5900
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.50	-2.00
q (cm/yr)	-1.05	-1.40
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.74

OL-GP-60138



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.1 cm/year

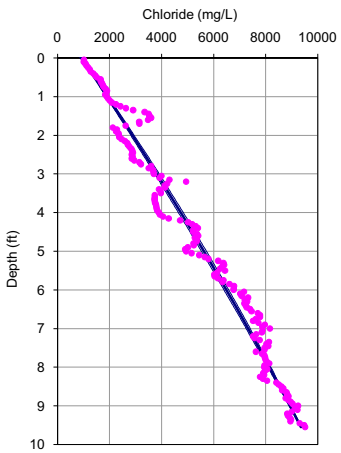
OL-GP-60138



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

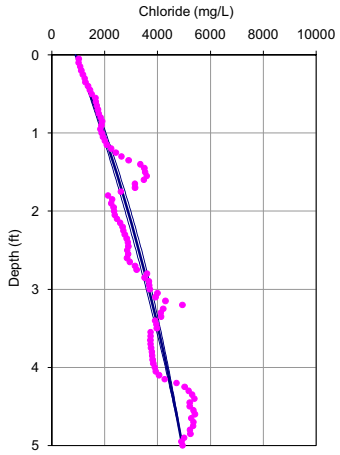
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	919	919
Cl (mg/L)	5700	4597
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.00	-0.10
q (cm/yr)	-2.10	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.80	0.72

OL-GP-60139



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

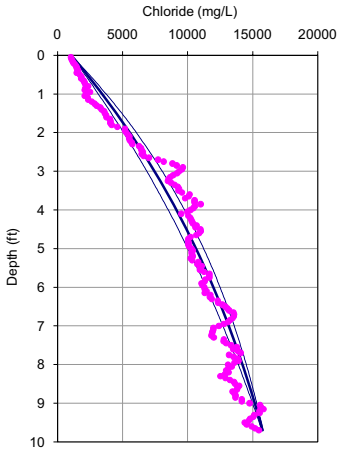
OL-GP-60139



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.9 cm/year

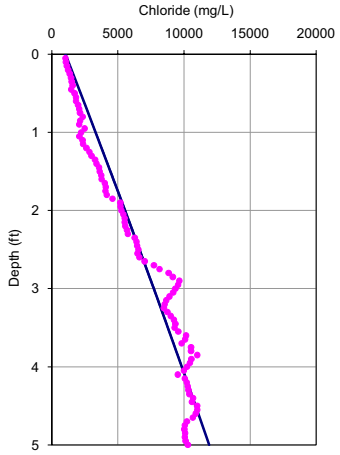
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	907	907
Cl (mg/L)	9700	4941
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.26	-1.29
q (cm/yr)	-0.18	-0.90
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.73

OL-GP-60140



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

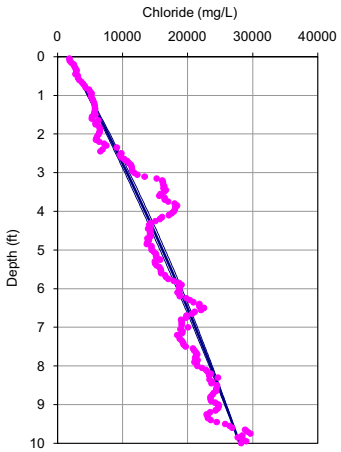
OL-GP-60140



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

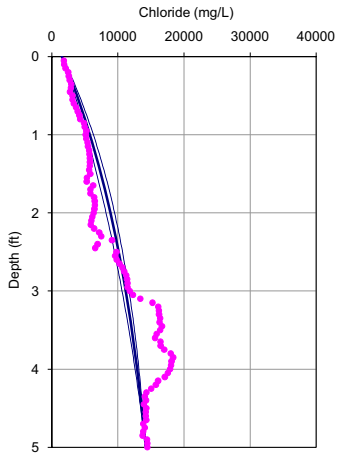
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1031	1031
Cl (mg/L)	16000	11899
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		11899
V(cm/yr)	-1.05	-0.22
q (cm/yr)	-0.73	-0.15
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.72

OL-GP-60141



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

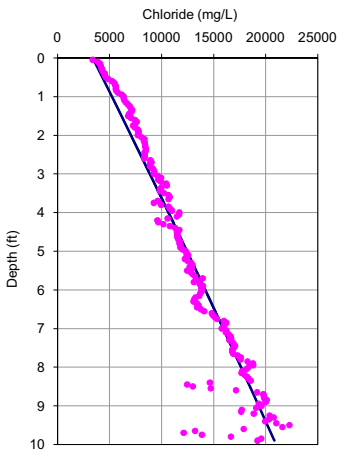
OL-GP-60141



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year

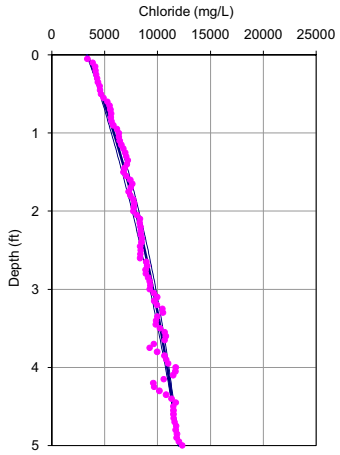
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1579	1579
Cl (mg/L)	28000	14200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.36	-2.62
q (cm/yr)	-0.25	-1.84
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.74

OL-GP-60142



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

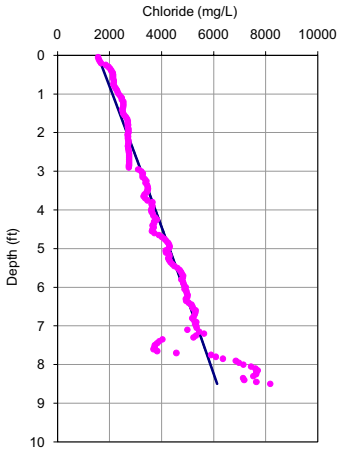
OL-GP-60142



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.3 cm/year

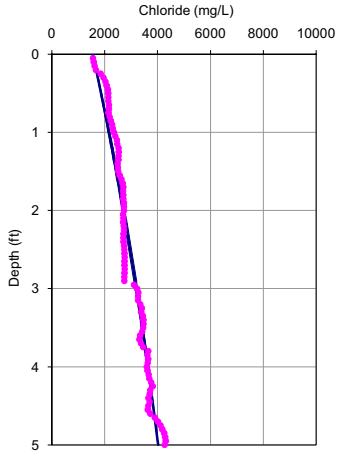
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3360	3360
Cl (mg/L)	21000	12000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-1.85
q (cm/yr)	-0.07	-1.30
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.74

OL-GP-60142.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

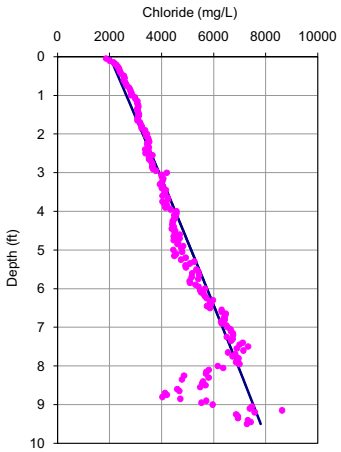
OL-GP-60142.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.7 cm/year

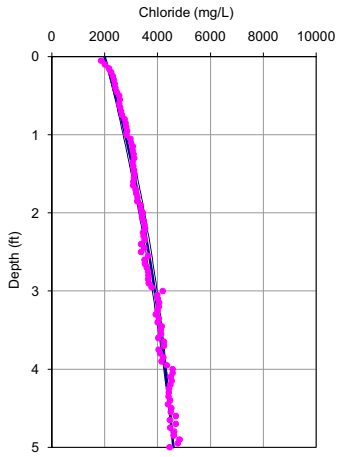
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1546	1546
Cl (mg/L)	6900	4020
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-1.02
q (cm/yr)	-0.07	-0.72
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60142-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

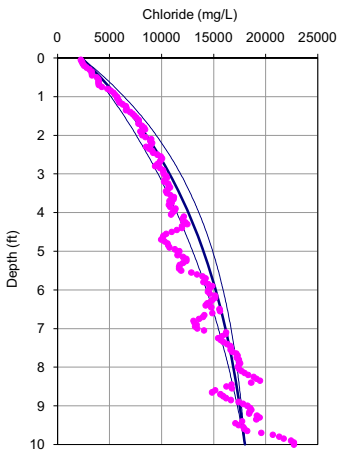
OL-GP-60142-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.4 cm/year

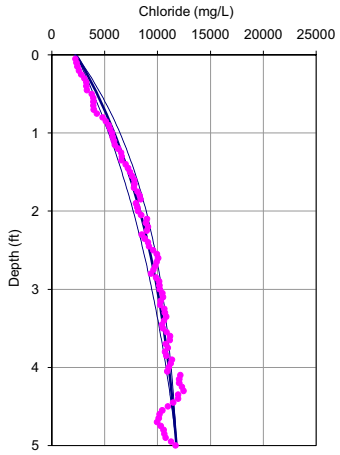
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2000	2000
Cl (mg/L)	8100	4600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-2.02
q (cm/yr)	-0.07	-1.41
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.74

OL-GP-60143



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

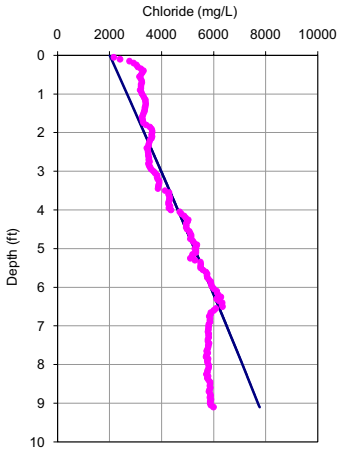
OL-GP-60143



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

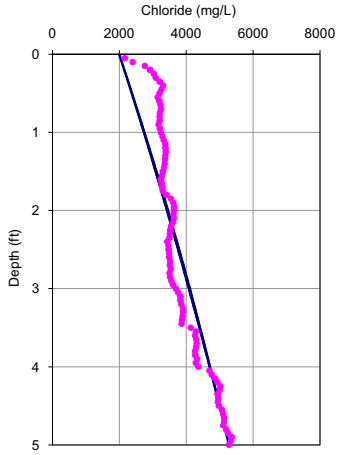
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2300	2300
Cl (mg/L)	18000	11800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.00	-3.58
q (cm/yr)	-1.40	-2.51
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.75

OL-GP-60143.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

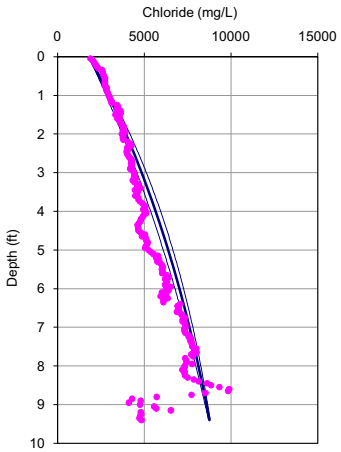
OL-GP-60143.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

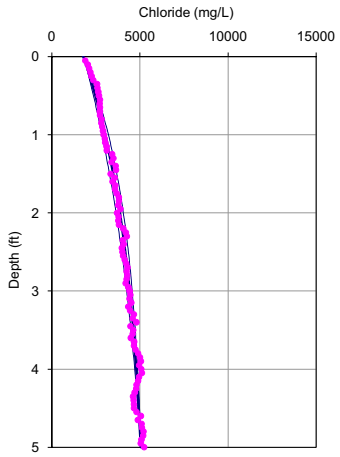
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2000	2000
Cl (mg/L)	8300	5278
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.12	-0.56
q (cm/yr)	-0.09	-0.39
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60143-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

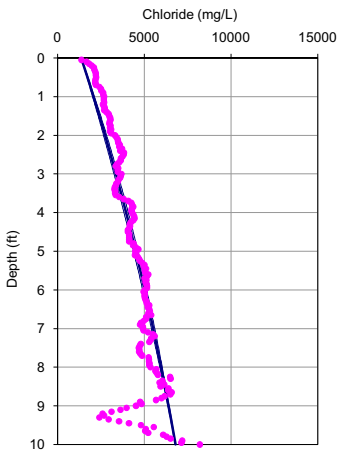
OL-GP-60143-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

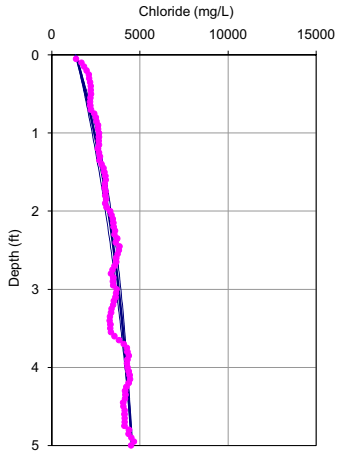
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1800	1800
Cl (mg/L)	9000	5050
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.00	-3.55
q (cm/yr)	-0.70	-2.49
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-GP-60144



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

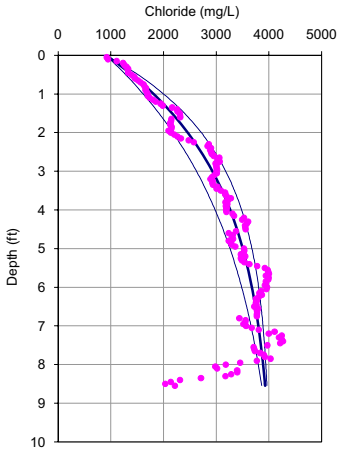
OL-GP-60144



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year

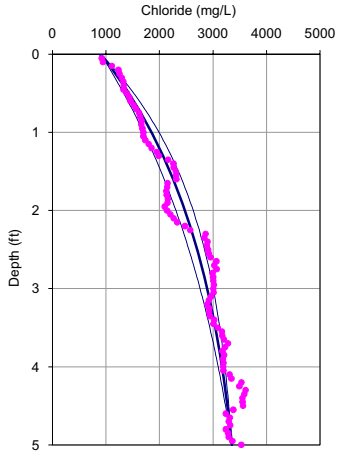
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1362	1362
Cl (mg/L)	6800	4550
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.55	-2.64
q (cm/yr)	-0.39	-1.85
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.74

OL-GP-60145



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.2 cm/year

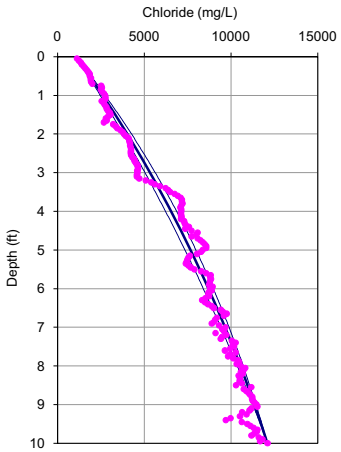
OL-GP-60145



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.6 cm/year

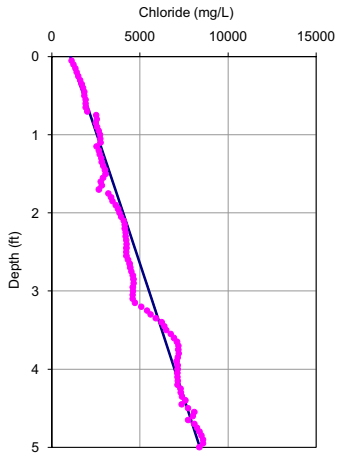
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	904	904
Cl (mg/L)	4000	3350
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.19	-3.71
q (cm/yr)	-2.23	-2.60
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.80	0.75

OL-GP-60146



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

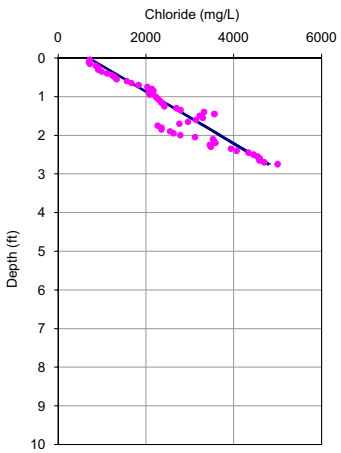
OL-GP-60146



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

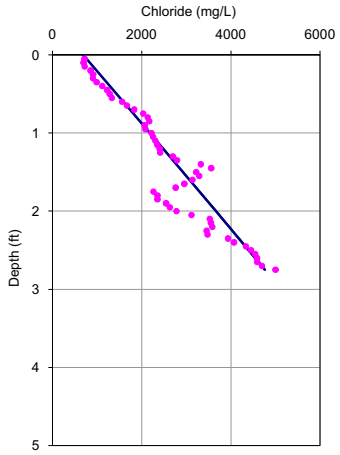
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1060	1060
Cl (mg/L)	12106	8400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.70	-0.10
q (cm/yr)	-0.49	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.72

OL-GP-60147



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

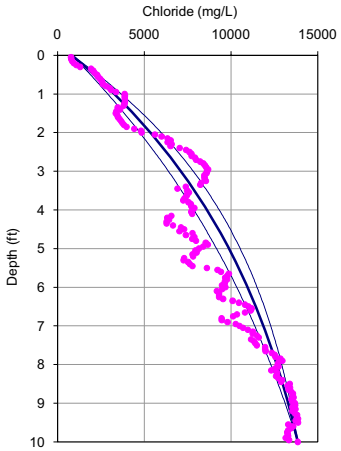
OL-GP-60147



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

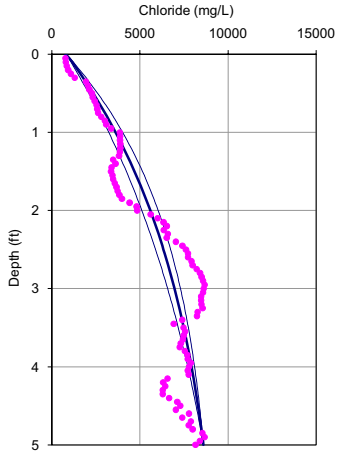
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	690	690
Cl (mg/L)	15000	8000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-60148



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

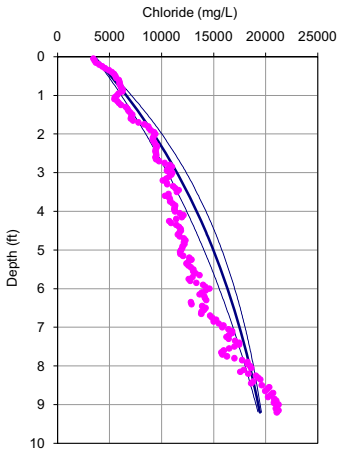
OL-GP-60148



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

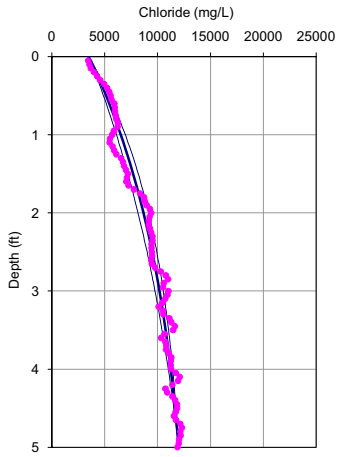
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	821	821
Cl (mg/L)	13854	8600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.50	-3.19
q (cm/yr)	-1.05	-2.24
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.75

OL-GP-60149



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

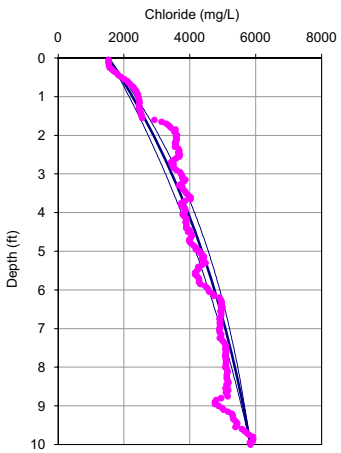
OL-GP-60149



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

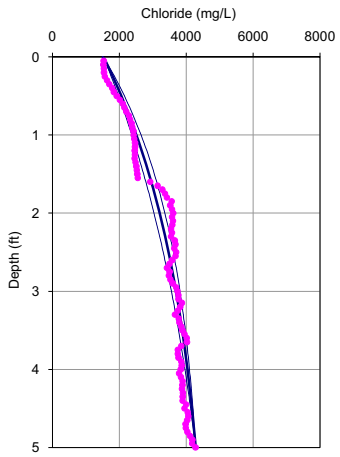
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3500	3500
Cl (mg/L)	20000	12000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.50	-3.12
q (cm/yr)	-1.05	-2.18
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.75

OL-GP-60149.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

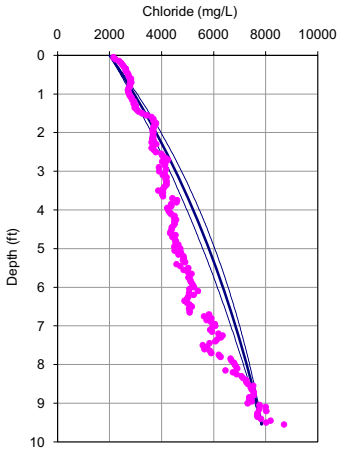
OL-GP-60149.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

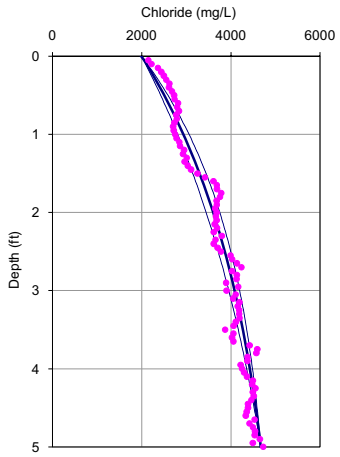
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1524	1524
Cl (mg/L)	5840	4278
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.20	-3.16
q (cm/yr)	-0.84	-2.21
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-GP-60149-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

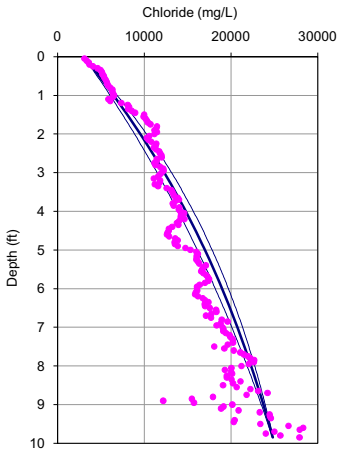
OL-GP-60149-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

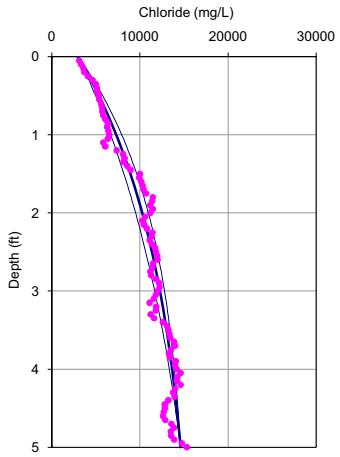
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2000	2000
Cl (mg/L)	8000	4670
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.00	-3.00
q (cm/yr)	-0.70	-2.10
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-GP-60150



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

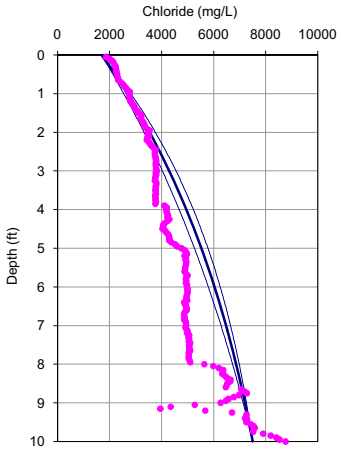
OL-GP-60150



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year

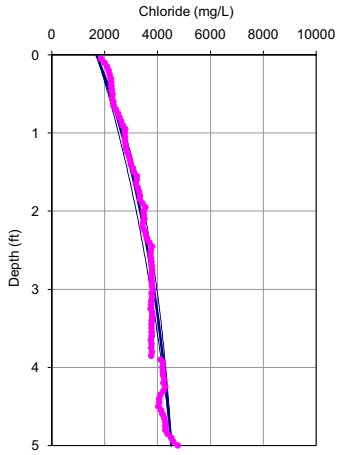
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3000	3000
Cl (mg/L)	25000	14600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.00	-3.41
q (cm/yr)	-0.70	-2.39
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-GP-60150.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

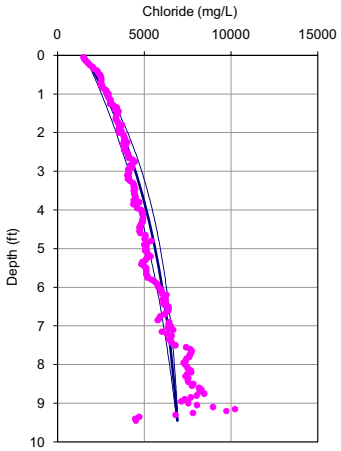
OL-GP-60150.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

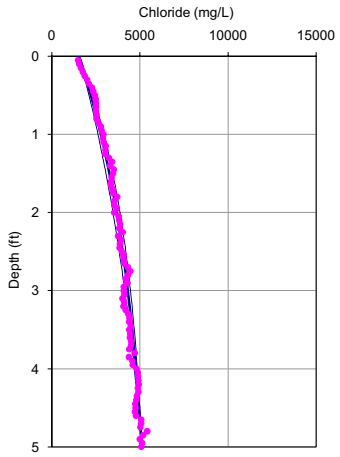
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1693	1693
Cl (mg/L)	7500	4525
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.20	-2.71
q (cm/yr)	-0.84	-1.90
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-GP-60150-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

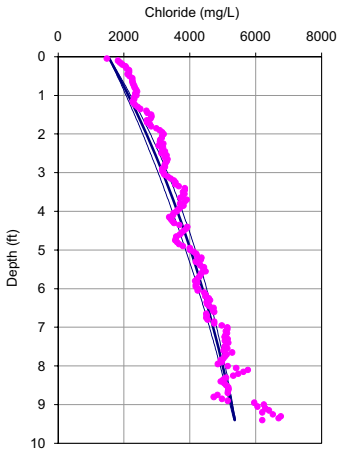
OL-GP-60150-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

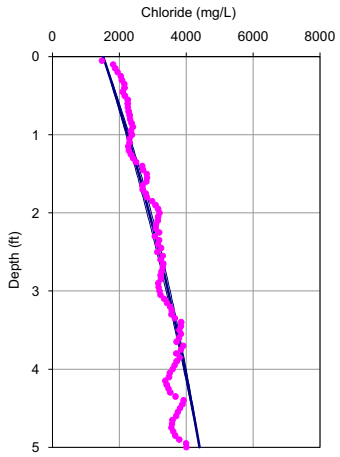
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1550	1550
Cl (mg/L)	7000	5100
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.00	-2.97
q (cm/yr)	-1.40	-2.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.75

OL-GP-60151



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

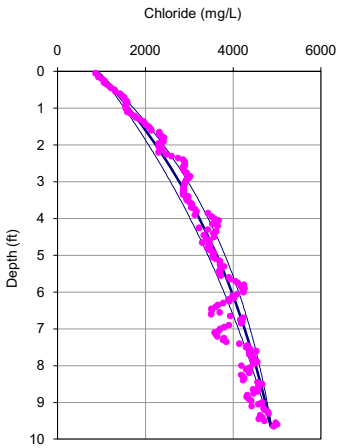
OL-GP-60151



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

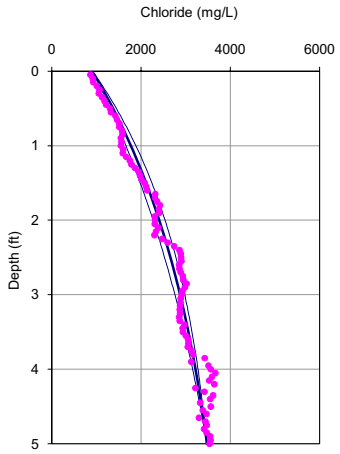
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1520	1520
Cl (mg/L)	5500	4400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.94	-1.11
q (cm/yr)	-0.66	-0.78
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.73

OL-GP-60152



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.9 cm/year

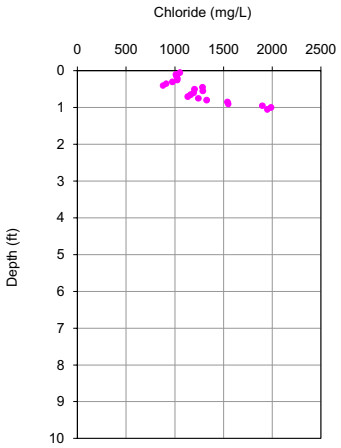
OL-GP-60152



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

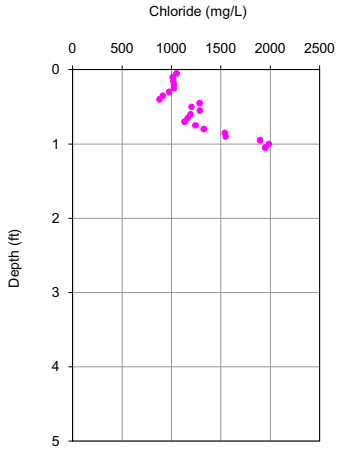
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	910	910
Cl (mg/L)	4920	3475
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.34	-2.71
q (cm/yr)	-0.94	-1.90
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.75

OL-GP-60153



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = NA cm/year

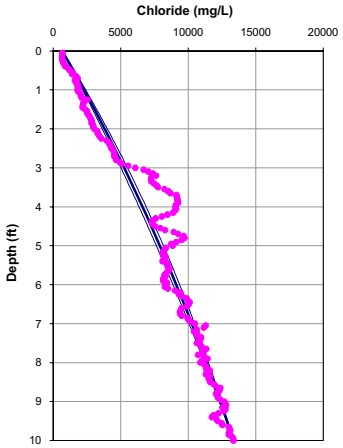
OL-GP-60153



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

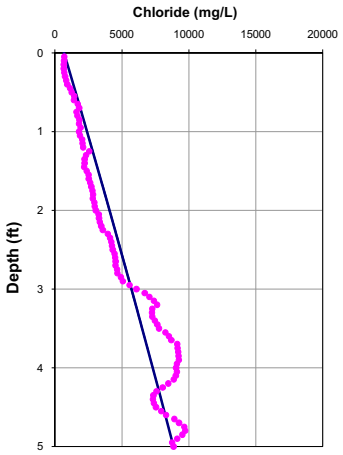
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1070	1070
Cl (mg/L)	1949	1949
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-60154



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

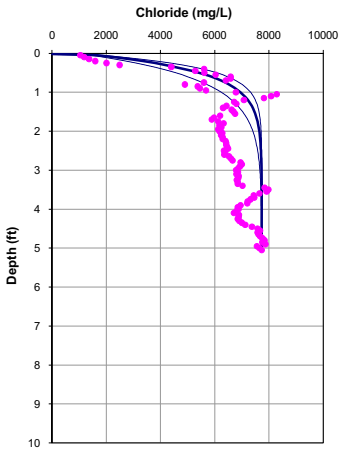
OL-GP-60154



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

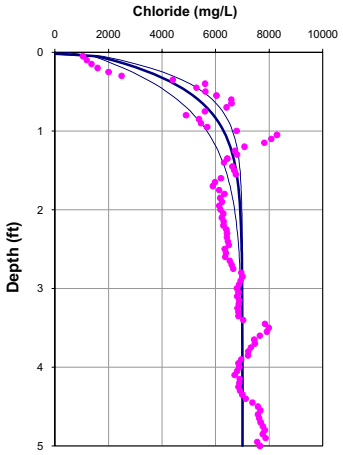
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	677	677
Cl (mg/L)	13350	8856
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.50	-0.22
q (cm/yr)	-0.35	-0.16
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-60155



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -16.8 cm/year

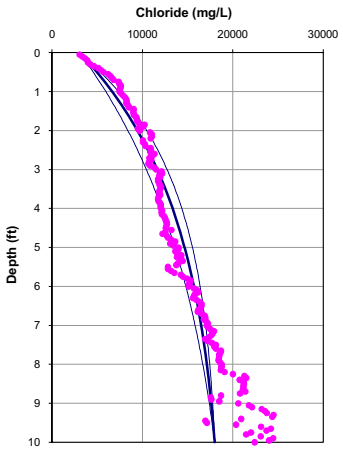
OL-GP-60155



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -16.8 cm/year

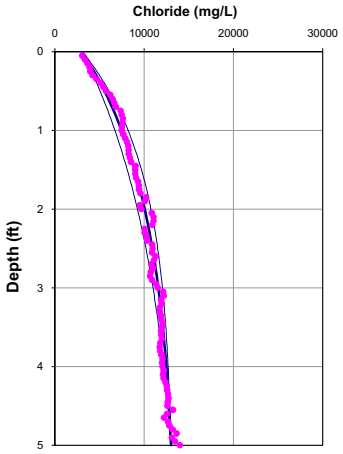
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	982	982
Cl (mg/L)	7736	7000
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-24.00	-24.06
q (cm/yr)	-16.80	-16.84
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.93	0.93

OL-GP-60156



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.6 cm/year

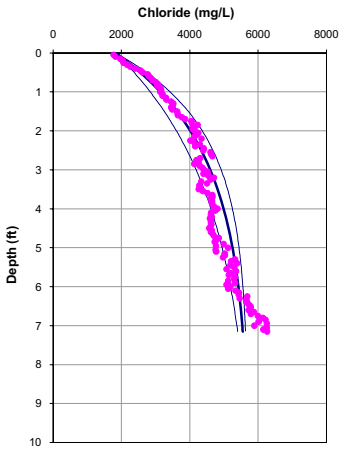
OL-GP-60156



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.4 cm/year

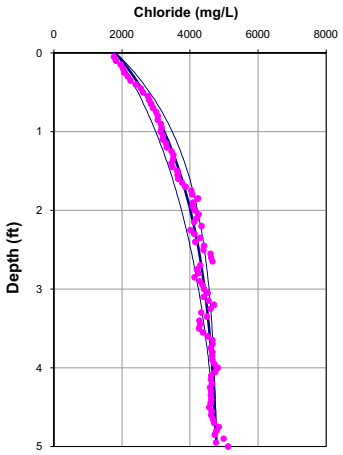
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3049	3049
Cl (mg/L)	18000	13000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.34	-4.88
q (cm/yr)	-1.64	-3.42
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.76

OL-GP-60156-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.8 cm/year

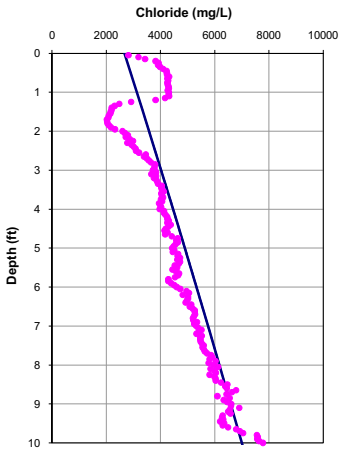
OL-GP-60156-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -4.0 cm/year

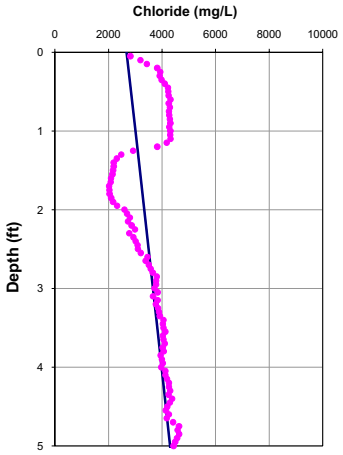
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1824	1824
Cl (mg/L)	5700	4780
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-4.00	-5.66
q (cm/yr)	-2.80	-3.96
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.82	0.77

OL-GP-60157



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

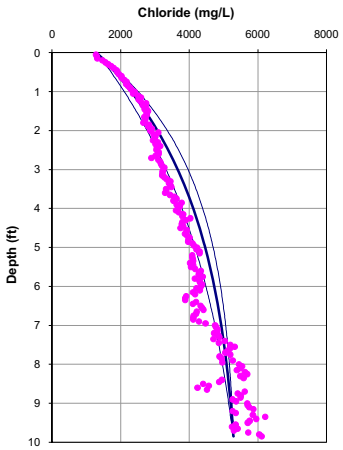
OL-GP-60157



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

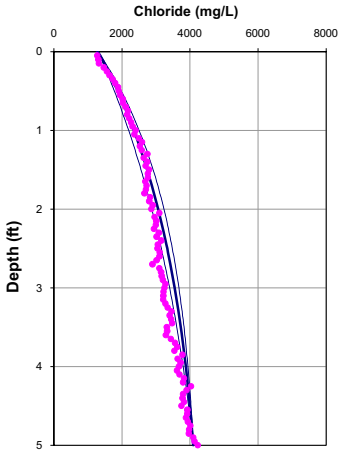
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2673	2673
Cl (mg/L)	7000	4300
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-60158



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.8 cm/year

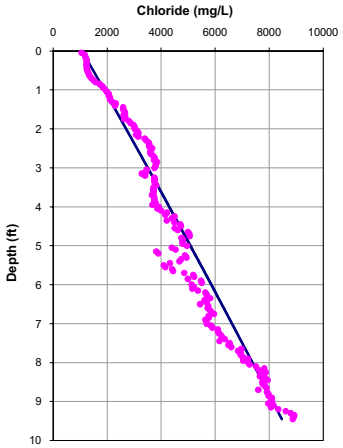
OL-GP-60158



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

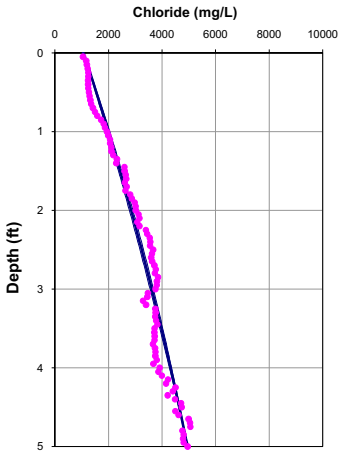
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1300	1300
Cl (mg/L)	5300	4100
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.50	-3.50
q (cm/yr)	-1.75	-2.45
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.79	0.75

OL-GP-60159



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

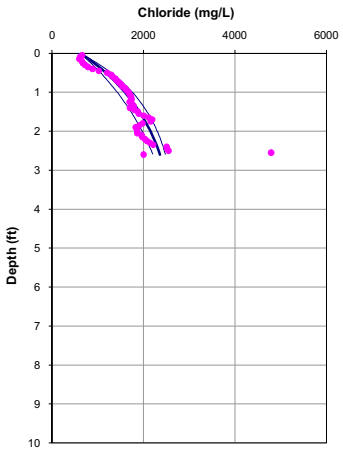
OL-GP-60159



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.6 cm/year

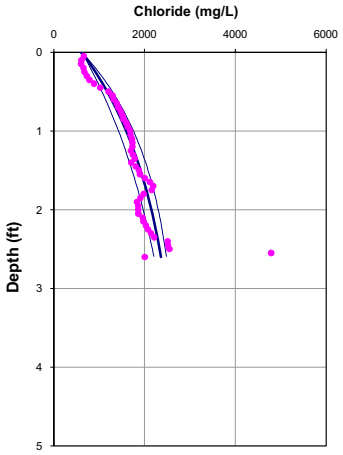
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1070	1070
Cl (mg/L)	8872	4955
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.82
q (cm/yr)	-0.07	-0.57
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60160



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.6 cm/year

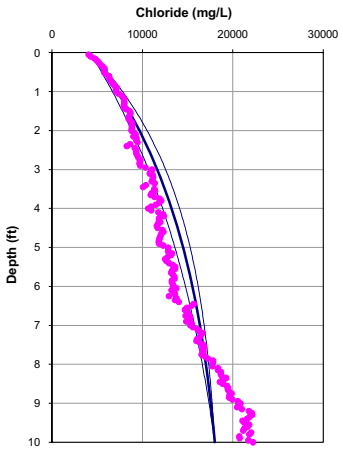
OL-GP-60160



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.6 cm/year

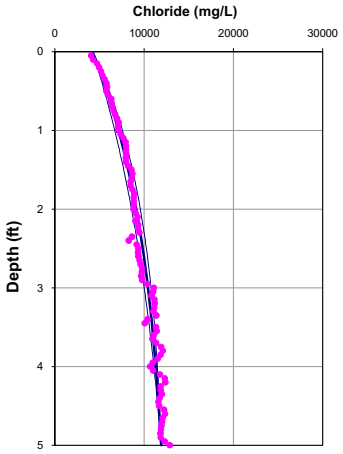
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	617	617
Cl (mg/L)	2750	2750
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-5.18	-5.18
q (cm/yr)	-3.62	-3.62
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.77

OL-GP-60161



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

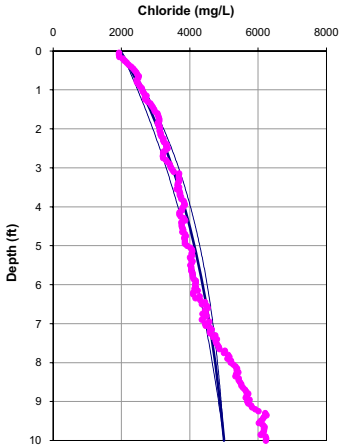
OL-GP-60161



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

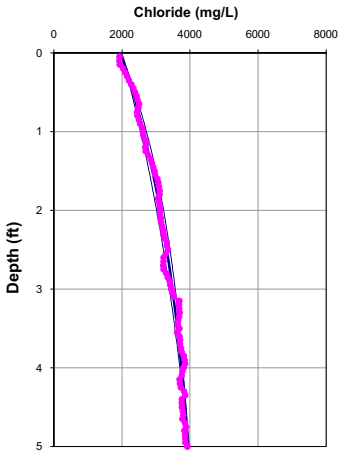
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	4200	4200
Cl (mg/L)	18000	11900
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.00	-3.59
q (cm/yr)	-1.40	-2.51
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.75

OL-GP-60161.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.2 cm/year

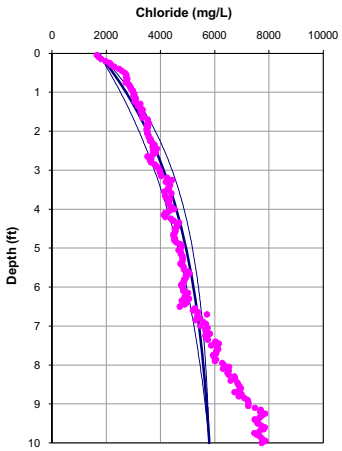
OL-GP-60161.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

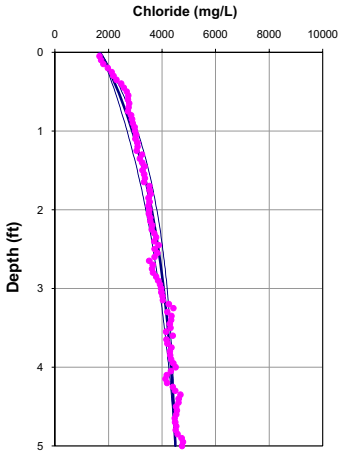
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1969	1969
Cl (mg/L)	5000	3950
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.67	-2.72
q (cm/yr)	-1.17	-1.90
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.75

OL-GP-60161-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.7 cm/year

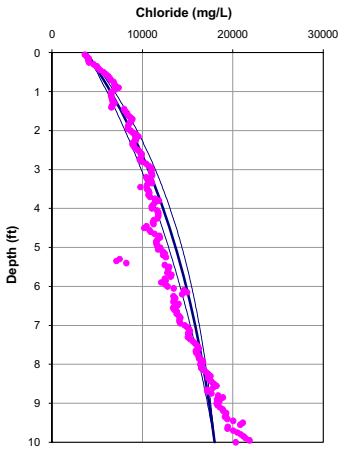
OL-GP-60161-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.1 cm/year

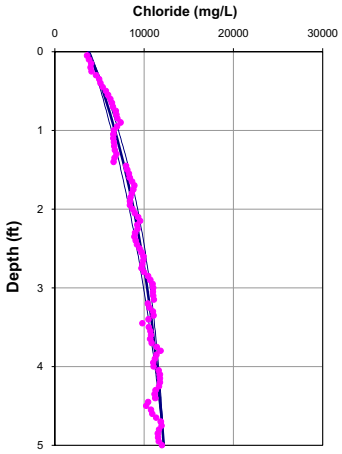
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1700	1700
Cl (mg/L)	5800	4500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.49	-4.46
q (cm/yr)	-1.74	-3.12
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.76

OL-GP-60162



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

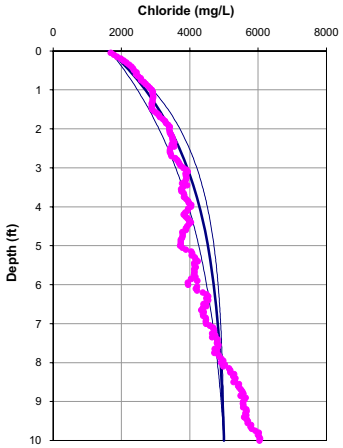
OL-GP-60162



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

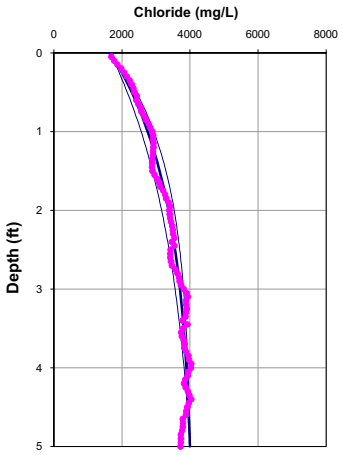
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3800	3800
Cl (mg/L)	18000	12200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.50	-2.94
q (cm/yr)	-1.05	-2.05
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.75

OL-GP-60162.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.5 cm/year

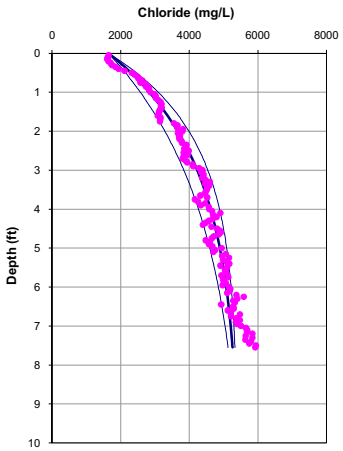
OL-GP-60162.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.8 cm/year

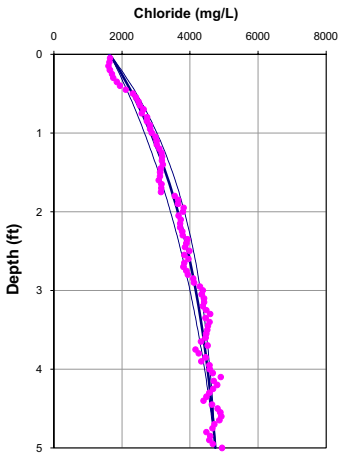
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1656	1656
Cl (mg/L)	5000	4000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.50	-5.44
q (cm/yr)	-2.45	-3.81
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.81	0.77

OL-GP-60162-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.5 cm/year

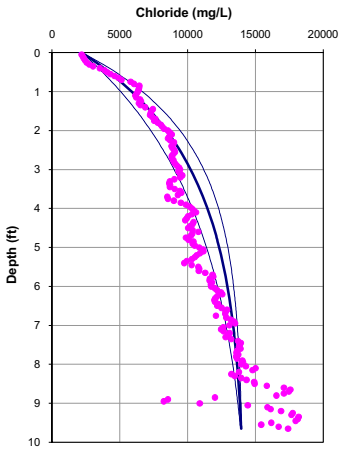
OL-GP-60162-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.6 cm/year

