M67001.SF.004632
MCB CAMP LEJEUNE
5090.3c

Draft

Remedial Investigation Report for Operable Unit No. 2 (Sites 6, 9, and 82)

Marine Corps Base, Camp Lejeune, North Carolina

Volume 1 of 2 Figures

Reference:
Contract
N62470-89-D-4814

CTO-0133

June 1993

Prepared For:

Department of the Navy
Atlantic Division
Naval Facilities
Engineering Command
Norfolk, Virginia

Under the

LANTDIV CLEAN Program

Comprehensive Long-Term
Environmental Action Navy

Baker
Baker Environmental, Inc.

FOSTER WHEELER
FOSTER WHEELER ENVIRESPONSE, INC.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

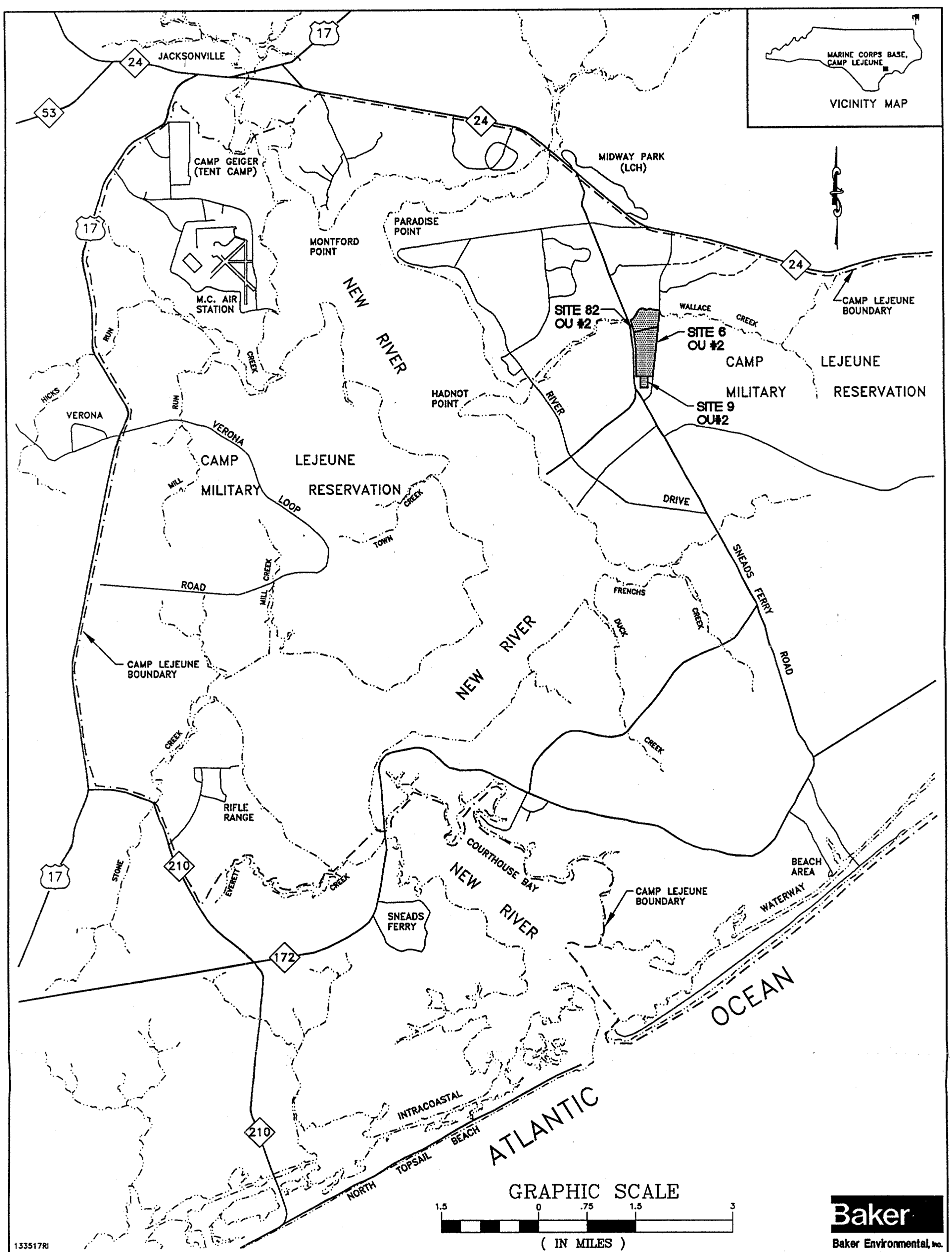


FIGURE 1-1
LOCATION MAP
OPERABLE UNIT No.2, SITES 6, 9, and 82
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

CTO-133CB12

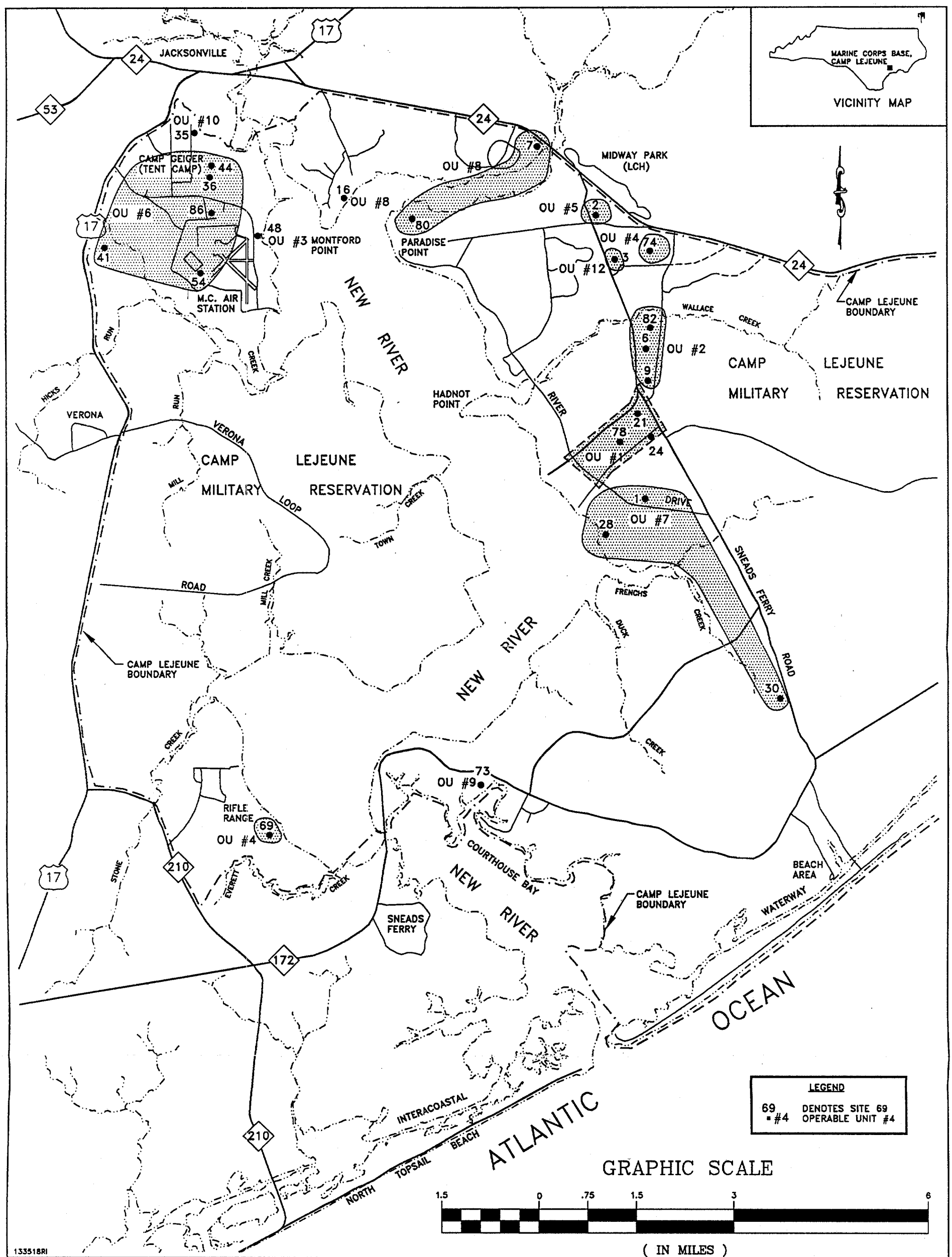
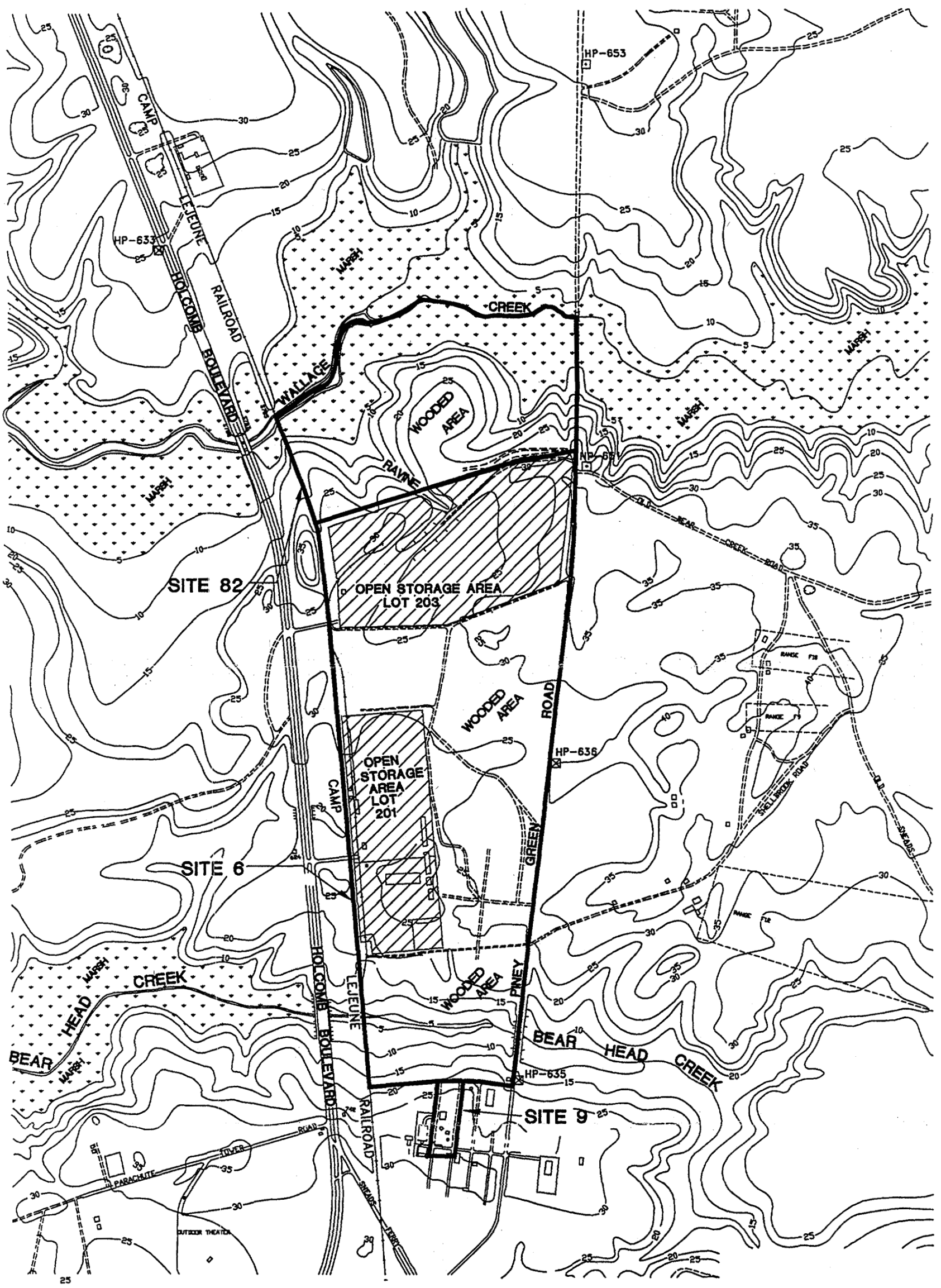


FIGURE 1-2
OPERABLE UNITS AND SITE LOCATIONS AT
MARINE CORPS BASE CAMP LEJEUNE
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA



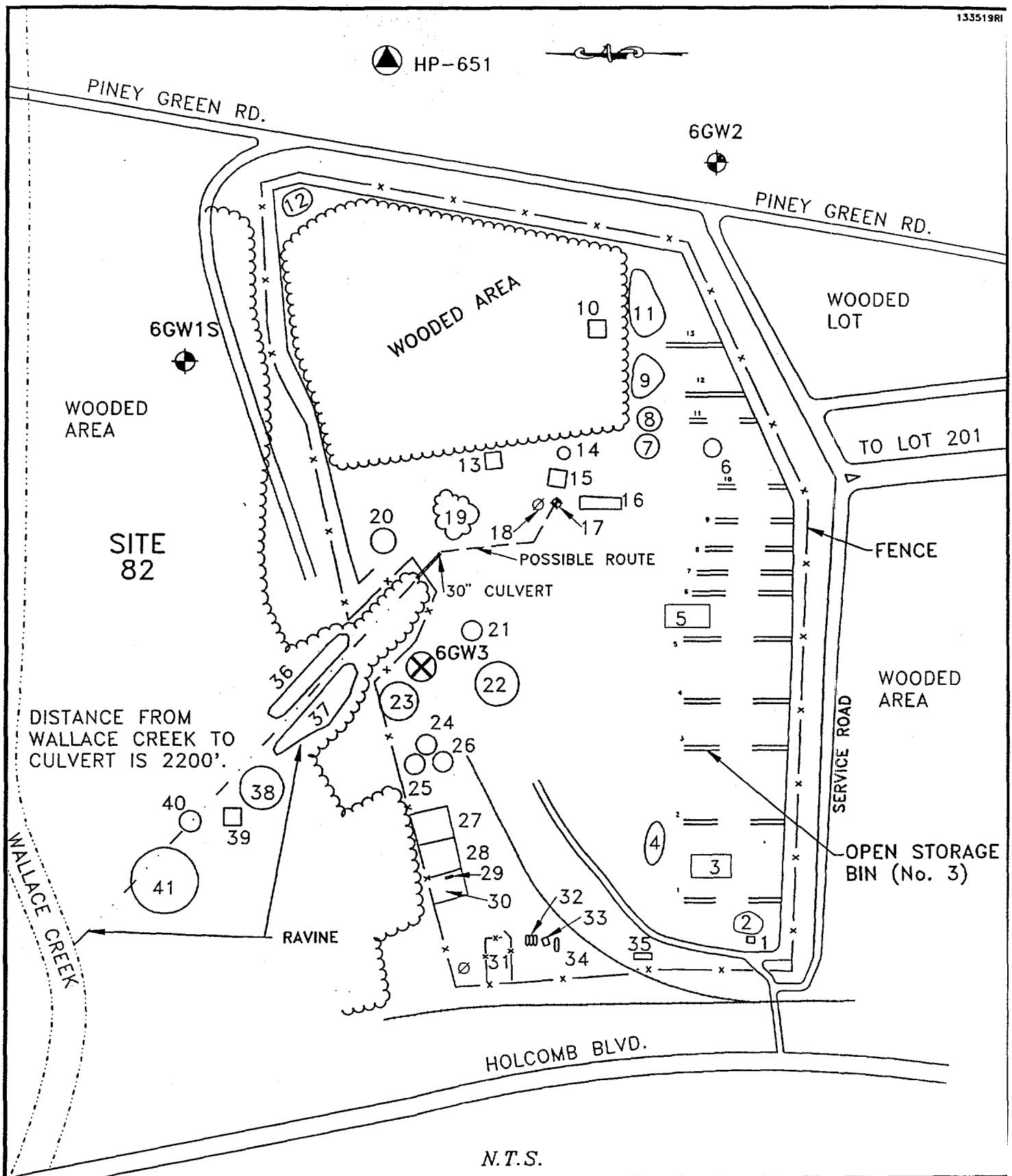
LEGEND

- APPROXIMATE SITE BOUNDARIES
- OPEN STORAGE AREA
- UNPAVED ROAD
- HP-633 ACTIVE WATER SUPPLY WELL
- HP-651 INACTIVE WATER SUPPLY WELL

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 1-3
SITE PLAN OF SITES 6, 9, and 82
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA



LEGEND

6GW1S
EXISTING GROUNDWATER WELL

HP-651
WATER SUPPLY WELL (INACTIVE)

FIGURE 1-4
SITE 6, LOT 203
SURFACE DEBRIS
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

INDEX TO FIGURE 1-4

1	Trailer
2	Drums with Stained Soil
3	Drums
4	Pile of Fiberglass-like material
5	Drums on Pallets and Formerly Fenced In Area
6	Drums
7	Drums
8	Two Drums with Tricresyl Phosphate
9	Soil Mound - 6 to 9 feet tall x 75 feet long x 25 feet wide
10	3 Truck Batteries
11	Metal Debris - 15-18 feet tall x 100 feet long x 50 feet wide
12	Reported Possible DDT and PCB Disposal Area
13	Three Crates of Metal Cleaning Solution
14	Shredded Tire Pile
15	Non-PCB Electric Transformer
16	Stacked Wooden Ammunition Boxes
17	Scrap Metal and Miscellaneous Debris
18	Light Pole #4
19	Clump of Trees with Debris Dispersed Throughout
20	Shredded Tire Pile
21	Pile of Rafts - 8-10 feet tall x 30 feet long x 30 feet wide
22	Pile of Rubber Cleated Tank Treads - 15-18 feet tall x 50 feet long x 50 feet wide
23	Minefield Clearing Training Kits - 8 feet tall 18 feet wide x 20 feet long
24	M-16 Spent Casings
25	Eleven Plastic Drums Labeled "Corrosives"
26	Bazooka Rocket Spent Casings
27	Radio Parts and Batteries
28	Broken Electric Fans
29	Compressed Gas Cylinder
30	Acid Container Storage Area
31	Fenced in Area - Former Use Unknown
32	Three 250-Gallon ASTs
33	Office Shed
34	Five Hundred Gallon AST (Diesel Fuel)
35	Truck Scale
36	Commodes
37	Cabinets, Steel Drums, and Rolls of Fencing
38	Ovens, with Possible Asbestos Linings
39	Pool of Water with Batteries and Debris
40	Approximate 100-foot x 50-foot area with Cans, Tires, Respirator Cartridges
41	Rusty, Empty Drums; Tires; Respirator Canister Filters

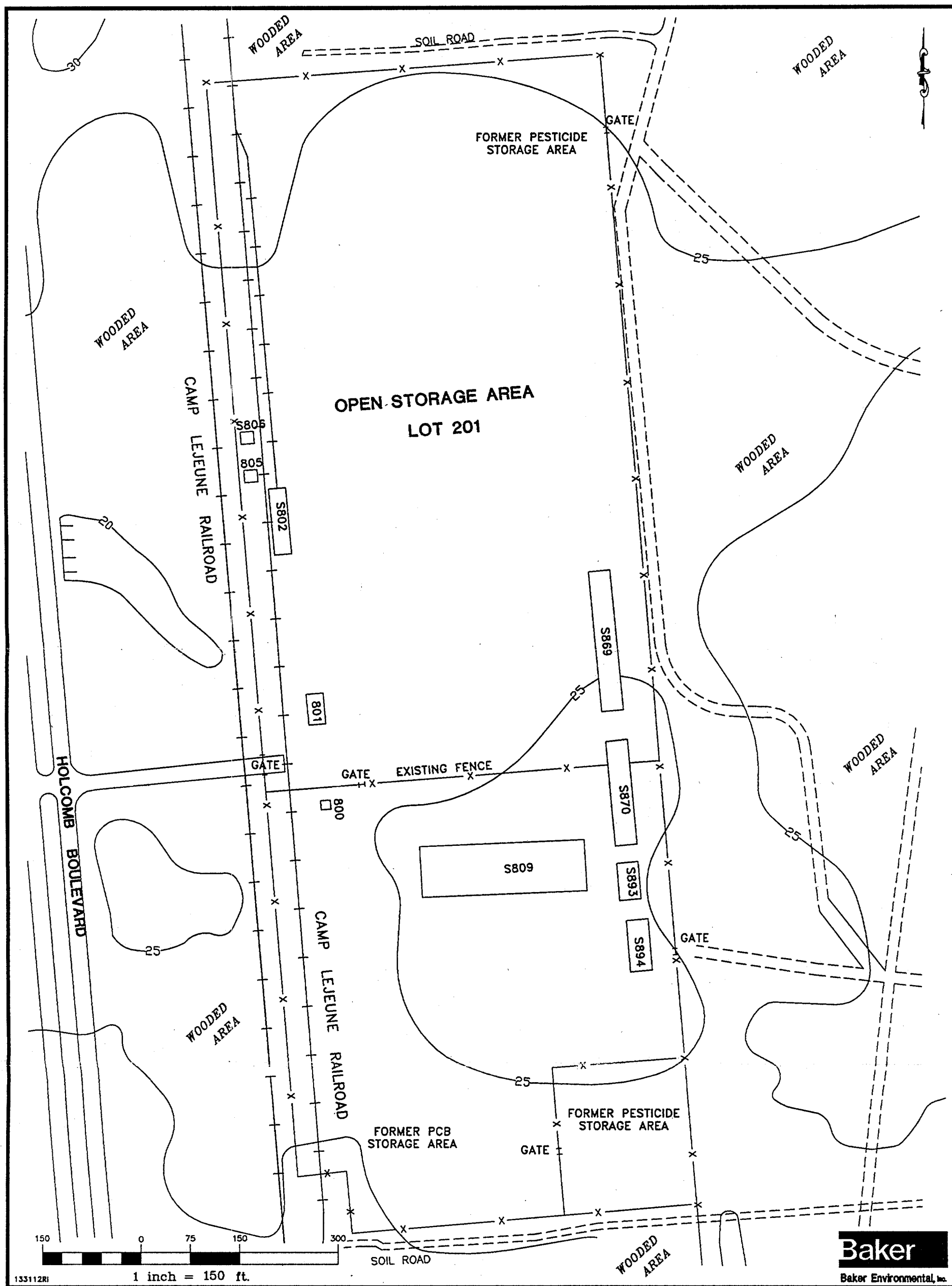
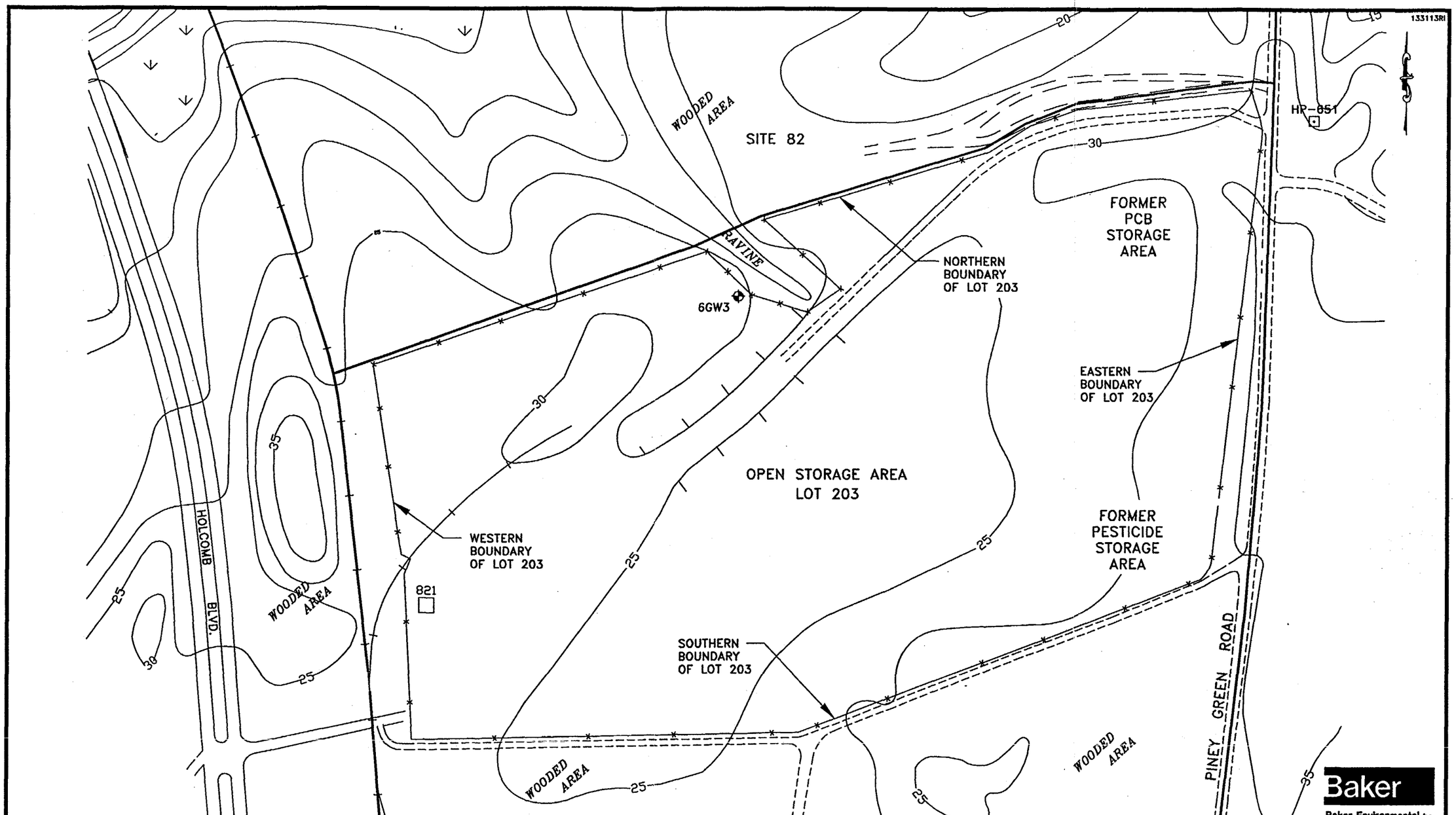


FIGURE 2-1
SITE PLAN OF LOT 201
SITE 6
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

SOURCE: LANTDIV, FEBRUARY 1992

CTO-133CB22



LEGEND

6GW3 ⊕ – EXISTING SHALLOW MONITORING WELL

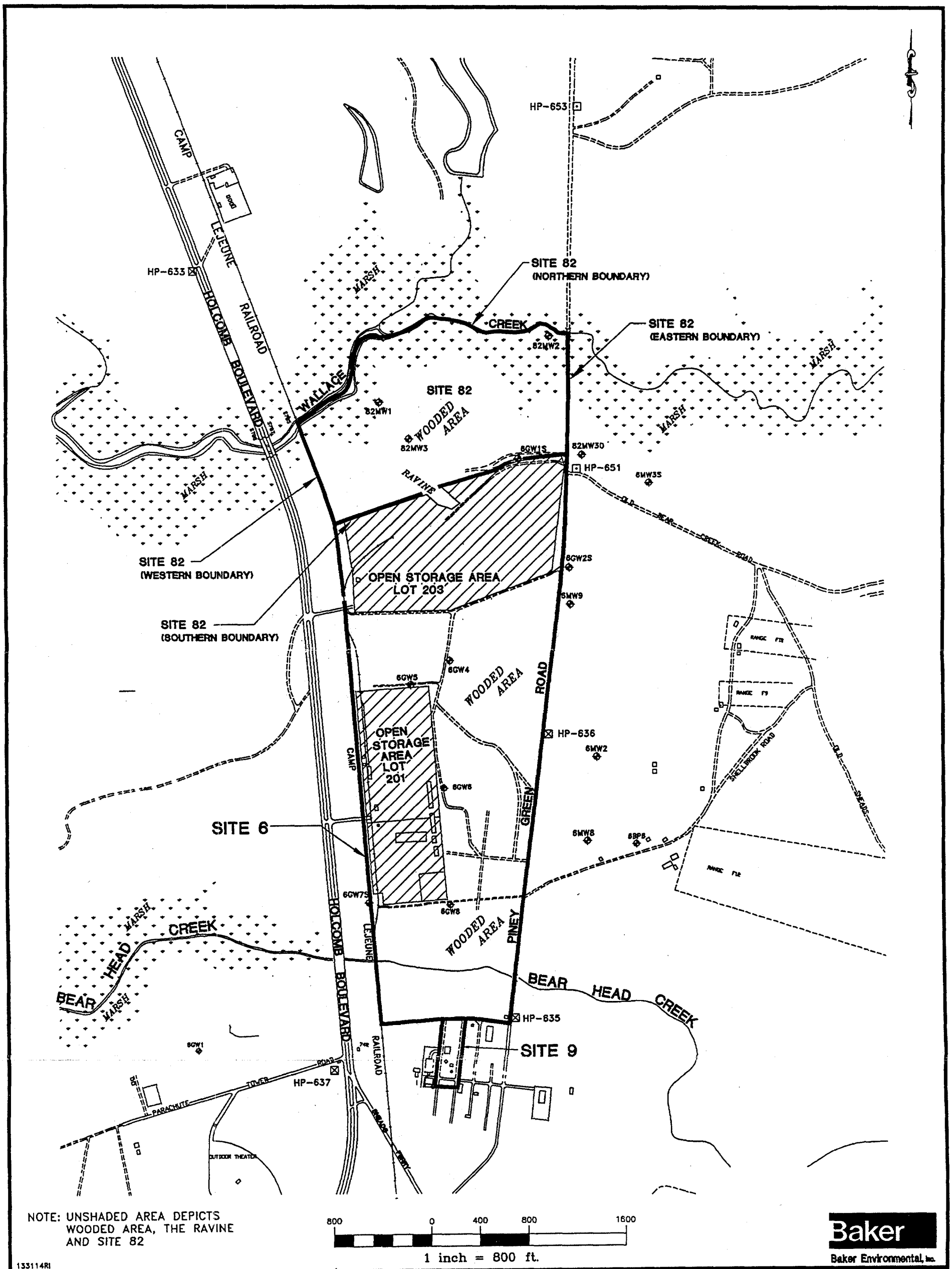
SOURCE: LANTDIV, FEBRUARY 1992

200 0 100 200 400

1 inch = 200 ft.

FIGURE 2-2
SITE PLAN OF LOT 203
SITE 6
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA



NOTE: UNSHADED AREA DEPICTS WOODED AREA, THE RAVINE AND SITE 82

800 0 400 800 1600

1 inch = 800 ft.

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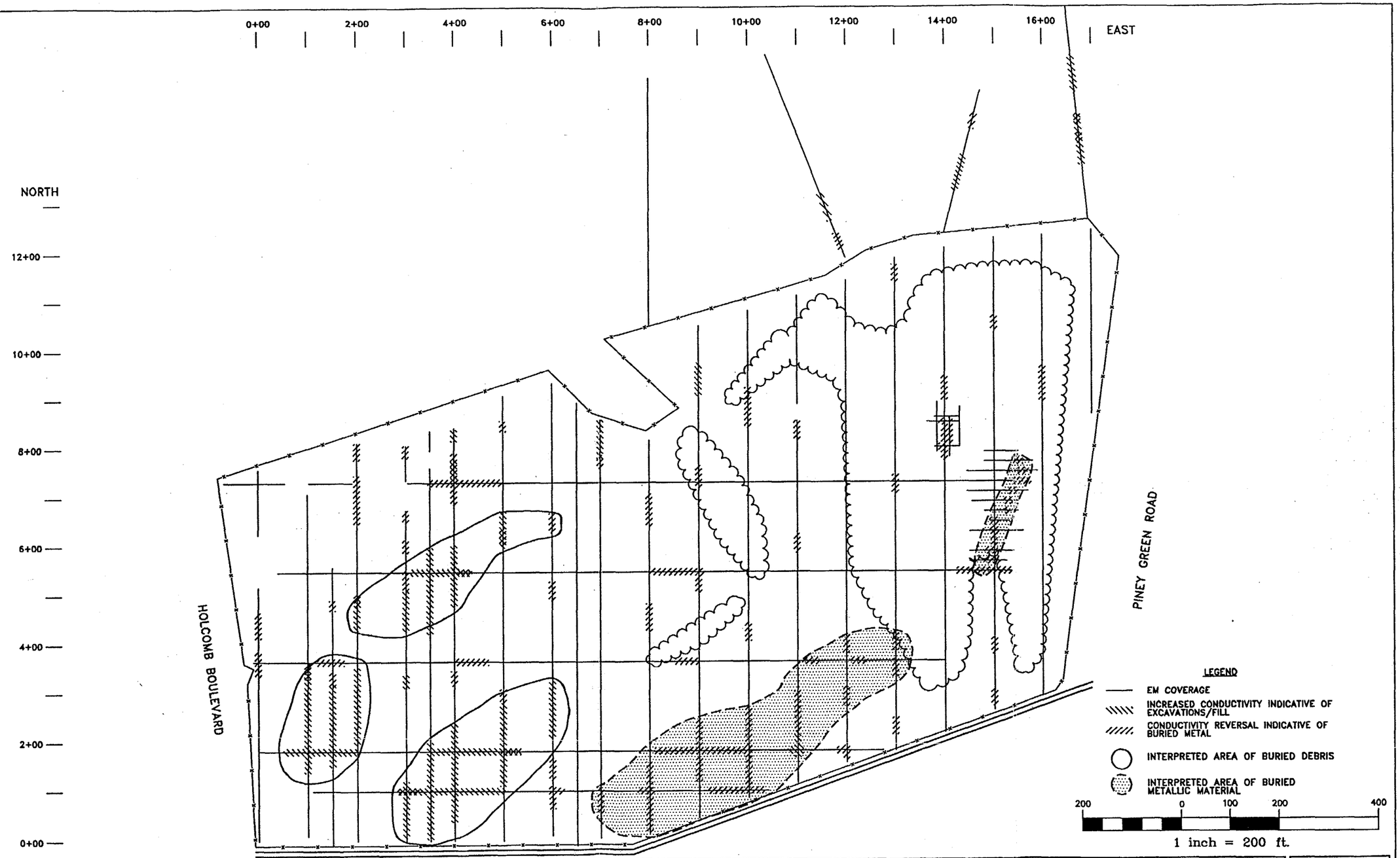
133114RI

LEGEND

6MW2 – EXISTING SHALLOW MONITORING WELL

SOURCE: LANTDIV, FEBRUARY 1992

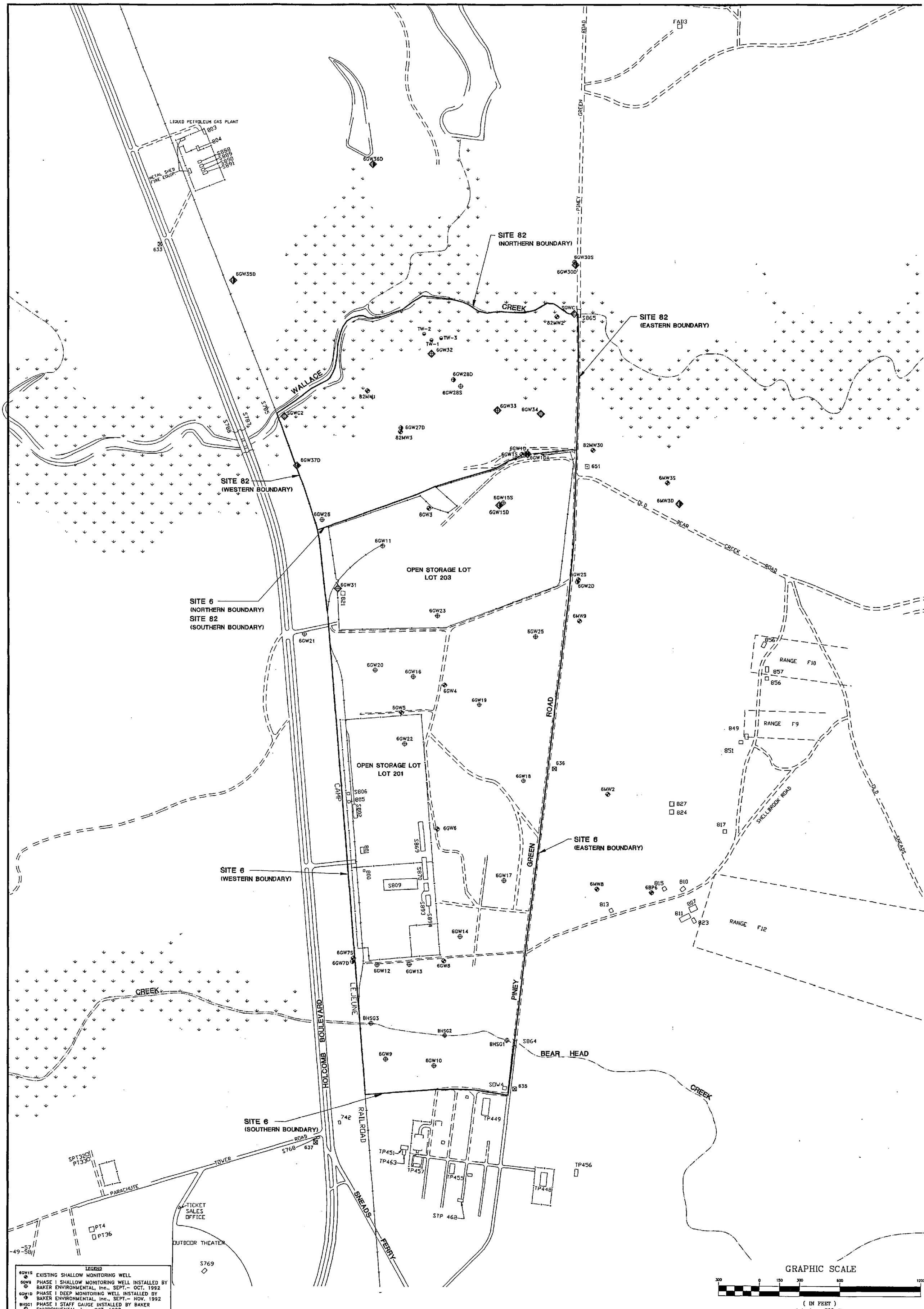
FIGURE 2-3
SITE PLAN
OF THE WOODED AREAS, THE RAVINE
AND SITE 82
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA



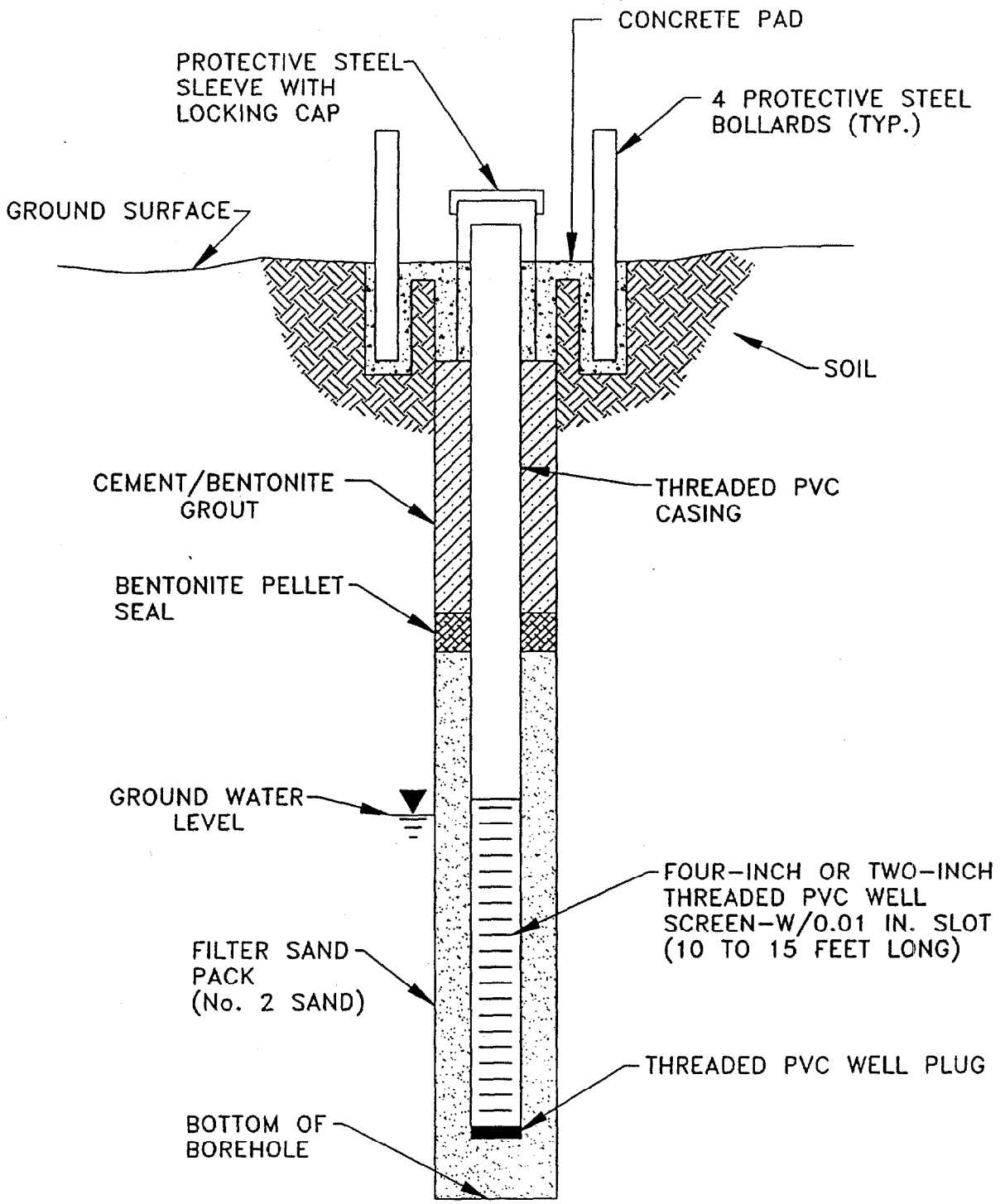
REVISIONS				
WESTON GEOPHYSICAL CORP. IS A WHOLLY OWNED SUBSIDIARY OF BAKER ENVIRONMENTAL, INC.	DATE JUNE 1993 SCALE 1"= 200' DRAWN REL REVIEWED MJN S.O.# 19133-22-SRN CADD# 133137RI	REMEDIAL INVESTIGATION CTO-0133 MARINE CORPS BASE CAMP LEJEUNE NORTH CAROLINA WESTON GEOPHYSICAL CORP. Coraopolis, Pennsylvania	Baker Baker Environmental, Inc.	EM SURVEY RESULTS SITE 6 – LOT 203 SCALE 1"= 200' DATE JUNE 1993

FIGURE NO.

