123987

Appendix H-1

July 2003 Sediment Probing
Upstream of the Power Canal

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 1
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 1 - Location: WC001

Station ID	Northing	Easting	Distance b/t Probing Points	Distance from North Shore	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
WC001-A	2222527.2	389264.0	NA	NA	NA	NA	NA	NA	Survey control point on northern shore (8.7 ft from edge of water)
0+00	NA	NA	NA	0	0.0	176.3	0.00	0.00	Edge of water
0+20	NA	NA	20	20	3.6	172.7	0.00	3.60	Sand w/ gravel over rock
0+40	NA	NA	20	40	5.0	171.3	0.00	5.00	Rocks w/ gravel
0+60	NA	NA	20	60	4.4	171.9	0.05	4.45	Rocks w/ gravel
0+80	NA	NA	20	80	3.5	172.8	0.10	3.60	Sands, gravel, rock
1+00	NA	NA	20	100	4.0	172.3	0.00	4.00	Sands, gravel, rock
1+20	NA	NA	20	120	4.0	172.3	0.50	4.50	Rock
1+40	NA	NA	20	140	4.0	172.3	0.05	4.05	Sands, gravel, rock
1+60	NA	NA	20	160	3.5	172.8	0.00	3.50	Trace sand, gravel over rock
1+80	NA	NA	20	180	3.0	173.3	0.00	3.00	Rock
2+00	NA	NA	20	200	2.0	174.3	0.00	2.00	Bedrock
2+18	NA	NA	18	218	0.0	176.3	0.00	0.00	Edge of water
WC001-B	2222303.0	389327.7	NA	NA	NA	NA	NA	NA	Survey control point on southern shore (9.3 ft from edge of water)

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Coordinates for this transect were obtained based on two points located on shore (WC001-A and WC001-B). Intermediate points were collected at typical water column velocity measurement stations.
4. Sediment elevation for each probing point was calculated using the surveyed water level collected at one point along the transect minus the measured depth of water at each point. The surveyed water level used for all calculations is 176.3 feet.
5. Northings and eastings are based on NAD83, in the New York East State Plane Zone.
6. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 2
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 2 - Location: Just Upstream of Dam Near Main St. Bridge

Station ID	Northing	Easting	Distance b/t Probing Points	Distance from North Shore	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
TR2-4 EWA-A	2223095.4	390657.8	NA	0.0	0.0	173.8	0.0	0.0	Edge of water
TR2-6	2223084.0	390657.1	11.5	11.5	0.2	173.4	0.0	0.2	Rock
TR2-7	2223062.5	390651.1	23.3	34.8	1.4	172.4	0.0	1.4	Rock
TR2-8	2223036.0	390645.0	27.2	62.0	1.2	172.6	0.0	1.2	Rock
TR2-9	2223017.7	390639.1	19.2	81.2	1.1	172.8	0.0	1.1	Rock
TR2-10	2222992.2	390635.4	25.8	107.0	1.0	172.9	0.0	1.0	Rock
TR2-11	2222968.7	390628.3	24.5	131.5	1.5	172.7	0.0	1.5	Rock
TR2-12	2222946.2	390622.1	23.4	154.9	1.2	173.0	0.0	1.2	Rock
TR2-13 EWA-B	2222929.6	390620.0	16.7	171.6	0.0	174.3	0.0	0.0	Edge of water

Notes:
1. All units in feet.
2. No measurement collected at Station TR2-5.
3. Stations TR2- 1,2, and 3 are located on northern shore beyond edge of water, and therefore are not included in the development of the cross section.
4. NA indicates not applicable.
5. Northings and eastings are based on NAD83, in the New York East State Plane Zone.
6. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 3
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 3 - Location: On Top of Dam

Station ID	Northing	Easting	Distance b/t Probing Points	Distance from Northern Edge of Dam	Water Depth	Top of Dam Elevation	Comments
DAM-01	2223209.3	390736.1	NA	0.0	NA	178.2	Top of dam
DAM-02	2223201.1	390735.8	8.3	8.3	NA	178.2	Top of dam
DAM-03	2223188.3	390735.9	12.7	21.0	NA	177.0	Top of dam
DAM-04	2223169.5	390736.6	18.9	39.9	NA	177.6	Top of dam
DAM-05	2223169.0	390736.3	0.6	40.4	NA	178.0	Top of dam
DAM-06	2223159.5	390736.6	10.2	50.7	NA	178.1	Top of dam
DAM-07	2223152.6	390735.2	6.7	57.4	NA	177.9	Top of dam
DAM-08	2223151.5	390735.6	1.1	58.5	NA	175.5	Top of dam
DAM-09	2223125.4	390736.5	26.2	84.7	NA	175.3	Top of dam
DAM-10	2223122.1	390736.0	3.3	87.9	NA	178.0	Top of dam
DAM-11	2223098.2	390736.3	23.9	111.9	NA	177.8	Top of dam
DAM-12	2223096.5	390736.1	1.7	113.5	NA	177.0	Top of dam
DAM-13	2223082.2	390735.7	14.4	127.9	NA	176.4	Top of dam
DAM-14	2223080.8	390736.6	1.7	129.5	NA	172.0	Top of dam
DAM-15	2223077.9	390736.9	2.9	132.4	NA	172.1	Top of dam
DAM-16	2223077.6	390737.2	0.5	132.9	NA	171.0	Top of dam
DAM-17	2223074.2	390736.3	3.5	136.3	0.7	170.9	Top of dam
DAM-18	2223067.5	390735.6	6.7	143.1	0.4	170.8	Top of dam
DAM-19	2222999.5	390731.0	68.2	211.3	0.2	172.1	Top of dam
DAM-20	2222997.1	390736.0	5.5	216.8	NA	177.8	Top of dam
DAM-21	2222964.7	390736.3	32.4	249.2	NA	177.8	Top of dam
DAM-22	2222948.6	390736.5	16.1	265.3	NA	177.9	Top of dam
DAM-23	2222942.4	390734.4	6.6	271.8	NA	176.1	Top of dam
DAM-24	2222933.2	390736.8	9.5	281.4	NA	177.3	Top of dam
DAM-25	2222917.0	390736.8	16.1	297.5	NA	177.4	Top of dam
DAM-26	2222910.2	390736.8	6.8	304.3	NA	174.8	Top of dam
DAM-27	2222898.6	390737.6	11.6	315.9	NA	175.5	Top of dam
DAM-28	2222895.7	390737.8	3.0	318.9	NA	178.9	Top of dam
DAM-29	2222890.3	390738.4	5.5	324.4	NA	179.4	Top of dam

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Northings and Eastings are based on NAD83, in the New York East State Plane Zone.
4. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 4
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 4 - Location: Between Rte. 37B and Railroad Crossing

Station ID	Northing	Easting	Distance b/t Probing Points	Distance from North Shore	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
TR04-EWA-A	2223148.9	393606.7	NA	0.0	0.0	164.5	0.0	0.0	Edge of water
TR04-01	2223135.8	393616.0	16.1	16.1	1.7	162.8	0.0	1.7	Rock
TR04-02	2223121.0	393624.7	17.1	33.2	2.4	162.2	0.0	2.4	Rock
TR04-03	2223107.2	393634.6	16.9	50.2	2.5	162.0	0.0	2.5	Rock
TR04-04	2223089.8	393644.7	20.1	70.3	2.8	161.8	0.0	2.8	Rock
TR04-05	2223072.3	393658.5	22.4	92.7	2.0	162.5	0.0	2.0	Rock
TR04-06	2223055.9	393668.8	19.4	112.0	2.6	161.8	0.0	2.6	Rock
TR04-07	2223039.1	393680.2	20.3	132.4	2.4	162.0	0.0	2.4	Rock
TR04-08	2223016.4	393692.0	25.5	157.9	2.0	162.4	0.0	2.0	Rock
TR04-09	2222994.0	393702.7	24.9	182.8	1.6	162.8	0.0	1.6	Rock
TR04-10	2222976.2	393714.2	21.1	203.9	1.3	163.0	0.0	1.3	Rock
TR04-11	2222953.2	393731.4	28.8	232.6	1.4	163.1	0.0	1.4	Rock
TR04-12	2222931.8	393749.6	28.1	260.7	1.0	163.4	0.0	1.0	Rock
TR04-13	2222920.7	393760.6	15.7	276.3	0.4	164.1	0.0	0.4	Rock
TR04-EWA-B	2222915.2	393768.1	9.3	285.6	0.0	164.5	0.0	0.0	Edge of water

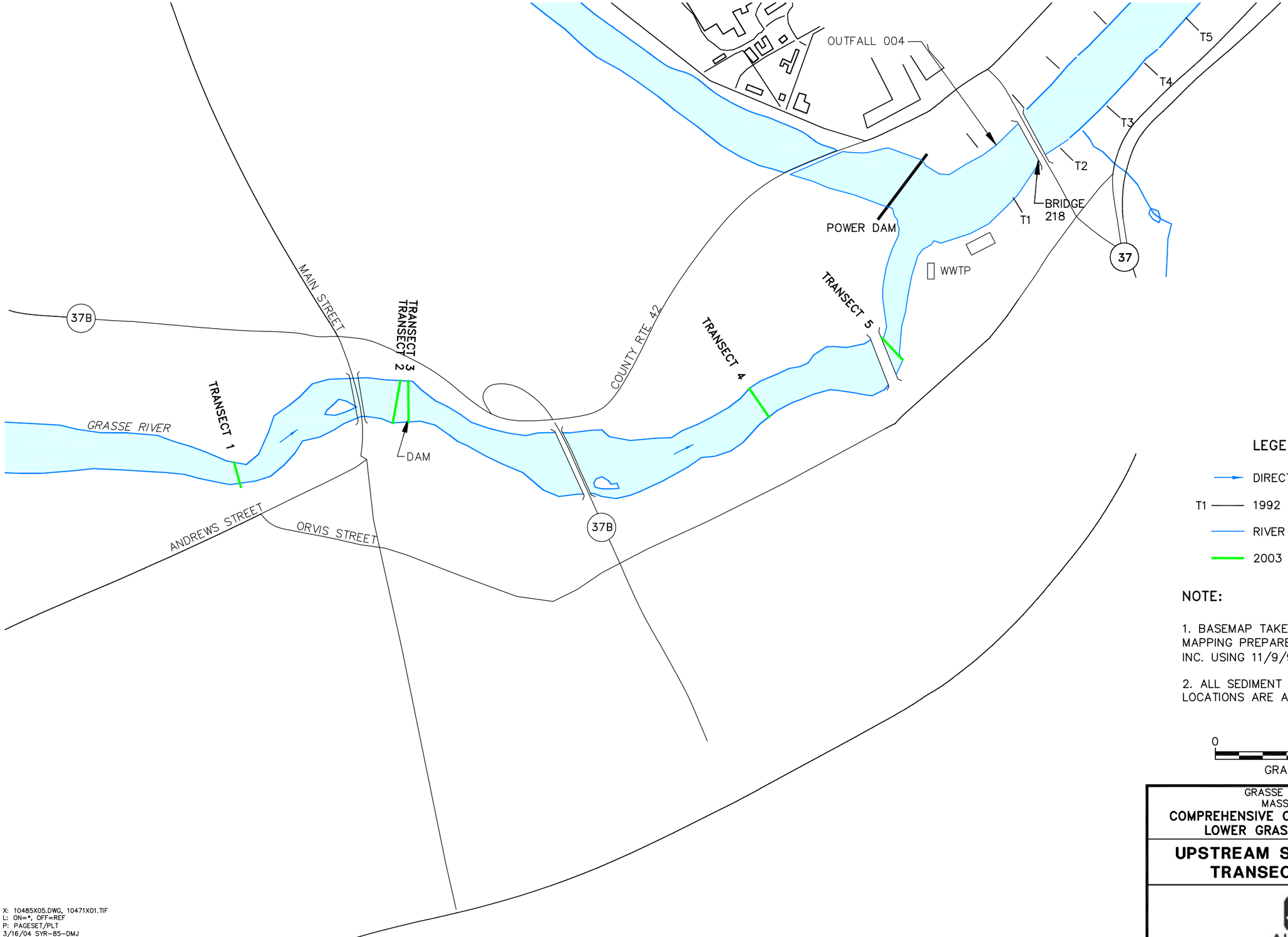
Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Northings and Eastings are based on NAD83, in the New York East State Plane Zone.
4. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 5
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 5 - Location: Downstream of Railroad Crossing

Station ID	Northing	Easting	Distance b/t Probing Points	Distance from North Shore	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
TR05-EWA-A	2223588.0	394710.9	NA	0.0	0.0	157.2	0.0	0	Edge of water
TR05-01	2223583.7	394716.0	6.6	6.6	1.5	155.7	0.0	1.5	Rock
TR05-02	2223569.2	394728.5	19.2	25.7	1.4	155.7	0.0	1.4	Rock
TR05-03	2223553.7	394738.4	18.4	44.1	1.2	156.0	0.0	1.2	Rock
TR05-04	2223539.1	394750.0	18.7	62.8	1.3	155.8	0.0	1.3	Rock
TR05-05	2223525.6	394759.6	16.5	79.4	1.4	155.9	0.0	1.4	Rock
TR05-06	2223507.5	394776.6	24.8	104.2	1.6	155.8	0.0	1.6	Rock
TR05-07	2223491.7	394791.9	22.0	126.2	1.6	155.8	0.0	1.6	Rock
TR05-08	2223475.1	394808.0	23.2	149.4	1.1	156.4	0.0	1.1	Rock
TR05-09	2223461.1	394821.1	19.1	168.5	1.9	155.6	0.0	1.9	Rock
TR05-10	2223448.2	394837.7	21.1	189.5	1.1	156.2	0.0	1.1	Rock
TR05-11	2223440.2	394849.7	14.4	204.0	0.8	156.9	0.0	0.8	Rock
TR05-EWA-B	2223438.4	394853.4	4.1	208.1	0.0	157.6	0.0	0	Edge of water

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Northings and Eastings are based on NAD83, in the New York East State Plane Zone.
4. Elevations are based on USLS 1935.



LEGEND:

- DIRECTION OF RIVER FLOW
- T1 — 1992 SEDIMENT PROBING TRANSECTS
- RIVER BOUNDARY
- 2003 SEDIMENT PROBING TRANSECTS

NOTE:

1. BASEMAP TAKEN FROM PLANIMETRIC MAPPING PREPARED BY LOCKWOOD MAPPING, INC. USING 11/9/92 AERIAL PHOTOGRAPHY.

2. ALL SEDIMENT PROBING TRANSECT LOCATIONS ARE APPROXIMATE.

0 800' 1600'

GRAPHIC SCALE

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

COMPREHENSIVE CHARACTERIZATION OF THE LOWER GRASSE RIVER ADDENDUM

UPSTREAM SEDIMENT PROBING TRANSECT LOCATIONS

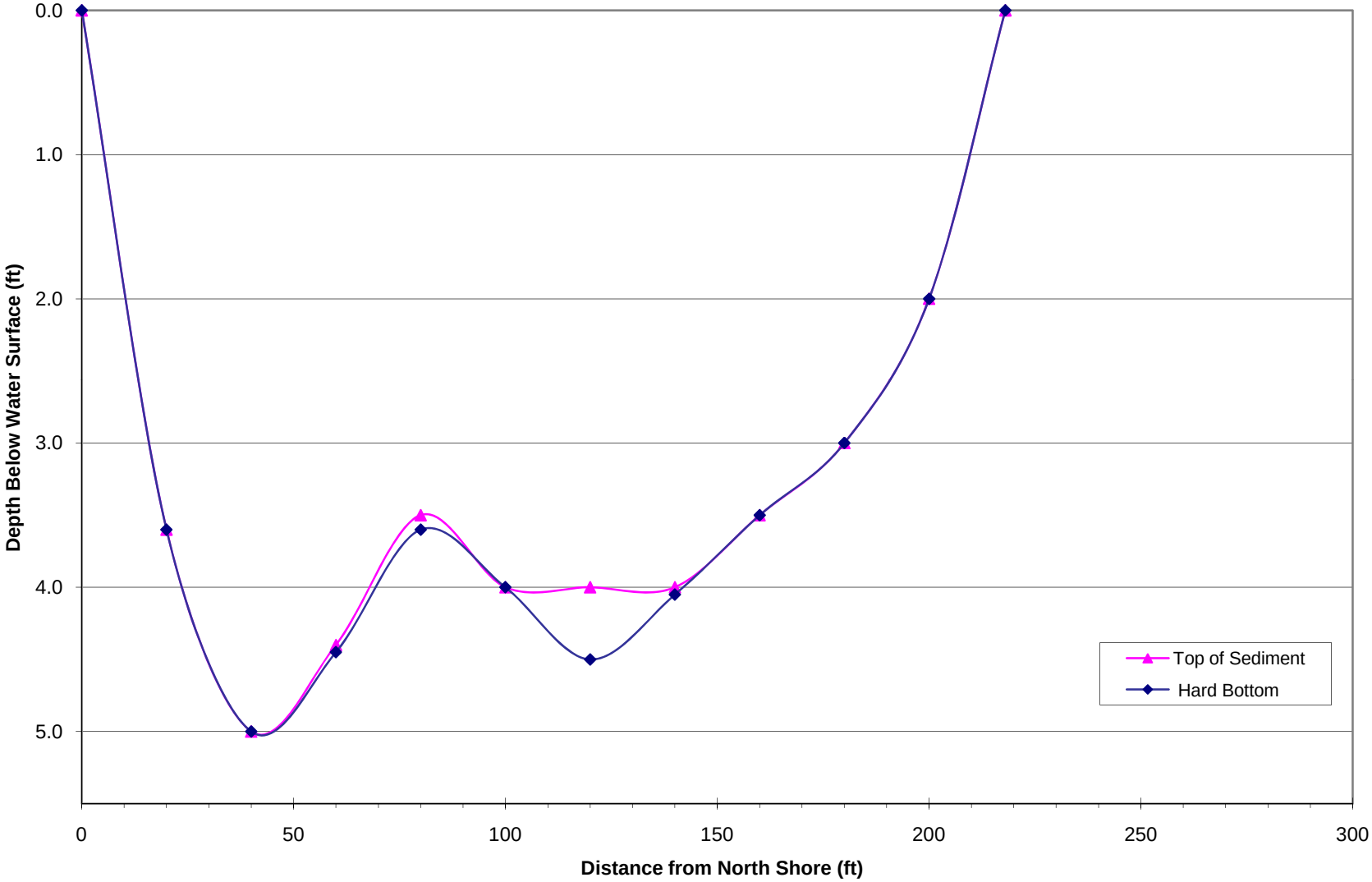
ALCOA

FIGURE
1

X: 10485X05.DWG, 10471X01.TIF
L: ON=*, OFF=REF
P: PAGESET/PLT
3/16/04 SYR-85-DMJ
10485001/MARCH1504/10485B06.DWG

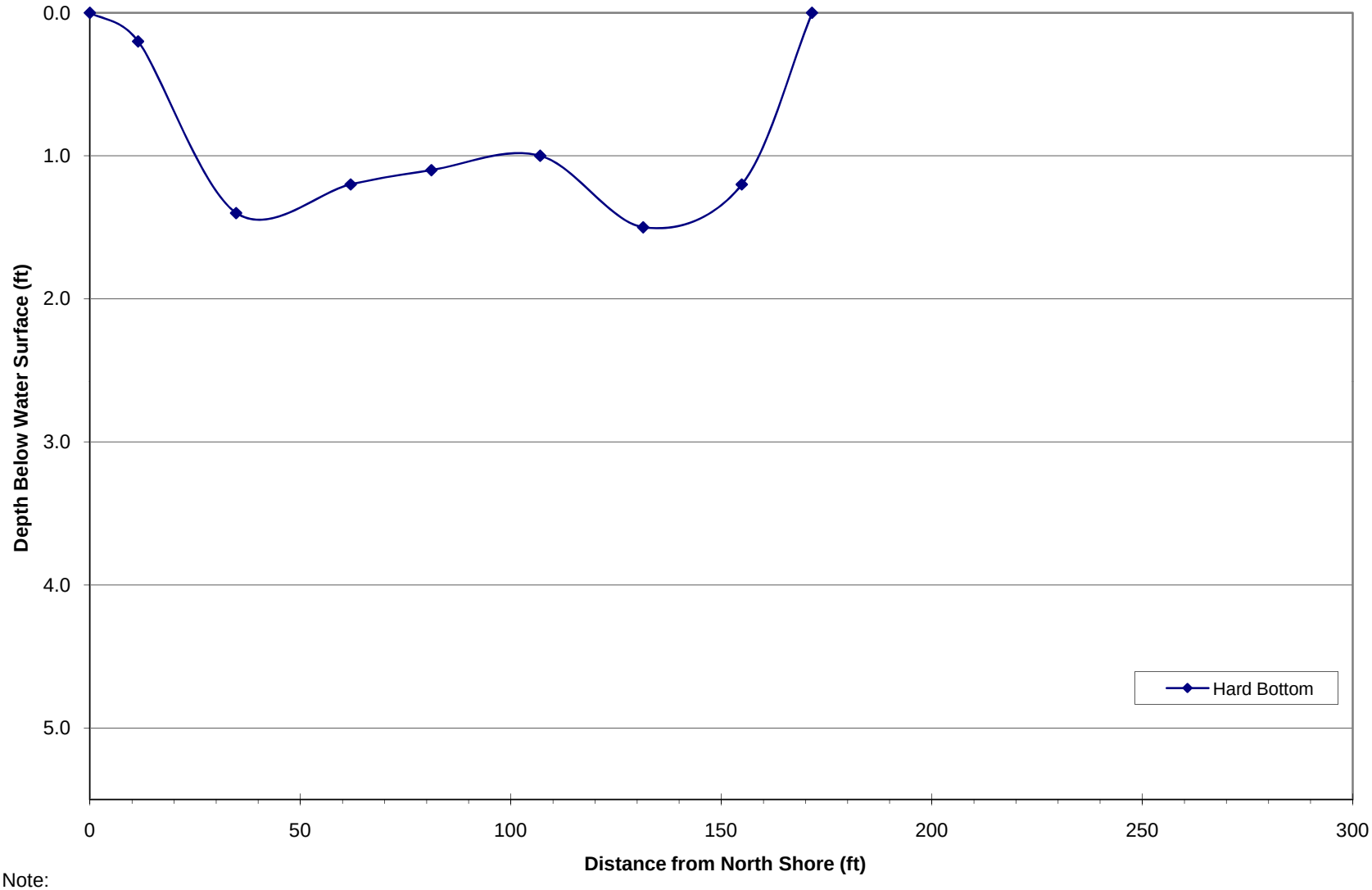
GRASSE RIVER STUDY AREA
MASSENA, NY

Figure 2
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 1 (WC001)



GRASSE RIVER STUDY AREA
MASSENA, NY

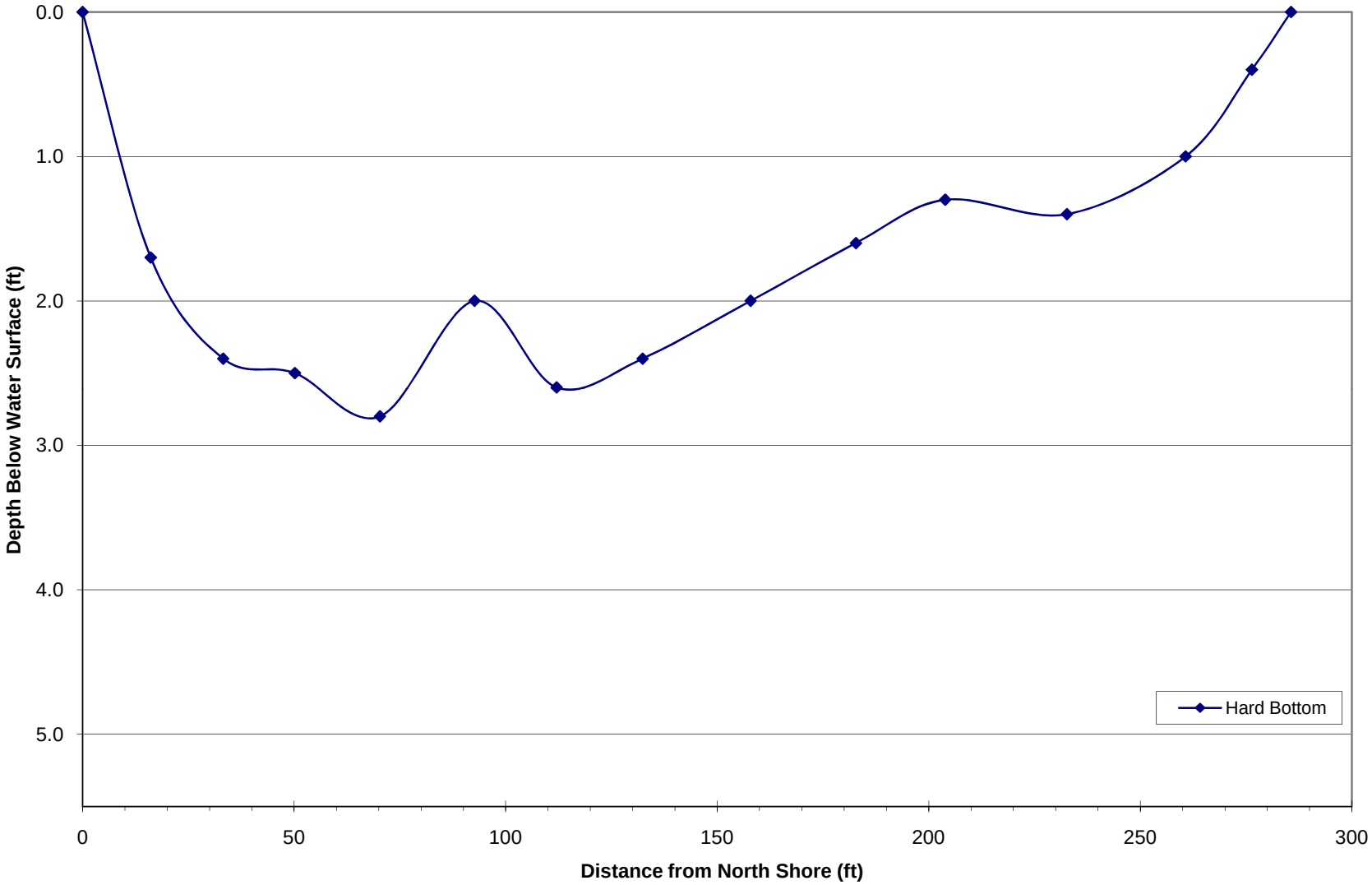
Figure 3
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 2 (Just Upstream of Dam Near Main Street Bridge)



Note:
1. No measurable sediment observed along transect.

GRASSE RIVER STUDY AREA
MASSENA, NY

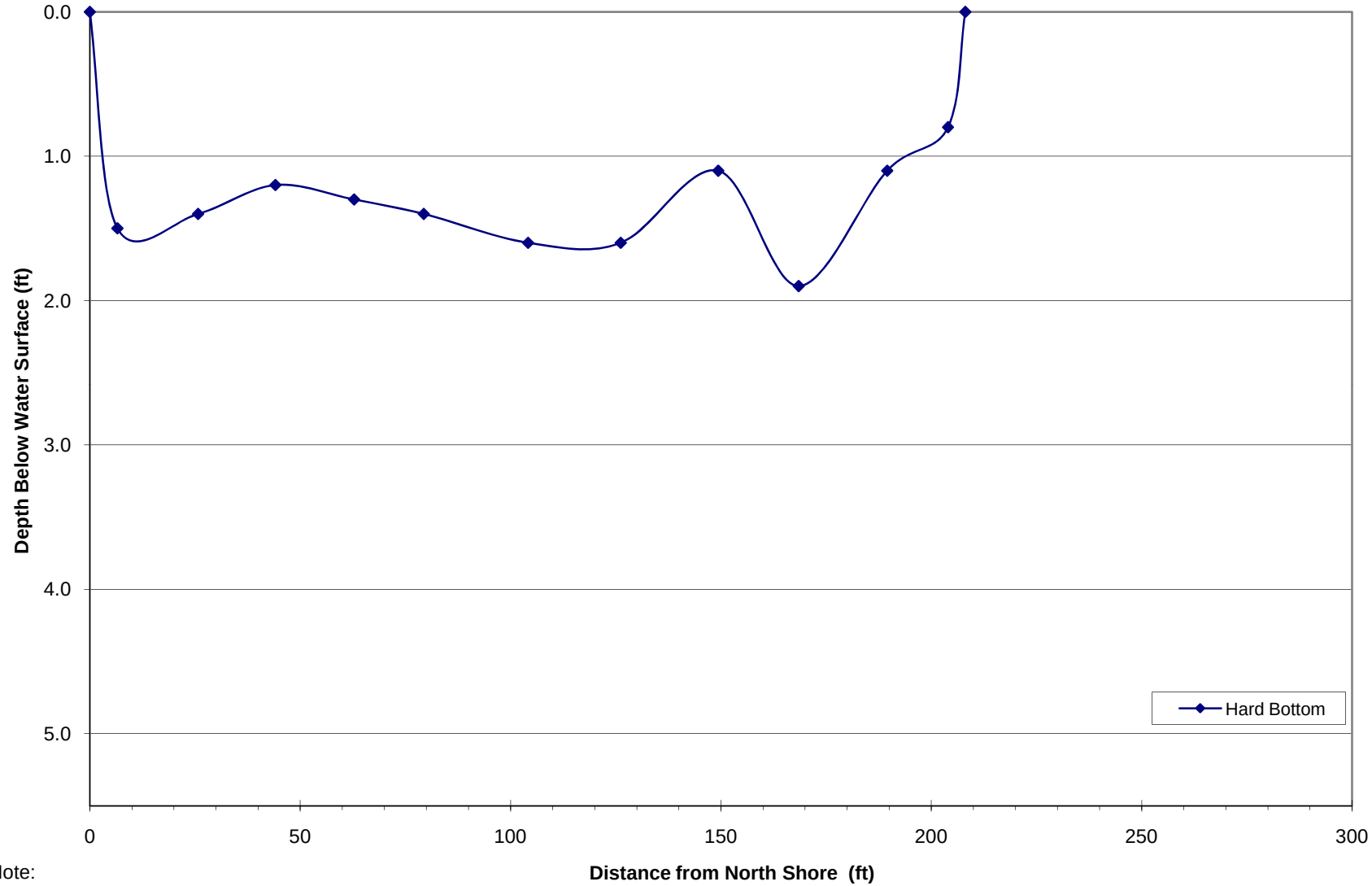
Figure 4
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 4 (Between Rt. 37B and Railroad Crossing)



Note:
1. No measurable sediment observed along transect.

GRASSE RIVER STUDY AREA
MASSENA, NY

Figure 5
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect 5 (Downstream of Railroad Crossing)



Note:
1. No measurable sediment observed along transect.

Appendix H-2

April 2004 Upstream River and Floodplain Cross Sections

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 1
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-01

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-01-1	2210414.85	358774.55	NA	189.81	NA	NA	on land
US-01-2	2210372.55	358755.73	NA	190.46	NA	NA	on land
US-01-3	2210346.56	358745.00	NA	190.17	NA	NA	on land
US-01-4	2210309.94	358731.18	NA	191.88	NA	NA	on land
US-01-5	2210251.01	358702.98	NA	193.97	NA	NA	on land
US-01-6	2210186.87	358670.71	NA	196.47	NA	NA	on land
US-01-7	2210117.62	358633.92	NA	198.82	NA	NA	on land
US-01-8	2210445.33	358788.51	0.00	186.73	1.80	NA	Sand over rock
US-01-9	2210453.75	358792.89	2.00	184.68	0.00	2.00	rock
US-01-10	2210464.03	358796.16	2.70	183.95	0.00	2.70	Rock
US-01-11	2210473.53	358800.03	2.50	184.24	0.00	2.50	Rock
US-01-12	2210482.72	358803.95	2.30	184.44	0.00	2.30	Rock
US-01-13	2210501.12	358811.80	2.40	184.33	0.00	2.40	Rock
US-01-14	2210519.52	358819.64	2.20	184.54	0.00	2.20	Rock
US-01-15	2210537.91	358827.49	2.30	184.43	0.00	2.30	Rock
US-01-16	2210556.31	358835.34	2.30	184.43	0.00	2.30	Rock
US-01-17	2210574.71	358843.18	2.30	184.43	0.00	2.30	Rock
US-01-18	2210591.22	358848.82	2.30	184.81	0.00	2.30	Rock
US-01-19	2210599.49	358852.98	0.00	186.77	0.00	NA	Rock
US-01-20	2210606.67	358855.47	NA	188.92	NA	NA	on land
US-01-21	2210618.19	358859.08	NA	190.73	NA	NA	on land
US-01-22	2210619.62	358859.38	NA	194.82	NA	NA	on land
US-01-23	2210634.87	358863.32	NA	202.00	NA	NA	on land
US-01-24	2210647.89	358874.52	NA	219.30	NA	NA	on land
US-01-25	2210665.07	358878.41	NA	228.49	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 2
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-02

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-02-1	2211218.56	363626.50	0.00	180.29	3.80	NA	Sand over hard bottom
US-02-2	2211225.55	363628.42	NA	181.96	NA	NA	on land
US-02-3	2211252.13	363635.71	NA	183.23	NA	NA	on land
US-02-4	2211266.90	363639.76	NA	186.92	NA	NA	on land
US-02-5	2211325.04	363655.70	NA	186.47	NA	NA	on land
US-02-6	2211371.81	363668.52	NA	186.48	NA	NA	on land
US-02-7	2211407.36	363678.26	NA	184.46	NA	NA	on land
US-02-8	2211453.73	363690.98	NA	183.43	NA	NA	on land
US-02-9	2211494.32	363702.11	NA	184.22	NA	NA	on land
US-02-10	2211545.68	363716.19	NA	189.23	NA	NA	on land
US-02-11	2211598.01	363730.53	NA	194.98	NA	NA	on land
US-02-12	2211757.34	363774.22	NA	213.06	NA	NA	on land
US-02-13	2211209.42	363624.00	1.80	178.51	5.20	7.00	Sand over hard bottom
US-02-14	2211190.72	363618.87	4.00	176.08	5.10	9.10	Sand over hard bottom
US-02-15	2211169.88	363613.16	6.60	173.65	6.00	12.60	Sand over hard bottom
US-02-16	2211151.81	363608.20	8.20	172.15	3.70	11.90	Sand over hard bottom
US-02-17	2211128.41	363601.79	9.60	170.65	2.00	11.60	Sand over hard bottom
US-02-18	2211097.57	363593.33	10.70	169.61	2.70	13.40	Sand over hard bottom
US-02-19	2211077.22	363587.75	10.10	170.17	2.40	12.50	Sand over hard bottom
US-02-20	2211058.12	363582.52	9.20	171.02	4.30	13.50	Coarse sand over silty sand/hard bottom
US-02-21	2211039.45	363577.40	9.00	171.33	3.00	12.00	Silt, fine sand; coarse sand/hard bottom
US-02-22	2211019.10	363571.82	7.00	173.27	1.80	8.80	Sand over hard bottom
US-02-23	2211000.83	363566.81	6.70	173.48	1.80	8.50	Sand over hard bottom
US-02-24	2210980.81	363561.32	6.80	173.53	2.20	9.00	Sand over hard bottom
US-02-25	2210963.15	363556.48	4.40	175.83	1.70	6.10	Silt over rock
US-02-26	2210959.62	363555.51	1.00	177.28	1.10	2.10	Silt over rock
US-02-27	2210946.14	363551.82	0.00	180.32	1.00	NA	Silt over stiff bottom
US-02-28	2210909.44	363536.80	NA	191.36	NA	NA	on land
US-02-29	2210861.99	363519.09	NA	194.91	NA	NA	on land
US-02-30	2210795.97	363494.65	NA	195.97	NA	NA	on land
US-02-31	2210720.68	363465.90	NA	200.56	NA	NA	on land
US-02-32	2210610.04	363415.39	NA	204.02	NA	NA	on land
US-02-33	2210554.34	363399.14	NA	224.35	NA	NA	on land
US-02-34	2210515.13	363382.28	NA	222.10	NA	NA	on land
US-02-35	2210936.92	363549.30	NA	184.74	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 3
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-03

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-03-1	2212862.53	366707.06	NA	182.99	NA	NA	on land
US-03-2	2212871.75	366710.17	NA	189.28	NA	NA	on land
US-03-3	2212902.13	366720.40	NA	198.52	NA	NA	on land
US-03-4	2212943.06	366734.19	NA	208.32	NA	NA	on land
US-03-5	2212998.09	366752.73	NA	210.64	NA	NA	on land
US-03-6	2213062.11	366774.30	NA	222.43	NA	NA	on land
US-03-7	2212882.61	366679.57	NA	190.00	NA	NA	on land
US-03-8	2212869.51	366674.77	0.00	182.97	2.50	NA	Silt over hard bottom
US-03-9	2212867.63	366673.27	2.50	180.75	2.70	5.20	Sandy silt over hard bottom
US-03-10	2212864.35	366673.45	5.10	177.90	0.00	5.10	Hard bottom/rock
US-03-11	2212856.48	366672.06	6.90	176.13	0.00	6.90	Rock
US-03-12	2212843.07	366669.63	7.20	175.84	0.20	7.40	Sand over hard bottom
US-03-13	2212821.22	366666.55	7.60	175.35	0.20	7.80	Sand over hard bottom
US-03-14	2212802.83	366664.33	8.00	175.04	0.00	8.00	Rock
US-03-15	2212783.43	366659.81	7.70	175.42	0.00	7.70	Rock
US-03-16	2212766.69	366656.93	7.70	175.64	0.00	7.70	Rock
US-03-17	2212745.06	366651.61	7.30	175.93	0.00	7.30	Rock
US-03-18	2212744.93	366651.05	NA	175.93	NA	NA	not available
US-03-19	2212723.70	366645.89	7.50	175.62	0.00	7.50	Rock
US-03-20	2212705.20	366640.13	7.90	175.30	0.00	7.90	Rock
US-03-21	2212686.72	366629.51	6.00	177.18	0.00	6.00	Rock
US-03-22	2212667.50	366622.25	5.10	177.94	0.00	5.10	Rock
US-03-23	2212660.96	366619.23	3.00	180.11	1.50	4.50	Silt over rock
US-03-24	2212664.21	366621.70	4.60	178.46	NA	NA	Edge of rock/sediment
US-03-25	2212658.41	366616.99	1.40	181.65	1.80	3.20	Silt over hard bottom
US-03-26	2212655.23	366617.37	0.00	183.03	0.20	NA	Silt over hard bottom
US-03-27	2212627.47	366609.24	NA	186.12	NA	NA	on land
US-03-28	2212571.58	366594.56	NA	184.90	NA	NA	on land
US-03-29	2212515.82	366579.13	NA	188.89	NA	NA	on land
US-03-30	2212480.93	366567.79	NA	197.22	NA	NA	on land
US-03-31	2212433.16	366556.40	NA	209.38	NA	NA	on land
US-03-32	2212354.54	366529.98	NA	212.14	NA	NA	on land
US-03-33	2212309.19	366504.51	NA	214.08	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 4
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-04

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-04-1	2215329.93	370740.84	NA	183.21	NA	NA	on land
US-04-2	2215325.61	370743.54	0.00	182.40	0.60	NA	Silt
US-04-3	2215315.31	370749.98	1.60	180.81	3.00	4.60	Silt over hard bottom
US-04-4	2215310.84	370752.77	3.00	179.27	2.00	5.00	Silt over hard bottom
US-04-5	2215309.55	370753.57	4.60	177.83	2.10	6.70	Silt over hard bottom
US-04-6	2215302.61	370757.91	8.70	174.50	4.20	12.90	Silt over sand over hard bottom
US-04-7	2215293.98	370763.30	8.80	173.64	3.60	12.40	Sand over hard bottom
US-04-8	2215275.76	370774.69	9.90	172.63	4.60	14.50	Sand over hard bottom
US-04-9	2215258.57	370785.43	10.50	171.97	3.00	13.50	Sand over hard bottom
US-04-10	2215245.23	370793.77	10.00	172.48	NA	NA	Coarse sand
US-04-11	2215232.90	370801.47	9.80	172.63	NA	NA	Coarse sand over fine sand
US-04-12	2215213.54	370813.57	10.10	172.41	NA	NA	Coarse sand over fine sand
US-04-13	2215195.23	370825.01	10.00	172.25	3.00	13.00	Sand over hard bottom
US-04-14	2215178.70	370835.34	10.20	172.18	2.00	12.20	Sand over hard bottom
US-04-15	2215161.95	370845.80	9.80	172.52	2.40	12.20	Sand over hard bottom
US-04-16	2215145.39	370856.16	10.20	172.23	1.30	11.50	Sand over hard bottom
US-04-17	2215128.55	370866.67	9.60	172.83	1.40	11.00	Sand over hard bottom
US-04-18	2215114.20	370875.64	8.60	173.78	0.60	9.20	Sand over hard bottom
US-04-19	2215109.32	370878.69	6.50	175.87	2.00	8.50	Silt over hard bottom
US-04-20	2215104.08	370881.97	4.50	178.19	2.30	6.80	Silt over sand over hard bottom
US-04-21	2215092.82	370889.00	2.30	180.05	2.20	4.50	Silt over hard bottom
US-04-22	2215087.26	370892.48	0.00	182.39	5.70	NA	Silt over hard bottom
US-04-23	2215031.63	370919.78	NA	184.56	NA	NA	on land
US-04-24	2214983.85	370942.18	NA	184.07	NA	NA	on land
US-04-25	2214887.75	370987.22	NA	184.91	NA	NA	on land
US-04-26	2214835.91	371011.51	NA	185.76	NA	NA	on land
US-04-27	2214781.02	371037.24	NA	189.05	NA	NA	on land
US-04-28	2214754.31	371049.76	NA	188.06	NA	NA	on land
US-04-29	2214712.20	371069.50	NA	188.38	NA	NA	on land
US-04-30	2214640.65	371103.03	NA	189.22	NA	NA	on land
US-04-31	2214606.33	371119.12	NA	198.74	NA	NA	on land
US-04-32	2214570.61	371135.86	NA	210.04	NA	NA	on land
US-04-33	2214480.94	371177.89	NA	211.11	NA	NA	on land
US-04-34	2215079.38	370897.41	NA	185.54	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 5
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-05

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-05-1	2215426.96	372005.59	NA	184.20	NA	NA	on land
US-05-2	2215458.86	372002.46	NA	184.22	NA	NA	on land
US-05-3	2215471.34	372001.24	NA	184.31	NA	NA	on land
US-05-4	2215490.06	371999.40	NA	186.89	NA	NA	on land
US-05-5	2215518.09	371996.66	NA	189.45	NA	NA	on land
US-05-6	2215589.84	371989.62	NA	191.02	NA	NA	on land
US-05-7	2215669.63	371981.79	NA	192.01	NA	NA	on land
US-05-8	2215706.77	371978.15	NA	191.04	NA	NA	on land
US-05-9	2215767.74	371972.17	NA	196.84	NA	NA	on land
US-05-10	2215852.90	371963.82	NA	201.95	NA	NA	on land
US-05-11	2215931.20	371956.14	NA	209.36	NA	NA	on land
US-05-12	2216042.92	371945.18	NA	213.63	NA	NA	on land
US-05-13	2216150.16	371934.66	NA	214.01	NA	NA	on land
US-05-14	2216208.40	371928.95	NA	219.10	NA	NA	on land
US-05-15	2216253.02	371924.58	NA	220.77	NA	NA	on land
US-05-16	2215424.61	372005.82	0.00	182.16	3.40	NA	Silt over hard bottom
US-05-17	2215423.78	372005.91	3.00	179.10	2.50	5.50	Silt over hard bottom
US-05-18	2215412.22	372007.04	7.00	172.14	0.60	7.60	bottom
US-05-19	2215401.02	372008.14	8.40	173.91	0.20	8.60	Coarse sand and rock
US-05-20	2215380.87	372010.11	8.10	174.09	0.10	8.20	Coarse sand and rock
US-05-21	2215347.19	372013.42	9.20	173.38	0.10	9.30	Coarse sand and rock
US-05-22	2215333.22	372014.79	9.00	173.53	0.10	9.10	Coarse sand and rock
US-05-23	2215306.96	372017.36	9.00	173.49	0.30	9.30	Coarse sand and rock
US-05-24	2215281.23	372019.89	9.20	173.29	0.60	9.80	Coarse sand and rock
US-05-25	2215261.20	372021.85	9.10	173.53	0.10	9.20	Coarse sand and rock
US-05-26	2215240.78	372023.85	9.00	173.38	0.60	9.60	Coarse sand and rock
US-05-27	2215219.88	372025.90	8.80	173.62	1.00	9.80	Coarse sand and rock
US-05-28	2215198.74	372027.98	6.10	176.19	3.40	9.50	Silt over hard bottom
US-05-29	2215180.48	372029.77	4.00	178.12	1.60	5.60	Silt over tight sand
US-05-30	2215167.41	372031.05	2.00	180.18	3.80	5.80	Silt over hard bottom
US-05-31	2215160.10	372031.77	0.00	182.24	4.60	NA	Silt over hard bottom
US-05-32	2215129.63	372034.75	NA	184.43	NA	NA	on land
US-05-33	2215098.07	372037.85	NA	187.55	NA	NA	on land
US-05-34	2215065.75	372041.02	NA	199.78	NA	NA	on land
US-05-35	2215033.98	372044.13	NA	213.43	NA	NA	on land
US-05-36	2215028.93	372044.63	NA	215.66	NA	NA	on land
US-05-37	2215156.58	372032.11	NA	183.24	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 6
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-06

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-06-1	2215435.36	374386.70	0.00	179.03	5.50	NA	Silt over sandy silt/hard bottom
US-06-2	2215457.79	374388.00	NA	182.81	NA	NA	on land
US-06-3	2215514.46	374391.29	NA	183.68	NA	NA	on land
US-06-4	2215583.96	374395.32	NA	192.42	NA	NA	on land
US-06-5	2215639.87	374398.56	NA	199.09	NA	NA	on land
US-06-6	2215690.55	374401.50	NA	206.60	NA	NA	on land
US-06-7	2215783.88	374406.91	NA	211.34	NA	NA	on land
US-06-8	2215806.49	374408.22	NA	211.09	NA	NA	on land
US-06-9	2215426.09	374386.17	3.00	176.02	2.50	5.50	Silt over hard bottom
US-06-10	2215422.04	374385.93	4.80	174.22	3.00	7.80	Sand over hard bottom
US-06-11	2215406.58	374385.03	4.60	174.41	3.00	7.60	Sand over rock
US-06-12	2215385.97	374383.84	4.80	174.17	3.00	7.80	Sand over rock
US-06-13	2215368.70	374382.84	4.50	174.45	2.00	6.50	Sand over rock
US-06-14	2215348.43	374381.66	4.60	174.31	3.00	7.60	Sand over rock
US-06-15	2215338.36	374381.08	4.60	174.25	3.00	7.60	Sand over rock
US-06-16	2215309.09	374379.38	4.80	174.22	3.00	7.80	Sand over rock
US-06-17	2215287.78	374378.14	6.00	172.94	2.00	8.00	Sand over rock
US-06-18	2215268.61	374377.03	5.90	173.11	2.30	8.20	Sand over rock
US-06-19	2215248.05	374375.84	6.20	172.84	2.10	8.30	Sand over rock
US-06-20	2215228.87	374374.73	5.40	173.67	2.00	7.40	Sand over rock
US-06-21	2215208.35	374373.54	4.90	174.05	1.60	6.50	Sand over rock
US-06-22	2215187.62	374372.34	4.70	174.39	1.50	6.20	Sand over rock
US-06-23	2215168.28	374371.22	4.00	174.92	3.00	7.00	Sand over rock
US-06-24	2215147.59	374370.02	3.50	175.47	1.20	4.70	Sand silt/hard bottom
US-06-25	2215140.84	374369.62	2.10	176.92	1.90	4.00	Silt over stiff bottom
US-06-26	2215130.14	374369.00	0.00	179.01	3.00	NA	Silt over stiff bottom
US-06-27	2215043.93	374364.00	NA	182.22	NA	NA	on land
US-06-28	2215027.17	374363.03	NA	185.14	NA	NA	on land
US-06-29	2214994.32	374361.13	NA	184.57	NA	NA	on land
US-06-30	2214967.62	374359.58	NA	182.79	NA	NA	on land
US-06-31	2214902.46	374398.53	NA	182.92	NA	NA	on land; collected off the transect line due to access considerations
US-06-32	2214834.65	374428.41	NA	184.39	NA	NA	on land; collected off the transect line due to access considerations
US-06-33	2214772.65	374413.36	NA	186.38	NA	NA	on land; collected off the transect line due to access considerations
US-06-34	2214703.68	374427.47	NA	210.29	NA	NA	on land; collected off the transect line due to access considerations

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 7
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-07

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-07-1	2216008.38	376139.56	NA	207.16	NA	NA	on land
US-07-2	2216042.38	376128.86	NA	206.85	NA	NA	on land
US-07-3	2216101.10	376110.40	NA	209.78	NA	NA	on land
US-07-4	2216150.97	376094.71	NA	210.83	NA	NA	on land
US-07-5	2215974.22	376150.30	NA	199.80	NA	NA	on land
US-07-6	2215949.45	376158.09	NA	191.09	NA	NA	on land
US-07-7	2215931.10	376163.86	NA	183.01	NA	NA	on land
US-07-8	2215916.09	376168.58	0.00	178.86	4.00	NA	Silt over stiff bottom
US-07-9	2215906.34	376171.65	1.10	177.82	5.70	6.80	Silt over hard sand
US-07-10	2215902.03	376173.00	2.00	176.71	7.00	9.00	Silt, some fine sand over hard bottom
US-07-11	2215893.63	376175.65	3.00	175.86	3.10	6.10	Silt over hard sand
US-07-12	2215873.62	376181.94	8.00	170.74	6.00	14.00	Silt over sand over hard bottom
US-07-13	2215848.61	376189.80	8.50	170.29	3.00	11.50	Sand over hard bottom
US-07-14	2215824.37	376197.43	8.50	170.38	8.00	16.50	Sand and silt; sediment depth greater than 8 ft
US-07-15	2215800.60	376204.90	7.30	171.61	7.00	14.30	Sand and silt over hard bottom
US-07-16	2215779.89	376211.41	7.50	171.24	7.50	15.00	Sand
US-07-17	2215760.66	376217.46	7.70	171.14	5.80	13.50	Sand over hard bottom
US-07-18	2215742.09	376223.30	7.10	170.54	5.80	12.90	Sand over hard bottom
US-07-19	2215722.79	376229.37	8.20	170.65	5.60	13.80	Silt/some sand over hard bottom
US-07-20	2215702.71	376235.69	10.20	168.66	2.60	12.80	Sand over hard bottom
US-07-21	2215689.69	376239.78	8.00	170.85	3.00	11.00	Silt over sand/hard bottom
US-07-22	2215683.90	376241.60	5.10	173.69	3.00	8.10	Silt over hard bottom
US-07-23	2215672.97	376245.04	1.70	177.13	2.00	3.70	Silt over hard bottom
US-07-24	2215670.01	376245.97	0.00	178.66	0.80	NA	Silt over hard bottom
US-07-25	2215663.39	376248.05	NA	182.97	NA	NA	on land
US-07-26	2215634.38	376257.18	NA	183.36	NA	NA	on land
US-07-27	2215615.48	376263.12	NA	181.59	NA	NA	on land
US-07-28	2215568.99	376277.74	NA	181.43	NA	NA	on land
US-07-29	2215558.65	376280.99	NA	183.12	NA	NA	on land
US-07-30	2215557.40	376281.39	NA	182.35	NA	NA	on land
US-07-31	2215450.38	376315.04	NA	180.41	NA	NA	on land
US-07-32	2215381.91	376336.58	NA	180.38	NA	NA	on land
US-07-33	2215354.24	376345.28	NA	183.08	NA	NA	on land
US-07-34	2215306.20	376360.39	NA	188.37	NA	NA	on land
US-07-35	2215306.21	376360.39	NA	188.37	NA	NA	on land
US-07-36	2215197.54	376394.56	NA	206.59	NA	NA	on land
US-07-37	2215150.33	376409.41	NA	207.10	NA	NA	on land
US-07-38	2215132.95	376414.87	NA	207.09	NA	NA	on land
US-07-39	2215092.59	376427.57	NA	206.42	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 8
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-08

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-08-1	2216041.73	377568.56	NA	203.48	NA	NA	on land
US-08-2	2216046.86	377569.58	NA	204.86	NA	NA	on land
US-08-3	2216174.73	377594.94	NA	208.04	NA	NA	on land
US-08-4	2216235.23	377606.94	NA	214.60	NA	NA	on land
US-08-5	2216004.04	377561.09	NA	196.09	NA	NA	on land
US-08-6	2215969.75	377554.29	NA	186.26	NA	NA	on land
US-08-7	2215923.05	377545.03	NA	184.86	NA	NA	on land
US-08-8	2215898.87	377540.23	NA	186.87	NA	NA	on land
US-08-9	2215886.18	377537.71	NA	186.59	NA	NA	on land
US-08-10	2215856.37	377531.80	NA	182.58	NA	NA	on land
US-08-11	2215849.54	377530.45	NA	183.28	NA	NA	on land
US-08-12	2215823.90	377525.36	NA	182.68	NA	NA	on land
US-08-13	2215814.34	377523.46	0.00	178.50	2.70	NA	Silt over stiff bottom
US-08-14	2215811.11	377522.82	1.40	177.13	0.30	1.70	Silt over rock
US-08-15	2215806.81	377521.97	3.40	175.14	0.50	3.90	Silt over rock
US-08-16	2215799.78	377520.58	5.00	173.44	8.00	13.00	Sandy silt over hard bottom
US-08-17	2215792.09	377519.05	6.30	172.14	9.00	15.30	Silt over coarse sand over sandy silt
US-08-18	2215785.97	377517.84	6.30	171.67	9.00	15.30	Coarse sand over sandy silt
US-08-19	2215763.27	377513.33	6.80	171.72	9.00	15.80	Sand over sandy silt
US-08-20	2215744.44	377509.60	6.40	172.11	1.40	7.80	Sand over hard bottom
US-08-21	2215725.85	377505.91	6.60	171.95	2.50	9.10	Sand over hard bottom
US-08-22	2215695.26	377499.85	6.20	172.29	9.00	15.20	Sand
US-08-23	2215671.73	377495.18	5.70	172.86	6.90	12.60	Sand over hard bottom
US-08-24	2215651.60	377491.19	5.50	173.04	6.50	12.00	Sand over hard bottom
US-08-25	2215631.51	377487.20	5.20	173.29	5.80	11.00	Sand over hard bottom
US-08-26	2215610.77	377483.09	5.60	172.98	4.50	10.10	Sand over hard bottom
US-08-27	2215592.22	377479.41	5.10	173.45	5.20	10.30	Sand over hard bottom
US-08-28	2215570.40	377475.08	5.50	172.97	7.00	12.50	Sandy silt over hard bottom
US-08-29	2215554.07	377471.84	3.00	175.55	2.80	5.80	Silt over hard bottom
US-08-30	2215545.65	377470.17	1.00	177.60	6.00	7.00	Silt over hard bottom
US-08-31	2215535.96	377468.25	0.00	178.52	2.00	NA	Silt over hard bottom
US-08-32	2215500.78	377461.28	NA	179.24	NA	NA	on land
US-08-33	2215488.65	377458.87	NA	181.48	NA	NA	on land
US-08-34	2215479.90	377457.13	NA	181.44	NA	NA	on land
US-08-35	2215461.41	377453.47	NA	178.17	NA	NA	on land
US-08-36	2215432.71	377447.77	NA	179.13	NA	NA	on land
US-08-37	2215421.41	377445.53	NA	181.21	NA	NA	on land
US-08-38	2215400.03	377441.29	NA	181.84	NA	NA	on land
US-08-39	2215347.64	377430.90	NA	186.21	NA	NA	on land
US-08-40	2215319.15	377425.25	NA	190.38	NA	NA	on land
US-08-41	2215280.11	377417.51	NA	199.90	NA	NA	on land
US-08-42	2215023.83	377366.68	NA	209.16	NA	NA	on land
US-08-43	2214990.00	377359.97	NA	211.59	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 9
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-09

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-09-1	2216377.64	378274.31	NA	199.87	NA	NA	on land
US-09-2	2216421.61	378247.90	NA	212.85	NA	NA	on land
US-09-3	2215927.74	378558.96	NA	181.01	NA	NA	on land
US-09-4	2215947.97	378546.10	NA	182.26	NA	NA	on land
US-09-5	2215979.73	378525.91	NA	181.63	NA	NA	on land
US-09-6	2215991.51	378518.43	NA	182.85	NA	NA	on land
US-09-7	2216022.79	378498.54	NA	182.53	NA	NA	on land
US-09-8	2216048.24	378482.36	NA	180.77	NA	NA	on land
US-09-9	2216084.44	378459.35	NA	179.72	NA	NA	on land
US-09-10	2216122.24	378435.31	NA	179.97	NA	NA	on land
US-09-11	2216144.07	378421.44	NA	180.61	NA	NA	on land
US-09-12	2216150.69	378417.22	NA	181.56	NA	NA	on land
US-09-13	2216165.70	378407.69	NA	181.77	NA	NA	on land
US-09-14	2216174.16	378402.31	NA	180.80	NA	NA	on land
US-09-15	2216211.91	378378.31	NA	180.90	NA	NA	on land
US-09-16	2216218.52	378374.10	NA	181.49	NA	NA	on land
US-09-17	2216254.98	378350.92	NA	181.84	NA	NA	on land
US-09-18	2216294.97	378325.50	NA	182.96	NA	NA	on land
US-09-19	2216327.85	378304.60	NA	186.94	NA	NA	on land
US-09-20	2216362.50	378282.57	NA	195.80	NA	NA	on land
US-09-21	2215924.06	378561.30	0.00	180.10	0.20	NA	Silt
US-09-22	2215920.88	378563.32	2.70	178.30	1.50	4.20	Silt over hard bottom
US-09-23	2215911.62	378569.21	5.50	174.64	10.00	15.50	Sand over silty sand over hard bottom
US-09-24	2215905.93	378572.83	6.30	173.88	10.00	16.30	Sand over hard bottom
US-09-25	2215887.09	378584.81	7.80	172.40	6.20	14.00	Sand over hard bottom
US-09-26	2215868.99	378596.31	9.50	170.65	5.50	15.00	Sand
US-09-27	2215850.32	378608.18	10.50	170.01	4.50	15.00	Sand
US-09-28	2215818.74	378628.26	11.80	168.45	3.20	15.00	Sand
US-09-29	2215799.86	378640.26	8.50	171.77	0.30	8.80	Clay
US-09-30	2215783.49	378650.67	8.70	171.52	0.30	9.00	Clay
US-09-31	2215766.20	378661.66	8.80	171.42	0.30	9.10	Clay
US-09-32	2215759.09	378666.19	5.50	174.73	0.00	5.50	Rock
US-09-33	2215749.46	378672.30	4.00	176.14	0.30	4.30	Clay and rock
US-09-34	2215739.79	378678.46	2.00	178.13	0.30	2.30	Clay and rock
US-09-35	2215733.70	378682.33	0.00	180.20	0.20	NA	Silt
US-09-36	2215730.02	378684.66	NA	182.54	NA	NA	on land
US-09-37	2215712.69	378695.69	NA	185.15	NA	NA	on land
US-09-38	2215681.84	378715.29	NA	194.34	NA	NA	on land
US-09-39	2215661.10	378728.48	NA	197.67	NA	NA	on land
US-09-40	2215627.54	378749.81	NA	206.25	NA	NA	on land
US-09-41	2215575.39	378782.97	NA	207.35	NA	NA	on land
US-09-42	2215510.11	378824.47	NA	209.77	NA	NA	on land
US-09-43	2215485.89	378839.87	NA	211.23	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 10
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-10

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-10-1	2216775.41	379602.19	NA	180.40	NA	NA	on land
US-10-2	2216785.10	379595.75	NA	183.15	NA	NA	on land
US-10-3	2216794.54	379589.47	NA	182.67	NA	NA	on land
US-10-4	2216813.65	379576.76	NA	180.57	NA	NA	on land
US-10-5	2216850.62	379552.16	NA	179.48	NA	NA	on land
US-10-6	2216888.59	379526.90	NA	179.07	NA	NA	on land
US-10-7	2216929.78	379499.50	NA	180.12	NA	NA	on land
US-10-8	2216969.32	379473.20	NA	179.68	NA	NA	on land
US-10-9	2217008.38	379447.22	NA	179.38	NA	NA	on land
US-10-10	2217038.96	379426.87	NA	179.87	NA	NA	on land
US-10-11	2217051.46	379418.56	NA	180.62	NA	NA	on land
US-10-12	2217055.37	379415.95	NA	183.59	NA	NA	on land
US-10-13	2217080.70	379399.11	NA	193.44	NA	NA	on land
US-10-14	2217158.70	379347.22	NA	202.95	NA	NA	on land
US-10-15	2217200.64	379319.32	NA	212.84	NA	NA	on land
US-10-16	2217183.08	379331.00	NA	210.14	NA	NA	on land
US-10-17	2216775.23	379602.31	0.00	179.56	NA	NA	not available
US-10-18	2216775.08	379602.41	0.30	179.30	1.60	1.90	Silt over hard bottom
US-10-19	2216770.96	379605.15	3.20	177.41	2.40	5.60	Silt over sand over hard bottom
US-10-20	2216762.14	379611.02	5.00	174.61	10.00	15.00	Silty sand over hard bottom
US-10-21	2216755.90	379615.17	7.20	172.42	6.60	13.80	Silty sand over hard bottom
US-10-22	2216738.60	379626.68	8.30	171.37	7.70	16.00	Silt over sand over hard bottom
US-10-23	2216719.71	379639.25	8.10	171.62	7.90	16.00	Silty sand over sand over hard bottom
US-10-24	2216701.10	379651.62	8.10	171.62	8.40	16.50	Silty sand over sand over hard bottom
US-10-25	2216672.50	379670.65	7.30	172.48	7.00	14.30	Sand over silty sand over hard bottom
US-10-26	2216654.72	379682.48	7.10	172.70	8.00	15.10	Sand over silty sand over hard bottom
US-10-27	2216637.95	379693.63	7.00	172.75	8.00	15.00	Sand over silty sand over hard bottom
US-10-28	2216620.78	379705.05	6.40	173.33	8.60	15.00	Sand over hard crust over silty sand over hard bottom
US-10-29	2216604.65	379715.79	6.60	173.20	8.40	15.00	Sand over silty clay over hard bottom
US-10-30	2216587.43	379727.24	6.70	173.03	8.40	15.10	Sand over silty clay over hard bottom
US-10-31	2216570.31	379738.63	7.00	172.80	8.00	15.00	Sand over silty clay over hard bottom
US-10-32	2216553.28	379749.96	5.20	174.60	9.00	14.20	Silty sand over hard bottom
US-10-33	2216538.05	379760.09	6.00	173.94	0.40	6.40	Silt over hard bottom
US-10-34	2216533.46	379763.14	1.00	178.70	1.00	2.00	Silt over hard bottom
US-10-35	2216527.59	379767.05	0.00	179.75	1.00	NA	Silt over hard bottom
US-10-36	2216518.08	379773.37	NA	182.79	NA	NA	on land
US-10-37	2216498.12	379786.65	NA	186.54	NA	NA	on land
US-10-38	2216454.91	379815.39	NA	200.96	NA	NA	on land
US-10-39	2216261.03	379944.37	NA	210.91	NA	NA	on land
US-10-40	2216778.85	379599.91	NA	181.11	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 11
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-11

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-11-1	2217897.66	380755.03	NA	180.01	NA	NA	on land
US-11-2	2217894.84	380758.04	NA	179.01	NA	NA	on land
US-11-3	2217892.85	380763.05	2.20	176.81	2.70	4.90	Silt over sand over hard bottom
US-11-4	2217887.31	380770.97	4.40	174.58	NA	NA	not available
US-11-5	2217882.08	380777.88	6.20	172.80	0.60	6.80	Sand over hard bottom
US-11-6	2217871.49	380795.65	6.80	172.20	4.20	11.00	Sand over hard bottom
US-11-7	2217849.67	380827.99	8.00	170.15	4.70	12.70	Sand over large sand and cobble
US-11-8	2217838.01	380844.80	8.20	170.98	5.80	14.00	Sand over hard bottom
US-11-9	2217826.67	380860.08	7.00	172.03	7.00	14.00	Sand over hard bottom
US-11-10	2217817.29	380879.13	7.70	171.37	6.30	14.00	Sand over hard bottom
US-11-11	2217804.58	380894.57	7.30	171.91	5.30	12.60	Sand over hard bottom
US-11-12	2217793.27	380911.36	7.70	171.31	7.30	15.00	Sand over hard bottom
US-11-13	2217779.72	380926.29	7.70	171.32	7.30	15.00	Sand over hard bottom
US-11-14	2217764.52	380940.08	7.70	171.36	3.30	11.00	Clayey silt over sand over hard bottom
US-11-15	2217758.75	380940.30	7.10	171.92	NA	NA	not available
US-11-16	2217752.00	380945.98	4.20	173.13	NA	NA	not available
US-11-17	2217746.21	380951.29	3.50	175.56	2.50	6.00	Clayey silt over hard bottom
US-11-18	2217732.32	380965.23	1.50	177.57	1.50	3.00	Clayey silt over hard bottom
US-11-19	2217730.93	380969.78	0.00	179.15	1.00	NA	Clayey silt over hard bottom
US-11-20	2217726.84	380970.05	NA	185.29	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 12
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-12

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-12-1	2218946.17	381487.42	NA	211.38	NA	NA	on land
US-12-2	2218942.61	381526.23	NA	194.49	NA	NA	on land
US-12-3	2218939.41	381561.09	NA	179.70	NA	NA	on land
US-12-4	2218938.88	381566.83	0.00	177.58	0.00	NA	Rip rap
US-12-5	2218937.53	381581.56	3.40	173.91	0.20	3.60	Soft silt
US-12-6	2218936.97	381587.67	3.18	173.81	1.00	4.18	Soft sediment with cobble and sand
US-12-7	2218935.16	381607.35	4.50	173.01	4.50	9.00	Sand/tight over loose sand/hard bottom
US-12-8	2218933.32	381627.43	5.90	171.76	1.00	6.90	Medium sand over rock (south end of bridge pier)
US-12-9	2218931.57	381646.52	4.20	173.53	3.90	8.10	Medium sand over hard bottom
US-12-10	2218929.69	381667.07	4.70	172.92	5.30	10.00	Sand over hard bottom
US-12-11	2218927.91	381686.41	5.00	172.63	5.00	10.00	Sand over hard bottom
US-12-12	2218926.11	381706.06	5.70	172.07	4.90	10.60	Sand over hard bottom
US-12-13	2218924.28	381725.96	5.90	172.70	0.00	5.90	Rock
US-12-14	2218922.59	381744.38	5.60	172.10	5.50	11.10	Sand with cobble over hard bottom
US-12-15	2218920.81	381763.85	4.20	173.39	0.10	4.30	Gravel over hard bottom
US-12-16	2218918.87	381784.94	2.60	174.95	0.10	2.70	Gravel over hard bottom
US-12-17	2218917.06	381804.63	2.40	174.48	0.20	2.60	Gravel over hard bottom
US-12-18	2218915.23	381824.65	3.90	173.72	0.30	4.20	Sand over hard bottom
US-12-19	2218913.48	381843.72	4.50	173.10	2.00	6.50	Sand over hard bottom
US-12-20	2218911.66	381863.53	4.00	173.68	3.90	7.90	Sand over hard bottom
US-12-21	2218909.54	381886.64	4.90	172.85	1.00	5.90	Sand over hard bottom (south end of bridge pier)
US-12-22	2218908.04	381903.02	3.40	174.25	3.00	6.40	Sand over hard bottom
US-12-23	2218906.15	381923.62	1.40	176.32	2.30	3.70	Sand over hard and tight sand
US-12-24	2218904.89	381937.28	0.60	177.13	3.20	3.80	Silt over hard bottom
US-12-25	2218904.01	381946.89	0.00	177.61	0.10	NA	Silt over hard bottom
US-12-26	2218903.79	381949.27	NA	178.16	NA	NA	on land
US-12-27	2218900.93	381980.45	NA	192.29	NA	NA	on land
US-12-28	2218896.83	382025.20	NA	210.77	NA	NA	on land

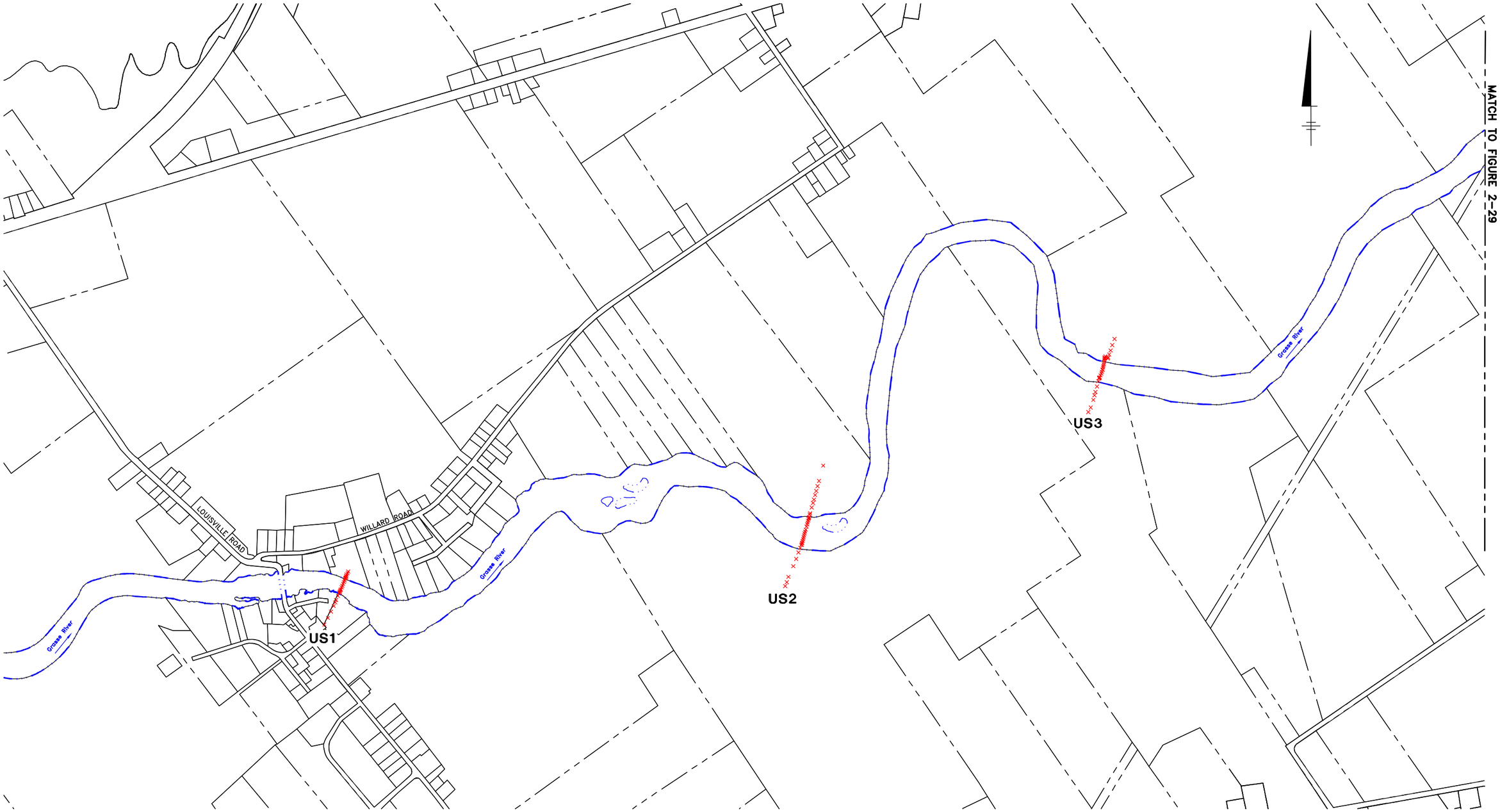
Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 13
Comprehensive Characterization of the Lower Grasse River Addendum
Sediment Probing Transect US-13

Transect Point	Northing	Easting	Water Depth	Top of Sediment Elevation	Sediment Depth	Bottom of Sediment Depth Below Water Surface	Comments
US-13-1	2220674.13	382580.06	NA	213.41	NA	NA	on land
US-13-2	2220648.19	382599.78	NA	209.93	NA	NA	on land
US-13-3	2220570.61	382648.38	NA	199.88	NA	NA	on land
US-13-4	2220535.66	382675.43	NA	193.34	NA	NA	on land
US-13-5	2220499.32	382704.71	NA	188.42	NA	NA	on land
US-13-6	2220464.55	382734.11	NA	184.72	NA	NA	on land
US-13-7	2220429.14	382763.73	NA	183.11	NA	NA	on land
US-13-8	2220394.33	382795.55	NA	182.47	NA	NA	on land
US-13-9	2220384.42	382803.71	NA	180.13	NA	NA	on land
US-13-10	2220343.85	382841.12	NA	181.81	NA	NA	on land
US-13-11	2220329.77	382850.26	0.00	178.49	0.80	NA	Silt over rock
US-13-12	2220315.70	382868.11	5.00	173.52	3.50	8.50	Loose sand over tight sand over hard bottom
US-13-13	2220302.63	382884.69	4.70	173.76	5.00	9.70	Sand over hard bottom
US-13-14	2220290.58	382899.97	4.80	173.68	6.00	10.80	Sand over hard bottom
US-13-15	2220278.20	382915.67	4.70	173.88	5.00	9.70	Sand over hard bottom
US-13-16	2220265.27	382932.07	4.90	173.67	5.00	9.90	Sand over hard bottom
US-13-17	2220253.15	382947.45	4.80	173.90	5.00	9.80	Sand over hard bottom
US-13-18	2220239.00	382965.40	5.30	173.34	5.60	10.90	Sand over hard bottom
US-13-19	2220227.80	382979.61	5.20	173.51	7.00	12.20	Sand over gravel
US-13-20	2220215.03	382995.80	5.30	173.37	8.70	14.00	Sand over hard bottom
US-13-21	2220202.86	383011.24	5.90	172.77	5.60	11.50	Sand over hard bottom
US-13-22	2220190.55	383026.85	6.20	172.48	4.00	10.20	Sand over hard bottom
US-13-23	2220177.63	383043.24	5.90	172.77	6.10	12.00	Sand over hard bottom
US-13-24	2220164.85	383059.46	5.50	172.54	5.30	10.80	Sand over hard bottom
US-13-25	2220152.02	383075.72	6.00	172.31	5.40	11.40	Sand over hard bottom
US-13-26	2220144.84	383084.83	6.80	171.80	5.20	12.00	Silt over hard bottom
US-13-27	2220139.77	383091.27	5.10	173.63	7.90	13.00	Silt over hard bottom
US-13-28	2220136.80	383095.01	3.80	174.89	1.20	5.00	Silt over hard bottom
US-13-29	2220130.60	383102.87	1.50	177.18	1.00	2.50	Silt over hard bottom
US-13-30	2220128.59	383105.43	0.00	178.76	0.20	NA	Silt
US-13-31	2220124.07	383111.16	NA	180.19	NA	NA	on land

Notes:
1. All units in feet.
2. NA indicates not available or applicable.
3. Bottom of sediment depth below water surface was calucalted using the water depth plus the sediment depth at each point.
4. Northings and eastings are based on NAD 83, in the New York East State Plane Zone.
5. Elevations are based on USLS 1935.



LEGEND:

US1 — APPROXIMATE UPSTREAM CROSS-SECTION POINT LOCATION AND TRANSECT ID

PROPERTY BOUNDARY

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A FIGURE BY CAMP DRESSER & MCKEE ENTITLED "ALCOA, INC. – MASSENA OPERATIONS – WEST PLANT" DATED AUGUST 1, 2003.
2. PROPERTY INFORMATION OBTAINED FROM ST. LAWRENCE COUNTY REAL PROPERTY DATA FOR 2000.

0 500' 1000'
GRAPHIC SCALE

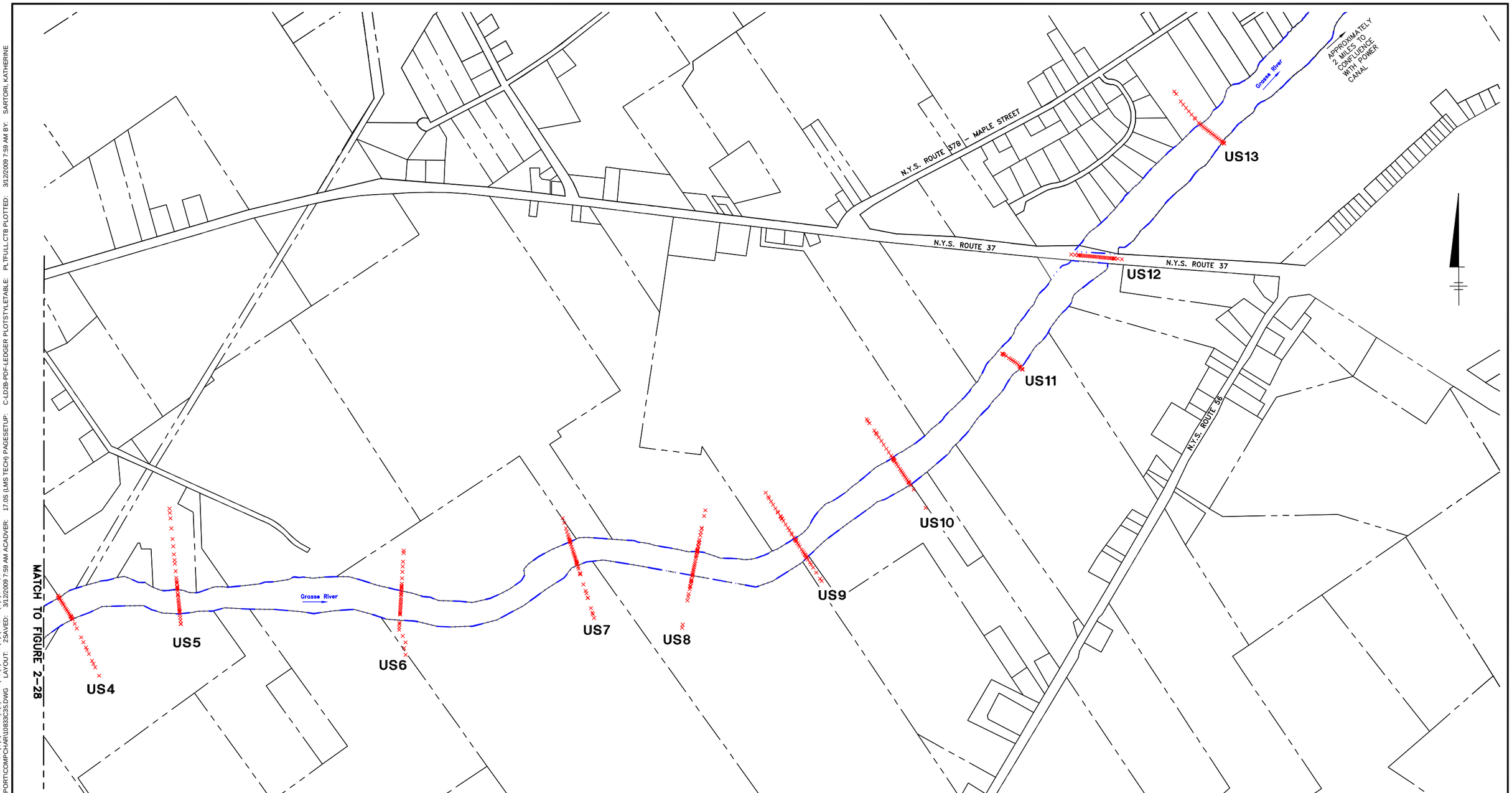
GRASSE RIVER STUDY AREA
MASSENA, NEW YORK
COMPREHENSIVE CHARACTERIZATION OF THE LOWER GRASSE RIVER ADDENDUM

UPSTREAM CROSS SECTION LOCATIONS US1 THROUGH US3

ALCOA

FIGURE
1

CITY: SYR DIV/GROUP: ENV/CAD DB: GMS NES BGP KLS LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0010833\0000\00001\REPORT\COMPCHAR\10833C30.DWG LAYOUT: 1SAVED: 3/12/2009 7:56 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: C-LD2B-PDF-LEDGER PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/12/2009 7:57 AM BY: SARTORI, KATHERINE
XREFS: 10833X02 10833RDL IMAGES: 10833X01.TIF PROJECTNAME: ---



LEGEND:

US4 — APPROXIMATE UPSTREAM CROSS-SECTION POINT LOCATION AND TRANSECT ID

— — — — PROPERTY BOUNDARY

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A FIGURE BY CAMP DRESSER & MCKEE ENTITLED "ALCOA, INC. – MASSENA OPERATIONS – WEST PLANT" DATED AUGUST 1, 2003.
2. PROPERTY INFORMATION OBTAINED FROM ST. LAWRENCE COUNTY REAL PROPERTY DATA FOR 2000.