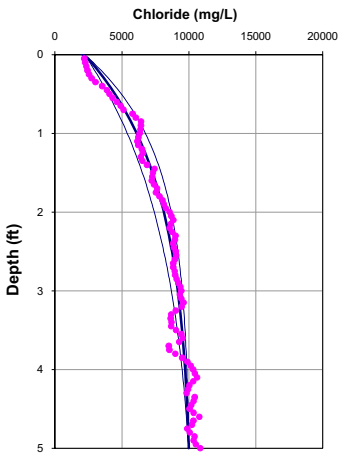
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1645	1645
Cl (mg/L)	5400	4750
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.62	-3.72
q (cm/yr)	-2.53	-2.61
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.81	0.75

OL-GP-60163



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.5 cm/year

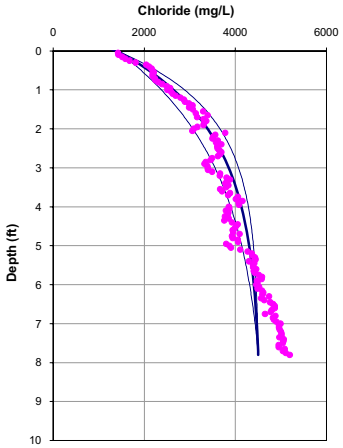
OL-GP-60163



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -4.3 cm/year

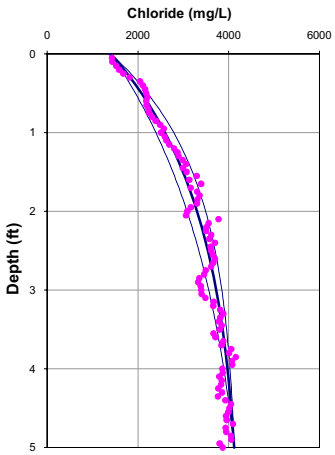
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2200	2200
Cl (mg/L)	14000	10000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.50	-6.11
q (cm/yr)	-2.45	-4.28
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.81	0.78

OL-GP-60163-A



Porosity = 0.70
Dispersion length = 0.2 feet
Upwelling Velocity = -3.3 cm/year

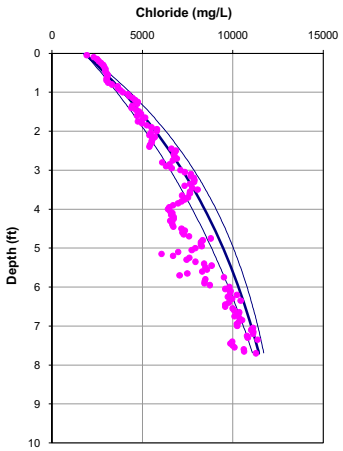
OL-GP-60163-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.3 cm/year

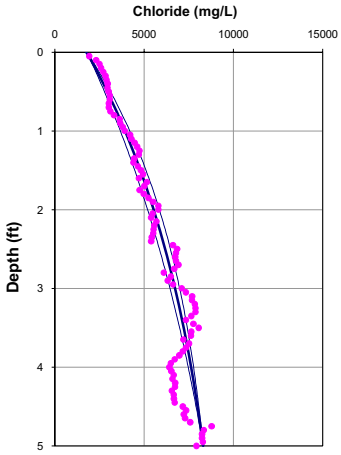
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1400	1400
Cl (mg/L)	4500	4120
L(ft)	7.75	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-4.78	-4.78
q (cm/yr)	-3.35	-3.34
dispersion length (ft)	0.21	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.21	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.80	0.76

OL-GP-60164



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.2 cm/year

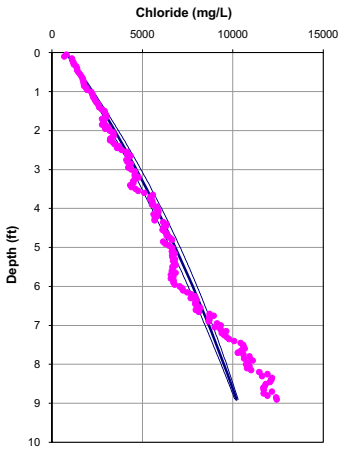
OL-GP-60164



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year

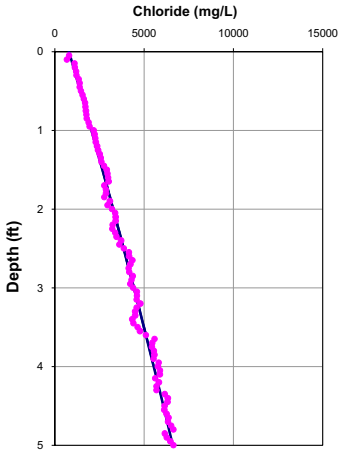
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1786	1786
Cl (mg/L)	12500	8300
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.70	-2.58
q (cm/yr)	-1.19	-1.80
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.74

OL-GP-60165



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

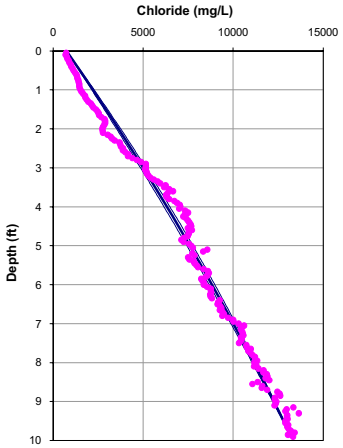
OL-GP-60165



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.3 cm/year

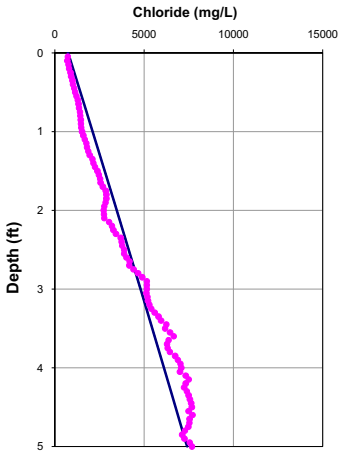
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	783	783
Cl (mg/L)	11000	6600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.65	-0.37
q (cm/yr)	-0.45	-0.26
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.72

OL-GP-60166



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

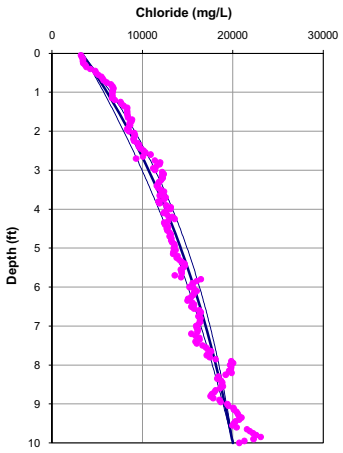
OL-GP-60166



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

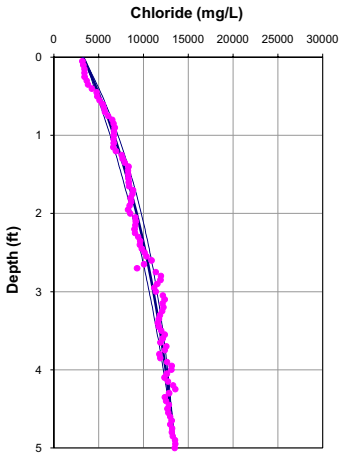
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	742	742
Cl (mg/L)	13324	7400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.31	-0.12
q (cm/yr)	-0.22	-0.09
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-60167



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

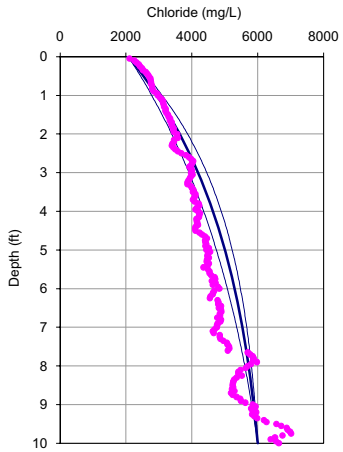
OL-GP-60167



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

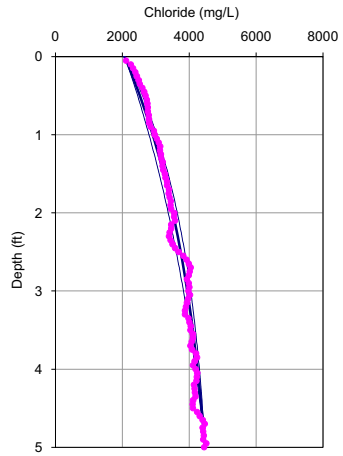
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3300	3300
Cl (mg/L)	20000	13500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.15	-2.71
q (cm/yr)	-0.81	-1.90
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-GP-60167.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

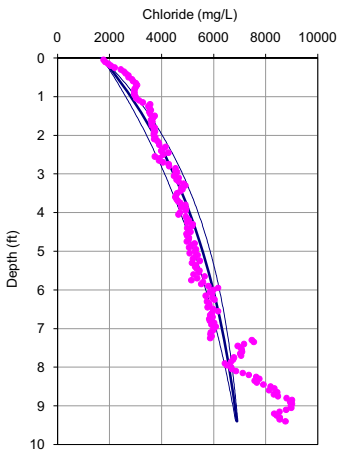
OL-GP-60167.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

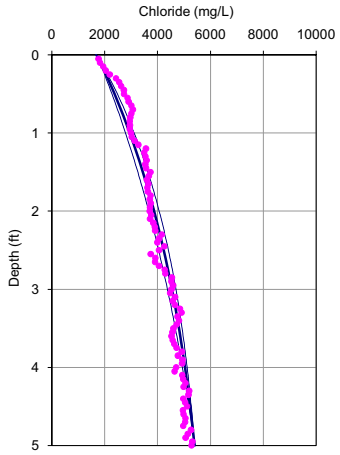
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2073	2073
Cl (mg/L)	6000	4470
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.00	-2.99
q (cm/yr)	-1.40	-2.09
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.75

OL-GP-60167-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.3 cm/year

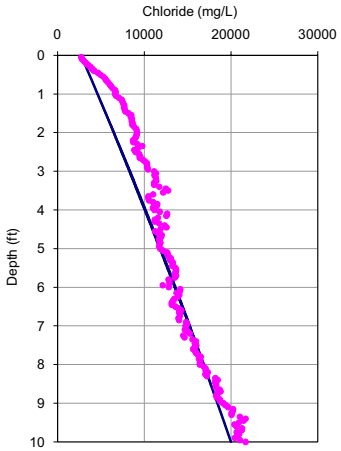
OL-GP-60167-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

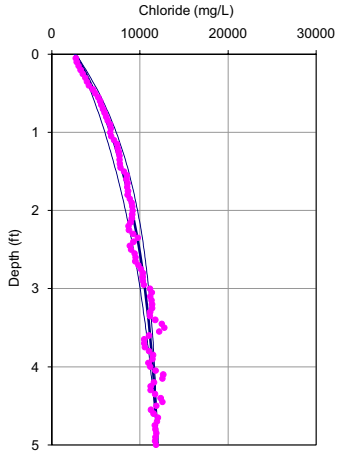
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1700	1700
Cl (mg/L)	7000	5400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.84	-2.76
q (cm/yr)	-1.29	-1.93
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.75

OL-GP-60168



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.1 cm/year

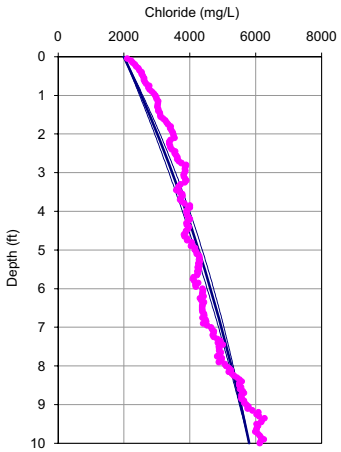
OL-GP-60168



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.2 cm/year

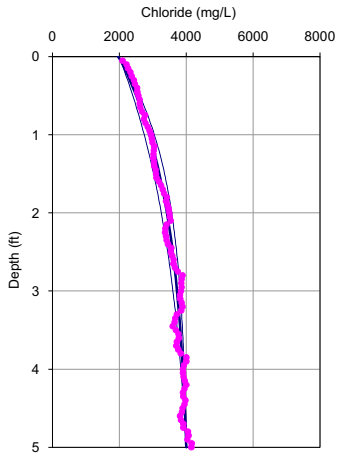
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2700	2700
Cl (mg/L)	20000	12000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.20	-4.54
q (cm/yr)	-0.14	-3.18
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.76

OL-GP-60168.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

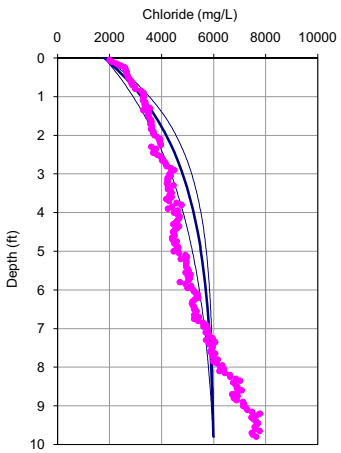
OL-GP-60168.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.5 cm/year

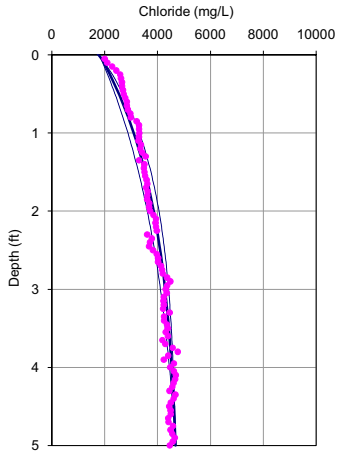
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1990	1990
Cl (mg/L)	5800	4000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.71	-5.06
q (cm/yr)	-0.49	-3.54
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.77

OL-GP-60168-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.8 cm/year

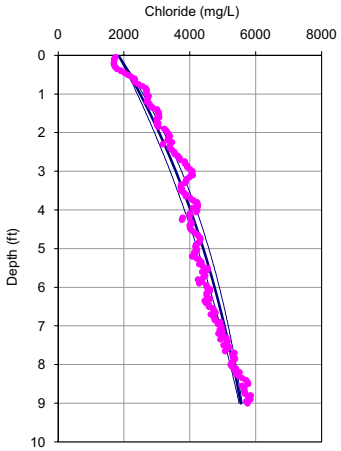
OL-GP-60168-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.5 cm/year

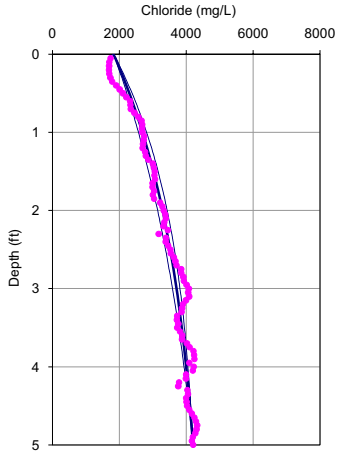
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1800	1800
Cl (mg/L)	6000	4680
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-4.00	-5.03
q (cm/yr)	-2.80	-3.52
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.82	0.77

OL-GP-60169



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

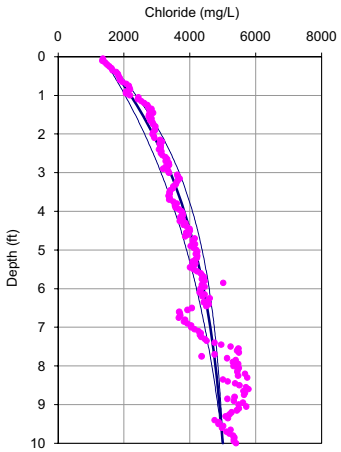
OL-GP-60169



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.3 cm/year

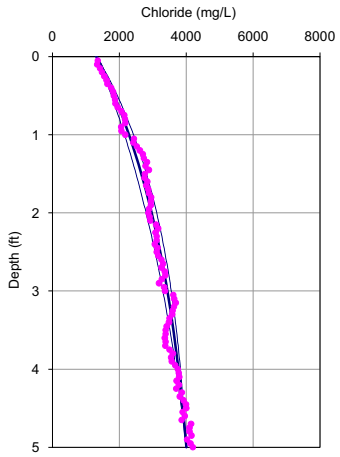
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1833	1833
Cl (mg/L)	5750	4200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.18	-3.27
q (cm/yr)	-0.82	-2.29
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-GP-60170



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.6 cm/year

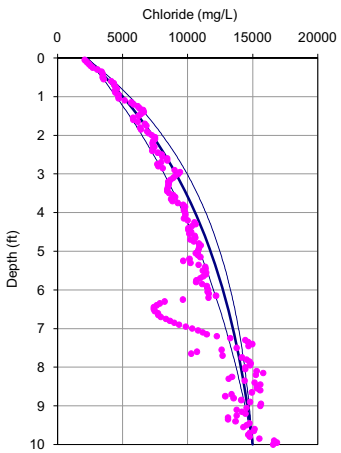
OL-GP-60170



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

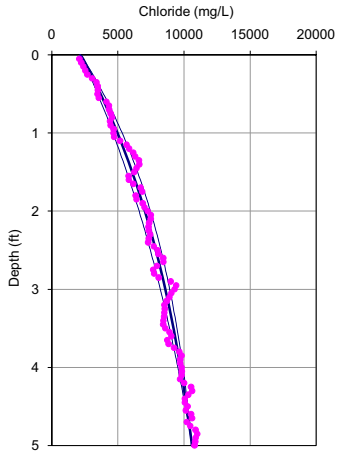
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1330	1330
Cl (mg/L)	5000	4000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.27	-3.19
q (cm/yr)	-1.59	-2.23
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.75

OL-GP-60170-200



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

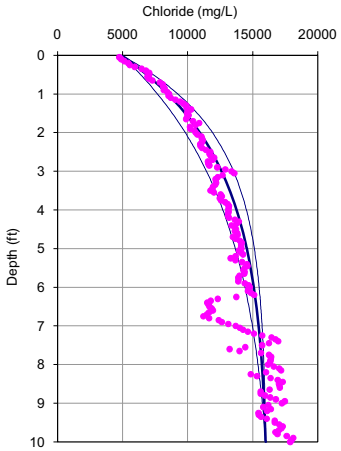
OL-GP-60170-200



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year

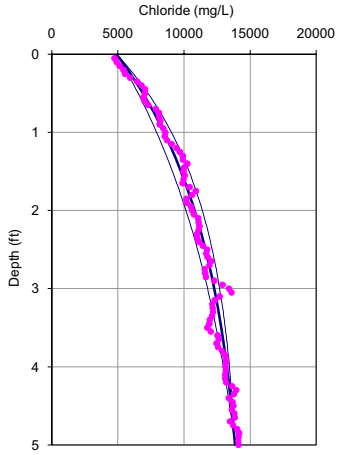
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2200	2200
Cl (mg/L)	15000	10600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.00	-2.60
q (cm/yr)	-1.40	-1.82
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.74

OL-GP-60170-400



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.6 cm/year

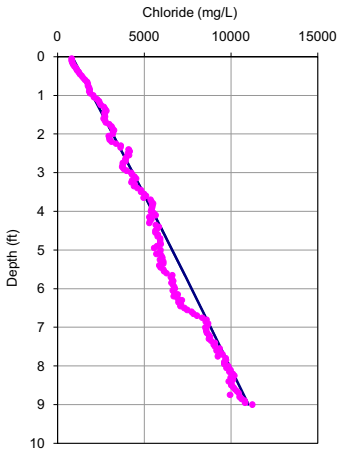
OL-GP-60170-400



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.8 cm/year

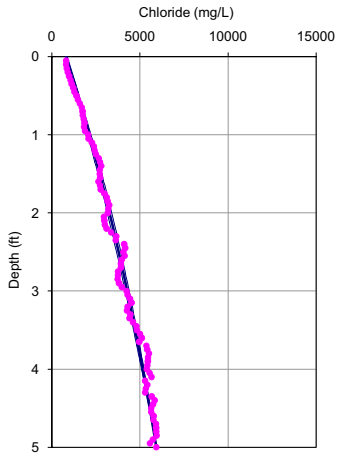
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	4900	4900
Cl (mg/L)	16000	13850
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.70	-4.01
q (cm/yr)	-2.59	-2.80
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.82	0.76

OL-GP-60171



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

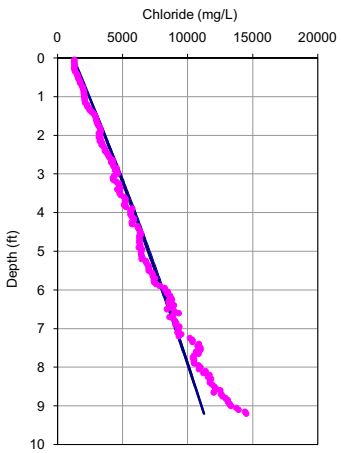
OL-GP-60171



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

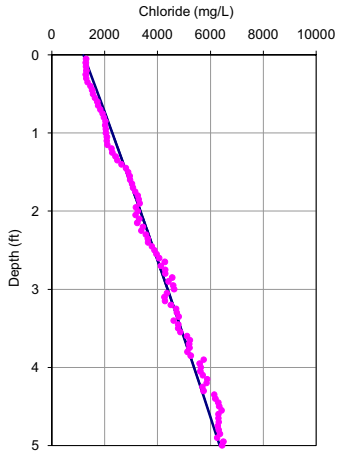
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	829	829
Cl (mg/L)	11000	5933
L(ft)	9	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-1.14
q (cm/yr)	-0.07	-0.80
dispersion length (ft)	0.26	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.26	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60172



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

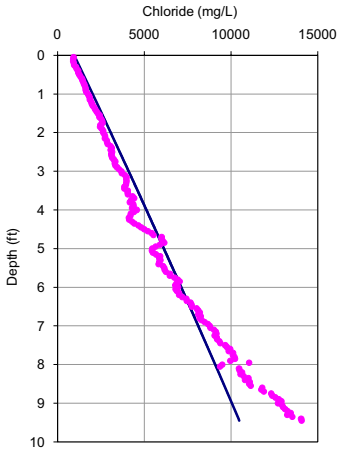
OL-GP-60172



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

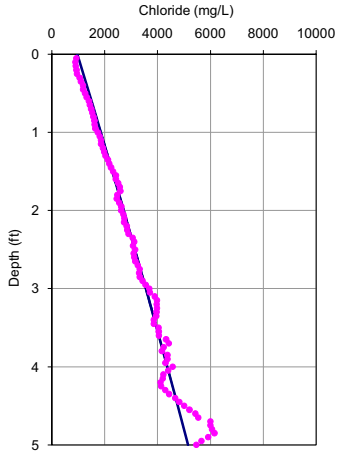
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1200	1200
Cl (mg/L)	12000	6350
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.26	-0.25
q (cm/yr)	-0.18	-0.18
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-60173



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

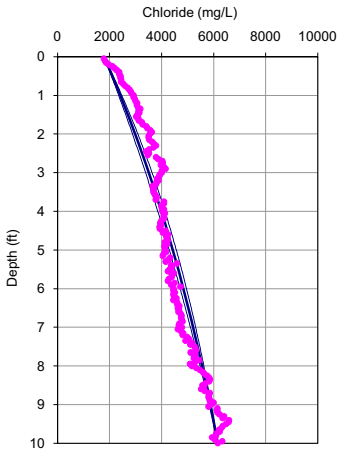
OL-GP-60173



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

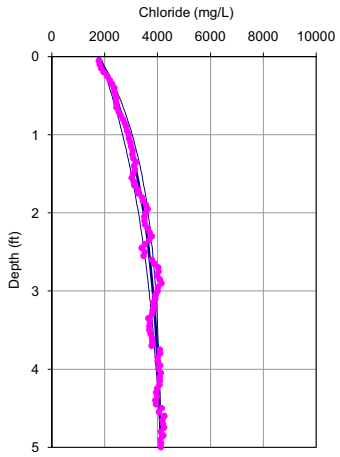
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	961	961
Cl (mg/L)	11000	5150
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.11	-0.29
q (cm/yr)	-0.07	-0.20
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-60174



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

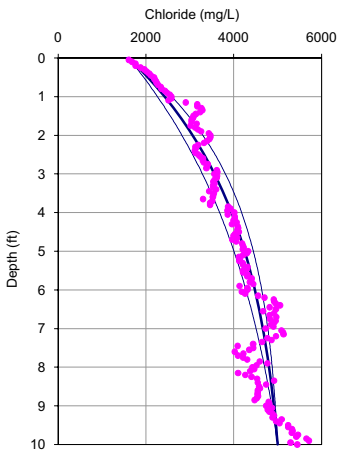
OL-GP-60174



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.7 cm/year

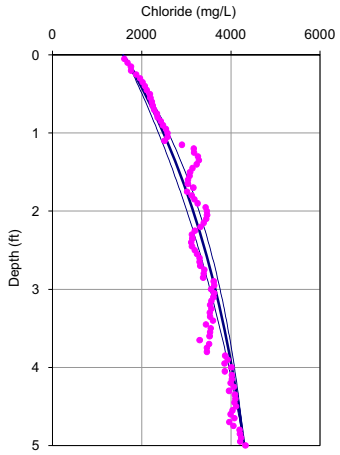
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1784	1784
Cl (mg/L)	6155	4125
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.76	-5.26
q (cm/yr)	-0.53	-3.68
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.77

OL-GP-60175



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.7 cm/year

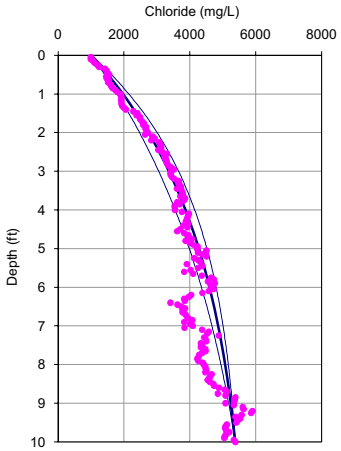
OL-GP-60175



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year

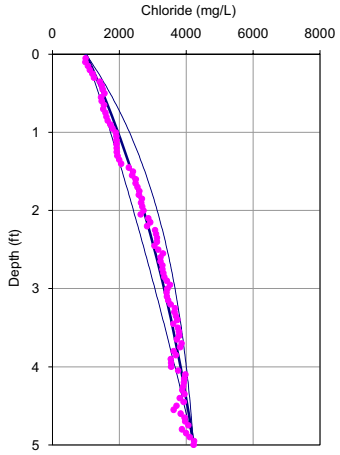
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1600	1600
Cl (mg/L)	5000	4300
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.36	-2.60
q (cm/yr)	-1.65	-1.82
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.74

OL-GP-60176



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

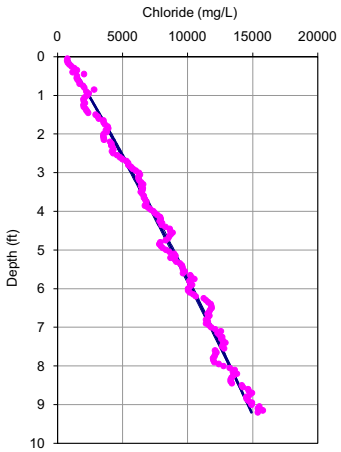
OL-GP-60176



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.4 cm/year

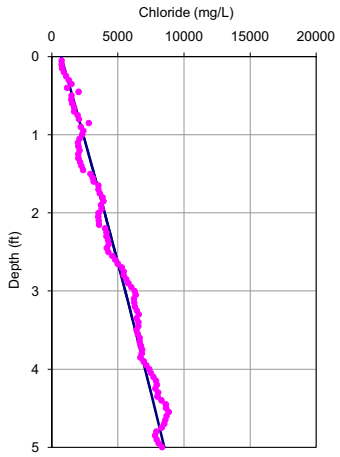
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1007	1007
Cl (mg/L)	5380	4220
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.00	-1.98
q (cm/yr)	-1.40	-1.38
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.74

OL-GP-60177



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

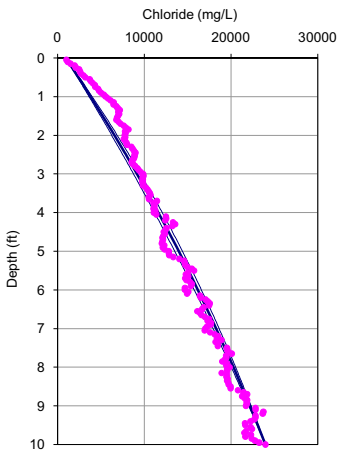
OL-GP-60177



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

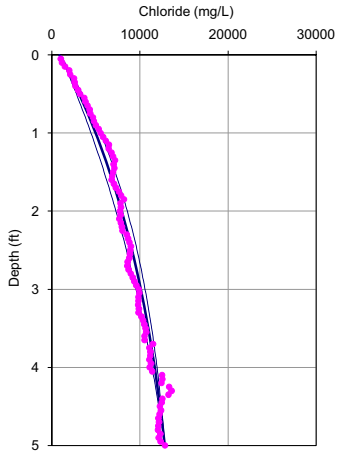
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	704	704
Cl (mg/L)	16000	8500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.22	-0.33
q (cm/yr)	-0.15	-0.23
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-60178



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

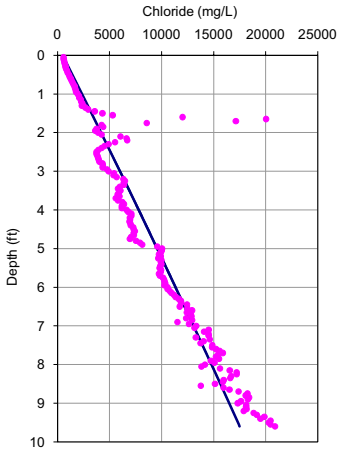
OL-GP-60178



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.0 cm/year

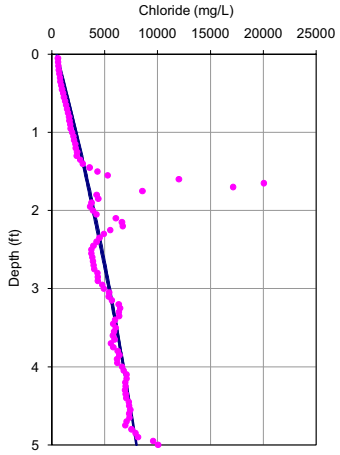
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	928	928
Cl (mg/L)	23981	12830
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.46	-2.80
q (cm/yr)	-0.32	-1.96
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.75

OL-GP-60179



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

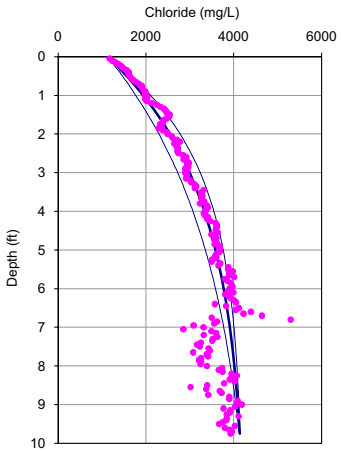
OL-GP-60179



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.6 cm/year

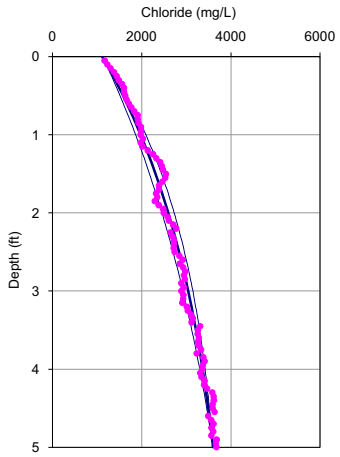
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	480	480
Cl (mg/L)	17500	8000
L(ft)	9.6	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.87
q (cm/yr)	-0.07	-0.61
dispersion length (ft)	0.29	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.29	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-GP-60180



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.0 cm/year

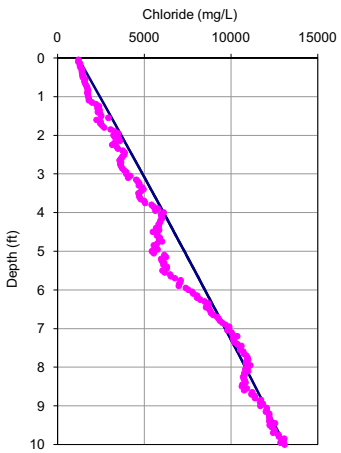
OL-GP-60180



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.0 cm/year

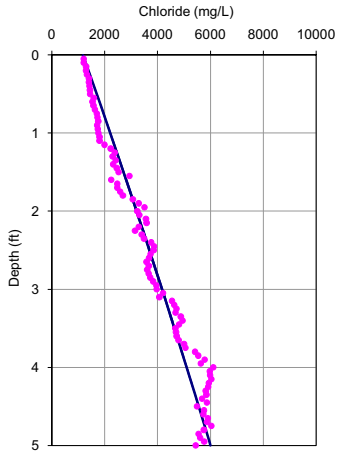
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1125	1125
Cl (mg/L)	4150	3600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.79	-2.90
q (cm/yr)	-1.95	-2.03
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.79	0.75

OL-GP-60181



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

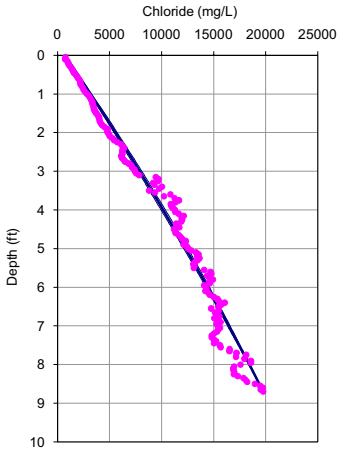
OL-GP-60181



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

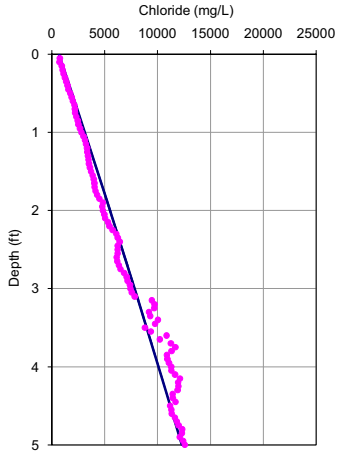
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1181	1181
Cl (mg/L)	13098	6000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.29
q (cm/yr)	-0.07	-0.20
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-60182



Porosity = 0.70
Dispersion length = 0.2 feet
Upwelling Velocity = -0.2 cm/year

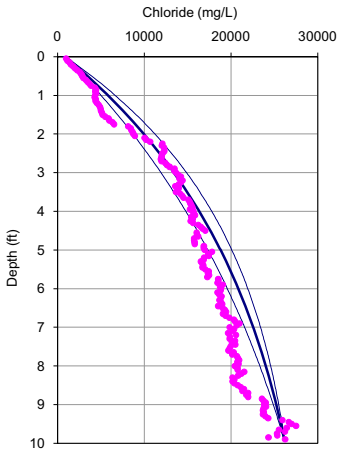
OL-GP-60182



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

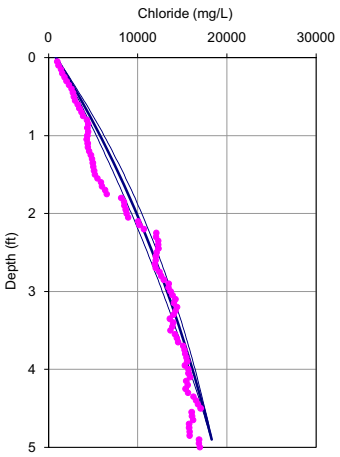
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	683	683
Cl (mg/L)	19762	12300
L(ft)	8.7	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.29	-0.22
q (cm/yr)	-0.21	-0.15
dispersion length (ft)	0.25	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.25	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-60183



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

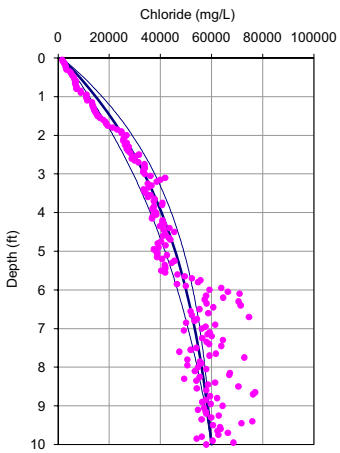
OL-GP-60183



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.1 cm/year

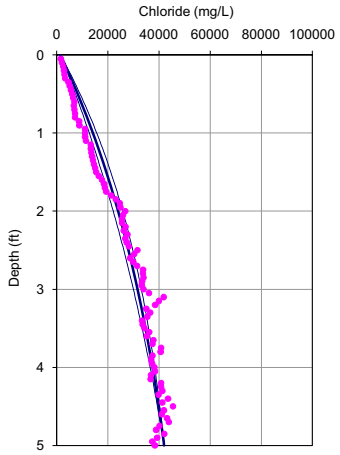
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	874	874
Cl (mg/L)	26249	18500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.60	-1.60
q (cm/yr)	-1.12	-1.12
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.74

OL-GP-60184



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.5 cm/year

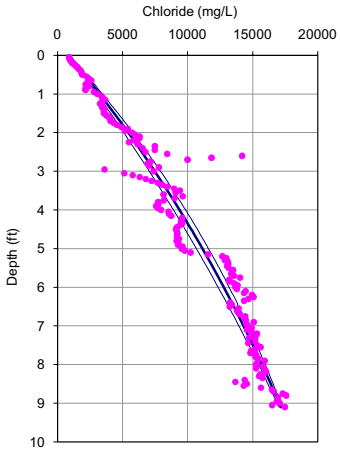
OL-GP-60184



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

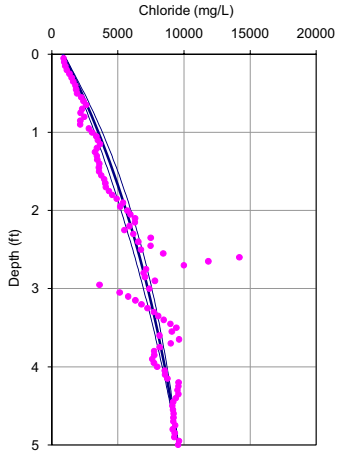
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1404	1404
Cl (mg/L)	60000	42000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.11	-2.30
q (cm/yr)	-1.48	-1.61
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.74

OL-GP-60185



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

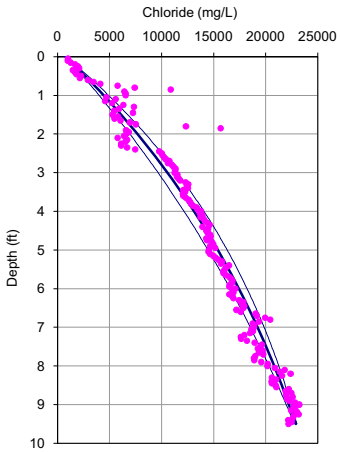
OL-GP-60185



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

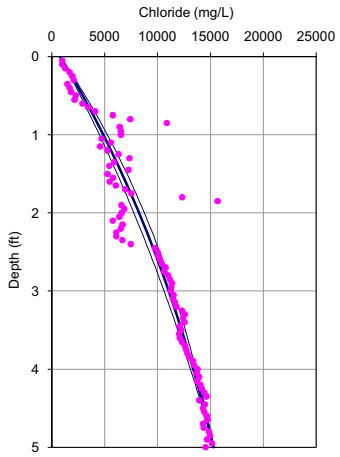
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	866	866
Cl (mg/L)	18250	9553
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.65	-2.15
q (cm/yr)	-0.46	-1.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.74

OL-GP-60186



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

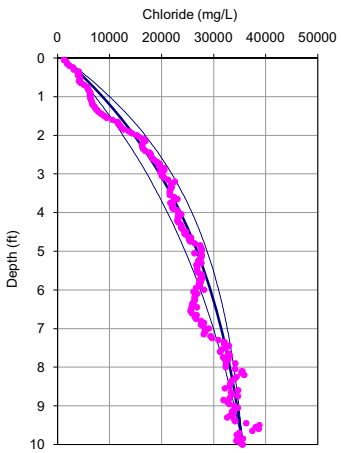
OL-GP-60186



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.2 cm/year

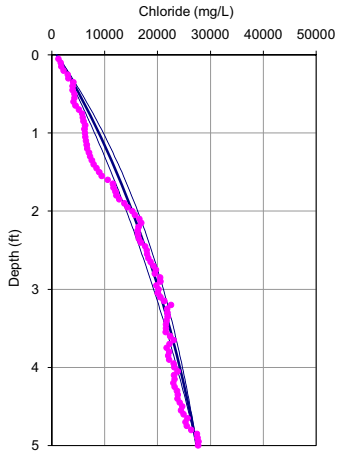
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	783	783
Cl (mg/L)	23500	15300
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.06	-1.66
q (cm/yr)	-0.74	-1.16
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.74

OL-GP-60187



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

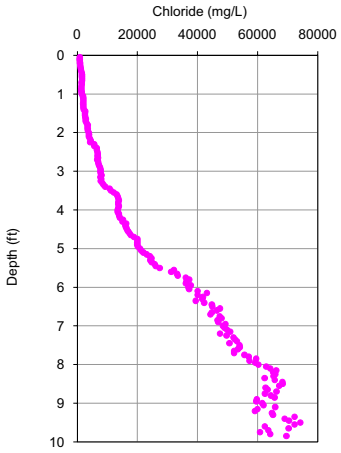
OL-GP-60187



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.4 cm/year

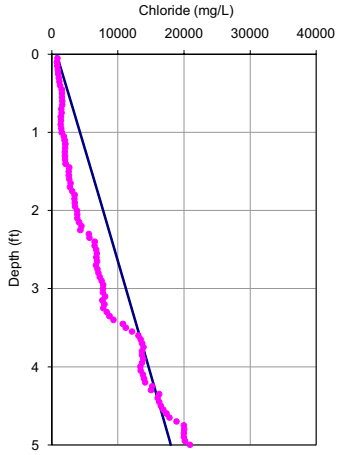
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1016	1016
Cl (mg/L)	35555	27400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.00	-2.00
q (cm/yr)	-1.40	-1.40
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.74

OL-GP-60188



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = NA cm/year

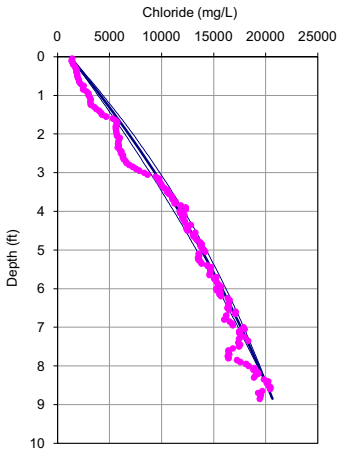
OL-GP-60188



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

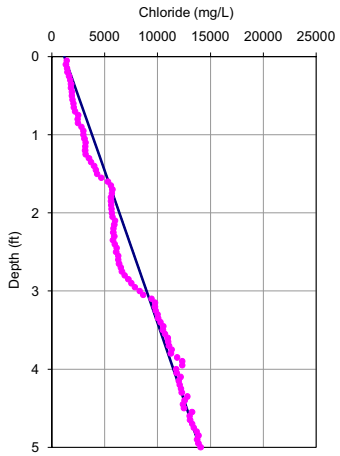
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	738	738
Cl (mg/L)	45000	18000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.66	-0.10
q (cm/yr)	-0.46	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.72

OL-GP-60189



Porosity = 0.70
Dispersion length = 0.2 feet
Upwelling Velocity = -0.5 cm/year

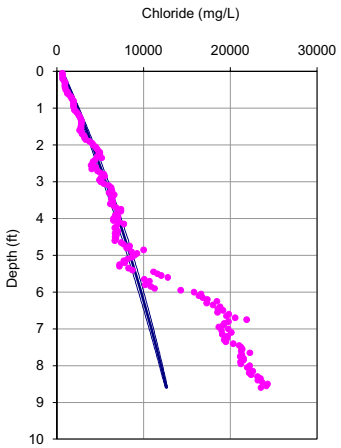
OL-GP-60189



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

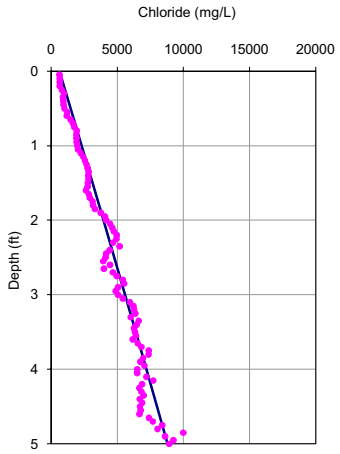
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1176	1176
Cl (mg/L)	20500	14000
L(ft)	8.75	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.70	-0.10
q (cm/yr)	-0.49	-0.07
dispersion length (ft)	0.25	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.25	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.72

OL-GP-60190



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

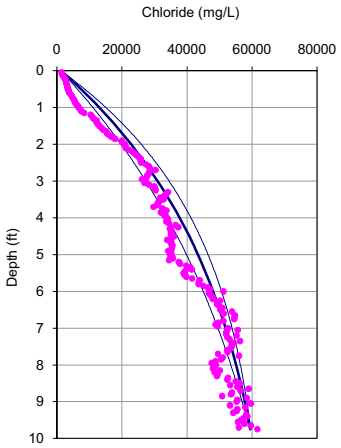
OL-GP-60190



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

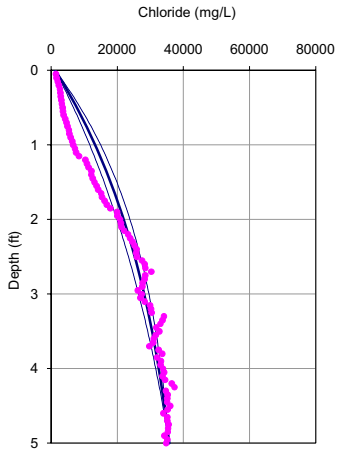
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	631	631
Cl (mg/L)	14000	8800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.60	-0.10
q (cm/yr)	-0.42	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.72

OL-GP-60191



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.2 cm/year

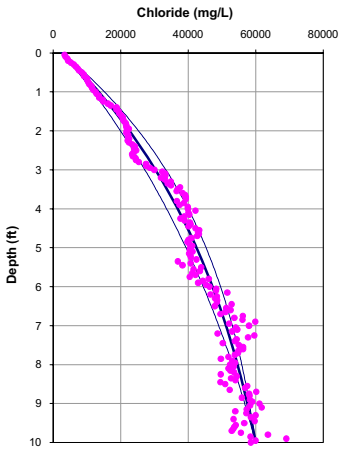
OL-GP-60191



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

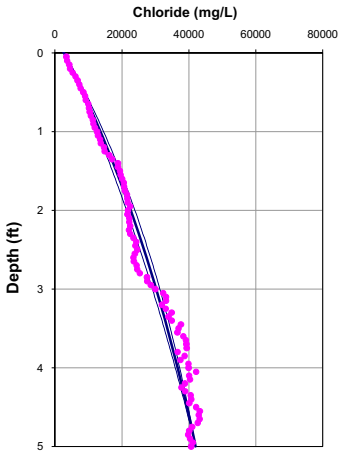
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1227	1227
Cl (mg/L)	60000	35700
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.70	-3.00
q (cm/yr)	-1.19	-2.10
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.75

OL-GP-60192



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.0 cm/year

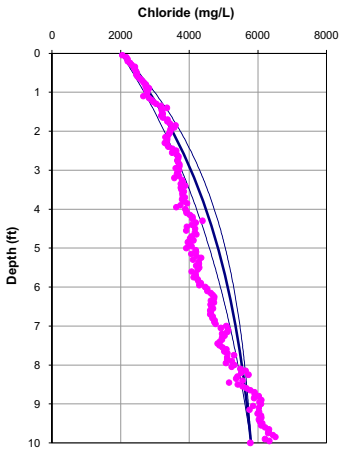
OL-GP-60192



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.1 cm/year

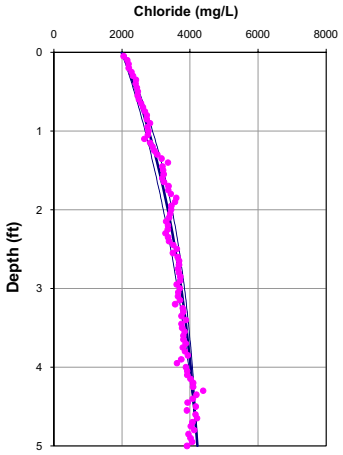
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2783	2783
Cl (mg/L)	60000	42000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.49	-1.54
q (cm/yr)	-1.04	-1.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.73