2-4


LIQUID PETROLEUM GAS PLANT
METAL SHED FIRE EQUIP.
SITE 82 (NORTHERN BOUNDARY)
SITE 82 (EASTERN BOUNDARY)
SITE 82 (WESTERN BOUNDARY)
SITE 6 (NORTHERN BOUNDARY)
SITE 82 (SOUTHERN BOUNDARY)
SITE 6 (EASTERN BOUNDARY)
SITE 6 (WESTERN BOUNDARY)
SITE 6 (SOUTHERN BOUNDARY)
WALLACE CREEK
GREEN PINEY ROAD
OPEN STORAGE LOT LOT 203
OPEN STORAGE LOT LOT 201
CAMP LEJEUNE BOULEVARD
HOLCOMB BOULEVARD
RAILROAD
SNEADS FERRY
BEAR HEAD CREEK
OLD BEAR CREEK ROAD
SHELLBROOK ROAD
OLD SNEADS
RANGE F10
RANGE F9
RANGE F12
TOWER ROAD
PARACHUTE
TICKET SALES OFFICE
OUTDOOR THEATER
6GW36D
6GW35D
6GW30S
6GW30D
6GW32
6GW28D
6GW28S
6GW33
6GW34
6GW27D
82MW3
82MW2
82MW1
SGWC1
SGWC2
6GW37D
6GW26
6GW3
6GW15S
6GW15D
6GW11
6GW31
6GW2S
6GW2D
6GW23
6MW9
6GW25
6GW21
6GW20
6GW16
6GW4
6GW19
6GW5
6GW22
6GW18
6MW2
6GW6
6GW17
6MW8
6GW14
6GW7S
6GW7D
6GW12
6GW13
6GW8
BHSG3
BHSG2
BHSG1
6GW9
6GW10
SDW4
82MW30
6MW3S
6MW3D
TW-1
TW-2
TW-3
633
651
636
635
637
742
S865
S864
S768
S769
TP449
TP451
TP463
TP457
TP455
TP448
TP456
STP 462
SPT320
PT330
PT4
PT36
GRAPHIC SCALE
(IN FEET)
1 inch = 300 ft.
LEGEND
6GW1S EXISTING SHALLOW MONITORING WELL
6GW9 PHASE I SHALLOW MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., SEPT.- OCT. 1992
6GW1D PHASE I DEEP MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., SEPT.- NOV. 1992
BHSG1 PHASE I STAFF GAUGE INSTALLED BY BAKER ENVIRONMENTAL, Inc., OCT. 1992
6GW31 PHASE II SHALLOW MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH-APRIL 1993
6GW1DA PHASE II DEEP MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH-APRIL 1993
SGWC1 PHASE II STAFF GAUGE INSTALLED BY BAKER ENVIRONMENTAL, Inc., DEC. 1992
TW-1 TEMPORARY WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH 1993
SOURCE: LANTDIV. FEBRUARY 1992
DATE JUNE 1993
SCALE 1"= 300'
DRAWN R.E.L.
REVIEWED RPW
S.O.# 19133-22-SRN
CADD# 133148RI
NORTH
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania
Baker
Baker Environmental, Inc.
MONITORING WELL AND STAFF GAUGE LOCATION MAP
SITES 6 AND 82
SCALE 1"= 300'
DATE JUNE 1993
FIGURE No.
2-8

133140R1



N.T.S.

Baker
Baker Environmental, Inc.

FIGURE 2-9
TYPICAL SHALLOW AND DEEP TYPE II GROUNDWATER MONITORING WELL CONSTRUCTION DIAGRAM
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

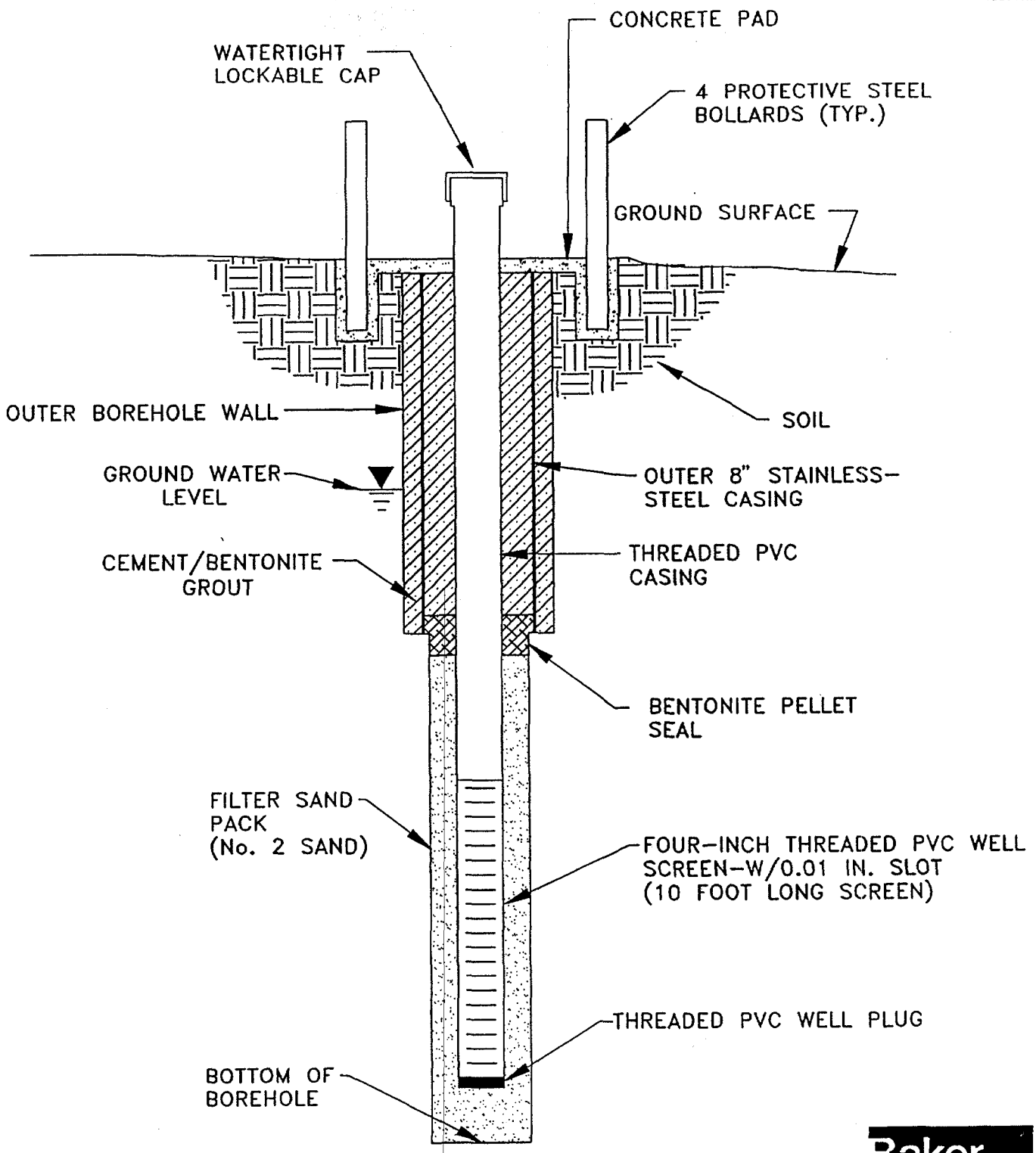
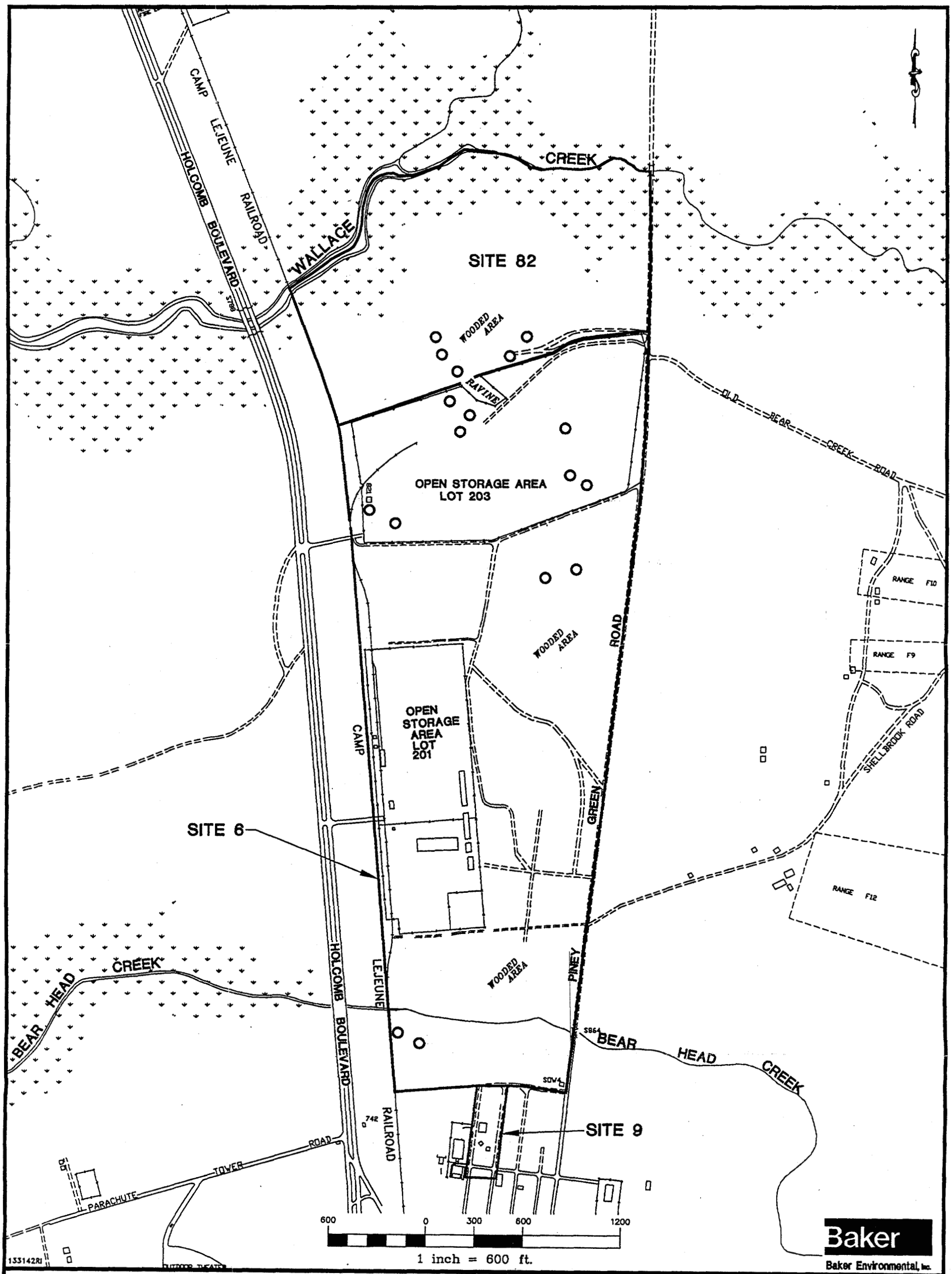


FIGURE 2-10
TYPICAL DEEP TYPE III GROUNDWATER
MONITORING WELL CONSTRUCTION DIAGRAM
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



LEGEND

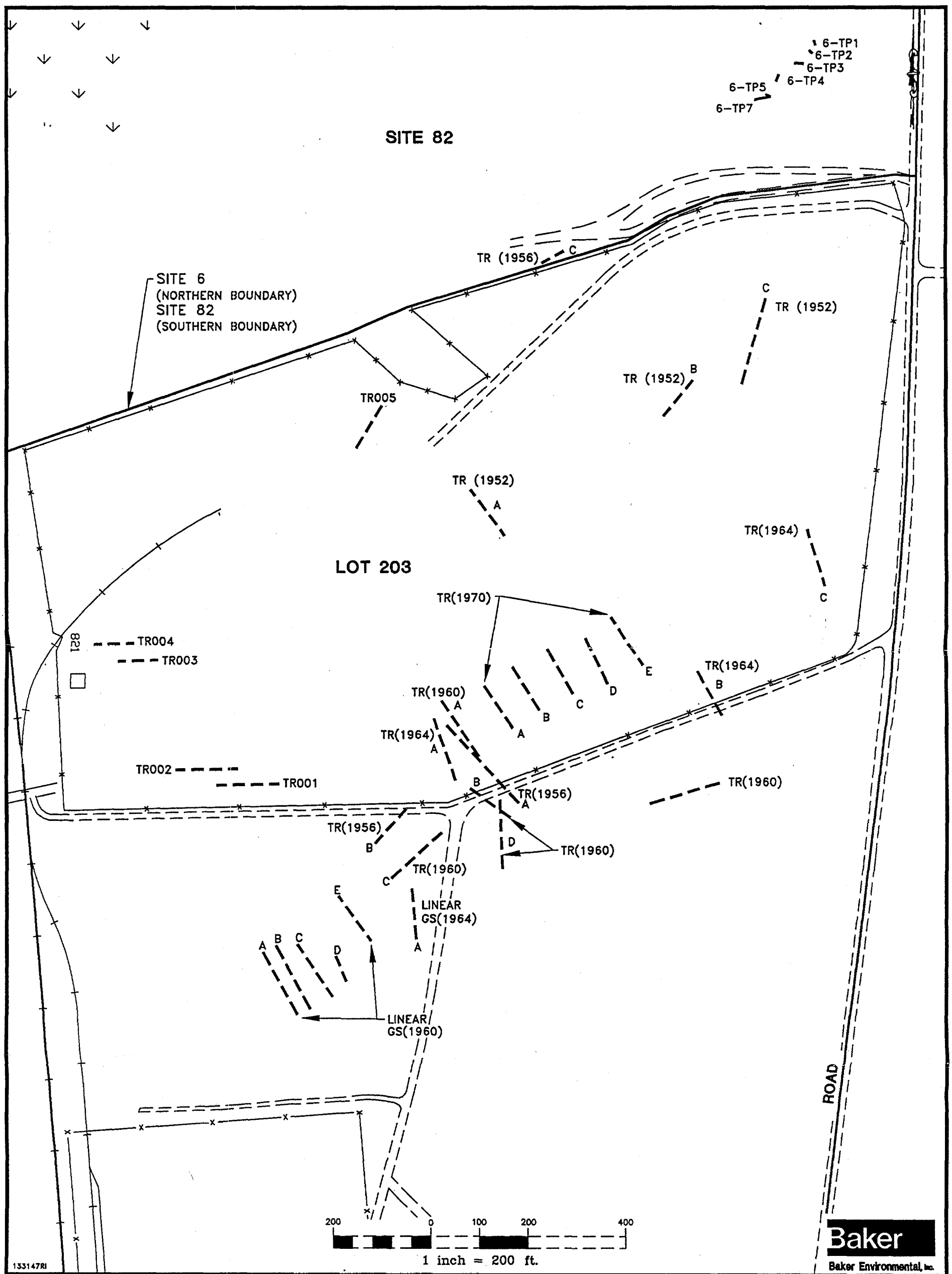
O APPROXIMATE LOCATION OF DRUMS

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 2-11
DRUM LOCATION MAP
SITES 6 AND 82
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

CTO-133 C B3 Z



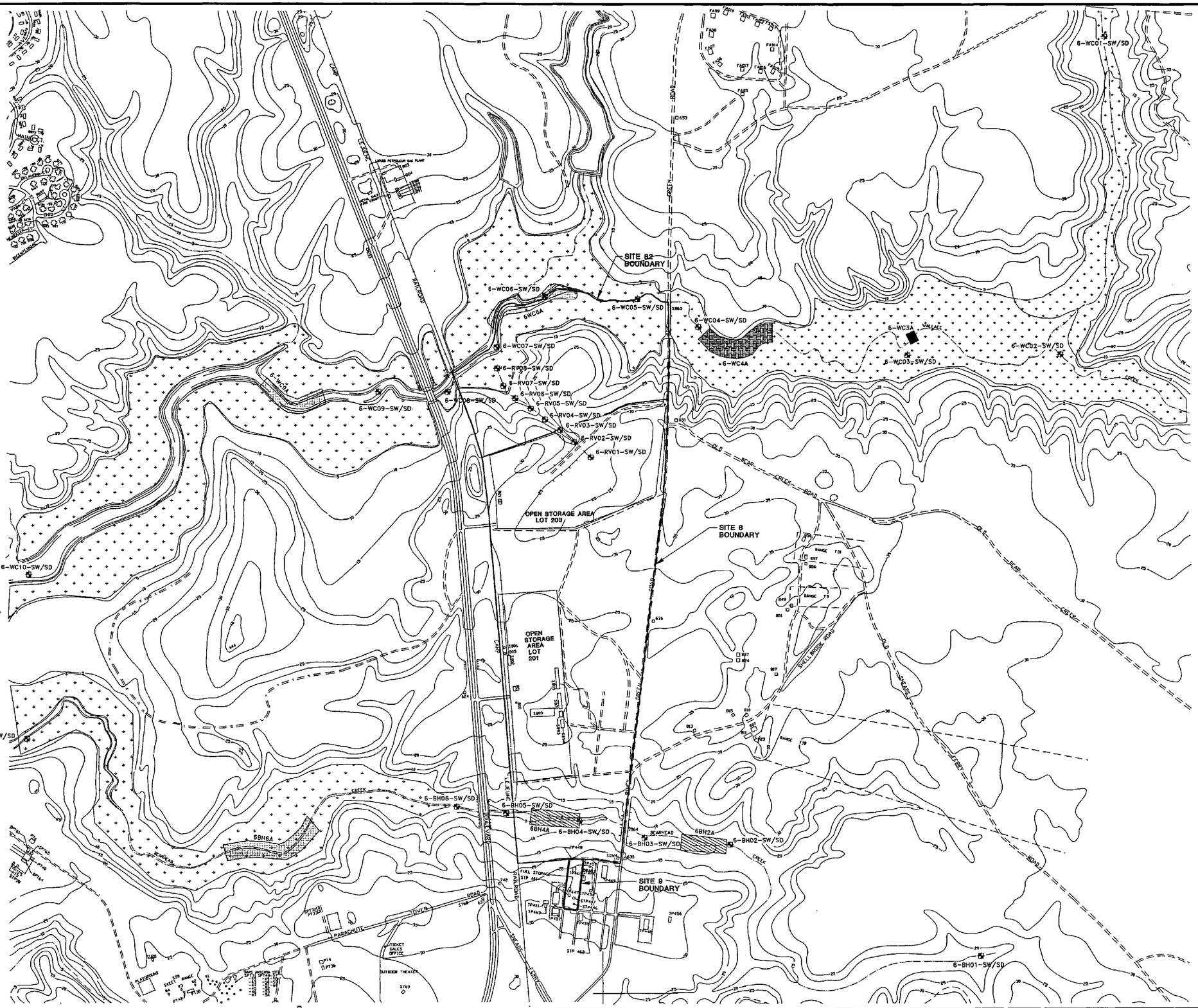
LEGEND

TR (1952) TRANSECT-PHASE I TEST PIT

6-TP1 TRANSECT-PHASE II TEST PIT

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 2-12
PHASE I AND PHASE II
TEST PIT LOCATION MAP
SITES 6 AND 82
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



REVISIONS

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 500'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133144RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL,Inc.
Coraopolis, Pennsylvania

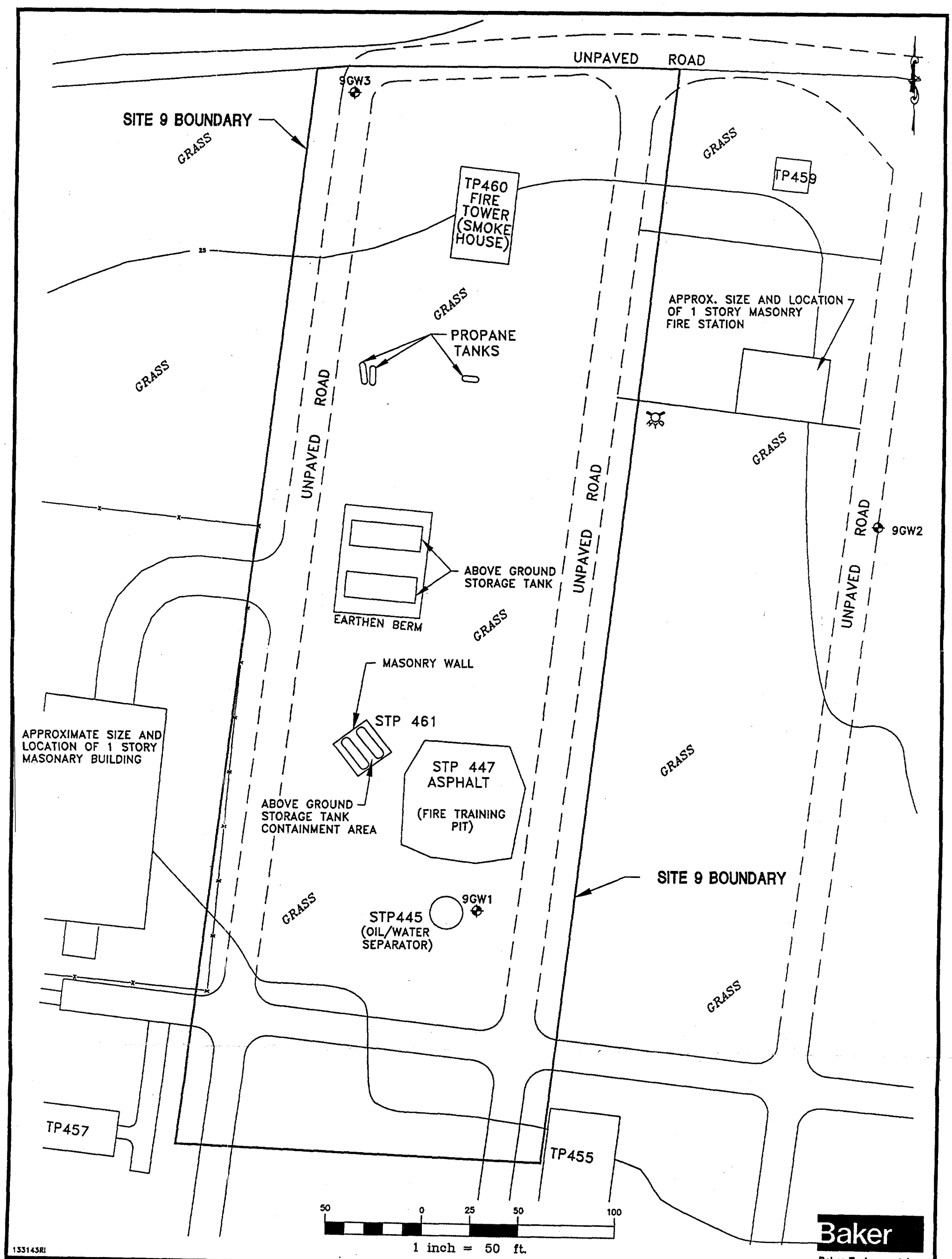
Baker
Baker Environmental, Inc.

SURFACE WATER/SEDIMENT INVESTIGATION AREA
AND
AQUATIC/ECOLOGICAL SURVEY
SITE 6

SCALE 1"= 500'

DATE JUNE 1993

FIGURE No.
2-13



LEGEND

9GW1 EXISTING MONITORING WELL INSTALLED BY ESE IN 1986

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 2-14
SITE PLAN-SITE 9
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

CTO-133 C032

LEGEND

9GW1	EXISTING MONITORING WELL INSTALLED BY ESE, 1986
9GW7D	SOIL BORING ADVANCED FOR DEEP MONITORING WELL
9GW4	SOIL BORING ADVANCED FOR SHALLOW MONITORING WELL
SB1	SOIL BORING

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 50'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133145RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

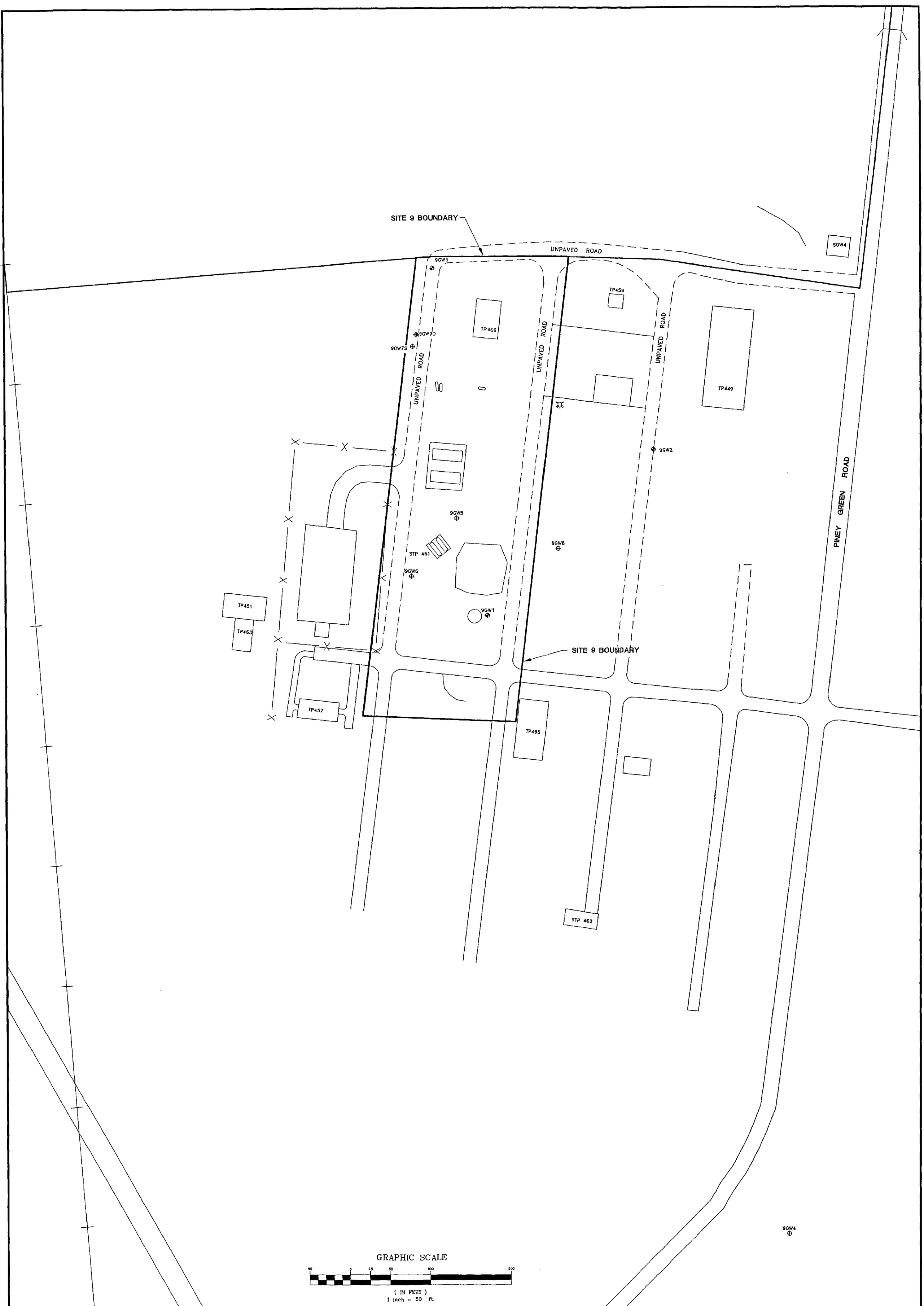
Baker
Baker Environmental, Inc.

SOIL BORING LOCATIONS WITHIN SITE 9

SCALE 1"= 50'

DATE JUNE 1993

FIGURE No.
2-15



LEGEND

9GW1 EXISTING MONITORING WELL INSTALLED BY ESE, 1986

9GW7D DEEP MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., SEPTEMBER 1992

9GW4 SHALLOW MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., SEPTEMBER 1992

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 50'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133146RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

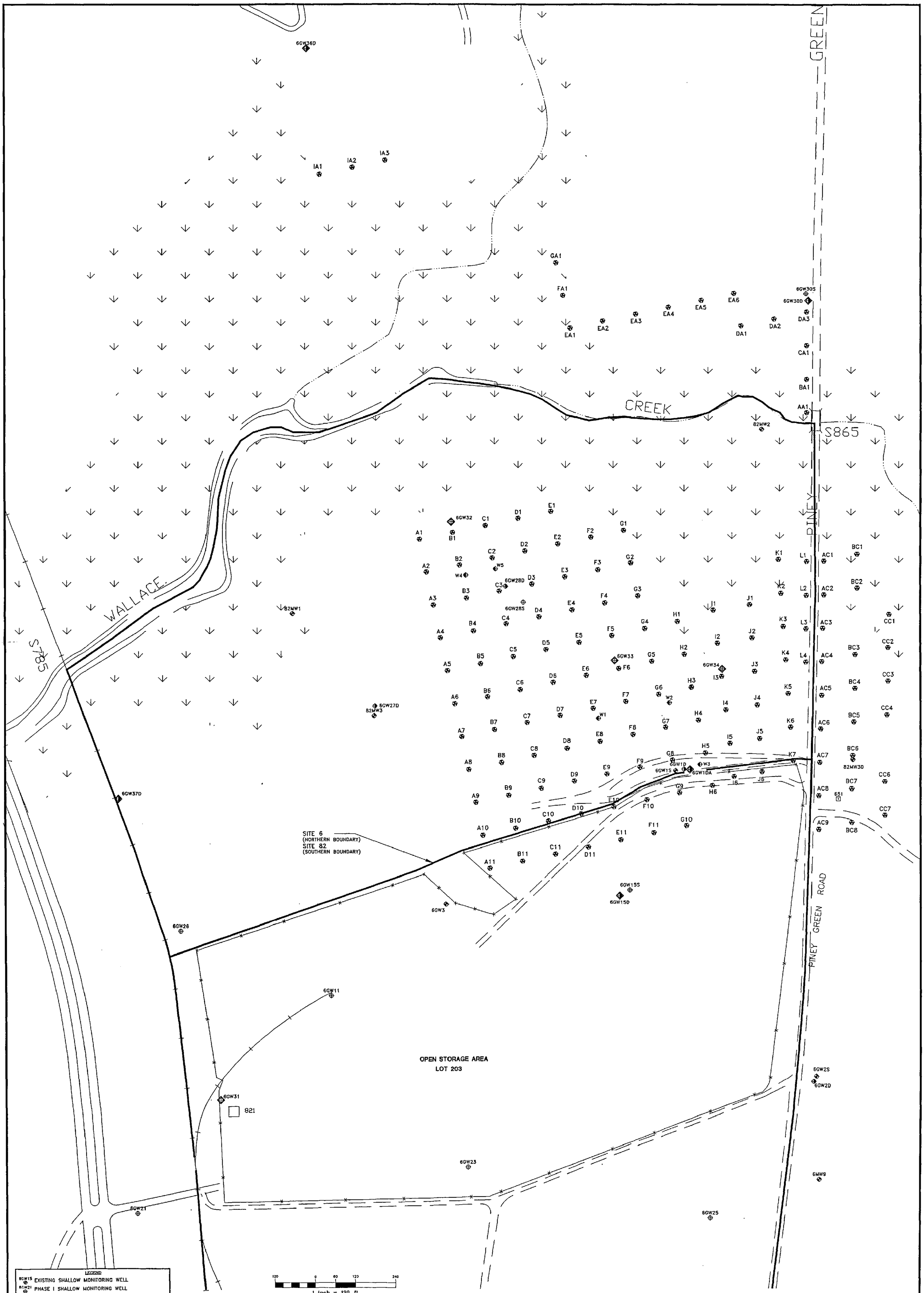
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

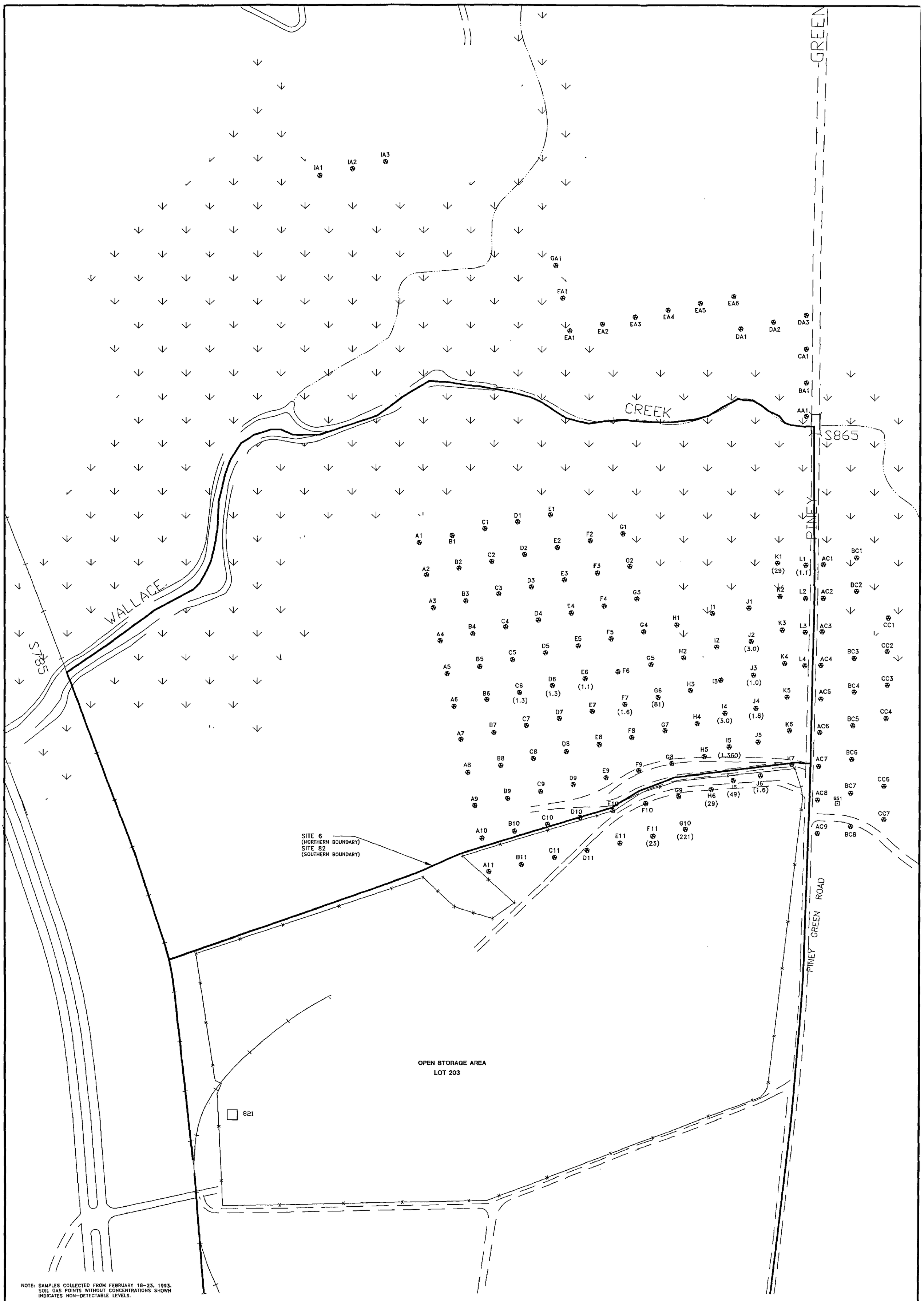
Baker
Baker Environmental, Inc.

