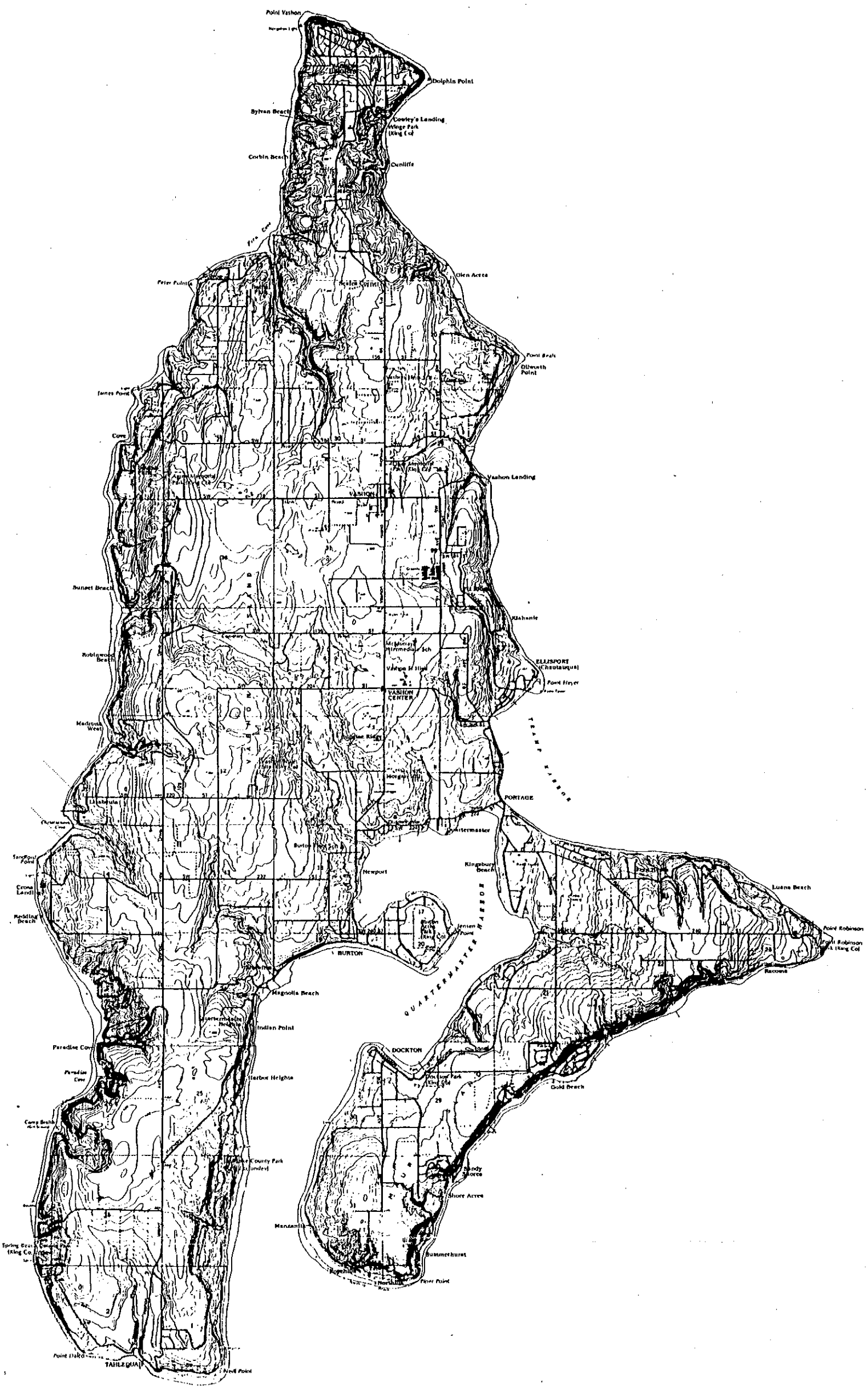
DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



SOURCE: Geraghty & Miller 1993.