OL-GP-60193



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

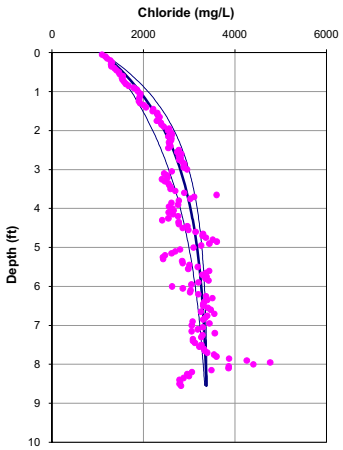
OL-GP-60193



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

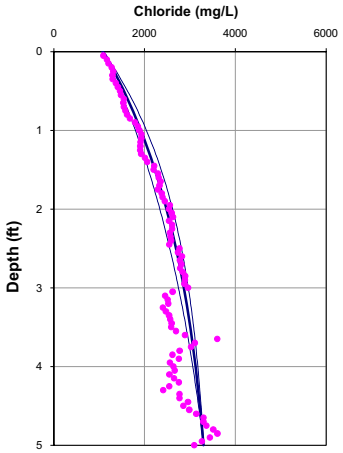
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2000	2000
Cl (mg/L)	5800	4220
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.00	-3.12
q (cm/yr)	-1.40	-2.18
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.75

OL-GP-60194



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -3.1 cm/year

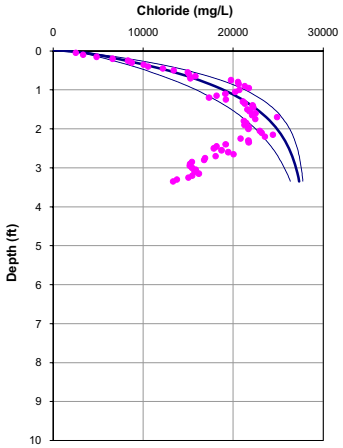
OL-GP-60194



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

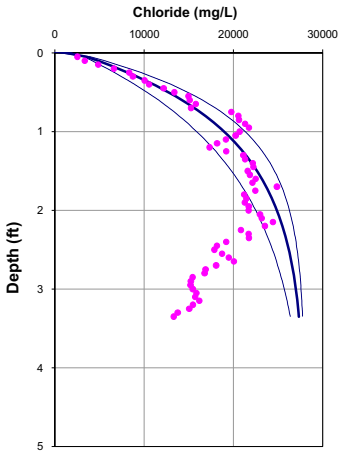
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1088	1088
Cl (mg/L)	3400	3300
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-4.40	-3.50
q (cm/yr)	-3.08	-2.45
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.83	0.75

OL-GP-70051



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -7.0 cm/year

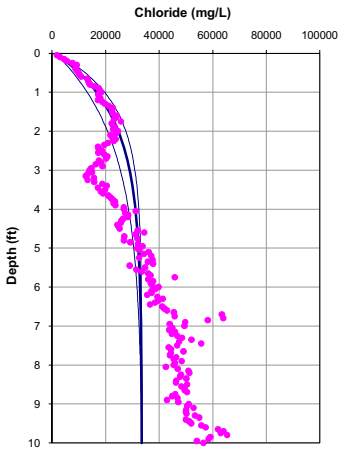
OL-GP-70051



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -7.0 cm/year

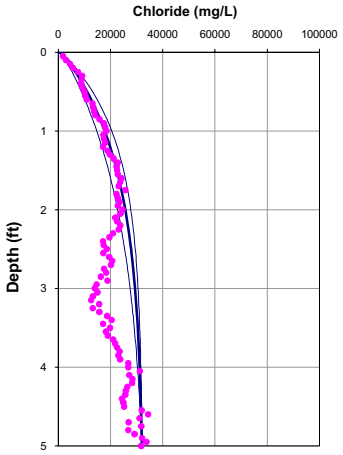
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2305	2305
Cl (mg/L)	28000	28000
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-10.00	-10.00
q (cm/yr)	-7.00	-7.00
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.81	0.81

OL-GP-70051A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -4.9 cm/year

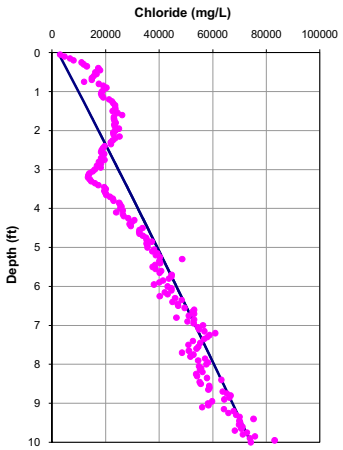
OL-GP-70051A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -4.9 cm/year

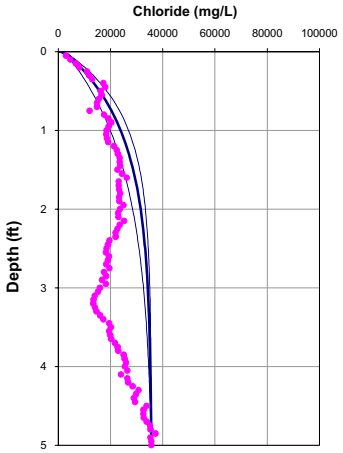
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1200	1200
Cl (mg/L)	33500	32000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-7.00	-7.00
q (cm/yr)	-4.90	-4.90
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.90	0.78

OL-GP-70052



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

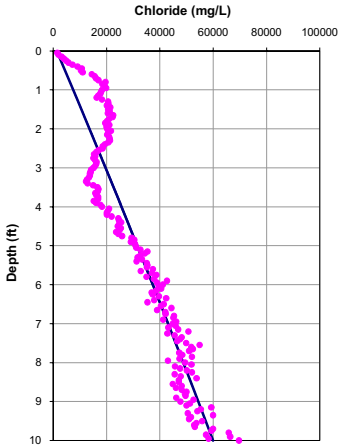
OL-GP-70052



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -7.0 cm/year

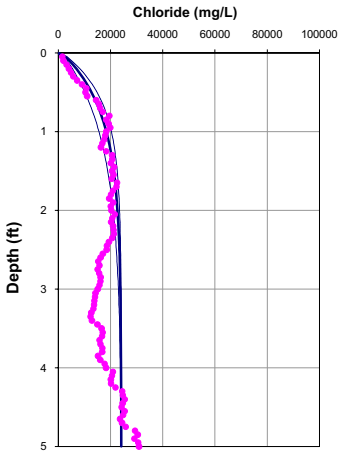
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2316	2316
Cl (mg/L)	74194	35600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-10.00
q (cm/yr)	-0.07	-7.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.81

OL-GP-70053



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

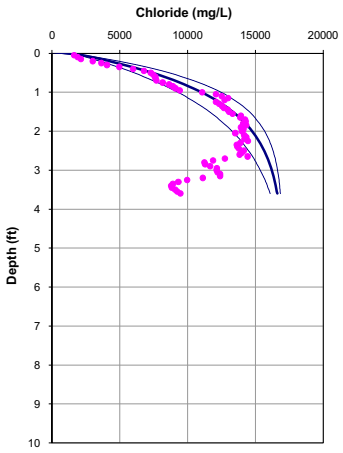
OL-GP-70053



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -9.8 cm/year

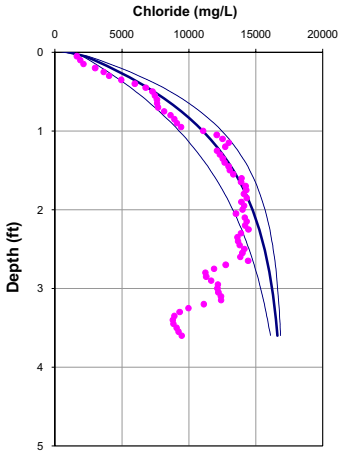
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1357	1357
Cl (mg/L)	60000	24100
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-14.00
q (cm/yr)	-0.07	-9.80
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.84

OL-GP-70053-1



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -6.3 cm/year

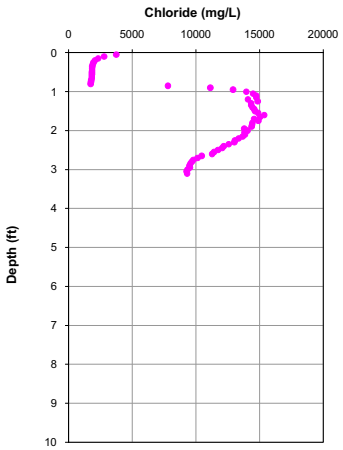
OL-GP-70053-1



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -6.3 cm/year

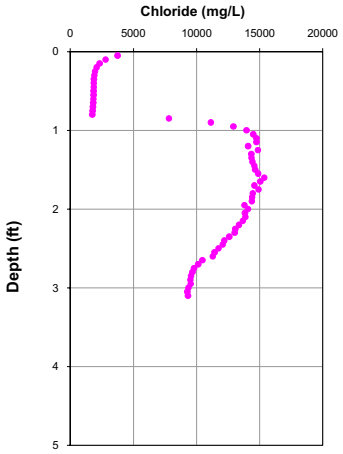
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1537	1537
Cl (mg/L)	17000	17000
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-9.00	-9.00
q (cm/yr)	-6.30	-6.30
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.80	0.80

OL-GP-70053-2



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = NA cm/year

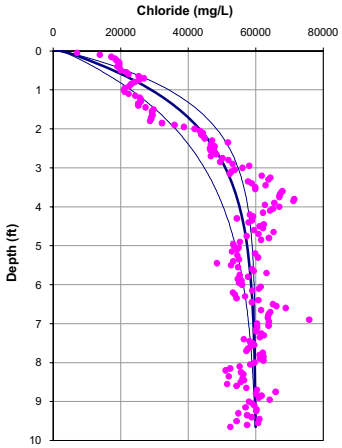
OL-GP-70053-2



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

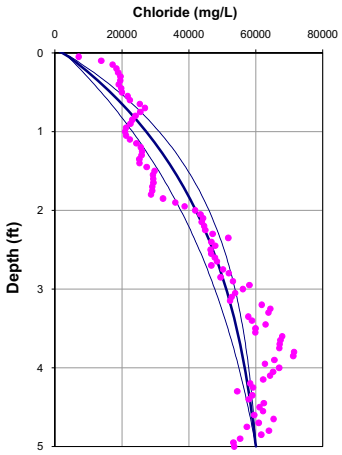
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	9323	9323
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-50.00	-25.27
q (cm/yr)	-35.00	-17.69
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	2.00	0.94

OL-GP-70054



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -4.6 cm/year

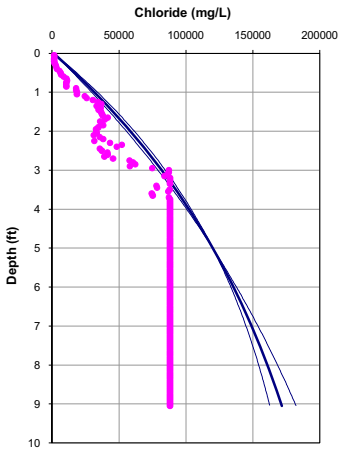
OL-GP-70054



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.2 cm/year

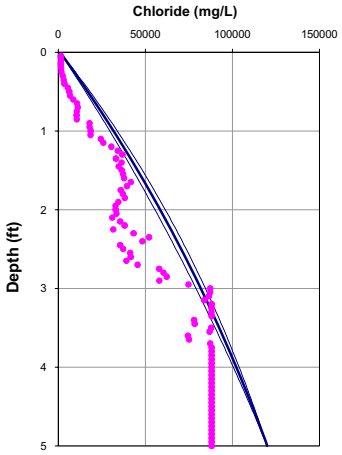
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2707	2707
Cl (mg/L)	60000	60000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-6.53	-4.54
q (cm/yr)	-4.57	-3.18
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.89	0.76

OL-GP-70054A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

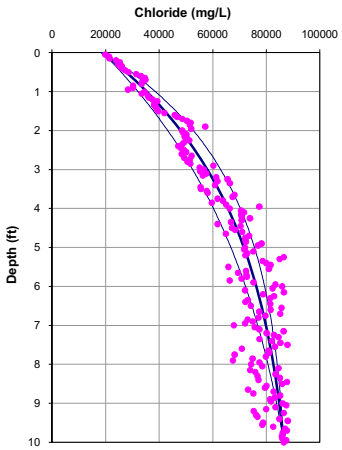
OL-GP-70054A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

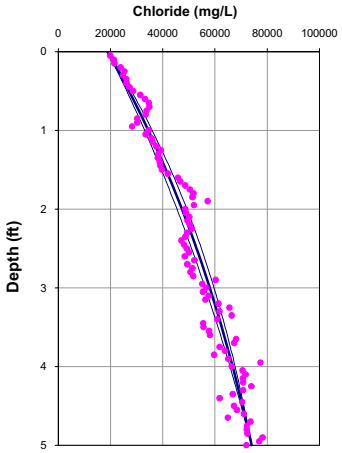
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1000	1000
Cl (mg/L)	120000	120000
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.20	-1.20
q (cm/yr)	-0.84	-0.84
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.73

OL-GP-70055



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.7 cm/year

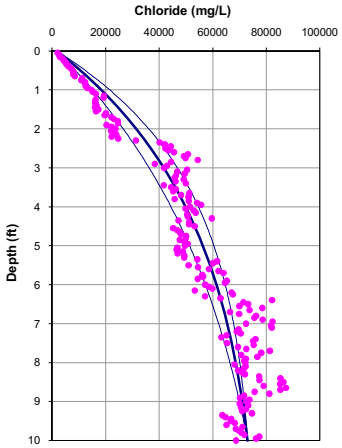
OL-GP-70055



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.2 cm/year

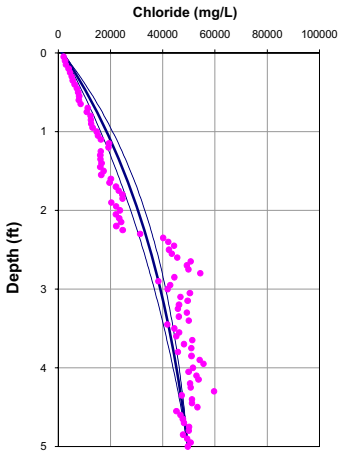
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	18893	18893
Cl (mg/L)	86514	74000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.37	-1.69
q (cm/yr)	-1.66	-1.19
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.74

OL-GP-70056



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.5 cm/year

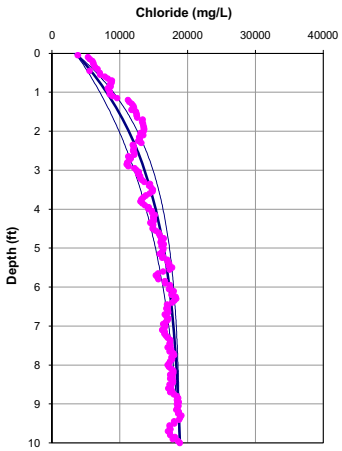
OL-GP-70056



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

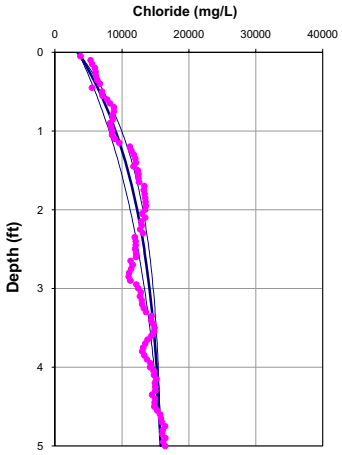
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1692	1692
Cl (mg/L)	73000	49627
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.21	-3.01
q (cm/yr)	-1.55	-2.11
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.75

OL-GP-70075



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.3 cm/year

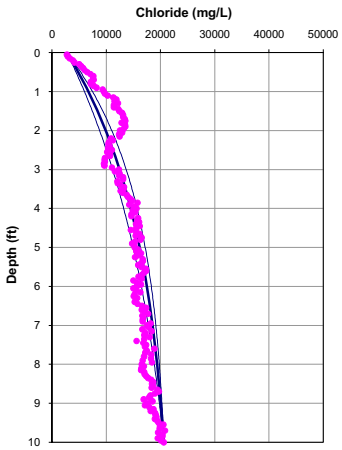
OL-GP-70075



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.5 cm/year

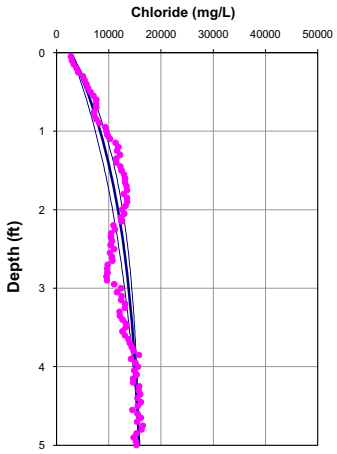
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	3463	3463
Cl (mg/L)	18846	15800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.28	-5.06
q (cm/yr)	-2.29	-3.55
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.80	0.77

OL-GP-70076



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

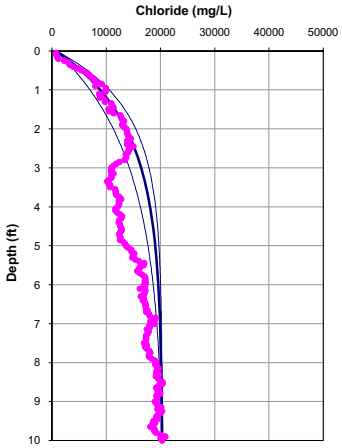
OL-GP-70076



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.2 cm/year

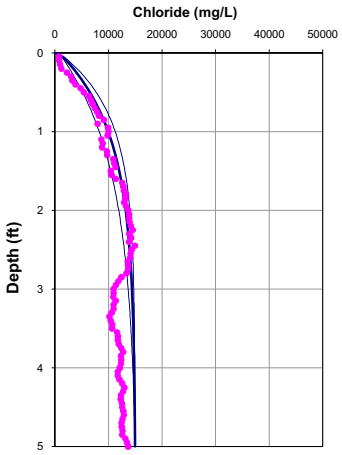
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2725	2725
Cl (mg/L)	20611	15800
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.05	-4.60
q (cm/yr)	-1.43	-3.22
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.76

OL-GP-70077



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -3.9 cm/year

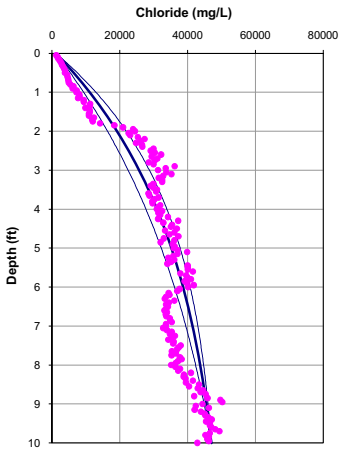
OL-GP-70077



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -7.0 cm/year

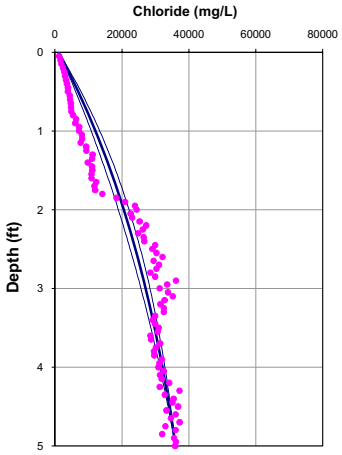
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	750	750
Cl (mg/L)	20304	14950
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-5.50	-10.00
q (cm/yr)	-3.85	-7.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.86	0.81

OL-GP-70078



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

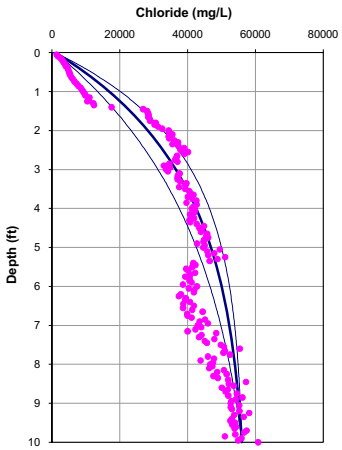
OL-GP-70078



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

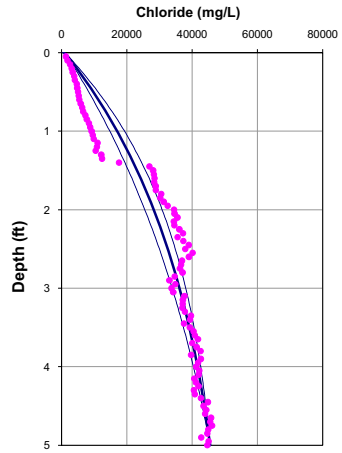
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1110	1110
Cl (mg/L)	47000	36000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.97	-2.31
q (cm/yr)	-1.38	-1.62
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.74

OL-GP-70079



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.2 cm/year

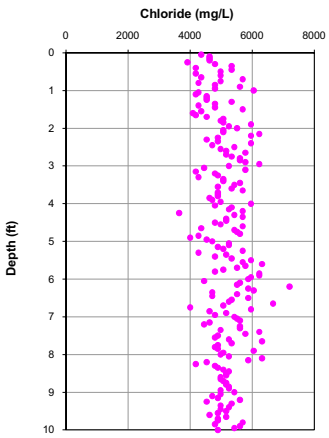
OL-GP-70079



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

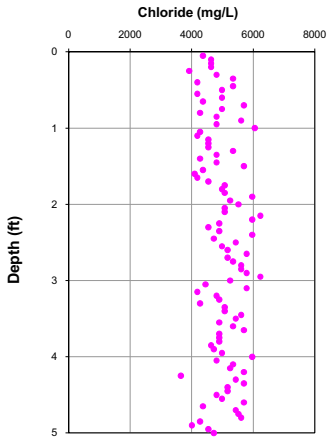
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	993	993
Cl (mg/L)	56000	45500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.10	-3.19
q (cm/yr)	-2.17	-2.23
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.80	0.75

OL-GP-70080



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = NA cm/year

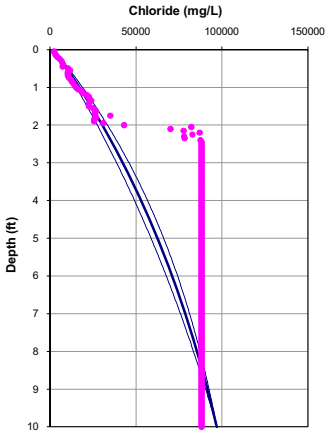
OL-GP-70080



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

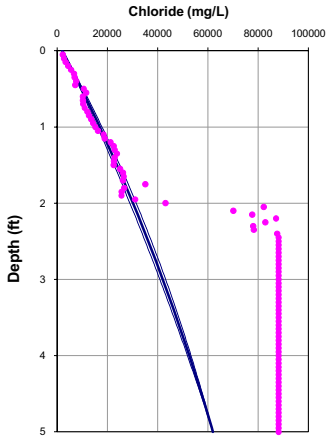
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	4806	4806
Cl (mg/L)	4895	4717
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-30.30	53687090.93
q (cm/yr)	-21.21	37580963.65
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	4825.72
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	1.49	473685.74

OL-GP-70081



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.7 cm/year

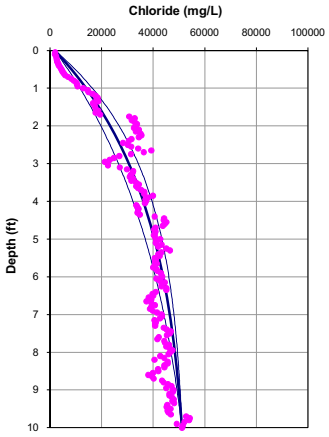
OL-GP-70081



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.7 cm/year

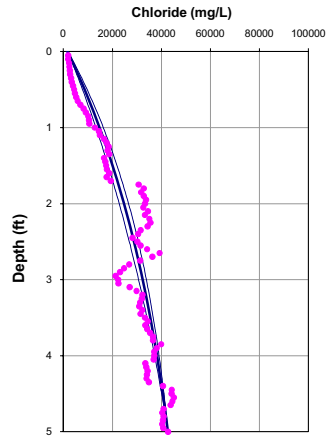
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2112	2112
Cl (mg/L)	97000	62000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.00	-1.00
q (cm/yr)	-0.70	-0.70
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.73

OL-GP-70082



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.7 cm/year

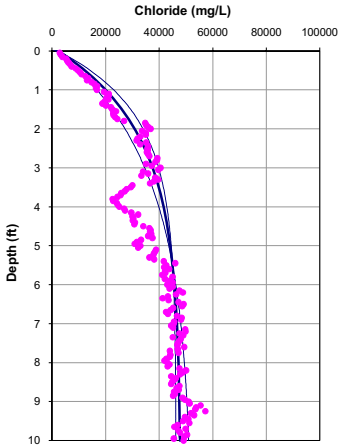
OL-GP-70082



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

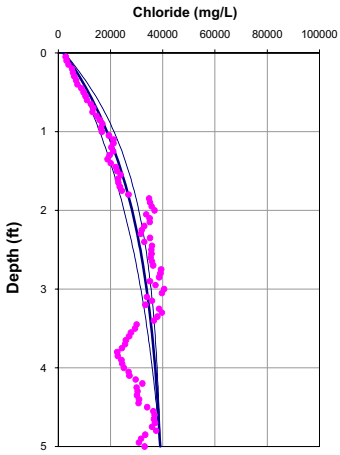
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1840	1840
Cl (mg/L)	51155	42701
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.41	-2.35
q (cm/yr)	-1.69	-1.64
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.74

OL-GP-70083



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.2 cm/year

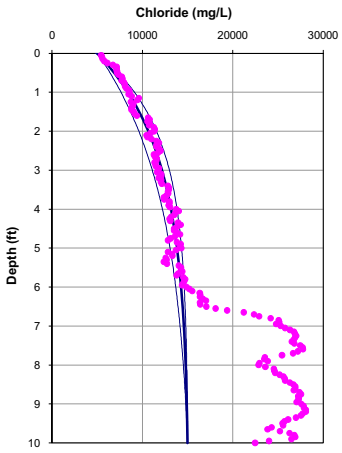
OL-GP-70083



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.5 cm/year

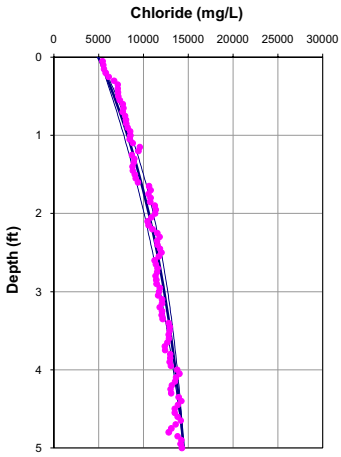
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2193	2193
Cl (mg/L)	45000	39000
L(ft)	5.5	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-4.50	-4.95
q (cm/yr)	-3.15	-3.46
dispersion length (ft)	0.12	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.12	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.77

OL-GP-70088



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.8 cm/year

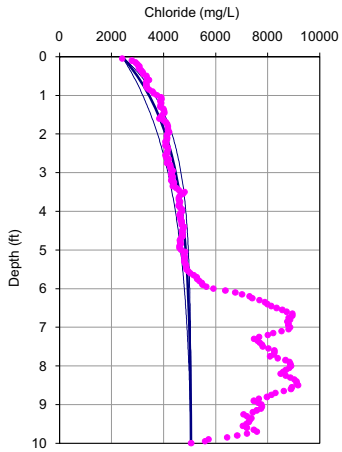
OL-GP-70088



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.0 cm/year

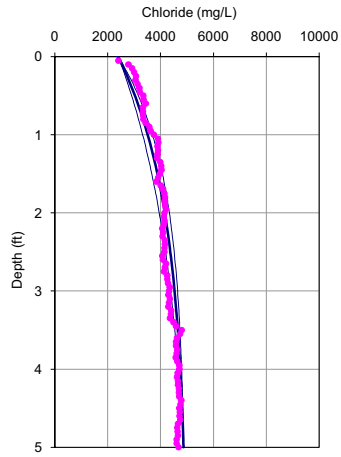
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	5000	5000
Cl (mg/L)	15000	14500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-4.00	-2.81
q (cm/yr)	-2.80	-1.97
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.82	0.75

OL-GP-70088.DAT



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -3.5 cm/year

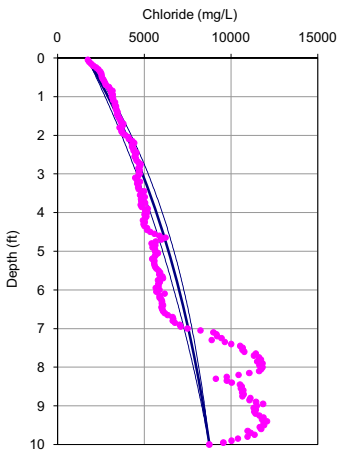
OL-GP-70088.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.5 cm/year

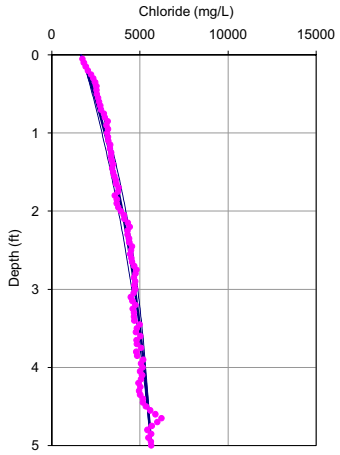
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2400	2400
Cl (mg/L)	5056	4870
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-5.00	-5.02
q (cm/yr)	-3.50	-3.51
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.85	0.77

OL-GP-70088-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.9 cm/year

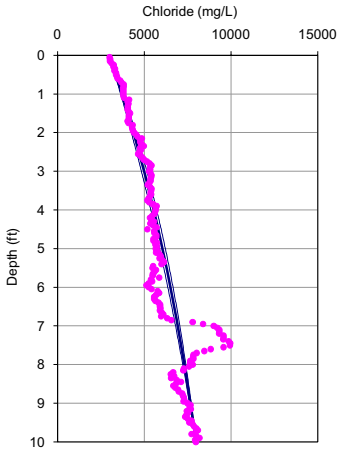
OL-GP-70088-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

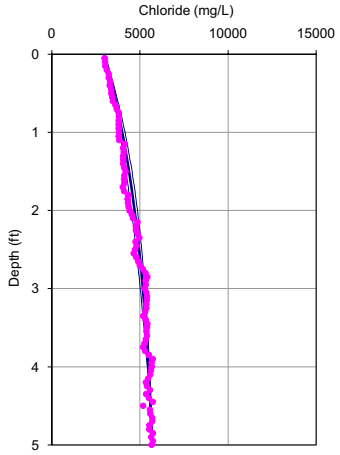
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1686	1686
Cl (mg/L)	8750	5633
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.26	-2.75
q (cm/yr)	-0.88	-1.92
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-GP-70089-A



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.6 cm/year

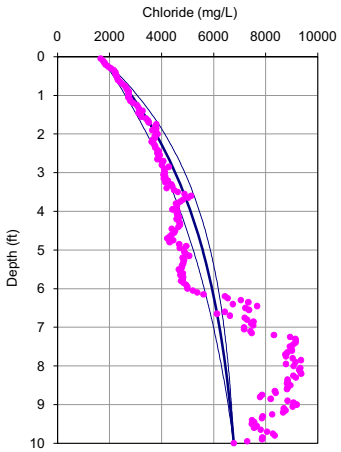
OL-GP-70089-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

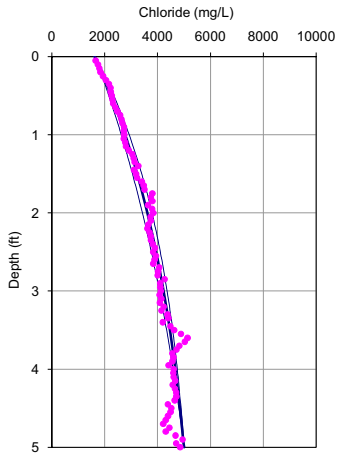
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2977	2977
Cl (mg/L)	7975	5700
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.84	-3.50
q (cm/yr)	-0.58	-2.45
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.75

OL-GP-70090



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.6 cm/year

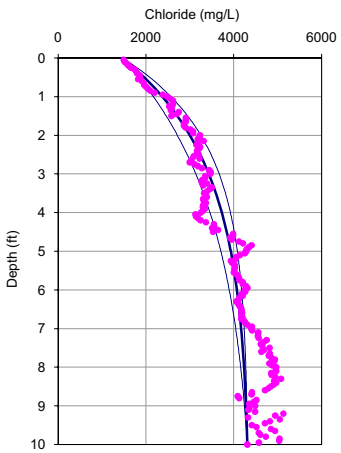
OL-GP-70090



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

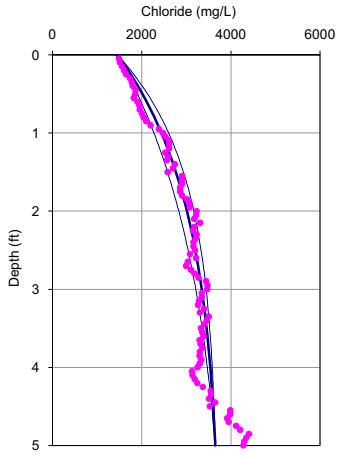
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1634	1634
Cl (mg/L)	6771	5000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.22	-2.78
q (cm/yr)	-1.55	-1.95
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.75

OL-GP-70091



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.6 cm/year

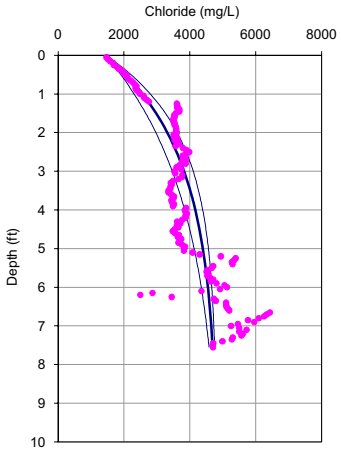
OL-GP-70091



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.5 cm/year

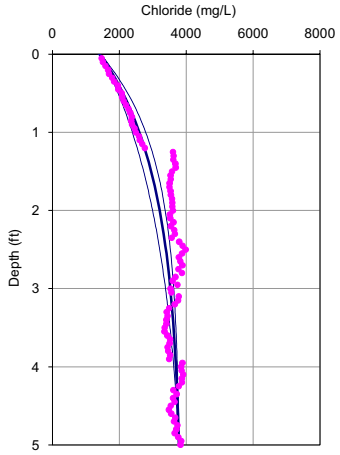
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1460	1460
Cl (mg/L)	4311	3650
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.66	-5.00
q (cm/yr)	-2.56	-3.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.81	0.77

OL-GP-70092



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.7 cm/year

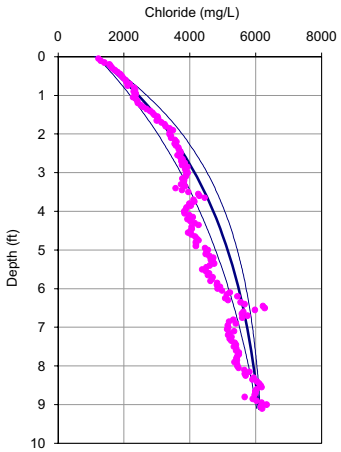
OL-GP-70092



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -4.2 cm/year

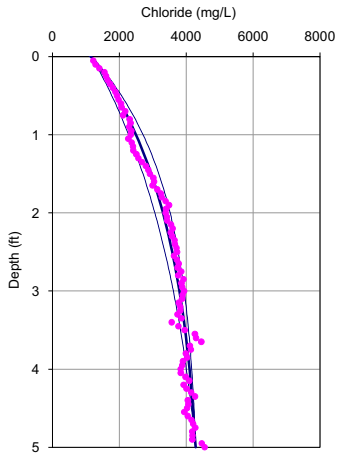
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1437	1437
Cl (mg/L)	4800	3780
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-3.91	-6.00
q (cm/yr)	-2.74	-4.20
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.82	0.77

OL-GP-70093



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.8 cm/year

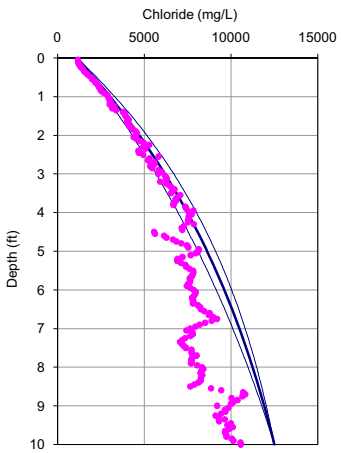
OL-GP-70093



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.2 cm/year

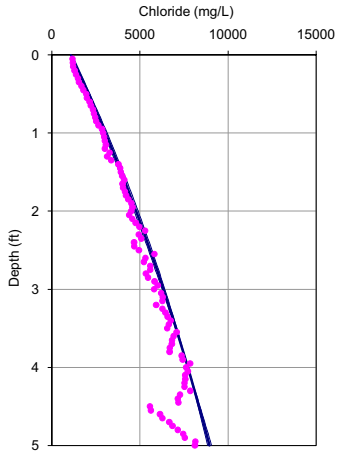
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1175	1175
Cl (mg/L)	6200	4280
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.50	-4.52
q (cm/yr)	-1.75	-3.16
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.79	0.76

OL-GP-70094



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.8 cm/year

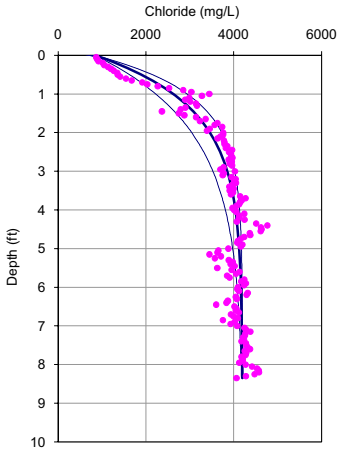
OL-GP-70094



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.7 cm/year

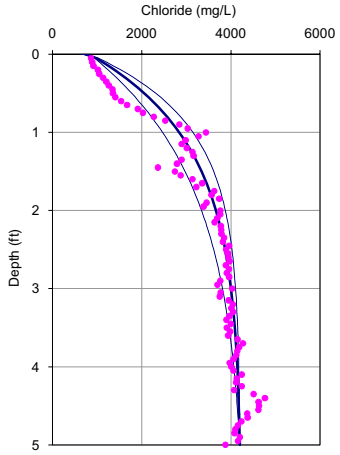
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1100	1100
Cl (mg/L)	12500	7718
L(ft)	10	4
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.19	-1.00
q (cm/yr)	-0.83	-0.70
dispersion length (ft)	0.31	0.08
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.08
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.73

OL-GP-70095



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -5.9 cm/year

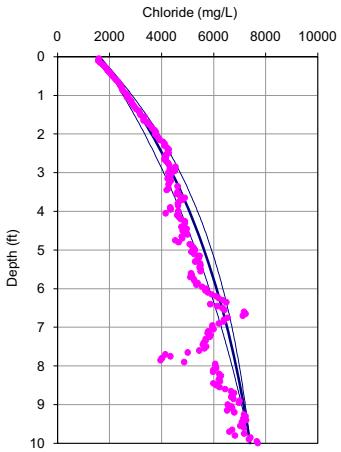
OL-GP-70095



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -5.9 cm/year

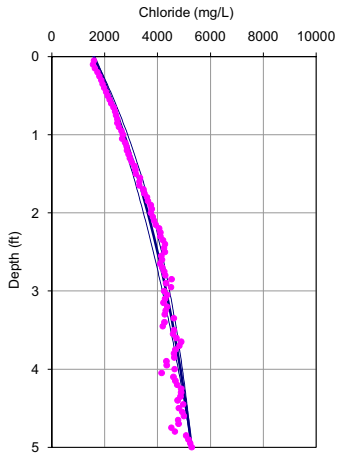
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	838	838
Cl (mg/L)	4200	4200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-8.48	-8.48
q (cm/yr)	-5.94	-5.94
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.94	0.80

OL-GP-70096



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

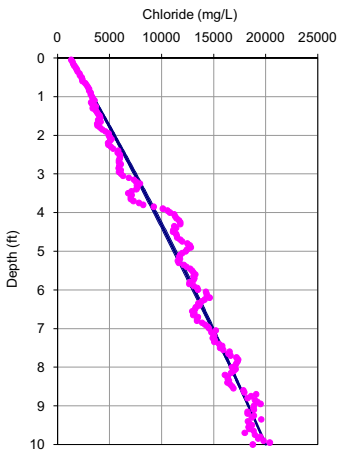
OL-GP-70096



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

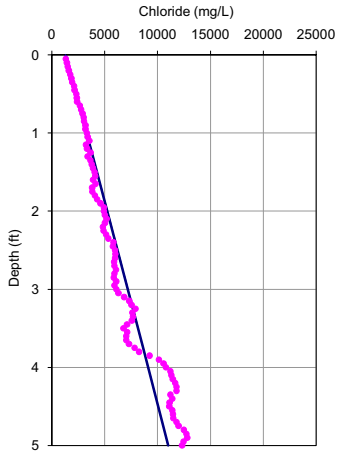
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1600	1600
Cl (mg/L)	7400	5288
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.50	-2.20
q (cm/yr)	-1.05	-1.54
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.74

OL-GP-70097



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

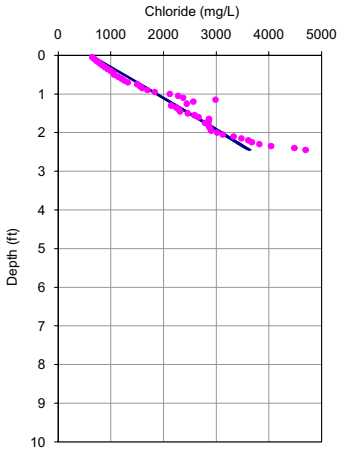
OL-GP-70097



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

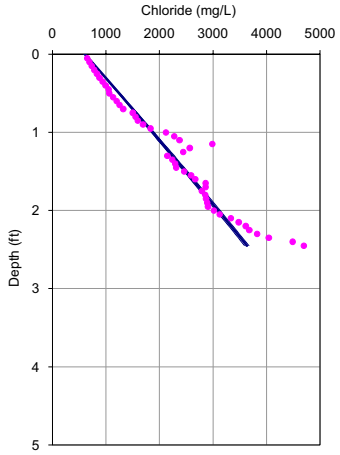
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1303	1303
Cl (mg/L)	20000	11000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.23	-0.10
q (cm/yr)	-0.16	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-GP-70098



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

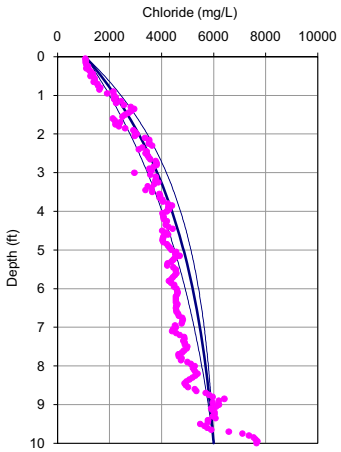
OL-GP-70098



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

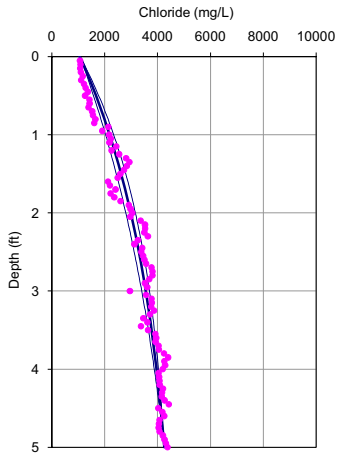
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	609	609
Cl (mg/L)	6500	6500
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.32	-0.32
q (cm/yr)	-0.22	-0.22
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-70099



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.5 cm/year

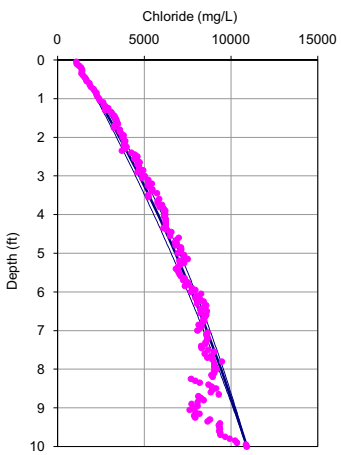
OL-GP-70099



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

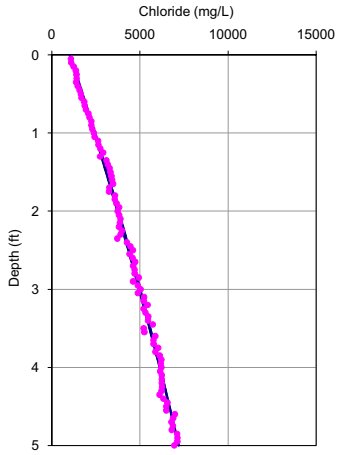
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1068	1068
Cl (mg/L)	6000	4250
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.20	-3.03
q (cm/yr)	-1.54	-2.12
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.75

OL-GP-70100



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

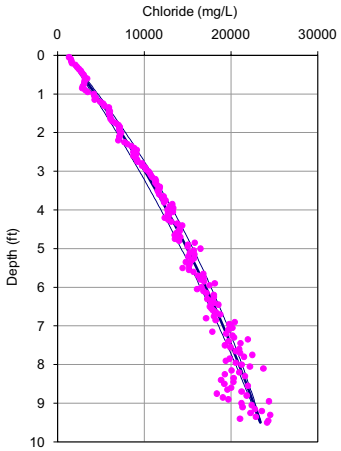
OL-GP-70100



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

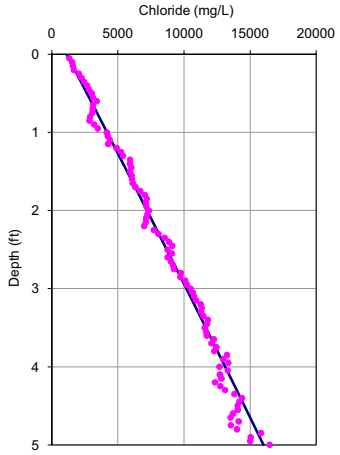
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1023	1023
Cl (mg/L)	10907	7200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.60	-0.60
q (cm/yr)	-0.42	-0.42
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.73

OL-GP-70101



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

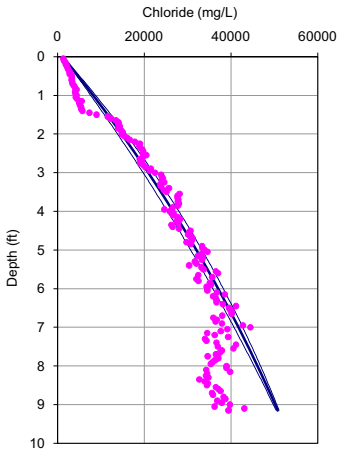
OL-GP-70101



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

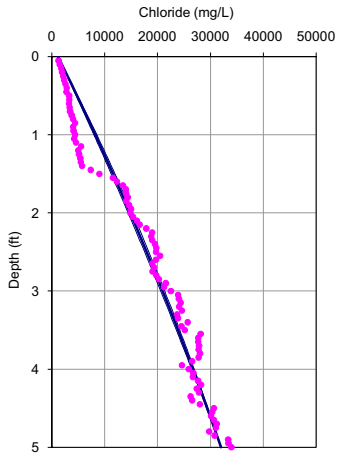
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1112	1112
Cl (mg/L)	24161	16000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.72	-0.13
q (cm/yr)	-0.50	-0.09
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.72