MONITORING WELL LOCATION MAP
SITE 9

SCALE 1"= 50' DATE JUNE 1993

FIGURE No.
2-16


GREEN
CREEK
WALLACE
PINEY
PINEY GREEN ROAD
S865
S785
6GW36D
IA1
IA2
IA3
GA1
FA1
EA1
EA2
EA3
EA4
EA5
EA6
DA1
DA2
DA3
CA1
BA1
AA1
6GW30S
6GW30D
82MW2
6GW32
6GW28D
6GW28S
82MW1
6GW33
6GW34
6GW27D
82MW3
6GW37D
SITE 6
(NORTHERN BOUNDARY)
SITE 82
(SOUTHERN BOUNDARY)
6GW15S
6GW15D
6GW3
6GW26
6GW11
OPEN STORAGE AREA
LOT 203
6GW31
821
6GW2S
6GW2D
6GW23
6MW9
6GW21
6GW25
6GW1D
6GW1S
6GW1DA
82MW3D
651
LEGEND
6GW1S EXISTING SHALLOW MONITORING WELL
6GW2I PHASE I SHALLOW MONITORING WELL
6GW1D PHASE I DEEP MONITORING WELL
A11 APPROXIMATE LOCATION OF SOIL GAS SAMPLE POINT
W1 APPROXIMATE LOCATION OF GROUNDWATER HEADSPACE SAMPLE POINT
6GW31 PHASE II SHALLOW MONITORING WELL
6GW1DA PHASE II DEEP MONITORING WELL
SOURCE: LANTDIV, FEBRUARY 1992
120 0 60 120 240
1 inch = 120 ft.
DATE JUNE 1993
SCALE 1"= 120'
DRAWN R.E.L.
REVIEWED R.P.W.
S.O.# 19133-22-SRN
CADD# 133150RI
NORTH
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania
Baker
Baker Environmental, Inc.
LOCATION OF SOIL GAS AND GROUNDWATER
HEADSPACE SAMPLE POINTS
SITES 6 AND 82
SCALE 1"= 300'
DATE JUNE 1993
FIGURE No.
2-17



NOTE: SAMPLES COLLECTED FROM FEBRUARY 18-23, 1993. SOIL GAS POINTS WITHOUT CONCENTRATIONS SHOWN INDICATES NON-DETECTABLE LEVELS.

LEGEND
C6 ⊗ APPROXIMATE LOCATION OF SOIL GAS SAMPLE POINT
(1.3) PCE CONCETRATION IN ug/l

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 120'
DRAWN	R.E.L.
REVIEWED	R.P.W.
S.O.#	19133-22-SRN
CADD#	133152RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

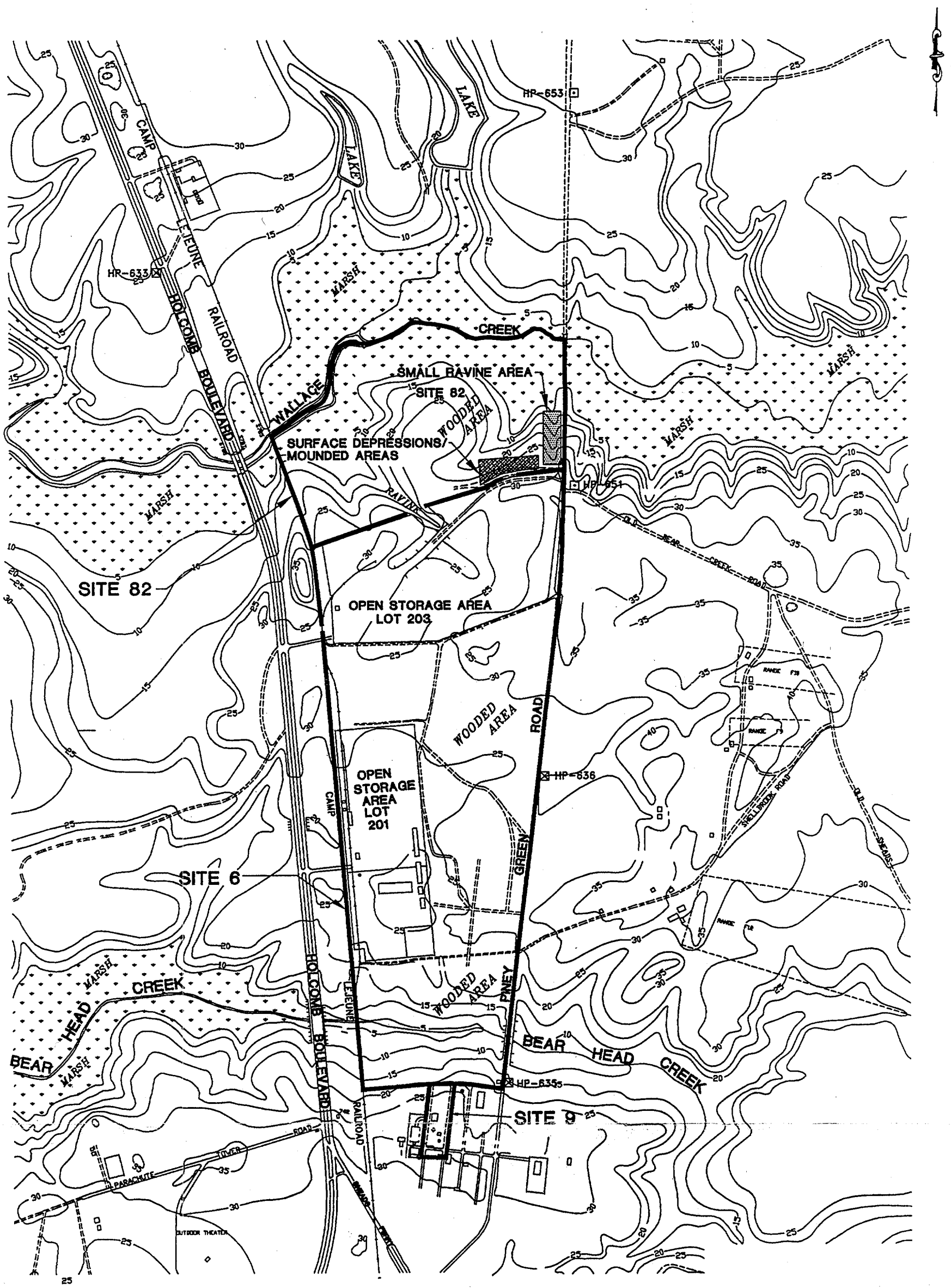
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

DISTRIBUTION OF PCE CONCENTRATIONS
FROM SOIL GAS SURVEY
SITES 6 AND 82

SCALE 1"= 300'
DATE JUNE 1993

FIGURE No.
2-19



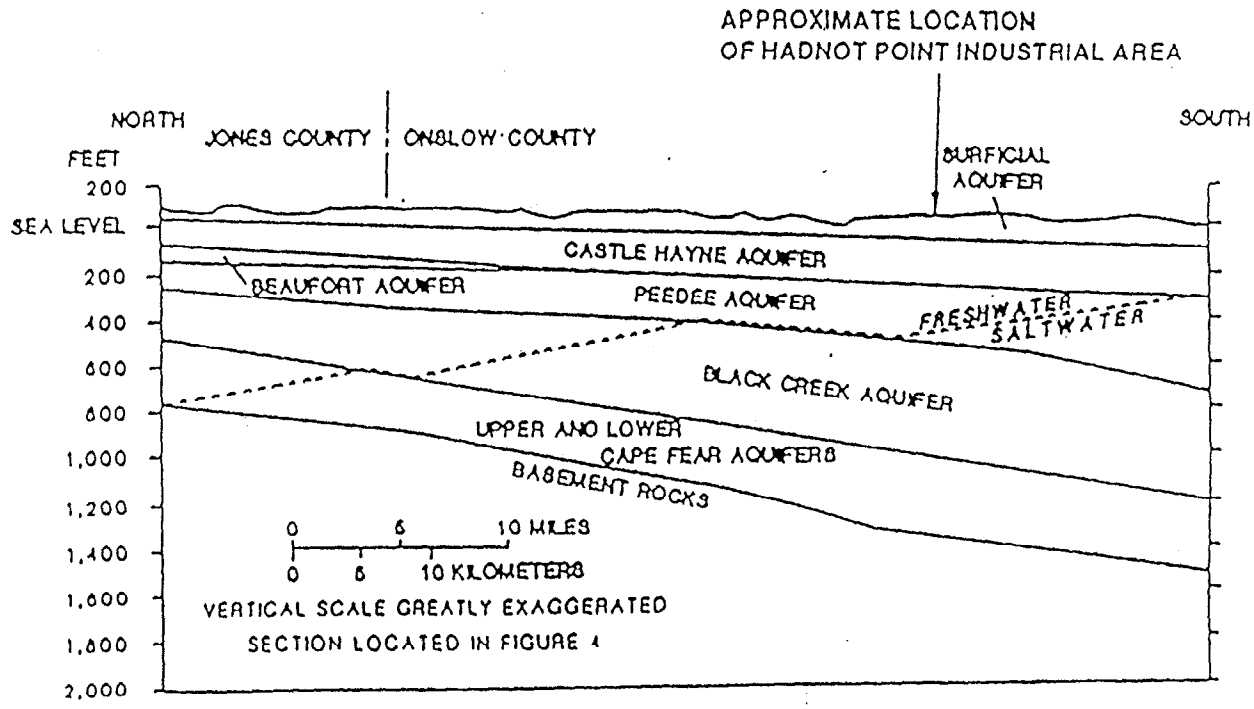
NOTE: UNSHADED AREA DEPICTS WOODED AREA, THE RAVINE AND SITE 82

LEGEND

FIGURE 3-1
SITE TOPOGRAPHY AND
LAND FEATURES
OPERABLE UNIT No.2
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

SOURCE: LANTDIV, FEBRUARY 1992

CTO133C04Z



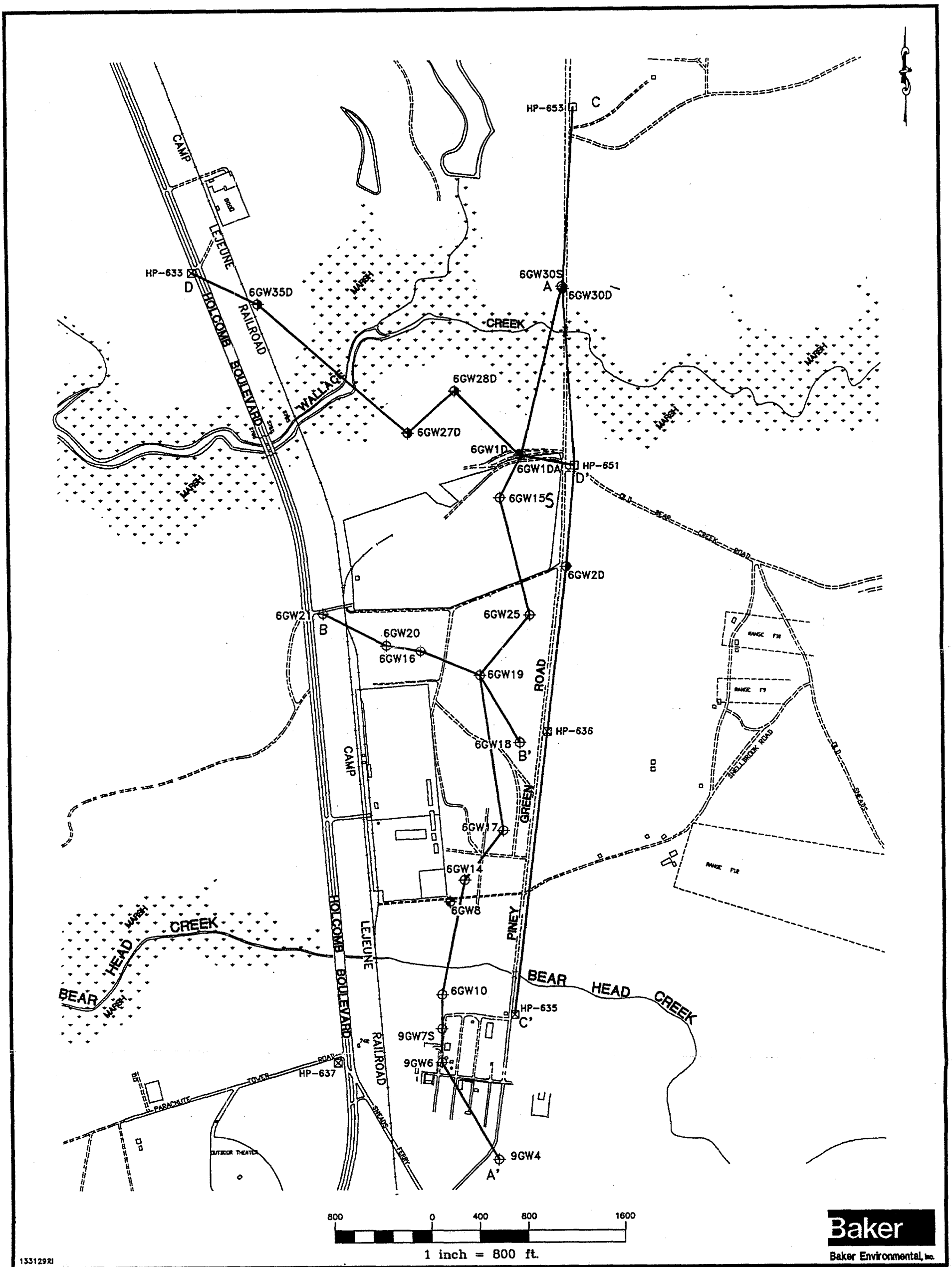
Baker
Baker Environmental, Inc.

133128RI

FIGURE 3-2
GENERALIZED HYDROGEOLOGIC CROSS-SECTION
JONES AND ONSLOW COUNTIES, NORTH CAROLINA

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

SOURCE: HARNED, et. al., 1989



LEGEND

A-A'/B-B'	SURFICIAL GEOLOGIC CROSS-SECTION TRAVERSE
C-C'/D-D'	DEEP GEOLOGIC CROSS-SECTION TRAVERSE
6GW10	SHALLOW MONITORING WELL
6GW1DA	DEEP MONITORING WELL
HP-633	ACTIVE WATER SUPPLY WELLS
HP-651	INACTIVE WATER SUPPLY WELLS

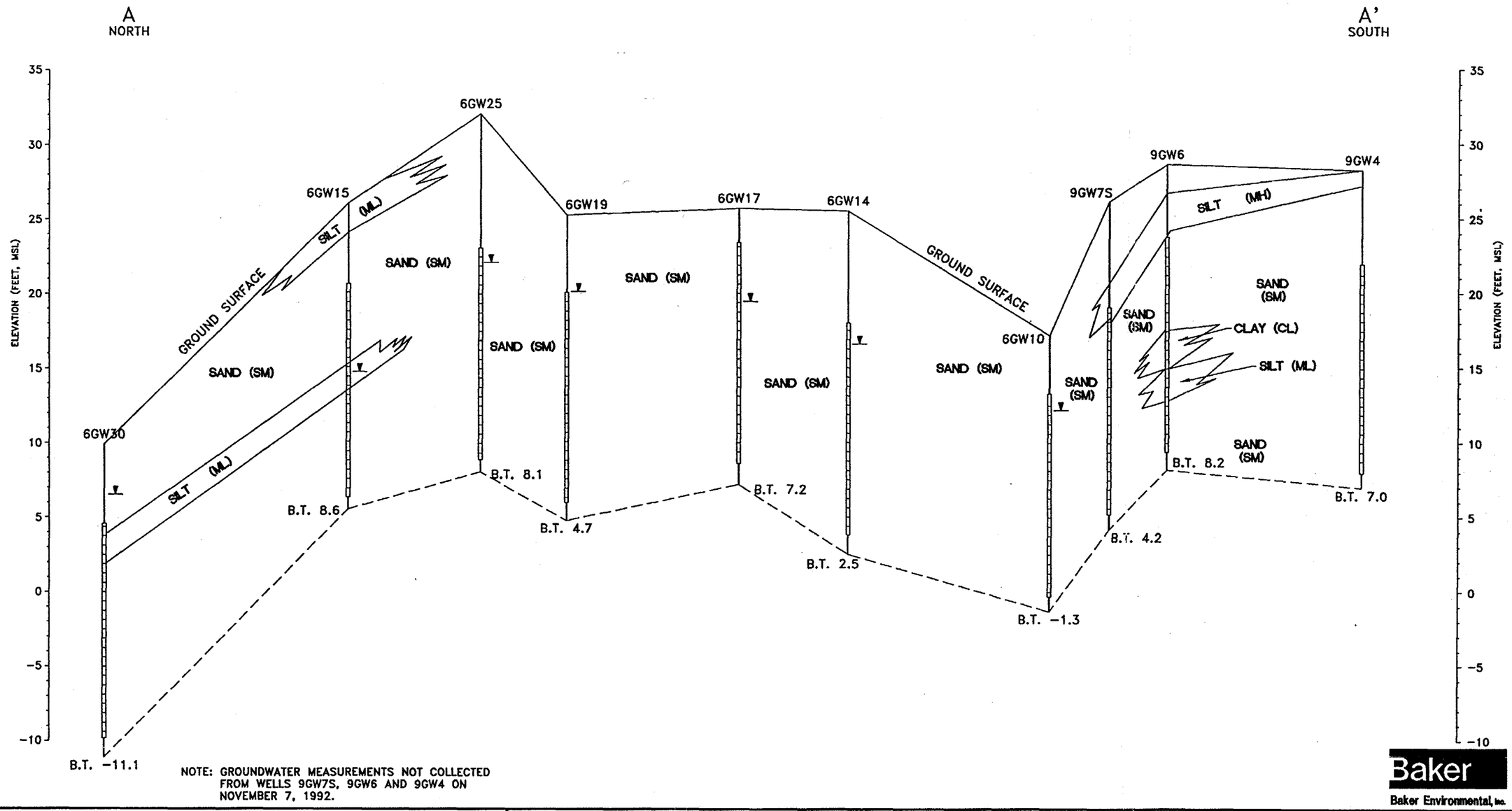
SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 3-3
SURFICIAL AND DEEP GEOLOGIC
CROSS-SECTION LOCATION MAP
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

CTO-133C B52

133130RI



NOTE: GROUNDWATER MEASUREMENTS NOT COLLECTED FROM WELLS 9GW7S, 9GW6 AND 9GW4 ON NOVEMBER 7, 1992.

Baker
Baker Environmental, Inc.

LEGEND

- GROUNDWATER ELEVATION (feet above MSL) ON NOVEMBER 7, 1992
- B.T. -1.3' BORING TERMINATED, ELEVATION MSL
- APPROXIMATE DEPTH AND LENGTH OF SCREEN
- ESTIMATED
- PROJECTED

560 0 280 560 1120
Horizontal Scale: 1 inch = 560 ft.

5 0 2.5 5 10
Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 3-4
GEOLOGIC CROSS-SECTION A-A'
DEPICTING SURFICIAL SOIL CONDITIONS
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

133131RI

B
NORTHWEST

B'
SOUTHEAST

ELEVATION (FEET, MSL)

30
25
20
15
10
5
0

6GW21
SILT (ML)
GROUND SURFACE
6GW20
6GW16
6GW19
6GW18
SILT (ML)
SAND (SM)
SAND (SM)
SAND (SM)
SAND (SM)
B.T. 5.4
B.T. −1.5
B.T. 4.4
B.T. 4.7
B.T. 7.0

Baker
Baker Environmental, Inc.

LEGEND

GROUNDWATER ELEVATION (feet above MSL) ON NOVEMBER 7, 1992

B.T. 5.4' BORING TERMINATED, ELEVATION MSL

APPROXIMATE DEPTH AND LENGTH OF SCREEN INTERVAL

ESTIMATED

PROJECTED

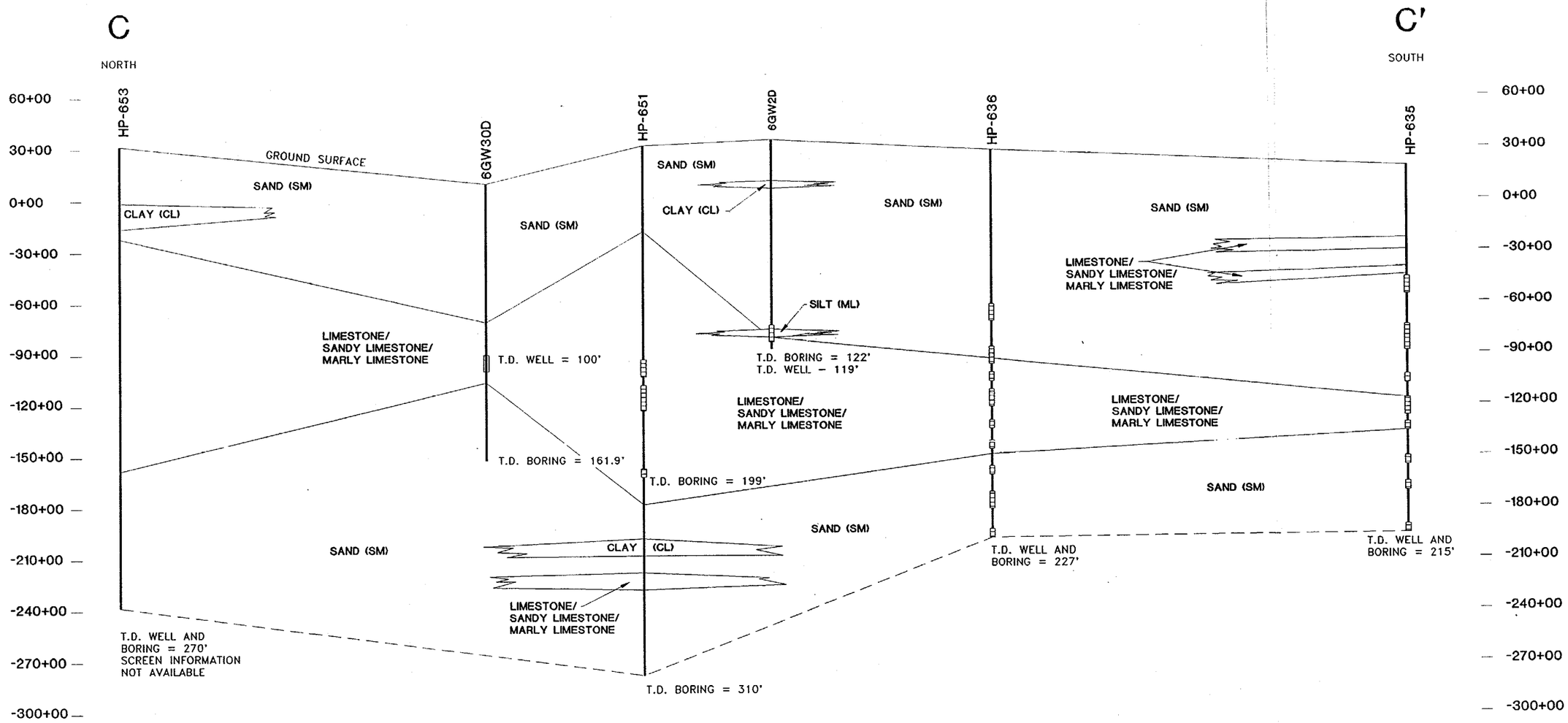
180 0 90 180 360
Horizontal Scale: 1 inch = 180 ft.

5 0 2.5 5 10
Vertical Scale: 1 inch = 5 ft.

THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED SOIL ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

FIGURE 3-5
GEOLOGIC CROSS-SECTION B-B'
DEPICTING SURFICIAL SOIL CONDITIONS
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA



HORIZONTAL SCALE

1 inch = 300 ft.

VERTICAL SCALE

1 inch = 30 ft.

NOTE: -HADNOT POINT SUPPLY WELL LITHOLOGY INFORMATION OBTAINED FROM HARNED, et al, 1989.
-THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

LEGEND	
HP-653	HADNOT POINT SUPPLY WELL
6GW2D	DEEP MONITORING WELL AND SOIL BORING
	APPROXIMATE DEPTH AND LENGTH OF SCREEN INTERVAL
T.D.	TOTAL DEPTH OF SOIL BORING OR WELL
———	ESTIMATED
- - -	PROJECTED

DATE	JUNE 1993
SCALE	GRAPHIC
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133132RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

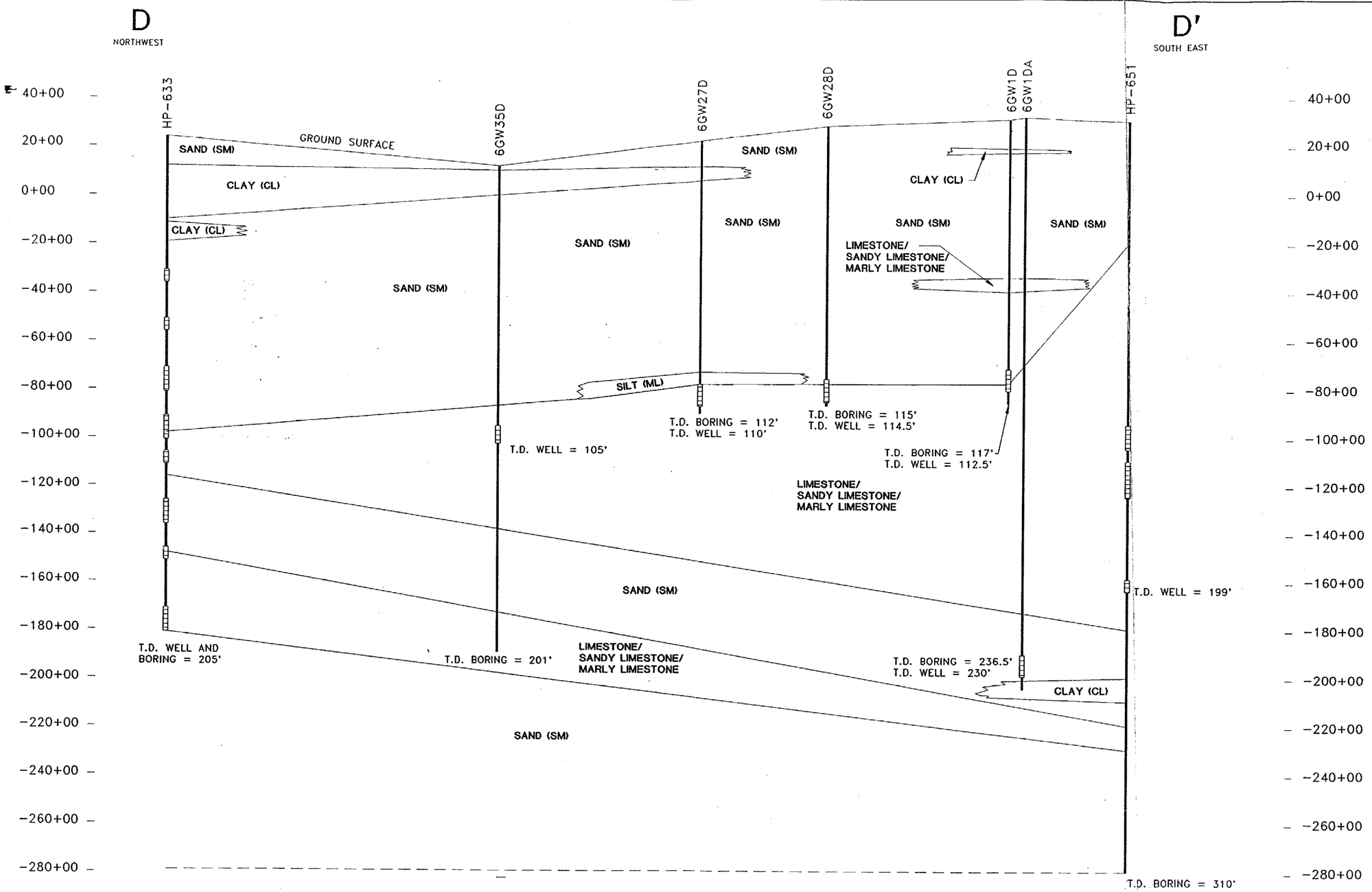
Baker
Baker Environmental, Inc.

GEOLOGIC CROSS-SECTION C-C'
DEPICTING DEEP SOIL CONDITIONS

SCALE GRAPHIC

DATE JUNE 1993

FIGURE No.
3-6



NOTES: -HADNOT POINT SUPPLY WELL LITHOLOGY INFORMATION OBTAINED FROM HARNED, et al, 1989.
-THE SOIL BORING INFORMATION IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE RESPECTIVE BORING LOCATIONS. SUBSURFACE CONDITIONS INTERPOLATED BETWEEN BORINGS ARE ESTIMATED BASED ON ACCEPTED ENGINEERING PRINCIPLES AND GEOLOGIC JUDGEMENT.

HORIZONTAL SCALE
200 0 100 200 400
1 inch = 200 ft.

VERTICAL SCALE
10 0 5 10 20
1 inch = 20 ft.