0 500' 1000'
GRAPHIC SCALE

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

COMPREHENSIVE CHARACTERIZATION OF THE LOWER GRASSE RIVER ADDENDUM

UPSTREAM CROSS SECTION LOCATIONS US4 THROUGH US13

ALCOA

FIGURE **2**

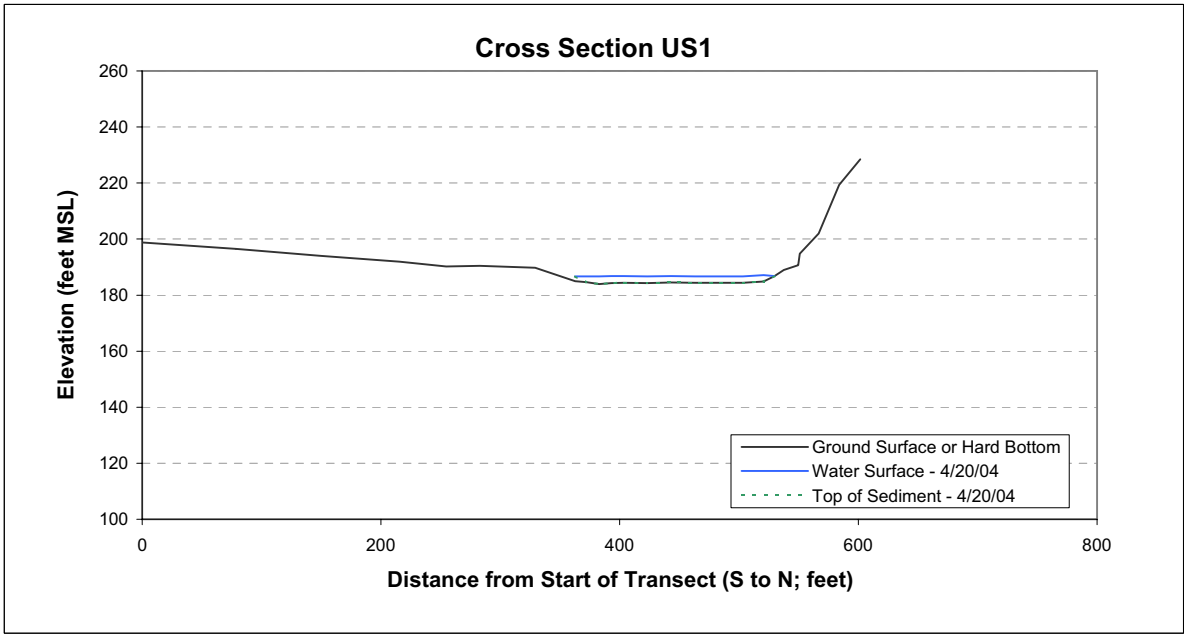
CITY: SYR DIV/GROUP: ENV/CAD DB: GMS NES BGP KLS LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0010833\0000\00001\REPORT\COMPCHAR\10833C35.DWG LAYOUT: 2SAVED: 3/12/2009 7:59 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: C-LD2B-PDF-LEDGER PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/12/2009 7:59 AM BY: SARTORI, KATHERINE
XREFS: 10833X02 10833RDL IMAGES: 10833X01.TIF PROJECTNAME: ---

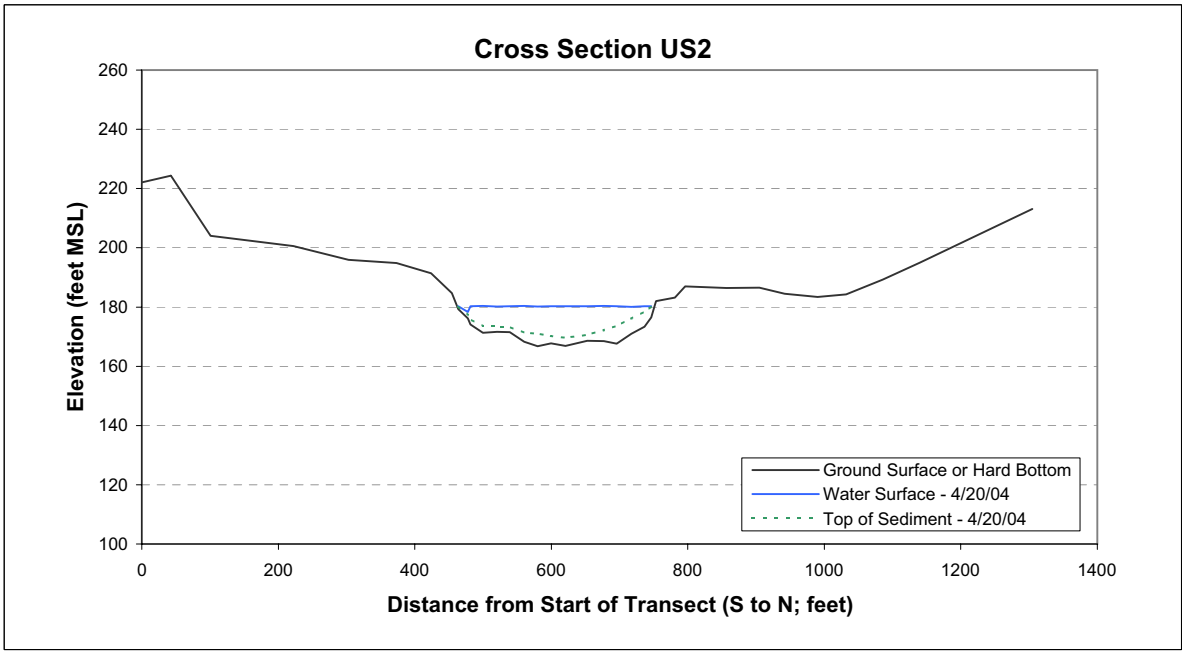
GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

FIGURE 3

Comprehensive Characterization of the Lower Grasse River Addendum

Cross Sectional Profiles of the Grasse River and Its Floodplains Between Louisville and Massena





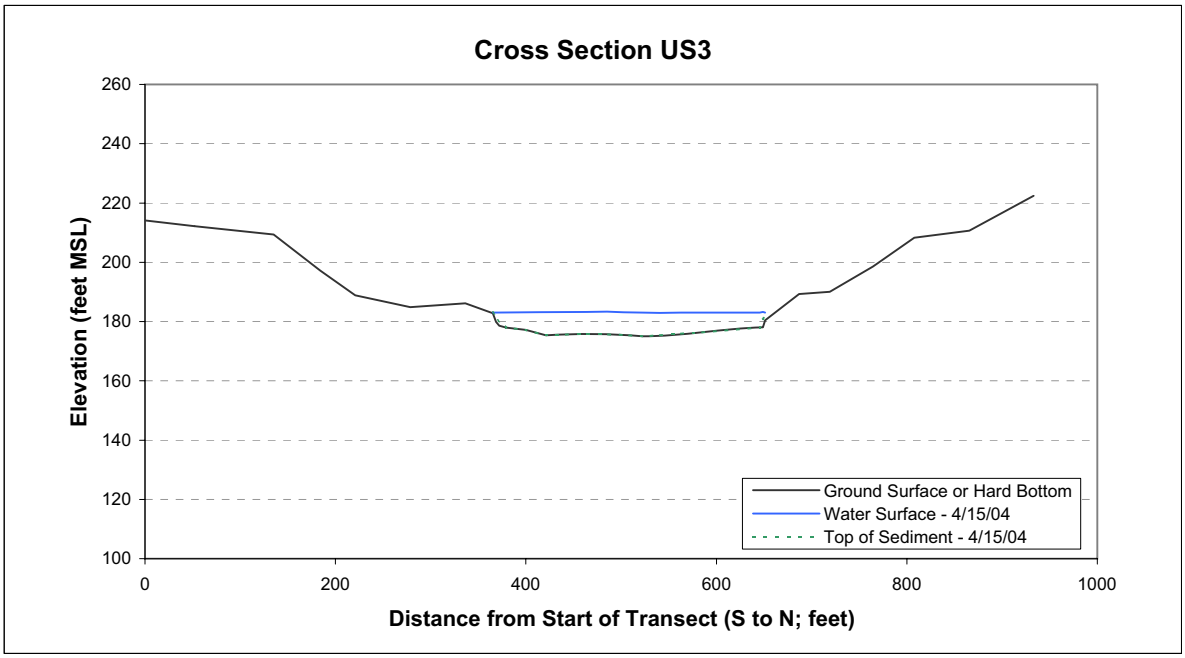
See notes on page 7.

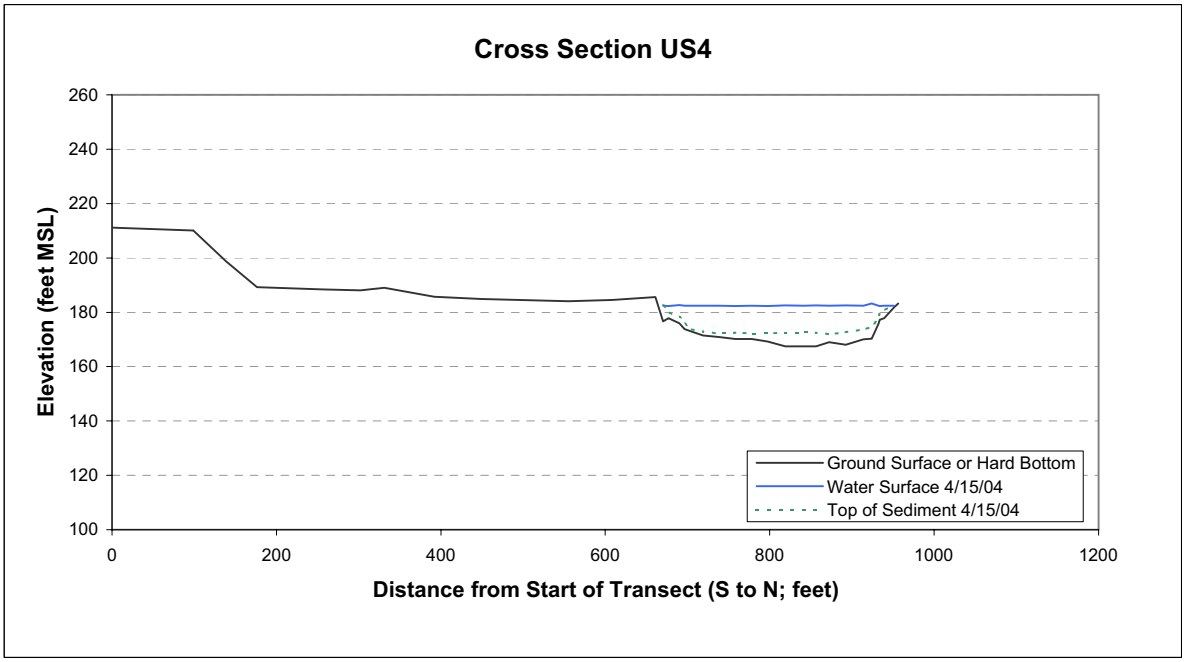
GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

FIGURE 3

Comprehensive Characterization of the Lower Grasse River Addendum

Cross Sectional Profiles of the Grasse River and Its Floodplains Between Louisville and Massena

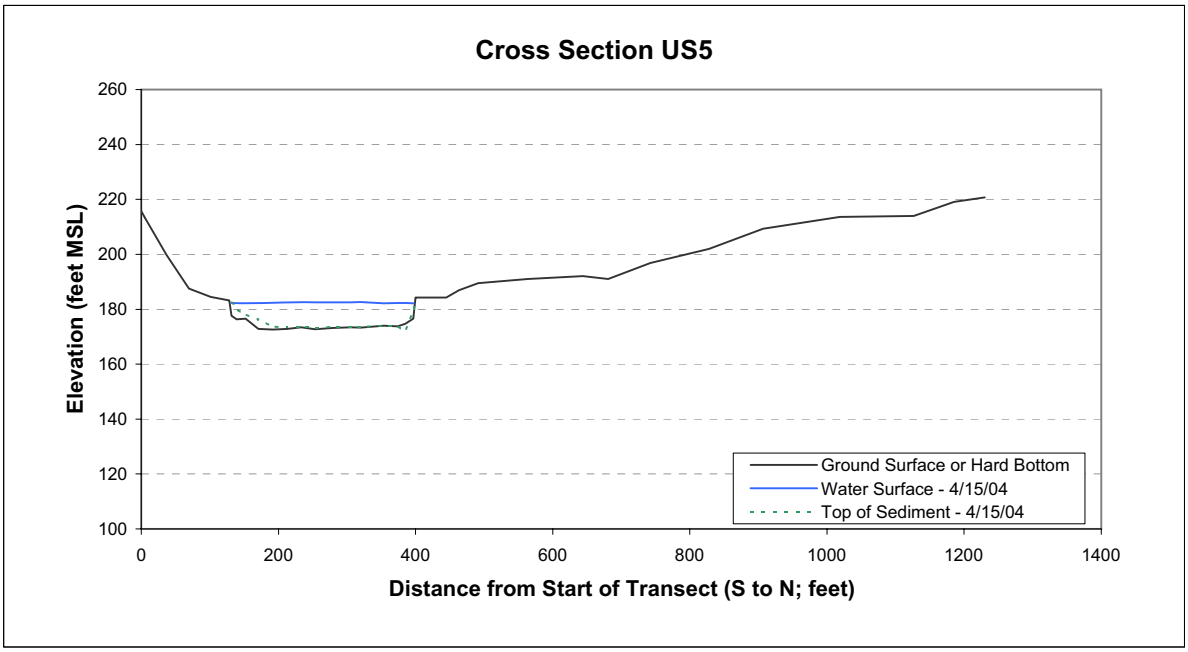


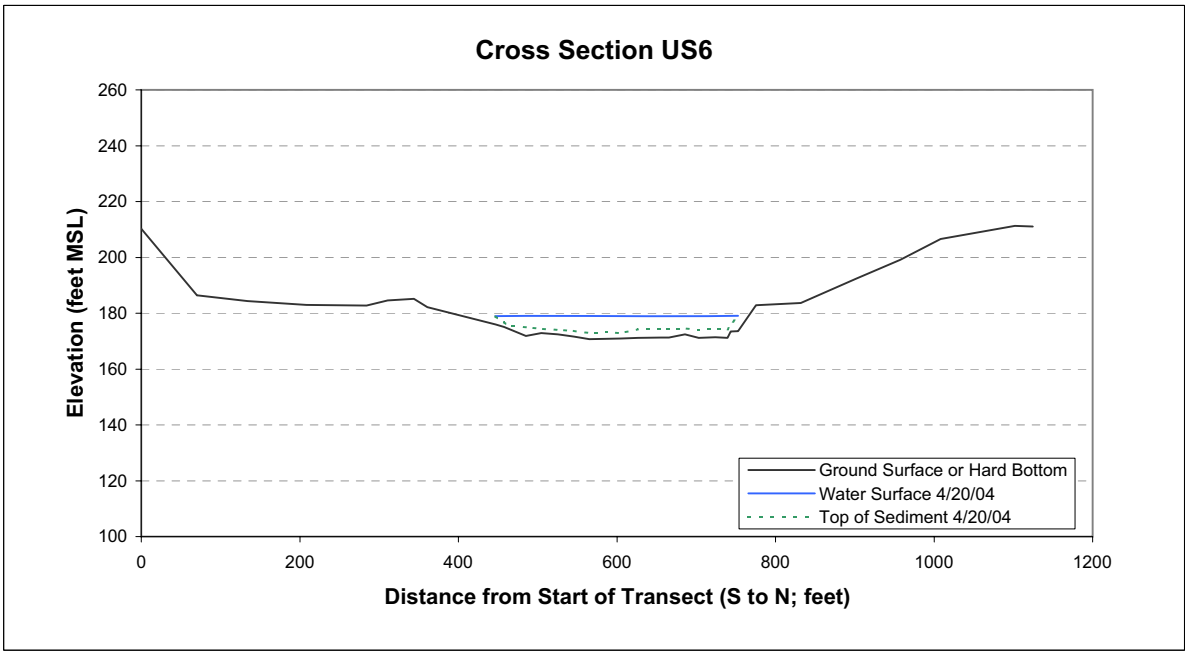


See notes on page 7.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

FIGURE 3
Comprehensive Characterization of the Lower Grasse River Addendum
Cross Sectional Profiles of the Grasse River and Its Floodplains Between Louisville and Massena

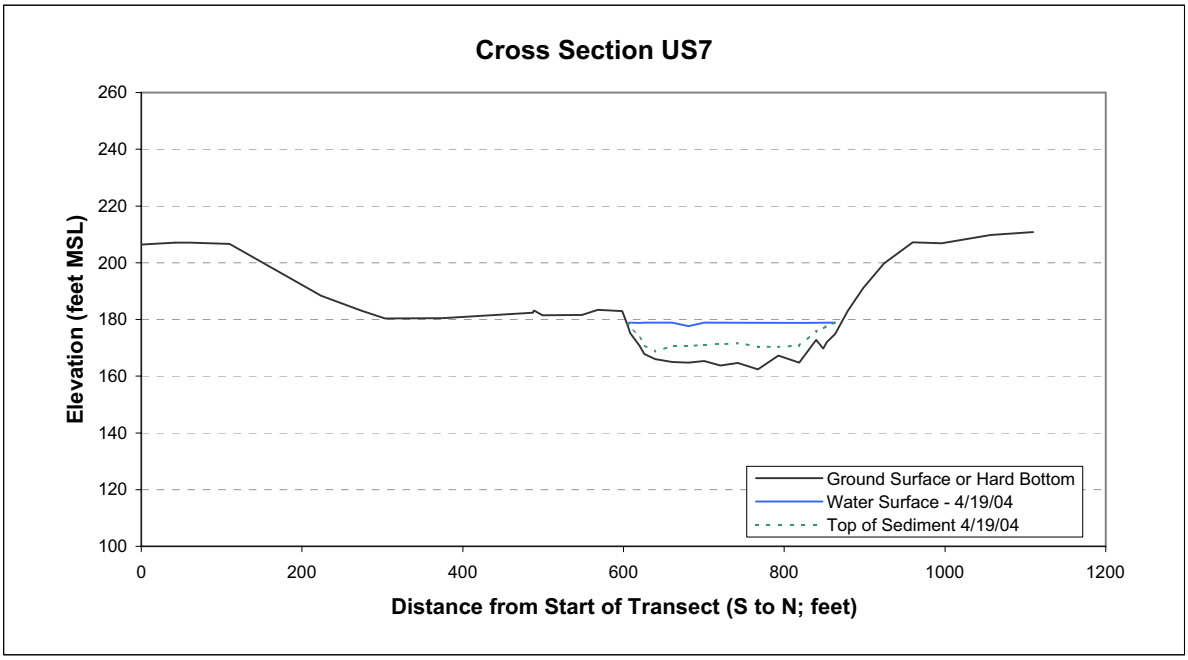


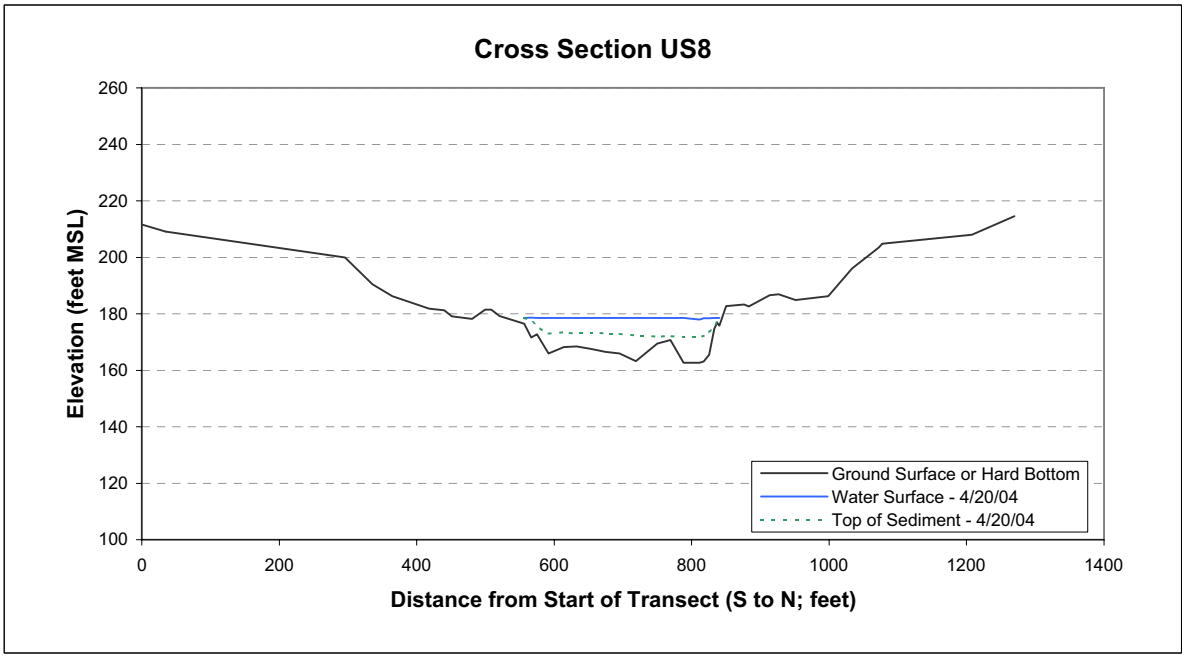


See notes on page 7.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

FIGURE 3
Comprehensive Characterization of the Lower Grasse River Addendum
Cross Sectional Profiles of the Grasse River and Its Floodplains Between Louisville and Massena

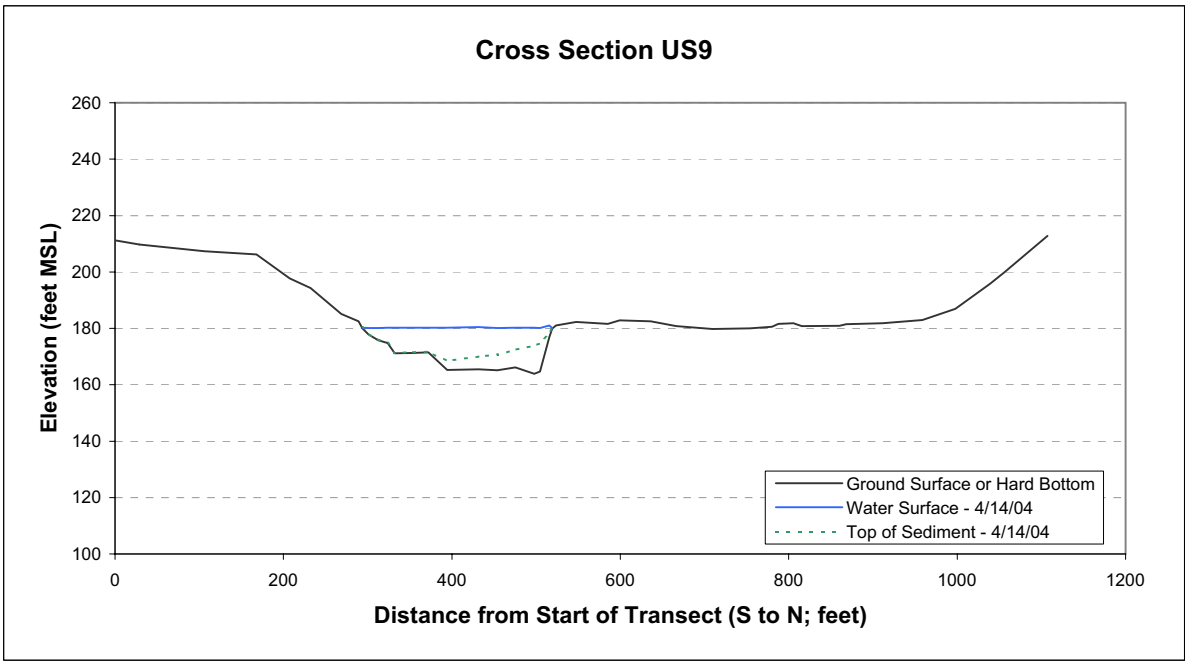


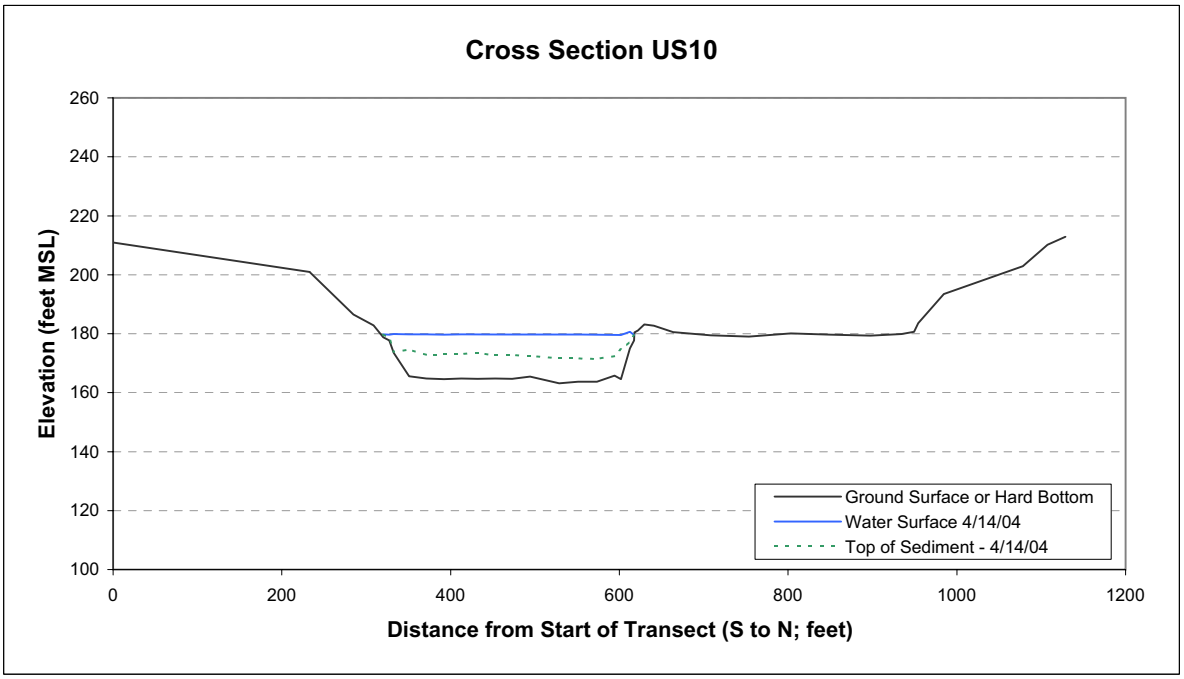


See notes on page 7.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

FIGURE 3
Comprehensive Characterization of the Lower Grasse River Addendum
Cross Sectional Profiles of the Grasse River and Its Floodplains Between Louisville and Massena

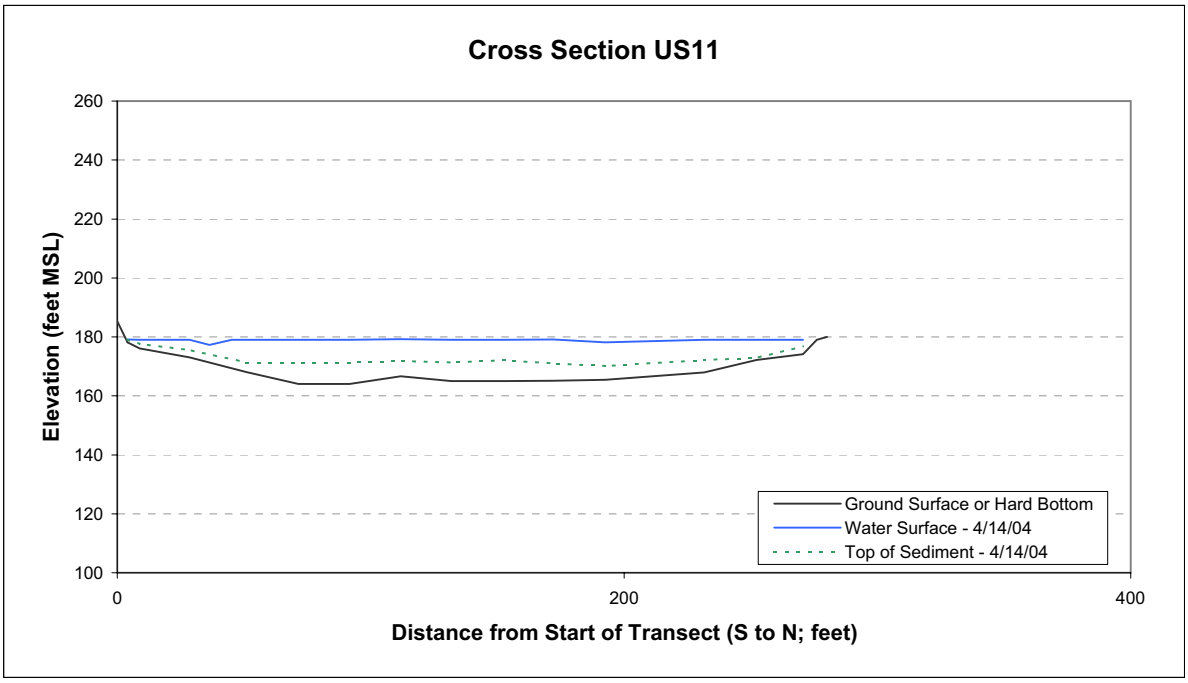


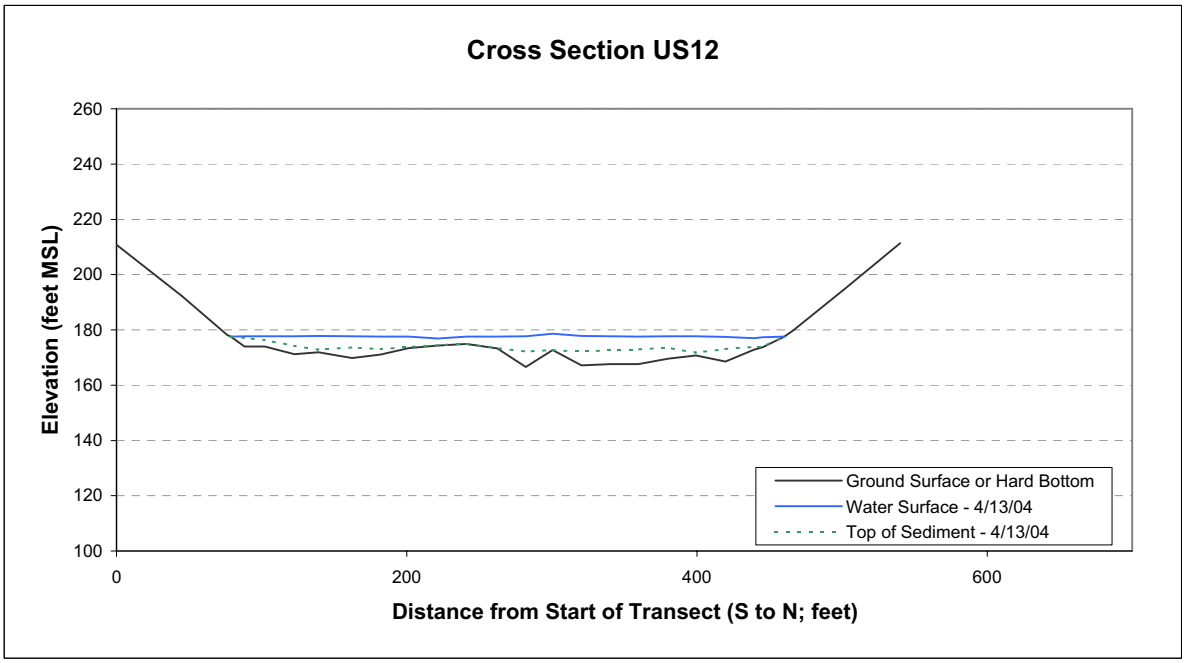


See notes on page 7.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

FIGURE 3
Comprehensive Characterization of the Lower Grasse River Addendum
Cross Sectional Profiles of the Grasse River and Its Floodplains Between Louisville and Massena





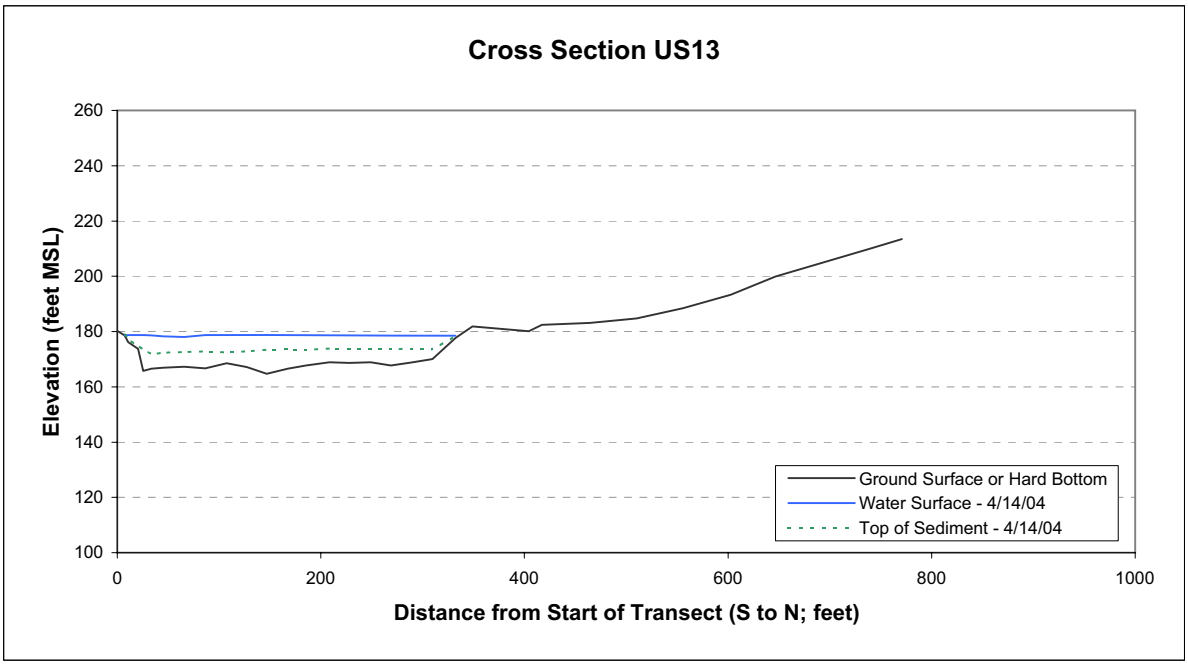
See notes on page 7.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

FIGURE 3

Comprehensive Characterization of the Lower Grasse River Addendum

Cross Sectional Profiles of the Grasse River and Its Floodplains Between Louisville and Massena



Notes:

1. Elevations based on United States Lakes Survey (USLS) 1935.
2. Information presented is reflective of conditions encountered at the date of collection, actual collection date is indicated in the legend.
3. The x-axis represents the distance in feet along the transect beginning south of the Grasse River and extending northward.
4. Transect US1 does not extend to an elevation of 210 feet mean sea level (MSL) on the southern floodplain, as this elevation was not reached before intersecting the property line, and access was not obtained for the adjacent property.
5. Survey information was not obtained for US4 on the northern floodplain, US11 on the northern and southern floodplains, and US13 on the southern floodplain as access was not granted by the respective property owners.
6. The last four points listed under Transect US6 were collected off the transect line due to access considerations (e.g., points collected along property line).
7. Transect US7 does not extend to an elevation of 210 feet MSL on the southern floodplain, as there was a change in grade and the targeted elevation would not be achieved for several additional stations out into the floodplain.

Sediment Core Profiles

2003 Phase II and January 2004
Monitoring Programs

This appendix contains vertical profiles of total PCBs, total organic carbon, bulk density, moisture and solids content, grain size. Data for chlorines per biphenyl and lead-210 are included when available.

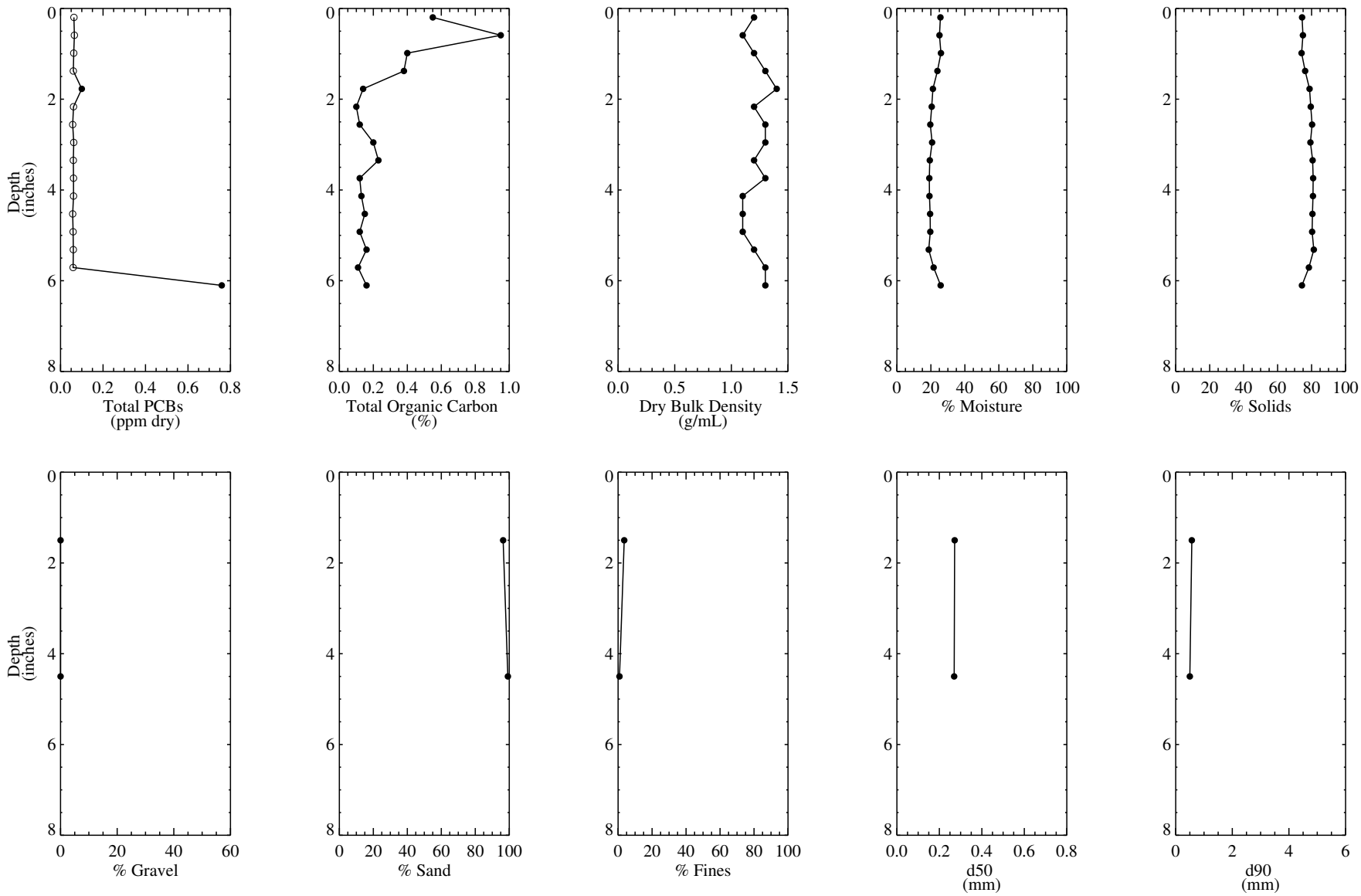


Figure 1. Vertical Profiles for Cores Co-located at T4-N

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:08 2004

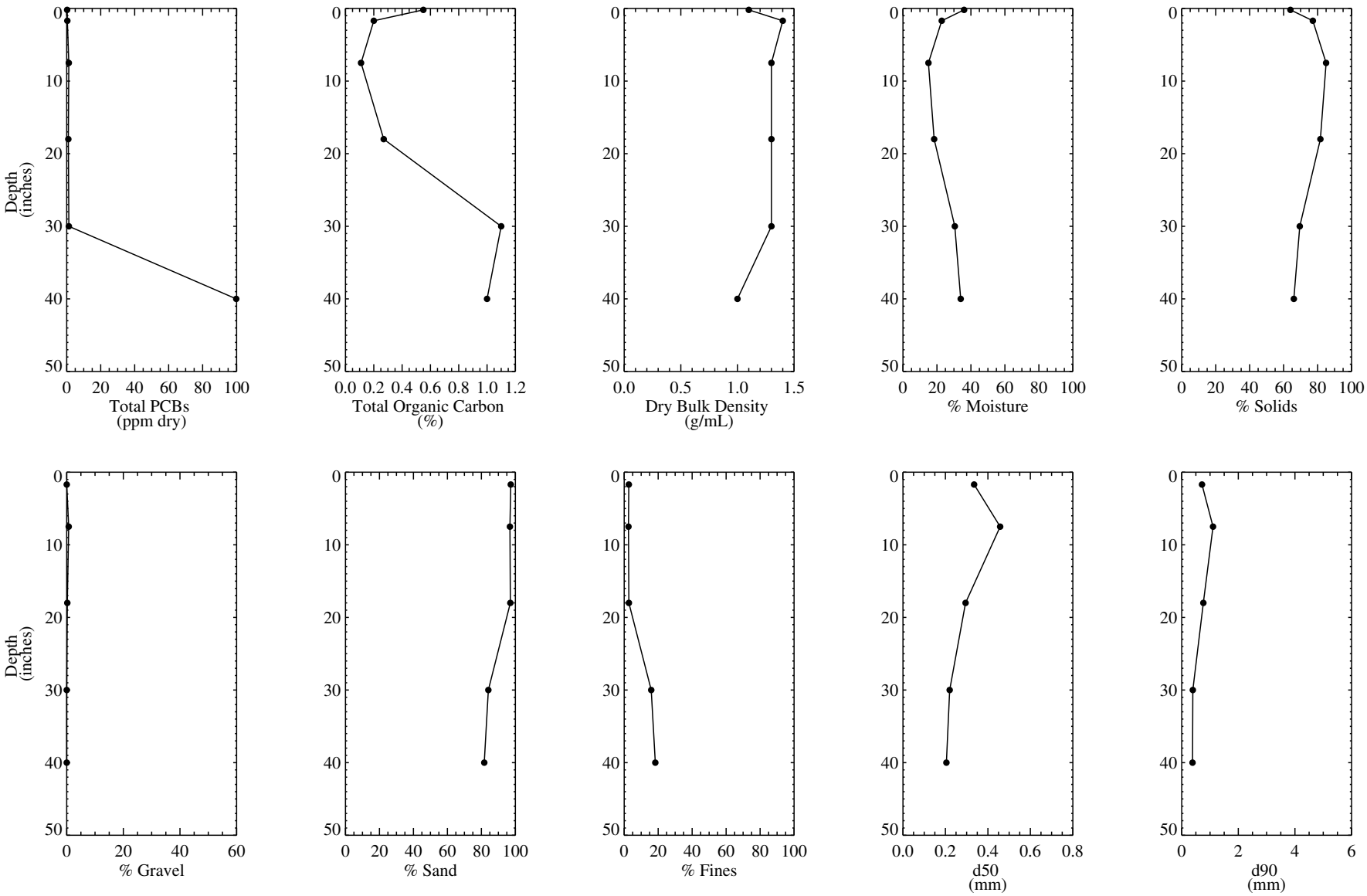


Figure 2. Vertical Profiles for Core T5-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:08 2004

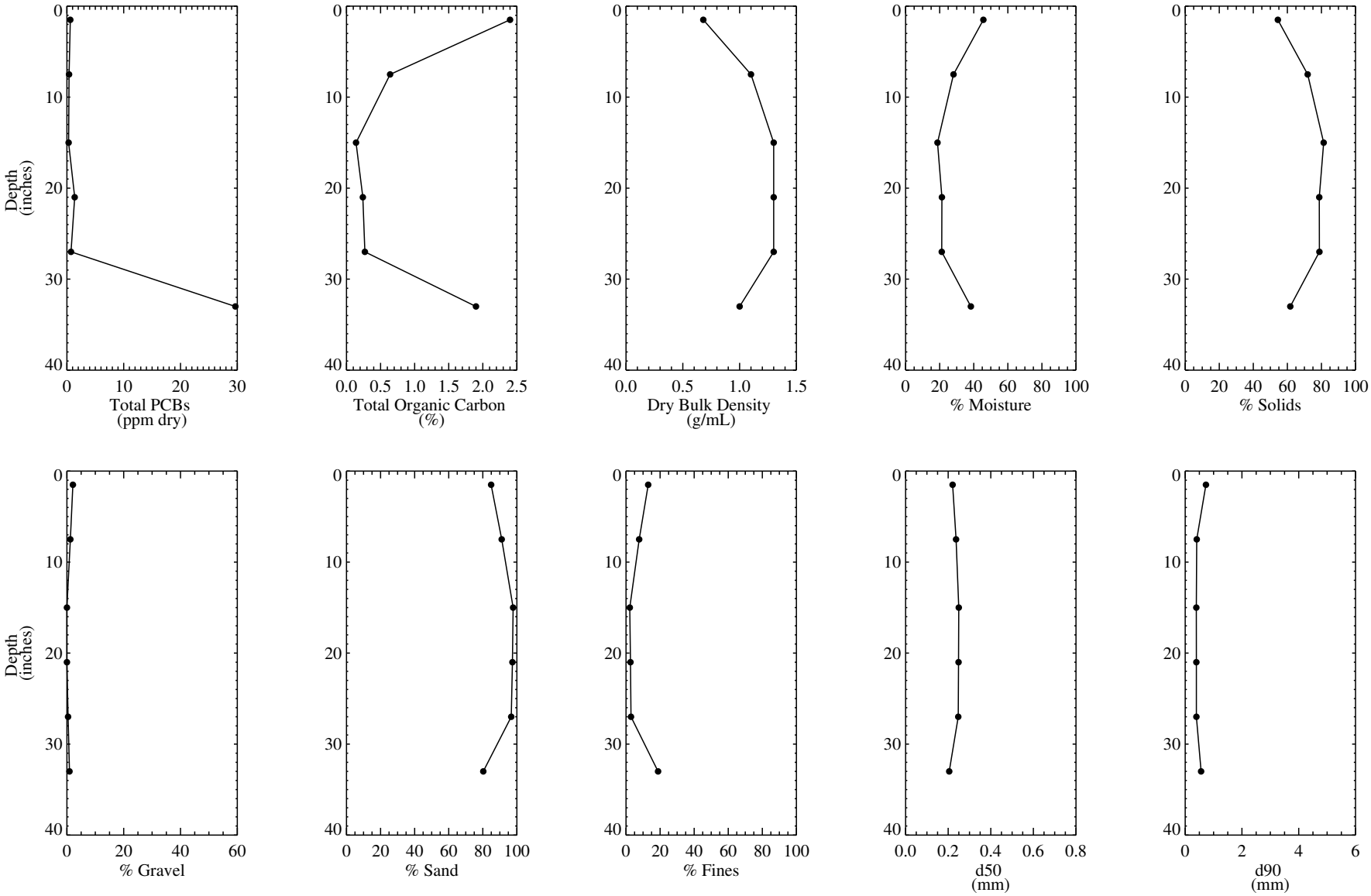


Figure 3. Vertical Profiles for Core T5-M2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:11 2004

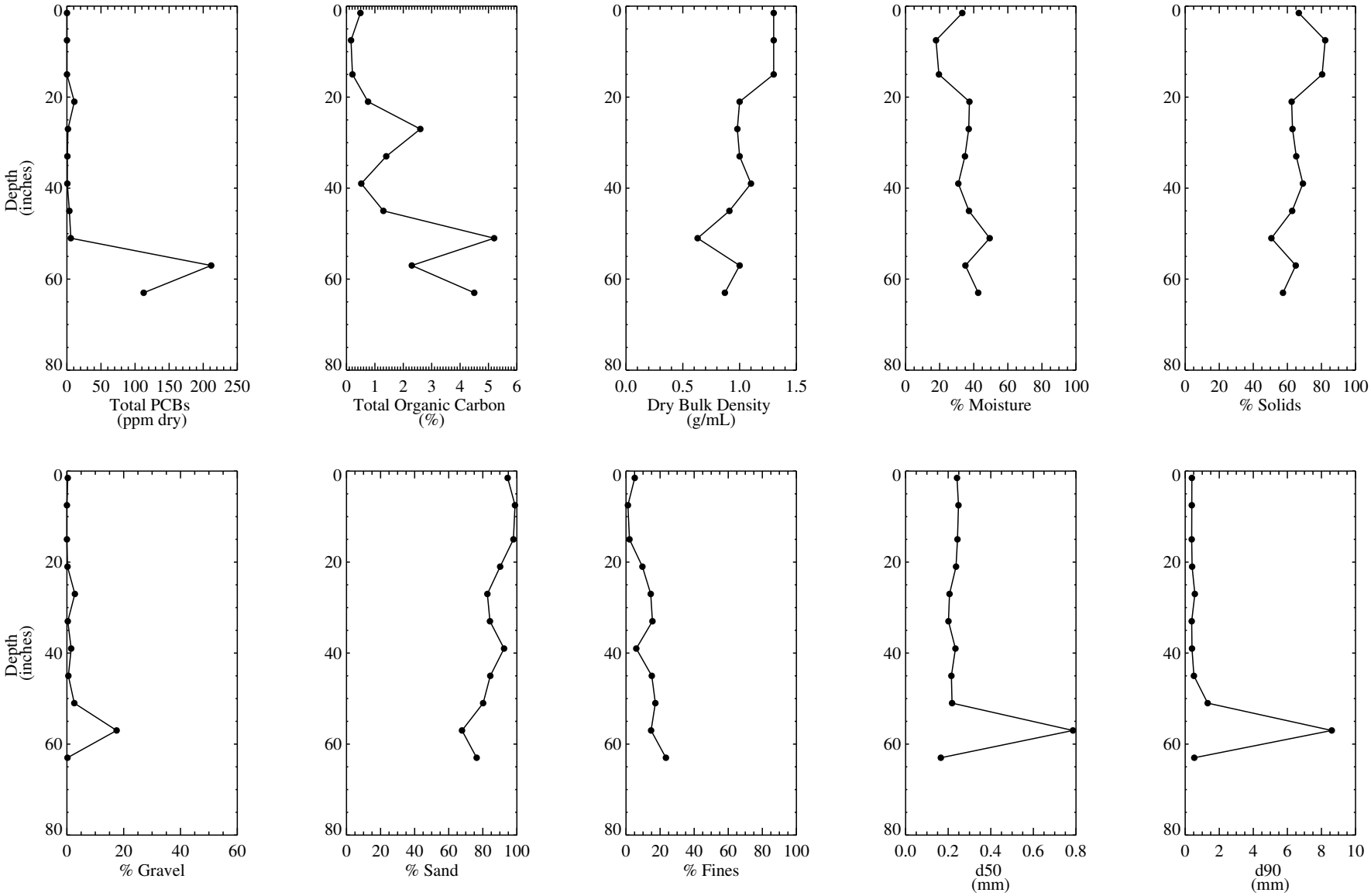


Figure 4. Vertical Profiles for Core T6-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:11 2004

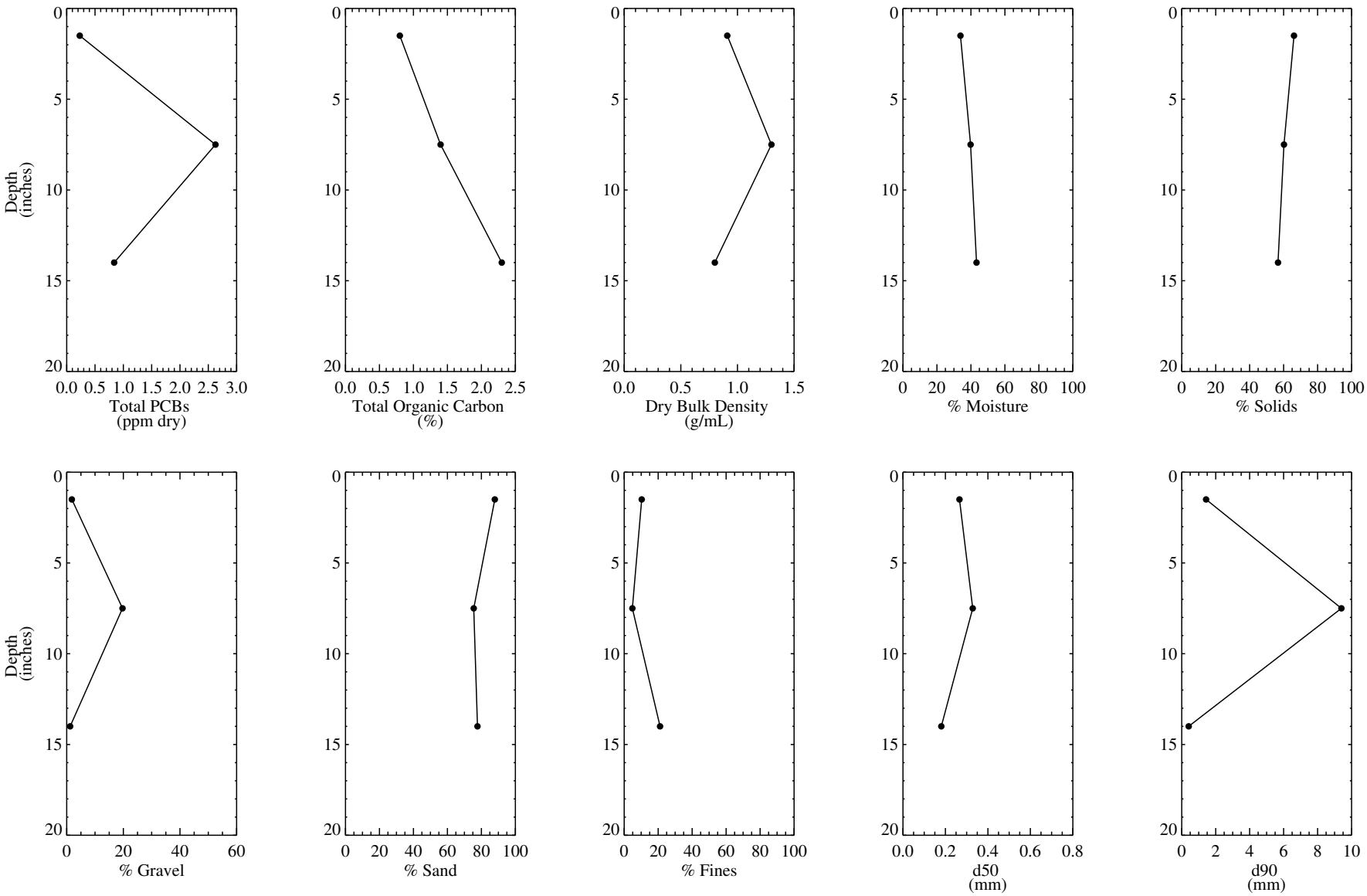


Figure 5. Vertical Profiles for Core T6-S2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:11 2004

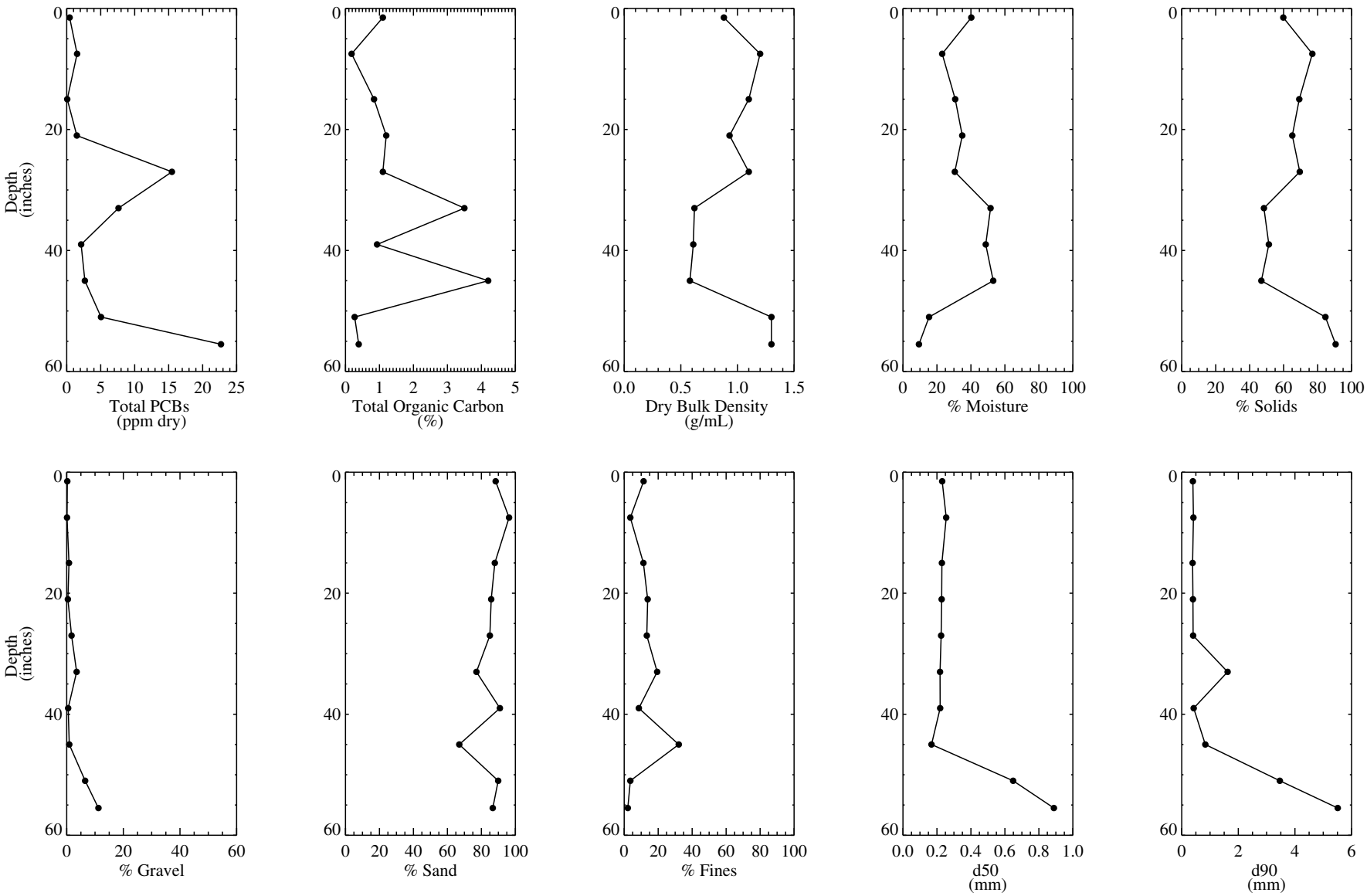


Figure 6. Vertical Profiles for Core T6.5-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:11 2004

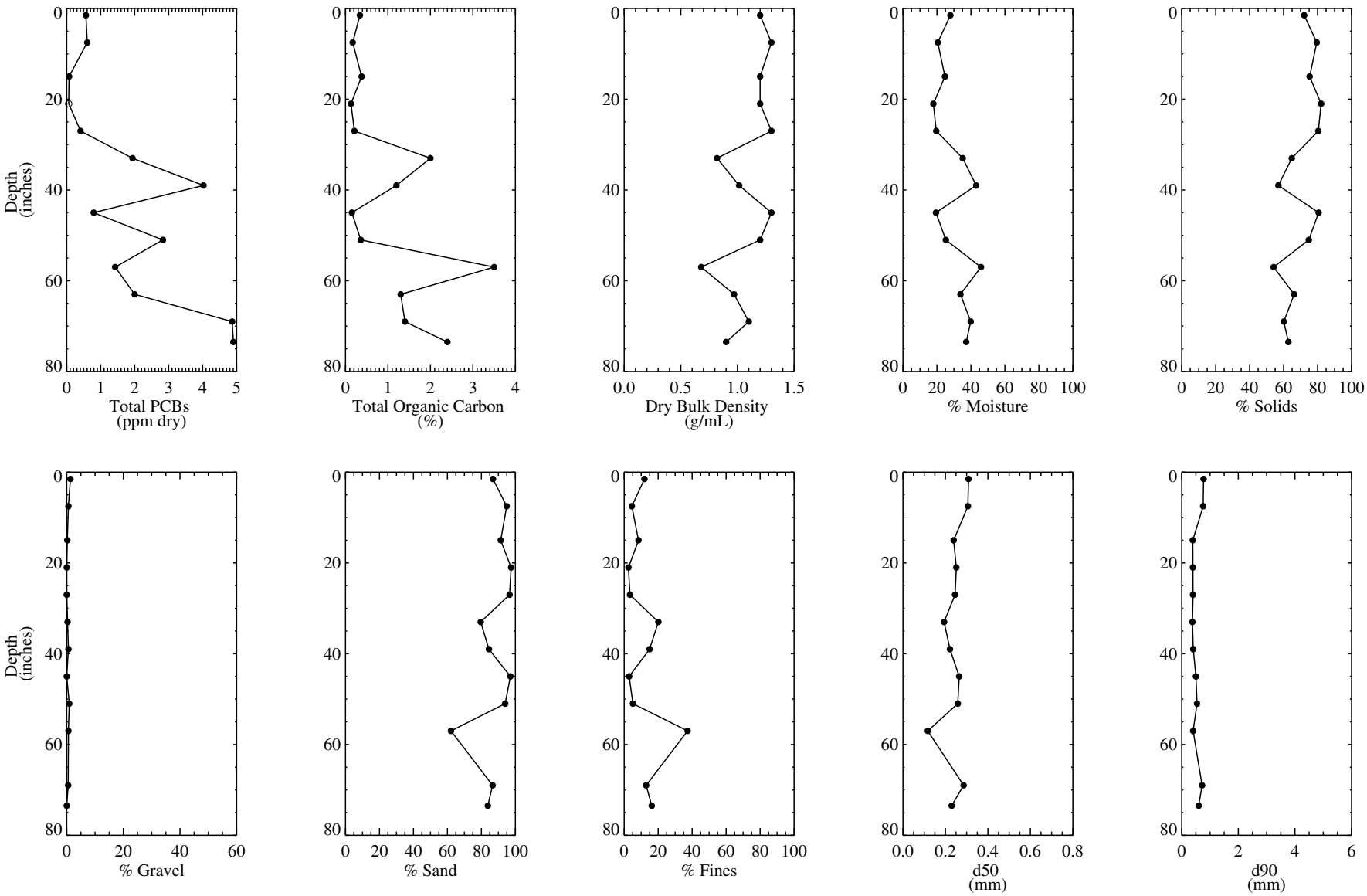


Figure 7. Vertical Profiles for Core T6.5-S2

January 2004 Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Segment without enough material and/or debris for particle size analysis: 60-66"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:11 2004

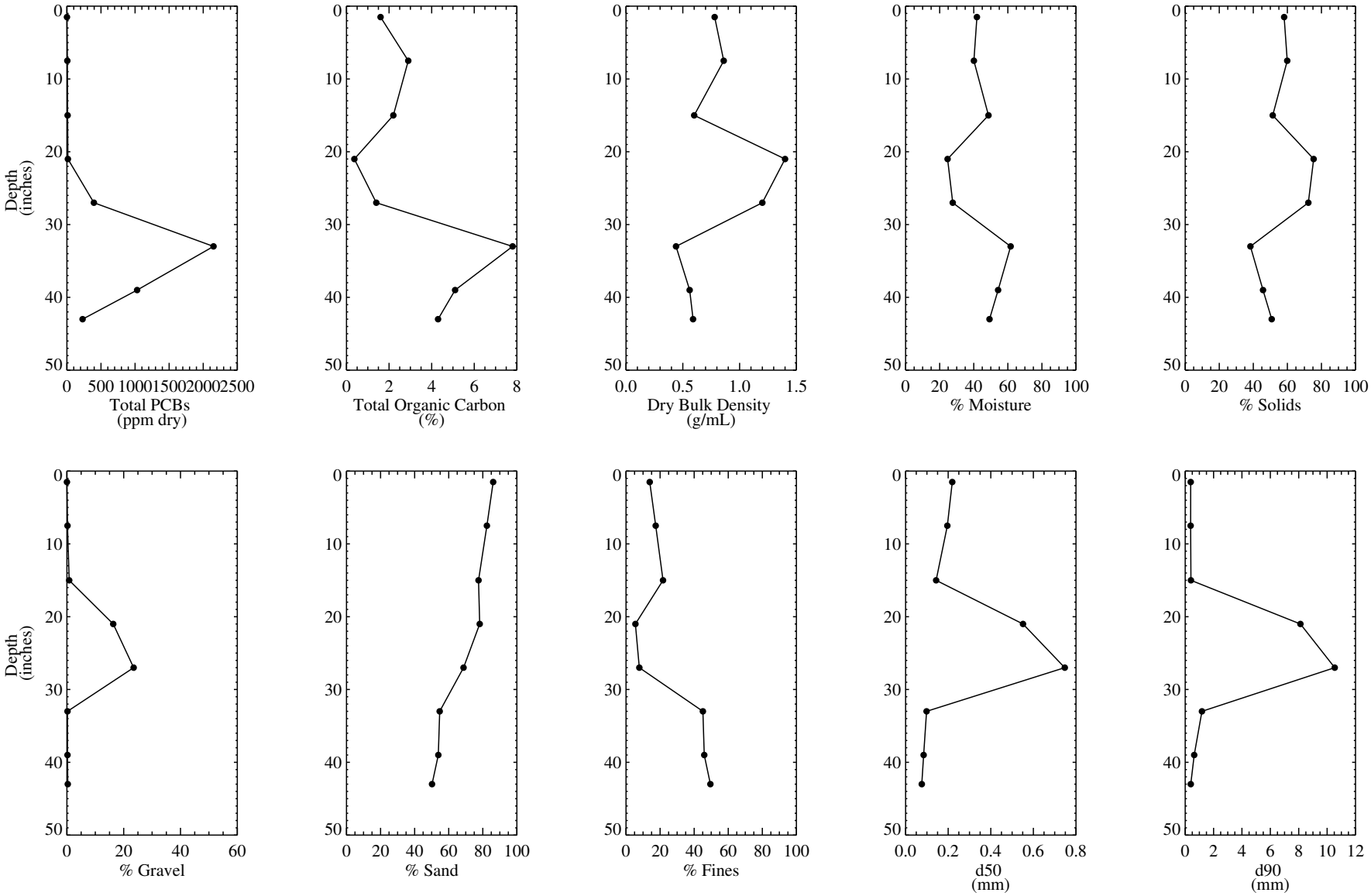


Figure 8. Vertical Profiles for Core T7-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:11 2004

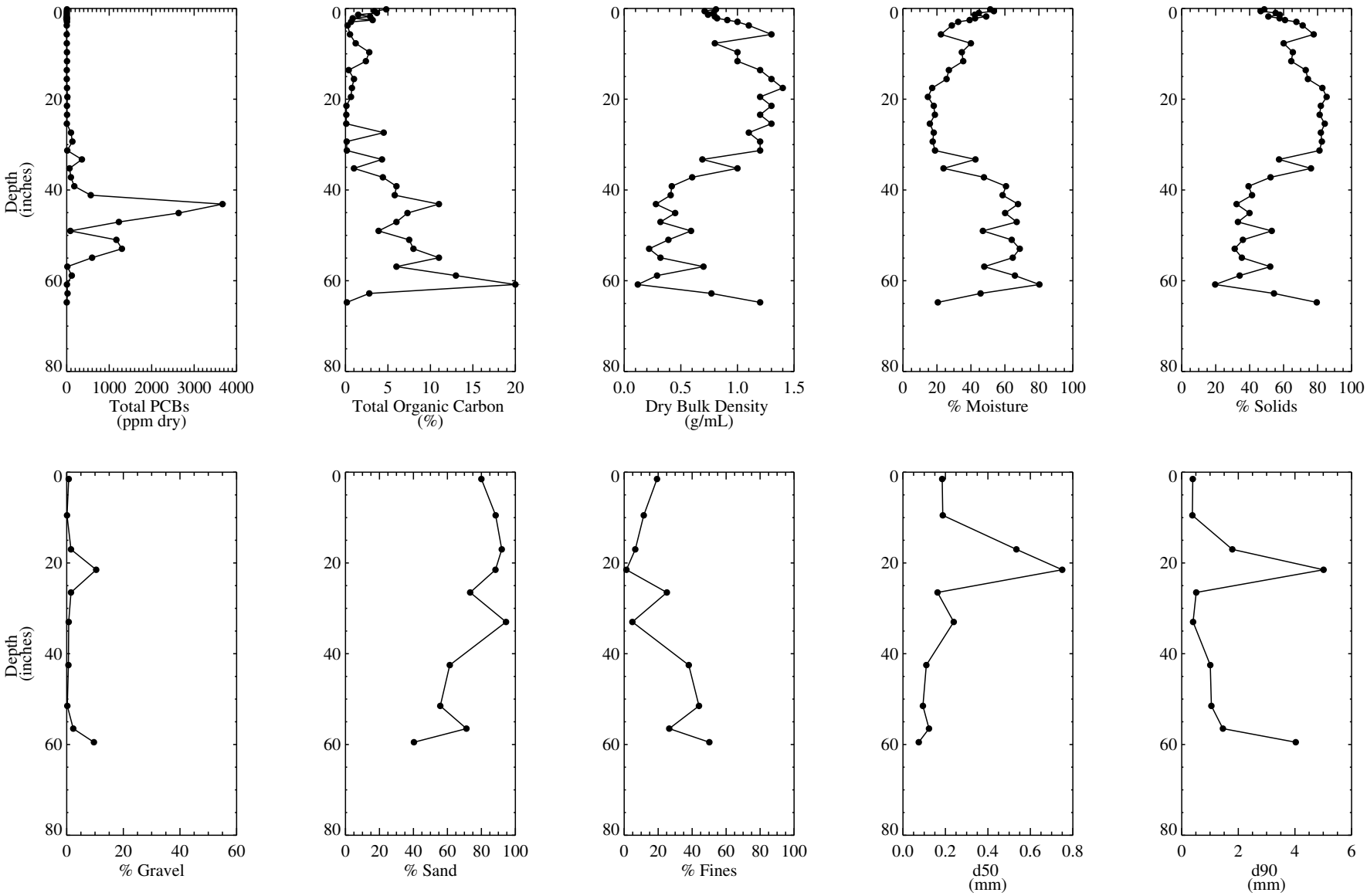


Figure 9. Vertical Profiles for Cores Co-located at T7-M

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Segments with no particle size results because they consisted only of woodchips: 47-49", 54-55", 58-59"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:08 2004

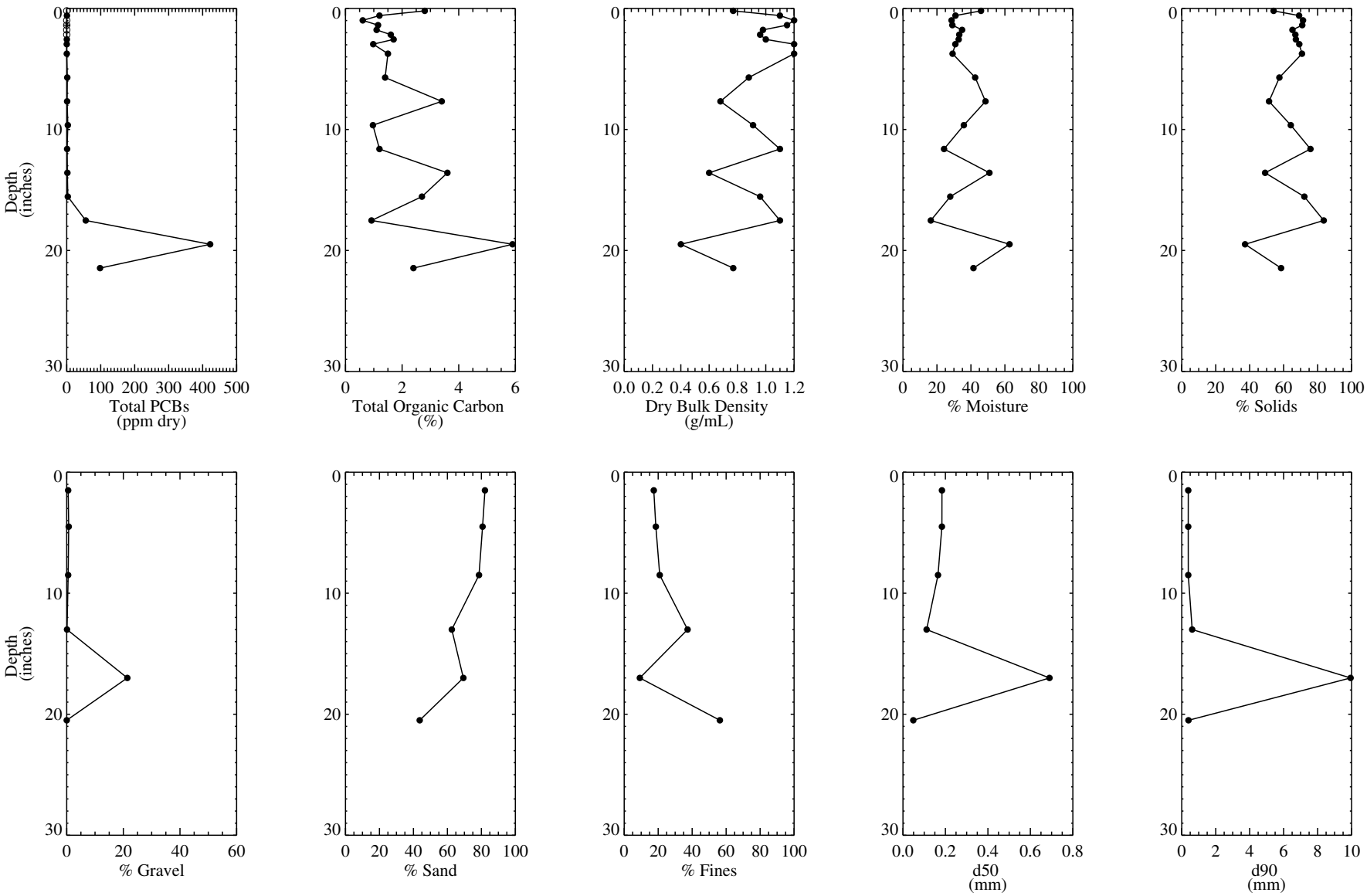


Figure 10. Vertical Profiles for Cores Co-located at T7-S

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

If duplicate and sample results are above and below detection limit, average shown as open circle with cross-hair.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:08 2004

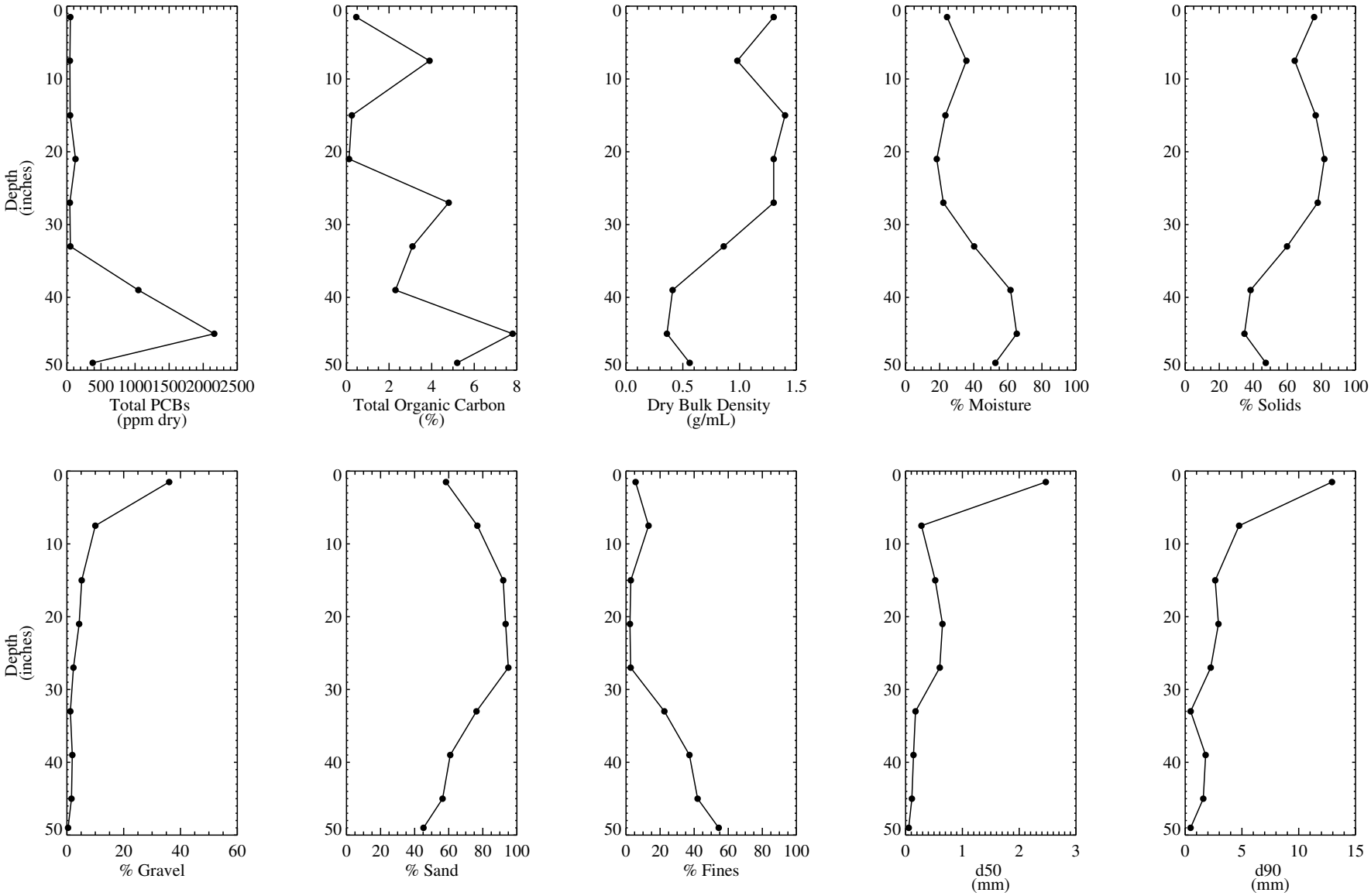


Figure 11. Vertical Profiles for Core T7.5-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

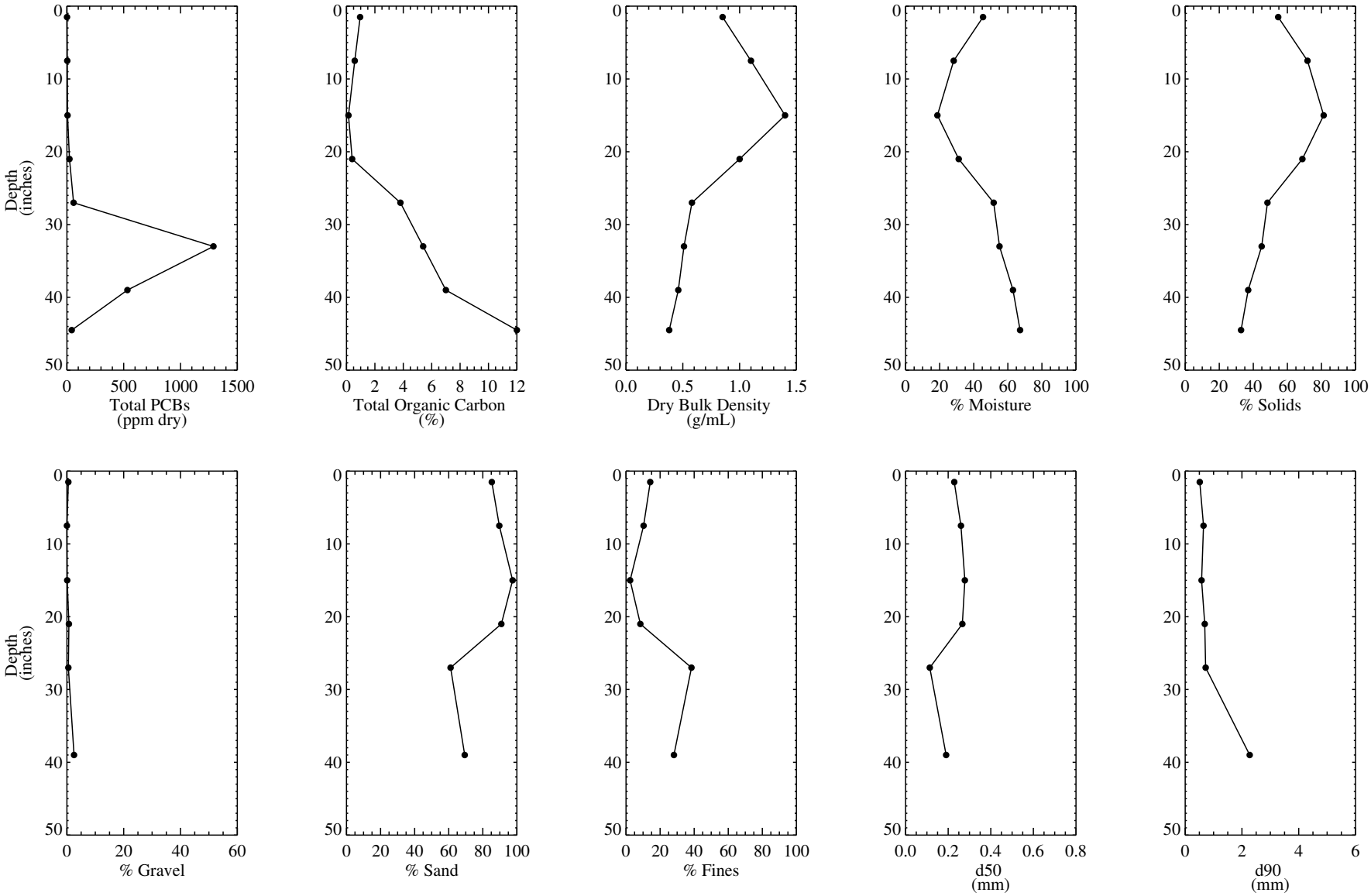


Figure 12. Vertical Profiles for Core T7.5-S2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Segments without enough material and/or debris for particle size analysis: 30-36" and 42-47"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

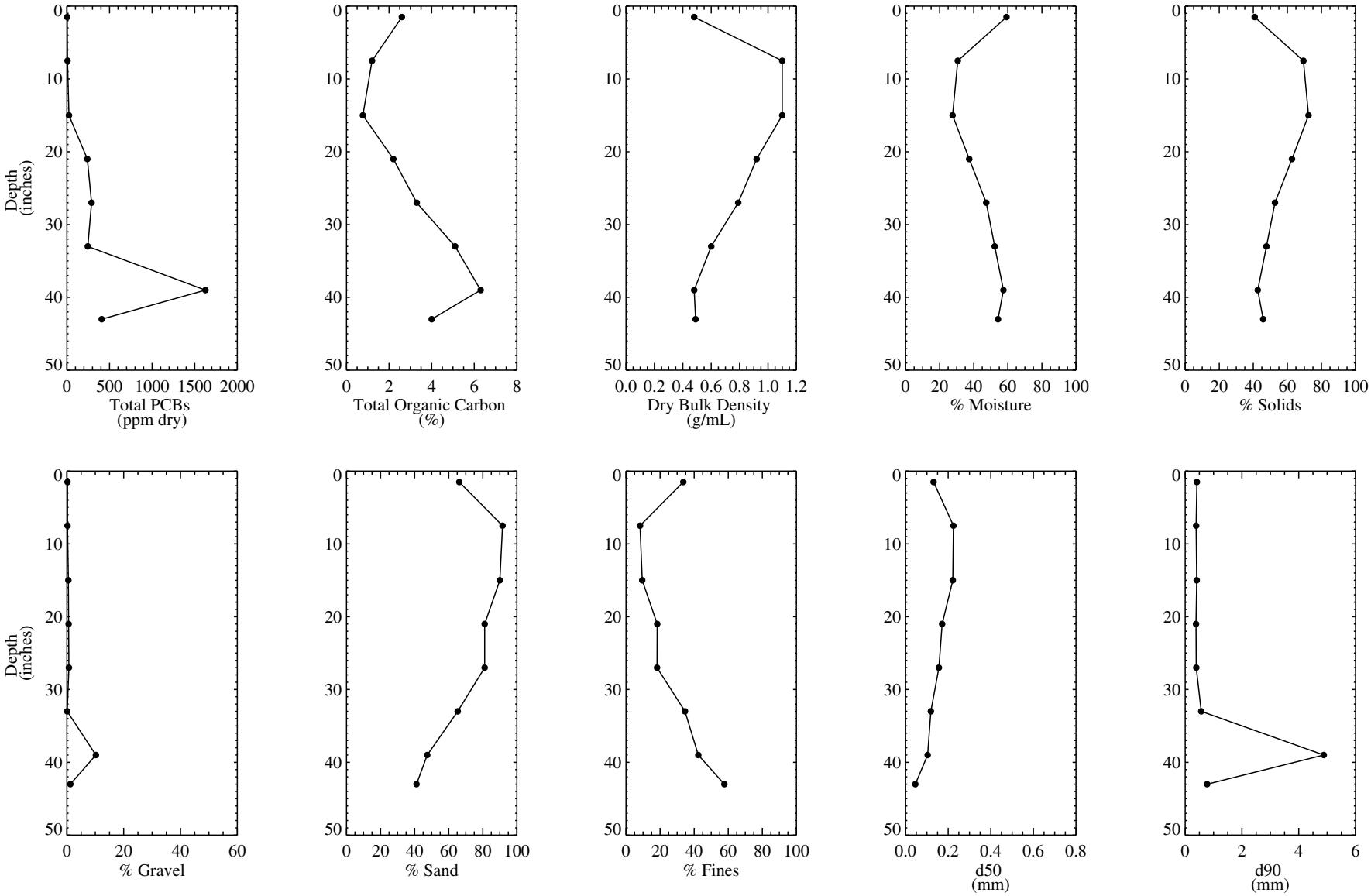


Figure 13. Vertical Profiles for Core T8-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

