Attachment 1
Radiological Profiles of Surface Soil

Attachment 1

Distribution of Cobalt-60 with Depth, (pCi/kg wet)

Depth	TS-155 (Beside WHT Moat)	TS-158 (Storage Area)	TS-171 (Under VC)
Asphalt	---	183	414
0-2"	18,600	9880	264
2-4"	5290	8880	< 99
4-6"	1270	866	< 93
6-8"	201	17.5	137
8-10"	95	201	< 104
10-12"	215	124	< 98
12-14"	—	< 96	781
14-16"	---	< 45	—

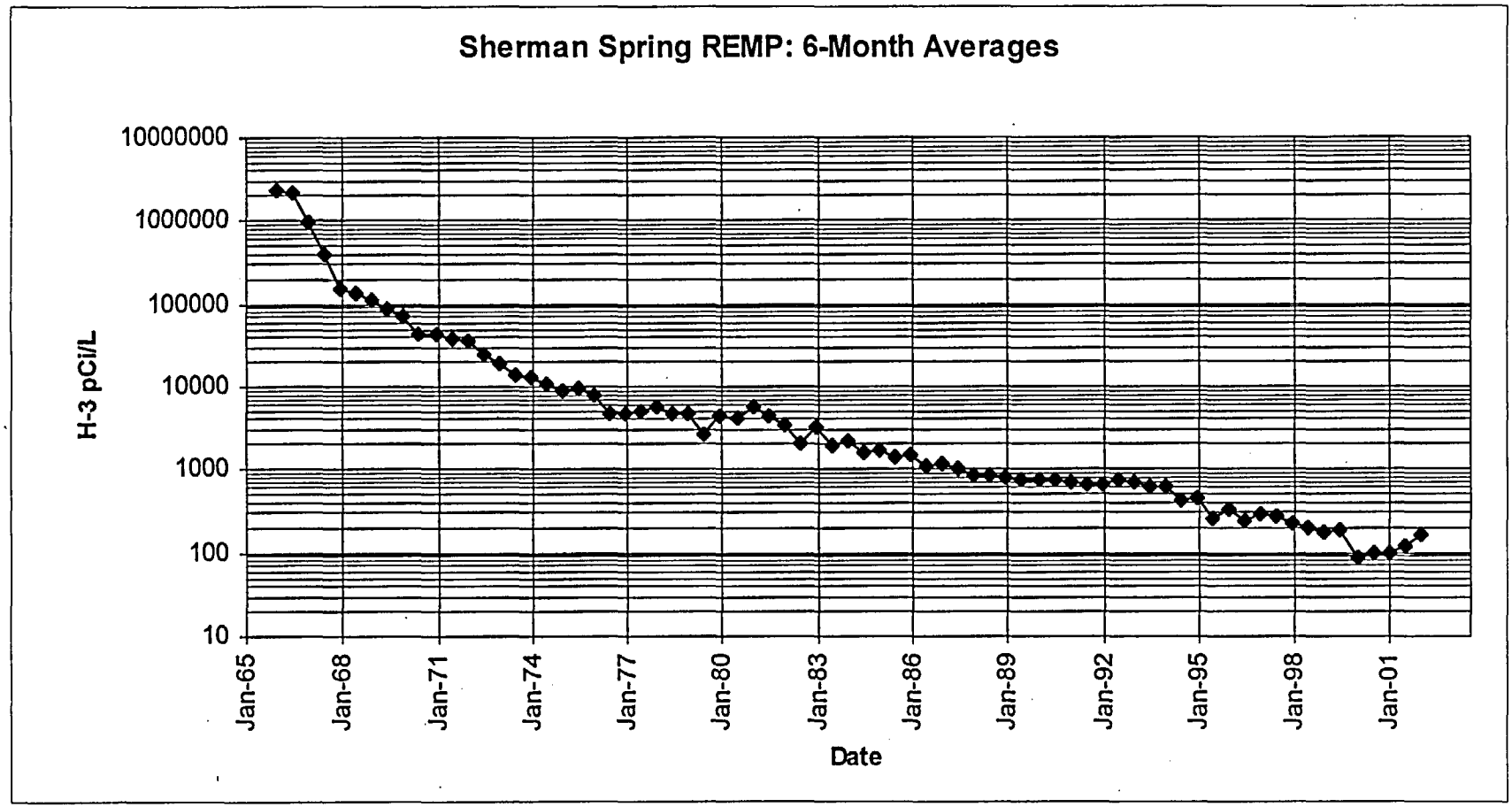
Distribution of Silver-108M with Depth, (pCi/kg wet)

Depth	TS-155 (Beside WHT Moat)	TS-158 (Storage Area)	TS-171 (Under VC)
Asphalt	---	< 56	< 55
0-2"	37,400	20,600	< 66
2-4"	5030	3940	< 44
4-6"	1100	149	< 51
6-8"	425	< 61	< 52
8-10"	187	< 59	< 51
10-12"	157	226	< 42
12-14"	—	< 61	< 53
14-16"	—	<60	—

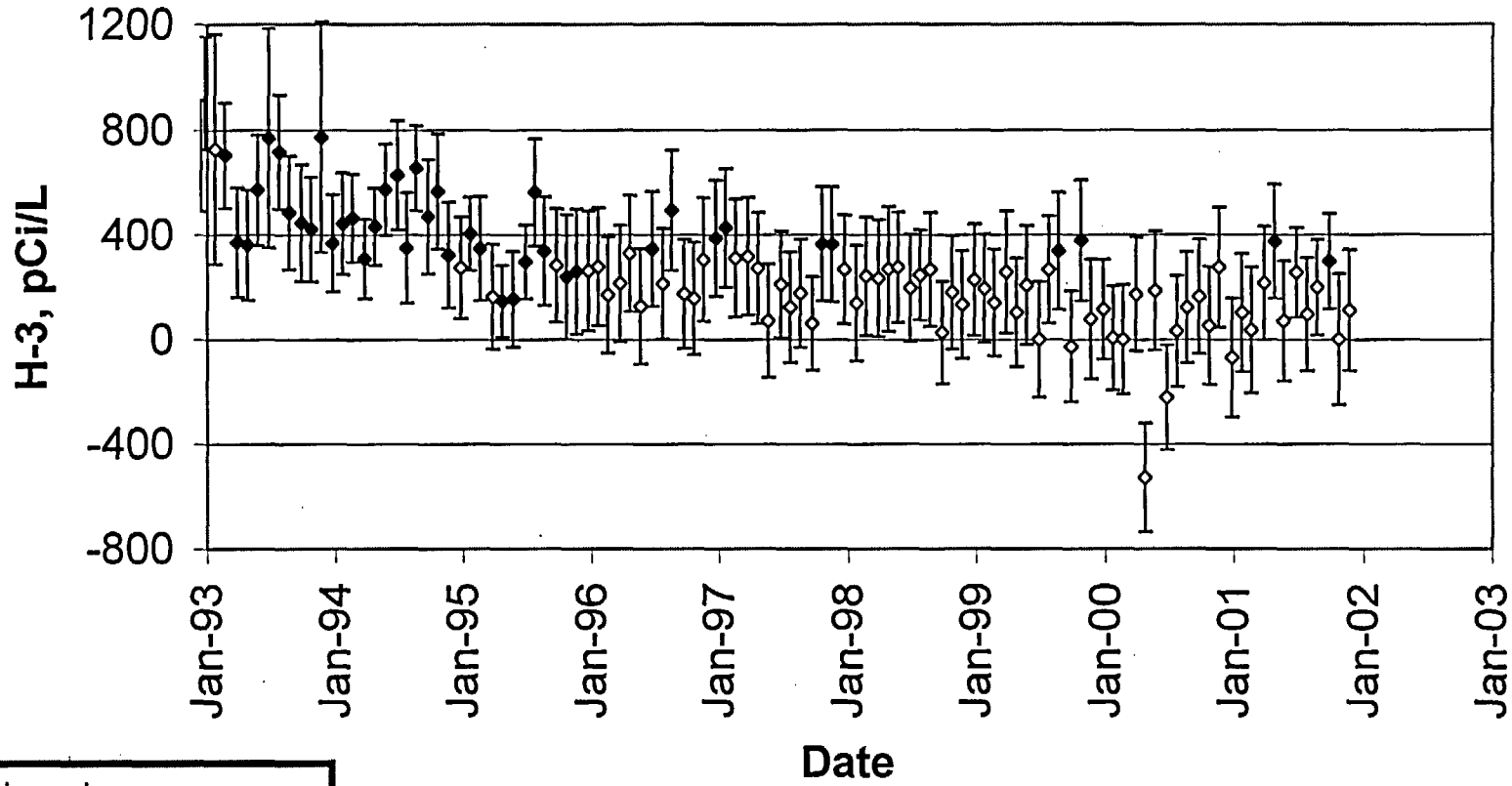
Distribution of Cesium-137 with Depth, (pCi/kg wet)

Depth	TS-155 (Beside WHT Moat)	TS-158 (Storage Area)	TS-171 (Under VC)
Asphalt	---	428	582
0-2"	18,400	7780	1490
2-4"	6070	9970	173
4-6"	1200	1660	84
6-8"	263	515	87
8-10"	115	336	< 87
10-12"	< 105	167	< 81
12-14"	---	145	251
14-16"	---	< 79	---

Attachment 2. H-3 Well Graphs


Sherman Spring REMP: 6-Month Averages
H-3 pCi/L
10000000
1000000
100000
10000
1000
100
10
Jan-65
Jan-68
Jan-71
Jan-74
Jan-77
Jan-80
Jan-83
Jan-86
Jan-89
Jan-92
Jan-95
Jan-98
Jan-01
Date

Sherman Spring REMP Data: H-3



Legend
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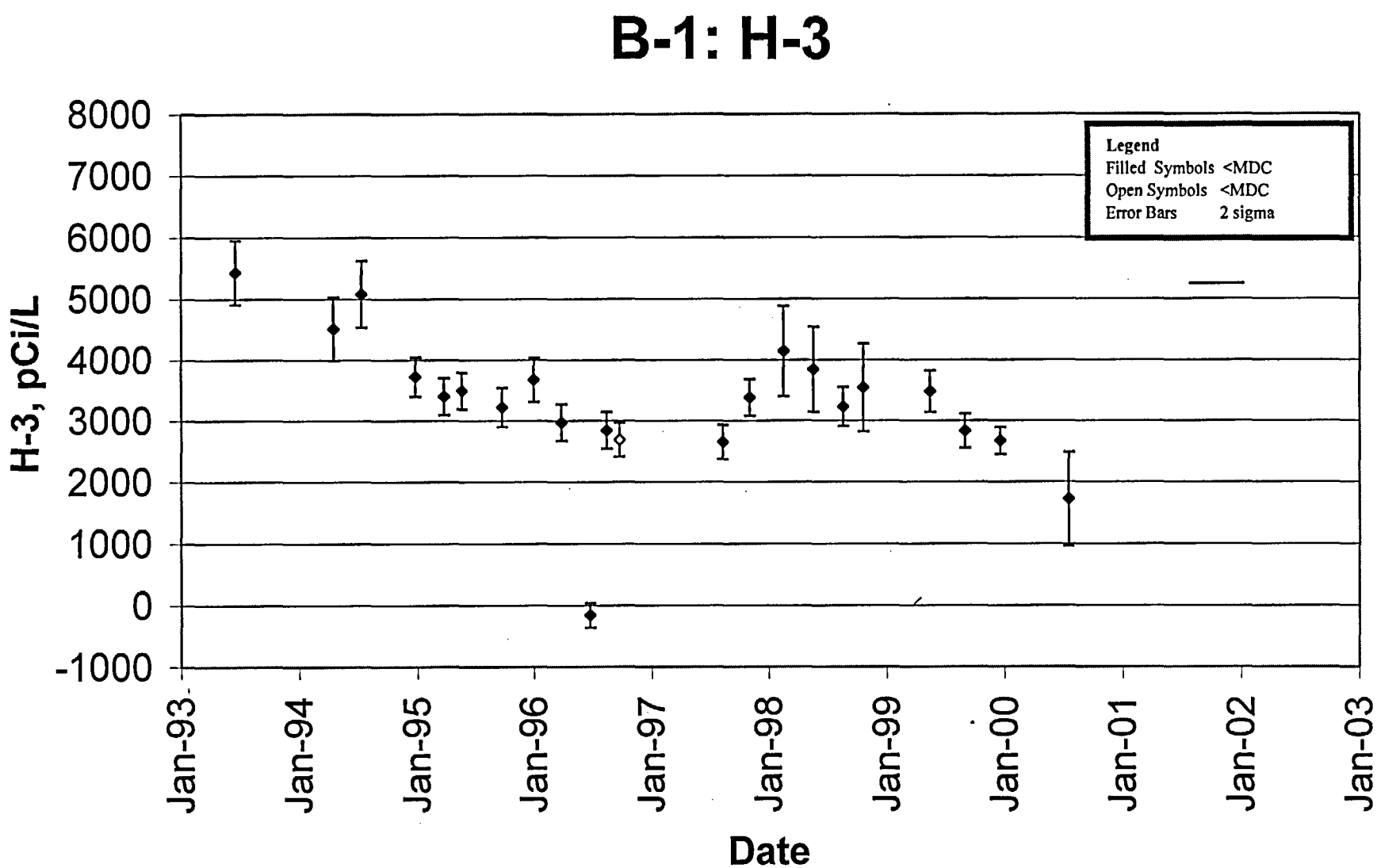
Open Symbols <MDC
Error Bars 2 sigma


B-1: H-3
Legend
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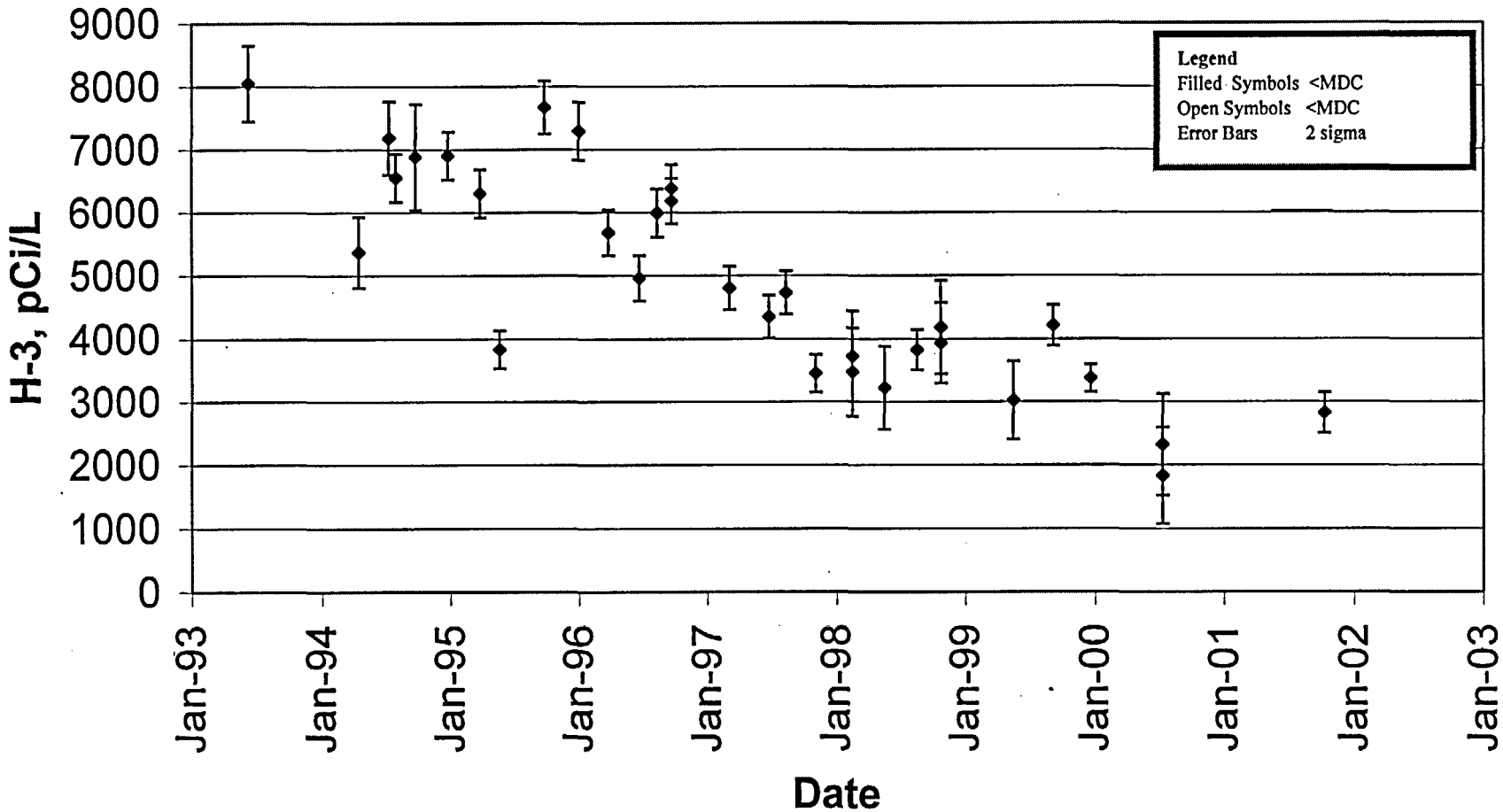
Error Bars 2 sigma
H-3, pCi/L
8000
7000
6000
5000
4000
3000
2000
1000
0
-1000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CB-1: H-3


Legend
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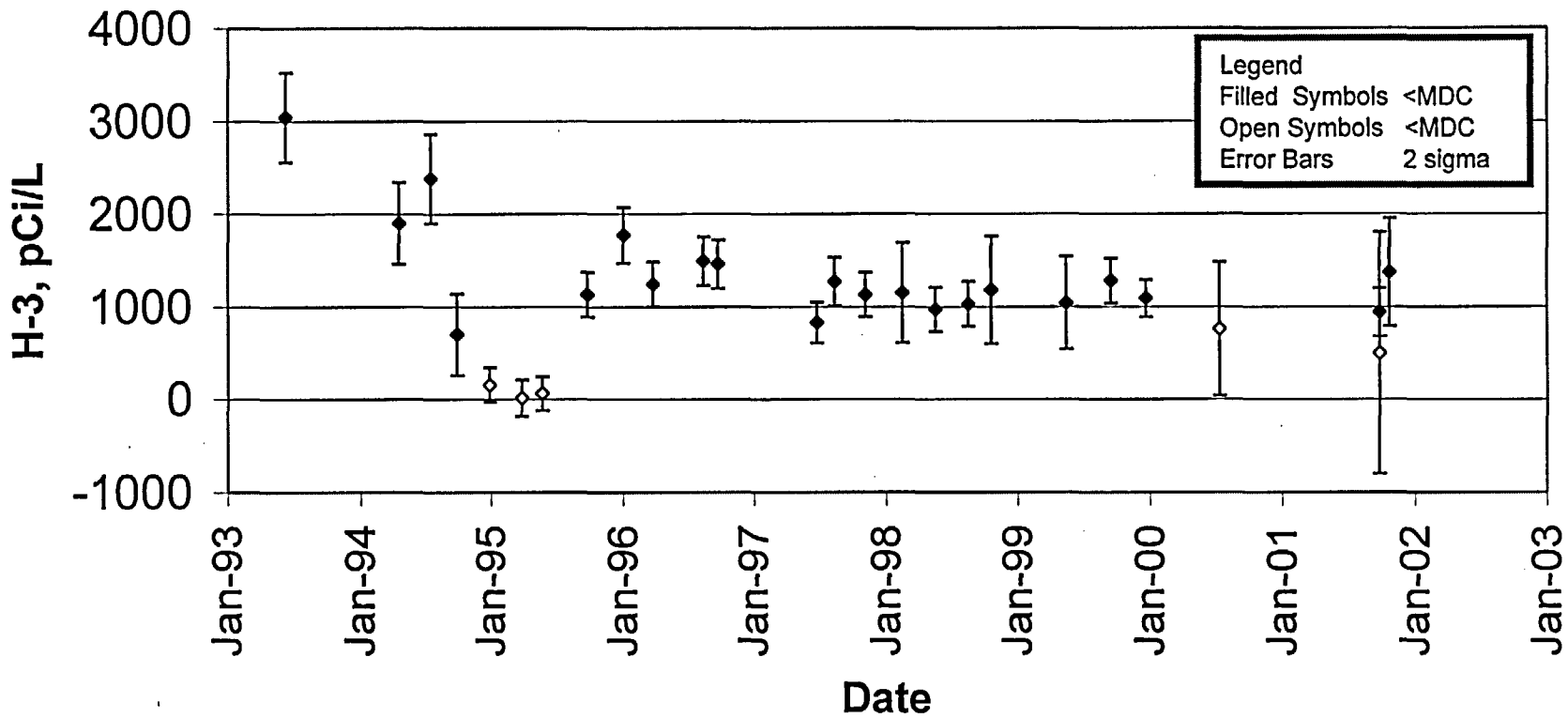
Error Bars 2 sigma
H-3, pCi/L
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CB-2: H-3


Legend
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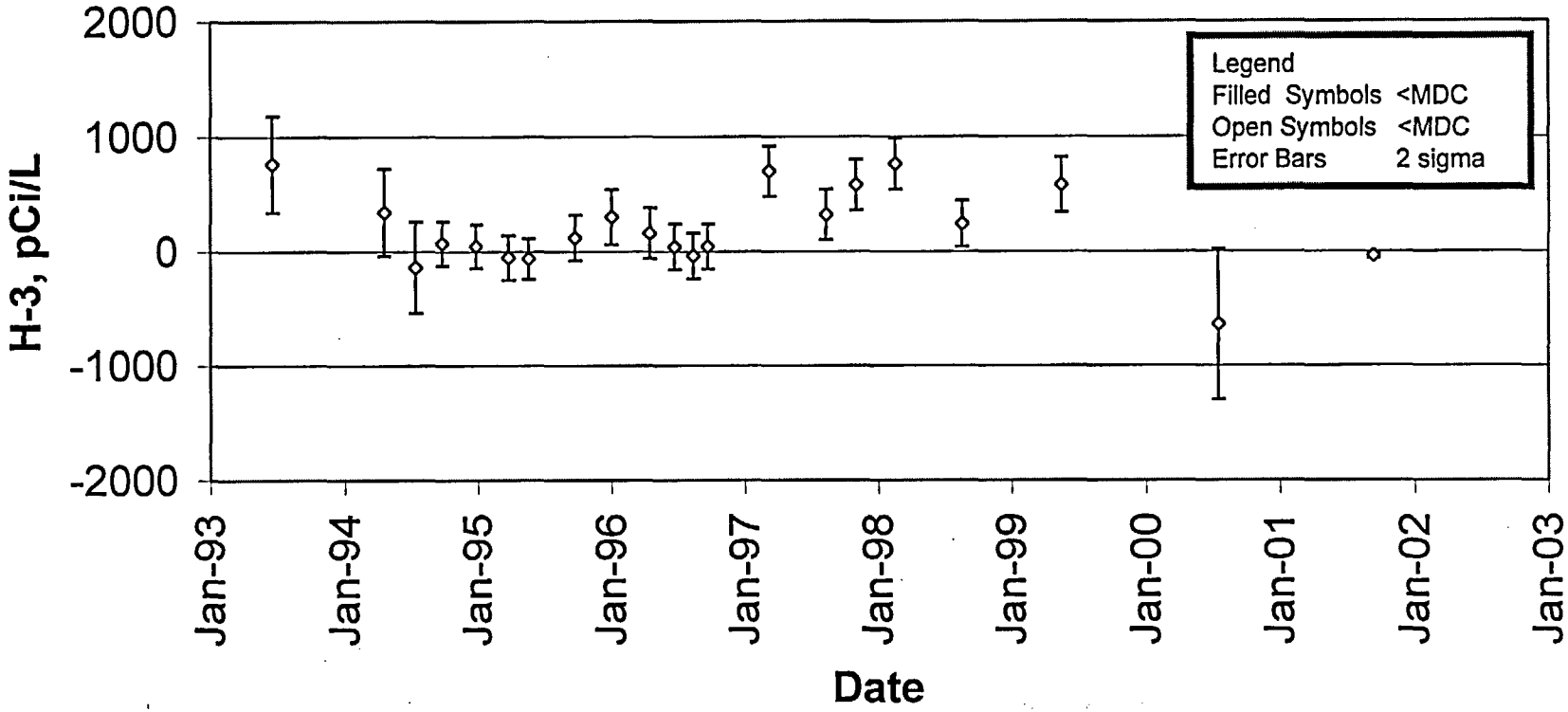
Error Bars 2 sigma
H-3, pCi/L
4000
3000
2000
1000
0
-1000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CB-3: H-3


2000
1000
0
-1000
-2000
H-3, pCi/L
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date
Legend
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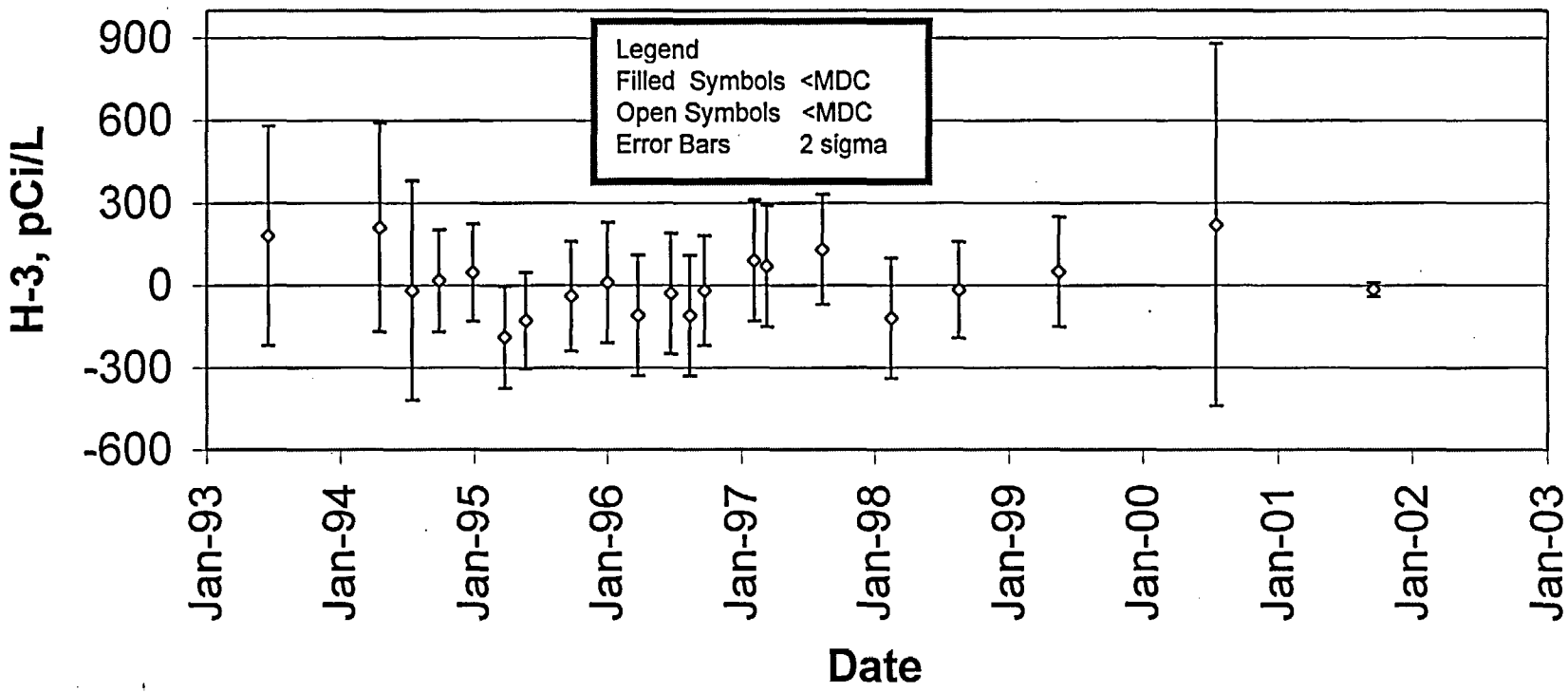
Open Symbols <MDC
Error Bars 2 sigma

CB-4: H-3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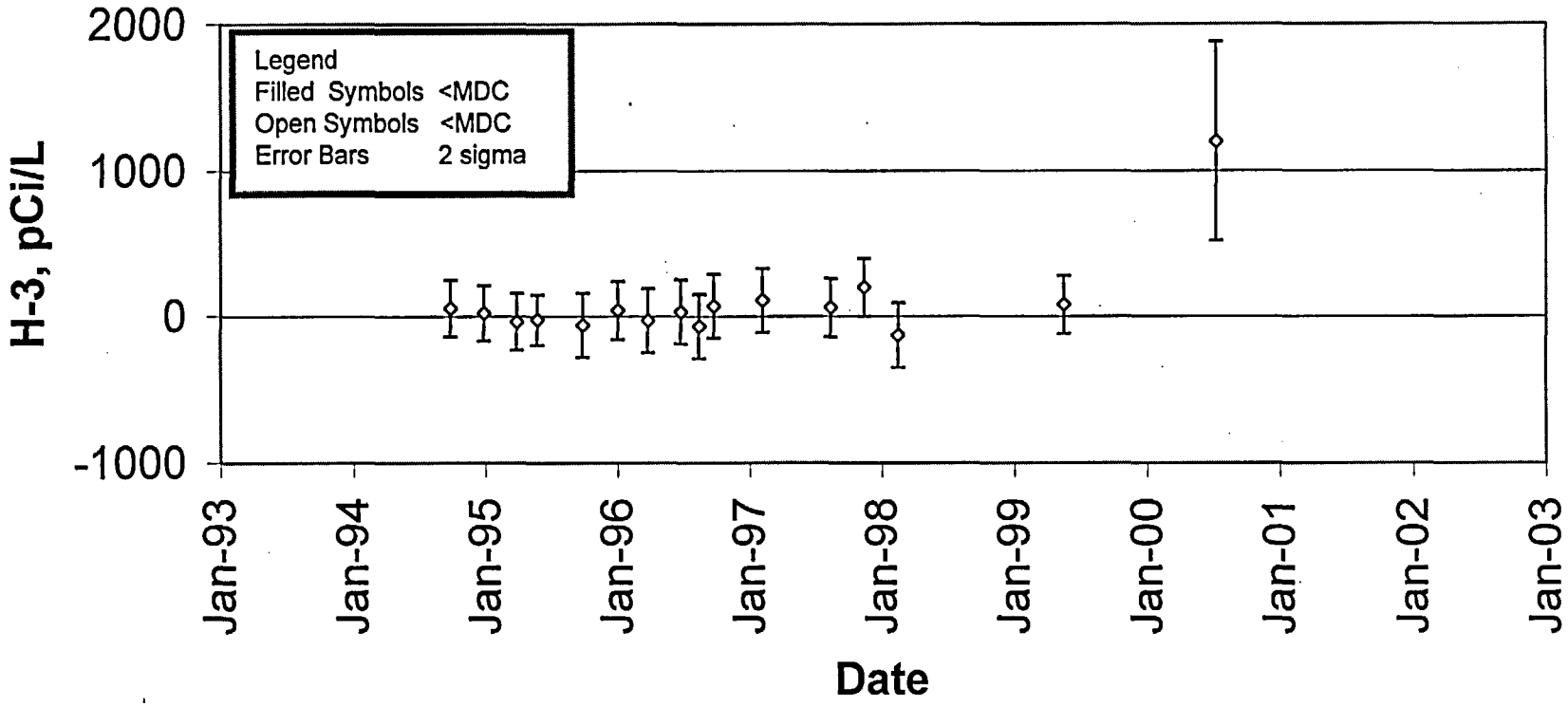
Error Bars 2 sigma
H-3, pCi/L
900
600
300
0
-300
-600
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CB-5: H-3


Legend
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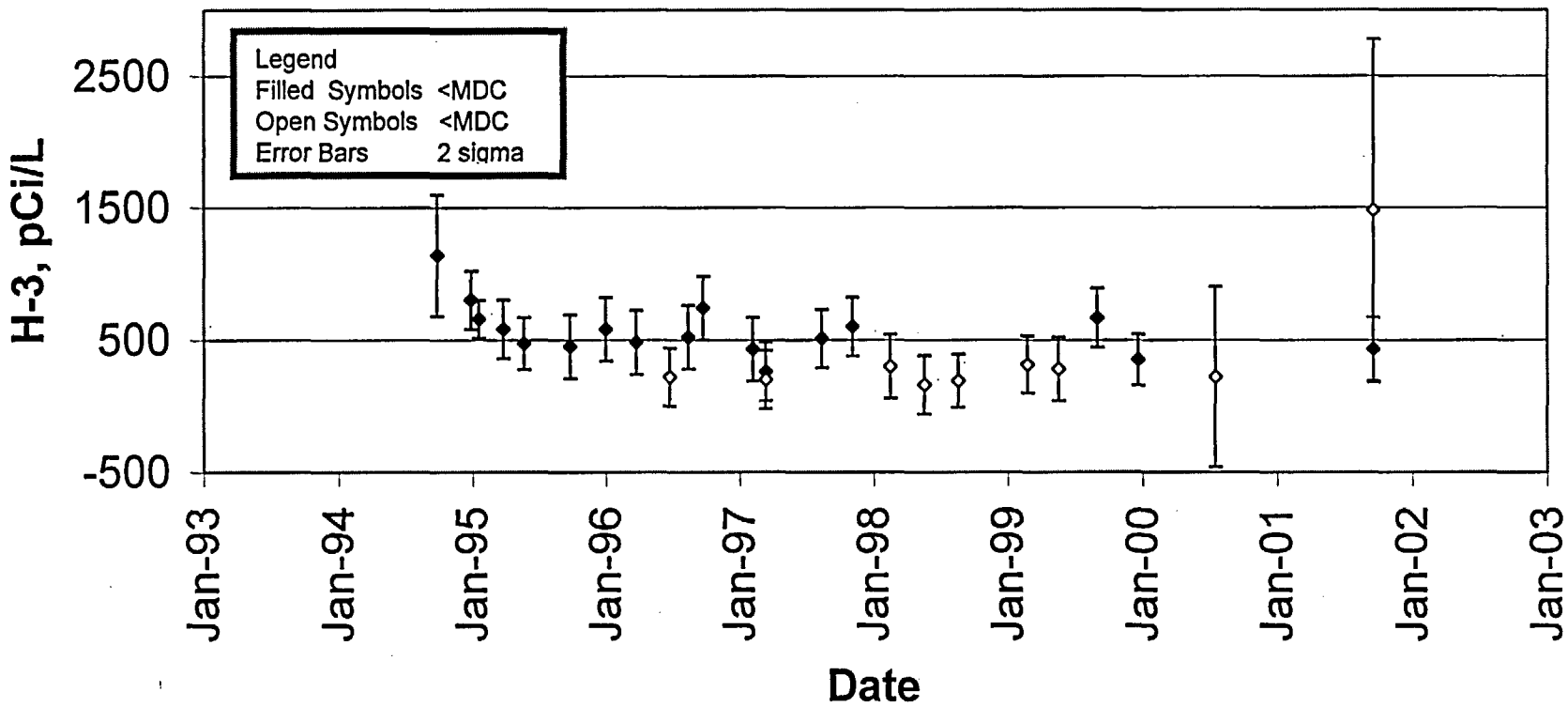
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
2000
1000
0
-1000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CB-6: H-3


Legend
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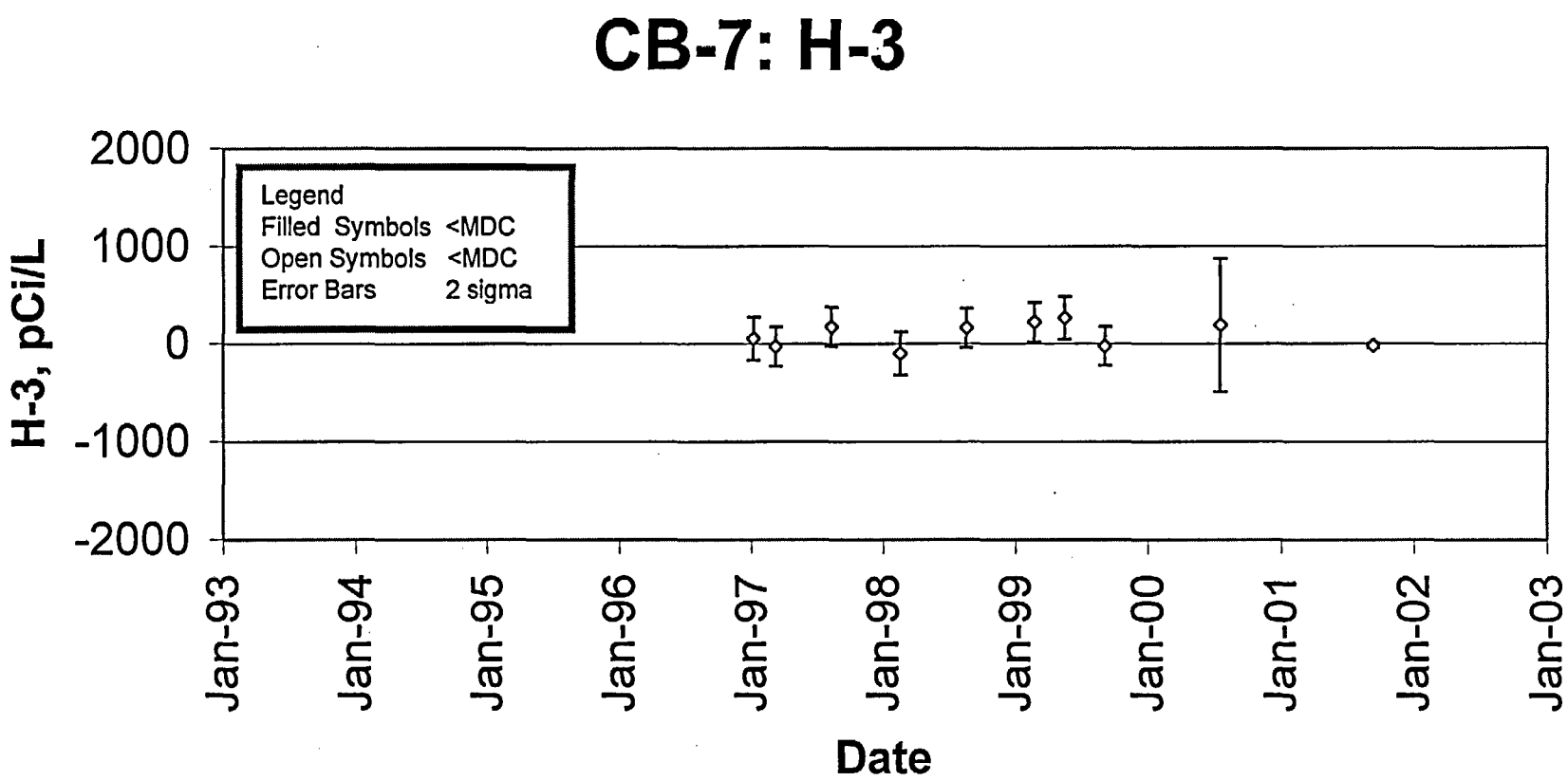
Error Bars 2 sigma
H-3, pCi/L
2500
1500
500
-500
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date


CB-7: H-3
Legend
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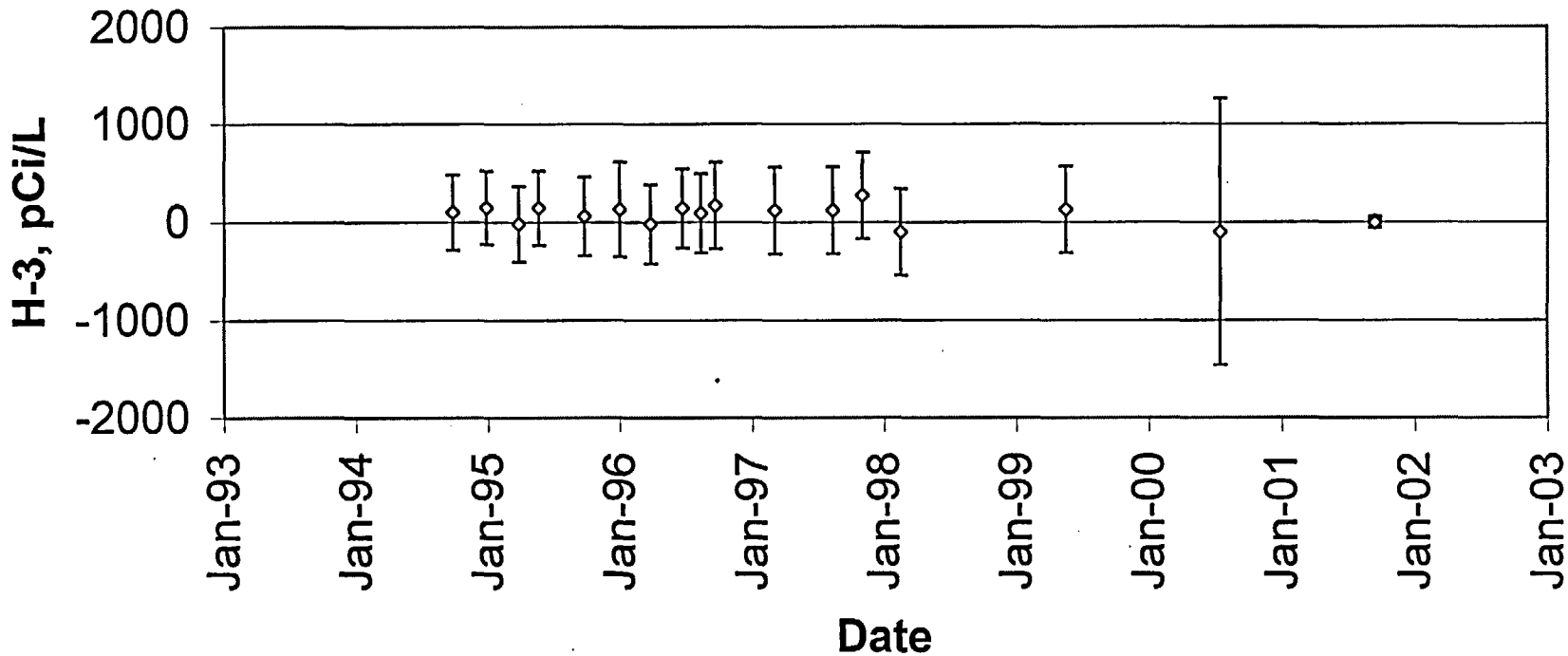
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
2000
1000
0
-1000
-2000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CB-8: H-3