OL-GP-70102



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

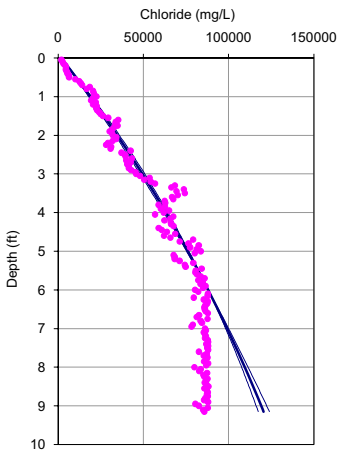
OL-GP-70102



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

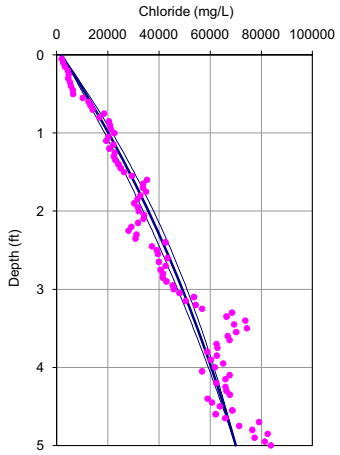
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1158	1158
Cl (mg/L)	54000	32000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.60	-0.62
q (cm/yr)	-0.42	-0.43
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.73

OL-GP-70103



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

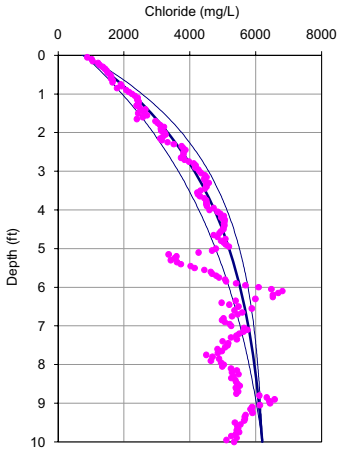
OL-GP-70103



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.0 cm/year

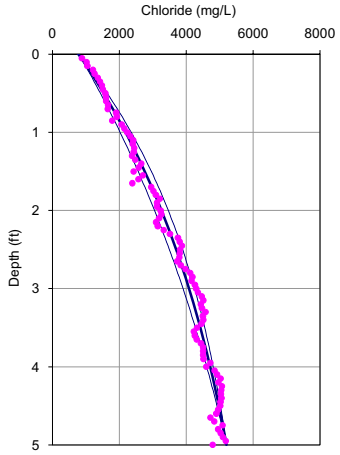
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	1786	1786
Cl (mg/L)	88000	70000
L(ft)	6	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.62	-1.44
q (cm/yr)	-0.43	-1.01
dispersion length (ft)	0.14	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.14	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.73

OL-GP-70104



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.0 cm/year

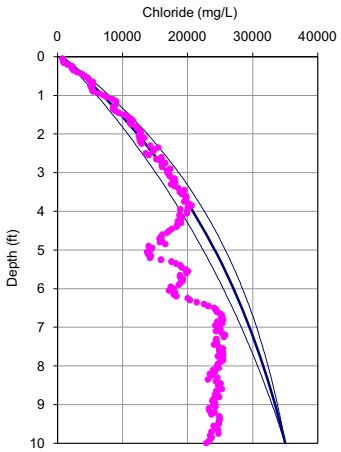
OL-GP-70104



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

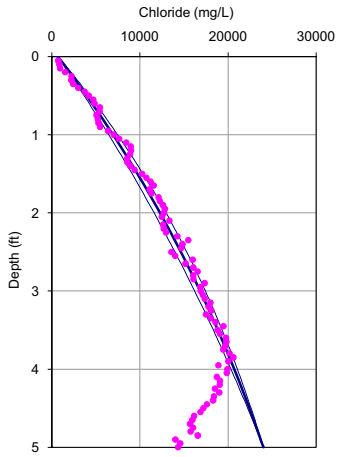
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	790	790
Cl (mg/L)	6200	5200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.80	-2.36
q (cm/yr)	-1.96	-1.65
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.79	0.74

OL-GP-70105



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.0 cm/year

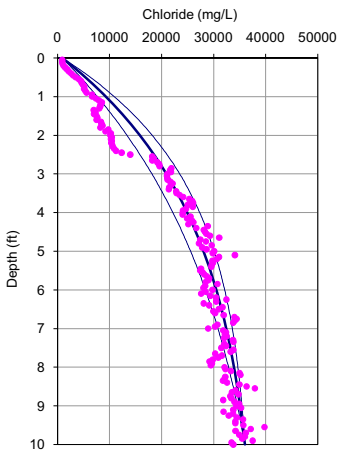
OL-GP-70105



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.0 cm/year

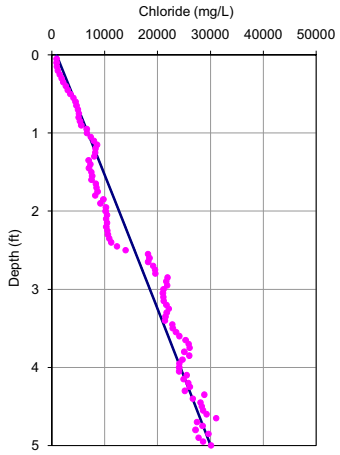
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	709	709
Cl (mg/L)	35000	24000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.40	-1.40
q (cm/yr)	-0.98	-0.98
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.73

OL-GP-70106



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.6 cm/year

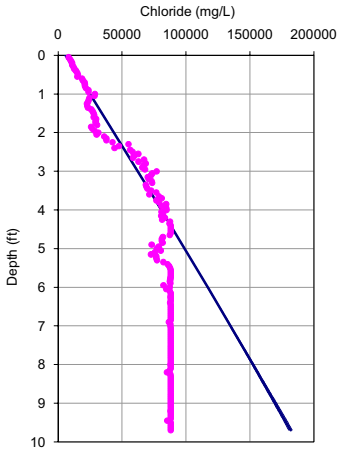
OL-GP-70106



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

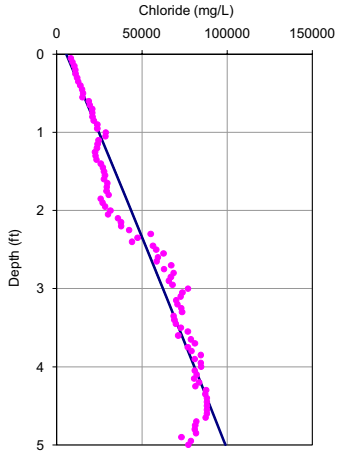
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	870	870
Cl (mg/L)	36000	30000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-2.30	-0.10
q (cm/yr)	-1.61	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.78	0.72

OL-GP-70107



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

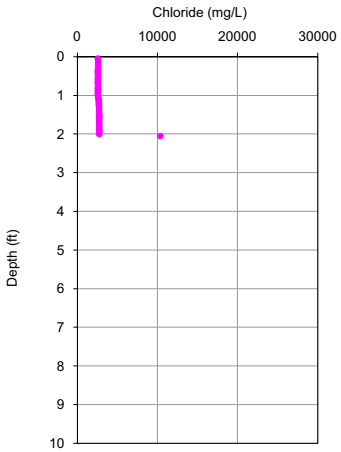
OL-GP-70107



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

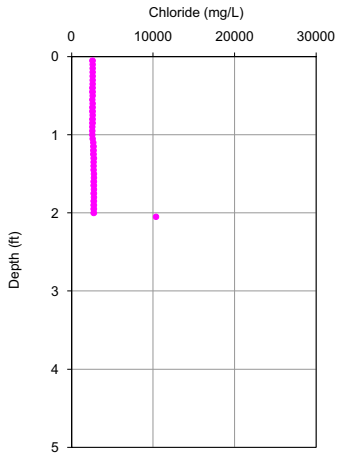
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	5734	5734
Cl (mg/L)	99000	99000
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-GP-70107-1



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = NA cm/year

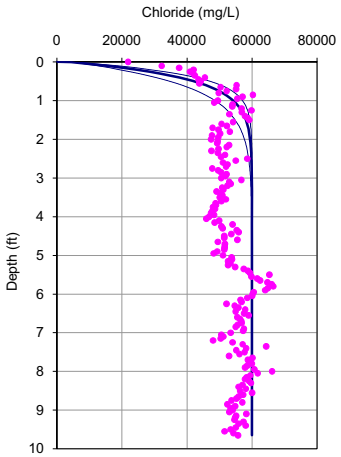
OL-GP-70107-1



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

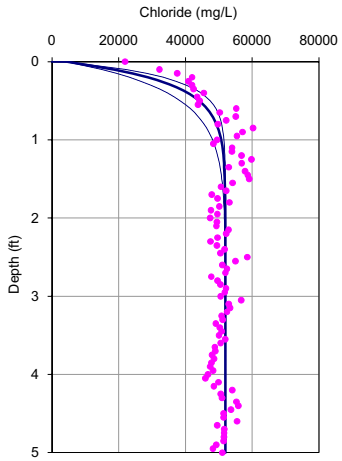
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	2571	2571
Cl (mg/L)	10362	10362
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	6.05
q (cm/yr)	-0.07	4.23
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.77

OL-GP-70107-2



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = <-35 cm/year

OL-GP-70107-2

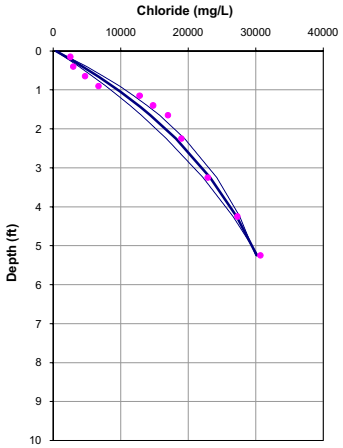


Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = <-35 cm/year

	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	4364	4364
Cl (mg/L)	60000	52000
L(ft)	9.2	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-35.00	-35.00
dispersion length (ft)	0.27	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.27	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	1.84	1.16

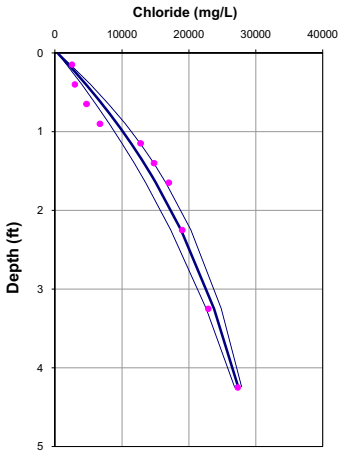
Upwelling Velocities from Sediment Pore-Water Chloride Data

OL-VC-20111



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -1.4 cm/year

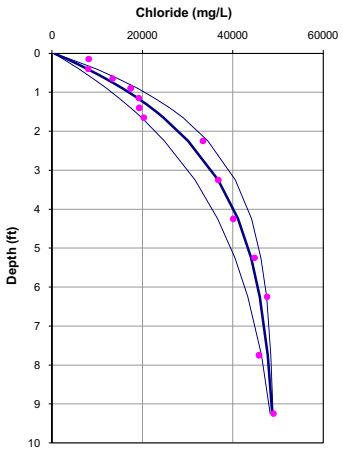
OL-VC-20111



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

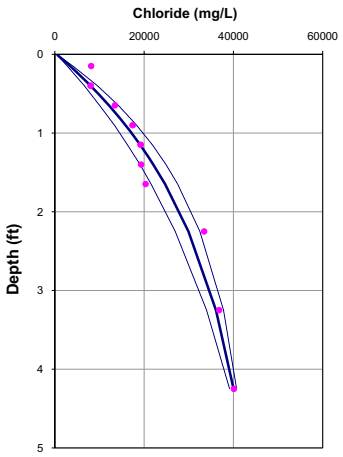
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	29500	29500
L(ft)	5	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		
V(cm/yr)	-2.16	-2.50
q (cm/yr)	-1.40	-1.63
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.68	0.69

OL-VC-20113



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -2.4 cm/year

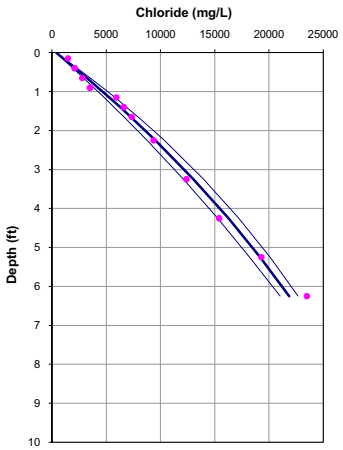
OL-VC-20113



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year

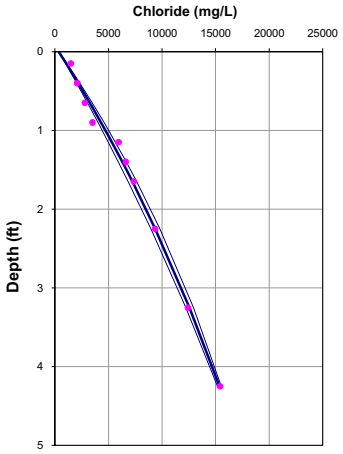
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	49000	42000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		
V(cm/yr)	-3.72	-3.73
q (cm/yr)	-2.42	-2.42
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.76	0.70

OL-VC-20118



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -0.5 cm/year

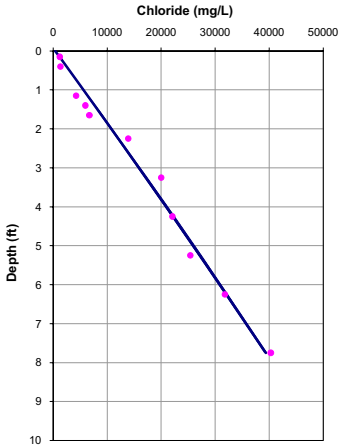
OL-VC-20118



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -0.7 cm/year

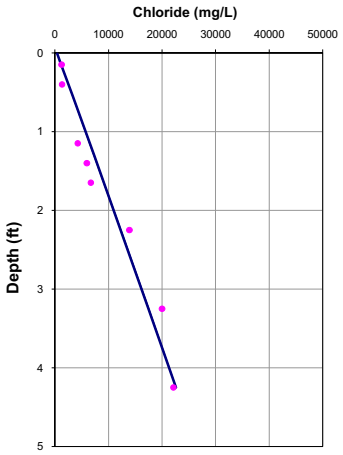
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	30000	17208
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		17208
V(cm/yr)	-0.74	-1.10
q (cm/yr)	-0.48	-0.72
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.68	0.67

OL-VC-20119



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

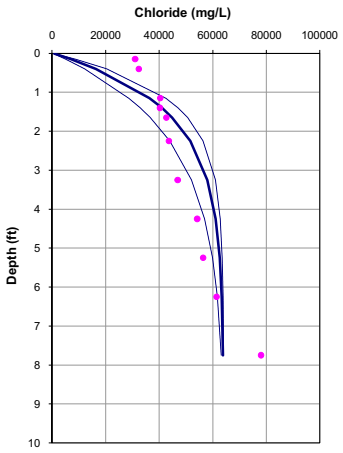
OL-VC-20119



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

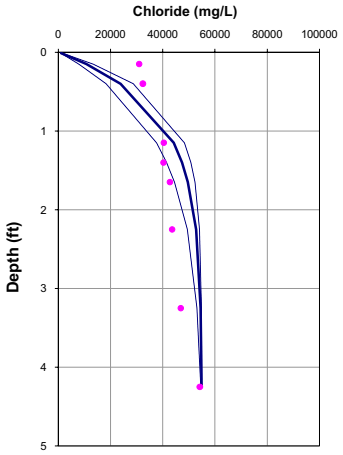
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	50000	26403
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		26403
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.67	0.66

OL-VC-20133



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -4.8 cm/year

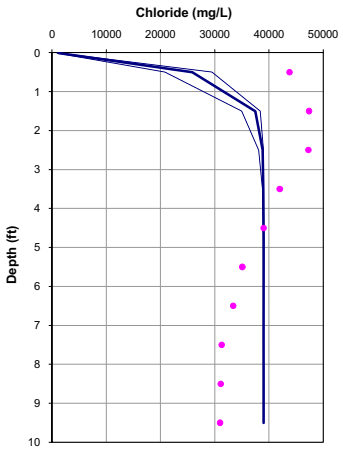
OL-VC-20133



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -8.5 cm/year

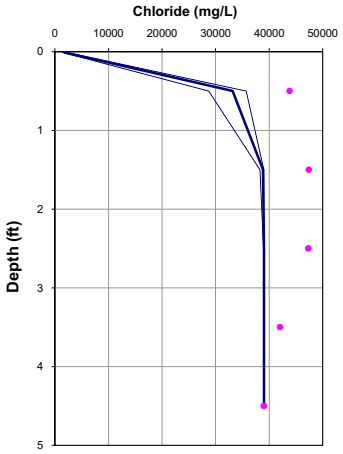
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	64000	55000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		
V(cm/yr)	-7.40	-13.11
q (cm/yr)	-4.81	-8.52
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.85	0.78

OL-STA-10111



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = <-32.5 cm/year

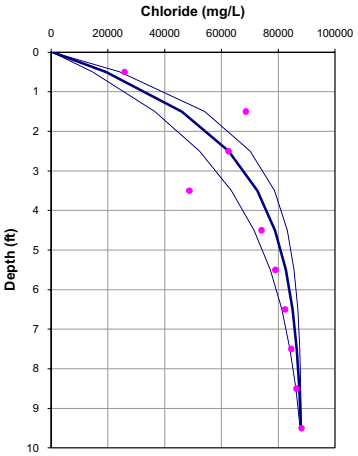
OL-STA-10111



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = <-32.5 cm/year

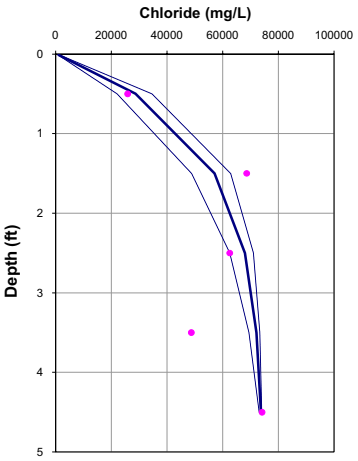
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	39000	39000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-32.50	-32.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	1.94	1.11

OL-STA-20087



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -2.9 cm/year

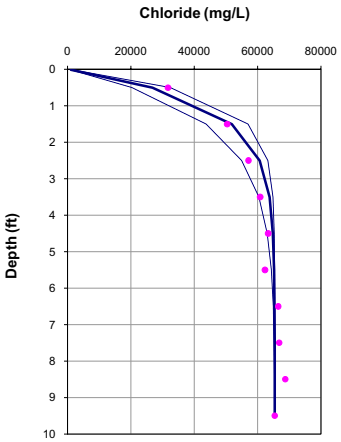
OL-STA-20087



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -5.5 cm/year

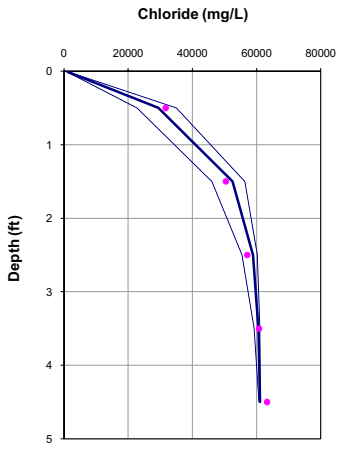
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	88200	74100
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		
V(cm/yr)	-4.51	-8.47
q (cm/yr)	-2.93	-5.51
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)****		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.78	0.74

OL-STA-40055



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -10.8 cm/year

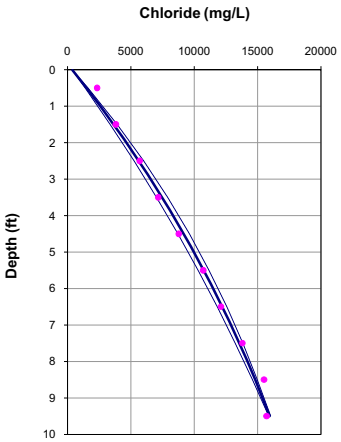
OL-STA-40055



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -10.6 cm/year

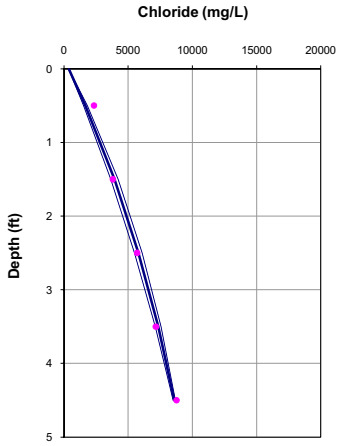
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	65400	61140
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		61140
V(cm/yr)	-14.40	-14.14
q (cm/yr)	-10.80	-10.60
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.15	0.91

OL-STA-40056



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.6 cm/year

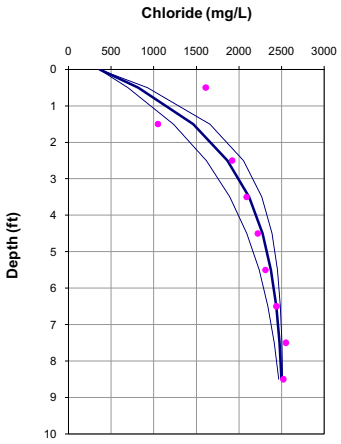
OL-STA-40056



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.4 cm/year

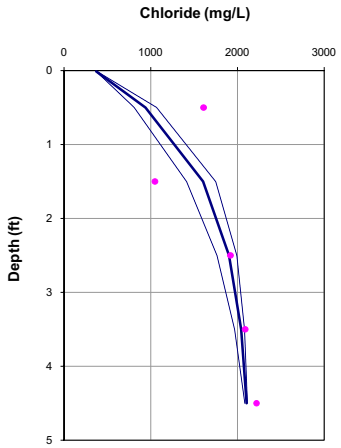
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	16500	9145
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		9144.7
V(cm/yr)	-0.74	-1.87
q (cm/yr)	-0.56	-1.41
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.80

OL-STA-40057



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -3.9 cm/year

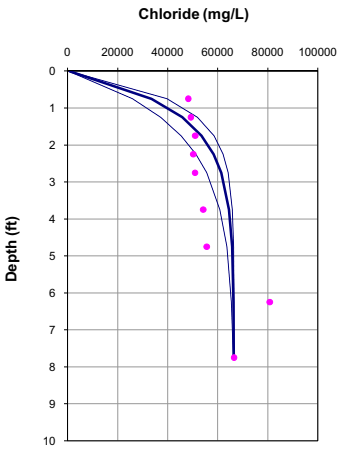
OL-STA-40057



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -6.0 cm/year

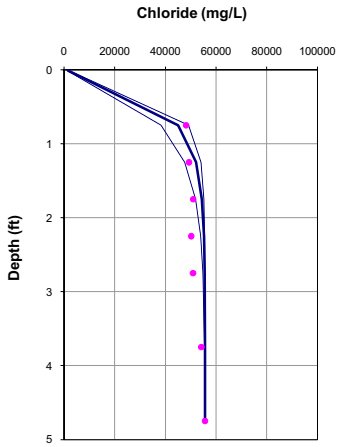
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	2520	2124
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		2124
V(cm/yr)	-5.14	-8.01
q (cm/yr)	-3.86	-6.01
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.92	0.86

OL-VC-40083



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -9.1 cm/year

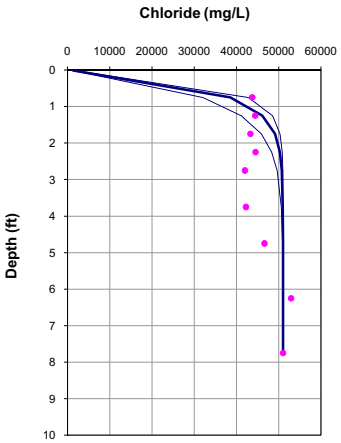
OL-VC-40083



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -20.2 cm/year

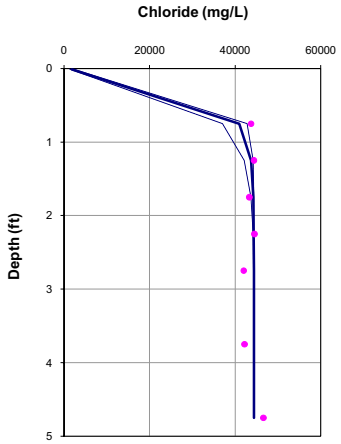
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	66500	55600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-12.19	-26.98
q (cm/yr)	-9.14	-20.23
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.10	1.02

OL-VC-40084



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -30.6 cm/year

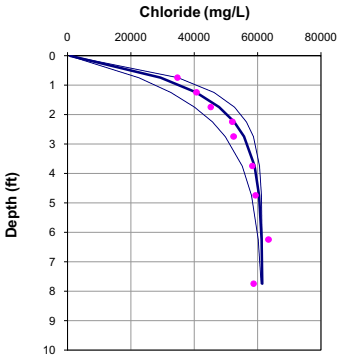
OL-VC-40084



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

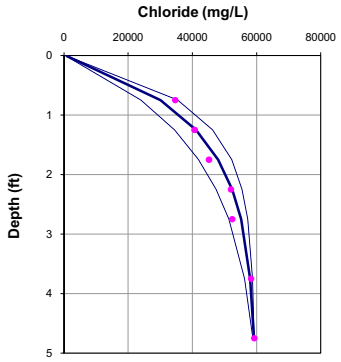
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	51000	44378
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		44378
V(cm/yr)	-40.81	-50.00
q (cm/yr)	-30.61	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.82	1.23

OL-VC-40085



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -8.1 cm/year

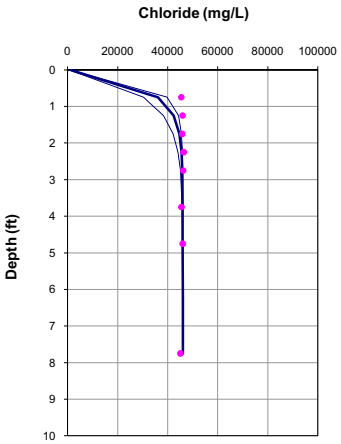
OL-VC-40085



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.2 cm/year

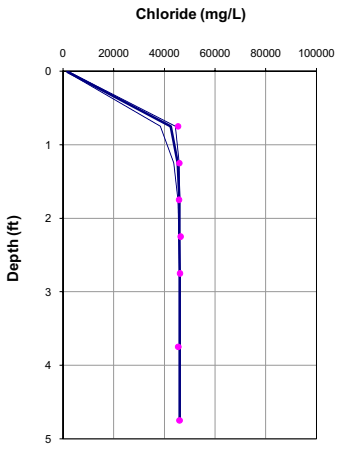
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	61500	59300
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-10.86	-9.62
q (cm/yr)	-8.14	-7.22
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.06	0.87

OL-VC-40087



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

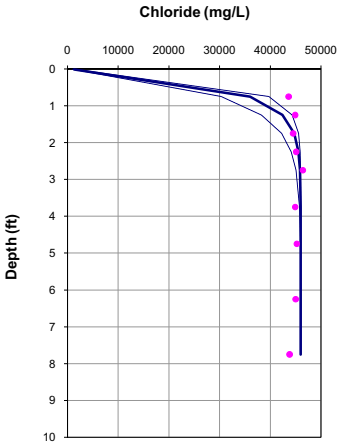
OL-VC-40087



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

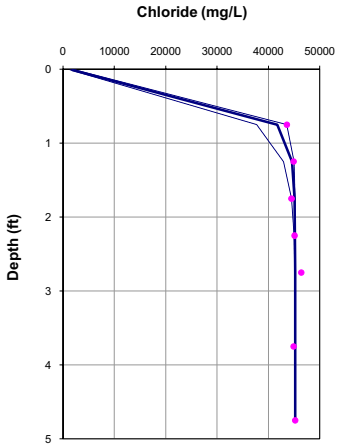
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	46000	46000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-VC-40088



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

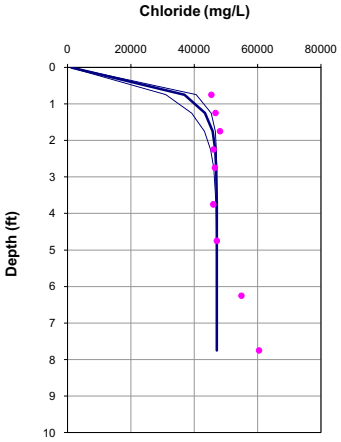
OL-VC-40088



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

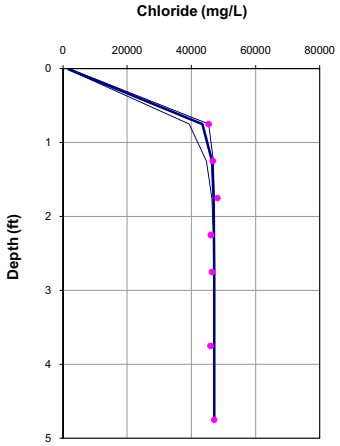
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	46000	45200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-VC-40089



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-37.5 cm/year

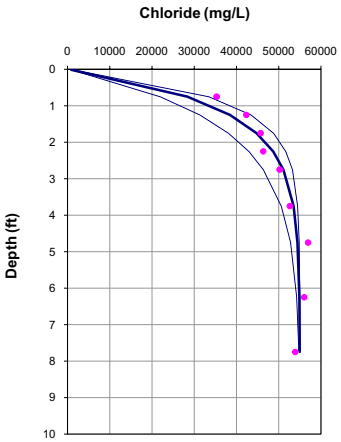
OL-VC-40089



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-37.5 cm/year

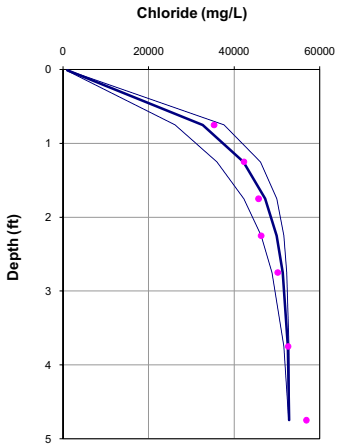
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	47100	47100
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-VC-40091



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -9.5 cm/year

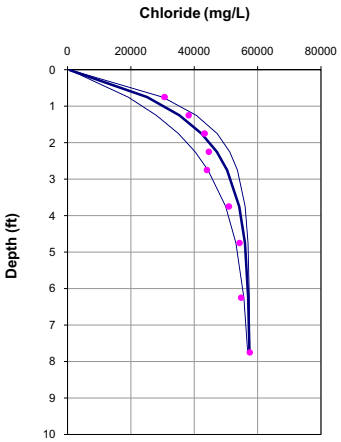
OL-VC-40091



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -10.3 cm/year

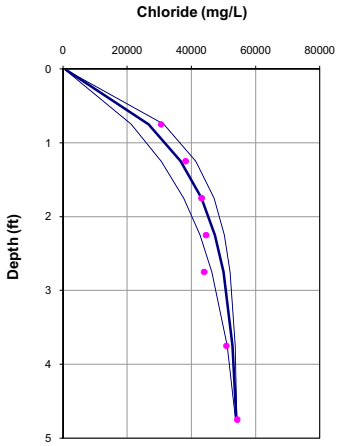
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	55000	52870
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		52870
V(cm/yr)	-12.68	-13.74
q (cm/yr)	-9.51	-10.31
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.11	0.91

OL-VC-40092



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -6.9 cm/year

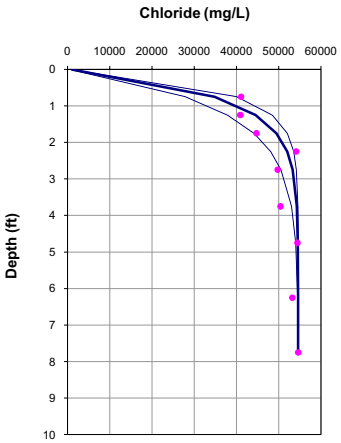
OL-VC-40092



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -6.8 cm/year

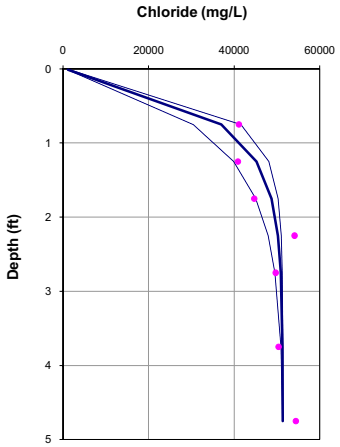
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	57500	54200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-9.21	-9.10
q (cm/yr)	-6.91	-6.82
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.02	0.86

OL-VC-40093



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -16.0 cm/year

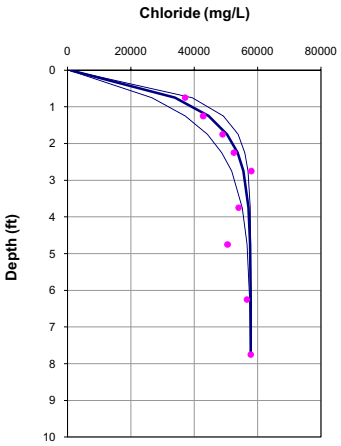
OL-VC-40093



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -14.5 cm/year

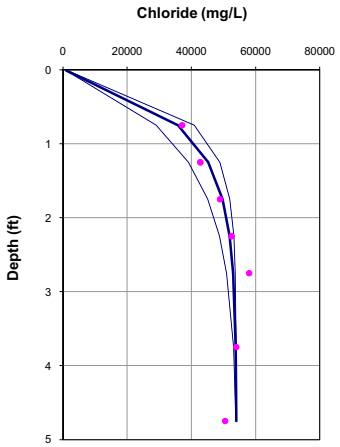
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	54600	51378
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		51378
V(cm/yr)	-21.38	-19.34
q (cm/yr)	-16.03	-14.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.33	0.96

OL-VC-40126



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -12.8 cm/year

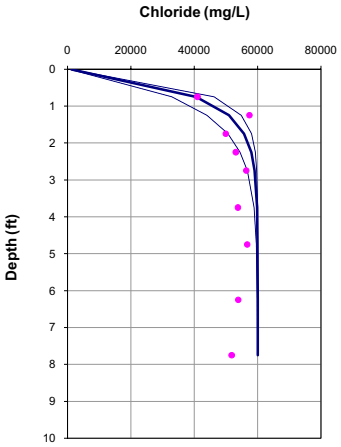
OL-VC-40126



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -12.0 cm/year

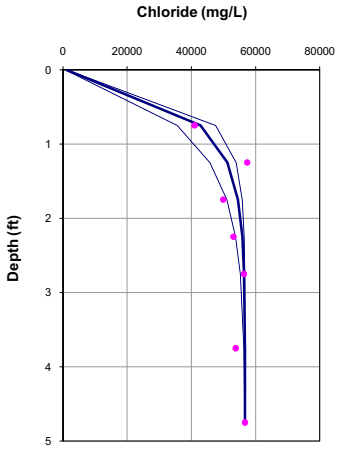
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	57800	54000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-17.06	-15.99
q (cm/yr)	-12.79	-11.99
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.22	0.93

OL-VC-40127



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -19.6 cm/year

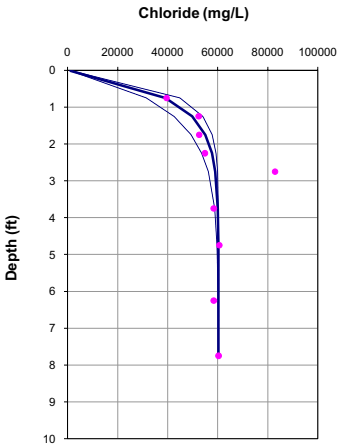
OL-VC-40127



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -16.4 cm/year

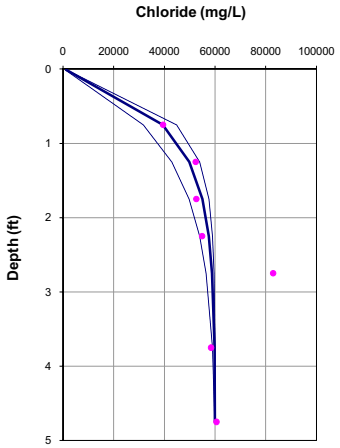
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	60000	56700
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-26.11	-21.85
q (cm/yr)	-19.58	-16.39
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.45	0.98

OL-VC-40128



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -17.0 cm/year

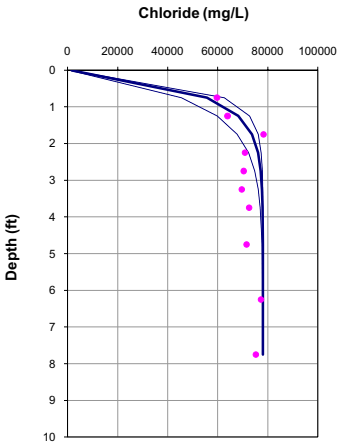
OL-VC-40128



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -11.7 cm/year

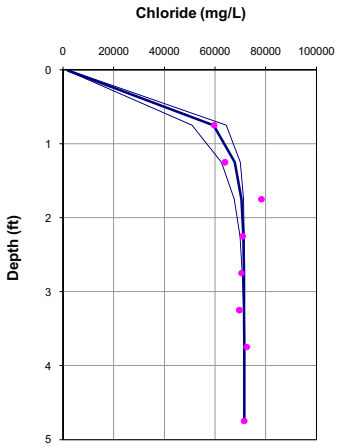
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	60300	60000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-22.65	-15.55
q (cm/yr)	-16.99	-11.66
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.36	0.92

OL-VC-40129



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -23.6 cm/year

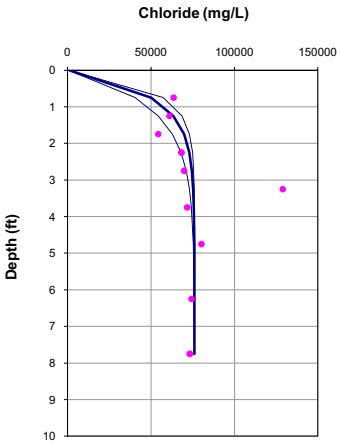
OL-VC-40129



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -22.2 cm/year

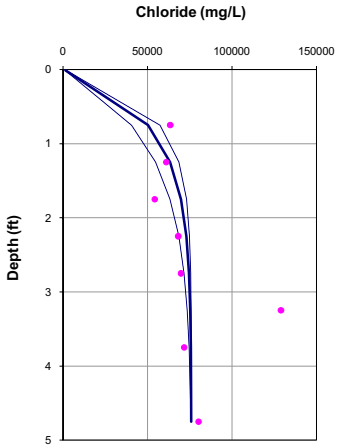
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	78000	71500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-31.48	-29.55
q (cm/yr)	-23.61	-22.16
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.59	1.05

OL-VC-40130



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -17.9 cm/year

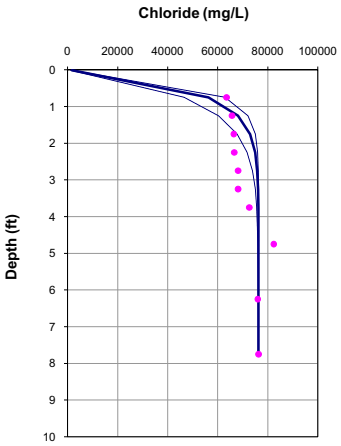
OL-VC-40130



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -11.9 cm/year

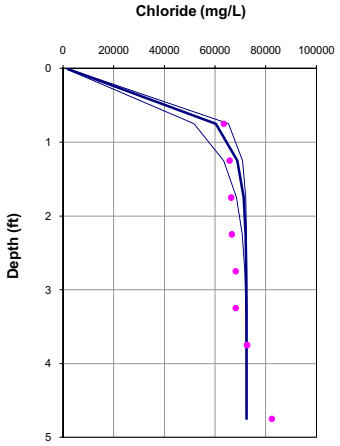
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	76000	76000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********	71054	
V(cm/yr)	-23.88	-15.90
q (cm/yr)	-17.91	-11.93
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.39	0.92

OL-VC-40131



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -27.4 cm/year

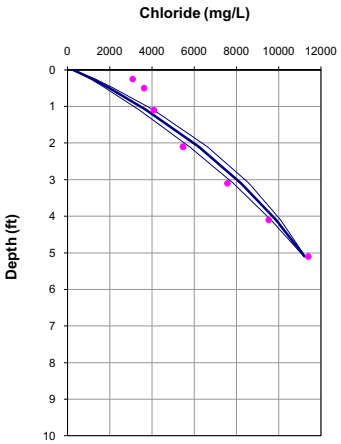
OL-VC-40131



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -22.4 cm/year

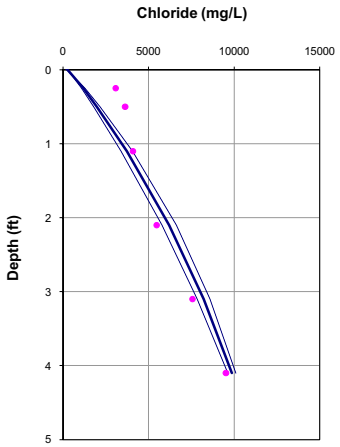
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	76300	72400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-36.59	-29.81
q (cm/yr)	-27.44	-22.36
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.72	1.05

OL-VC-40149



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

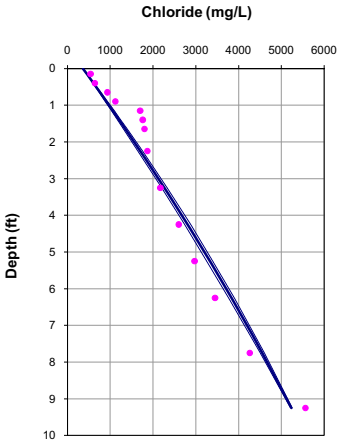
OL-VC-40149



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

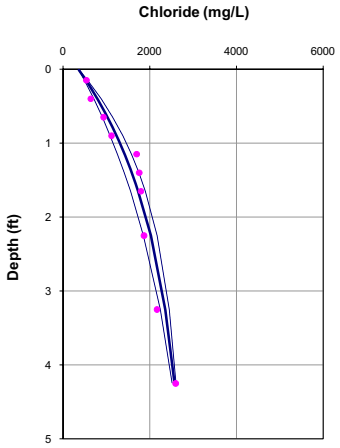
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	11400	11400
L(ft)	5.25	5.25
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		9280.8
V(cm/yr)	-1.95	-1.95
q (cm/yr)	-1.46	-1.46
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.80

OL-VC-40151



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

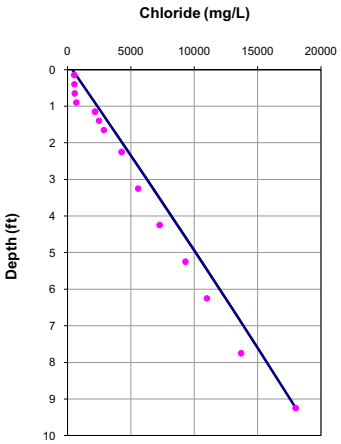
OL-VC-40151



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -3.4 cm/year

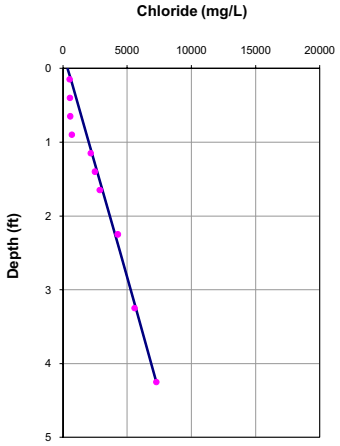
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	5560	2680
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.35	-4.57
q (cm/yr)	-0.26	-3.43
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.82

OL-VC-40154



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

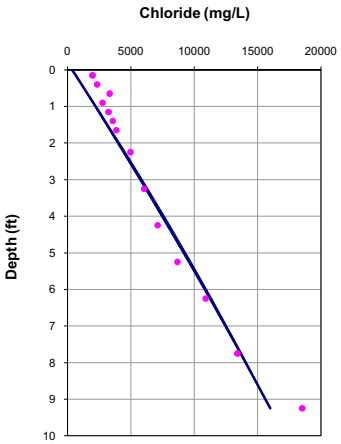
OL-VC-40154



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

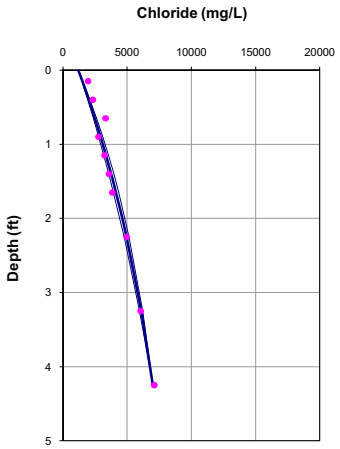
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	18000	7270
L(ft)	9.25	4.25
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.08	-0.08
dispersion length (ft)	0.27	0.08
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.27	0.08
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.79

OL-VC-40157



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

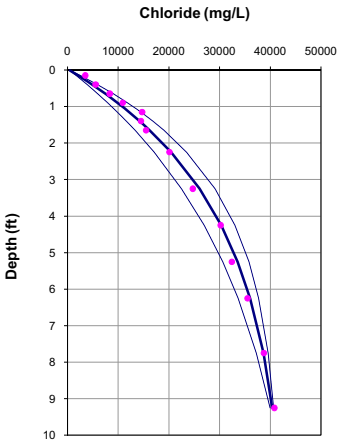
OL-VC-40157



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.7 cm/year

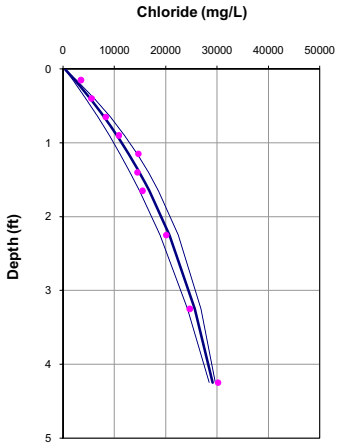
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	1200
Cl (mg/L)	16000	7000
L(ft)	9.25	4.25
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-0.21	-2.21
q (cm/yr)	-0.16	-1.65
dispersion length (ft)	0.27	0.08
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.27	0.08
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.80

OL-VC-40165



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -2.1 cm/year

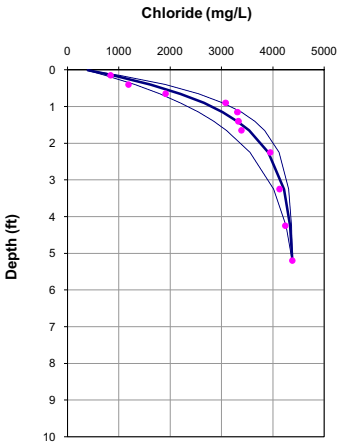
OL-VC-40165



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.6 cm/year

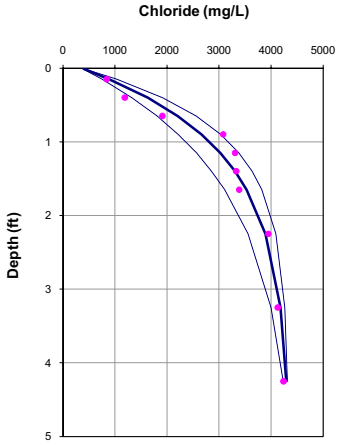
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	41000	31030
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********'		31030
V(cm/yr)	-2.82	-3.50
q (cm/yr)	-2.12	-2.63
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.86	0.82