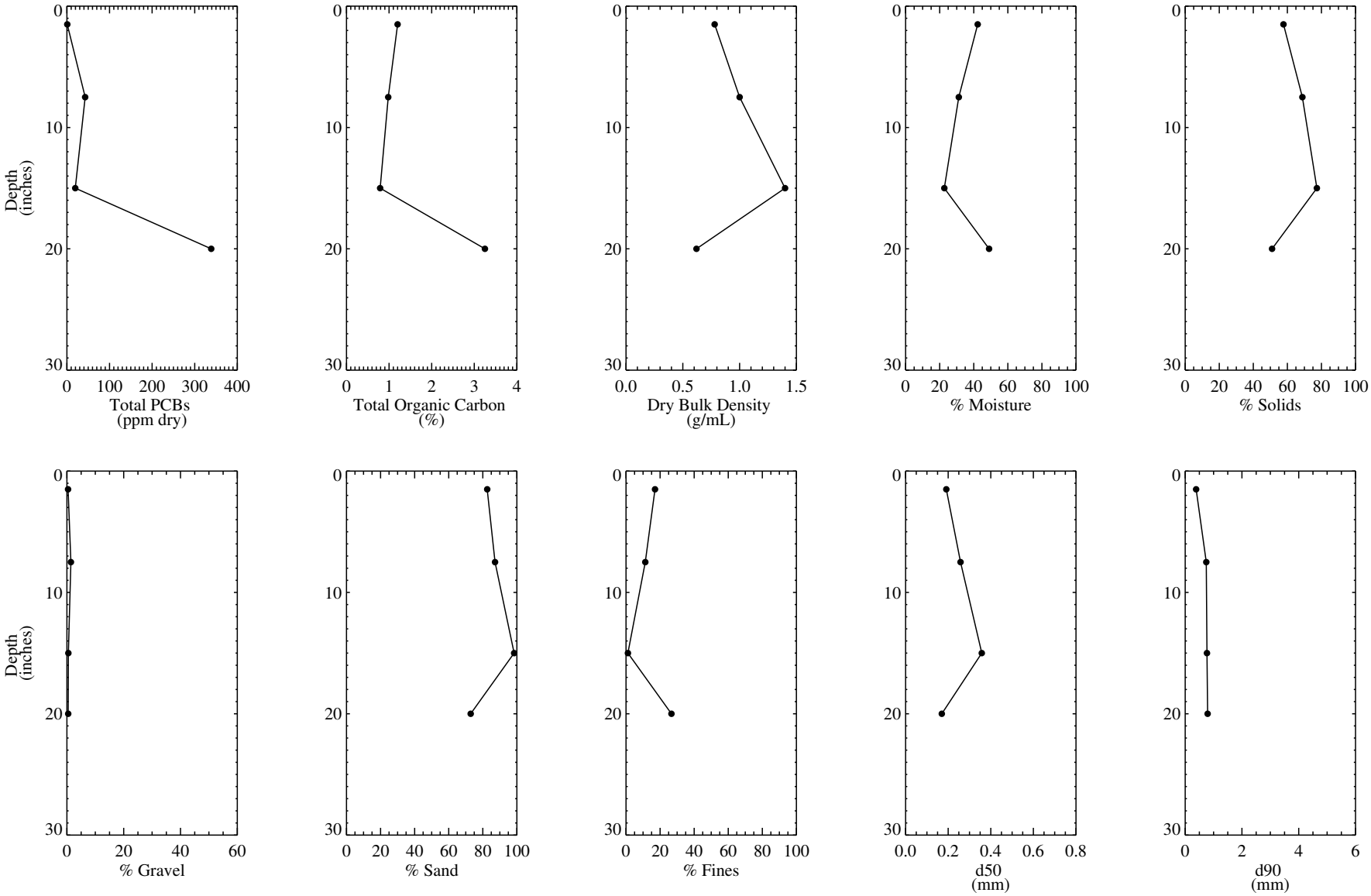


Figure 14. Vertical Profiles for Core T8-S2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

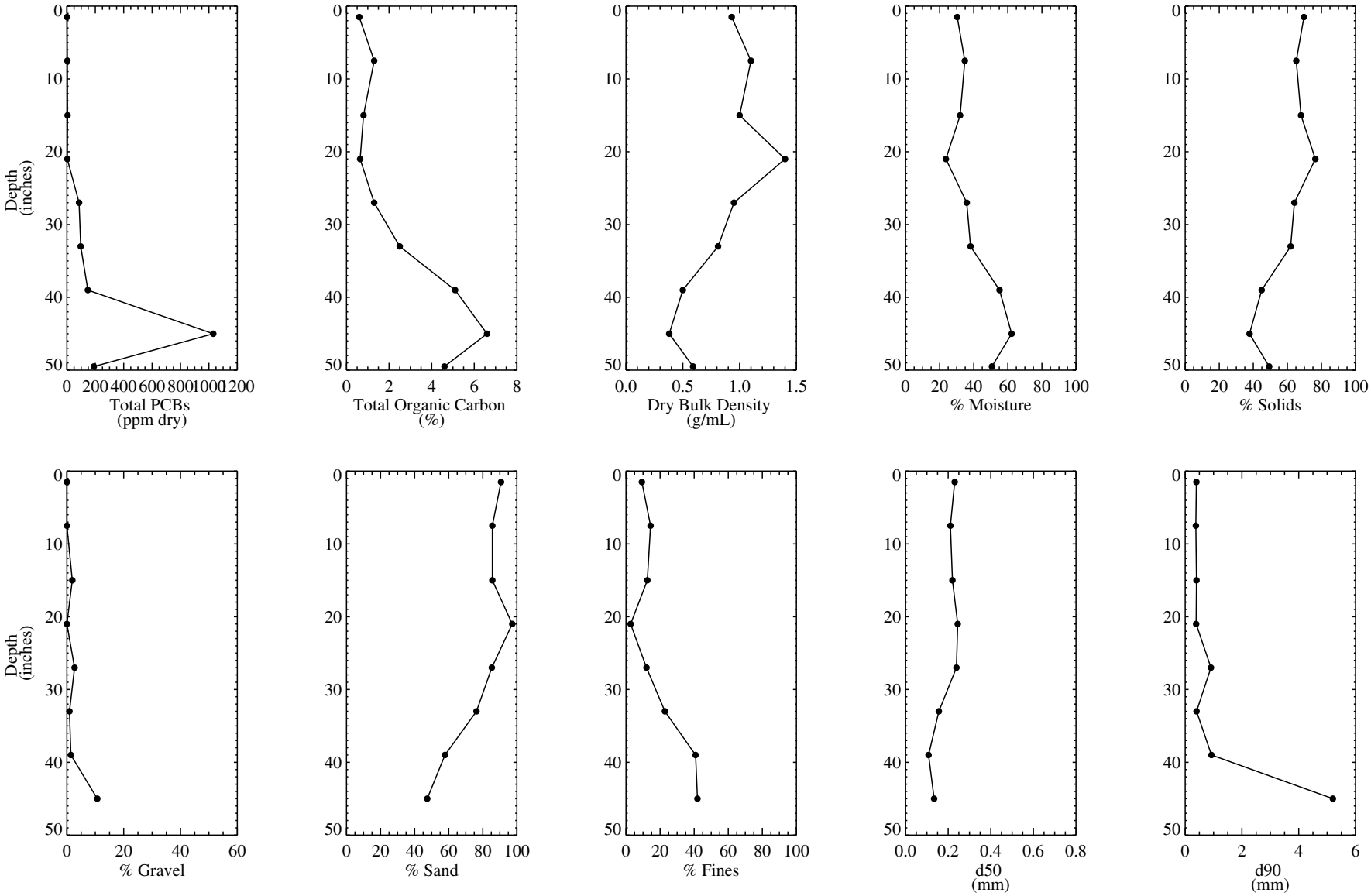


Figure 15. Vertical Profiles for Core T9-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Segment without enough material and/or debris for particle size analysis: 48-51"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

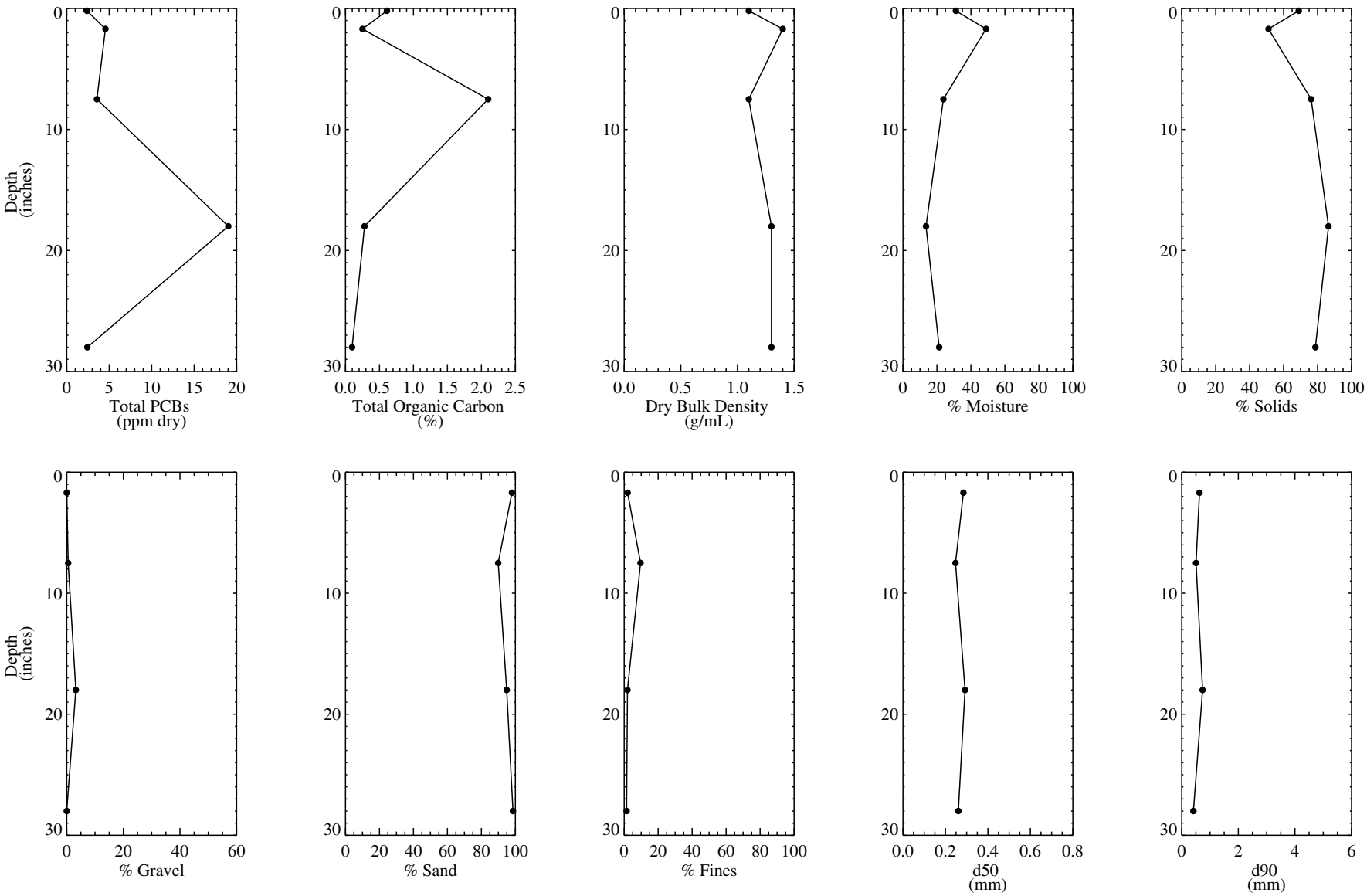


Figure 16. Vertical Profiles for Core T9-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:08 2004

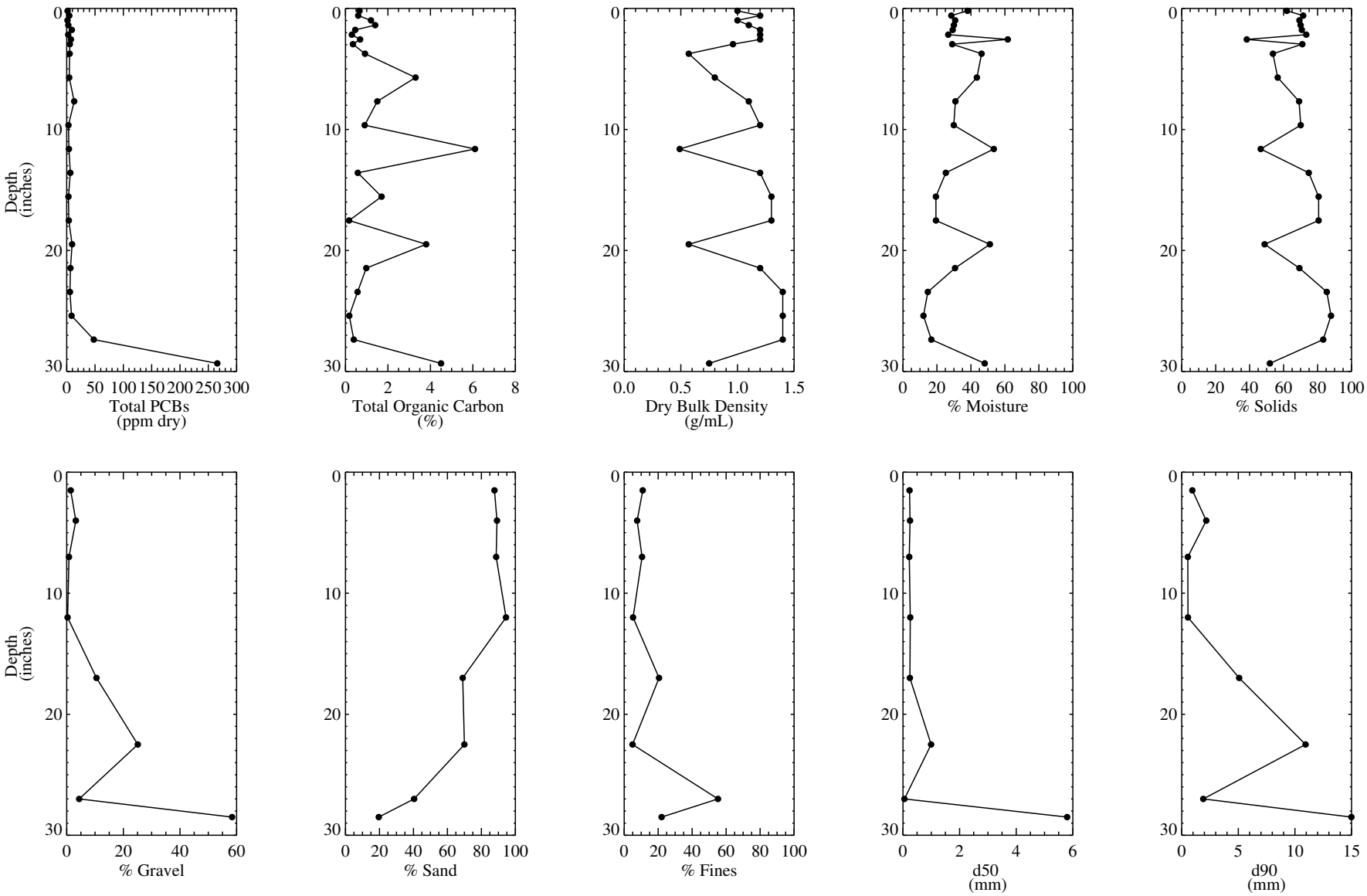


Figure 17. Vertical Profiles for Cores Co-located at T10-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

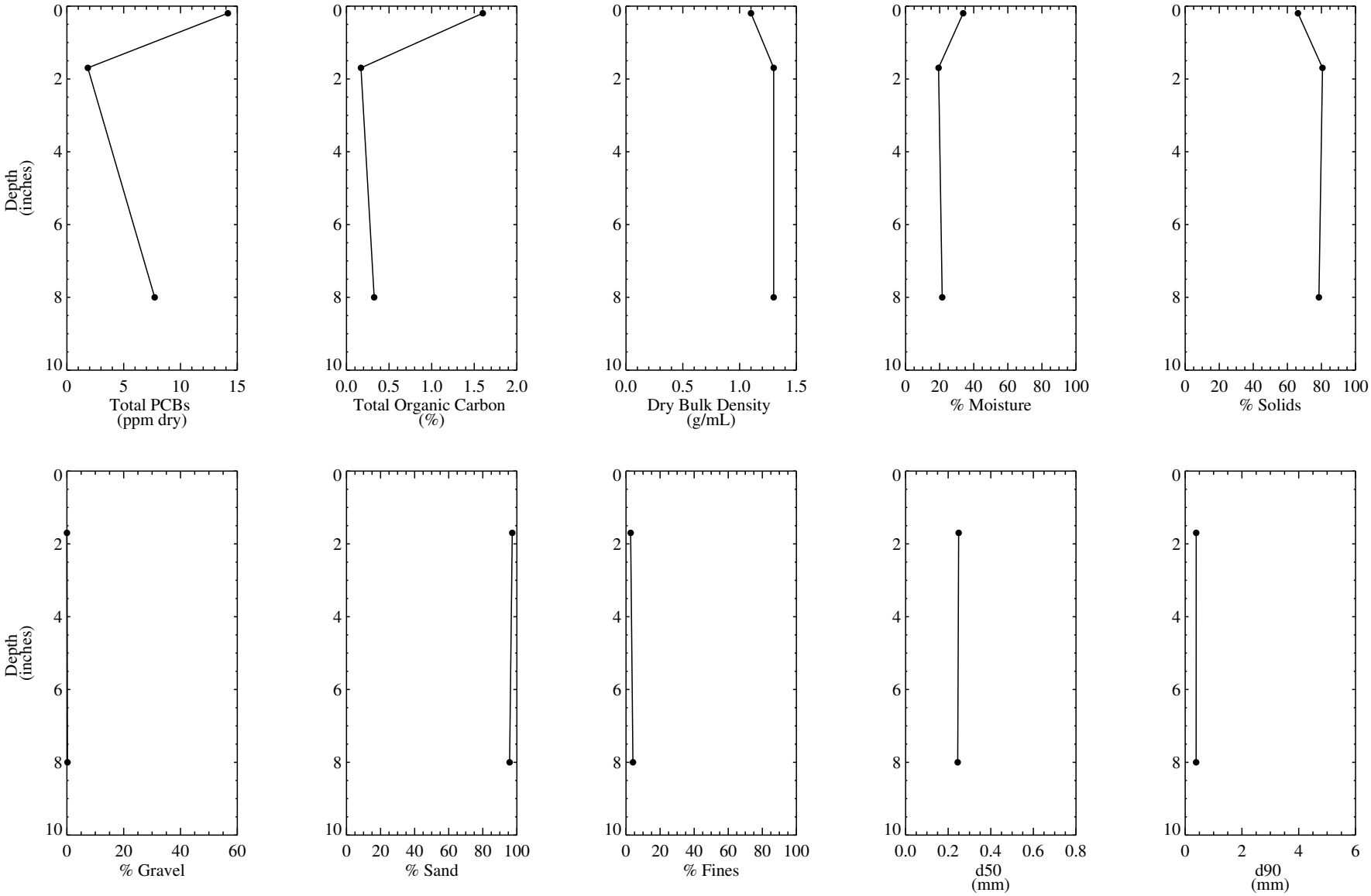


Figure 18. Vertical Profiles for Core T11-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

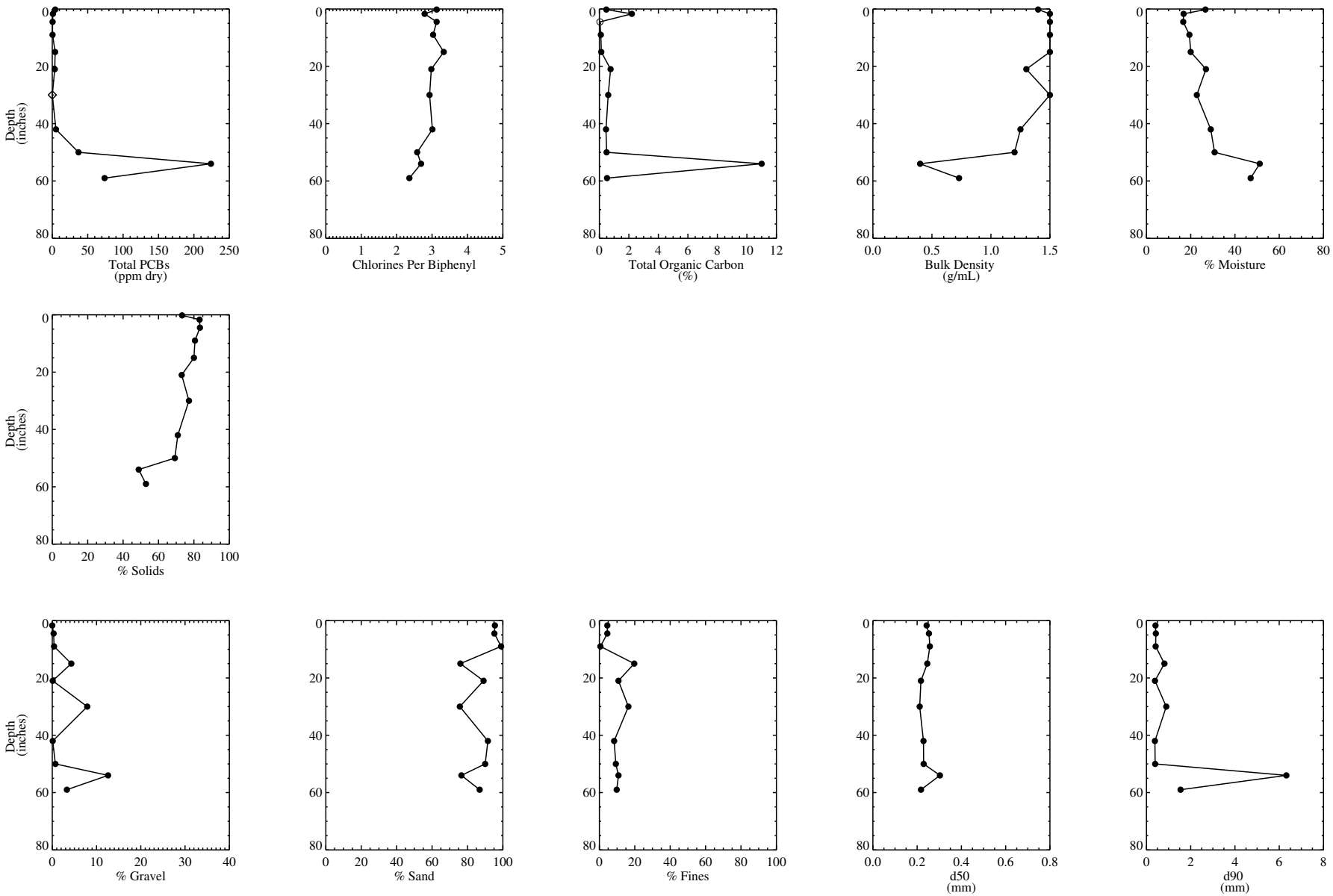


Figure 19. Vertical Profiles for Core 1A-17 (collected in Test Cell Subcell #1B2)

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:32 2004

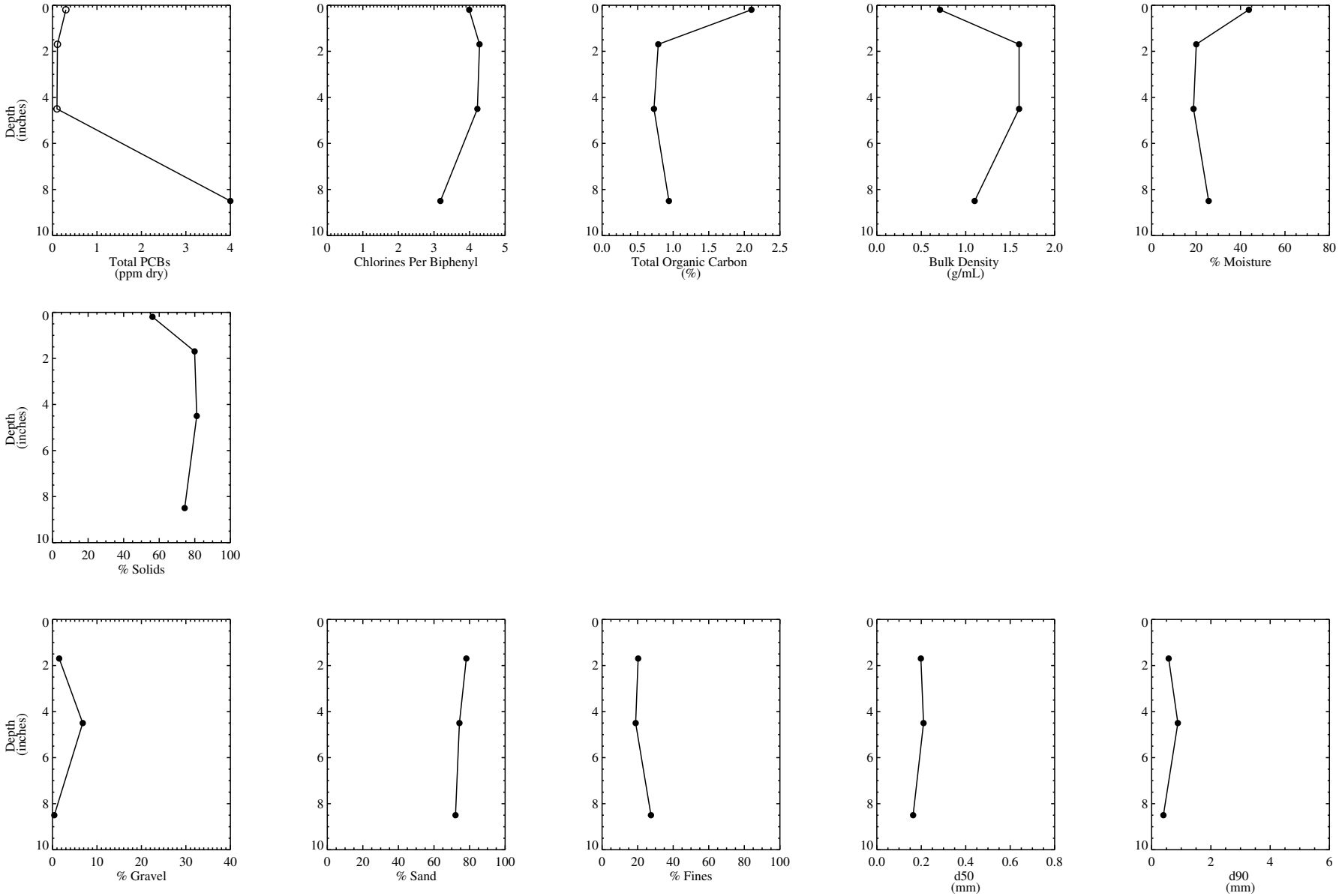


Figure 20. Vertical Profiles for Core 1C2-17

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:32 2004

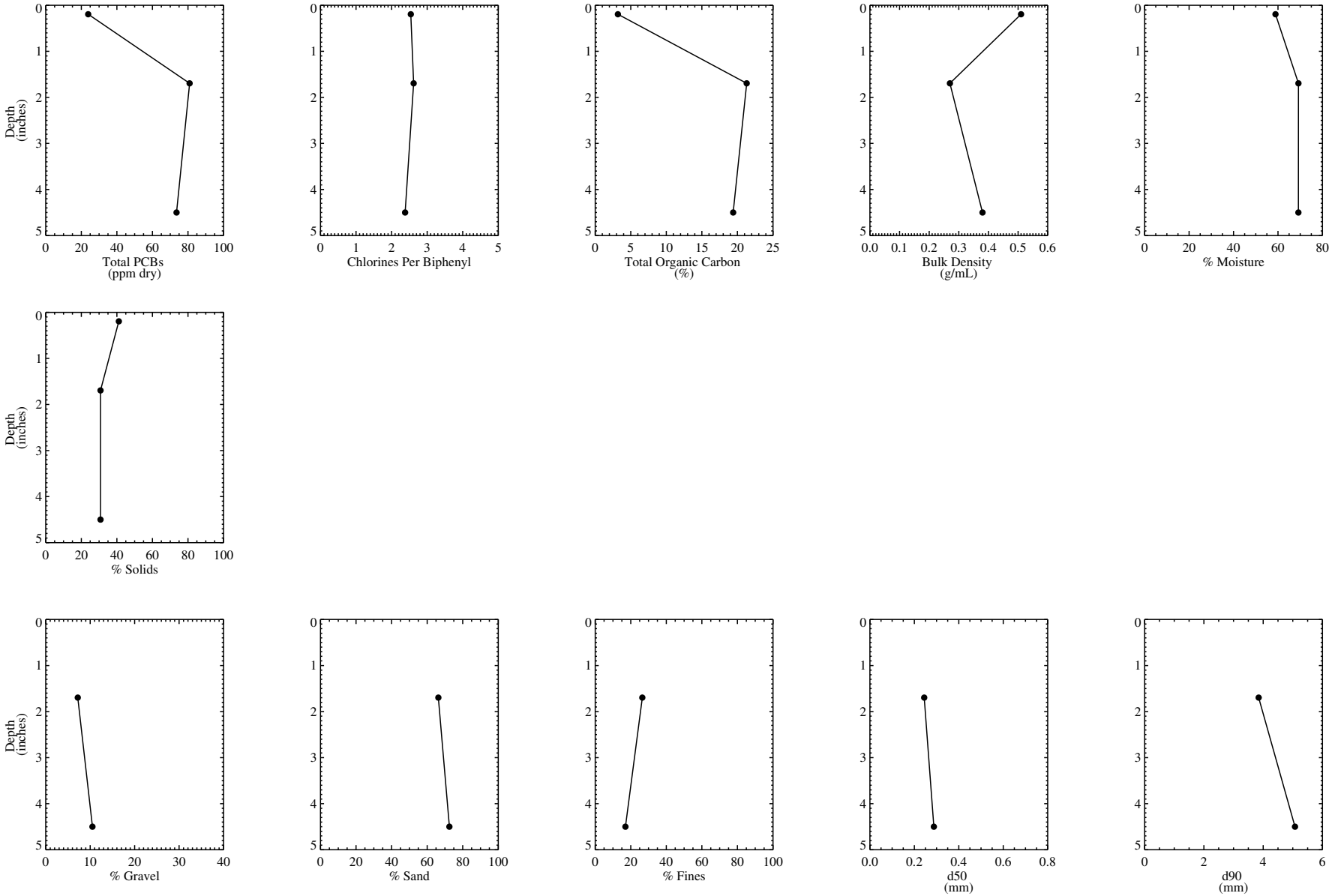


Figure 21. Vertical Profiles for Core PC2-15

2003 Phase I Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:32 2004

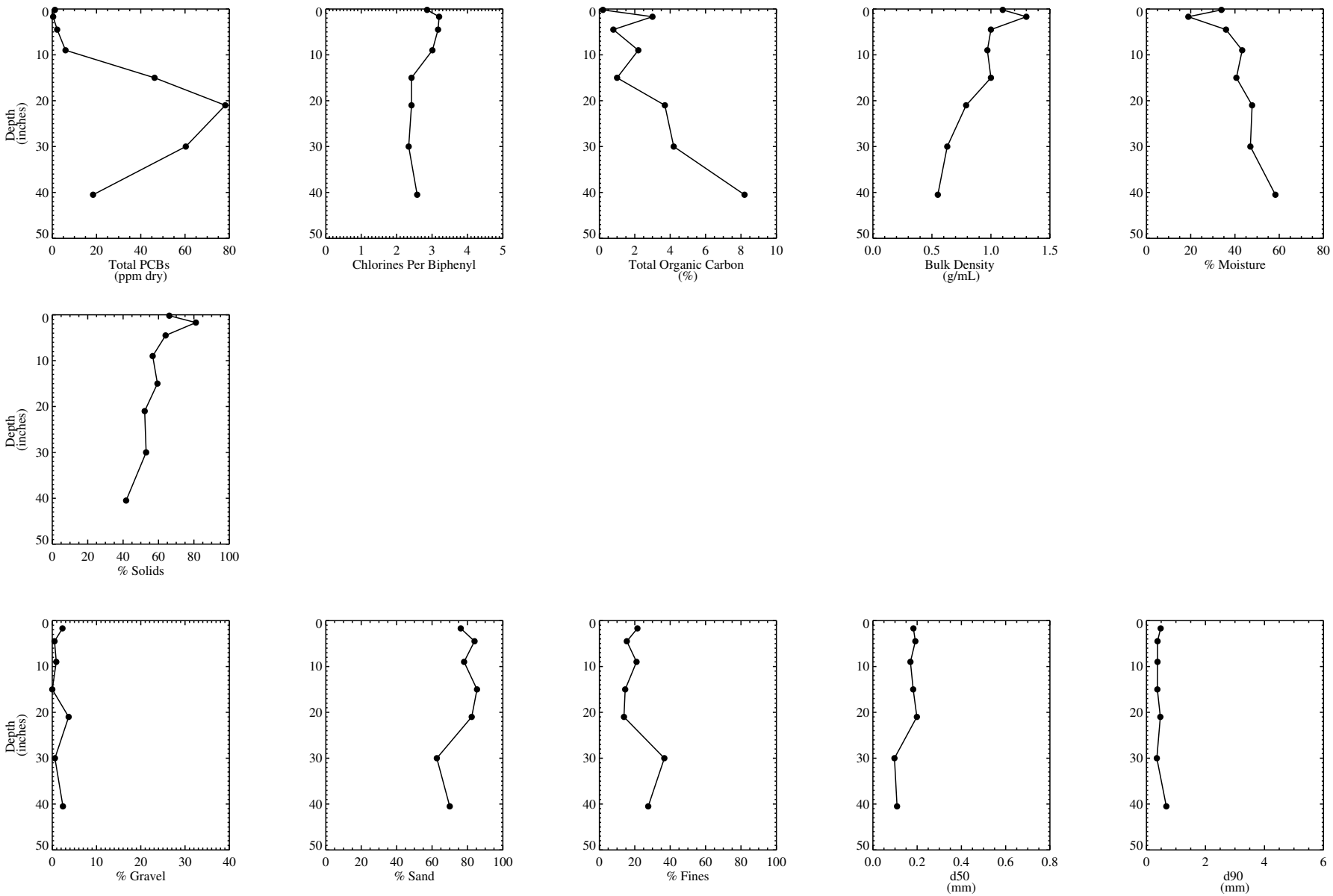


Figure 22. Vertical Profiles for Core PC3-16

2003 Phase I Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:32 2004

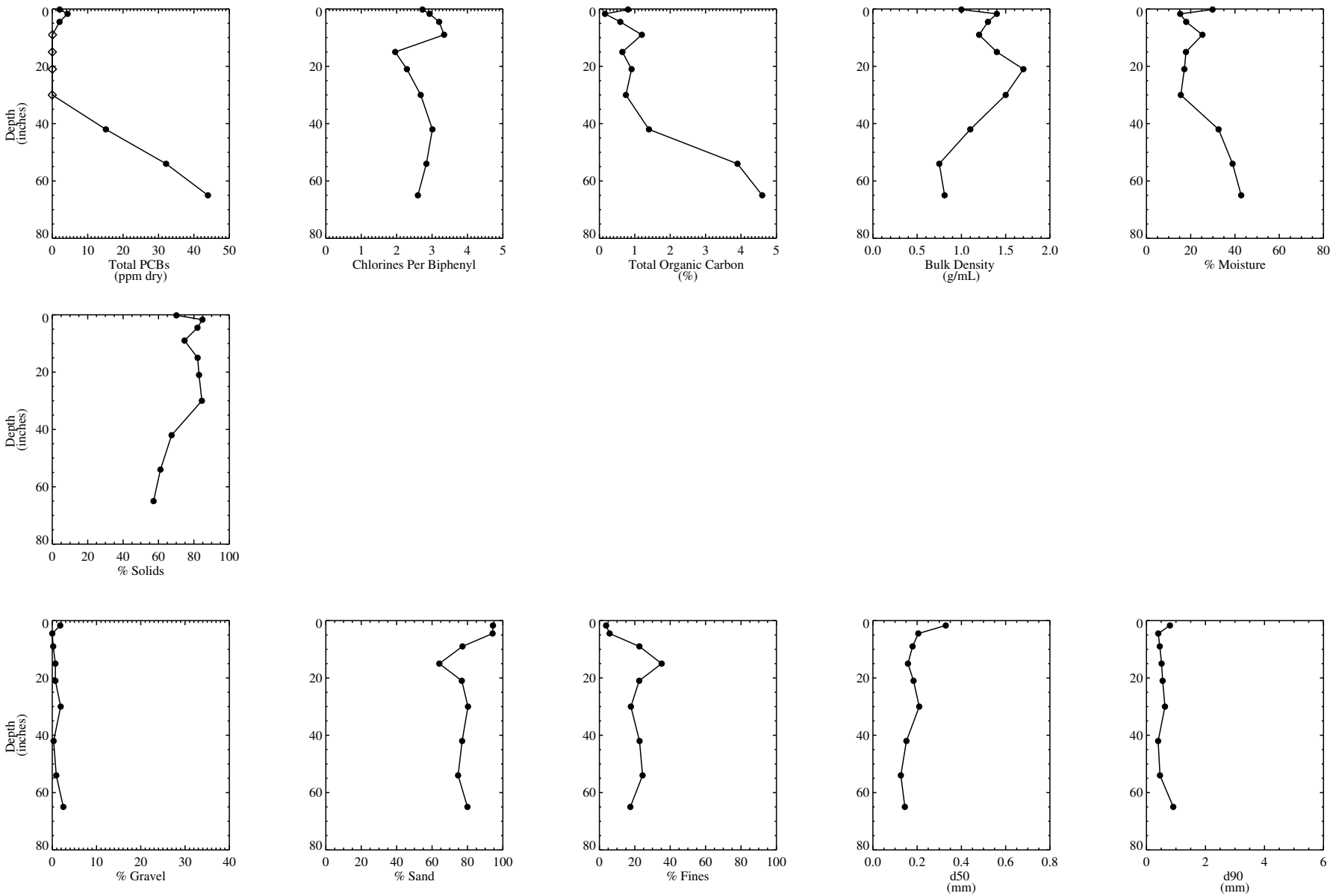


Figure 23. Vertical Profiles for Core PC4-40

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:32 2004

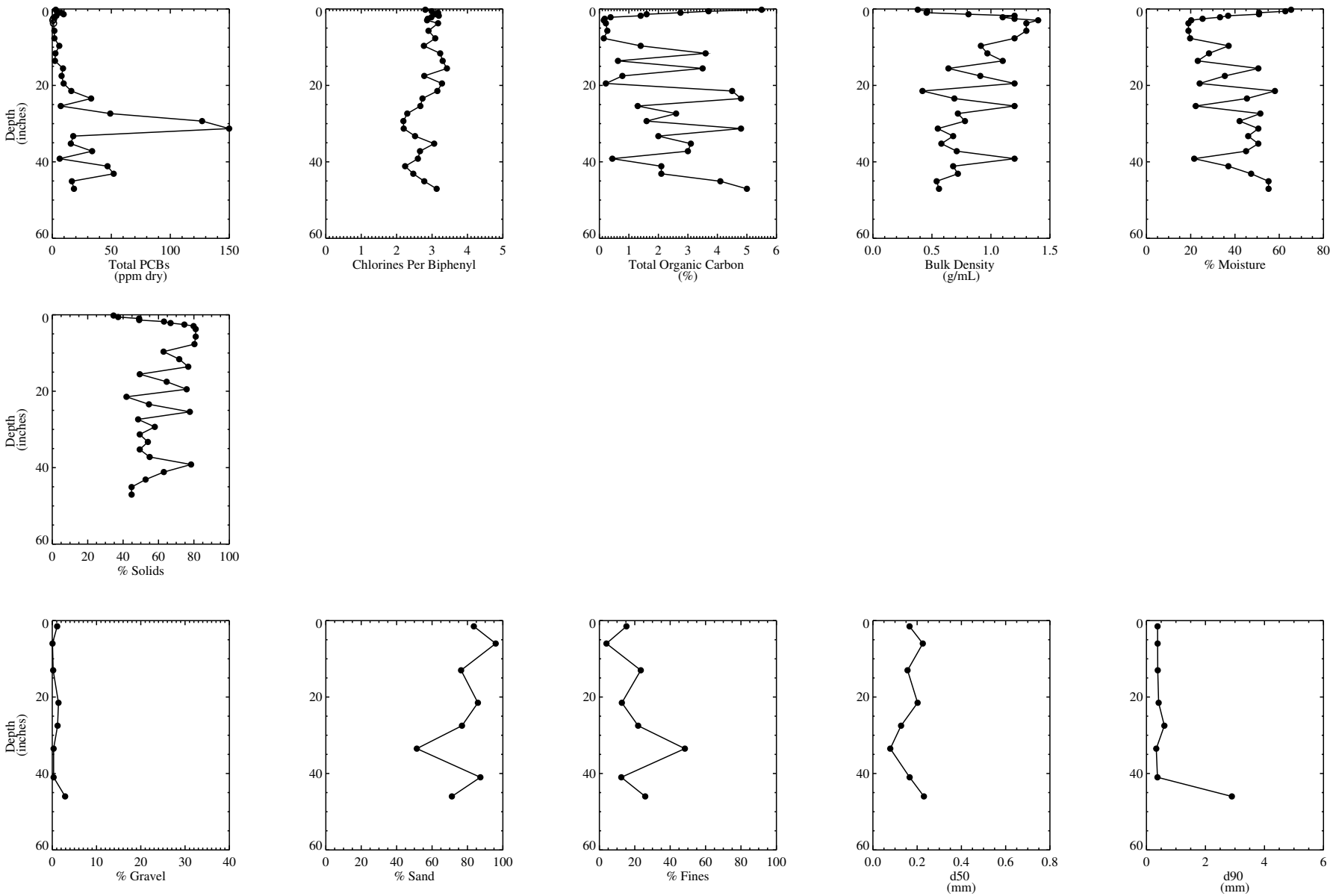


Figure 24. Vertical Profiles for Cores Co-located at T17-N

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:33 2004

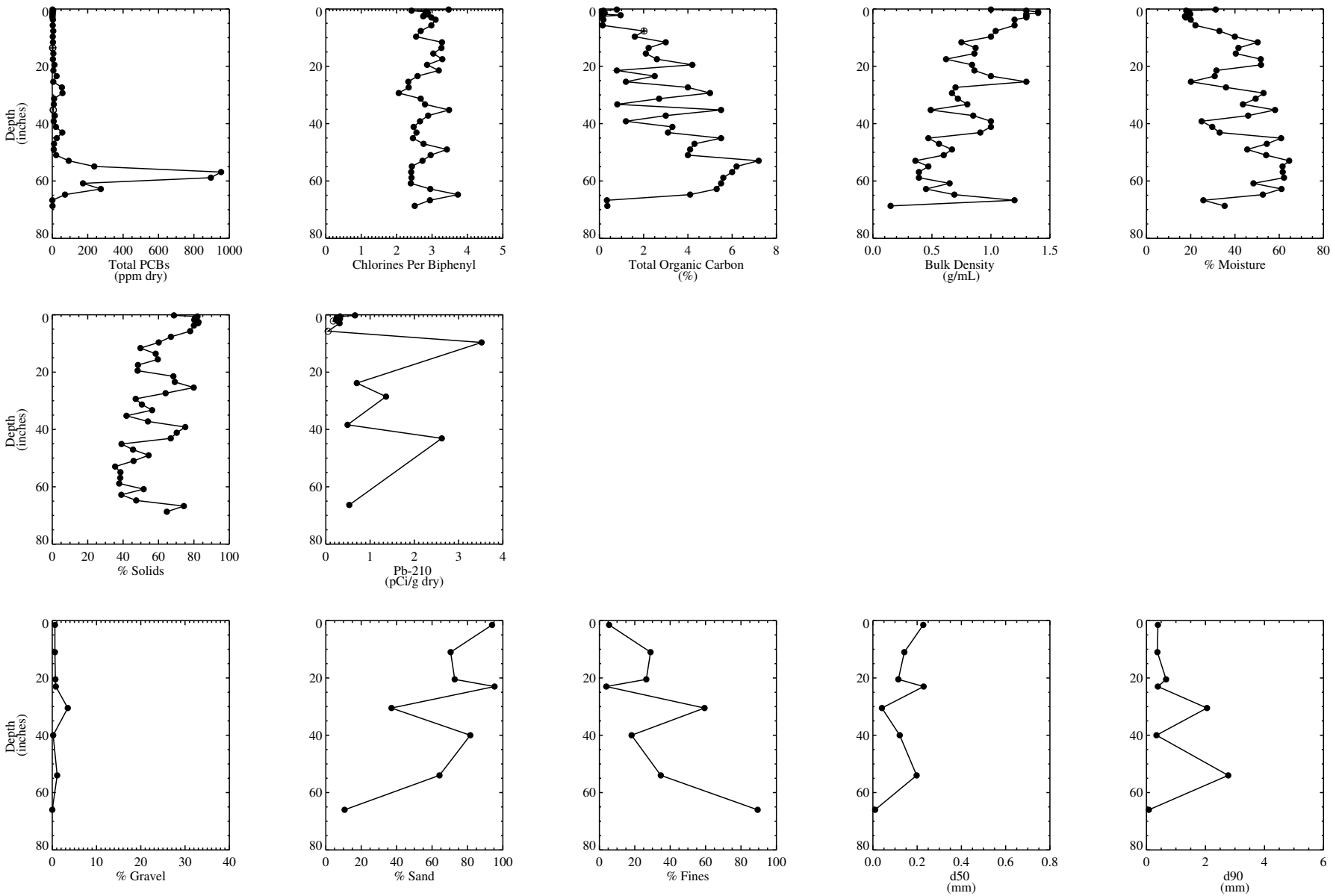


Figure 25. Vertical Profiles for Cores Co-located at T17-M

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:33 2004

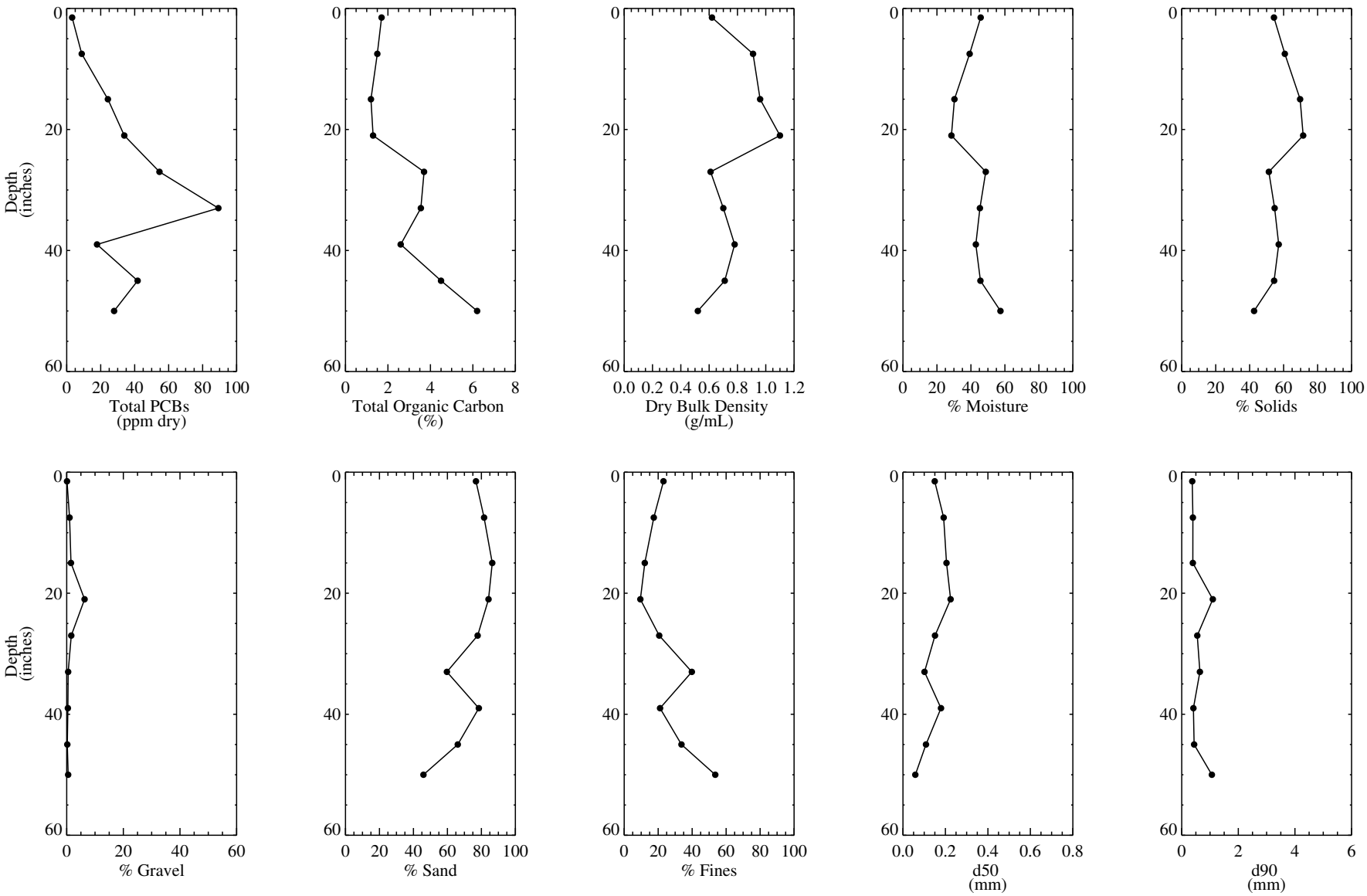


Figure 26. Vertical Profiles for Core T17.5-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

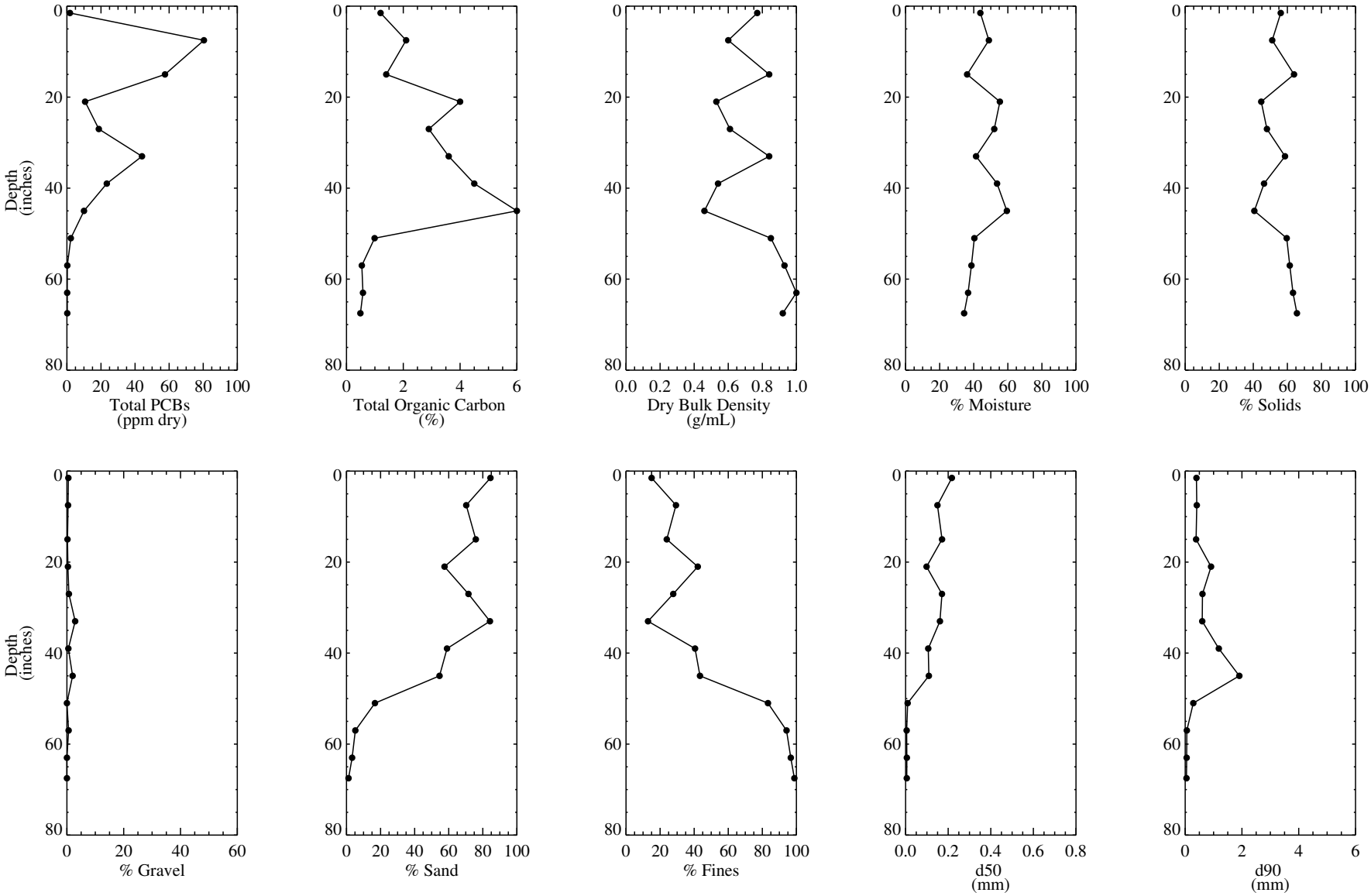


Figure 27. Vertical Profiles for Core T17.5-S2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

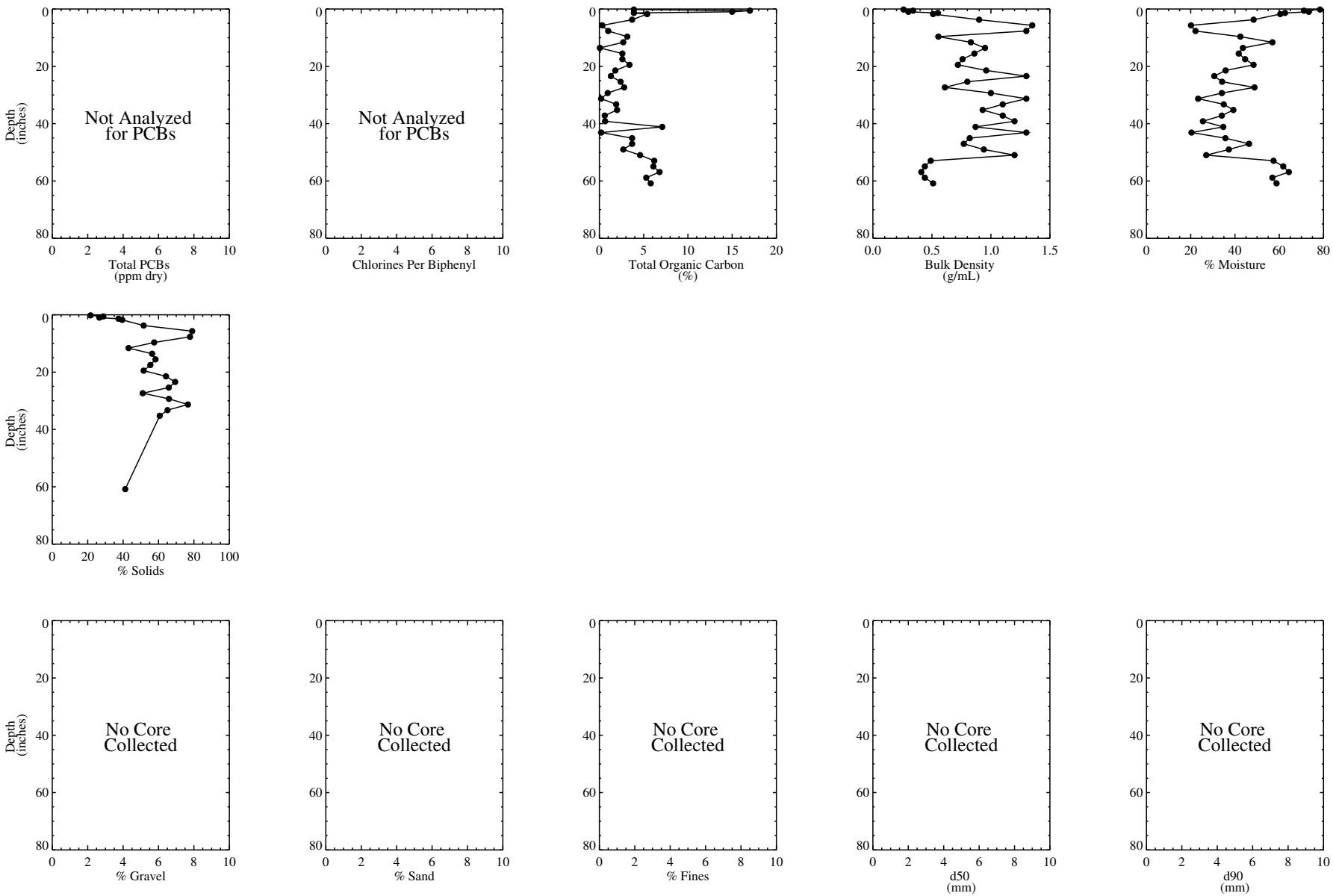


Figure 28. Vertical Profiles for Core T18-N

2003 Phase I Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:33 2004

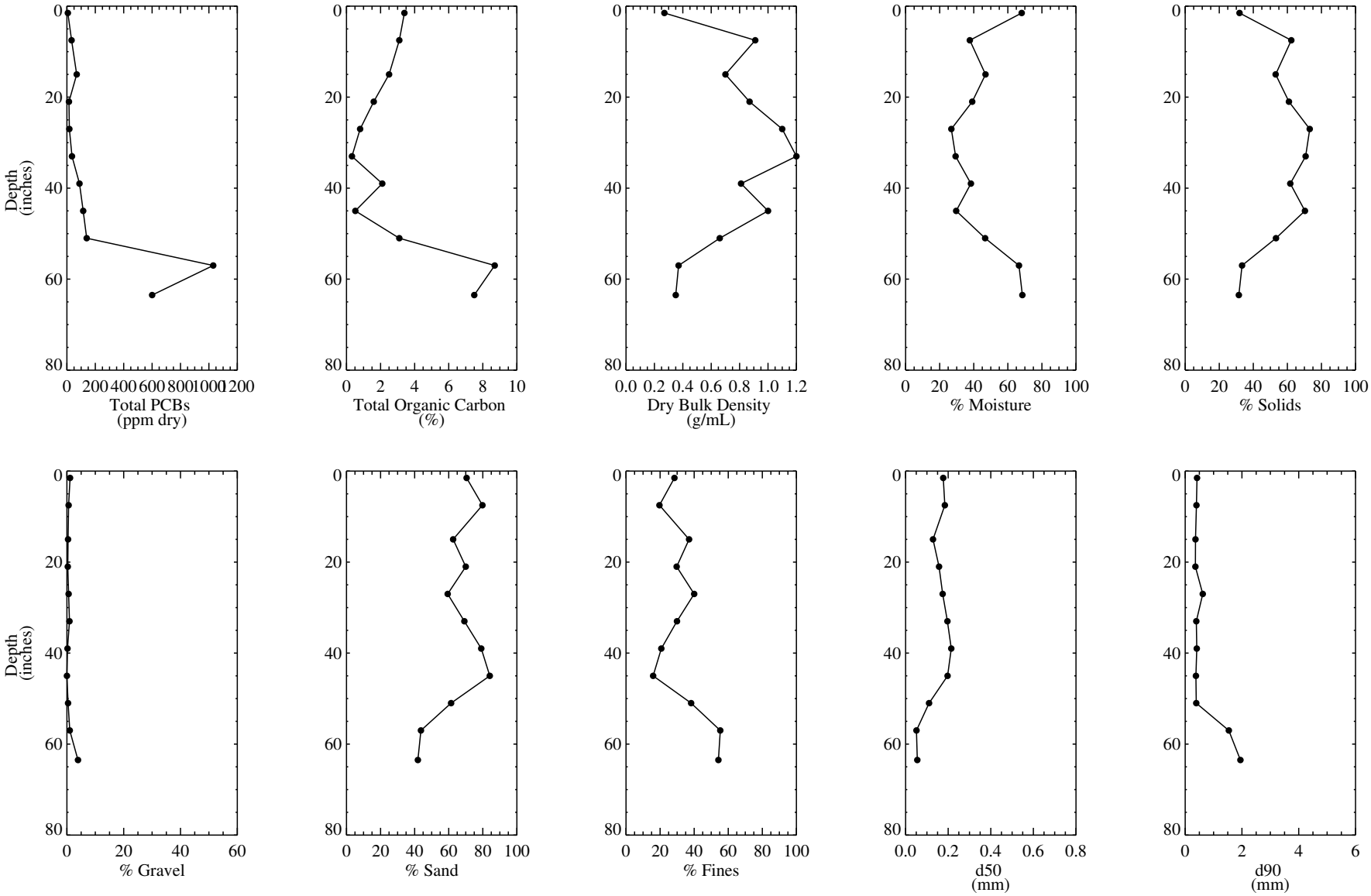


Figure 29. Vertical Profiles for Core T18-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

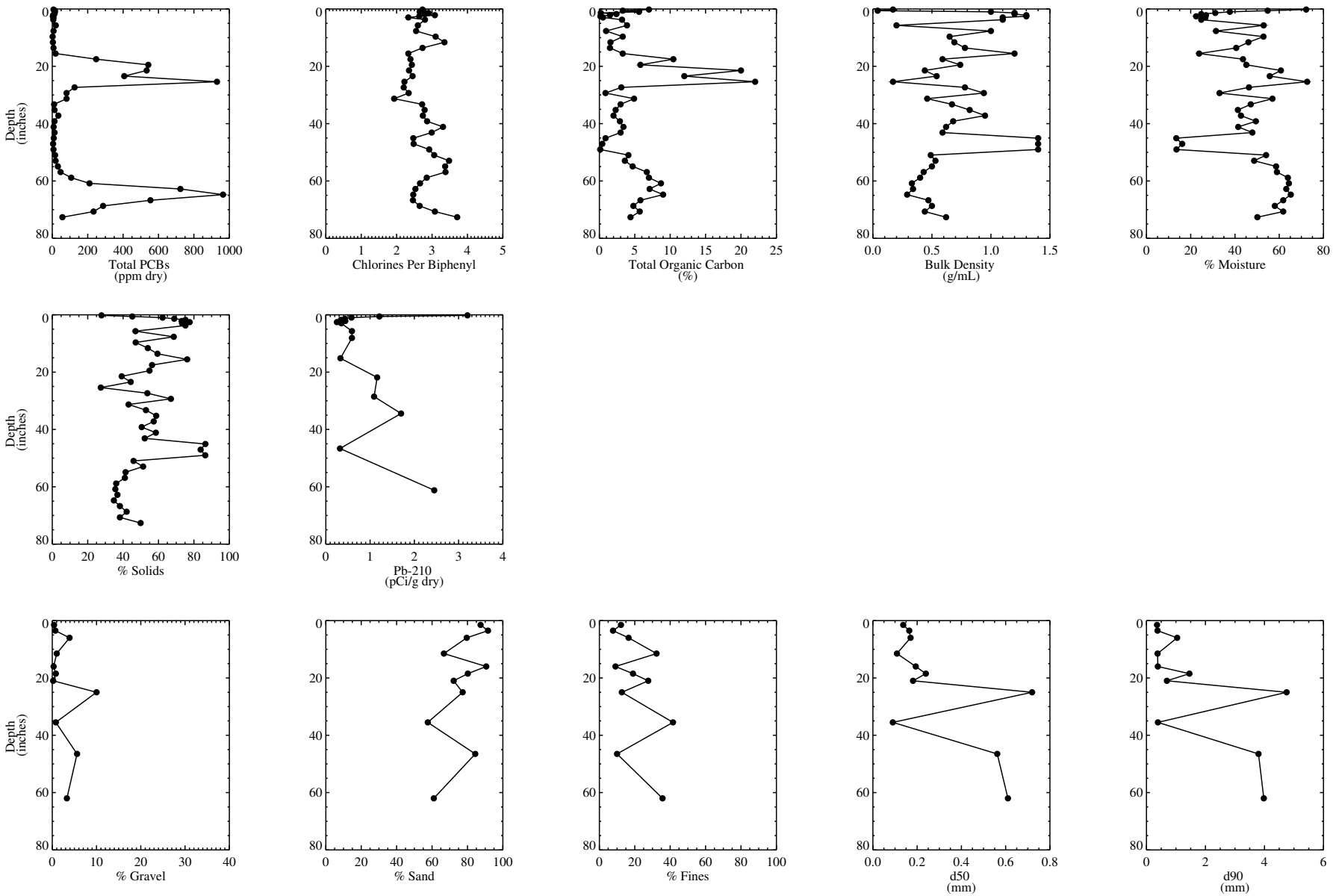


Figure 30. Vertical Profiles for Cores Co-located at T18-M

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:33 2004

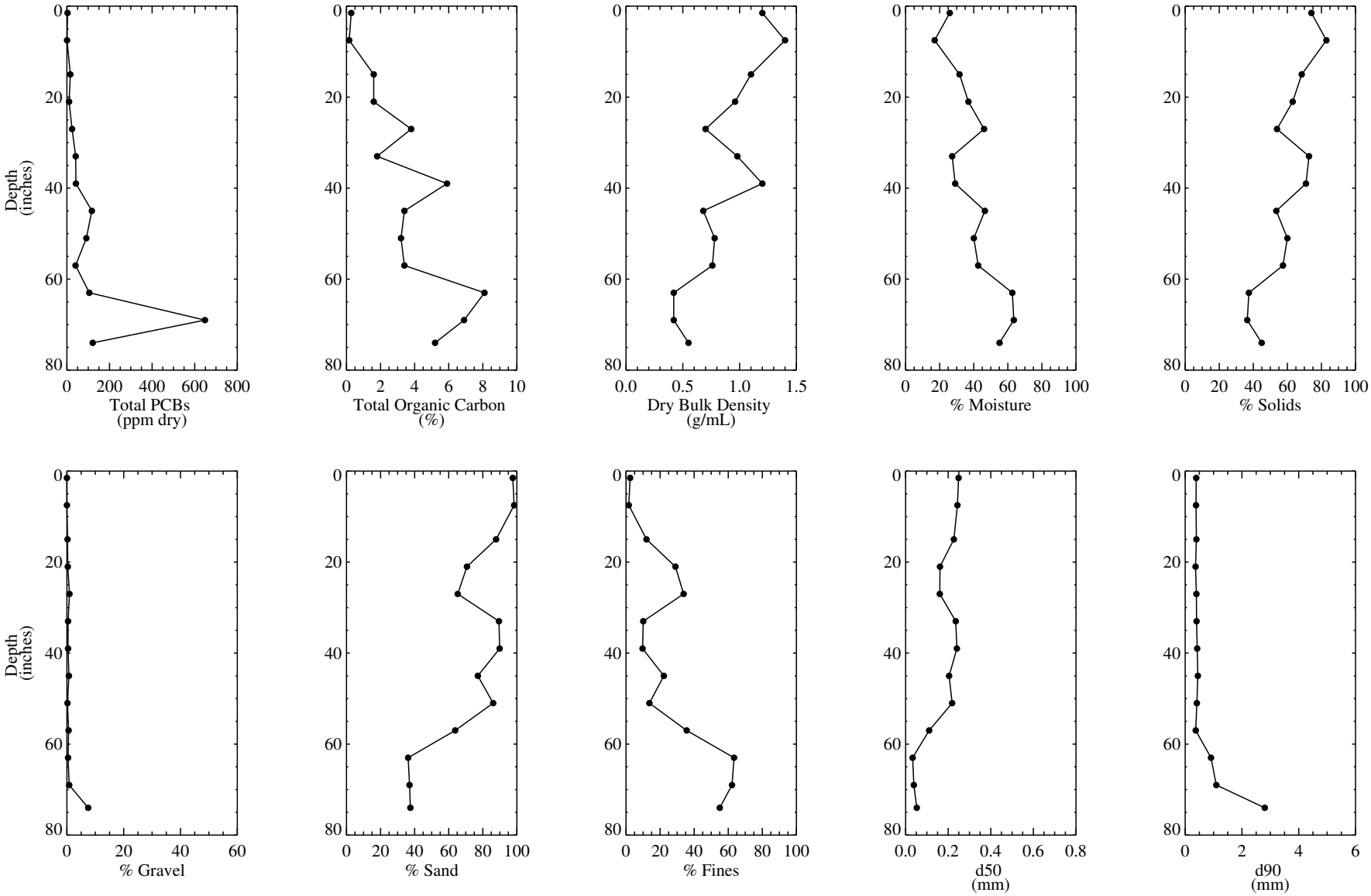


Figure 31. Vertical Profiles for Core T18-S2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:13 2004

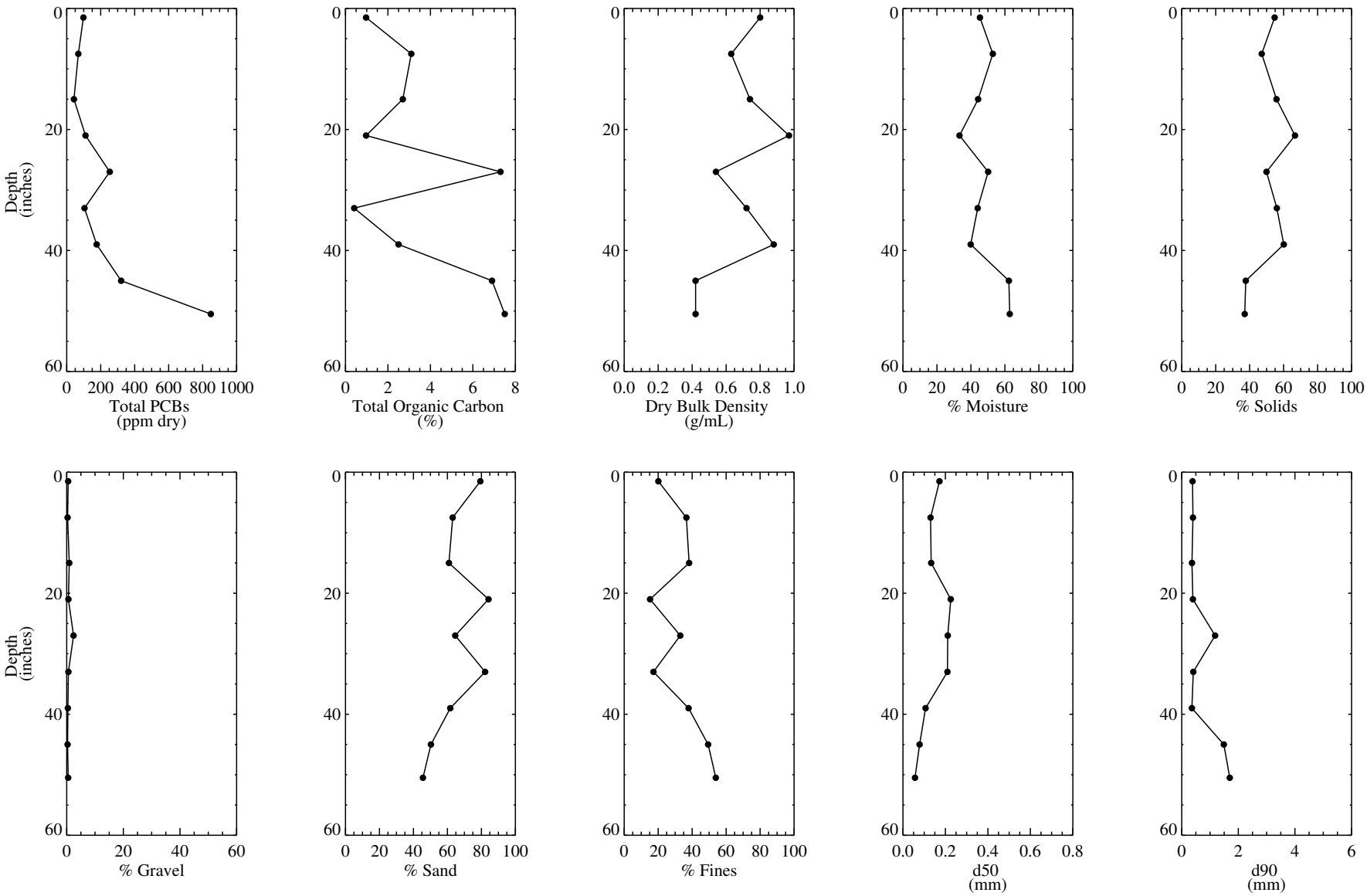


Figure 32. Vertical Profiles for Core T18.5-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:12 2004

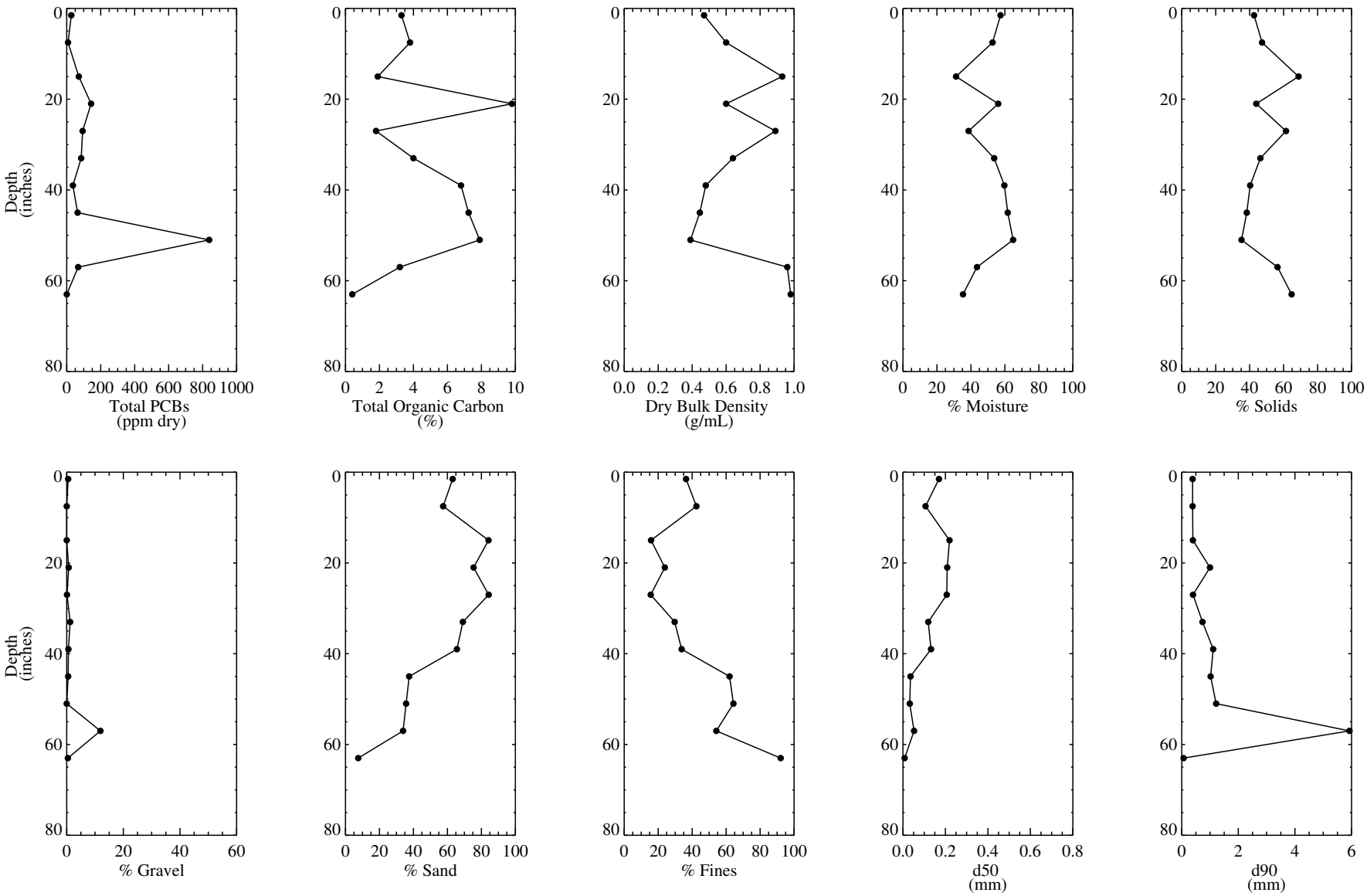


Figure 33. Vertical Profiles for Core T18.5-S2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:13 2004

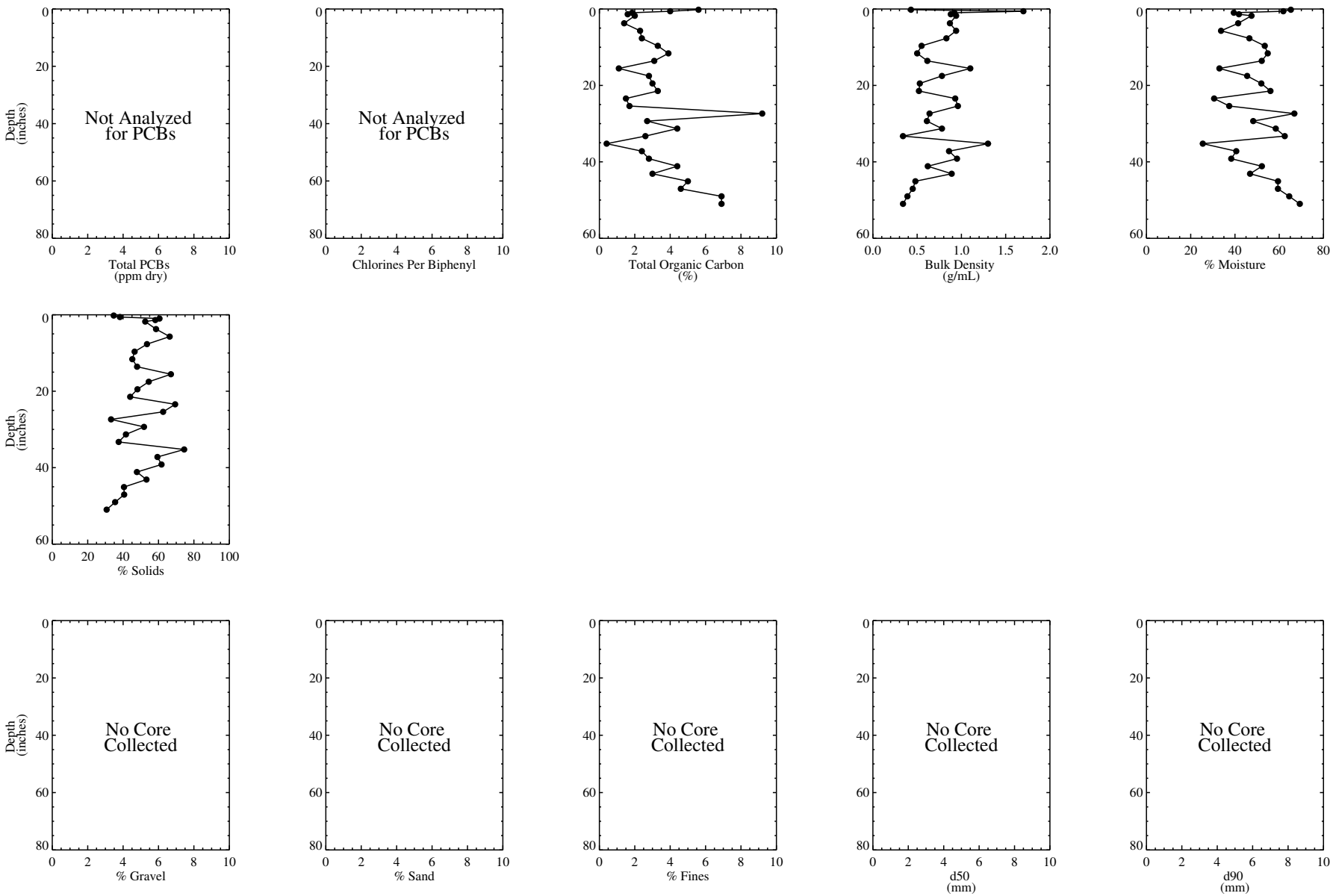


Figure 34. Vertical Profiles for Core T19-N

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:33 2004

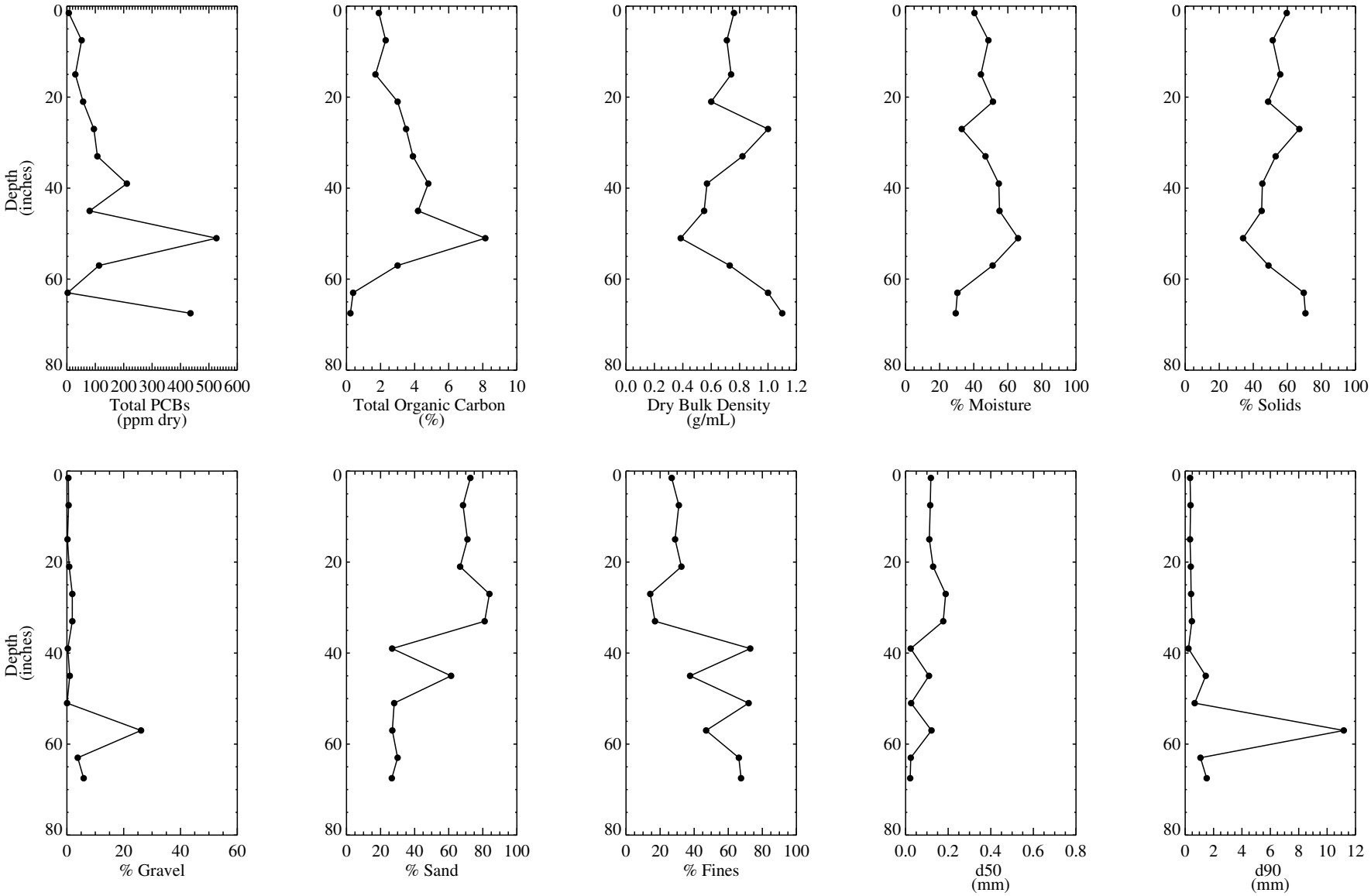


Figure 35. Vertical Profiles for Core T19-N2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:13 2004