Legend
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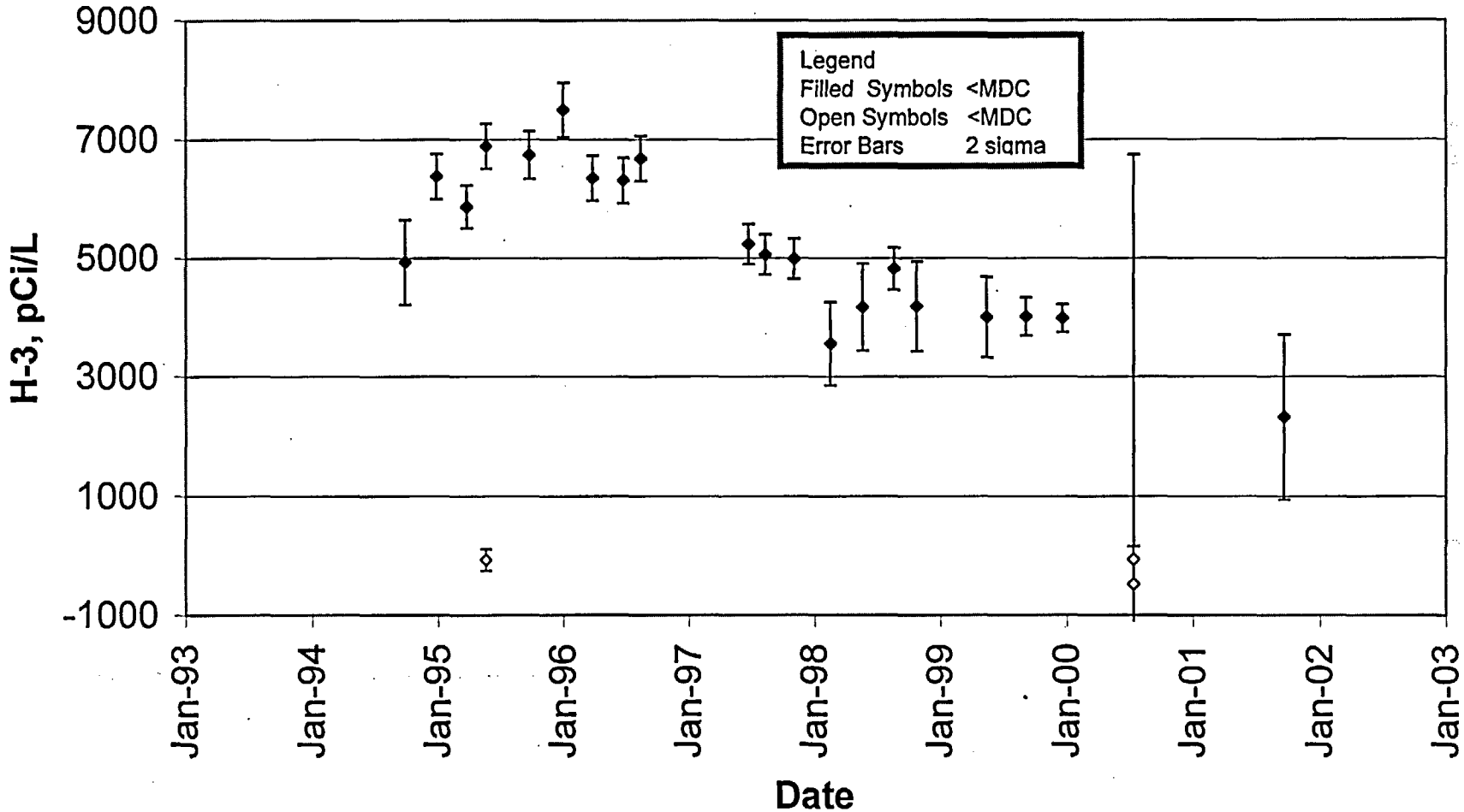
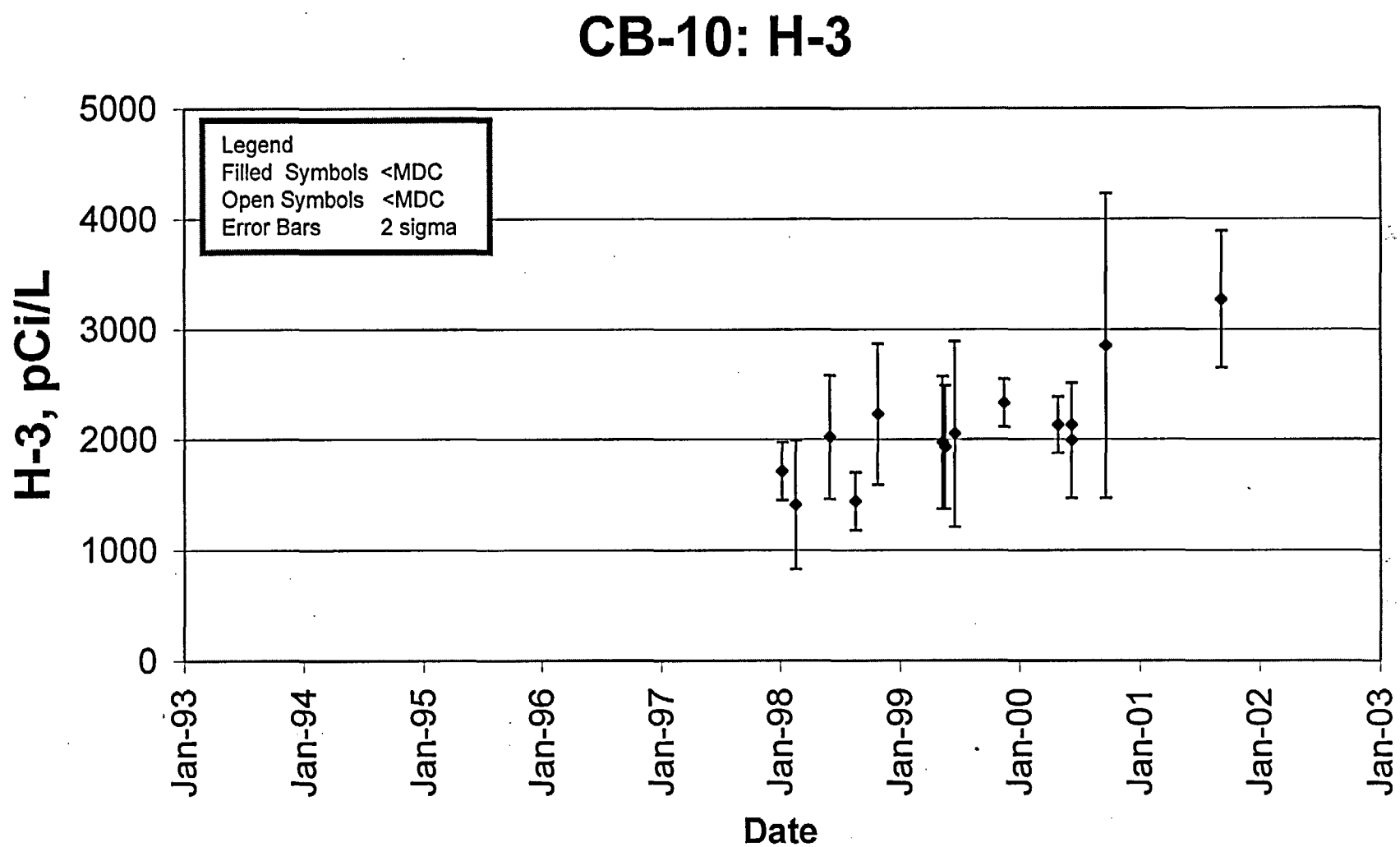
Error Bars 2 sigma

CB-9: H-3


Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
9000
7000
5000
3000
1000
-1000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date


CB-10: H-3
Legend
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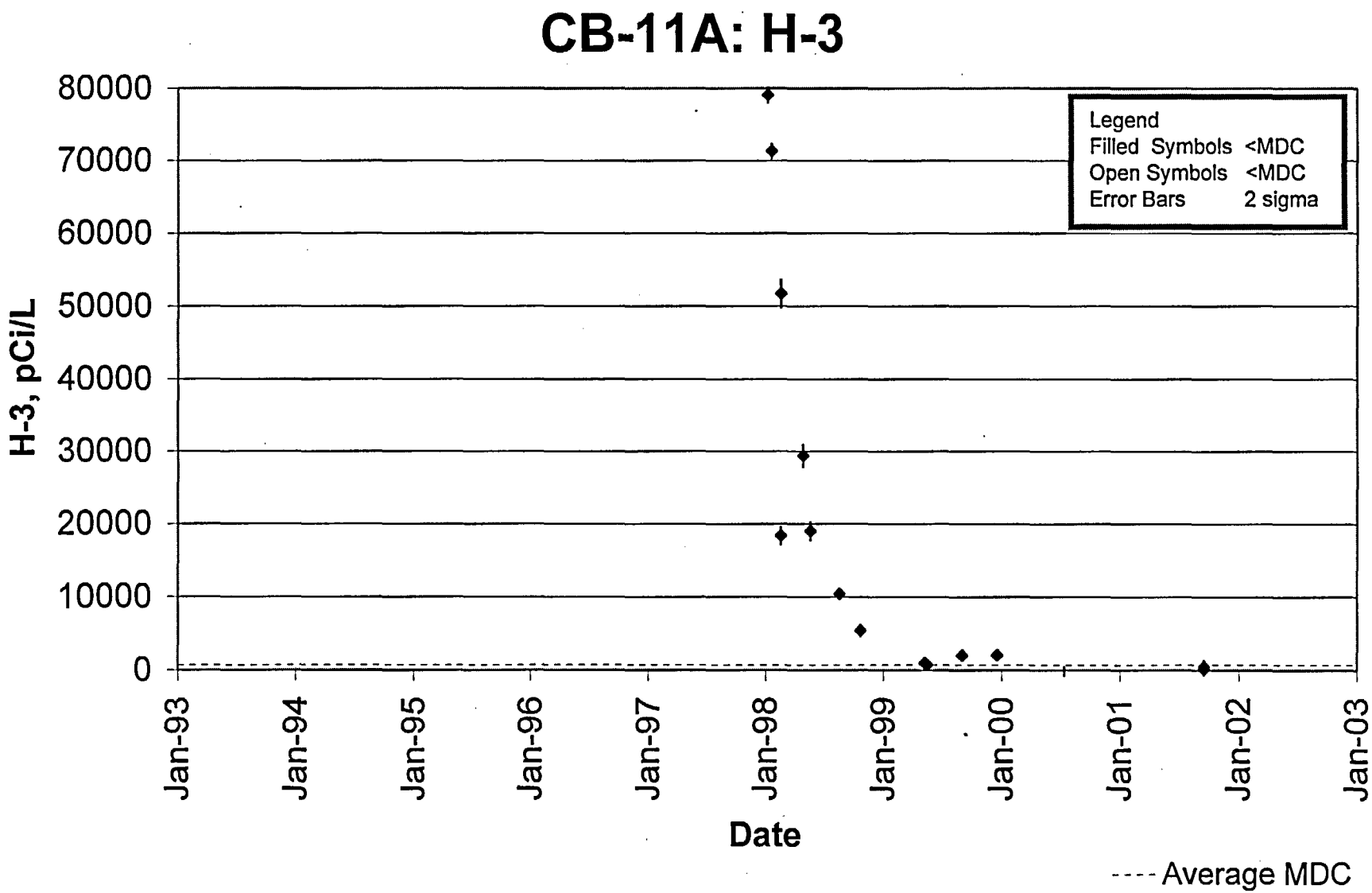
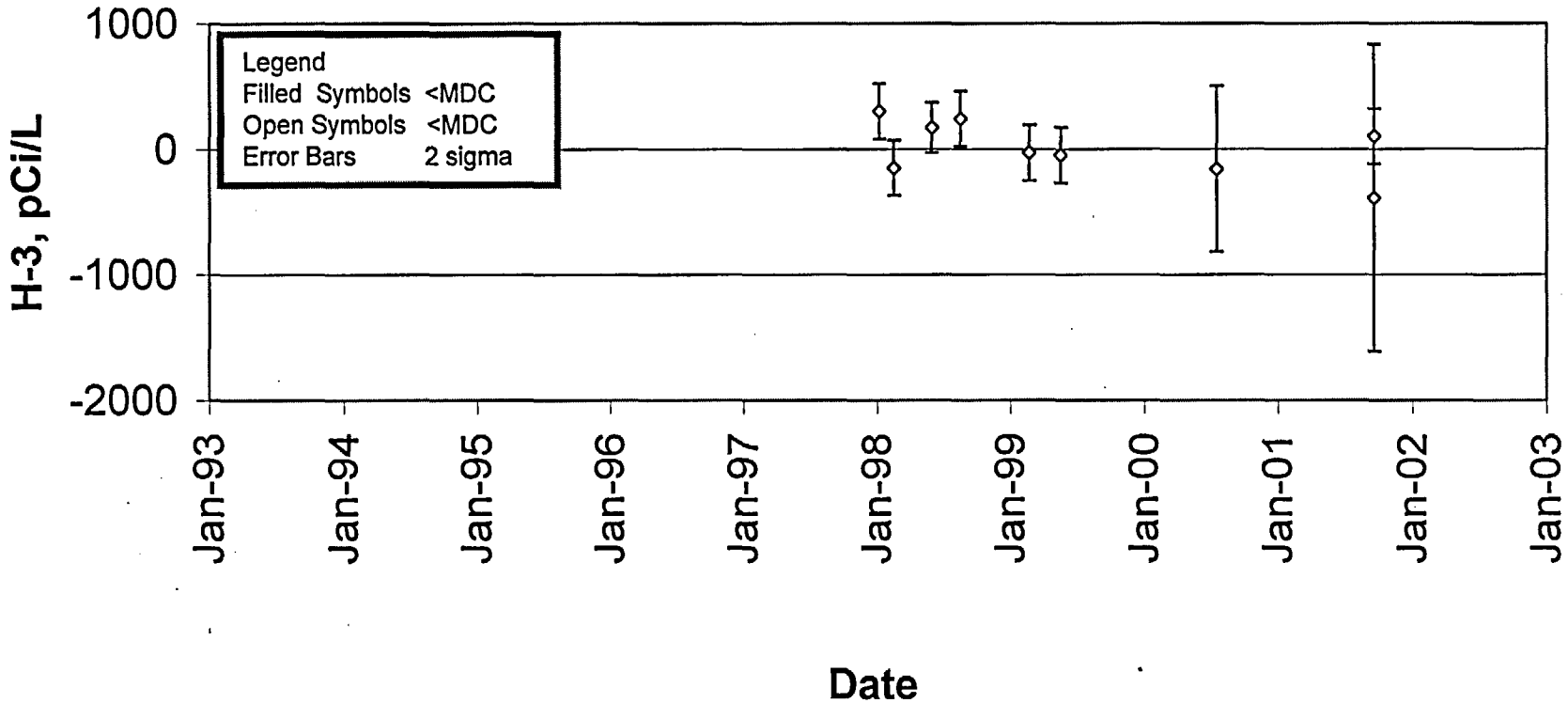
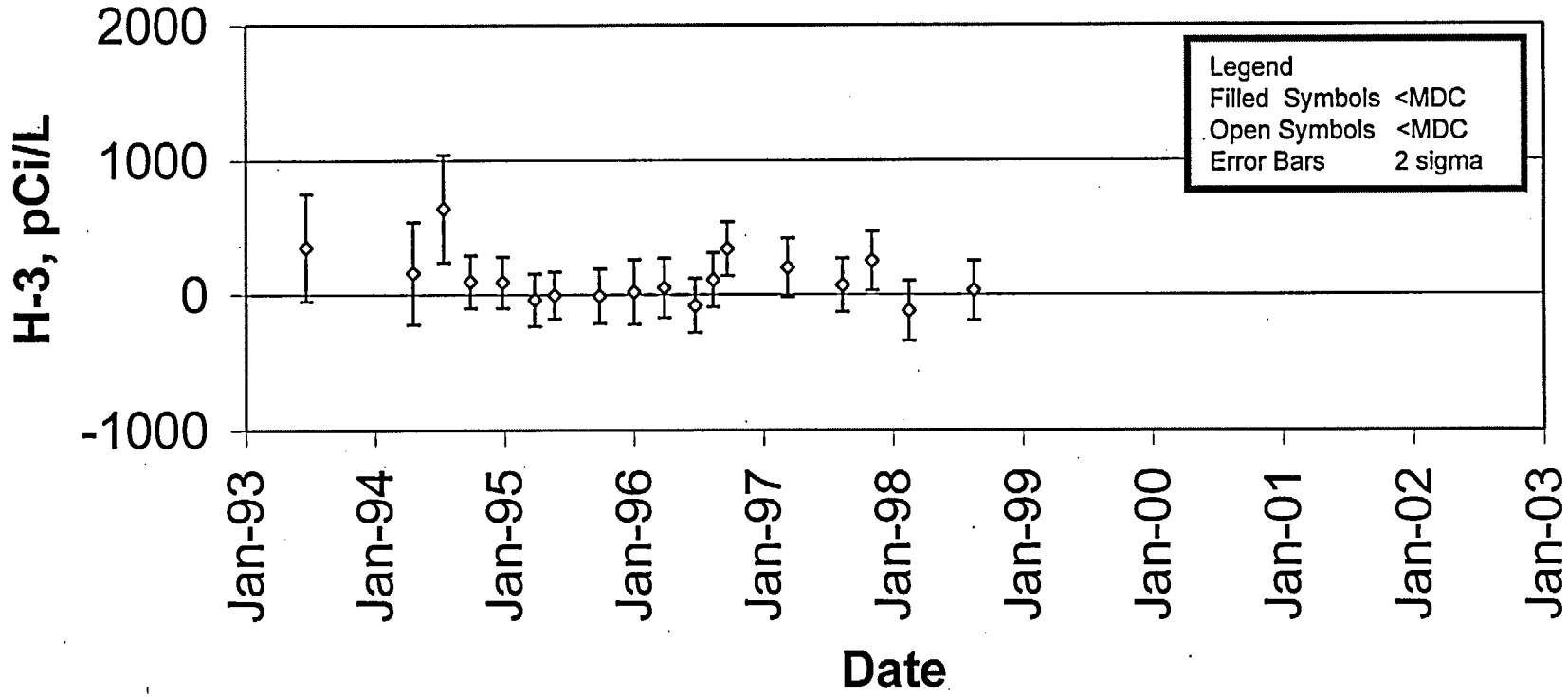
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
5000
4000
3000
2000
1000
0
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

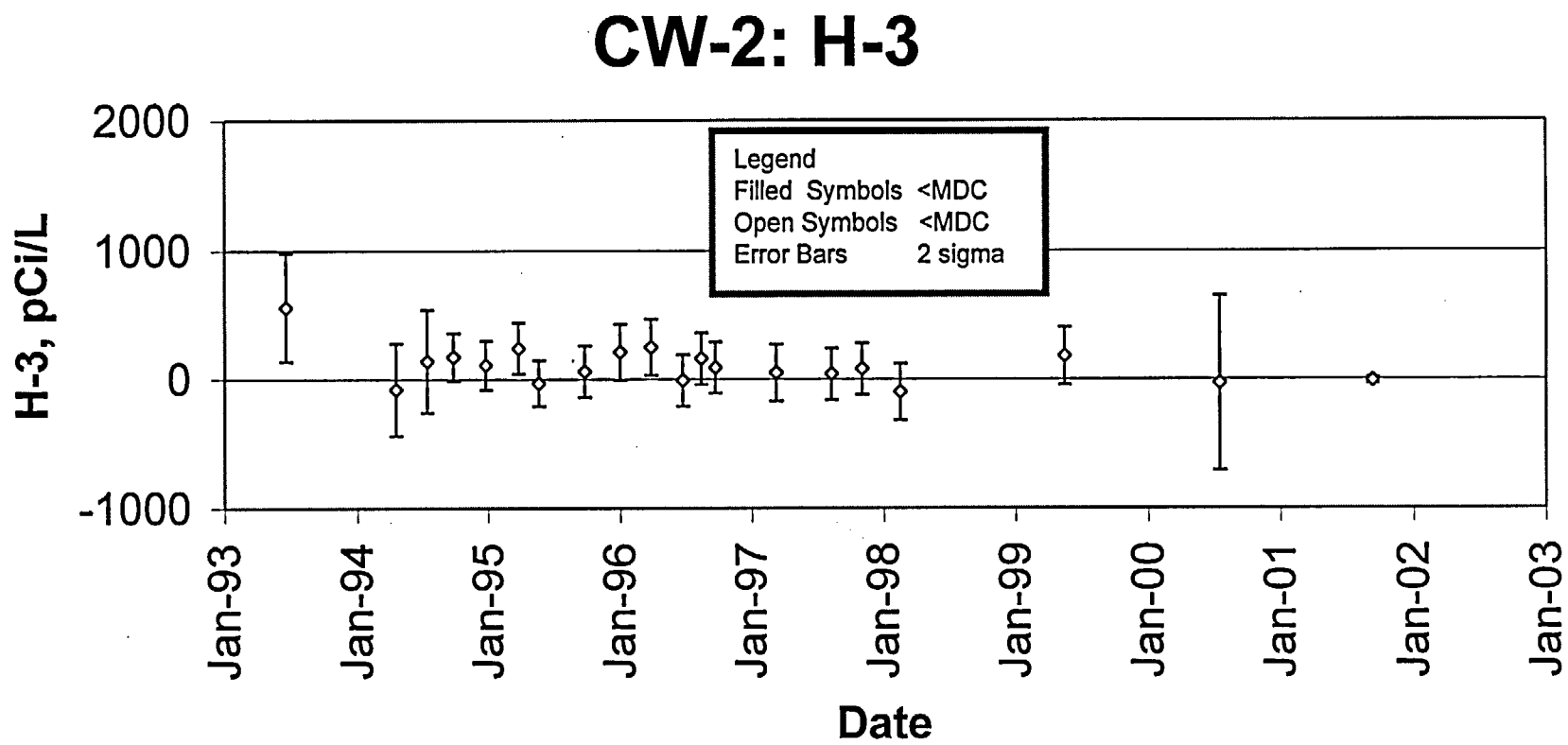

CB-11A: H-3
H-3, pCi/L
80000
70000
60000
50000
40000
30000
20000
10000
0
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date
Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
---- Average MDC

CB-12: H-3

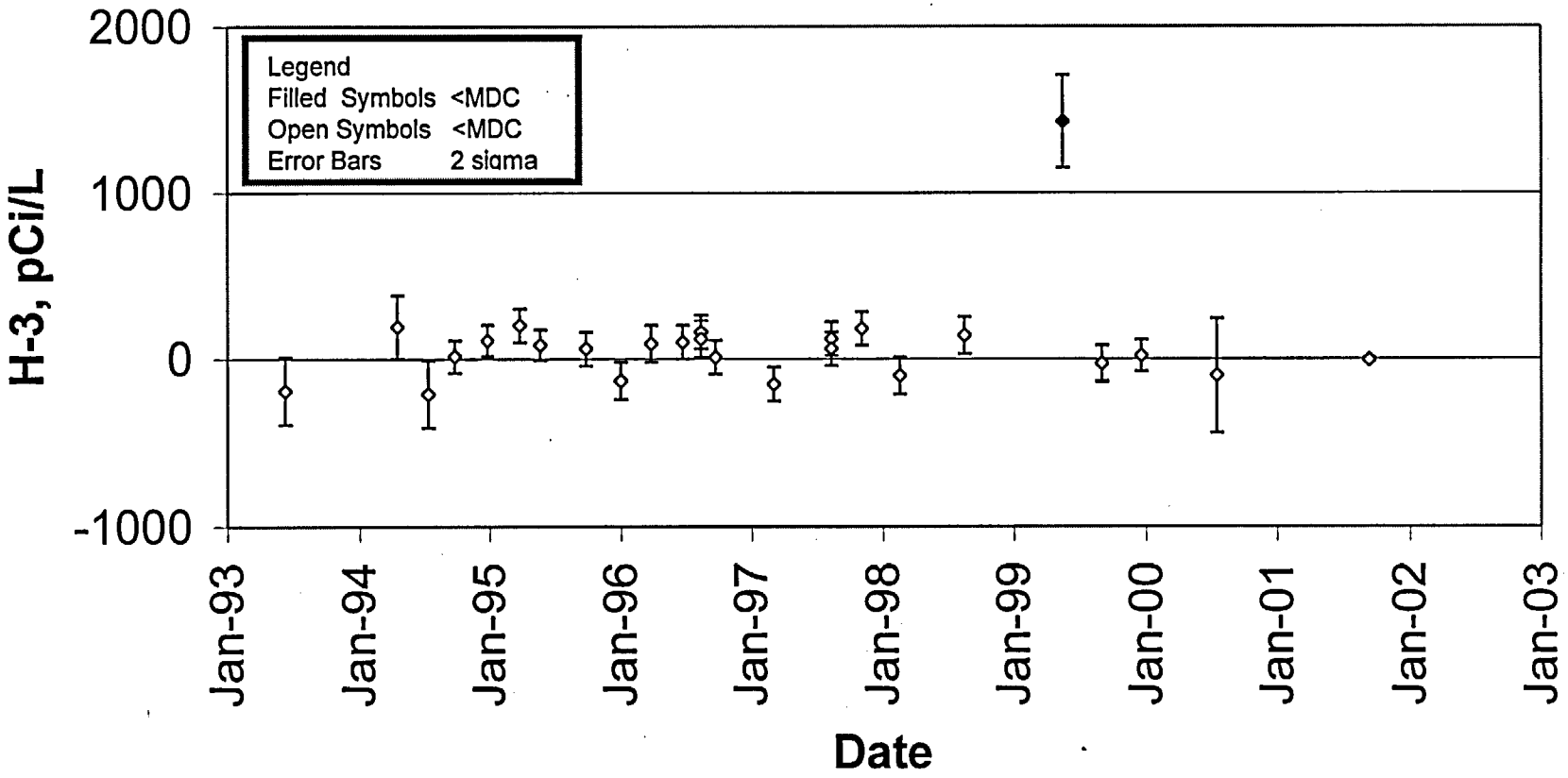

Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
1000
0
-1000
-2000
H-3, pCi/L
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CW-1: H-3

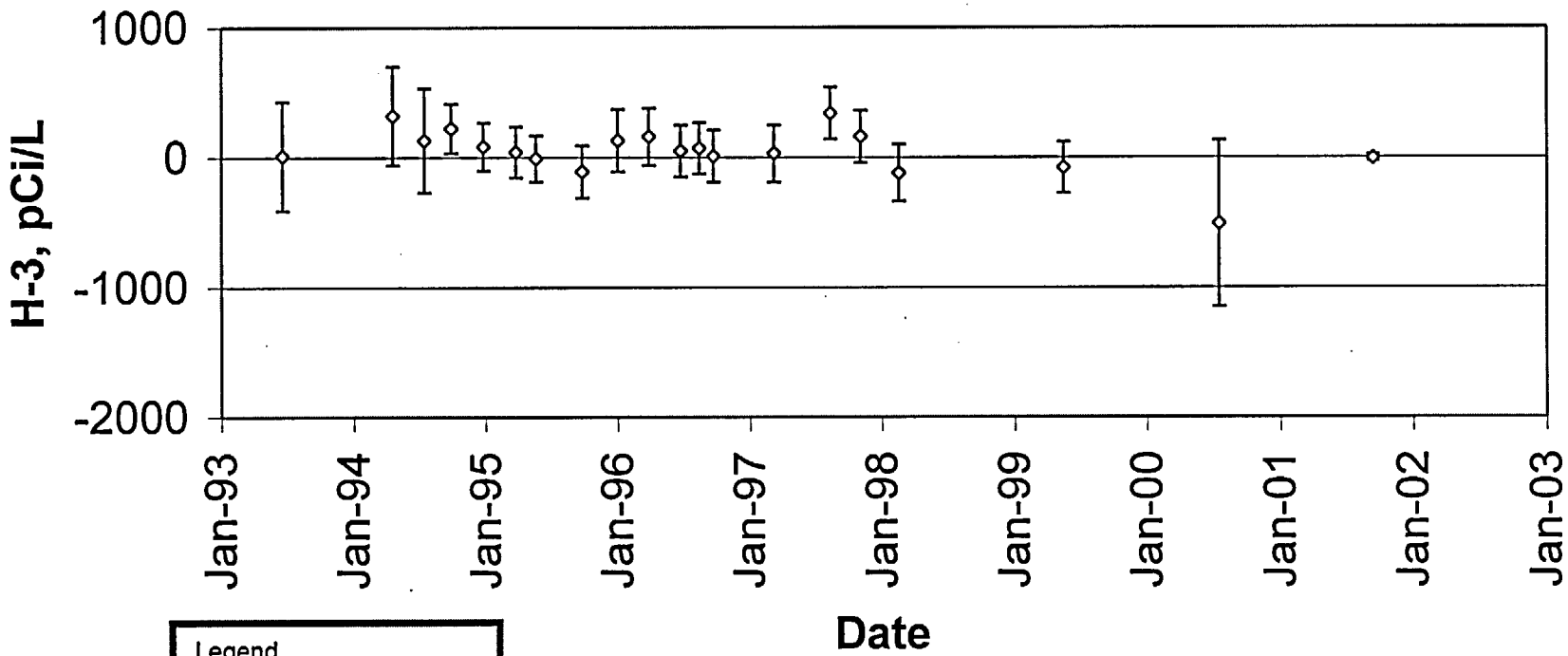

2000
1000
0
-1000
H-3, pCi/L
Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date


CW-2: H-3
Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
2000
1000
0
-1000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CW-3: H-3


Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
2000
1000
0
-1000
H-3, pCi/L
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CW-4: H-3



Legend
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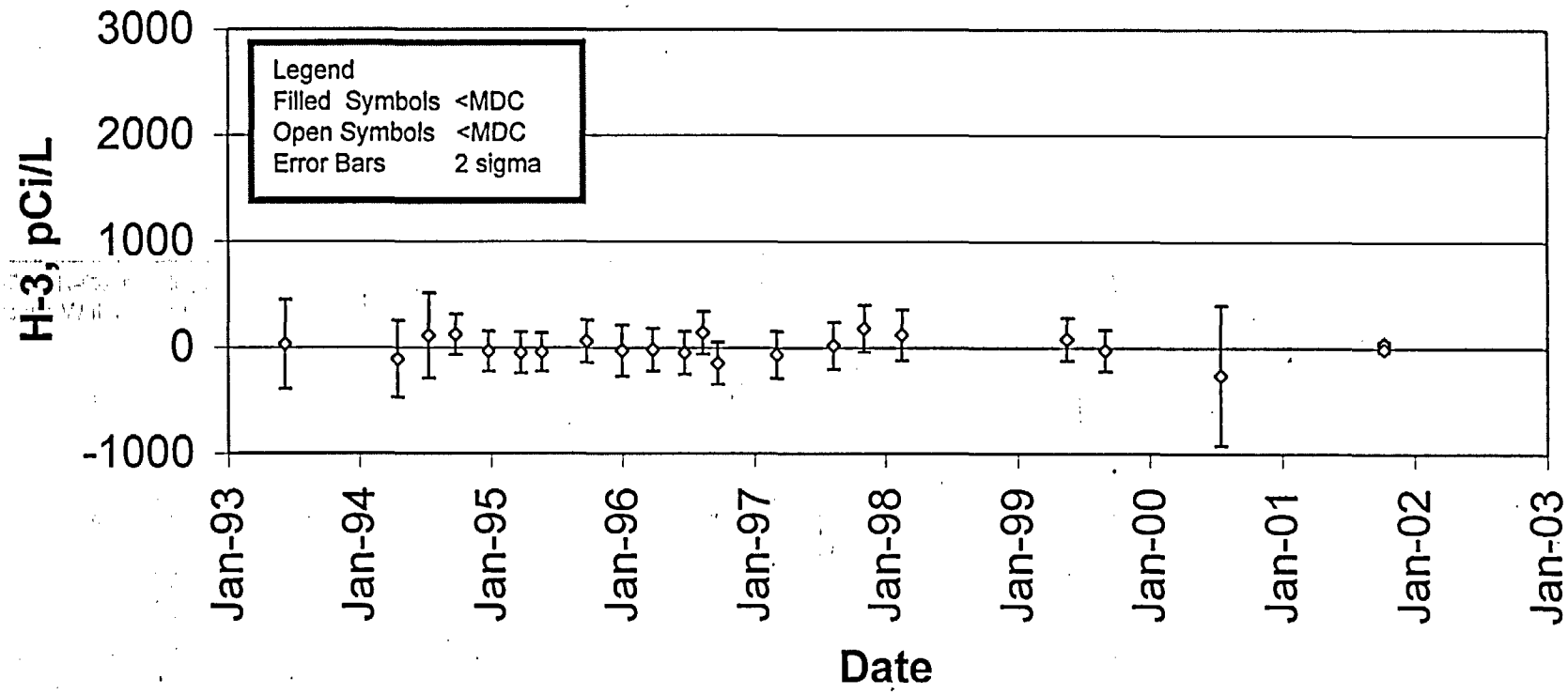
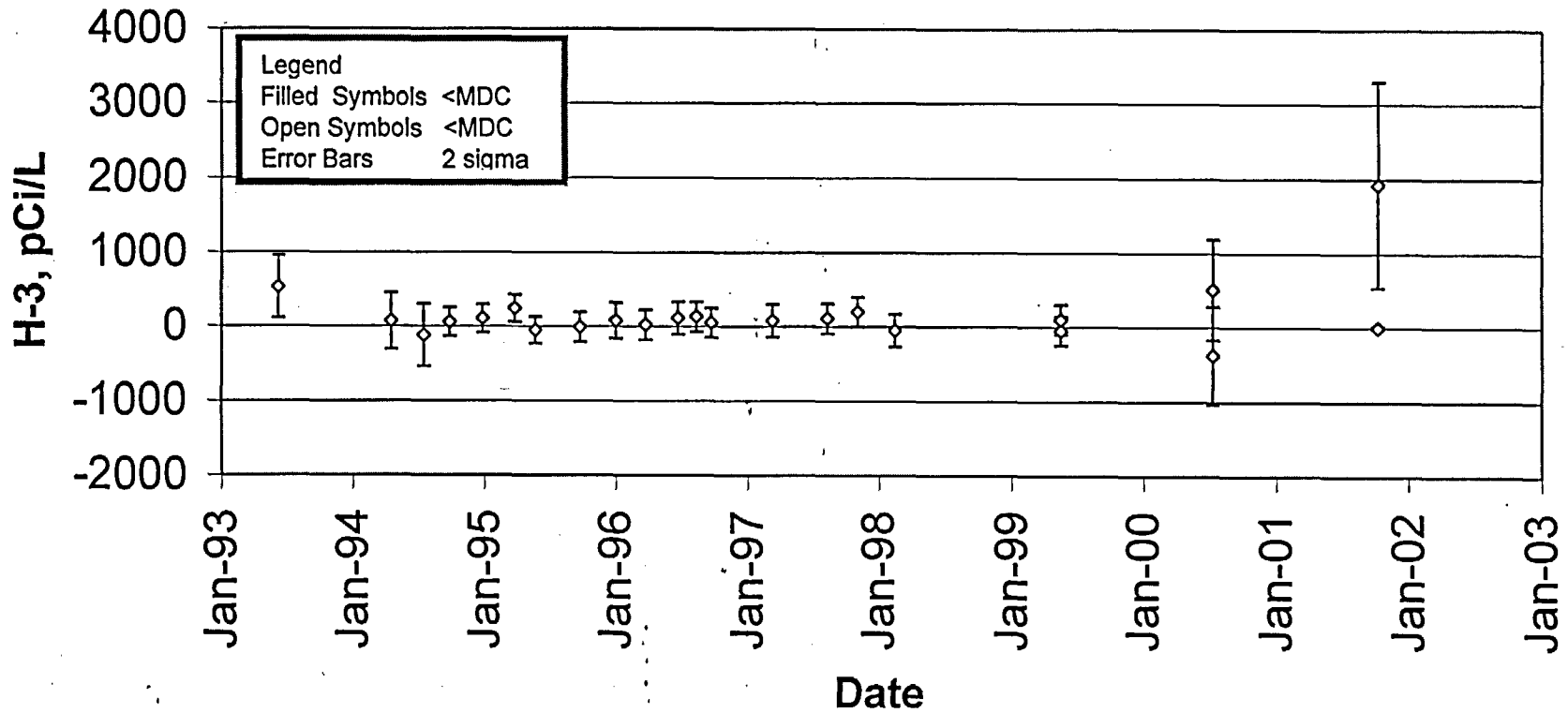
Open Symbols <MDC
Error Bars 2 sigma

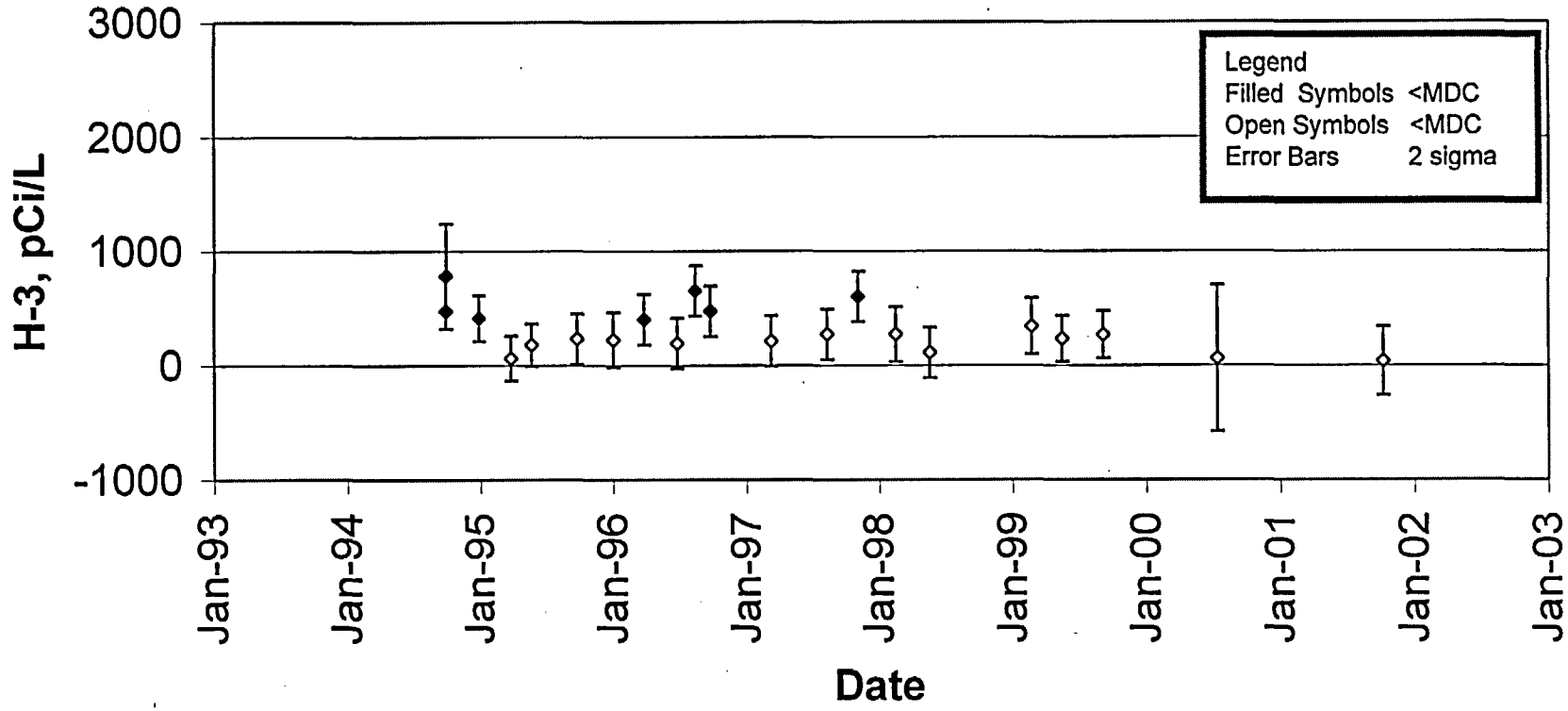
CW-5: H-3


Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
3000
2000
1000
0
-1000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

