N42237.AR.000033
NSB KINGS BAY
5090.3a

AGENDA RCRA FACILITY INVESTIGATION SITE INSPECTION TECHNICAL REVIEW COMMITTEE MEETING NSB KINGS BAY GA
6/24/1991
NSB KINGS BAY

31547.000
13.03.00.0001

AGENDA

RCRA FACILITY INVESTIGATION/SITE INSPECTION TECHNICAL REVIEW COMMITTEE MEETING

NAVAL SUBMARINE BASE KINGS BAY, GEORGIA

JUNE 24, 1991 1300 O'CLOCK

I. Introduction

II. Presentation by ABB Environmental Services, Inc.

A. Site 5 - Army Reserve Disposal Area, Towhee Trail

Groundwater Flow

Comparison of analytical data from first two groundwater sample events.

Inorganics in groundwater.

Additional surface soil sampling.

B. Site 11 - Old Camden County Landfill

Groundwater flow.

Comparison of analytical data for first two groundwater sample events.

Inorganics in groundwater.

C. Site 16 - Army Reserve Disposal Area, Motor Missile Magazines

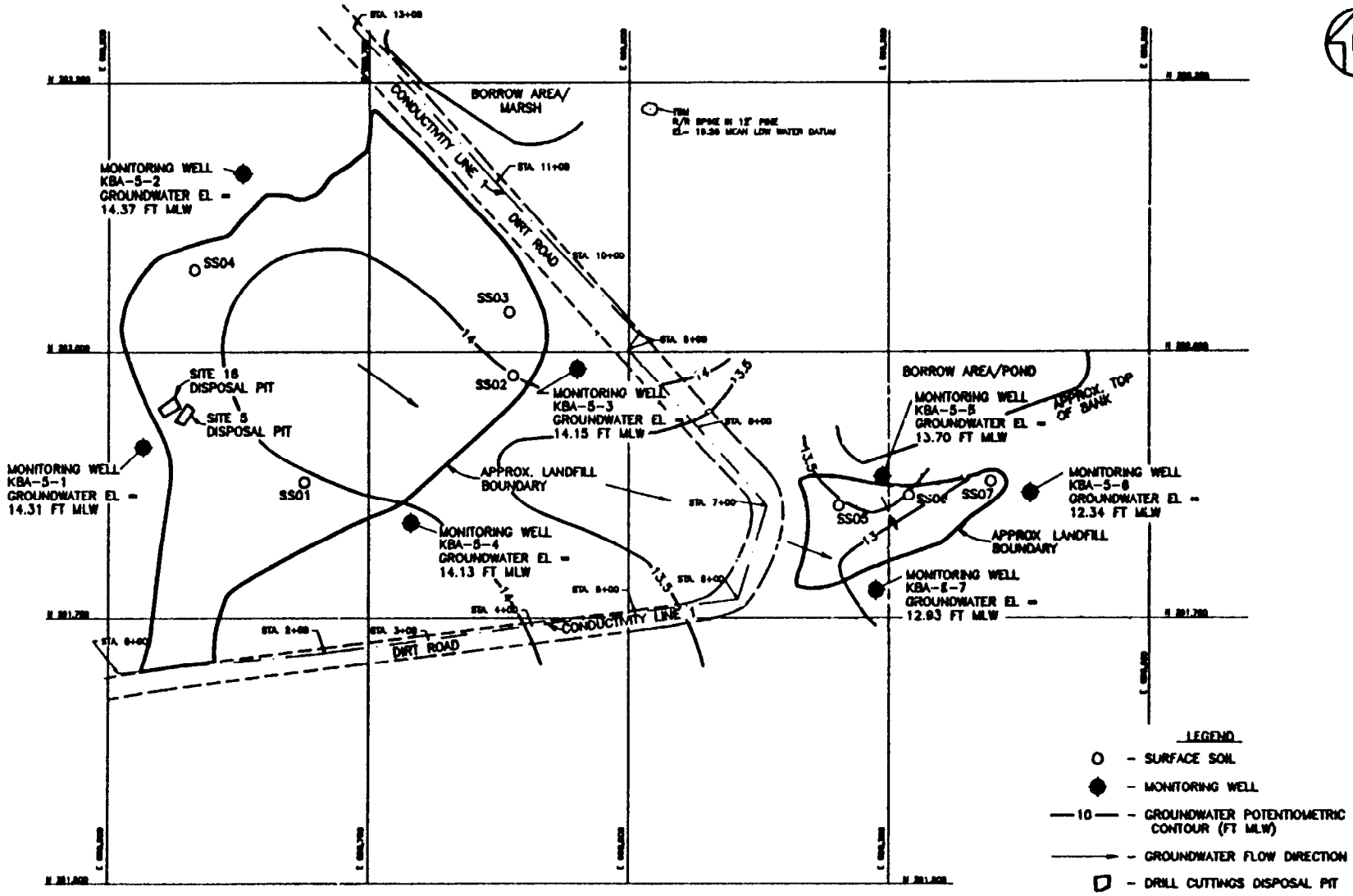
Groundwater flow.

Comparison of analytical data from first two groundwater sample events.

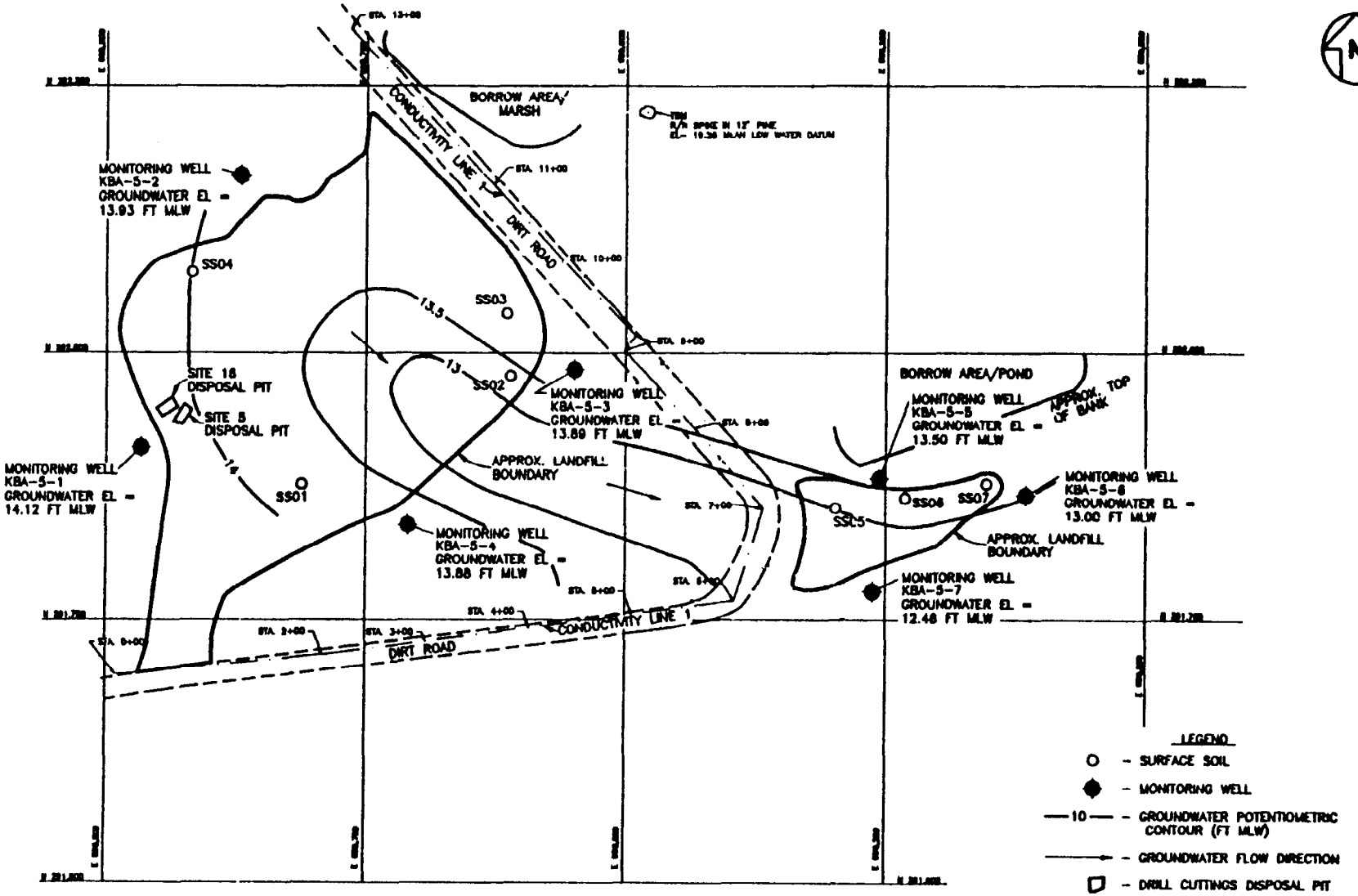
Inorganics in groundwater.

D. Proposed analytical program for upcoming groundwater sample events.

III. Closing comments.



SITE 5
GROUNDWATER POTENTIOMETRIC SURFACE MAP - FEBRUARY 1992



SITE 5
GROUNDWATER POTENTIOMETRIC SURFACE MAP - MAY 1992

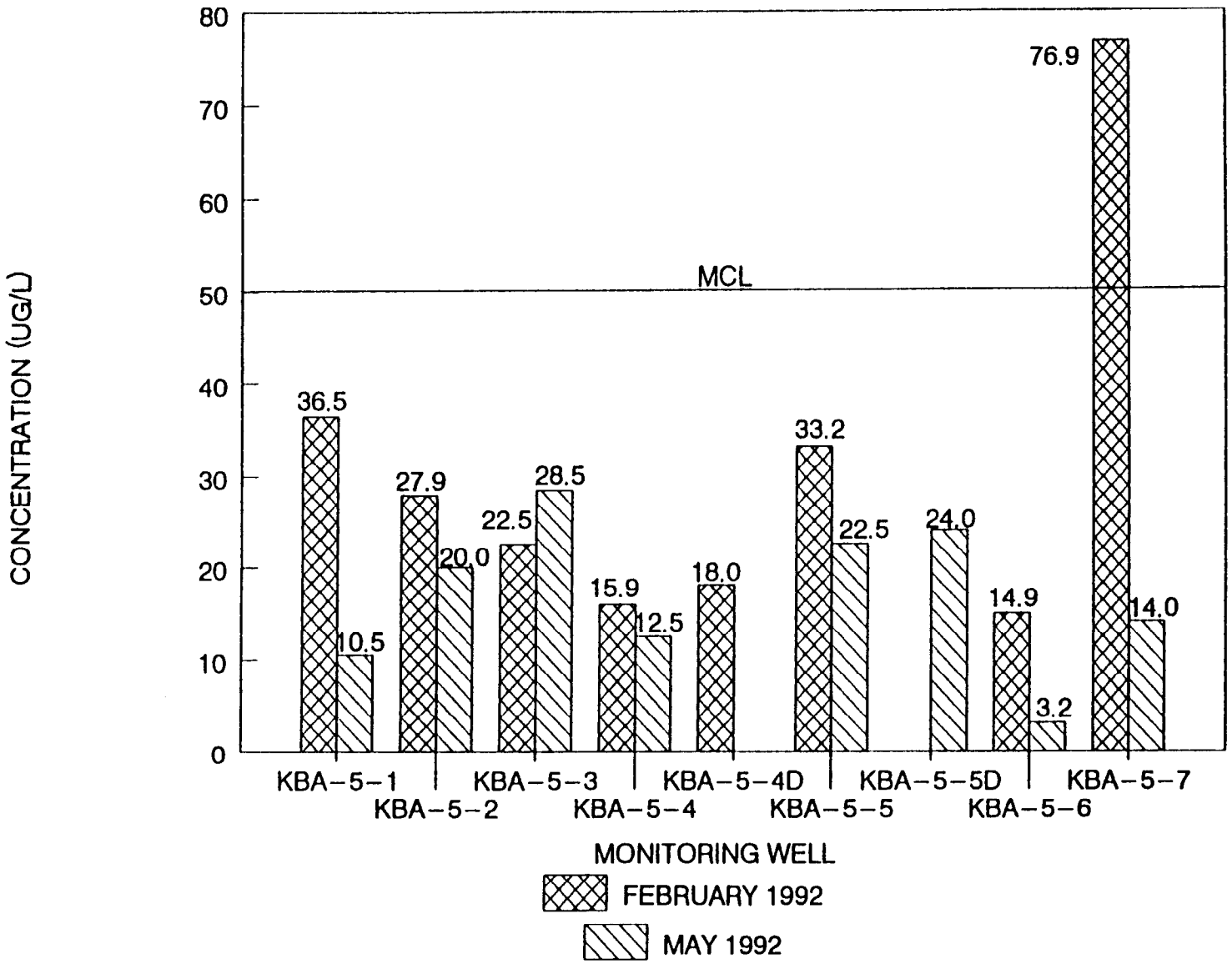
SITE 5, ARMY RESERVE DISPOSAL AREA, TOWHEE TRAIL