LEGEND
HP-633 HADNOT POINT SUPPLY WELL
6GW1D DEEP MONITORING WELL AND SOIL BORING
APPROXIMATE DEPTH AND LENGTH OF SCREEN INTERVAL
T.D. TOTAL DEPTH OF SOIL BORING OR WELL
ESTIMATED
PROJECTED

DATE	JUNE 1993
SCALE	GRAPHIC
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133133RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORP BASE, CAMP LEJEUNE
NORTH CAROLINA

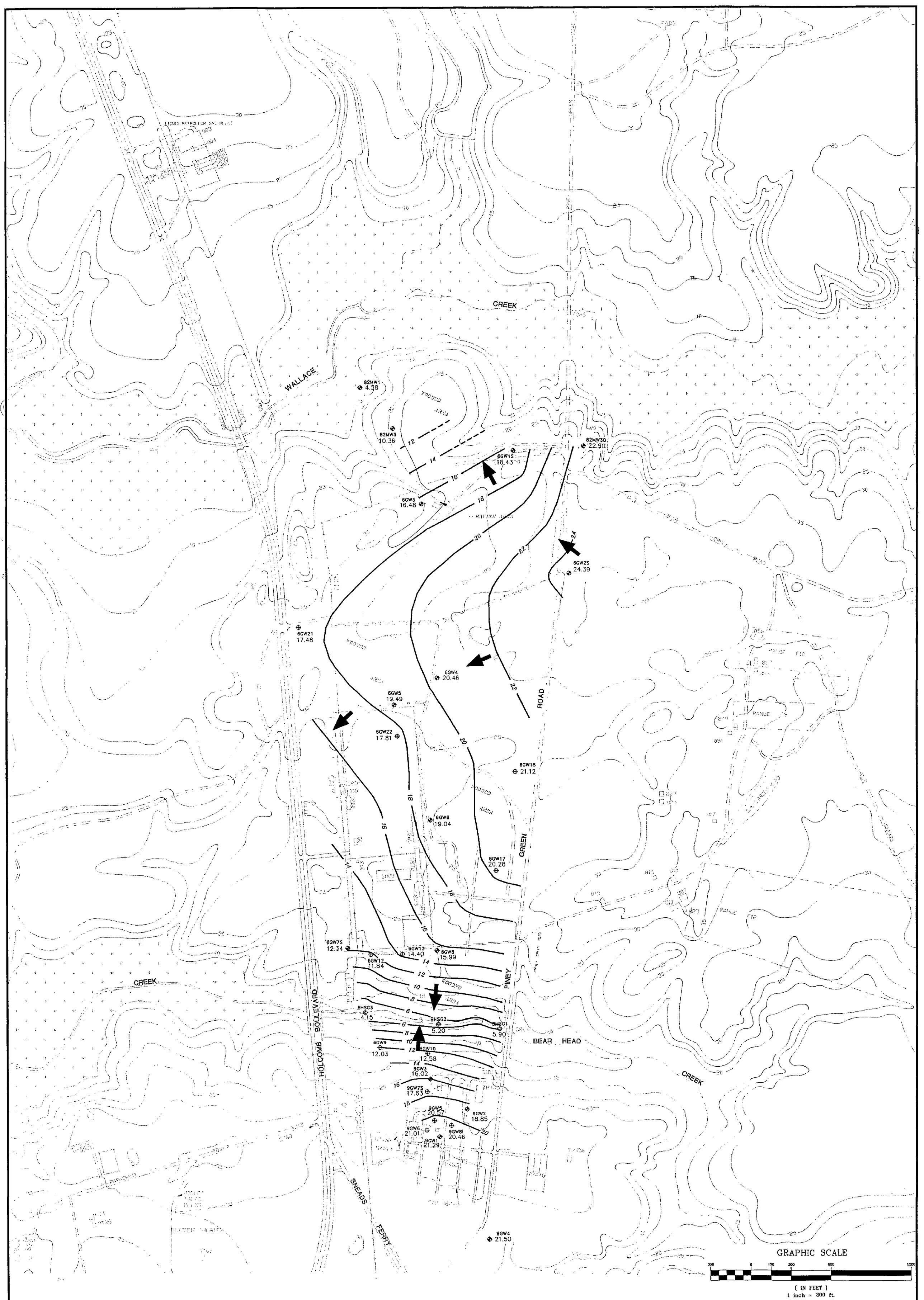
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

GEOLOGIC CROSS-SECTION D-D'
DEPICTING DEEP SOIL CONDITIONS

SCALE	GRAPHIC
DATE	JUNE 1993

FIGURE No.
3-7



LEGEND

- 6GW7S — EXISTING SHALLOW MONITORING WELL
- 6GW12 — PHASE I SHALLOW MONITORING WELL
- BHSG3 — PHASE I STAFF GAUGE
- 4.15 — GROUNDWATER ELEVATION WELL SPECIFIC (FEET ABOVE MSL)
- —14— GROUNDWATER CONTOUR LINE (FEET ABOVE MSL)
- → ESTIMATED DIRECTION OF GROUNDWATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1" = 300'
DRAWN	GLB
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133135RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

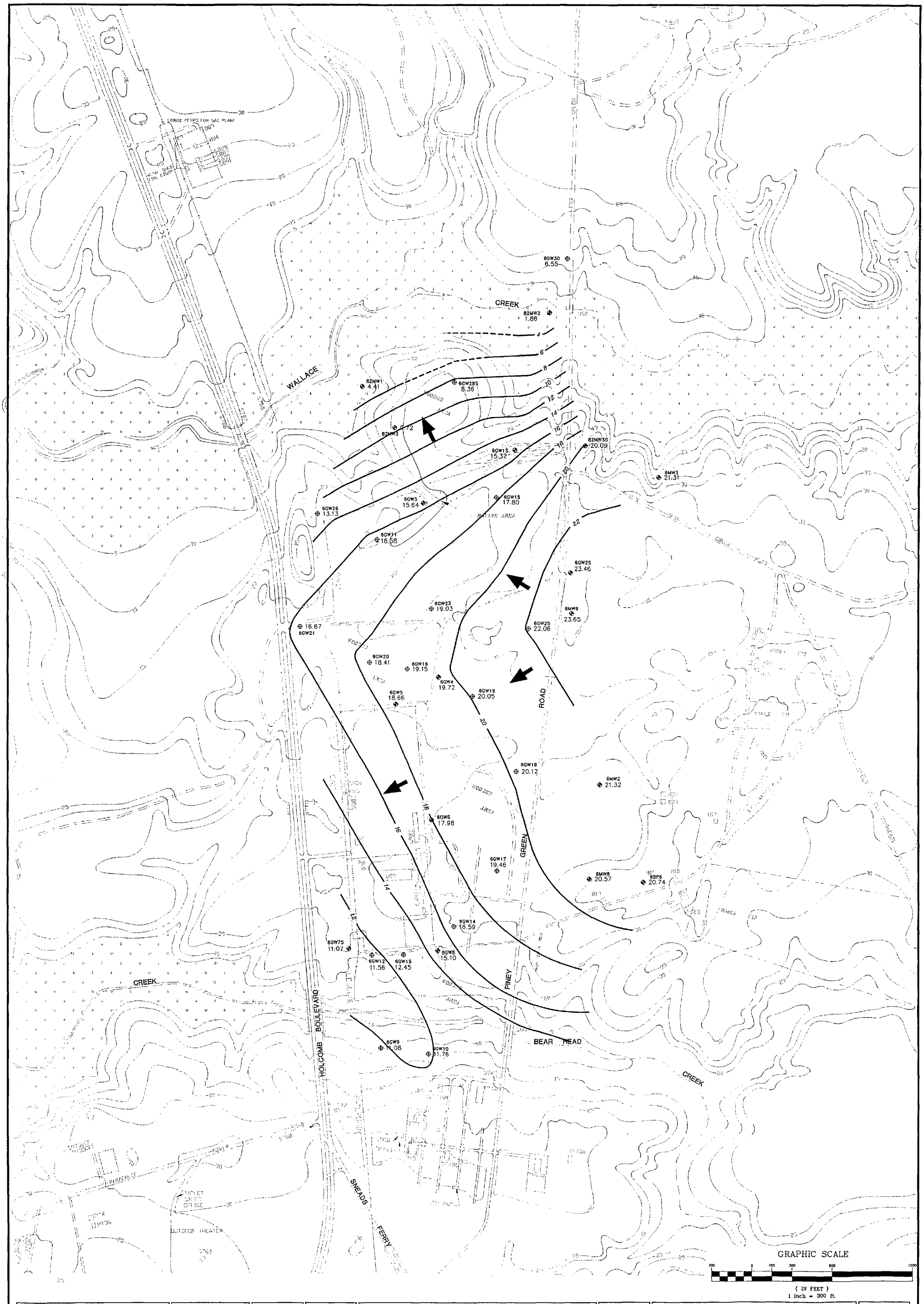
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

SHALLOW GROUNDWATER CONTOUR MAP
SEPTEMBER 30, 1992

SCALE 1" = 300' DATE JUNE 1993

FIGURE No.
3-8



LEGEND	
6GW7S	EXISTING SHALLOW MONITORING WELL
6GW12	PHASE I SHALLOW MONITORING WELL
15.32	GROUNDWATER ELEVATION WELL SPECIFIC (FEET ABOVE MSL)
—14—	GROUNDWATER CONTOUR LINE (FEET ABOVE MSL)
---4---	ESTIMATED CONTOUR LINE (FEET ABOVE MSL)
→	ESTIMATED DIRECTION OF GROUNDWATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	GLB
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133163RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

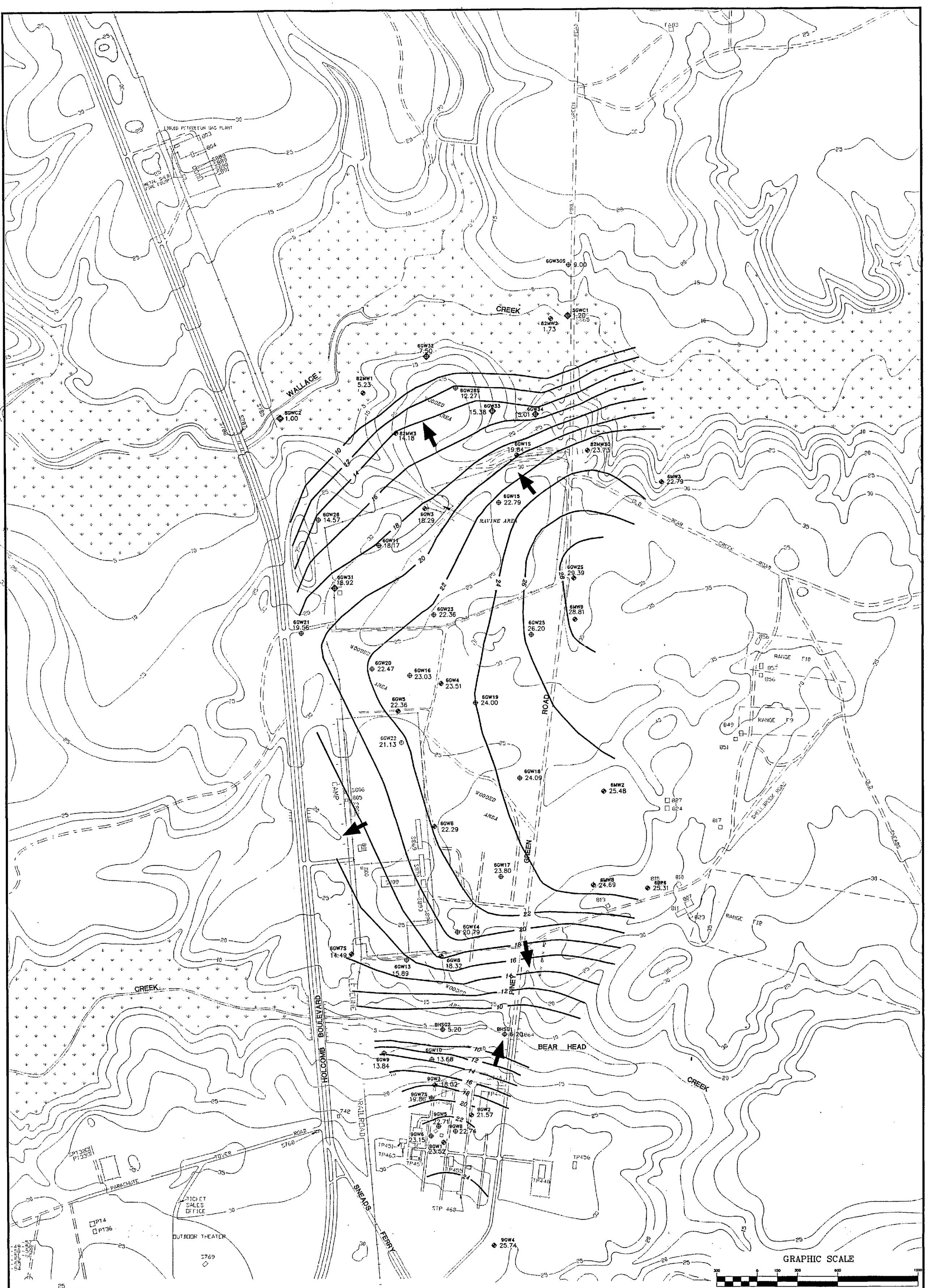
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

SHALLOW GROUNDWATER CONTOUR MAP
NOVEMBER 7, 1992

SCALE 1"= 300' DATE JUNE 1993

FIGURE No.
3-9



LEGEND

- 6GW7S — EXISTING SHALLOW MONITORING WELL
- 6GW12 — PHASE I SHALLOW MONITORING WELL
- 6GW31 — PHASE II SHALLOW MONITORING WELL
- 15.32 — GROUNDWATER ELEVATION WELL SPECIFIC (FEET ABOVE MSL)
- —22— GROUNDWATER CONTOUR LINE (FEET ABOVE MSL)
- ESTIMATED DIRECTION OF GROUNDWATER FLOW
- BHSG1 — PHASE I STAFF GAUGE INSTALLED BY BAKER ENVIRONMENTAL, INC., OCT. 1992
- SGWC2 — PHASE II STAFF GAUGE INSTALLED BY BAKER ENVIRONMENTAL, INC., DEC. 1992

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	GLB/WJH
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133164RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

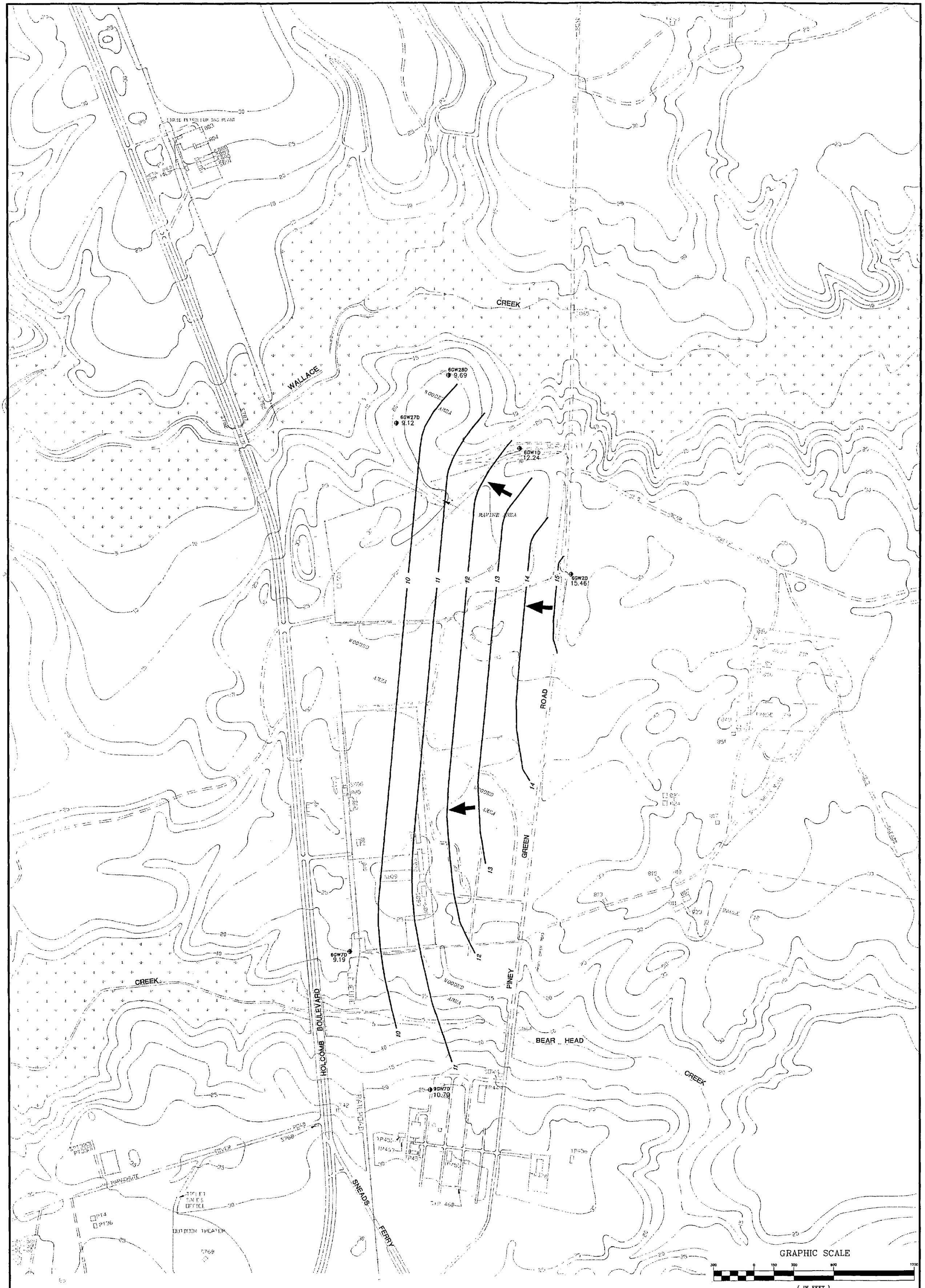
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

SHALLOW GROUNDWATER CONTOUR MAP
APRIL 1, 1993

SCALE 1"= 300' | DATE JUNE 1993

FIGURE No.
3-10



LEGEND

6GW27D PHASE I DEEP MONITORING WELL

9.19 GROUNDWATER ELEVATION WELL SPECIFIC (FEET ABOVE MSL)

—14— GROUNDWATER CONTOUR LINE (FEET ABOVE MSL)

ESTIMATED DIRECTION OF GROUNDWATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	GLB
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133136RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

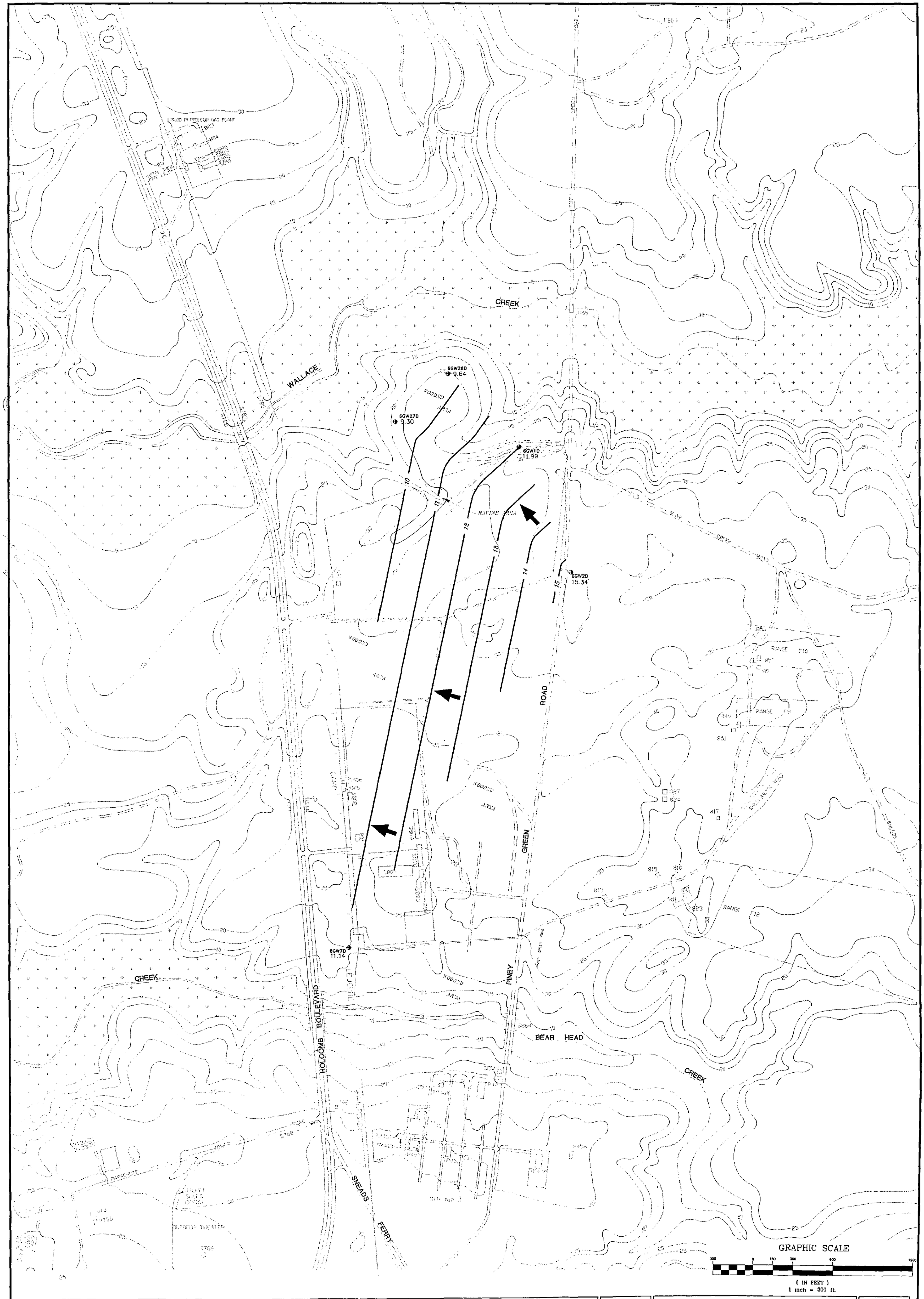
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

DEEP GROUNDWATER CONTOUR MAP
OCTOBER 26, 1992

SCALE 1"= 300' DATE JUNE 1993

FIGURE No.
3-11



LEGEND

6GW27D PHASE I DEEP MONITORING WELL

11.14 GROUNDWATER ELEVATION WELL SPECIFIC (FEET ABOVE MSL)

—14— GROUNDWATER CONTOUR LINE (FEET ABOVE MSL)

ESTIMATED DIRECTION OF GROUNDWATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1" = 300'
DRAWN	GLB
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133165RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

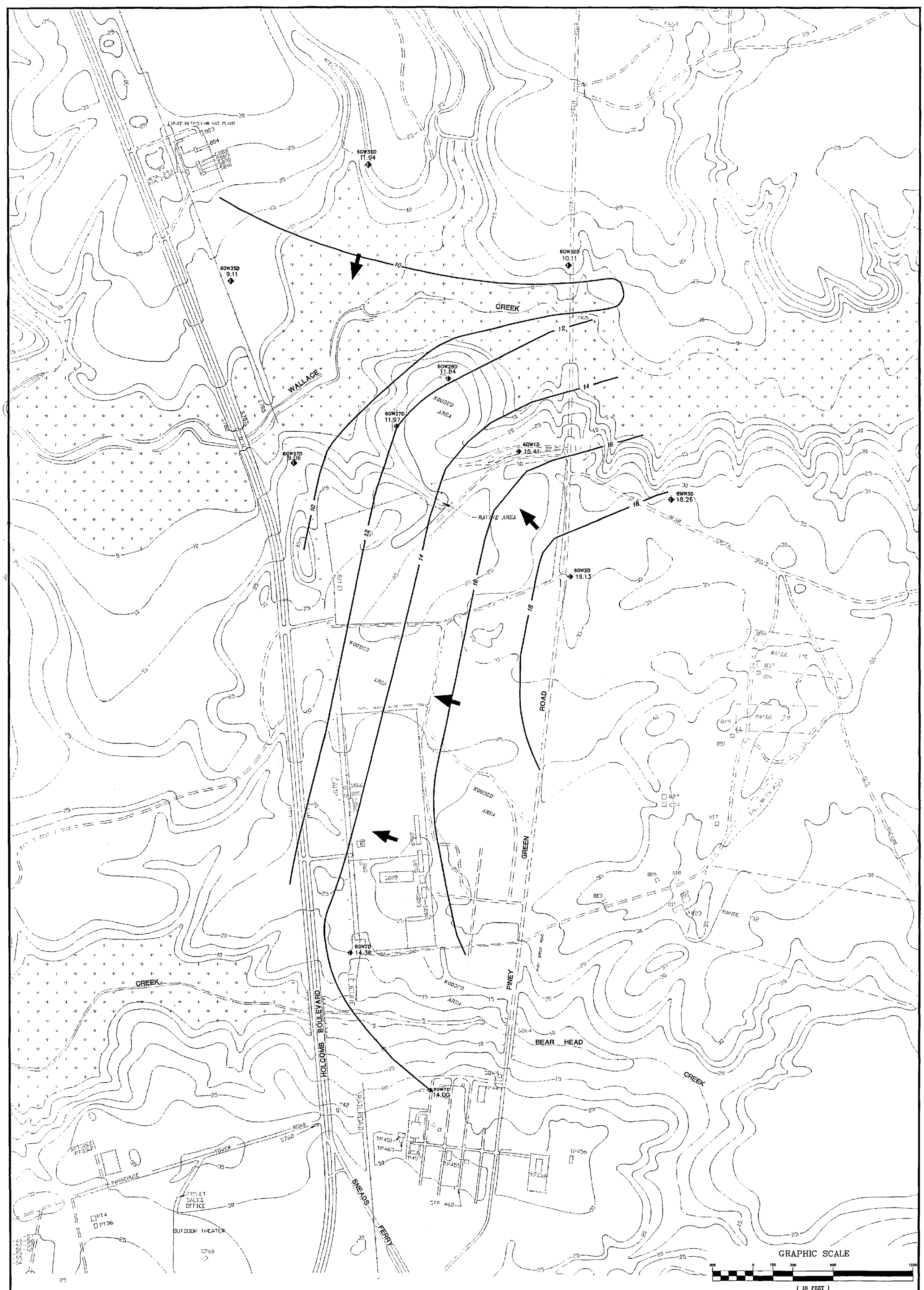
Baker
Baker Environmental, Inc.

DEEP GROUNDWATER CONTOUR MAP
NOVEMBER 7, 1992

SCALE 1" = 300'

DATE JUNE 1993

FIGURE No.
3-12



LEGEND

- 6GW27D PHASE I DEEP MONITORING WELL
- 6GW30D PHASE II DEEP MONITORING WELL
- 11.97 GROUNDWATER ELEVATION WELL SPECIFIC (FEET ABOVE MSL)
- —14— GROUNDWATER CONTOUR LINE (FEET ABOVE MSL)
- ESTIMATED DIRECTION OF GROUNDWATER FLOW

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	GLB/WJH
REVIEWED	RPW
S.O.#	19133-23-SRN
CADD#	133166RI

NORTH

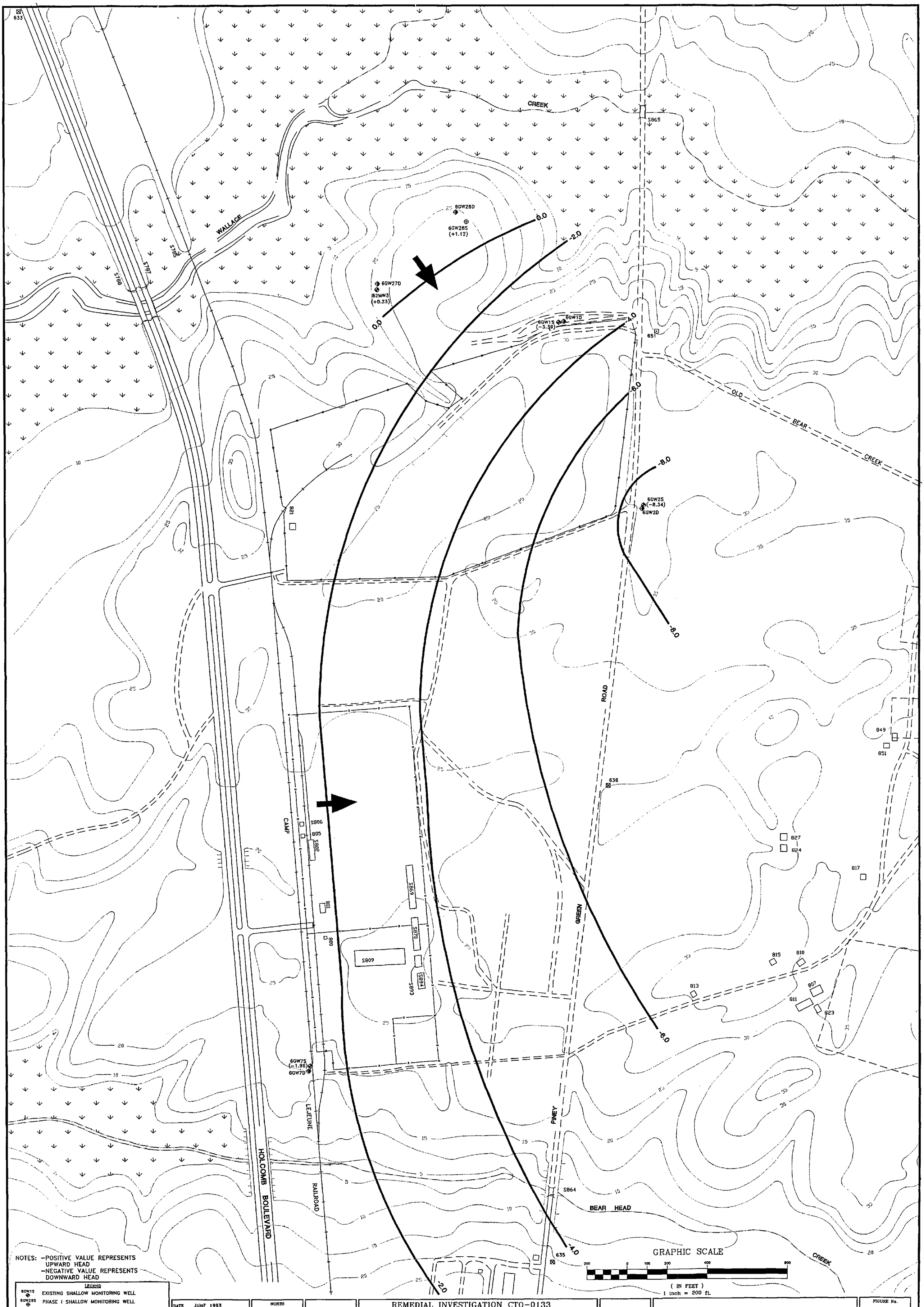
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

DEEP GROUNDWATER CONTOUR MAP
APRIL 1, 1993

SCALE 1"= 300' DATE JUNE 1993

FIGURE No. 3-13



NOTES: -POSITIVE VALUE REPRESENTS UPWARD HEAD
-NEGATIVE VALUE REPRESENTS DOWNWARD HEAD

LEGEND

- 6GW1S — EXISTING SHALLOW MONITORING WELL
- 6GW2BS — PHASE I SHALLOW MONITORING WELL
- 6GW1D — PHASE I DEEP MONITORING WELL
- (-3.39) — GROUNDWATER ELEVATION DIFFERENTIAL AT WELL CLUSTER (feet)
- DIRECTION OF GROUNDWATER ELEVATION DIFFERENTIAL INCREASE
- 0.0 — GROUNDWATER ELEVATION DIFFERENTIAL CONTOUR LINE

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 200'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133134RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

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CONTOUR MAP DEPICTING GROUNDWATER ELEVATION DIFFERENTIALS ON OCTOBER 26, 1992

SCALE 1"= 200' DATE JUNE 1993

FIGURE No.
3-14

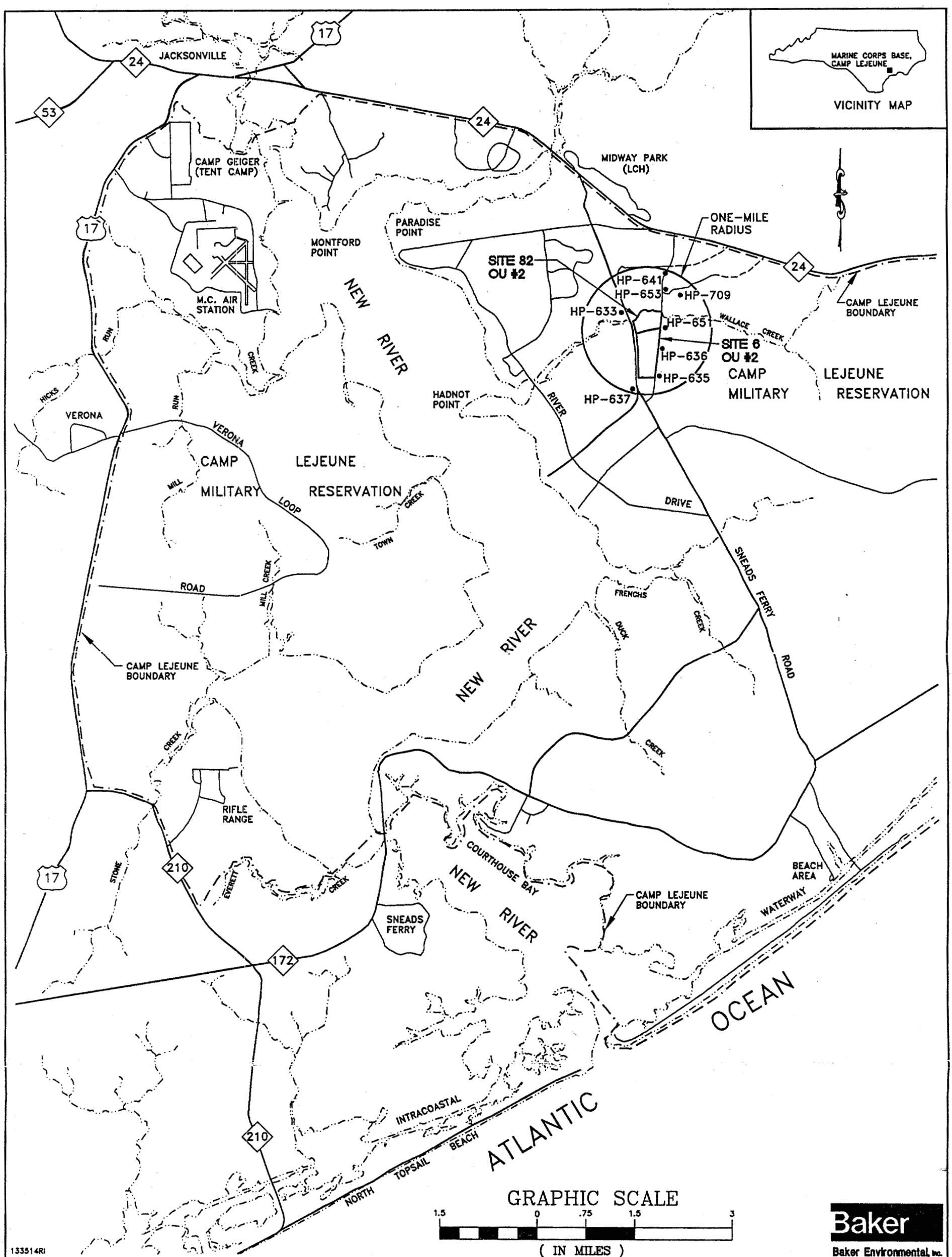


FIGURE 3-15
WATER SUPPLY WELLS IN A ONE-MILE RADIUS OF SITES 6 AND 82
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

SOURCE: U.S.G.S. WATER RESOURCES INVESTIGATION REPORT 89-4096, PLATE 1

CTO-133CB72

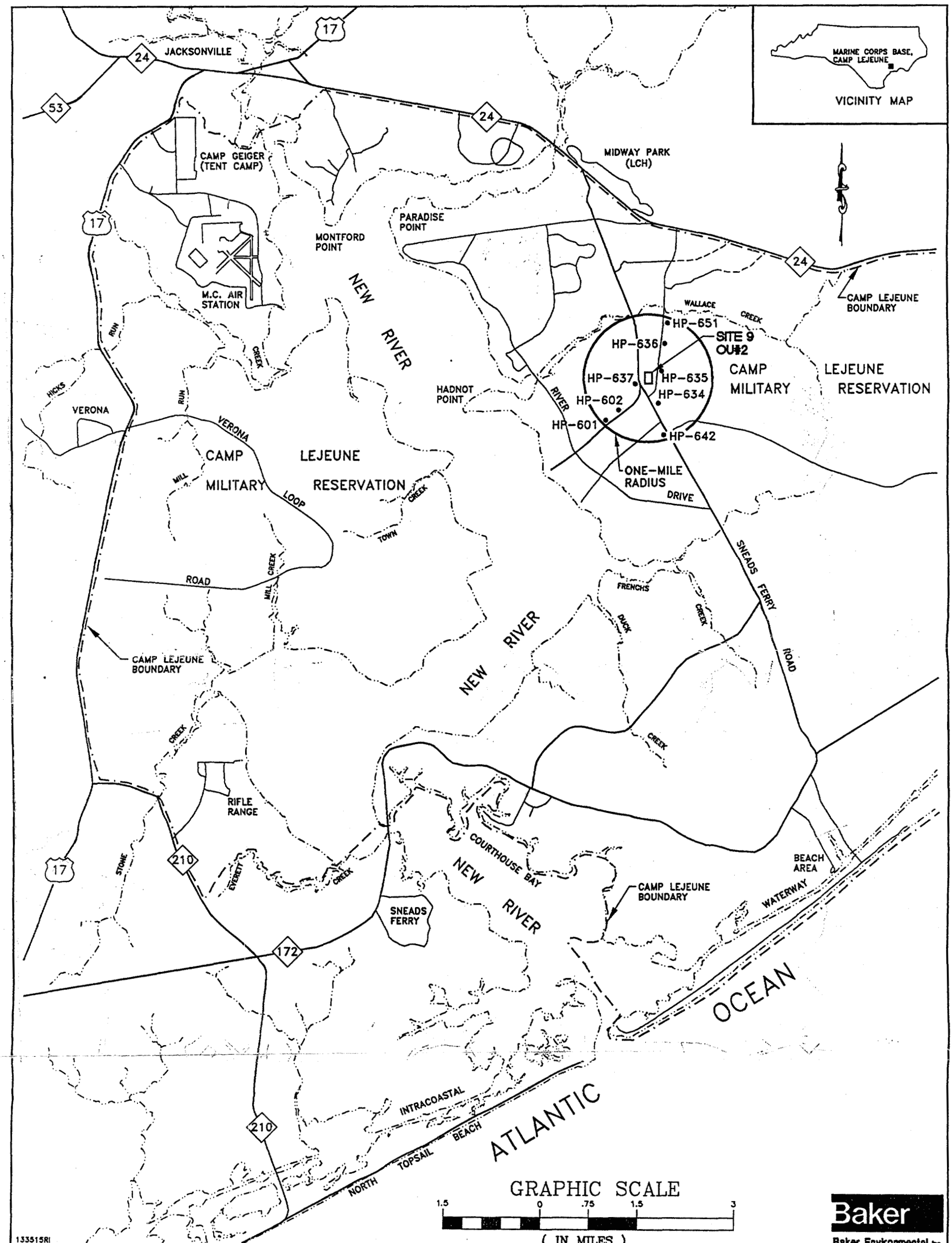


FIGURE 3-16
WATER SUPPLY WELLS IN A ONE-MILE RADIUS OF SITE 9
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

SOURCE: U.S.G.S. WATER-RESOURCES INVESTIGATIONS REPORT 89-4096, PLATE 1

Draft

Remedial Investigation Report for Operable Unit No. 2 (Sites 6, 9, and 82)

Marine Corps Base, Camp Lejeune, North Carolina

Volume 2 of 2 Figures

Prepared For:

Department of the Navy
Atlantic Division
Naval Facilities
Engineering Command
Norfolk, Virginia

Under the

LANTDIV CLEAN Program

Comprehensive Long-Term Environmental Action Navy

Reference:
Contract
N62470-89-D-4814

CTO-0133

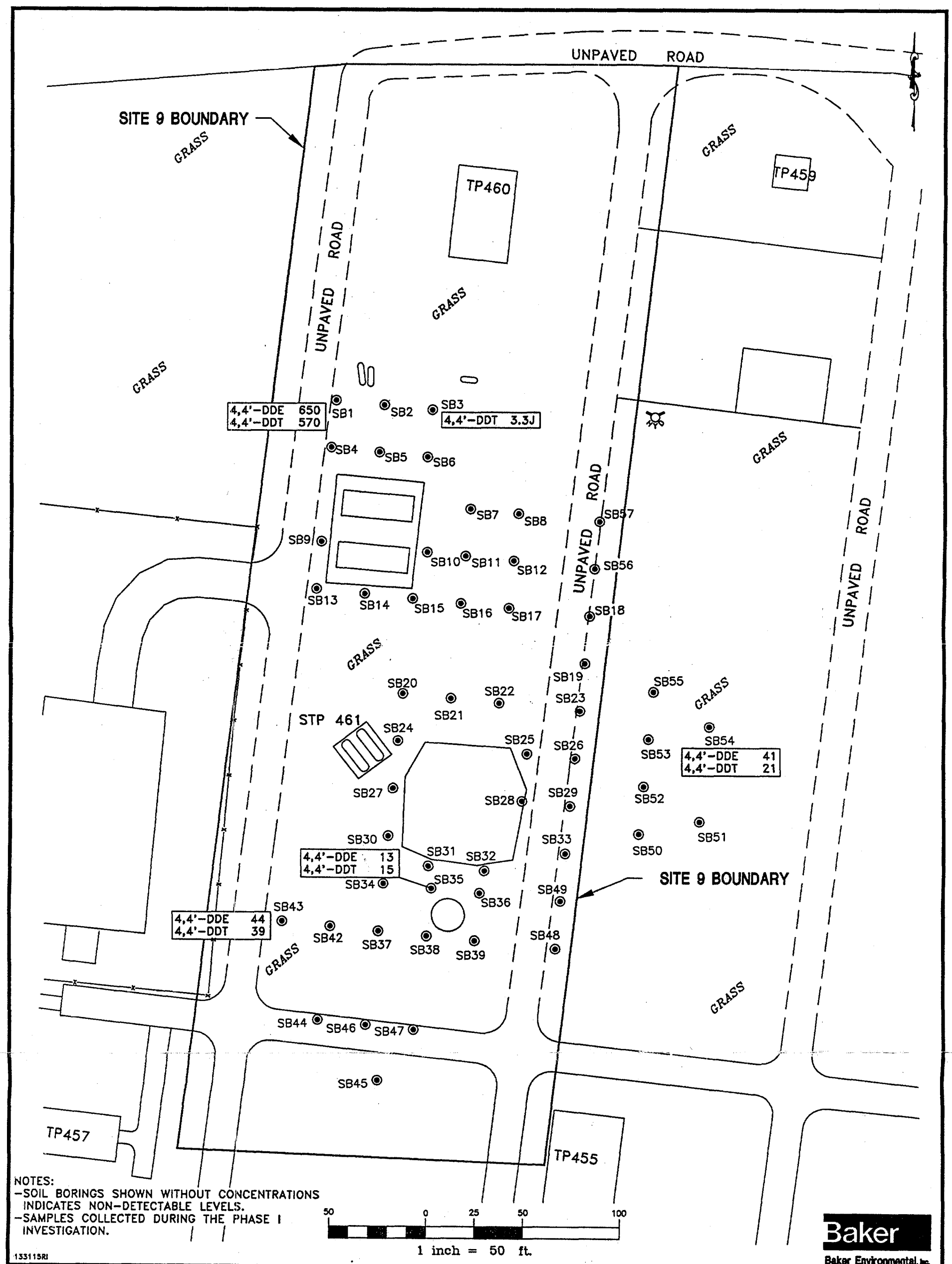
June 1993

Vol 1 of 2

Baker
Baker Environmental, Inc.