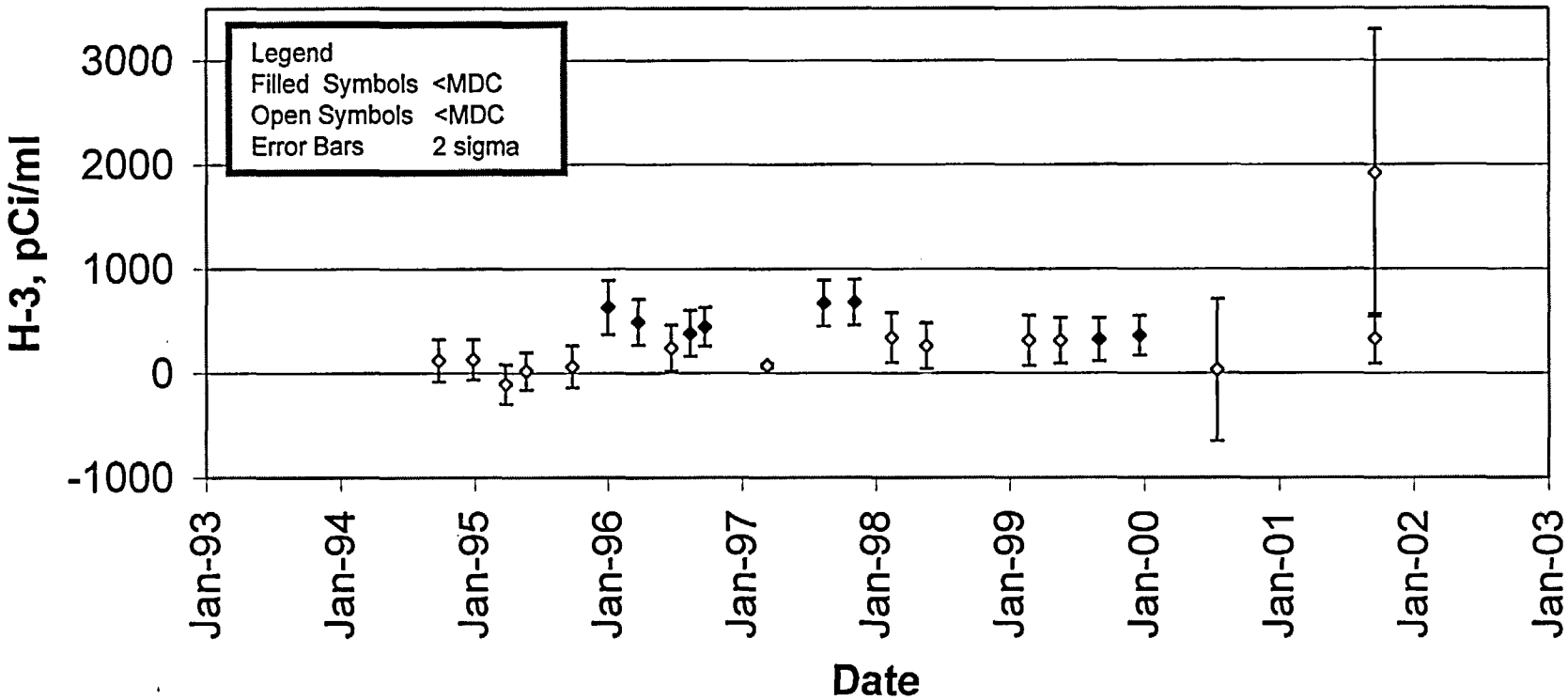
CW-6: H-3


Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
4000
3000
2000
1000
0
-1000
-2000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CW-7: H-3


3000
2000
1000
0
-1000
H-3, pCi/L
Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CW-8: H-3


Legend
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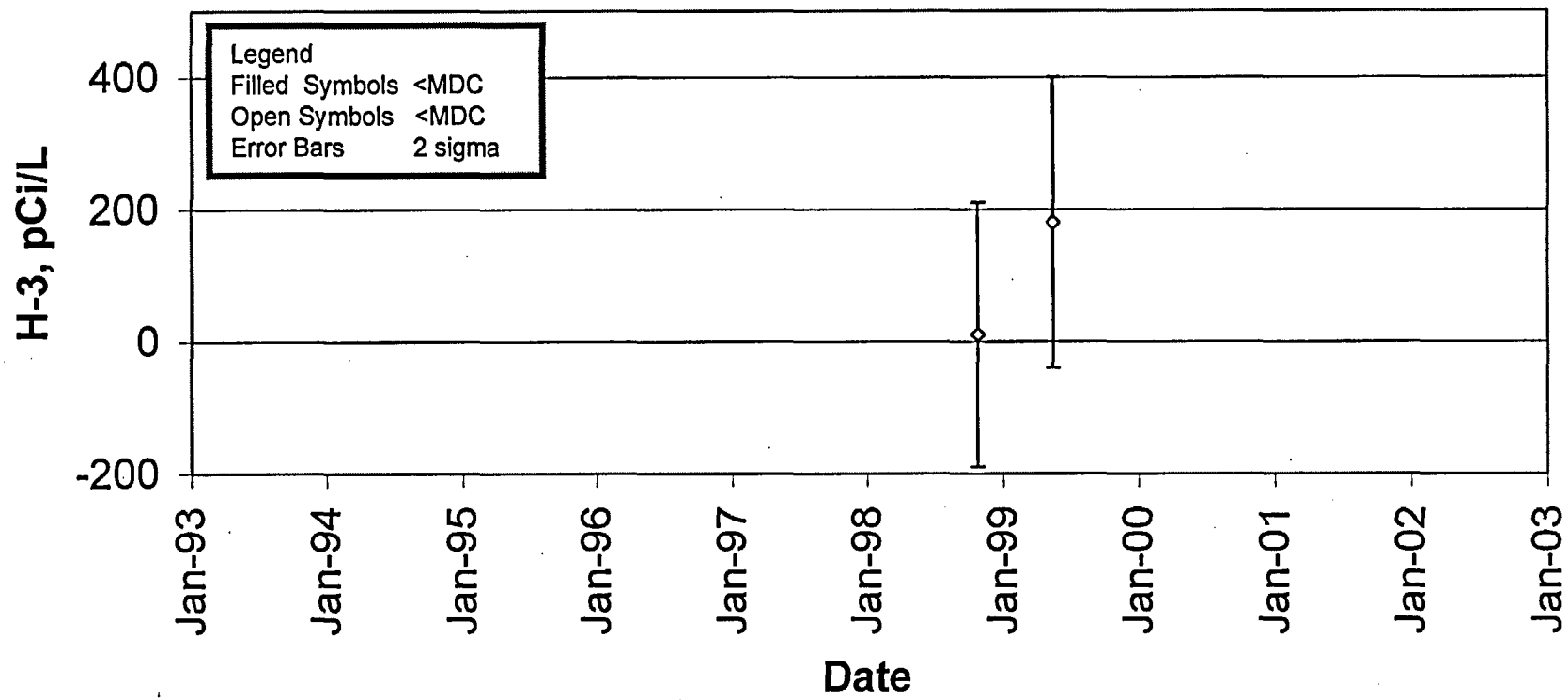
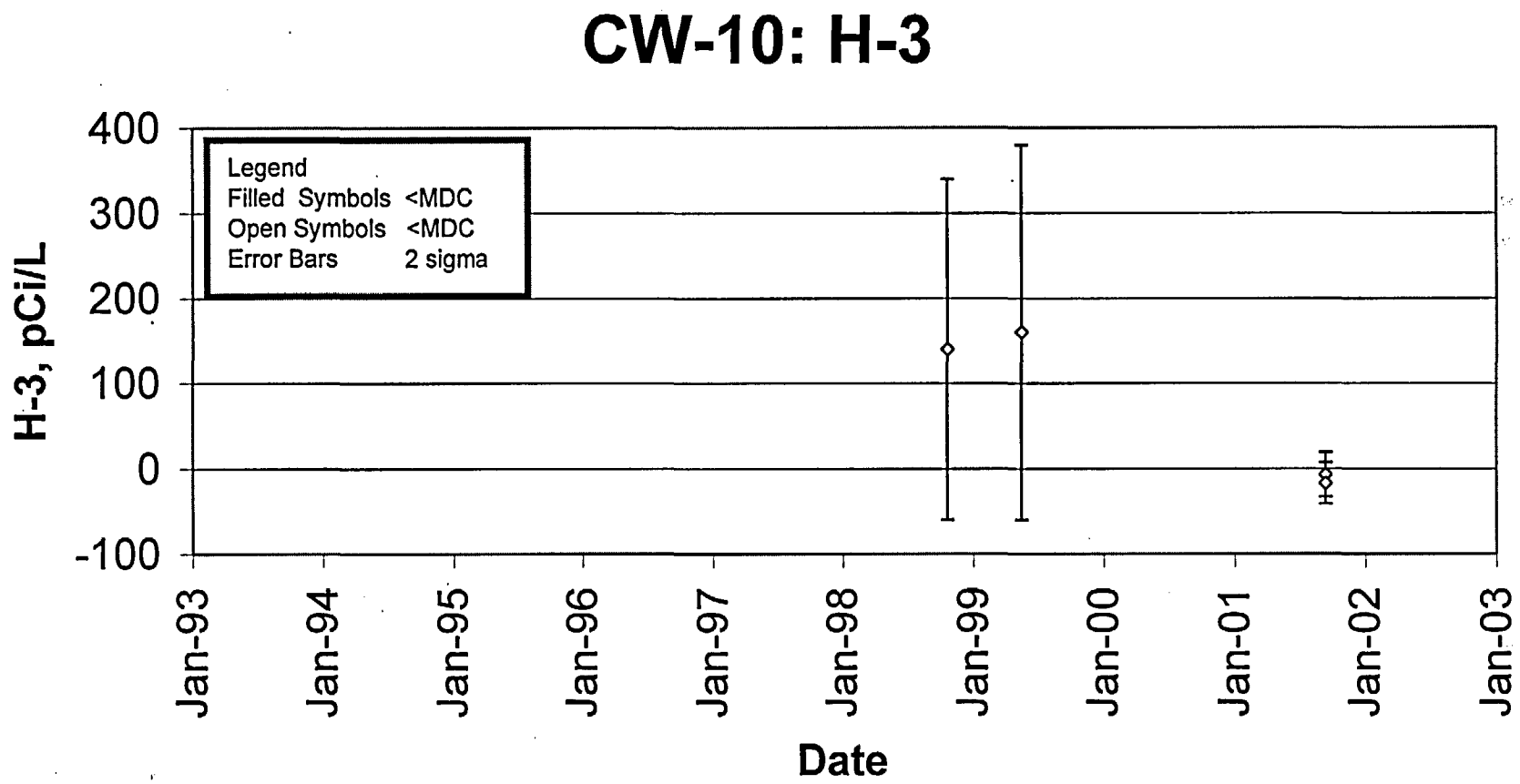
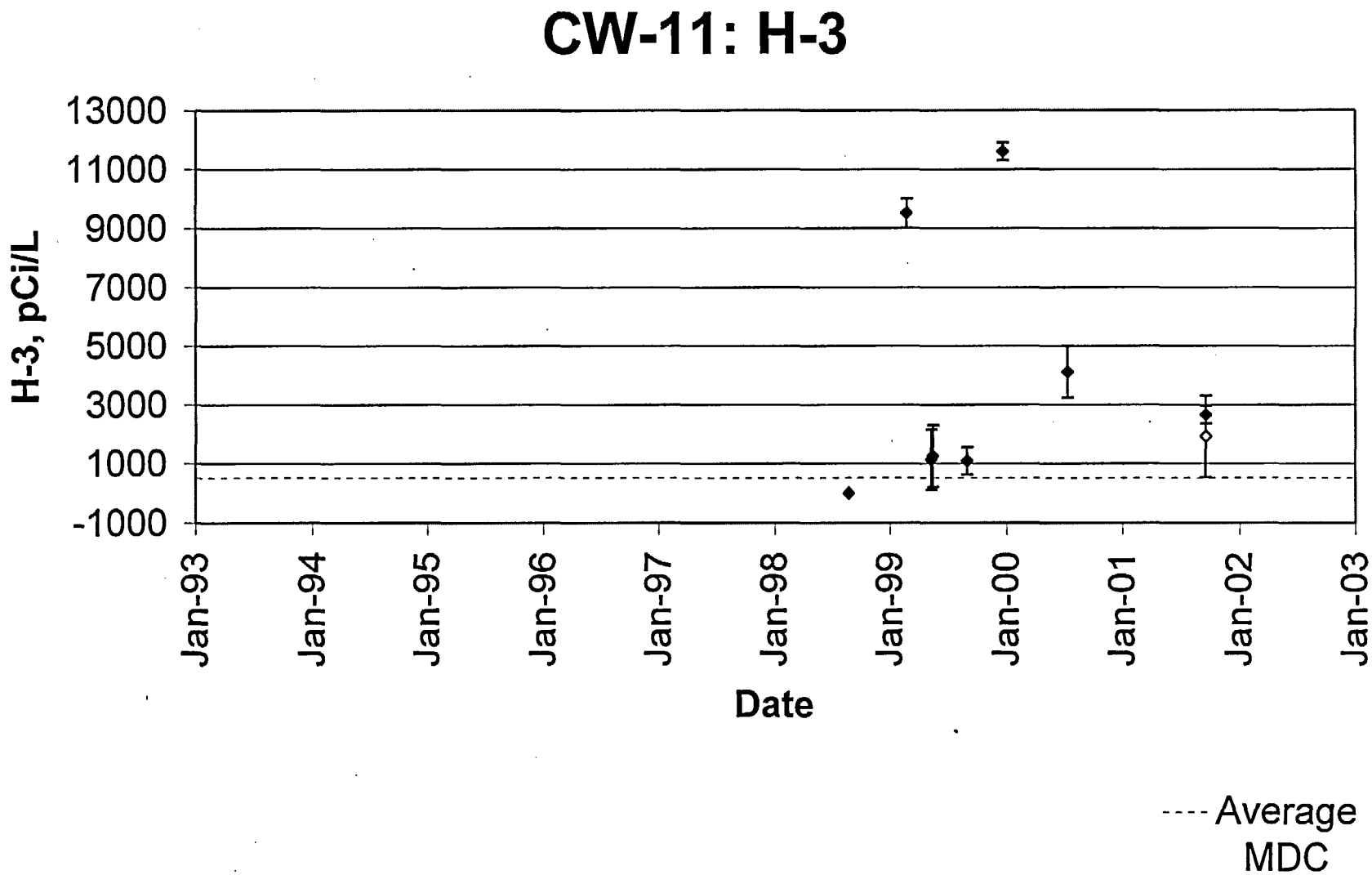
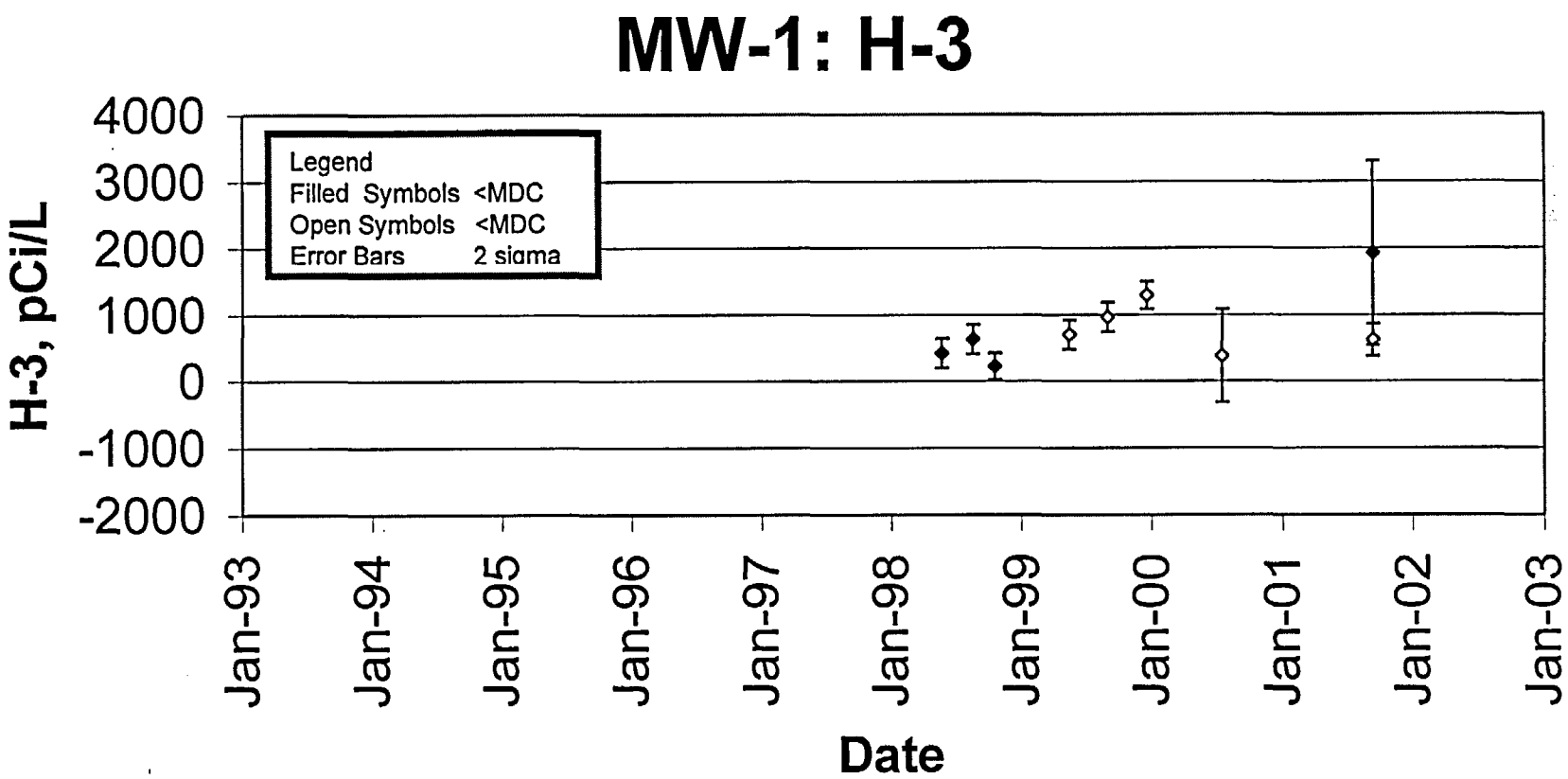
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/ml
3000
2000
1000
0
-1000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

CW-9: H-3


Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
400
200
0
-200
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date


CW-10: H-3
Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
400
300
200
100
0
-100
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date


CW-11: H-3
H-3, pCi/L
13000
11000
9000
7000
5000
3000
1000
-1000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date
Average MDC


MW-1: H-3
Legend
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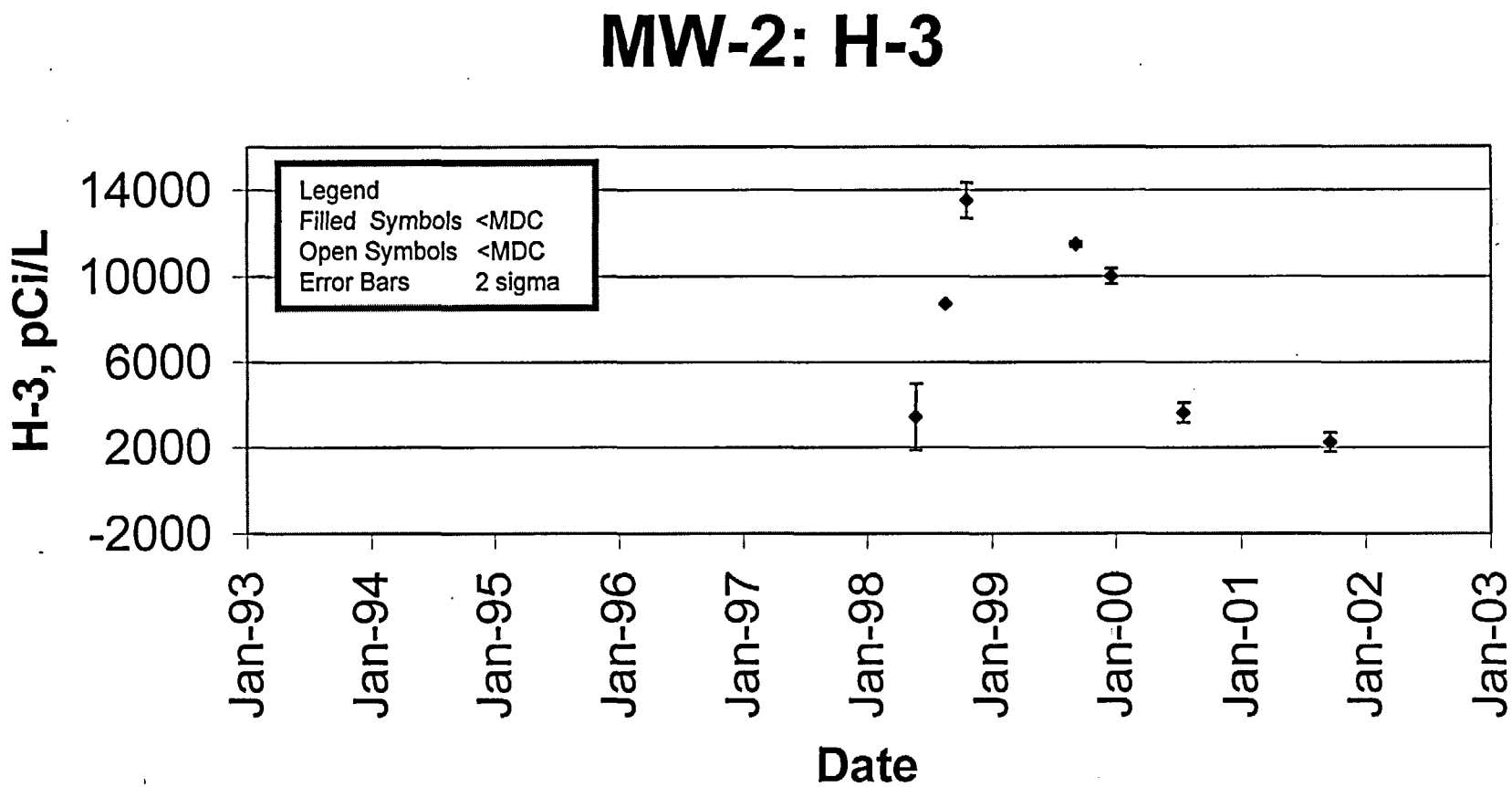
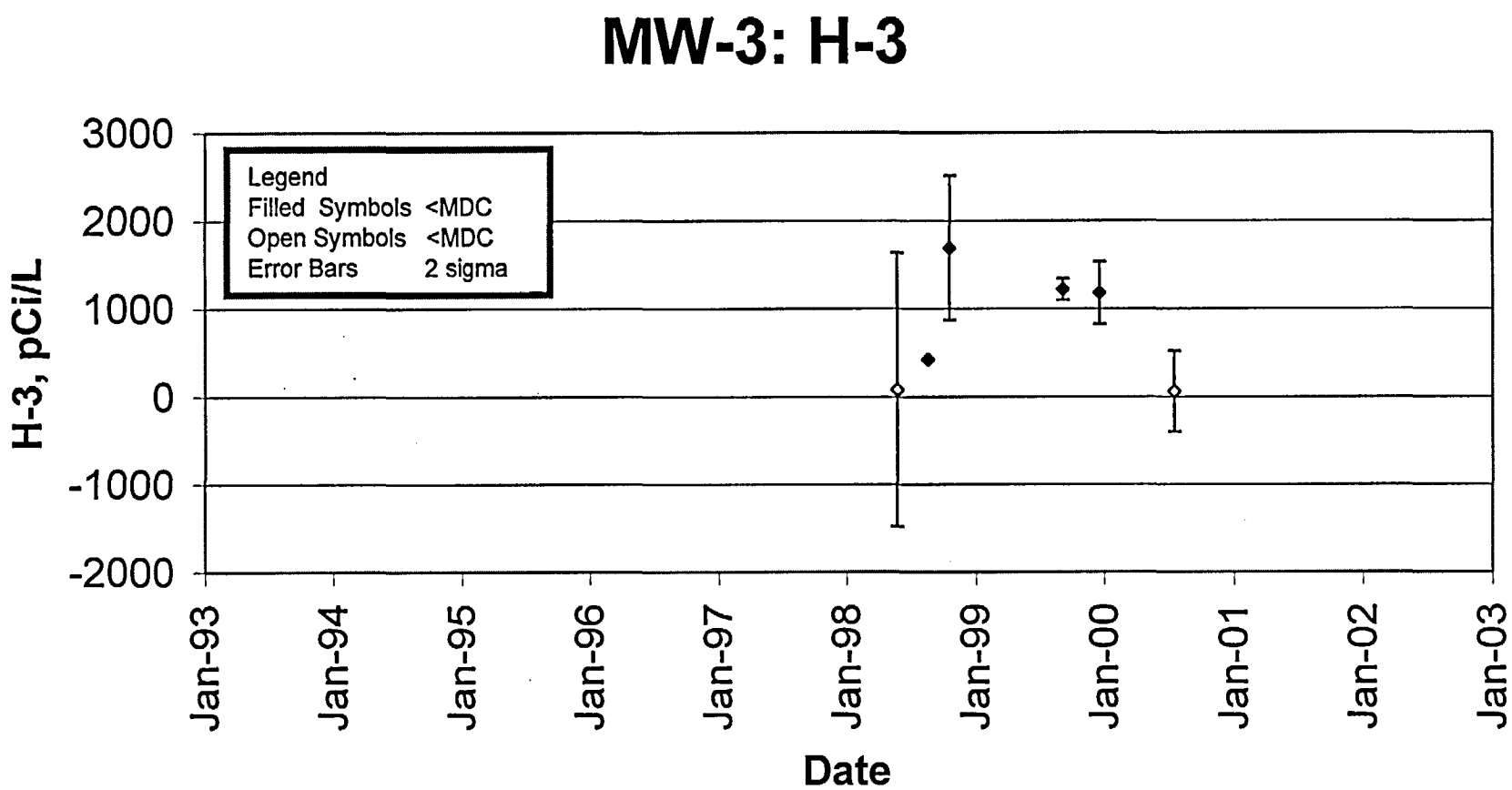
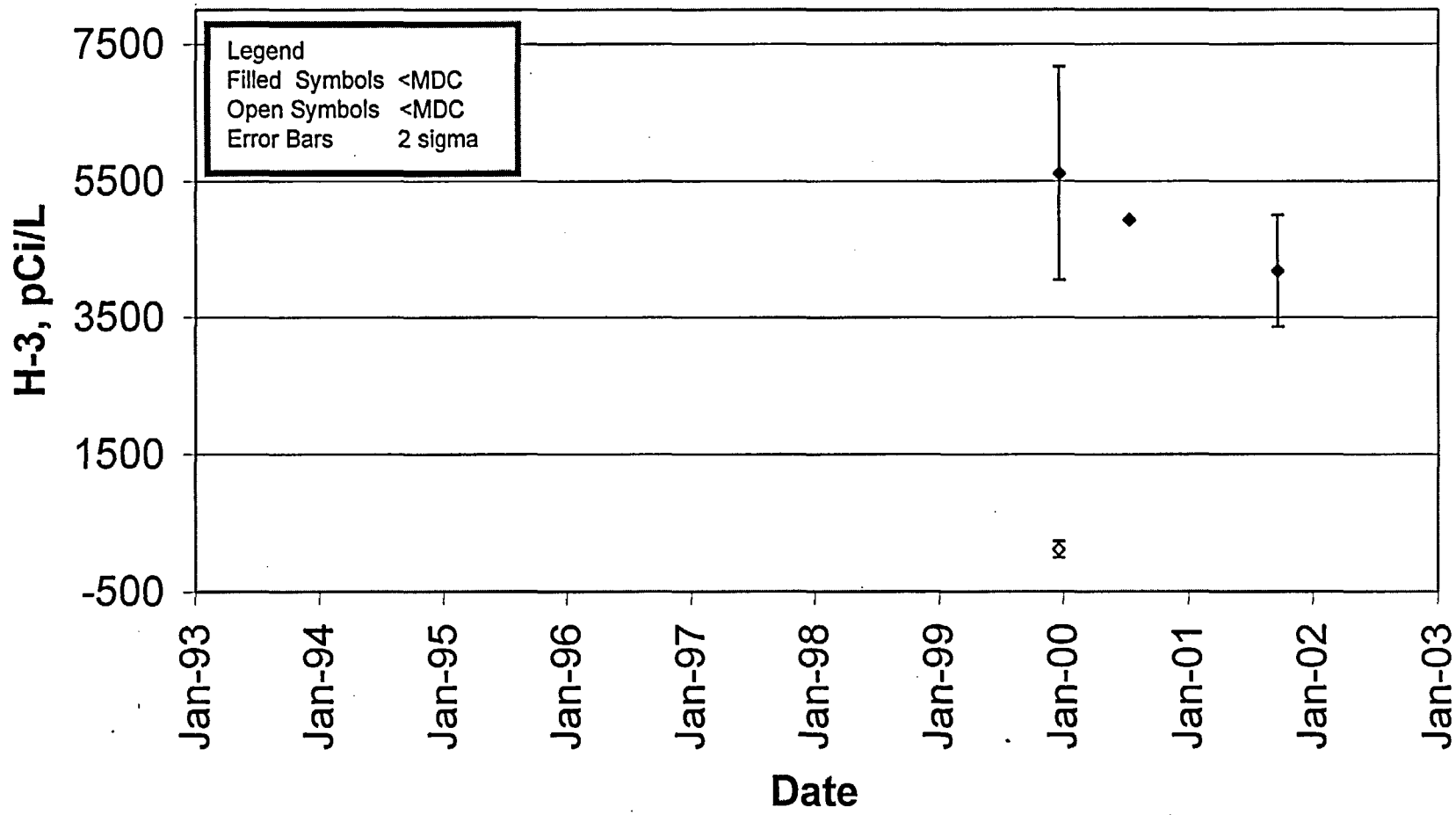
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
4000
3000
2000
1000
0
-1000
-2000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

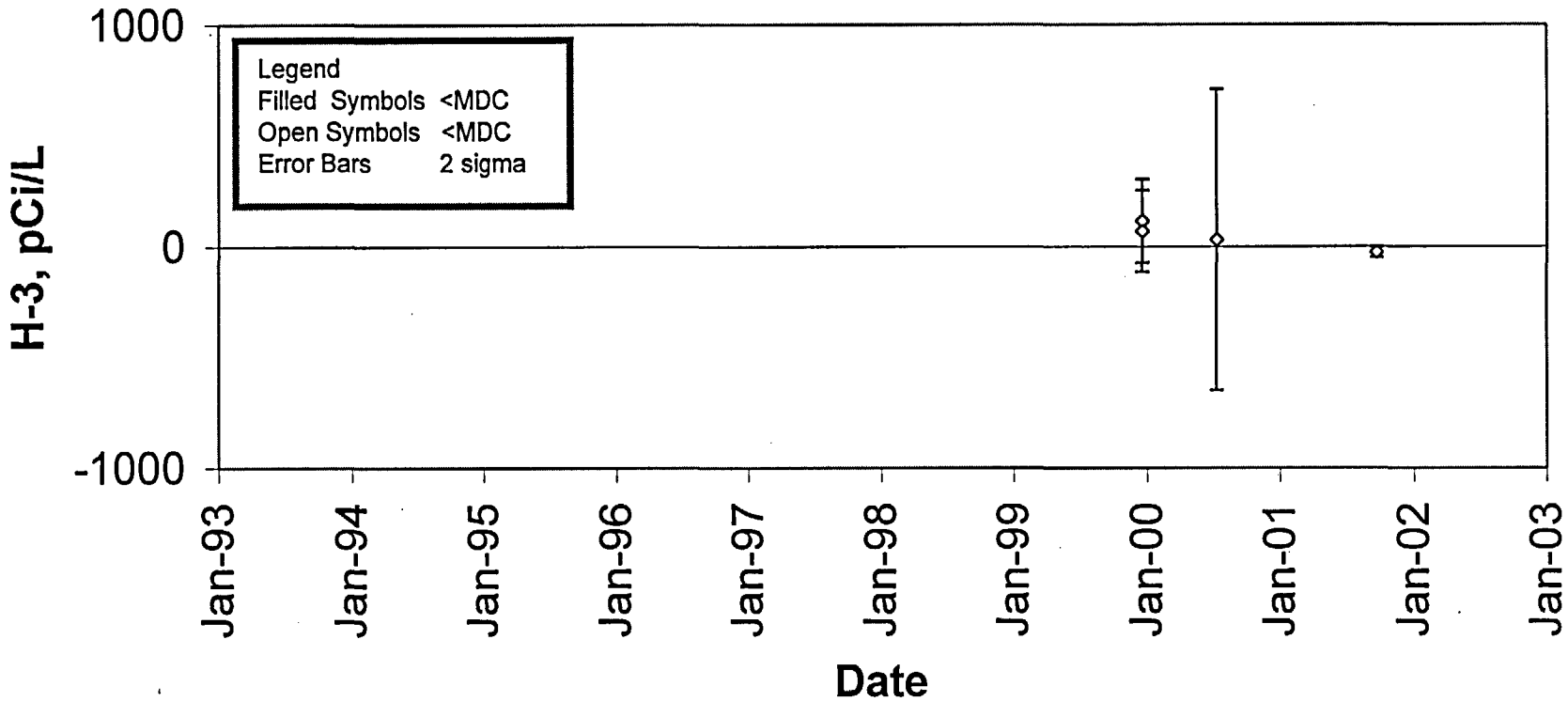

MW-2: H-3
Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
14000
10000
6000
2000
-2000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date


MW-3: H-3
Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
3000
2000
1000
0
-1000
-2000
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

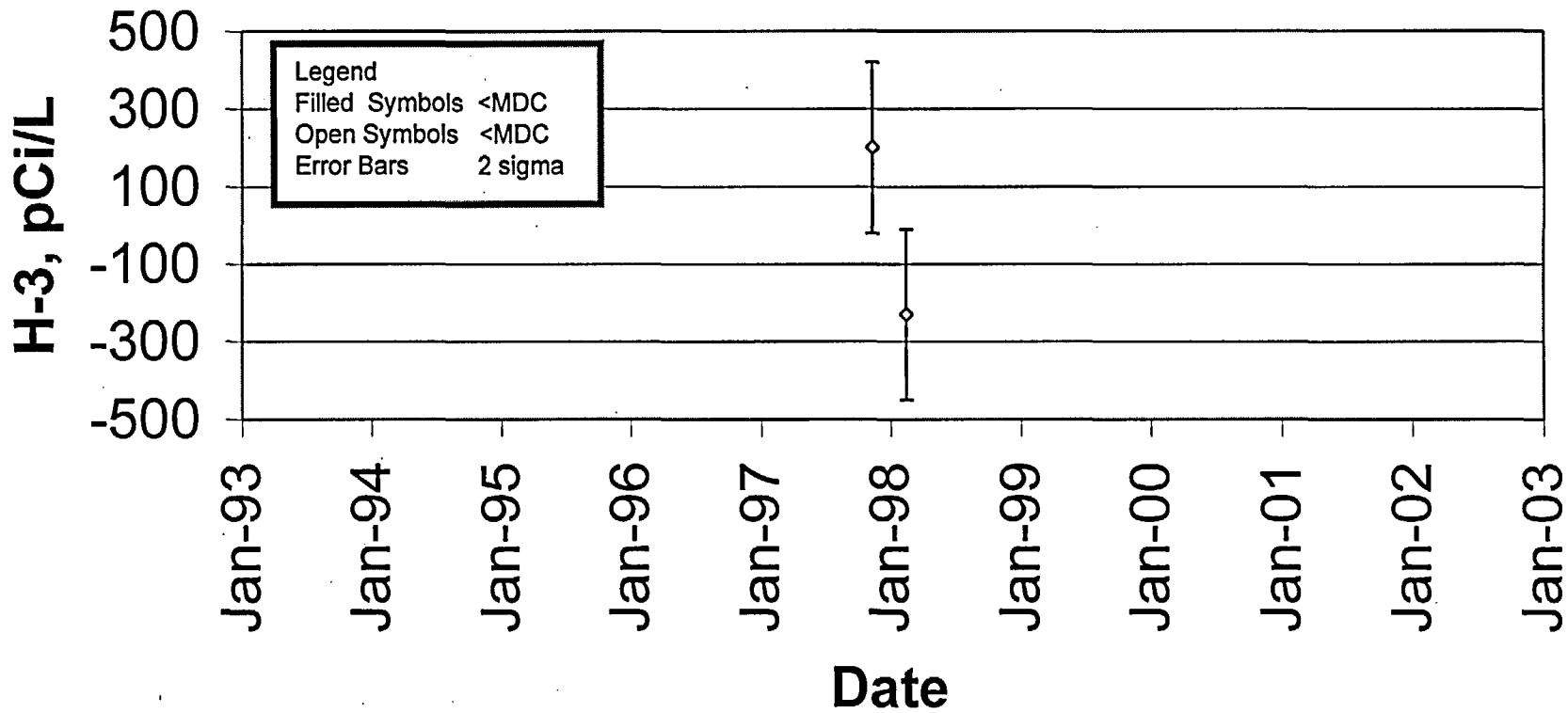
MW-5: H-3


Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
7500
5500
3500
1500
-500
H-3, pCi/L
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

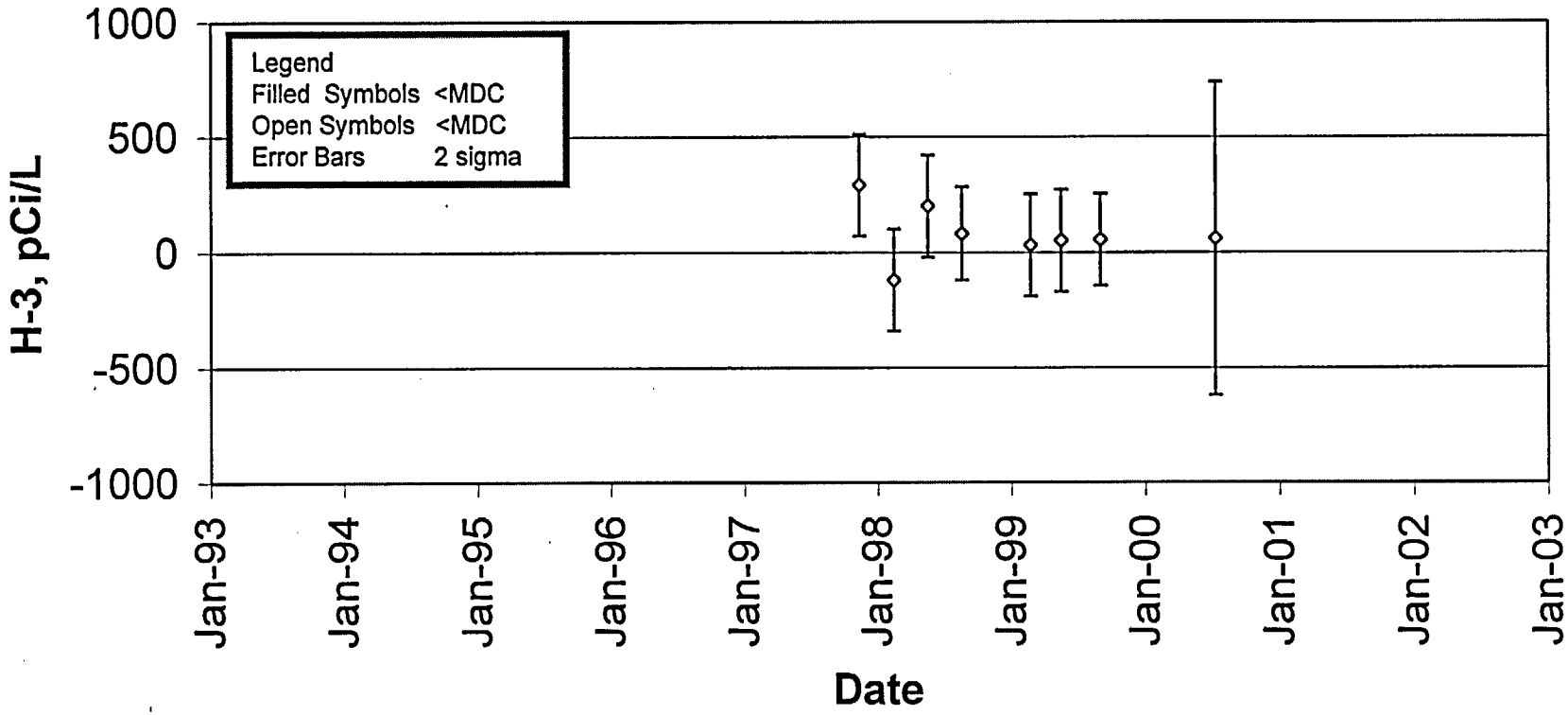
MW-6: H-3


Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
1000
0
-1000
H-3, pCi/L
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