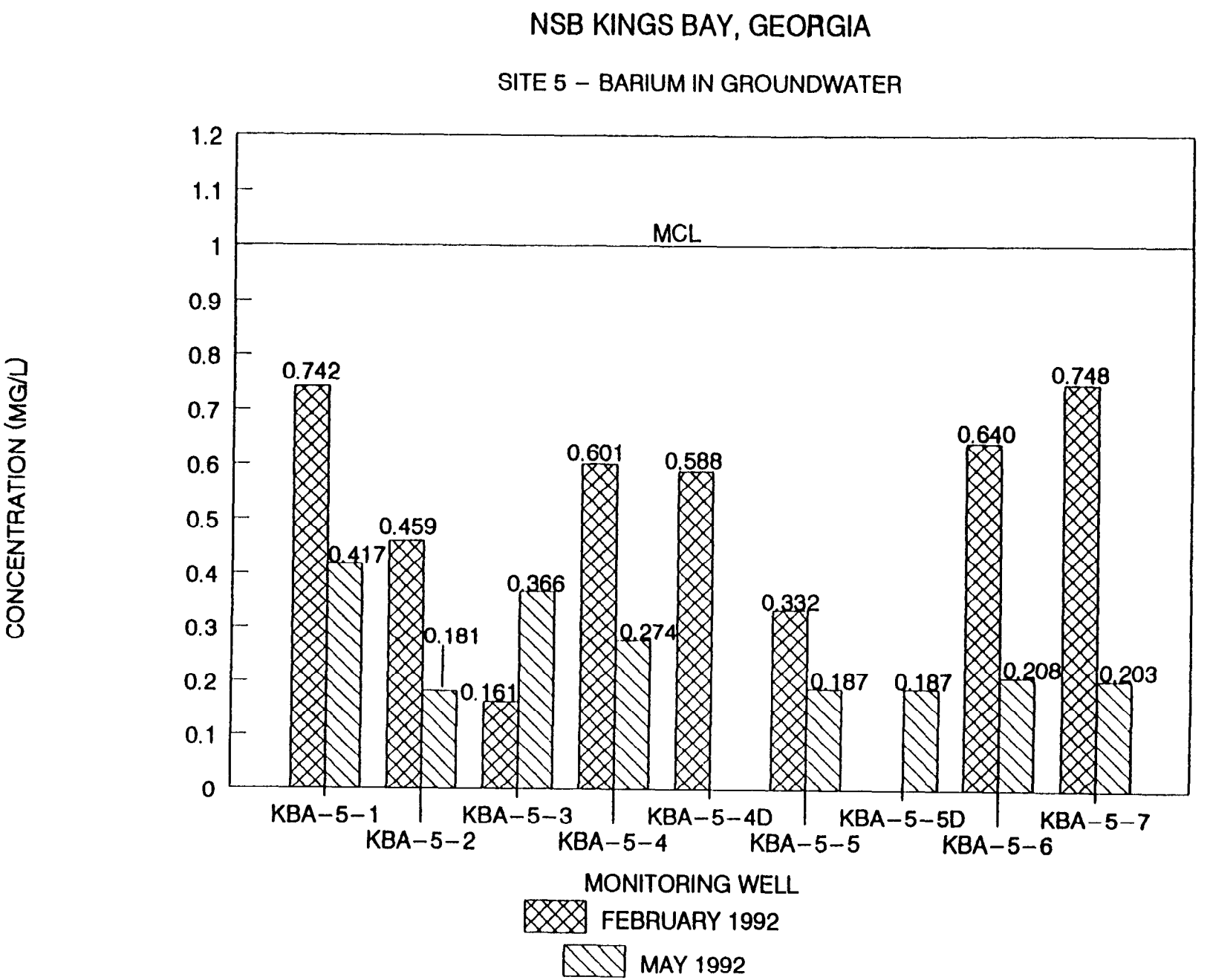
COMPARISON OF APPENDIX IX CHEMICALS IN GROUNDWATER FOR SAMPLE EVENTS NO. 1 AND 2

SAMPLE EVENT NO. 1 (FEB. 1992)	SAMPLE EVENT NO. 2 (MAY 1992)
VOLATILE ORGANICS	**VOLATILE ORGANICS**
carbon disulfide	none detected
trichlorofluoromethane	
4-methyl-2-pentanone	
ethylbenzene	
xylene	
SEMIVOLATILE ORGANICS	**SEMIVOLATILE ORGANICS**
none detected	none detected
PESTICIDES, HERBICIDES, AND PCBS	**PESTICIDES, HERBICIDES, AND PCBS**
none detected	none detected
DIOXINS AND FURANS	**DIOXINS AND FURANS**
none detected	none detected
INORGANICS	**INORGANICS**
arsenic	cadmium
cadmium	lead
chromium	cyanide
lead	selenium
cyanide	sulfide
sulfide	

NSB KINGS BAY, GEORGIA

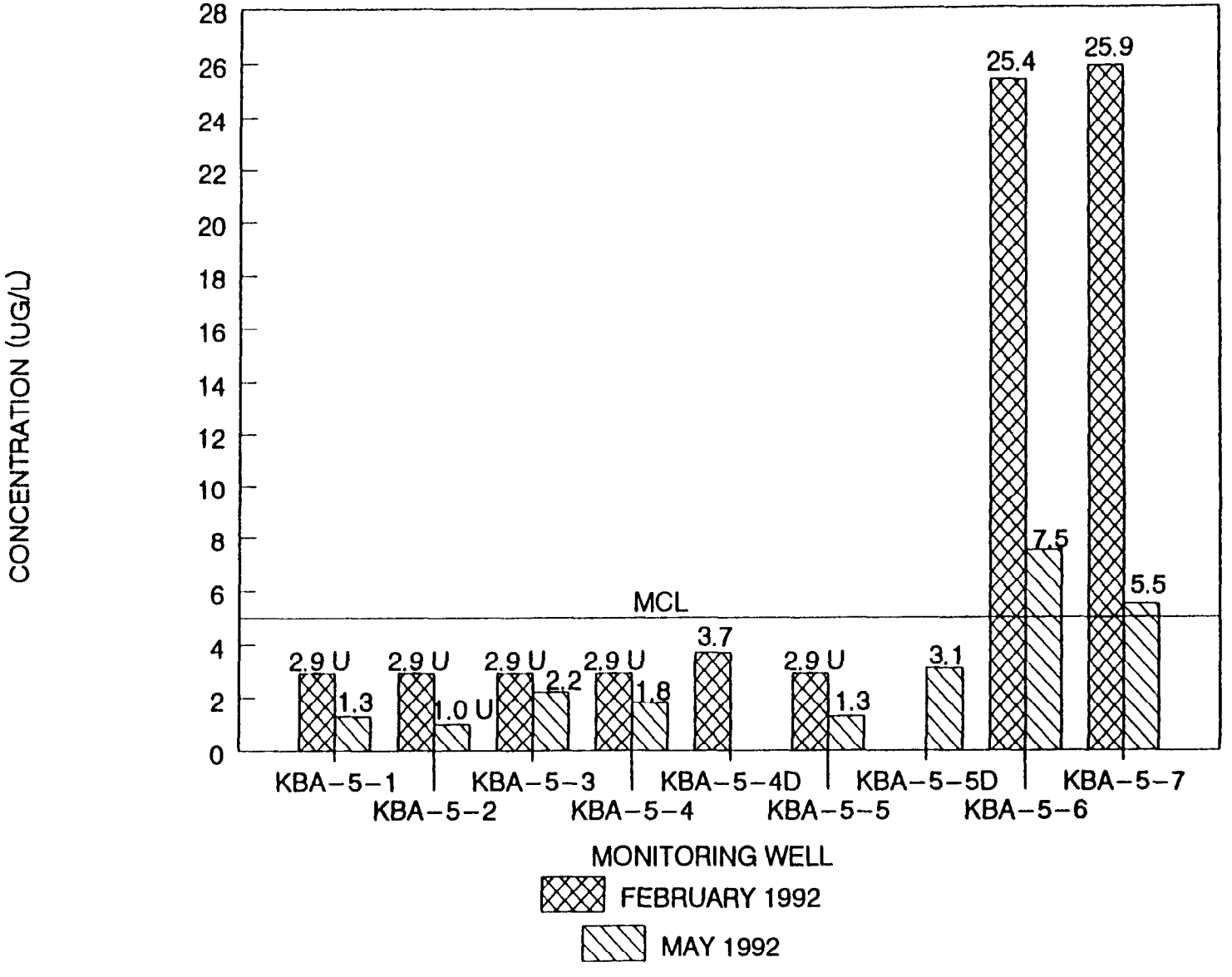
SITE 5 – ARSENIC IN GROUNDWATER




NSB KINGS BAY, GEORGIA
SITE 5 – BARIUM IN GROUNDWATER
CONCENTRATION (MG/L)
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
MCL
0.742
0.417
0.459
0.181
0.161
0.366
0.601
0.274
0.588
0.332
0.187
0.187
0.640
0.208
0.748
0.203
KBA-5-1
KBA-5-2
KBA-5-3
KBA-5-4
KBA-5-4D
KBA-5-5
KBA-5-5D
KBA-5-6
KBA-5-7
MONITORING WELL
FEBRUARY 1992
MAY 1992