OL-VC-40168



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.3 cm/year

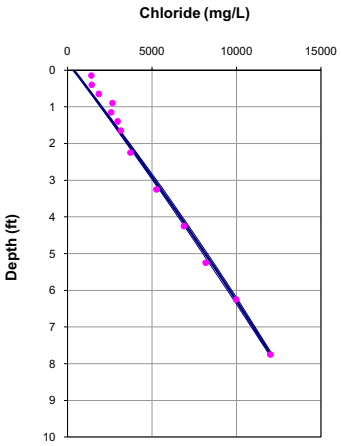
OL-VC-40168



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.5 cm/year

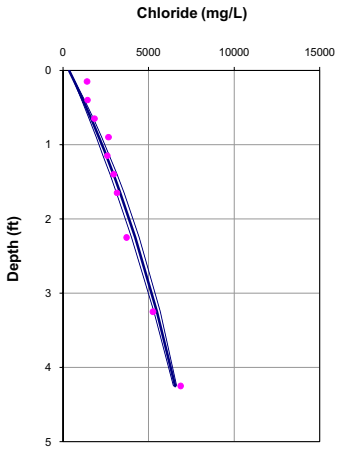
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	4380	4327
L(ft)	5.25	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********'		4326.8
V(cm/yr)	-9.78	-9.97
q (cm/yr)	-7.34	-7.48
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.88	0.87

OL-VC-40172



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

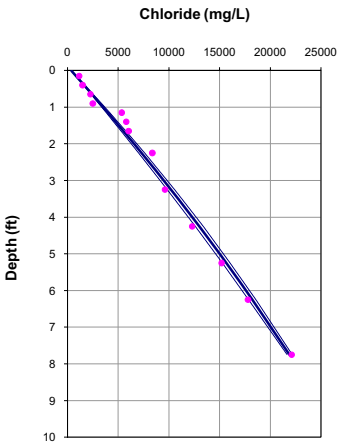
OL-VC-40172



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.3 cm/year

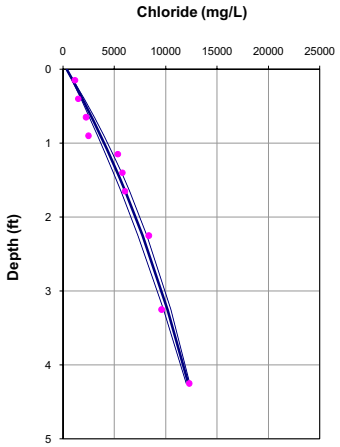
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	15000	7233
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		7233.3
V(cm/yr)	-0.24	-1.76
q (cm/yr)	-0.18	-1.32
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.80

OL-VC-40179



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

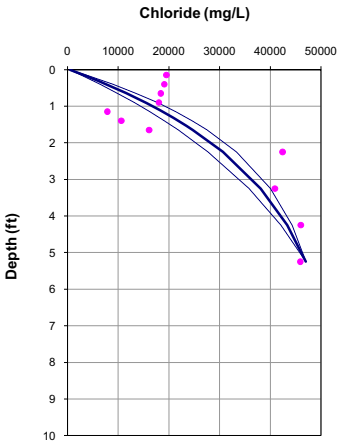
OL-VC-40179



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.3 cm/year

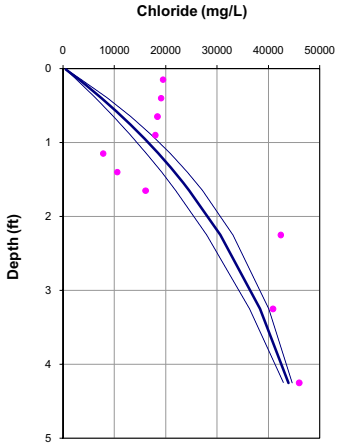
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	27000	13484
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		13484
V(cm/yr)	-0.38	-1.75
q (cm/yr)	-0.28	-1.31
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.80

OL-VC-40184



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

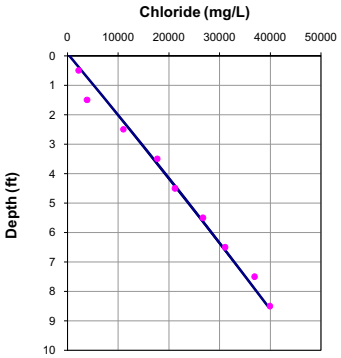
OL-VC-40184



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = NA cm/year

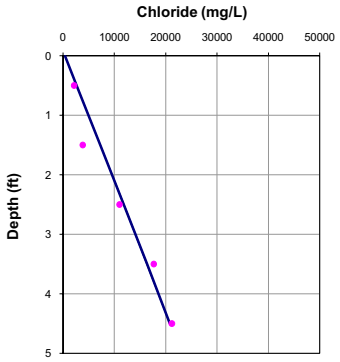
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	47000	47000
L(ft)	5.25	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-3.44	-3.22
q (cm/yr)	-2.58	-2.41
dispersion length (ft)	0.11	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.11	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.82	0.81

OL-STA-60072



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

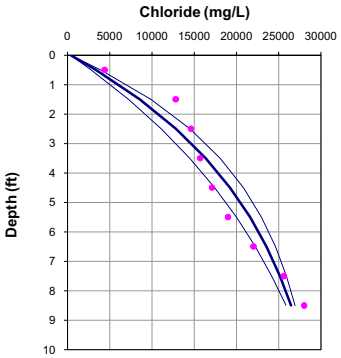
OL-STA-60072



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

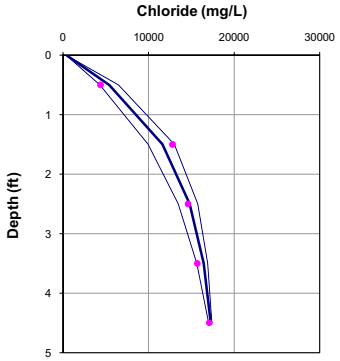
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	46000	23000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-STA-60078



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.3 cm/year

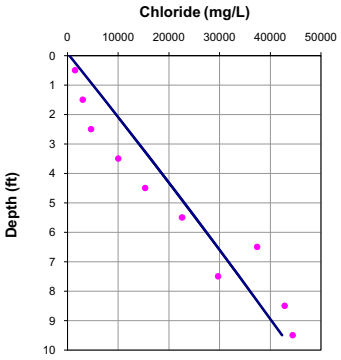
OL-STA-60078



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -4.4 cm/year

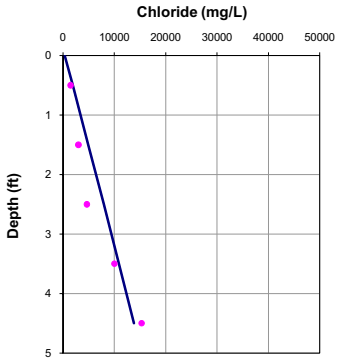
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	28000	17500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.80	-6.23
q (cm/yr)	-1.26	-4.36
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.77	0.78

OL-STA-60081



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

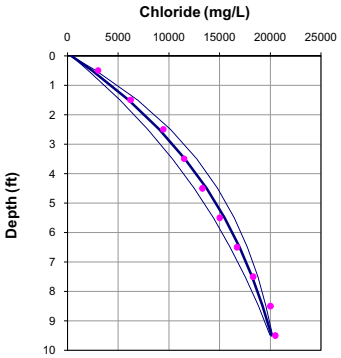
OL-STA-60081



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

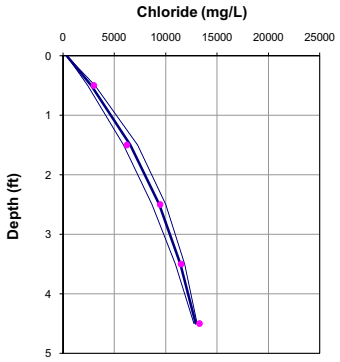
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	44400	15300
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-STA-60087



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

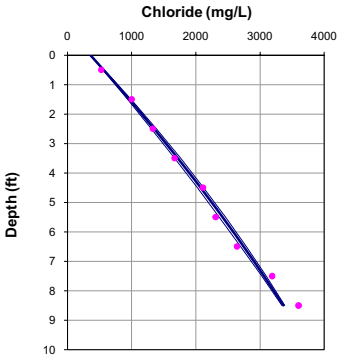
OL-STA-60087



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.0 cm/year

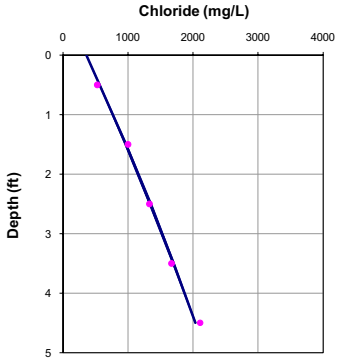
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	20500	13500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-1.62	-2.79
q (cm/yr)	-1.13	-1.96
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.75

OL-STA-60090



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

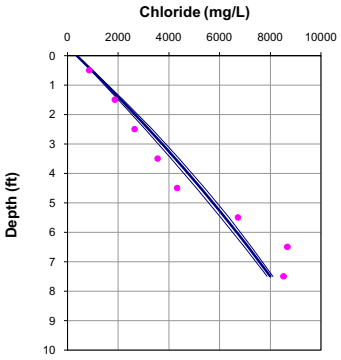
OL-STA-60090



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.3 cm/year

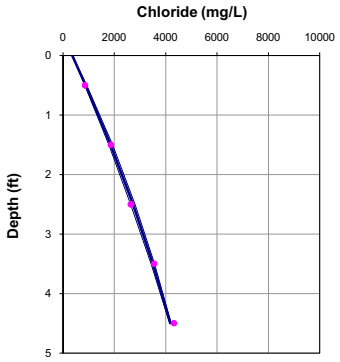
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	3800	2200
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.34	-0.49
q (cm/yr)	-0.24	-0.34
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.73

OL-STA-60096



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

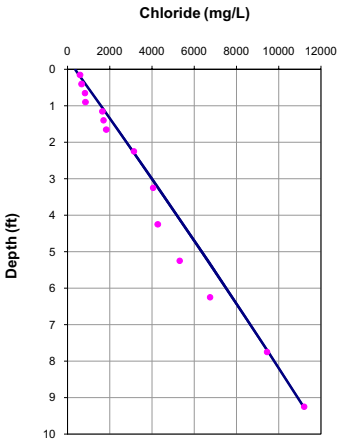
OL-STA-60096



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.7 cm/year

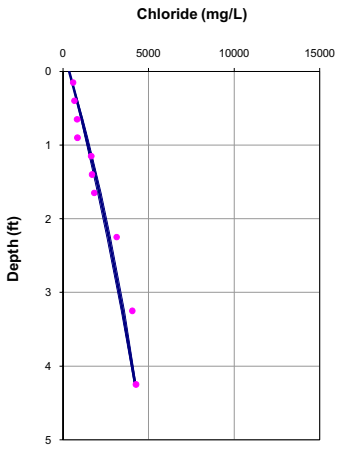
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	10000	4500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.41	-1.00
q (cm/yr)	-0.28	-0.70
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.73

OL-VC-60125



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

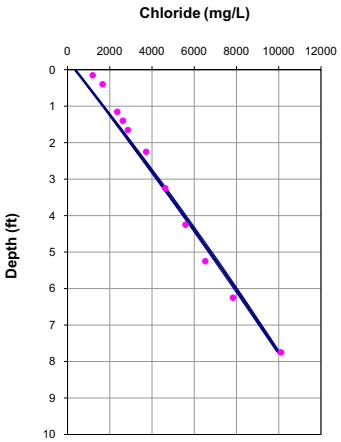
OL-VC-60125



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

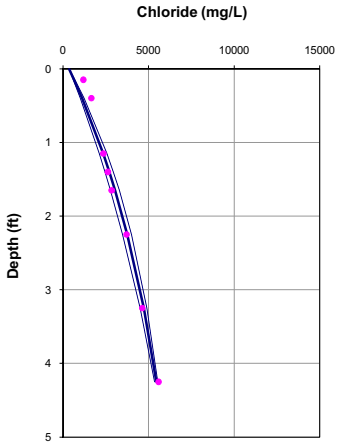
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	12000	4700
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.10	-1.17
q (cm/yr)	-0.07	-0.82
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.73

OL-VC-60127



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.1 cm/year

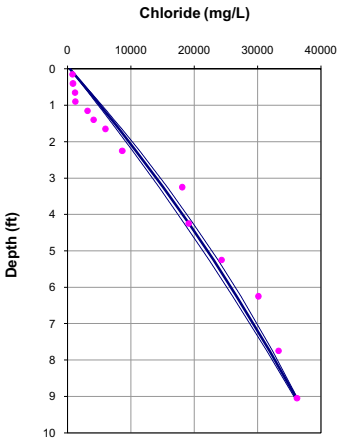
OL-VC-60127



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.7 cm/year

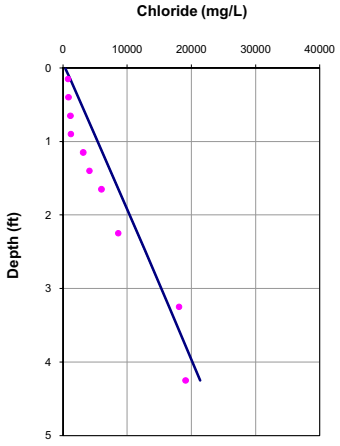
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	12500	5895
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		5895.3
V(cm/yr)	-0.18	-2.38
q (cm/yr)	-0.13	-1.67
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.74

OL-VC-60129



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.3 cm/year

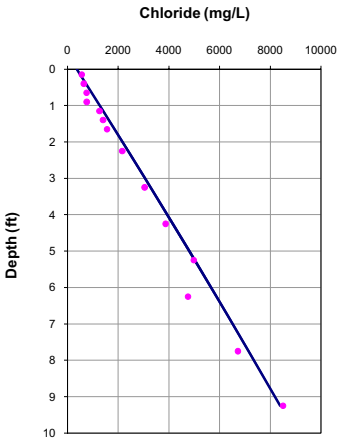
OL-VC-60129



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

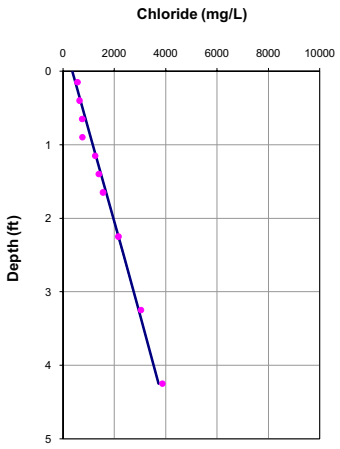
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	39000	25000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-0.44	-0.10
q (cm/yr)	-0.31	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-VC-60150



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

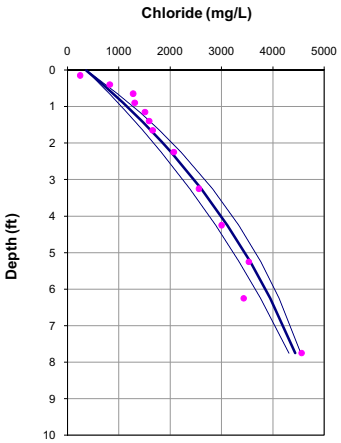
OL-VC-60150



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

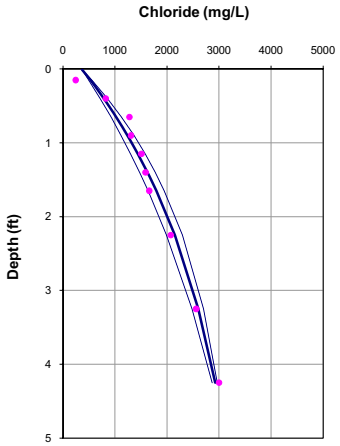
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	9000	4300
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		4300
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-VC-60152



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.9 cm/year

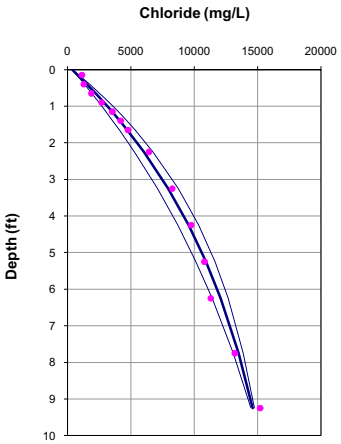
OL-VC-60152



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

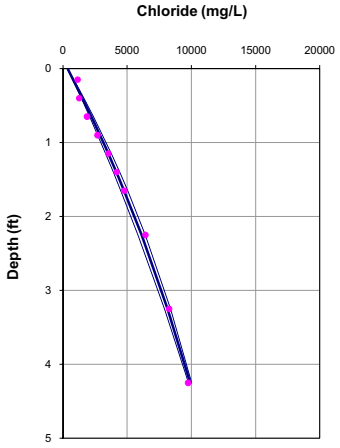
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	5000	3104
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		3104.5
V(cm/yr)	-1.26	-3.01
q (cm/yr)	-0.88	-2.11
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.75

OL-VC-60154



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -1.1 cm/year

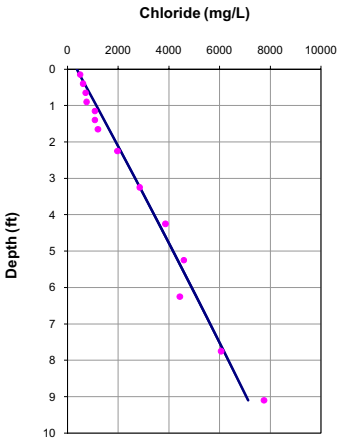
OL-VC-60154



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.9 cm/year

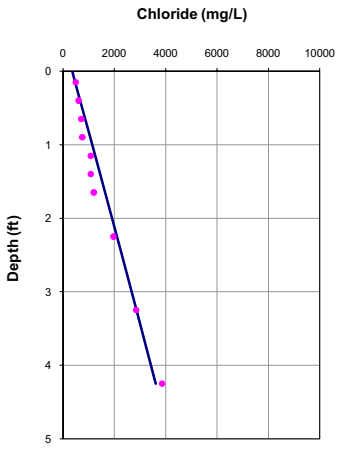
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	15070	11068
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********	15070	11068
V(cm/yr)	-1.51	-1.25
q (cm/yr)	-1.06	-0.88
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.76	0.73

OL-VC-60162



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

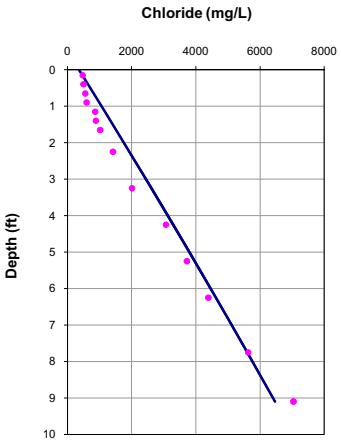
OL-VC-60162



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

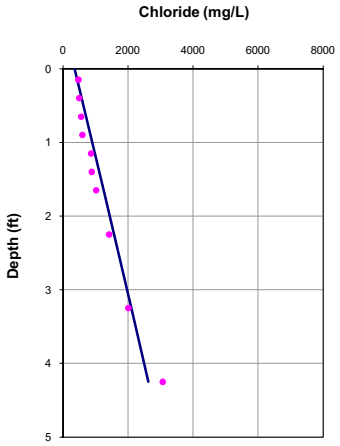
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	7750	4912
L(ft)	10	6
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		4912.2
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.14
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.14
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-VC-60168



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

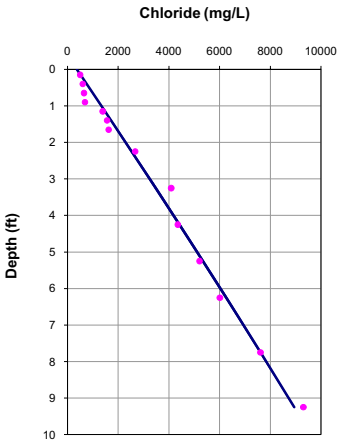
OL-VC-60168



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

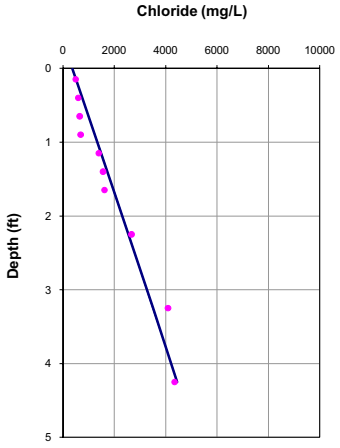
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	7040	3016
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		3016.4
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-VC-60171



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

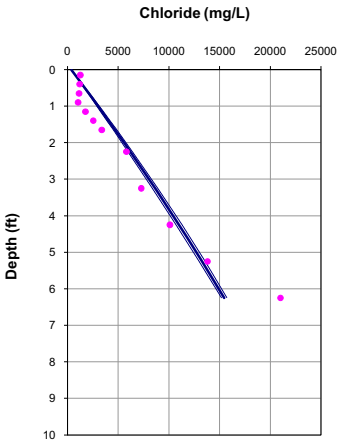
OL-VC-60171



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

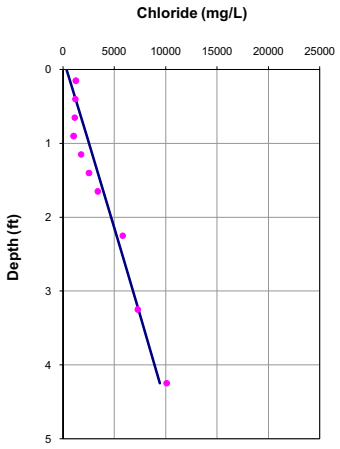
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	9600	5153
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		5153.4
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-VC-60179



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

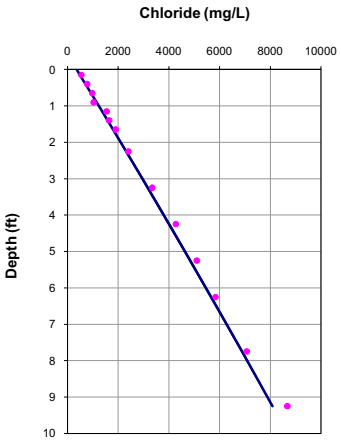
OL-VC-60179



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

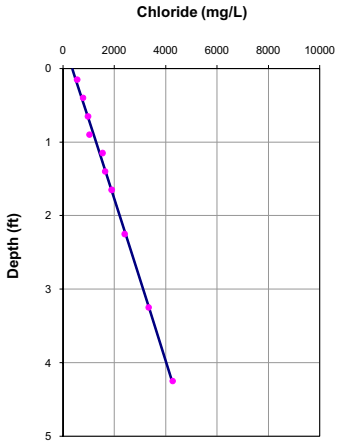
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	23000	11000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		11000
V(cm/yr)	-0.32	-0.10
q (cm/yr)	-0.22	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.72

OL-VC-60181



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

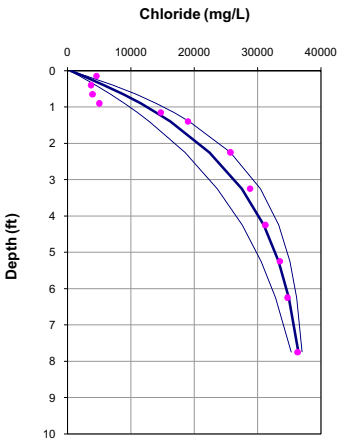
OL-VC-60181



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

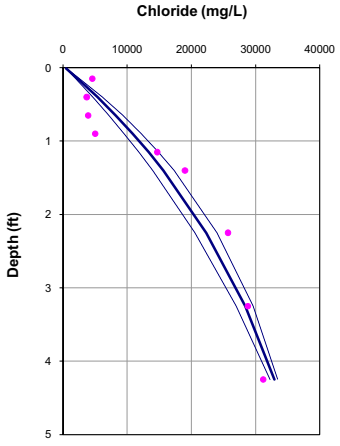
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	8670	4910
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		4909.5
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-VC-60191



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.7 cm/year

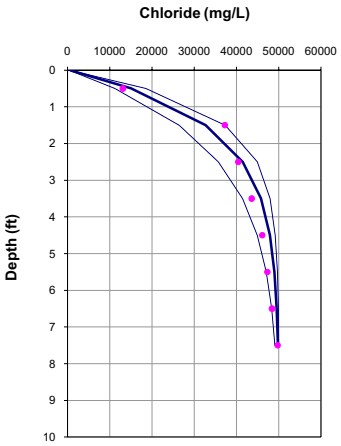
OL-VC-60191



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year

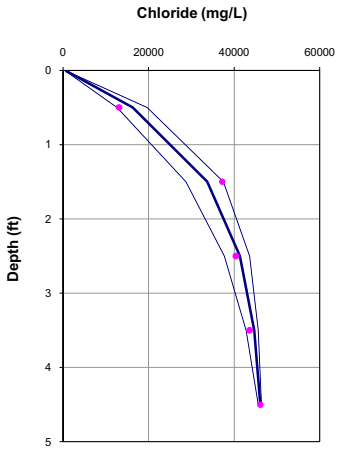
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	37500	35568
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		35568
V(cm/yr)	-3.79	-2.55
q (cm/yr)	-2.65	-1.79
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.82	0.74

OL-STA-70040



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -5.4 cm/year

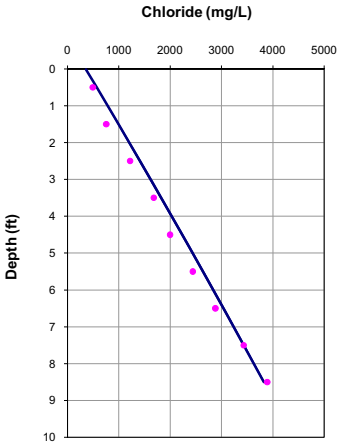
OL-STA-70040



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -5.5 cm/year

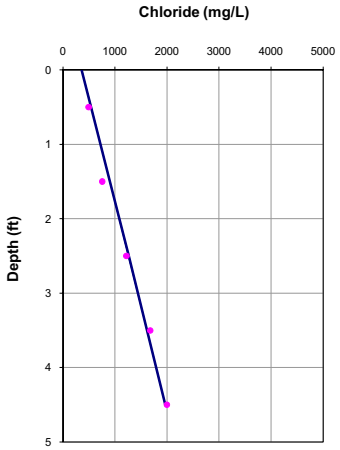
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	50000	46500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-7.70	-7.84
q (cm/yr)	-5.39	-5.49
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.92	0.79

OL-STA-70042



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

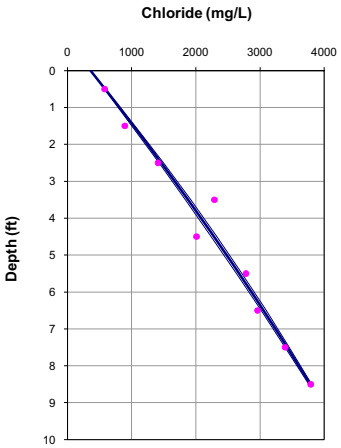
OL-STA-70042



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

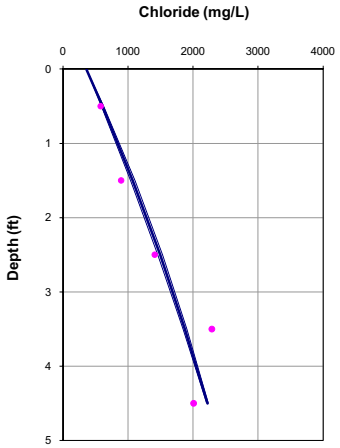
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	4400	2142
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********'		2142.1
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-STA-70043



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

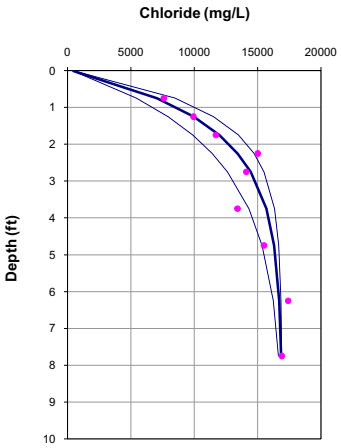
OL-STA-70043



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.6 cm/year

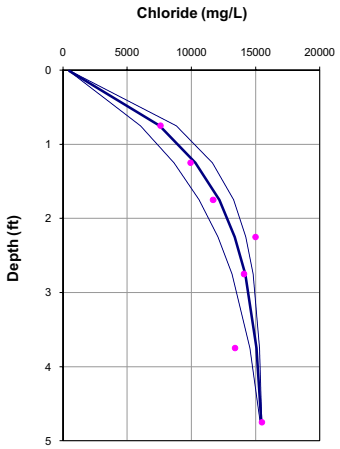
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	4300	2383
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********'		2382.6
V(cm/yr)	-0.27	-0.86
q (cm/yr)	-0.19	-0.60
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.73	0.73

OL-VC-70057



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -5.3 cm/year

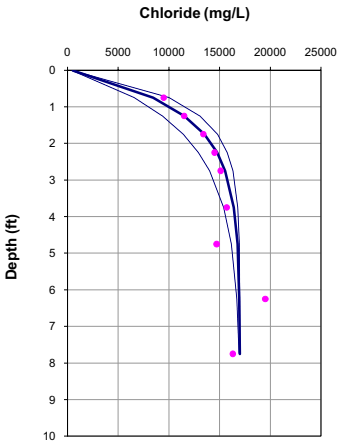
OL-VC-70057



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -5.5 cm/year

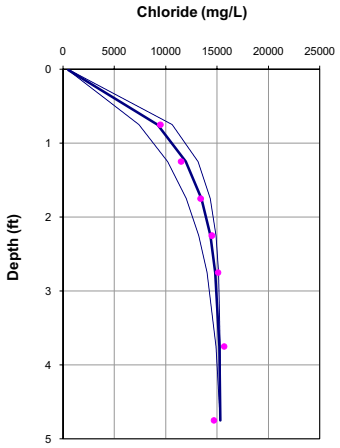
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	16900	15500
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-7.57	-7.91
q (cm/yr)	-5.30	-5.54
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.91	0.79

OL-VC-70058



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -7.4 cm/year

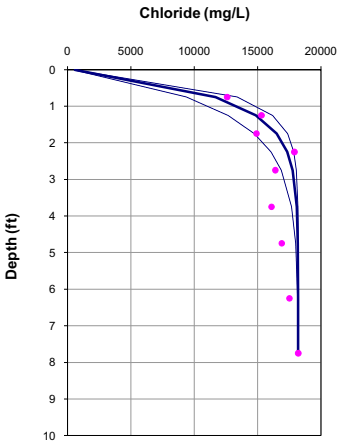
OL-VC-70058



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -8.2 cm/year

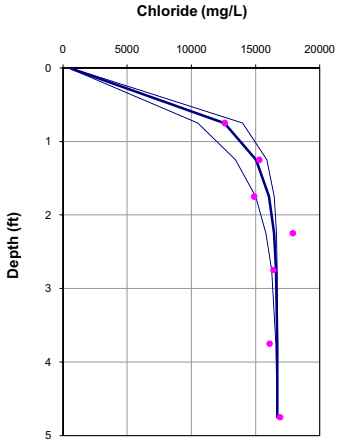
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	17000	15350
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		15350
V(cm/yr)	-10.51	-11.68
q (cm/yr)	-7.36	-8.18
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.99	0.82

OL-VC-70059



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -13.7 cm/year

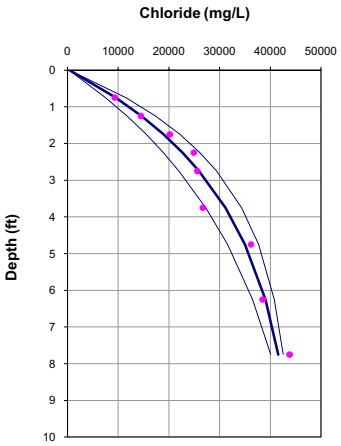
OL-VC-70059



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -13.8 cm/year

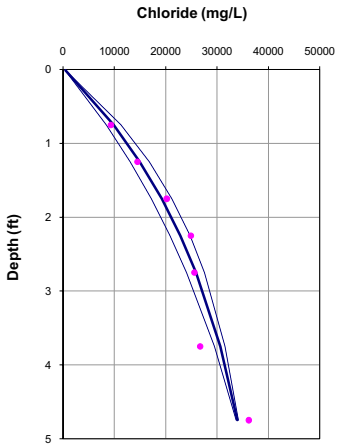
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	18200	16696
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		16696
V(cm/yr)	-19.60	-19.72
q (cm/yr)	-13.72	-13.81
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	1.22	0.90

OL-VC-70061



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.0 cm/year

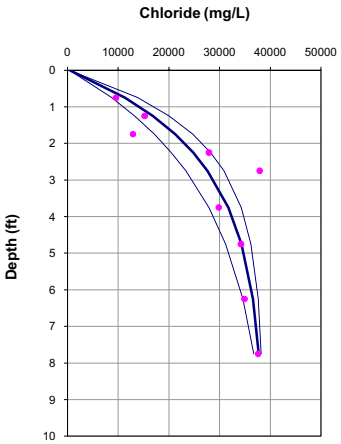
OL-VC-70061



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.2 cm/year

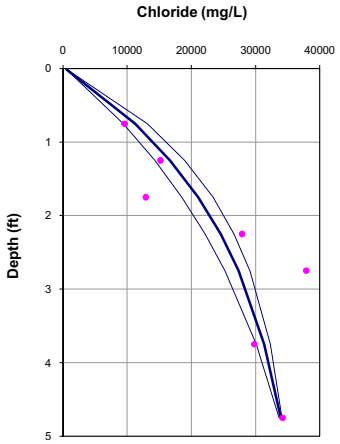
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	43800	34623
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		34623
V(cm/yr)	-2.83	-3.10
q (cm/yr)	-1.98	-2.17
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.79	0.75

OL-VC-70062



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -3.1 cm/year

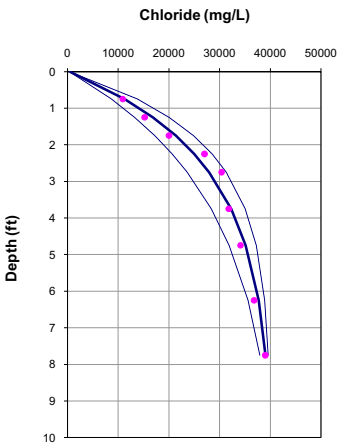
OL-VC-70062



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.8 cm/year

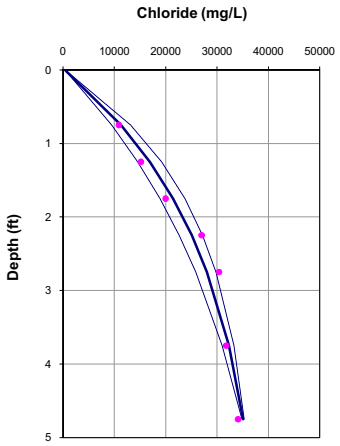
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	38500	34400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		
V(cm/yr)	-4.45	-4.06
q (cm/yr)	-3.12	-2.84
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.83	0.76

OL-VC-70063



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.9 cm/year

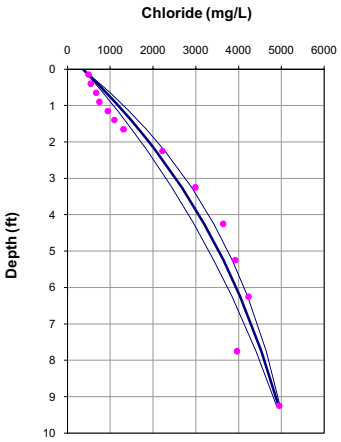
OL-VC-70063



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.7 cm/year

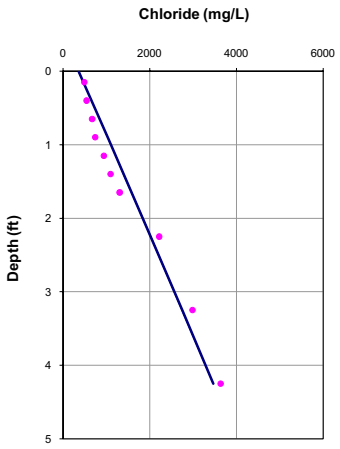
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	40000	35611
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		35611
V(cm/yr)	-4.17	-3.88
q (cm/yr)	-2.92	-2.72
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.83	0.76

OL-VC-70089



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.9 cm/year

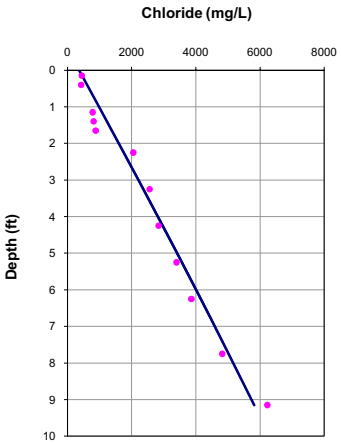
OL-VC-70089



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

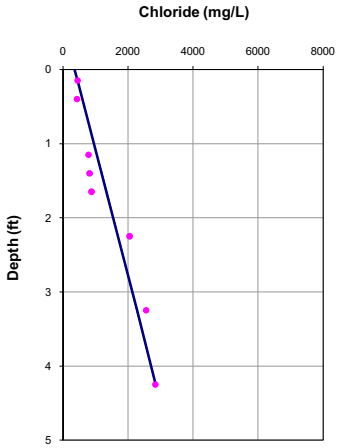
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	5100	4000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		4000
V(cm/yr)	-1.29	-0.10
q (cm/yr)	-0.90	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.75	0.72

OL-VC-70093



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = ~0 cm/year

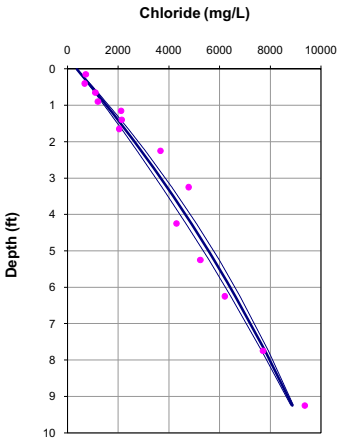
OL-VC-70093



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = ~0 cm/year

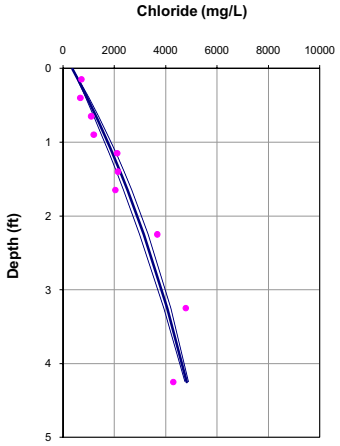
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	6300	3280
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		3280.1
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.72	0.72

OL-VC-70100



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -0.4 cm/year

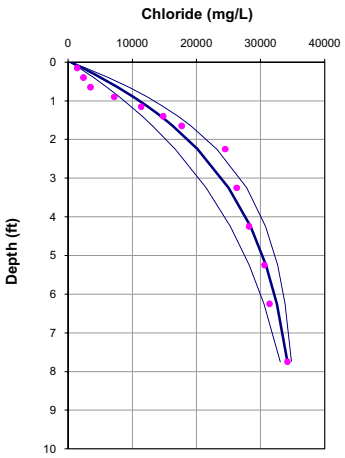
OL-VC-70100



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.2 cm/year

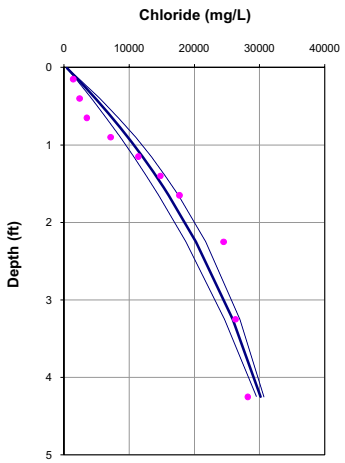
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	9360	5302
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		5301.6
V(cm/yr)	-0.55	-1.65
q (cm/yr)	-0.39	-1.15
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.74	0.74

OL-VC-70102



Porosity = 0.70
Dispersion length = 0.3 feet
Upwelling Velocity = -2.4 cm/year

OL-VC-70102

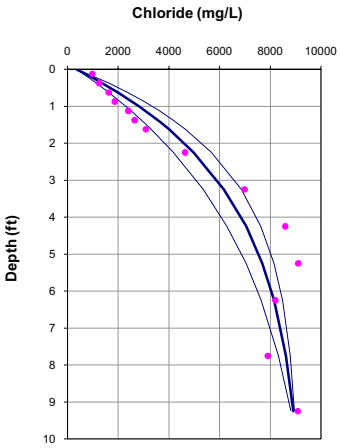


Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.7 cm/year

	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	35500	32680
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.7	0.7
Calculated Values **********		32680
V(cm/yr)	-3.40	-2.42
q (cm/yr)	-2.38	-1.69
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.72	0.72
Diffusion + Dispersion (cm2/day)	0.81	0.74

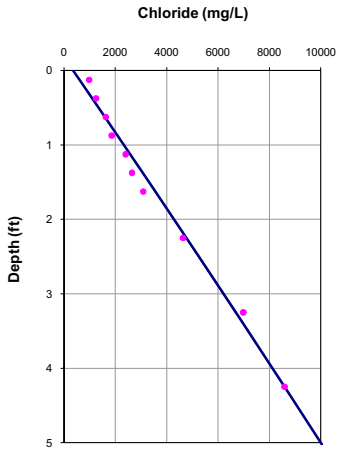
Upwelling Velocities from Sediment Pore-Water Chloride Data -
Phase 5 Data

OL-VC-20187



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -1.8 cm/year

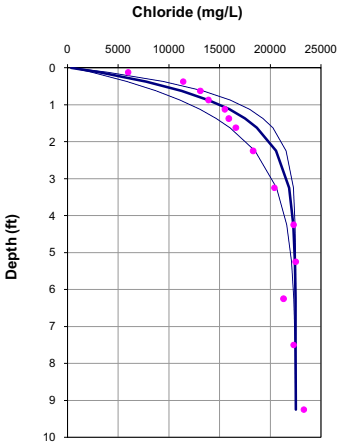
OL-VC-20187



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -0.1 cm/year

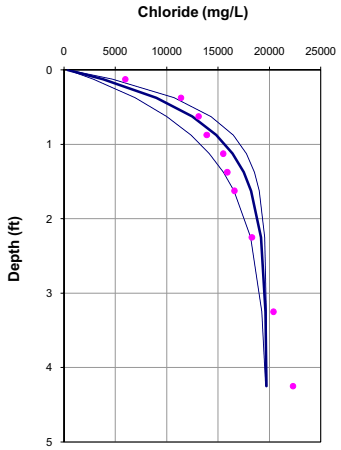
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	9000	10000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		
V(cm/yr)	-2.81	-0.10
q (cm/yr)	-1.82	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.74	0.66

OL-VC-20188



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -8.3 cm/year

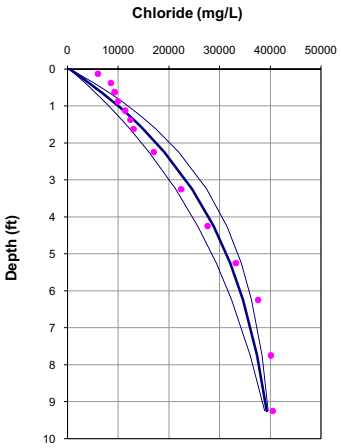
OL-VC-20188



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -9.7 cm/year

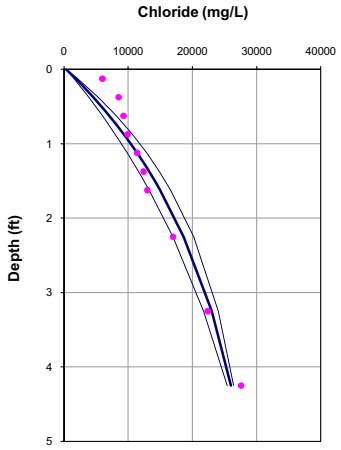
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	22500	19726
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********'	21025	19726
V(cm/yr)	-12.83	-14.97
q (cm/yr)	-8.34	-9.73
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.99	0.80

OL-VC-20189



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -1.4 cm/year

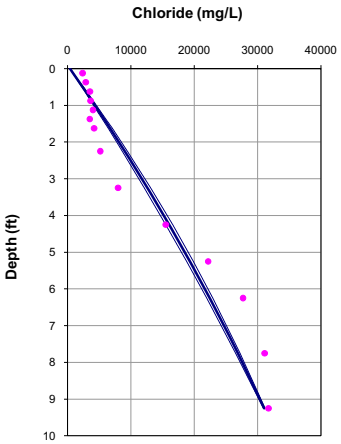
OL-VC-20189



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -2.0 cm/year

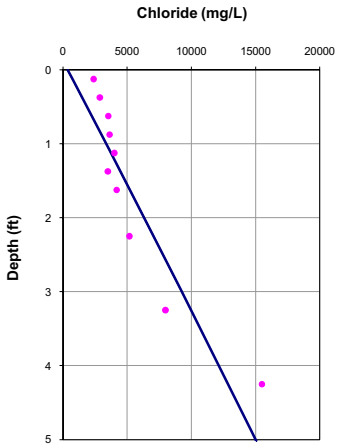
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	40000	27614
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********'	36787	27614
V(cm/yr)	-2.20	-3.07
q (cm/yr)	-1.43	-2.00
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.72	0.69

OL-VC-20190



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -0.2 cm/year

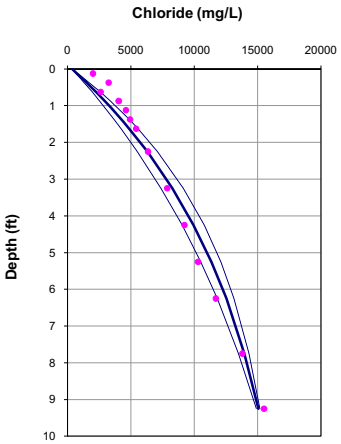
OL-VC-20190



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -0.1 cm/year

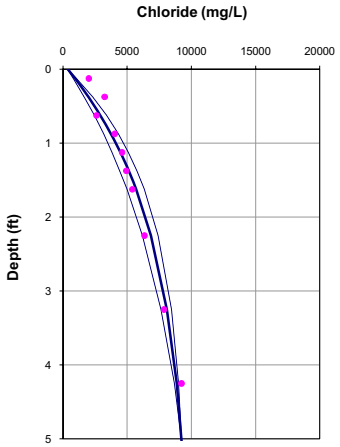
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	33000	15000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		15000
V(cm/yr)	-0.36	-0.10
q (cm/yr)	-0.24	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.67	0.66

OL-VC-30129



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -0.9 cm/year

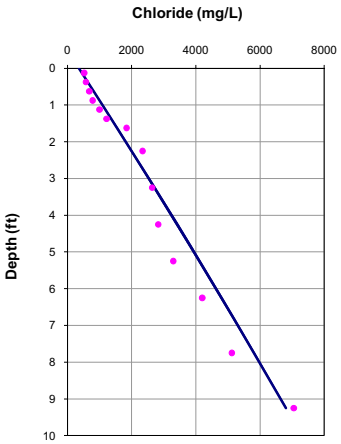
OL-VC-30129



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -2.7 cm/year

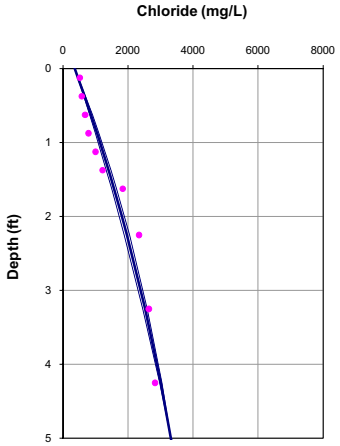
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	15500	9250
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		9127.4
V(cm/yr)	-1.45	-4.09
q (cm/yr)	-0.94	-2.66
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.70	0.70