NSR-1: H-3

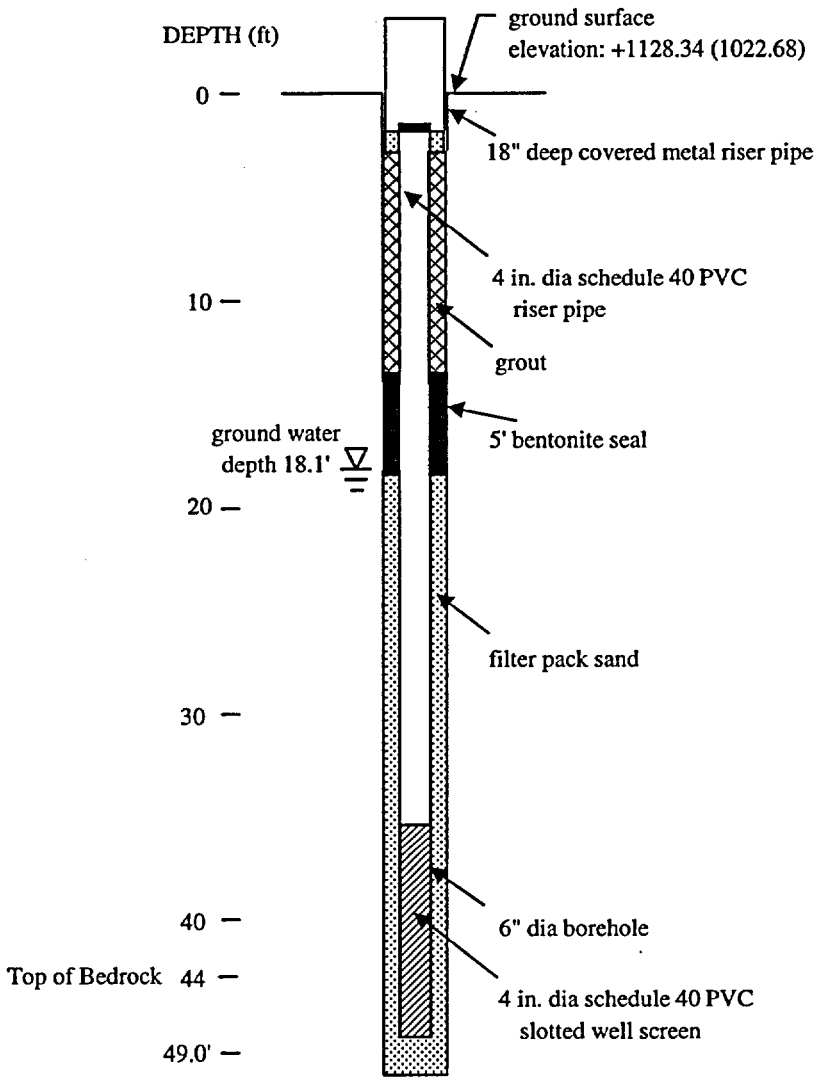

Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
H-3, pCi/L
500
300
100
-100
-300
-500
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

OSR-1: H-3


Legend
Filled Symbols <MDC
Open Symbols <MDC
Error Bars 2 sigma
1000
500
0
-500
-1000
H-3, pCi/L
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Date

Attachment 3
Monitoring Well Configuration Sketches

SCHEMATIC FOR WELL INSTALLATION B-1
New Fuel Vault

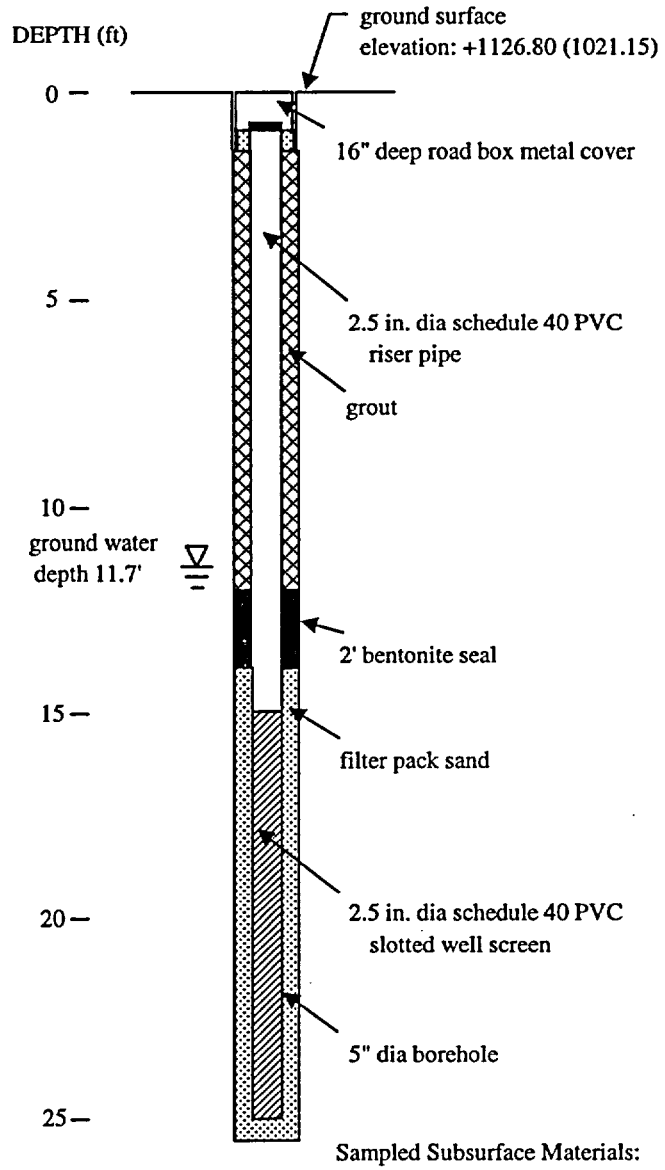


Borehole depth: 78.5'
Bottom of well screen: 49.0'
Top of well screen: 39.0'
Top of filter sand: 23'
Top of bentonite seal: 18'
Installation date: 12/30/77

Sampled Subsurface Materials:
0-8' Fill
8-44' Till
44'-78.5' Bedrock

Contractor: Guild Drilling
Engineer: Dames & Moore

SCHEMATIC FOR WELL INSTALLATION CB-1
N. of Fuel Building

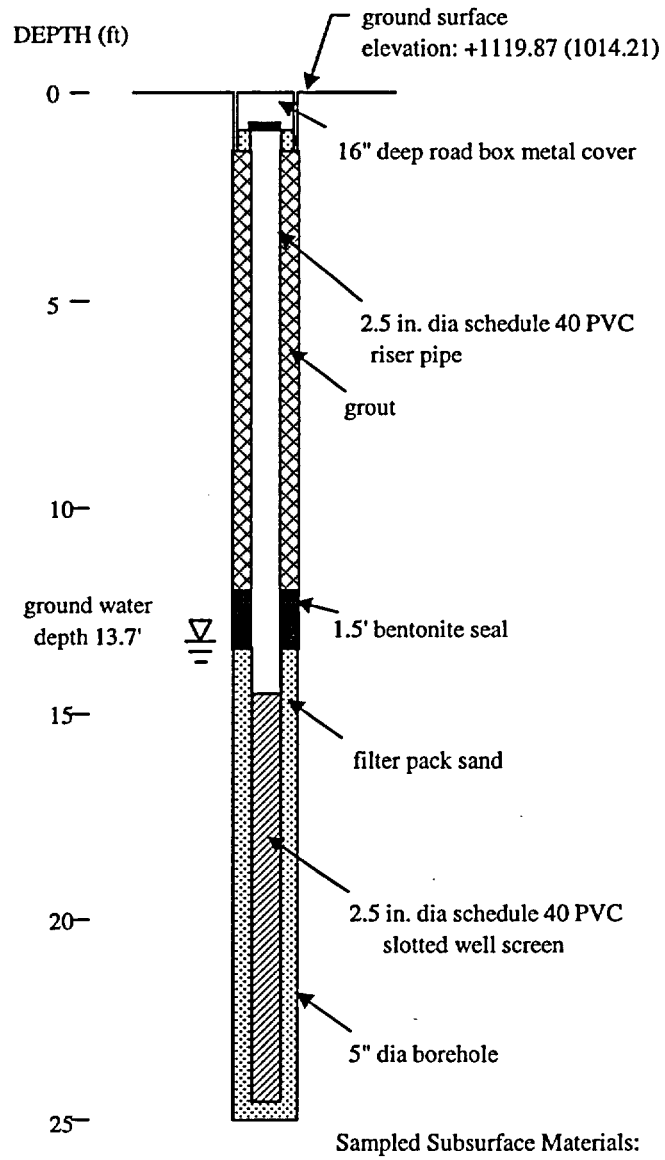


Borehole depth: 25.5'
Bottom of well screen: 25'
Top of well screen: 15'
Top of filter sand: 14'
Top of bentonite seal: 12'
Installation date: 4/26-27/93

Sampled Subsurface Materials:
0-0.5' Asphalt
0.5-3.5' Fill
3.5'-13.5' Bouldery Till
13.5'-25.5' Till

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CB-2
N. of Office Building

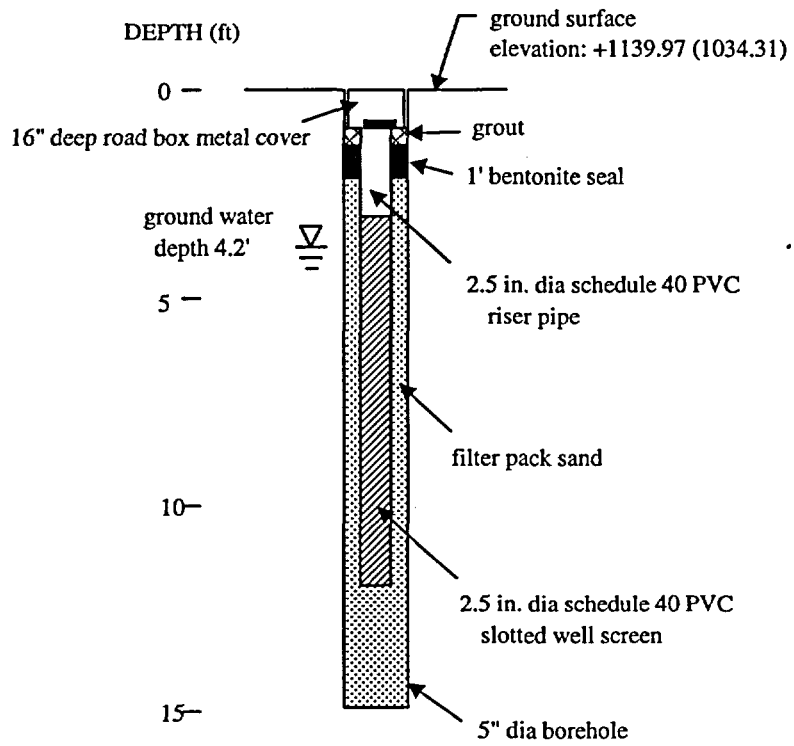


Borehole depth: 25'
Bottom of well screen: 24.5'
Top of well screen: 14.5'
Top of filter sand: 13.5'
Top of bentonite seal: 12'
Installation date: 4/20-21/93

Sampled Subsurface Materials:
0-0.5' Asphalt
0.5-15.5' Fill/Outwash
15.5'-25' Bouldery Till

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CB-3
E. of Fire Water Tank

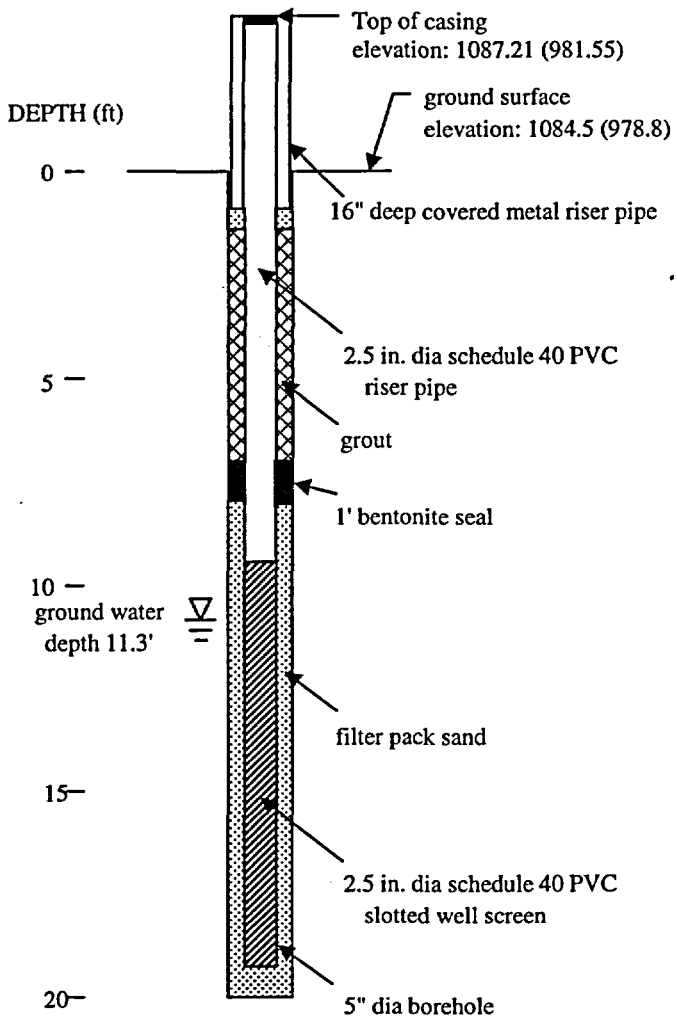


Borehole depth: 15.0'
Bottom of well screen: 13.0'
Top of well screen: 3.0'
Top of filter sand: 5.0'
Top of bentonite seal: 2'
Installation date: 4/29/93

Sampled Subsurface Materials:
0-0.5' Asphalt
0.5-10' Silty Outwash
10-15' Till

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CB-4
Old Septic Leaching Field



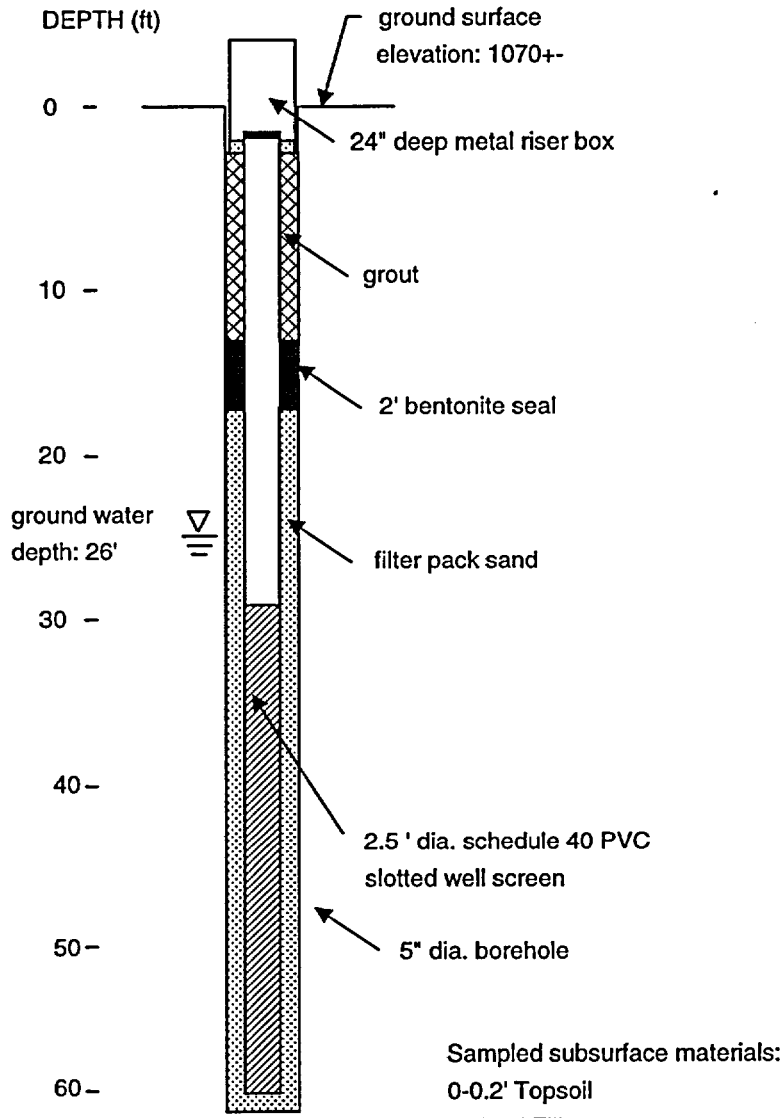
Borehole depth: 20.0'
Bottom of well screen: 19.0'
Top of well screen: 9.0'
Top of filter sand: 8.0'
Top of bentonite seal: 7.0'
Installation date: 5/4-5/93

Sampled Subsurface Materials:
0-0.5' Asphalt
0-2' Fill
2'-7'Sand
7'-9' Gravel
9-13' Sand
13-15' Gravel
15-20' Alluvium

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CB-5

Southeast Construction Fill Area



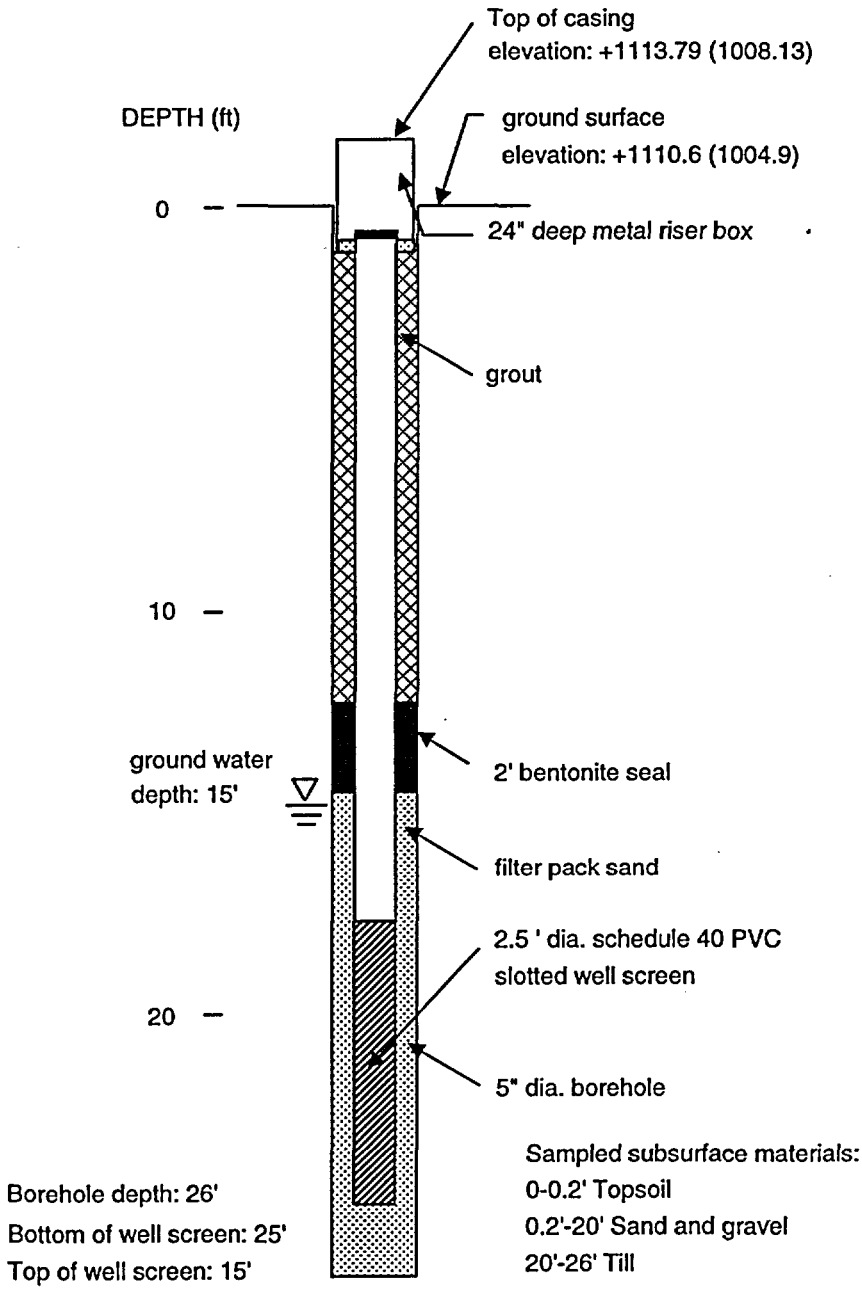
Borehole depth: 60'6"
Bottoms of well screen: 59'
Top of well screens: 29'
Top of filter sand: 18'
Top of bentonite seal: 16'

Sampled subsurface materials:
0-0.2' Topsoil
0.2'-25' Fill
25'-60'6" Till

Contractor: Guild Drilling
Engineer: Yankee Atomic
Installation date: 9/9/94

SCHEMATIC FOR WELL INSTALLATION CB-6

Southeast of Sherman Dam



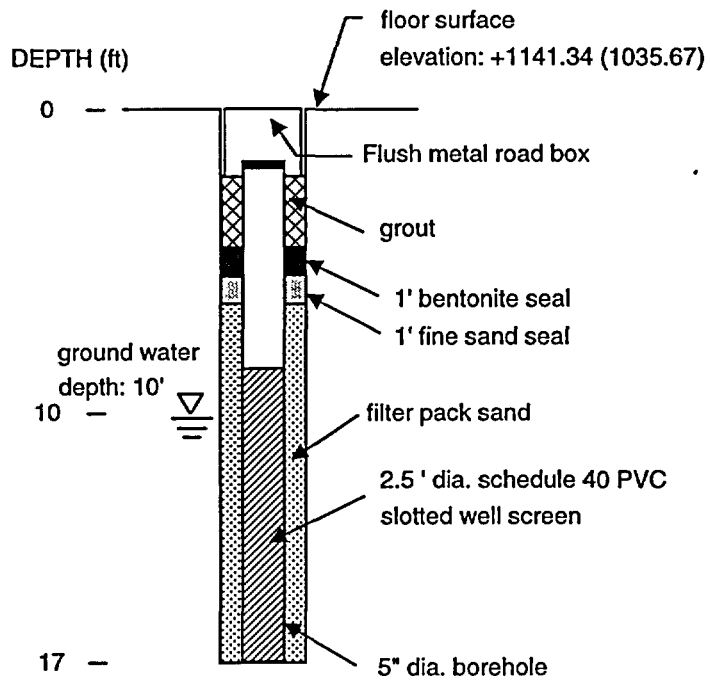
Borehole depth: 26'
Bottom of well screen: 25'
Top of well screen: 15'
Top of filter sand: 14'
Top of bentonite seal: 12'

Sampled subsurface materials:
0-0.2' Topsoil
0.2'-20' Sand and gravel
20'-26' Till

Contractor: Guild Drilling
Engineer: Yankee Atomic
Installation date: 9/13/94

SCHEMATIC FOR WELL INSTALLATION CB-7

PCA Warehouse near Waste Building



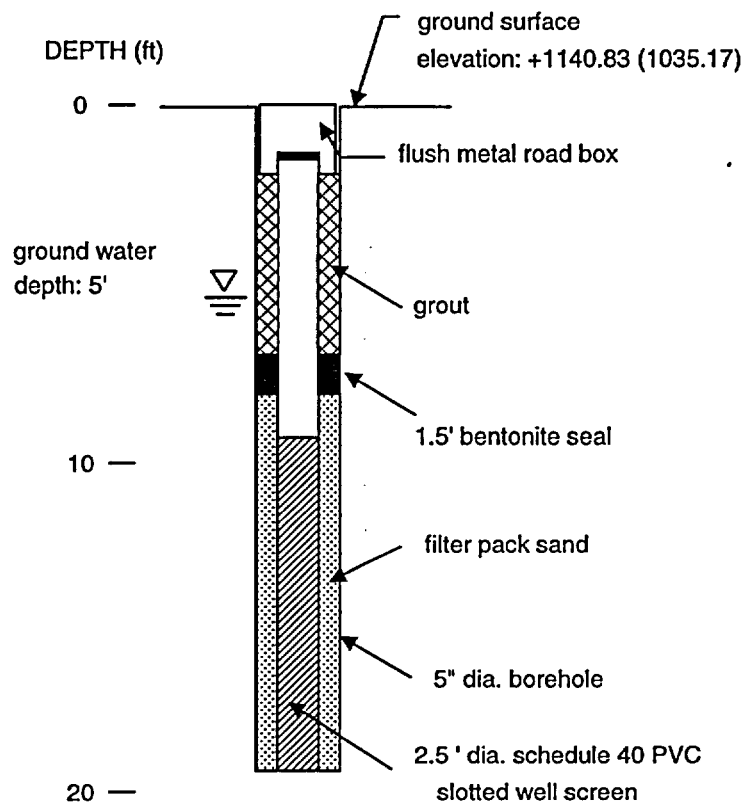
Well depth: 17'
Bottom of well screen: 17'
Top of well screen: 7'
Top of filter sand: 5.5'
Top of fine sand seal: 4.5'
Top of bentonite seal: 3.5'

Sampled subsurface materials:
0-1' Concrete
1'-6' Sand and Gravel Fill
6'-11' Boulder, Cobbles
11'-17' Boulders (Till?)

Contractor: Guild Drilling
Engineer: Yankee Atomic
Installation date: 1/7/97

SCHEMATIC FOR WELL INSTALLATION CB-8

Rad Storage Area East of Old PCA



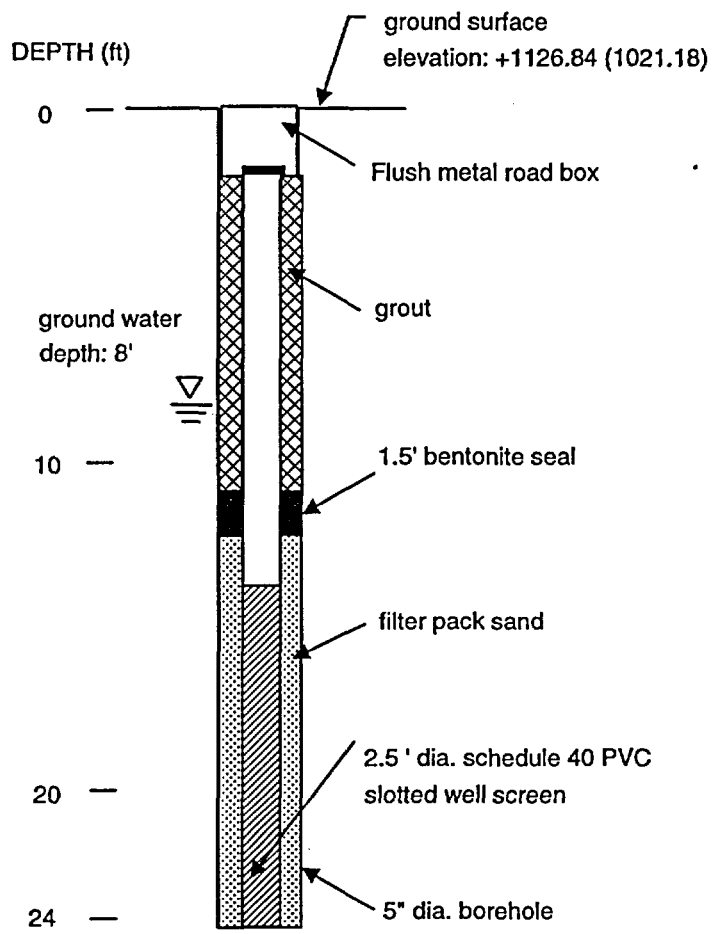
Well depth: 19'
Bottom of well screen: 19'
Top of well screen: 14'
Top of filter sand: 13'
Top of bentonite seal: 11.5'

Sampled subsurface materials:
0-.5' Asphalt
0.5'-3' Sand fill (till?)
3'-19' Till

Contractor: Guild Drilling
Engineer: Yankee Atomic
Installation date: 9/20/94

SCHEMATIC FOR WELL INSTALLATION CB-9

Beneath VC Equipment Hatch

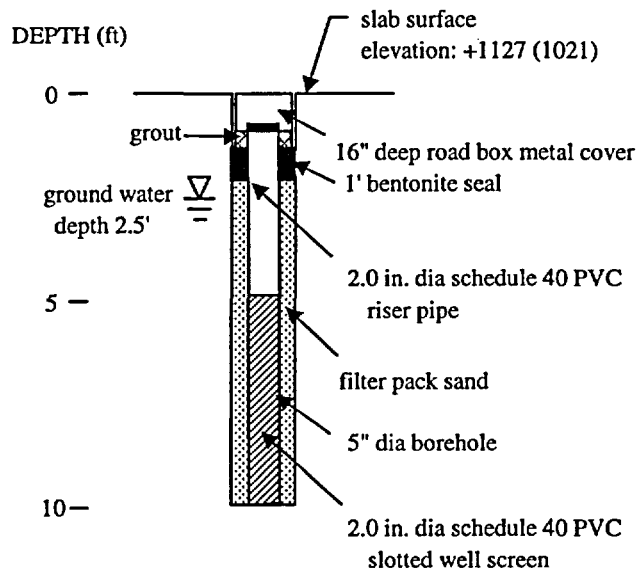


Well depth: 24'
Bottom of well screen: 24'
Top of well screen: 14'
Top of filter sand: 13'
Top of bentonite seal: 11.5'

Sampled subsurface materials:
0-2" Asphalt
2"-9.5' Sand fill
9.5'-24' Till

Contractor: Guild Drilling
Engineer: Yankee Atomic
Installation date: 9/19/94

SCHEMATIC FOR WELL INSTALLATION CB-10
NW. Corner of Ion Exchange Pit



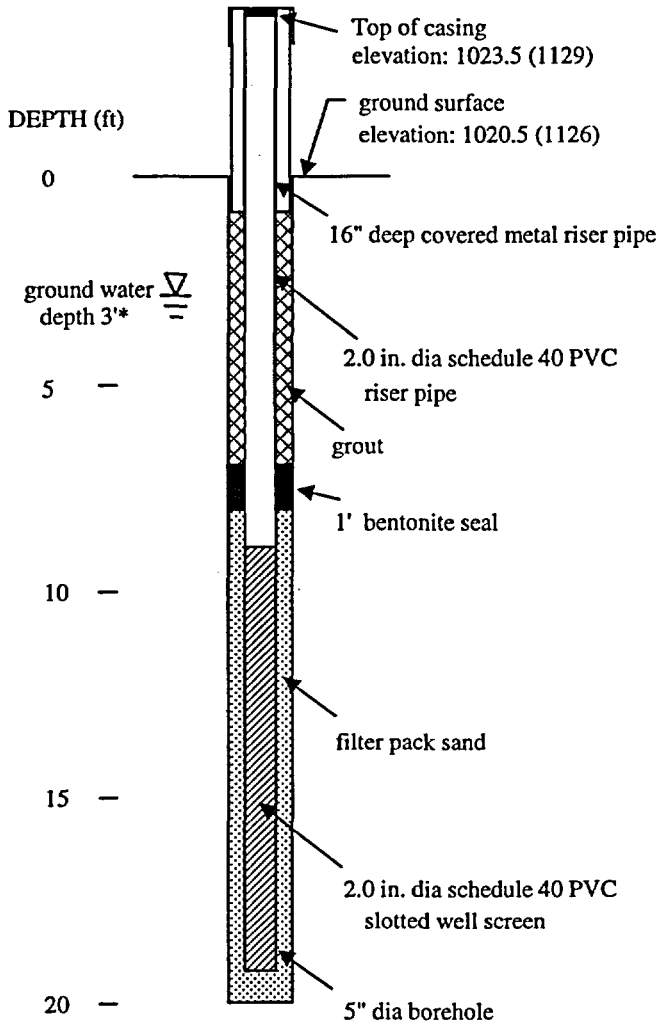
Borehole depth: 11.5'
Bottom of well screen: 11.5'
Top of well screen: 6.5'
Top of filter sand: 5.5'
Top of bentonite seal: 4.5'
Installation date: 12/19/97

Sampled Subsurface Materials:
0-1.5' Concrete
1.5-10' Brown silty gravelly widely-graded sand

Contractor: Geosearch
Engineer: Duke Engineering & Services

SCHEMATIC FOR WELL INSTALLATION CB-11A

PAB Pipe Trench



* Initial ground water depth +0.2 ft above floor

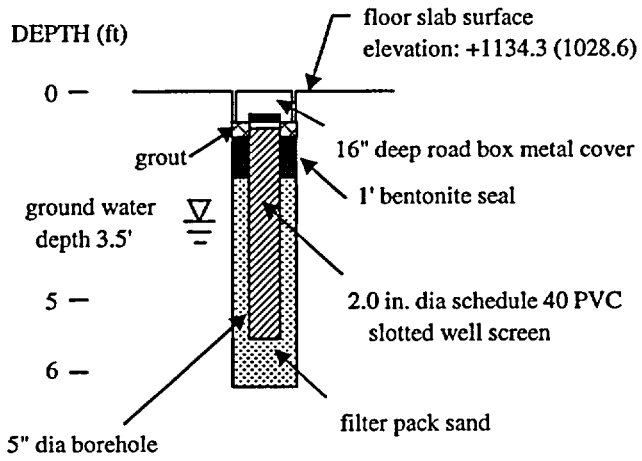
Borehole depth: 20'
Bottom of well screen: 19'
Top of well screen: 9'
Top of filter sand: 8'
Top of bentonite seal: 7'
Installation date: 12/18/97

Sampled Subsurface Materials:
- 0-1.5' Concrete
- 1.5-19.5' Brown silty gravelly widely-graded sand: loose
- 19.5-20.0' Clayey silt

Contractor: Geosearch
Engineer: Duke Engineering & Services

SCHEMATIC FOR WELL INSTALLATION CB-12

NW Corner of Waste Disposal Building Ash Dewatering Pit

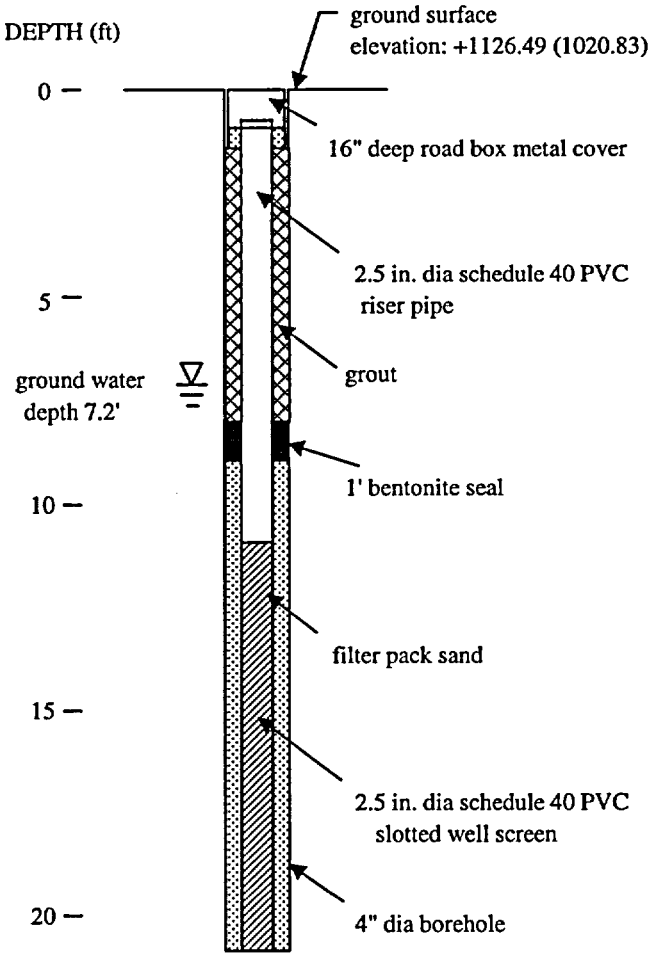


Borehole depth: 7'
Bottom of well screen: 6.6'
Top of well screen: 1.6'
Top of filter sand: 1.6'
Top of bentonite seal: 0.6'
Installation date: 12/10/97

Sampled Subsurface Materials:
0-0.5' Asphalt
0.5-10' Silty Outwash
10-15' Till

Contractor: Geosearch
Engineer: Duke Engineering & Services
Installation date: 12/10/97

SCHEMATIC FOR WELL INSTALLATION CW-1
N. of Diesel Generator Building

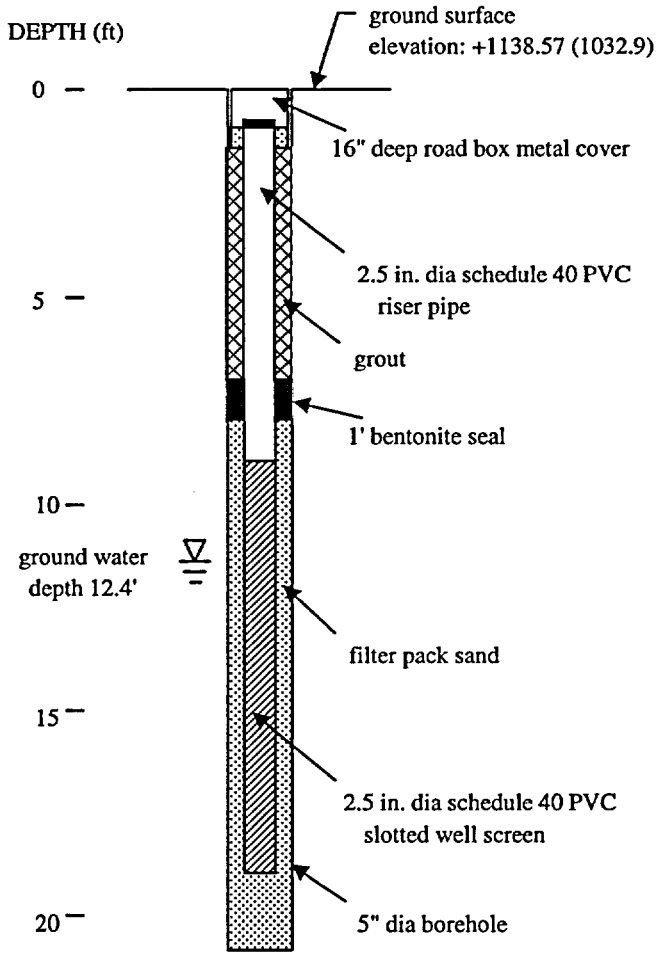


Borehole depth: 21.0'
Bottom of well screen: 21.0'
Top of well screen: 11.0'
Top of filter sand: 9.0'
Top of bentonite seal: 8'
Installation date: 4/28/93

Inferred Subsurface Materials:
0-0.5' Asphalt
0.5-12' Bouldery Till
12-21' Till

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CW-2
N. of old SI Tank

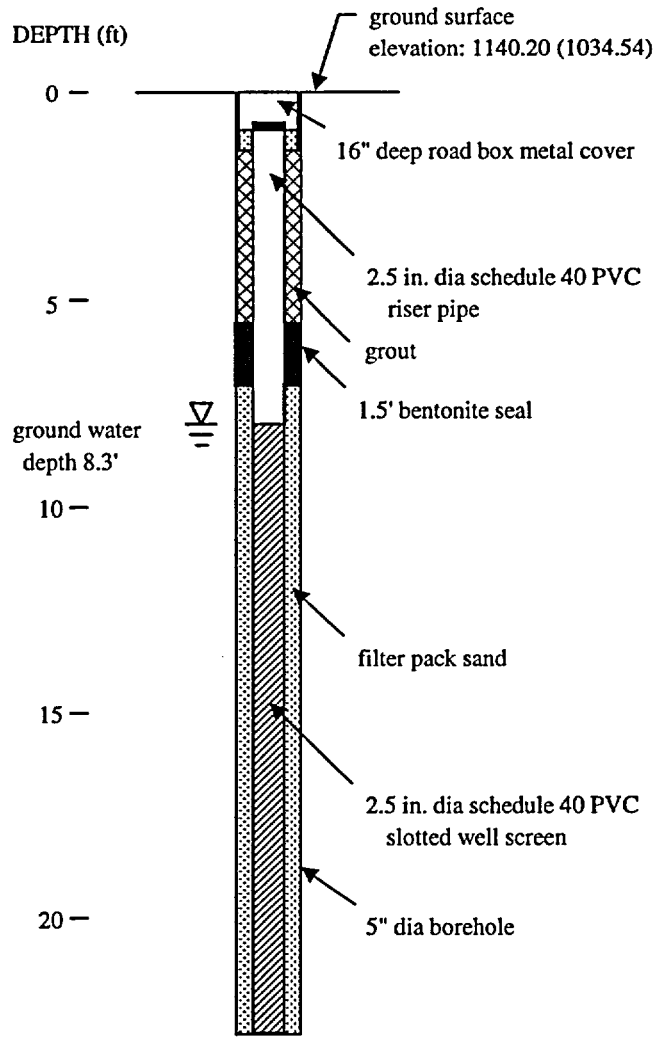


Borehole depth: 21.0'
Bottom of well screen: 20.0'
Top of well screen: 9.0'
Top of filter sand: 9.0'
Top of bentonite seal: 8.0'
Installation date: 4/29/93