GERAGHTY & MILLER, INC.
Environmental Services

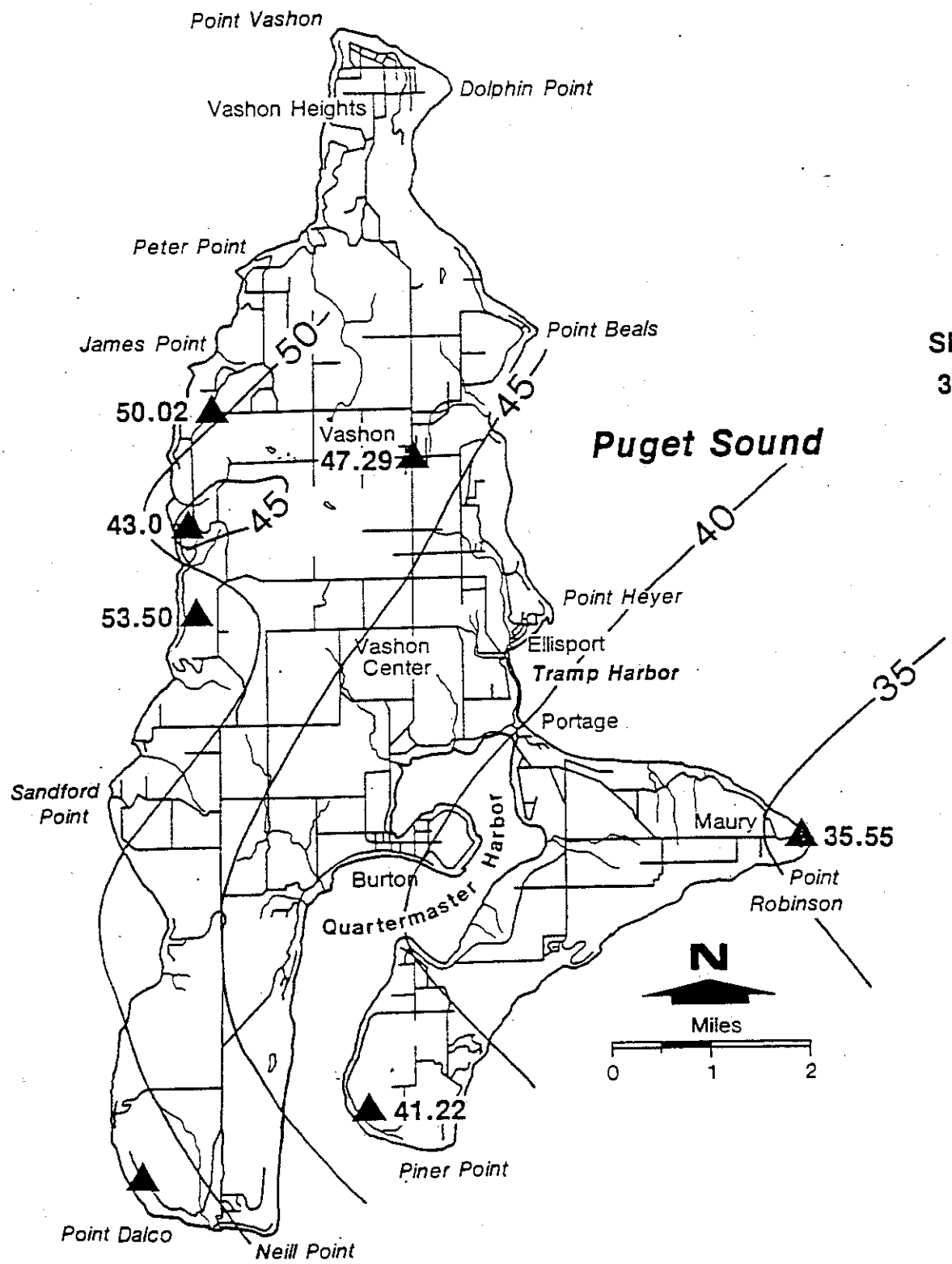
GROUND WATER MANAGEMENT AREA

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

2.1

156186



SOURCE: Carr 1983.

GERAGHTY & MILLER, INC.
Environmental Services

ISOHYETAL (TOTAL PRECIPITATION) MAP, 1981 - 1982

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 4.1

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA028.02 | DWG DATE: MAR 1993