FOSTER WHEELER
FOSTER WHEELER ENVIRESPONSE, INC.

WESTON
MANAGERS DESIGNERS/CONSULTANTS



NOTES:
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

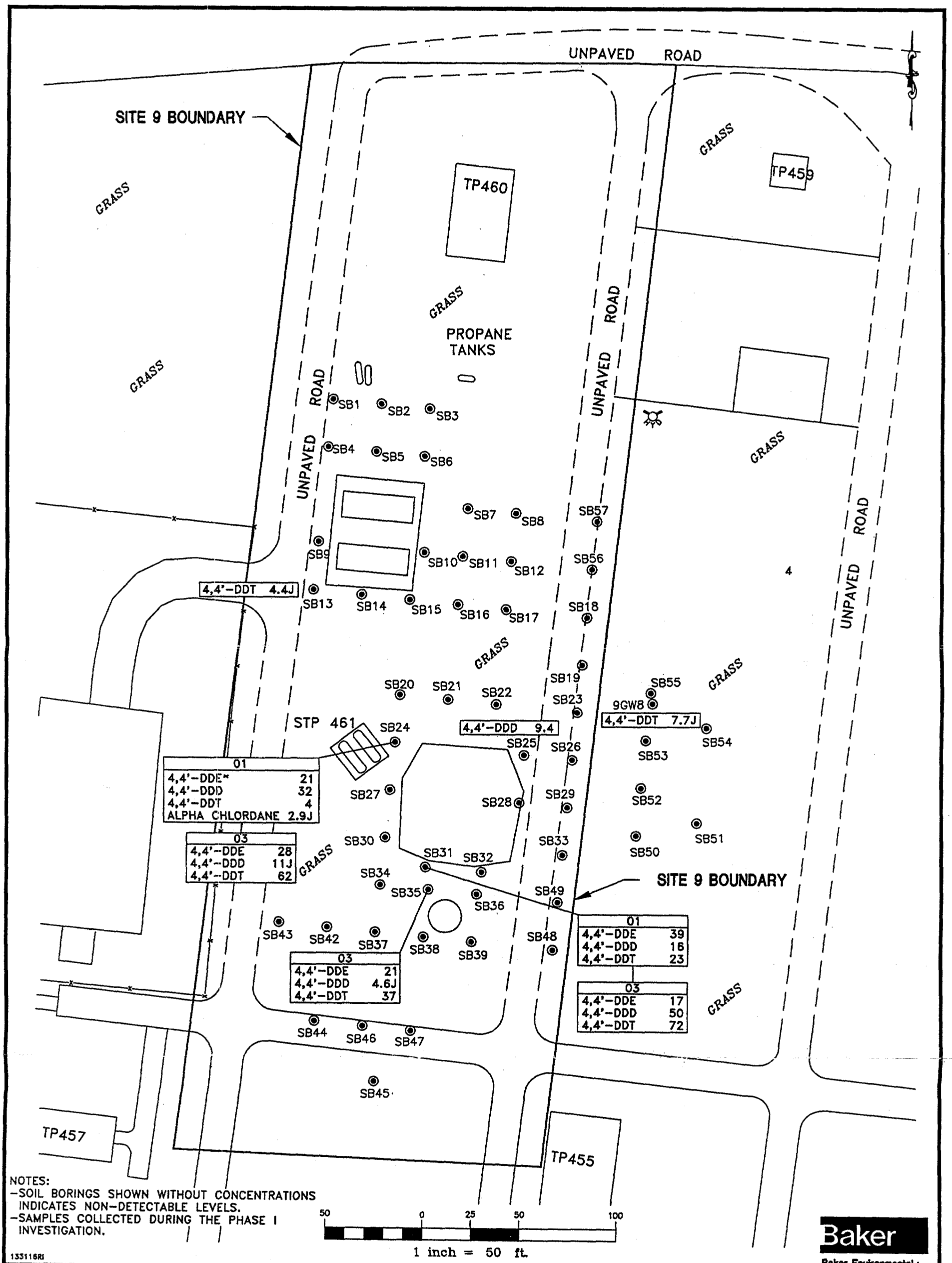
SB1	SOIL BORING
4,4'-DDT 3.3J	PESTICIDE DETECTED AND CONCENTRATION (ug/kg)

SOURCE: LANTDIV, FEBRUARY 1992

FIGURE 4-1
POSITIVE DETECTIONS OF PESTICIDES IN SURFACE SOILS AT SITE 9
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

CTO 133C B8Z



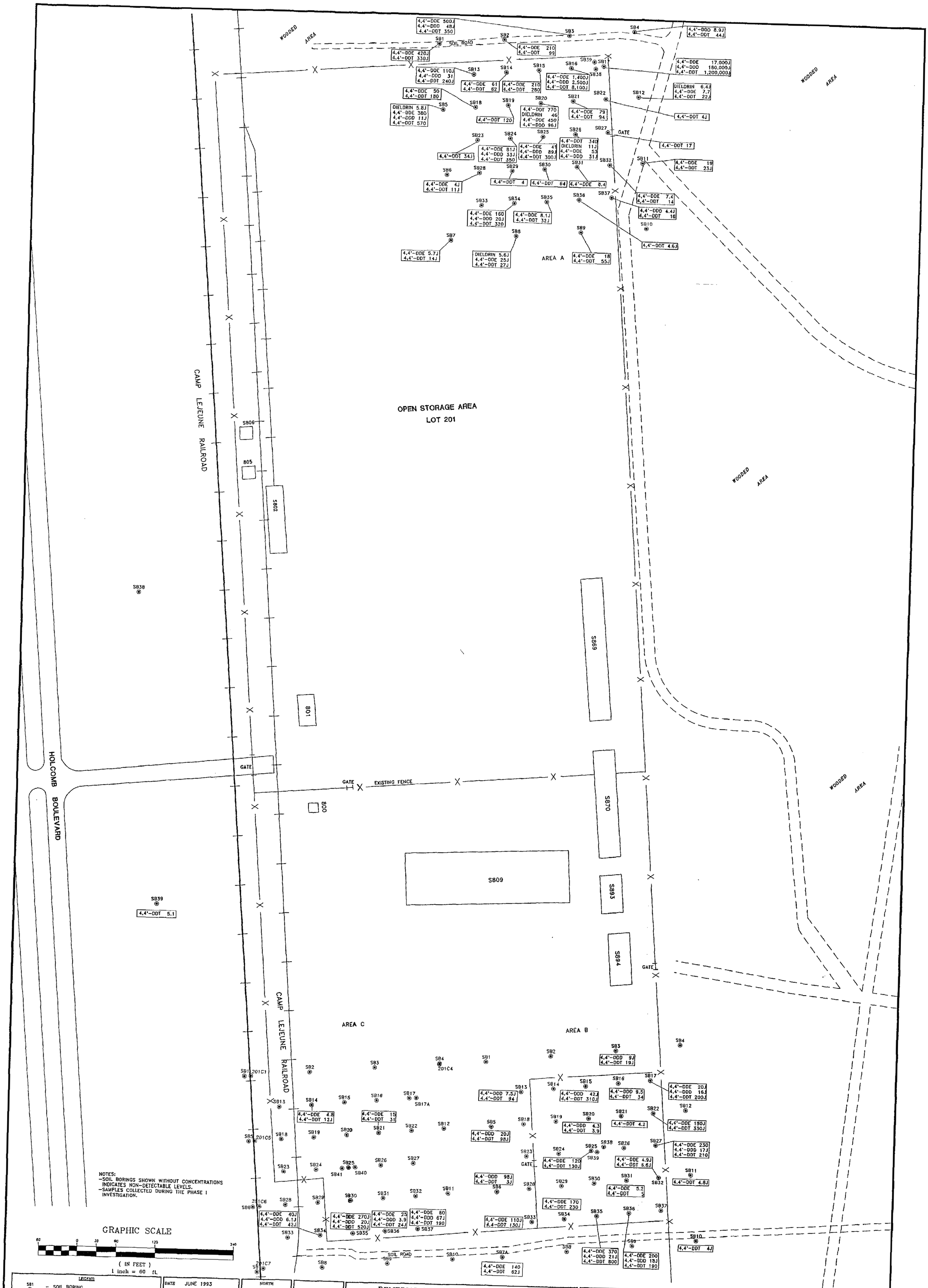
LEGEND

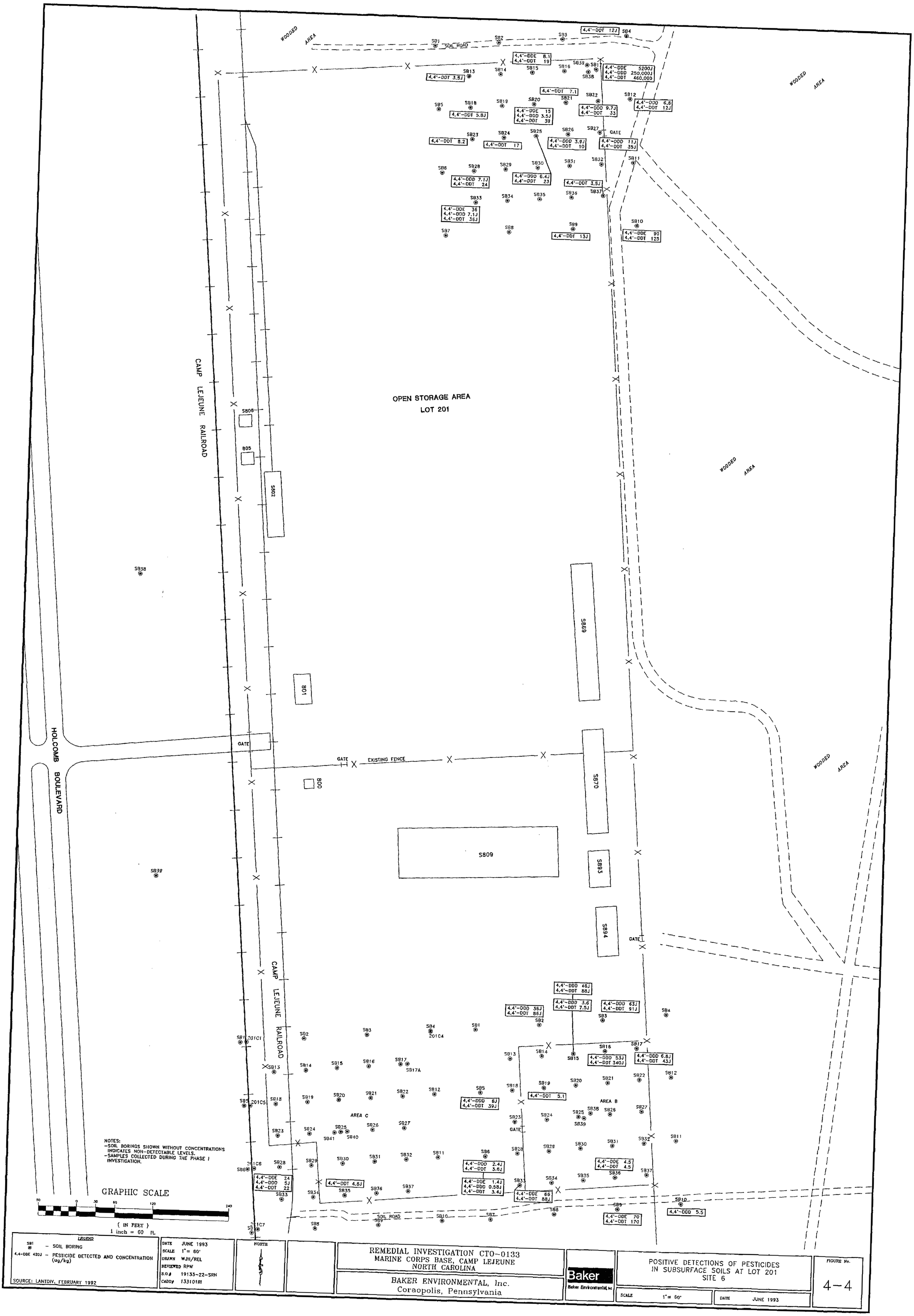
SB1	SOIL BORING
4,4'-DDT 7.7J	PESTICIDE DETECTED AND CONCENTRATION (ug/kg)

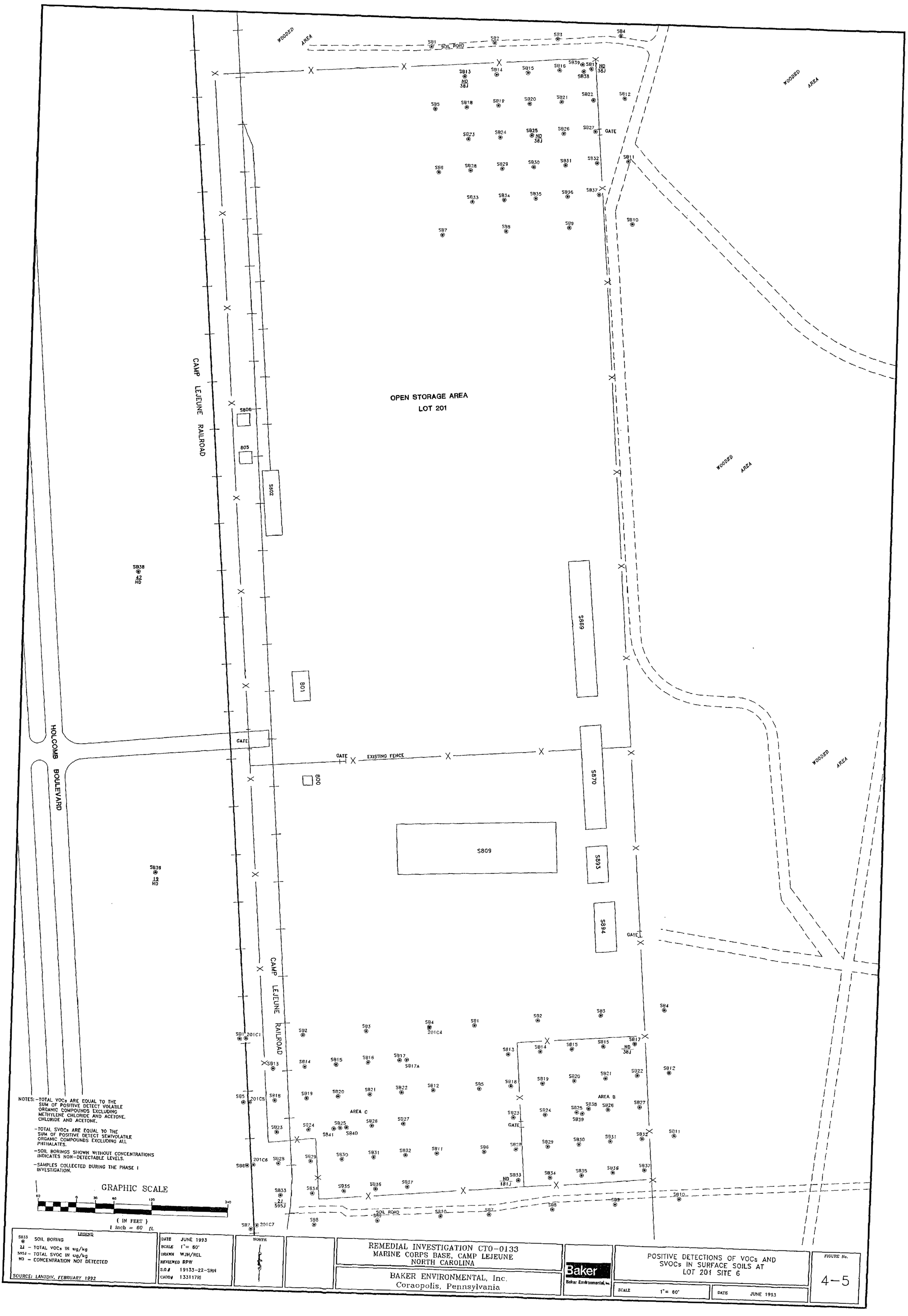
SOURCE: LANTDIV, FEBRUARY 1992

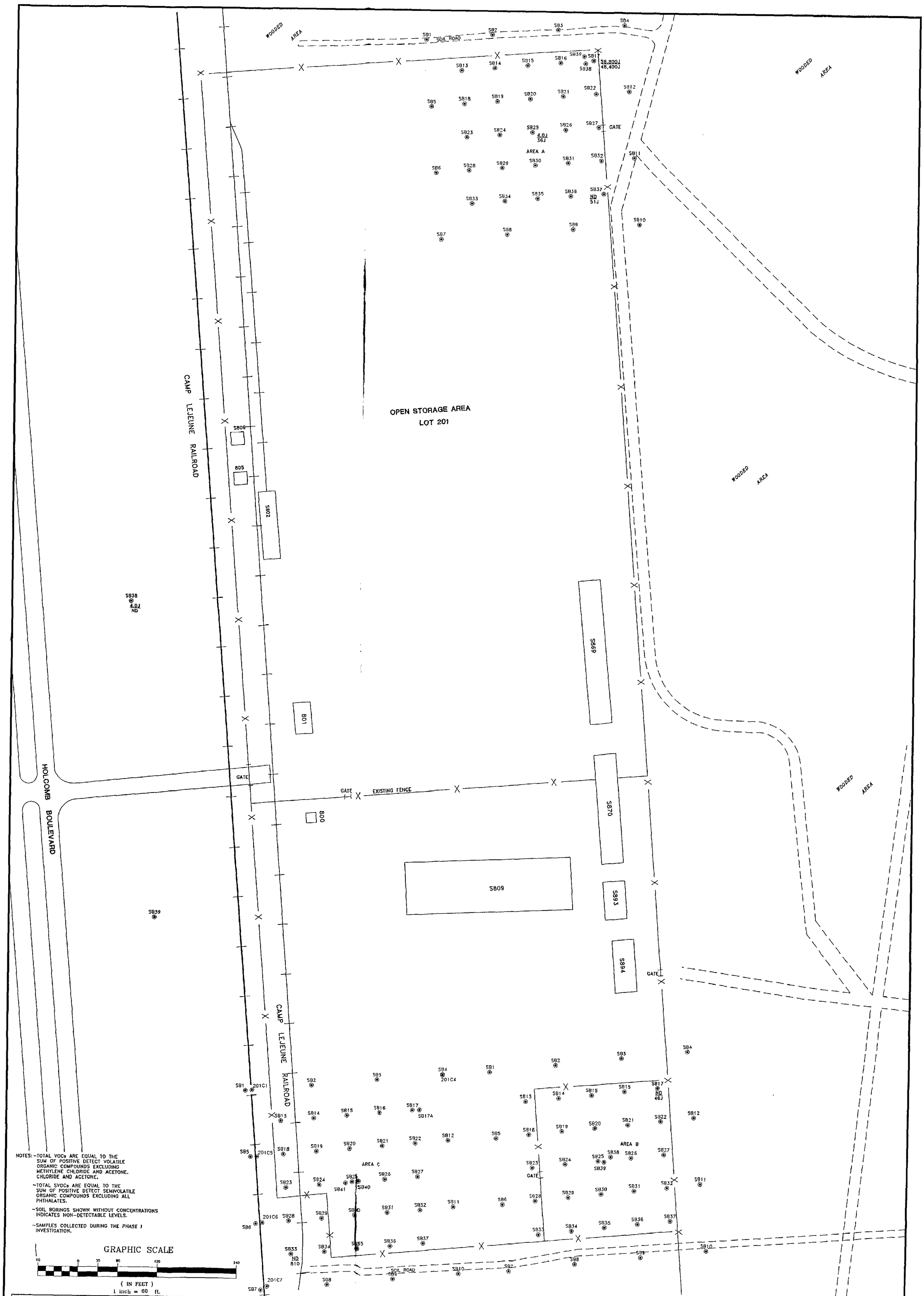
FIGURE 4-2
POSITIVE DETECTIONS OF PESTICIDES IN SUBSURFACE SOILS AT SITE 9
REMEDIAL INVESTIGATION CTO-0133

MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA


WOODED AREA
SOIL ROAD
OPEN STORAGE AREA
LOT 201
CAMP LEJEUNE RAILROAD
HOLCOMB BOULEVARD
GATE
EXISTING FENCE
AREA A
AREA B
AREA C
S802
S801
S800
S805
S806
S869
S870
S809
S893
S894
NOTES:
-SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.
GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.
LEGEND
SB1 - SOIL BORING
4,4'-DDE 420J - PESTICIDE DETECTED AND CONCENTRATION (ug/kg)
SOURCE: LANTDIV, FEBRUARY 1992
DATE JUNE 1993
SCALE 1"= 60'
DRAWN WJH/REL
REVIEWED RPW
S.O.# 19133-22-SRN
CADD# 133100RI
NORTH
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania
Baker
Baker Environmental, Inc.
POSITIVE DETECTIONS OF PESTICIDES
IN SURFACE SOILS AT LOT 201
SITE 6
SCALE 1"= 60'
DATE JUNE 1993
FIGURE No.
4-3


WOODED AREA
SOIL ROAD
OPEN STORAGE AREA
LOT 201
CAMP LEJEUNE RAILROAD
HOLCOMB BOULEVARD
GATE
EXISTING FENCE
S805
805
S802
801
800
S869
S870
S809
S893
S894
AREA B
AREA C
NOTES:
-SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.
GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.
LEGEND
SB1 – SOIL BORING
4,4-DDE 420J – PESTICIDE DETECTED AND CONCENTRATION (ug/kg)
SOURCE: LANTDIV, FEBRUARY 1992
DATE JUNE 1993
SCALE 1"= 60'
DRAWN WJH/REL
REVIEWED RPW
S.O.# 19133-22-SRN
CADD# 133101RI
NORTH
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania
Baker
Baker Environmental, Inc.
POSITIVE DETECTIONS OF PESTICIDES IN SUBSURFACE SOILS AT LOT 201
SITE 6
SCALE 1"= 60'
DATE JUNE 1993
FIGURE No.
4-4


WOODED AREA
SOIL ROAD
OPEN STORAGE AREA
LOT 201
CAMP LEJEUNE RAILROAD
HOLCOMB BOULEVARD
GATE
EXISTING FENCE
S802
S805
S806
S801
S800
S869
S870
S809
S893
S894
AREA B
AREA C
NOTES: -TOTAL VOCs ARE EQUAL TO THE SUM OF POSITIVE DETECT VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE. CHLORIDE AND ACETONE.
-TOTAL SVOCs ARE EQUAL TO THE SUM OF POSITIVE DETECT SEMIVOLATILE ORGANIC COMPOUNDS EXCLUDING ALL PHTHALATES.
-SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.
GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.
LEGEND
SB33 SOIL BORING
2J - TOTAL VOCs IN ug/kg
595J - TOTAL SVOC IN ug/kg
ND - CONCENTRATION NOT DETECTED
SOURCE: LANTDIV, FEBRUARY 1992
DATE JUNE 1993
SCALE 1"= 60'
DRAWN WJH/REL
REVIEWED RPW
S.O.# 19133-22-SRN
CADD# 133117RI
NORTH
REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania
Baker
Baker Environmental, Inc.
POSITIVE DETECTIONS OF VOCs AND SVOCs IN SURFACE SOILS AT LOT 201 SITE 6
SCALE 1"= 60'
DATE JUNE 1993
FIGURE No.
4-5



NOTES: -TOTAL VOCs ARE EQUAL TO THE SUM OF POSITIVE DETECT VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE. CHLORIDE AND ACETONE.

-TOTAL SVOCs ARE EQUAL TO THE SUM OF POSITIVE DETECT SEMIVOLATILE ORGANIC COMPOUNDS EXCLUDING ALL PHTHALATES.

-SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.

-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

LEGEND

SB33	SOIL BORING
56,800J	- TOTAL VOCs IN ug/kg
48,400J	- TOTAL SVOC IN ug/kg
ND	- CONCENTRATION NOT DETECTED

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 60'
DRAWN	WJH/REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133118RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

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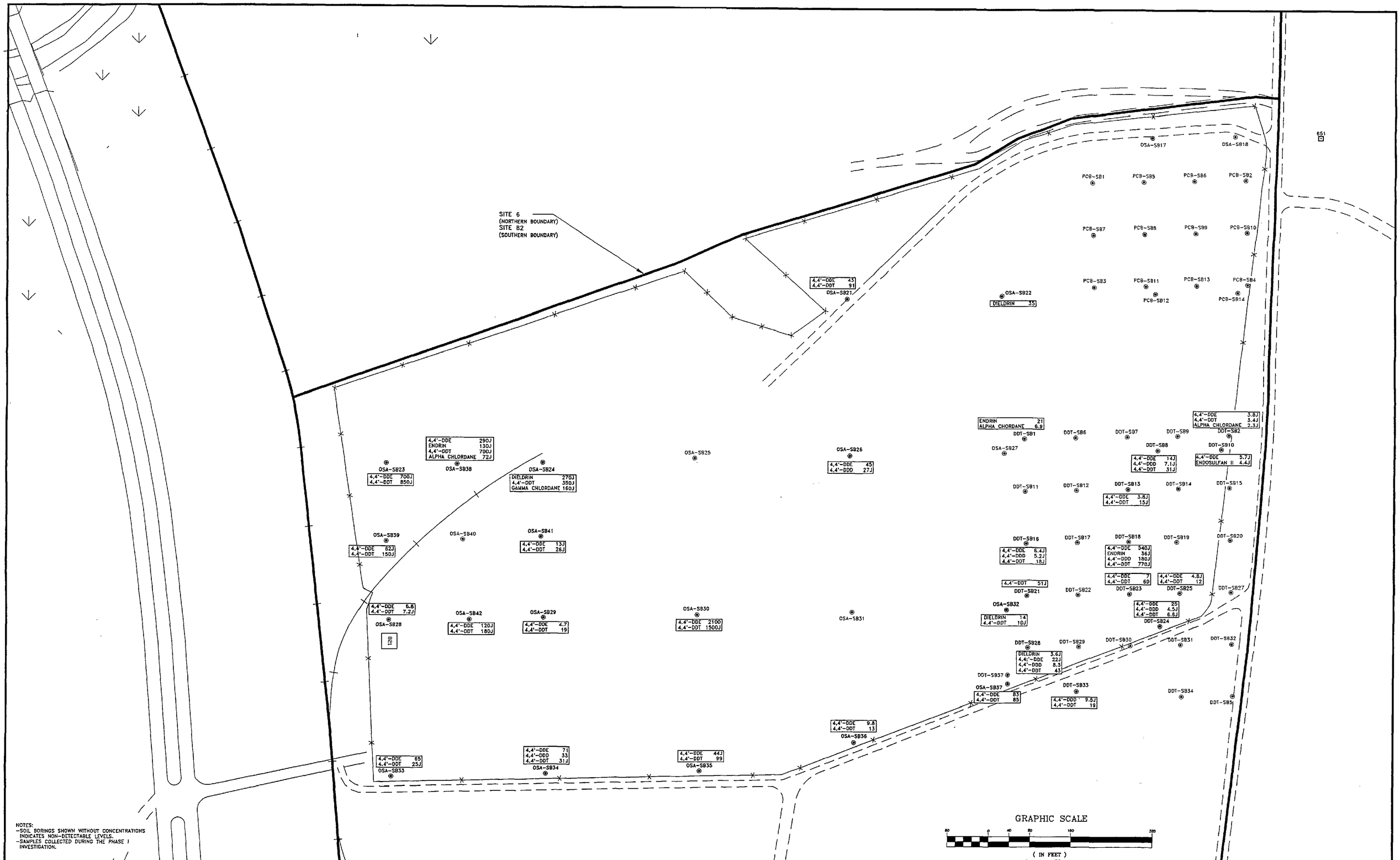
Baker Environmental, Inc.

POSITIVE DETECTIONS OF VOCs AND SVOCs IN SUBSURFACE SOILS AT LOT 201
SITE 6

SCALE 1"= 60'

DATE JUNE 1993

FIGURE No.
4-6



NOTES:
-SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

DDT-SB1 SOIL BORING

ENDRIN 21 PESTICIDE DETECTED AND CONCENTRATION (ug/kg)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 80'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133102RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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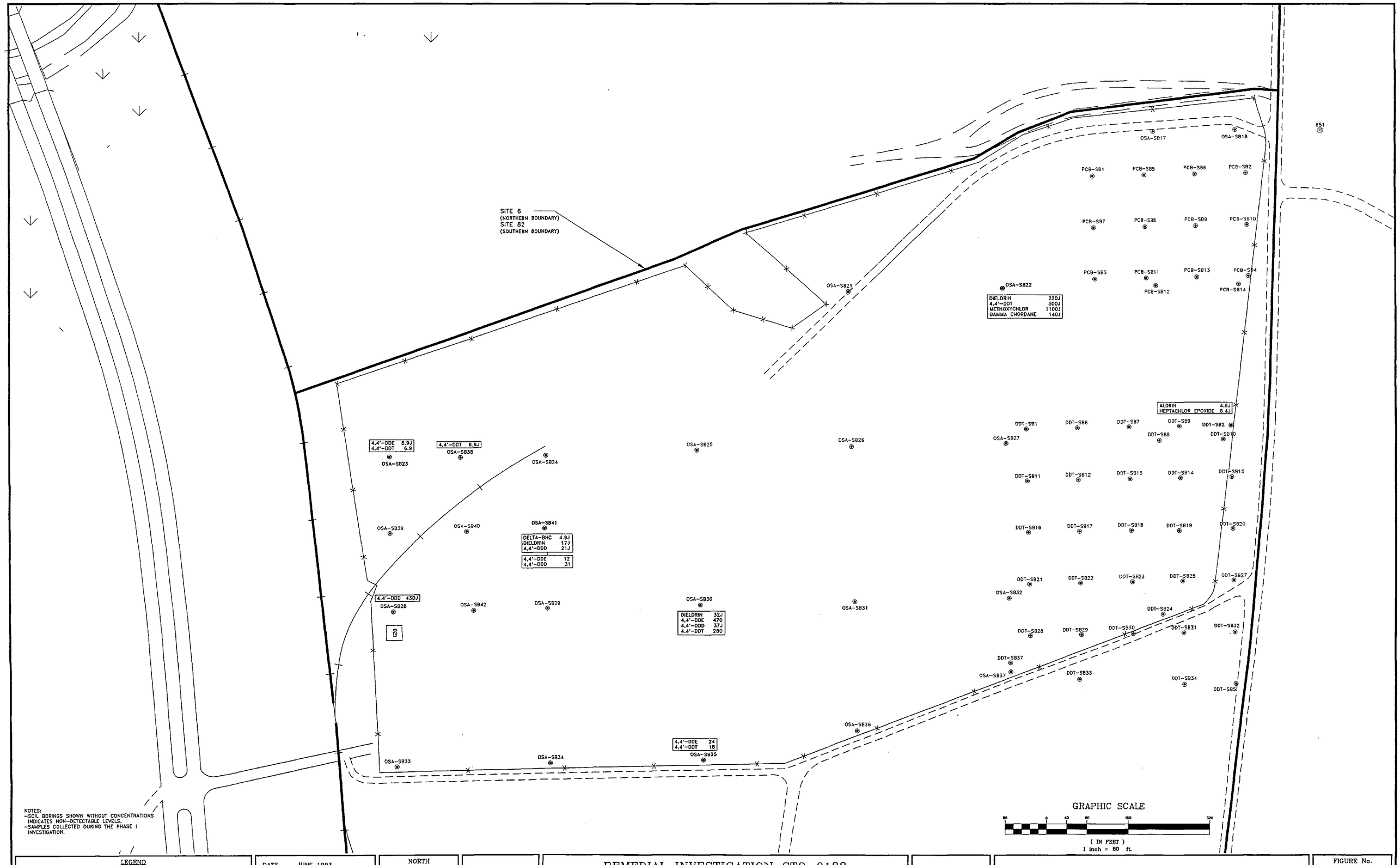
POSITIVE DETECTIONS OF PESTICIDES IN SURFACE SOILS AT LOT 203
SITE 6

SCALE 1"= 80'

DATE JUNE 1993

FIGURE No.
4-7



NOTES:
-SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

OSA-SB28	SOIL BORING
4,4'-DDT 430J	PESTICIDE DETECTED AND CONCENTRATION (ug/kg)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 80'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133103RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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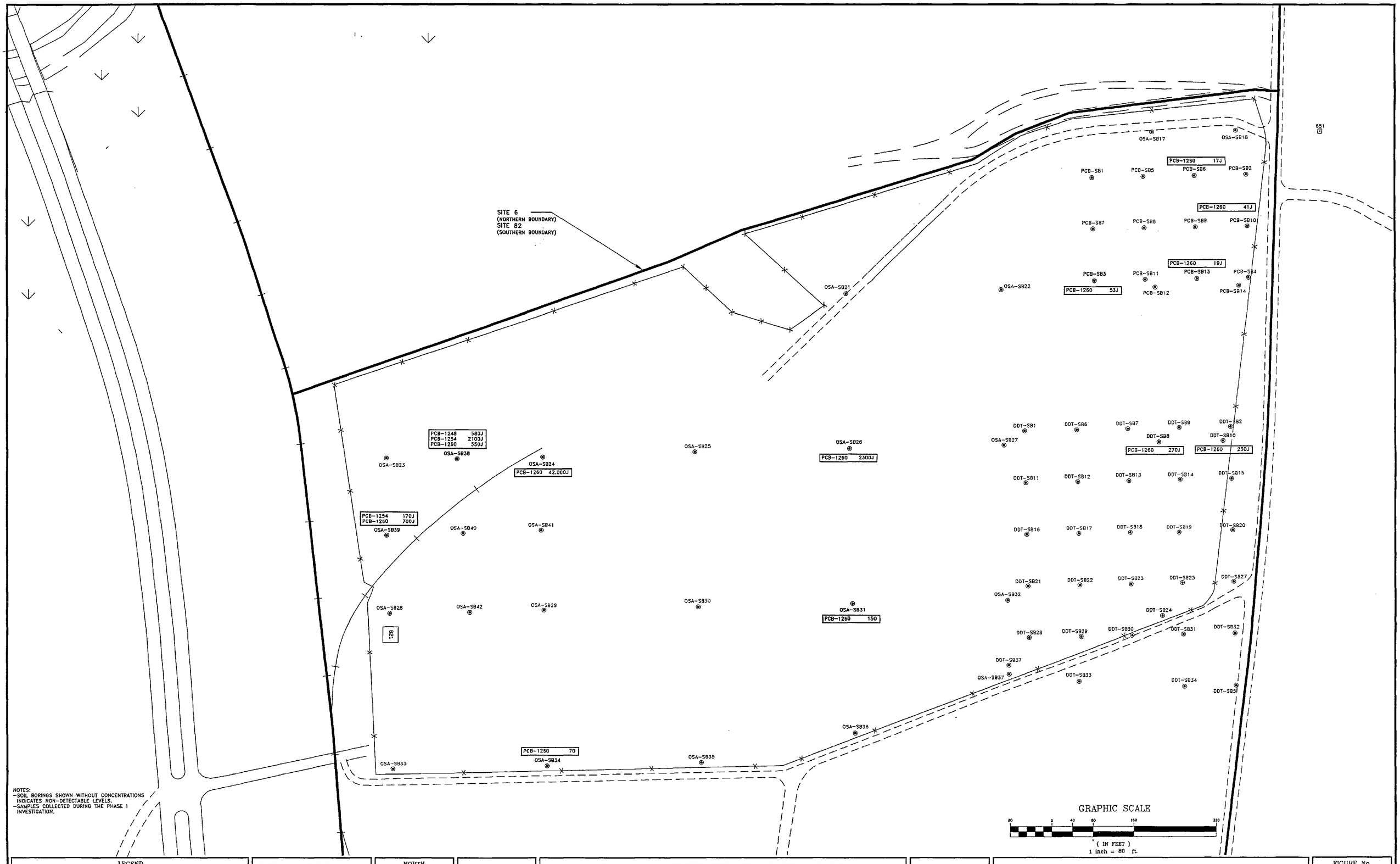
POSITIVE DETECTIONS OF PESTICIDES IN SUBSURFACE SOILS AT LOT 203
SITE 6