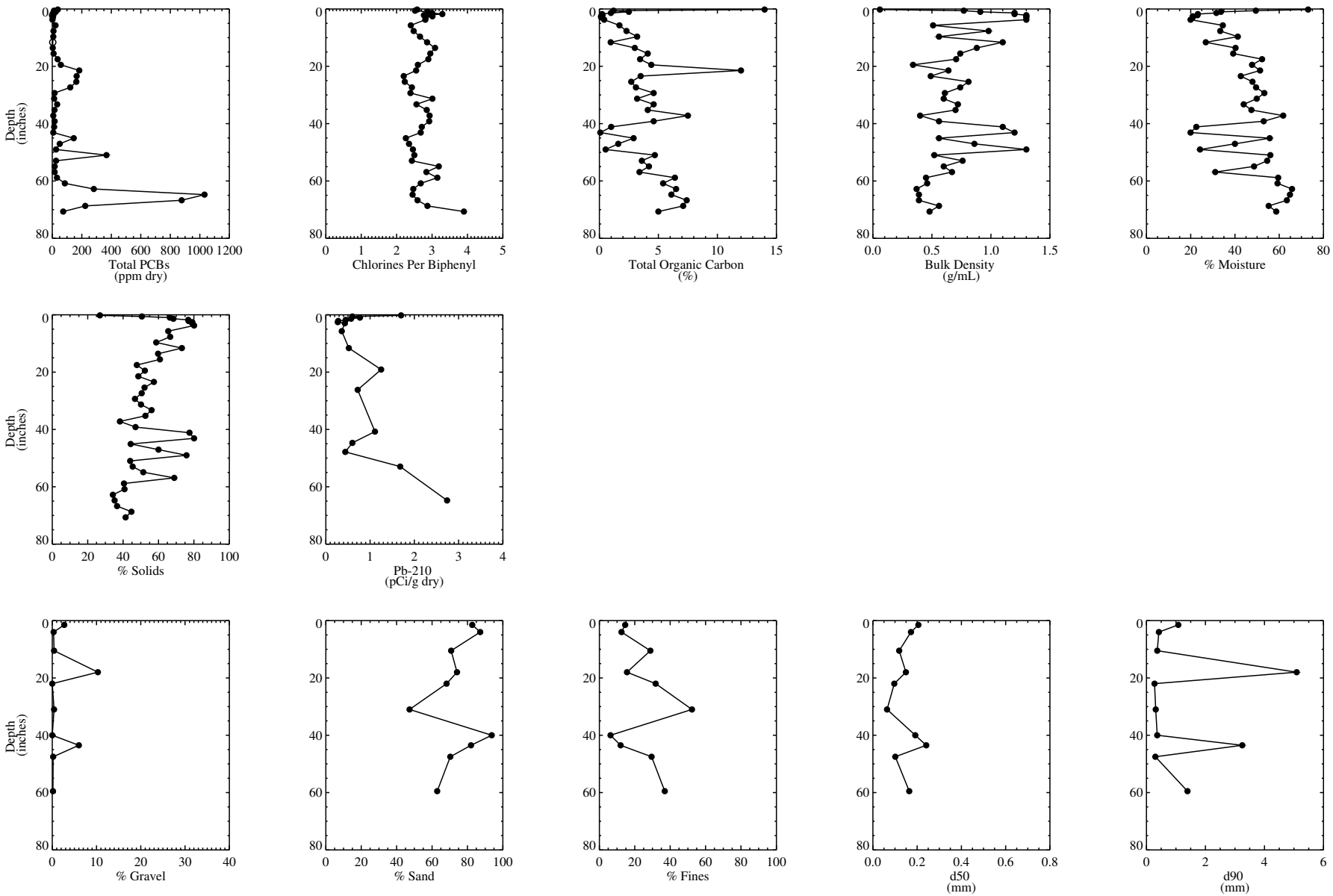


Figure 36. Vertical Profiles for Cores Co-located at T19-M

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:33 2004

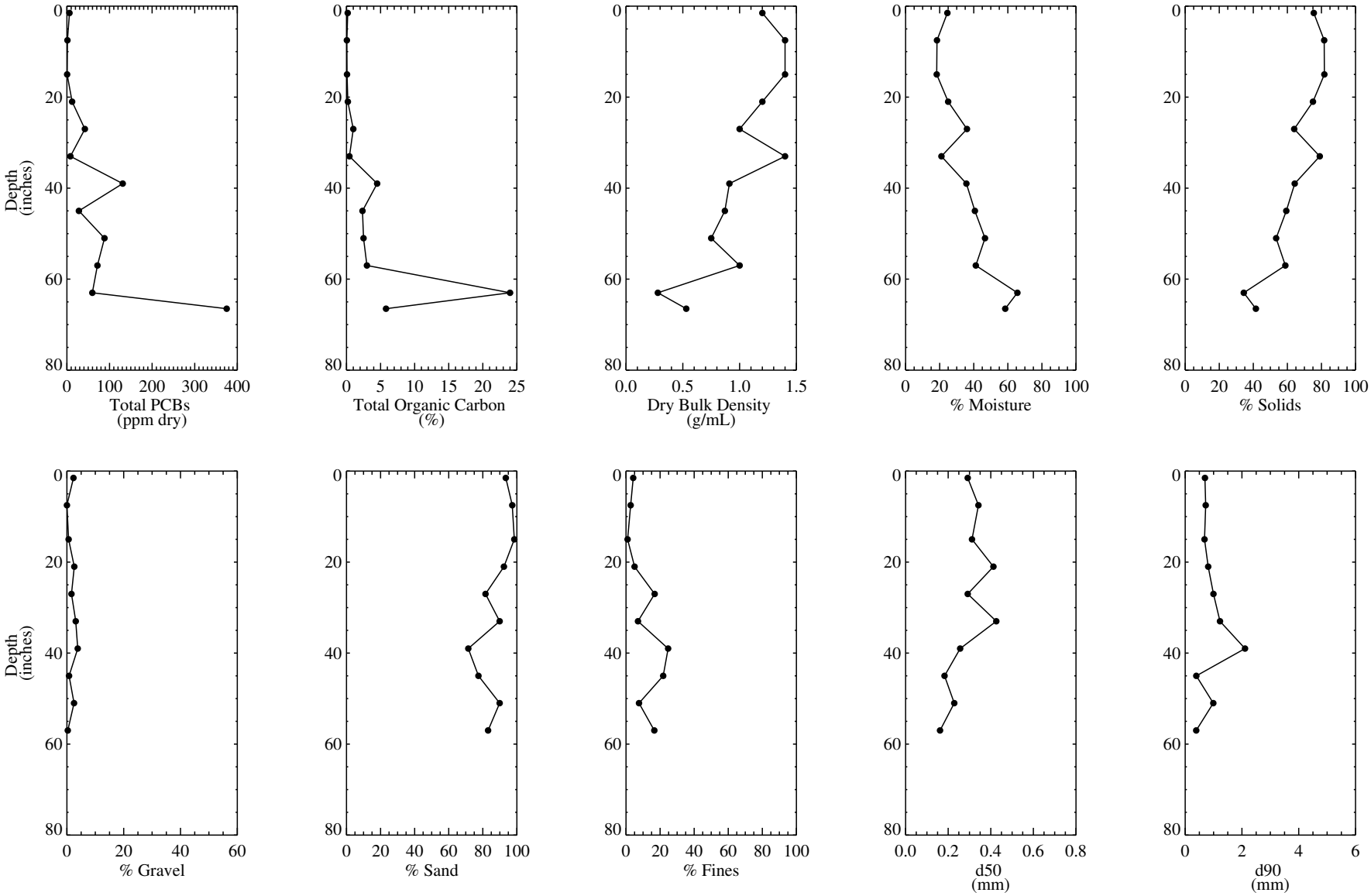


Figure 37. Vertical Profiles for Core T19-S2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Segments without enough material and/or debris for particle size analysis: 60-66" and 66-67"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:13 2004

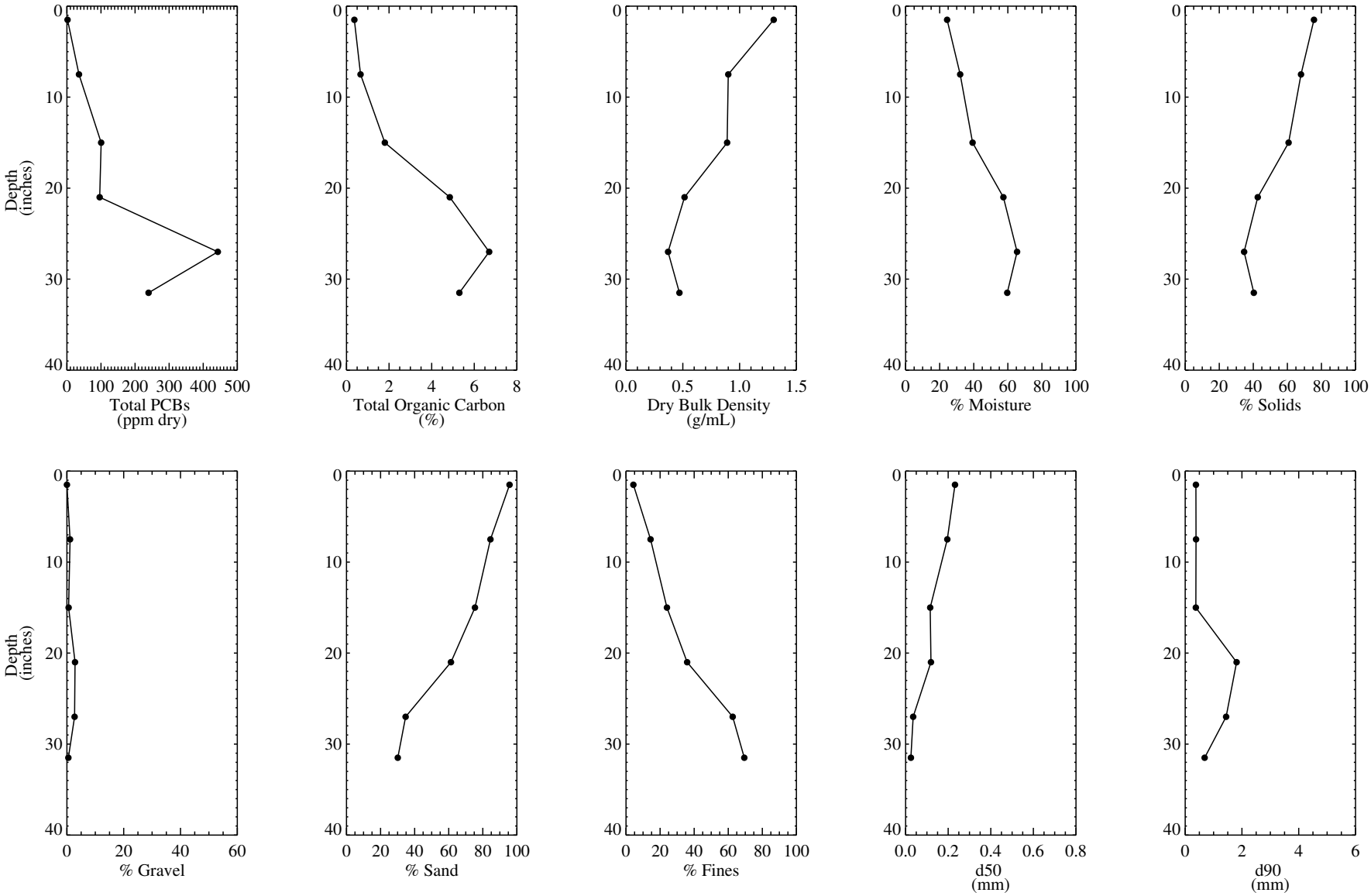


Figure 38. Vertical Profiles for Core T19.5-M2

January 2004 Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\Jan2004\profiles\parameter_profiles_Jan2004_CCLGR.pro
Wed Mar 24 14:41:13 2004

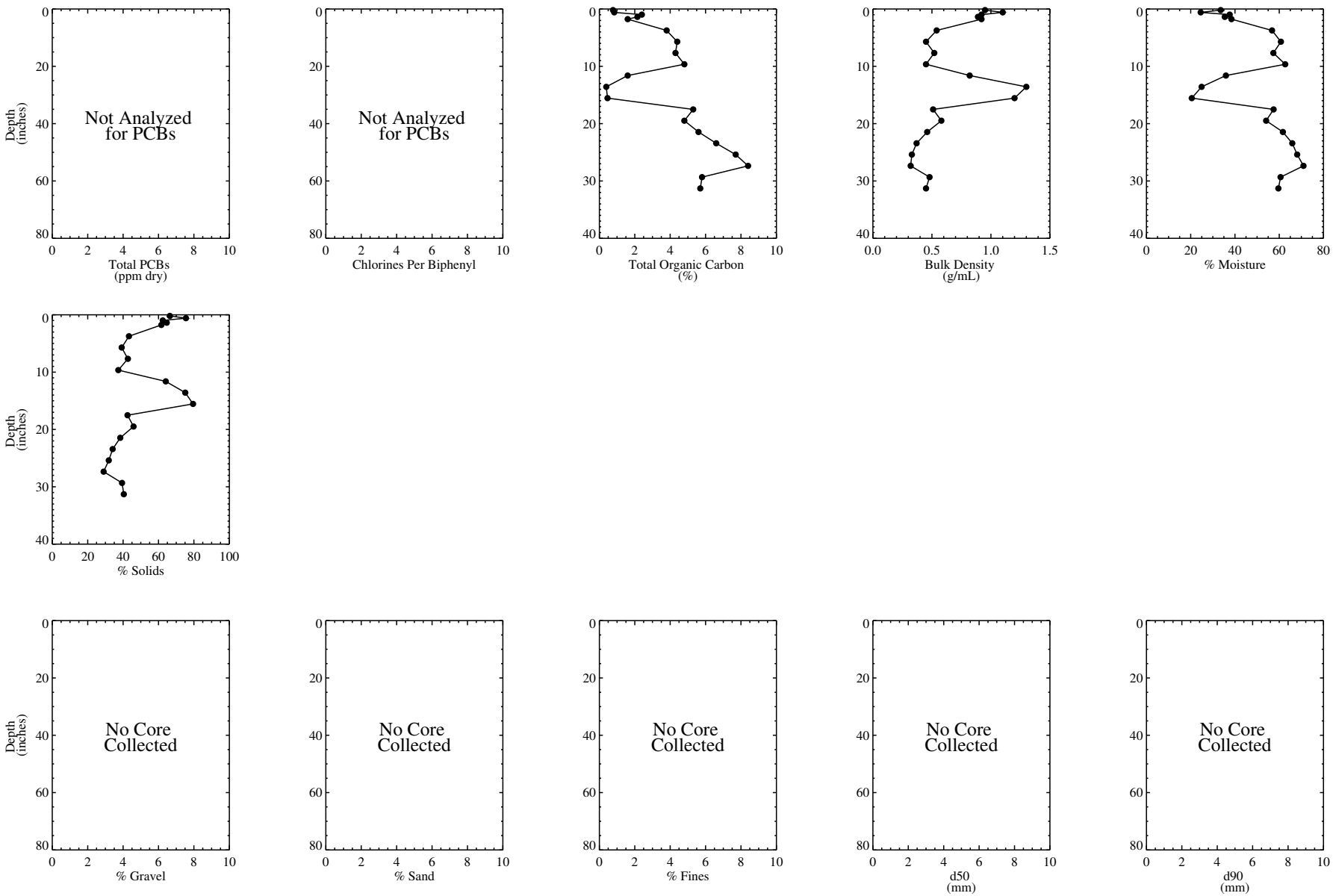


Figure 39. Vertical Profiles for Core T20-N

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:33 2004

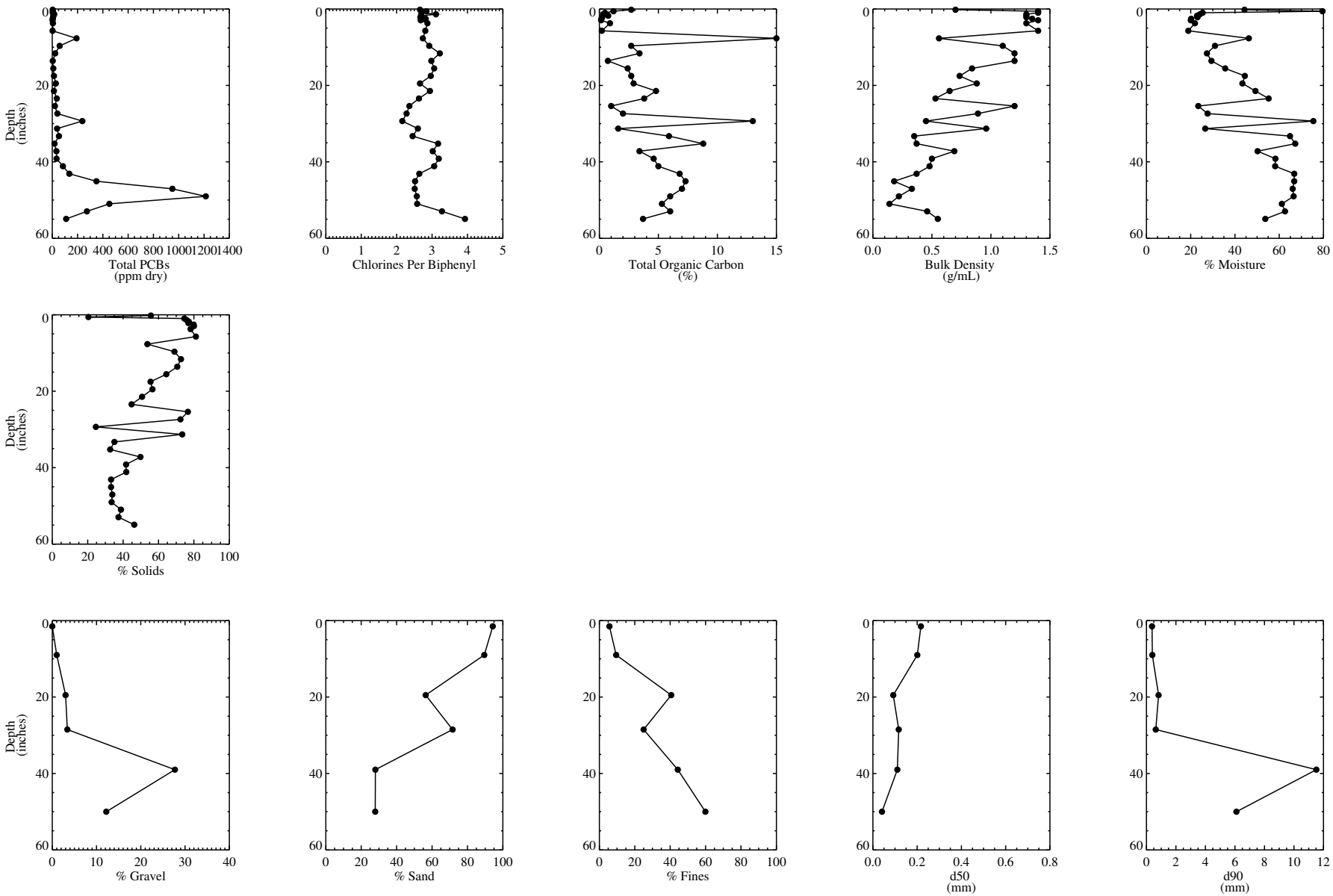


Figure 40. Vertical Profiles for Cores Co-located at T20-M

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:34 2004

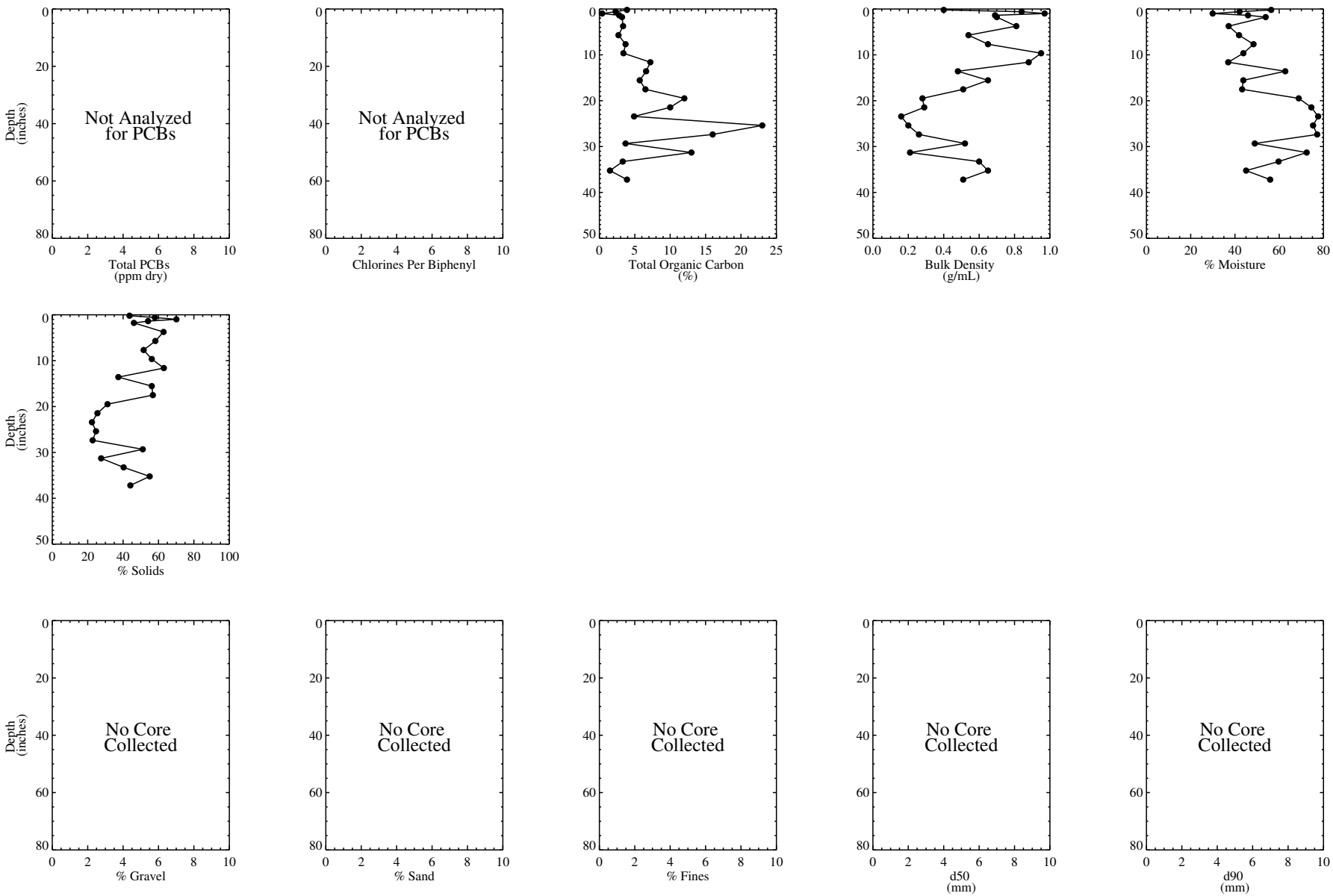


Figure 41. Vertical Profiles for Core T21-S

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:34 2004

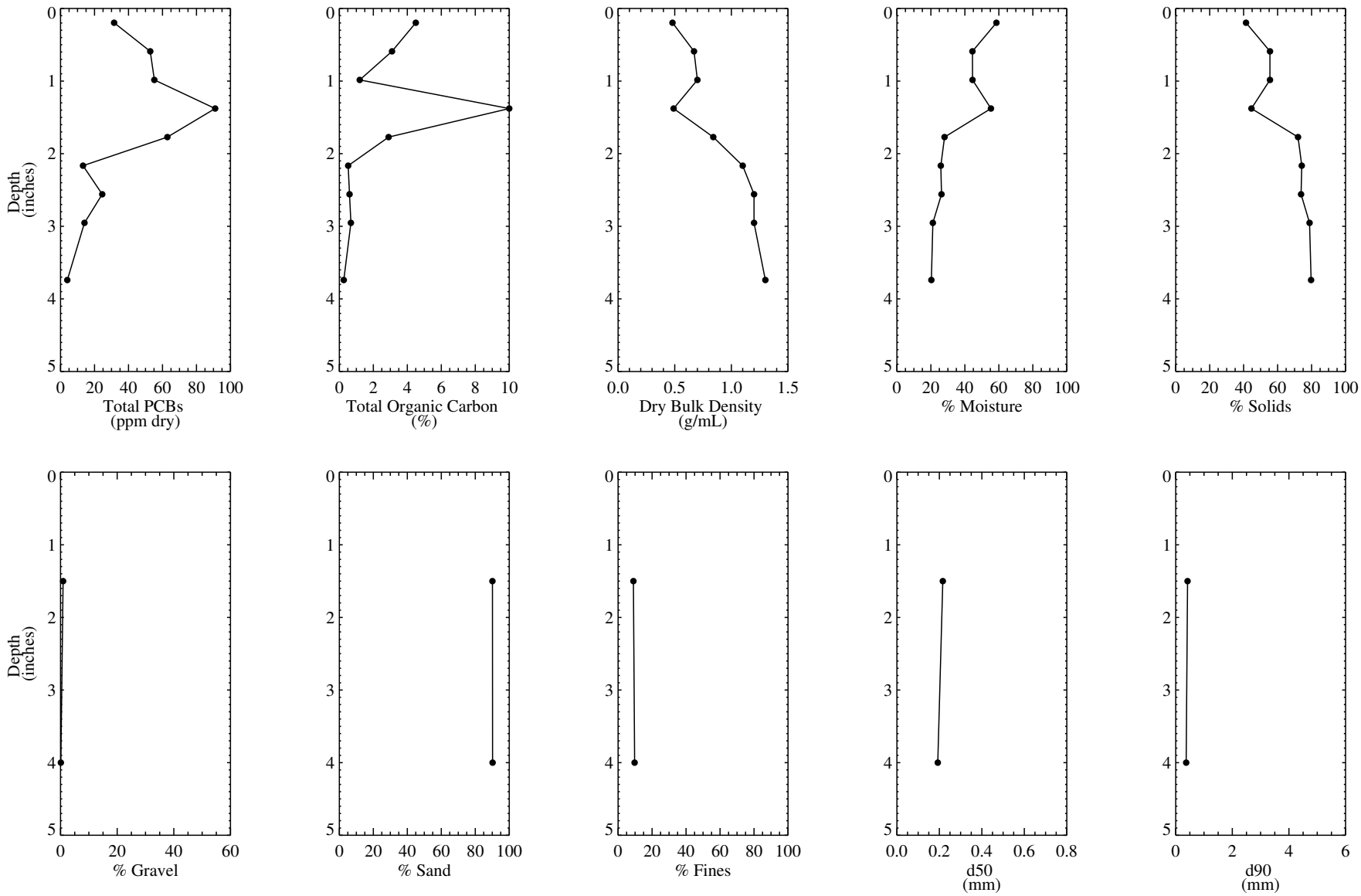


Figure 42. Vertical Profiles for Cores Co-located at T22-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

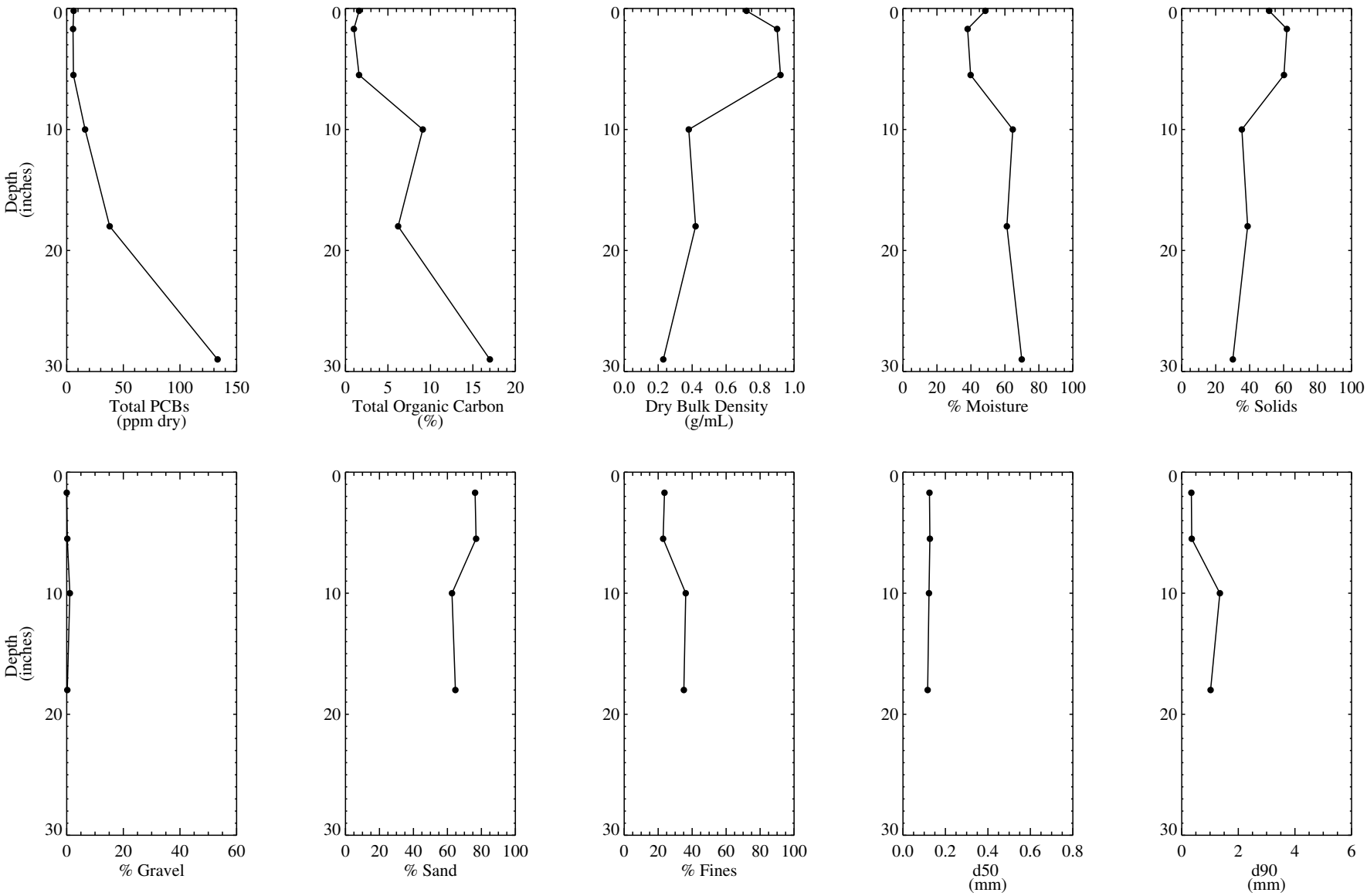


Figure 43. Vertical Profiles for Core T22-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Segment with no particle size results because it consisted only of woodchips: 24-34"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

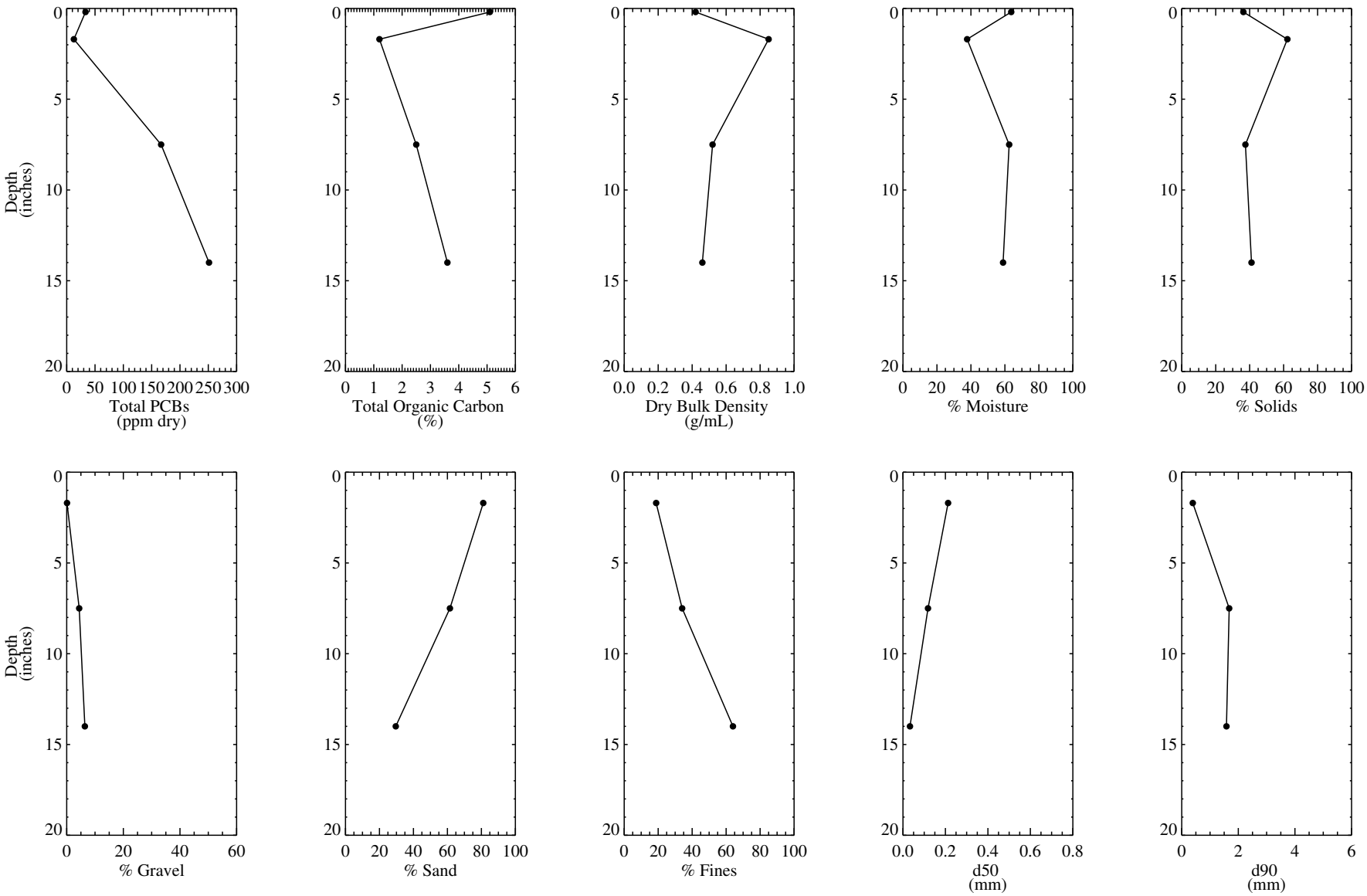


Figure 44. Vertical Profiles for Core T23-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

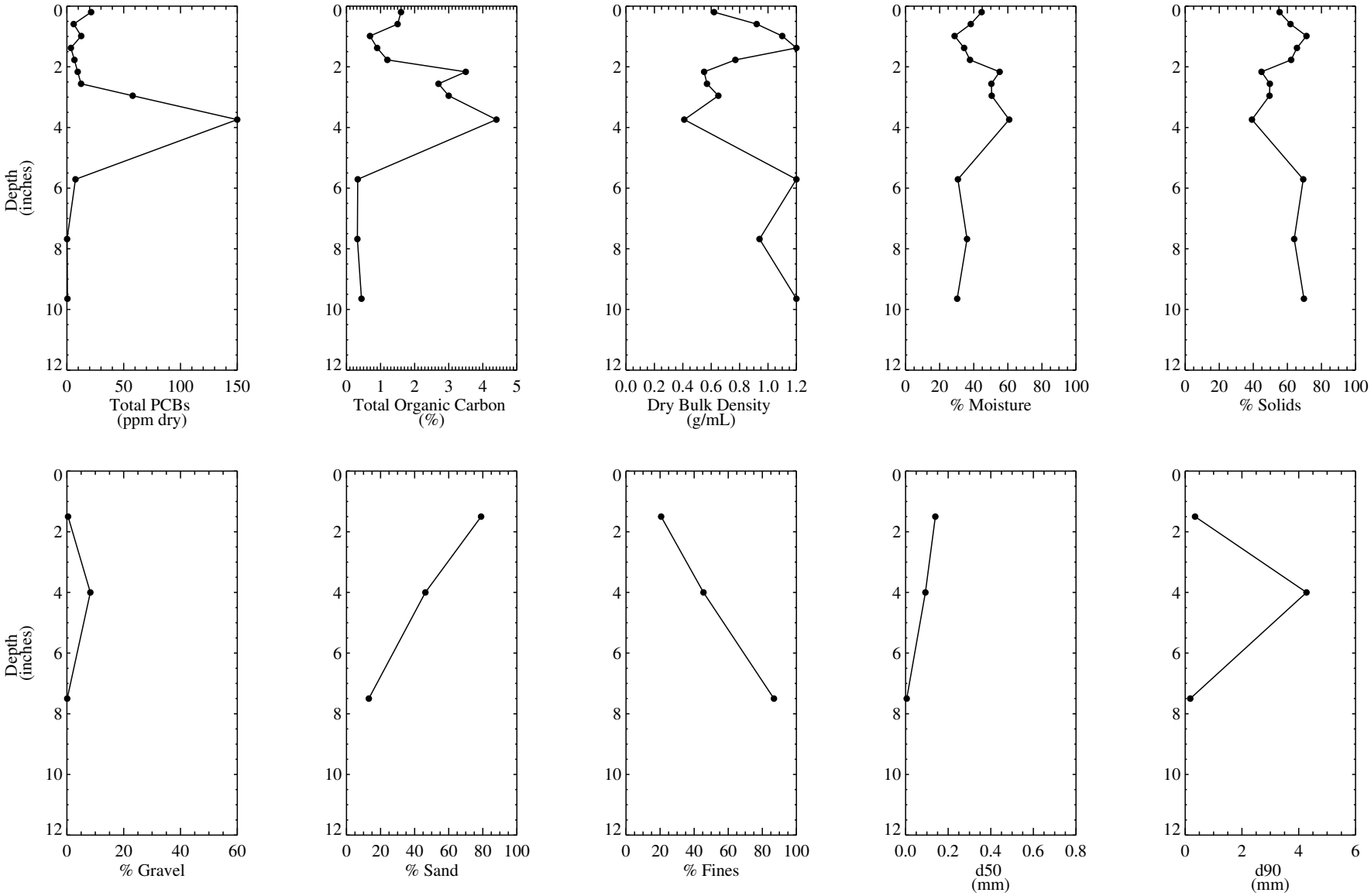


Figure 45. Vertical Profiles for Cores Co-located at T23-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

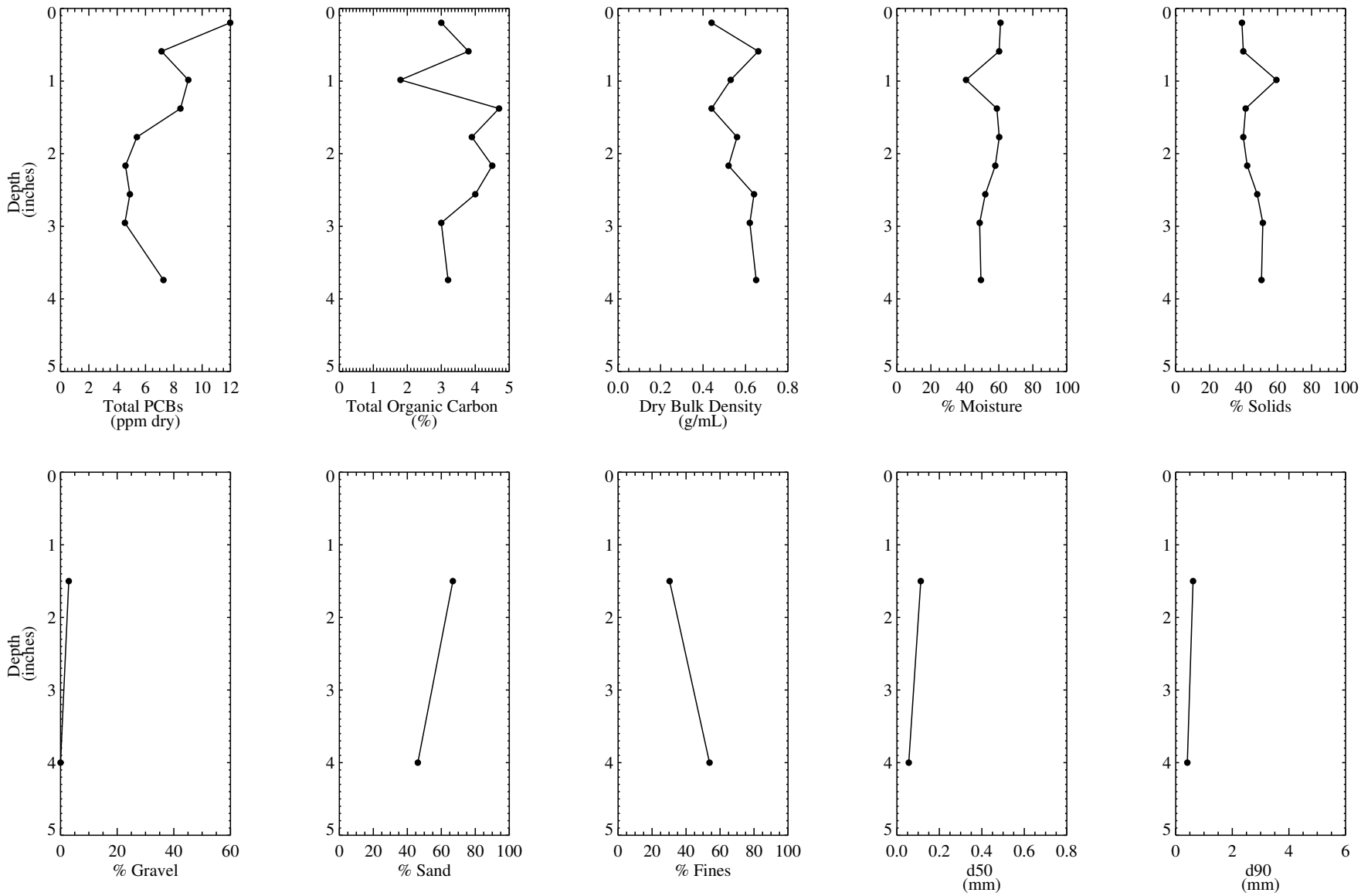


Figure 46. Vertical Profiles for Cores Co-located at T24-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

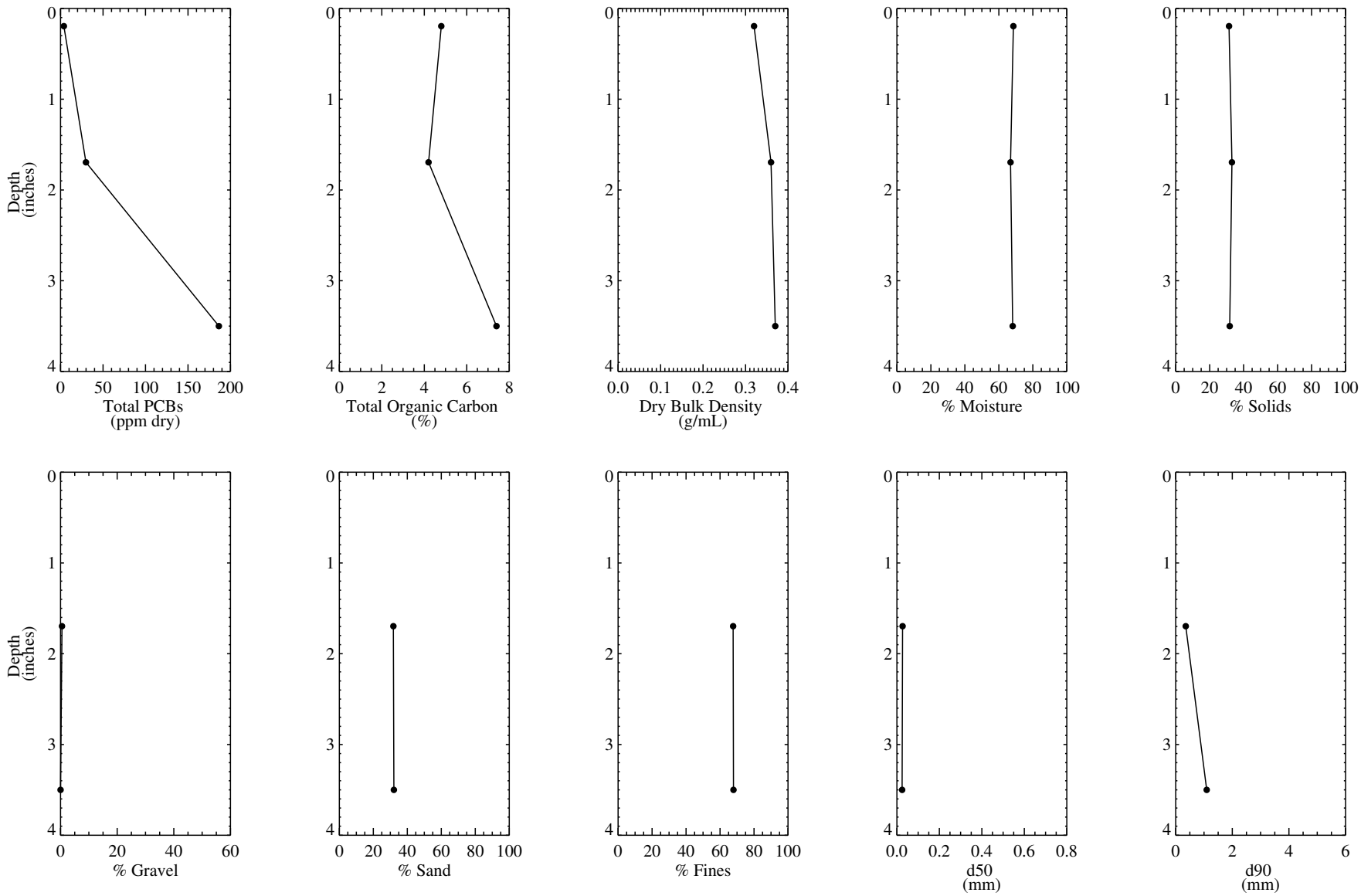


Figure 47. Vertical Profiles for Core T25-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

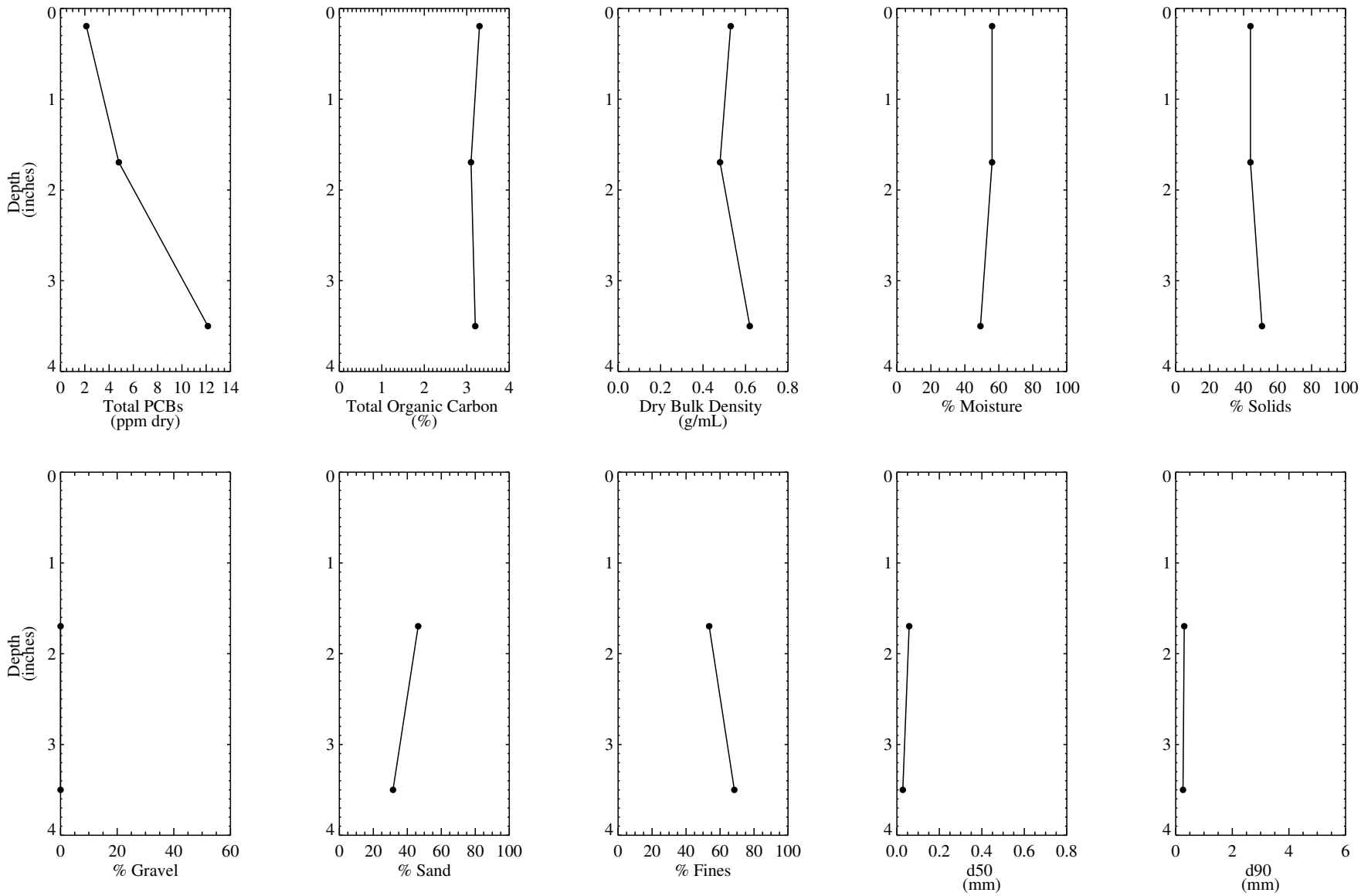


Figure 48. Vertical Profiles for Core T25-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

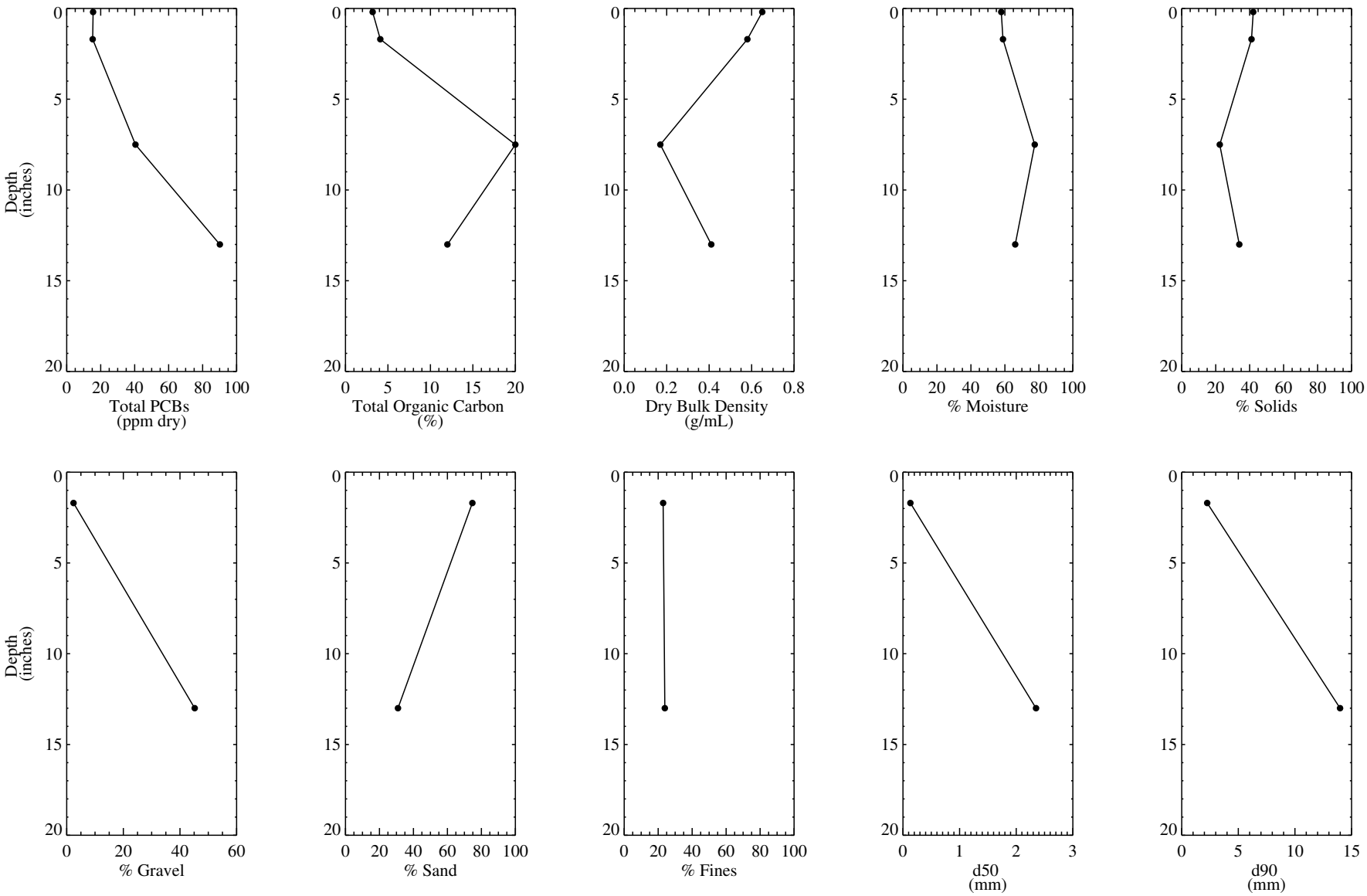


Figure 49. Vertical Profiles for Core T26-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Segment with no particle size results because it consisted only of woodchips: 3-12"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:09 2004

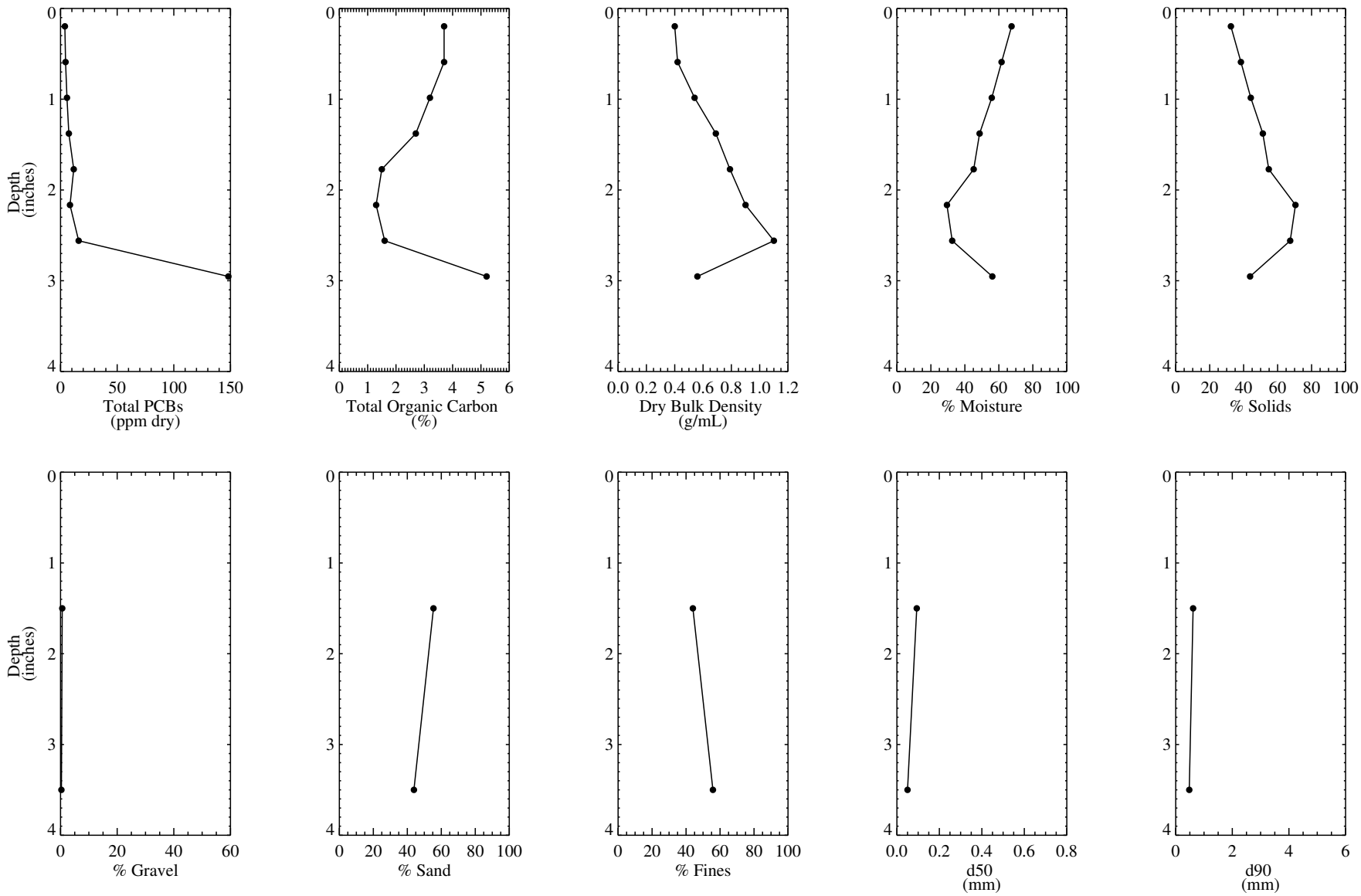


Figure 50. Vertical Profiles for Cores Co-located at T26-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

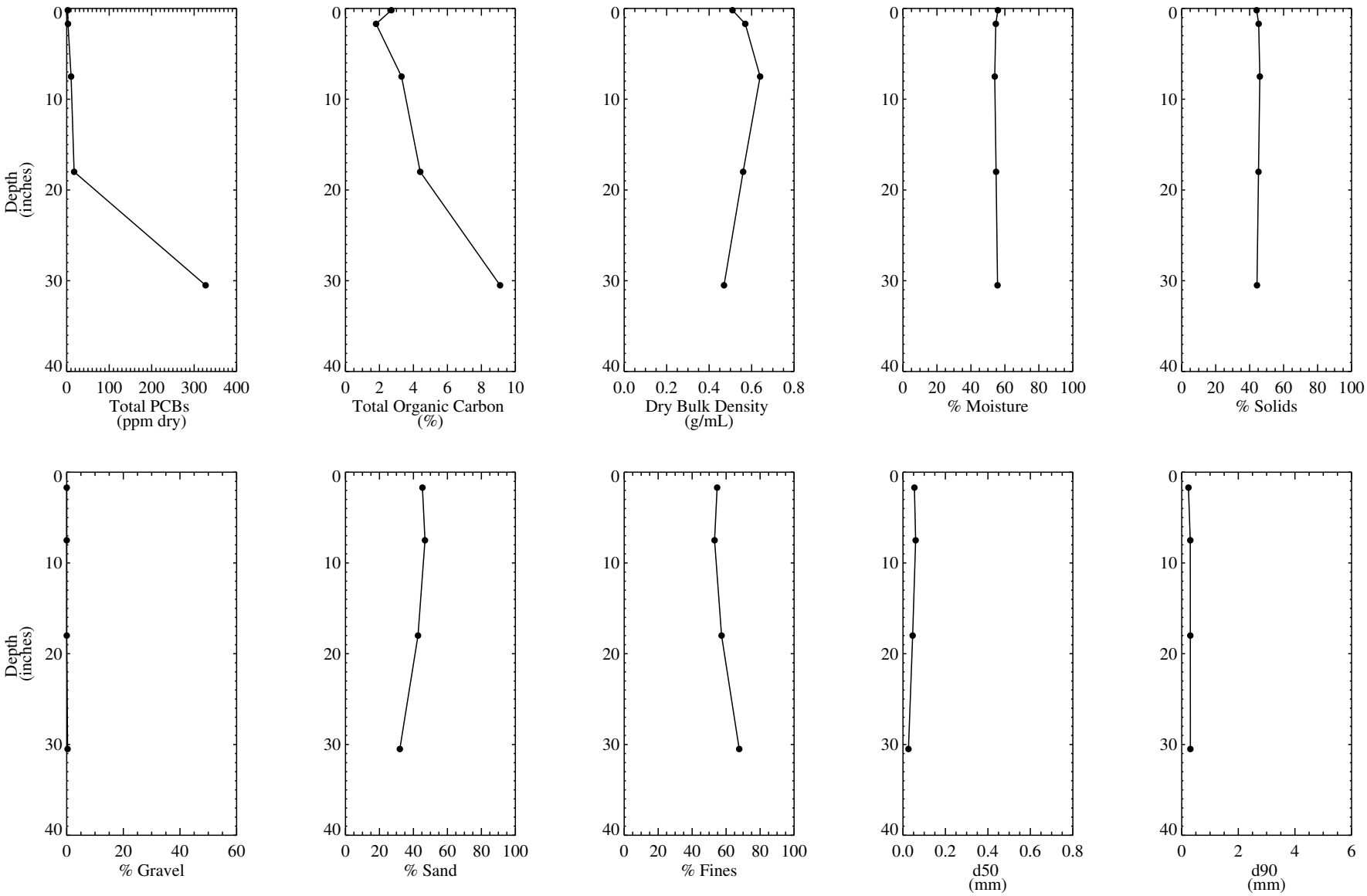


Figure 51. Vertical Profiles for Core T27-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

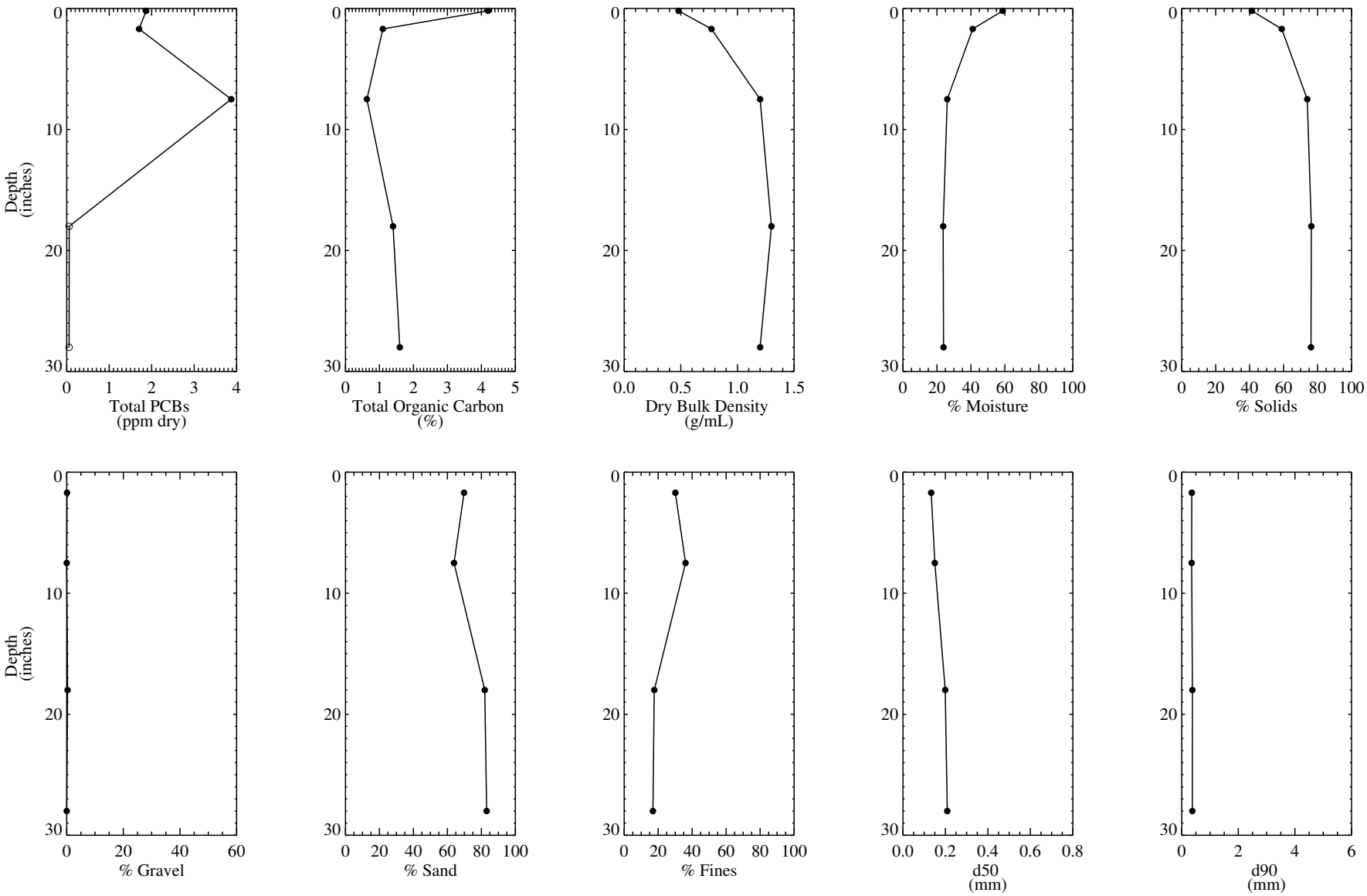


Figure 52. Vertical Profiles for Core T27-M

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

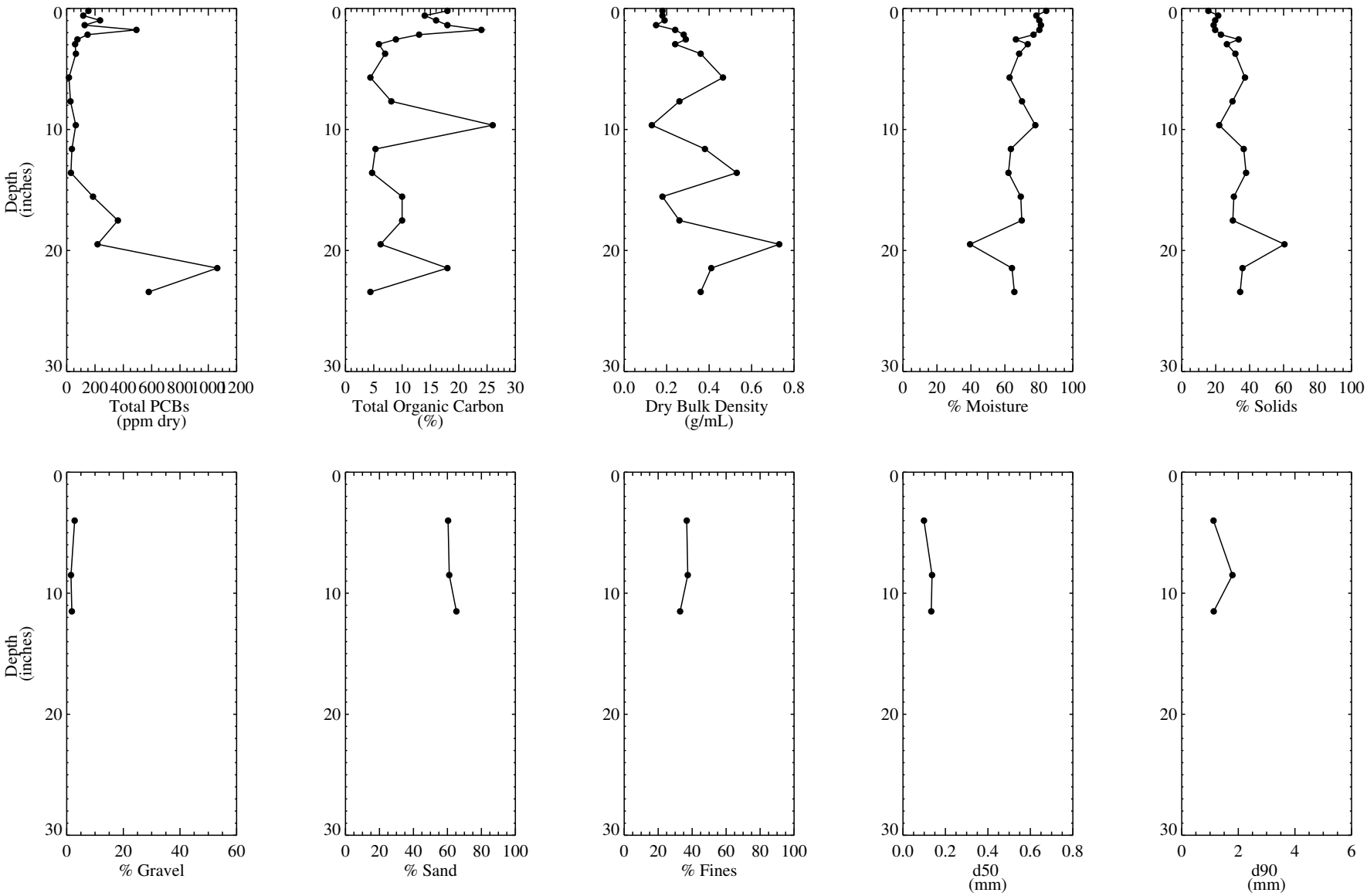


Figure 53. Vertical Profiles for Cores Co-located at T28-M

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged.

Segments with no particle size results because they consisted only of woodchips: 0-3", 5-7", 13-17"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

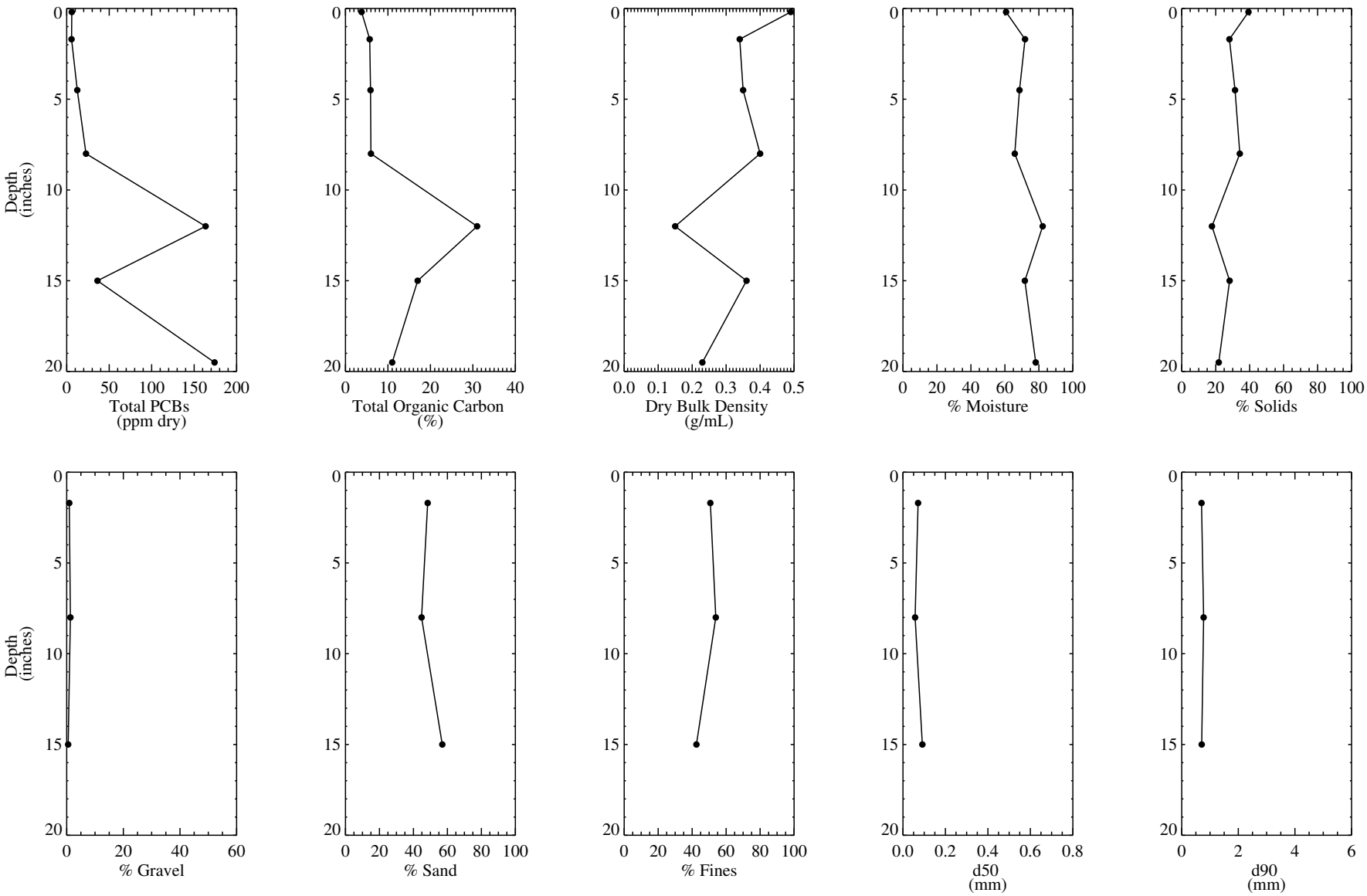


Figure 54. Vertical Profiles for Core T29-S

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged.