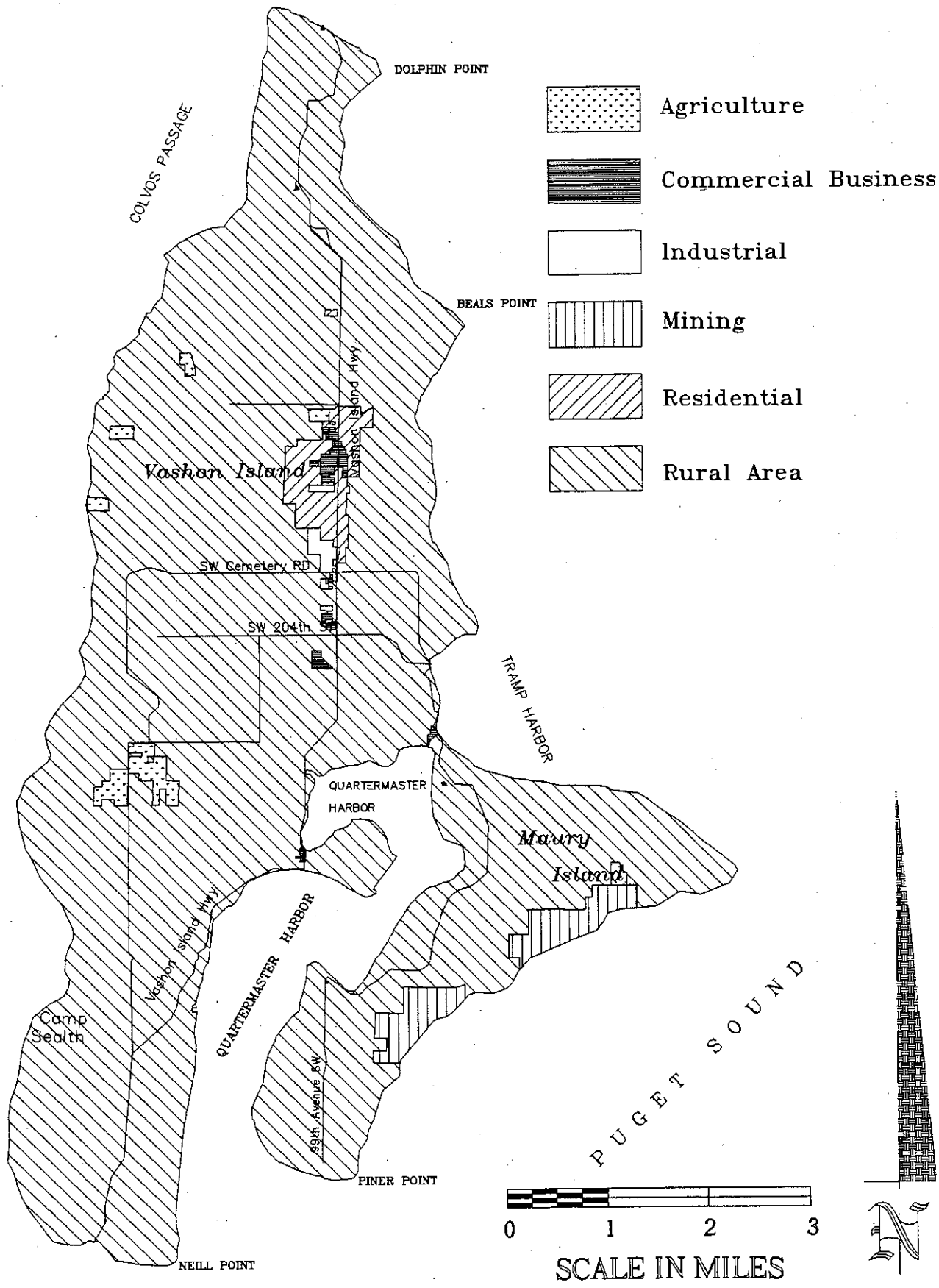


Figure 5.1.a. Existing Land Use

source: Surface Water Management, Geographical Information Systems
date: July 11, 1996