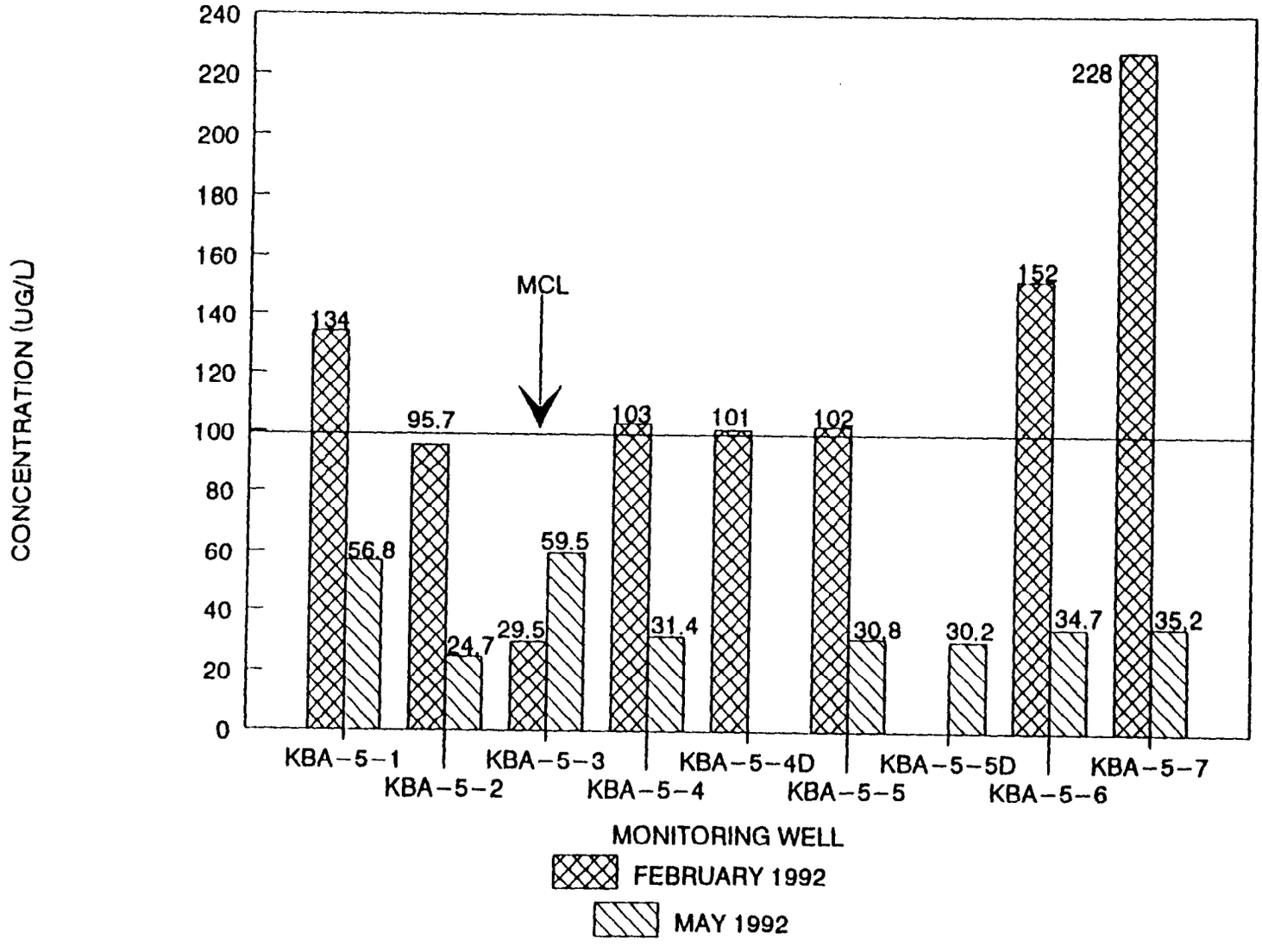
NSB KINGS BAY, GEORGIA

SITE 5 – CADMIUM IN GROUNDWATER



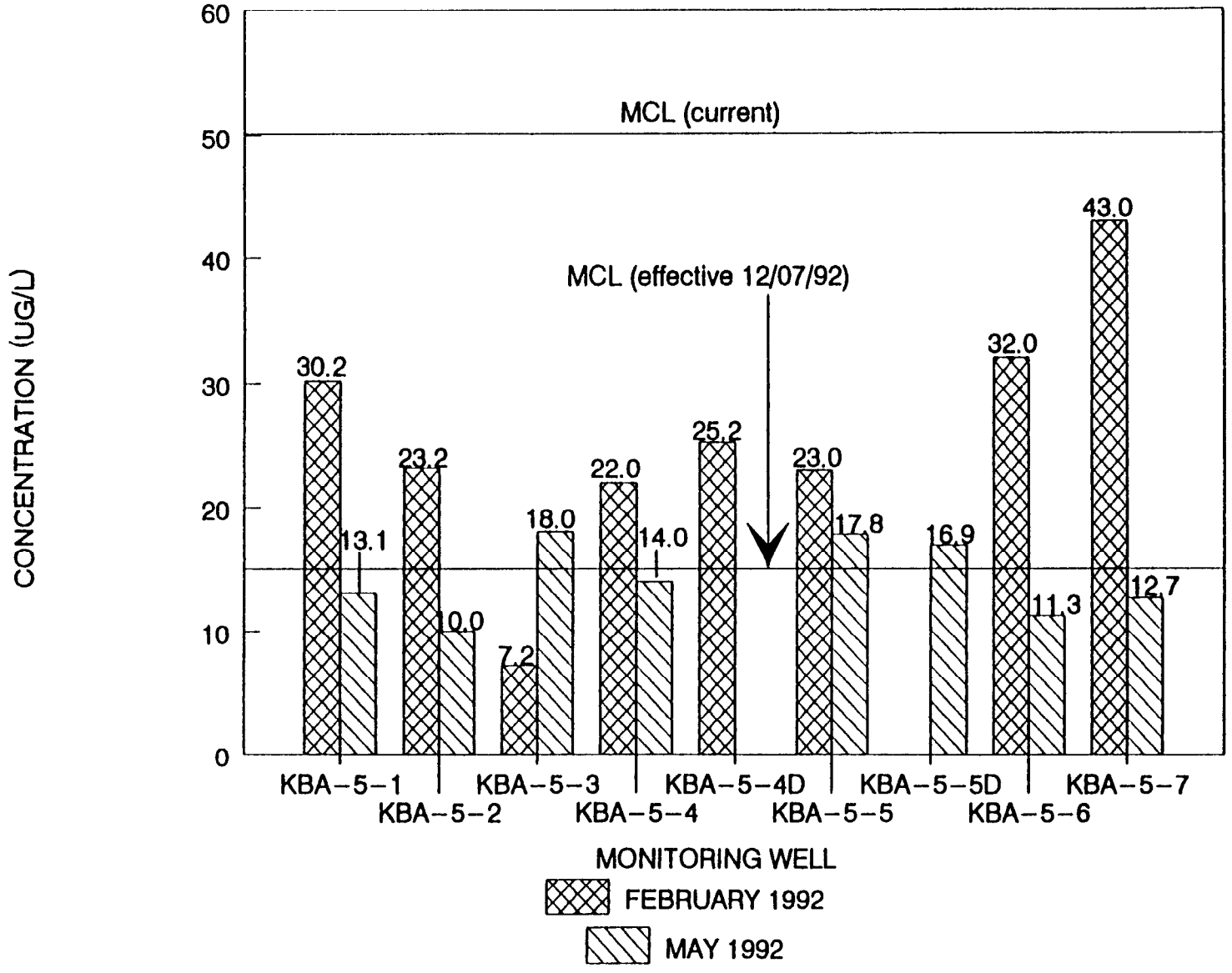
NSB KINGS BAY, GEORGIA

SITE 5 – CHROMIUM IN GROUNDWATER



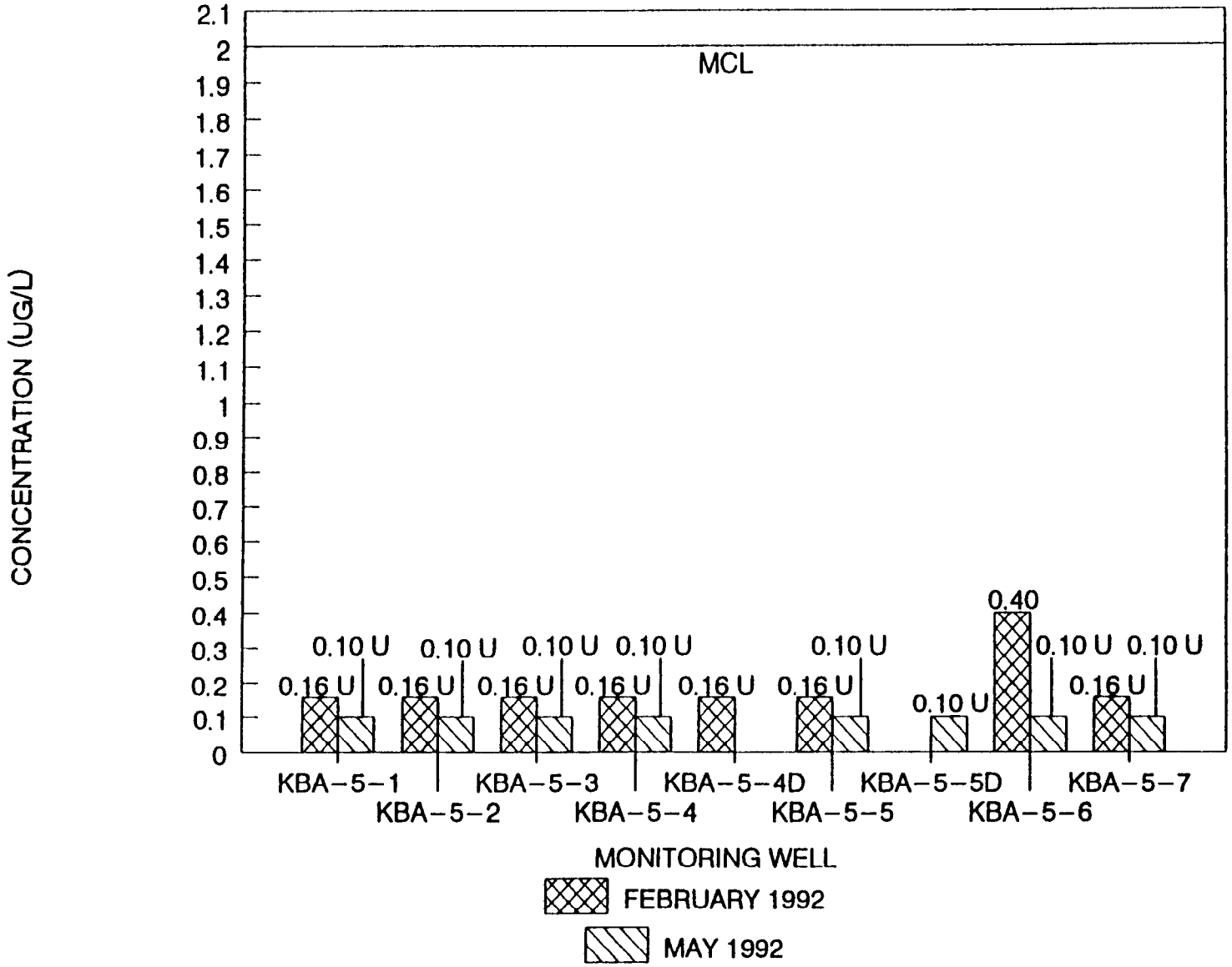
NSB KINGS BAY, GEORGIA

SITE 5 – LEAD IN GROUNDWATER



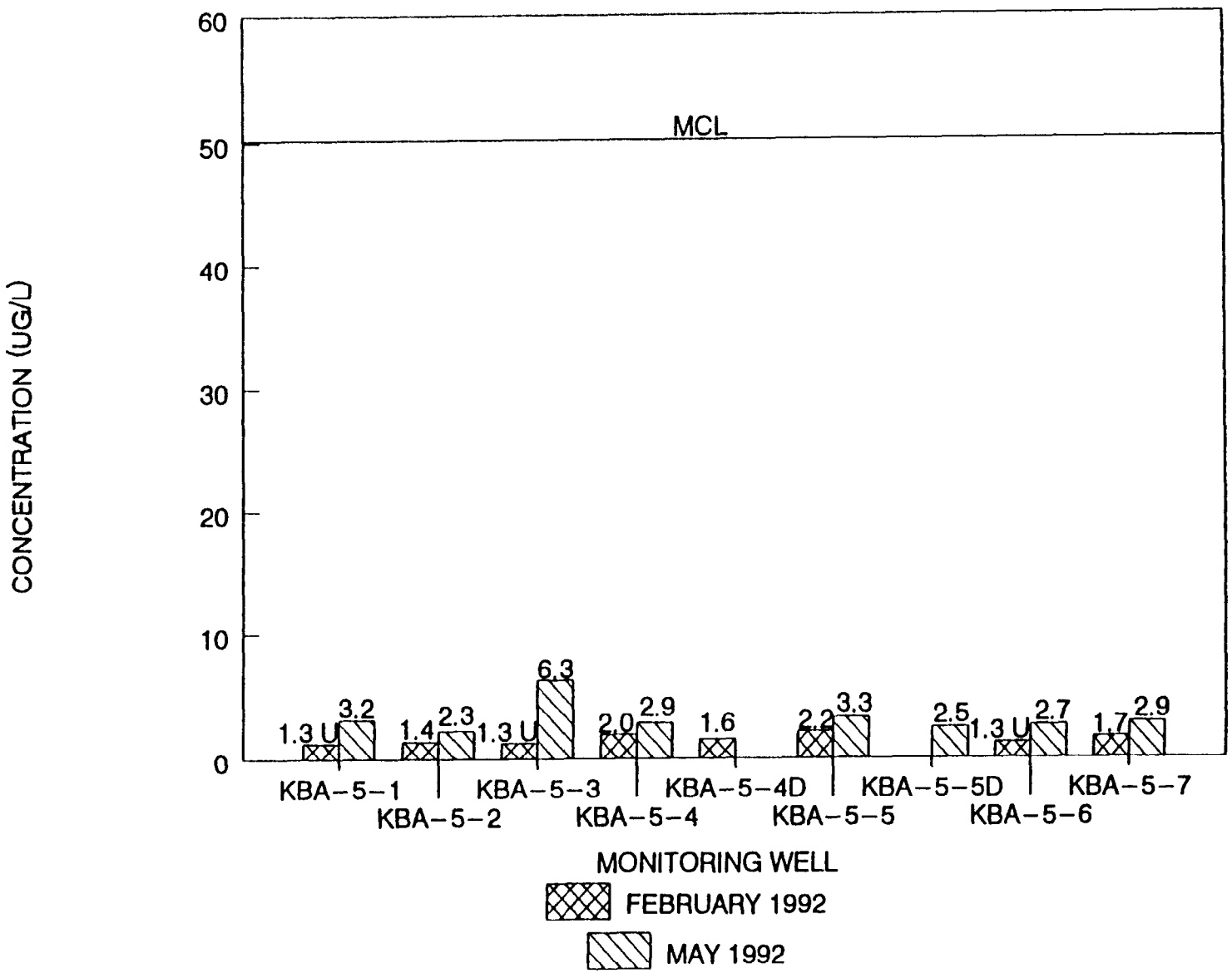
NSB KINGS BAY, GEORGIA

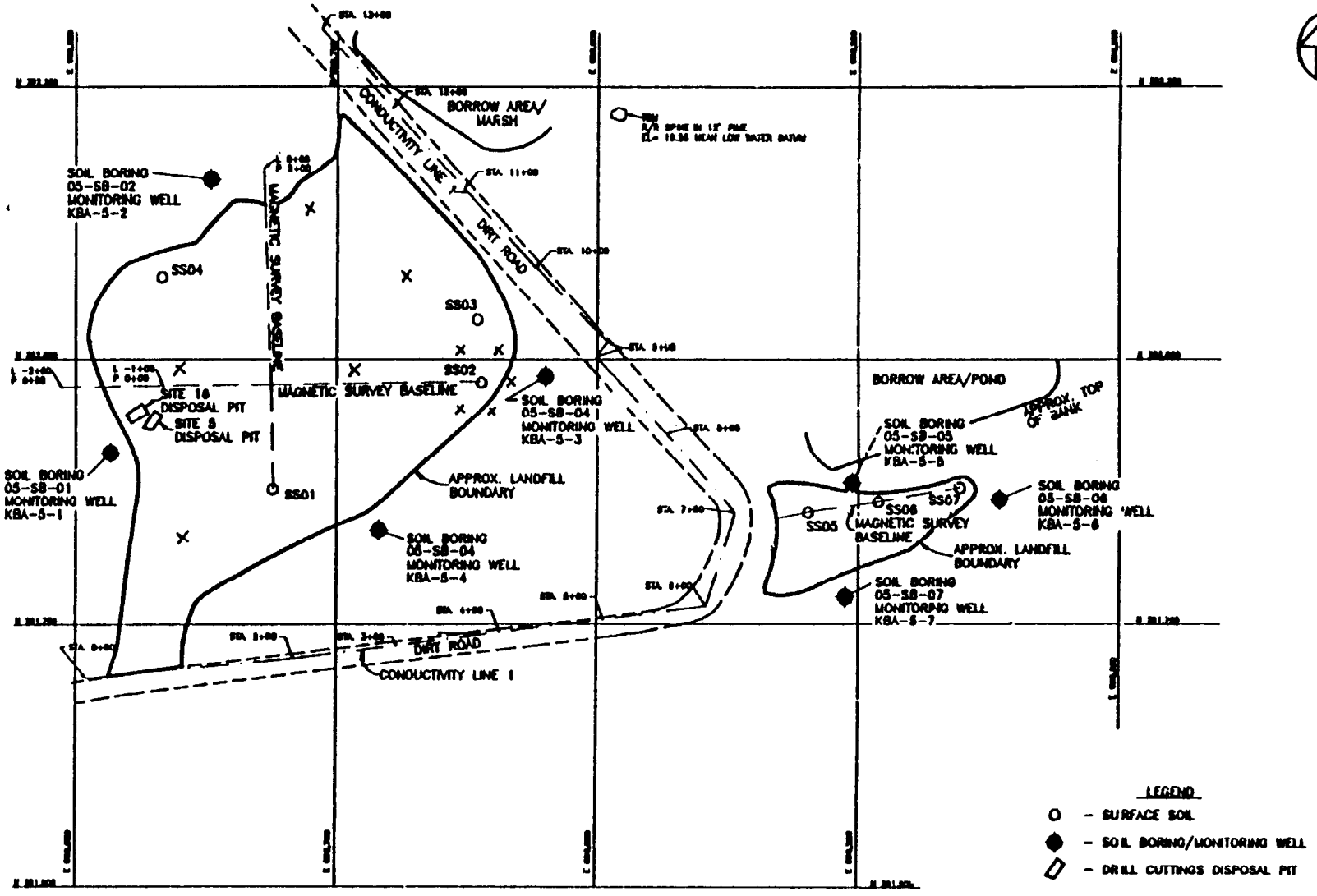
SITE 5 – MERCURY IN GROUNDWATER



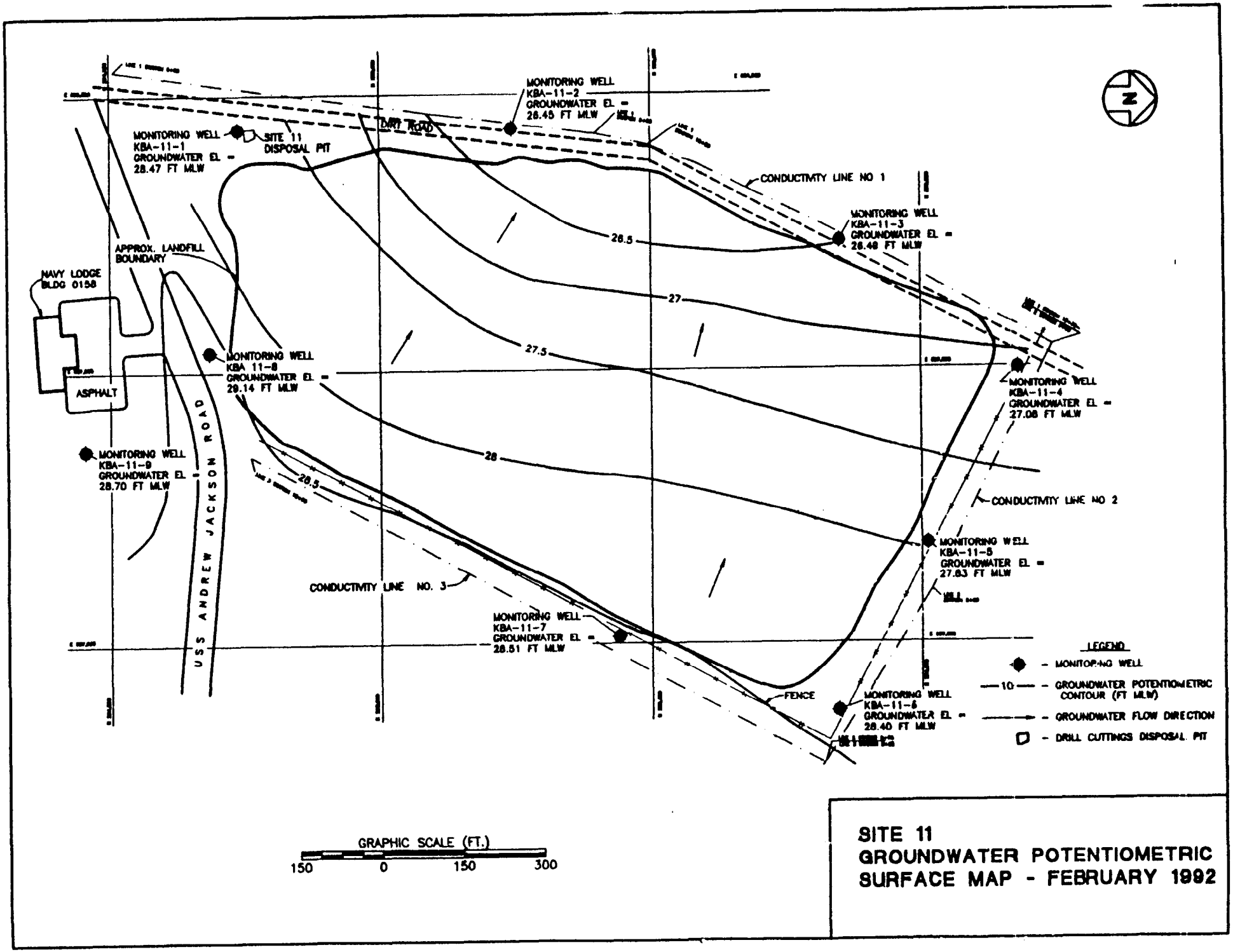