Segments with no particle size results because they consisted only of woodchips: 10-14", 16-23"; Segment without enough material for particle size analysis: 3-6"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

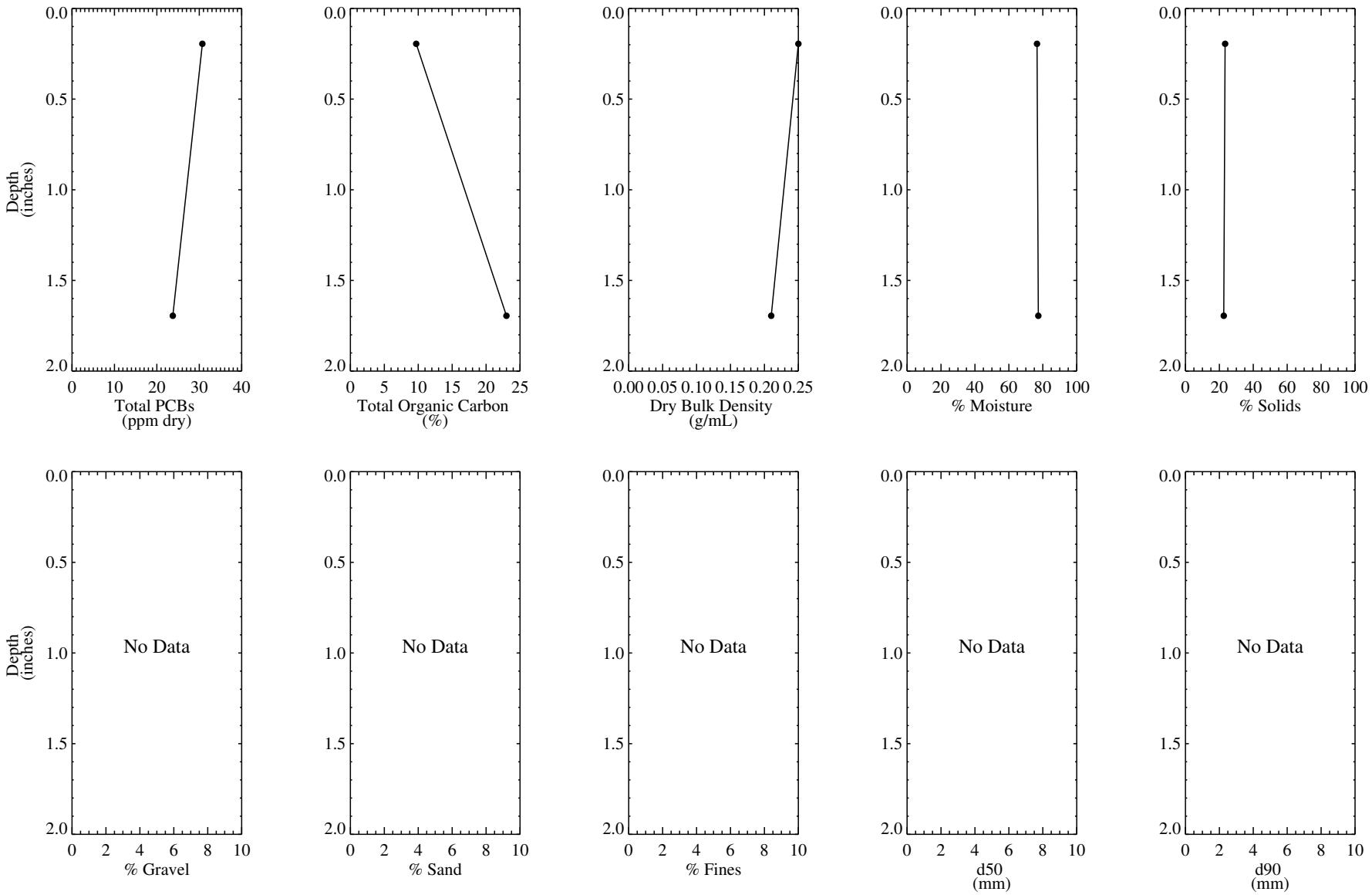


Figure 55. Vertical Profiles for Core T30-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Segment with no particle size results because it consisted only of woodchips: 0.39-3"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

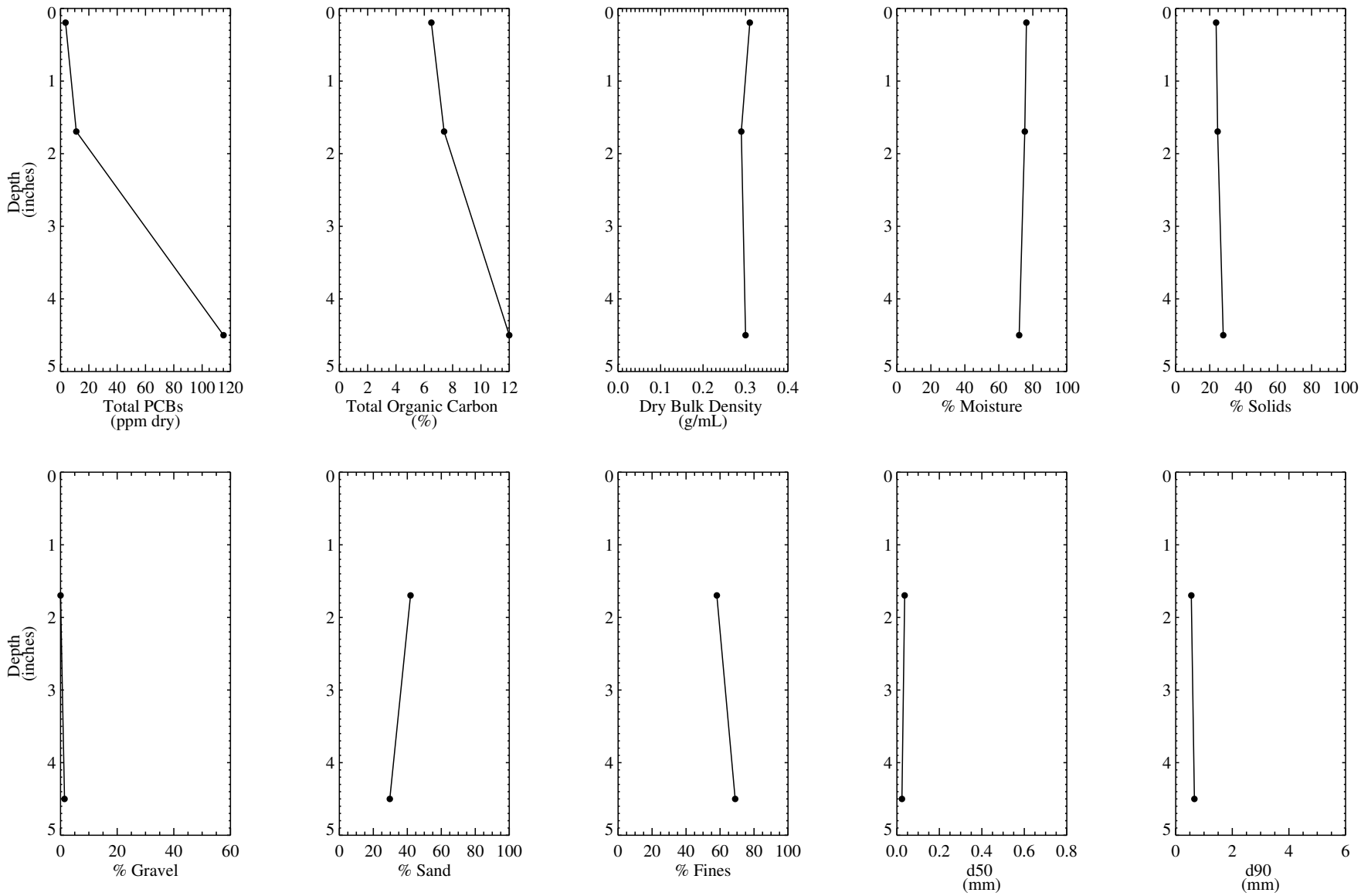


Figure 56. Vertical Profiles for Core T31-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

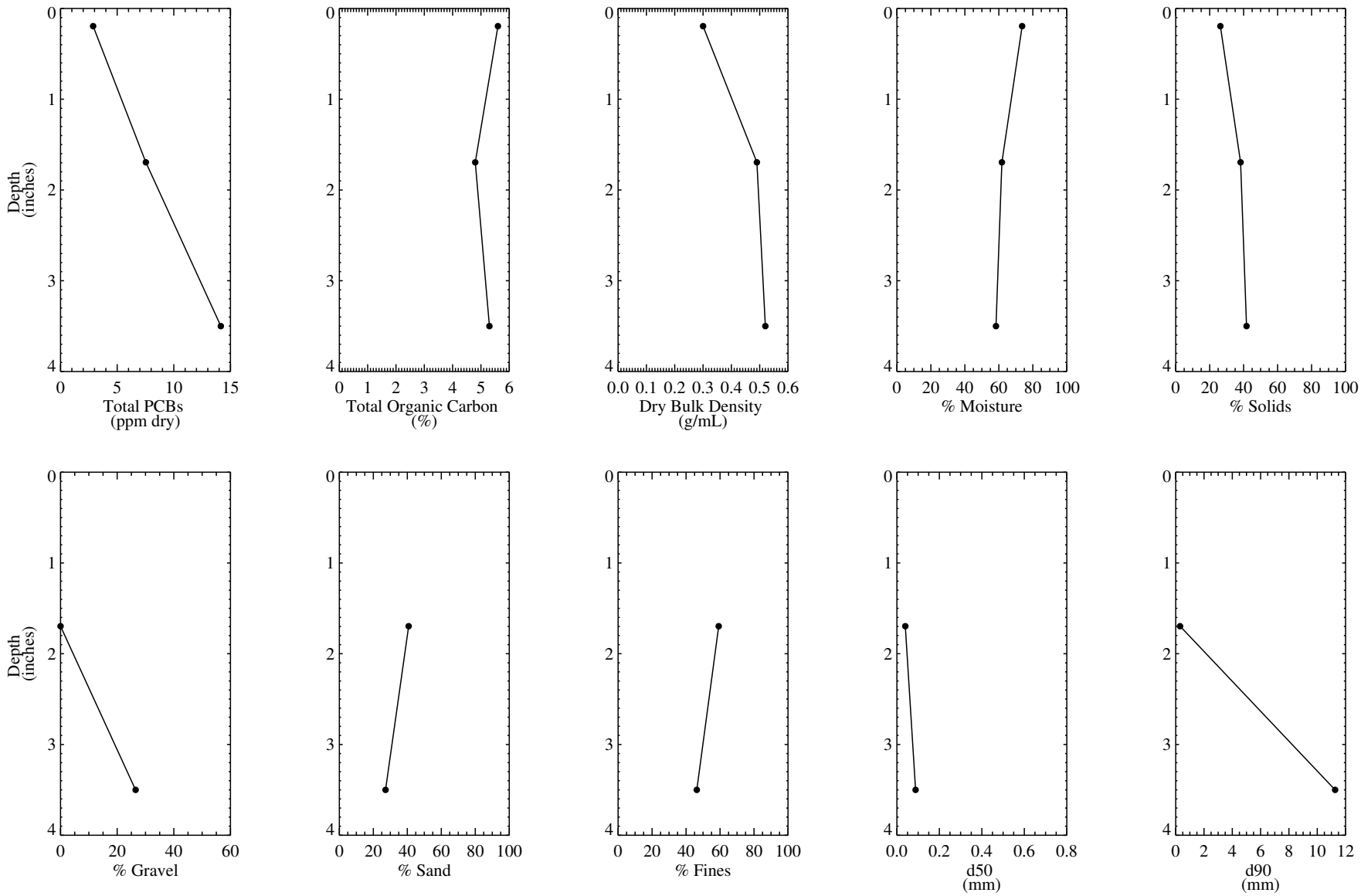


Figure 57. Vertical Profiles for Core T32-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

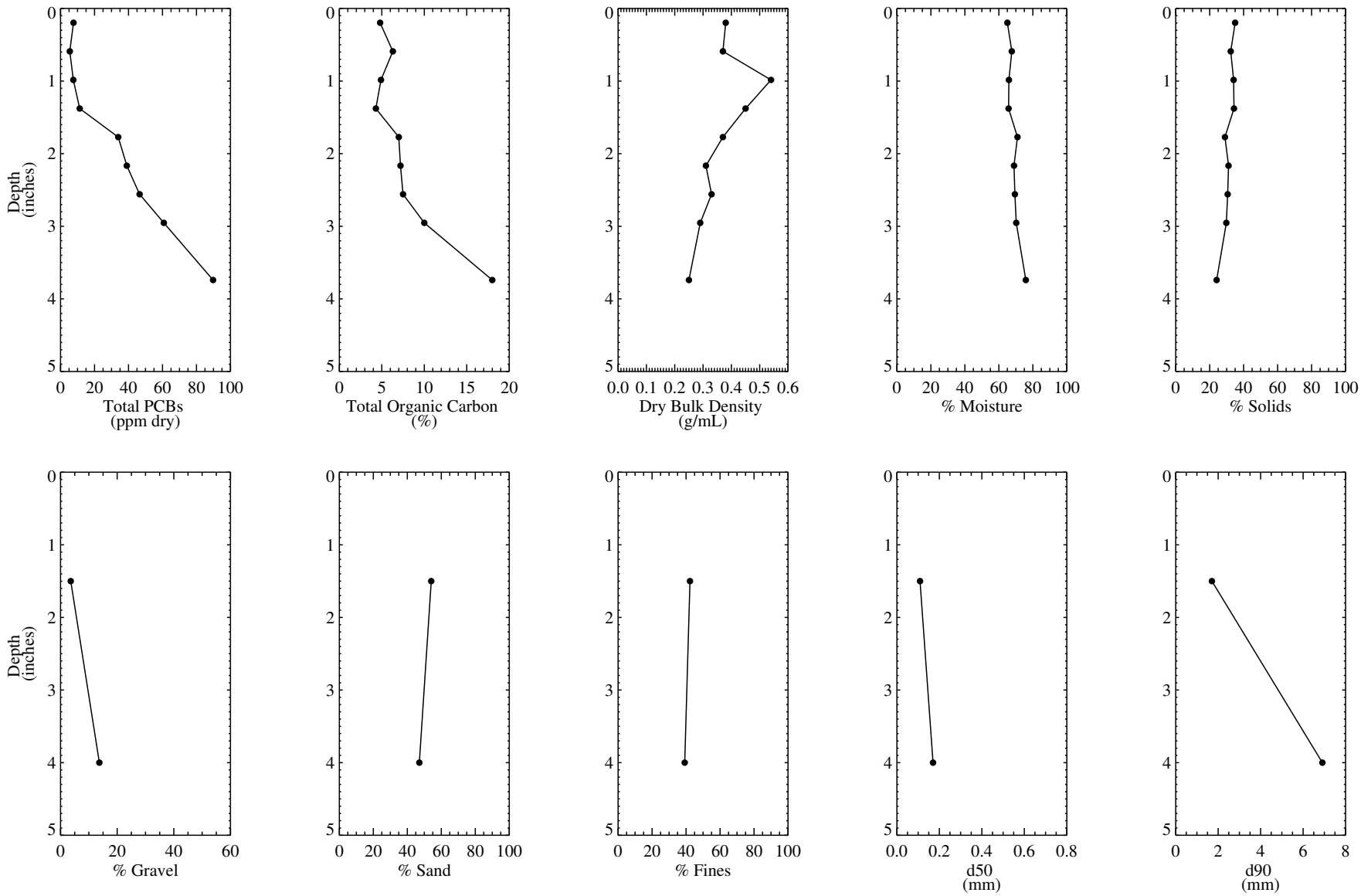


Figure 58. Vertical Profiles for Cores Co-located at T33-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:10 2004

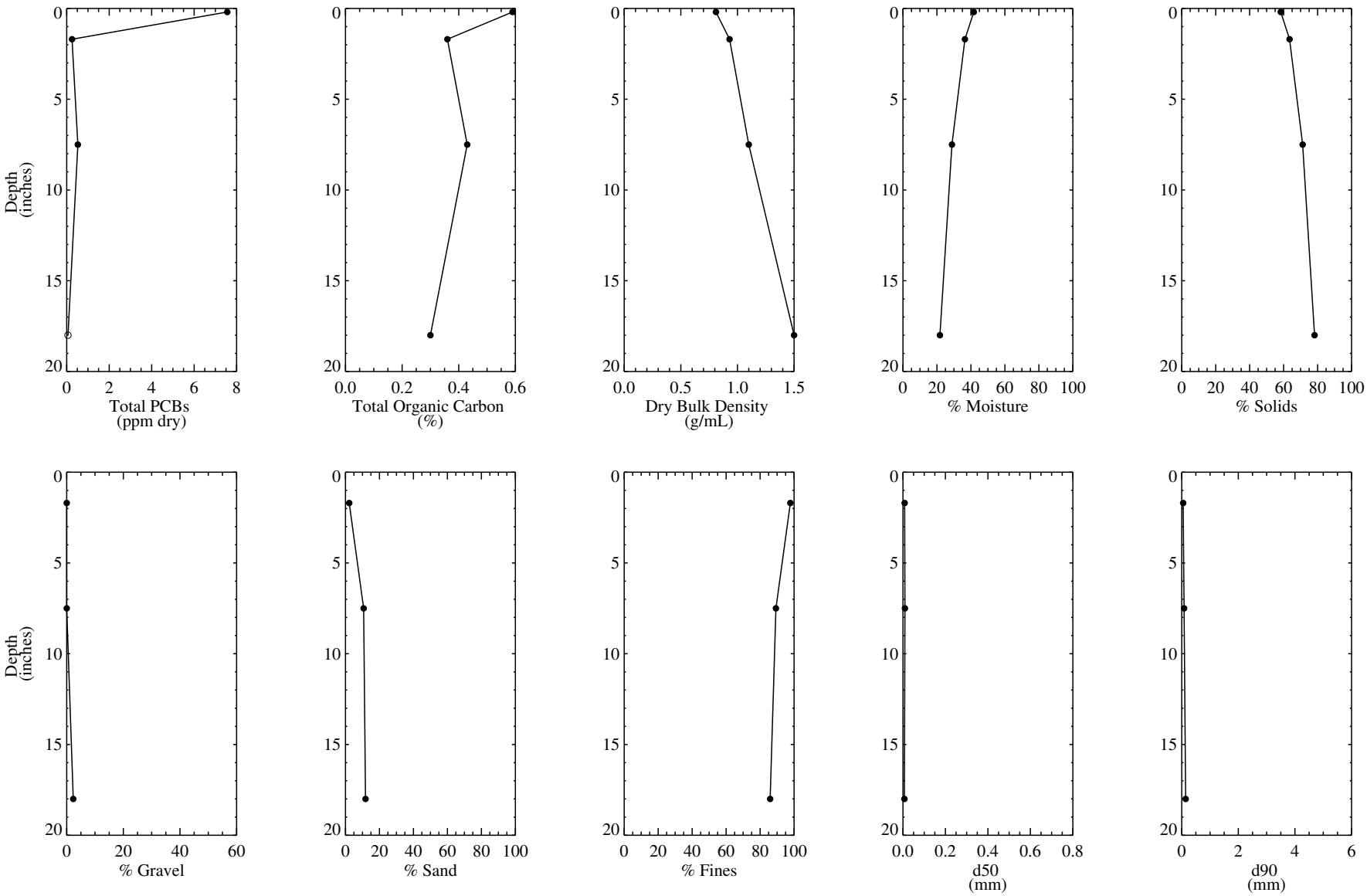


Figure 59. Vertical Profiles for Core T34-M

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

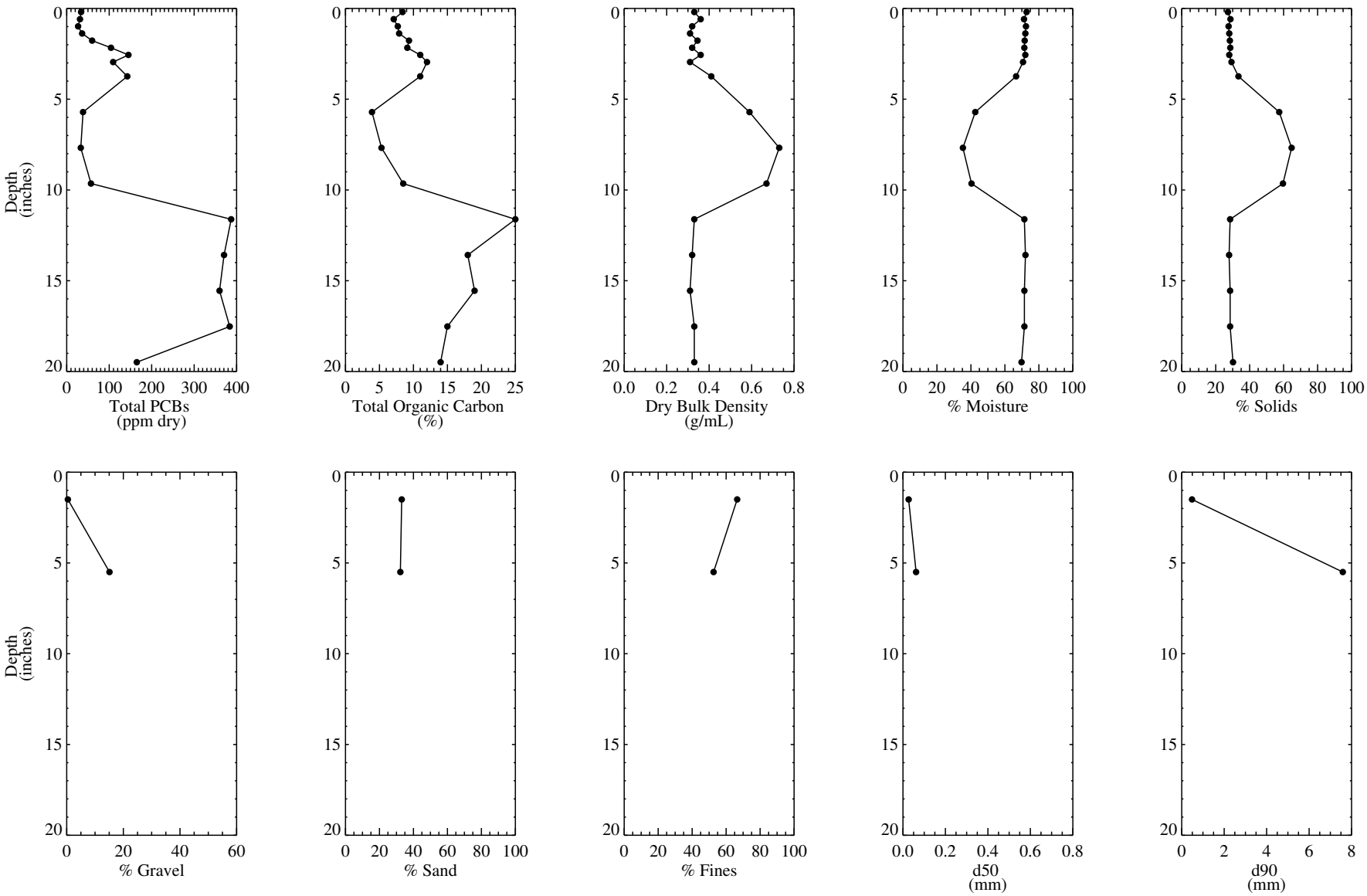


Figure 60. Vertical Profiles for Cores Co-located at T35-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

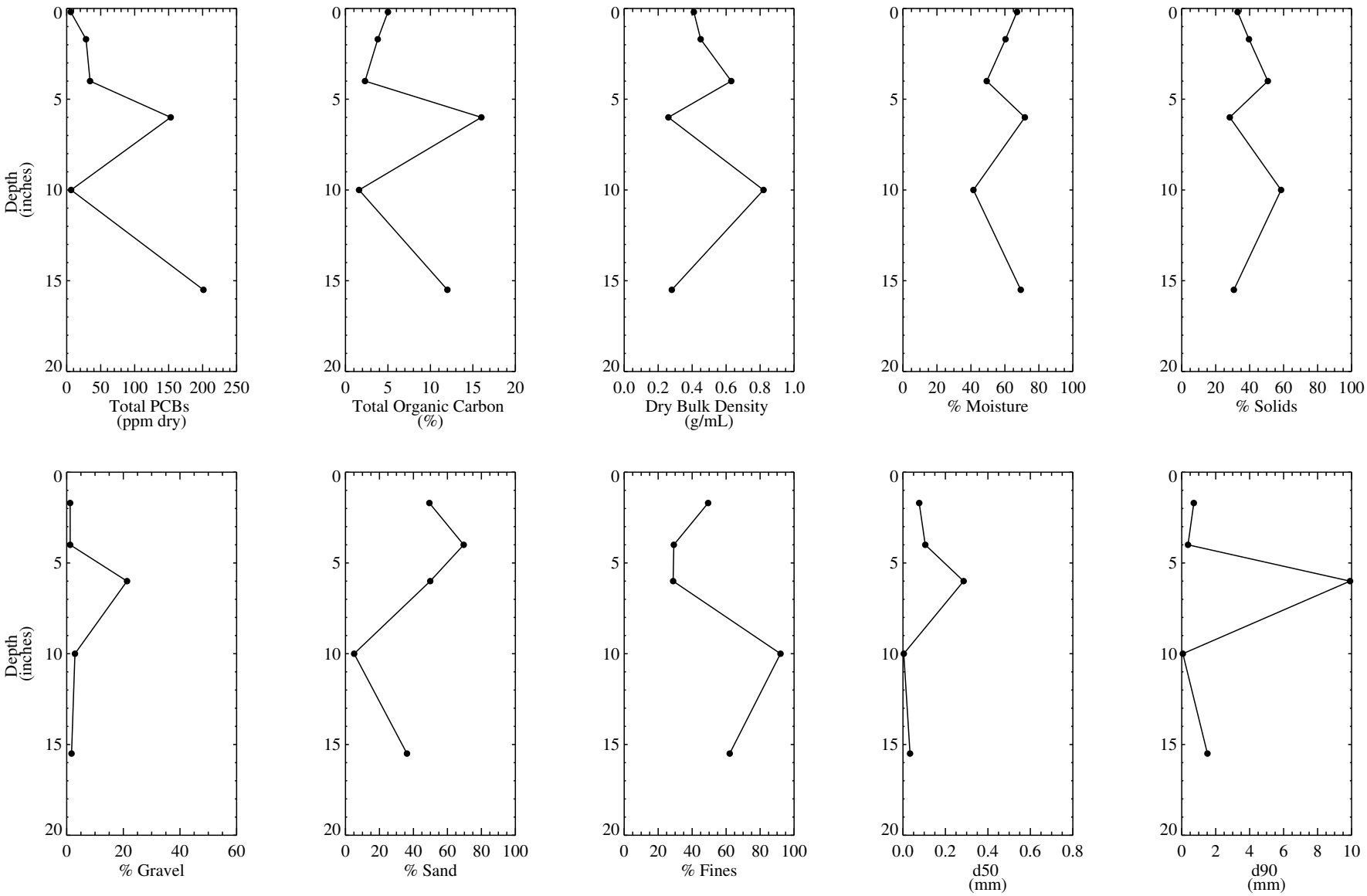


Figure 61. Vertical Profiles for Core T37-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

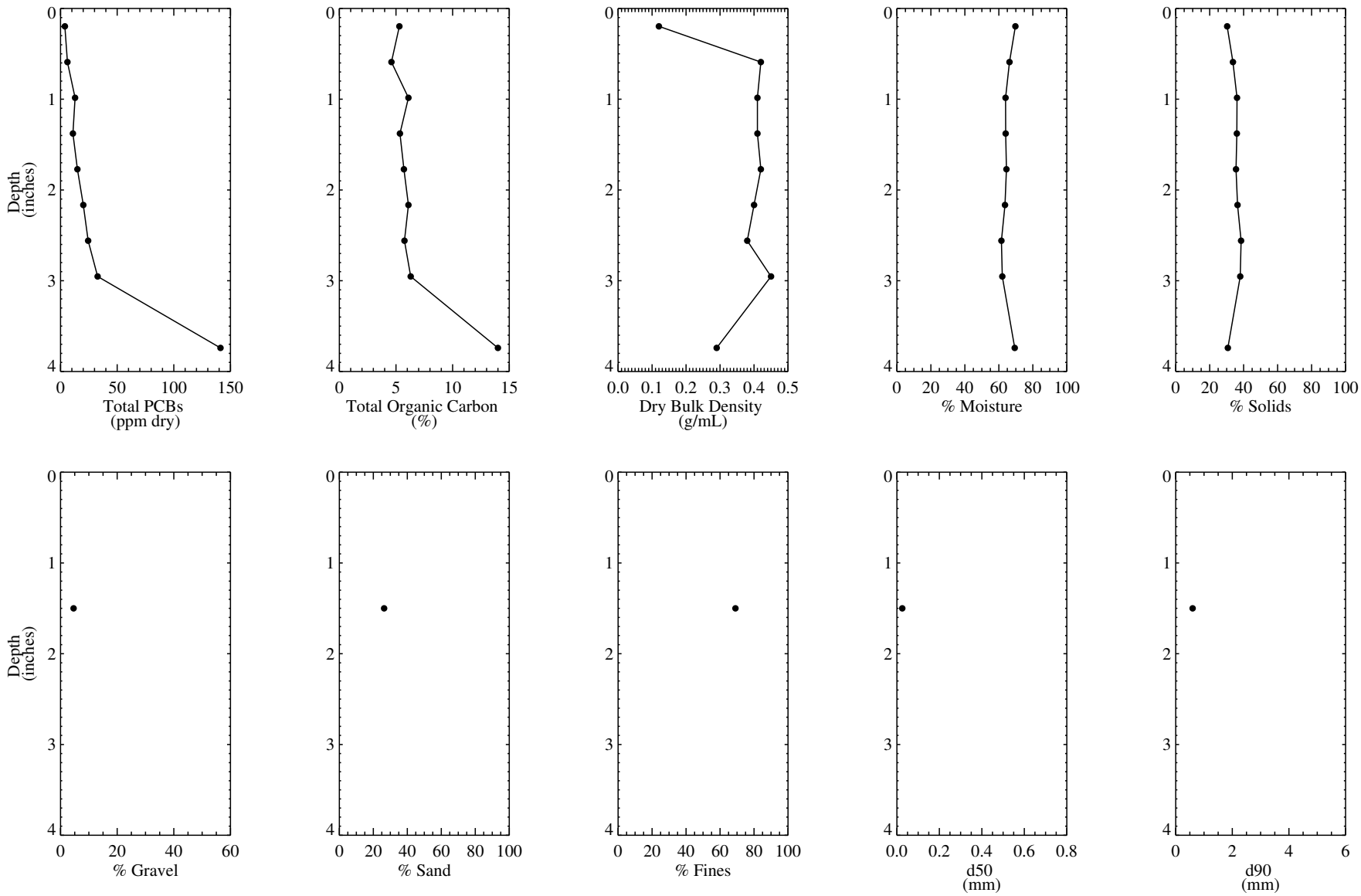


Figure 62. Vertical Profiles for Cores Co-located at T38-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

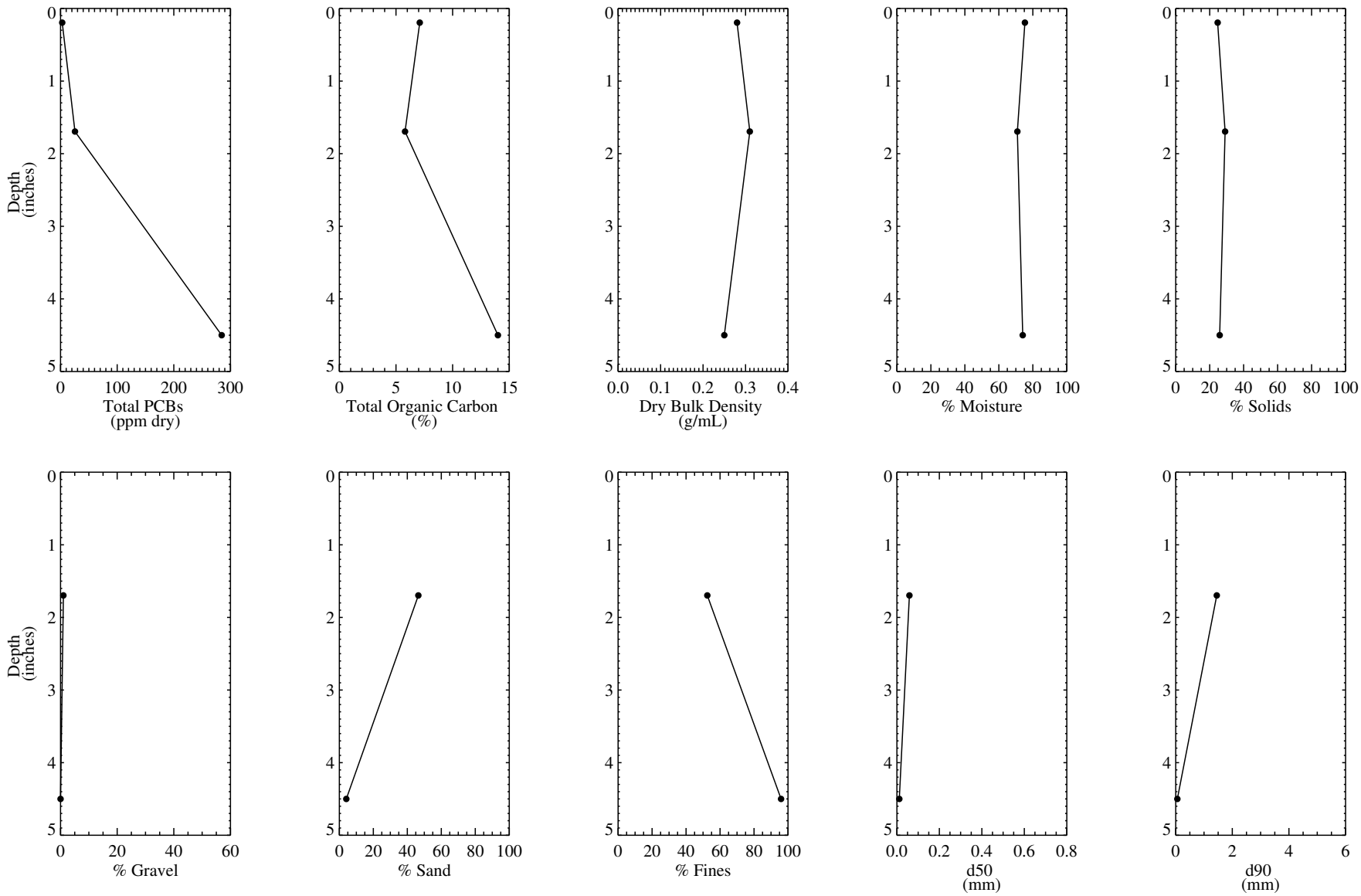


Figure 63. Vertical Profiles for Core T40-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

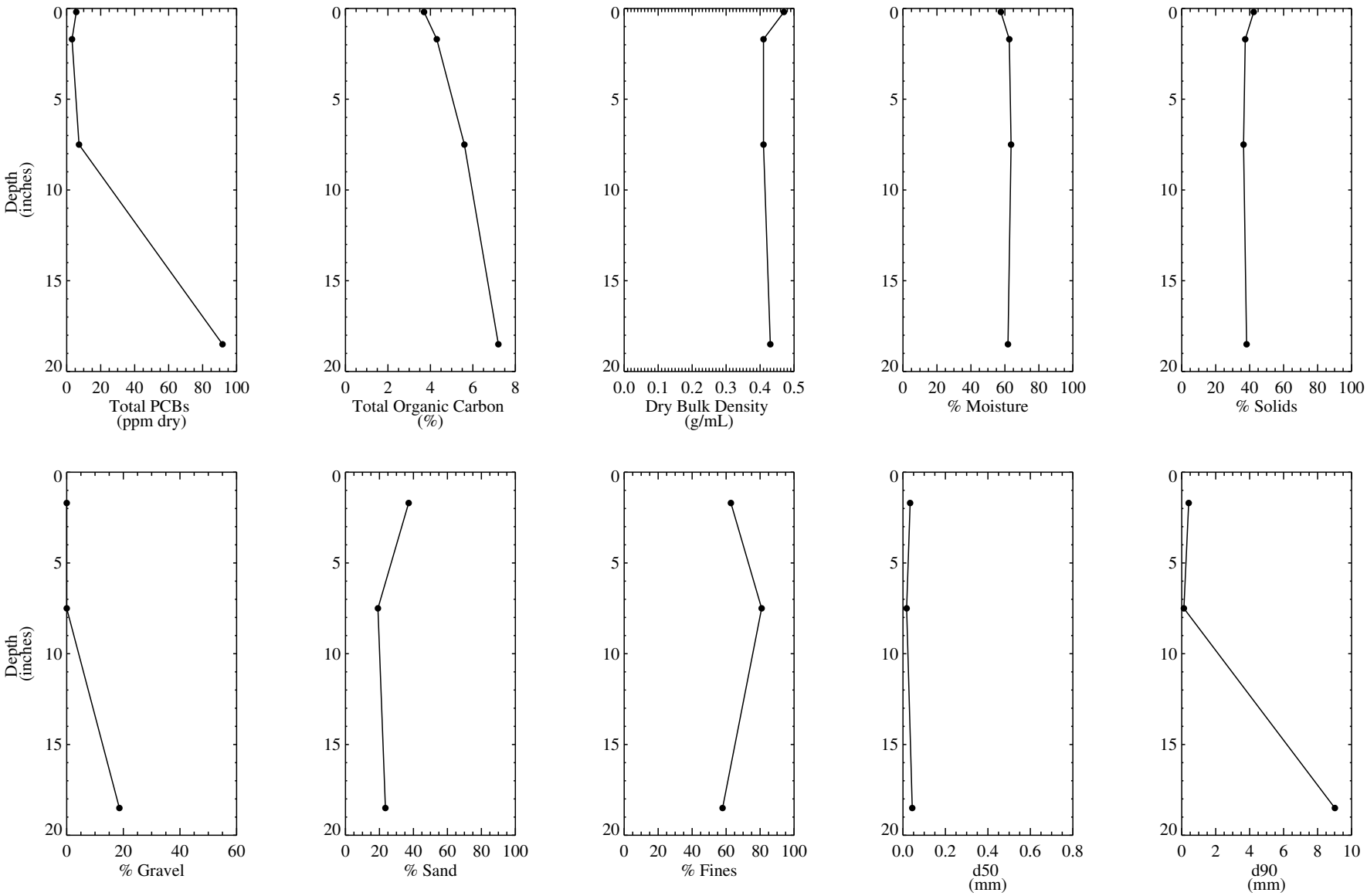


Figure 64. Vertical Profiles for Core T42-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

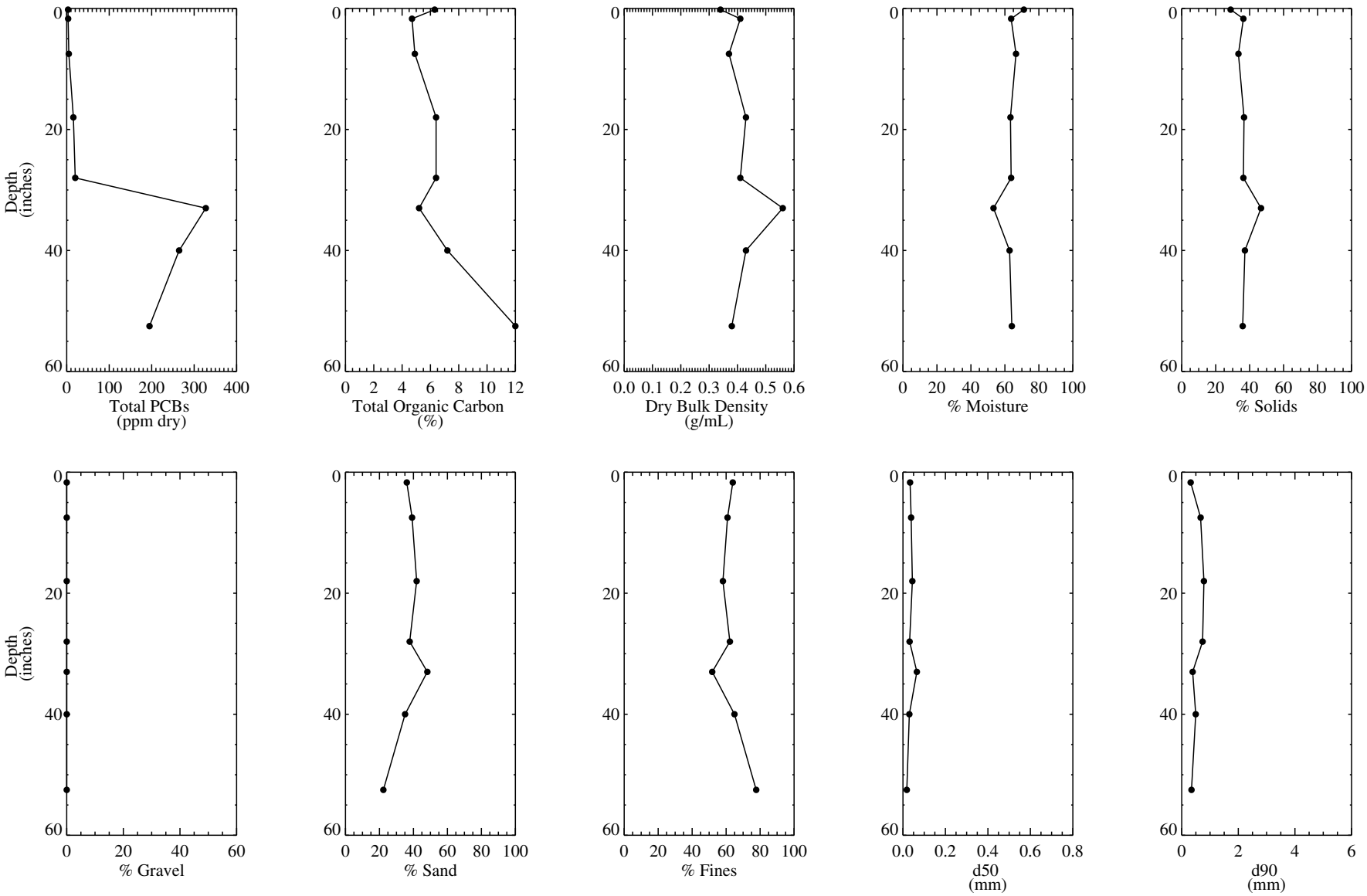


Figure 65. Vertical Profiles for Core T44-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

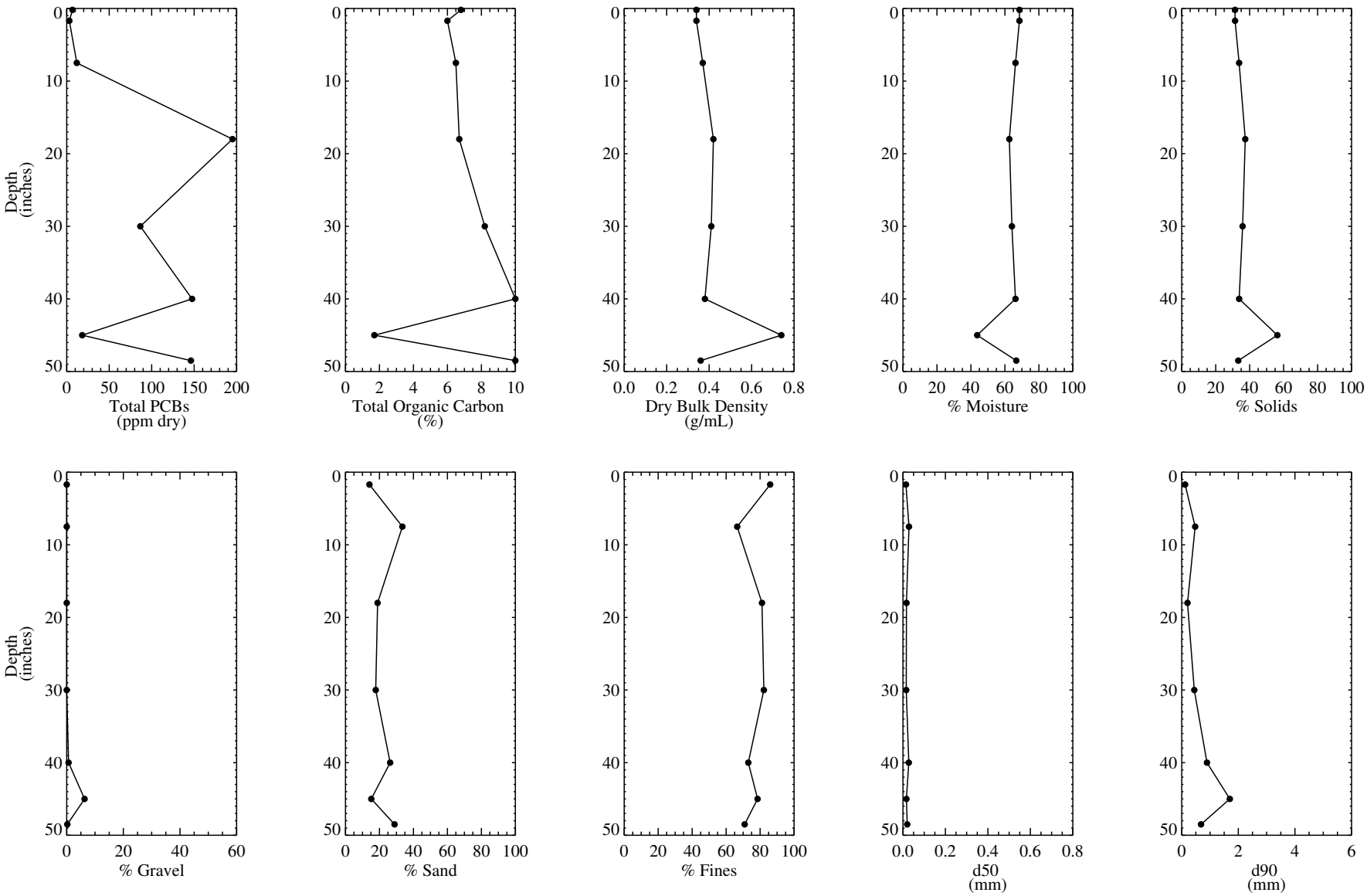


Figure 66. Vertical Profiles for Core T46-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

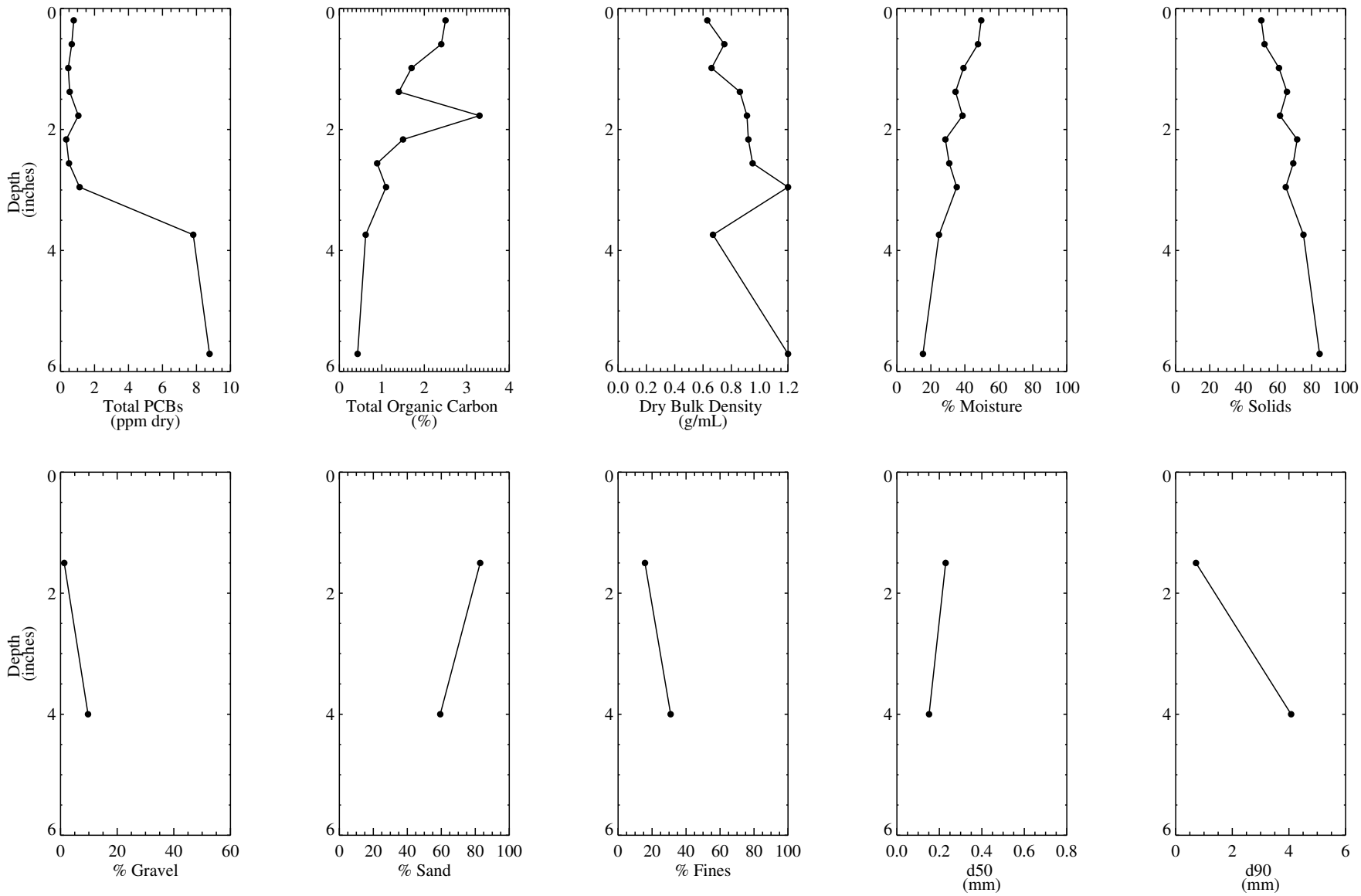


Figure 67. Vertical Profiles for Cores Co-located at T48-M

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:11 2004

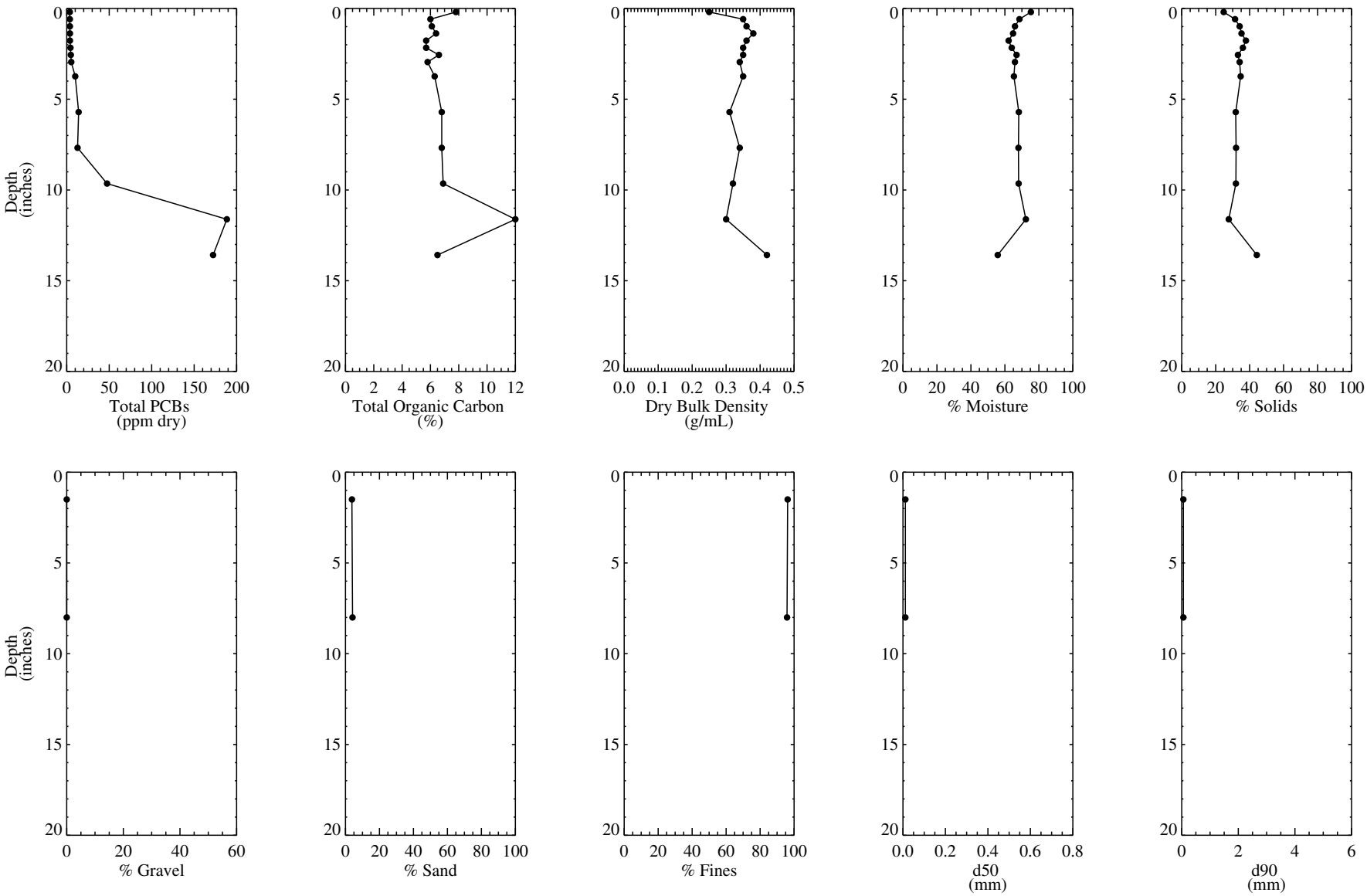


Figure 68. Vertical Profiles for Cores Co-located at T53-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

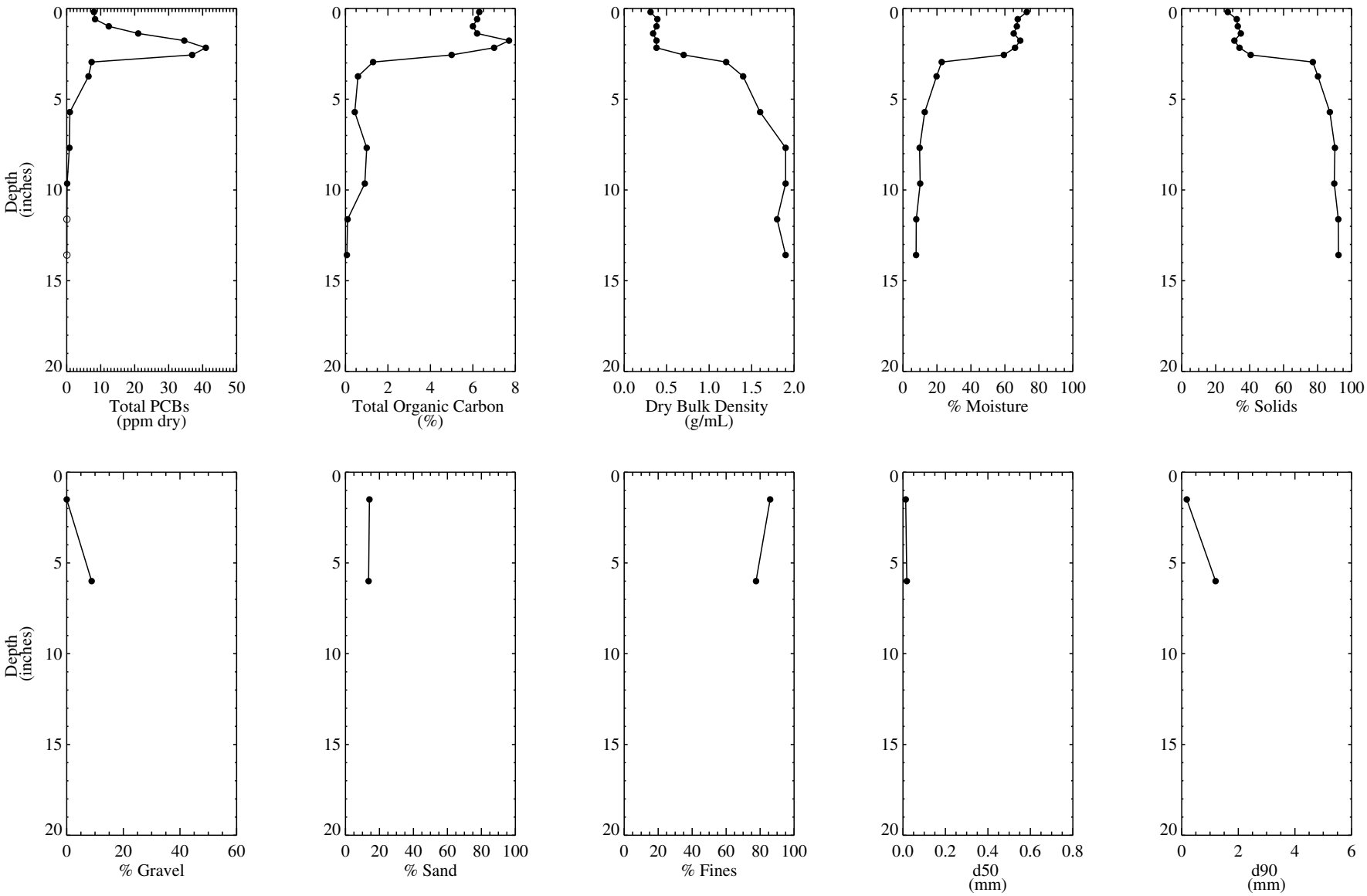


Figure 69. Vertical Profiles for Cores Co-located at T55-M

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

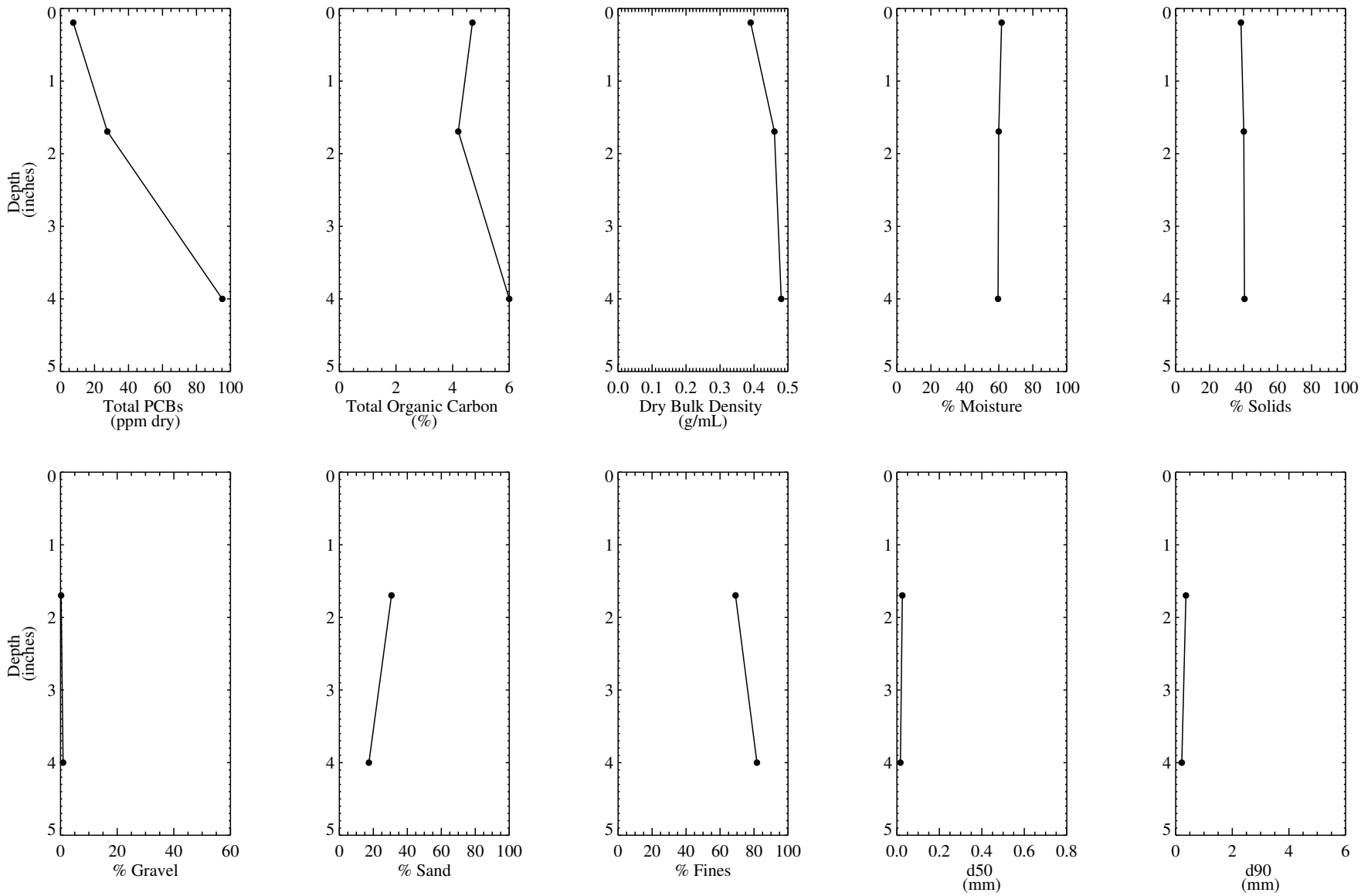


Figure 70. Vertical Profiles for Core T56-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

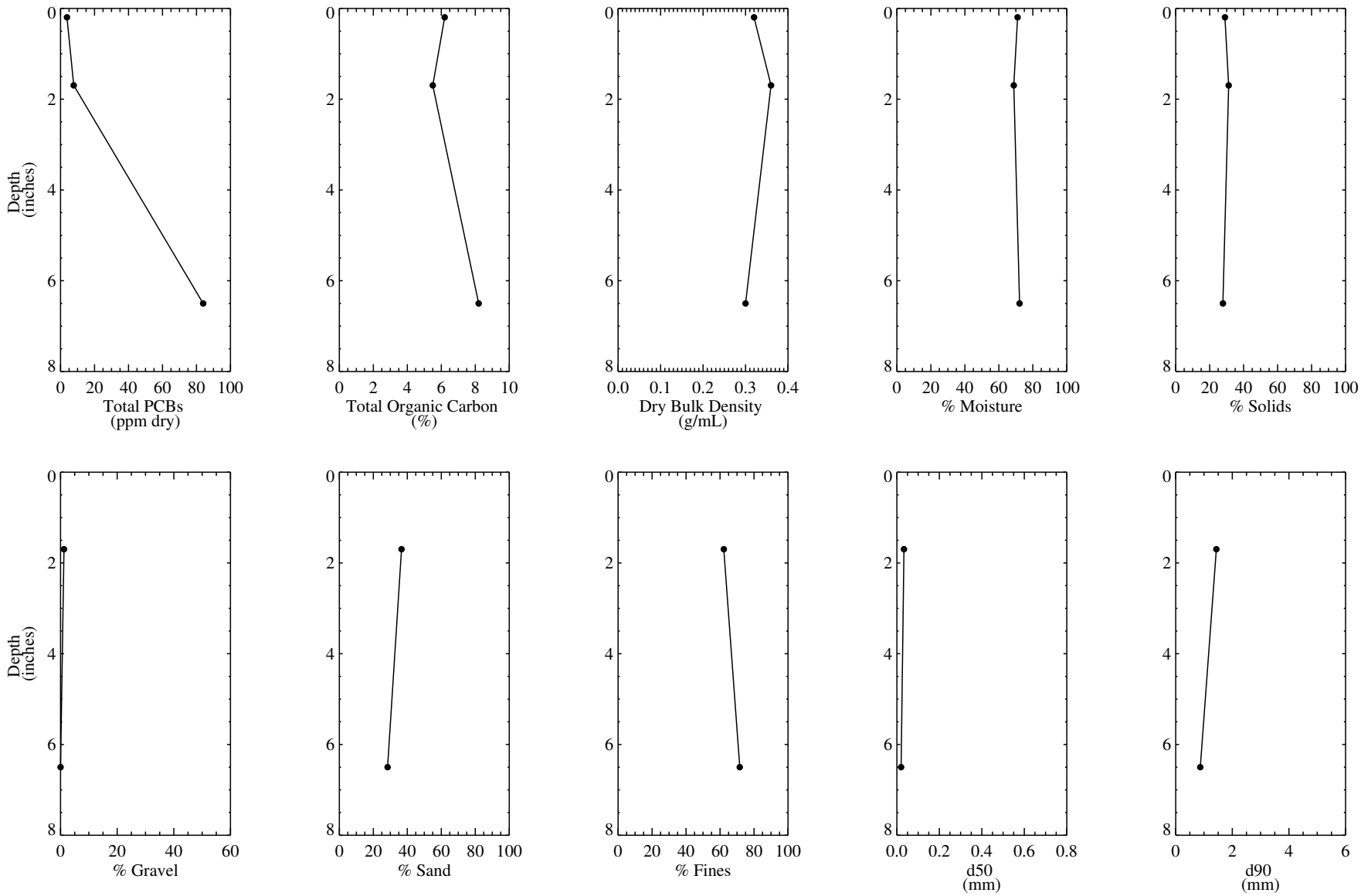


Figure 71. Vertical Profiles for Core T59-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

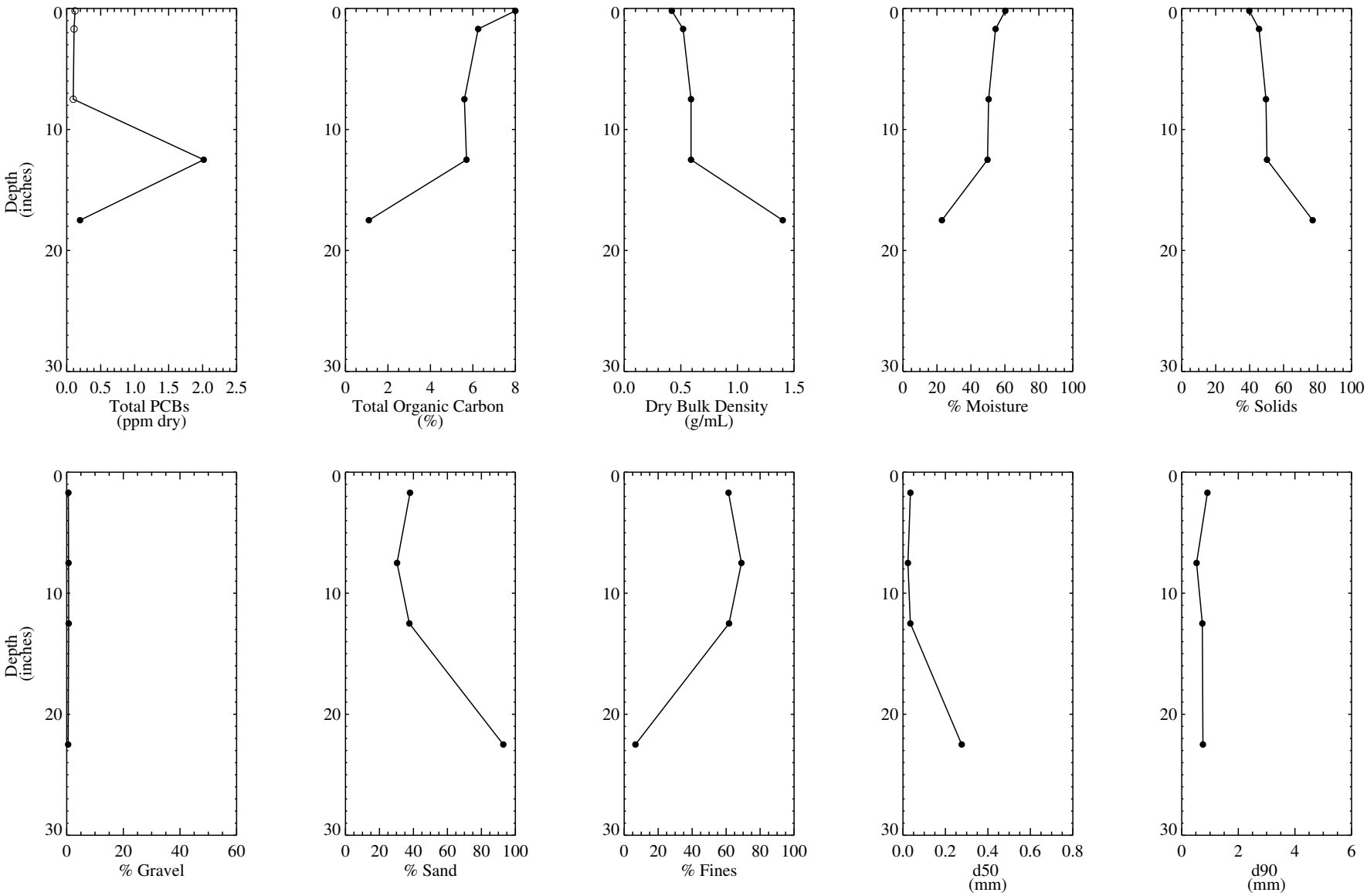


Figure 72. Vertical Profiles for Core T62-M

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

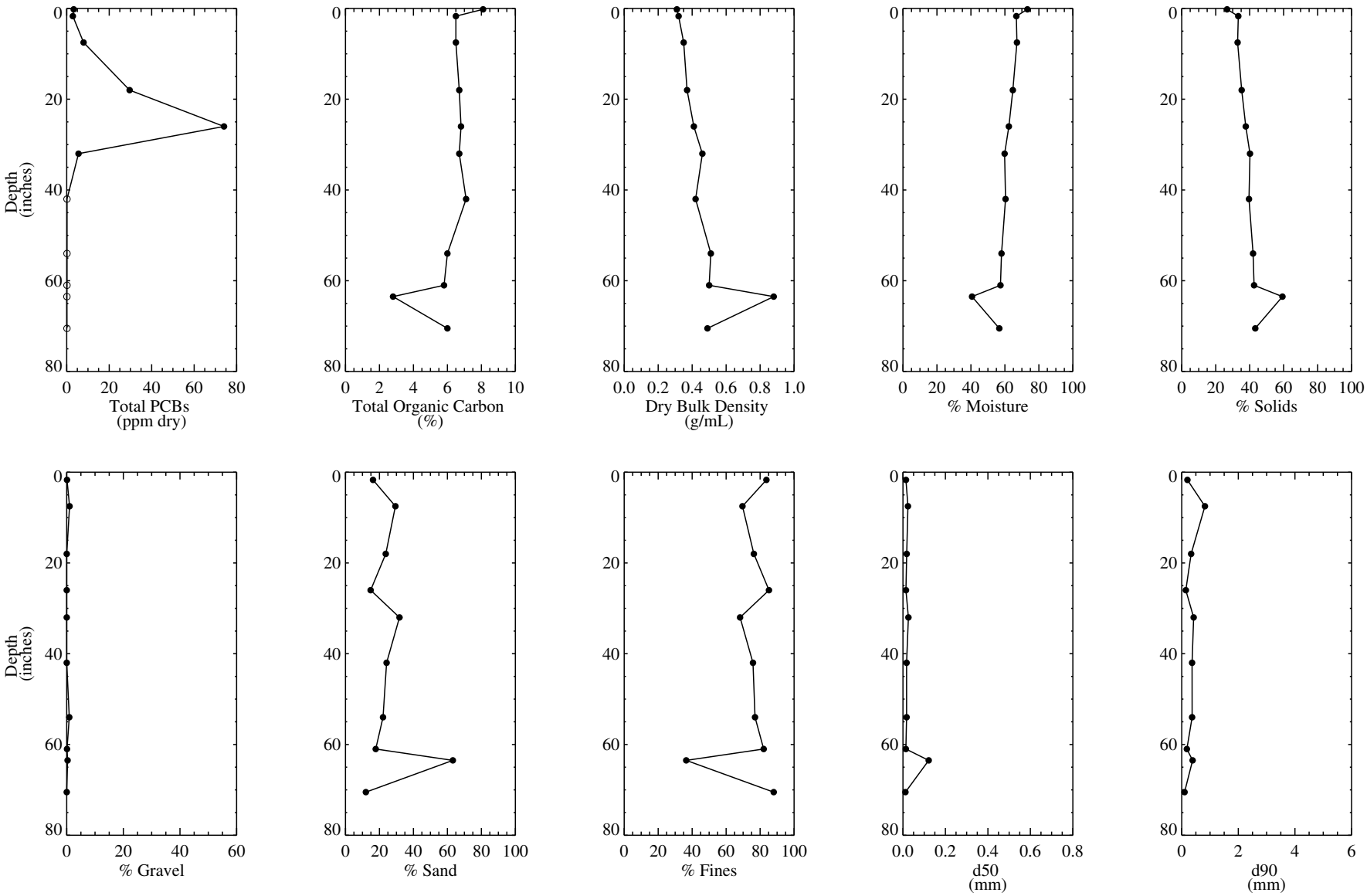


Figure 73. Vertical Profiles for Core T65-S

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

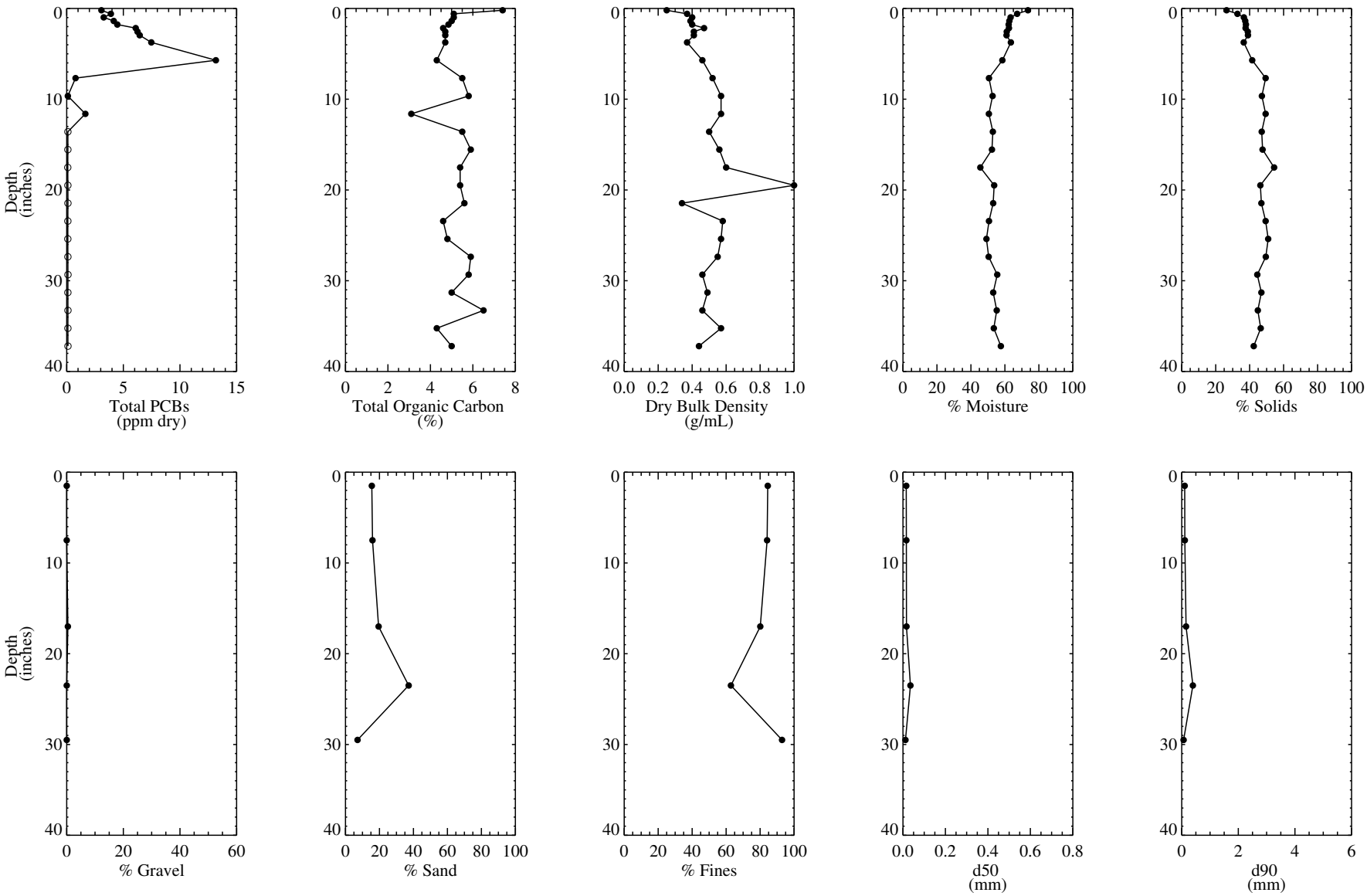


Figure 74. Vertical Profiles for Cores Co-located at T68-M

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

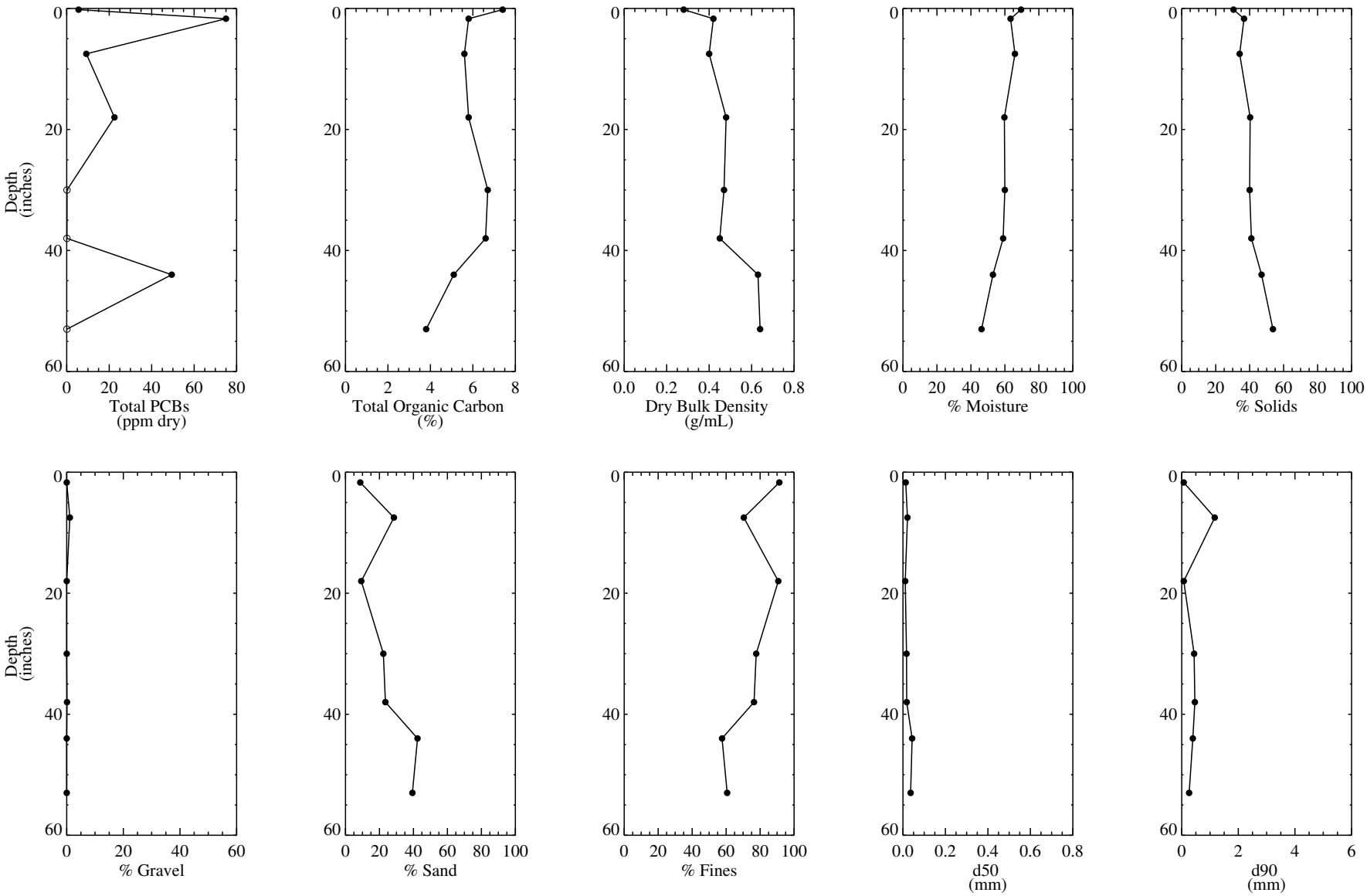


Figure 75. Vertical Profiles for Core T71-N

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

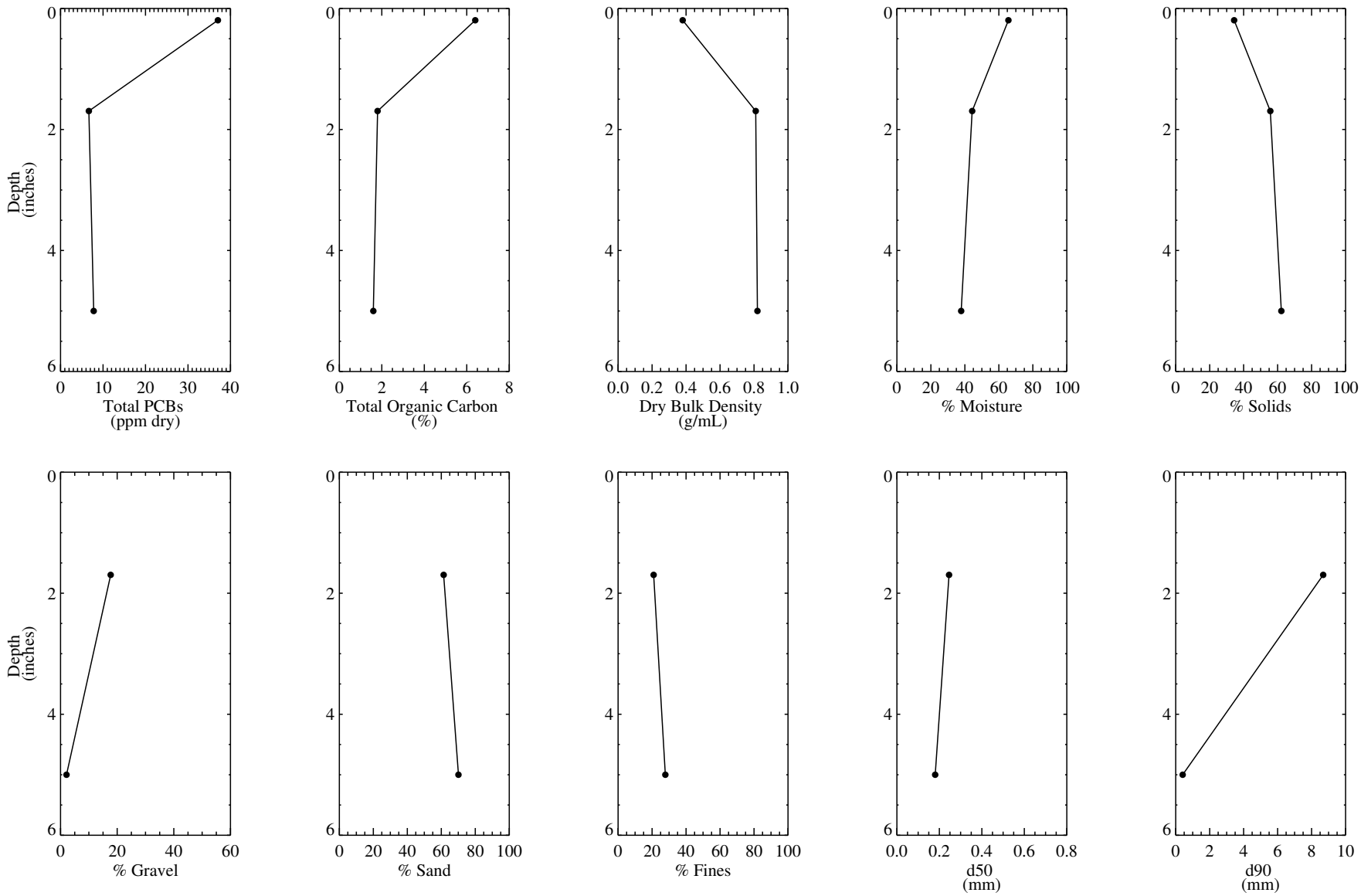


Figure 76. Vertical Profiles for Core SST5-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:12 2004