Inferred Subsurface Materials:
0-0.5' Asphalt
0.5-15' Fill/Outwash
15'-21'Till

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CW-3
SE of Ion Exchange Pit

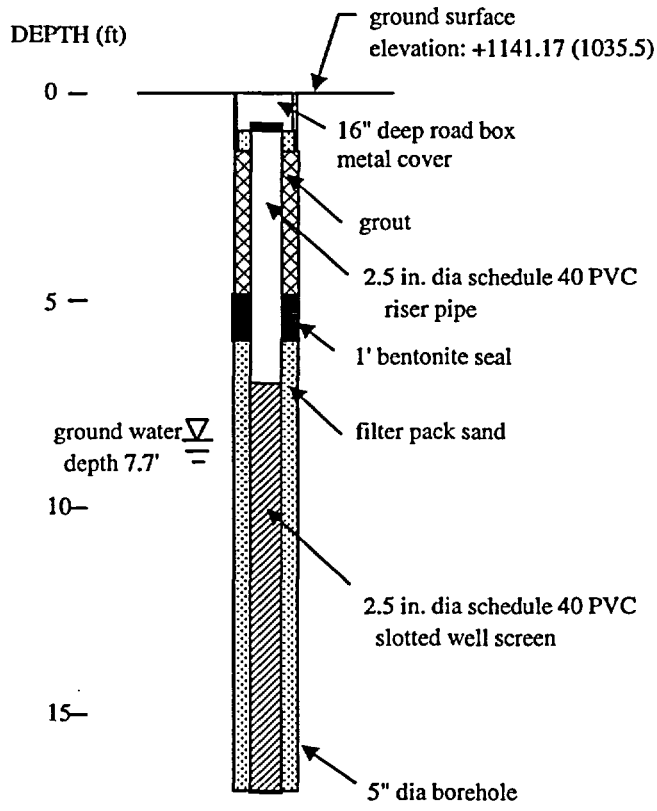


Borehole depth: 23.0'
Bottom of well screen: 23.0'
Top of well screen: 8.0'
Top of filter sand: 7.0'
Top of bentonite seal: 5.5'
Installation date: 5/3/93

Inferred Subsurface Materials:
0-0.5' Asphalt
0.5-7.5' Fill/Outwash
7.5-19' Till
19-23' Bedrock

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CW-4
Between PCA Storage Buildings

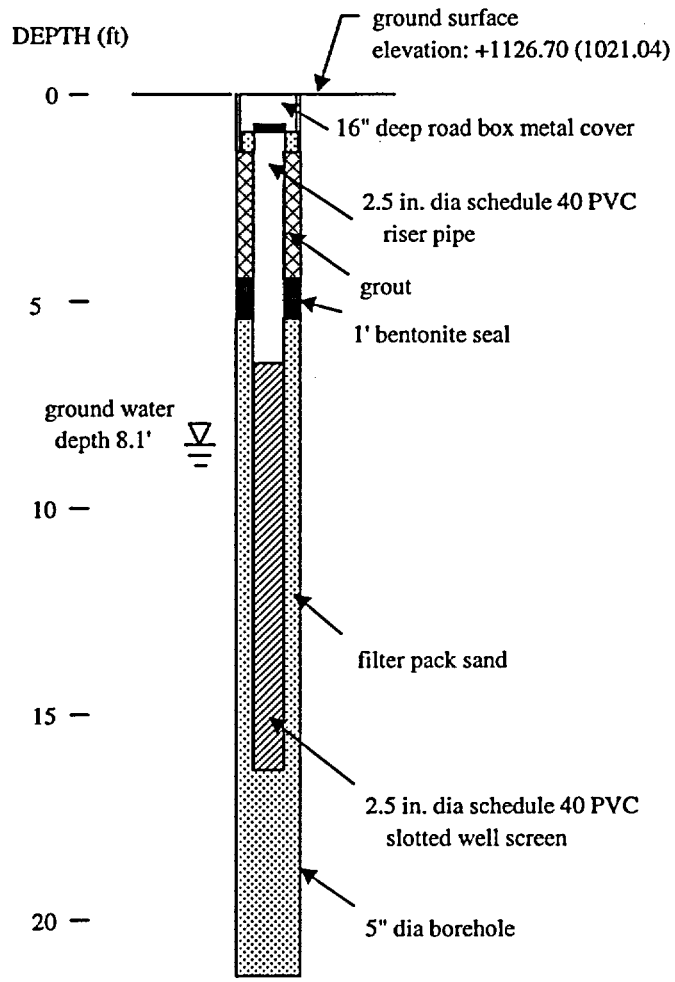


Borehole depth: 17.0'
Bottom of well screen: 17.0'
Top of well screen: 7.0'
Top of filter sand: 5.0'
Top of bentonite seal: 5'
Installation date: 5/3-4/93

Inferred Subsurface Materials:
0-0.5' Asphalt
0.5-17' Till

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CW-5
S. of Service Building

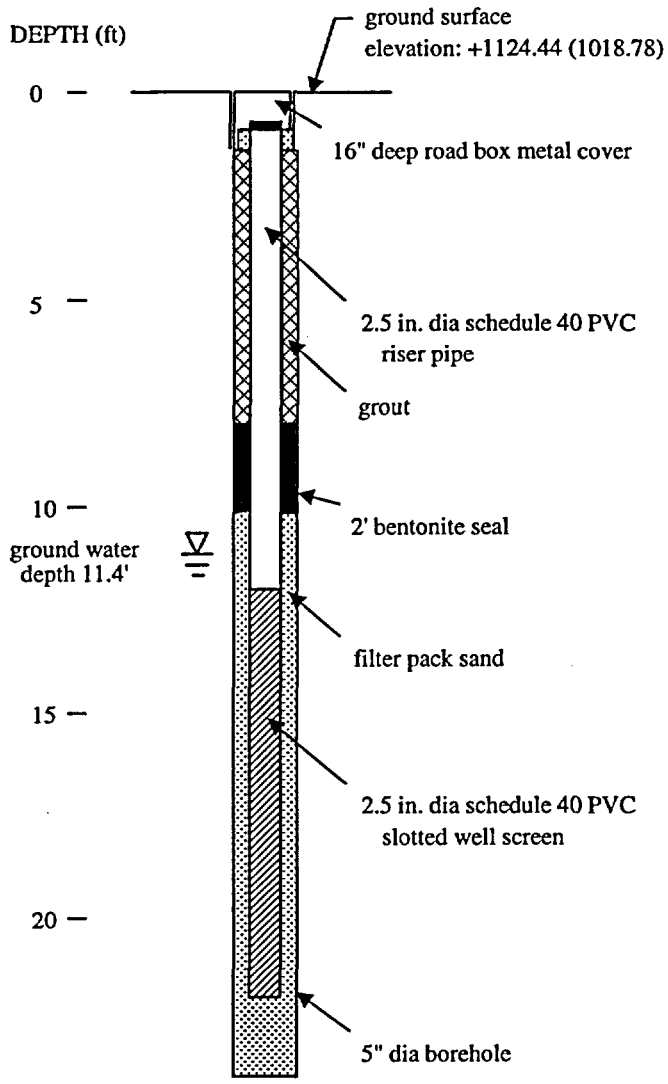


Borehole depth: 21.5'
Bottom of well screen: 16.5'
Top of well screen: 6.5'
Top of filter sand: 5.5'
Top of bentonite seal: 4.5'
Installation date: 4/27/93

Inferred Subsurface Materials:
0-0.5' Asphalt
0.5-12' Fill/Outwash
13'-21.5' Bedrock

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CW-6
W. of Turbine Building



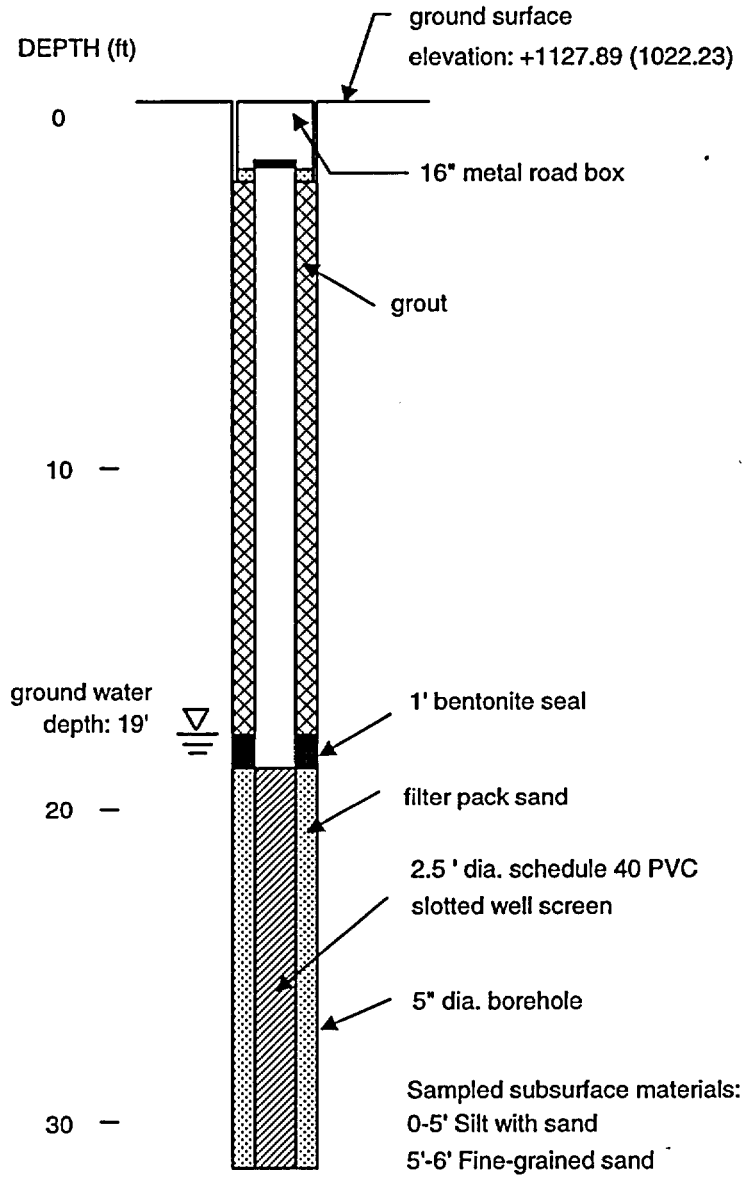
Borehole depth: 24'
Bottom of well screen: 22'
Top of well screen: 12'
Top of filter sand: 11'
Top of bentonite seal: 10'
Installation date: 4/22-23/93

Inferred Subsurface Materials:
0-0.5' Asphalt
0.5-14' Fill/Outwash
12'-24' Till

Contractor: Guild Drilling
Engineer: Yankee Atomic

SCHEMATIC FOR WELL INSTALLATION CW-7

West of Service Building near former Used Oil UST



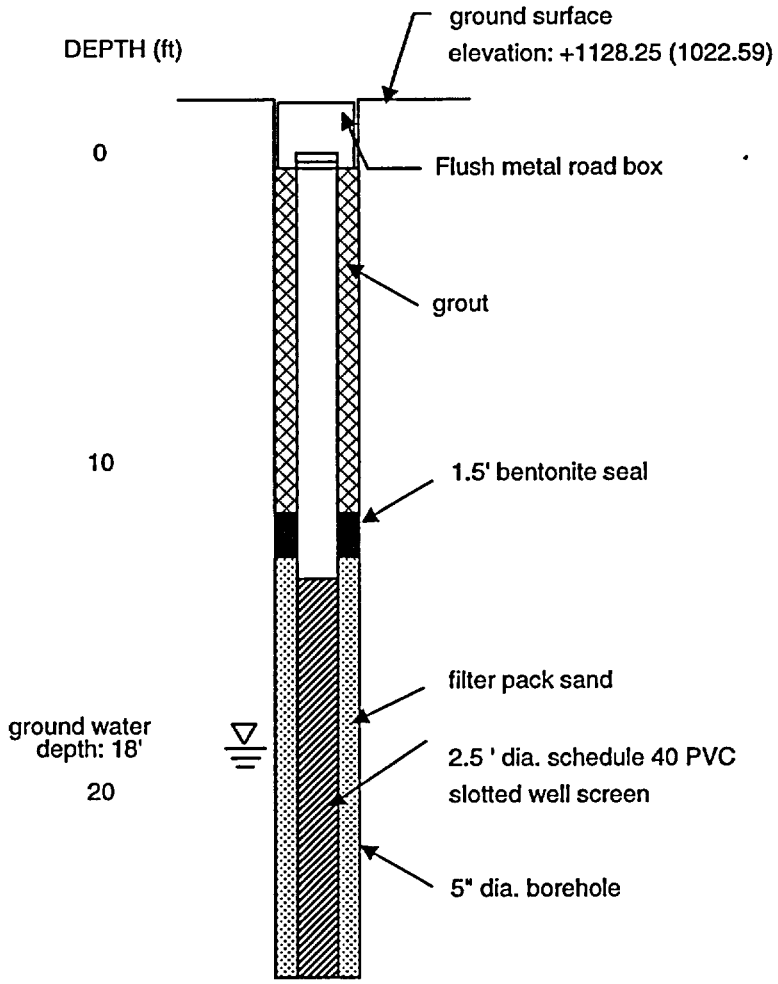
Borehole depth: 31'
Bottom of well screen: 31'
Top of well screen: 21'
Top of filter sand: 20'
Top of bentonite seal: 19'

Sampled subsurface materials:
0-5' Silt with sand
5'-6' Fine-grained sand
6'-8' Cobbles
8'-31' Till (top depth uncertain)

Contractor: Guild Drilling
Engineer: Yankee Atomic
Installation date: 9/13/94

SCHEMATIC FOR WELL INSTALLATION CW-8

Southwest Bay of Turbine Building

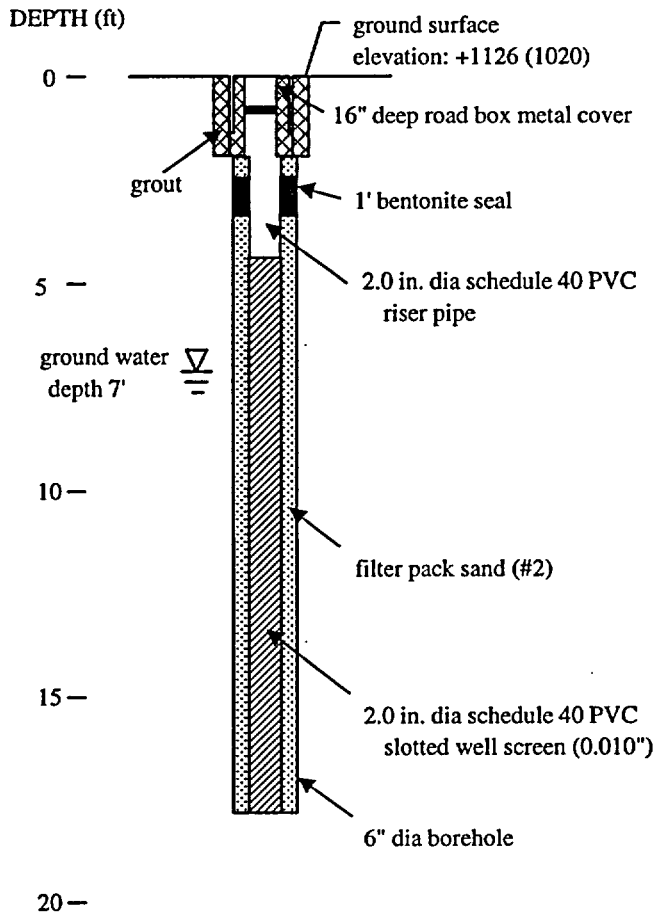


Well depth: 26'
Bottom of well screen: 26'
Top of well screen: 16'
Top of filter sand: 14.5'
Top of bentonite seal: 13'

Sampled subsurface materials:
0-1.4' Concrete
1.4'-5' Sand
5'-10' Cobbles
10'-26' Till (top depth uncertain)

Contractor: Guild Drilling
Engineer: Yankee Atomic
Installation date: 9/14/94

SCHEMATIC FOR WELL INSTALLATION CW-9
N. of Diesel Generator Building

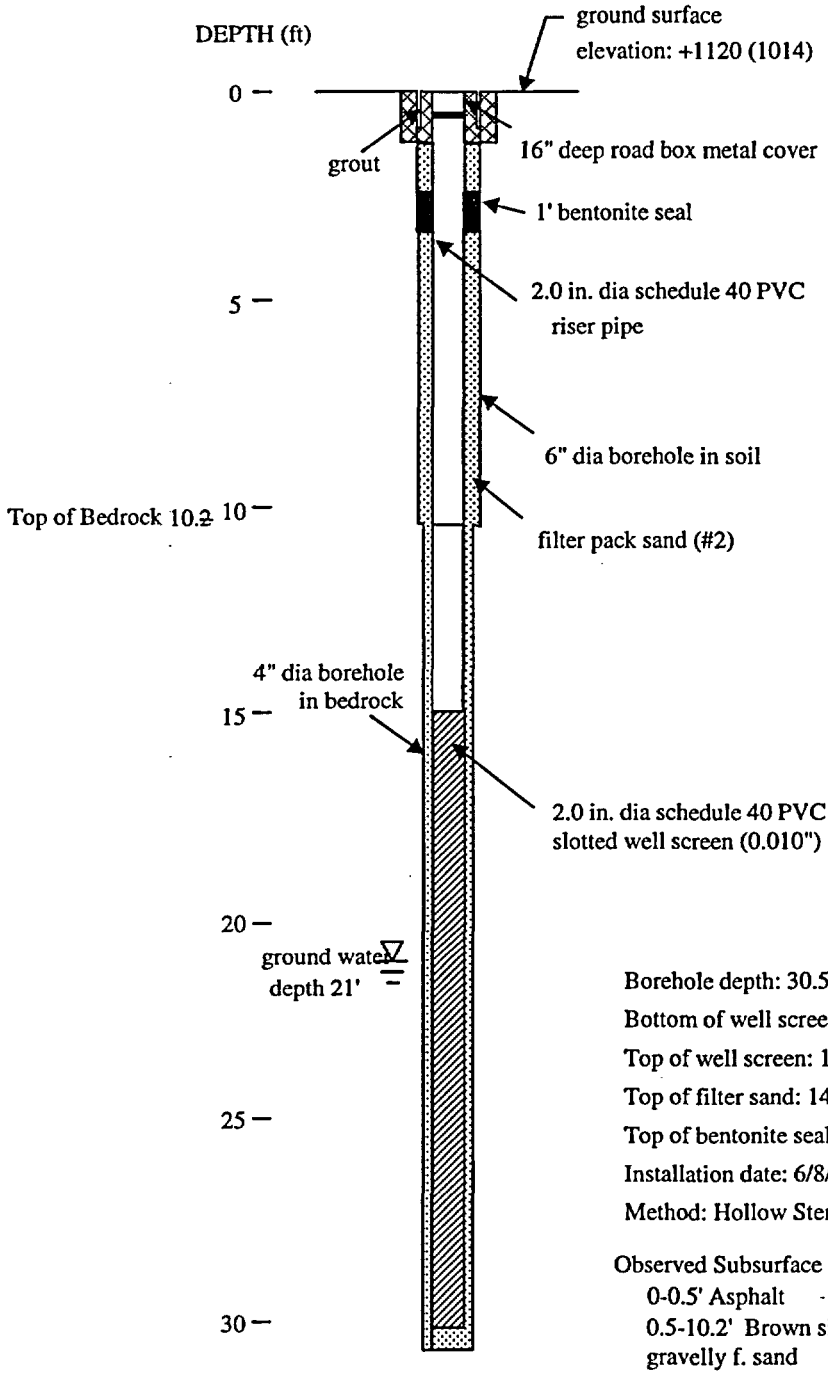


Borehole depth: 17.0'
Bottom of well screen: 17.0'
Top of well screen: 4.0'
Top of filter sand: 3.0'
Top of bentonite seal: 2'
Installation date: 6/8/98
Method: Hollow Stem Auger

Observed Subsurface Materials:
0-0.5' Asphalt
0.5-17' Brown dense c.sandy
f. gravelly, cobbley silt: Till

Contractor: Geosearch
Engineer: Duke Engineering & Services

SCHEMATIC FOR WELL INSTALLATION CW-10
N. of Former Gasoline UST Location



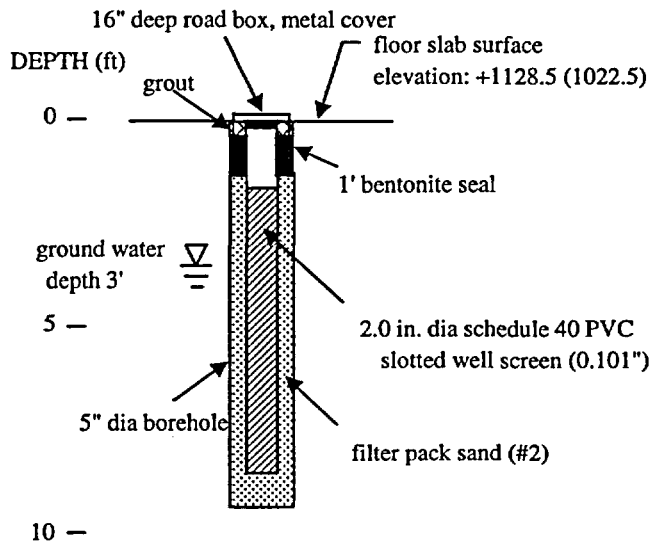
Borehole depth: 30.5'
Bottom of well screen: 30.0'
Top of well screen: 15.0'
Top of filter sand: 14.0'
Top of bentonite seal: 13'
Installation date: 6/8/98
Method: Hollow Stem Auger

Observed Subsurface Materials:
0-0.5' Asphalt
0.5-10.2' Brown silty gravelly f. sand
10.2-30.5' Bedrock: dry to 23,' where fractures occur

Contractor: Geosearch
Engineer: Duke Engineering & Services

SCHEMATIC FOR WELL INSTALLATION CW-11

PAB at LP Cooling Pump Area



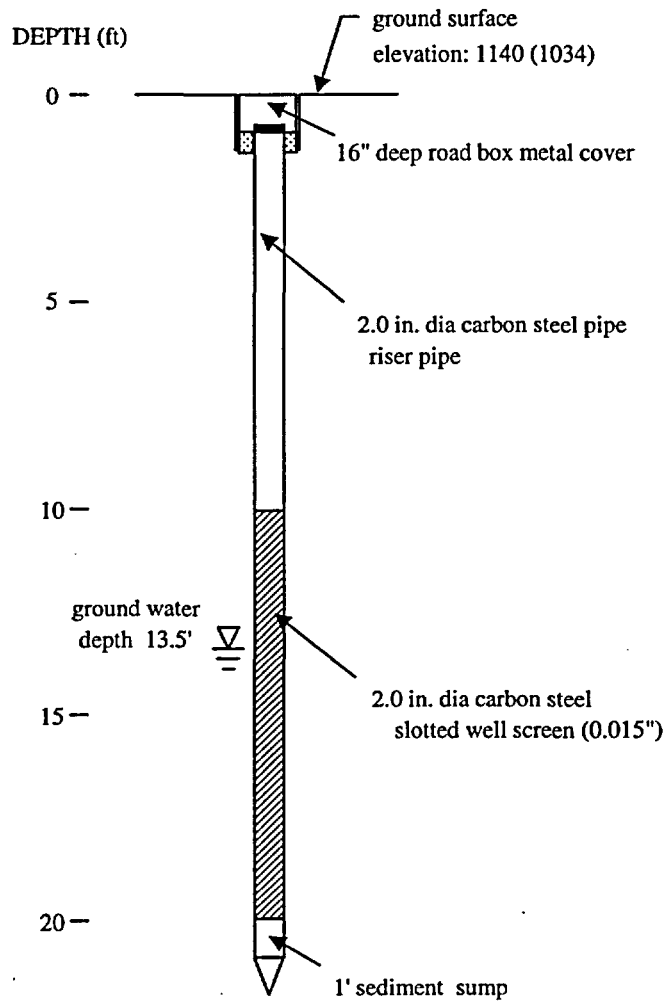
Borehole depth: 9.5'
Bottom of well screen: 9'
Top of well screen: 2'
Top of filter sand: 1.6'
Top of bentonite seal: 0.6'
Installation date: 6/11/98

Sampled Subsurface Materials:
0-1.5' Concrete Slab
1.5-9.5' Sand & gravel fill

Contractor: Geosearch
Engineer: Duke Engineering & Services

SCHEMATIC FOR WELL INSTALLATION MW-1

S. of PAB



Inferred Subsurface Materials:

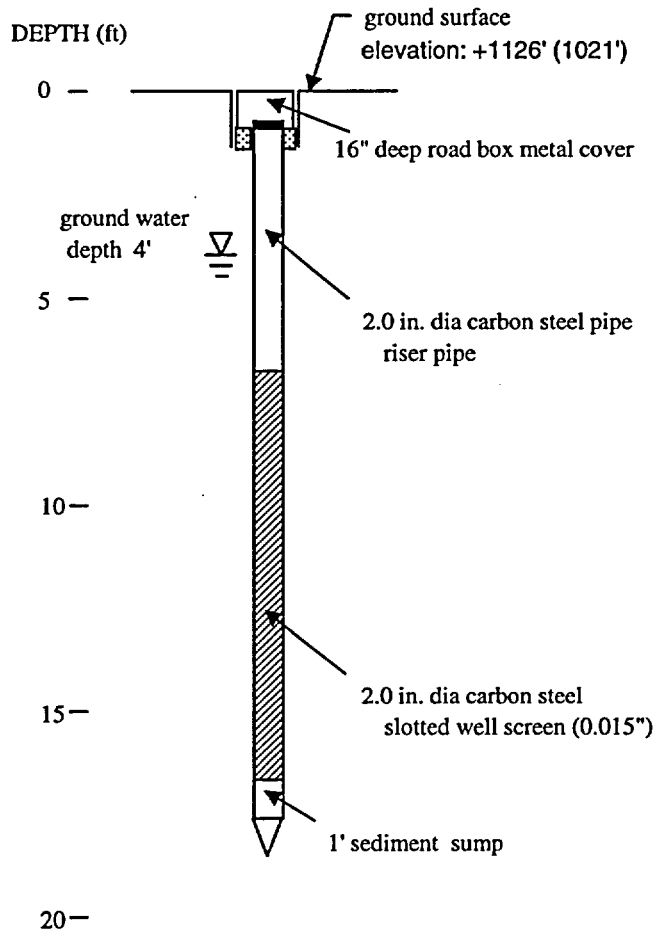
0-0.5' Asphalt
0.5-21' Clay/silt?

Borehole depth: 21'
Bottom of well screen: 20'
Top of well screen: 10'
Installation date: 4/24/98

Contractor: Geosearch
Engineer: Duke Engineering & Services

SCHEMATIC FOR WELL INSTALLATION MW-2

N. of PAB



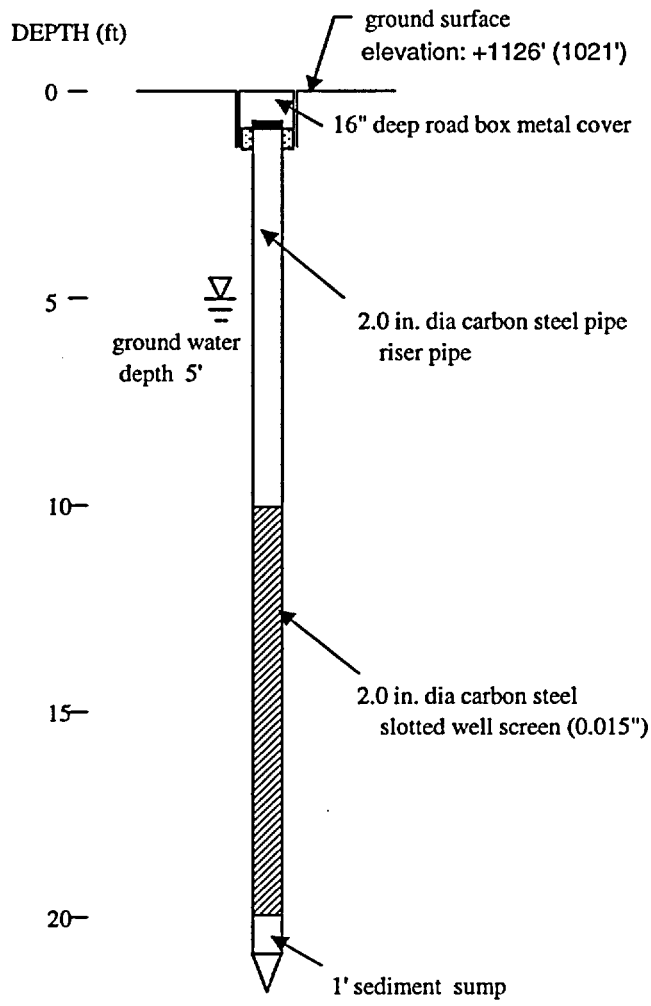
Borehole depth: 18'
Bottom of well screen: 17'
Top of well screen: 7'
Installation date: 4/24/98

Inferred Subsurface Materials:

0-0.5' Asphalt
0.5-11' Fill
10'-18.5' Till
18.5' Refusal

Contractor: Geosearch
Engineer: Duke Engineering & Services

SCHEMATIC FOR WELL INSTALLATION MW-3
N. of PAB



Borehole depth: 21'

Bottom of well screen: 20'

Top of well screen: 10'

Installation date: 4/24/98

Note: Casing bent on installation causing sampling difficulty

Inferred Subsurface Materials:

0-0.5' Asphalt
0.5-11' Fill
11'-21' Till

Contractor: Geosearch

Engineer: Duke Engineering & Services

DRILLING LOG for Well #: NSR-1

ERM
399 Boylston Street, 6th Floor
Boston, MA 02116

Project:	Yankee Nuclear Power St.-Rowe	Project Number:	468.01		
Client:	Yankee Atomic Electric Company	Logged by:	Joe Fiacco		
Drilling Co:	Geosearch	Driller:	Pat Goodale		
Date Started:	22-Oct-97	Date Finished:	22-Oct-97		
Location:	Rowe, Massachusetts	Drilling Method:	4 1/4" ID HSAs & 3 7/8" Air Hammer		
Screen Diam:	2.5"	Length:	10'	Slot Size:	0.01"
Casing Diam:	2.5"	Length:	13'	Type:	PVC
Boring Depth:	23'	Well Depth:	23'	Boring Diam.:	8" (0-20')/4" (20-23')
Surface Elev.:		MP:		Depth to GW:	~18'
		MP Elev.:			

SITE MAP

Notes: This boring was completed in two attempts

Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
1–2		Sand Fill	2-2 3-5	12"	Brown, fine to medium SAND, trace fine gravel, piece of wood in tip of spoon, well sorted, loose, dry	S-1 0-2'	1.0	
3–5								
6–10		Misc. Fill	8-9 10-13	12"	Greyish-brown, rock fragments, some fine to medium sand and wood fragments, poorly sorted, loose, dry; the wood pieces have a strong chemical odor	S-2 5-7'	900	NSR-1/S-2/ 5-7 ft VOCs (8260) SVOCs (8270)
11–12		Sand	13-13 15-17	10"	Brown, fine to medium SAND, trace coarse sand and fine gravel, well sorted, loose, damp	S-3 10-12'	5.3	
13–25					Note: air hammered through a boulder from 11-13 feet in second boring Note: encountered water table at ~17-18 feet Note: top of bedrock at 20 feet; air hammered to 23 feet **Bottom of Borehole: 23'** **Well Construction:** -3' - 2': Steel protective standpipe 0 - 10': Portland cement/bentonite grout 10 - 12': Bentonite chip seal 12 - 23': #1 silica sand filter pack 13 - 23': 2.5" ID, 0.010"-slotted PVC well screen			

Footnotes for Blowcounts
(1) 140 lb. Hammer
(2) 300 lb. Hammer
(3) Slide Hammer

Key to Well Construction
Sandpack
Well Screen
Grout
Bentonite Seal
Cement

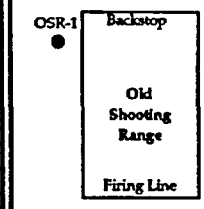
DRILLING LOG for Well #: OSR-1

ERM
399 Boylston Street, 6th Floor
Boston, MA 02116

Project:	Yankee Nuclear Power St.-Rowe	Project Number:	468.01
Client:	Yankee Atomic Electric Company	Logged by:	Joe Fiacco
Drilling Co:	Geosearch	Driller:	Pat Goodale
Date Started:	22-Oct-97	Date Finished:	22-Oct-97
Location:	Rowe, Massachusetts	Drilling Method:	4 1/4" ID HSAs

Screen Diam:	2.5"	Length:	10'	Slot Size:	0.01"
Casing Diam:	2.5"	Length:	3'	Type:	PVC
Boring Depth:	33'	Well Depth:	13'	Boring Diam.:	8"
Surface Elev.:		MP:		Depth to GW:	~7'
		MP Elev.:			

SITE MAP



Notes:

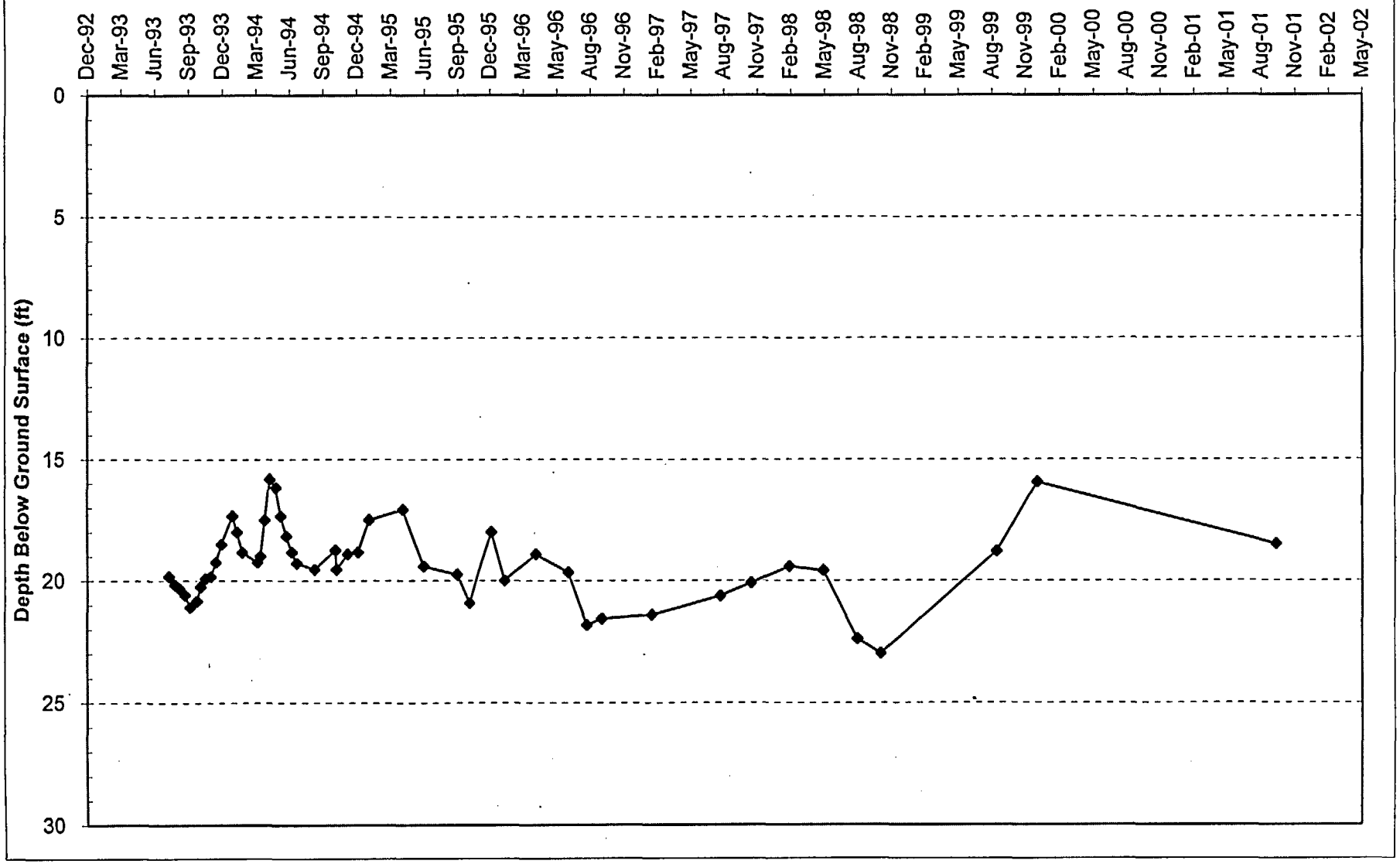
Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
1		Sand	3-5	24"	Brown, fine SAND, some coarse sand and fine gravel,	S-1	13.8	
2		Fill	10-12		moderately well sorted, loose, dry	0-2'		
3								
4								
5								
6		Sand	4-4	12"	Top 6" of spoon: Brown, fine SAND, well sorted, loose,	S-2	50.2	
7		Fill	5-6		damp; Middle of spoon: 2" thick piece of wood (no odor);	5-7'		
8					Bottom 4" of spoon: Grey, fine to very fine SAND, well			
9					sorted, loose, damp			
10								
11		Sand	9-9	10"	Brown, fine SAND, some coarse sand and fine gravel,	S-3	6.2	
12			23-50/3"		moderately well sorted, loose, wet	10-12'		
13					Bottom of Borehole: 13'			
14								
15								
16								
17								
18								
19								
20					Well Construction:			
21					-3' - 2': Steel protective standpipe			
22					0 - 1.5': Portland cement surface seal			
23					1.5 - 2.5': Bentonite chip seal			
24					2.5 - 13': #1 silica sand filter pack			
25					3 - 13': 2.5" ID, 0.010"-slotted PVC well screen			