NSB KINGS BAY, GEORGIA

SITE 5 – SELENIUM IN GROUNDWATER

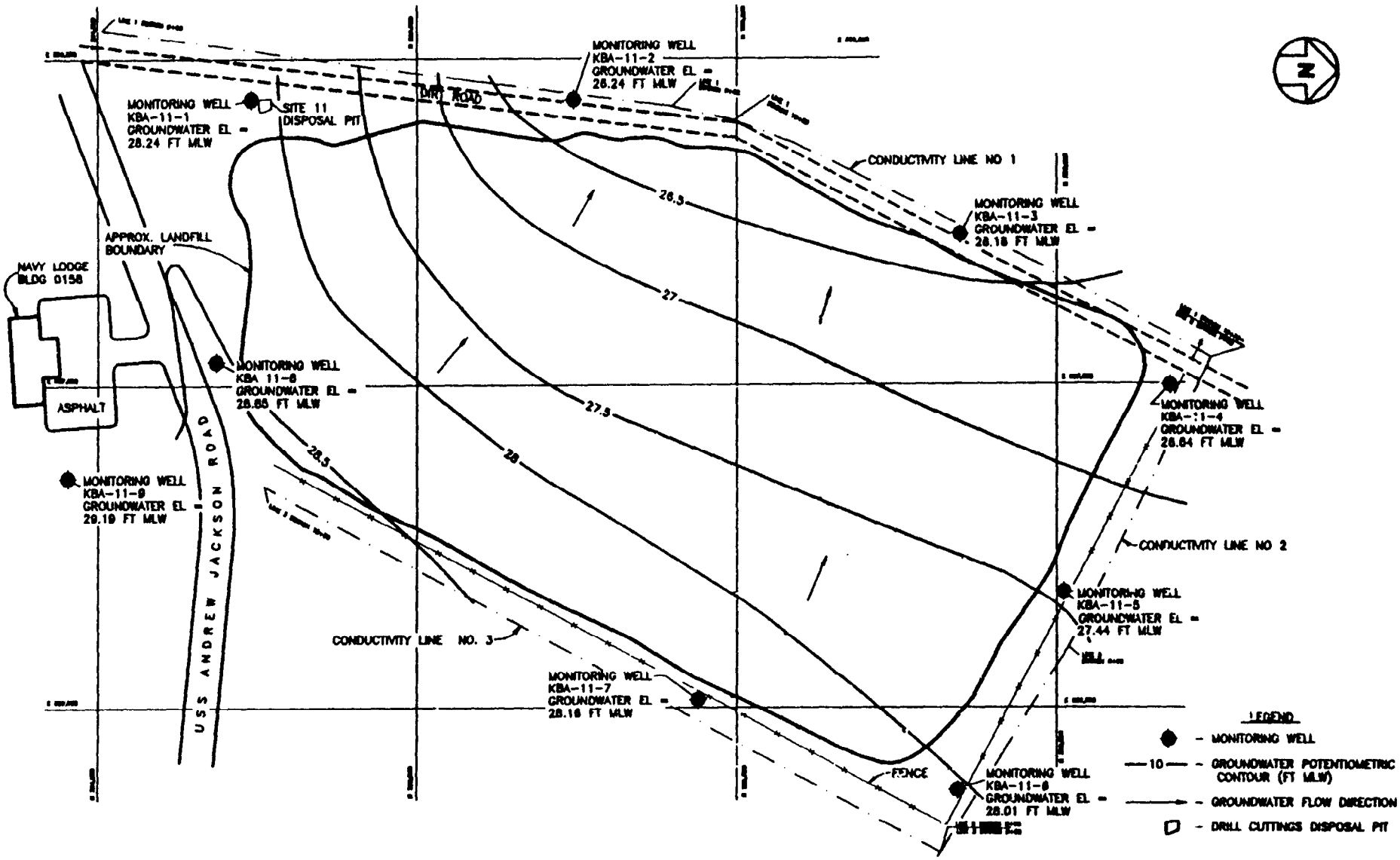




SITE 5
ARMY RESERVE DISPOSAL AREA
TOWHEE TRAIL
SAMPLING LOCATIONS



SITE 11
GROUNDWATER POTENTIOMETRIC
SURFACE MAP - FEBRUARY 1992



SITE 11
GROUNDWATER POTENTIOMETRIC
SURFACE MAP - MAY 1992

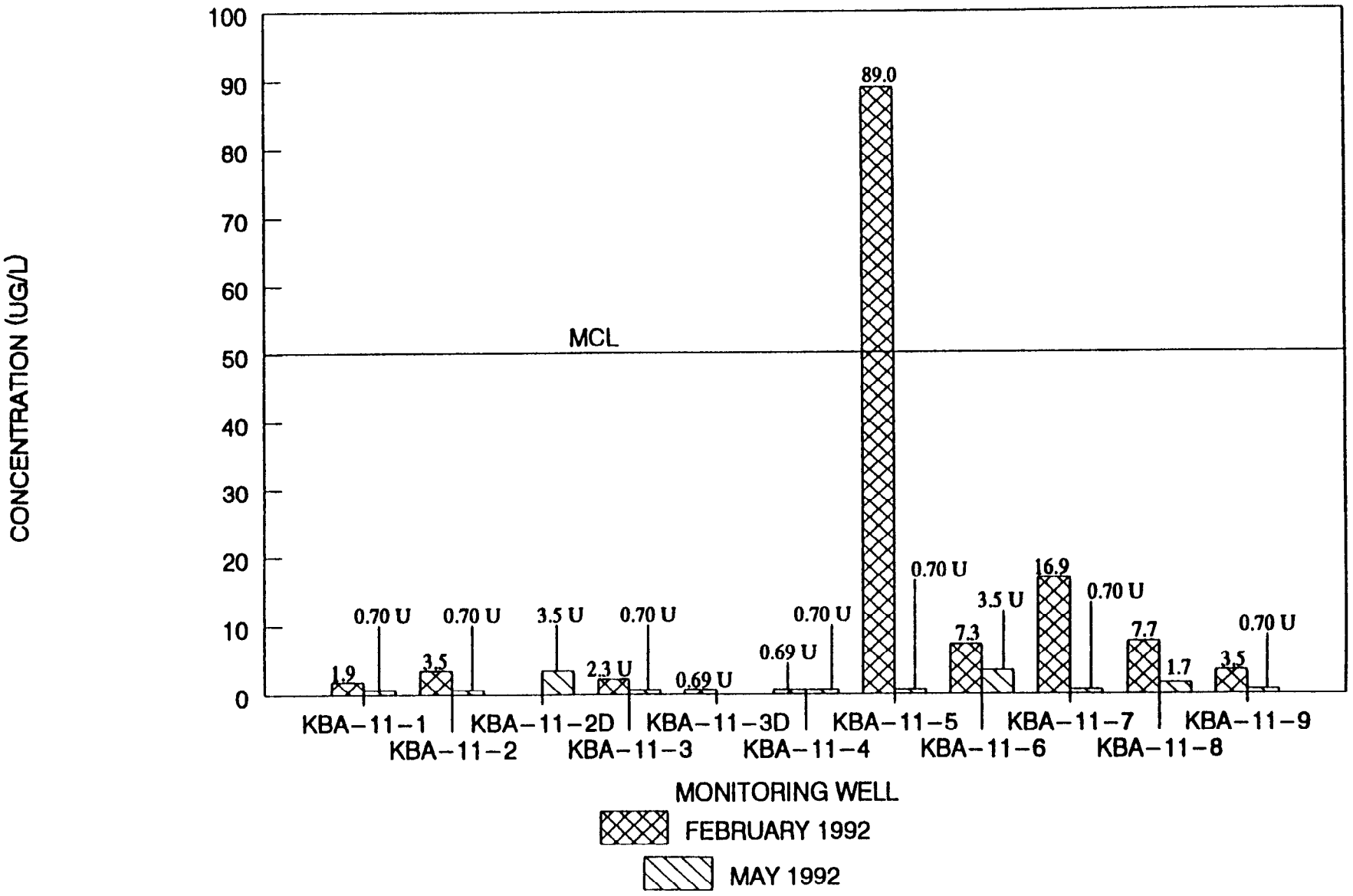
SITE 11, OLD CAMDEN COUNTY LANDFILL

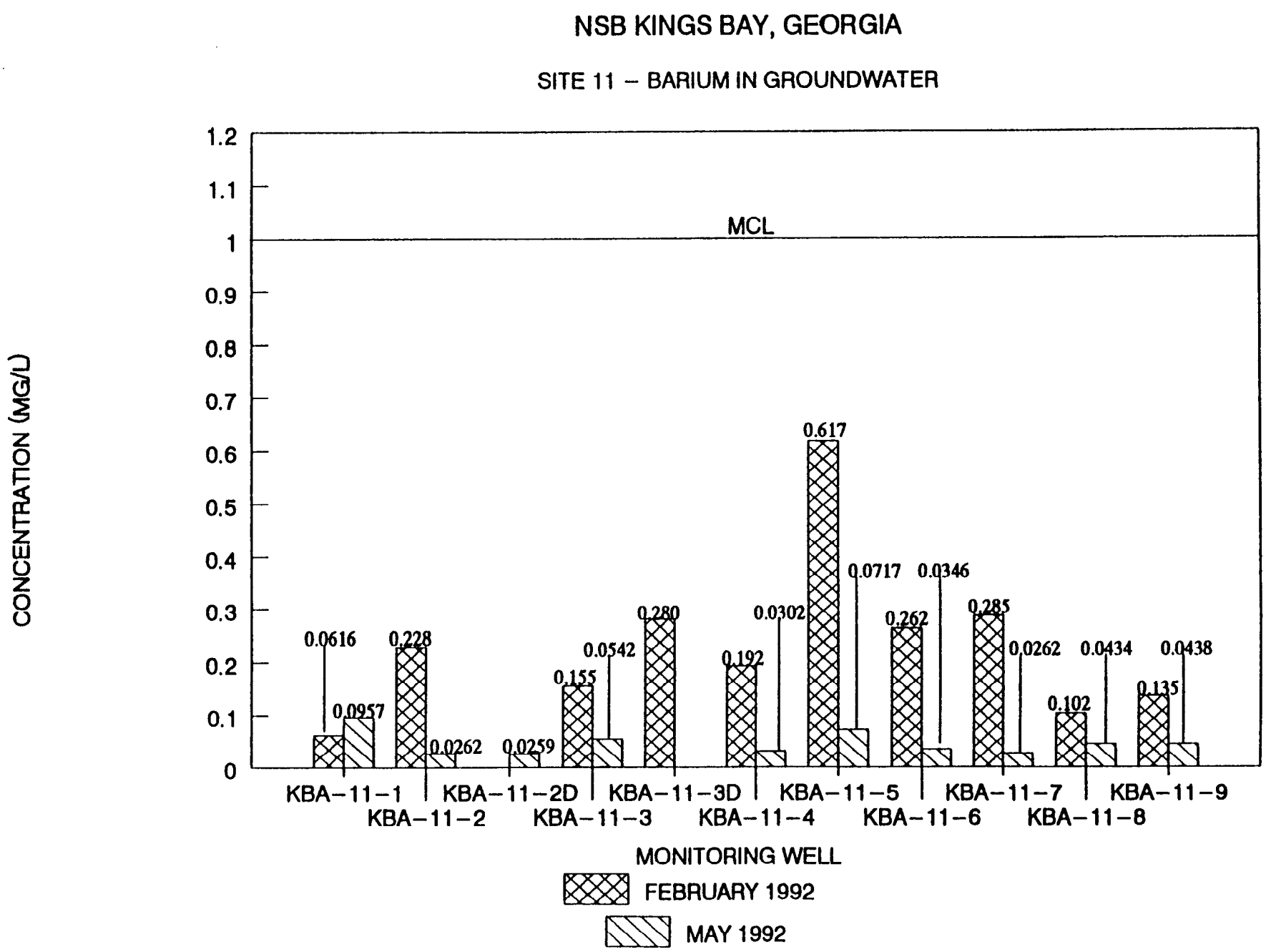
COMPARISON OF APPENDIX IX CHEMICALS IN GROUNDWATER FOR SAMPLE EVENTS NO. 1 AND NO. 2