OL-VC-30130



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -0.1 cm/year

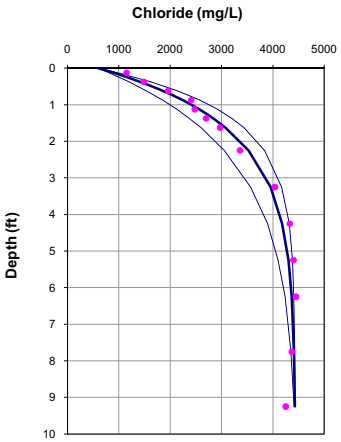
OL-VC-30130



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

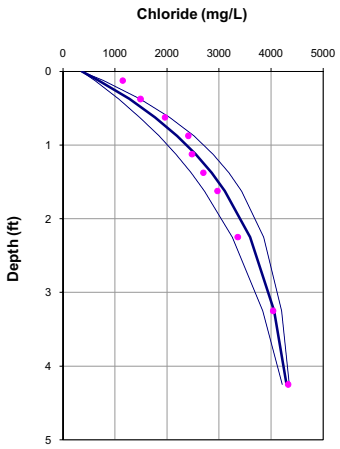
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	7300	3326
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********		3325.6
V(cm/yr)	-0.10	-1.21
q (cm/yr)	-0.07	-0.78
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.67	0.67

OL-VC-30131



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -4.1 cm/year

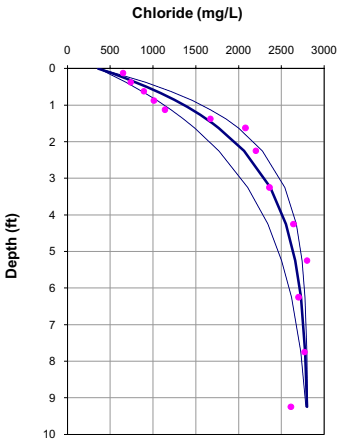
OL-VC-30131



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -3.7 cm/year

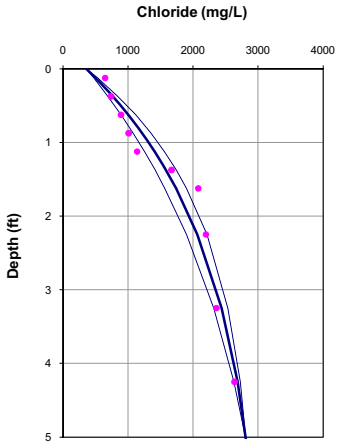
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	600	359
Cl (mg/L)	4430	4400
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********	4429.6	4374.4
V(cm/yr)	-6.30	-5.62
q (cm/yr)	-4.09	-3.65
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.82	0.71

OL-VC-30132



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -3.2 cm/year

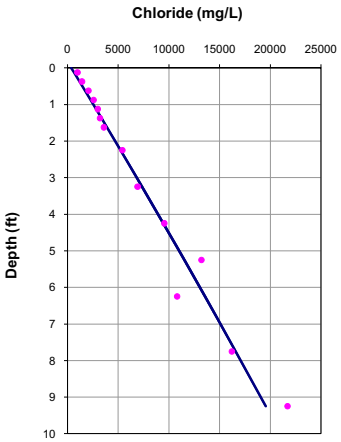
OL-VC-30132



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -2.3 cm/year

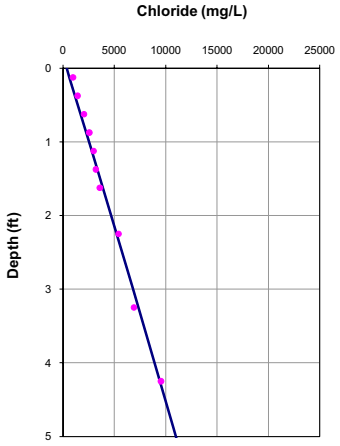
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	2807	2813
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********	2807.2	2812.8
V(cm/yr)	-4.94	-3.49
q (cm/yr)	-3.21	-2.27
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.79	0.69

OL-VC-30133



Porosity = 0.65
Dispersion length = 0.3 feet
Upwelling Velocity = -0.1 cm/year

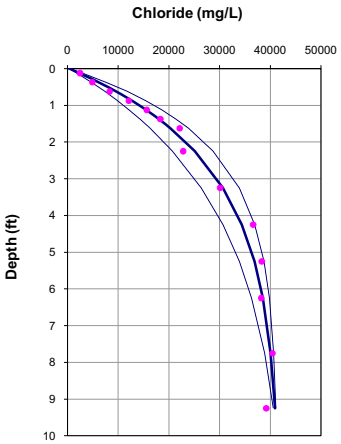
OL-VC-30133



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -0.1 cm/year

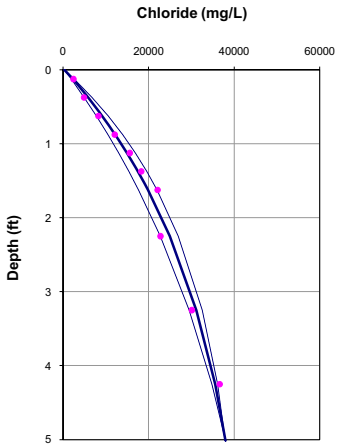
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	21000	11000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.65	0.65
Calculated Values **********	21000	19000
V(cm/yr)	-0.10	-0.10
q (cm/yr)	-0.07	-0.07
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.66	0.66
Diffusion + Dispersion (cm2/day)	0.67	0.66

OL-VC-40238



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -3.2 cm/year

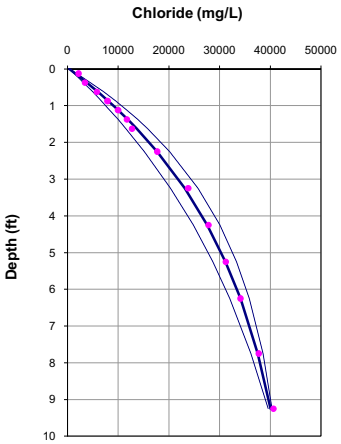
OL-VC-40238



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

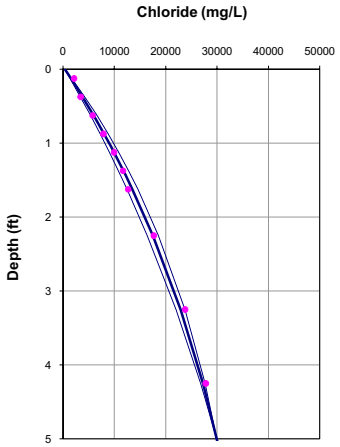
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	41163	38000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********	41163	37186
V(cm/yr)	-4.31	-3.30
q (cm/yr)	-3.23	-2.48
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.89	0.81

OL-VC-40239



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -1.6 cm/year

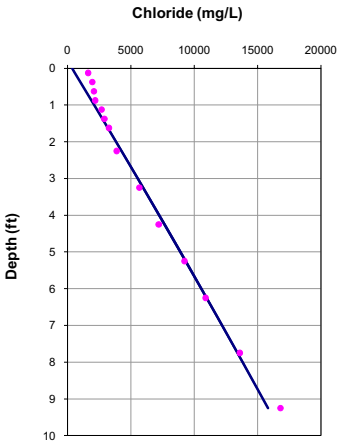
OL-VC-40239



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

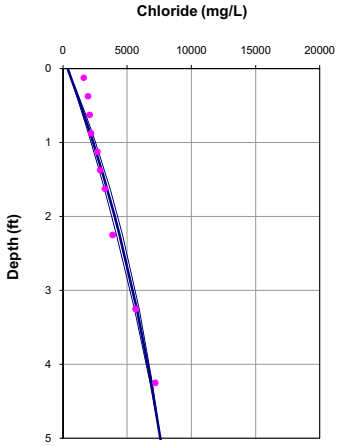
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	41000	30000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		28060
V(cm/yr)	-2.07	-2.01
q (cm/yr)	-1.56	-1.51
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.84	0.80

OL-VC-40240



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.1 cm/year

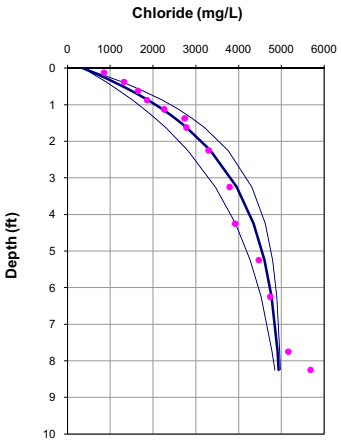
OL-VC-40240



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.3 cm/year

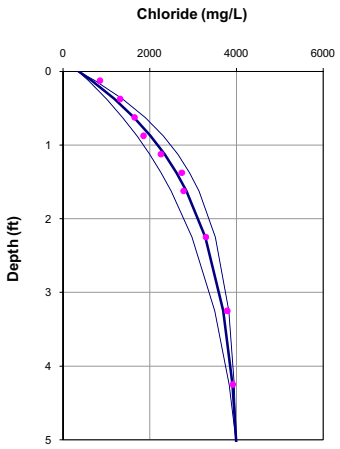
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	17000	7600
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		7414.6
V(cm/yr)	-0.10	-1.70
q (cm/yr)	-0.08	-1.27
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.79	0.80

OL-VC-40241



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -3.7 cm/year

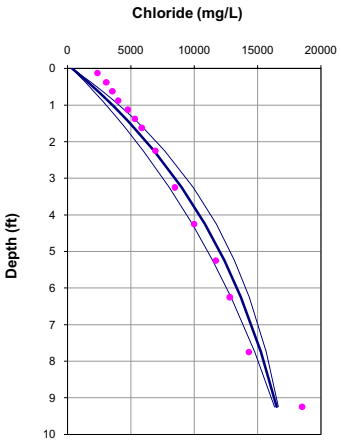
OL-VC-40241



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -5.0 cm/year

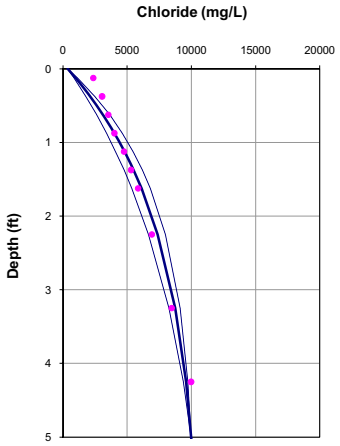
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	5000	4000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		4293.7
V(cm/yr)	-4.87	-6.70
q (cm/yr)	-3.65	-5.02
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.91	0.84

OL-VC-40242



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -1.3 cm/year

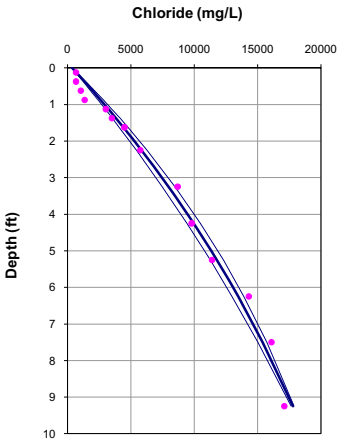
OL-VC-40242



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -3.6 cm/year

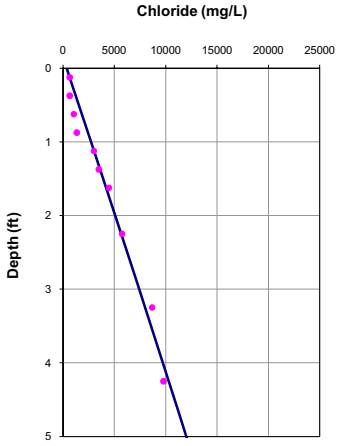
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	17000	10000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		9862
V(cm/yr)	-1.68	-4.80
q (cm/yr)	-1.26	-3.60
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.83	0.83

OL-VC-40243



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -0.6 cm/year

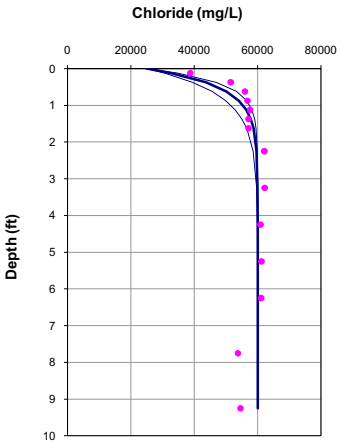
OL-VC-40243



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.1 cm/year

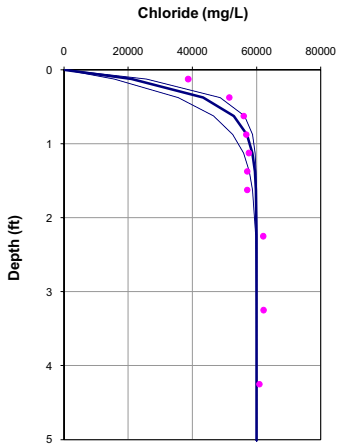
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	18700	12000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		12339
V(cm/yr)	-0.77	-0.10
q (cm/yr)	-0.57	-0.08
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.80	0.79

OL-VC-40244



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = <-35.0 cm/year

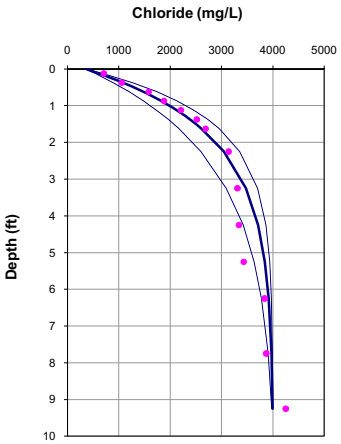
OL-VC-40244



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = <-35.0 cm/year

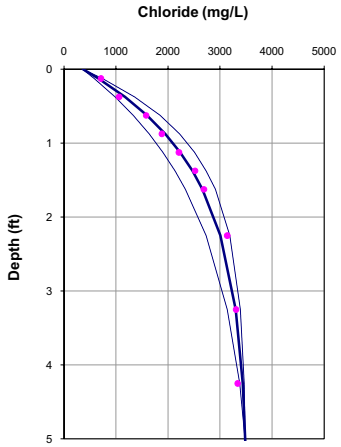
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	25000	359
Cl (mg/L)	60000	60000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		
V(cm/yr)	-50.00	-50.00
q (cm/yr)	-37.50	-37.50
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	2.06	1.23

OL-VC-40245



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.1 cm/year

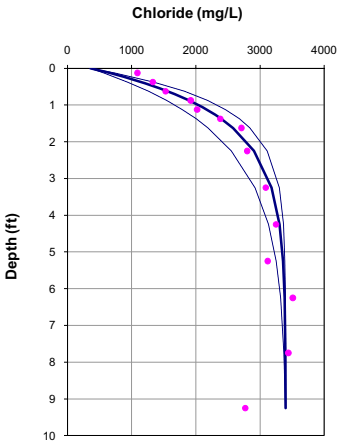
OL-VC-40245



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -6.1 cm/year

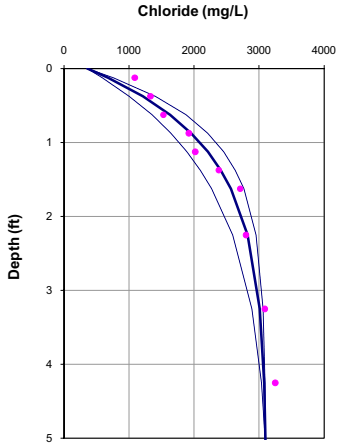
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	4000	3485
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********'		3485
V(cm/yr)	-6.77	-8.09
q (cm/yr)	-5.08	-6.06
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.96	0.86

OL-VC-40246



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -7.5 cm/year

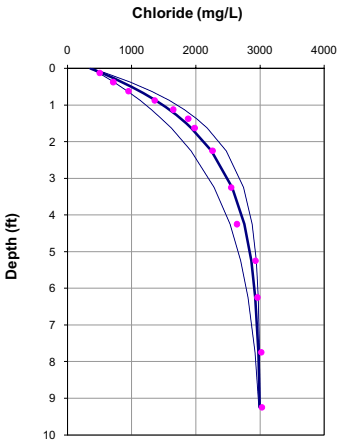
OL-VC-40246



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.8 cm/year

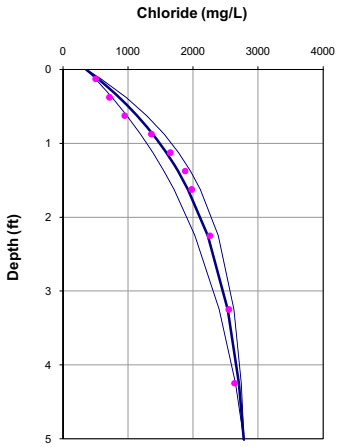
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	3400	3100
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********'		3393.5
V(cm/yr)	-10.03	-10.38
q (cm/yr)	-7.52	-7.79
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	1.04	0.88

OL-VC-40247



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -4.7 cm/year

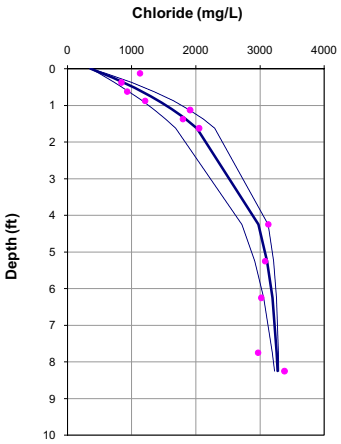
OL-VC-40247



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -4.3 cm/year

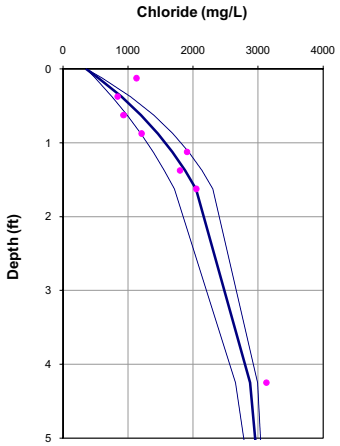
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	3000	2785
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		2784.8
V(cm/yr)	-6.22	-5.80
q (cm/yr)	-4.66	-4.35
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.94	0.84

OL-VC-40248



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -4.2 cm/year

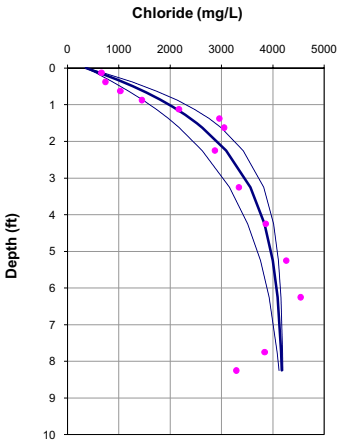
OL-VC-40248



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.0 cm/year

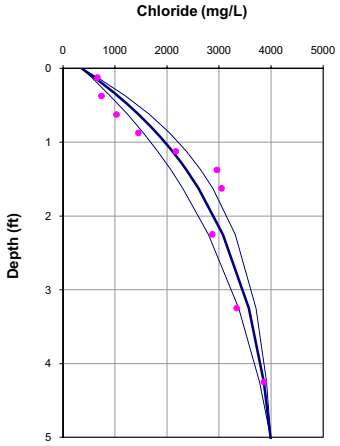
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	3300	3100
L(ft)	10	10
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		3098.4
V(cm/yr)	-5.63	-6.68
q (cm/yr)	-4.22	-5.01
dispersion length (ft)	0.31	0.31
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.31
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.93	0.95

OL-VC-40249



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -4.6 cm/year

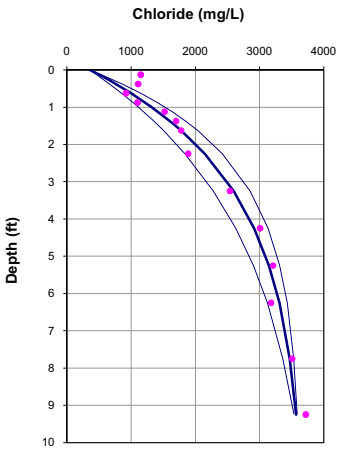
OL-VC-40249



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -3.9 cm/year

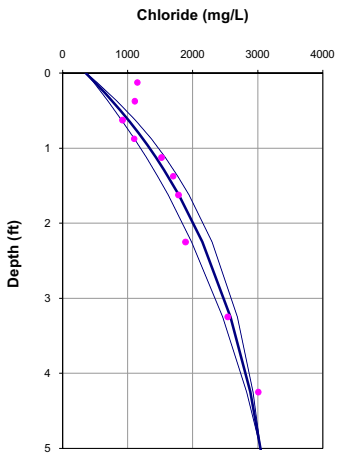
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	4200	4000
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		4523.6
V(cm/yr)	-6.16	-5.20
q (cm/yr)	-4.62	-3.90
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.94	0.83

OL-VC-40250



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -2.7 cm/year

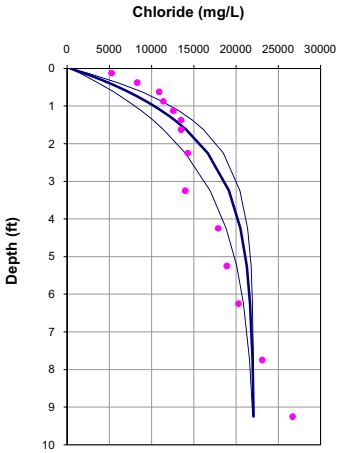
OL-VC-40250



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.6 cm/year

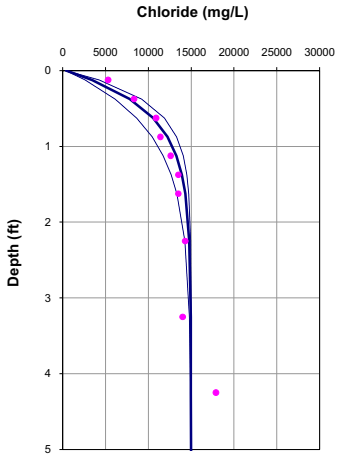
	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	3600	3049
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		3049.4
V(cm/yr)	-3.55	-3.53
q (cm/yr)	-2.66	-2.64
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)***		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.87	0.82

OL-VC-50071



Porosity = 0.75
Dispersion length = 0.3 feet
Upwelling Velocity = -5.3 cm/year

OL-VC-50071



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -16.8 cm/year

	10 feet	5 feet
Input Parameters **********		
Co (mg/L)	359	359
Cl (mg/L)	22100	14977
L(ft)	10	5
D (cm2/day)	1.236	1.236
porosity	0.75	0.75
Calculated Values **********		14977
V(cm/yr)	-7.07	-22.40
q (cm/yr)	-5.31	-16.80
dispersion length (ft)	0.31	0.11
Internal Parameters *********(do not alter except as noted)**		
Neuman dispersion length (ft)	0.31	0.11
V(ft/d)	0.00	0.00
Effective. Diffusion (cm2/day)	0.78	0.78
Diffusion + Dispersion (cm2/day)	0.96	0.98

Attachment VIII

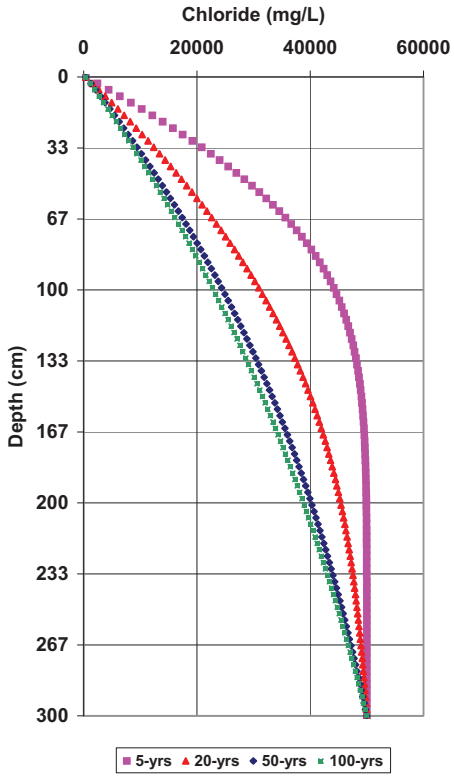
Transient Evaluation of Chloride-Depth Profiles

Attachment VIII
Transient Evaluation of Chloride-Depth Profiles

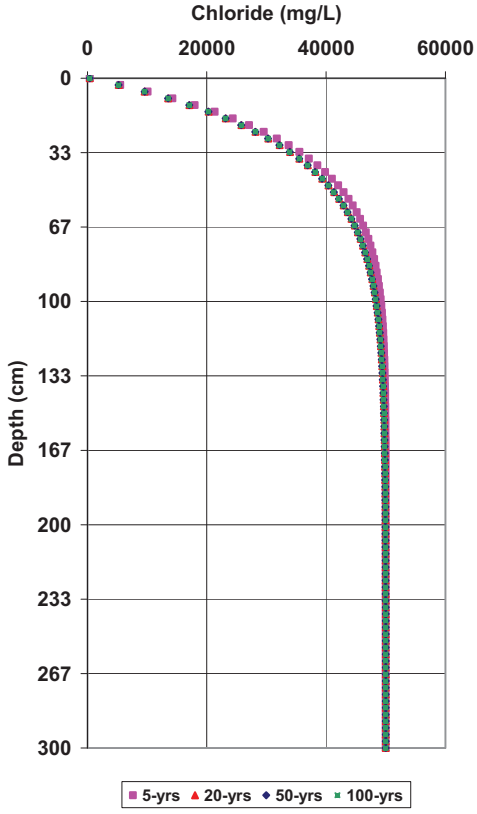
The transient analyses were conducted to determine the time required for an equilibrium chloride depth profile to be established after placement of high salinity pore waters in the subsurface. For these analyses, it was assumed that the chloride concentration in the sediment from the sediment-water interface to infinite depth was at a concentration of 50,000 mg/L and that chloride concentration in the overlying lake water was 350 mg/L.

A transient version of Equation 1 (Section 3 of the main report) was then used to calculate the time required to achieve relatively stable conditions. The time to achieve steady-state chloride profiles varies with upwelling velocity, and for these analyses upwelling velocities of 0 cm/year and 10 cm/year were evaluated. The results of these analyses are shown below.

Transient Diffusion/Advection Profiles



No Upwelling



10 cm/yr Upwelling

These results indicate that in shallow sediments, steady-state chloride profiles are achieved in a relatively short period of time if there is a small upwelling velocity. With an upwelling velocity of 10 cm/year, after five years the chloride-depth profile is approaching the steady-state profile. With no upwelling velocity, after 100 years a linear-steady-state diffusion profile is approximated.

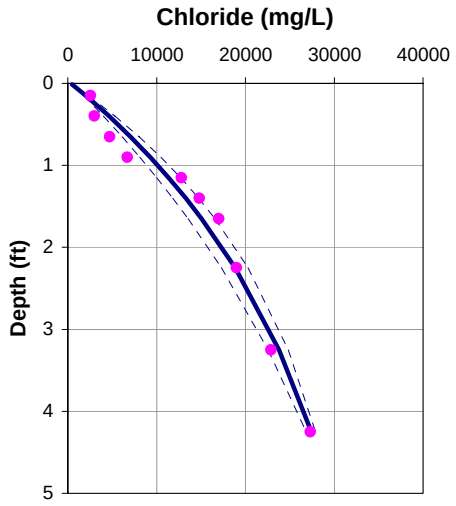
Attachment IX

Comparison of Upwelling Estimates from Pore Water and Sediment Conductivity Data from Same Location

Attachment IX
Comparison of Upwelling Estimates from Pore Water and Sediment Conductivity Data from Same Location

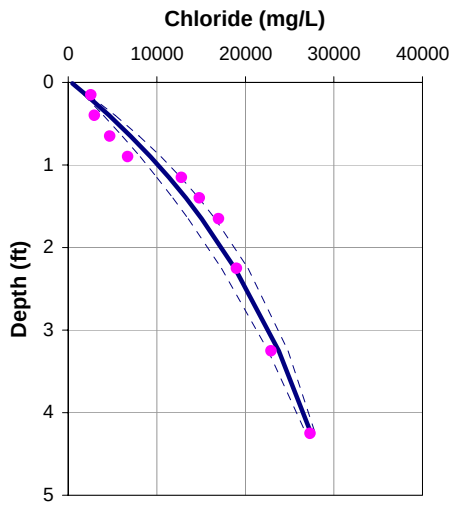
This Attachment contains a comparison of chloride-depth profiles from co-located Vibracore and sediment conductivity borings. At each location with co-located borings, plots of chloride-depth profiles are presented side by side to illustrate the similarities between profiles obtained from the two methods. In addition, the results of the co-located borings are tabulated with the difference between the upwelling velocities from the two methods noted. At several locations with co-located Vibracore and sediment-conductivity borings, duplicate and/or triplicate sediment conductivity borings were advanced. The chloride-depth profiles from the duplicates and/or triplicates are also plotted and the estimated upwelling velocities tabulated. There are a total of 30 locations with co-located Vibracore and sediment-conductivity borings.

OL-VC-20111



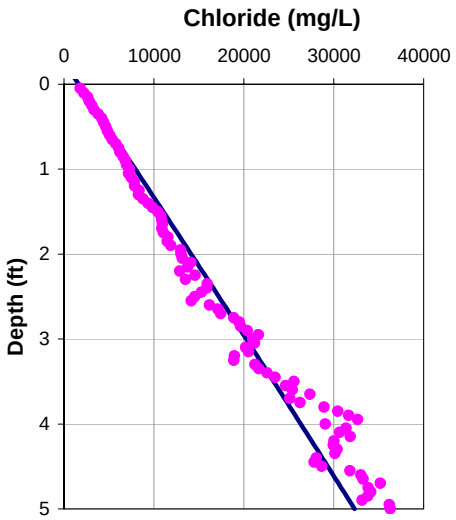
Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

OL-VC-20111



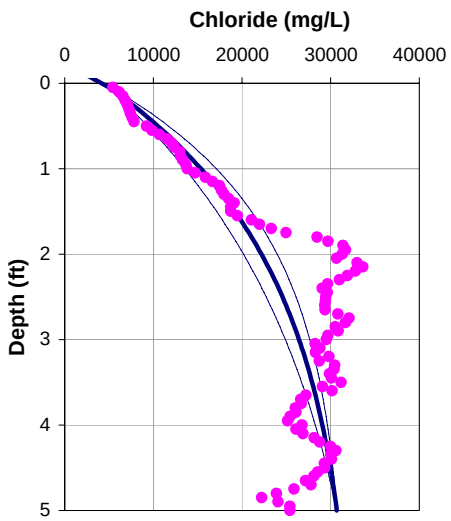
Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

OL-GP-20111



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = 0 cm/year

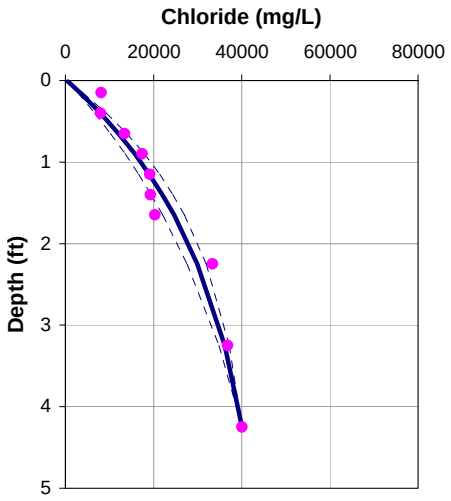
OL-GP-20111.DAT



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -2.6 cm/year

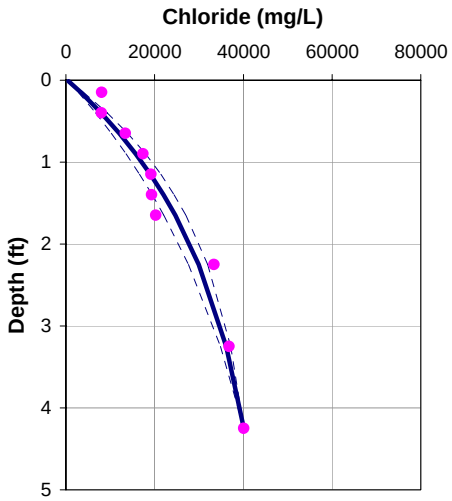
	20111	20111.DAT
Vibracore (cm/year)	-1.6	-1.6
Geoprobe (cm/year)	0.0	-2.6
Difference (cm/year)	1.6	-1.0

OL-VC-20113



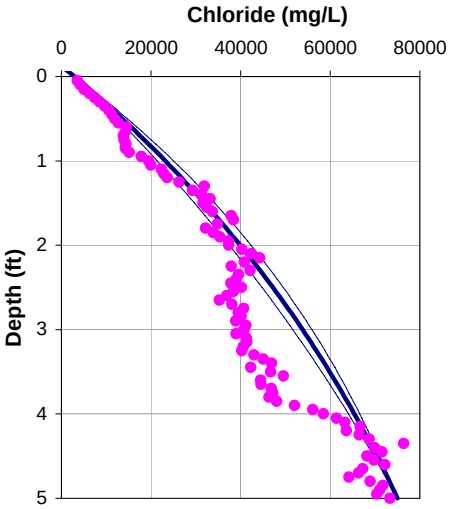
Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year

OL-VC-20113



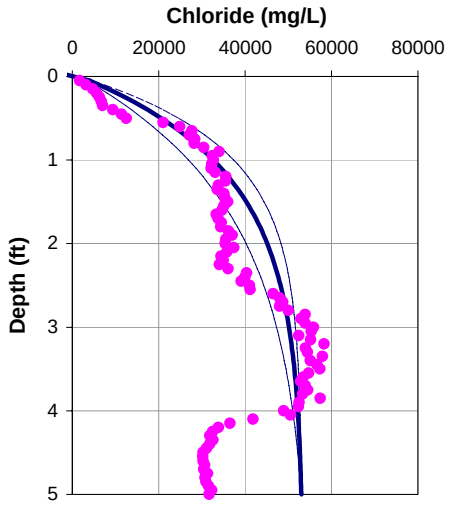
Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year

OL-GP-20113



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -1.0 cm/year

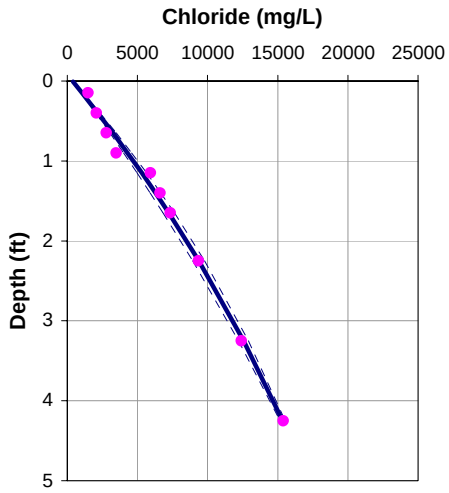
OL-GP-20113.DAT



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -5.2 cm/year

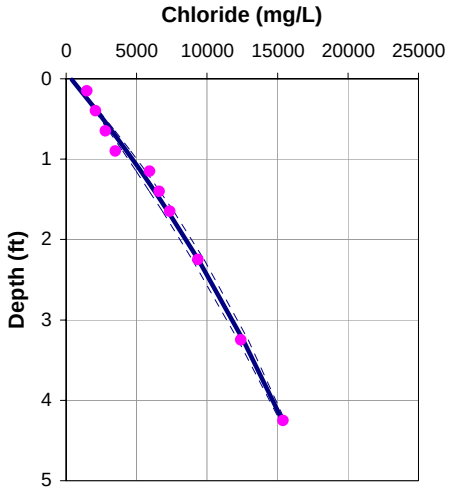
	20113	20113.DAT
Vibracore (cm/year)	-2.4	-2.4
Geoprobe (cm/year)	-1.0	-7.3
Difference (cm/year)	1.4	-4.9

OL-VC-20118



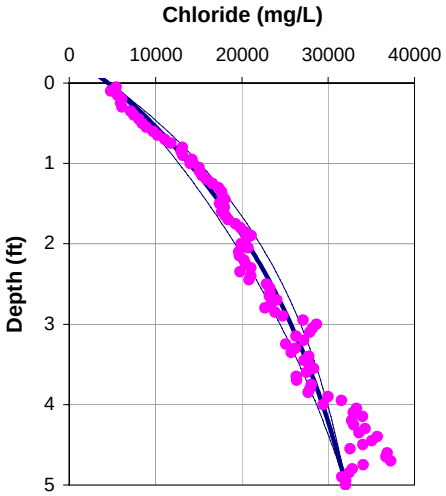
Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -0.7 cm/year

OL-VC-20118



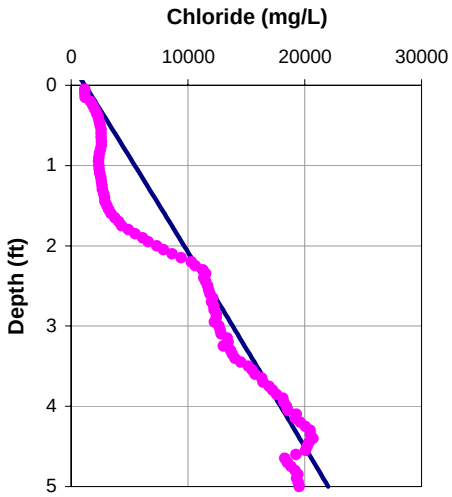
Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -0.7 cm/year

OL-GP-20118



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -1.6 cm/year

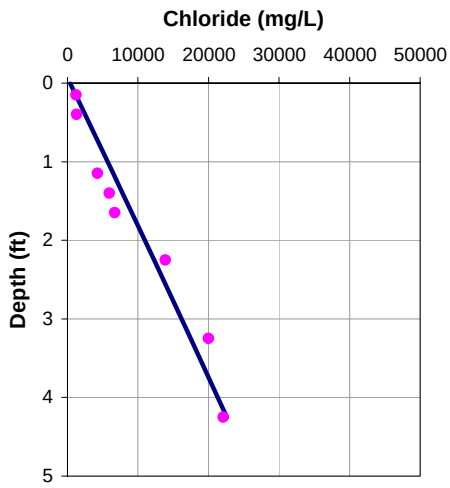
OL-GP-20118.DAT



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

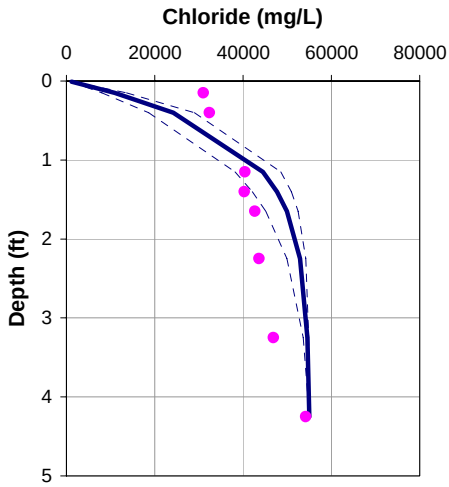
	20118	20118.DAT
Vibracore (cm/year)	-0.7	-0.7
Geoprobe (cm/year)	-1.6	0.0
Difference (cm/year)	-0.9	0.7

OL-VC-20119



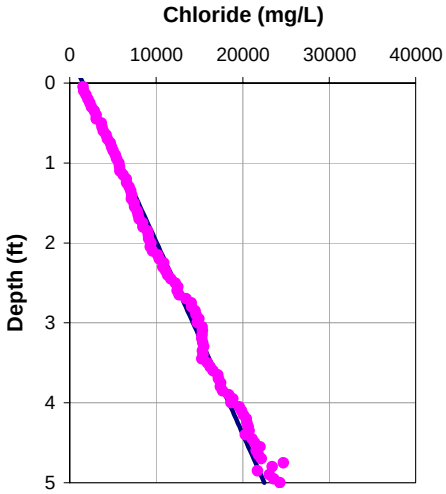
Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-20133



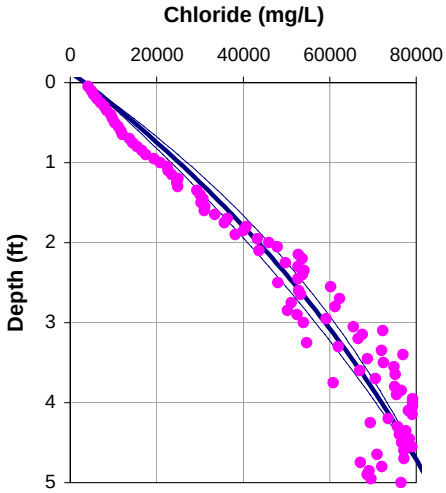
Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -8.5 cm/year

OL-GP-20119



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

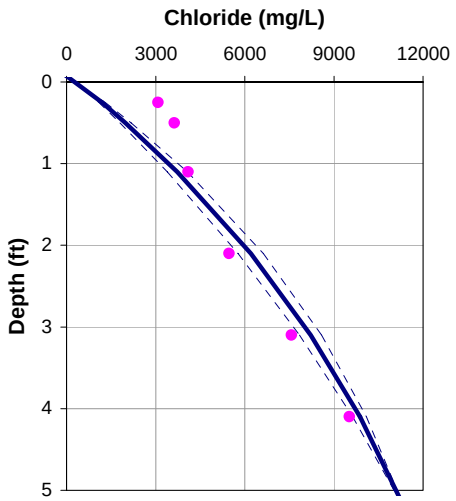
OL-GP-20133



Porosity = 0.65
Dispersion length = 0.1 feet
Upwelling Velocity = -0.9 cm/year

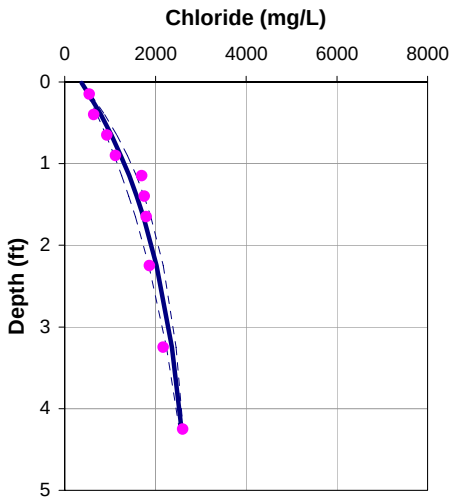
	20119	20133
Vibracore (cm/year)	0.0	-8.5
Geoprobe (cm/year)	0.0	-0.9
Difference (cm/year)	0.0	7.6

OL-VC-40149



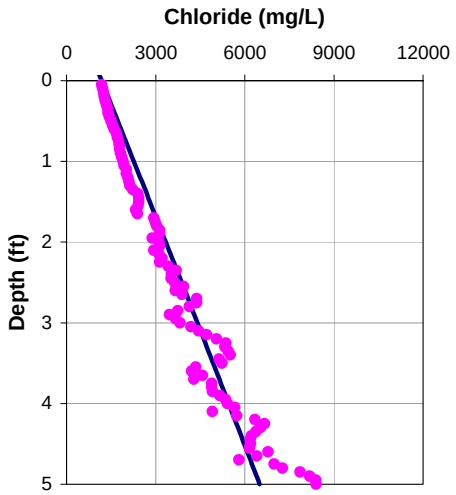
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.5 cm/year

OL-VC-40151



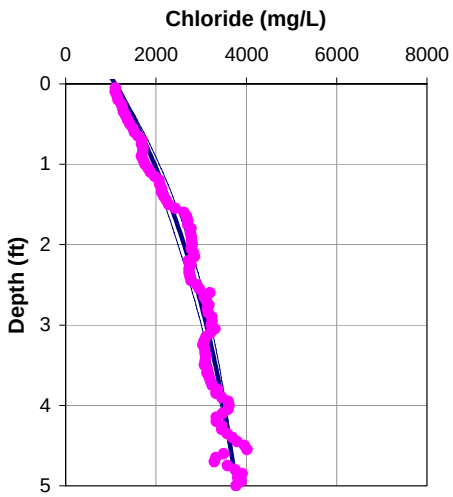
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -3.4 cm/year

OL-GP-40149



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

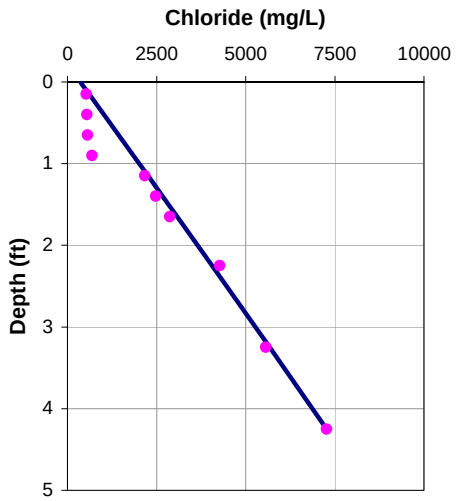
OL-GP-40151



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.0 cm/year

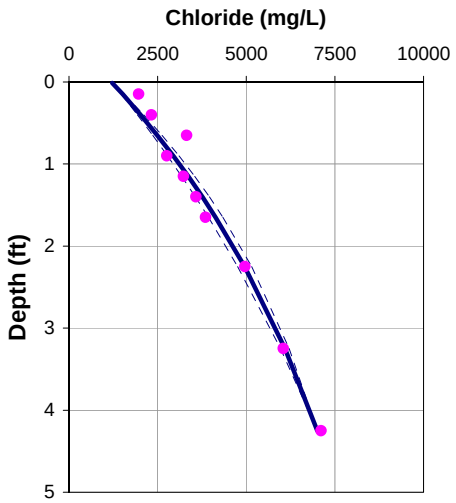
	40149	40151
Vibracore (cm/year)	-1.5	-3.4
Geoprobe (cm/year)	0.0	-2.0
Difference (cm/year)	1.5	1.4

OL-VC-40154



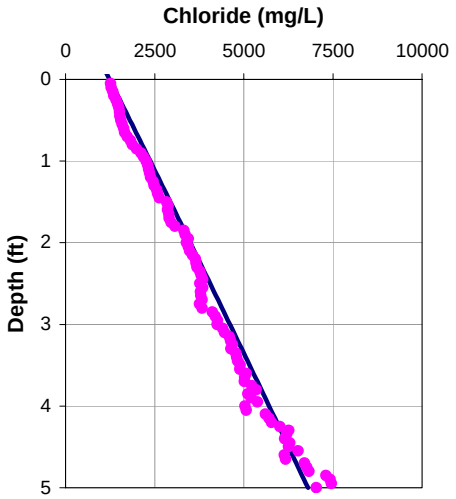
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-40157



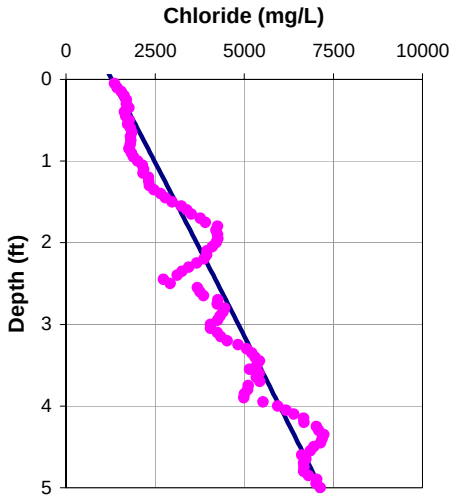
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.7 cm/year