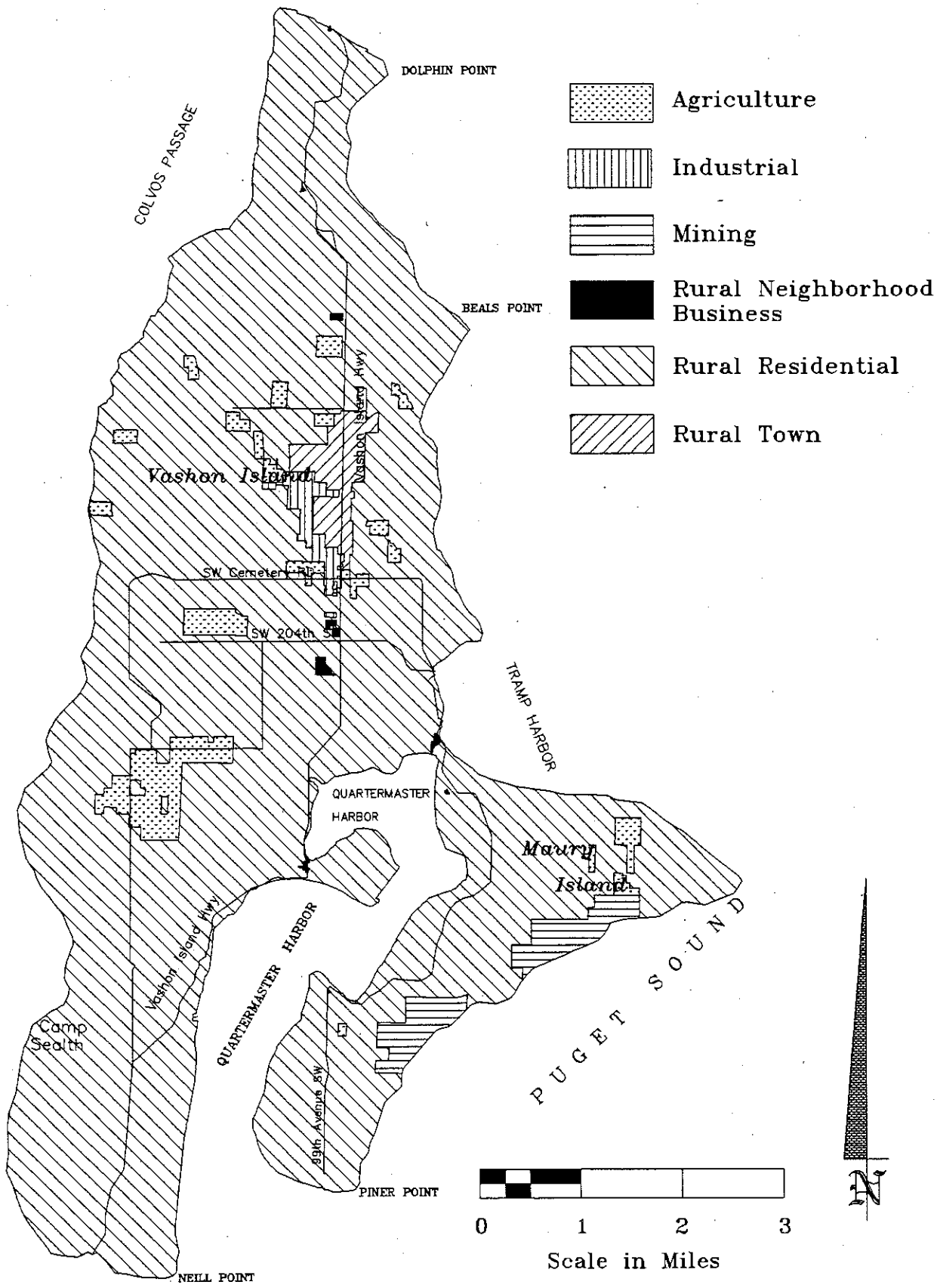
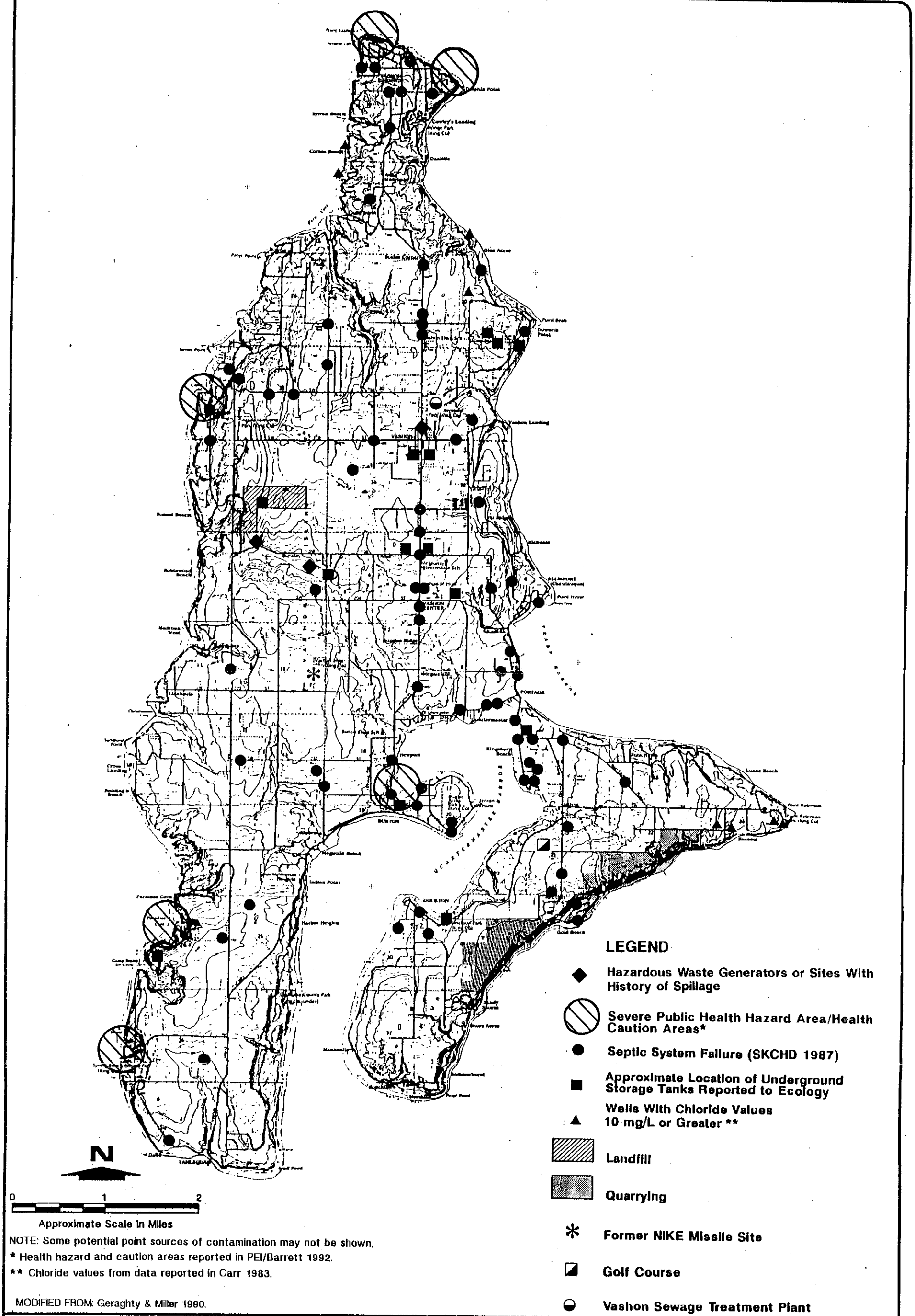