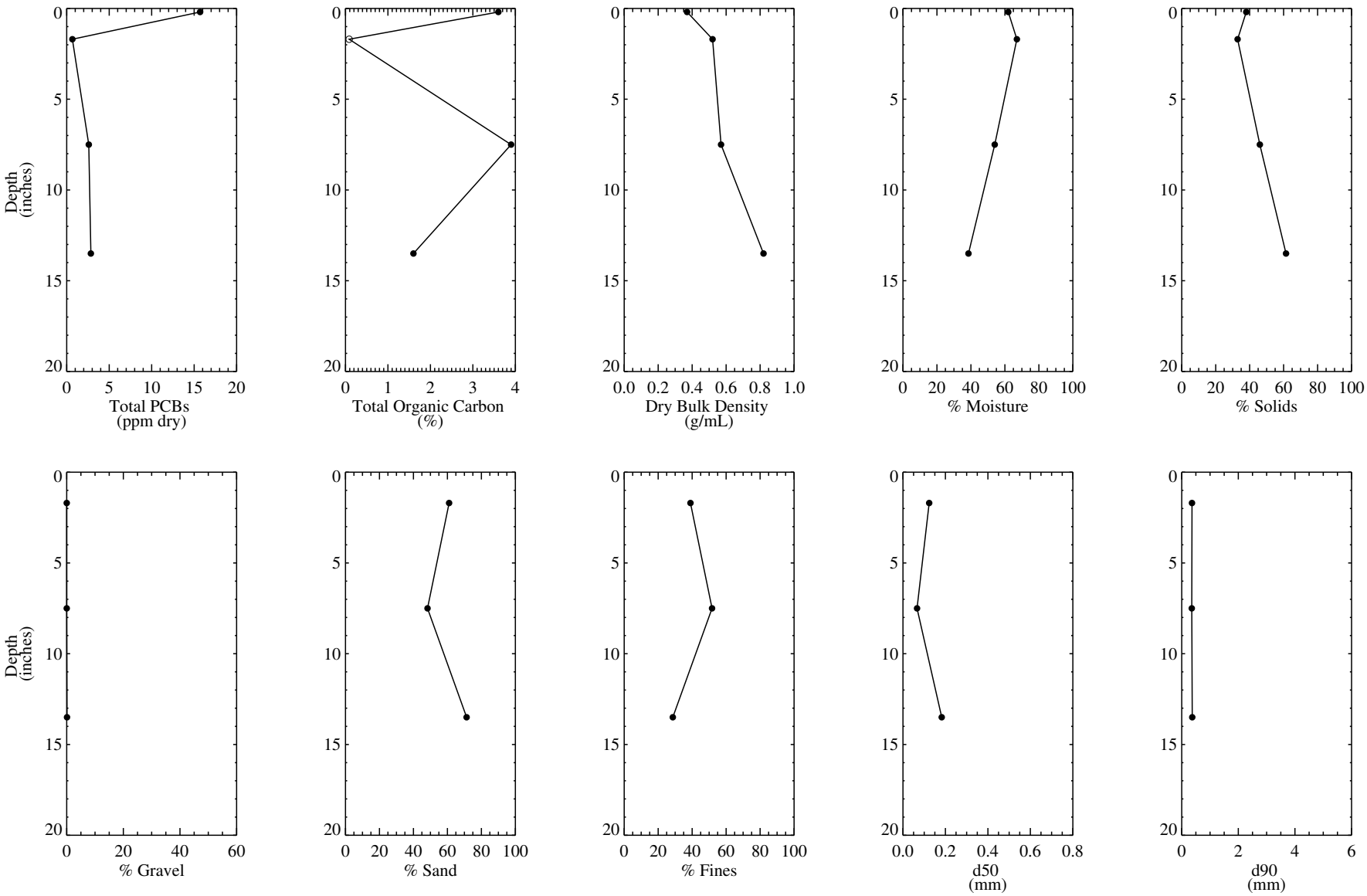


Figure 77. Vertical Profiles for Core SST7-S

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:13 2004

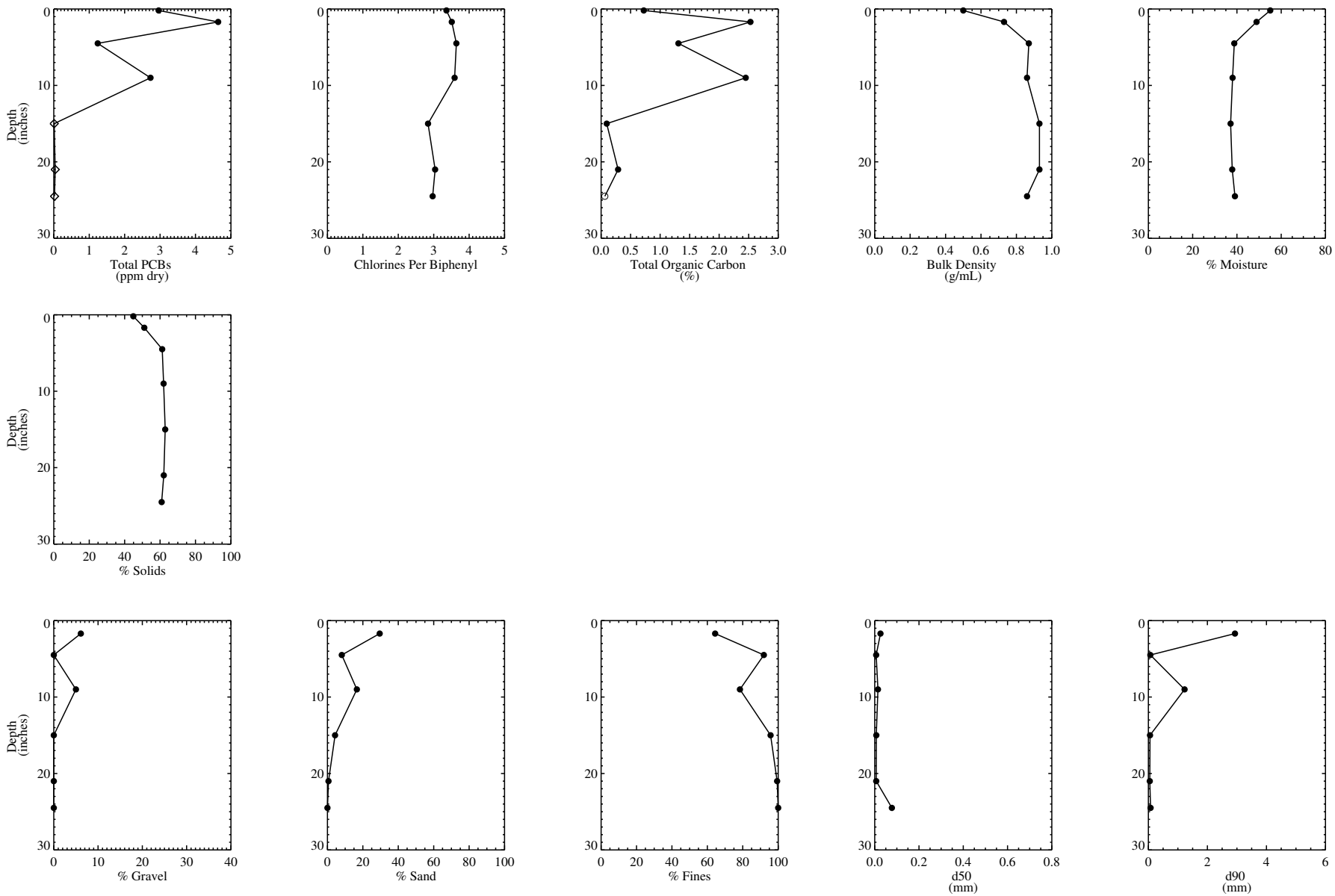


Figure 78. Vertical Profiles for Core 1B1-SS

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:34 2004

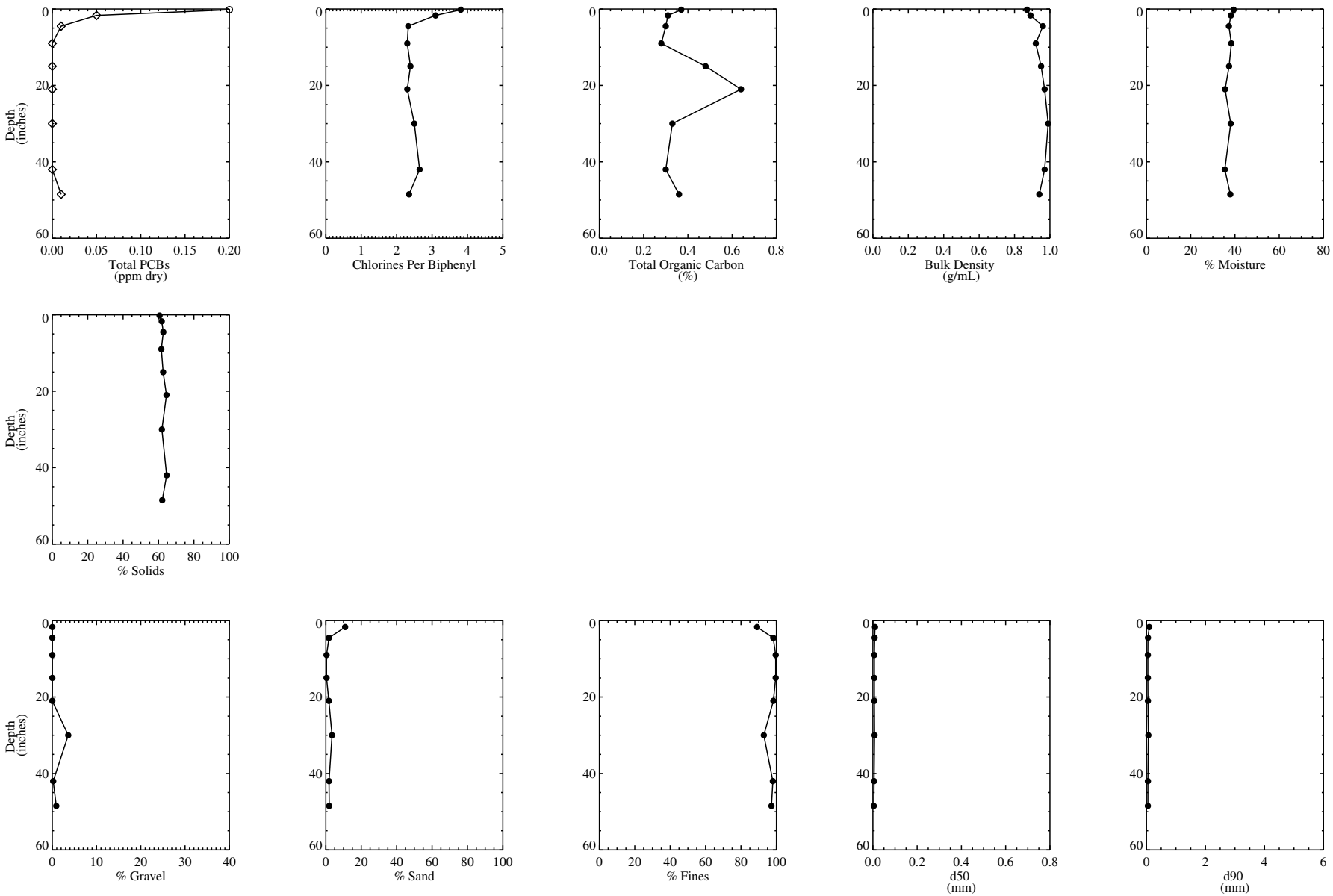


Figure 79. Vertical Profiles for Core 1B2-SS

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:34 2004

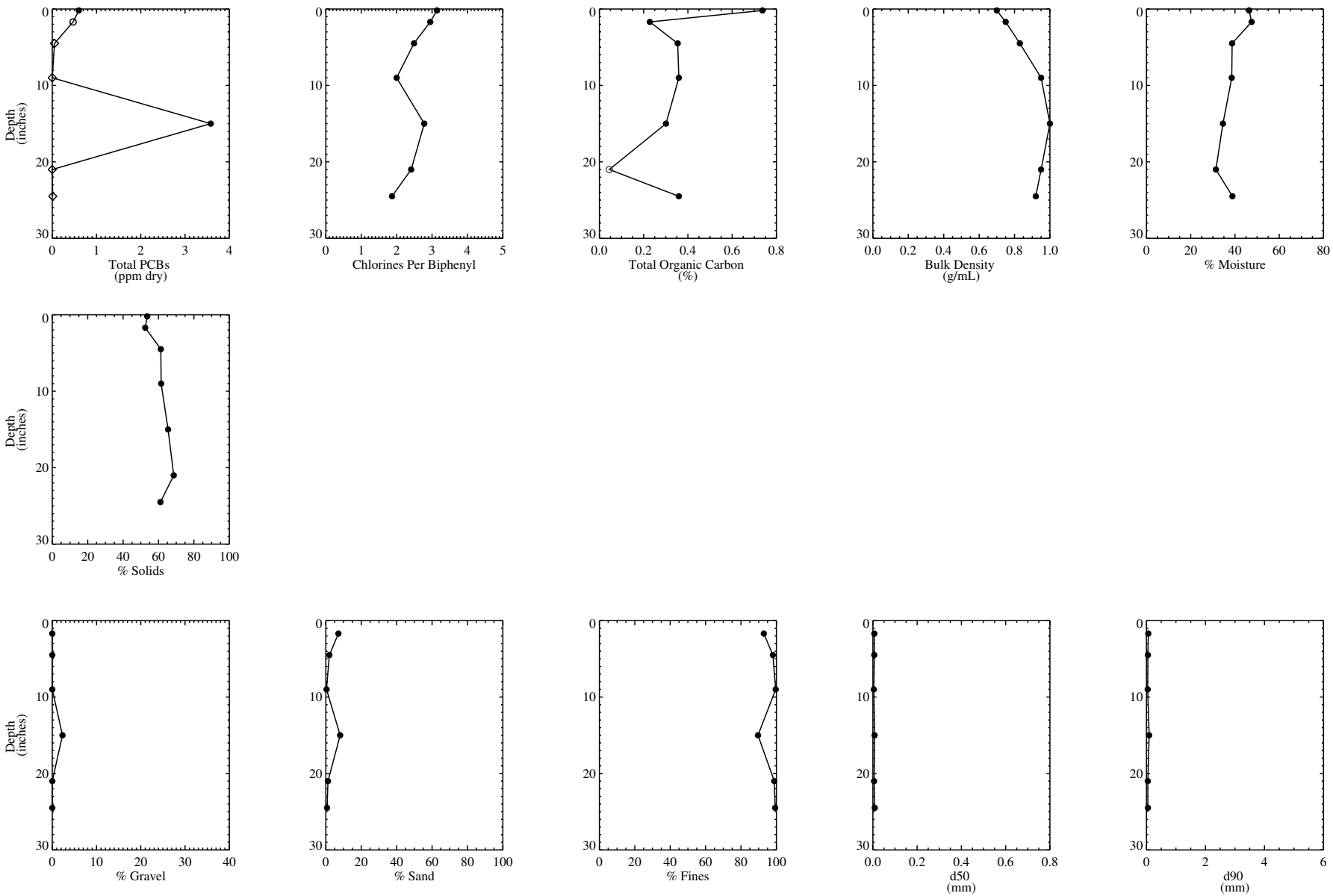


Figure 80. Vertical Profiles for Core 1D-SS

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:34 2004

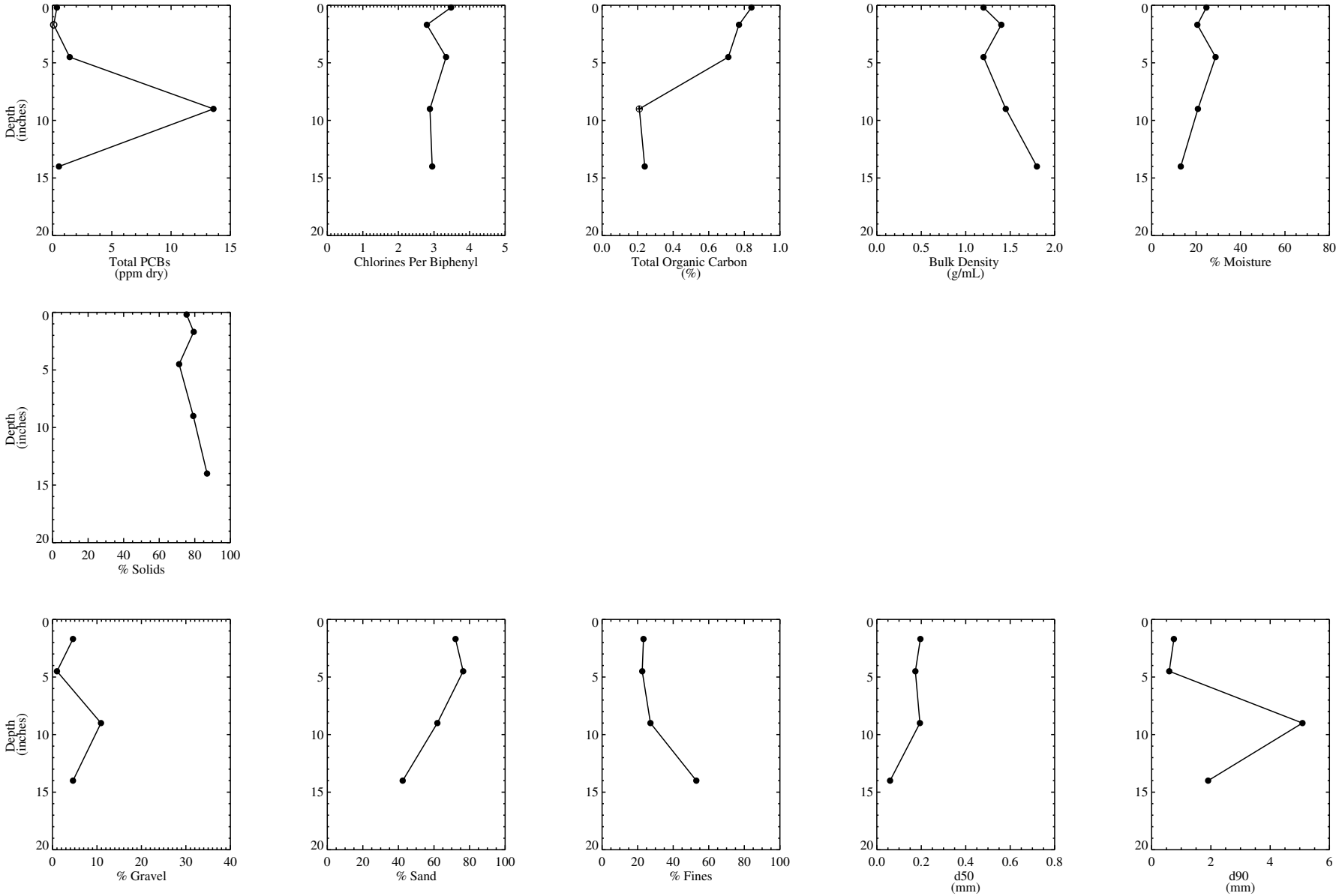


Figure 81. Vertical Profiles for Core PC2-SS

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:34 2004

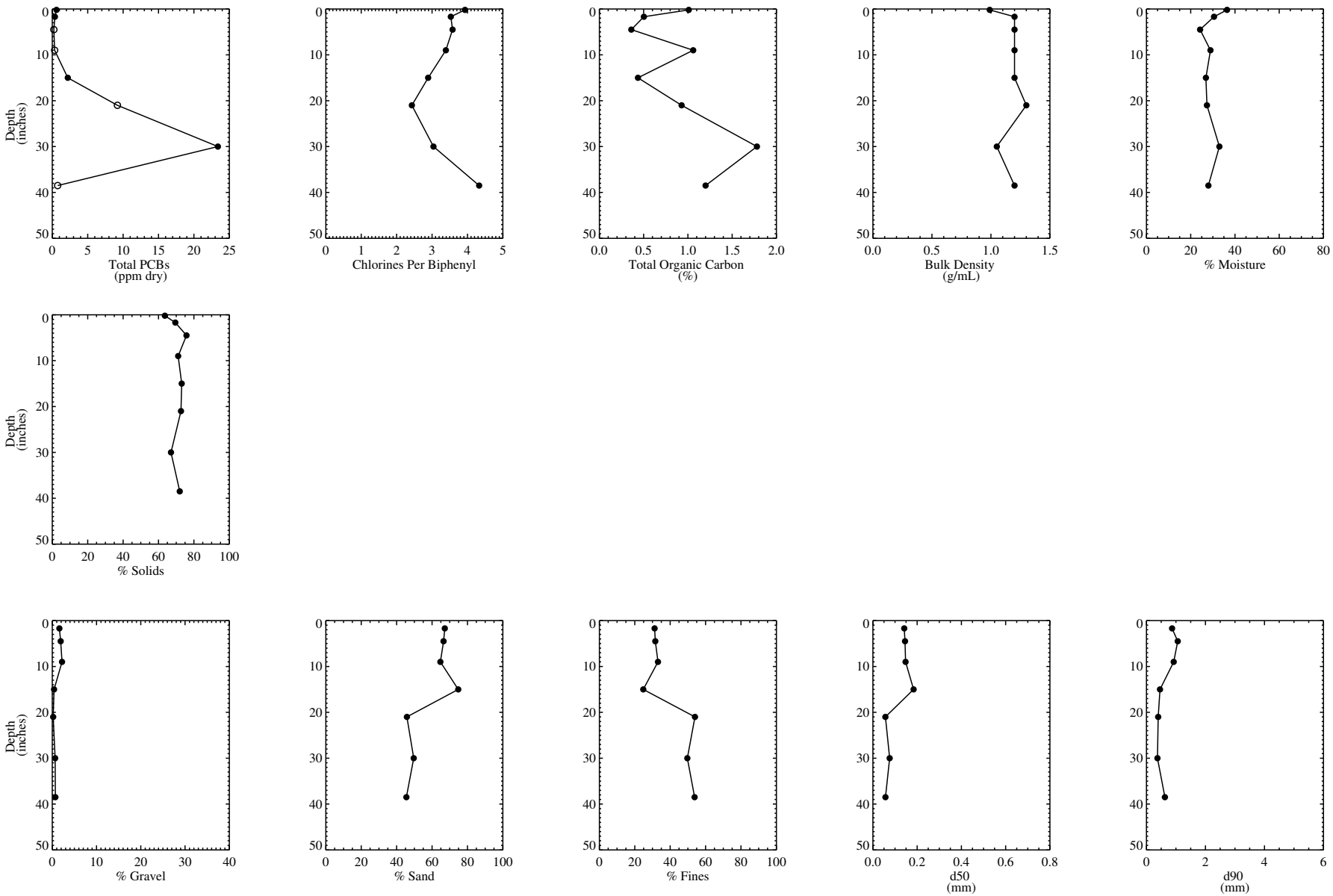


Figure 82. Vertical Profiles for Core PC3-SS

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:35 2004

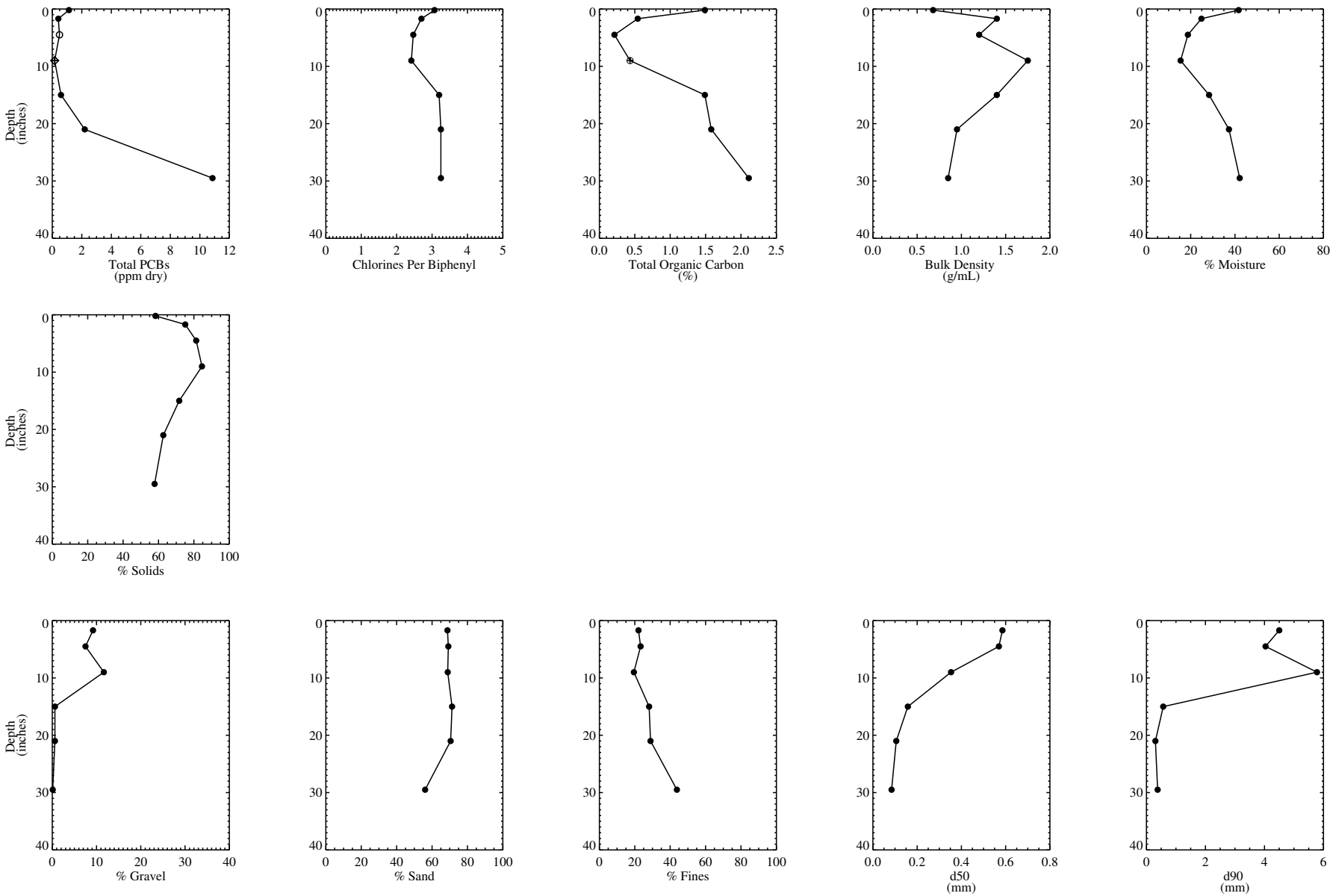


Figure 83. Vertical Profiles for Core PC4-SS

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:35 2004

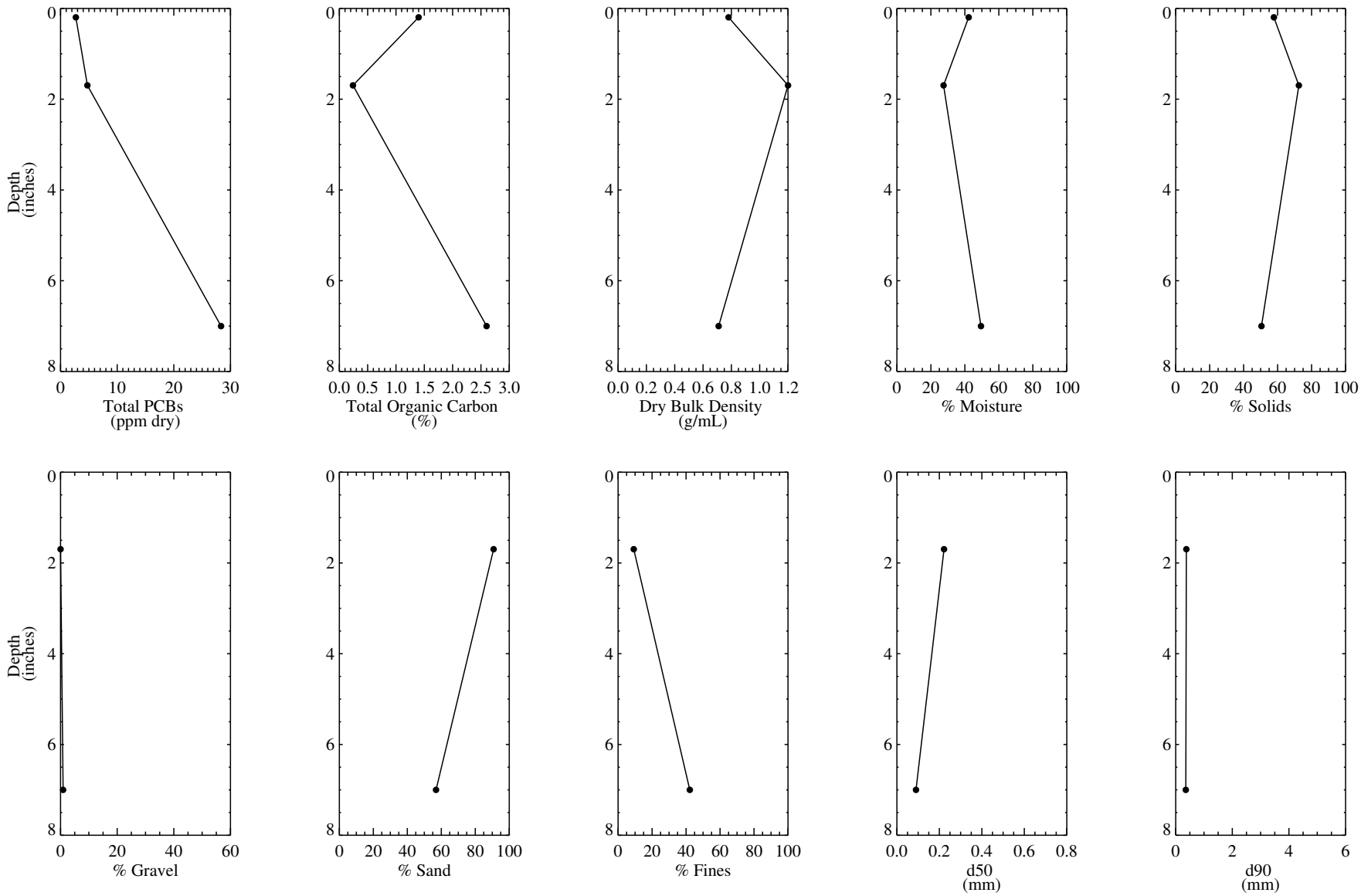


Figure 84. Vertical Profiles for Core SST22-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:13 2004

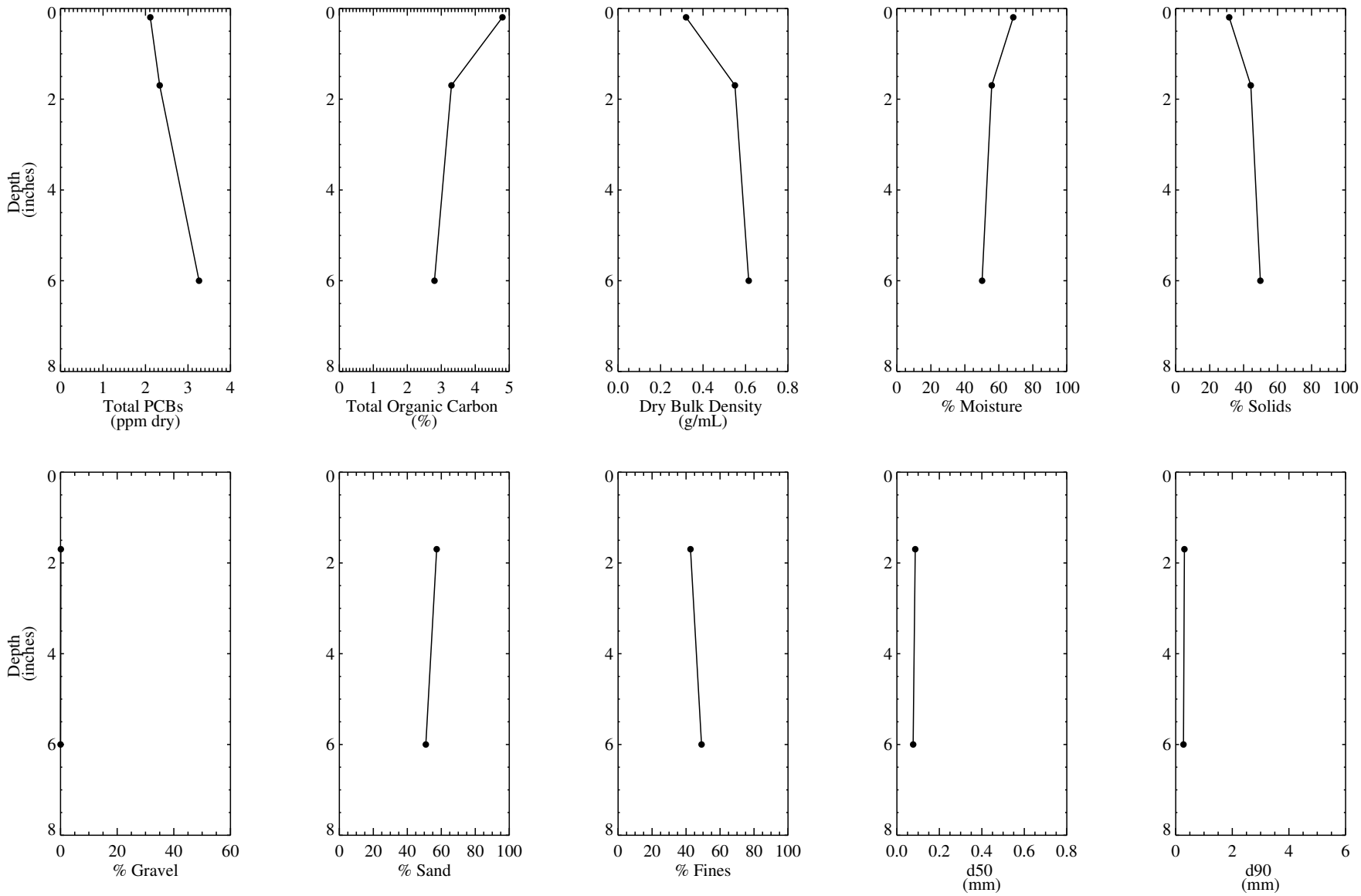


Figure 85. Vertical Profiles for Core SST24-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:13 2004

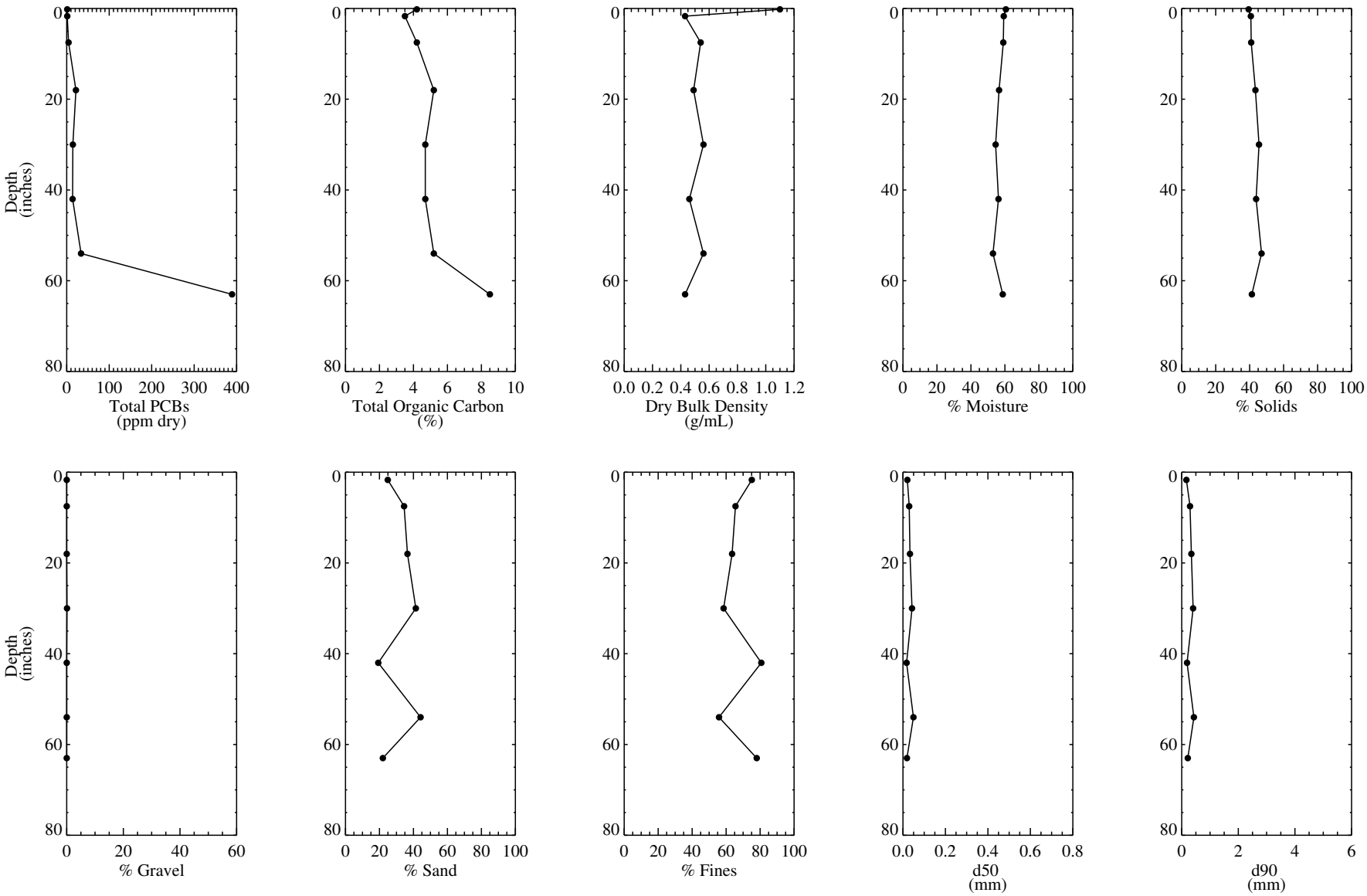


Figure 86. Vertical Profiles for Core SST37-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:13 2004

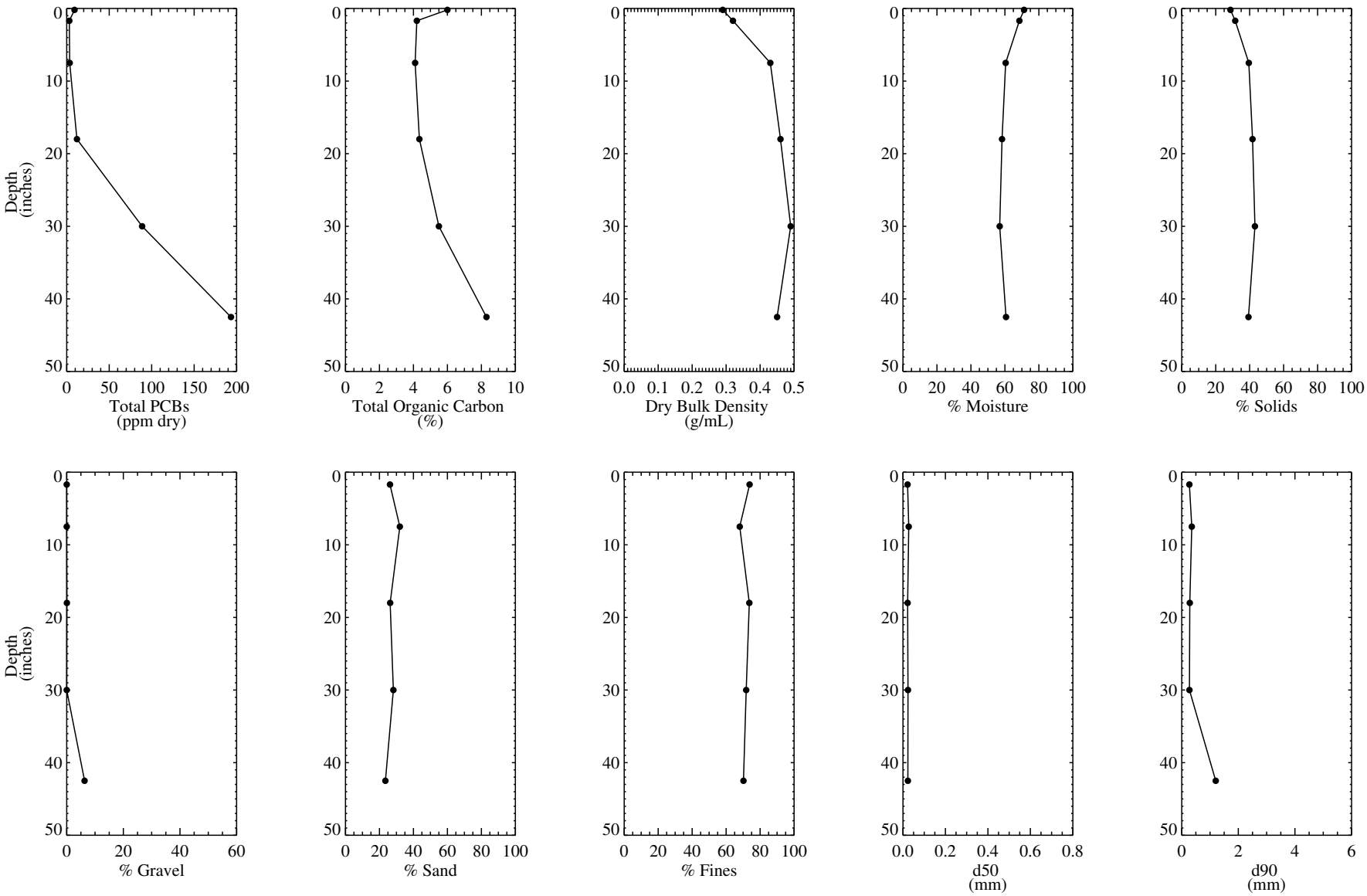


Figure 87. Vertical Profiles for Core SST37-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:13 2004

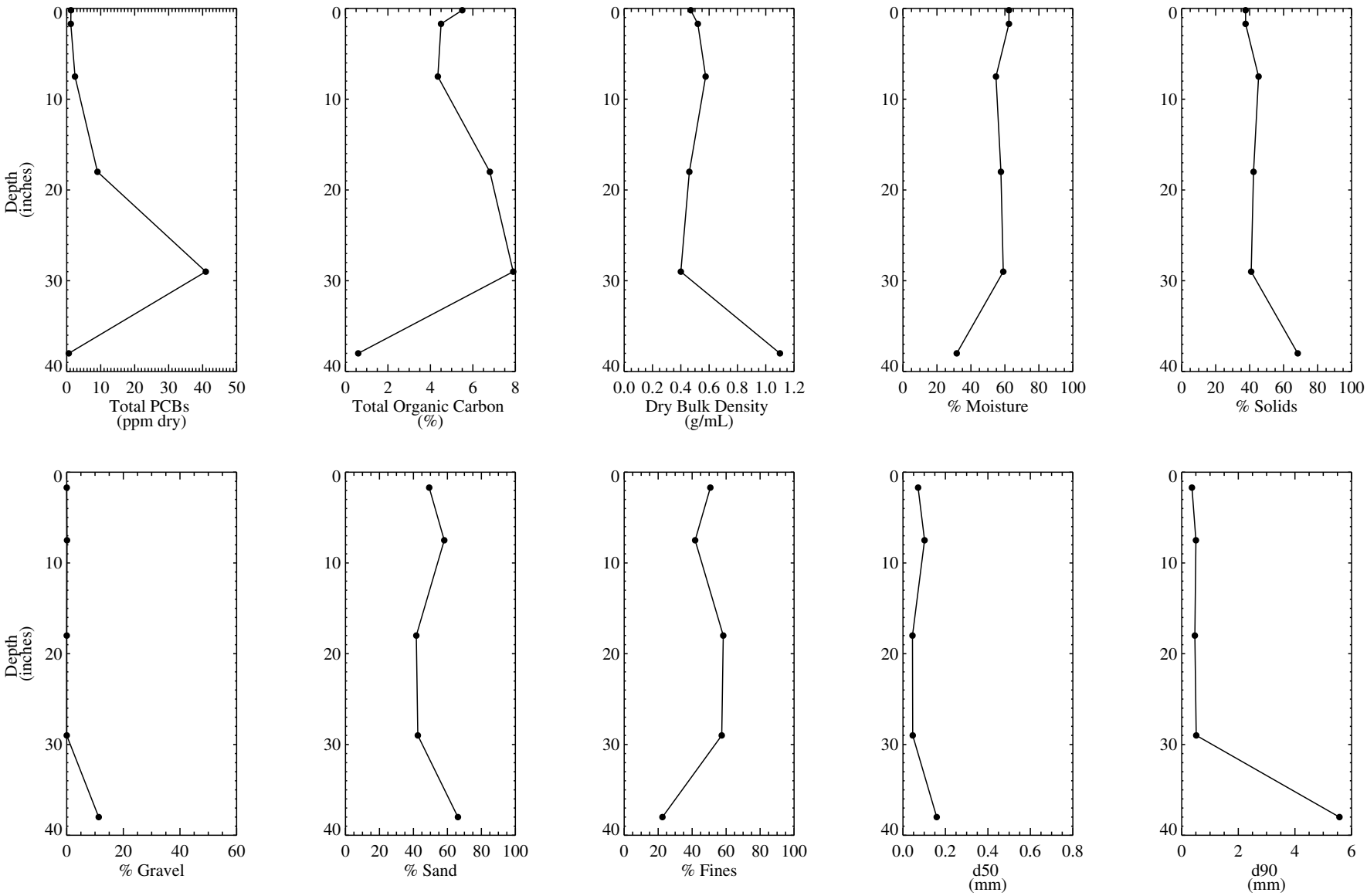


Figure 88. Vertical Profiles for Core SST52-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:13 2004

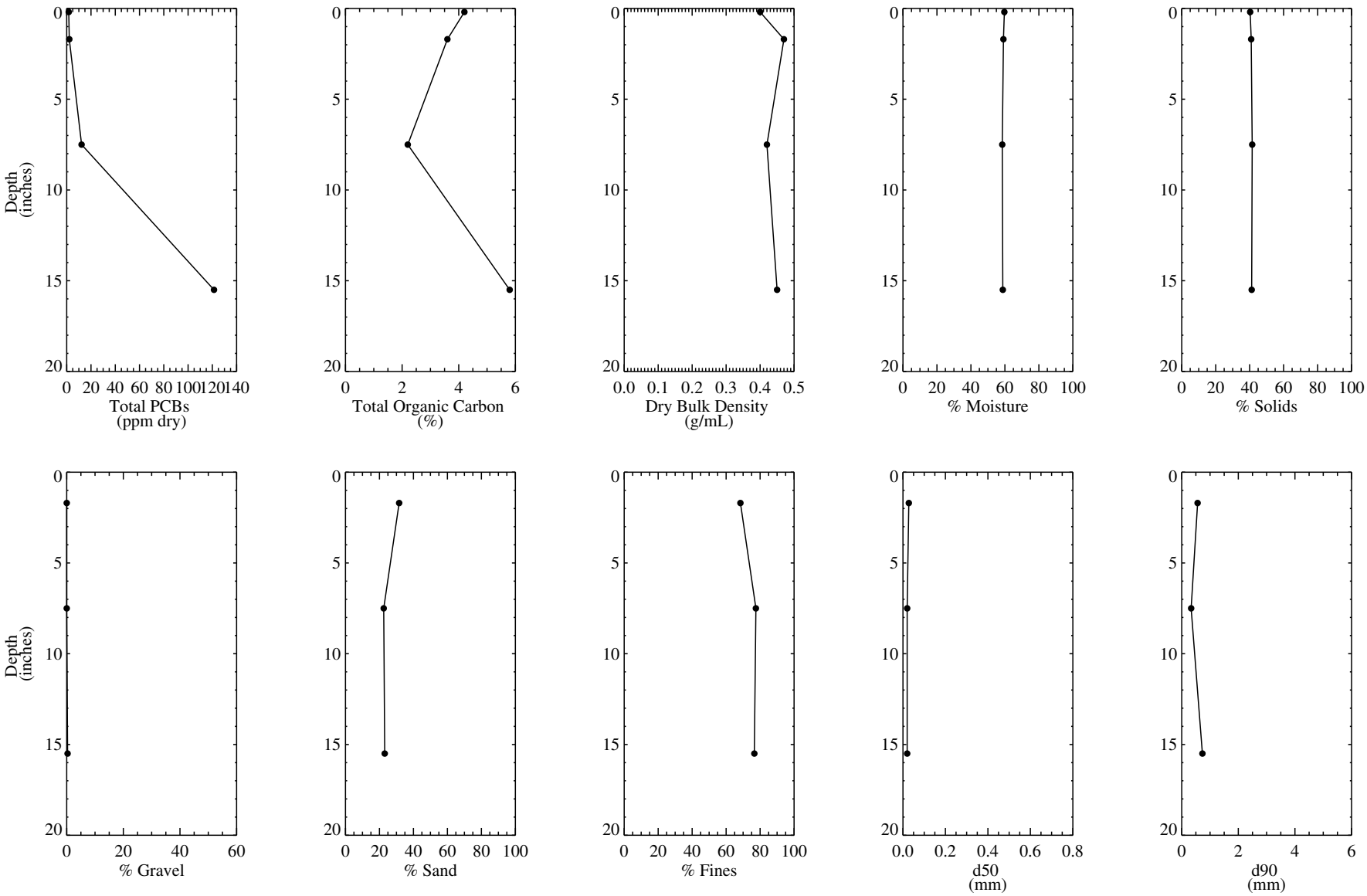


Figure 89. Vertical Profiles for Core SST54-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:13 2004

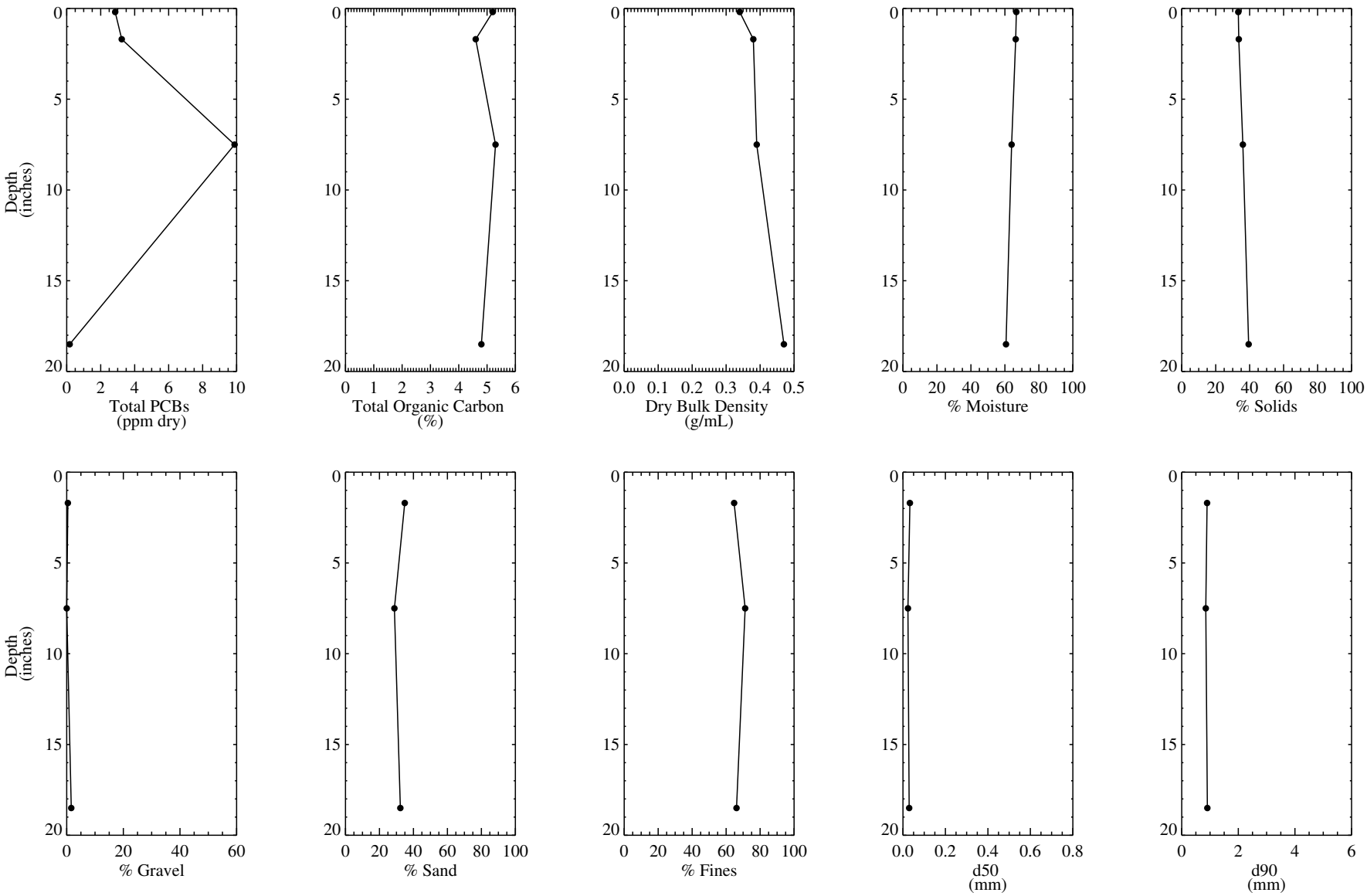


Figure 90. Vertical Profiles for Core SST61-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:13 2004

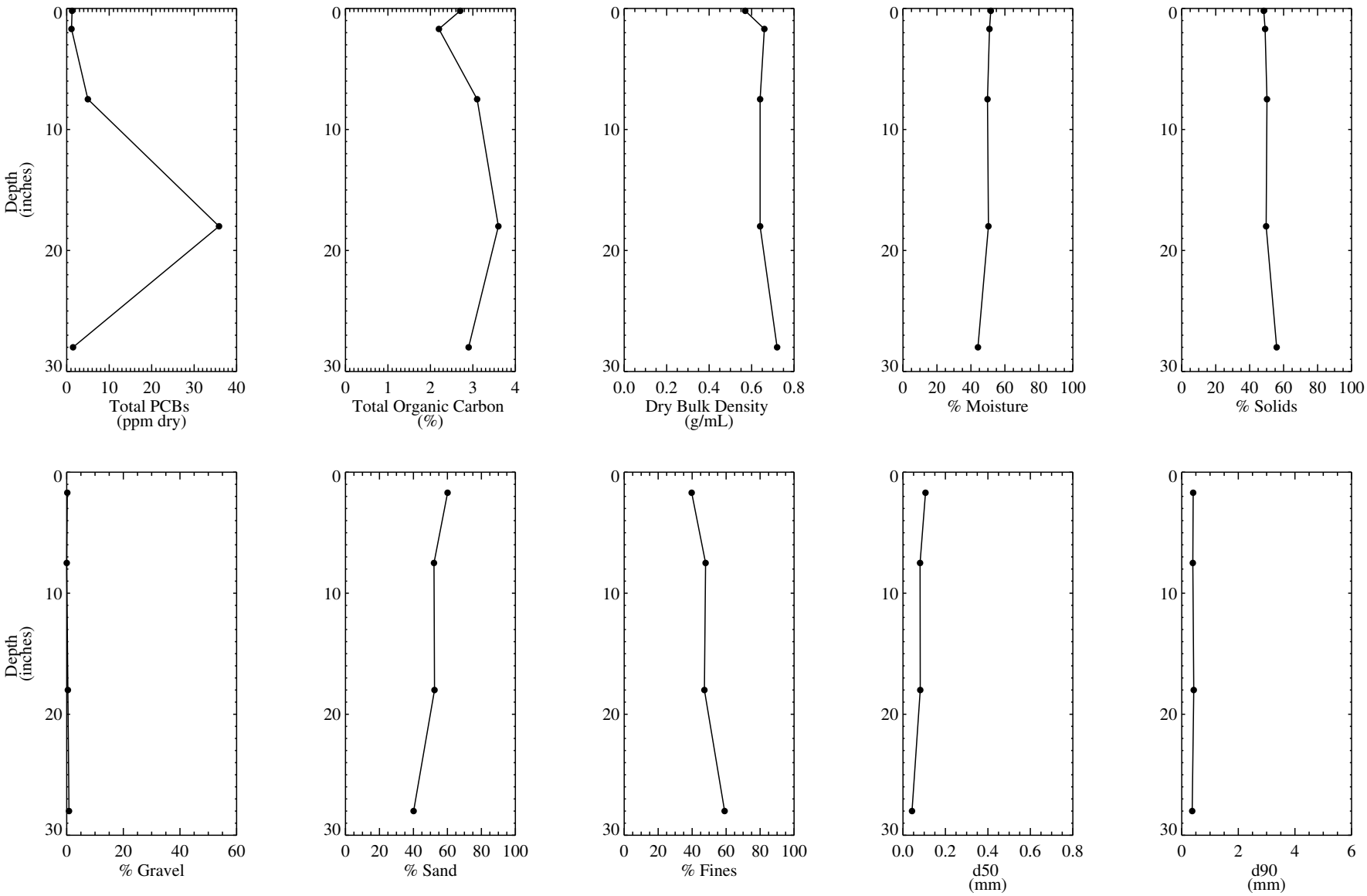


Figure 91. Vertical Profiles for Core SST62-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

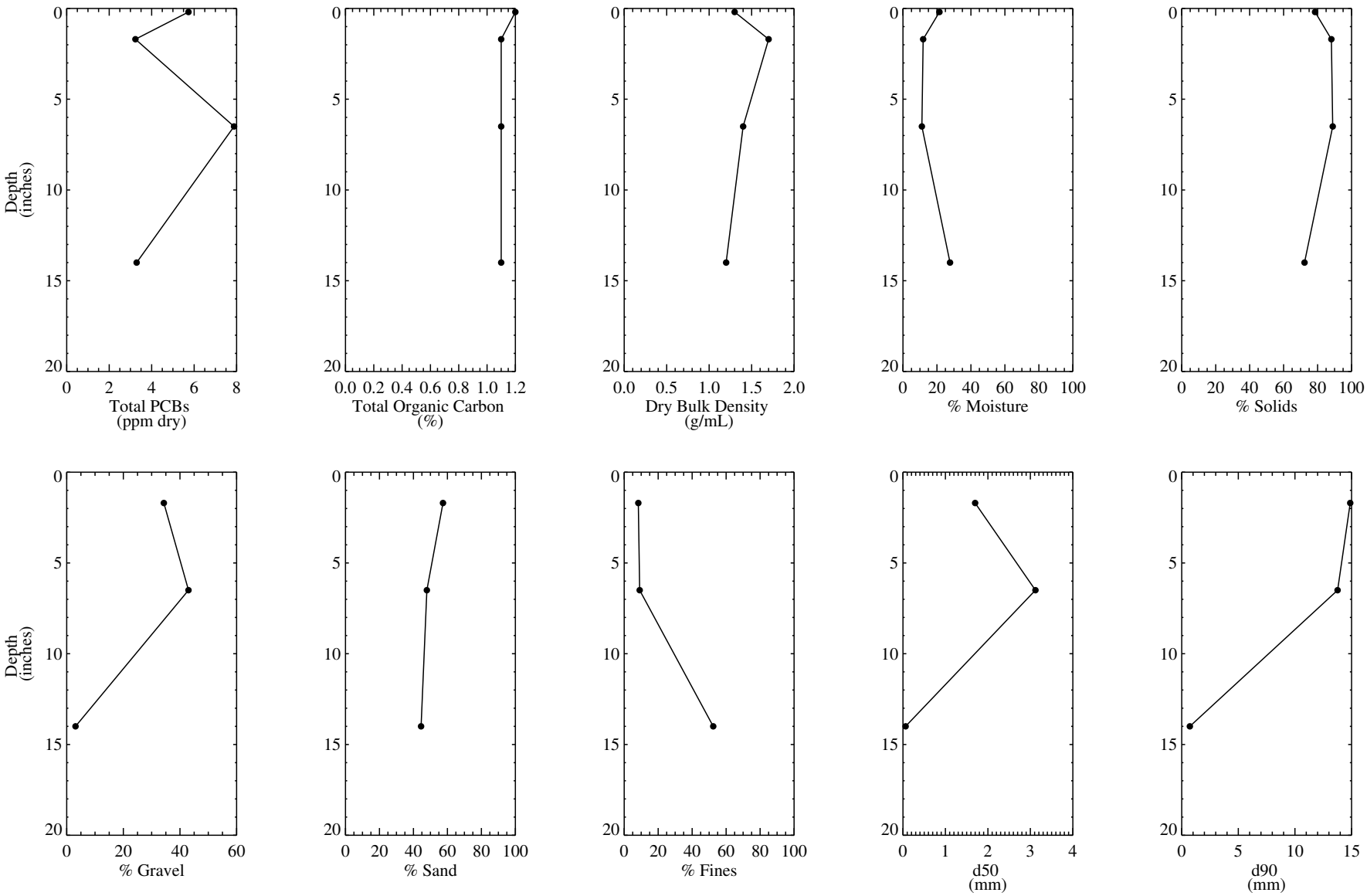


Figure 92. Vertical Profiles for Core NST5-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

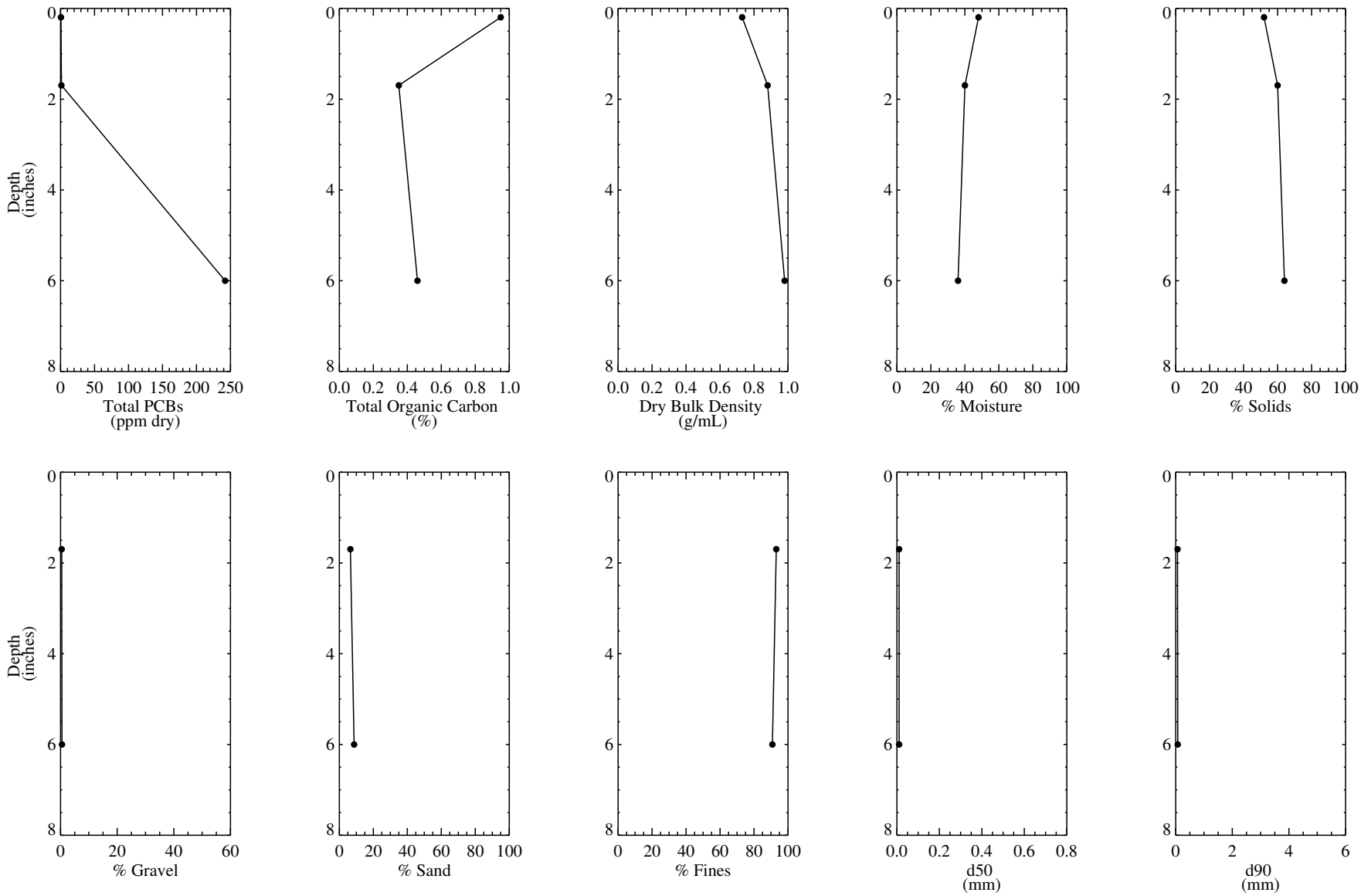


Figure 93. Vertical Profiles for Core NST5-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

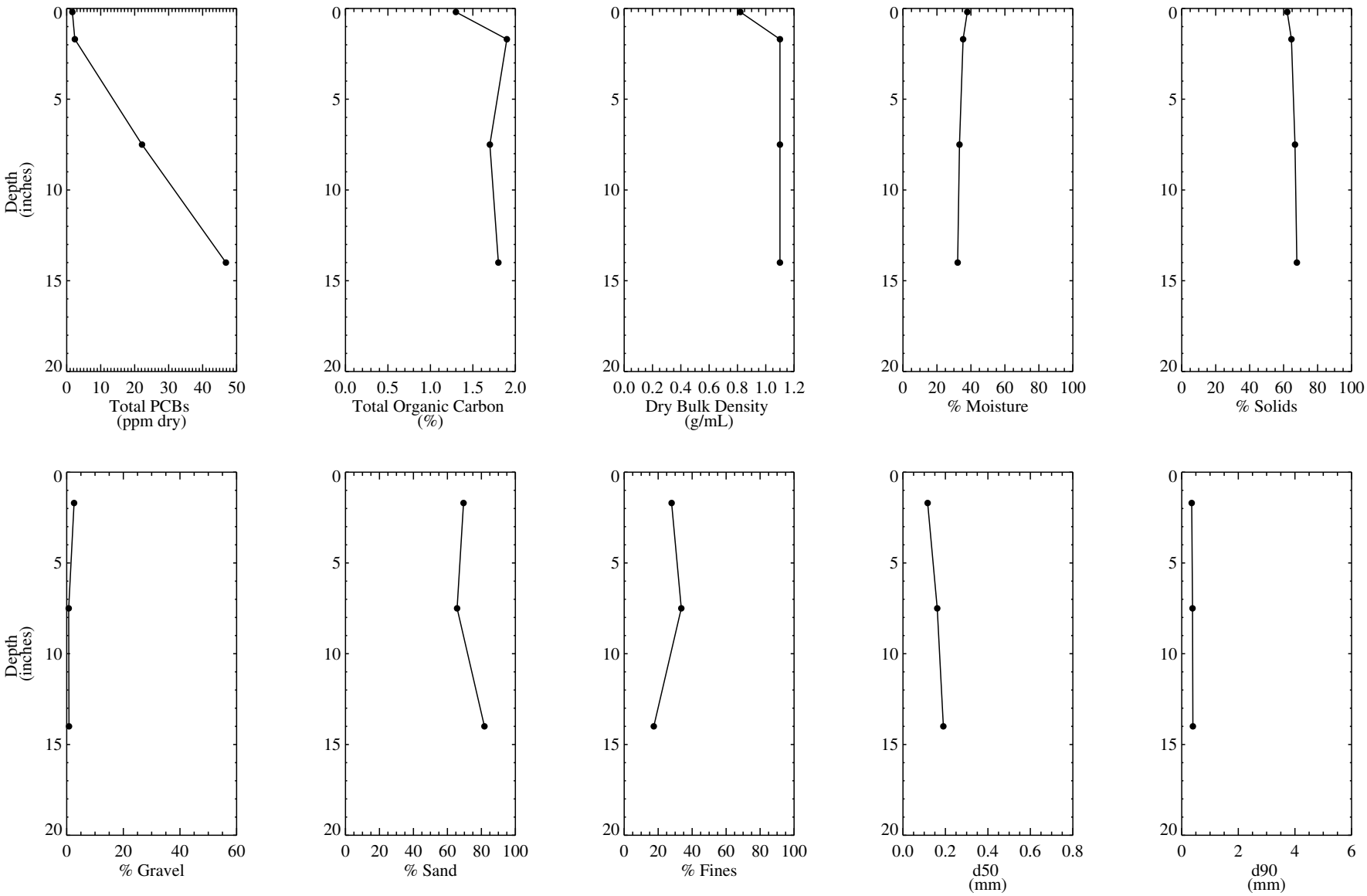


Figure 94. Vertical Profiles for Core NST13-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

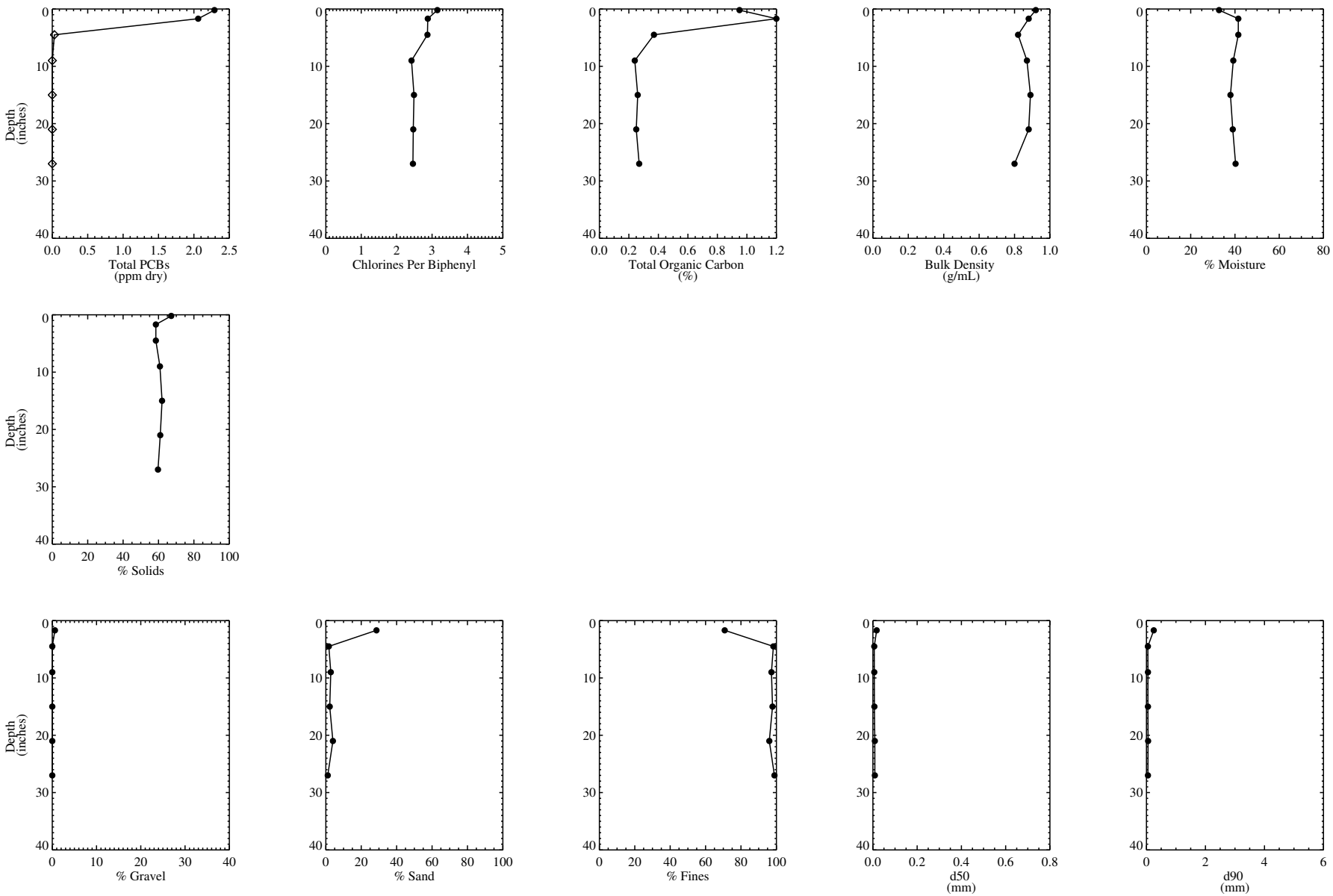


Figure 95. Vertical Profiles for Core NST16-N

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:35 2004

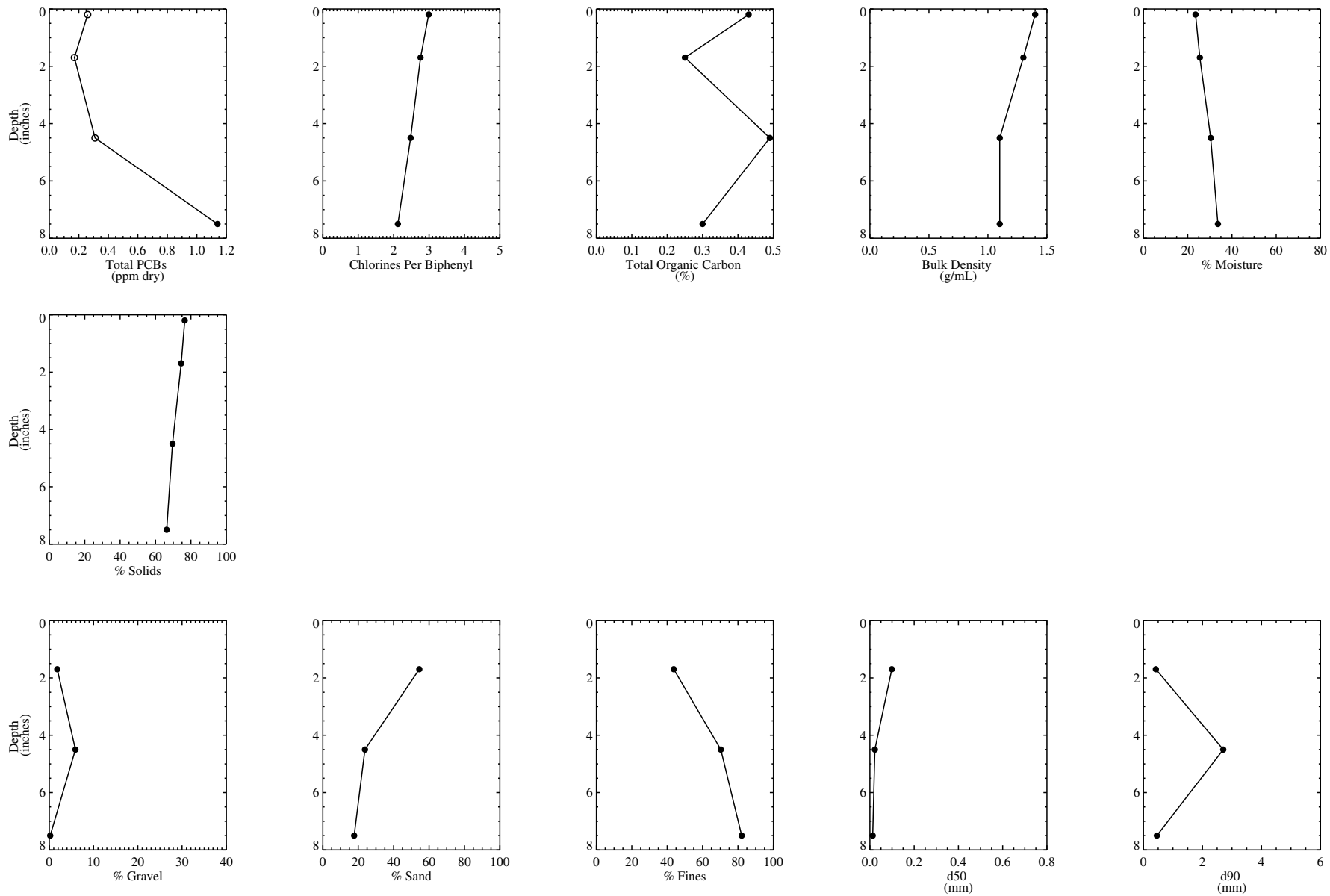


Figure 96. Vertical Profiles for Core NST16-S

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:35 2004

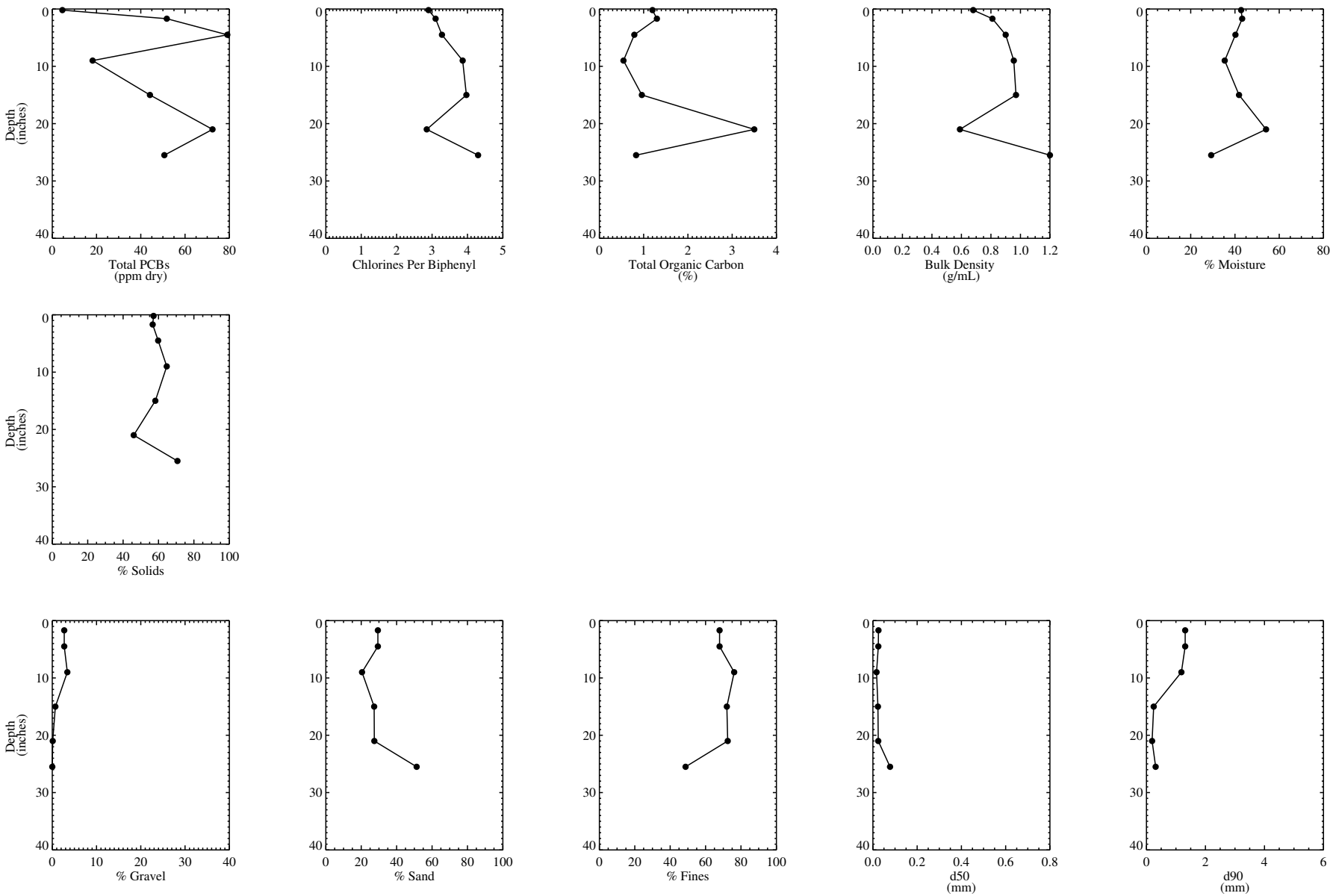


Figure 97. Vertical Profiles for Core NST18-N

2003 Phase I Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:35 2004

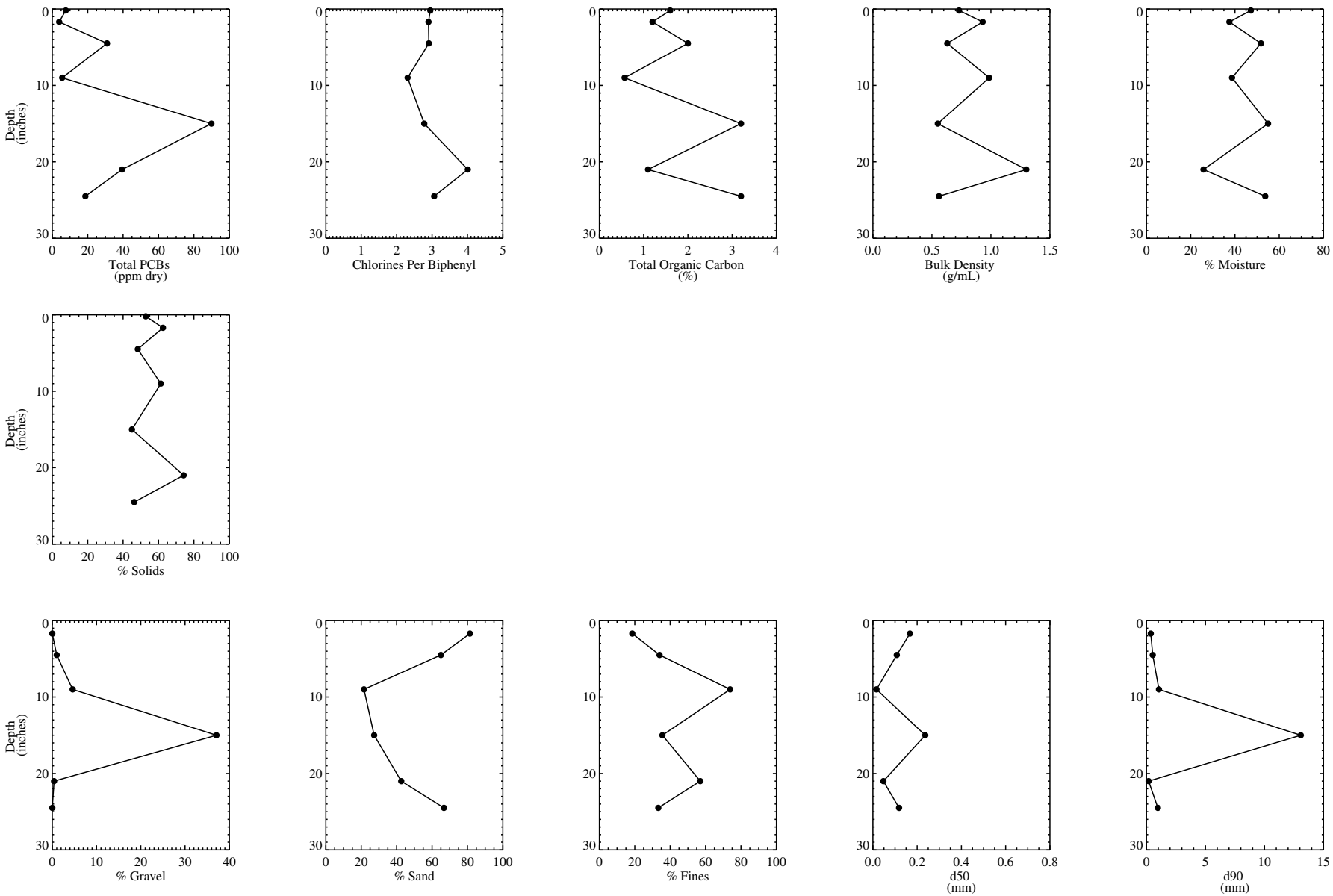


Figure 98. Vertical Profiles for Core NST18-S

2003 Phase I Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:35 2004

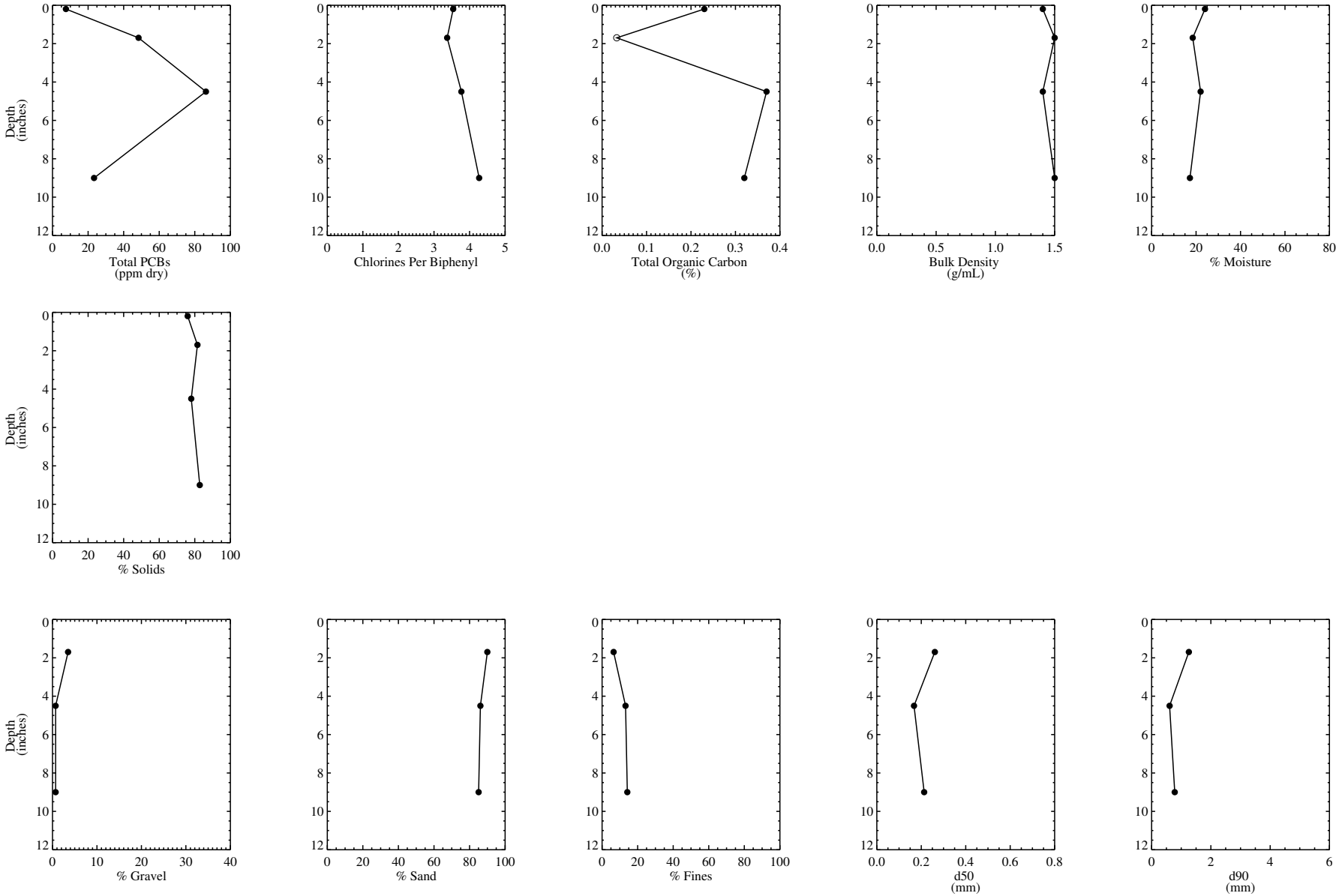


Figure 99. Vertical Profiles for Core NST21-N

2003 Phase I Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:36 2004

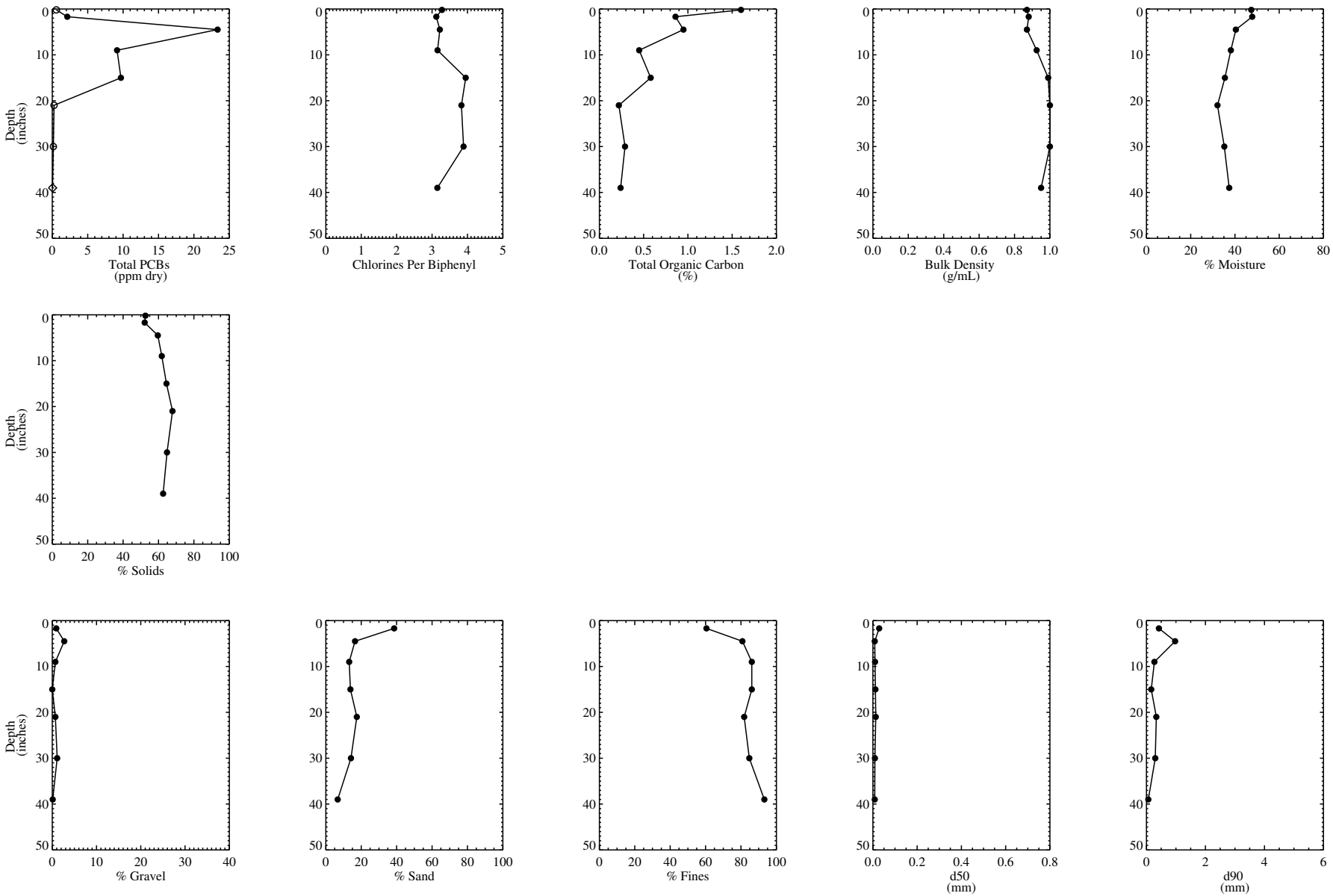


Figure 100. Vertical Profiles for Core NST21-S

2003 Phase I Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Estimated values shown as open circles; values below method detection limit (MDL) shown as open diamonds. If duplicate and sample results are above detection limit and estimated, open circle with cross-hair; if estimated and below MDL, open diamond with cross-hair.