OL-GP-40154



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

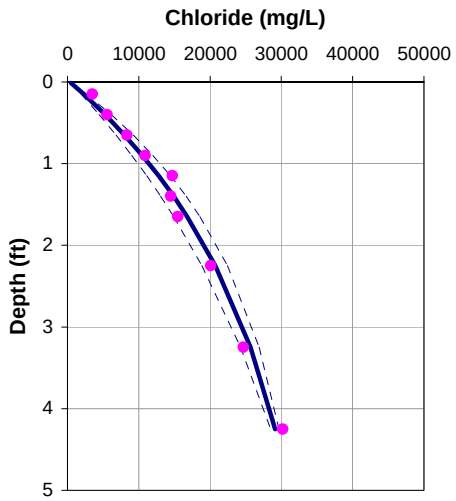
OL-GP-40157



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

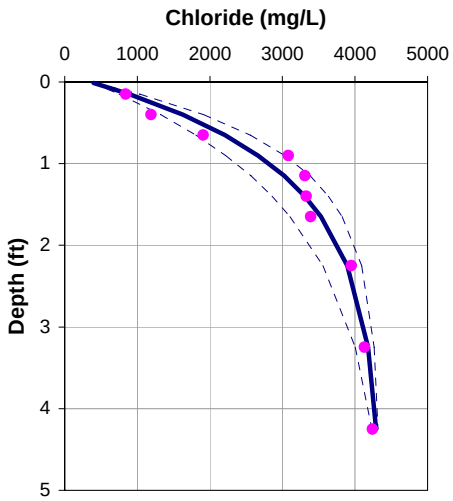
	40154	40157
Vibracore (cm/year)	0.0	-1.7
Geoprobe (cm/year)	0.0	0.0
Difference (cm/year)	0.0	1.7

OL-VC-40165



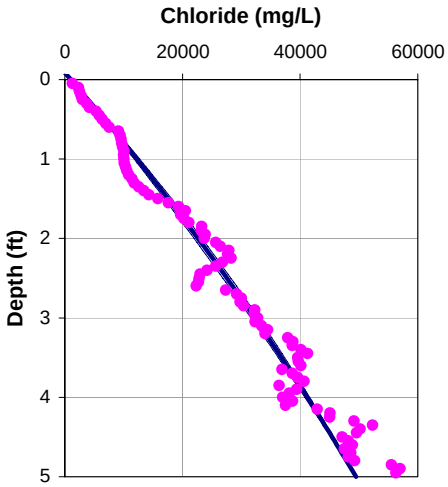
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.6 cm/year

OL-VC-40168



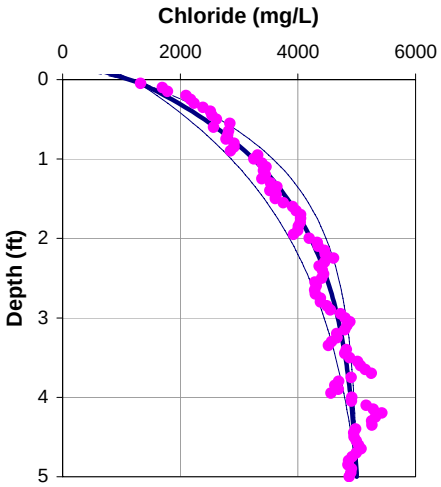
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -7.5 cm/year

OL-GP-40165.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.5 cm/year

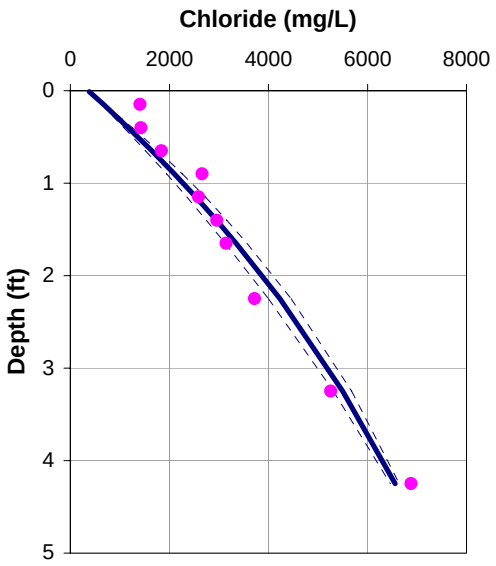
OL-GP-40168.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -5.7 cm/year

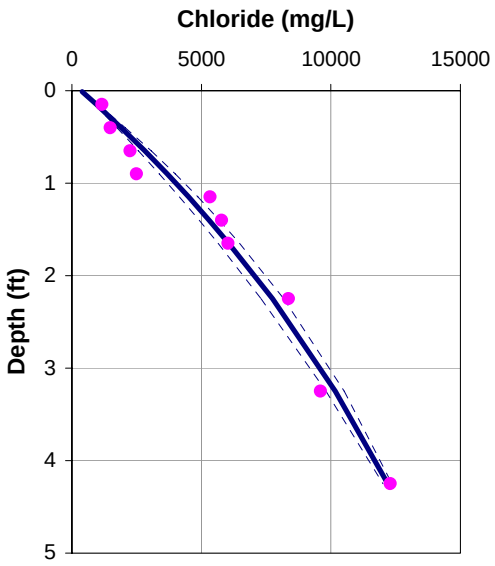
	40165.DAT	40168.DAT
Vibracore (cm/year)	-2.6	-7.5
Geoprobe (cm/year)	-0.5	-5.7
Difference (cm/year)	2.1	1.8

OL-VC-40172



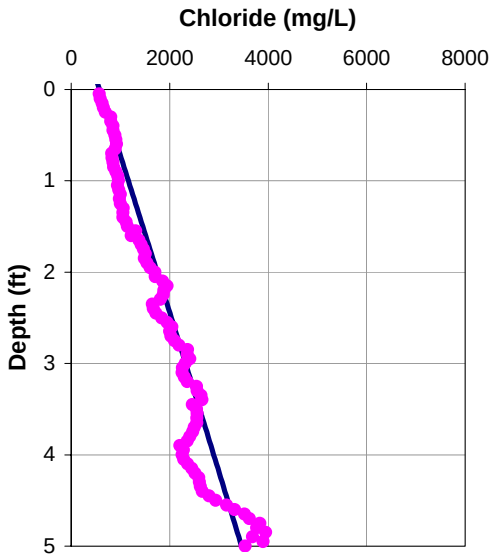
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.3 cm/year

OL-VC-40179



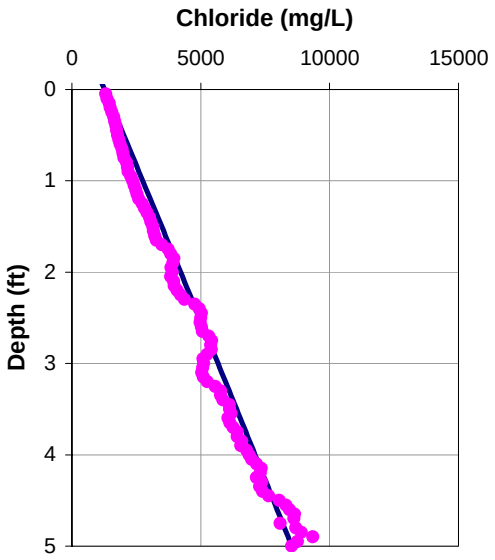
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -1.3 cm/year

OL-GP-40172.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

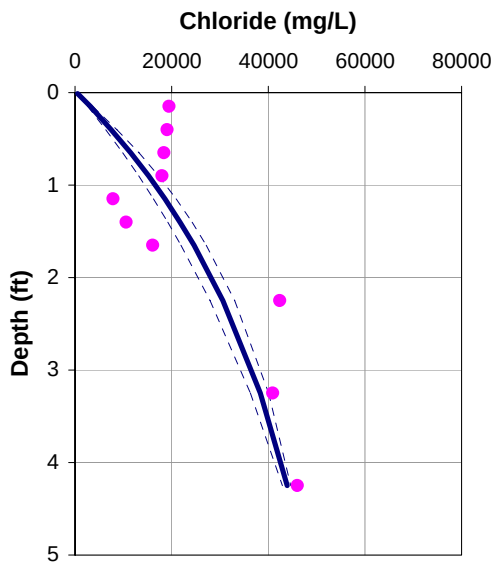
OL-GP-40179.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

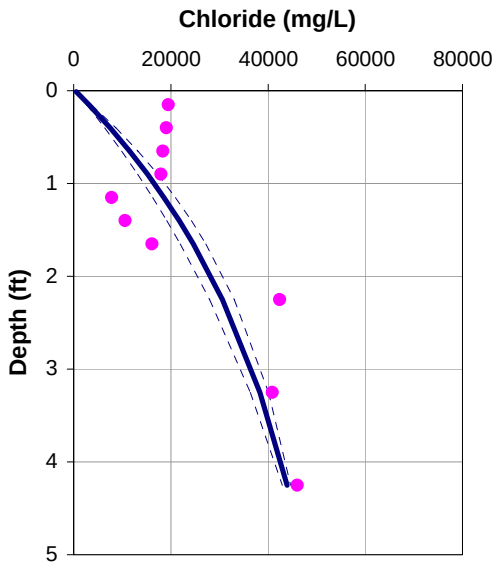
	40172	40179.DAT
Vibracore (cm/year)	-1.3	-1.3
Geoprobe (cm/year)	0.0	0.0
Difference (cm/year)	1.3	1.3

OL-VC-40184



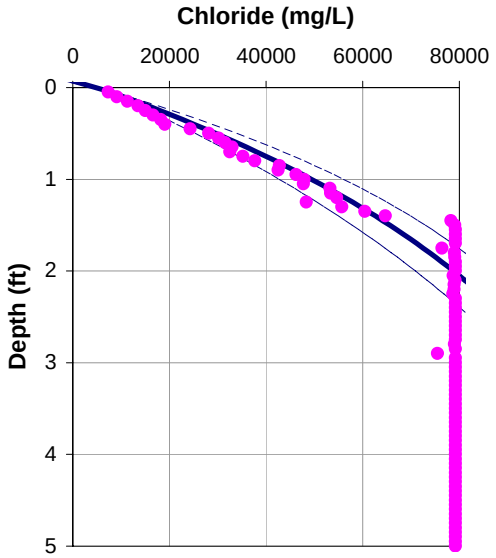
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year

OL-VC-40184



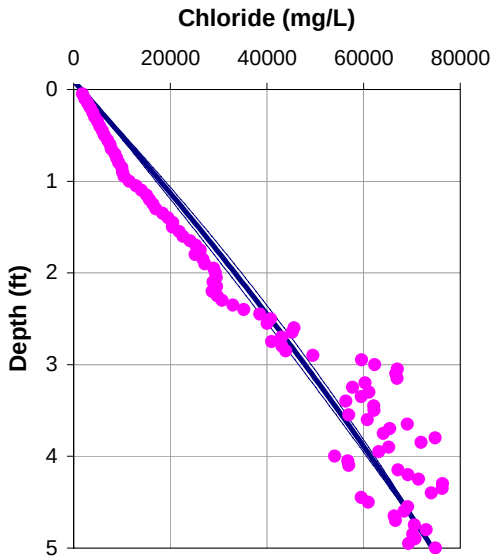
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year

OL-GP-40184



Porosity = 0.75
Dispersion length = 0.0 feet
Upwelling Velocity = -3.0 cm/year

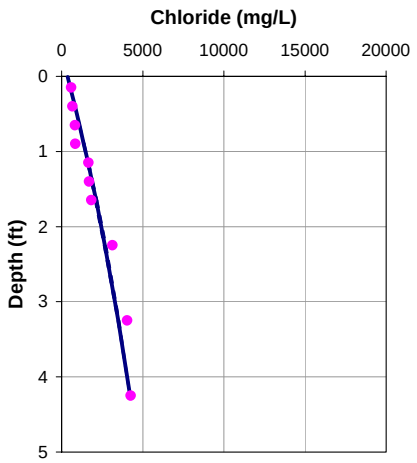
OL-GP-40184.DAT



Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

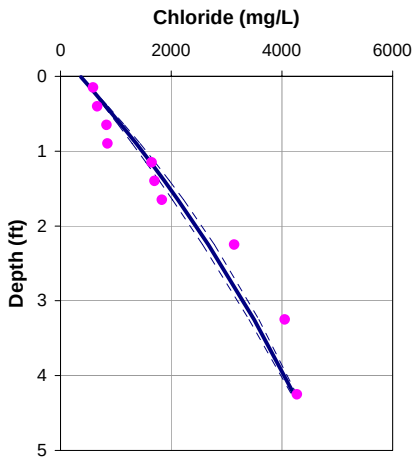
	40184	40184.DAT
Vibracore (cm/year)	-2.4	-2.4
Geoprobe (cm/year)	-3.0	-0.4
Difference (cm/year)	-0.6	2.0

OL-VC-60125



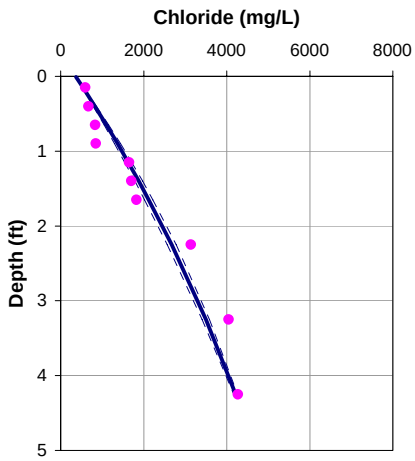
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

OL-VC-60125



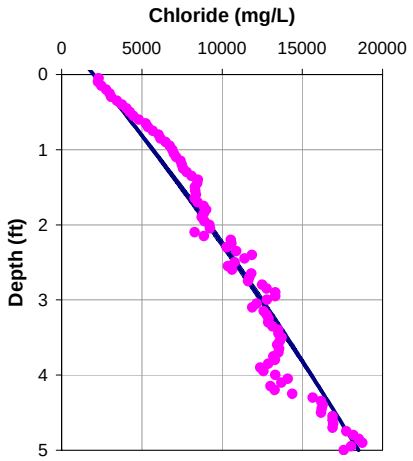
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

OL-VC-60125



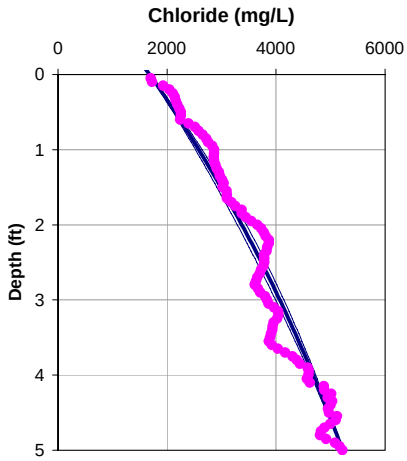
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

OL-GP-60125



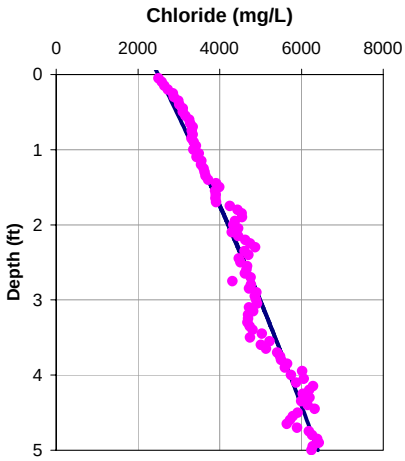
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.3 cm/year

OL-GP-60125.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

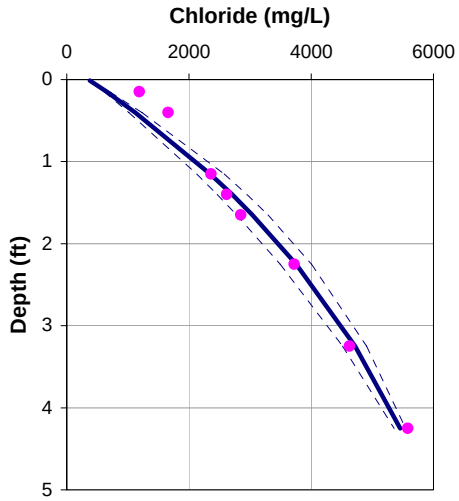
OL-GP-60125-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

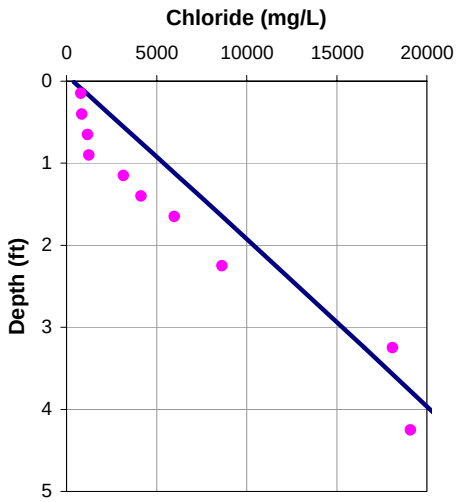
	60125	60125.DAT	60125-A
Vibracore (cm/year)	-0.8	-0.8	-0.8
Geoprobe (cm/year)	-0.3	-0.8	-0.4
Difference (cm/year)	0.5	0.0	0.4

OL-VC-60127



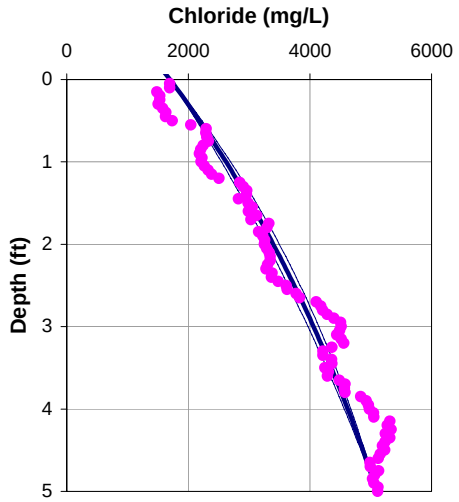
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.7 cm/year

OL-VC-60129



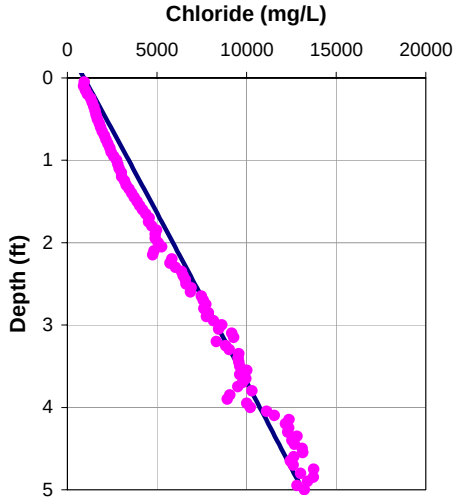
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-GP-60127



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.0 cm/year

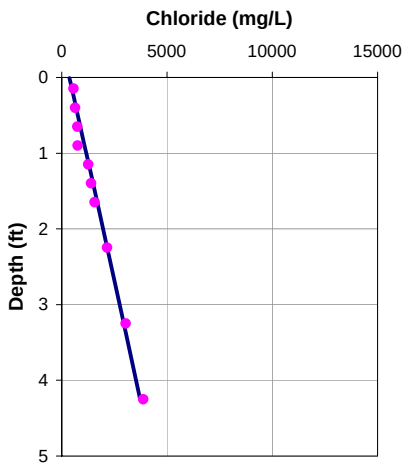
OL-GP-60129



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

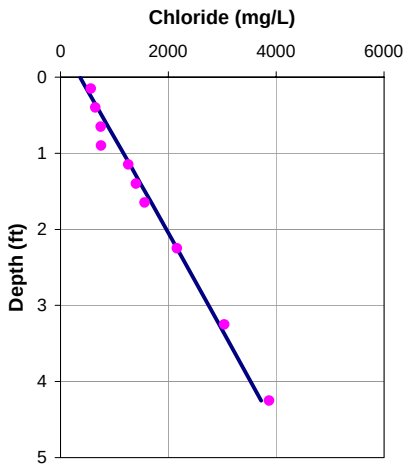
	60127	60129
Vibracore (cm/year)	-1.7	0.0
Geoprobe (cm/year)	-1.0	0.0
Difference (cm/year)	0.7	0.0

OL-VC-60150



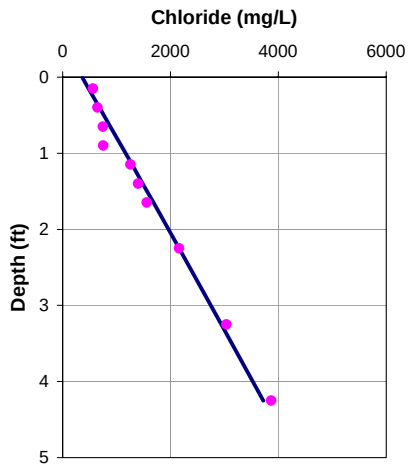
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-60150



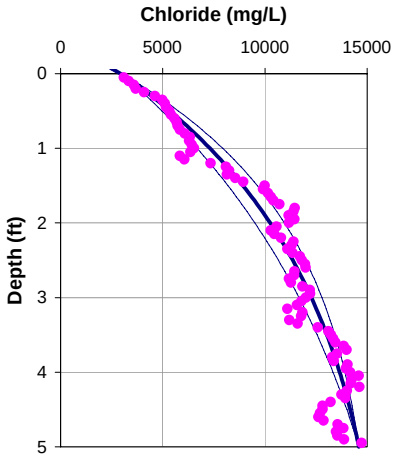
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-60150



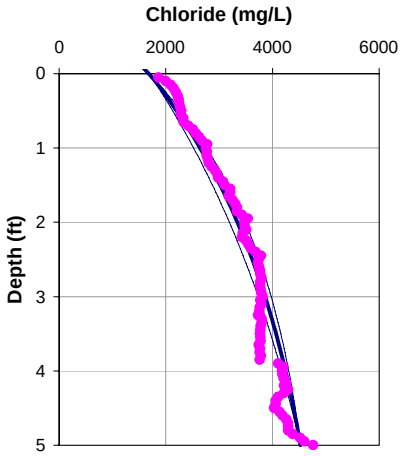
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-GP-60150



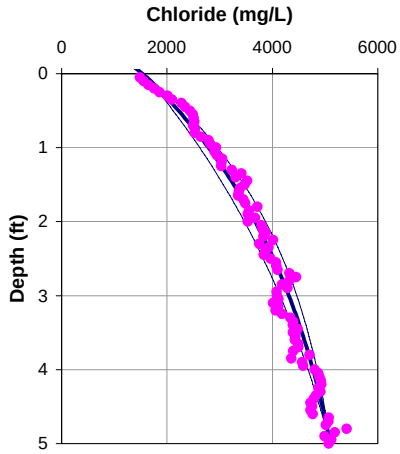
Porosity = 0.7
Dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year

OL-GP-60150.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

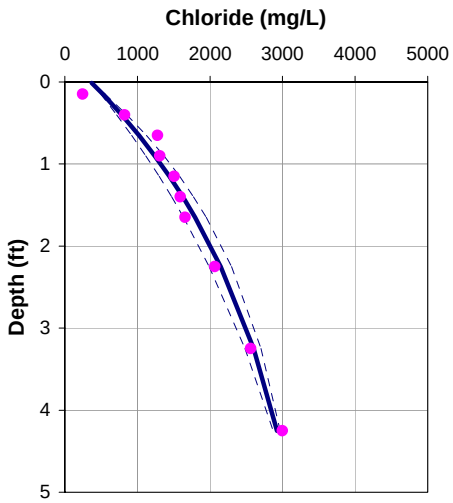
OL-GP-60150-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

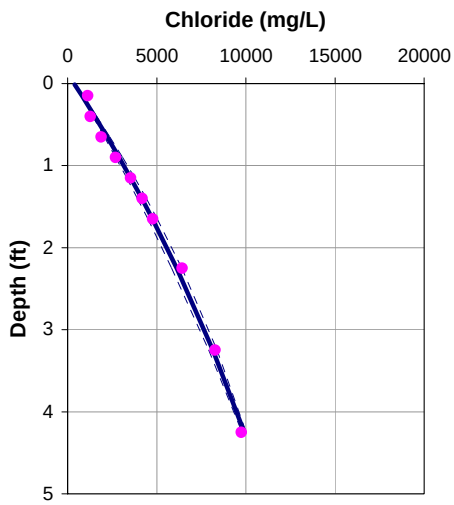
	60150	60150.DAT	60150-A
Vibracore (cm/year)	0.0	0.0	0.0
Geoprobe (cm/year)	-2.4	-1.9	-2.1
Difference (cm/year)	-2.4	-1.9	-2.1

OL-VC-60152



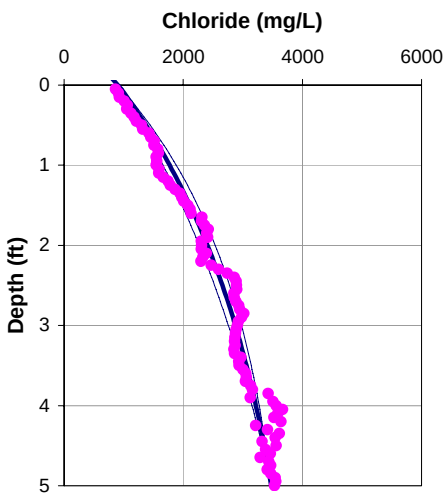
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

OL-VC-60154



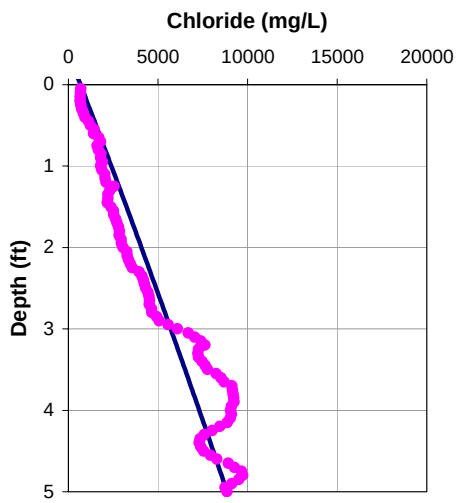
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.9 cm/year

OL-GP-60152



Porosity = 0.7
Dispersion length = 0.1 feet
Upwelling Velocity = -1.9 cm/year

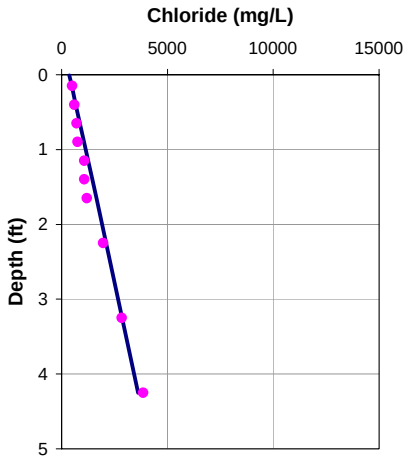
OL-GP-60154



Porosity = 0.7
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

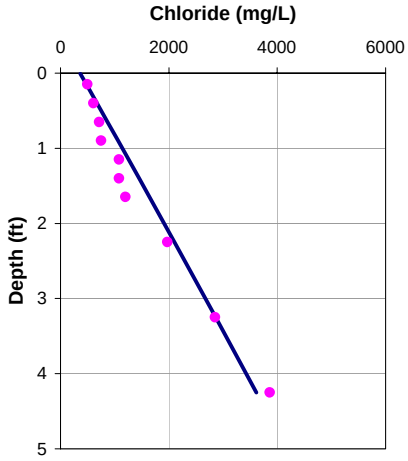
	60152	60154
Vibracore (cm/year)	-2.1	-0.9
Geoprobe (cm/year)	-1.9	-0.2
Difference (cm/year)	0.2	0.7

OL-VC-60162



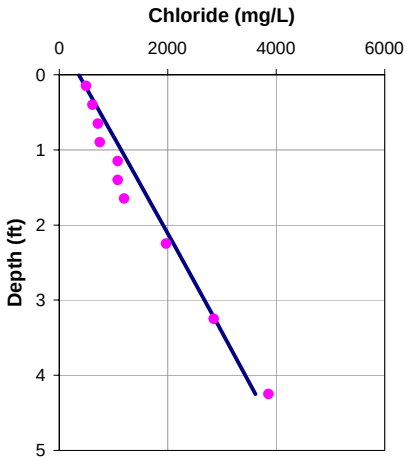
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-60162



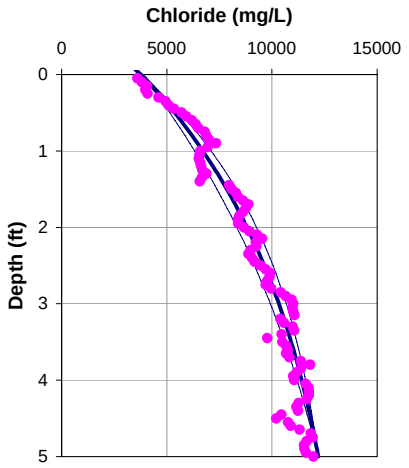
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-60162



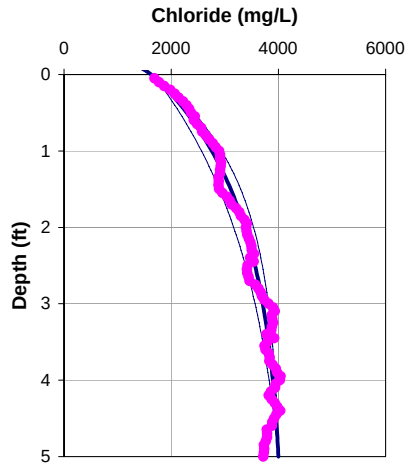
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-GP-60162



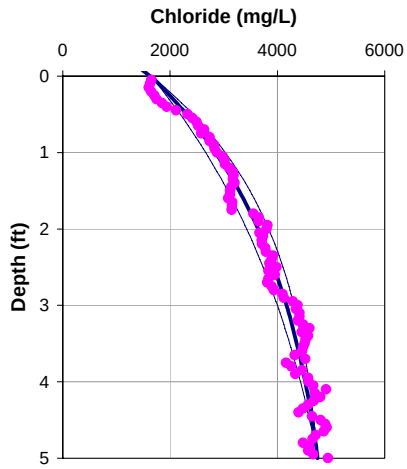
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

OL-GP-60162.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.8 cm/year

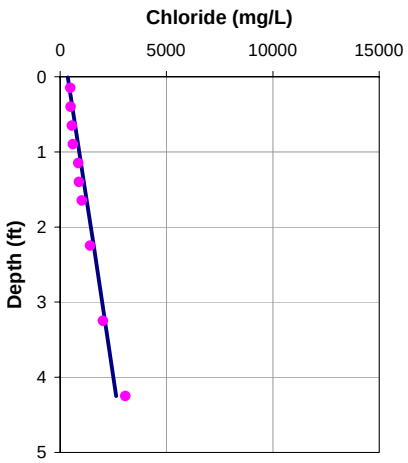
OL-GP-60162-A



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.6 cm/year

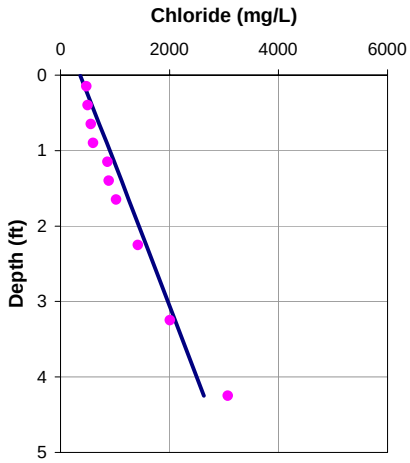
	60162	60162.DAT	60162-A
Vibracore (cm/year)	0.0	0.0	0.0
Geoprobe (cm/year)	-2.1	-3.8	-2.6
Difference (cm/year)	-2.1	-3.8	-2.6

OL-VC-60168



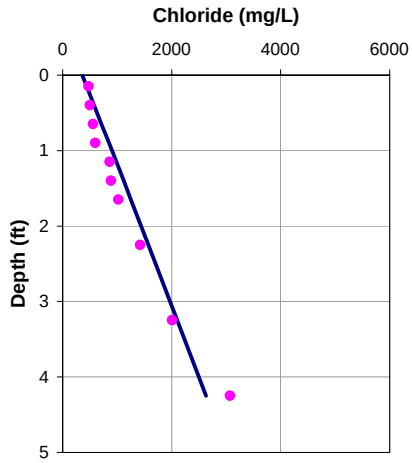
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-60168



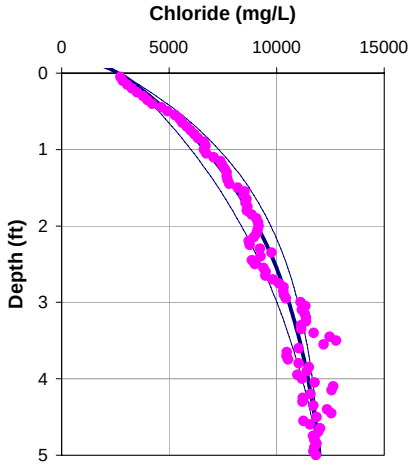
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-60168



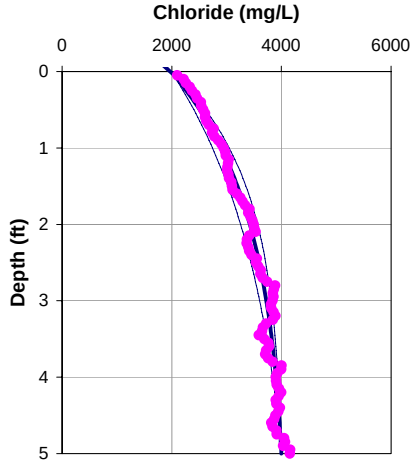
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-GP-60168



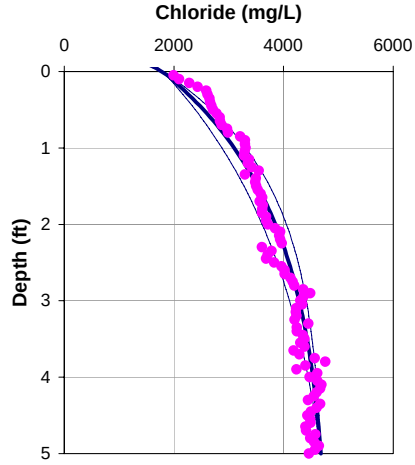
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.2 cm/year

OL-GP-60168.DAT



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.5 cm/year

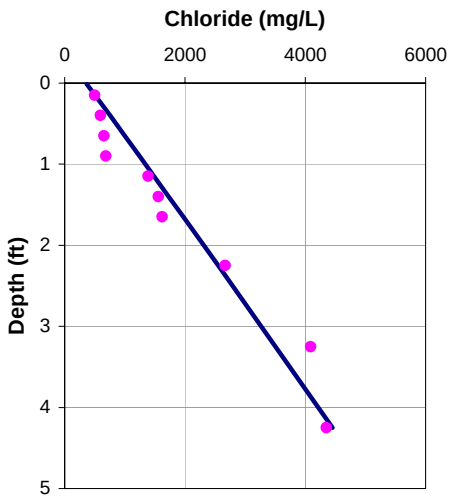
OL-GP-60168-A



Porosity = 0.70
Dispersion length = 0.1
Upwelling Velocity = -3.5

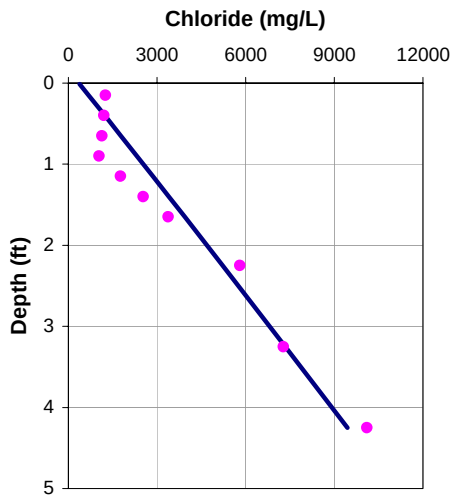
	60168	60168.DAT	60168-A
Vibracore (cm/year)	0.0	0.0	0.0
Geoprobe (cm/year)	-3.2	-3.5	-3.5
Difference (cm/year)	-3.2	-3.5	-3.5

OL-VC-60171



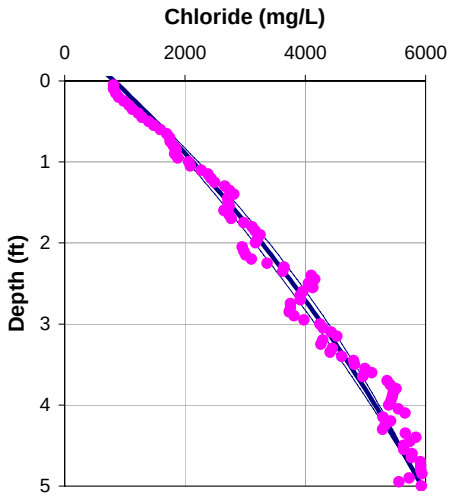
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-60179



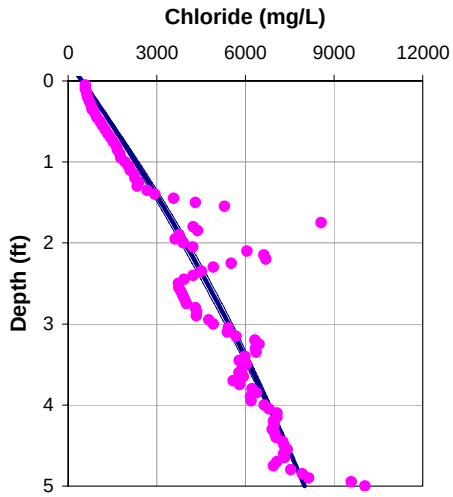
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-GP-60171



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.8 cm/year

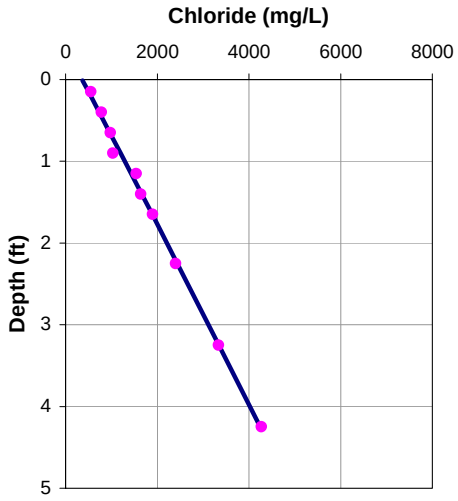
OL-GP-60179



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.6 cm/year

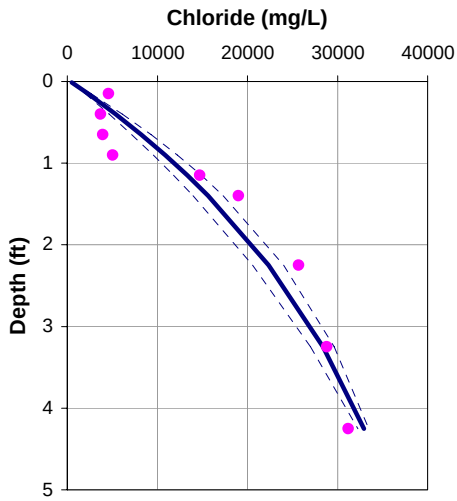
	60171	60179
Vibracore (cm/year)	0.0	0.0
Geoprobe (cm/year)	-0.8	-0.6
Difference (cm/year)	-0.8	-0.6

OL-VC-60181



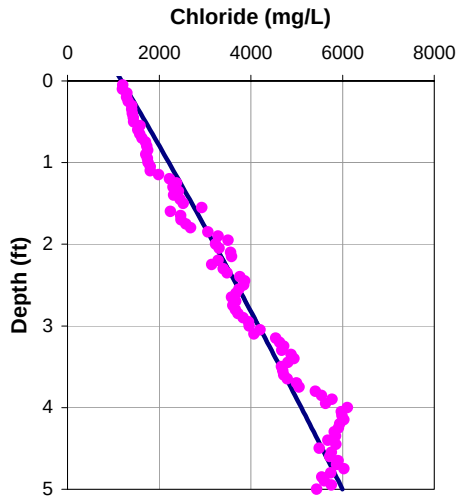
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-60191



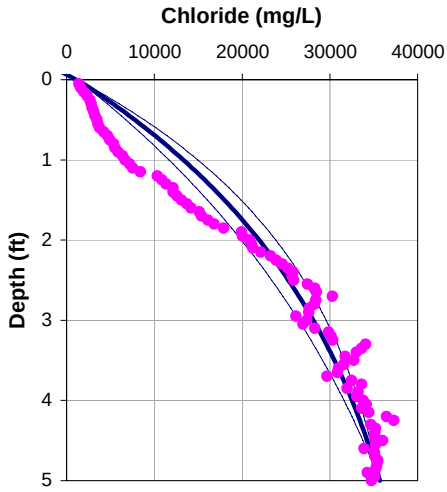
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year

OL-GP-60181



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.2 cm/year

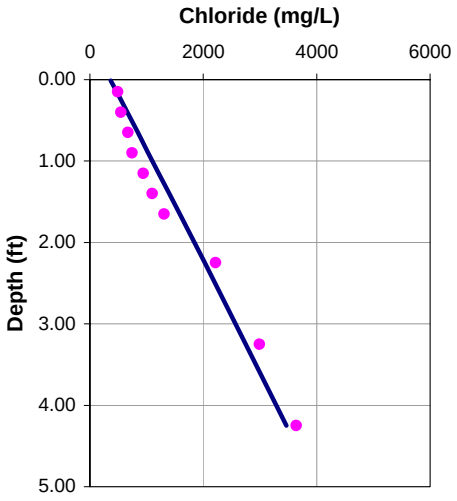
OL-GP-60191



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -2.1 cm/year

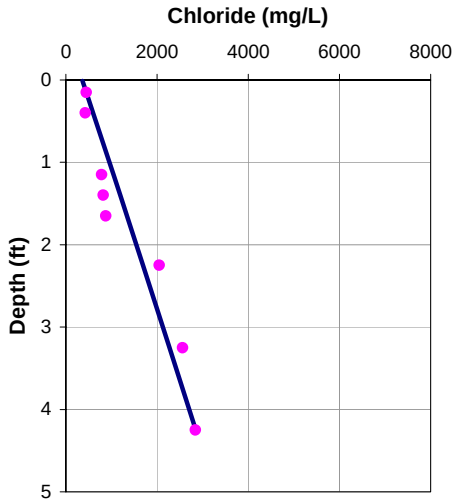
	60181	60191
Vibracore (cm/year)	0.0	-1.8
Geoprobe (cm/year)	-0.2	-2.1
Difference (cm/year)	-0.2	-0.3

OL-VC-70089



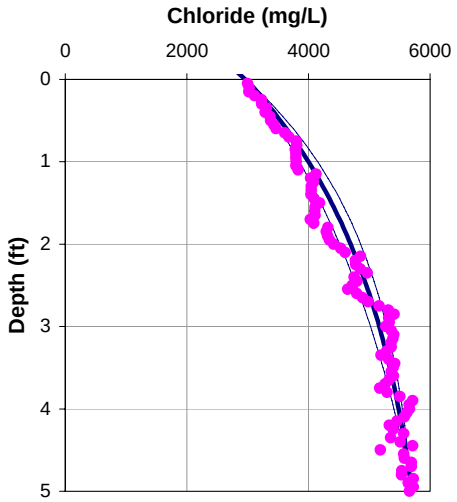
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-VC-70093



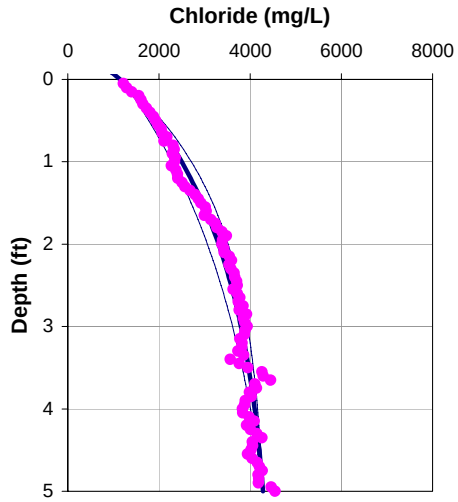
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = 0.0 cm/year

OL-GP-70089-A



Porosity = 0.7
Dispersion length = 0.1 feet
Upwelling Velocity = -2.5 cm/year

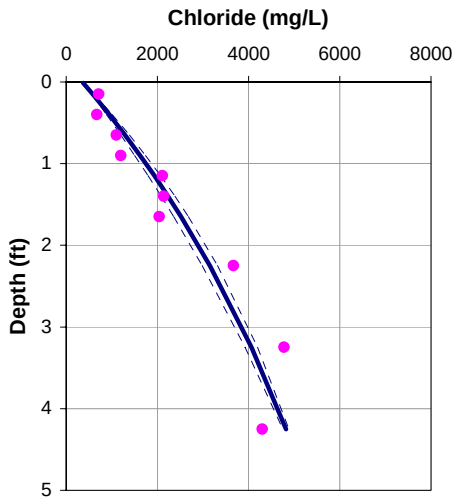
OL-GP-70093



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -3.2 cm/year

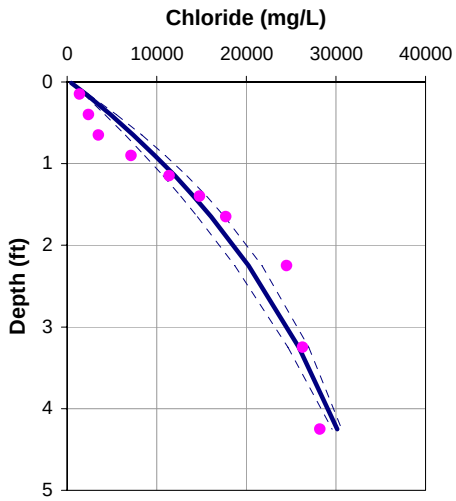
	70089-A	70093
Vibracore (cm/year)	0.0	0.0
Geoprobe (cm/year)	-2.5	-3.2
Difference (cm/year)	-2.5	-3.2

OL-VC-70100



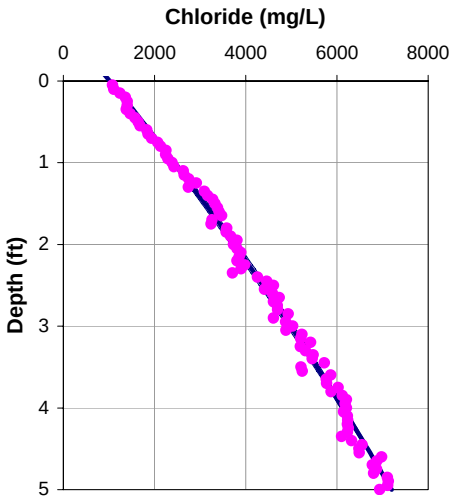
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.2 cm/year

OL-VC-70102



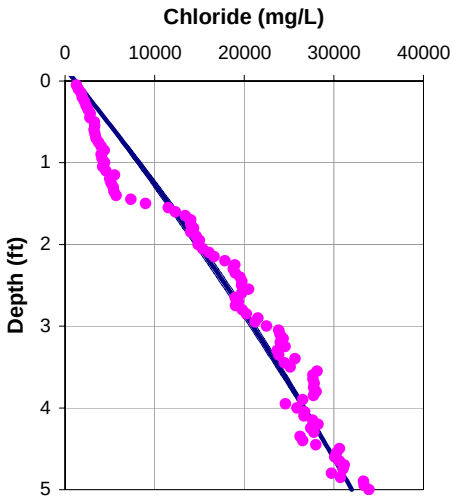
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.7 cm/year

OL-GP-70100



Porosity = 0.7
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

OL-GP-70102



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -0.4 cm/year

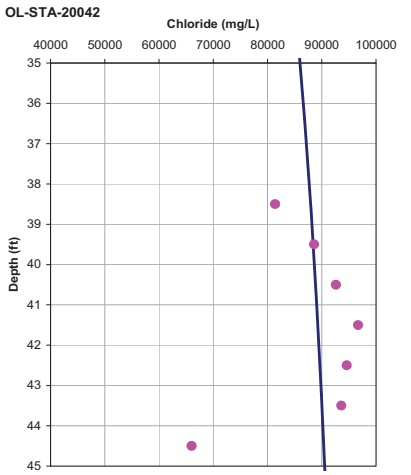
	70100	70102
Vibracore (cm/year)	-1.2	-1.7
Geoprobe (cm/year)	-0.4	-0.4
Difference (cm/year)	0.7	1.3

Attachment X

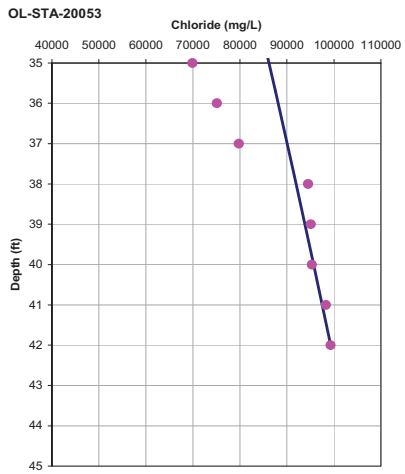
Evaluation of Velocity in Silt and Clay Unit

Attachment X
Evaluation of Velocity in Silt and Clay Unit

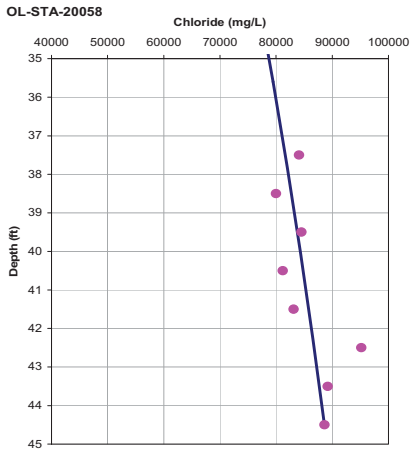
Three borings were advanced approximately 10 feet into the silt and clay unit in 2007 SMU-2. These borings are identified as OL-STA-20042, OL-STA-20053, and OL-STA-20058 and their locations are shown in Figure X-1. Pore water samples were collected at approximately one foot intervals after the boring had been advanced approximately three feet into the silt and clay unit. A total of eight pore water samples were collected at each location. The pore water was analyzed for common cations and anions. Plots of chloride concentrations with depth are shown below for the three locations. The velocity has been estimated using the technique described in Section 3. In these evaluations a lake water concentration of 359 mg/L was assumed.