Figure 5.1.b. Future Land Use

source: Surface Water Management, Geographic Information System
date: July 11, 1996

DWG DATE: MAR 1994	PRJCT NO.WA0028.0OB	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



GERAGHTY & MILLER, INC.
Environmental Services

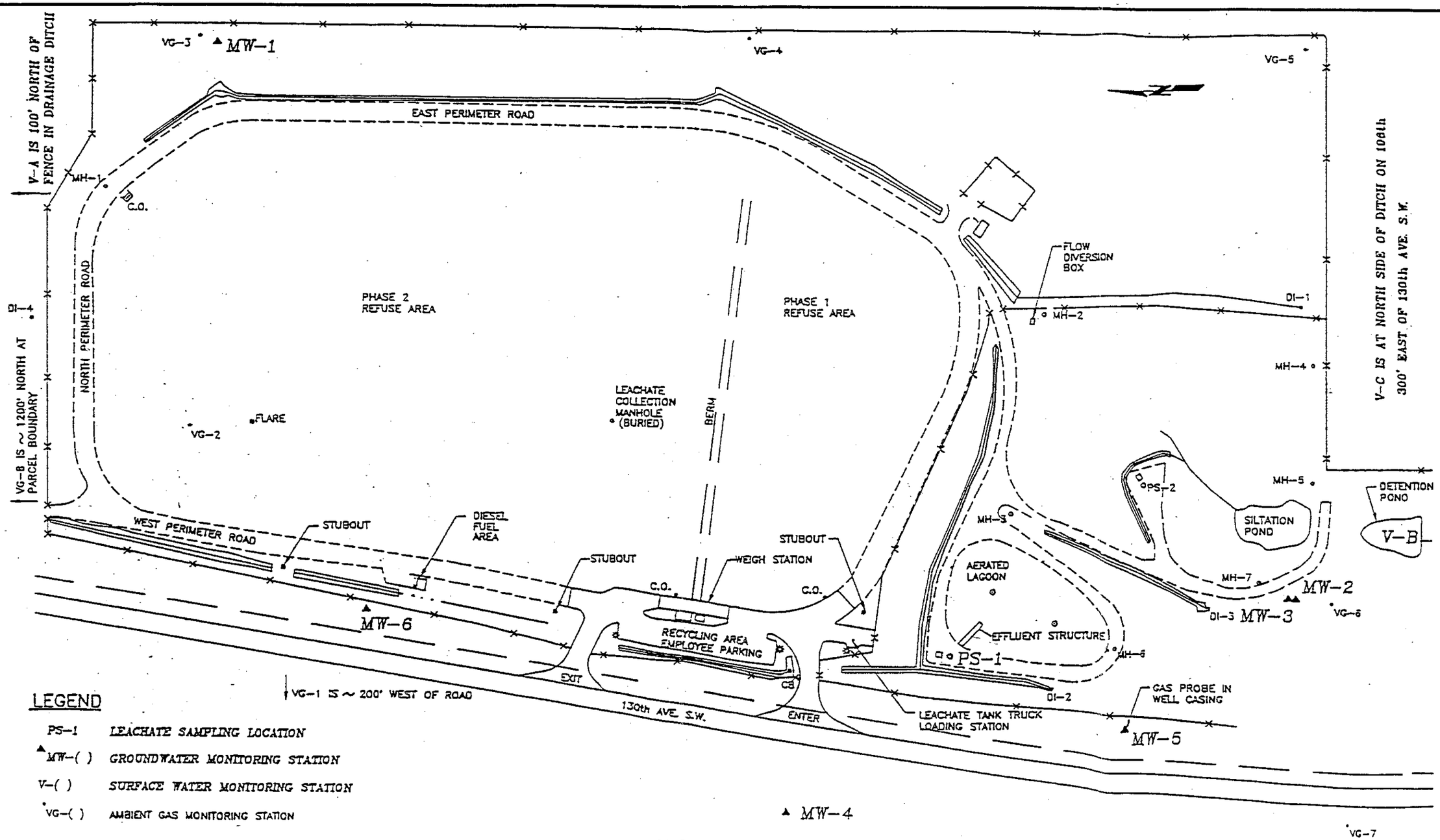
POTENTIAL POINT SOURCES OF CONTAMINATION