Data table: sediment_bz, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseI\profiles\parameter_profiles_PhaseI_CCLGR.pro
Wed Mar 24 13:08:36 2004

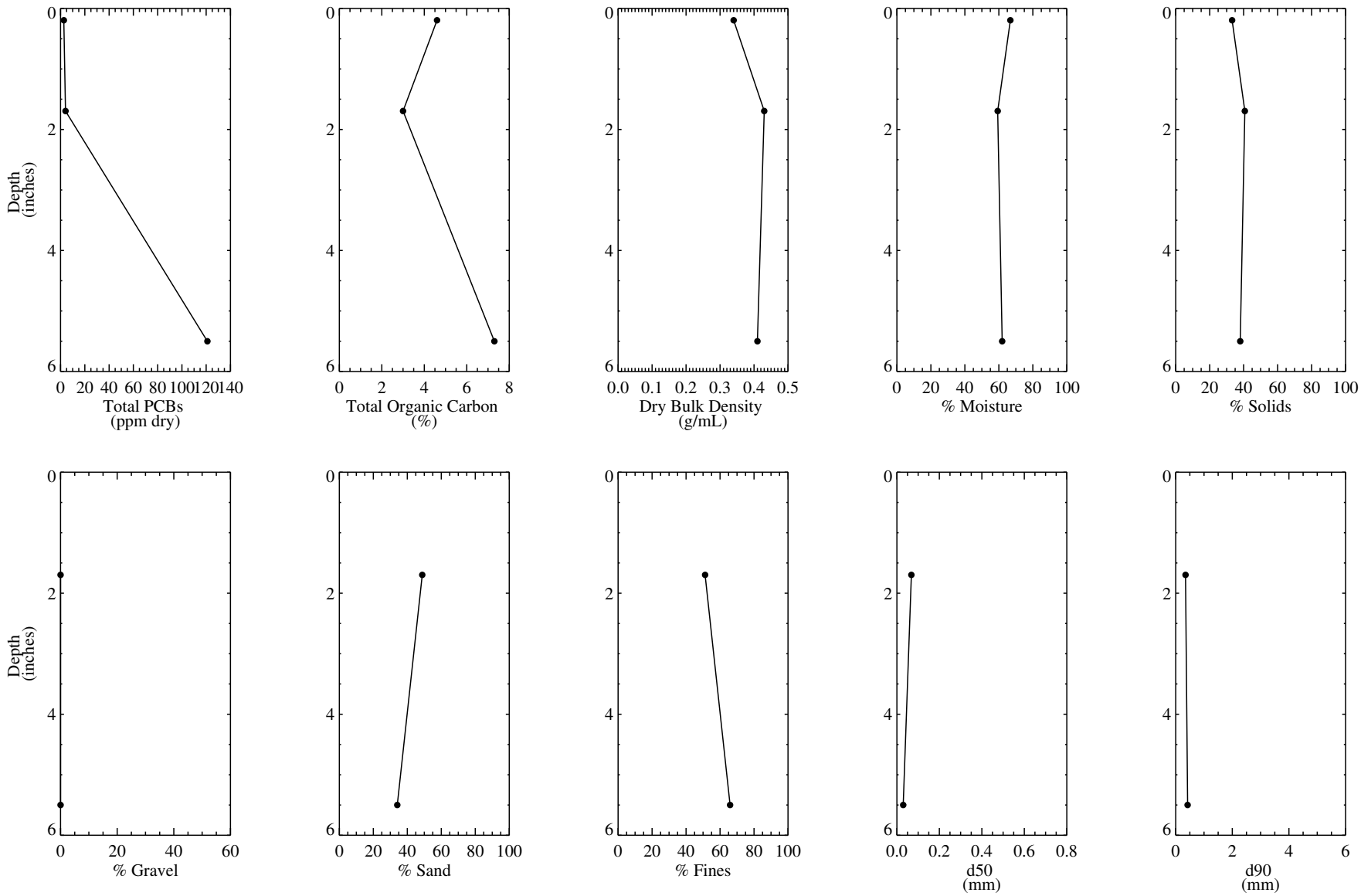


Figure 101. Vertical Profiles for Core NST29-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

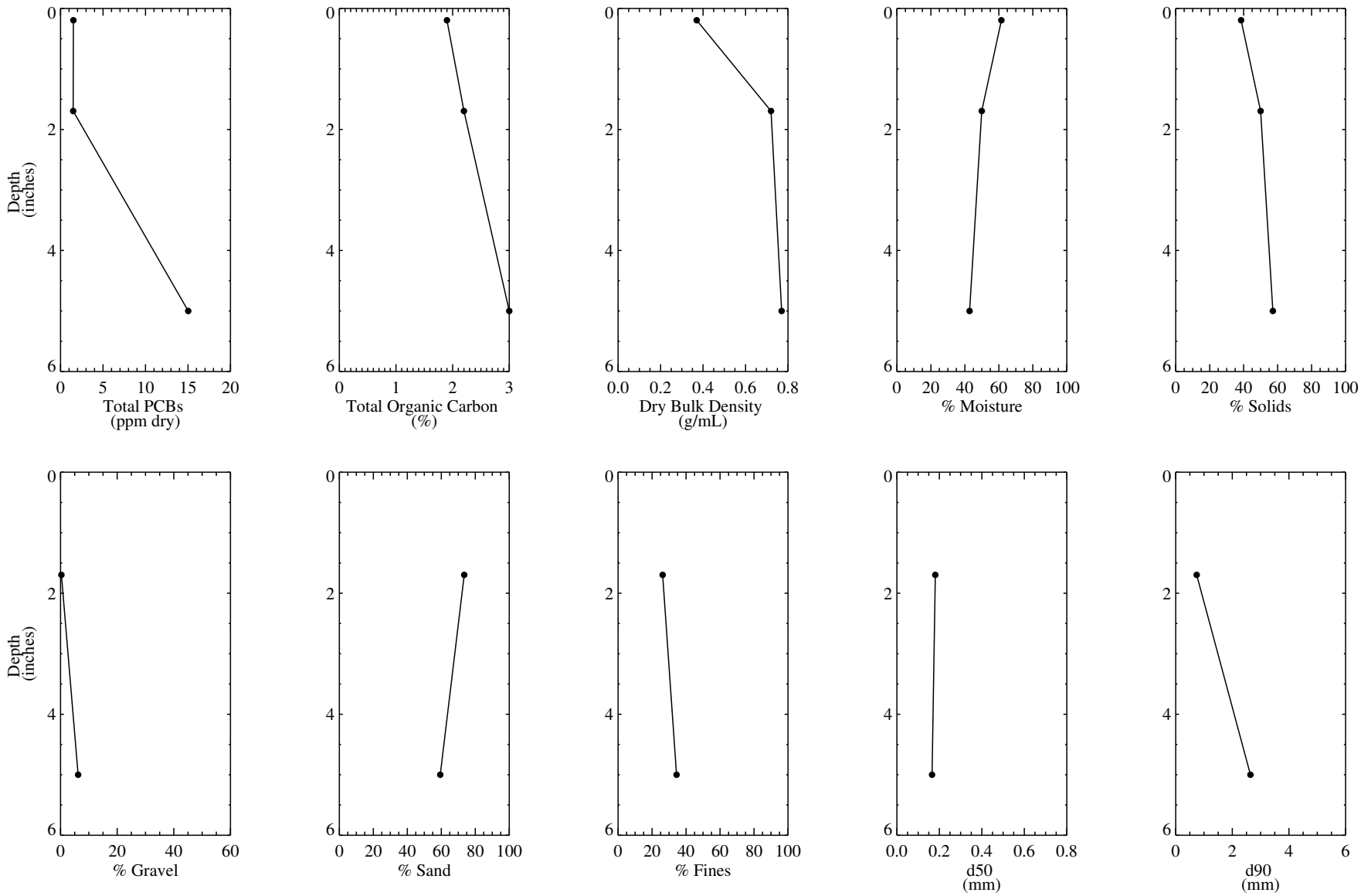


Figure 102. Vertical Profiles for Core NST29-S

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

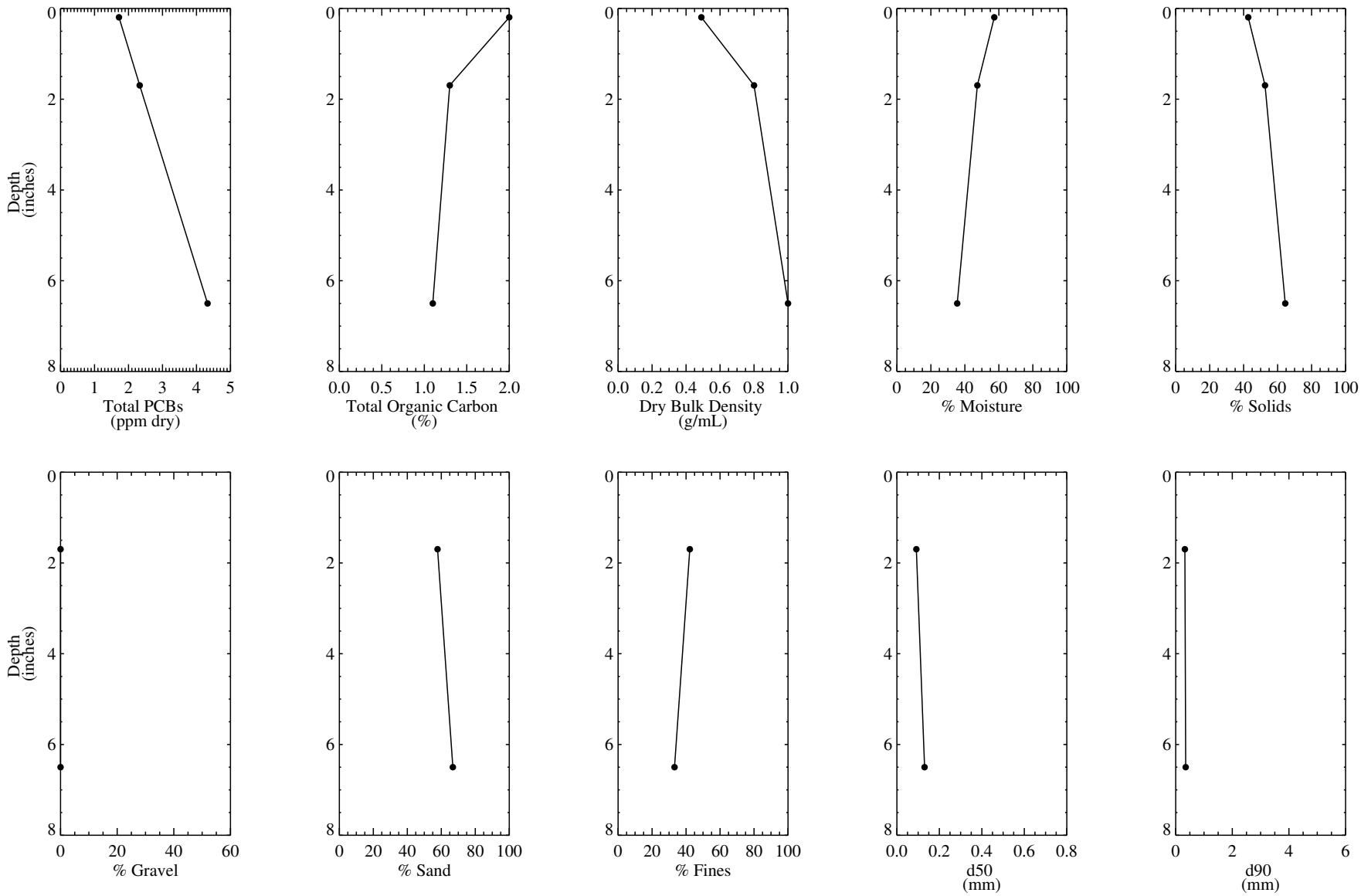


Figure 103. Vertical Profiles for Core NST41-N

2003 Phase II Monitoring Program
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

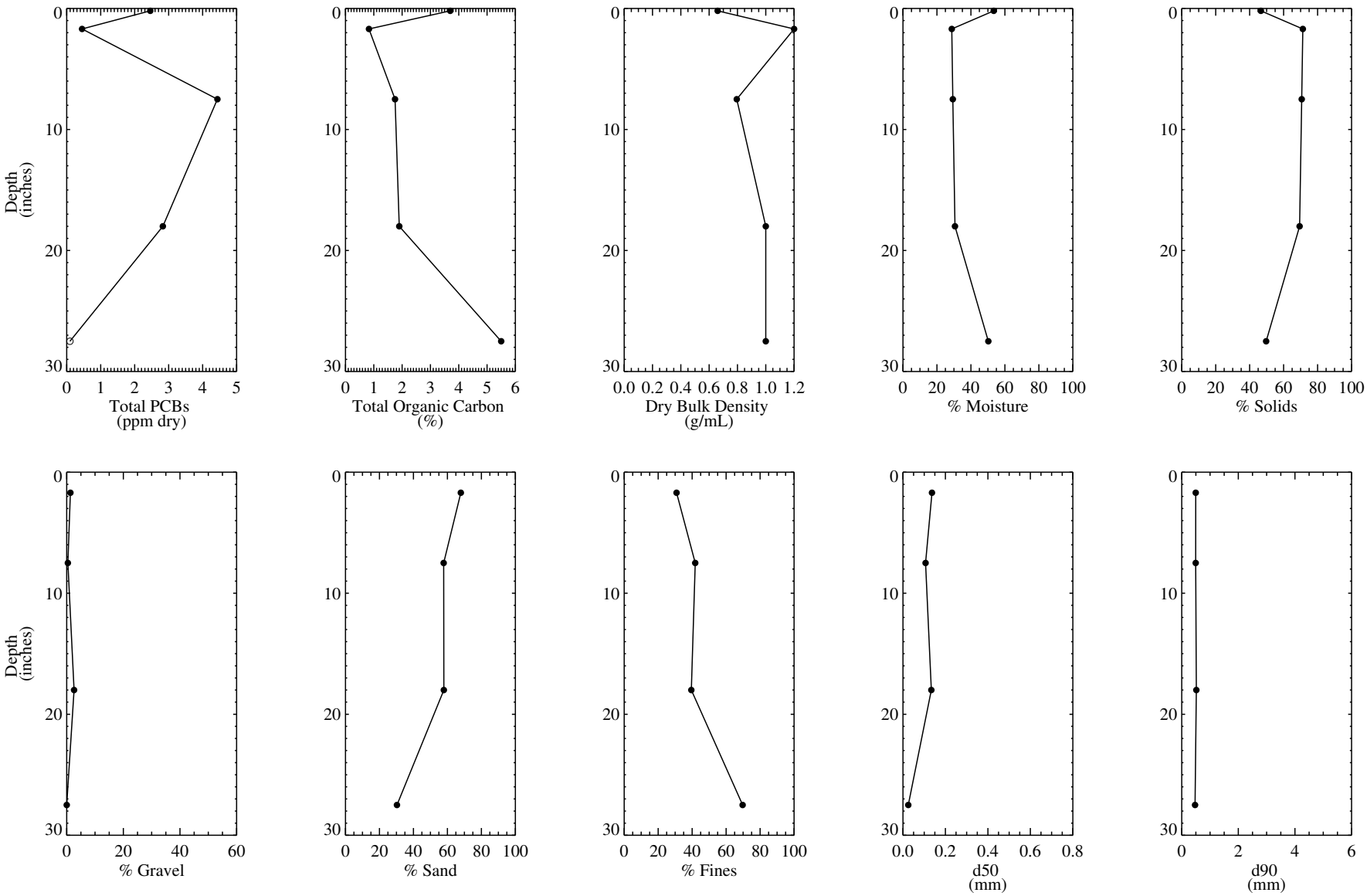


Figure 104. Vertical Profiles for Core NST41-S

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Segment without enough material for particle size analysis: 3-12"

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

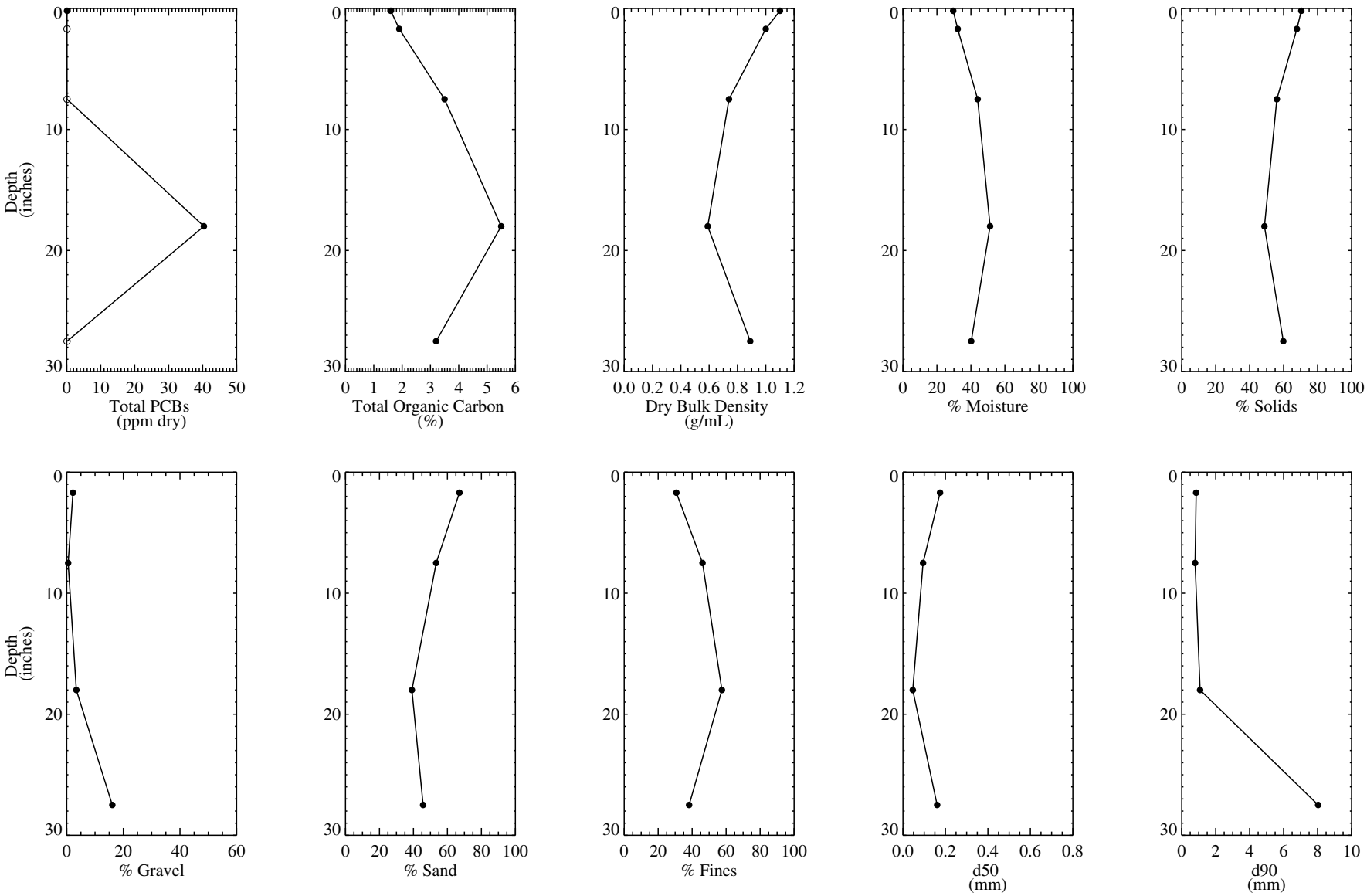


Figure 105. Vertical Profiles for Core NST57-N

2003 Phase II Monitoring Program

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro, sediment_char

EC - D:\ALCgra\Analysis\Capping_pilot\sediment\PhaseII\profiles\parameter_profiles_PhaseII_CCLGR.pro
Wed Mar 24 13:09:14 2004

Sediment Core Profiles

2004 Focused Program

This appendix contains vertical profiles of total PCBs, total organic carbon, bulk density, moisture and solids content, and grain size (when available).

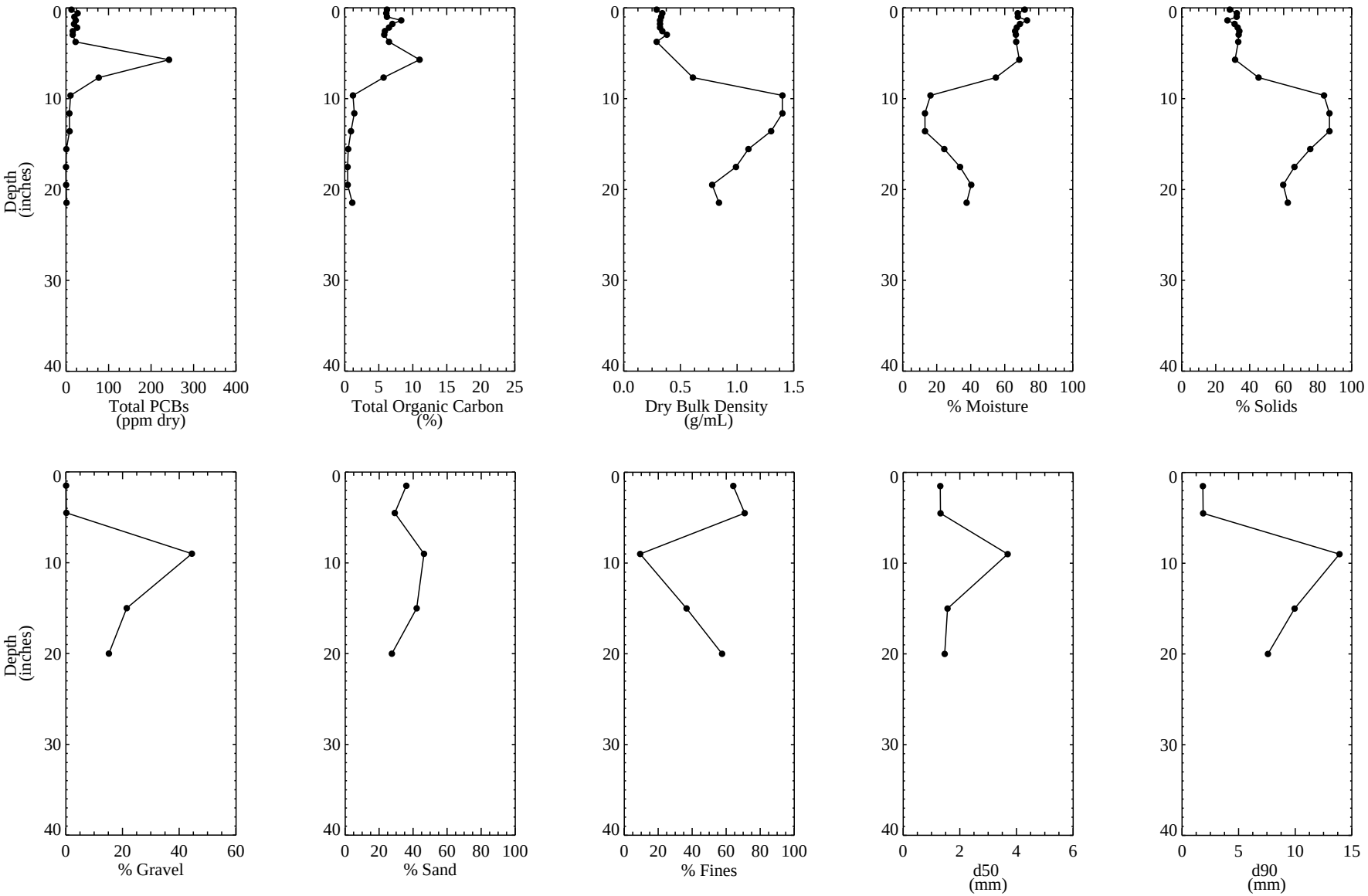


Figure 106. Vertical Profiles for Core T35-NA (co-located core for grain size)

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

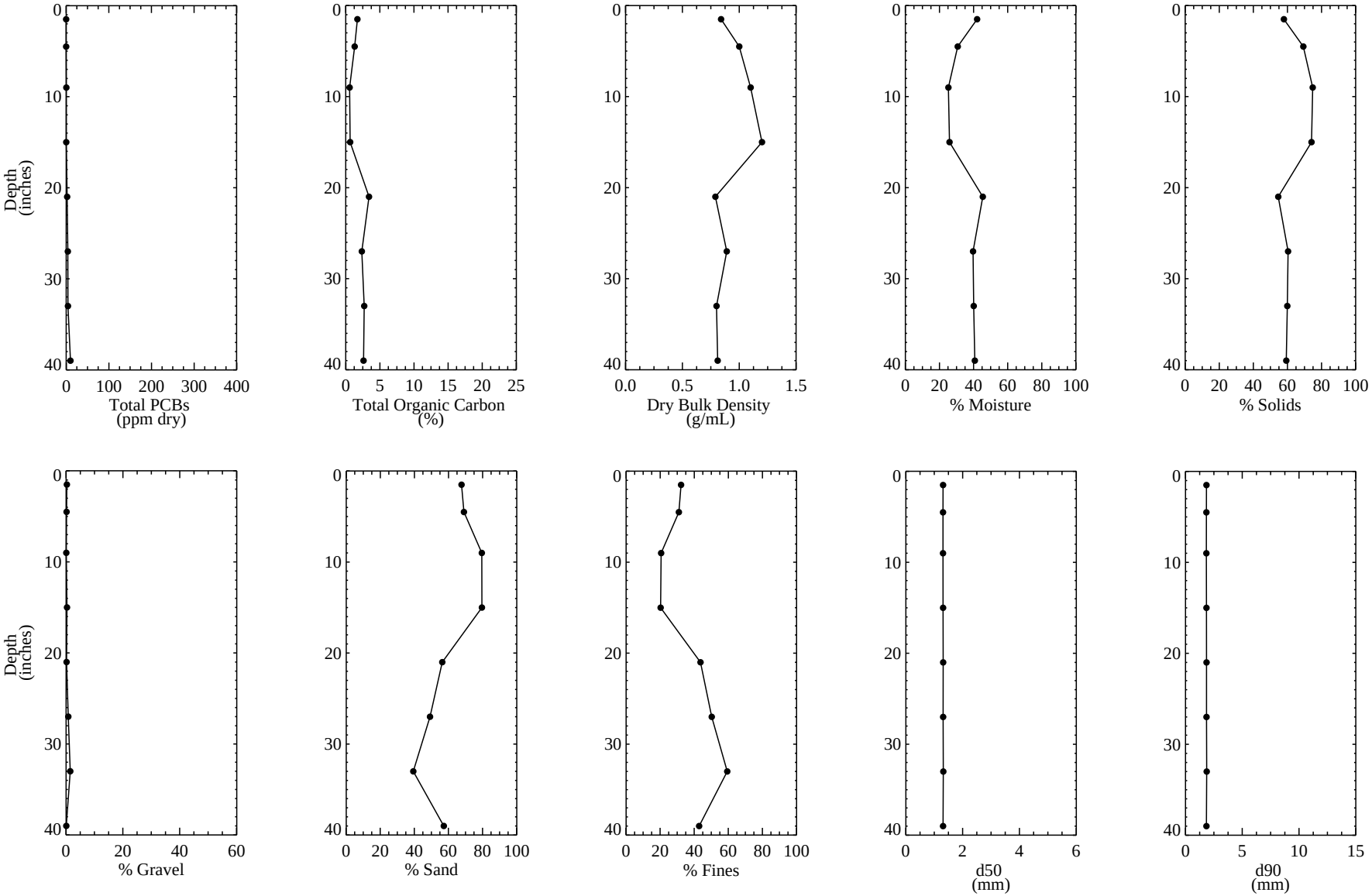


Figure 107. Vertical Profiles for Core T35-NB

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC/DN - U:\ALCgra\Analysis\Sediment\Cores_2004\parameter_profiles_scale.pro
Fri Jul 09 18:38:04 2004

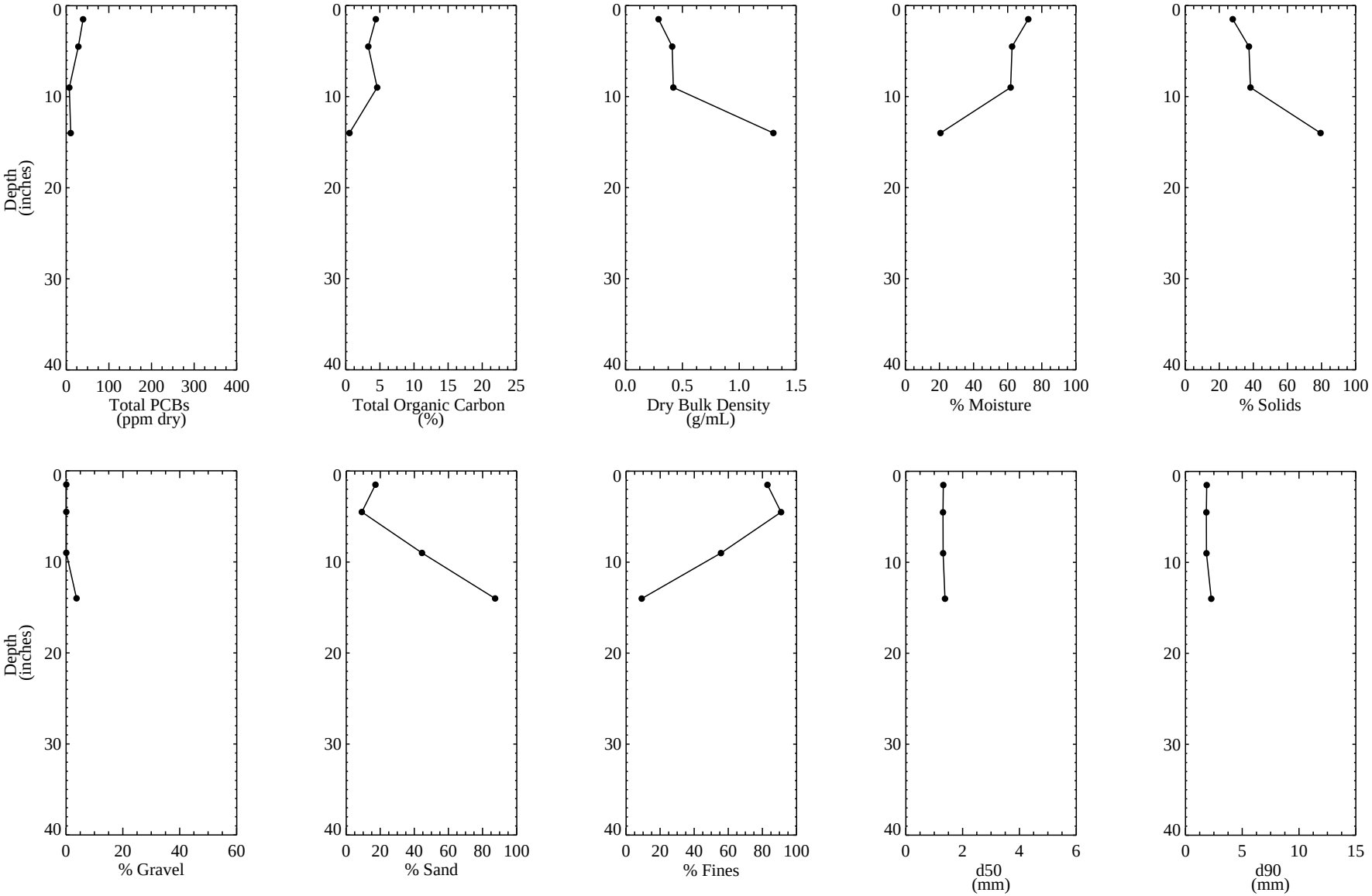


Figure 108. Vertical Profiles for Core T35-NC

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC/DN - U:\ALCgra\Analysis\Sediment\Cores_2004\parameter_profiles_scale.pro
Fri Jul 09 18:38:04 2004

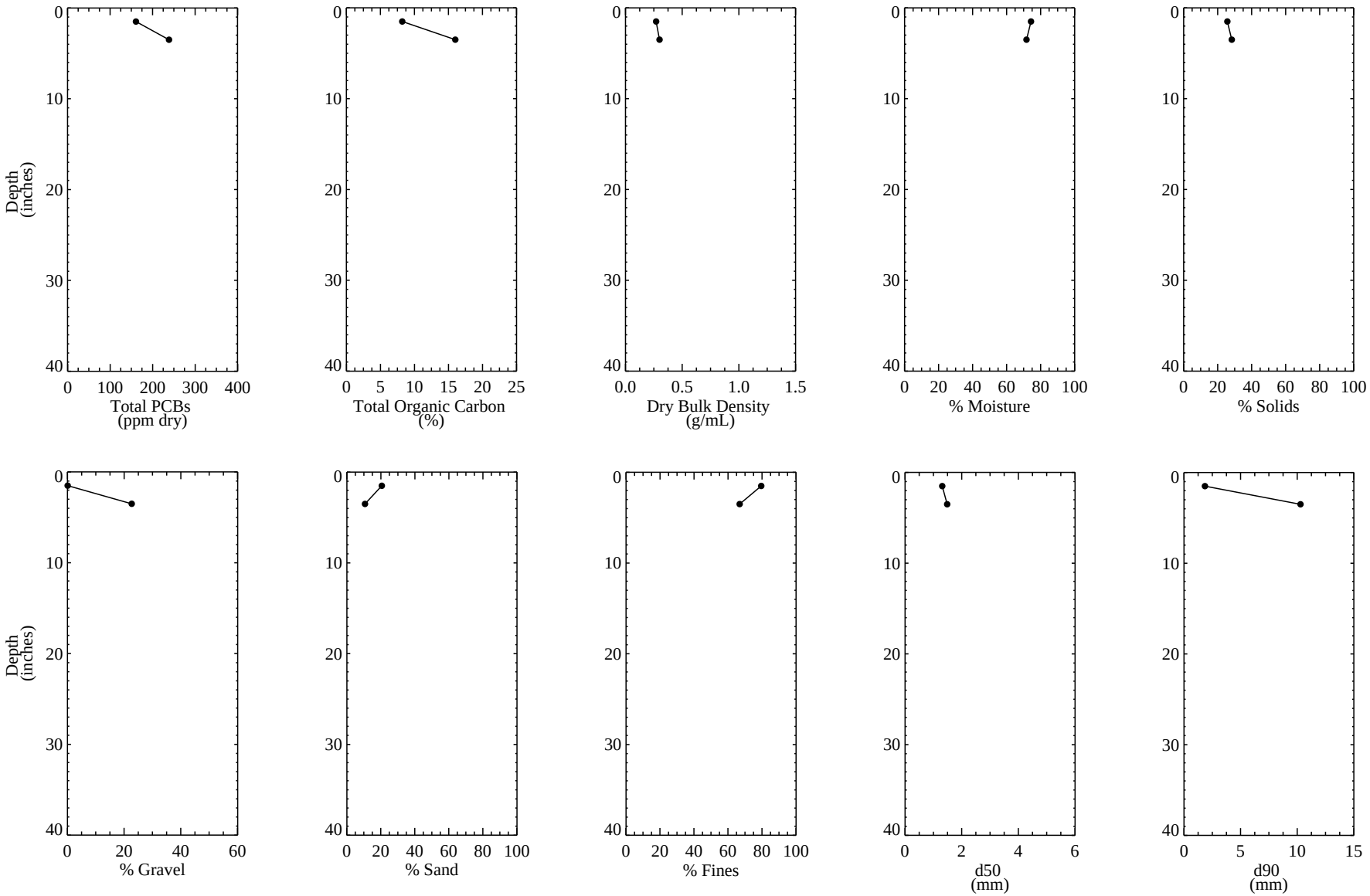


Figure 109. Vertical Profiles for Core T35-ND

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC/DN - U:\ALCgra\Analysis\Sediment\Cores_2004\parameter_profiles_scale.pro
Fri Jul 09 18:38:04 2004

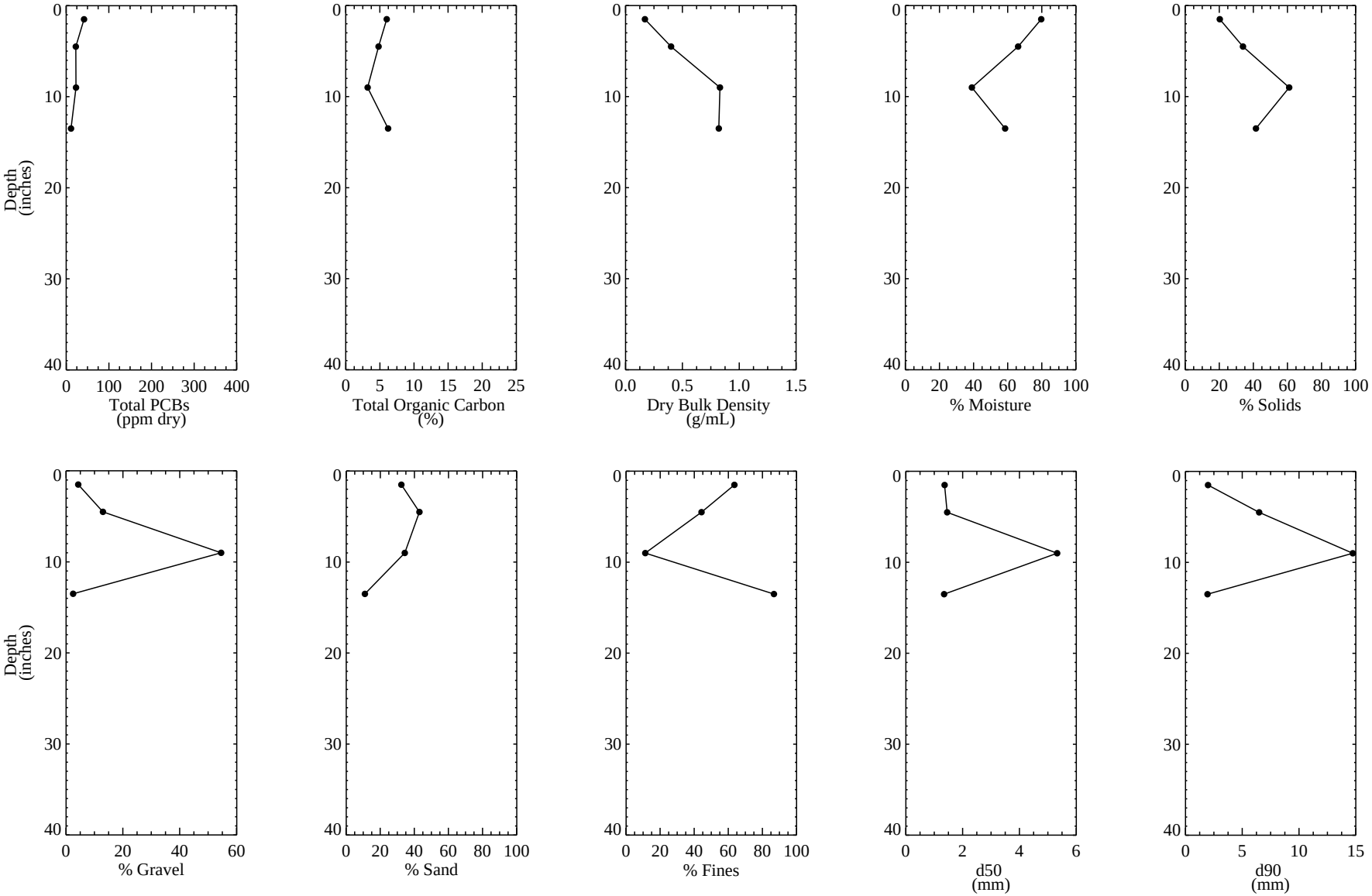


Figure 110. Vertical Profiles for Core T35-NE

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC/DN - U:\ALCgra\Analysis\Sediment\Cores_2004\parameter_profiles_scale.pro
Fri Jul 09 18:38:04 2004

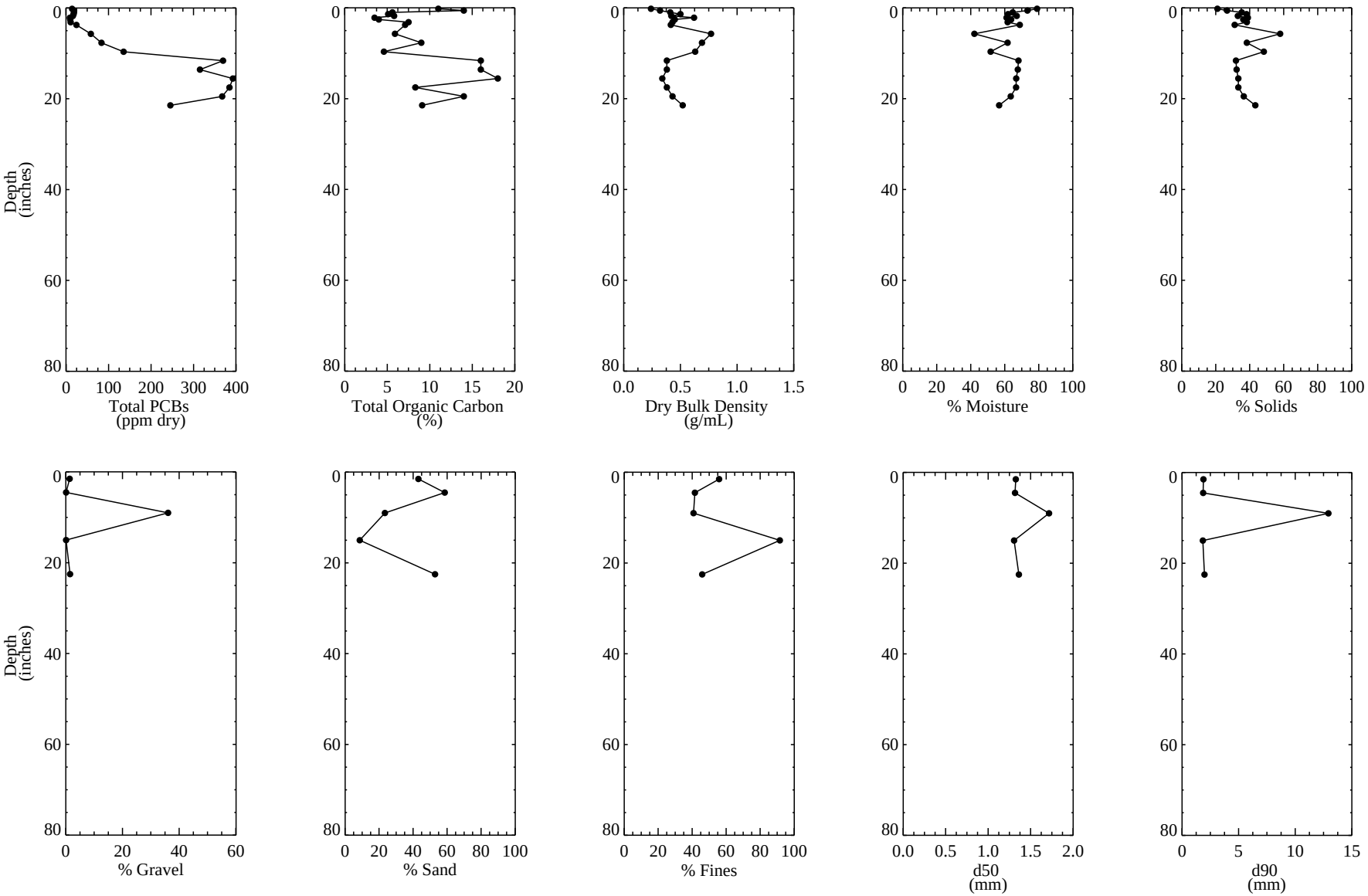


Figure 111. Vertical Profiles for Core T37-NA (co-located core for grain size)

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

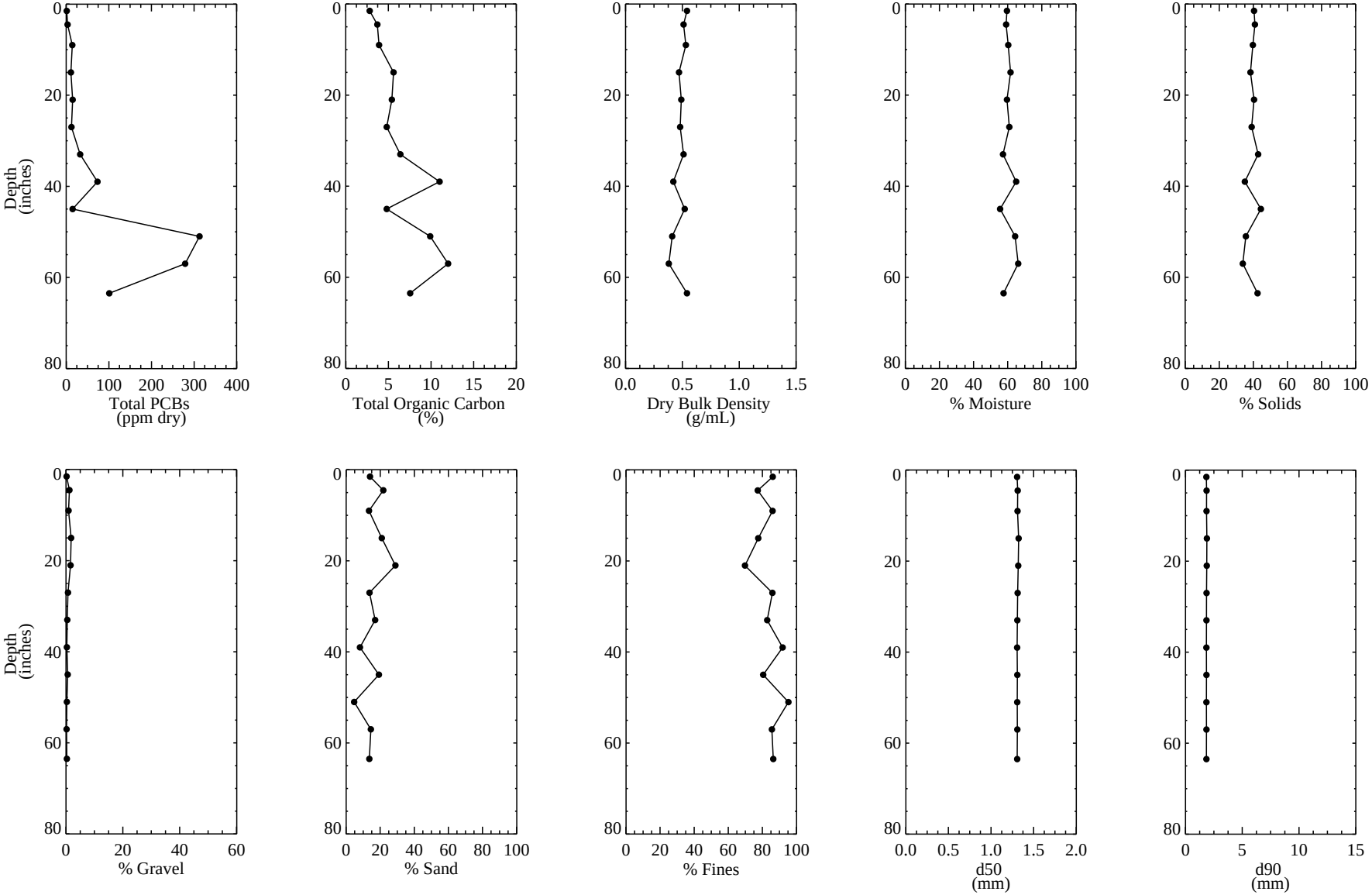


Figure 112. Vertical Profiles for Core T37-NB

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC/DN - U:\ALCgra\Analysis\Sediment\Cores_2004\parameter_profiles_scale.pro
Fri Jul 09 18:38:04 2004

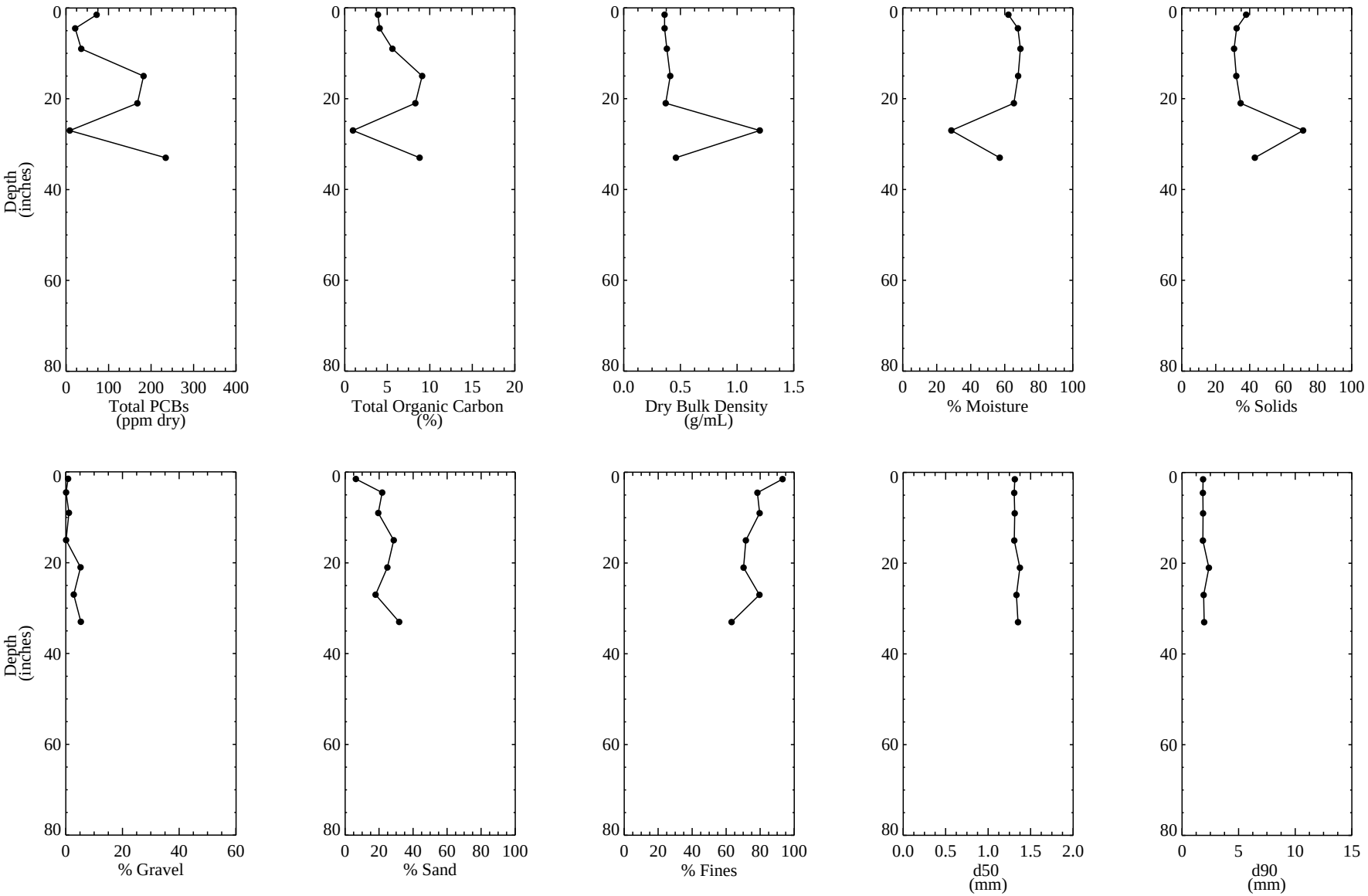


Figure 113. Vertical Profiles for Core T37-NC

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

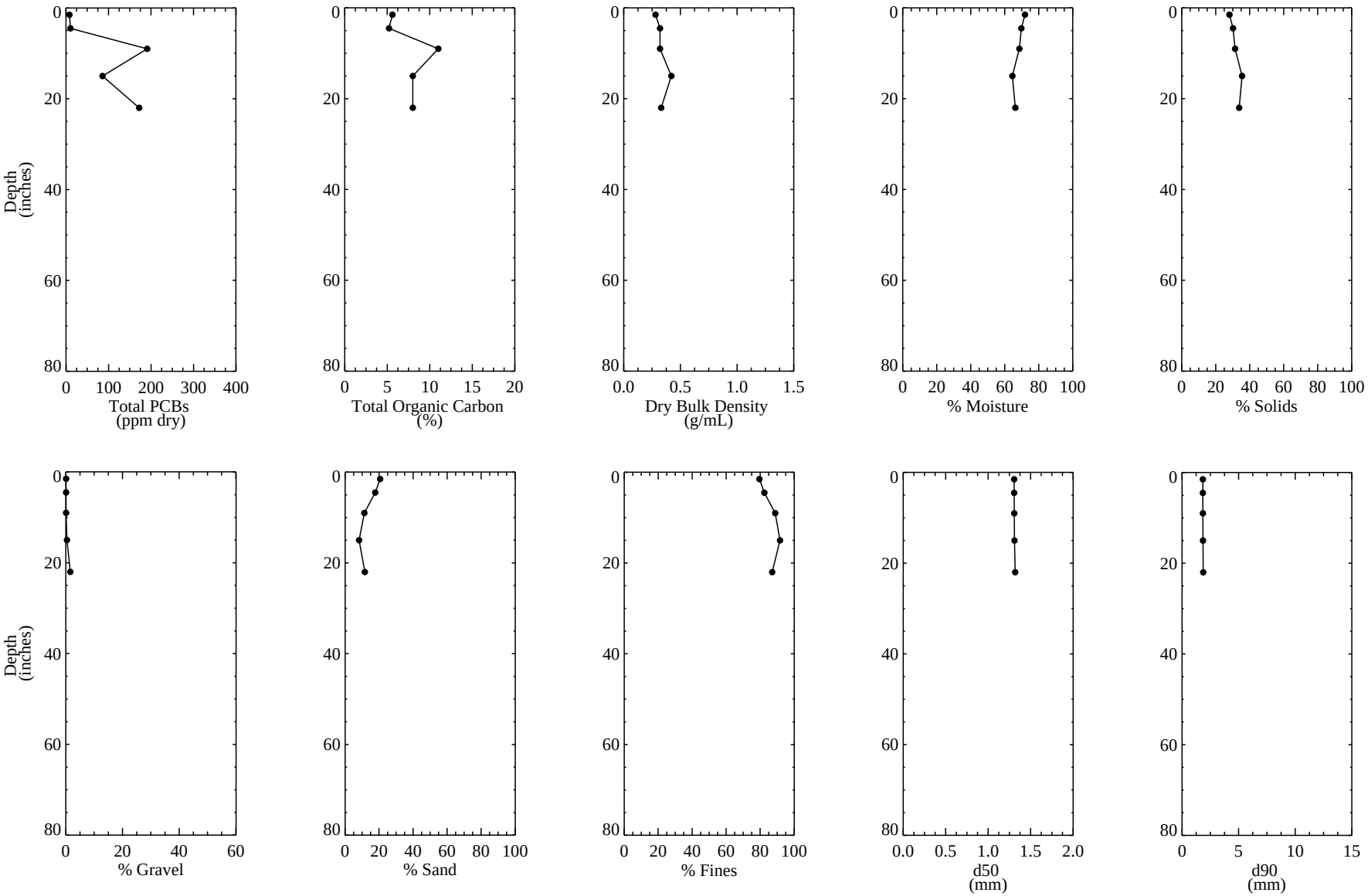


Figure 114. Vertical Profiles for Core T37-ND

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

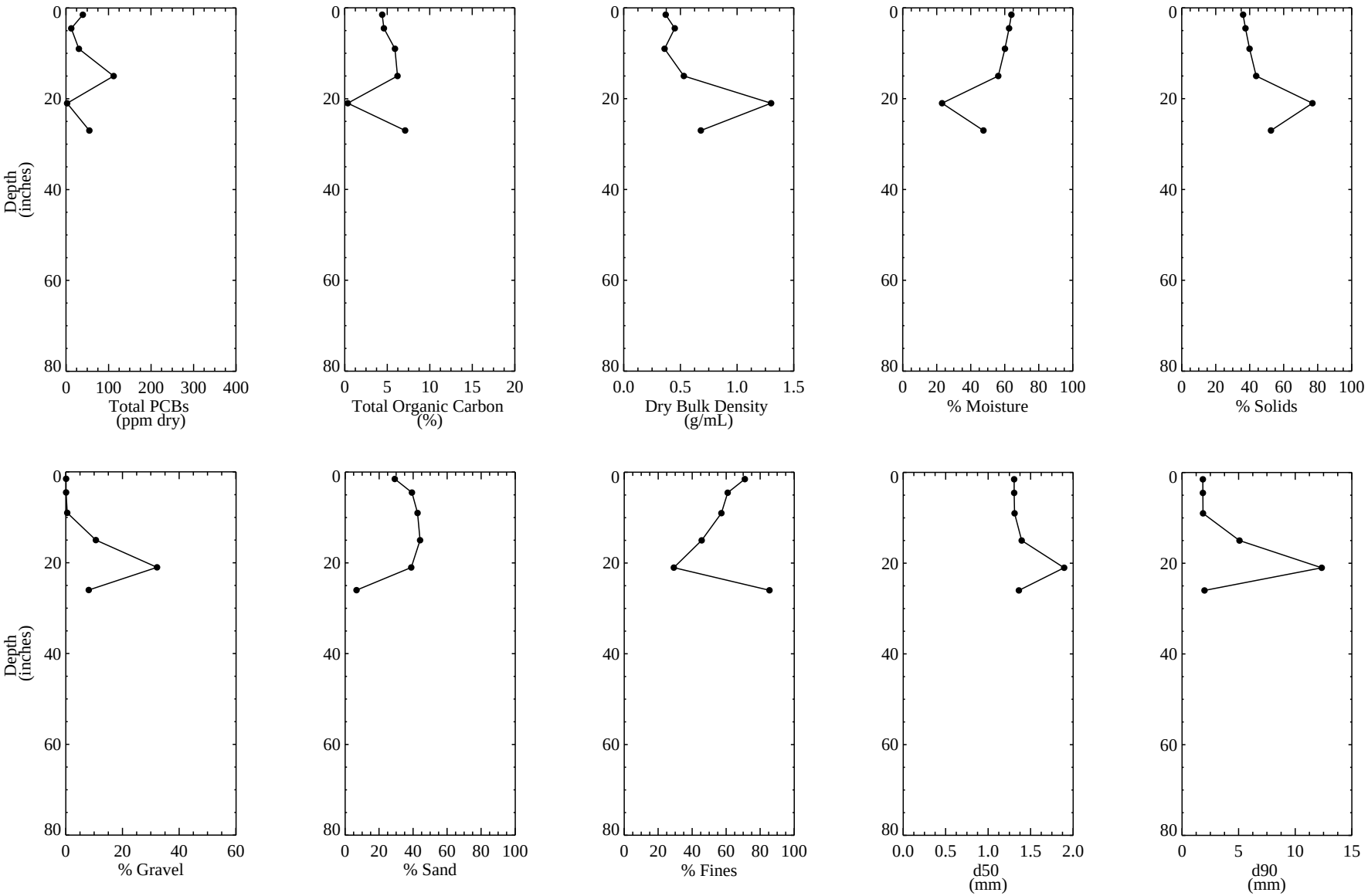


Figure 115. Vertical Profiles for Core T37-NE

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

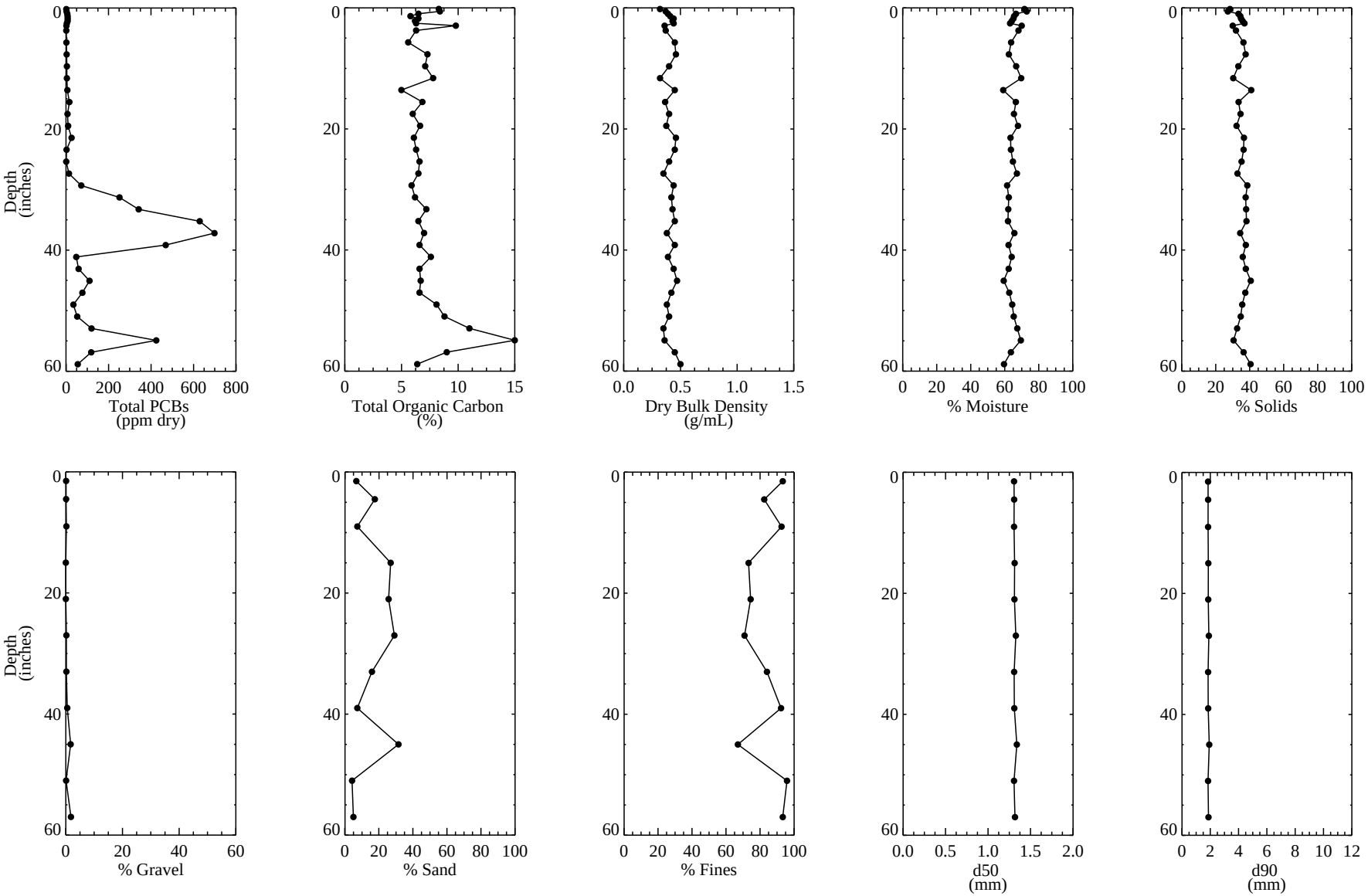


Figure 116. Vertical Profiles for Core T46-MA (co-located core for grain size)

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

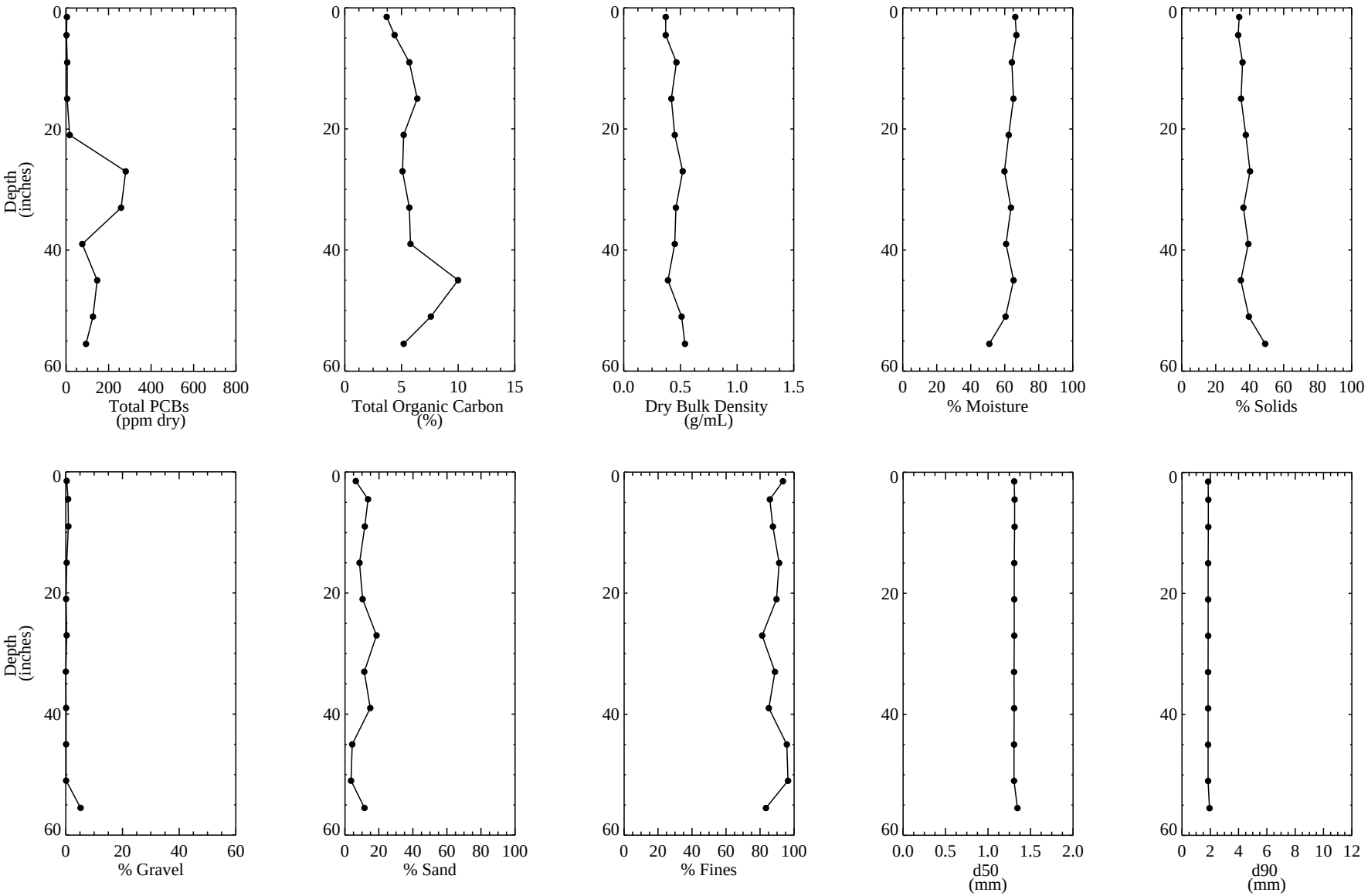


Figure 117. Vertical Profiles for Core T46-MB

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC/DN - U:\ALCgra\Analysis\Sediment\Cores_2004\parameter_profiles_scale.pro
Fri Jul 09 18:38:05 2004

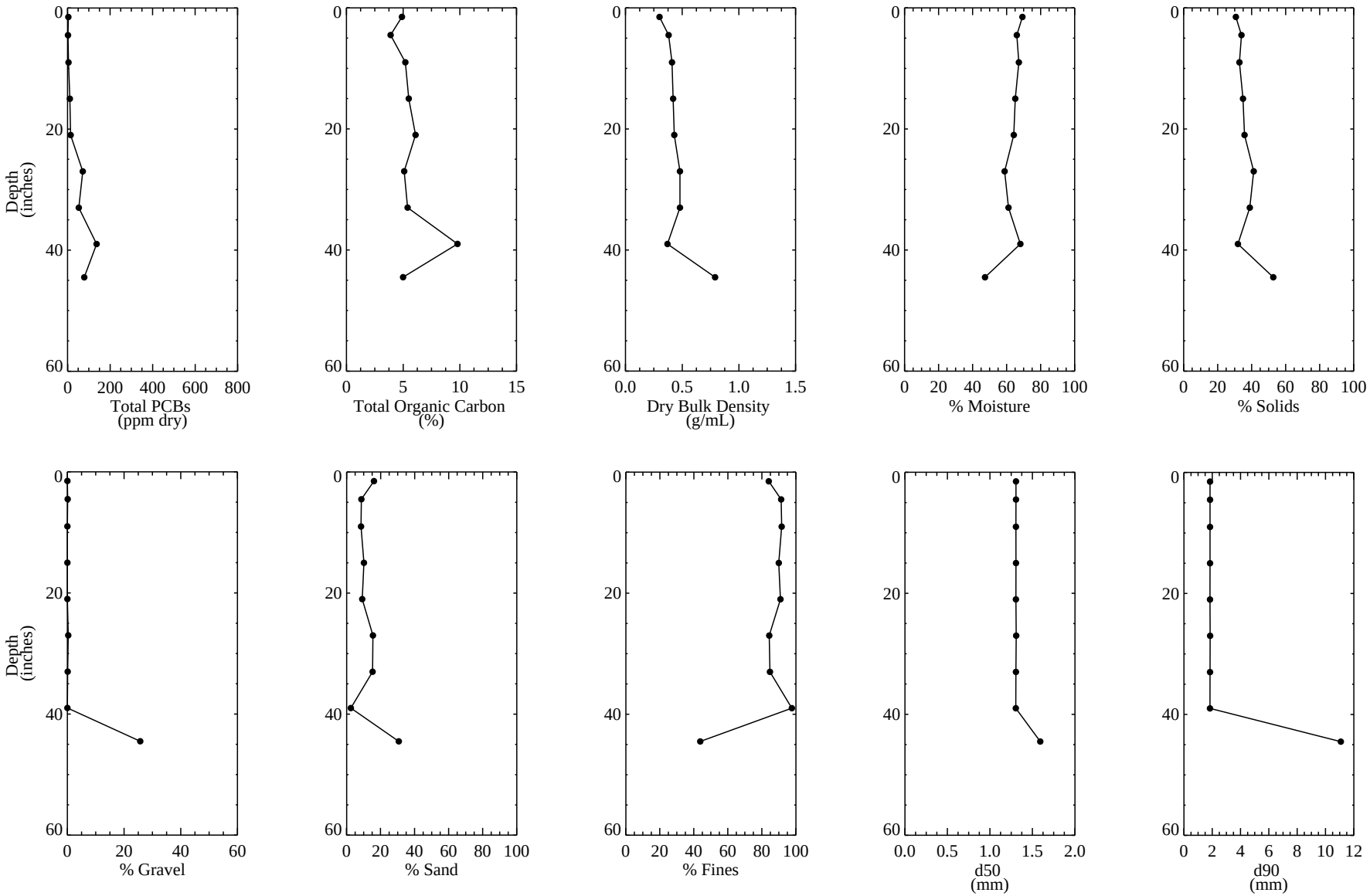


Figure 118. Vertical Profiles for Core T46-MC

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

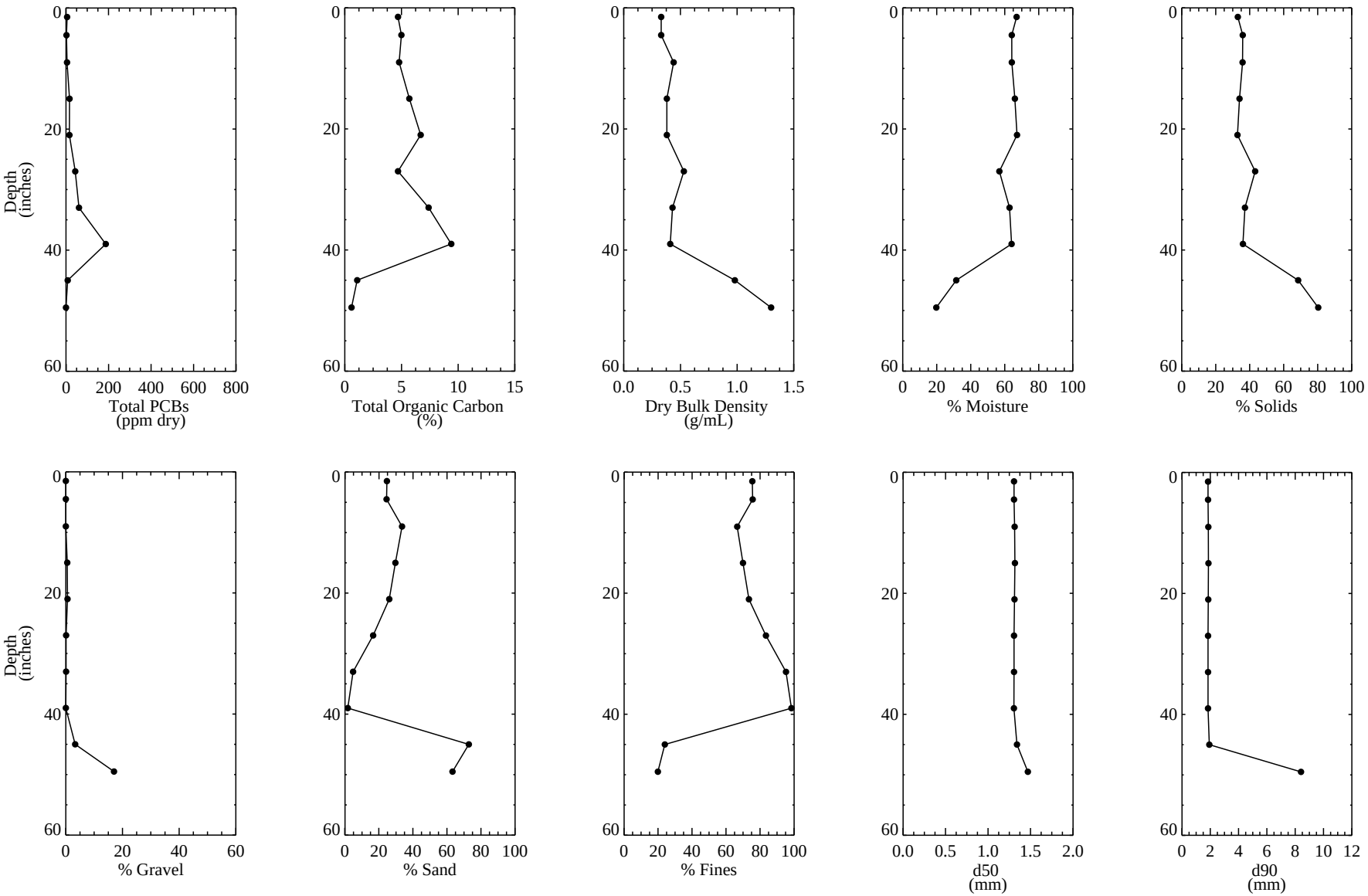


Figure 119. Vertical Profiles for Core T46-MD

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC/DN - U:\ALCgra\Analysis\Sediment\Cores_2004\parameter_profiles_scale.pro
Fri Jul 09 18:38:05 2004

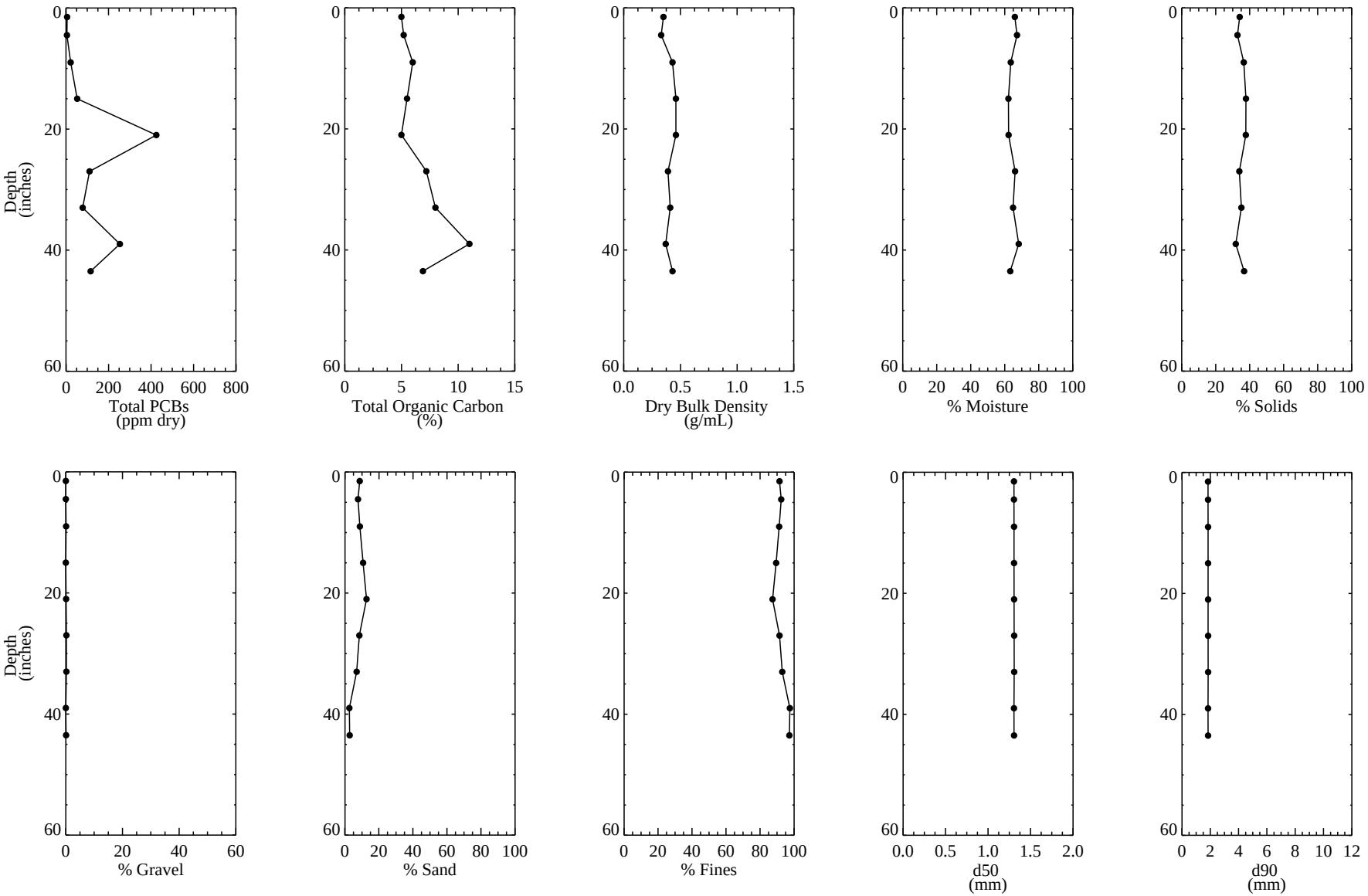


Figure 120. Vertical Profiles for Core T46-ME

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

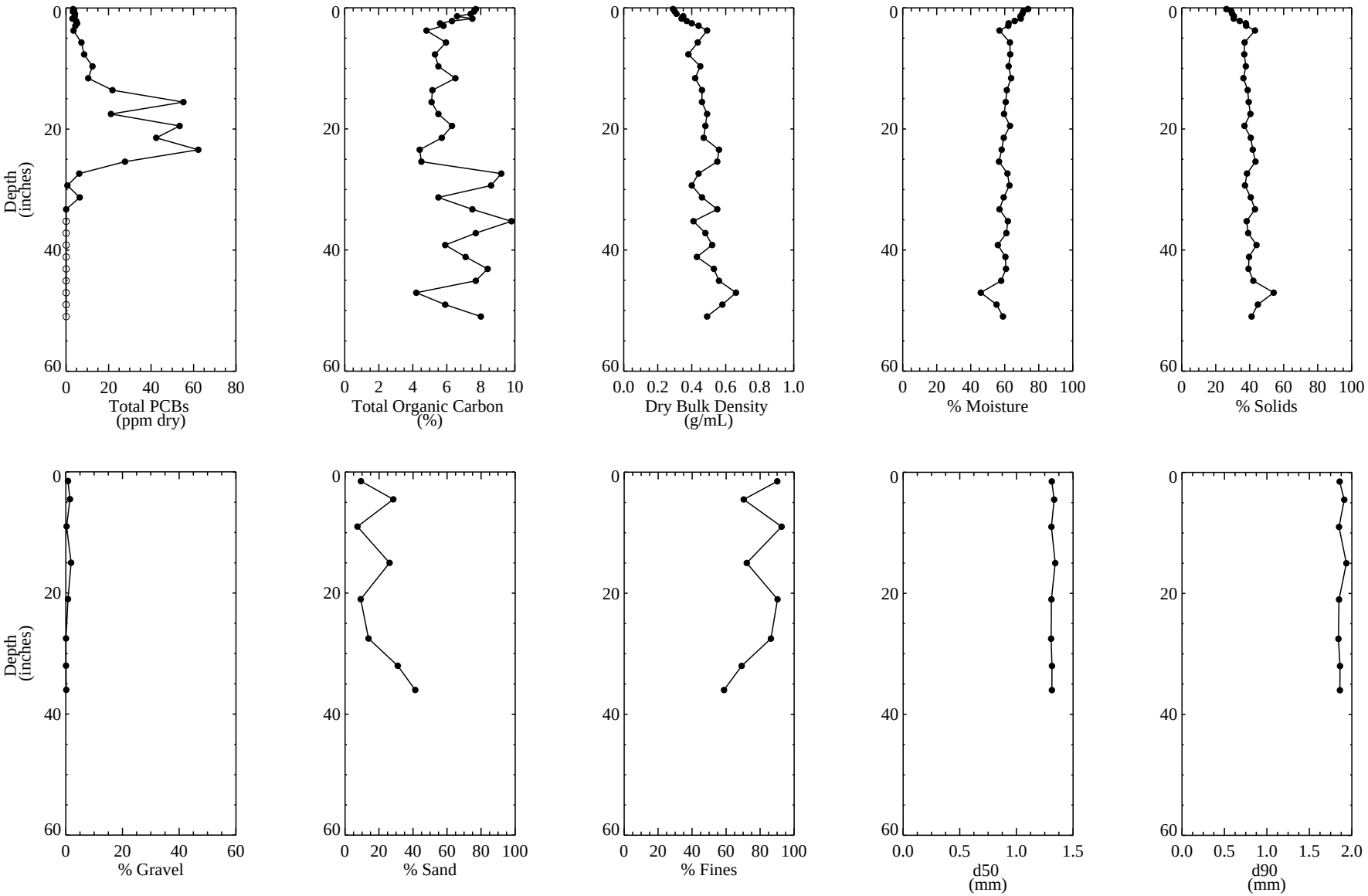


Figure 121. Vertical Profiles for Core T71-NA (co-located core for grain size)