SCALE 1"= 80'
DATE JUNE 1993

FIGURE No.
4-8



NOTES:
-SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

PCB-SB3	SOIL BORING
PCB-1260 53J	PCB DETECTED AND CONCENTRATION (ug/kg)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 80'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133104RI

NORTH

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MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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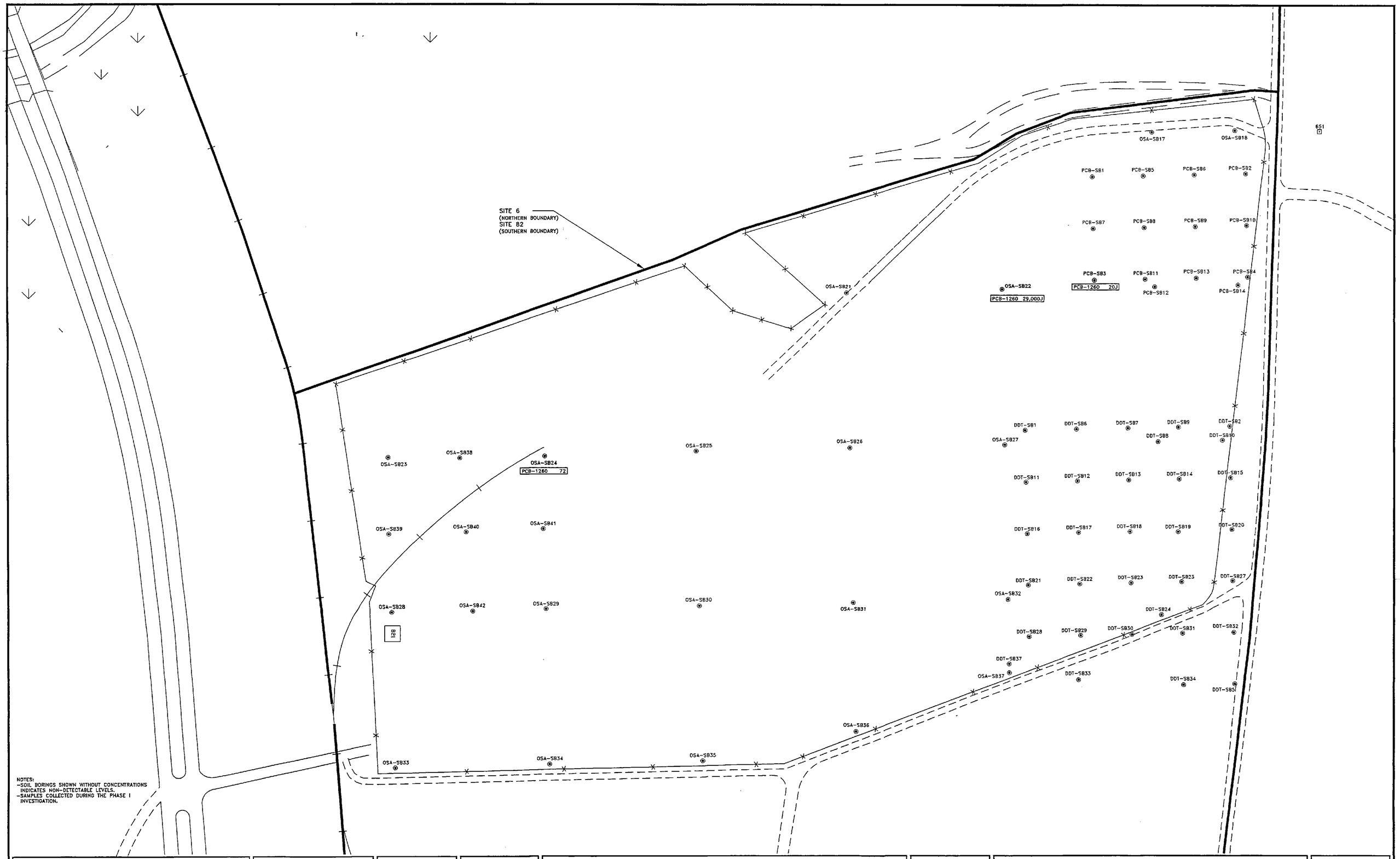
POSITVE DETECTIONS OF PCBs IN
SURFACE SOILS AT LOT 203
SITE 6

SCALE 1"= 80'

DATE JUNE 1993

FIGURE No.

4-9



NOTES:
-SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

PCB-SB3 SOIL BORING

PCB-1260 72 PCB DETECTED AND CONCENTRATION (ug/kg)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 80'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133105RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL,Inc.
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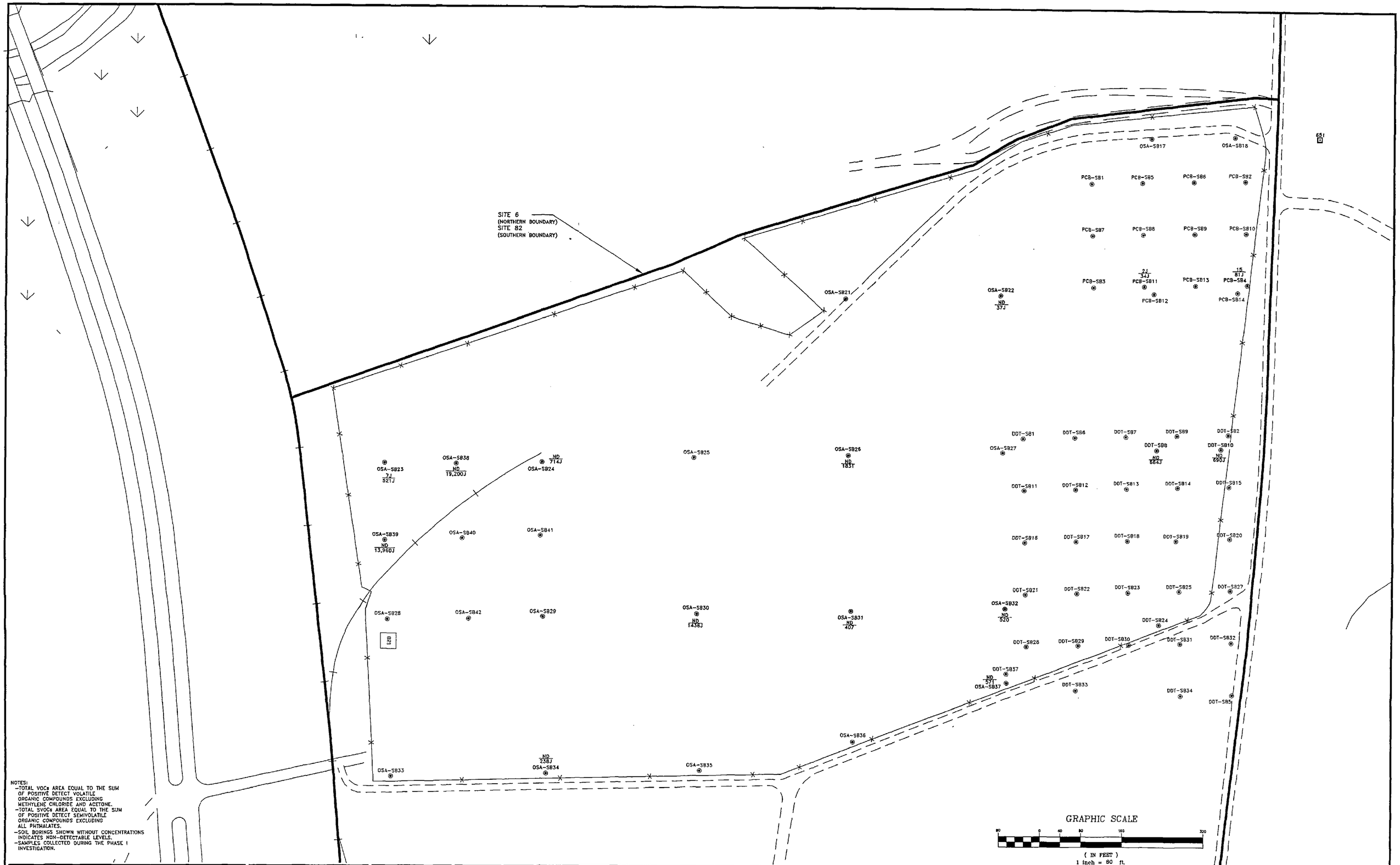
POSITIVE DETECTIONS OF PCBs IN SUBSURFACE SOILS AT LOT 203
SITE 6

SCALE 1"= 80'

DATE JUNE 1993

FIGURE No.

4-10



NOTES:
- TOTAL VOCs AREA EQUAL TO THE SUM OF POSITIVE DETECT VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE.
- TOTAL SVOCs AREA EQUAL TO THE SUM OF POSITIVE DETECT SEMIVOLATILE ORGANIC COMPOUNDS EXCLUDING ALL PHTHALATES.
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

OSA-SB23	SOIL BORING
7J	TOTAL VOCs IN ug/kg
521J	TOTAL SVOCs IN ug/kg
ND	CONCENTRATION NOT DETECTED

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 80'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133119RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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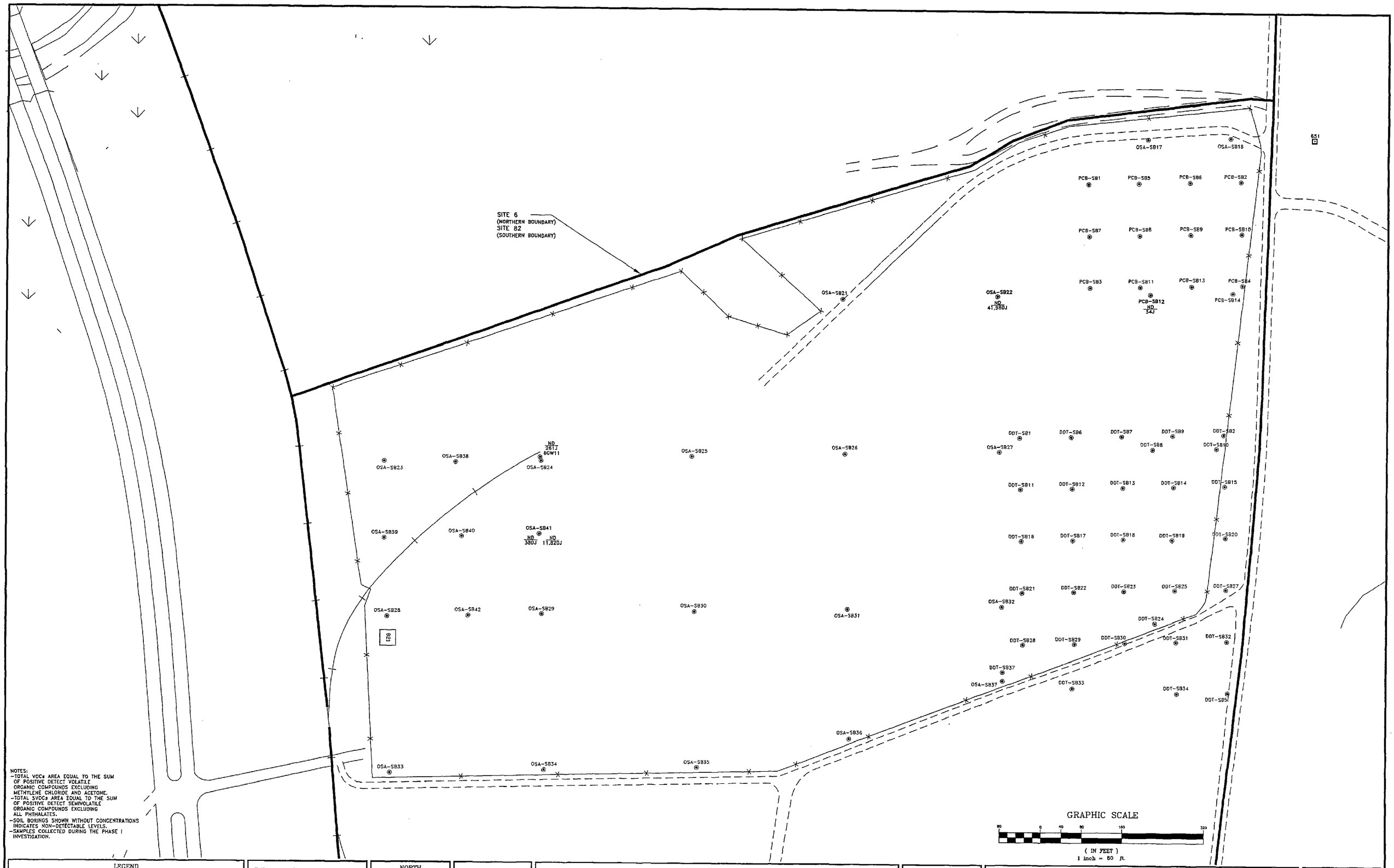
POSITIVE DETECTIONS OF VOCs AND SVOCs IN SURFACE SOILS AT LOT 203
SITE 6

SCALE 1"= 80'

DATE JUNE 1993

FIGURE No.
4-11



NOTES:
- TOTAL VOCs AREA EQUAL TO THE SUM OF POSITIVE DETECT VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE.
- TOTAL SVOCs AREA EQUAL TO THE SUM OF POSITIVE DETECT SEMIVOLATILE ORGANIC COMPOUNDS EXCLUDING ALL PHTHALATES.
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

PCB-SB12	SOIL BORING
ND / 34J	TOTAL VOCs IN ug/kg / TOTAL SVOCs IN ug/kg
ND	CONCENTRATION NOT DETECTED

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 80'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133120RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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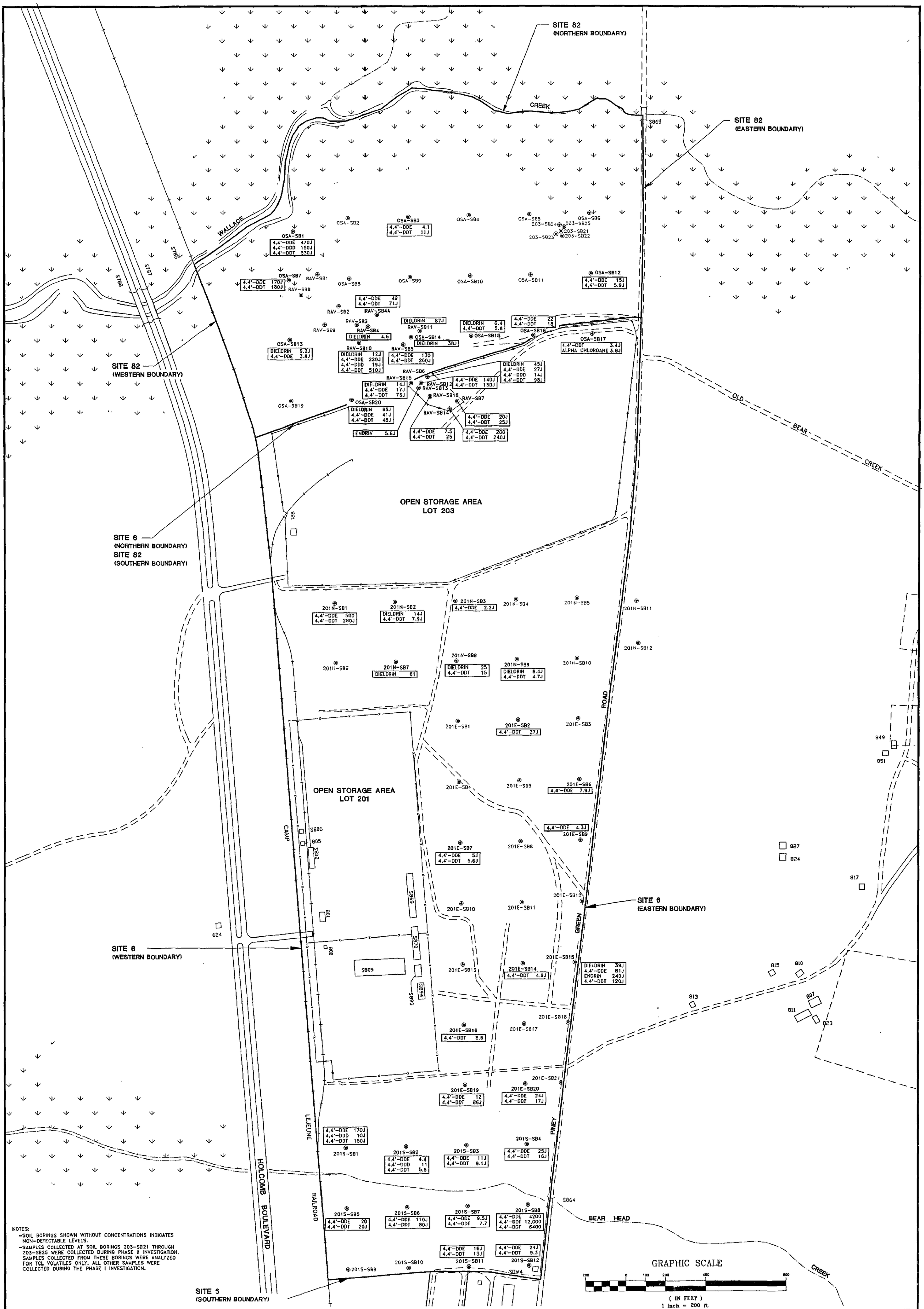
POSITIVE DETECTIONS OF VOCs AND SVOCs IN SUBSURFACE SOILS AT LOT 203, SITE 6

SCALE 1"= 80'

DATE APRIL 1993

FIGURE No.

4-12



NOTES:
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED AT SOIL BORINGS 203-SB21 THROUGH 203-SB25 WERE COLLECTED DURING PHASE II INVESTIGATION. SAMPLES COLLECTED FROM THESE BORINGS WERE ANALYZED FOR TCL VOLATILES ONLY. ALL OTHER SAMPLES WERE COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

201S-SB1	SOIL BORING
4,4'-DDT 150J	PESTICIDE DETECTED AND CONCENTRATION (ug/kg)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 200'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133106RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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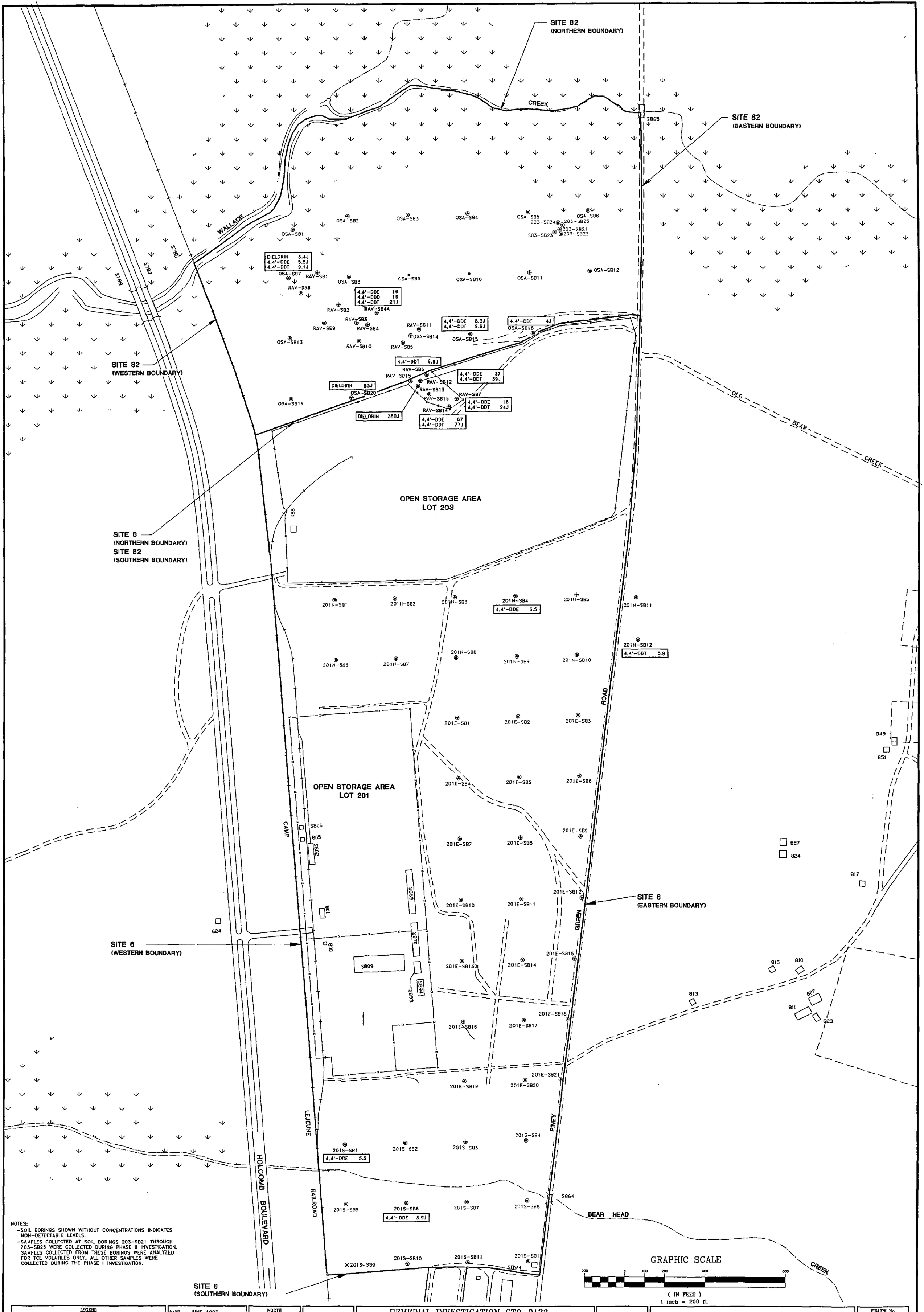
POSITIVE DETECTIONS OF PESTICIDES
IN SURFACE SOILS AT
WOODED AREAS, the RAVINE and SITE 82
SITES 6 and 82

SCALE 1"= 200' DATE JUNE 1993

FIGURE No.
4-13



NOTES:
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED AT SOIL BORINGS 203-SB21 THROUGH 203-SB25 WERE COLLECTED DURING PHASE II INVESTIGATION. SAMPLES COLLECTED FROM THESE BORINGS WERE ANALYZED FOR TCL VOLATILES ONLY. ALL OTHER SAMPLES WERE COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

201S-SB1	SOIL BORING
4,4'-DDE 5.3	PESTICIDE DETECTED AND CONCENTRATION (ug/kg)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 200'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133107RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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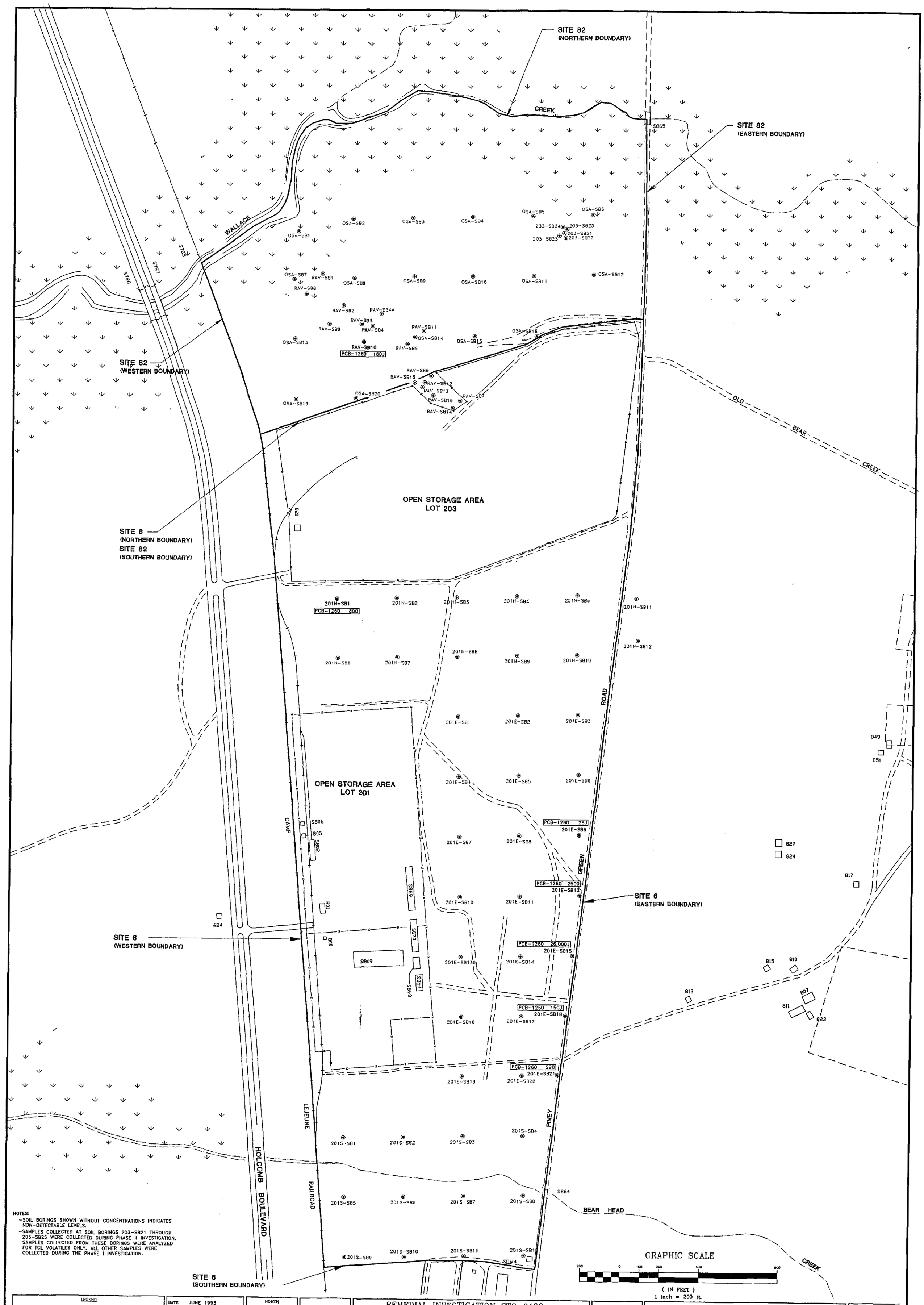
POSITIVE DETECTIONS OF PESTICIDES IN SUBSURFACE SOILS AT WOODED AREAS, the RAVINE and SITE 82 SITES 6 and 82

SCALE 1"= 200' DATE JUNE 1993

FIGURE No.
4-14



NOTES:
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED AT SOIL BORINGS 203-SB21 THROUGH 203-SB25 WERE COLLECTED DURING PHASE II INVESTIGATION. SAMPLES COLLECTED FROM THESE BORINGS WERE ANALYZED FOR TCL VOLATILES ONLY. ALL OTHER SAMPLES WERE COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

201N-SB1 SOIL BORING

PCB-1260 800 PCB DETECTED AND CONCENTRATION (ug/kg)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 200'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133108RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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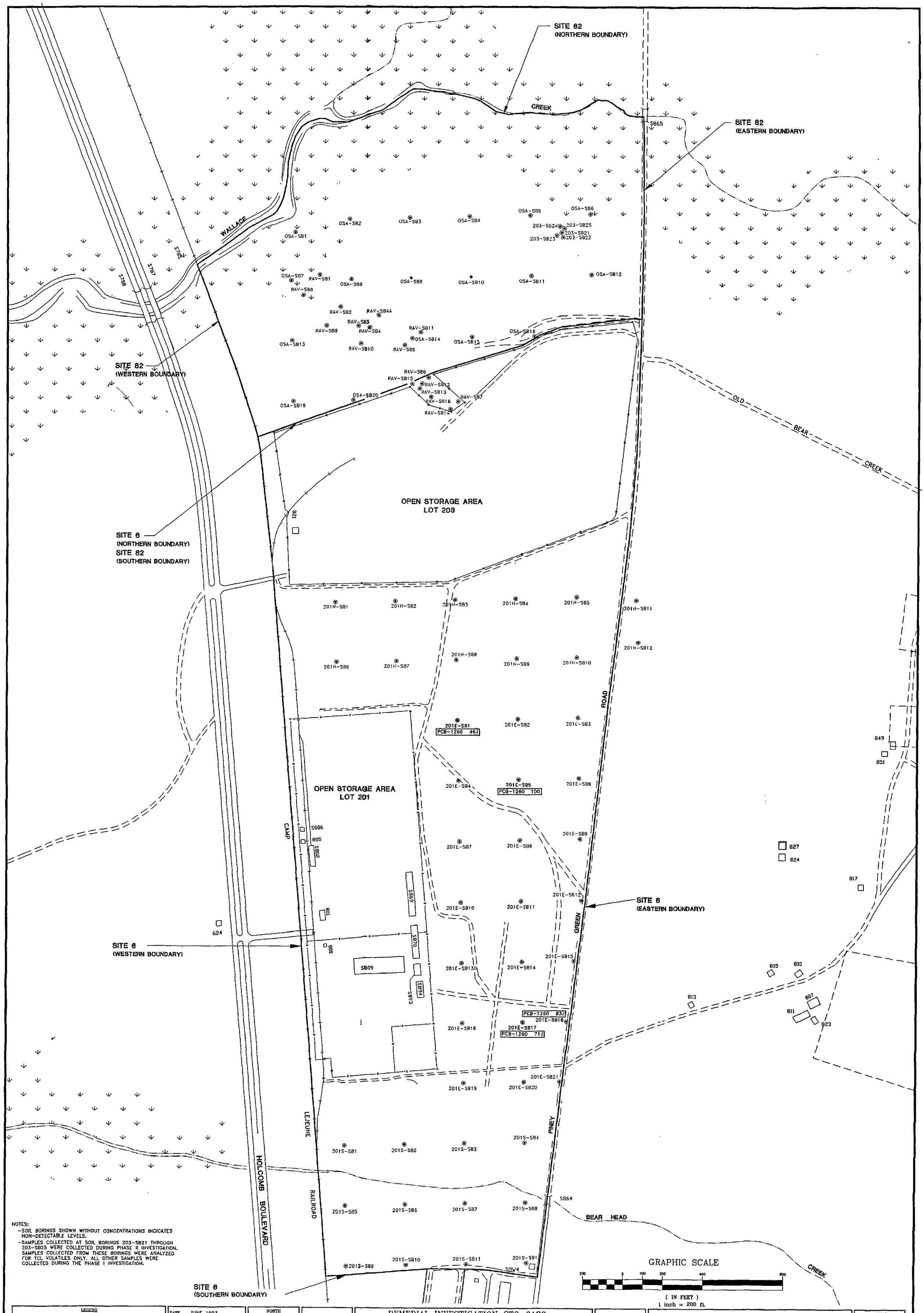
POSITIVE DETECTIONS OF PCBs IN SURFACE SOILS AT WOODED AREAS ,the RAVINE and SITE 82 SITES 6 and 82

SCALE 1"= 200' DATE JUNE 1993

FIGURE No.
4-15



NOTES:
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED AT SOIL BORINGS 203-SB21 THROUGH 203-SB25 WERE COLLECTED DURING PHASE II INVESTIGATION. SAMPLES COLLECTED FROM THESE BORINGS WERE ANALYZED FOR TCL VOLATILES ONLY. ALL OTHER SAMPLES WERE COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND
201E-SB1 SOIL BORING
PCB-1260 46J PCB DETECTED AND CONCENTRATION (ug/kg)
SOURCE: LANTDIV, FEBRUARY 1992

DATE JUNE 1993
SCALE 1" = 200'
DRAWN R.E.L.
REVIEWED RPW
S.O.# 19133-22-SRN
CADD# 133109RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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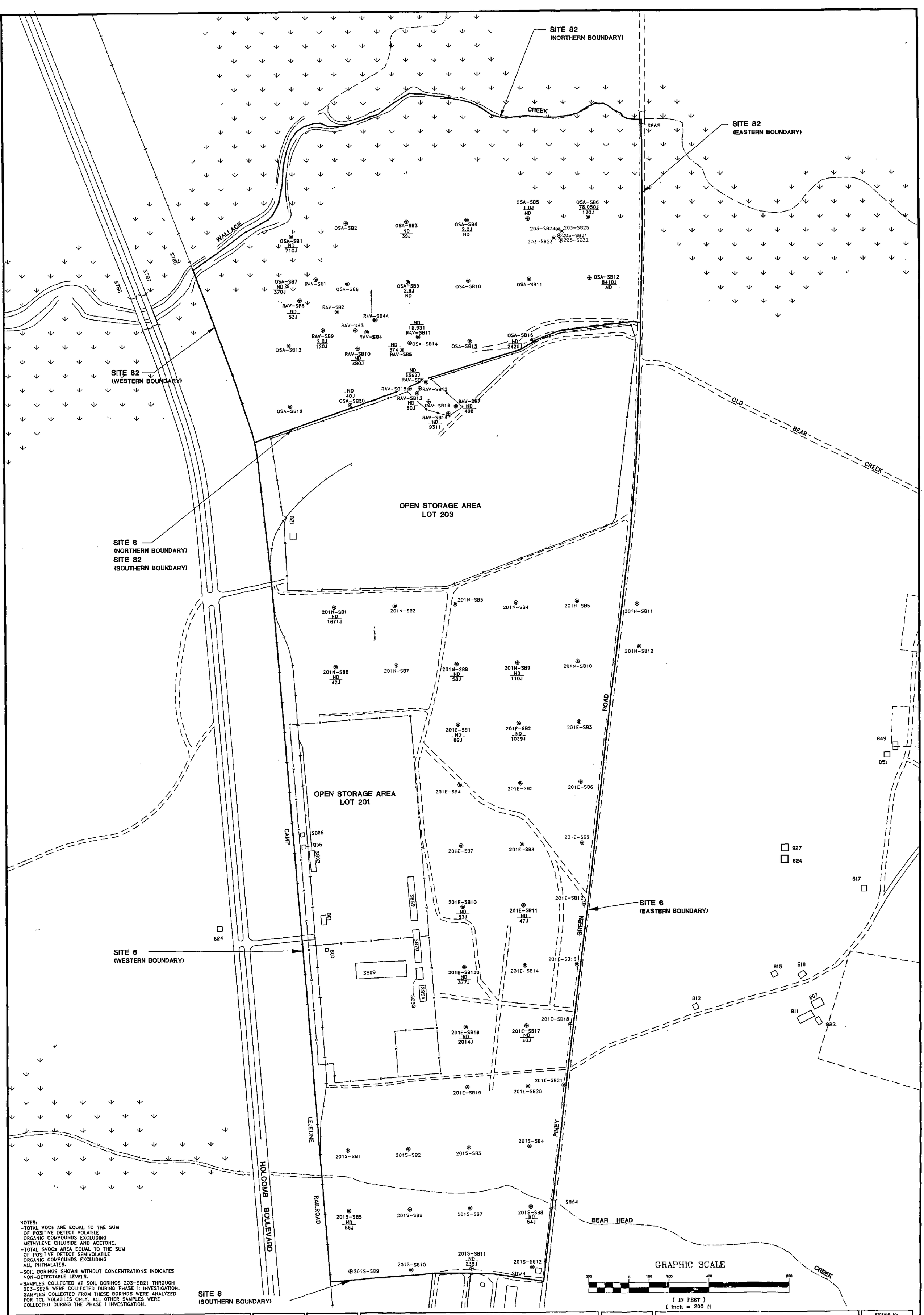
POSITIVE DETECTIONS OF PCBs IN SUBSURFACE SOILS AT WOODED AREAS ,the RAVINE and SITE 82 SITES 6 and 82

SCALE 1" = 200'
DATE JUNE 1993

FIGURE No.
4-16



NOTES:
- TOTAL VOCs ARE EQUAL TO THE SUM OF POSITIVE DETECT VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE.
- TOTAL SVOCs AREA EQUAL TO THE SUM OF POSITIVE DETECT SEMIVOLATILE ORGANIC COMPOUNDS EXCLUDING ALL PHTHALATES.
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED AT SOIL BORINGS 203-SB21 THROUGH 203-SB25 WERE COLLECTED DURING PHASE II INVESTIGATION. SAMPLES COLLECTED FROM THESE BORINGS WERE ANALYZED FOR TCL VOLATILES ONLY. ALL OTHER SAMPLES WERE COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

RAV-SB9	SOIL BORING
2.0J	TOTAL VOCs IN ug/kg
120J	TOTAL SVOCs IN ug/kg
ND	CONCENTRATION NOT DETECTED

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1" = 200'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133121RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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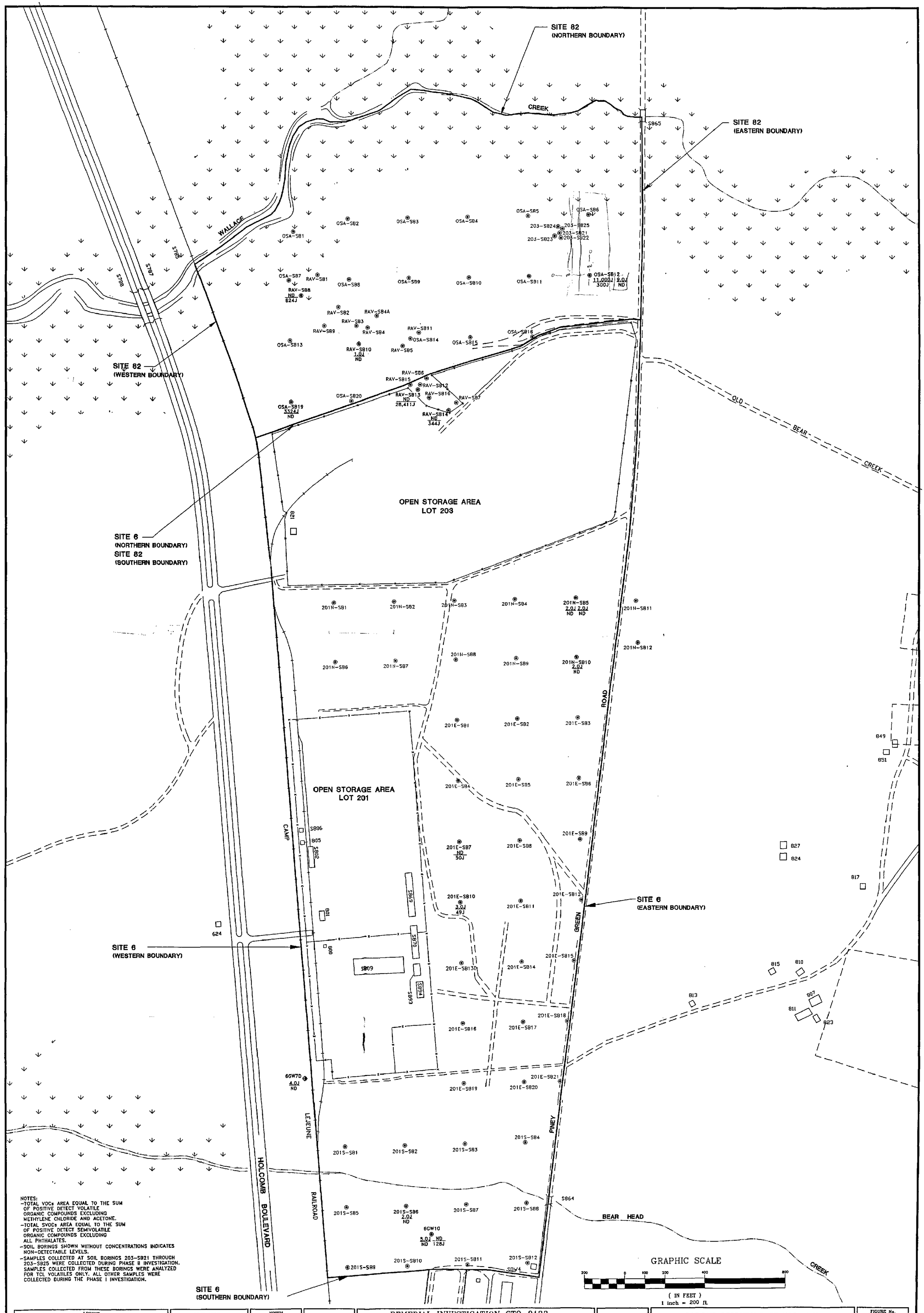
POSITIVE DETECTIONS OF VOCs AND SVOCs IN SURFACE SOILS AT WOODED AREAS, the RAVINE and SITE 82 SITES 2 and 82

SCALE 1" = 200'
DATE JUNE 1993

FIGURE No.
4-17



NOTES:
- TOTAL VOCs AREA EQUAL TO THE SUM OF POSITIVE DETECT VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE.
- TOTAL SVOCs AREA EQUAL TO THE SUM OF POSITIVE DETECT SEMIVOLATILE ORGANIC COMPOUNDS EXCLUDING ALL PHTHALATES.
- SOIL BORINGS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS.
- SAMPLES COLLECTED AT SOIL BORINGS 203-SB21 THROUGH 203-SB25 WERE COLLECTED DURING PHASE II INVESTIGATION. SAMPLES COLLECTED FROM THESE BORINGS WERE ANALYZED FOR TCL VOLATILES ONLY. ALL OTHER SAMPLES WERE COLLECTED DURING THE PHASE I INVESTIGATION.