Footnotes for Blowcounts
(1) 140 lb. Hammer
(2) 300 lb. Hammer
(3) Slide Hammer

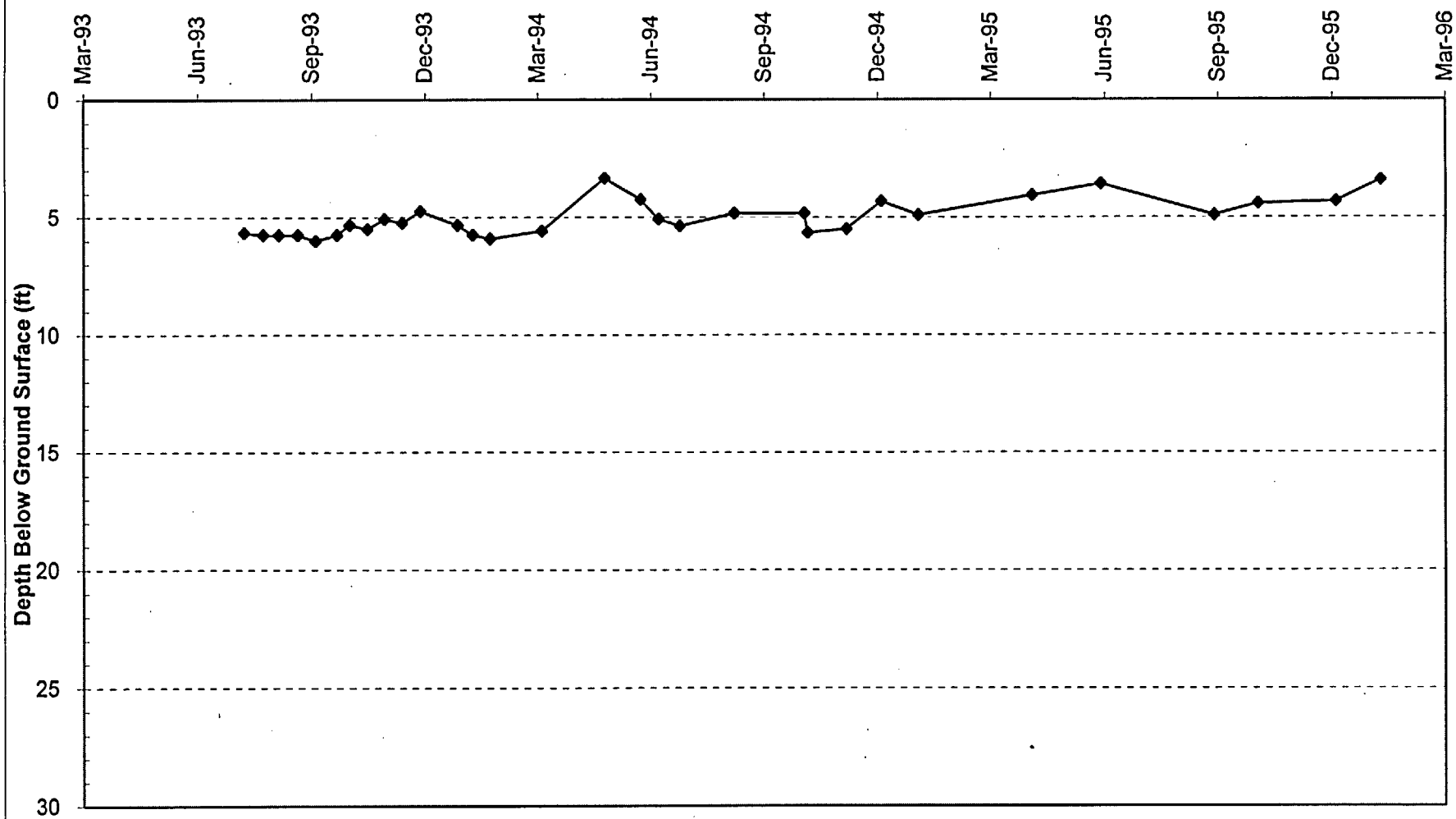
Key to Well Construction
Sandpack
Well Screen
Grout
Bentonite Seal
Cement