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 5.1c

163135

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA028.02 | DWG DATE: MAR 1993



SOURCE: Harding Lawson 1991.

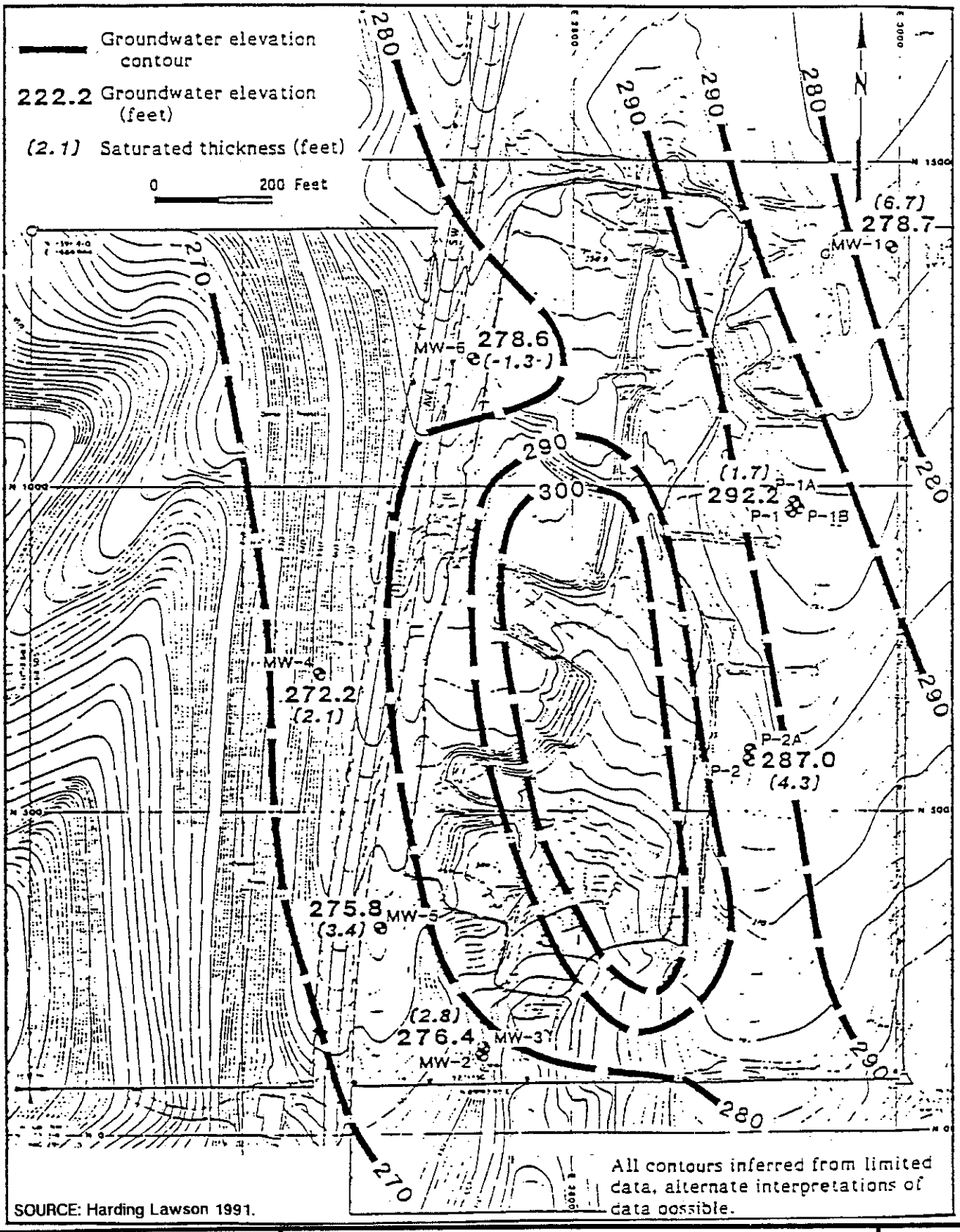
GERAGHTY & MILLER, INC.
Environmental Services

VASHON ISLAND LANDFILL SAMPLING LOCATIONS

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 5.2

156186



SOURCE: Harding Lawson 1991.