LEGEND

OSA-SB23	SOIL BORING
71 / 521J	TOTAL VOCs IN ug/kg / TOTAL SVOCs IN ug/kg
ND	CONCENTRATION NOT DETECTED

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 200'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133122RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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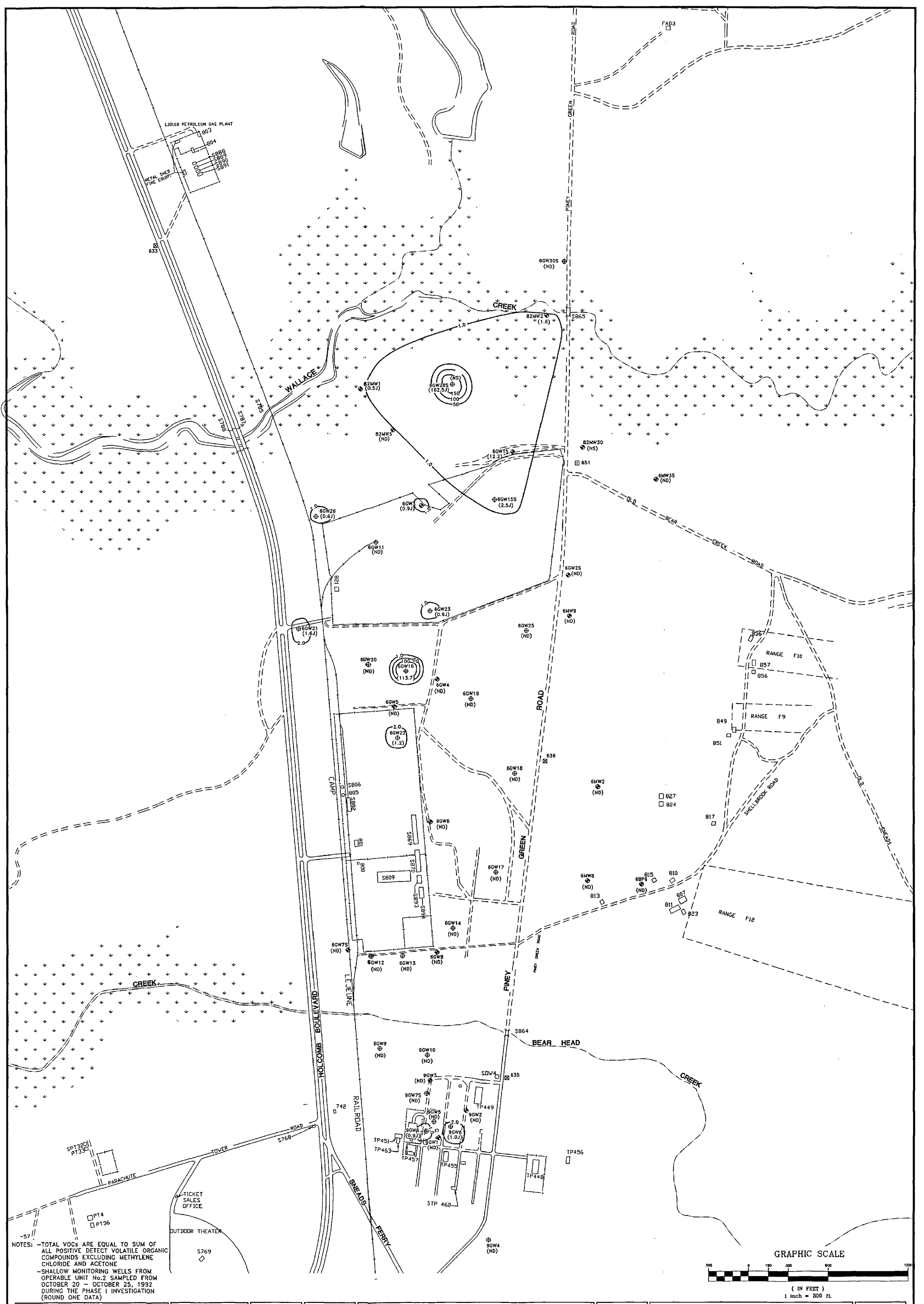
POSITIVE DETECTIONS OF VOCs AND AND SVOCs IN SUBSURFACE SOILS AT WOODED AREAS, the RAVINE and SITE 82 SITES 6 and 82

SCALE 1"= 200' DATE JUNE 1993

FIGURE No. 4-18



NOTES: –TOTAL VOCs ARE EQUAL TO SUM OF ALL POSITIVE DETECT VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE
–SHALLOW MONITORING WELLS FROM OPERABLE UNIT No.2 SAMPLED FROM OCTOBER 20 – OCTOBER 25, 1992 DURING THE PHASE I INVESTIGATION (ROUND ONE DATA)

LEGEND

(113.7)	TOTAL VOC CONCENTRATION (WELL SPECIFIC) IN ug/L
(ND)	VOCs NOT DETECTED
(NS)	WELL NOT SAMPLED
—100—	ESTIMATED TOTAL VOC ISOCONTOUR LINE (ug/L)
6MW2	EXISTING SHALLOW MONITORING WELL
6GW18	PHASE I SHALLOW MONITORING WELLS

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133123RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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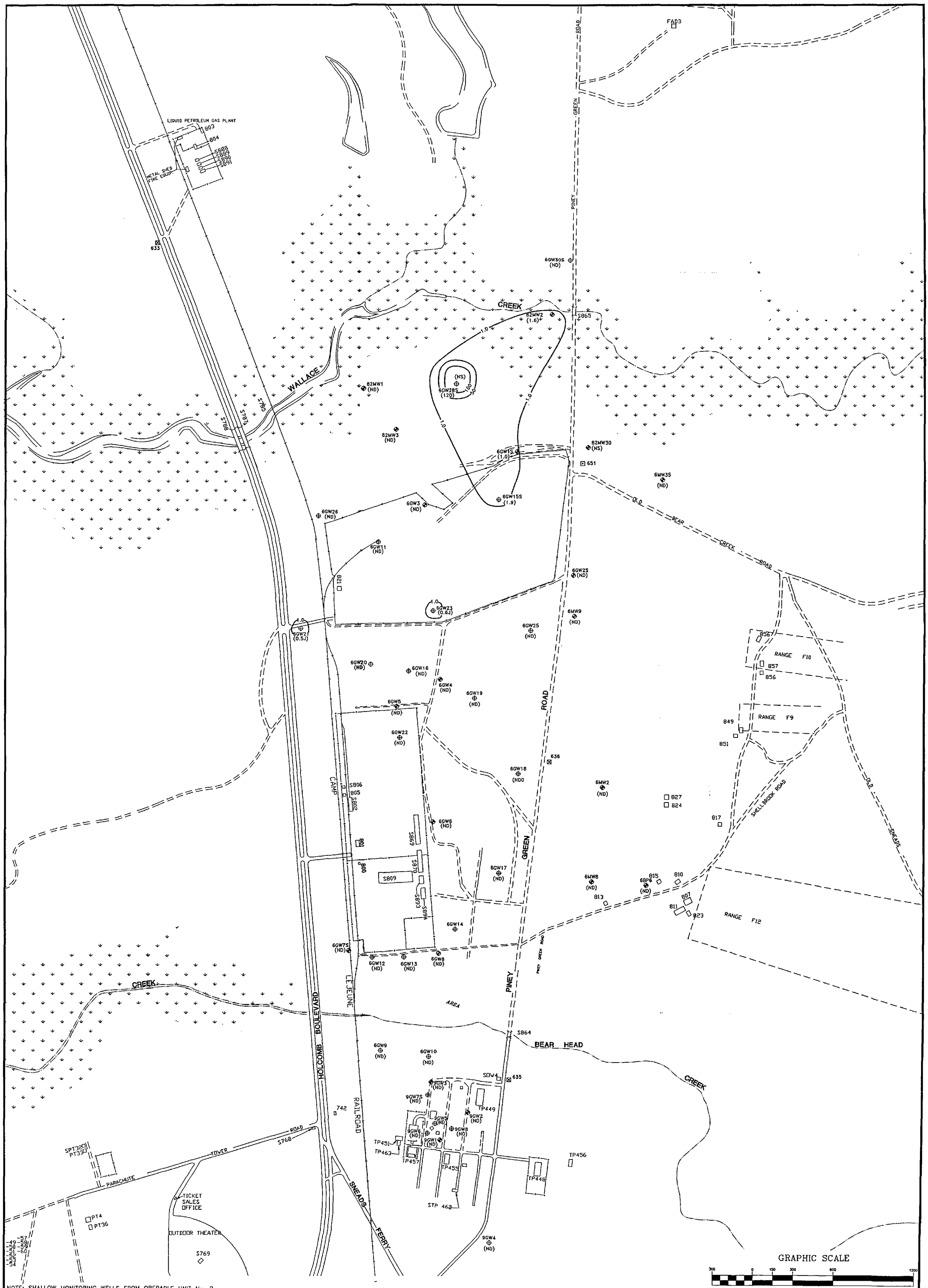
TOTAL VOCs ISOCONCENTRATION MAP
FOR SURFICIAL GROUNDWATER–PHASE I RESULTS
OPERABLE UNIT No. 2

SCALE 1"= 300' DATE JUNE 1993

FIGURE No.
4–19



NOTE: SHALLOW MONITORING WELLS FROM OPERABLE UNIT No. 2
SAMPLED FROM OCTOBER 20 – OCTOBER 25, 1992
DURING THE PHASE I INVESTIGATION (ROUND ONE DATA)

LEGEND

(120)	TCE CONCENTRATION (WELL SPECIFIC) ug/L
(ND)	TCE NOT DETECTED
(NS)	WELL NOT SAMPLED
—100—	ESTIMATED TCE ISOCONTOUR LINE (ug/L)
6MW2	EXISTING SHALLOW MONITORING WELL
6GW18	PHASE I SHALLOW MONITORING WELL

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133124RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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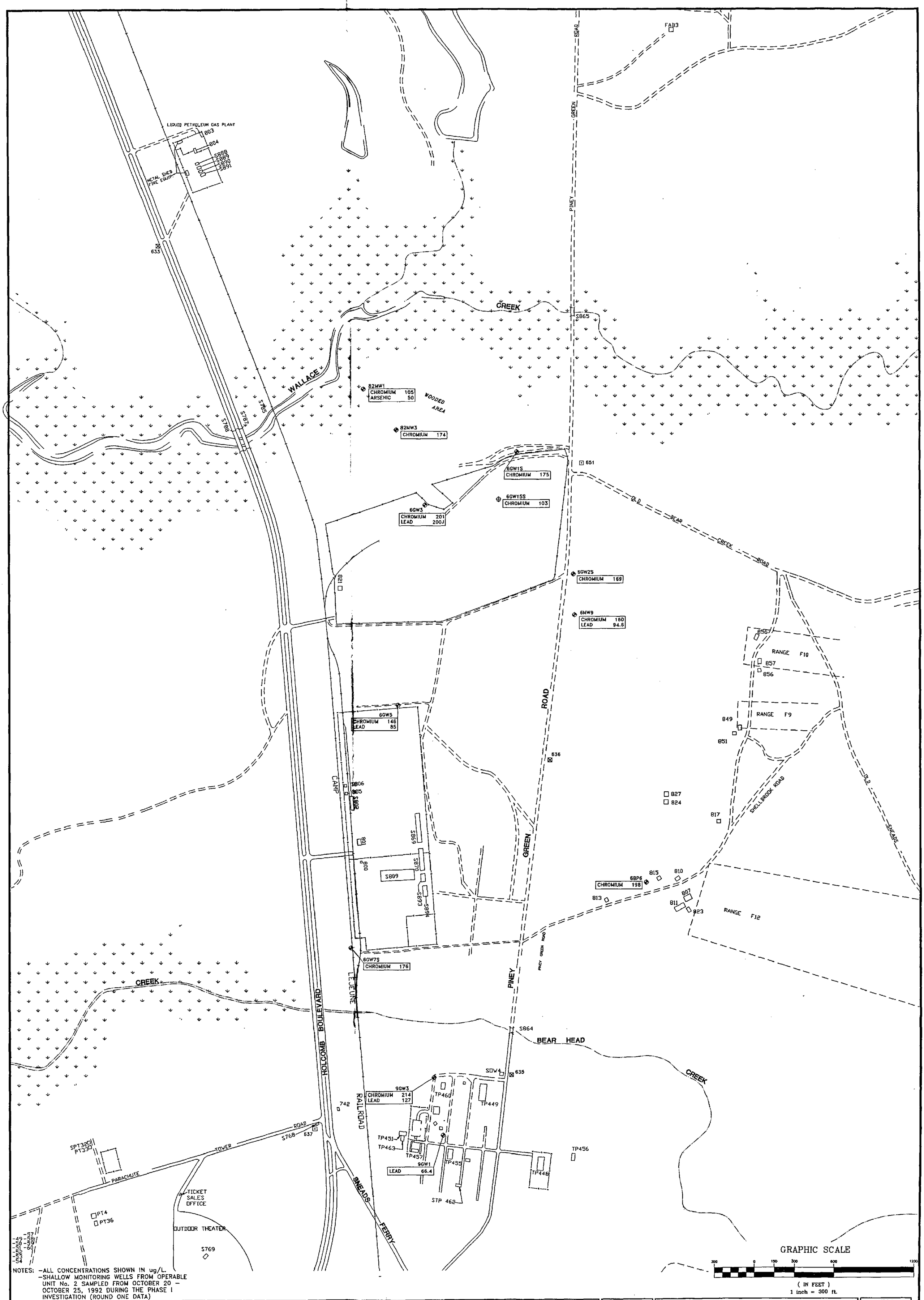
TCE ISOCONCENTRATION MAP
FOR SURFICIAL GROUNDWATER-PHASE I RESULTS
OPERABLE UNIT No. 2

SCALE 1"= 300' DATE JUNE 1993

FIGURE No.
4-20



NOTES: -ALL CONCENTRATIONS SHOWN IN ug/L.
-SHALLOW MONITORING WELLS FROM OPERABLE UNIT No. 2 SAMPLED FROM OCTOBER 20 – OCTOBER 25, 1992 DURING THE PHASE I INVESTIGATION (ROUND ONE DATA)

LEGEND
6GW2S EXISTING SHALLOW MONITORING WELL
6GW16 PHASE I SHALLOW MONITORING WELL

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133125RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

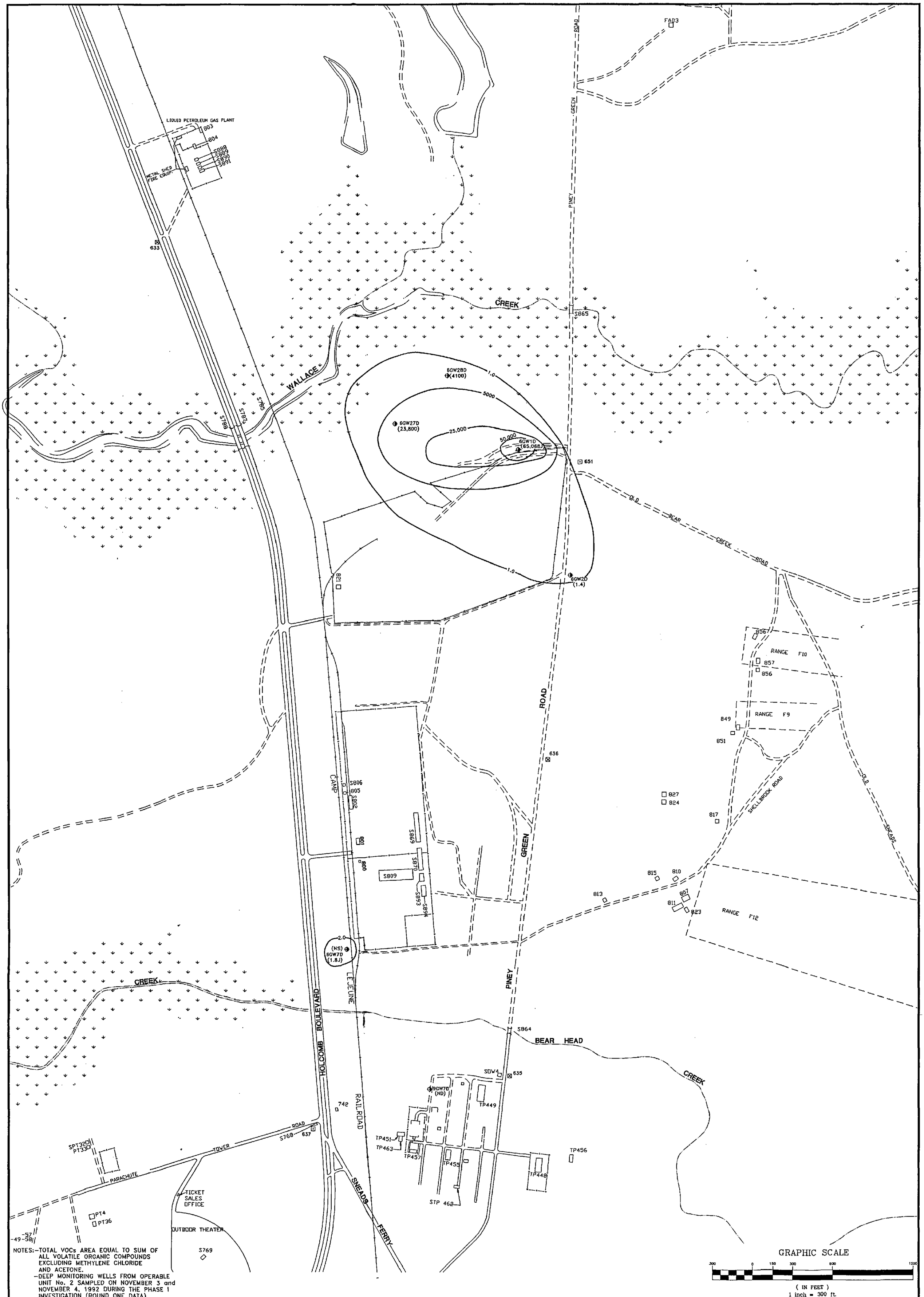
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

POSITIVE DETECTIONS OF TOTAL METALS ABOVE THE PRIMARY FEDERAL MCLs IN SURFICIAL GROUNDWATER–PHASE I RESULTS
OPERABLE UNIT No. 2

SCALE 1"= 300' DATE JUNE 1993

FIGURE No.
4-21



NOTES:-TOTAL VOCs AREA EQUAL TO SUM OF ALL VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE.
-DEEP MONITORING WELLS FROM OPERABLE UNIT No. 2 SAMPLED ON NOVEMBER 3 and NOVEMBER 4, 1992 DURING THE PHASE I INVESTIGATION (ROUND ONE DATA)

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LEGEND

9GW7D	PHASE I DEEP MONITORING WELL
(1.8)	TOTAL VOC CONCENTRATION (WELL SPECIFIC) IN ug/L
(ND)	VOCs NOT DETECTED
—2.0—	ESTIMATED TOTAL VOC ISOCONTOUR LINE (ug/L)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133126RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

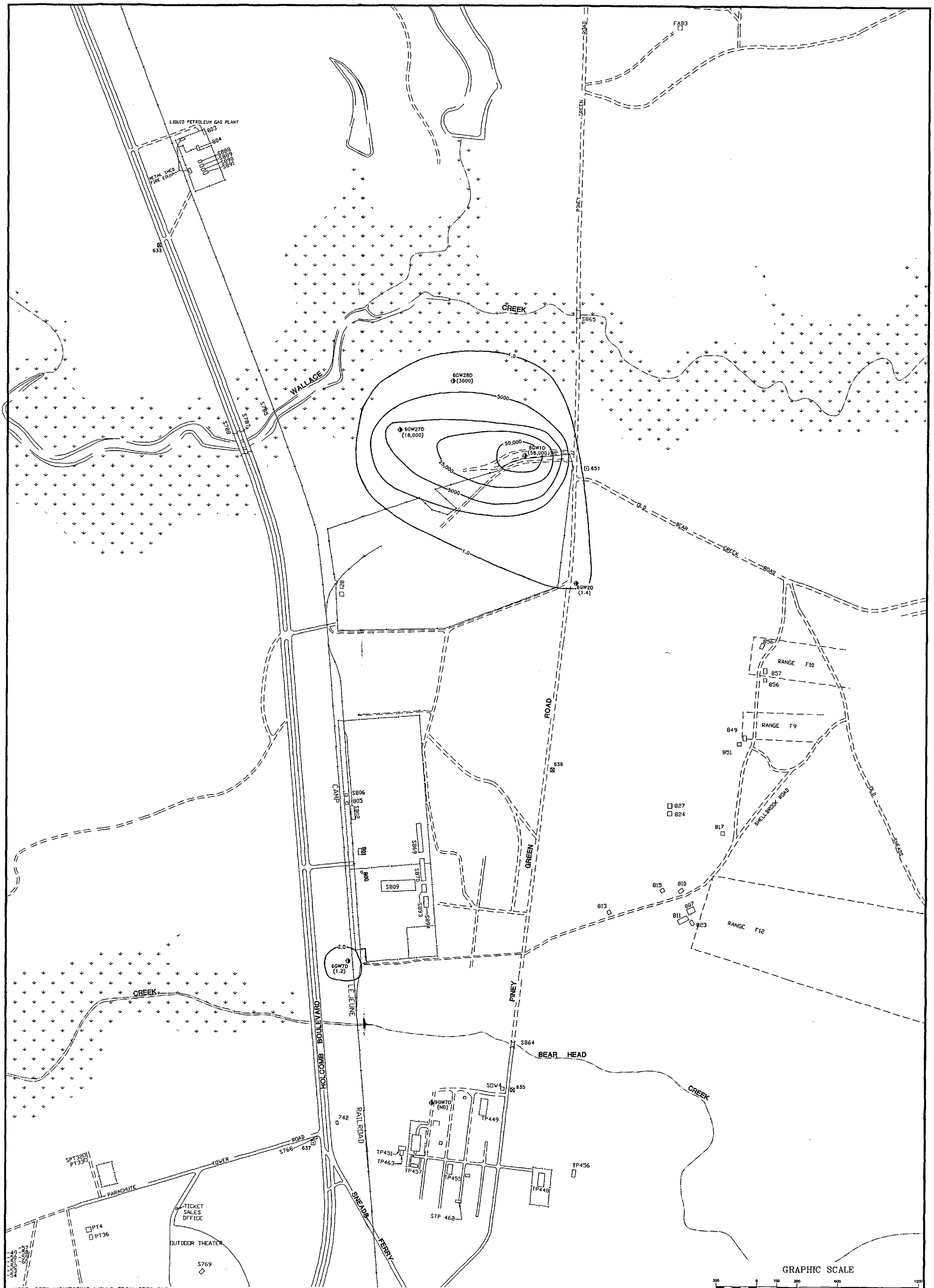
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

TOTAL VOCs ISOCONCENTRATION MAP
FOR DEEP GROUNDWATER-PHASE I RESULTS
OPERABLE UNIT No. 2

SCALE 1"= 300' DATE JUNE 1993

FIGURE No.
4-22



NOTE: DEEP MONITORING WELLS FROM OPERABLE UNIT No. 2 SAMPLED ON NOVEMBER 3 and NOVEMBER 4, 1992 DURING THE PHASE I INVESTIGATION (ROUND ONE DATA).

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LEGEND	
6GW2D	PHASE I DEEP MONITORING WELL
(1.2)	TCE CONCENTRATION (WELL SPECIFIC) IN ug/L
(ND)	TCE NOT DETECTED
—1.0—	ESTIMATED TCE ISOCONTOUR LINE (ug/L)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1" = 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133127RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

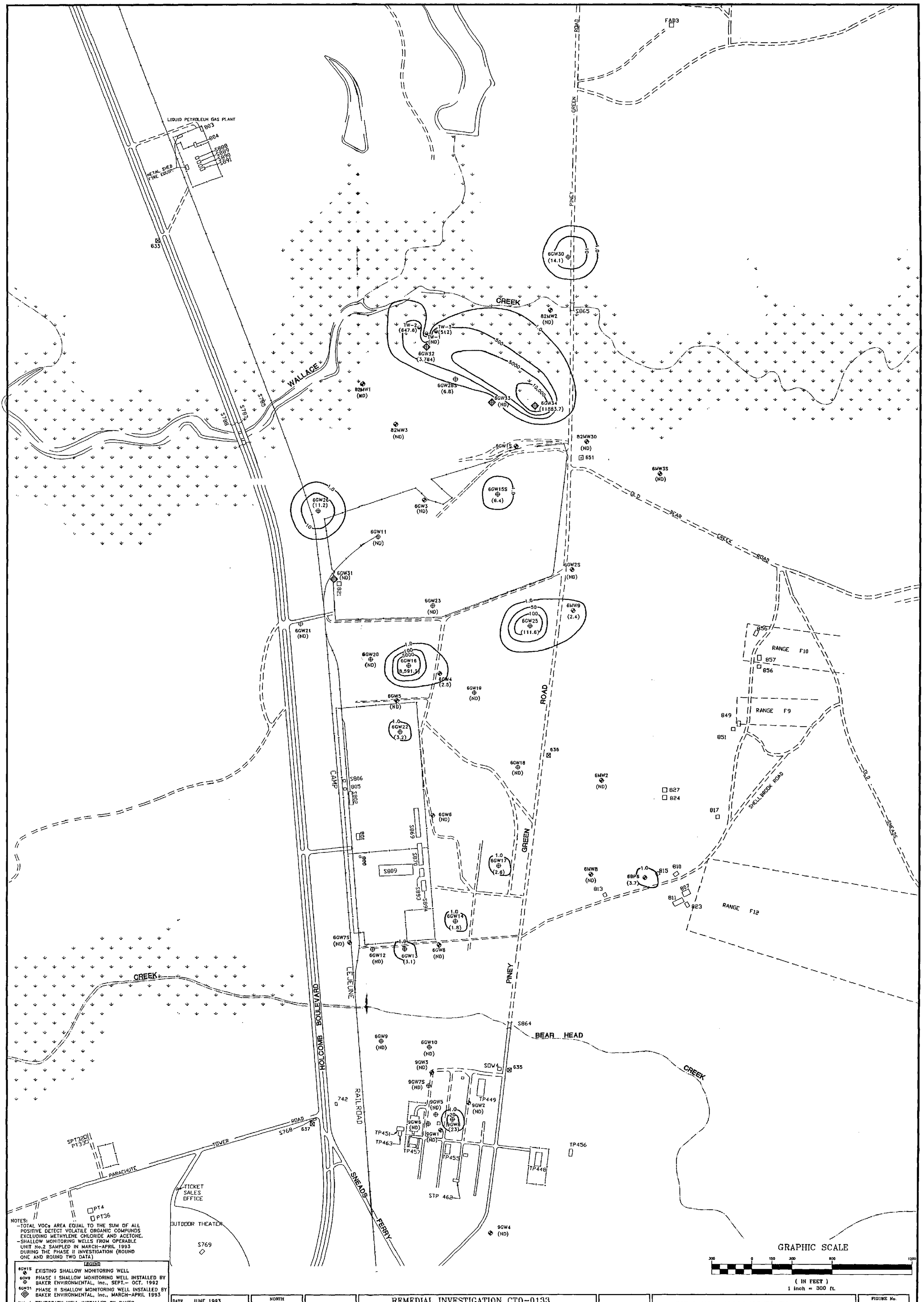
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

TCE ISOCONCENTRATION MAP
FOR DEEP GROUNDWATER-PHASE I RESULTS
OPERABLE UNIT No. 2

SCALE 1" = 300' DATE JUNE 1993

FIGURE No.
4-23



NOTES:
- TOTAL VOCs AREA EQUAL TO THE SUM OF ALL POSITIVE DETECT VOLATILE ORGANIC COMPUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE.
- SHALLOW MONITORING WELLS FROM OPERABLE UNIT No.2 SAMPLED IN MARCH-APRIL 1993 DURING THE PHASE II INVESTIGATION (ROUND ONE AND ROUND TWO DATA)

LEGEND

6GW1S	EXISTING SHALLOW MONITORING WELL
6GW9	PHASE I SHALLOW MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., SEPT.- OCT. 1992
6GW31	PHASE II SHALLOW MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH-APRIL 1993
TW-1	TEMPORARY WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH 1993
(2.5)	TOTAL VOC CONCENTRATION (WELL SPECIFIC) IN ug/l
(ND)	VOCs NOT DETECTED
1.0	ESTIMATED TOTAL VOC ISOCONTOUR LINE (ug/l)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133157RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

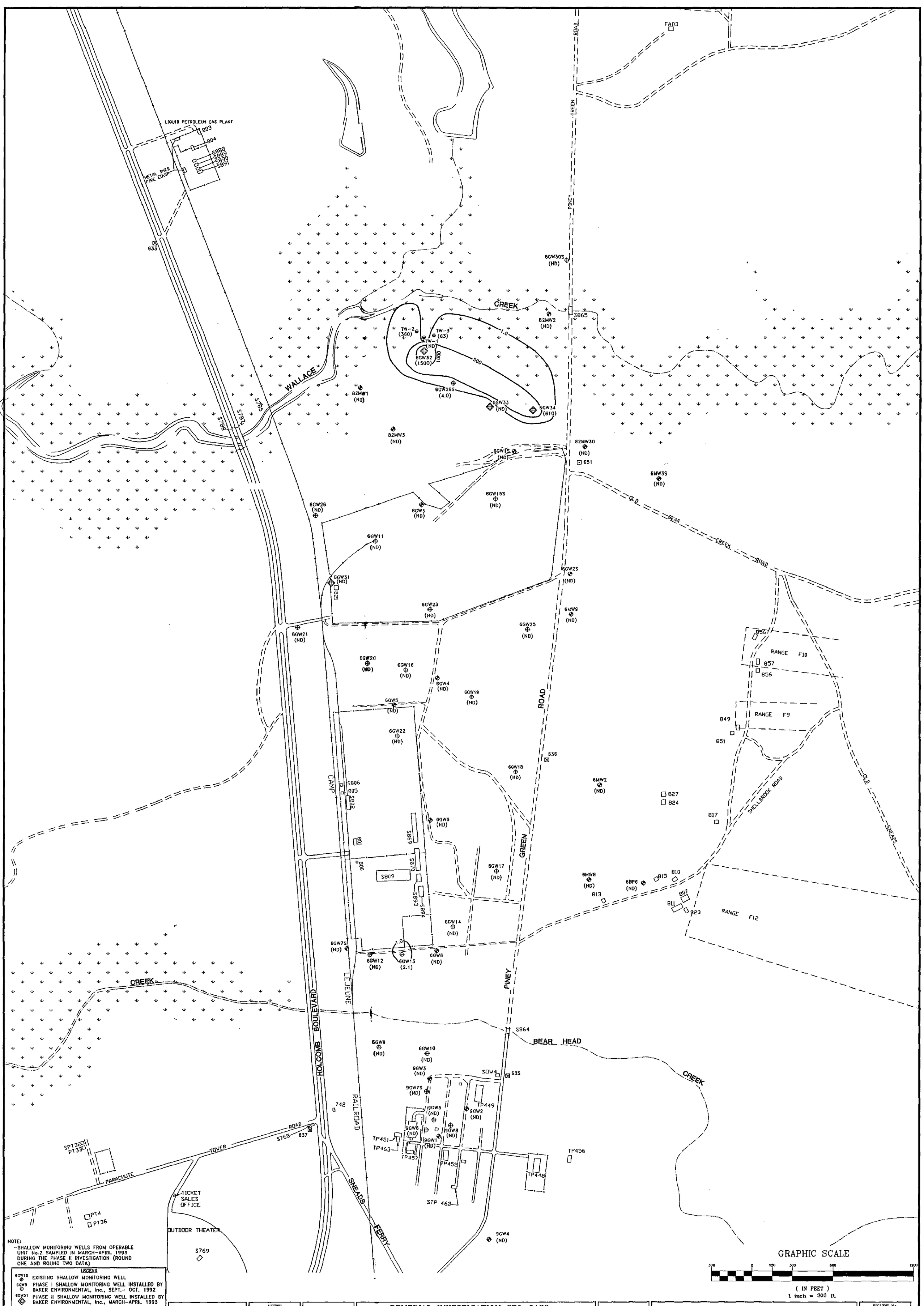
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