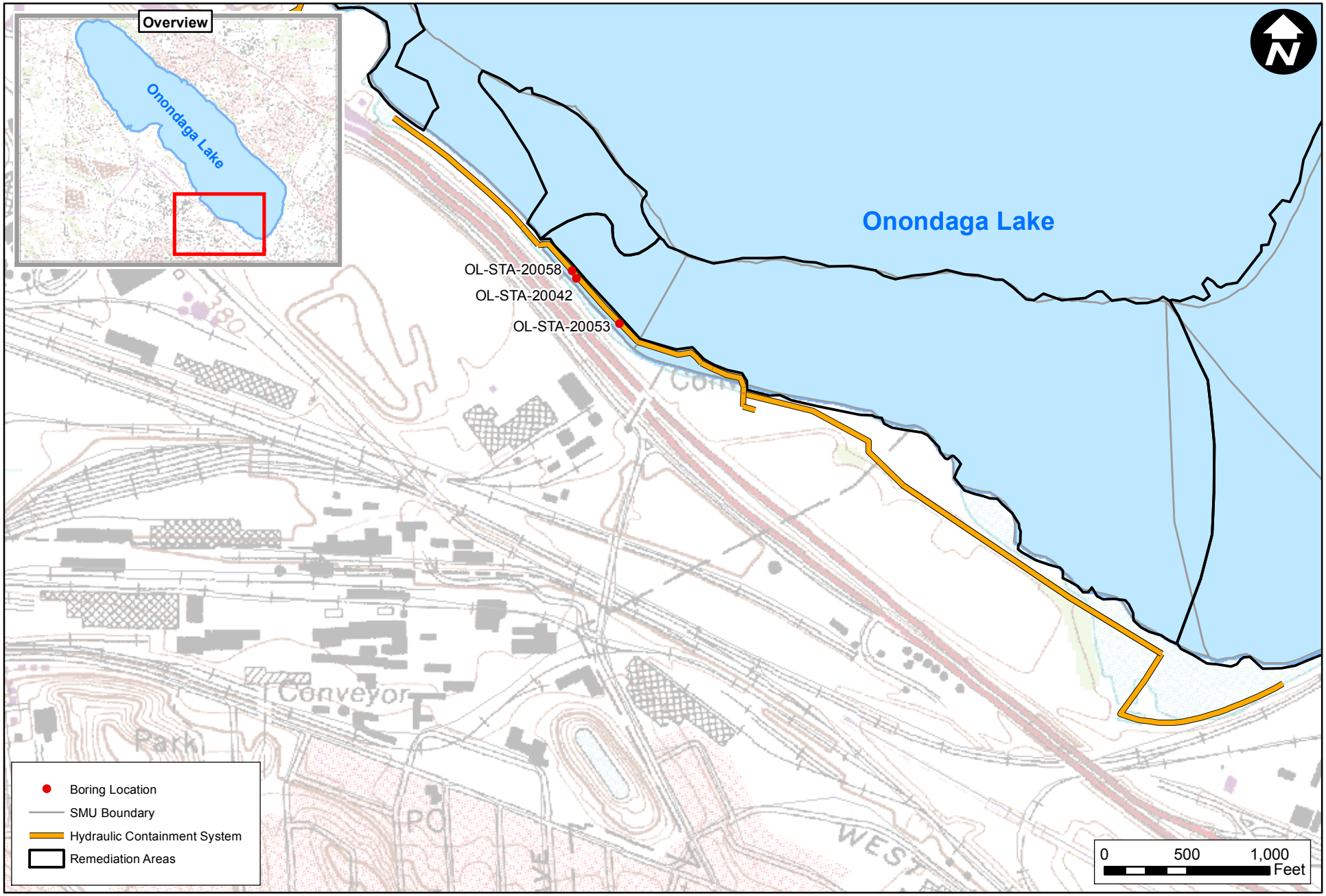
porosity = 0.65
dispersion length = 0.5 feet
Upwelling Velocity = -0.4 cm/year



porosity = 0.65
dispersion length = 0.5 feet
Upwelling Velocity = -0.1 cm/year



porosity = 0.65
dispersion length = 0.5 feet
Upwelling Velocity = -0.2 cm/year



P:\815\GIS\11-09 Report Figures\Boring Location Map.mxd
Map Date 11/10/2009 8:22:04 AM By: jstephens

Figure X-I Boring Location Map

Attachment XI

Sensitivity Evaluations

Attachment XI
Sensitivity Evaluations

The sensitivity of calculated velocities from Geoprobe Conductivity data to chloride-conductivity factor, porosity, and dispersion length was evaluated for data from location GP-40168. In addition, the sensitivity of calculated velocities to porosity and dispersion length were evaluated for chloride data from VC-40091, VC-40092, VC-70058. The evaluations indicate that calculated upwelling velocities are sensitive to the dispersion length.

Because the calculated upwelling velocities are sensitive to dispersion length, it is important to critically evaluate what is an appropriate dispersion length to use in the analyses of upwelling velocities. The range of dispersion lengths that were evaluated in the sensitivity analyses were based on language contained in an email from Don Hesler, NYSDEC, to Tim Johnson at Parsons dated December 10, 2007. This email stated:

Schulze-Makuch (2005) compiled data on dispersion length from 109 authors for different types of media including consolidated media and unconsolidated sediment. Schulze-Makuch discusses that the data included in the compilation differ in the degree of reliability,but it is Earth Tech's opinion that for purposes of choosing a range of values to use in a simple sensitivity analysis, these should be considered adequate. Based on review of the dispersion lengths reported for unconsolidated sediment from scales on the order of 10 ft (ranging from 3 to 16 ft), a range in dispersion lengths from about 0.01 ft to about 0.8 ft should be selected for use in the sensitivity analysis."

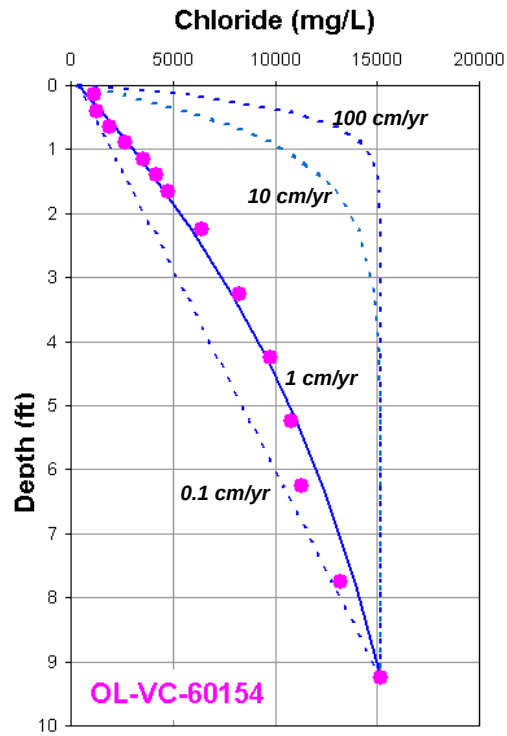
For the selection of an appropriate dispersion length for shallow sediments in Onondaga Lake it is important to understand the physical meaning of a dispersion length. The dispersion length is a measure of the variability in the velocity distribution in sediments; a small dispersion length implies that the velocity variations are small and a large dispersion length indicates that there are significant velocity variations. The variations in velocity are a function of heterogeneities in the hydraulic conductivity distribution; a homogeneous media has a very small dispersion length whereas a very heterogeneous media has a larger dispersion length. Therefore, it is important to understand sediment heterogeneity to select an appropriate dispersion length.

Before assessing sediment heterogeneities, it is necessary to understand the depth interval of interest for estimating the dispersion length. The depth interval of interest is defined as that interval over which dispersive transport of chloride is significant. This interval can be determined by examining the dispersive flux equation

$$flux = -D\frac{\partial C}{\partial z} \qquad (1)$$

where: D = sum of dispersion and diffusion coefficients, C = chloride concentration, and z = vertical distance.

From this equation it is obvious that the magnitude of the dispersive flux is dependent on the change in chloride concentration with depth, and that the dispersive flux is zero if the chloride concentration is constant with depth.



The expected change in chloride concentration is illustrated on the plot to the right for velocities of 0.1 cm/year, 10 cm/year and 100 cm/year, respectively. The expected change in chloride concentrations is a function of the upwelling velocity; at an upwelling velocity of 1 cm/year the rate of change in chloride concentration with depth is relatively constant over the depth interval 0 to 9 feet, at an upwelling velocity of 10 cm/year, the chloride concentration is changing significantly with depth only in the upper three feet, and at an upwelling velocity of 100 cm/year the chloride concentration is only changing significantly with depth in the upper foot. Therefore, it can be concluded that the appropriate depth intervals for evaluating the dispersion length for velocities of 10 cm/year and 100 cm/year are approximately 3 feet and 1 foot, respectively as at deeper depths there is no significant dispersive transport as the term $\frac{\partial C}{\partial z}$ in equation 1 is approximately zero.

The dispersion coefficient is defined as

$$D = \omega D^* + \alpha_L v \qquad (2)$$

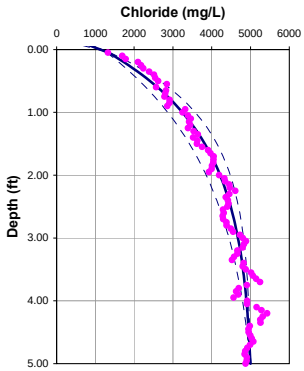
where: D^* is the diffusion coefficient, ω is coefficient related to tortuosity, v is the upwelling velocity and α_L is dispersion length. When the upwelling velocity is small, the term $\alpha_L v$ approaches zero and the dispersion coefficient is mainly a function of the diffusion coefficient. Therefore, the depth interval of interest for estimating the dispersion length for purposes of analyzing upwelling velocities is only the upper few feet of sediments (deeper depths are not of interest either because chloride concentrations are not changing with depth when upwelling velocities are more than a few centimeters per year or because the term $\alpha_L v$ is small relative to the diffusion coefficient when upwelling velocities are low).

A review of the boring logs for the many borings that have been advanced in the lake indicate that typically the lithologic characteristics of the upper few feet of sediment are relatively uniform; typically silt with a little clay and trace fine sand. As a result, the general observation is that heterogeneity with respect to composition of sediments is small.

A few researchers have specially looked at dispersion in lacustrine sediments. A study by Cornett and others (1989), where chloride and tritium depth profiles within the sediments of Perch Lake in Ontario were used to estimate groundwater upwelling velocities in the range of 0 to 5 cm/year, specified that dispersion was approximately equal to diffusion for the fine-grained sediments in this lake. This conclusion was similar to that reached by Lerman (1979). Another study by Roychoudhury (2001) that specifically looked at dispersion in unconsolidated aquatic sediments also concluded that dispersion is approximately equal to diffusion for the range of upelling velocities that we examined in Onondaga Lake. These studies indicated that the appropriate dispersion length for evaluation of fine-grained lake lacustrine sediments is very small.

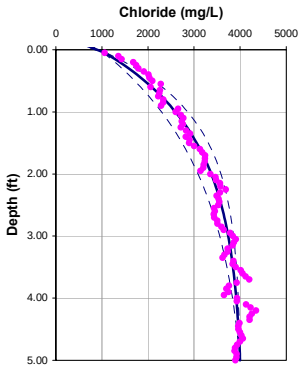
Several researchers have attempted to develop a general relationship between the scale of a problem and the dispersion length (Neuman 1990 and 2006, Xu and Eckstein 1995, and Schulze-Makuch 2005). These studies all relied on compilations of dispersion lengths determined by a large number of researchers, but in most case the dispersion lengths were determined for horizontal groundwater flow rather than vertical groundwater flow. Based on these studies, the estimated dispersion length, when the depth interval of interest is five feet, is in the range of 0.045 feet to 0.496 feet. The estimate based on the work of Neuman (1990), which in our opinion is the most rigorous of the evaluations, is about 0.1 foot. We have used this value in our evaluation of data from the upper five feet and in our opinion this value of the dispersion length likely overestimates the actual dispersion length at most locations because of the relatively uniform composition of shallow sediments. In the Lake RI, a dispersion length of 1 cm was used for a depth interval of interest of 3 meters which is significantly lower than the preferred value used in these analyses.

OL-GP-40168



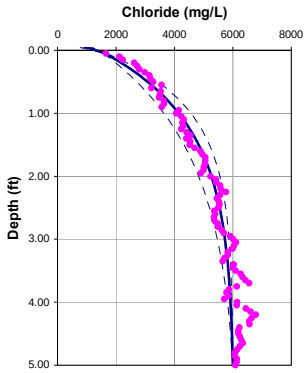
porosity = 0.75
dispersion length = 0.1 feet
Upwelling Velocity = -5.7 cm/year

OL-GP-40168-sen2



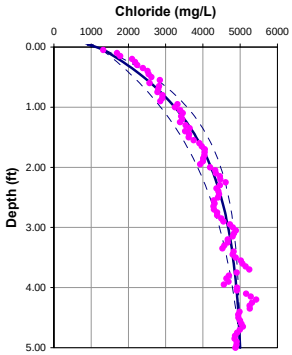
porosity = 0.75
dispersion length = 0.1 feet
Upwelling Velocity = -5.7 cm/year

OL-GP-40168-sen1



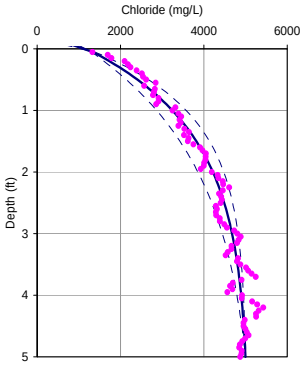
porosity = 0.75
dispersion length = 0.1 feet
Upwelling Velocity = -6.9 cm/year

OL-GP-40168



porosity = 0.52
dispersion length = 0.1 feet
Upwelling Velocity = -2.7 cm/year

OL-GP-40168.DAT

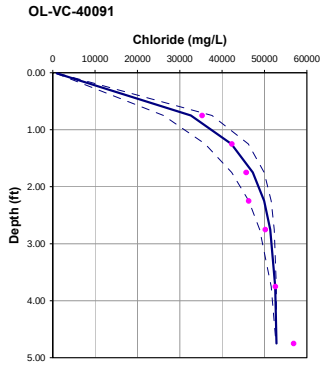


Porosity = 0.75
Dispersion length = 0.8 feet
Upwelling Velocity = -13.0 cm/year

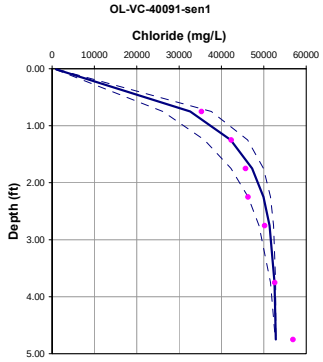
Comparison of Results

Locations	Chloride - Conductivity Factor	Porosity	Dispersion Length (feet)	Calculated Velocity (cm/year)
GP-40168	0.8	0.75	0.1	-5.7
GP-40168-sen2	1.0	0.75	0.1	-5.7
GP-40168-sen1	0.64	0.75	0.1	-6.9
GP-40168	0.8	0.52	0.1	-2.7
GP-40168	0.8	0.75	0.8	-13.0

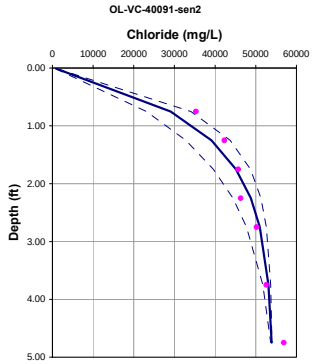
VC-40091



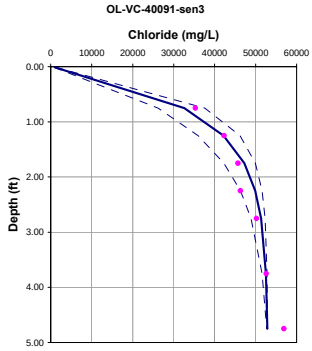
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -10.3 cm/year



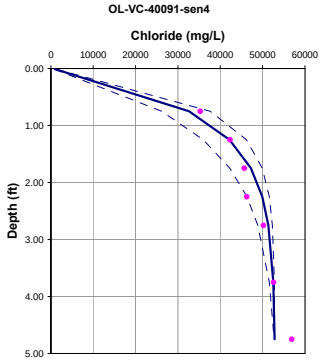
Porosity = 0.75
Dispersion length = 0.5 feet
Upwelling Velocity = -24.4 cm/year



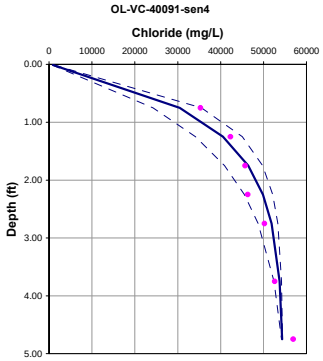
Porosity = 0.75
Dispersion length = 0.8 feet
Upwelling Velocity = -37.5 cm/year



Porosity = 0.52
Dispersion length = 0.1 feet
Upwelling Velocity = -4.8 cm/year



Porosity = 0.52
Dispersion length = 0.5 feet
Upwelling Velocity = -11.5 cm/year

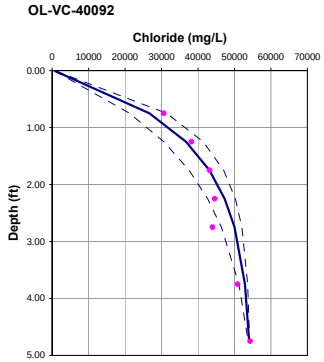


Porosity = 0.52
Dispersion length = 0.8 feet
Upwelling Velocity = <-37.5 cm/year

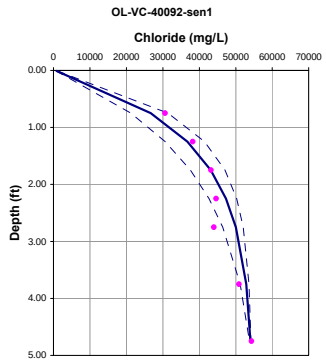
Comparison of Results

Locations	Porosity	Dispersion Length (feet)	Calculated Velocity (cm/year)
VC-40091	0.75	0.1	-10.3
VC-40091-sen1	0.75	0.5	-24.4
VC-40091-sen2	0.75	0.8	<-37.5
VC-40091-sen3	0.52	0.1	-4.8
VC-40091-sen4	0.52	0.5	-11.5
VC-40091-sen5	0.52	0.8	<-37.5

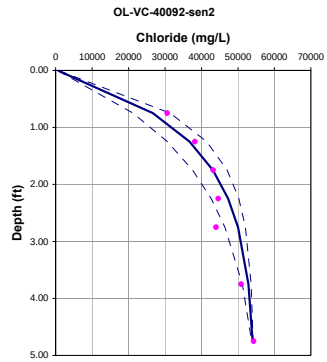
VC-40092



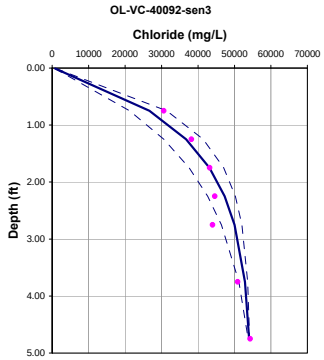
Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -6.8 cm/year



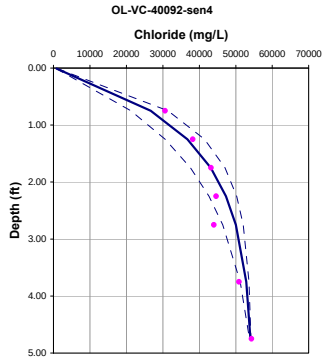
Porosity = 0.75
Dispersion length = 0.5 feet
Upwelling Velocity = -11.0 cm/year



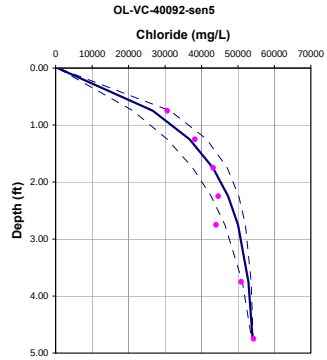
Porosity = 0.75
Dispersion length = 0.8 feet
Upwelling Velocity = -20.8 cm/year



Porosity = 0.52
Dispersion length = 0.1 feet
Upwelling Velocity = -3.2 cm/year



Porosity = 0.52
Dispersion length = 0.5 feet
Upwelling Velocity = -5.2 cm/year

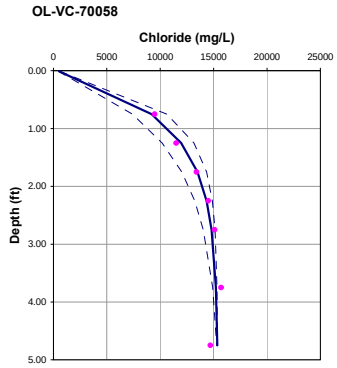


Porosity = 0.52
Dispersion length = 0.8 feet
Upwelling Velocity = -9.9 cm/year

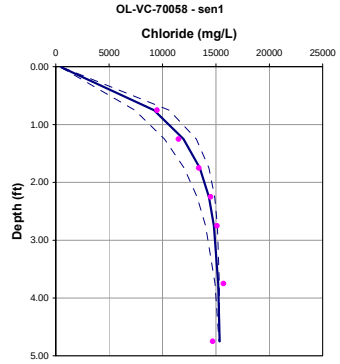
Comparison of Results

Locations	Porosity	Dispersion Length (feet)	Calculated Velocity (cm/year)
VC-40092	0.75	0.1	-6.8
VC-40092-sen1	0.75	0.5	-11.0
VC-40092-sen2	0.75	0.8	-20.8
VC-40092-sen3	0.52	0.1	-3.2
VC-40092-sen4	0.52	0.5	-5.2
VC-40092-sen5	0.52	0.8	-9.9

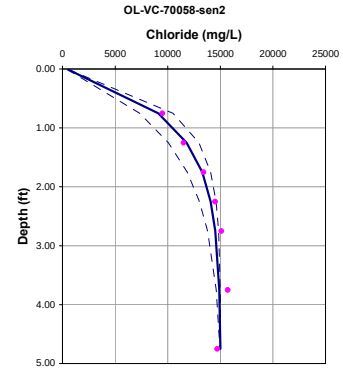
VC-70058



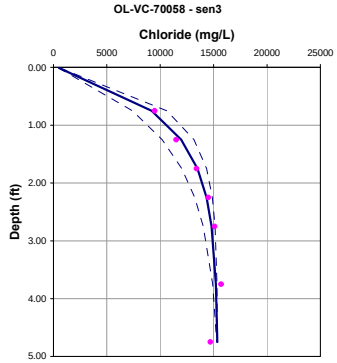
Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -8.2 cm/year



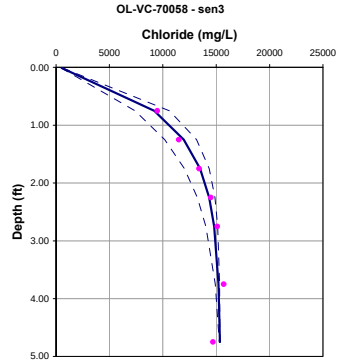
Porosity = 0.70
Dispersion length = 0.5 feet
Upwelling Velocity = -17.5 cm/year



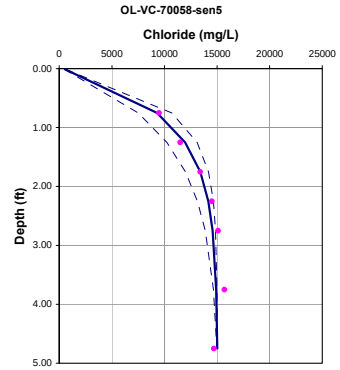
Porosity = 0.70
Dispersion length = 0.8 feet
Upwelling Velocity = <-50 cm/year



Porosity = 0.60
Dispersion length = 0.1 feet
Upwelling Velocity = -5.9 cm/year



Porosity = 0.60
Dispersion length = 0.5 feet
Upwelling Velocity = -12.7 cm/year



Porosity = 0.60
Dispersion length = 0.8 feet
Upwelling Velocity = <-50 cm/year

Comparison of Results

Locations	Porosity	Dispersion Length (feet)	Calculated Velocity (cm/year)
VC-70058	0.70	0.1	-8.2
VC-70058-sen1	0.70	0.5	-17.5
VC-70058-sen2	0.70	0.8	<-50
VC-70058-sen3	0.60	0.1	-5.9
VC-70058-sen4	0.60	0.5	-12.7
VC-70058-sen5	0.60	0.8	<-50

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Xu, M. and Y. Eckstein, 1995. Use of Weighted Least-Squares Method in Evaluation of the Relationship Between Dispersivity and Field Scale. v. 33: 905-916.

Attachment XII

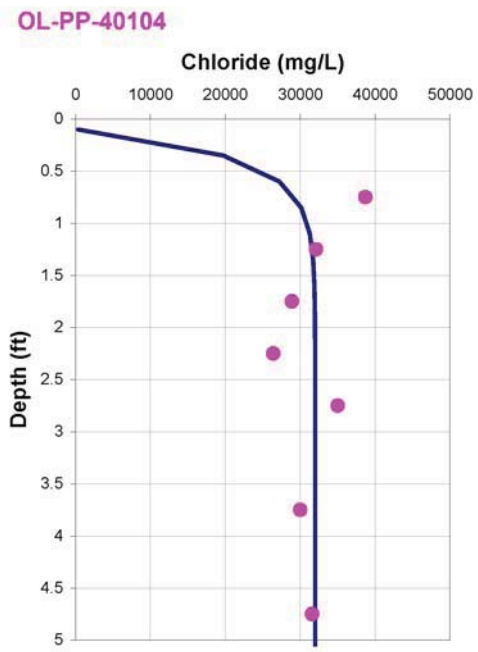
Results from Diffusion Samples – Phase III

Attachment XII
Results from Diffusion Samplers – Phase III

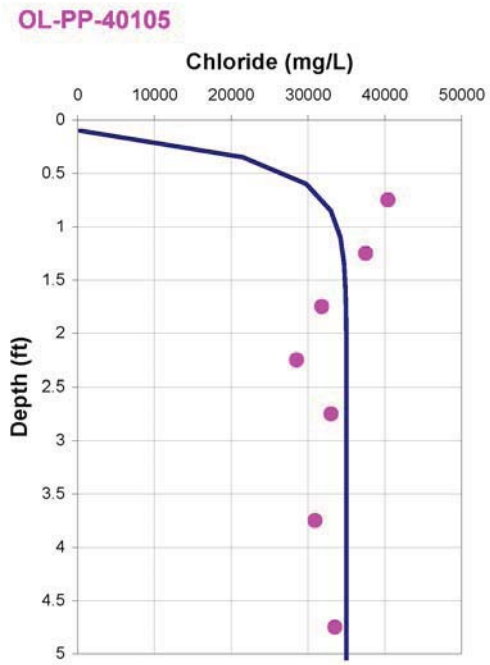
This attachment contains chloride-depth profiles determined from the diffusion samplers (extended peepers) installed at each of the seepage meter clusters in the Phase III investigation in 2007. Attached is one figure for each of the five seepage meter clusters with the chloride-depth profiles for the diffusion samples as well as a chloride-depth profile for a nearby vibracore location. Also shown on each figure is a location map in the vicinity of the seepage meter cluster with a reference circle with a radius of 25 feet.

Seepage Meter Cluster 4-1

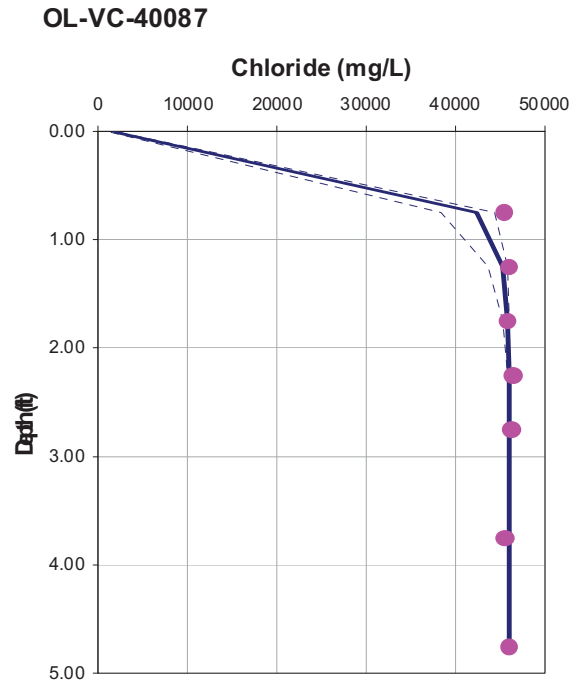
S.S. Papadopulos & Associates, Inc.



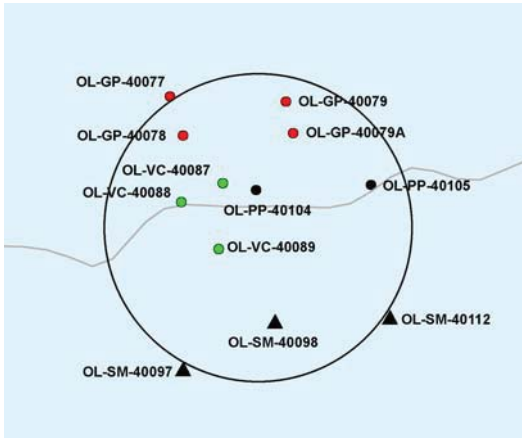
porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -32.5 cm/year



porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -32.5 cm/year

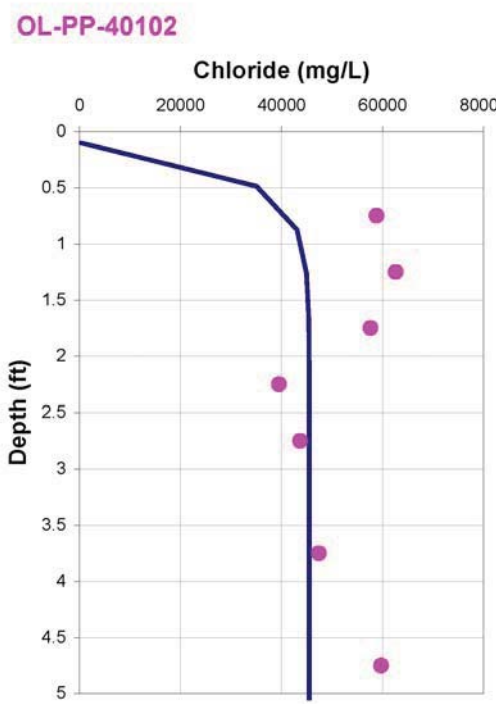


Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -37.5 cm/year

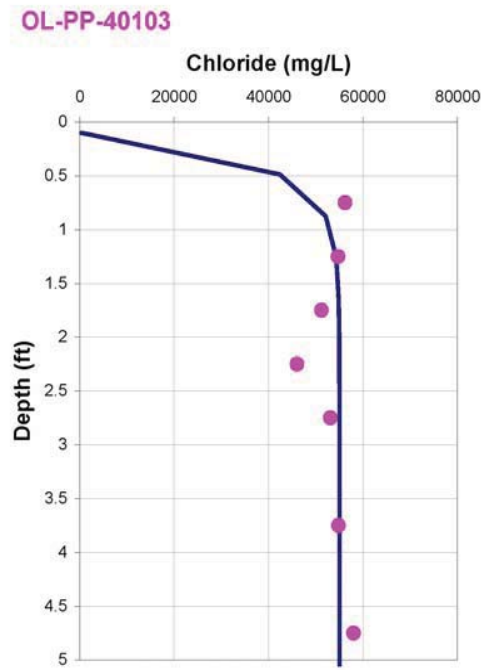


Seepage Meter Cluster 4-2

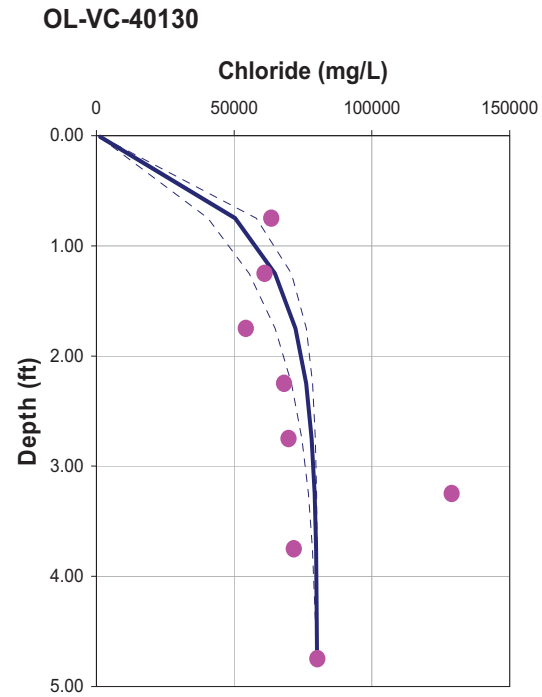
S.S. Papadopulos & Associates, Inc.



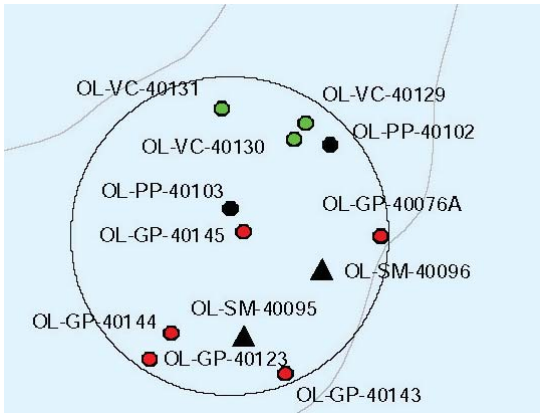
porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -32.5 cm/year



porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -32.5 cm/year

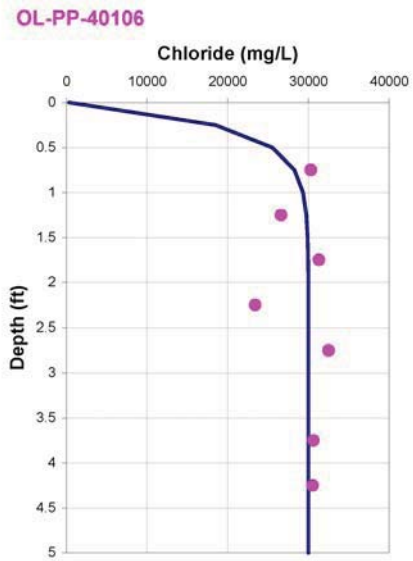


Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -10.7 cm/year

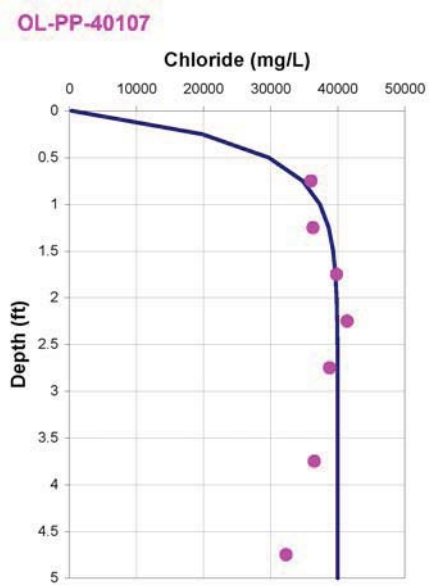


Seepage Meter Cluster 4-3

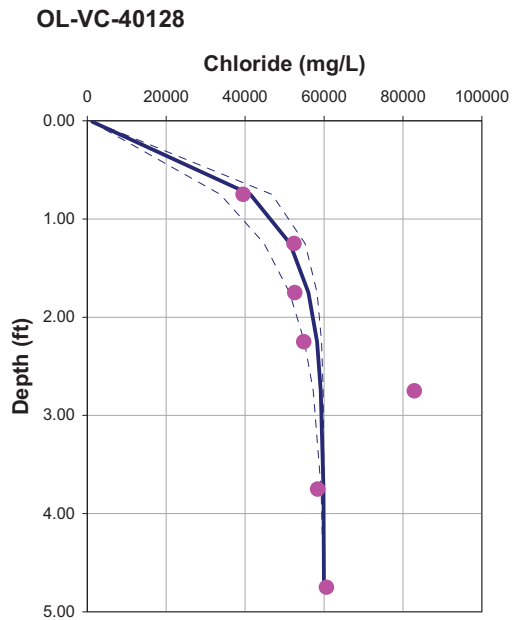
S.S. Papadopulos & Associates, Inc.



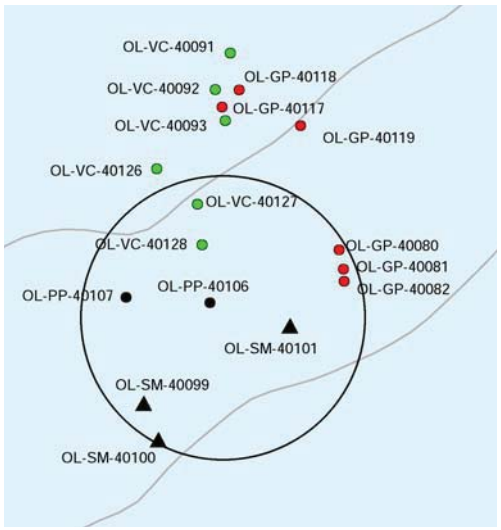
porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -32.5 cm/year



porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -19.5 cm/year

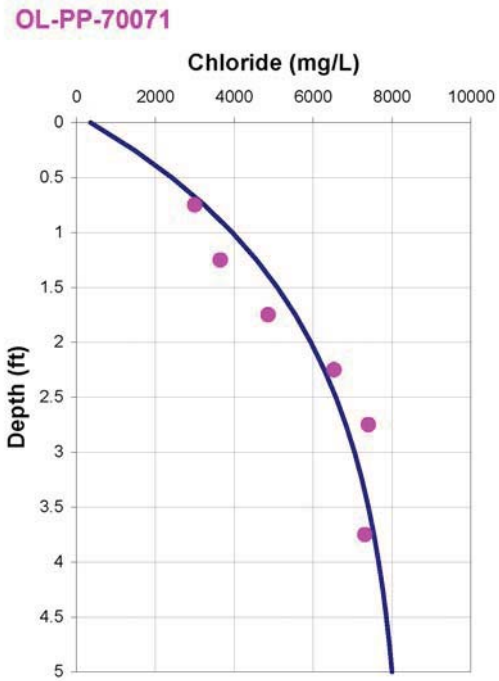


Porosity = 0.75
Dispersion length = 0.1 feet
Upwelling Velocity = -13.0 cm/year

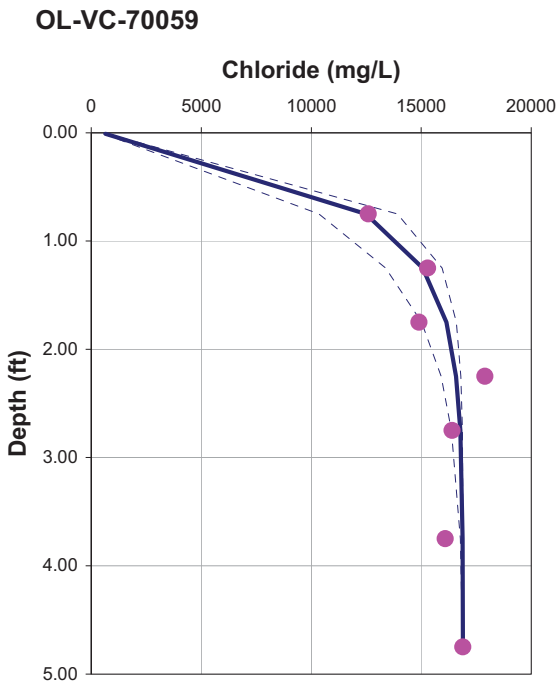


Seepage Meter Cluster 7-1

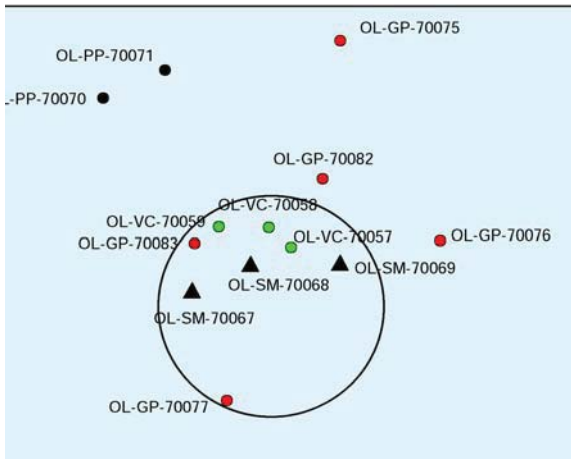
S.S. Papadopulos & Associates, Inc.



porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -3.3 cm/year

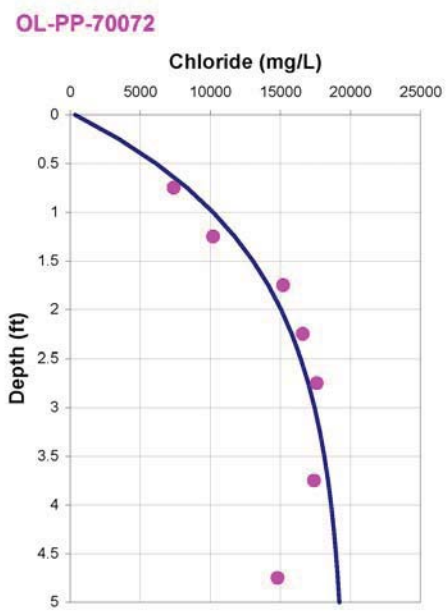


Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -13.1 cm/year

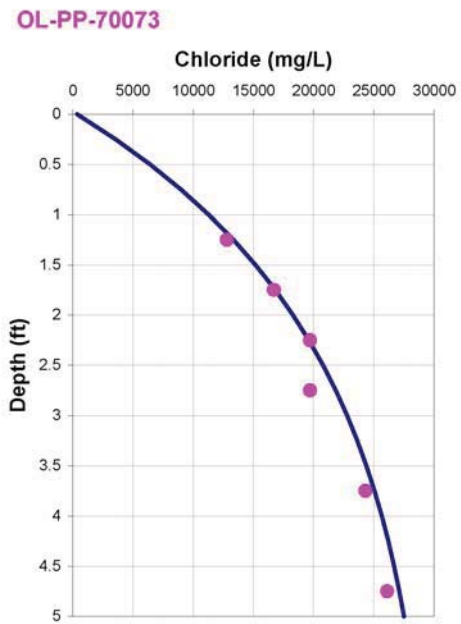


Seepage Meter Cluster 7-2

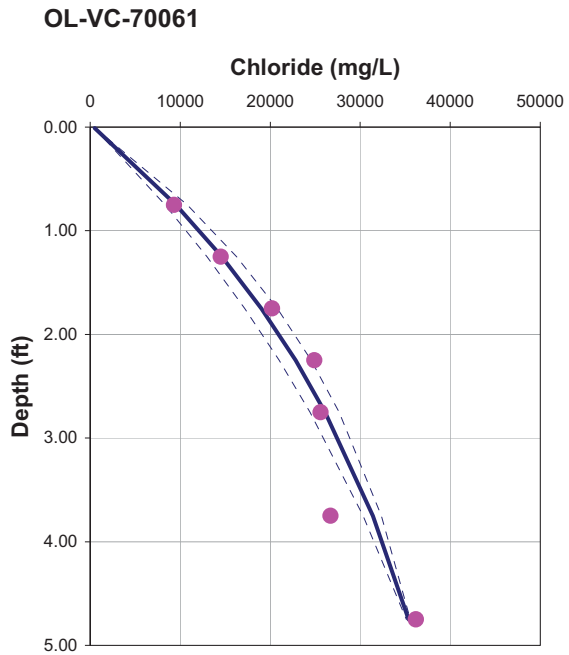
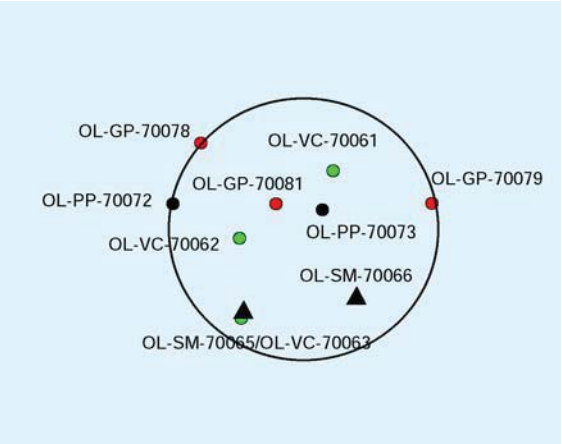
S.S. Papadopulos & Associates, Inc.



porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -3.9 cm/year



porosity = 0.65
dispersion length = 0.1 feet
Upwelling Velocity = -2.4 cm/year



Porosity = 0.70
Dispersion length = 0.1 feet
Upwelling Velocity = -1.8 cm/year