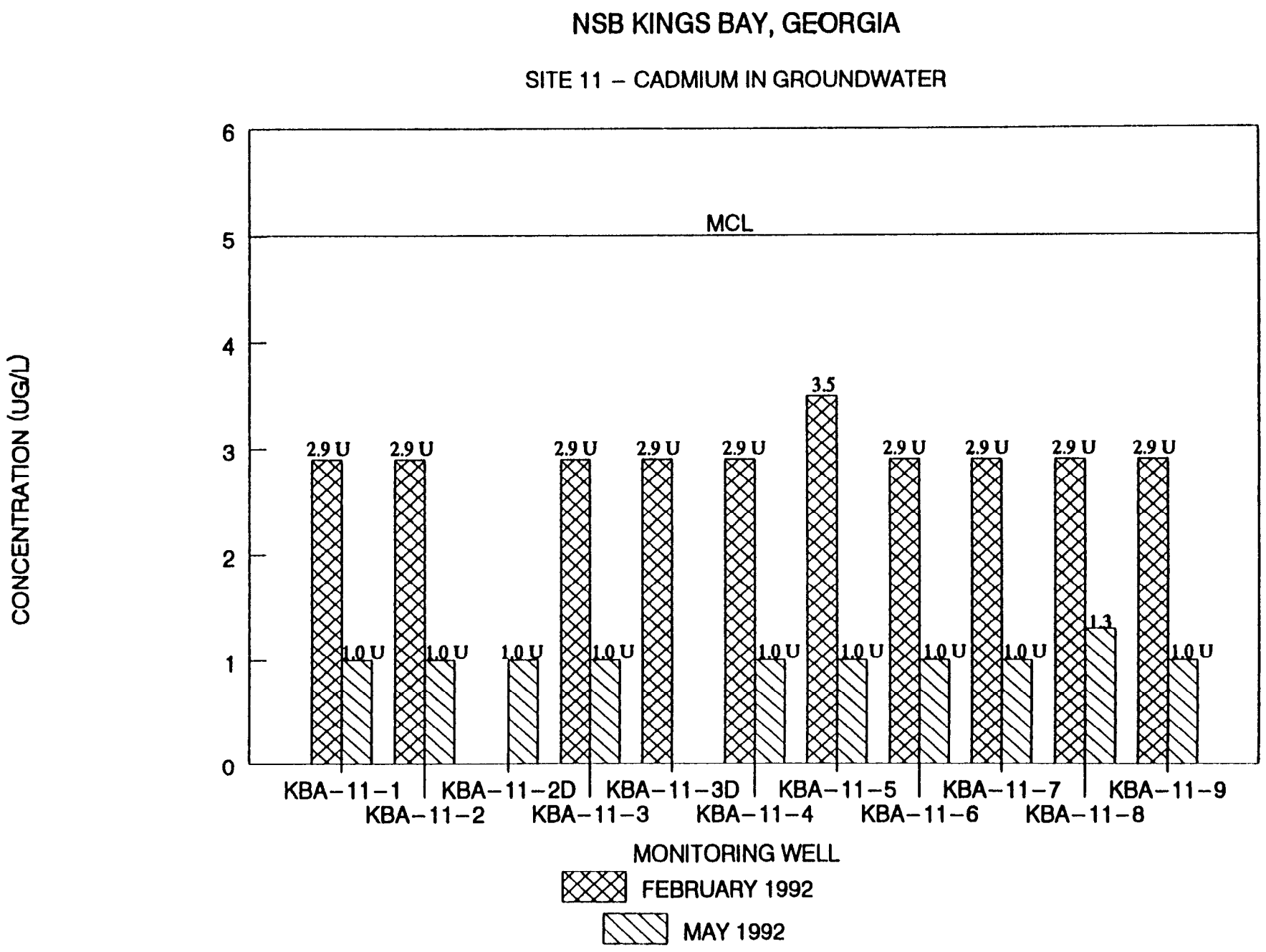
SAMPLE EVENT NO. 1 (FEB. 1992)	SAMPLE EVENT NO. 2 (MAY 1992)
VOLATILE ORGANICS	**VOLATILE ORGANICS**
vinyl chloride	vinyl chloride
1,2-dichloroethene	1,2-dichloroethene
chlorobenzene	chlorobenzene
xylene	xylene
1,4-dichlorobenzene	1,4-dichlorobenzene
ethylbenzene	1,3-dichlorobenzene
4-methyl-2-pentanone	toluene
	chloroethane
	trichloroethene
	tetrachloroethene
SEMIVOLATILE ORGANICS	**SEMIVOLATILE ORGANICS**
1,4-dichlorobenzene	1,4-dichlorobenzene
PESTICIDES, HERBICIDES, AND PCBS	**PESTICIDES, HERBICIDES, AND PCBS**
none detected	none detected
DIOXINS AND FURANS	**DIOXINS AND FURANS**
none detected	none detected
INORGANICS	**INORGANICS**
arsenic, beryllium	within background range
chromium, cobalt	of upgradient wells
copper, lead	
mercury, nickel	
vanadium, zinc	

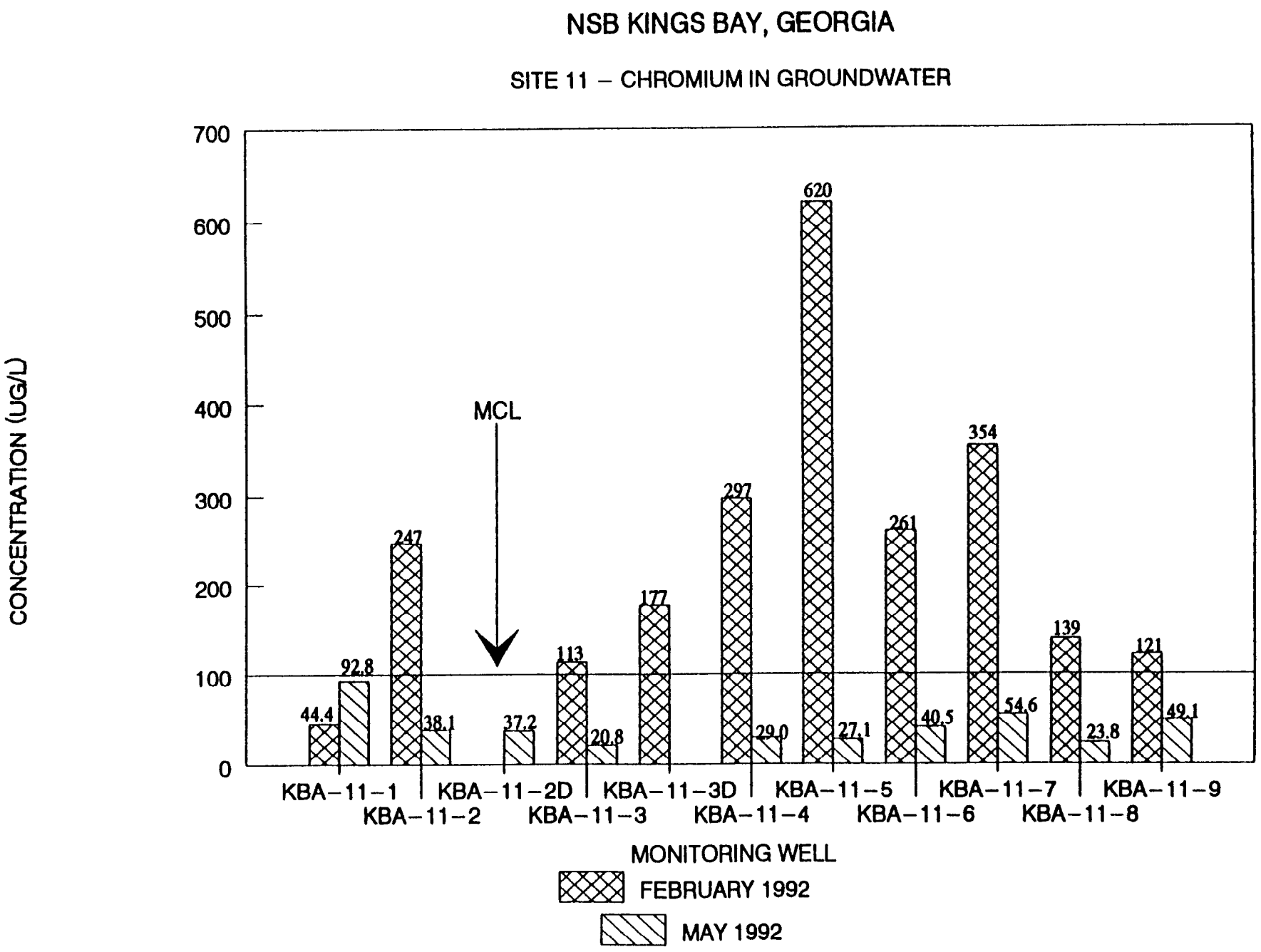
NSB KINGS BAY, GEORGIA

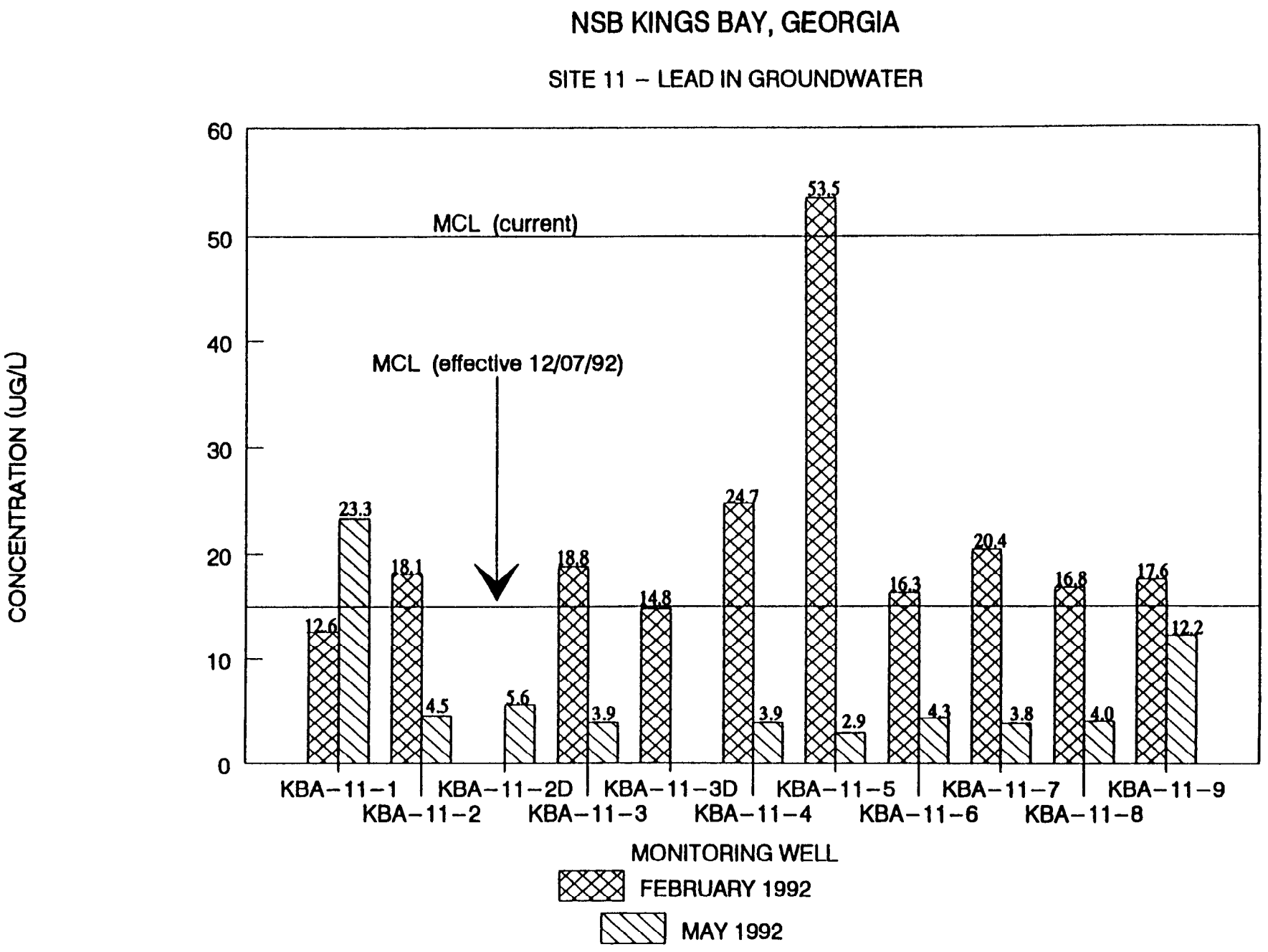
SITE 11 – ARSENIC IN GROUNDWATER




NSB KINGS BAY, GEORGIA
SITE 11 – BARIUM IN GROUNDWATER
CONCENTRATION (MG/L)
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
MCL
0.0616
0.0957
0.228
0.0262
0.0259
0.155
0.0542
0.280
0.192
0.0302
0.617
0.0717
0.262
0.0346
0.285
0.0262
0.102
0.0434
0.135
0.0438
KBA-11-1
KBA-11-2
KBA-11-2D
KBA-11-3
KBA-11-3D
KBA-11-4
KBA-11-5
KBA-11-6
KBA-11-7
KBA-11-8
KBA-11-9
MONITORING WELL
FEBRUARY 1992
MAY 1992

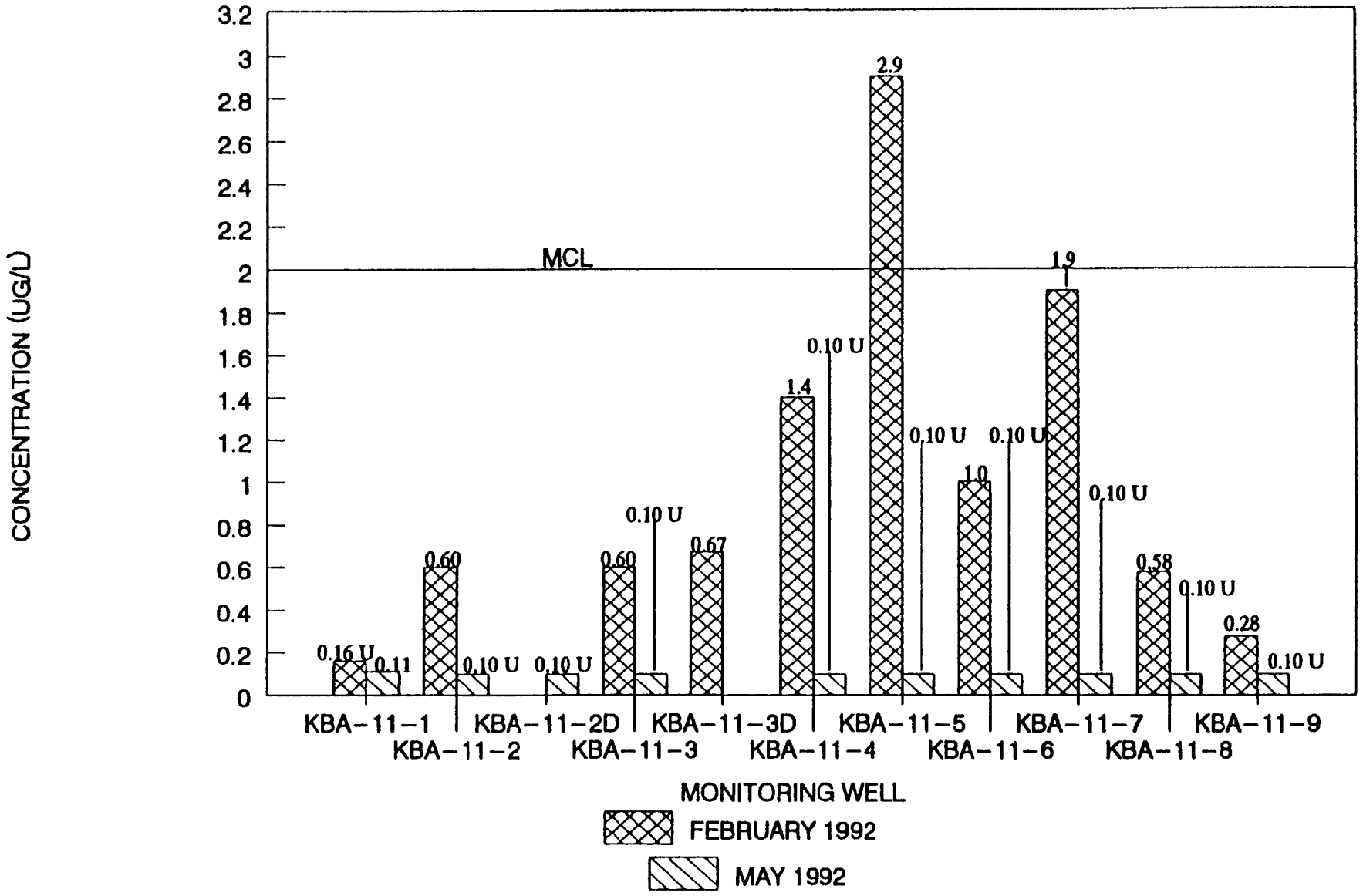

NSB KINGS BAY, GEORGIA
SITE 11 – CADMIUM IN GROUNDWATER
CONCENTRATION (UG/L)
6
5
4
3
2
1
0
MCL
2.9 U
1.0 U
3.5
1.3
KBA-11-1
KBA-11-2
KBA-11-2D
KBA-11-3
KBA-11-3D
KBA-11-4
KBA-11-5
KBA-11-6
KBA-11-7
KBA-11-8
KBA-11-9
MONITORING WELL
FEBRUARY 1992
MAY 1992