TOTAL VOCs ISOCONCENTRATION MAP FOR SURFICIAL GROUNDWATER-PHASE II RESULTS OPERABLE UNIT No.2

SCALE 1"= 300' DATE JUNE 1993

FIGURE No.
4-24



NOTE:
-SHALLOW MONITORING WELLS FROM OPERABLE UNIT No.2 SAMPLED IN MARCH-APRIL 1993 DURING THE PHASE II INVESTIGATION (ROUND ONE AND ROUND TWO DATA)

LEGEND

- 6GW1S — EXISTING SHALLOW MONITORING WELL
- 6GW9 — PHASE I SHALLOW MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., SEPT.- OCT. 1992
- 6GW31 — PHASE II SHALLOW MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH-APRIL 1993
- TW-1 — TEMPORARY WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH 1993
- (2.1) — TCE CONCENTRATION (WELL SPECIFIC) IN ug/l
- (ND) — TCE NOT DETECTED
- 1.0 — ESTIMATED TCE ISOCONTOUR LINE (ug/l)

SOURCE: LANTDIV. FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133158RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

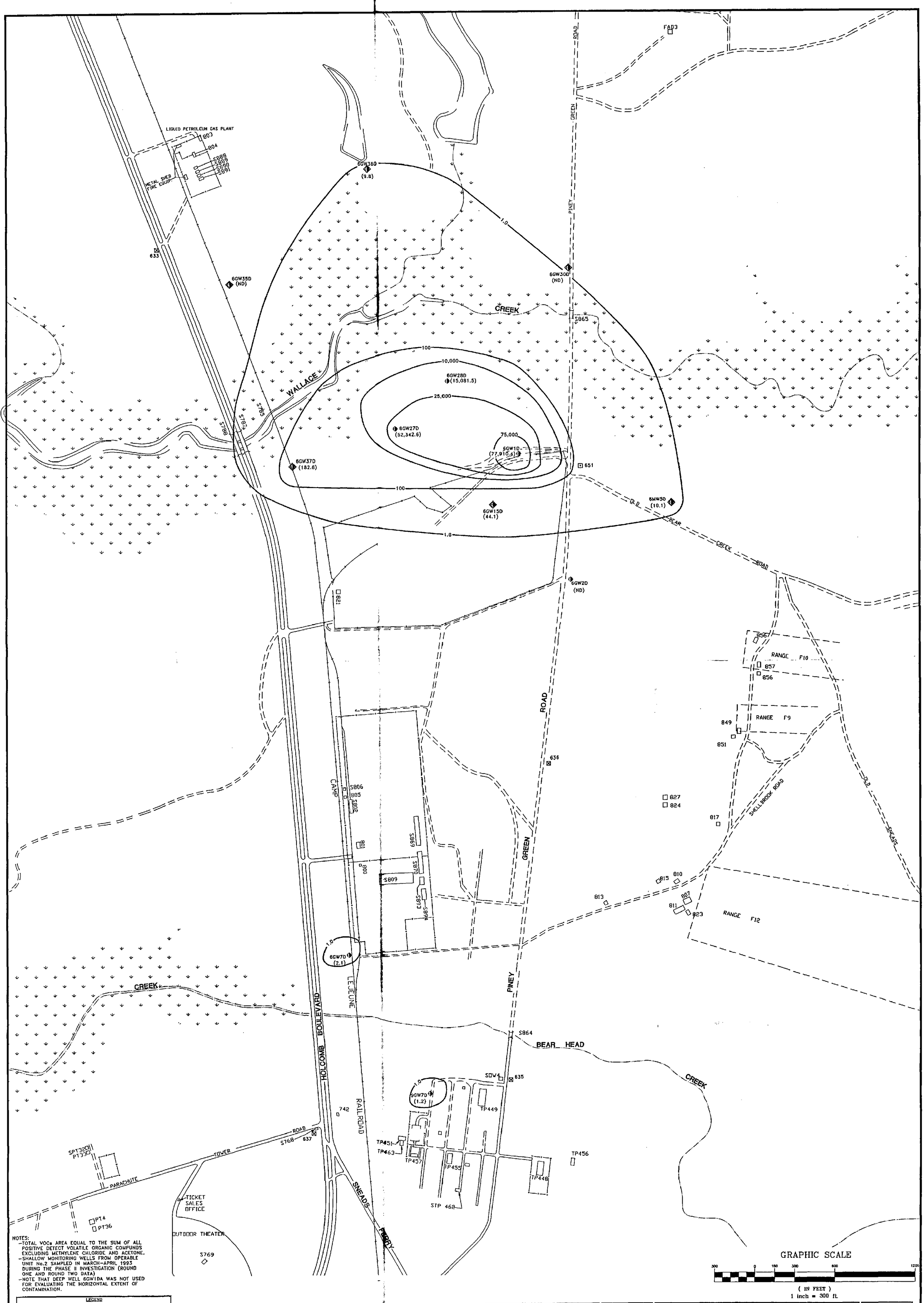
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

TCE ISOCONCENTRATION MAP FOR SURFICIAL GROUNDWATER-PHASE II RESULTS OPERABLE UNIT No.2

SCALE 1"= 300' | DATE JUNE 1993

FIGURE No. 4-25



NOTES:
- TOTAL VOCs AREA EQUAL TO THE SUM OF ALL POSITIVE DETECT VOLATILE ORGANIC COMPUNDS EXCLUDING METHYLENE CHLORIDE AND ACETONE.
- SHALLOW MONITORING WELLS FROM OPERABLE UNIT No.2 SAMPLED IN MARCH–APRIL 1993 DURING THE PHASE II INVESTIGATION (ROUND ONE AND ROUND TWO DATA)
- NOTE THAT DEEP WELL 6GW1DA WAS NOT USED FOR EVALUATING THE HORIZONTAL EXTENT OF CONTAMINATION.

LEGEND

6GW1D	PHASE I DEEP MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., SEPT.– OCT. 1992
6GW15D	PHASE II DEEP MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH–APRIL 1993
(2.1)	TOTAL VOC CONCENTRATION (WELL SPECIFIC) IN ug/l
(ND)	VOCs NOT DETECTED
1.0	ESTIMATED TOTAL VOC ISOCONTOUR LINE (ug/l)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1" = 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133159RI

NORTH

REMEDIAL INVESTIGATION CTO–0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

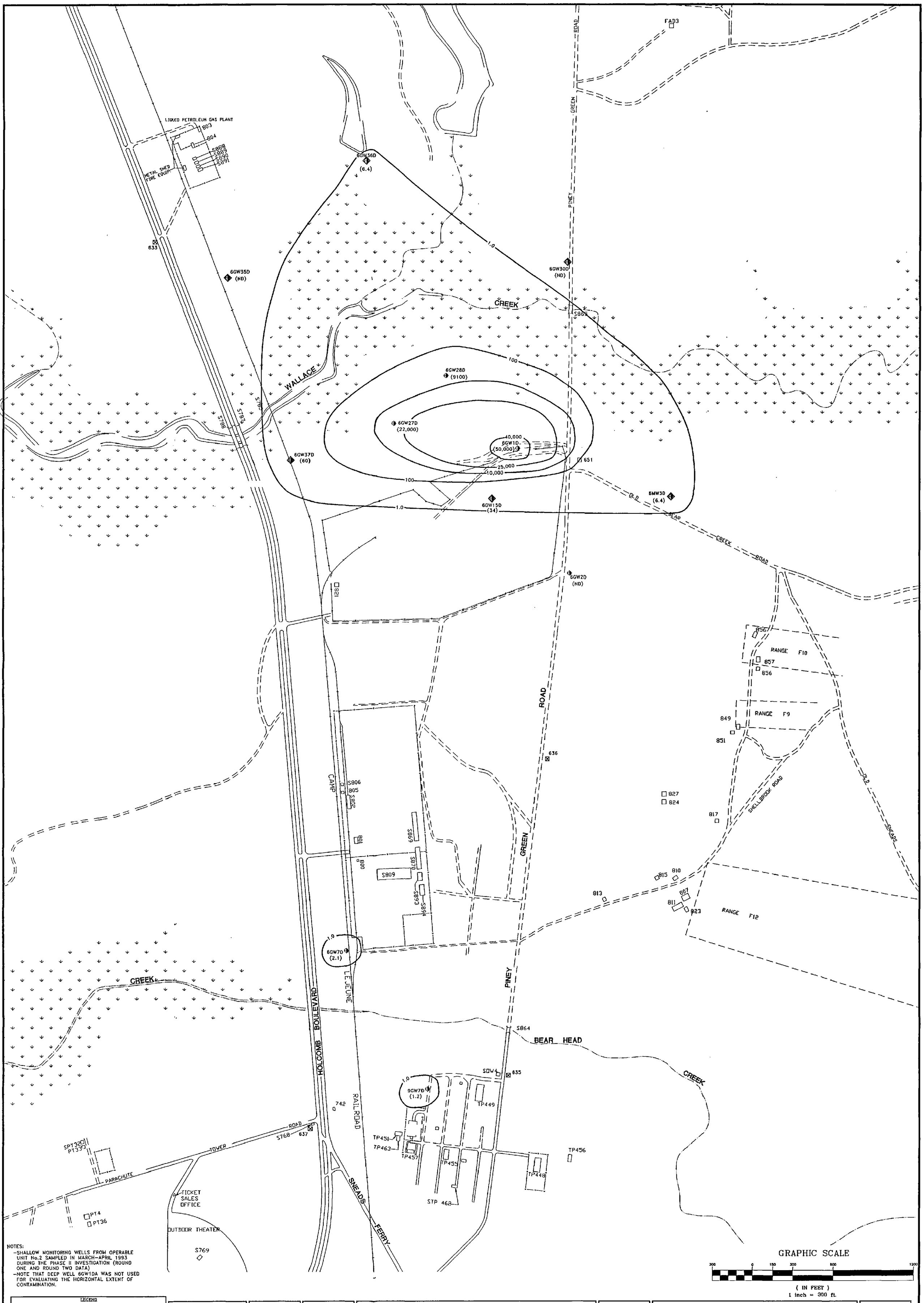
BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

Baker
Baker Environmental, Inc.

TOTAL VOCs ISOCONCENTRATION MAP FOR DEEP GROUNDWATER–PHASE II RESULTS
OPERABLE UNIT No.2

SCALE 1" = 300' DATE JUNE 1993

FIGURE No.
4–26



NOTES:
- SHALLOW MONITORING WELLS FROM OPERABLE UNIT No.2 SAMPLED IN MARCH–APRIL 1993 DURING THE PHASE II INVESTIGATION (ROUND ONE AND ROUND TWO DATA)
- NOTE THAT DEEP WELL 6GW1DA WAS NOT USED FOR EVALUATING THE HORIZONTAL EXTENT OF CONTAMINATION.

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LEGEND

6GW1D	PHASE I DEEP MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., SEPT.– OCT. 1992
6GW15D	PHASE II DEEP MONITORING WELL INSTALLED BY BAKER ENVIRONMENTAL, Inc., MARCH–APRIL 1993
(2.1)	TCE CONCENTRATION (WELL SPECIFIC) IN ug/l
(ND)	TCE NOT DETECTED
1.0	ESTIMATED TCE ISOCONTOUR LINE (ug/l)

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 300'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133160RI

NORTH

REMEDIAL INVESTIGATION CTO–0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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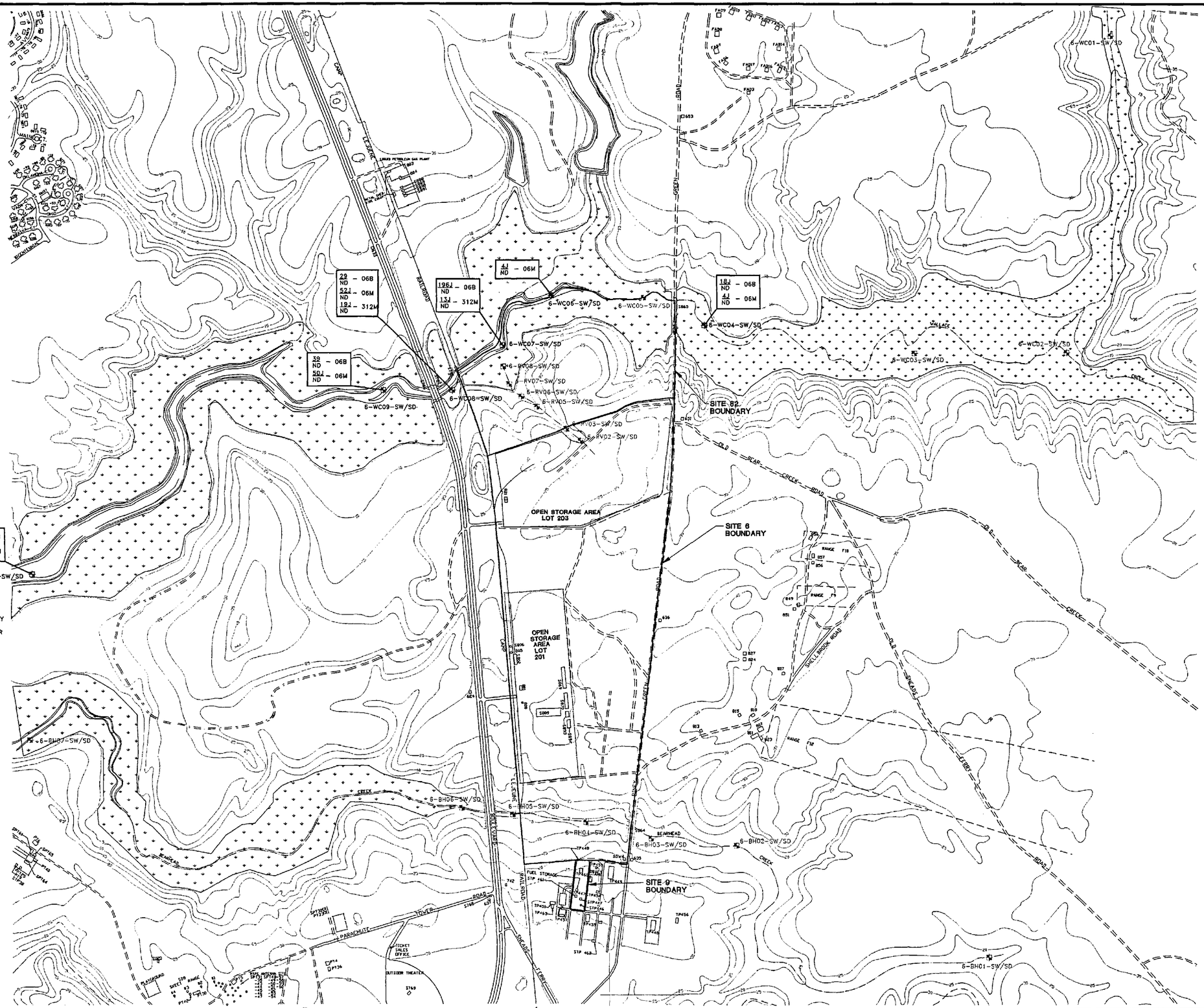
TCE ISOCONCENTRATION MAP FOR
DEEP GROUNDWATER–PHASE II RESULTS
OPERABLE UNIT No.2

SCALE 1"= 300' DATE JUNE 1993

FIGURE No.
4–27



NOTE:
-ALL CONCENTRATIONS SHOWN IN ug/l
-SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION
-SURFACE WATER/SEDIMENT SAMPLE STATIONS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTEABLE LEVELS.

GRAPHIC SCALE

500 0 250 500 1000 2000

(IN FEET)
1 inch = 500 ft.

REVISIONS	
6-WC04-SW/SD	SURFACE WATER SAMPLE STATION
13J	TOTAL VOCs IN ug/L.
1J	TOTAL SVOCs IN ug/L.
06B	SAMPLE COLLECTED FROM SOUTH BANK
06M	SAMPLE COLLECTED FROM THE MIDDLE OF CREEK
312M	SAMPLE COLLECTED FROM SURFACE WATER/SEDIMENT INTERFACE
ND	CONCENTRATIONS NOT DETECTED

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 500'
DRAWN	R.E.L.
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133154RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

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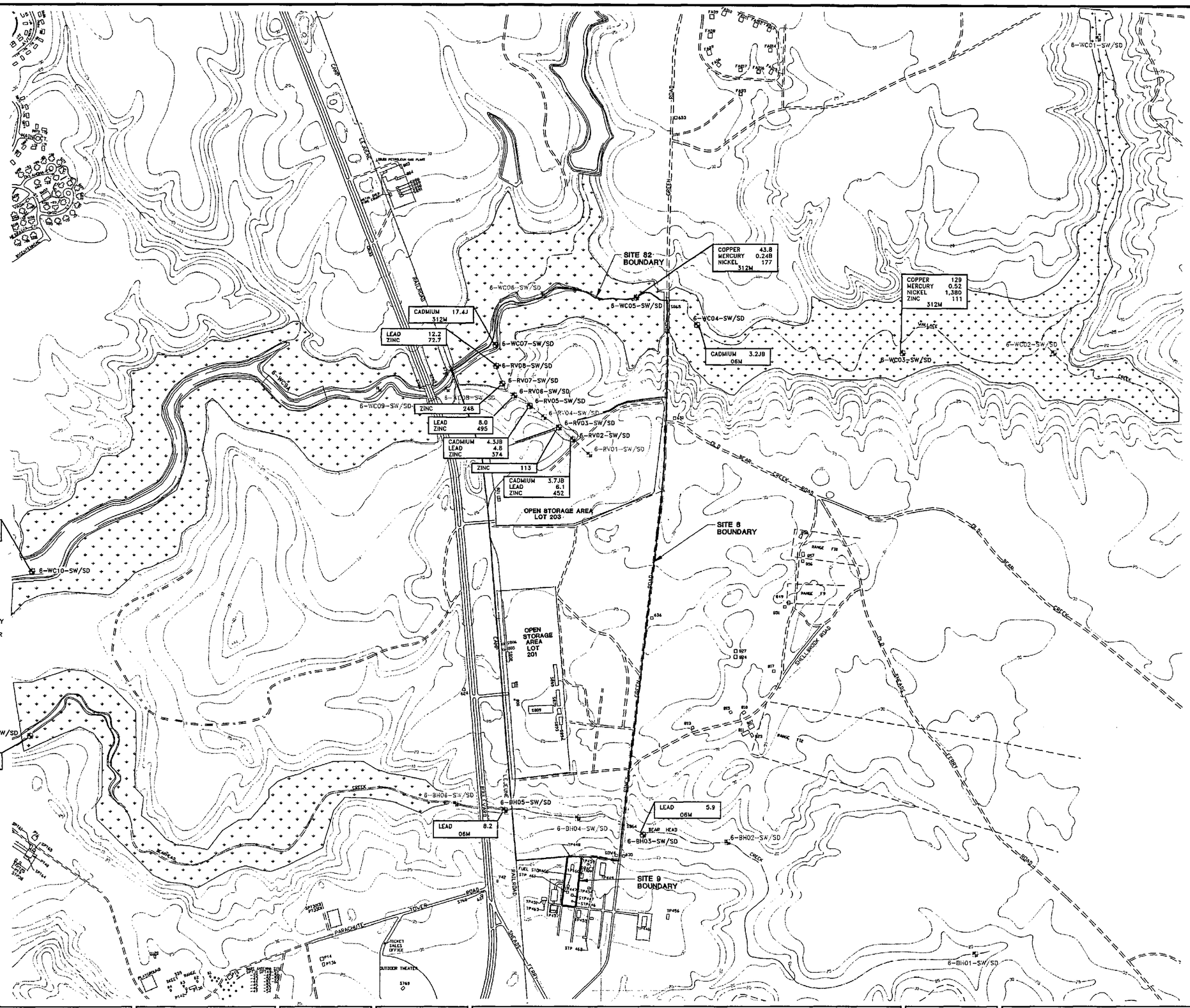
POSITIVE DETECTIONS OF VOCs AND SVOCs
IN WALLACE CREEK
SITE 6

SCALE 1"= 500'

DATE APRIL 1993

FIGURE No.

4-28



NOTE:
- ALL CONCENTRATIONS SHOWN IN ug/l.
- SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION.
- SURFACE WATER/SEDIMENT SAMPLE STATIONS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTABLE LEVELS OR LEVELS BELOW THE EVALUATION CRITERIA DESCRIBED BELOW.
- SURFACE WATER CRITERIA EVALUATED BY NCWQS AND FEDERAL ACUTE AND CHRONIC FRESHWATER AWQCs.

GRAPHIC SCALE

500 0 250 500 1000 2000

(IN FEET)
1 inch = 500 ft.

LEGEND

6-WC01-SW/SD	SURFACE WATER SAMPLE STATION
06M	SAMPLE COLLECTED FROM THE MIDDLE OF THE CREEK
312M	SAMPLE COLLECTED FROM SURFACE WATER/SEDIMENT INTERFACE

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 500'
DRAWN	REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133155RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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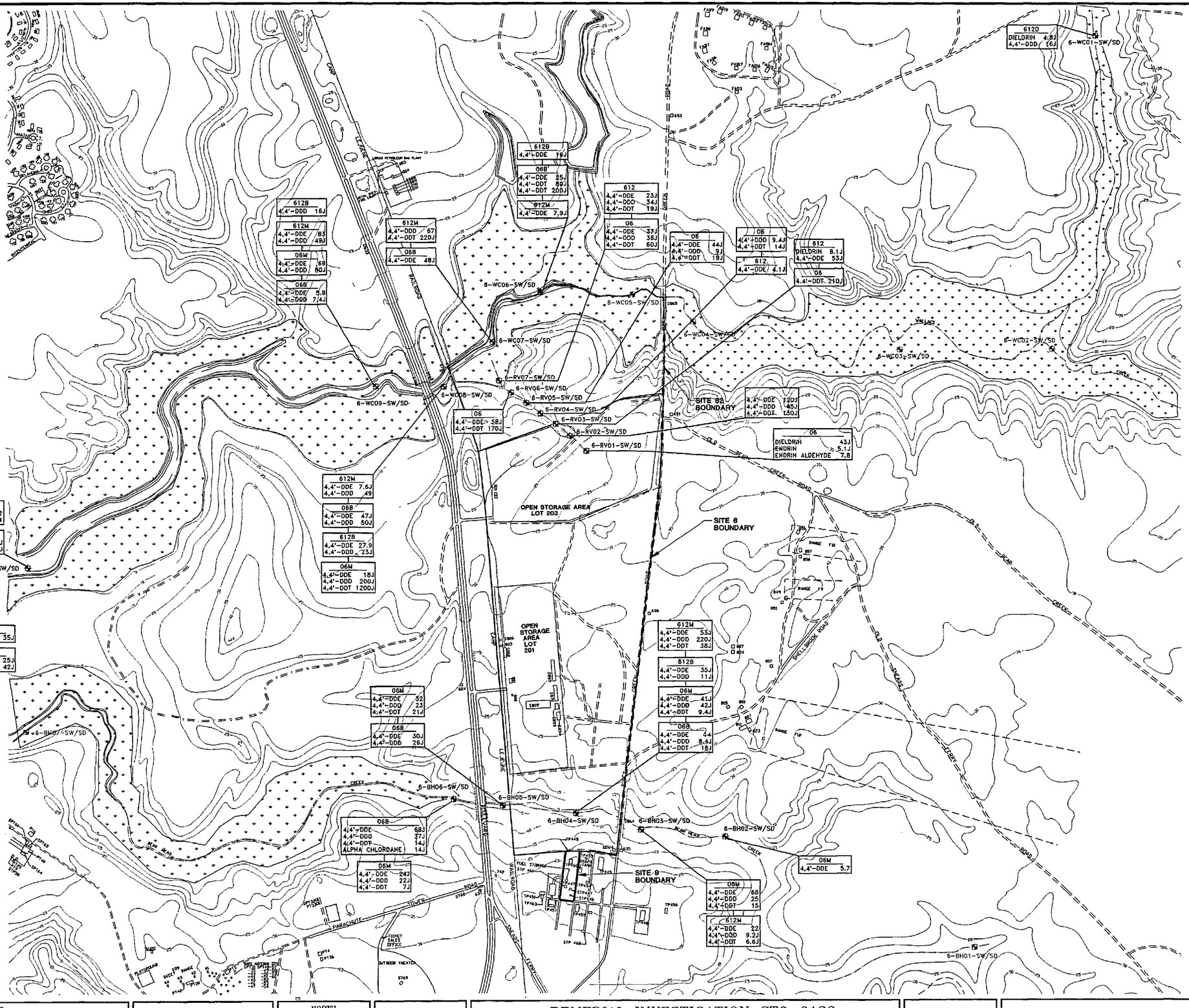
INORGANIC CONTAMINANTS OF CONCERN WHICH EXCEED SURFACE WATER CRITERIA IN BEAR HEAD CREEK, WALLACE CREEK AND THE RAVINE SITE 6

SCALE 1"= 500'

DATE JUNE 1993

FIGURE No.

4-29



NOTE:
- SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION
- SURFACE WATER/SEDIMENT SAMPLE STATIONS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTEABLE LEVELS.

LEGEND

BH02	SEDIMENT SAMPLE STATION
06M	SAMPLE LOCATION
4,4'-DDE 5.7	PESTICIDE DETECTED AND CONCENTRATION (ug/kg)
06	SAMPLE COLLECTED FROM THE TOP OF 6-INCHES OF SEDIMENT
M	SAMPLE COLLECTED FROM MIDDLE OF CREEK
B	SAMPLE COLLECTED FROM SOUTH BANK
312	SAMPLE COLLECTED FROM SURFACE WATER/SEDIMENT INTERFACE
612	SAMPLE COLLECTED FROM 6 TO 12 INCHES OF SEDIMENT

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 500'
DRAWN	WJH/REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133110RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

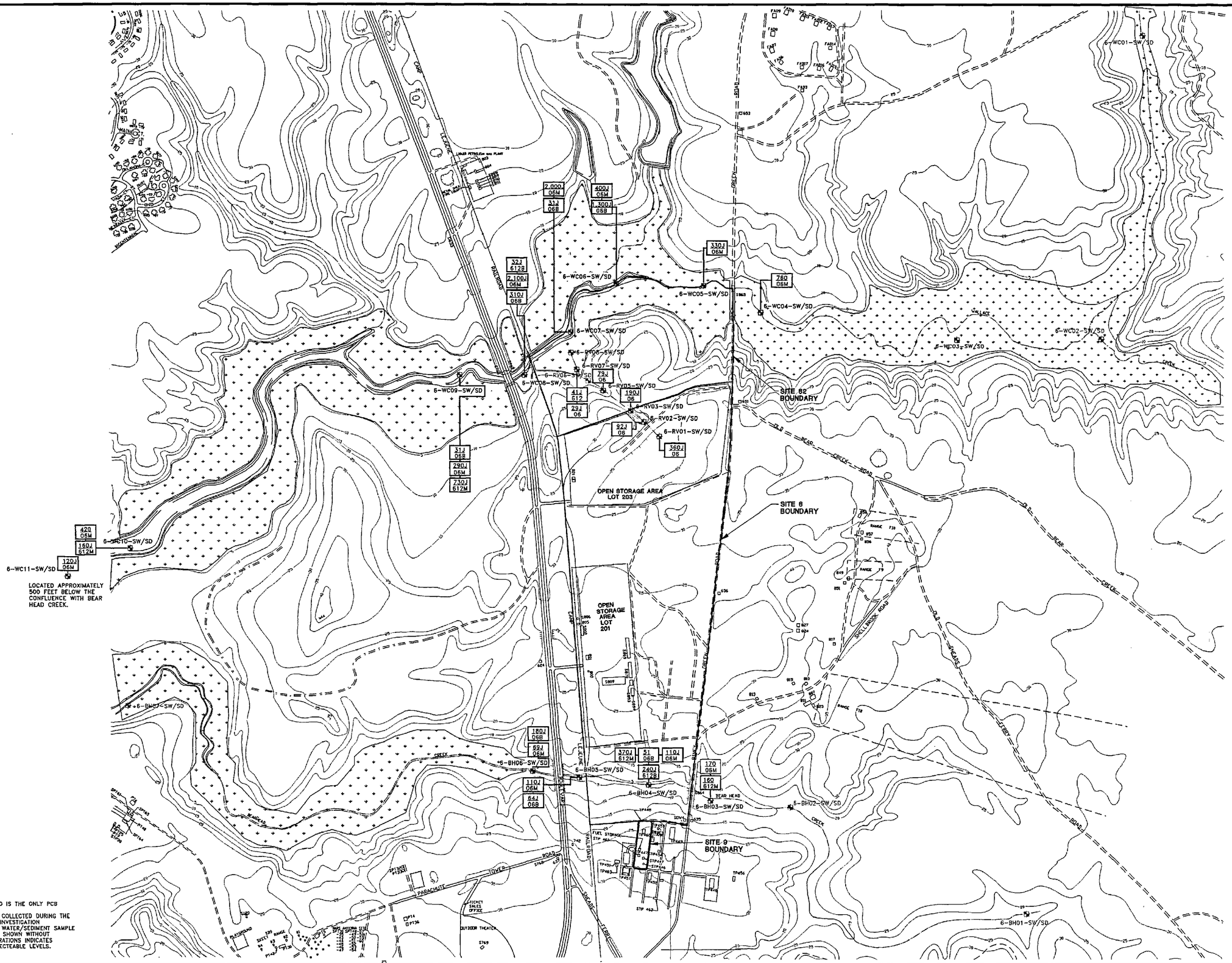
Baker
Baker Environmental, Inc.

POSITIVE DETECTIONS OF PESTICIDES IN SEDIMENTS FROM BEAR HEAD CREEK, WALLACE CREEK, THE RAVINE AND SITE 6

SCALE 1"= 500'

DATE JUNE 1993

FIGURE No.
4-30



NOTE:
- PCB-1260 IS THE ONLY PCB DETECTED
- SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION
- SURFACE WATER/SEDIMENT SAMPLE STATIONS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTEABLE LEVELS.

GRAPHIC SCALE

500 0 250 500 1000 2000

(IN FEET)
1 inch = 500 ft.

LEGEND

BH3	– SEDIMENT SAMPLE STATION
170	– PCB-1260 CONCENTRATION IN ug/kg
06M	– SAMPLE LOCATION
06	– SAMPLE COLLECTED FROM THE TOP OF 6-INCHES OF SEDIMENT
M	– SAMPLE COLLECTED FROM MIDDLE OF CREEK
B	– SAMPLE COLLECTED FROM SOUTH BANK
312	– SAMPLE COLLECTED FROM SURFACE WATER/SEDIMENT INTERFACE
612	– SAMPLE COLLECTED FROM 6 TO 12 INCHES OF SEDIMENT

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 500'
DRAWN	WJH/REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133111RI

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

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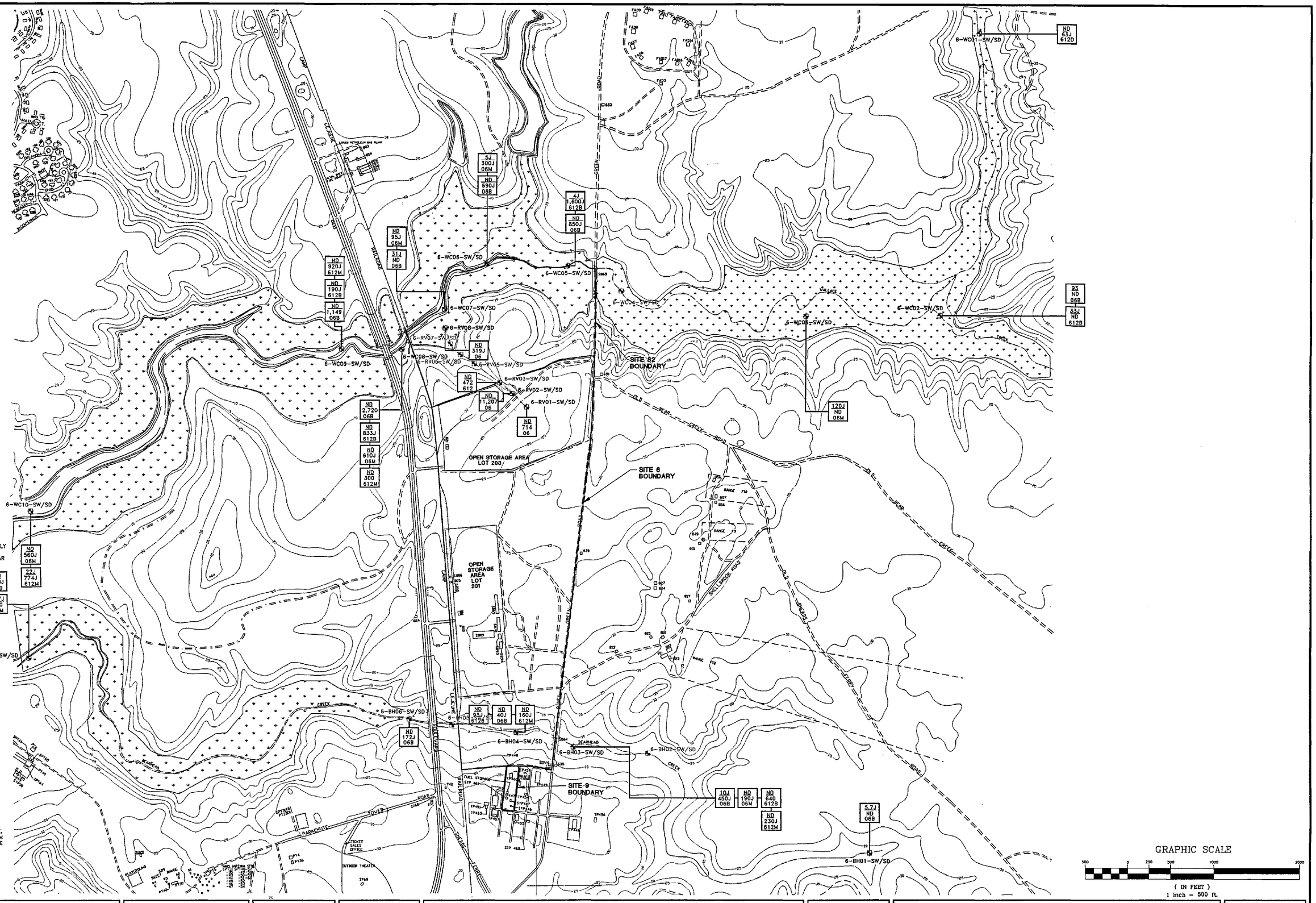
Baker Environmental, Inc.

POSITIVE DETECTIONS OF PCBs IN SEDIMENTS FROM BEAR HEAD CREEK, WALLACE CREEK, THE RAVINE AND SITES 6 AND 82

SCALE 1"= 500' | DATE JUNE 1993

FIGURE No.
4-31



NOTES:
- TOTAL VOCs ARE EQUAL TO THE SUM OF ALL POSITIVE DETECT VOLATILE ORGANIC COMPOUNDS EXCLUDING METHYLENE CHLORIDE, ACETONE, CARBON DISULFIDE, AND 2-BUTANONE.
- TOTAL SVOCs ARE EQUAL TO THE SUM OF ALL POSITIVE DETECT SEMIVOLATILE ORGANIC COMPOUNDS EXCLUDING ALL PHTHALATES.
- SAMPLES COLLECTED DURING THE PHASE I INVESTIGATION
- SURFACE WATER/SEDIMENT SAMPLE STATIONS SHOWN WITHOUT CONCENTRATIONS INDICATES NON-DETECTEABLE LEVELS.

LEGEND

BH7 – SEDIMENT SAMPLE STATION
587J – TOTAL VOCs IN ug/kg
370 – TOTAL SVOCs IN ug/kg
06 – SAMPLE COLLECTED FROM THE TOP OF 6-INCHES OF SEDIMENT
M – SAMPLE COLLECTED FROM MIDDLE OF CREEK
B – SAMPLE COLLECTED FROM SOUTH BANK
312 – SAMPLE COLLECTED FROM SURFACE WATER/SEDIMENT INTERFACE
612 – SAMPLE COLLECTED FROM 6 TO 12 INCHES OF SEDIMENT

SOURCE: LANTDIV, FEBRUARY 1992

DATE	JUNE 1993
SCALE	1"= 500'
DRAWN	WJH/REL
REVIEWED	RPW
S.O.#	19133-22-SRN
CADD#	133156R1

NORTH

REMEDIAL INVESTIGATION CTO-0133
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

BAKER ENVIRONMENTAL, Inc.
Coraopolis, Pennsylvania

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Baker Environmental, Inc.

POSITIVE DETECTIONS OF VOCs AND SVOCs IN SEDIMENTS FROM BEARHEAD CREEK, WALLACE CREEK, THE RAVINE AND SITES 6 AND 82

SCALE	1"= 500'
DATE	JUNE 1993

FIGURE No.
4-32