GERAGHTY & MILLER, INC.
Environmental Services

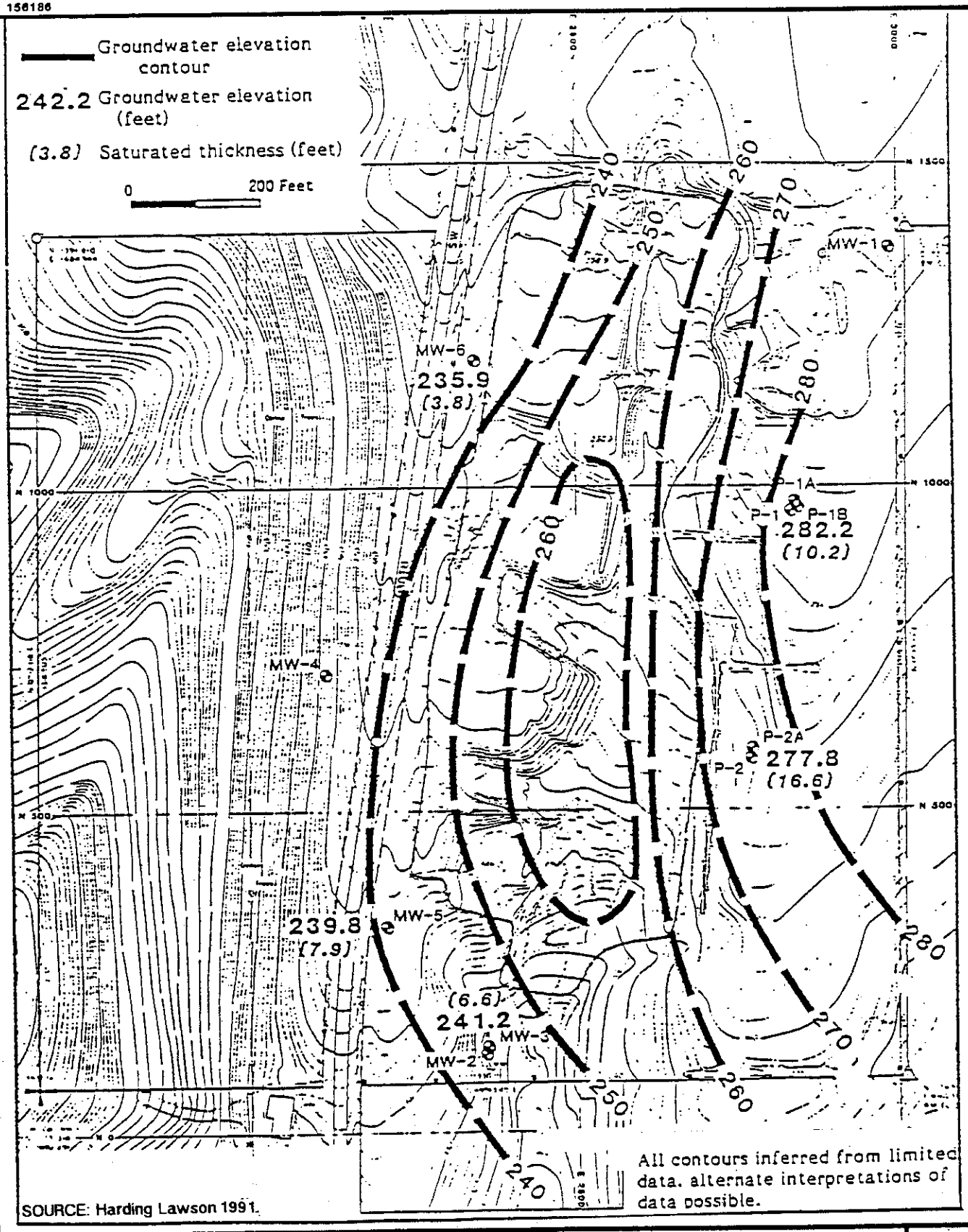
GROUND WATER ELEVATIONS OF UPPER GROUND WATER ZONE FOR VASHON LANDFILL