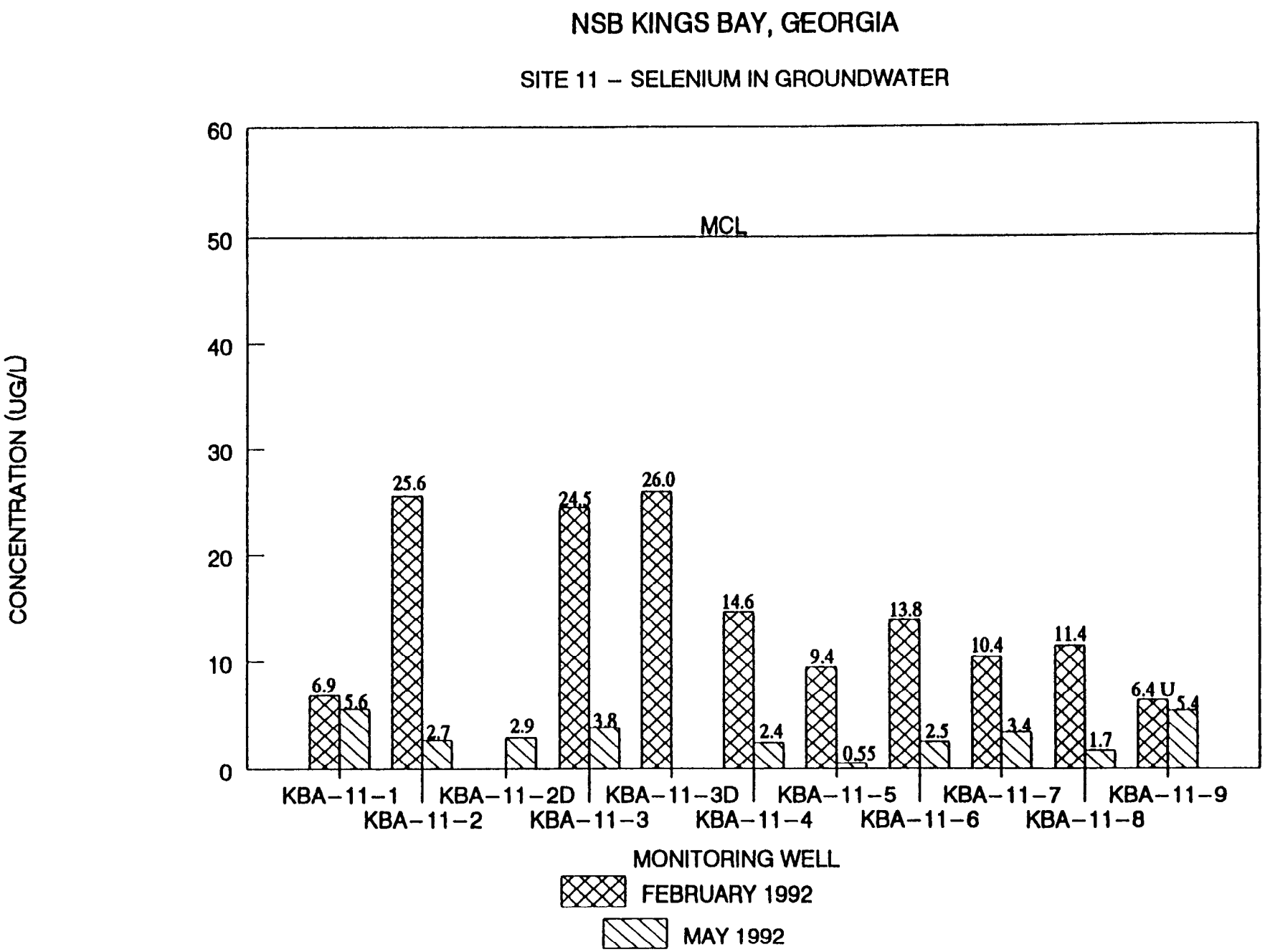

NSB KINGS BAY, GEORGIA
SITE 11 – CHROMIUM IN GROUNDWATER
CONCENTRATION (UG/L)
700
600
500
400
300
200
100
0
MCL
44.4
92.8
247
38.1
37.2
113
20.8
177
297
29.0
620
27.1
261
40.5
354
54.6
139
23.8
121
49.1
KBA-11-1
KBA-11-2
KBA-11-2D
KBA-11-3
KBA-11-3D
KBA-11-4
KBA-11-5
KBA-11-6
KBA-11-7
KBA-11-8
KBA-11-9
MONITORING WELL
FEBRUARY 1992
MAY 1992

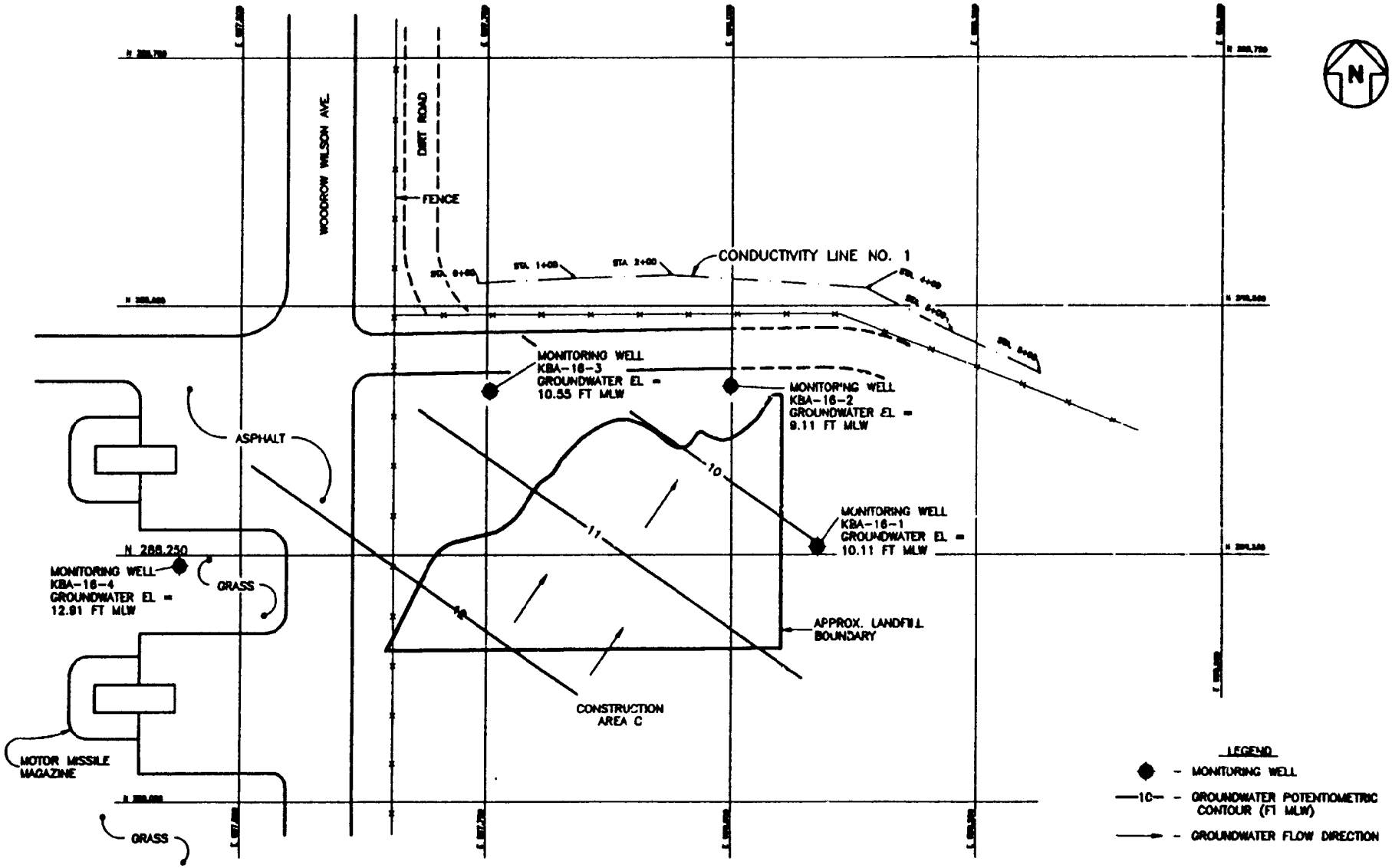

NSB KINGS BAY, GEORGIA
SITE 11 – LEAD IN GROUNDWATER
CONCENTRATION (UG/L)
60
50
40
30
20
10
0
MCL (current)
MCL (effective 12/07/92)
12.6
23.3
18.1
4.5
5.6
18.8
3.9
14.8
24.7
3.9
53.5
2.9
16.3
4.3
20.4
3.8
16.8
4.0
17.6
12.2
KBA-11-1
KBA-11-2
KBA-11-2D
KBA-11-3
KBA-11-3D
KBA-11-4
KBA-11-5
KBA-11-6
KBA-11-7
KBA-11-8
KBA-11-9
MONITORING WELL
FEBRUARY 1992
MAY 1992

NSB KINGS BAY, GEORGIA

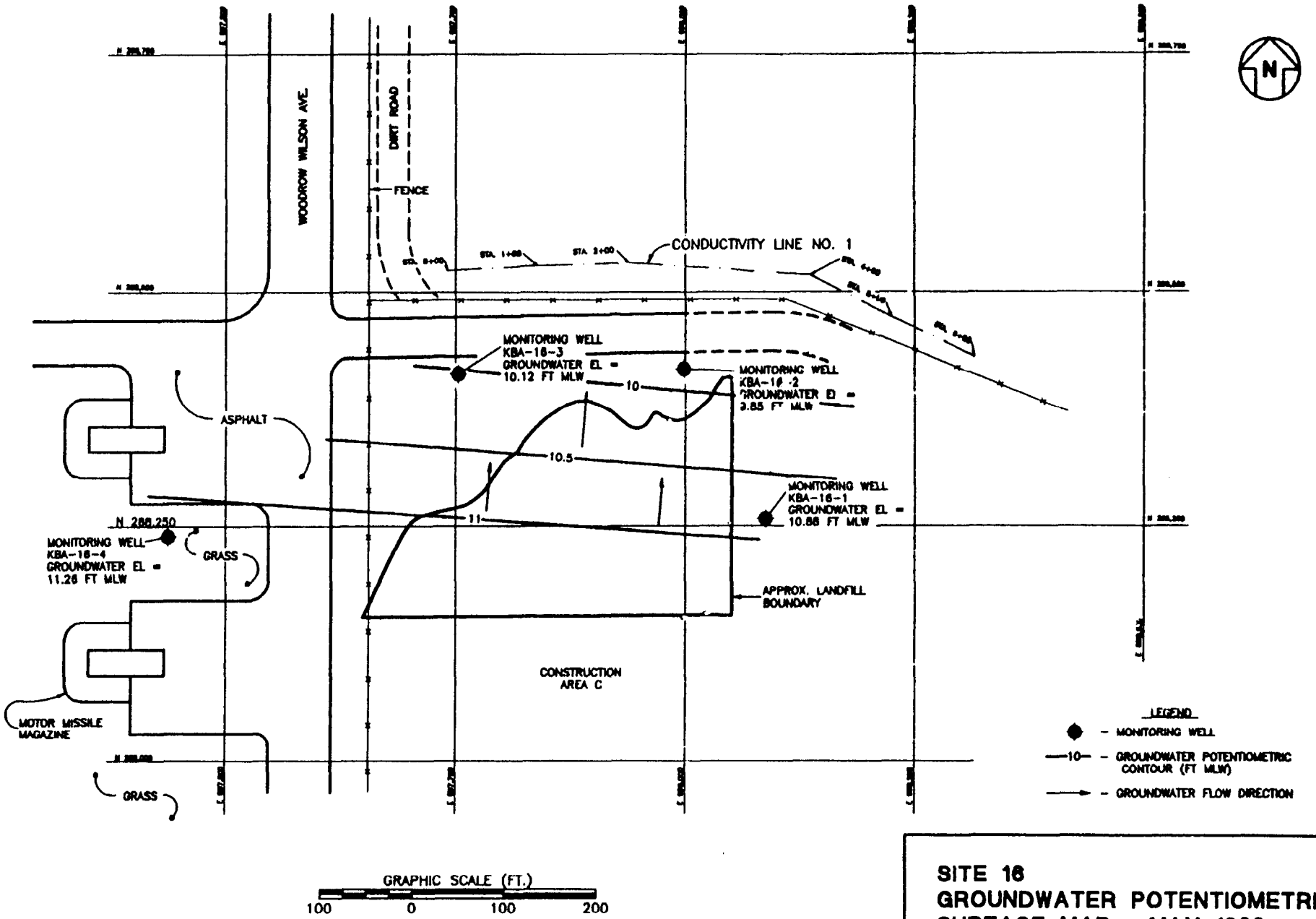
SITE 11 – MERCURY IN GROUNDWATER




NSB KINGS BAY, GEORGIA
SITE 11 – SELENIUM IN GROUNDWATER
CONCENTRATION (UG/L)
60
50
40
30
20
10
0
MCL
6.9
5.6
25.6
2.7
2.9
24.5
3.8
26.0
14.6
2.4
9.4
0.55
13.8
2.5
10.4
3.4
11.4
1.7
6.4 U
5.4
KBA-11-1
KBA-11-2
KBA-11-2D
KBA-11-3
KBA-11-3D
KBA-11-4
KBA-11-5
KBA-11-6
KBA-11-7
KBA-11-8
KBA-11-9
MONITORING WELL
FEBRUARY 1992
MAY 1992