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.
Data table: sediment_aro, sediment_char

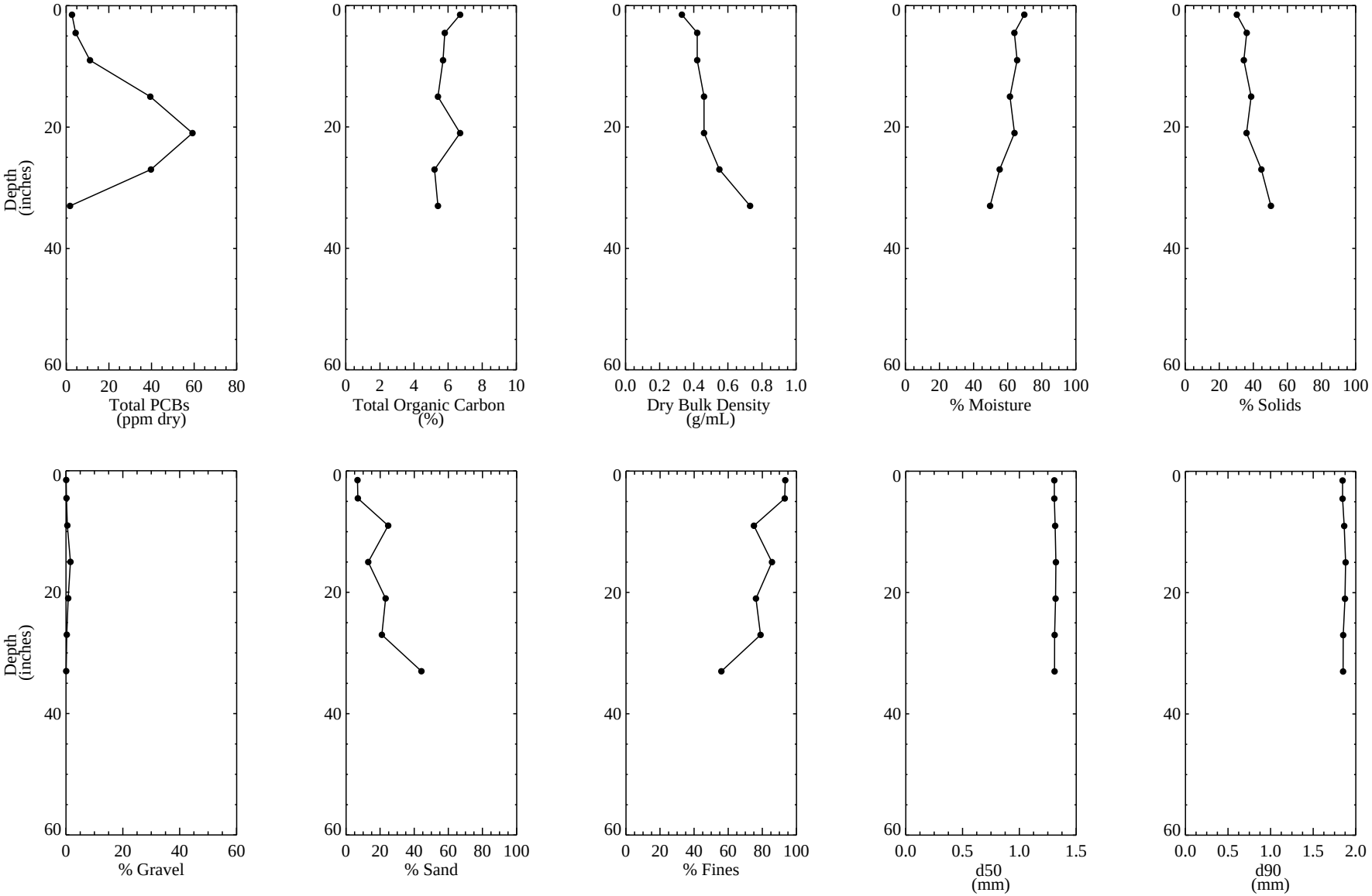


Figure 122. Vertical Profiles for Core T71-NB

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

EC/DN - U:\ALCgra\Analysis\Sediment\Cores_2004\parameter_profiles_scale.pro
Fri Jul 09 18:38:05 2004

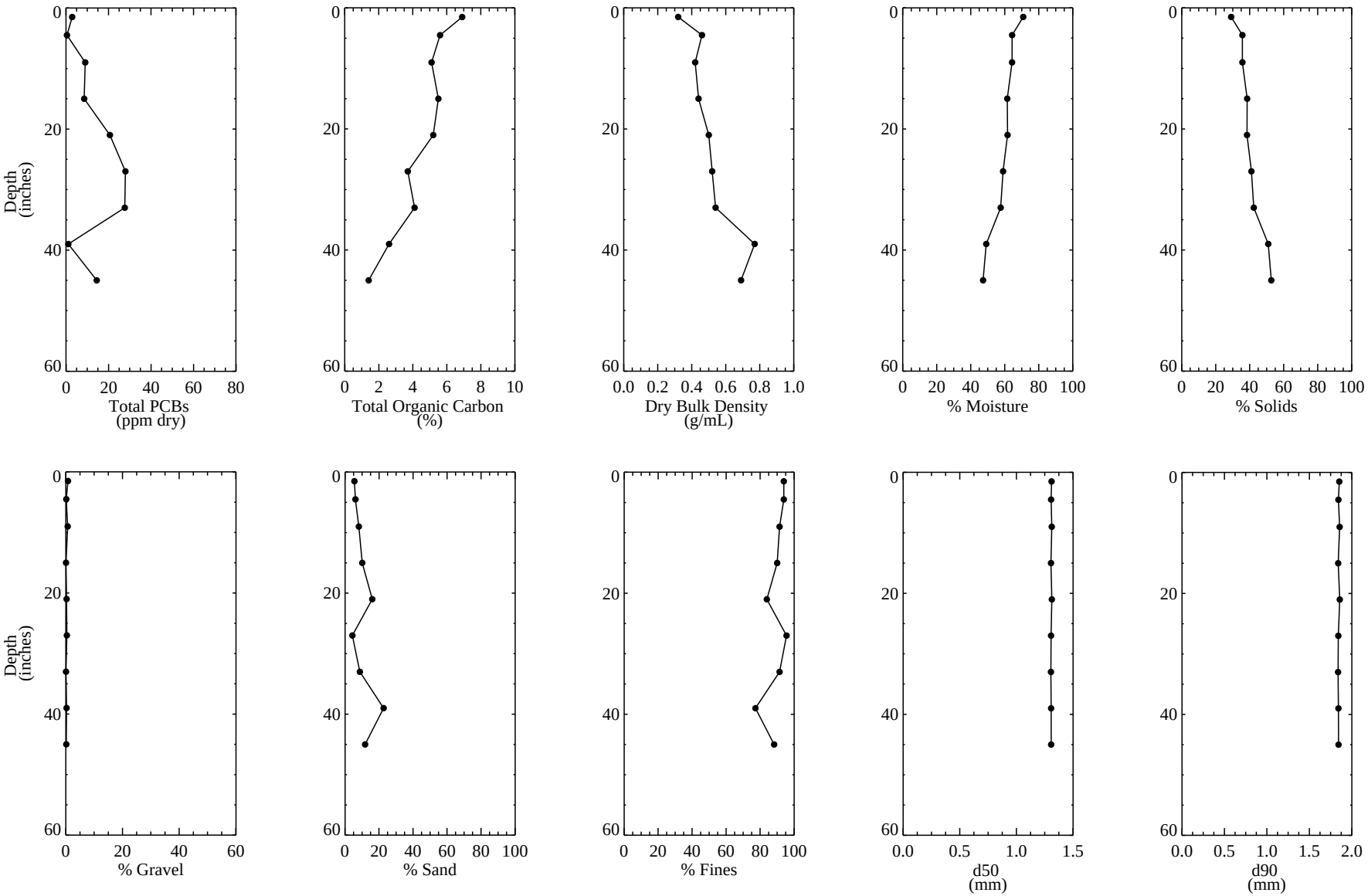


Figure 123. Vertical Profiles for Core T71-NC

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

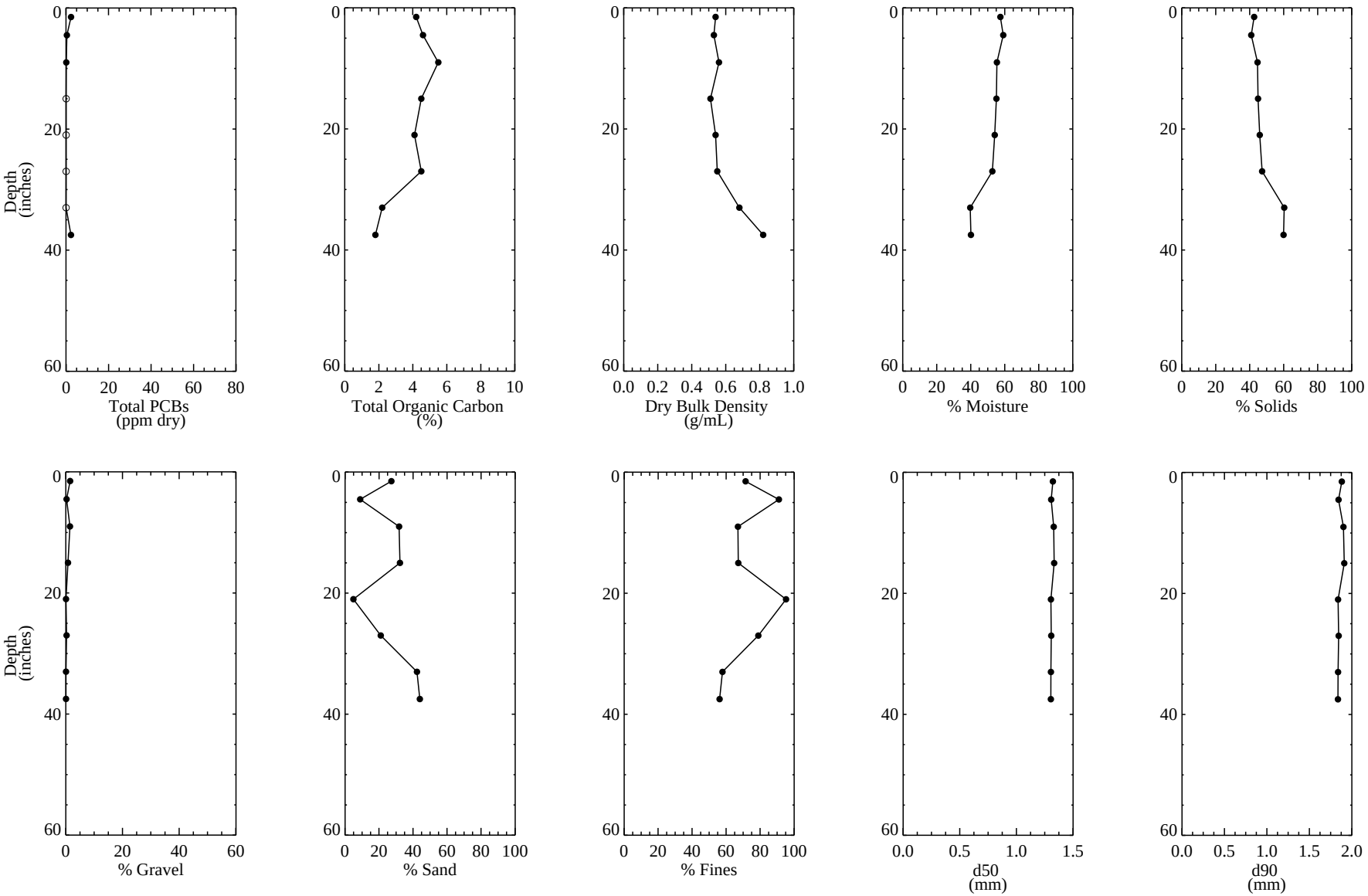


Figure 124. Vertical Profiles for Core T71-ND

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.
Data table: sediment_aro, sediment_char

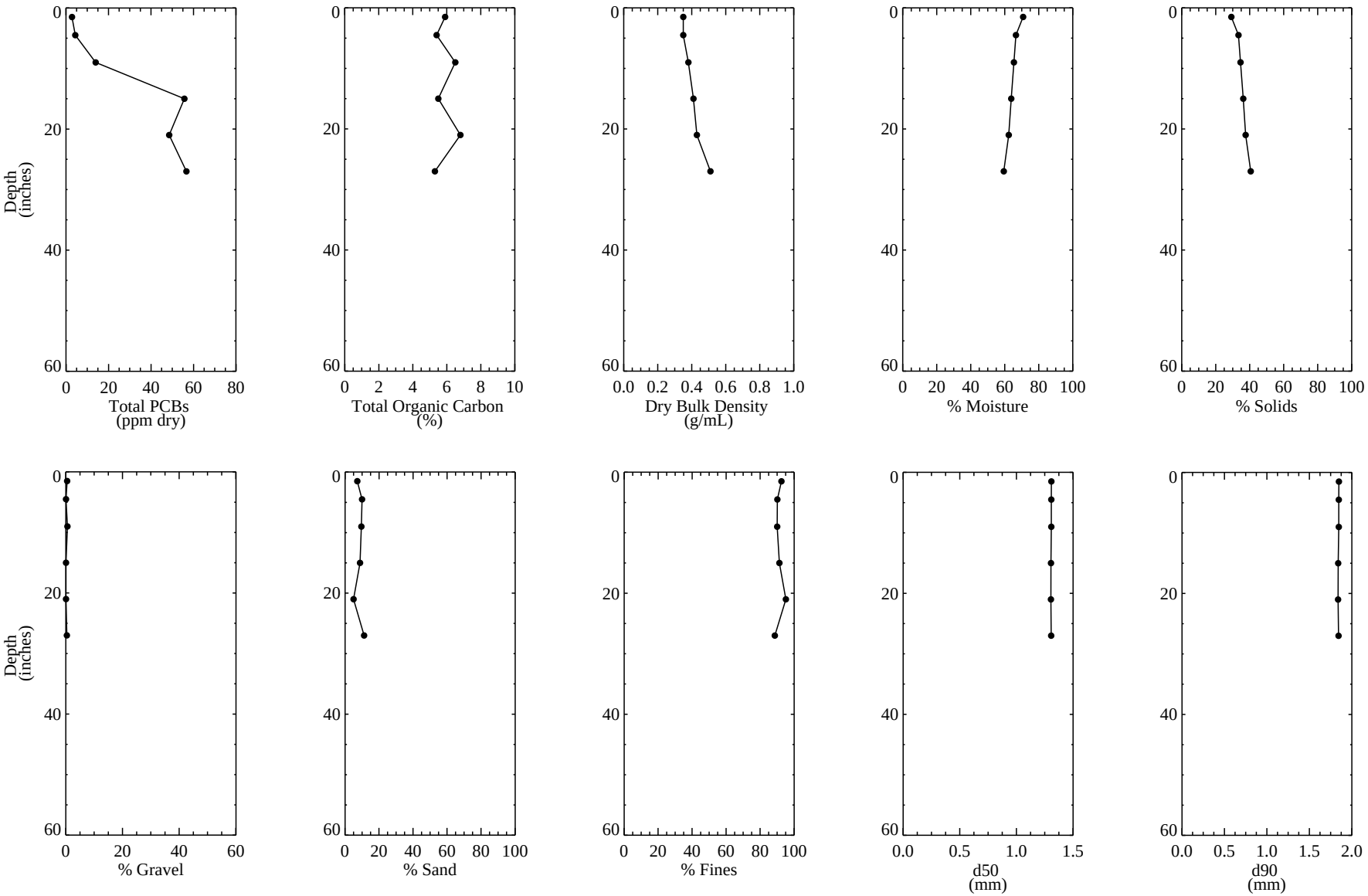


Figure 125. Vertical Profiles for Core T71-NE

Samples collected during the Spring 2004 monitoring program.
Results plotted at mid-depth. Duplicate results averaged.
Data table: sediment_aro, sediment_char

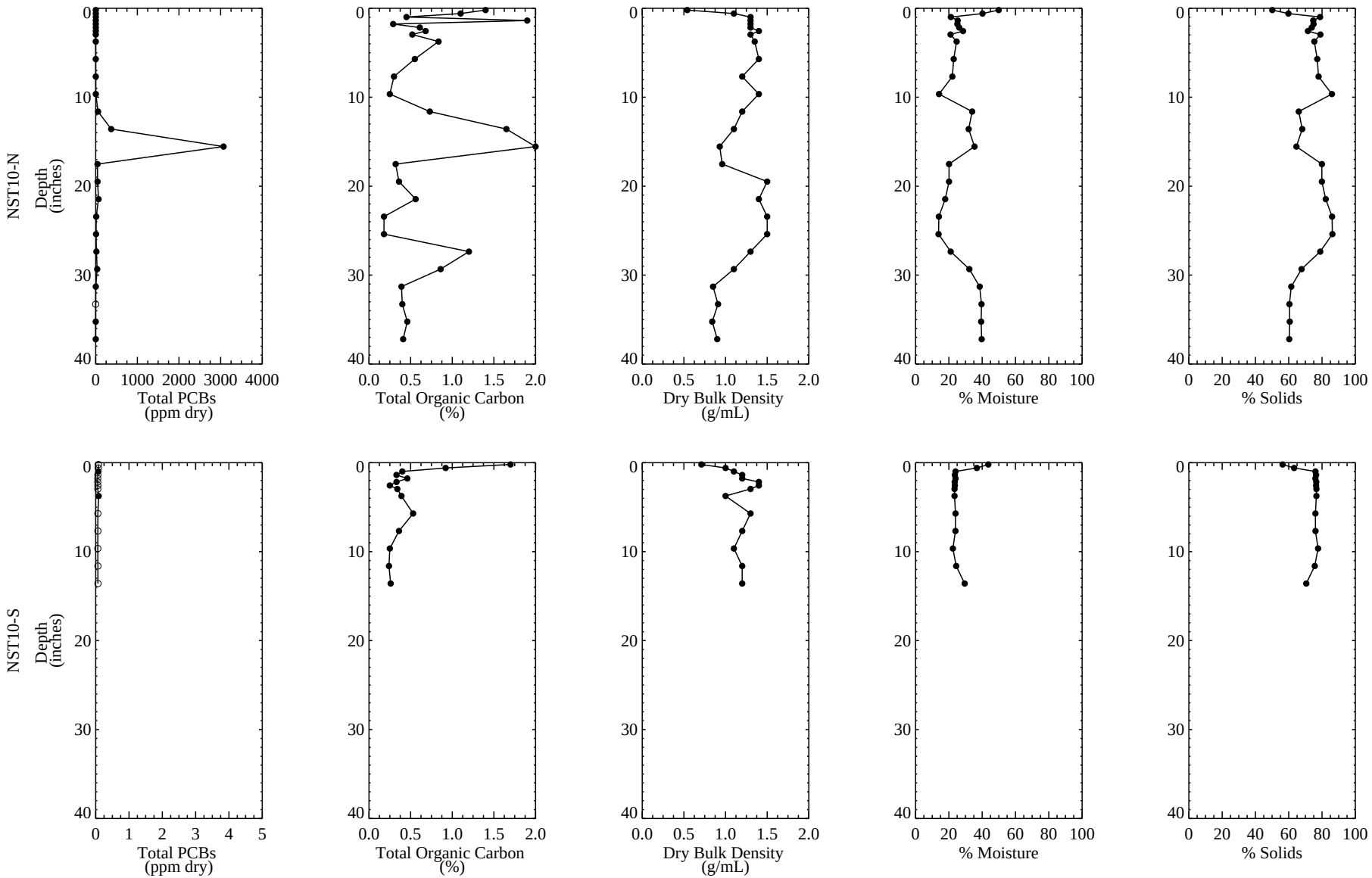


Figure 126. Vertical Profiles for High-Resolution Cores NST10-N and NST10-S

Samples collected during September 2004.

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro

EC - D:\ALCgra\Analysis\ROPS\sediment\pre\profiles\ROPS_CoreProfiles_AugSept2004.pro
Tue Mar 29 17:16:39 2005

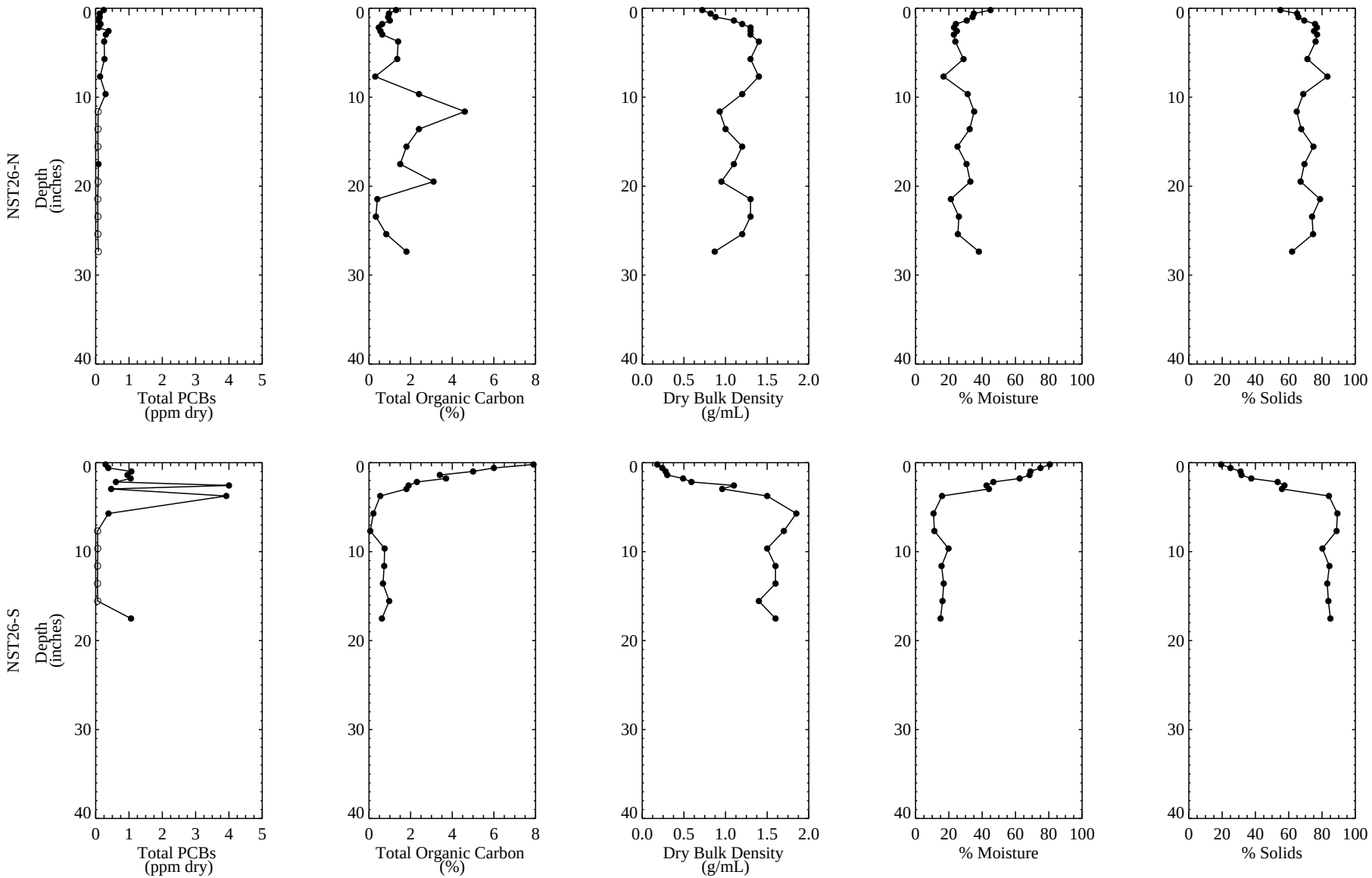


Figure 127. Vertical Profiles for High-Resolution Cores NST26-N and NST26-S

Samples collected during September 2004.

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro

EC - D:\ALCgra\Analysis\ROPS\sediment\pre\profiles\ROPS_CoreProfiles_AugSept2004.pro
Tue Mar 29 17:16:39 2005

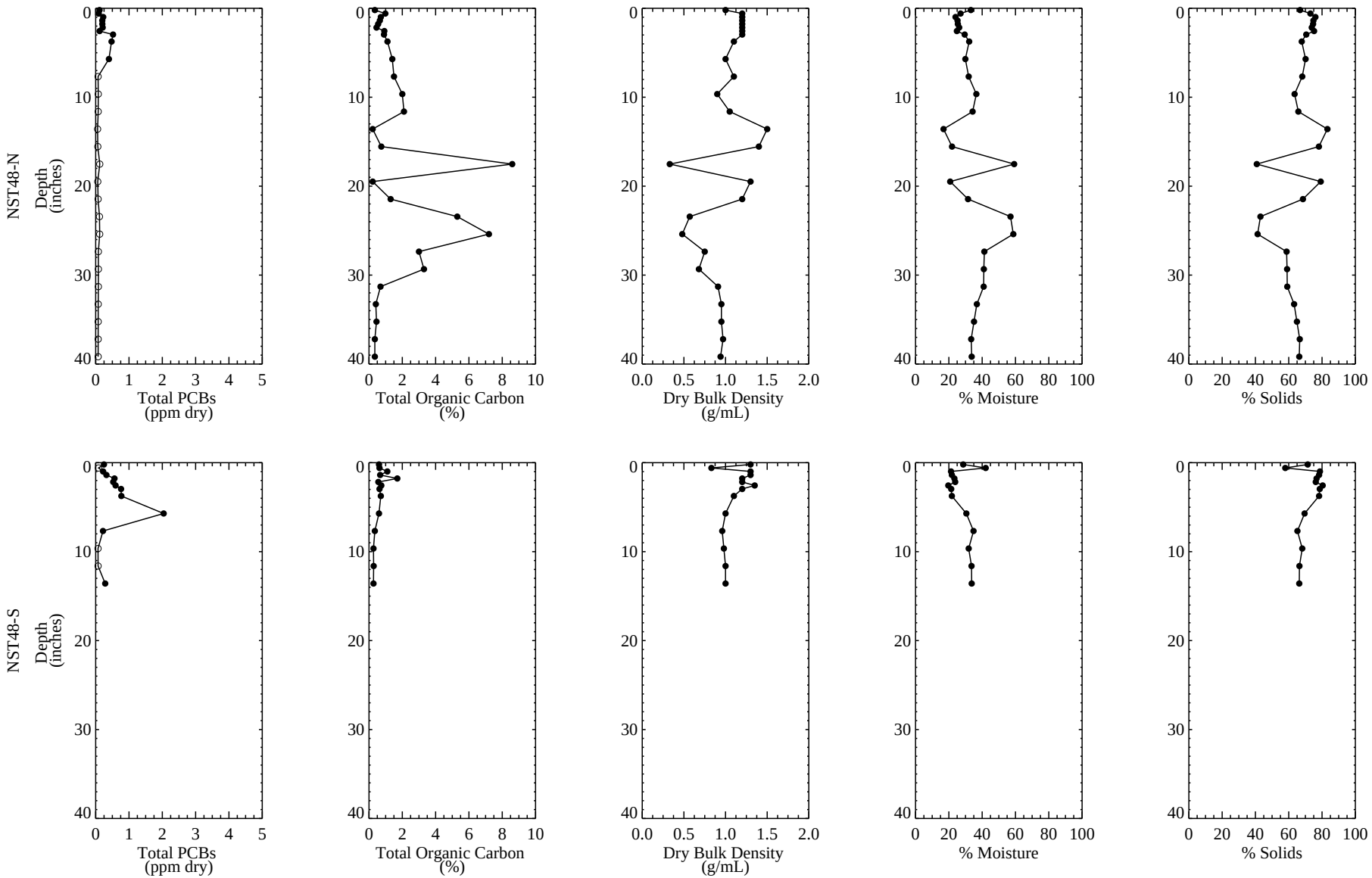


Figure 128. Vertical Profiles for High-Resolution Cores NST48-N and NST48-S

Samples collected during September 2004.

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro

EC - D:\ALCgra\Analysis\ROPS\sediment\pre\profiles\ROPS_CoreProfiles_AugSept2004.pro
Tue Mar 29 17:16:39 2005

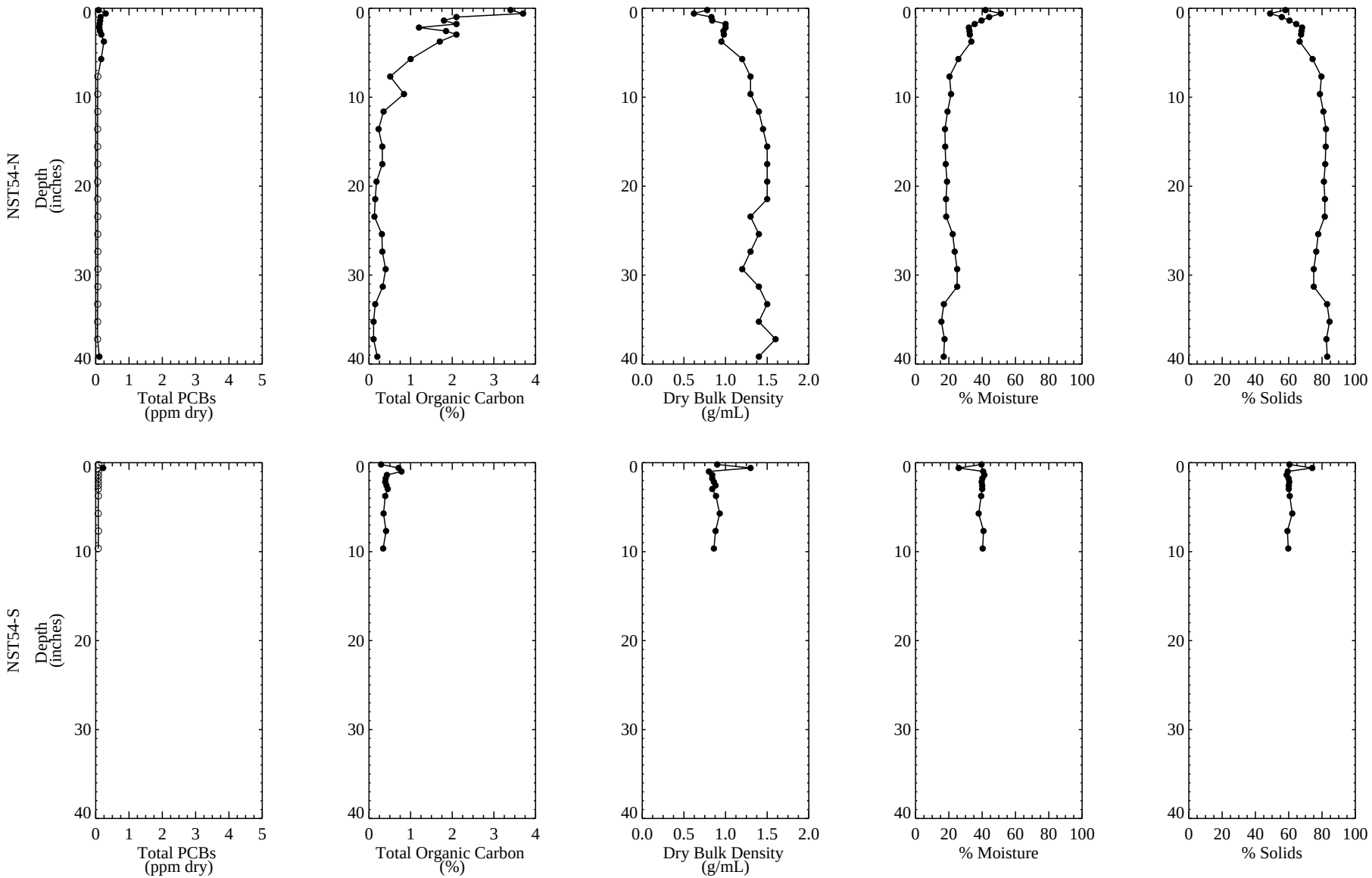


Figure 129. Vertical Profiles for High-Resolution Cores NST54-N and NST54-S

Samples collected during September 2004.

Results plotted at mid-depth. Duplicate results averaged. Values below the practical quantitation limit shown as open circles.

Data table: sediment_aro

EC - D:\ALCgra\Analysis\ROPS\sediment\pre\profiles\ROPS_CoreProfiles_AugSept2004.pro
Tue Mar 29 17:16:40 2005

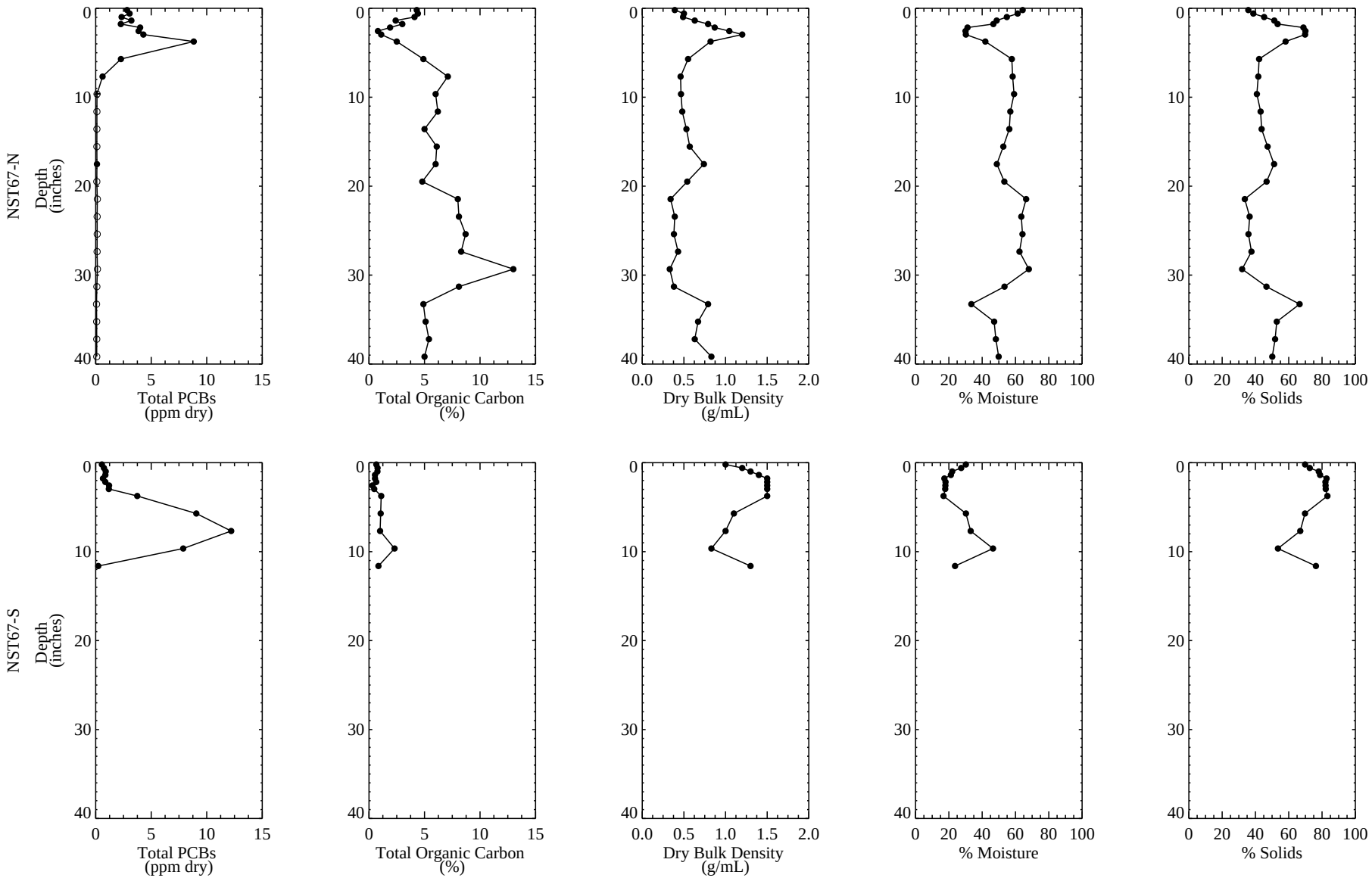


Figure 130. Vertical Profiles for High-Resolution Cores NST67-N and NST67-S

Samples collected during September 2004.

Results plotted at mid-depth. Duplicate results averaged. *Values below the practical quantitation limit shown as open circles.*

If duplicate and sample results are above and below detection limit, average shown as open circle with cross-hair.

Data table: sediment_aro

EC - D:\ALCgra\Analysis\ROPS\sediment\pre\profiles\ROPS_CoreProfiles_AugSept2004.pro
Tue Mar 29 17:16:40 2005

2003 Bank Sampling Program

The collection of bank soils along the lower Grasse River was performed in fall 2003 at the request of the Agencies [i.e., United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), and the St. Regis Mohawk Tribe (SRMT)] in an effort to provide a preliminary understanding of the distribution of polychlorinated biphenyls (PCBs) in near-river soils. These data were not collected with the intention of conducting quantitative estimates of hypothetical risk.

Bank Sampling Locations/Collection Protocol

Bank samples were collected throughout the lower Grasse River from November 18 through 20, 2003 in accordance with the Phase II Grasse River Sampling Work Plan (Alcoa, November 2003). Collection sites were selected at locations that were expected to represent an increased probability of detecting PCBs that potentially could have originated from the river either by high-flow transport or ice scour. To achieve this goal, sampling locations were selected based on either the presumed location of low lying or wetland areas, or the observed presence of ice remnants on the banks during winter 2002-2003. These biased sampling locations allow for the desired, agreed upon qualitative assessment of PCB distribution in near-river soils.

Samples were collected along a total of 24 transects located either on Alcoa property or within Alcoa flowage rights (see Figures 1 through 3). Transects stretched perpendicular to the river and were either 5 or 10 feet in length (distances for each transect are provided on Table 1 and Figures 1 through 3). The starting point of each transect (i.e., 0 feet) was located at the beginning of upland vegetation.

A total of 3 discrete soil samples were collected along each transect at 1, 3, and 5 feet (horizontal distance for transects of 5 feet) or 1, 5, and 10 feet (horizontal distance for transects of 10 feet). Each discrete soil sample location, along with the edge of water and/or beginning of upland vegetation, was determined using differential global positioning system (DGPS) surveying techniques. Each of the 3 discrete soil samples along each transect were collected using an aluminum scoop to represent the top 3 inches of soil, and were then composited to make one representative sample for laboratory analysis per transect.

Visual characterization was determined for each composite sample including general soil type (e.g., sand, silt, clay, organic matter/other matter), as determined using the Unified Soil Classification System (USCS) and approximate grain size (e.g., fine, medium, and coarse). In addition, descriptions of the transect location were recorded in the field log book. Photographs were obtained of each general sampling area and the composite sample. Photographic logs for these samples are provided in Attachment A. All samples were handled, packaged and shipped according to the protocol described in the 2003 Monitoring Work Plan (Alcoa, April 2003).

The composite soil samples were submitted to Northeast Analytical (NEA) in Schenectady, New York for PCB (Aroclor) and total organic carbon (TOC) analysis. Quality assurance/quality control (QA/QC) samples included one blind duplicate sample and one matrix spike/matrix spike duplicate (MS/MSD) sample per 20 samples collected. The blind duplicate samples were analyzed for PCB (Aroclor) and TOC. The MS/MSD samples were analyzed for PCB (Aroclor) only. Rinse blank samples were collected before and after sampling performed with the aluminum scoop (non-disposable equipment) and were submitted for PCB (Aroclor).

Bank Sample Results

Bank sample results are presented on Table 1 and summarized on Figures 1 through 3. In summary, total PCB Aroclor results range from non-detect (at a detection limit of 0.07 parts per million [ppm]) to 7.54 ppm. Considering all PCB results:

- 46% of samples resulted in non-detectable PCB levels;
- 83% of the samples had PCBs less than 1 ppm;
- 96% of the samples had PCBs less than 5 ppm; and
- 100% of the samples had PCBs less than 10 ppm.

Bank samples were collected from locations that were expected to represent an increased probability of detecting PCBs. Data indicate that ice and/or high-flow related transport of PCB-containing sediments to the bank areas is not a significant exposure pathway. Further, data do not suggest that there is lateral deposition away from the channel because the levels immediately adjacent to the channel (all samples collected within 5 or 10 feet of the river) are low.

The levels of PCBs found in bank samples are lower than those used to evaluate direct contact with sediments in the approved Human Health Risk Assessment Update (RA Update; Alcoa, July 2002), and these sediment concentrations did not present an unacceptable risk to individuals contacting this material. In the RA Update, the exposure assumptions considered sediments as equivalent to soils, and the risks from exposure to 50 ppm sediments were within USEPA's acceptable risk range.

As such, based on the analytical results observed from the bank sampling program, coupled with the information developed for the site-specific Human Health Risk Assessment Update (Alcoa, July 2002), no further study is recommended for this potential exposure pathway.

References

Alcoa Inc. *2003 Monitoring Work Plan*. April 2003.

Alcoa Inc. *Phase II Grasse River Sampling Work Plan.* November 2003.

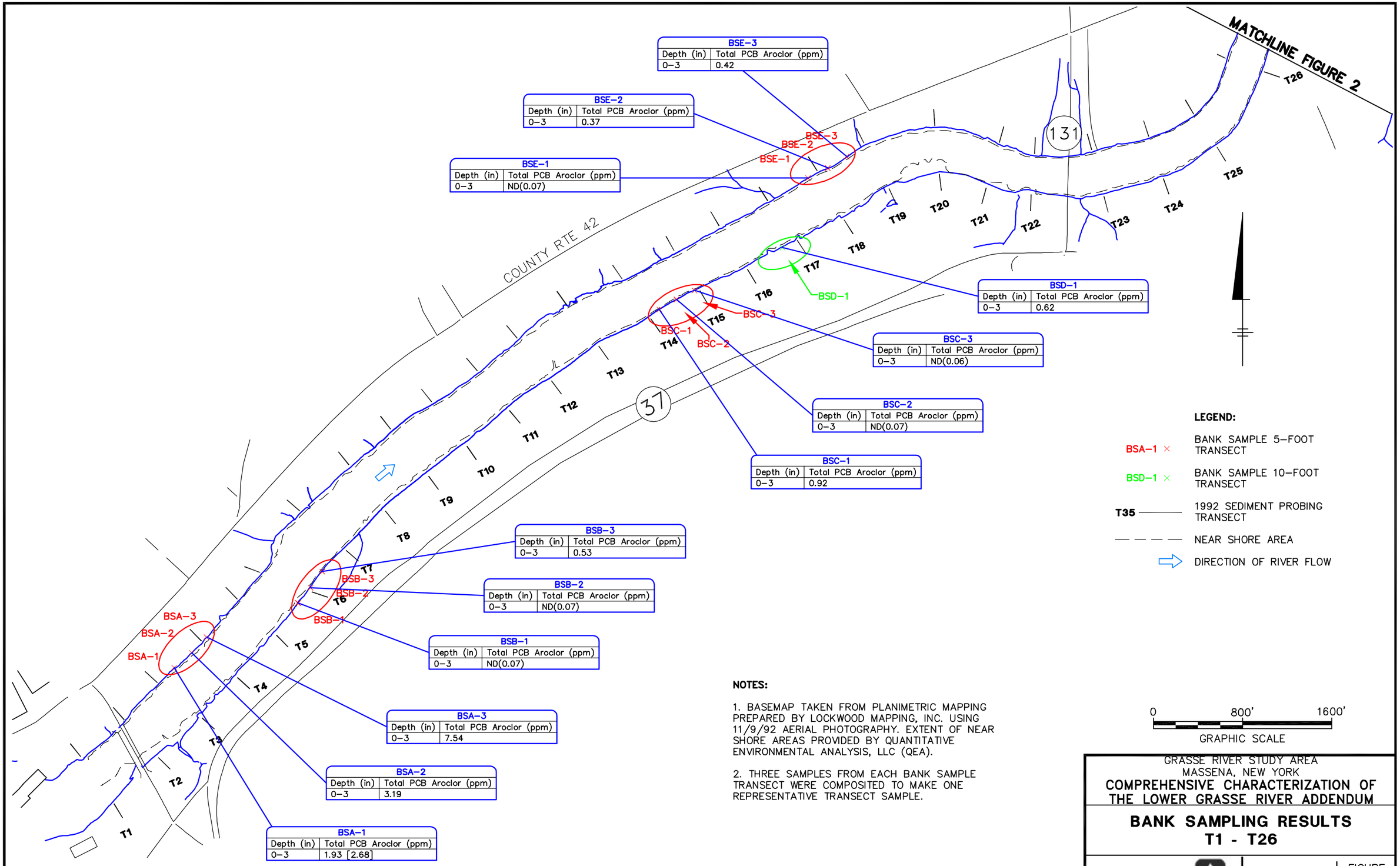
Alcoa Inc. *Human Health Risk Assessment Update; Grasse River Study Area, Massena, New York.* July 2002.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

Table 1
Comprehensive Characterization of the Lower Grasse River Addendum
Bank Sampling Results

Transect[1]	Transect Length (ft)	Total PCB Aroclor (ppm)[2,3]	TOC (%)[3]	Percent Solids (%)[3]
BSA-1	5	1.93 [2.68]	3.6 [3.1]	66.8 [69.0]
BSA-2	5	3.19	2.0	65.6
BSA-3	5	7.54	3.1	77.0
BSB-1	5	ND(0.07)	1.4	70.3
BSB-2	5	ND(0.07)	0.8	70.5
BSB-3	5	0.53	5.2	57.2
BSC-1	5	0.92	4.2	68.0
BSC-2	5	ND(0.07)	1.9	74.1
BSC-3	5	ND(0.06)	1.8	78.5
BSD-1	10	0.62	4.6	56.5
BSE-1	5	ND(0.07)	2.4	63.7
BSE-2	5	0.37	6.4	61.8
BSE-3	5	0.42	6.6	49.6
BSF-1	10	0.76	7.6	63.1
BSG-1	10	ND(0.07)	3.3	71.6
BSG-2	10	ND(0.06)	3.0	73.3
BSH-1	10	0.13	5.6	65.6
BSH-2	10	ND(0.07)	1.0	74.7
BSH-3	10	ND(0.06)	1.9	75.3
BSI-1	10	ND(0.09)	9.1	55.5
BSI-2	10	ND(0.06)	2.1	73.3
BSJ-1	10	0.38	6.0	66.7
BSJ-2	10	0.21 [0.23]	7.4 [6.8]	59.6 [60.2]
BSJ-3	10	1.45	21.0	23.6

Notes:
1. Three grab samples (0 to 3 inches) were collected along each transect at a distance of either 1, 3, and 5 feet or 1, 5, and 10 feet from the beginning of upland vegetation depending on the transect (as indicated above). All grab samples collected along each transect were composited into one sample for laboratory analyses. Transect locations are presented on **Figures 1 through 3**.
2. ND indicates a non-detect result with the practical quantitation limit provided in parenthesis.
3. Duplicate results are provided in brackets.



NOTES:

1. BASEMAP TAKEN FROM PLANIMETRIC MAPPING PREPARED BY LOCKWOOD MAPPING, INC. USING 11/9/92 AERIAL PHOTOGRAPHY. EXTENT OF NEAR SHORE AREAS PROVIDED BY QUANTITATIVE ENVIRONMENTAL ANALYSIS, LLC (QEA).

2. THREE SAMPLES FROM EACH BANK SAMPLE TRANSECT WERE COMPOSITED TO MAKE ONE REPRESENTATIVE TRANSECT SAMPLE.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

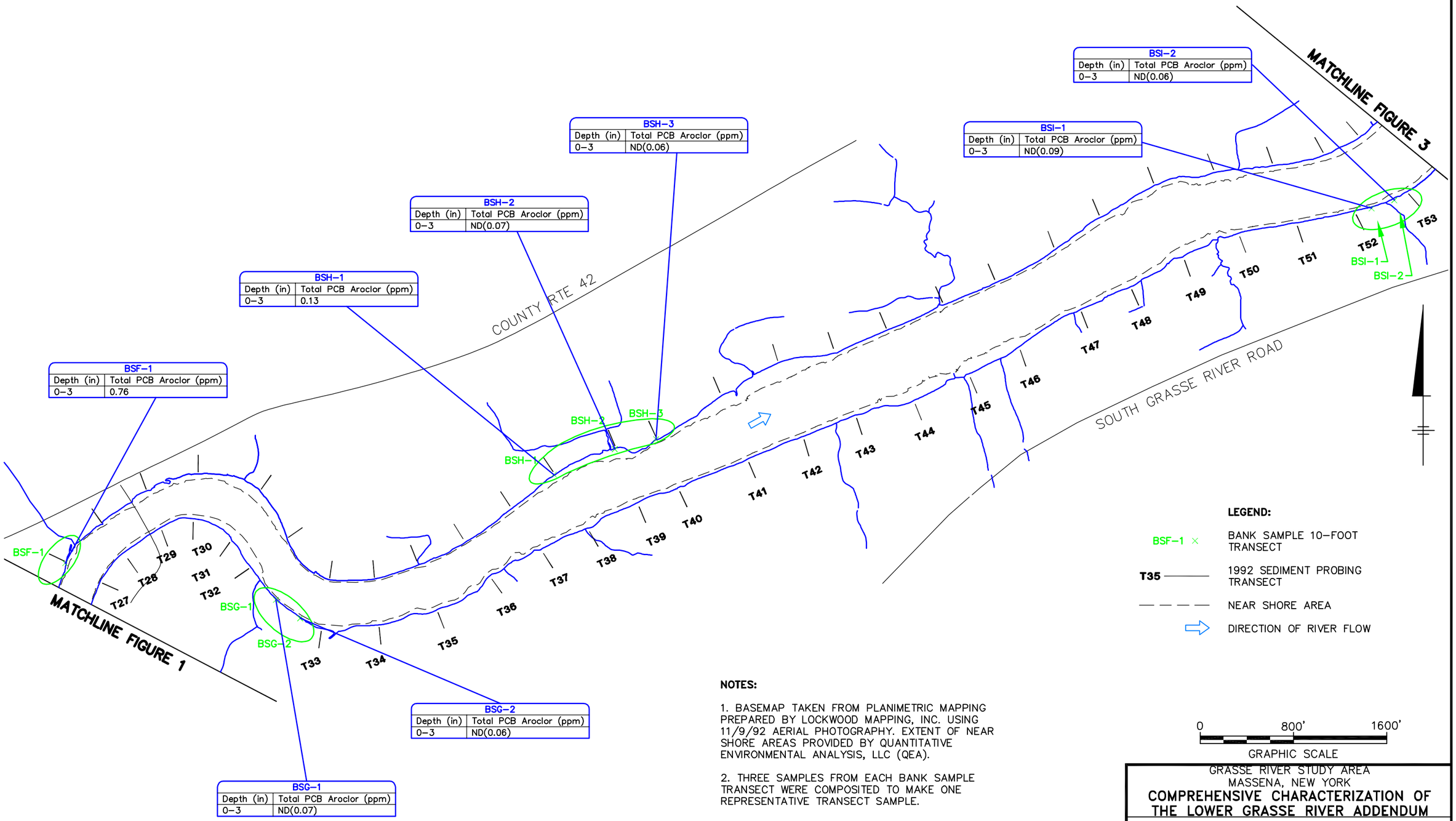
COMPREHENSIVE CHARACTERIZATION OF THE LOWER GRASSE RIVER ADDENDUM

BANK SAMPLING RESULTS
T1 - T26

ALCOA

FIGURE
1

X: 10485X00.DWG, X04.DWG, 10485X01.TIF
L: ON=*, OFF=*REF*
P: PAGESET/PLT-BL
3/19/04 SYR-85-CBM LAF LJP
10485001/10485G34.DWG



BSF-1	
Depth (in)	Total PCB Aroclor (ppm)
0–3	0.76

BSH-1	
Depth (in)	Total PCB Aroclor (ppm)
0–3	0.13

BSH-2	
Depth (in)	Total PCB Aroclor (ppm)
0–3	ND(0.07)

BSH-3	
Depth (in)	Total PCB Aroclor (ppm)
0–3	ND(0.06)

BSI-1	
Depth (in)	Total PCB Aroclor (ppm)
0–3	ND(0.09)

BSI-2	
Depth (in)	Total PCB Aroclor (ppm)
0–3	ND(0.06)

BSG-1	
Depth (in)	Total PCB Aroclor (ppm)
0–3	ND(0.07)

BSG-2	
Depth (in)	Total PCB Aroclor (ppm)
0–3	ND(0.06)

LEGEND:

BSF–1 × BANK SAMPLE 10–FOOT TRANSECT

T35 ——— 1992 SEDIMENT PROBING TRANSECT

— — — — NEAR SHORE AREA

⇨ DIRECTION OF RIVER FLOW

NOTES:

1. BASEMAP TAKEN FROM PLANIMETRIC MAPPING PREPARED BY LOCKWOOD MAPPING, INC. USING 11/9/92 AERIAL PHOTOGRAPHY. EXTENT OF NEAR SHORE AREAS PROVIDED BY QUANTITATIVE ENVIRONMENTAL ANALYSIS, LLC (QEA).

2. THREE SAMPLES FROM EACH BANK SAMPLE TRANSECT WERE COMPOSITED TO MAKE ONE REPRESENTATIVE TRANSECT SAMPLE.

0 800' 1600'

GRAPHIC SCALE

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

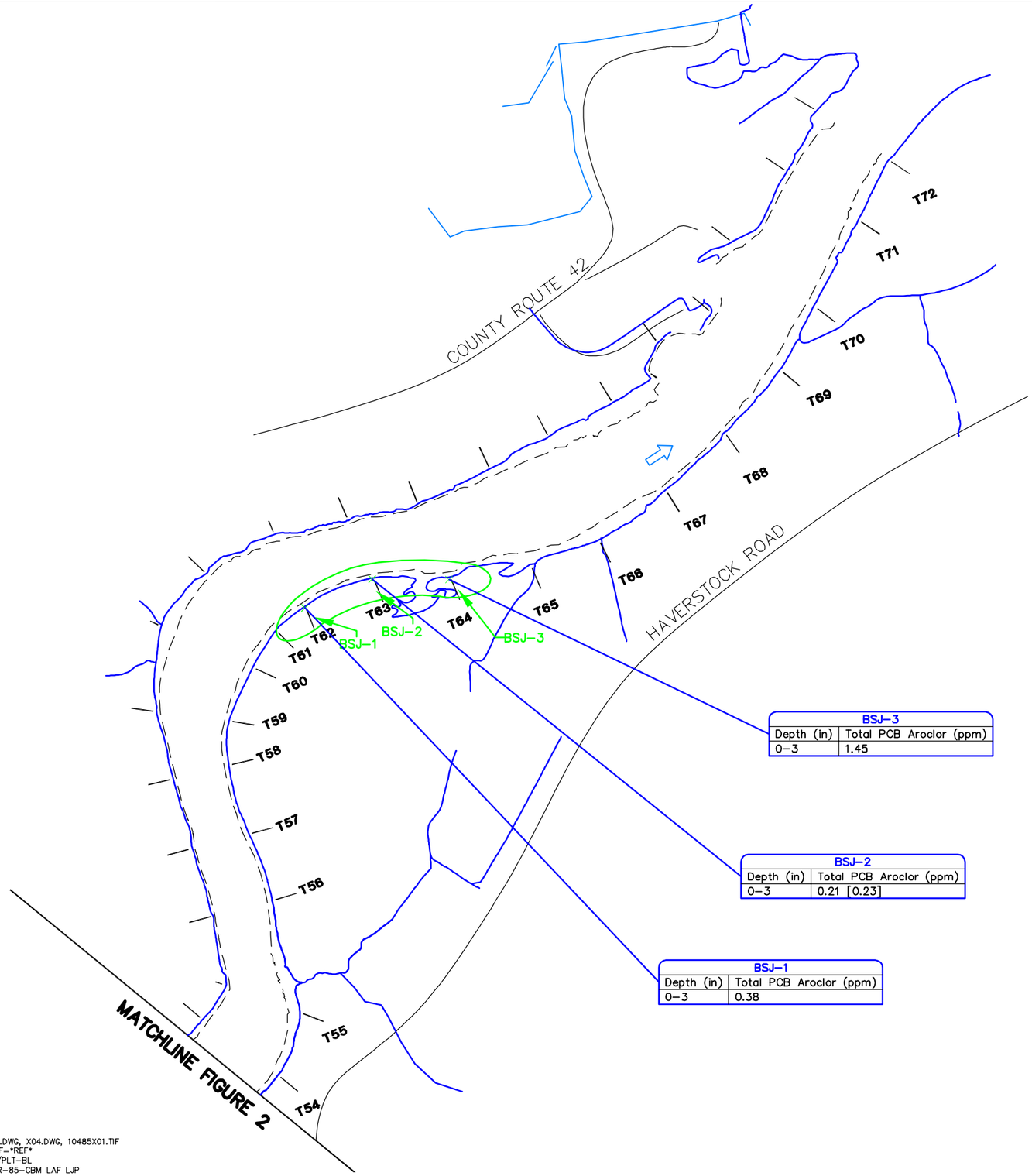
COMPREHENSIVE CHARACTERIZATION OF THE LOWER GRASSE RIVER ADDENDUM

BANK SAMPLING RESULTS T27 - T53

ALCOA

FIGURE **2**

X: 10485X00.DWG, X04.DWG, 10485X01.TIF
L: ON=*, OFF=*REF*
P: PAGESET/PLT-BL
3/19/04 SYR-85-CBM LAF LJP
10485001/10485G35.DWG



BSJ-3	
Depth (in)	Total PCB Aroclor (ppm)
0-3	1.45

BSJ-2	
Depth (in)	Total PCB Aroclor (ppm)
0-3	0.21 [0.23]

BSJ-1	
Depth (in)	Total PCB Aroclor (ppm)
0-3	0.38

LEGEND:

BSJ-1 × BANK SAMPLE 10-FOOT TRANSECT

T35 ——— 1992 SEDIMENT PROBING TRANSECT

— — — — NEAR SHORE AREA

⇨ DIRECTION OF RIVER FLOW

NOTES:

1. BASEMAP TAKEN FROM PLANIMETRIC MAPPING PREPARED BY LOCKWOOD MAPPING, INC. USING 11/9/92 AERIAL PHOTOGRAPHY.

2. EXTENT OF NEAR SHORE AREAS PROVIDED BY QUANTITATIVE ENVIRONMENTAL ANALYSIS, LLC (QEA).

3. THREE SAMPLES FROM EACH BANK SAMPLE TRANSECT WERE COMPOSITED TO MAKE ONE REPRESENTATIVE TRANSECT SAMPLE.

0 800' 1600'

GRAPHIC SCALE

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

COMPREHENSIVE CHARACTERIZATION OF THE LOWER GRASSE RIVER ADDENDUM

BANK SAMPLING RESULTS
T54 - T72

ALCOA

FIGURE
3

X: 10485X00.DWG, X04.DWG, 10485X01.TIF
L: ON=*, OFF=*REF*
P: PAGESET/PLT-BL
3/19/04 SYR-85-CBM LAF LJP
10485001/10485G36.DWG

Attachment A

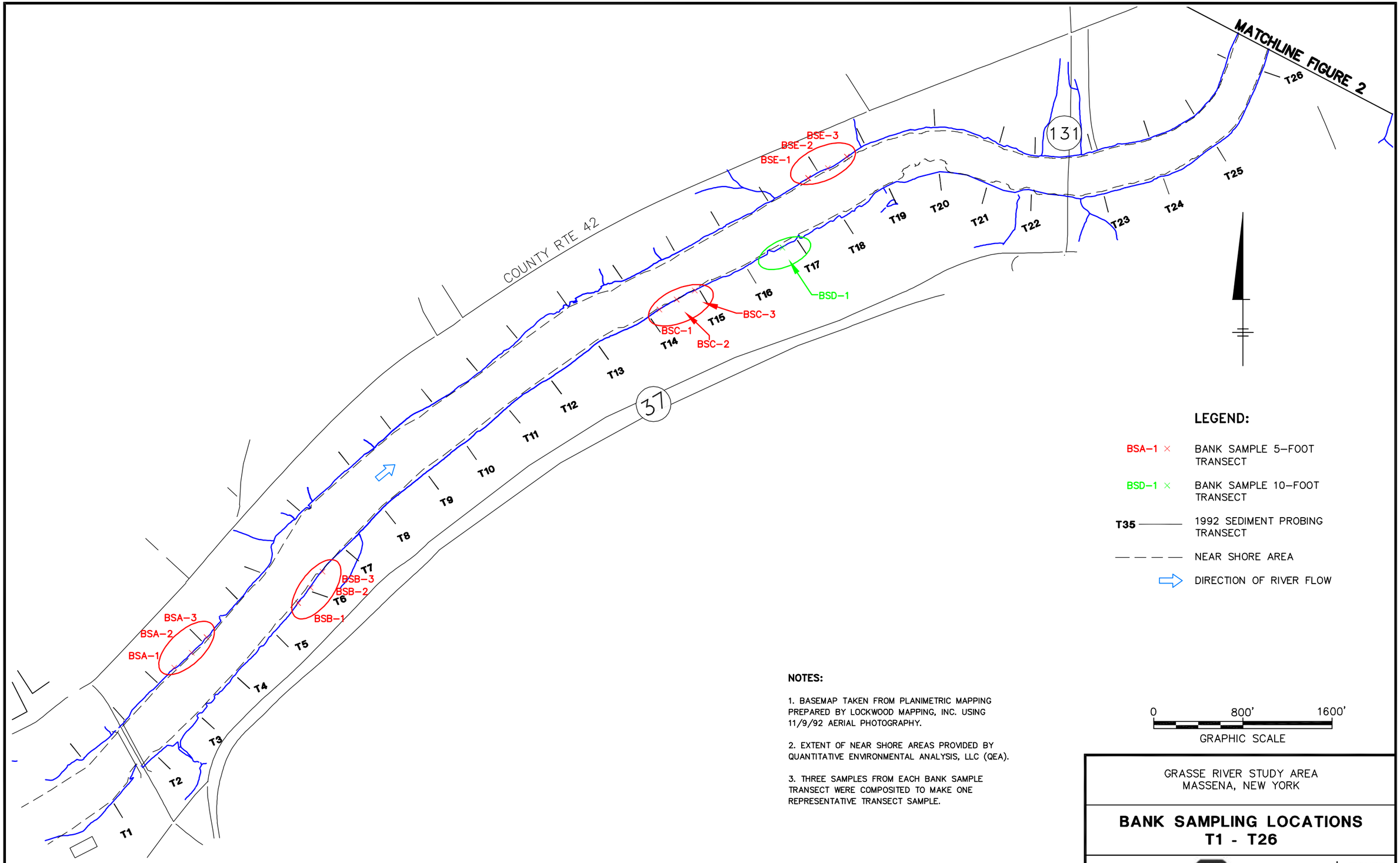
Grasse River Phase II Bank Sampling Photo Log

Grasse River Phase II Bank Sampling Photo Log

Part 1 of 3

T1 to T26

November 2003



NOTES:

1. BASEMAP TAKEN FROM PLANIMETRIC MAPPING PREPARED BY LOCKWOOD MAPPING, INC. USING 11/9/92 AERIAL PHOTOGRAPHY.

2. EXTENT OF NEAR SHORE AREAS PROVIDED BY QUANTITATIVE ENVIRONMENTAL ANALYSIS, LLC (QEA).

3. THREE SAMPLES FROM EACH BANK SAMPLE TRANSECT WERE COMPOSITED TO MAKE ONE REPRESENTATIVE TRANSECT SAMPLE.

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

BANK SAMPLING LOCATIONS
T1 - T26

ALCOA

FIGURE
1

X: 10470X00, X04.DWG, 1047001.TIF
L: ON=*, OFF=*REF*
P: PAGESET/PLT-BL
12/16/03 SYR-85-CBM LAF LJP
10470002/10470G04.DWG

BSA-1

Moderately steep, grassy slope; some trees (downed and living)

0 – 3”

Dark brown stiff silt, some fine sand, organics (roots, leaves, grass)

BSA-2

Moderately steep, grassy slope, some small brush, trees; rocky near edge of water

0 – 3”

Dark brown stiff silt, trace fine sand, organics (grass, leaves, roots, worms), some fine to coarse gravel

BSA-3

Moderately steep, grassy slope, rocky near edge of water, one tree, some downed branches

0 – 3”

Dark brown fine sand with silt, trace grey clay, trace coarse gravel, organics (roots, leaves, twigs)

BSB-1

Moderate to steep sloped, dense grass and shrubby vegetation, some small trees

0 – 3”

Dark brown silt, some fine sand, grey silty clay, organics (roots, worms, twigs)

BSB-2

Moderate to steep slope, dense brush and grasses, rocky near edge of water

0 – 3”

Wet, silty grey clay, trace fine to medium gravel, organics (roots, leaves, twigs)

BSB-3

Moderately sloped bank, large rocks (boulders) at edge of water, dense grass and shrubs, some small trees

0 – 3”

Wet, brown/grey silty clay, trace fine sand, some medium to coarse gravel, organics (roots, twigs, leaves)

BSC-1

Moderately sloped bank with dense brush and small trees; rocky near edge of water (rocks: 1-2 ft diameter)

0 – 3”

Brown/dark brown silt, trace fine sand, some fine to medium gravel, organics (roots, twigs, worms), trace clay

BSC-2

Steep, rocky slope, some grasses and trees, wood-deck structure along side of transect; rocky edge of water (1/2-2+ ft diameter)

0 – 3”

Dark brown/grey stiff silt, some grey clay, trace fine sand, organics (worms, moss, roots)

BSC-3

Moderately steep, rocky slope, some trees, small brush, grasses, rocky shore (rocks: 3 in-2+ ft diameter)

0 – 3”

Grey brown clayey silt, some fine sand, organics (worms, roots, leaves, twigs), trace fine to medium gravel

BSD-1

Gentle to moderate slope, dense grass, some small shrubs, rocky shore (downed tree limbs near shore as well)

0 – 3”

Brown silt, trace fine sand with root structure

BSE-1

Moderate slope, dense grass, small shrubs and trees, some rocks near edge of water (gravel to cobble size)

0 – 3”

Grey brown stiff clay, some fine sand and silt, some organics (roots, leaves)

BSE-2

Gentle slope, dense grass down to edge of water

0 – 3”

Dark brown grey clayey silt, trace fine sand, organics (roots, twigs, leaves)

BSE-3

Moderate slope, dense grass down to edge of water

0 – 3”

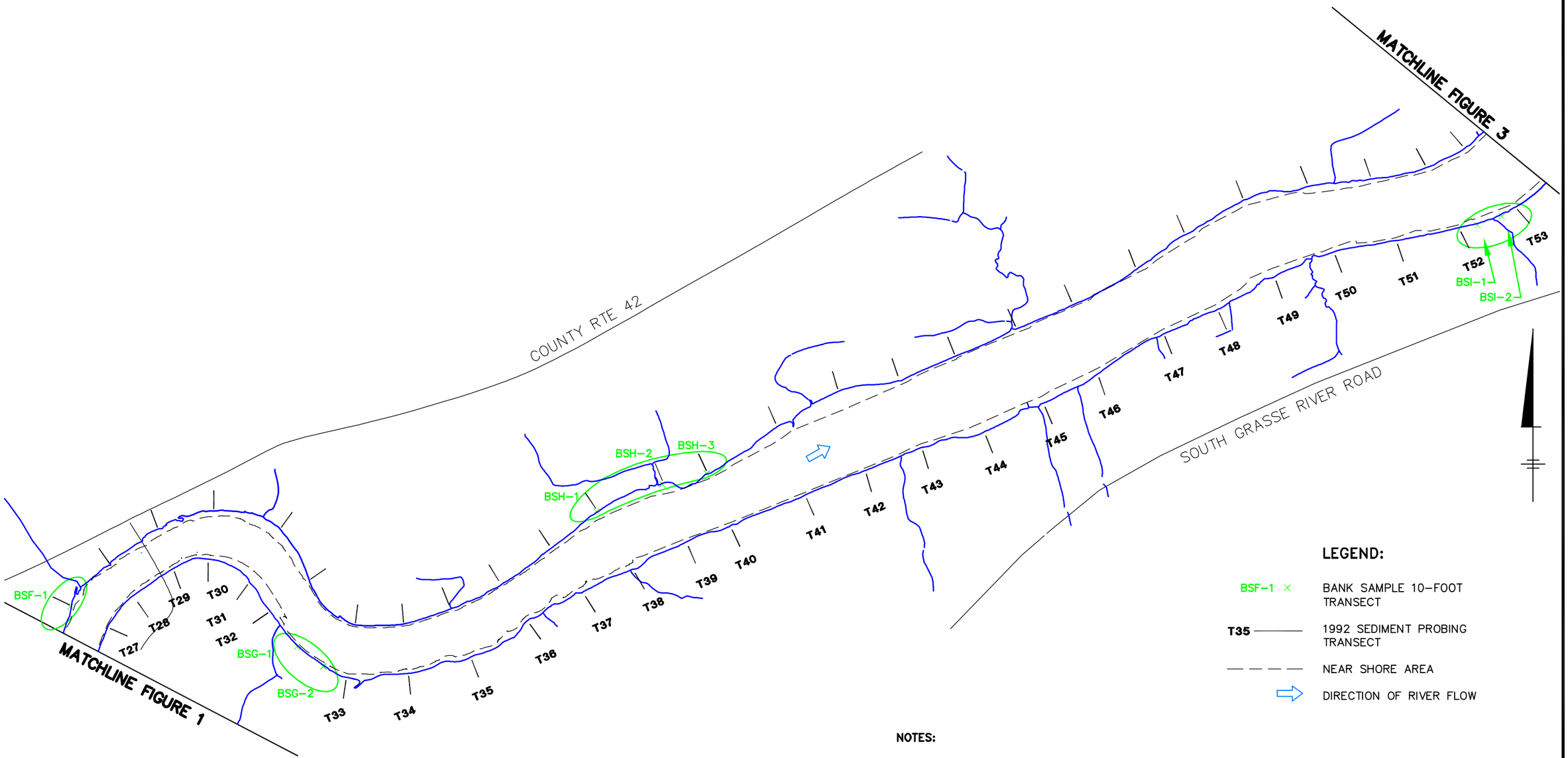
Dark brown silt within grass root structures

Grasse River Phase II Bank Sampling Photo Log

Part 2 of 3

T27 to T53

November 2003



LEGEND:

BSF-1 ×	BANK SAMPLE 10-FOOT TRANSECT
T35 ———	1992 SEDIMENT PROBING TRANSECT
— — — —	NEAR SHORE AREA
⇨	DIRECTION OF RIVER FLOW

NOTES:

1. BASEMAP TAKEN FROM PLANIMETRIC MAPPING PREPARED BY LOCKWOOD MAPPING, INC. USING 11/9/92 AERIAL PHOTOGRAPHY.

2. EXTENT OF NEAR SHORE AREAS PROVIDED BY QUANTITATIVE ENVIRONMENTAL ANALYSIS, LLC (QEA).

3. THREE SAMPLES FROM EACH BANK SAMPLE TRANSECT WERE COMPOSITED TO MAKE ONE REPRESENTATIVE TRANSECT SAMPLE.

0 800' 1600'

GRAPHIC SCALE

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

BANK SAMPLING LOCATIONS
T27 - T53

ALCOA

FIGURE
2

X: 10470X00, X04.DWG, 10470X01.TIF
L: ON=*, OFF=*REF*
P: PAGESET/PLT-BL
12/16/03 SYR-85-CBM LAF LJP
10470002/10470G05.DWG

BSF-1

Gentle to moderate slope, dense grass, small shrubs

Note: Drainage swale ~3 ft downstream of transect

0 – 3”

Dark brown silt within roots and organics (twigs, leaves)

BSG-1

Steep slope at edge of water; moderate uphill; dense grass, some small shrubs

0 – 3”

Dark brown silt, some fine sand, trace fine gravel within root structure

BSG-2

Wetland near edge of water (cattails), steep bank slope with grass, small shrubs

0 – 3”

Dark brown silt and sand, trace fine gravel with root structures

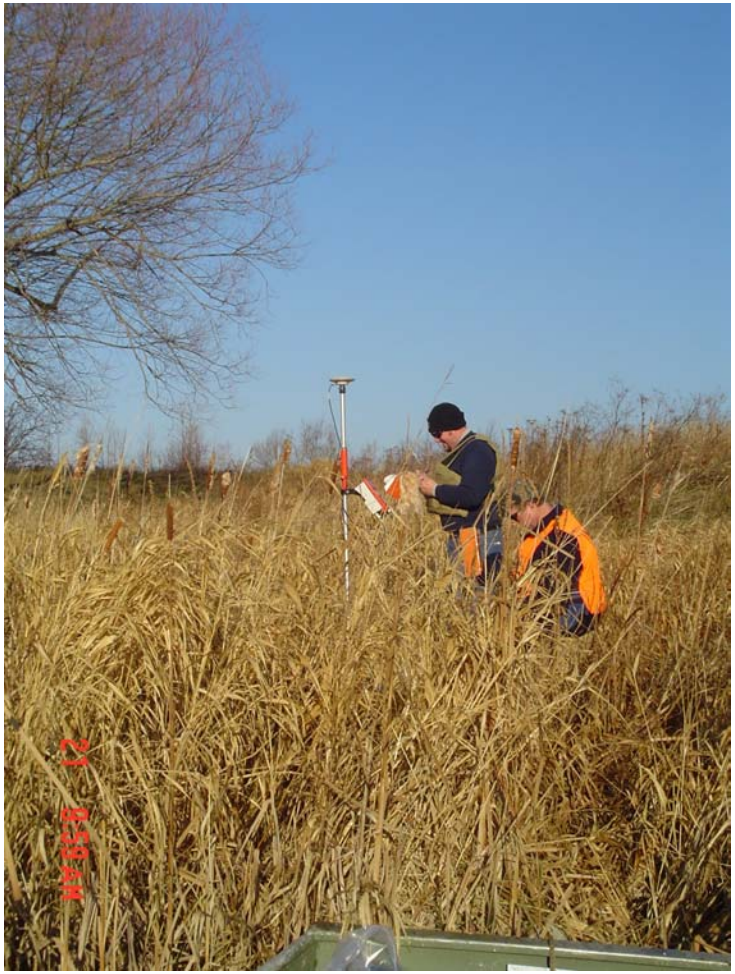
BSH-1

Little (gentle) to no slope, dense grass to edge of water

0 – 3”

Dark brown silt, organics (leaves, twigs) within root structure

BSH-2

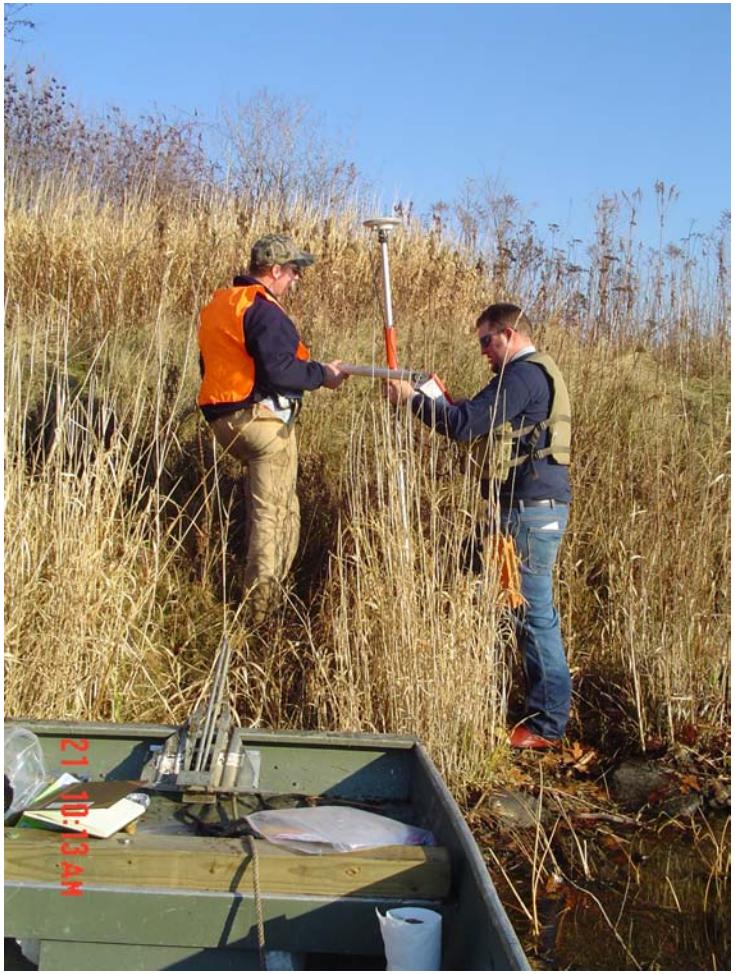


Wetland (cattails) near edge of water, bank is gently to moderately sloped; dense grass

0 – 3”

Brown silty clay, organics, root structures

BSH-3



Moderate to steep sloped bank dense grass, small shrubs; some boulders near edge of water (~1-2+ ft diameter); wetland area near shore

0 – 3”

Brown/dark brown silt, trace fine sand, trace clay, some organics (roots, leaves, twigs)

BSI-1

Level, flat slope, grass

0 – 3”

Dark brown silt within root structure

BSI-2

Steep eroded bank, flat to gentle slope, grassy vegetation

0 – 3”

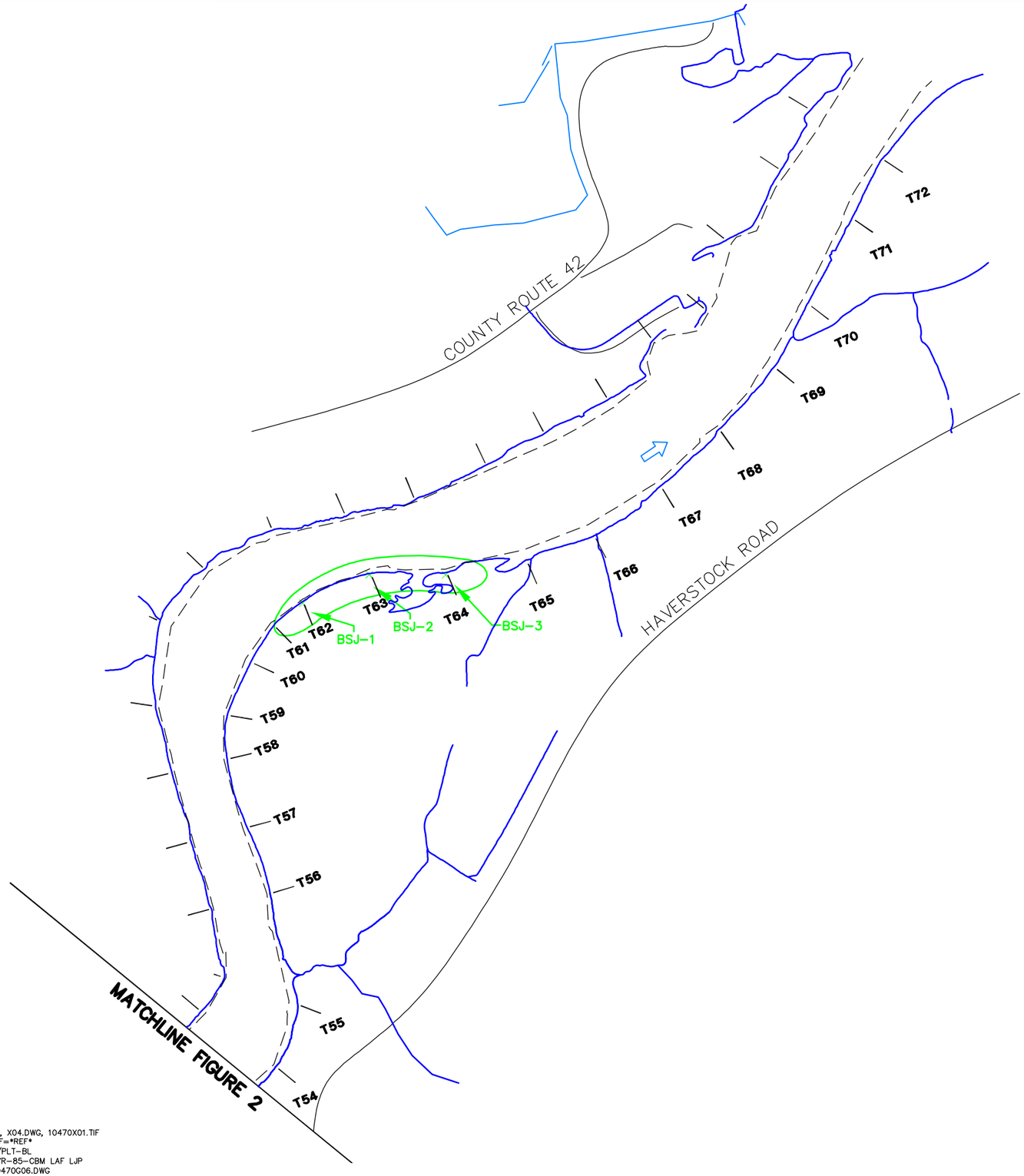
Brown, silty clay within root structure

Grasse River Phase II Bank Sampling Photo Log

Part 3 of 3

T54 to T72

November 2003



LEGEND:

BSJ-1 ×	BANK SAMPLE 10-FOOT TRANSECT
T35 ———	1992 SEDIMENT PROBING TRANSECT
— — — —	NEAR SHORE AREA
⇨	DIRECTION OF RIVER FLOW

NOTES:

1. BASEMAP TAKEN FROM PLANIMETRIC MAPPING PREPARED BY LOCKWOOD MAPPING, INC. USING 11/9/92 AERIAL PHOTOGRAPHY.

2. EXTENT OF NEAR SHORE AREAS PROVIDED BY QUANTITATIVE ENVIRONMENTAL ANALYSIS, LLC (QEA).

3. THREE SAMPLES FROM EACH BANK SAMPLE TRANSECT WERE COMPOSITED TO MAKE ONE REPRESENTATIVE TRANSECT SAMPLE.

0 800' 1600'

GRAPHIC SCALE

GRASSE RIVER STUDY AREA
MASSENA, NEW YORK

BANK SAMPLING LOCATIONS
T54 - T72

ALCOA

FIGURE
3

X: 10470X00, X04.DWG, 10470X01.TIF
L: ON=*, OFF=*REF*
P: PAGESET/PLT-BL
12/16/03 SYR-85-CBM LAF LJP
10470002/10470G06.DWG

BSJ-1

Gentle slope to edge of water, wetland grasses near edge of water, dense grass on bank

0 – 3”

Dark brown silt within root structure, organics (roots)

BSJ-2

Gentle to no slope, dense grass

0 – 3”

Dark brown silt within root structure, organics (wood, twigs)

BSJ-3

Flat, level bank, dense grass

0 – 3”

Dark brown silt within root structure