Attachment 4
Monitoring Well Ground Water Levels

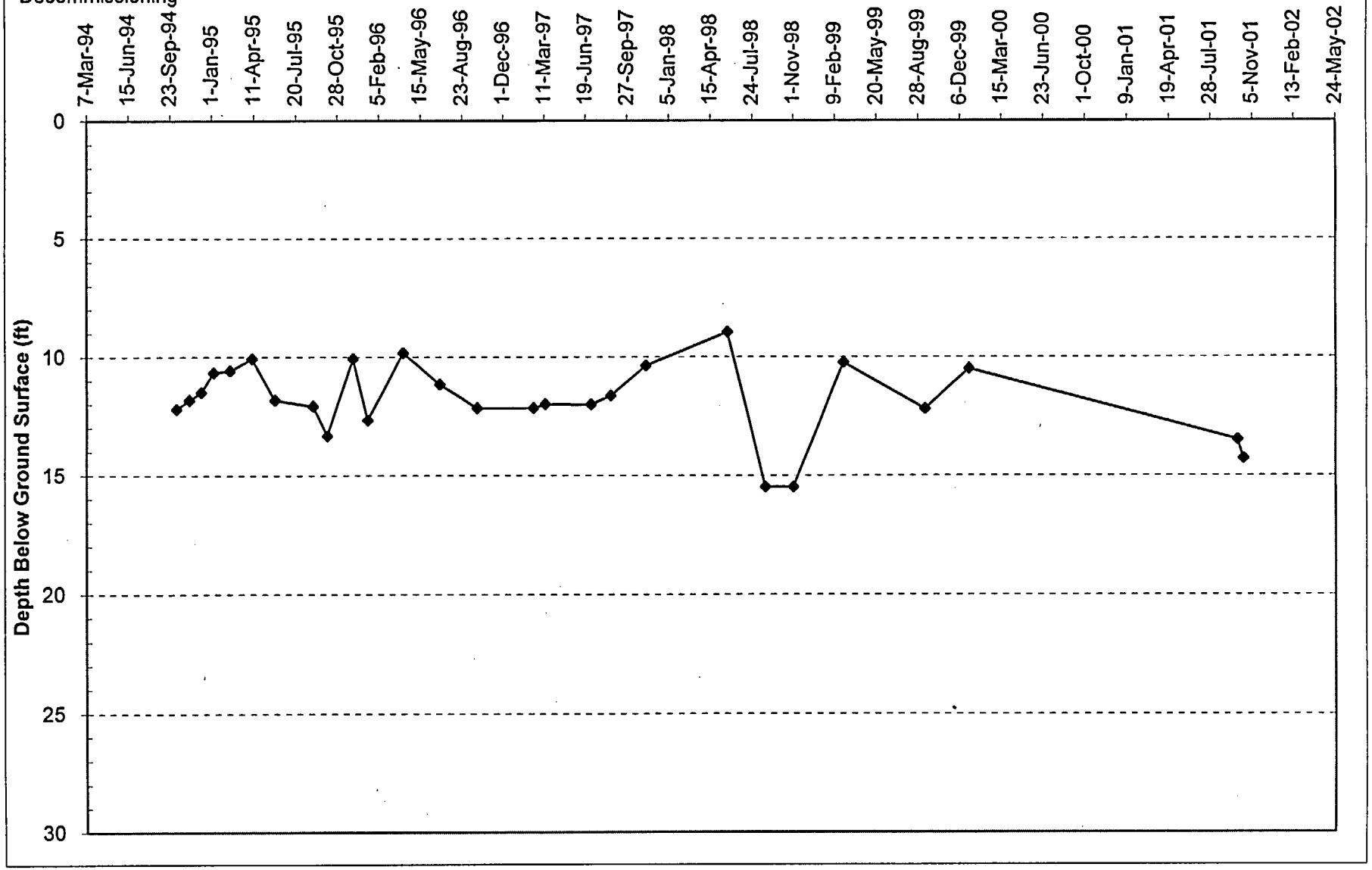
Ground Water Level in Well B-1



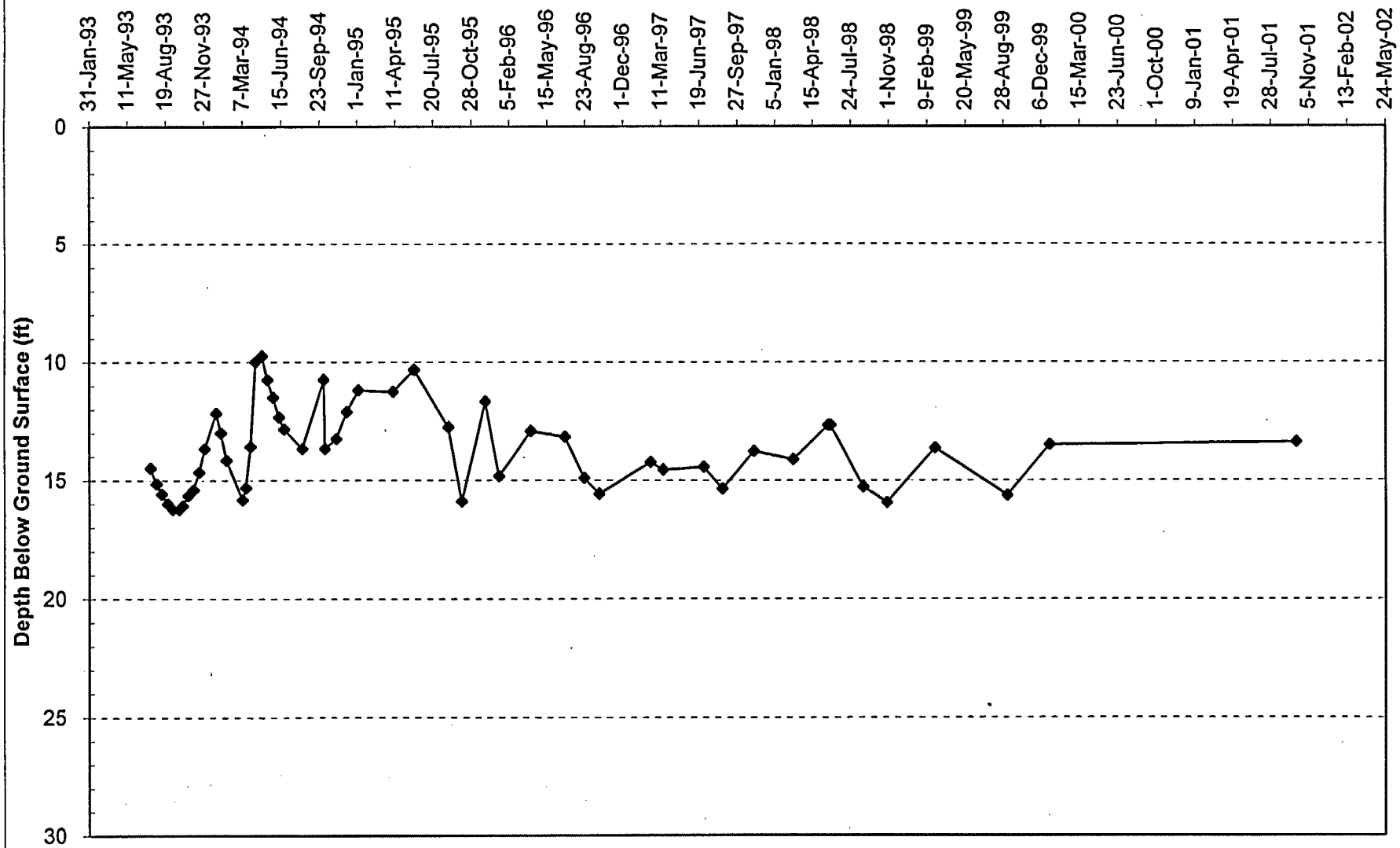
Ground Water Level in Well B-3



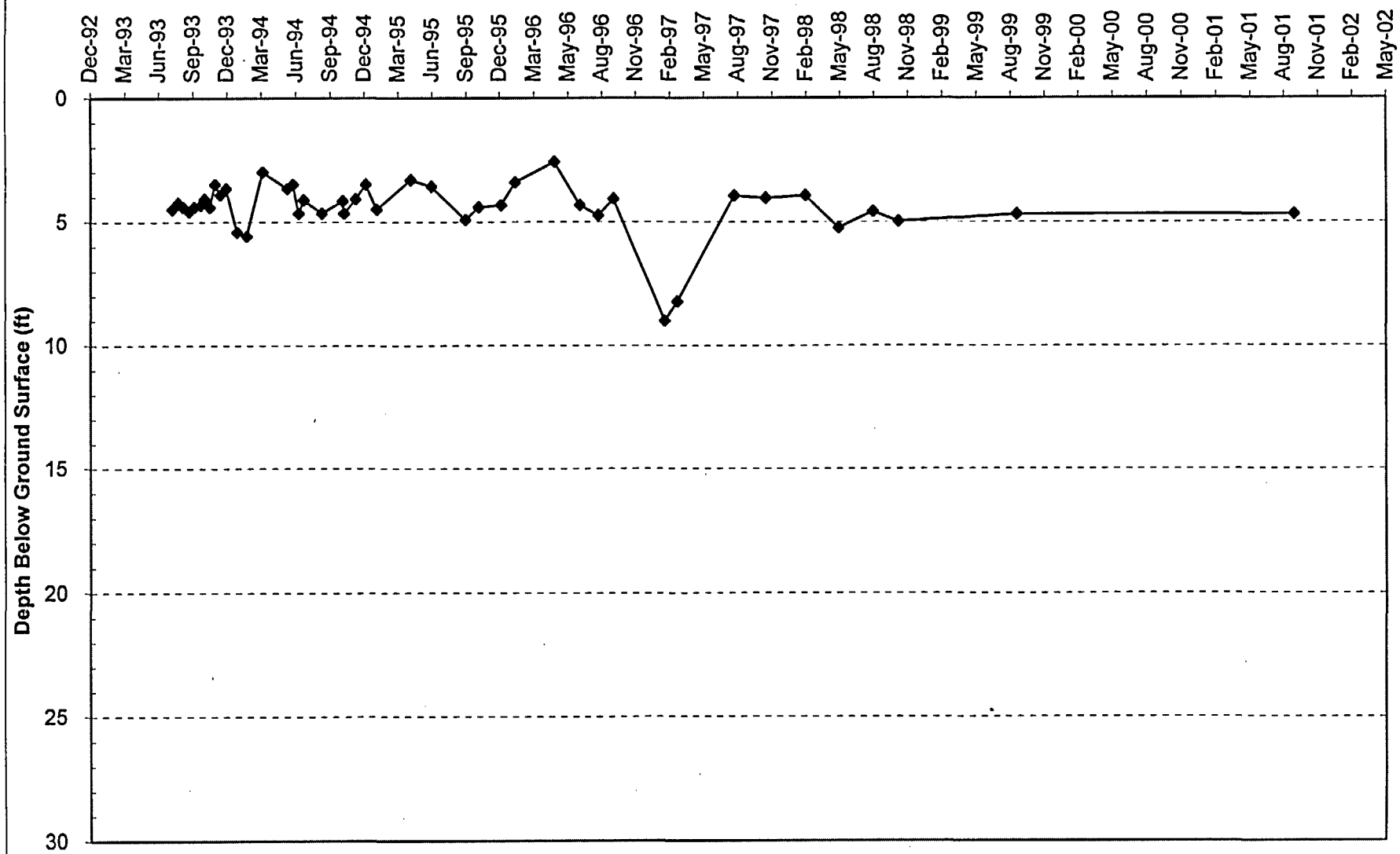
Ground Water Level in Well CB-1



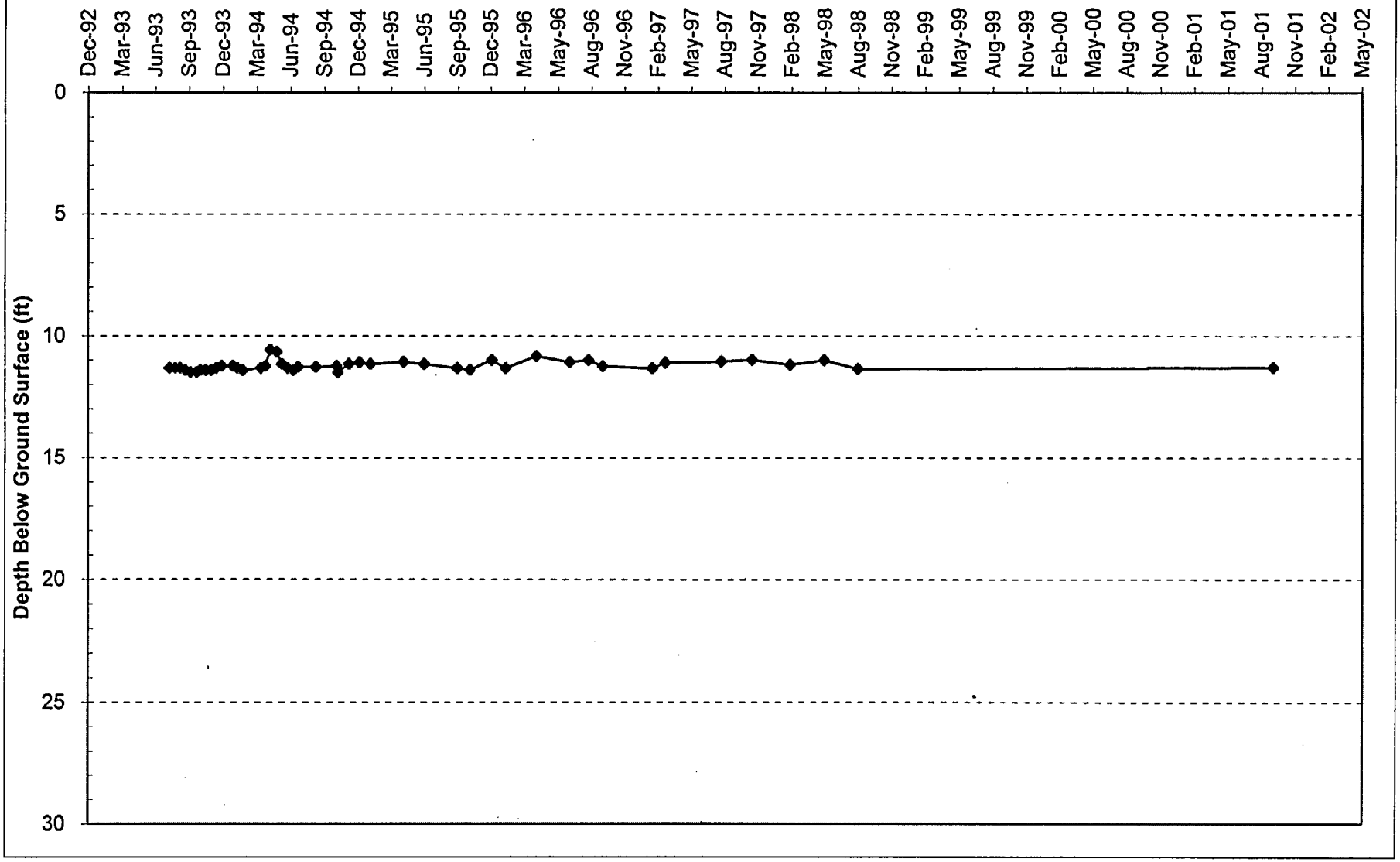
Ground Water Level in Well CB-2



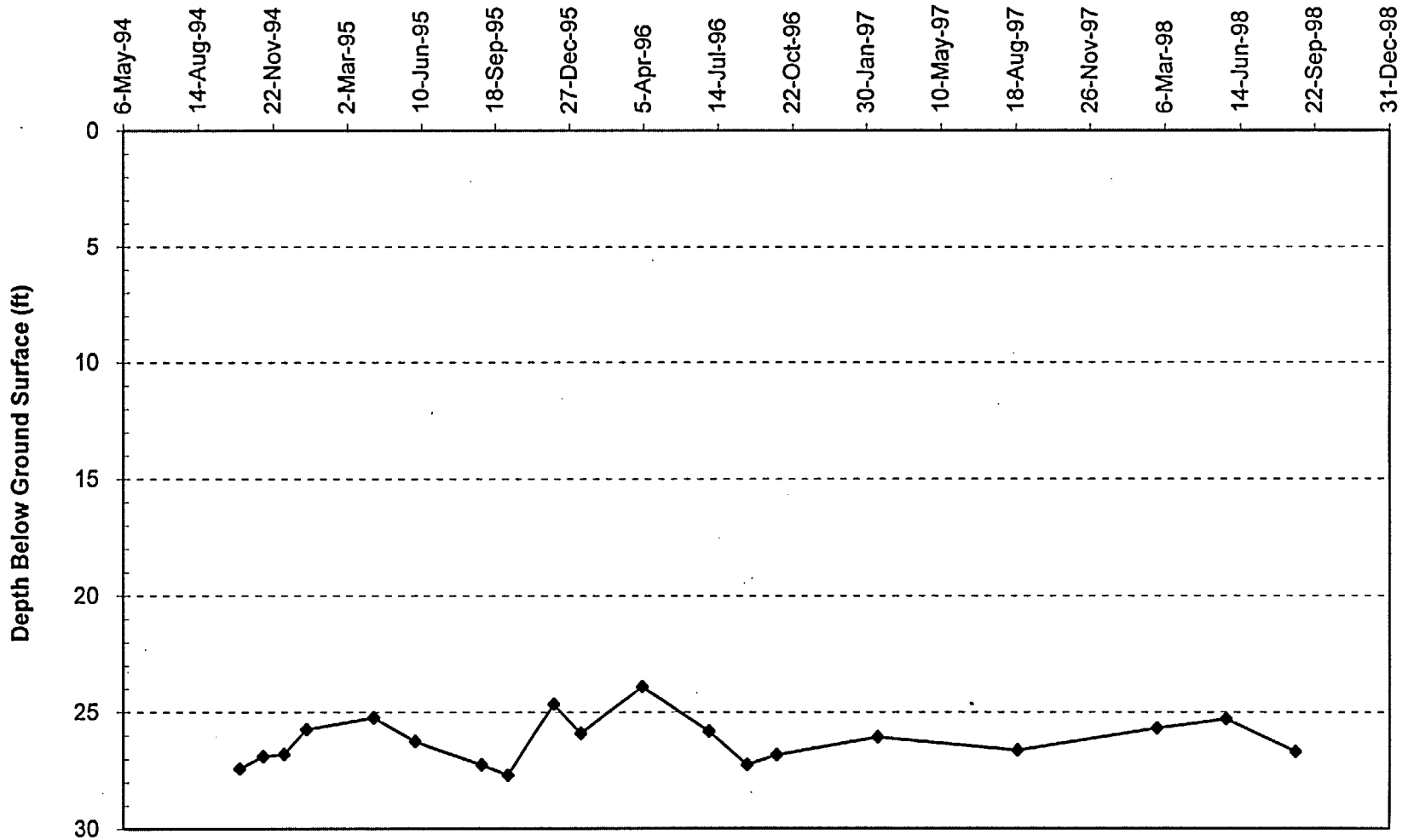
Ground Water Level in Well CB-3



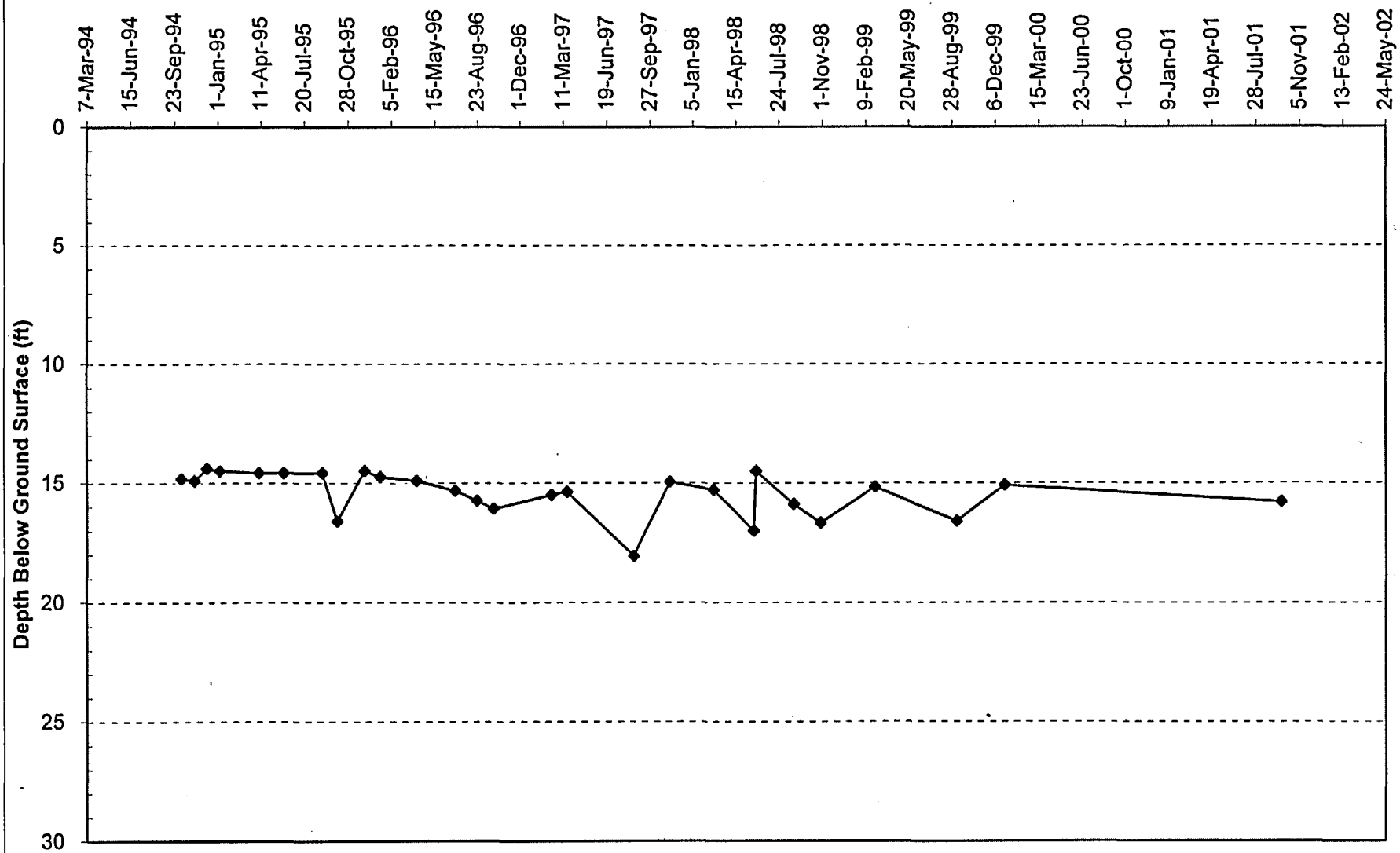
Ground Water Level in Well CB-4



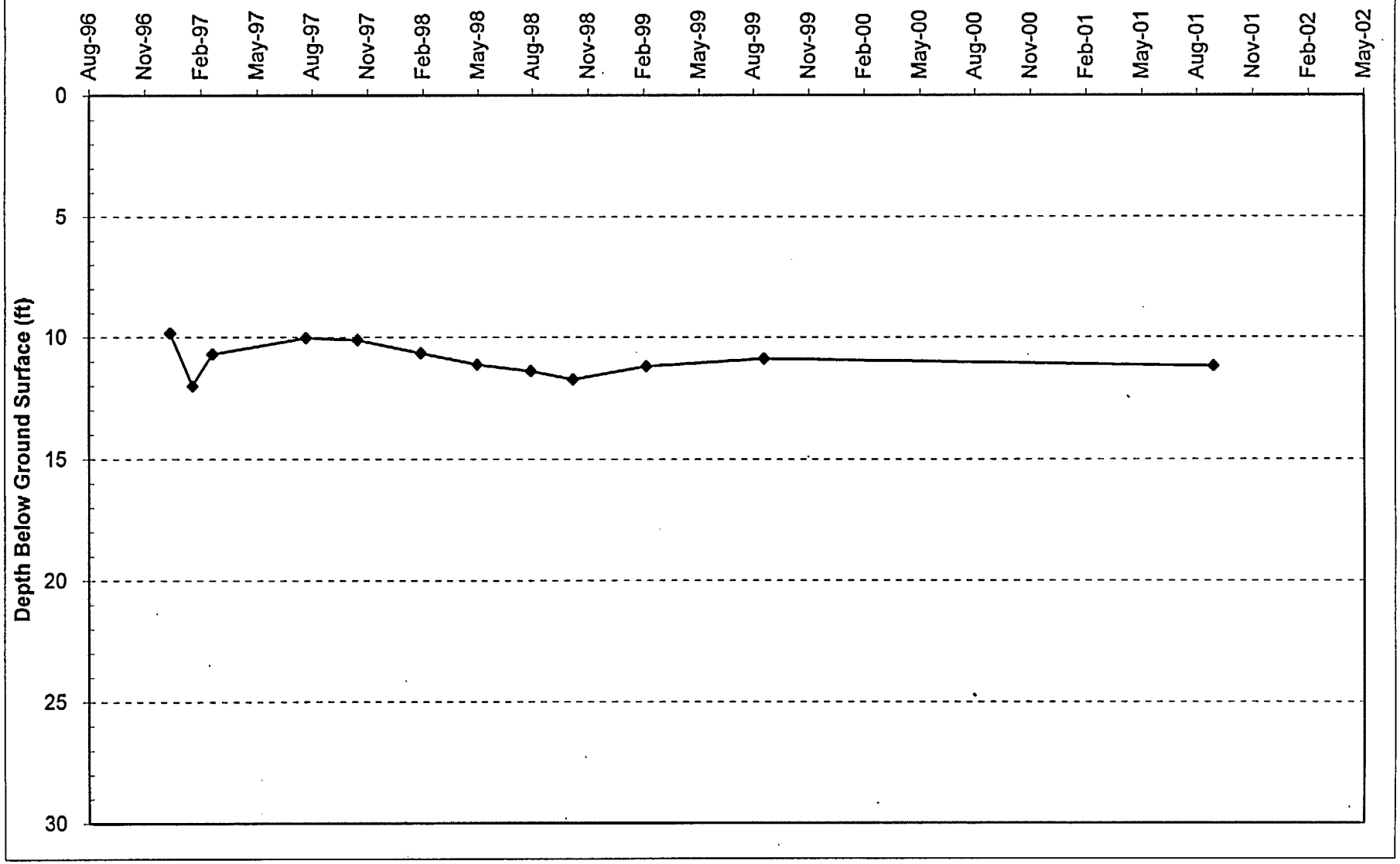
Ground Water Level in Well CB-5



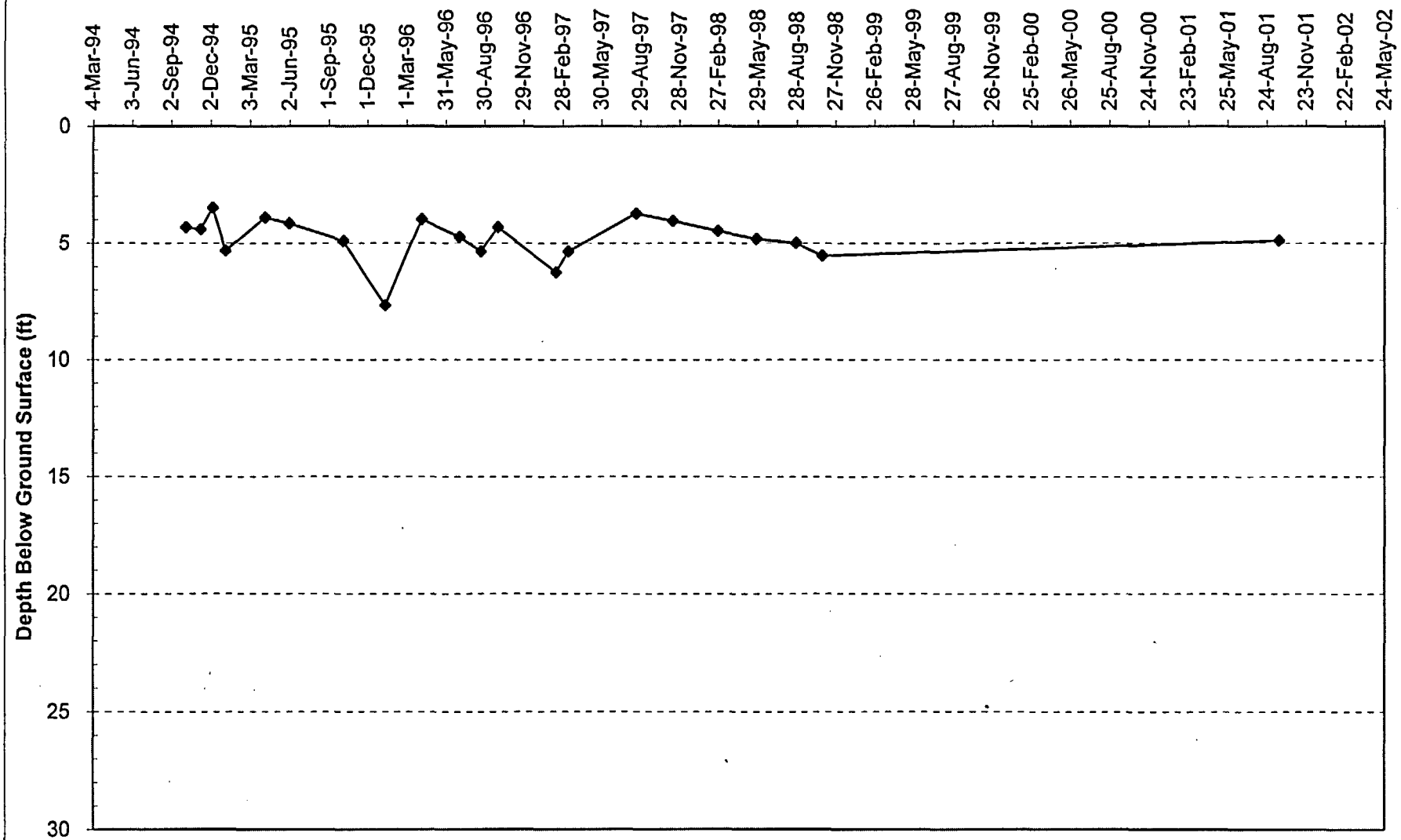
Ground Water Level in Well CB-6



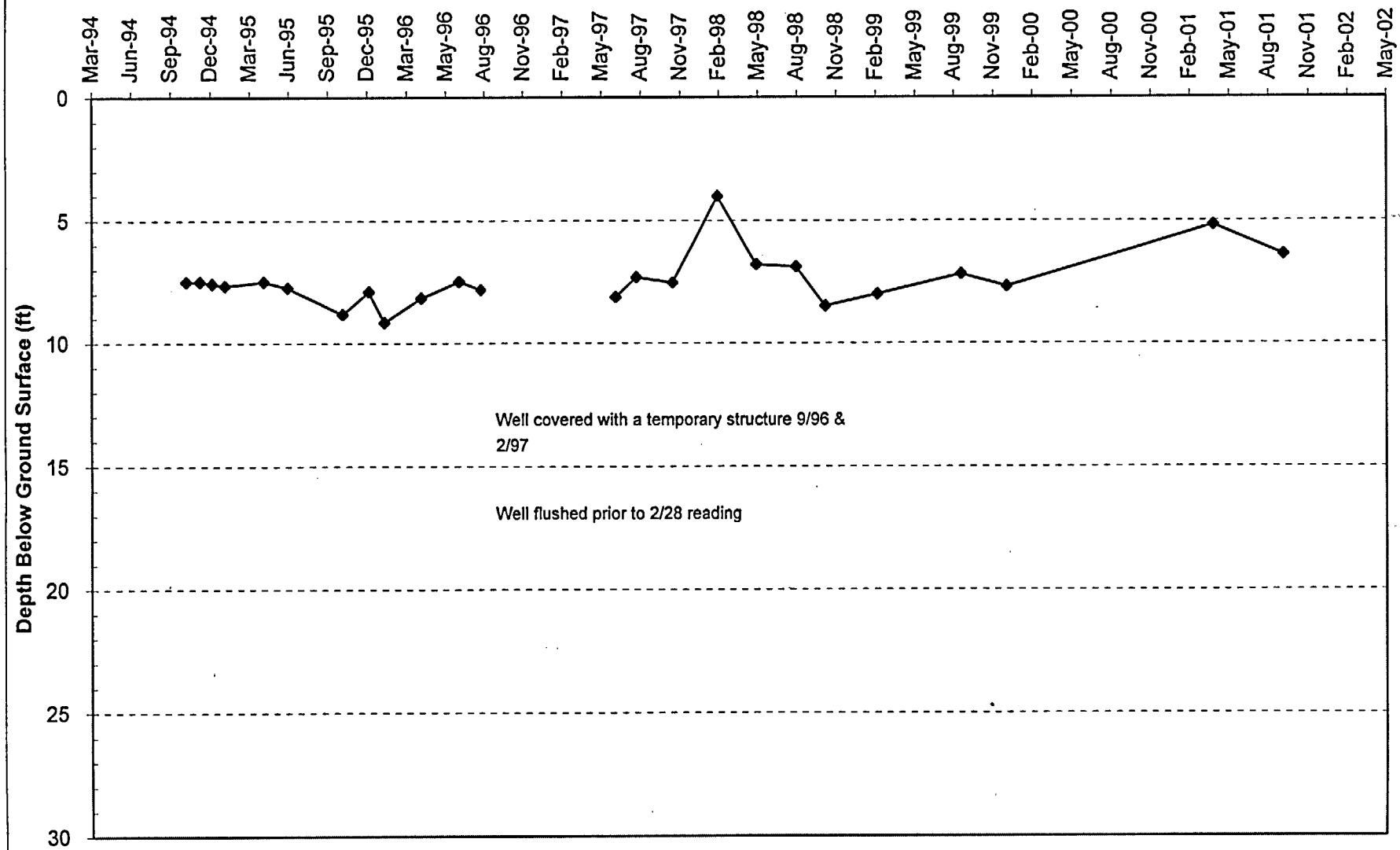
Ground Water Level in Well CB-7



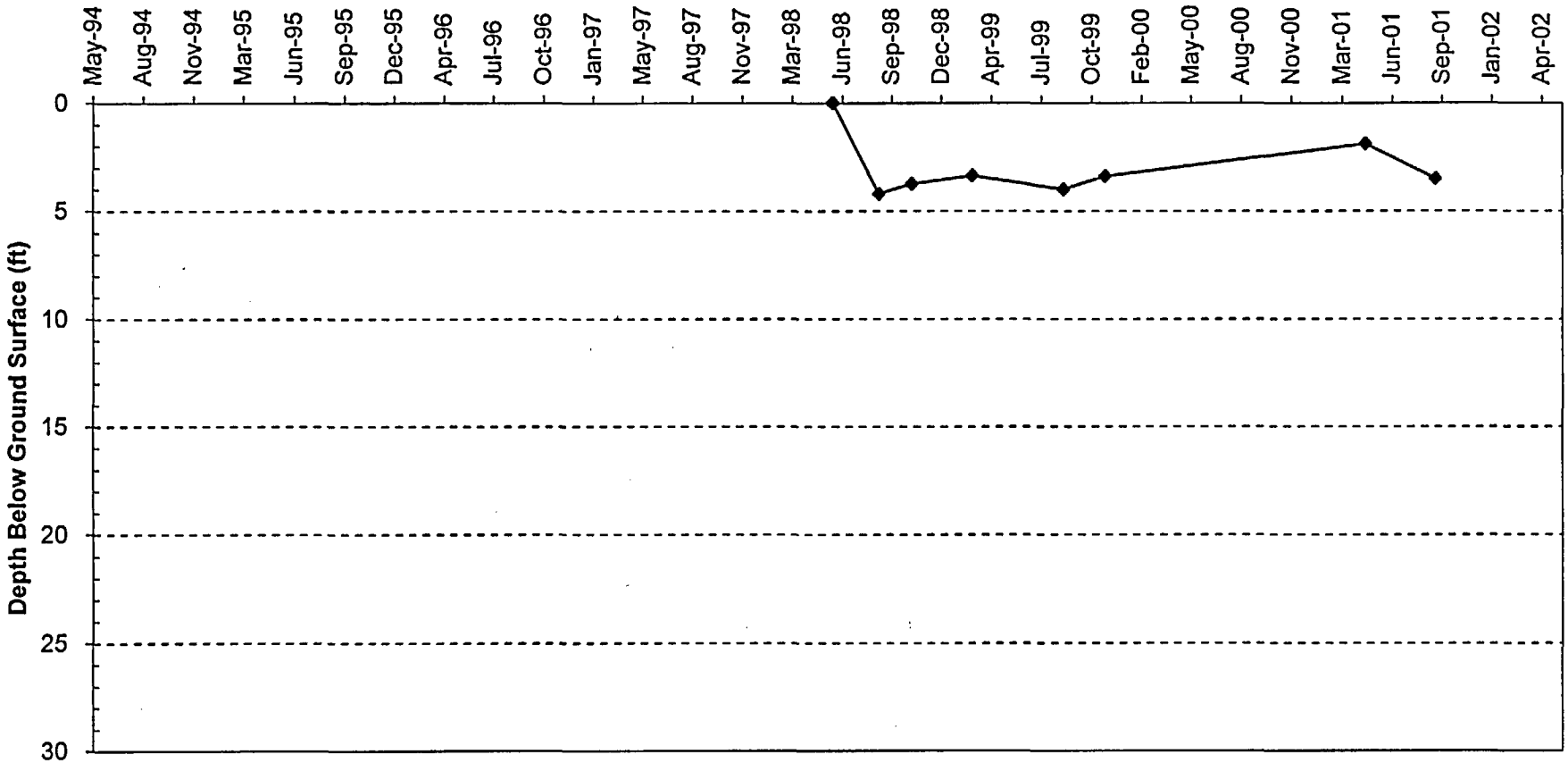
Ground Water Level in Well CB-8



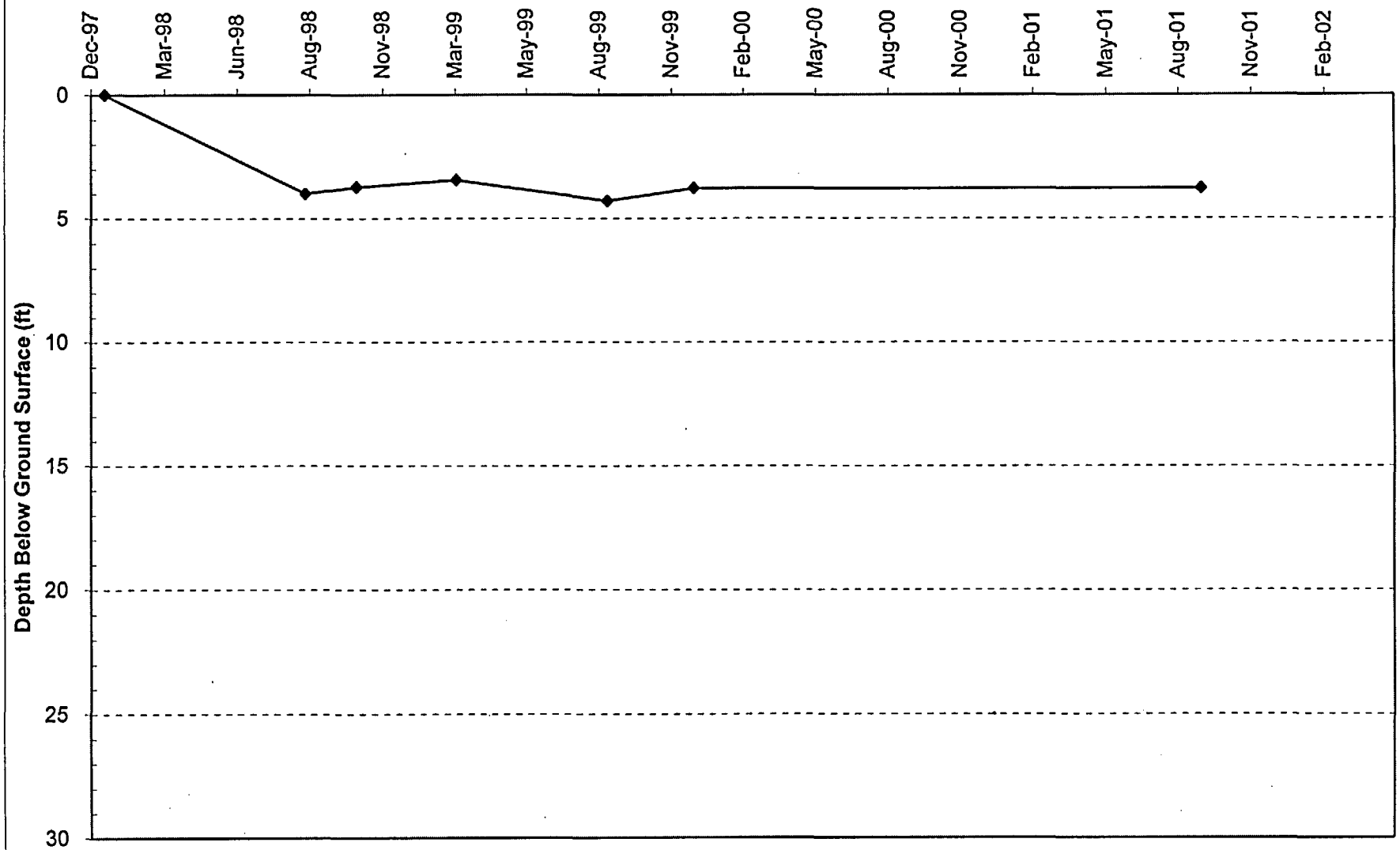
Ground Water Level in Well CB-9



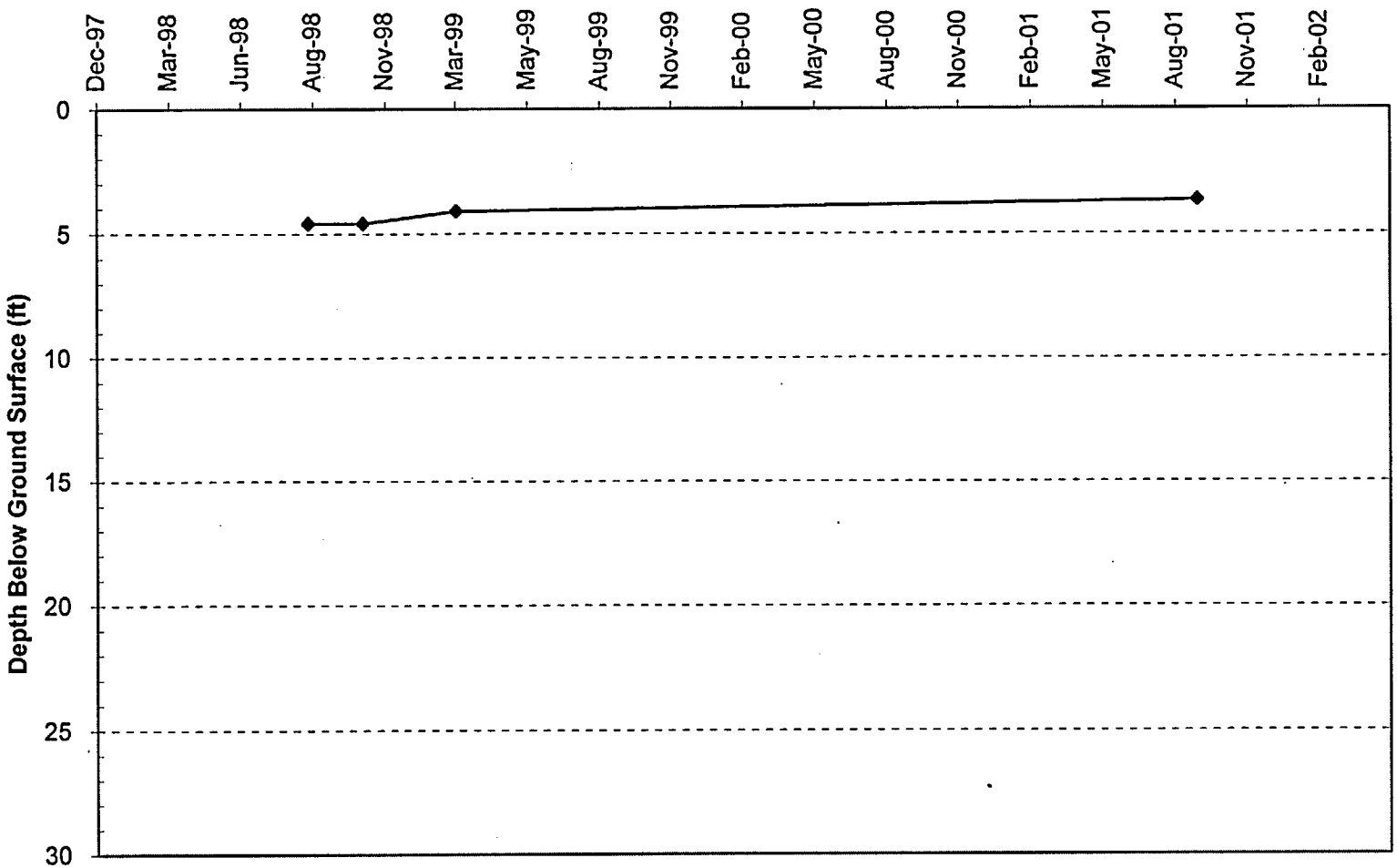
Ground Water Level in Well CB-10



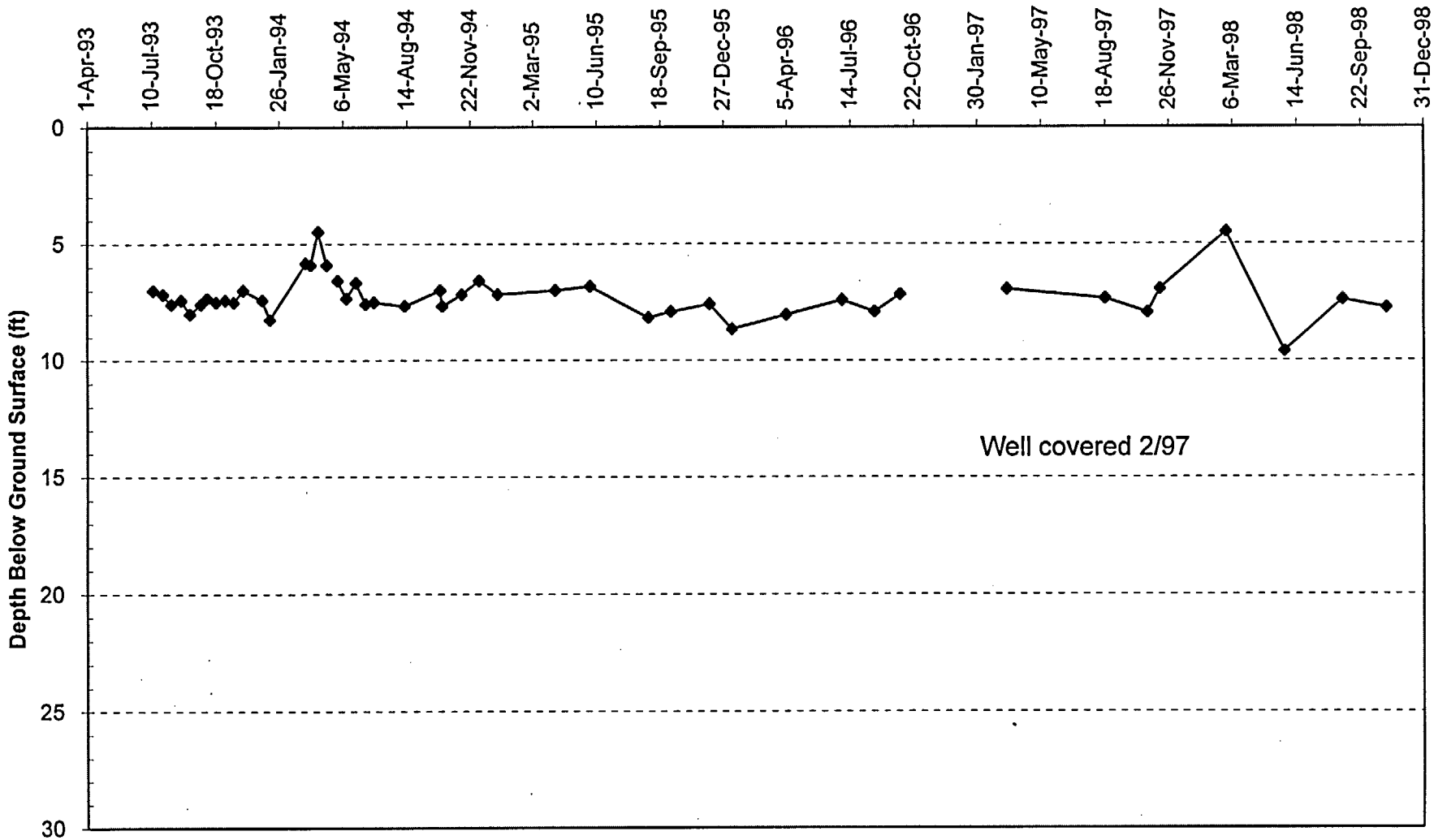
Ground Water Level in Well CB-11A



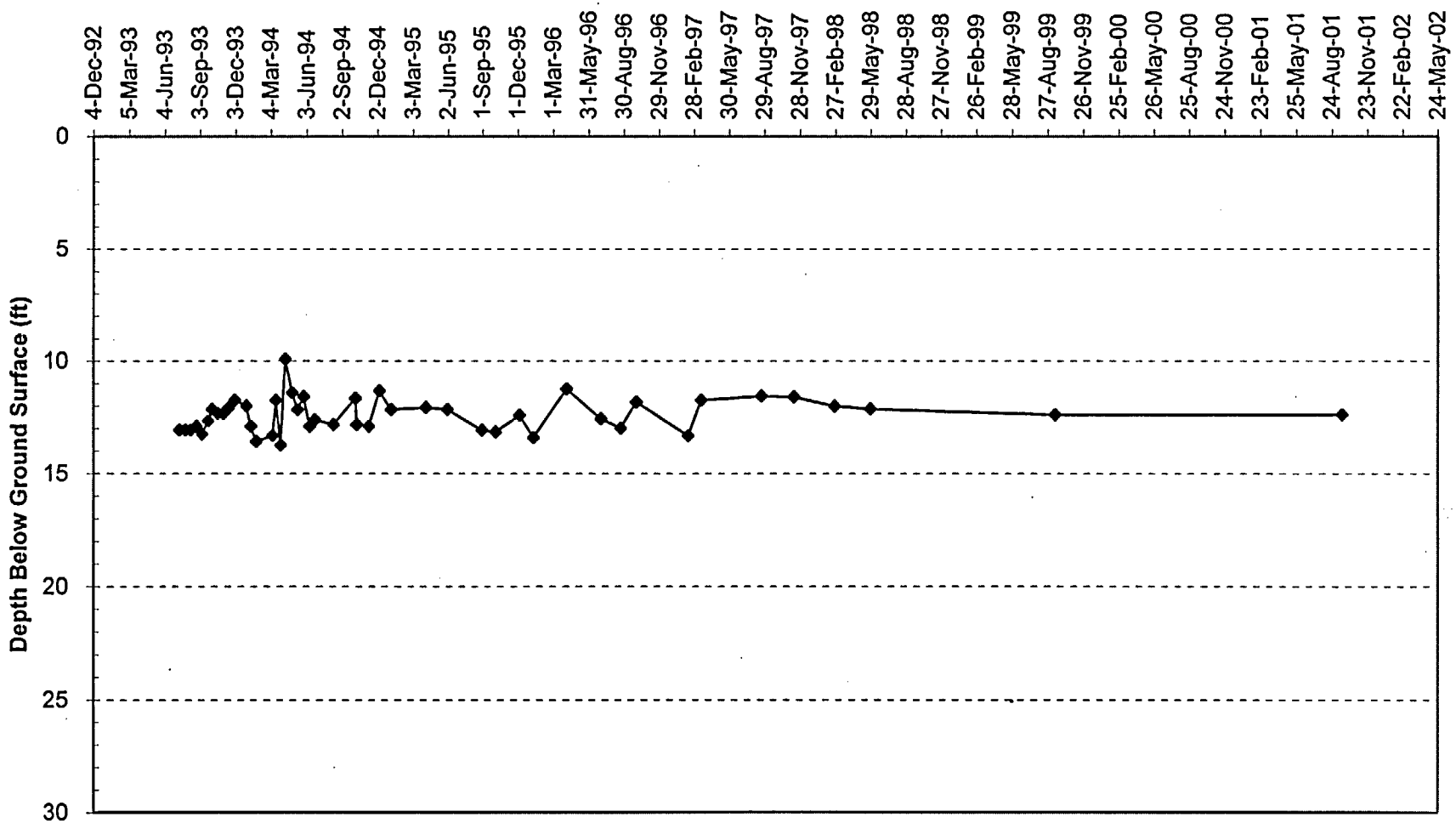
Ground Water Level in Well CB-12



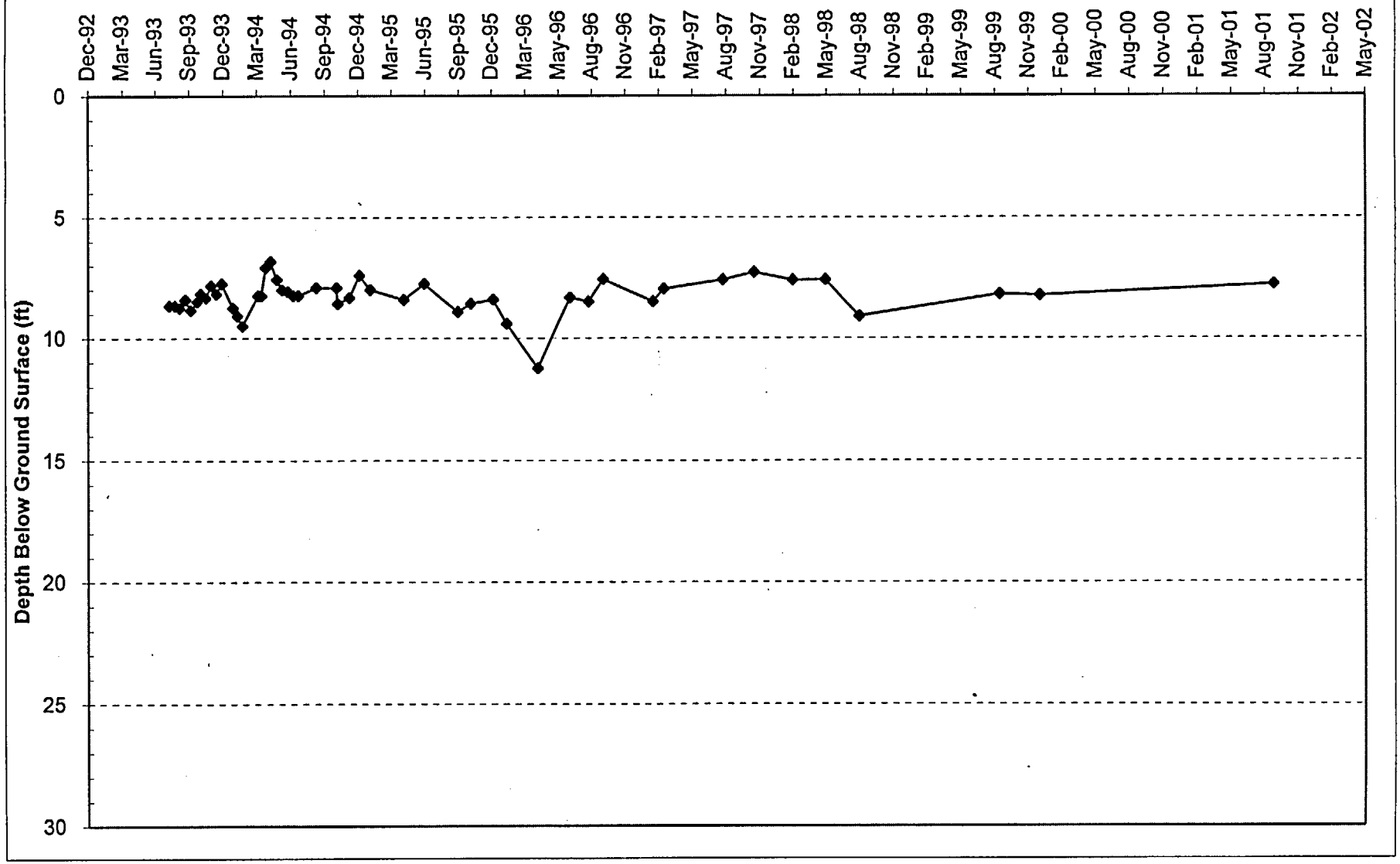
Ground Water Level in Well CW-1



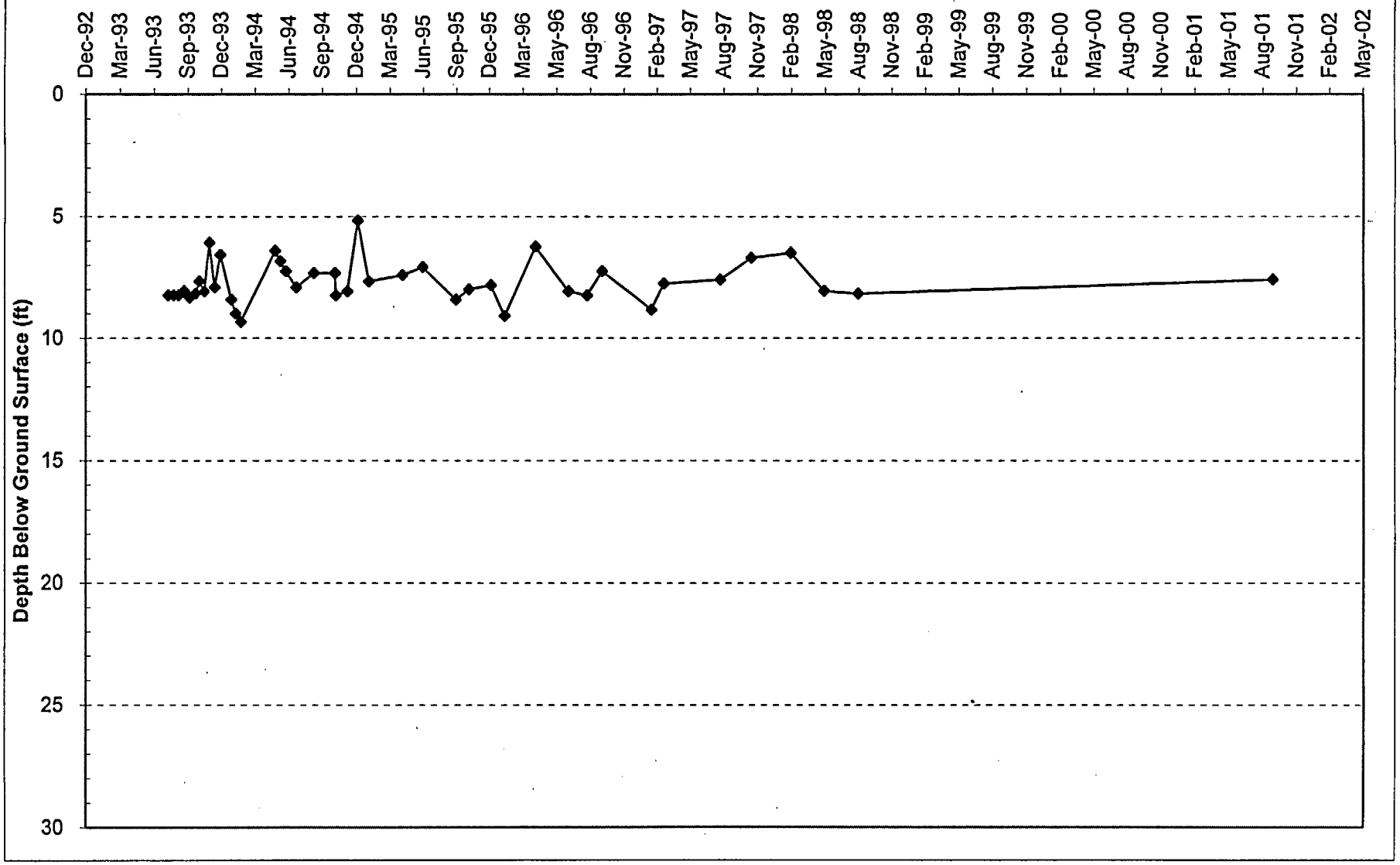
Ground Water Level in Well CW-2



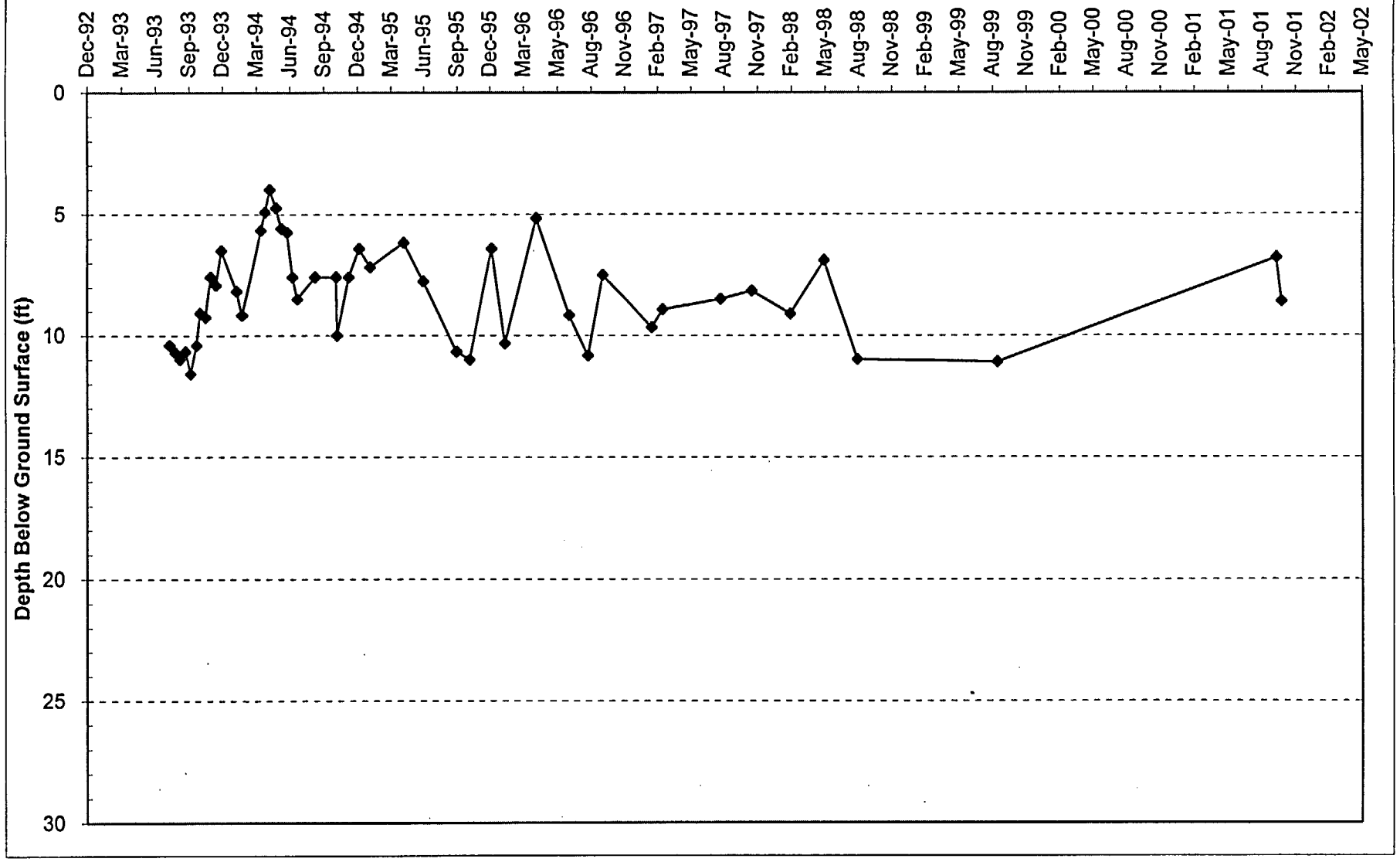
Ground Water Level in Well CW-3



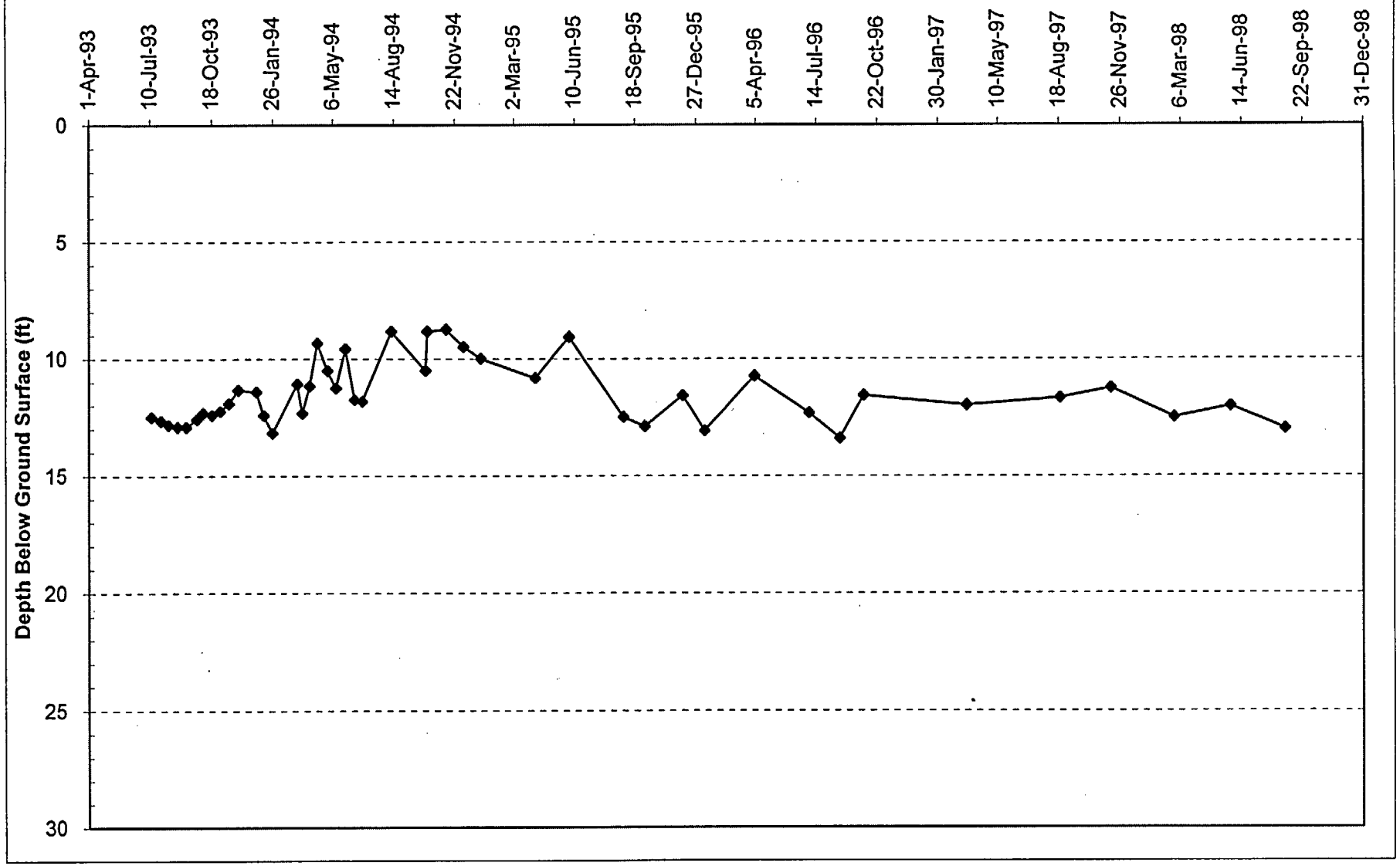
Ground Water Level in Well CW-4



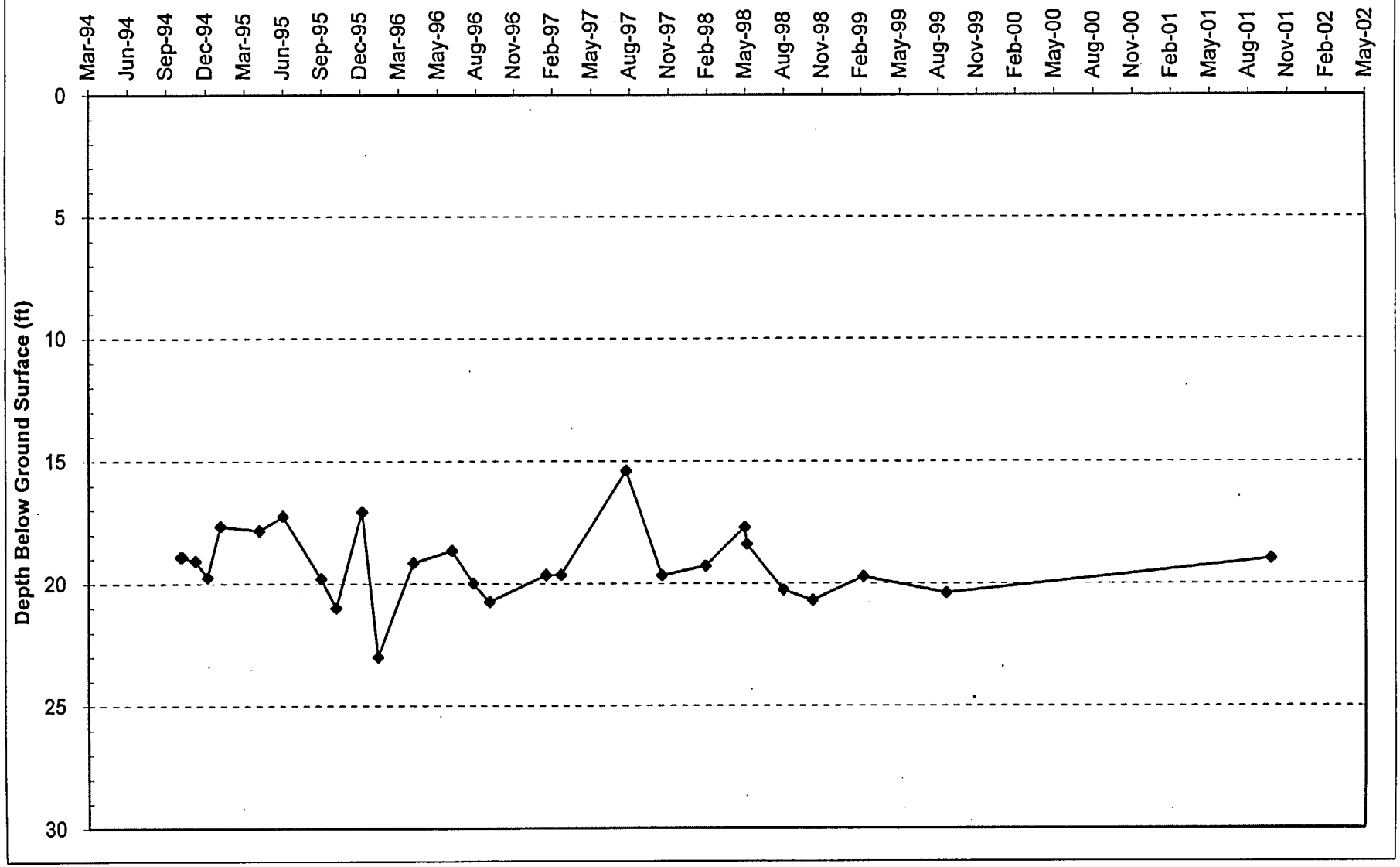
Ground Water Level in Well CW-5



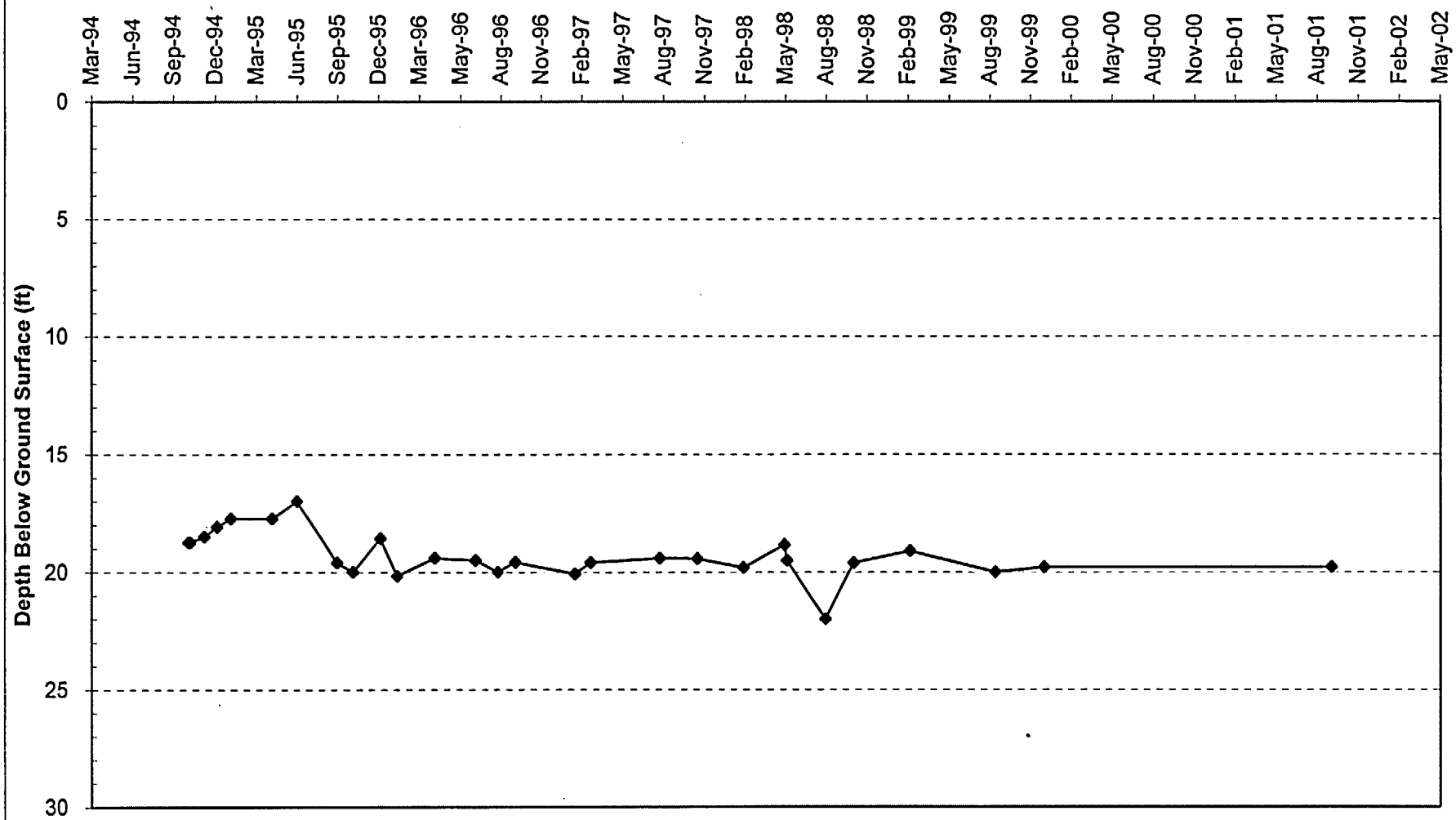
Ground Water Level in Well CW-6



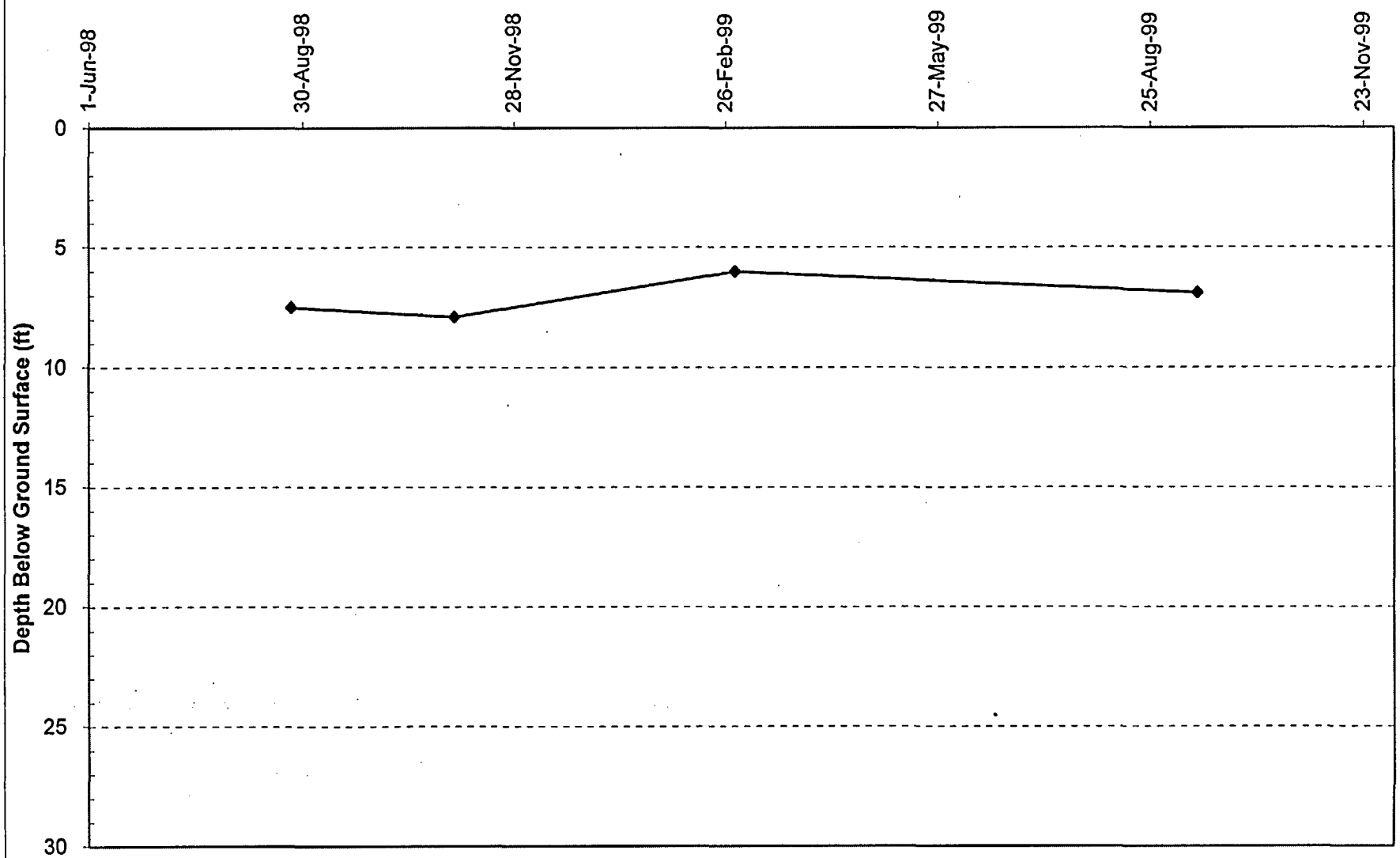
Ground Water Level in Well CW-7



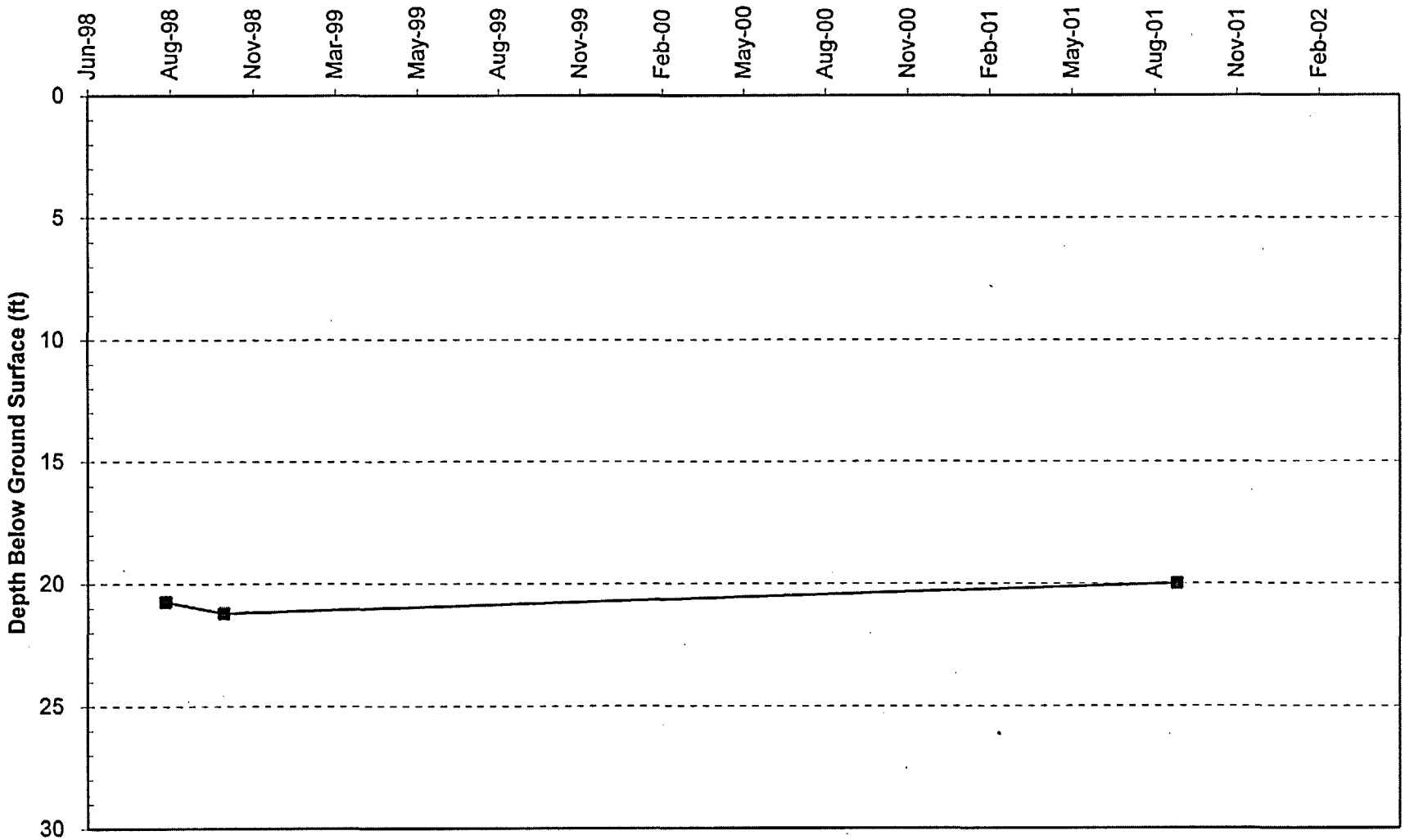
Ground Water Level in Well CW-8



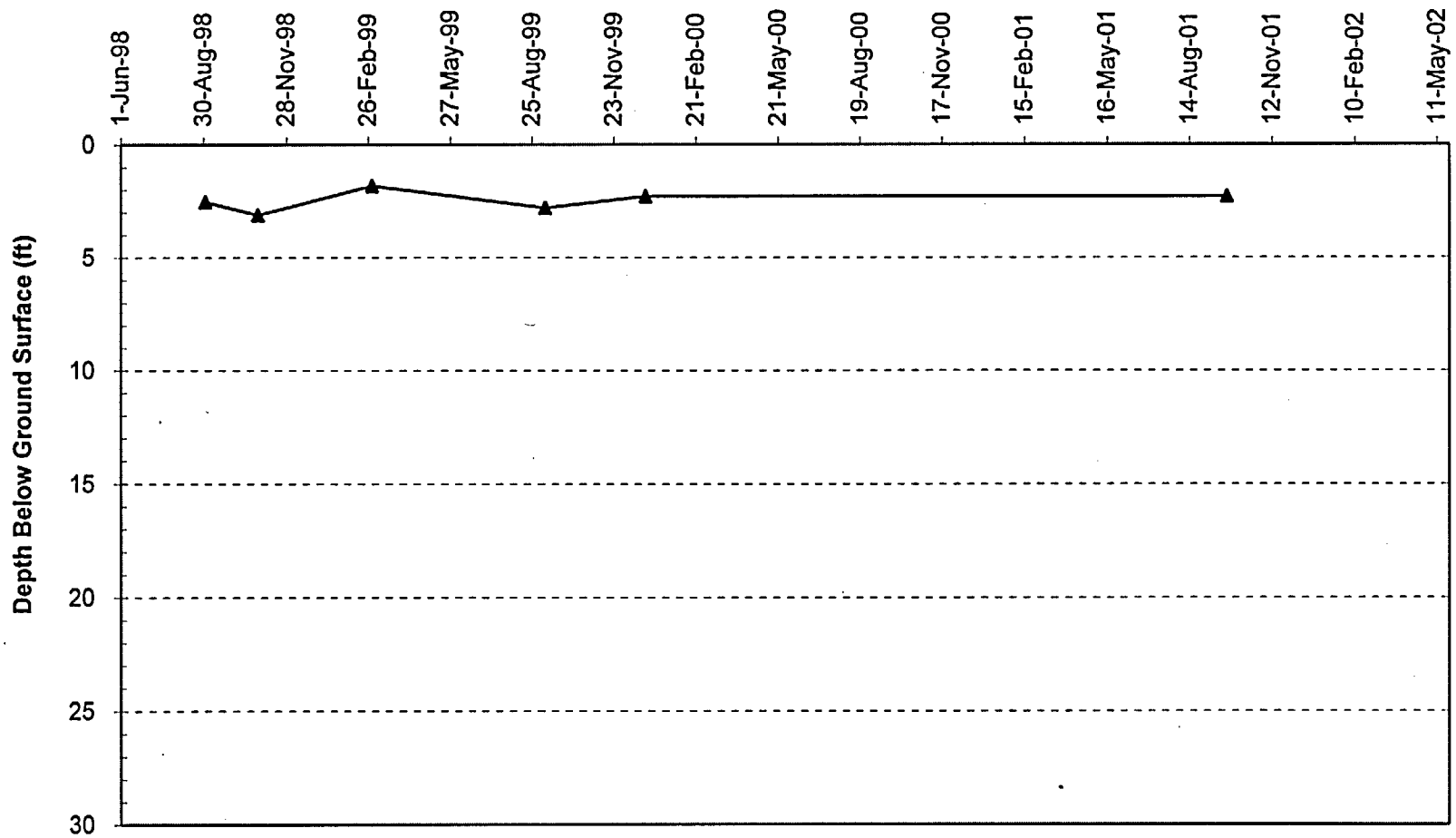
Ground Water Level in Well CW-9



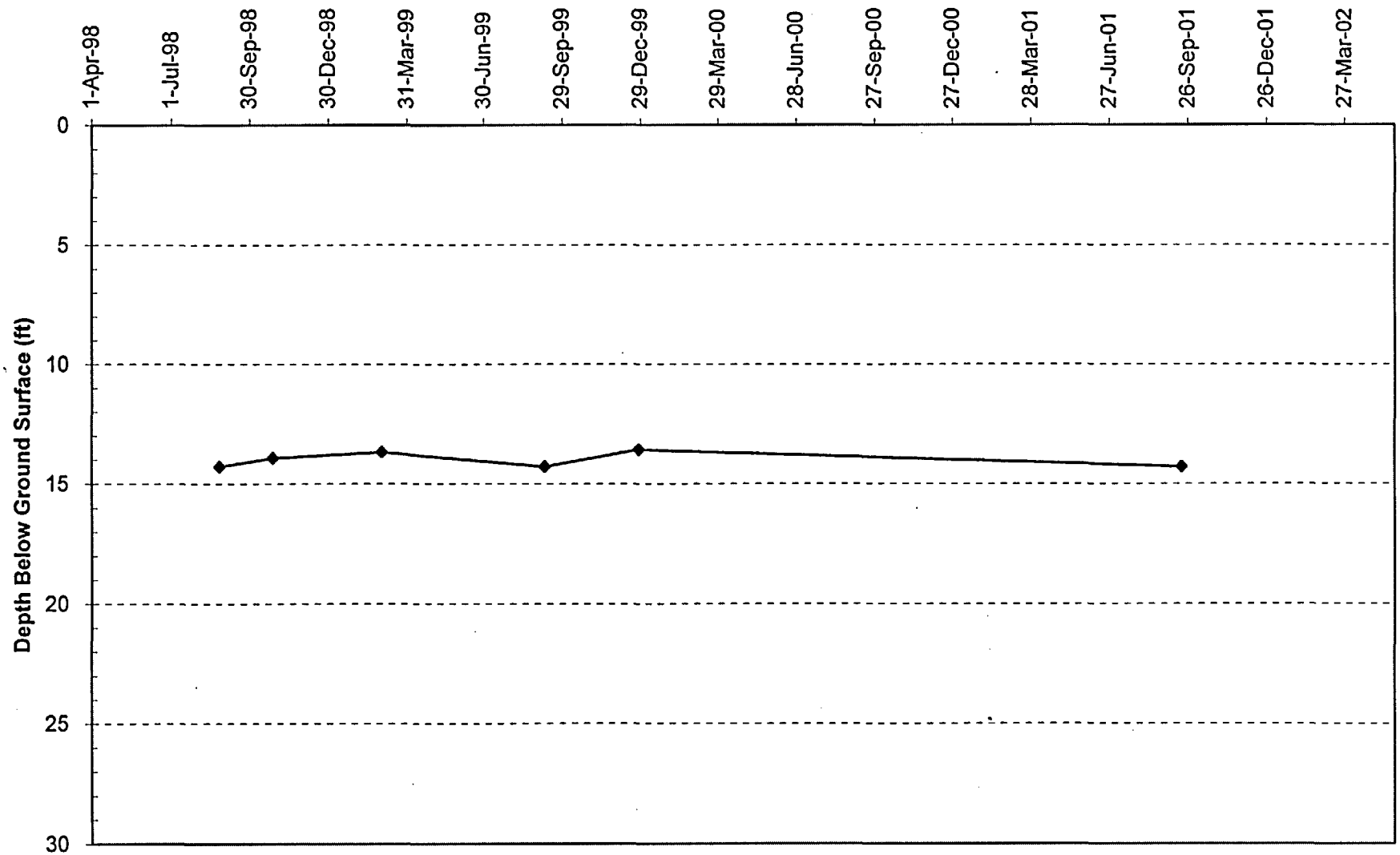
Ground Water Level in Well CW-10



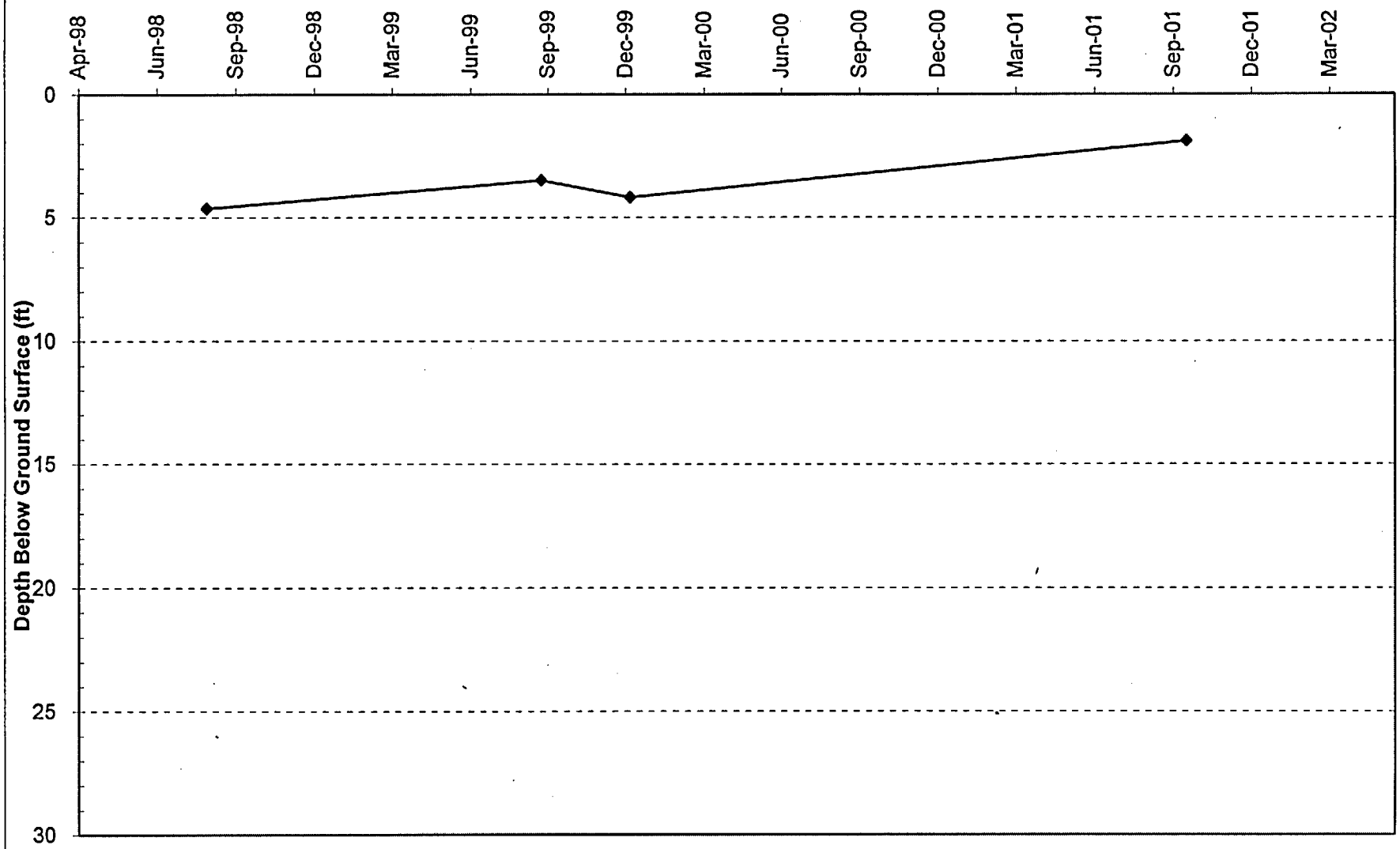
Ground Water Level in Well CW-11



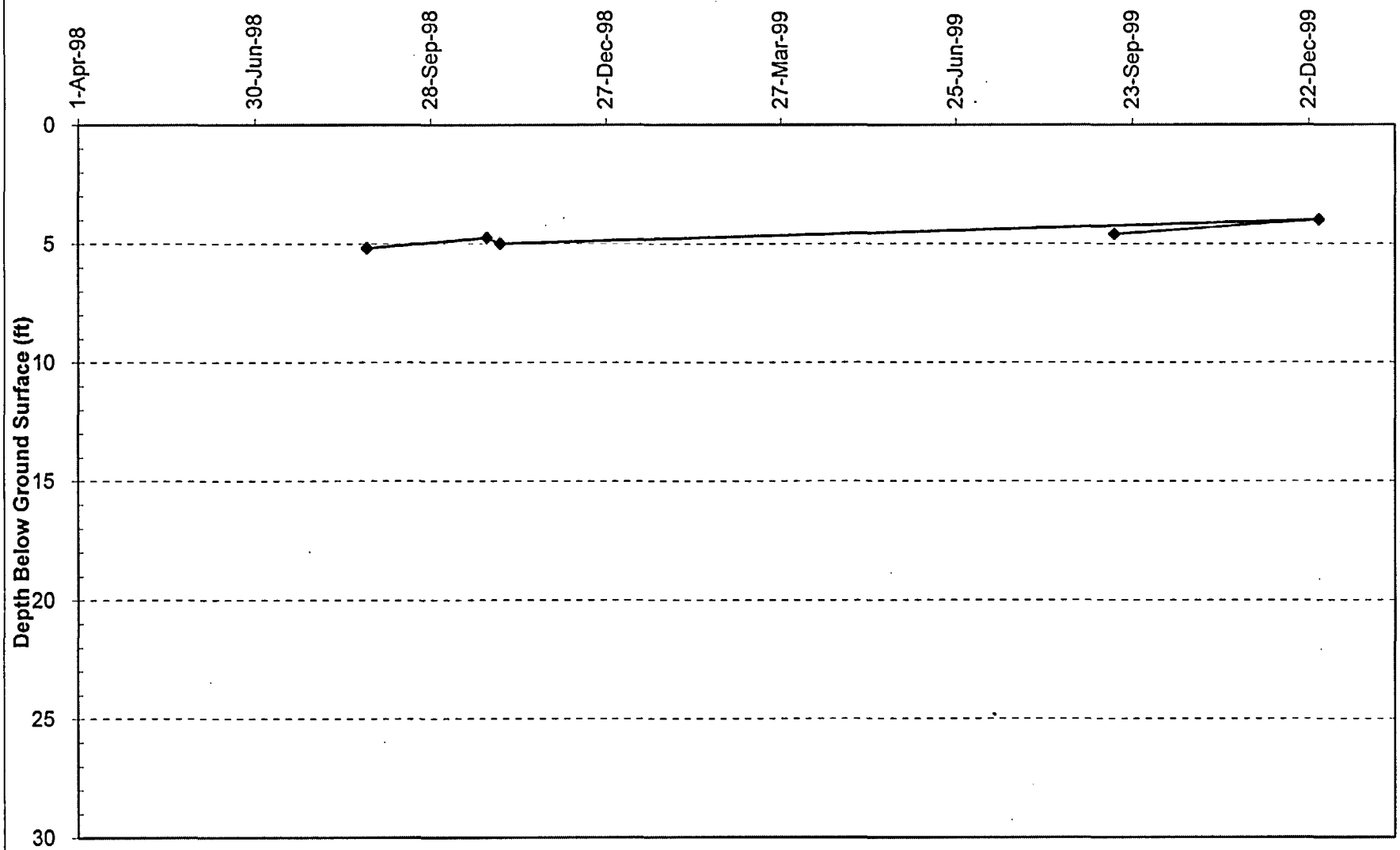
Ground Water Level in Well MW-1



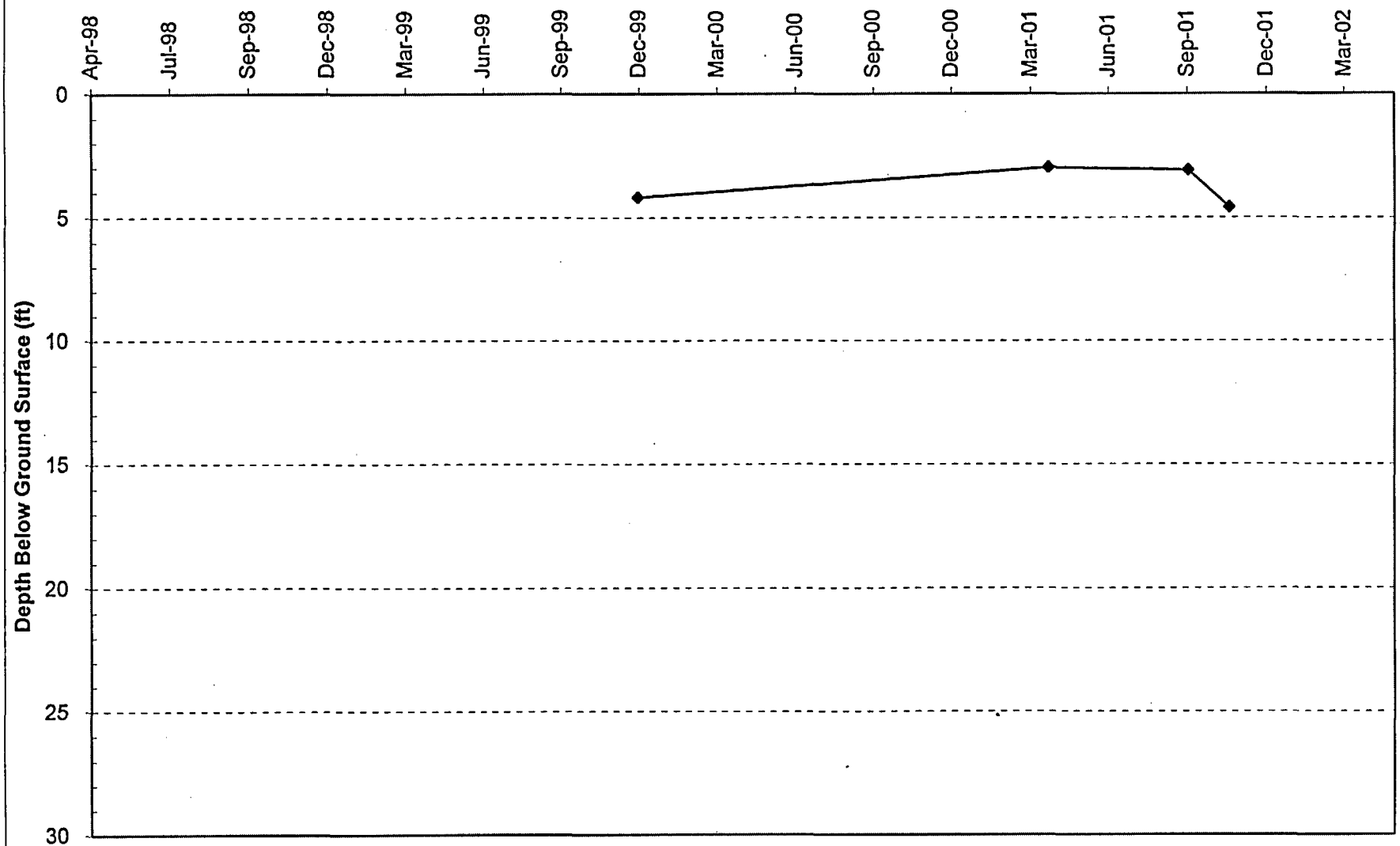
Ground Water Level in Well MW-2



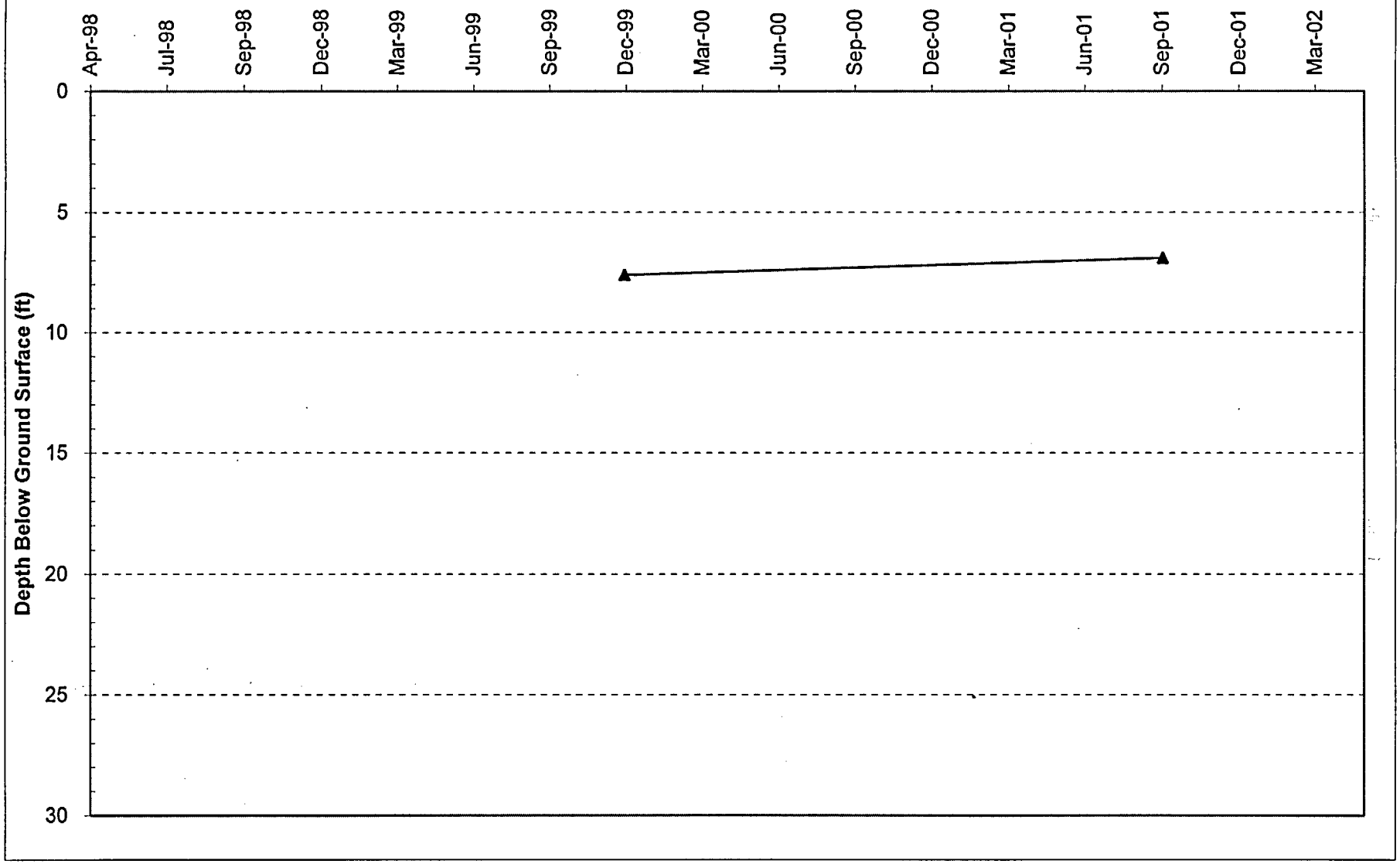
Ground Water Level in Well MW-3



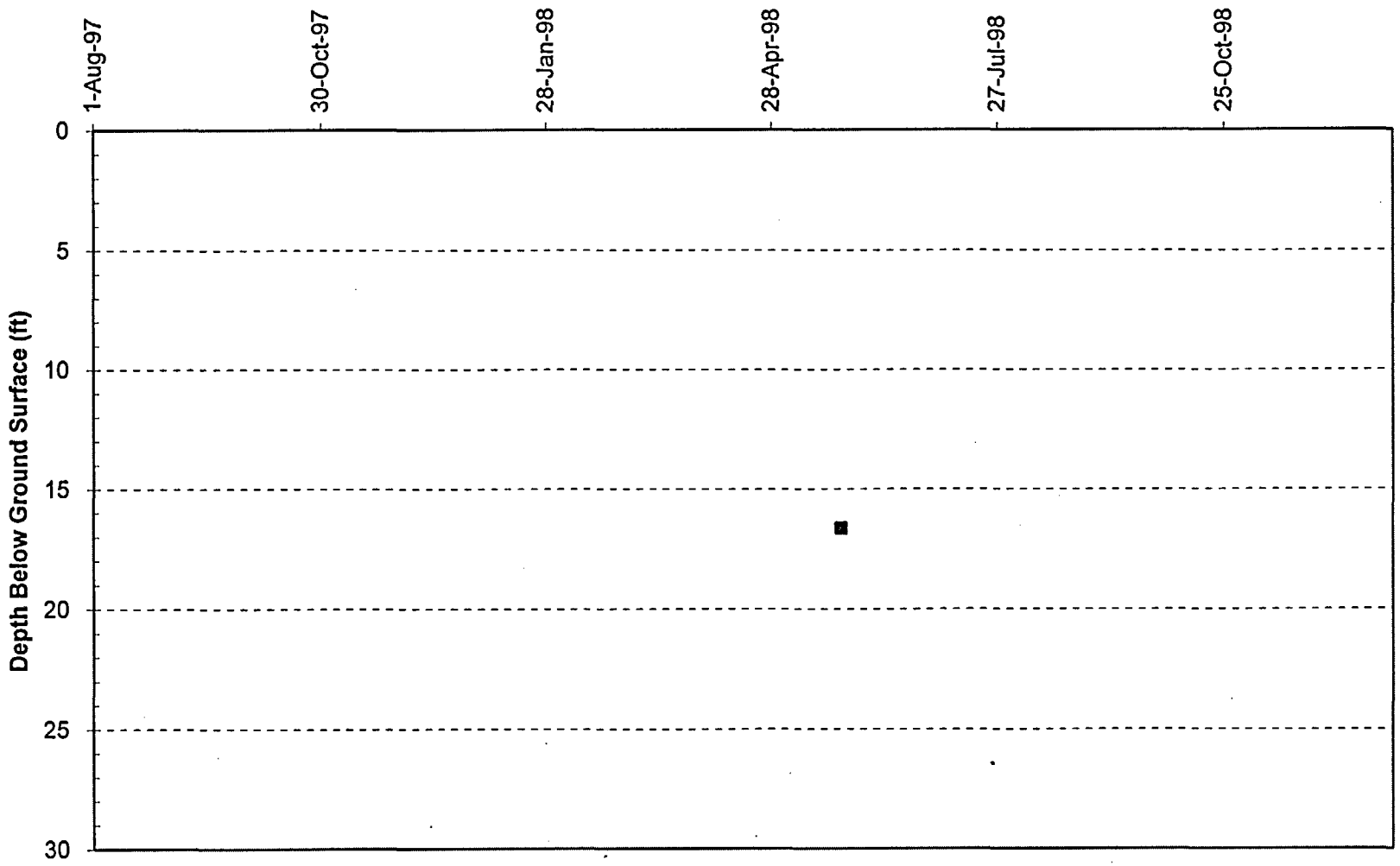
Ground Water Level in Well MW-5



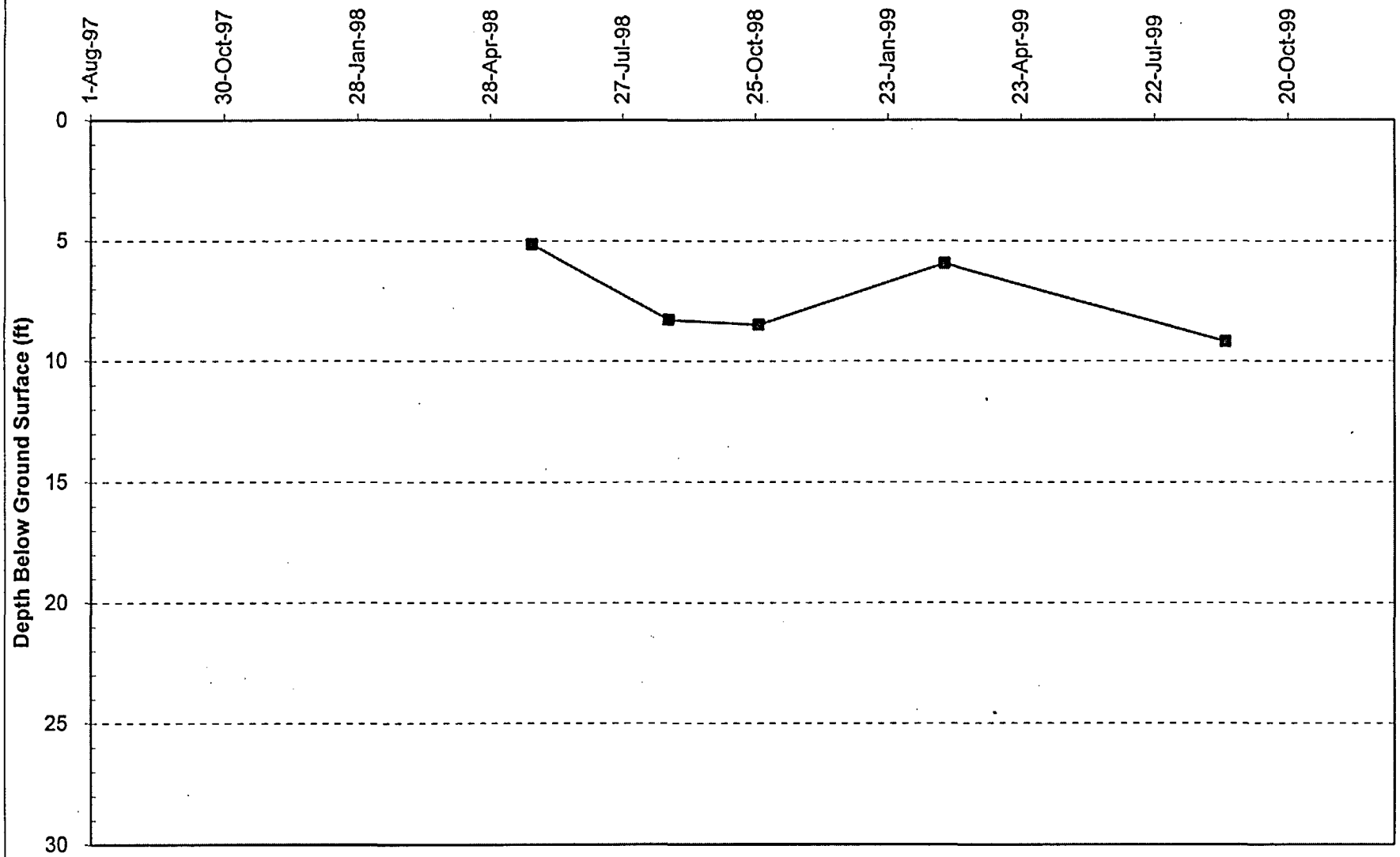
Ground Water Level in Well MW-6



Ground Water Level in Well NSR-1

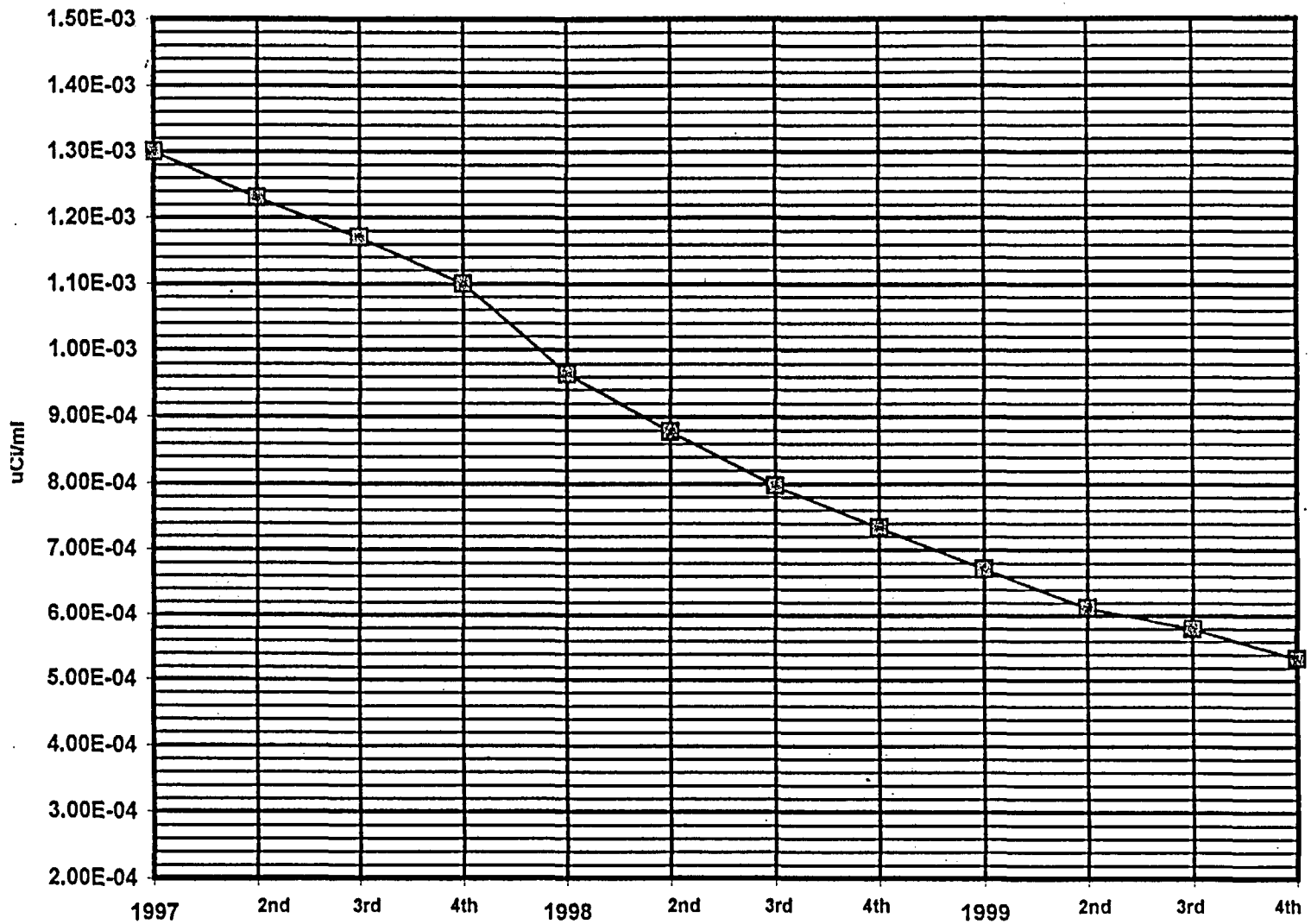


Ground Water Level in Well OSR-1



Attachment 5
YNPS Spent Fuel Pool: Concentration of H-3, 1997-1999

SPENT FUEL PIT AVERAGE QUARTERLY TRITIUM VALUES