SITE 16
GROUNDWATER POTENTIOMETRIC
SURFACE MAP - FEBRUARY 1992



SITE 16
GROUNDWATER POTENTIOMETRIC
SURFACE MAP - MAY 1992

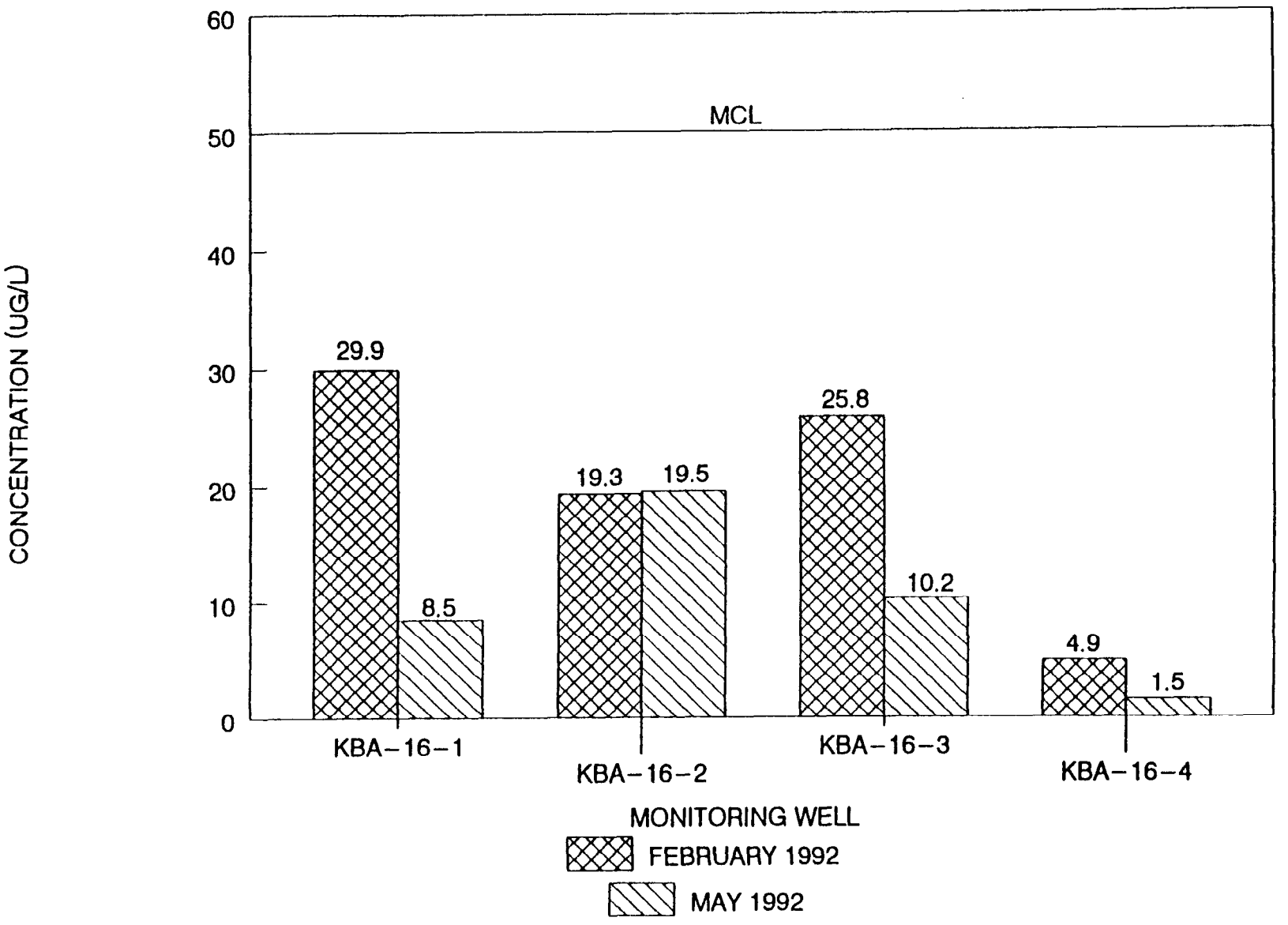
SITE 16, ARMY RESERVE DISPOSAL AREA, MOTOR MISSILE MAGAZINES

COMPARISON OF APPENDIX IX CHEMICALS IN GROUNDWATER FOR SAMPLE EVENTS NO. 1 AND 2

SAMPLE EVENT NO. 1 (FEB. 1992)		SAMPLE EVENT NO. 2 (MAY 1992)	
VOLATILE ORGANICS		**VOLATILE ORGANICS**	
4-methyl-2-pentanone		none detected	
ethylbenzene			
xylene			
SEMIVOLATILE ORGANICS		**SEMIVOLATILE ORGANICS**	
none detected		none detected	
PESTICIDES, HERBICIDES, AND PCBS		**PESTICIDES, HERBICIDES, AND PCBS**	
none detected		none detected	
DIOXINS AND FURANS		**DIOXINS AND FURANS**	
none detected		none detected	
INORGANICS		**INORGANICS**	
arsenic	beryllium	arsenic	beryllium
chromium	vanadium	chromium	lead
zinc	sulfide	selenium	vanadium
		zinc	sulfide

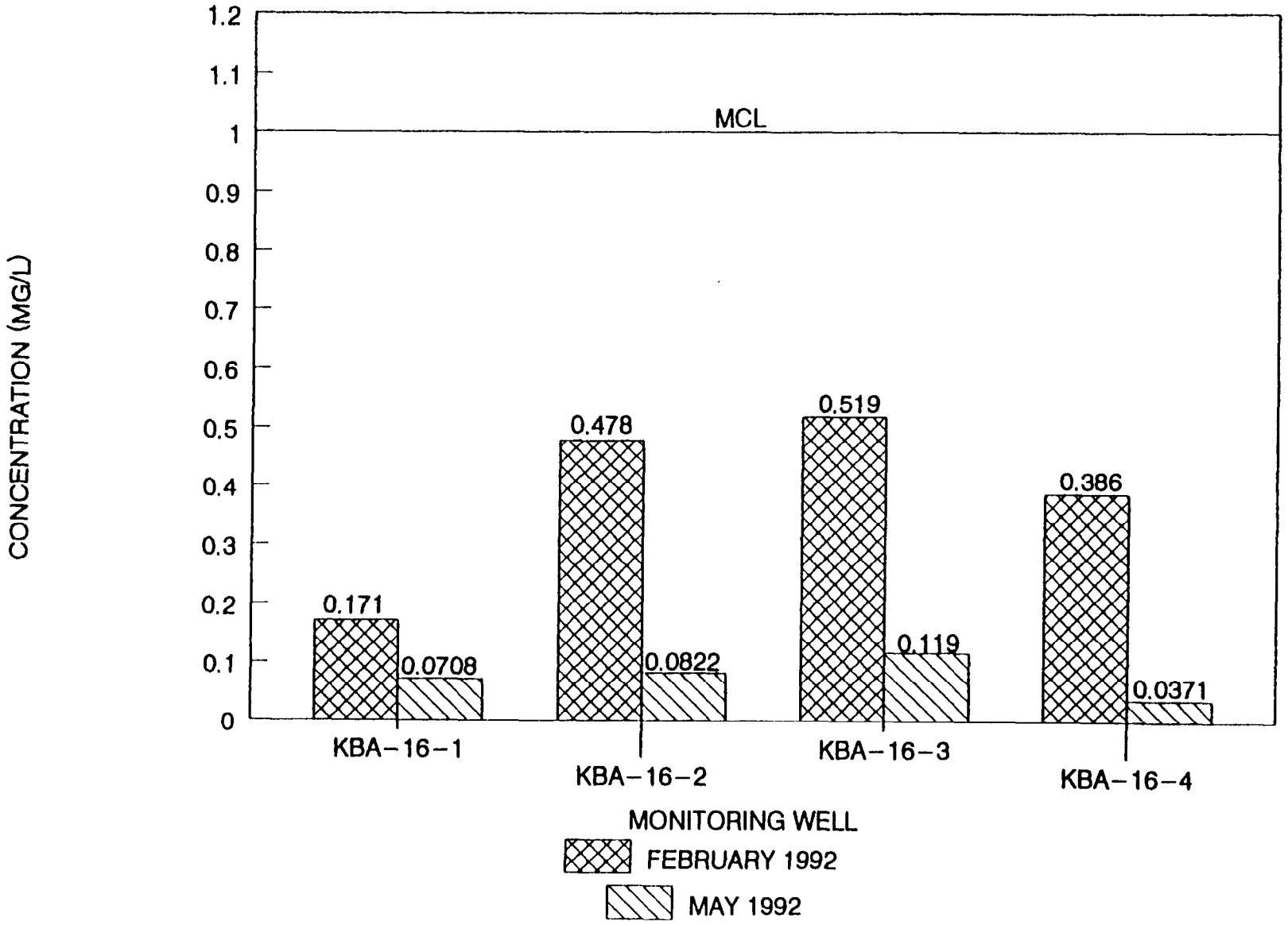
NSB KINGS BAY, GEORGIA

SITE 16 – ARSENIC IN GROUNDWATER



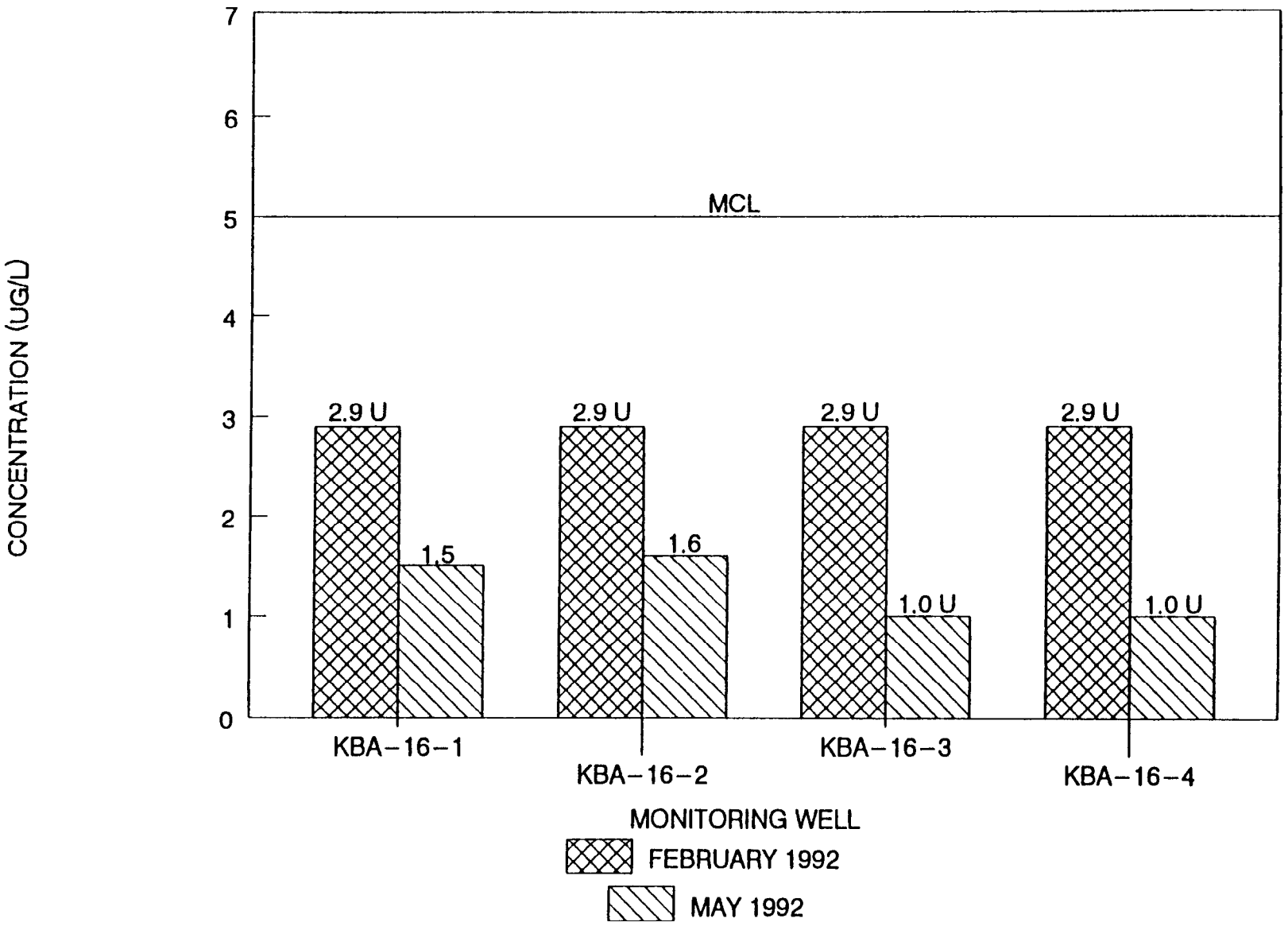
NSB KINGS BAY, GEORGIA

SITE 16 – BARIUM IN GROUNDWATER



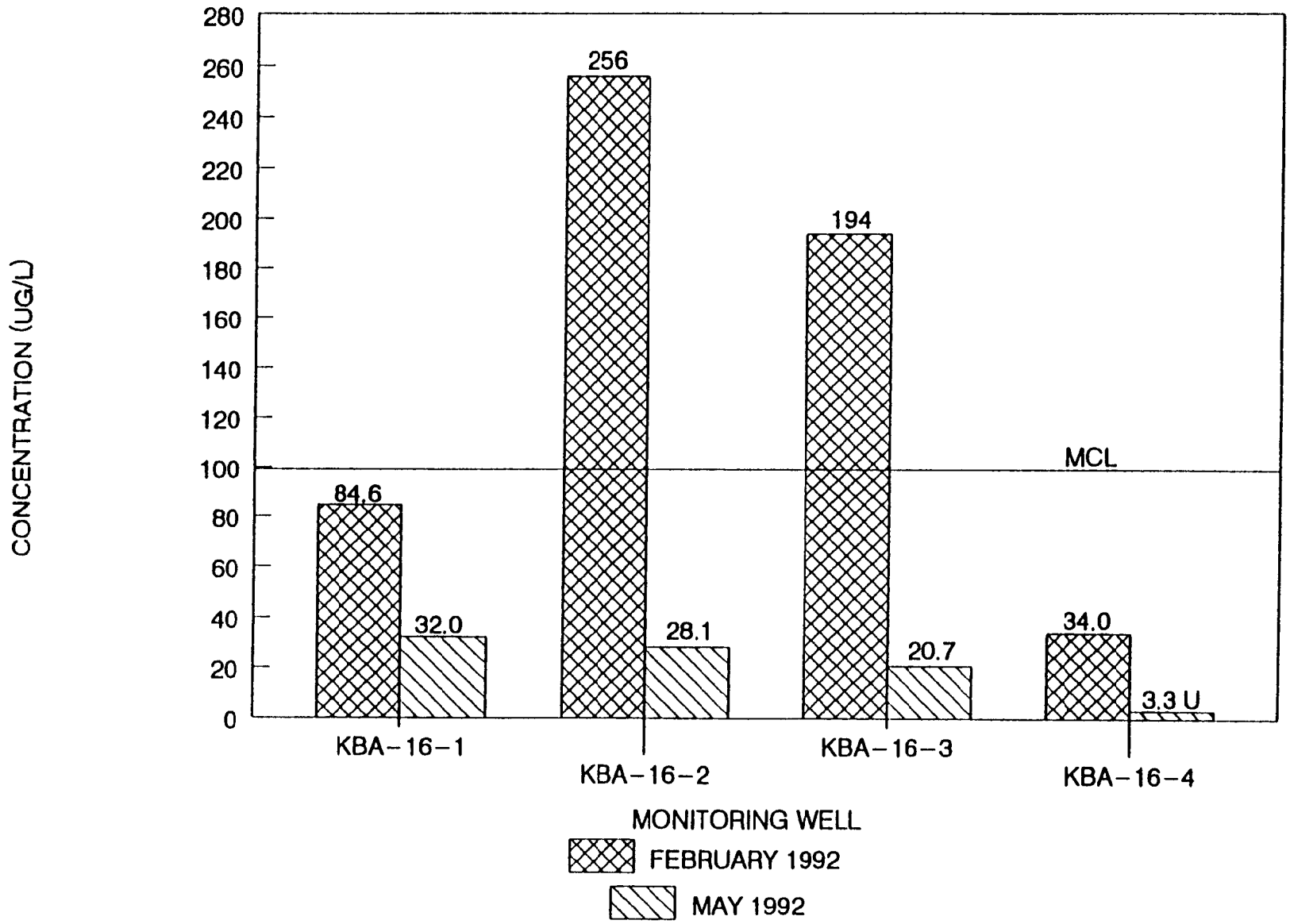
NSB KINGS BAY, GEORGIA

SITE 16 – CADMIUM IN GROUNDWATER



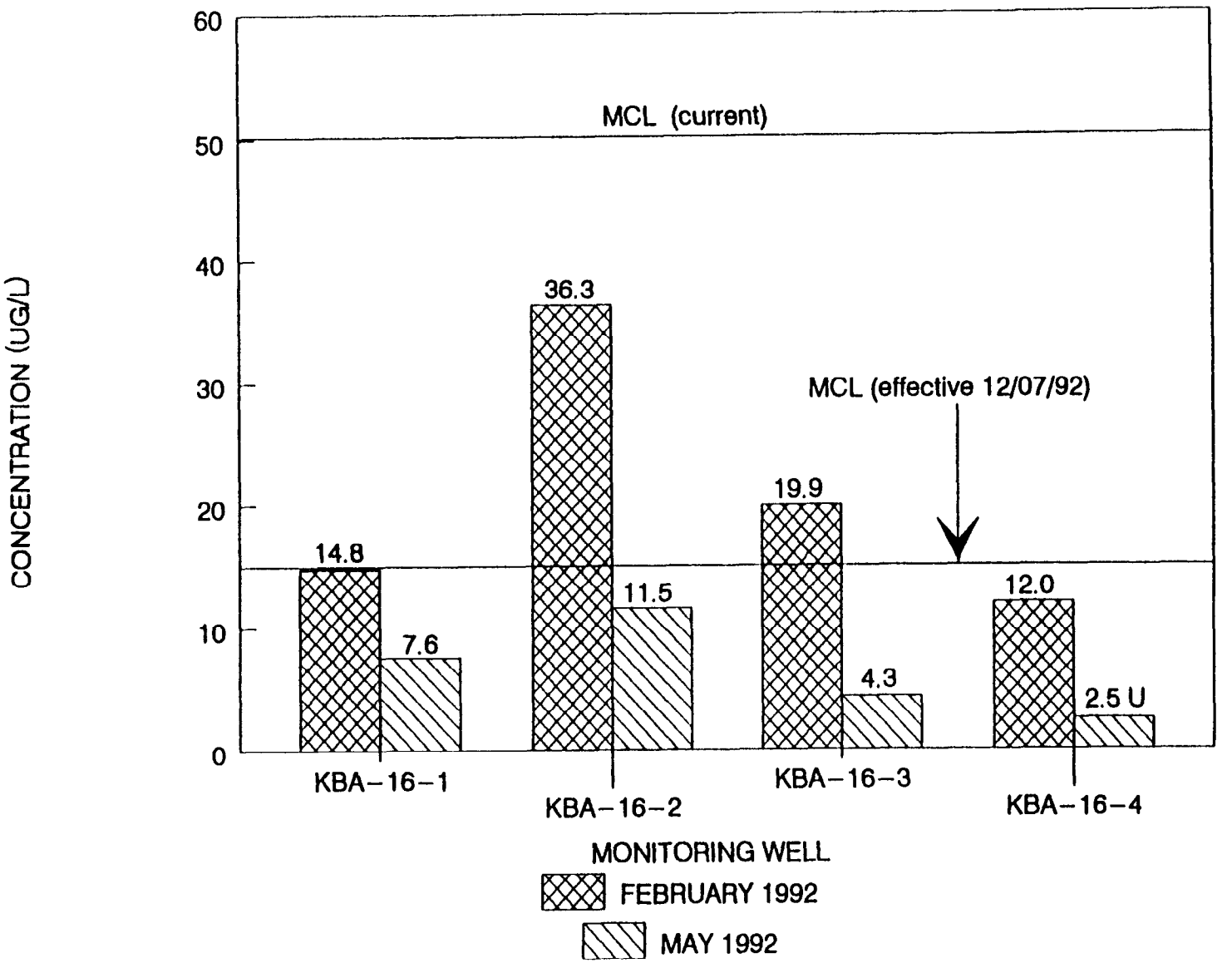
NSB KINGS BAY, GEORGIA

SITE 16 – CHROMIUM IN GROUNDWATER



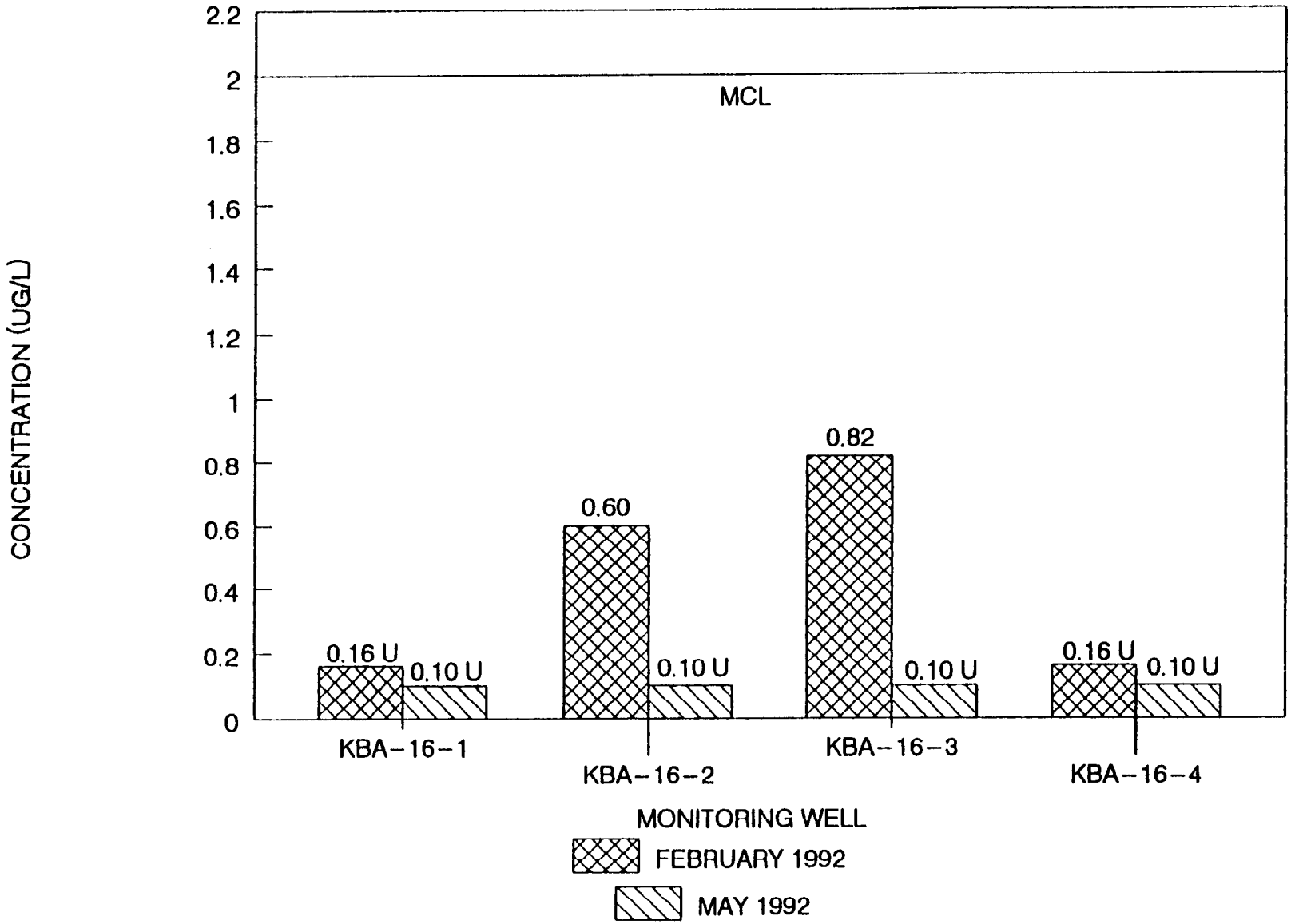
NSB KINGS BAY, GEORGIA

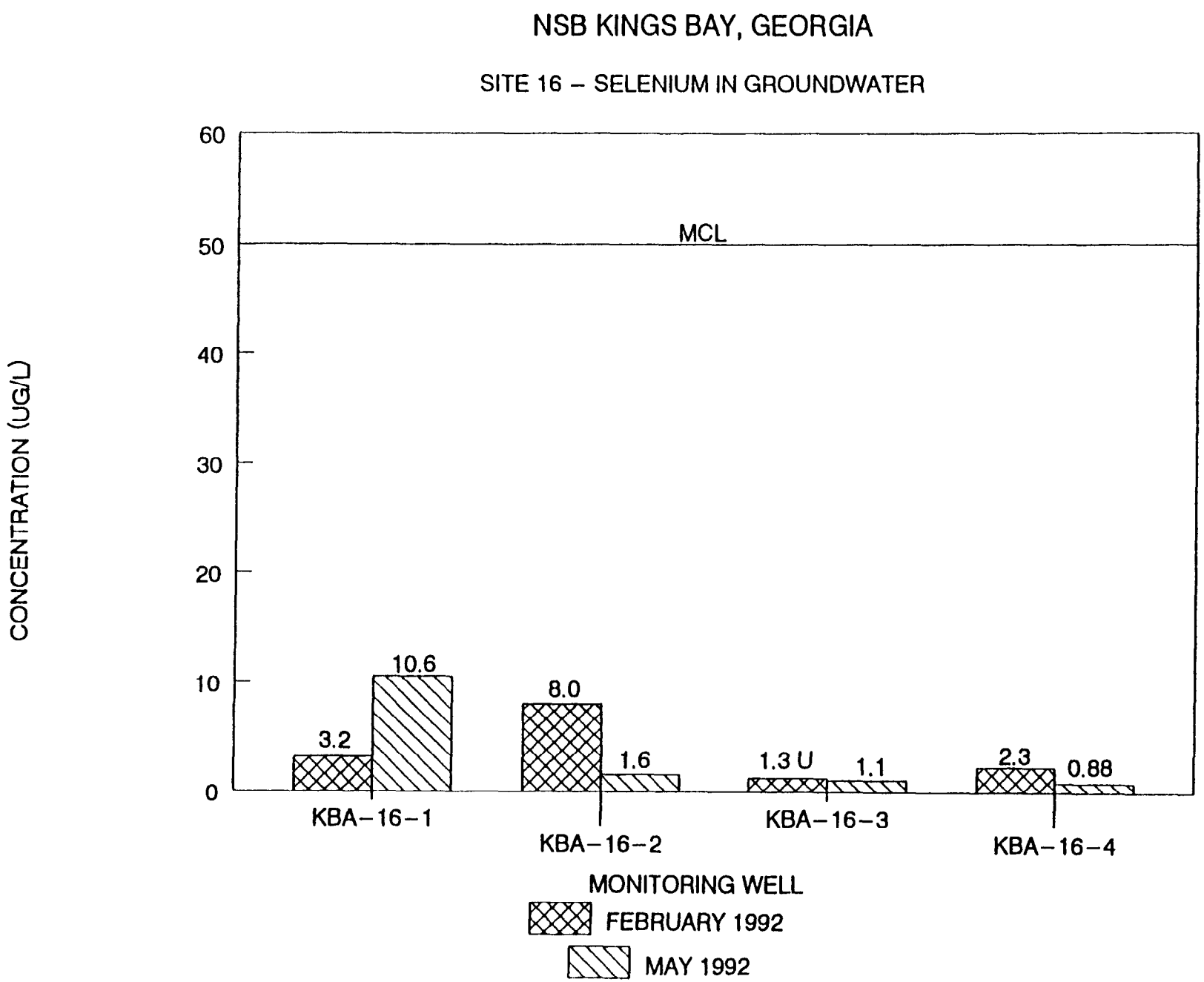
SITE 16 – LEAD IN GROUNDWATER



NSB KINGS BAY, GEORGIA

SITE 16 – MERCURY IN GROUNDWATER




NSB KINGS BAY, GEORGIA
SITE 16 – SELENIUM IN GROUNDWATER
CONCENTRATION (UG/L)
60
50
40
30
20
10
0
MCL
3.2
10.6
8.0
1.6
1.3 U
1.1
2.3
0.88
KBA-16-1
KBA-16-2
KBA-16-3
KBA-16-4
MONITORING WELL
FEBRUARY 1992
MAY 1992

PROPOSED MONITORING PARAMETERS FOR GROUNDWATER SAMPLE EVENTS NO. 3 THROUGH 6

SITE 5 - ARMY RESERVE DISPOSAL AREA, TOWHEE TRAIL

Volatile organic compounds

Polychlorinated biphenyl compounds (PCBs)

Inorganics (including sulfide and cyanide)

Total dissolved solids

Total suspended solids

SITE 11 - OLD CAMDEN COUNTY LANDFILL

Volatile organic compounds

Inorganics (including sulfide and cyanide)

Total dissolved solids

Total suspended solids

SITE 16 - ARMY RESERVE DISPOSAL AREA, MOTOR MISSILE MAGAZINES

Volatile organic compounds

Base/neutral semivolatile organic compounds

Inorganics (including sulfide and cyanide)

Total dissolved solids

Total suspended solids

ANALYTICAL PROGRAM

APPENDIX IX VOLATILE ORGANIC COMPOUNDS

SW-846 Method 8240 (gas chromatography)

APPENDIX IX BASE/NEUTRAL FRACTION SEMIVOLATILE COMPOUNDS

SW-846 Method 8270 (gas chromatography/mass spectroscopy)

APPENDIX IX POLYCHLORINATED BIPHENYL COMPOUNDS (PCBs)

SW-846 Method 8080

APPENDIX IX INORGANICS*

SW-846 Methods (as indicated below)

antimony 6010	nickel 6010
arsenic 7060	thalium 7841
barium 6010	tin 6010
beryllium 6010	silver 6010
cadmium 6010	selenium 7740
copper 6010	vanadium 6010
chromium 6010	sulfide 9030
lead 7421	cyanide 9010
mercury 7470	

TOTAL DISSOLVED SOLIDS AND TOTAL SUSPENDED SOLIDS

Standard Methods 2540 C and D

* 6010 = inductively couple plasma (ICP)
series 7000 = atomic adsorption (AA)
9010 = colorimetric spectroscopy
9030 = titration