FRAMATOME ANP FRAMATOME ANP DE&S	DESIGN VERIFICATION CHECKLIST *QA Record Type N/A*	Form DPR-3.9A Page 1 of 1 Revision 4

Document No.: DESD-TD-YR-02-001 Rev.: 1 Page: 1 of 1

Document Title: Site Ground Water Data Collection for YNPS Decommissioning

1.	Were the inputs correctly selected and incorporated into design?	☐ Y	☐ N	☒ N/A	
2.	Are assumptions necessary to perform the design activity adequately described and reasonable? Where necessary, are the assumptions identified for subsequent reverifications when the detailed design activities are completed?	☐ Y	☐ N	☒ N/A	
3.	Are the appropriate quality and quality assurance requirements specified?	☒ Y	☐ N	☐ N/A	
4.	Are the applicable codes, standards and regulatory requirements, including issue and addenda properly identified, and are their requirements for design met?	☐ Y	☐ N	☒ N/A	
5.	Have applicable construction and operating experience been considered?	☐ Y	☐ N	☒ N/A	
6.	Have the design interface requirements been satisfied?	☐ Y	☐ N	☒ N/A	
7.	Was an appropriate design method used?	☐ Y	☐ N	☒ N/A	
8.	Is the output reasonable compared to inputs?	☐ Y	☐ N	☒ N/A	
9.	Are the specified parts, equipment and processes suitable for the required application?	☐ Y	☐ N	☒ N/A	
10.	Are the specified materials compatible with each other and the design environmental conditions to which the material will be exposed?	☐ Y	☐ N	☒ N/A	
11.	Have adequate maintenance features and requirements been specified?	☐ Y	☐ N	☒ N/A	
12.	Are accessibility and other design provisions adequate for performance of needed maintenance and repair?	☐ Y	☐ N	☒ N/A	
13.	Has adequate accessibility been provided to perform the inservice inspection expected to be required during the plant life?	☐ Y	☐ N	☒ N/A	
14.	Has the design properly considered radiation exposure to the public and plant personnel?	☐ Y	☐ N	☒ N/A	
15.	Are the acceptance criteria incorporated in the design documents sufficient to allow verification that design requirements have been satisfactorily accomplished?	☐ Y	☐ N	☒ N/A	
16.	Have adequate pre-operational and subsequent periodic test requirements been appropriately specified?	☐ Y	☐ N	☒ N/A	
17.	Are adequate handling, storage, cleaning and shipping requirements specified?	☐ Y	☐ N	☒ N/A	
18.	Are adequate identification requirements specified?	☐ Y	☐ N	☒ N/A	
19.	Are requirements for record preparation review, approval, retention, etc., adequately specified?	☒ Y	☐ N	☐ N/A	

Comments:

Verified By: (First, MI, Last)	E. F. Maher PRINTED/TYPED NAME	[signature] SIGNATURE	2/3/2003 DATE