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 5.3

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA028.02 | DWG DATE: MAR 1993

156186



GERAGHTY & MILLER, INC.
Environmental Services

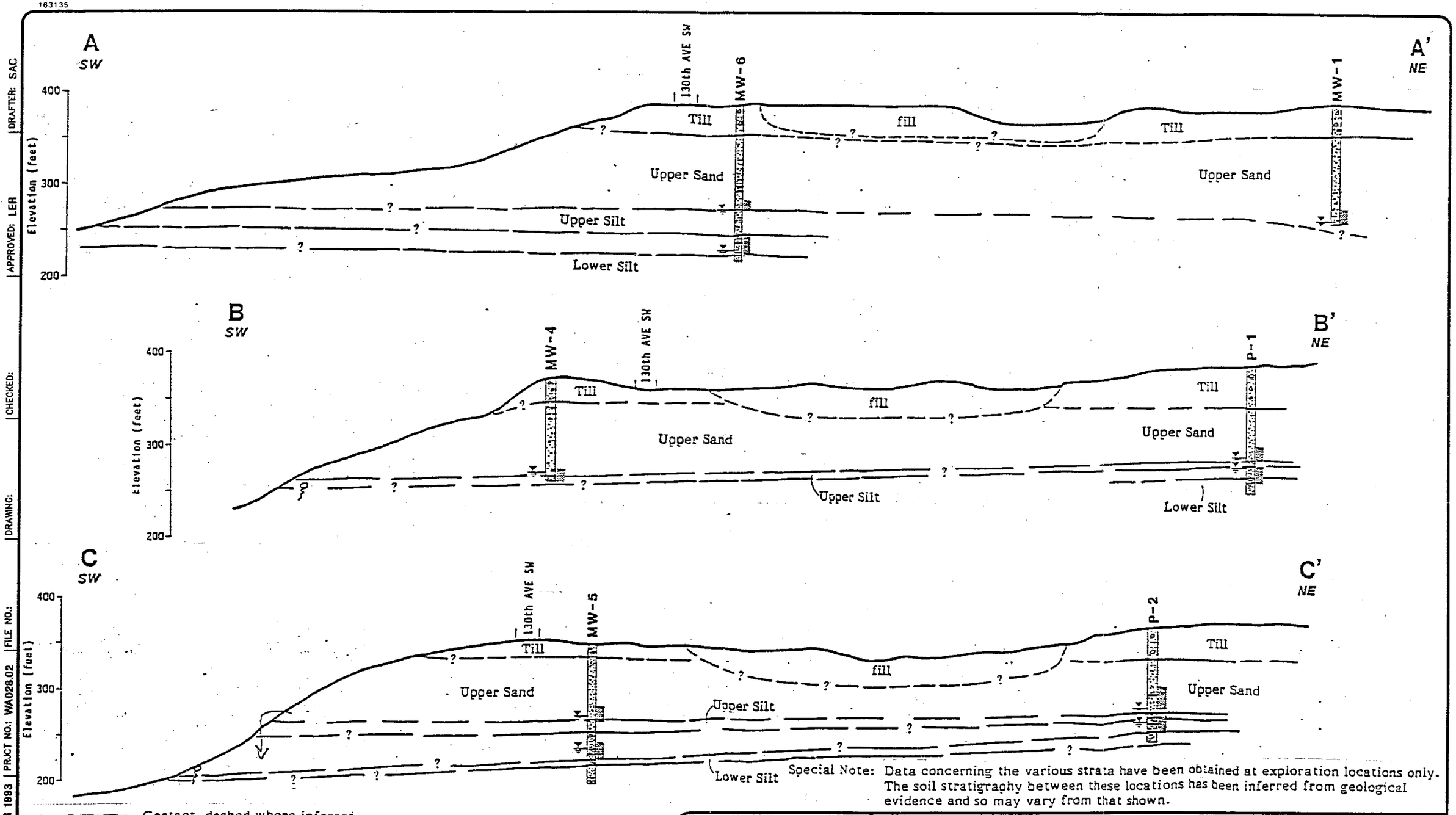
GROUND WATER ELEVATIONS OF LOWER GROUND WATER ZONE FOR VASHON LANDFILL

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 5.4

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA028.02 | DWG DATE: MAR 1993

163135



Special Note: Data concerning the various strata have been obtained at exploration locations only. The soil stratigraphy between these locations has been inferred from geological evidence and so may vary from that shown.

Contact, dashed where inferred

Measured water level

Spring

Gravel Pack Interval

0 500 1000 Feet

SOURCE: Harding Lawson 1991.

GERAGHTY & MILLER, INC.
Environmental Services

GEOLOGIC CROSS SECTIONS
VASHON LANDFILL

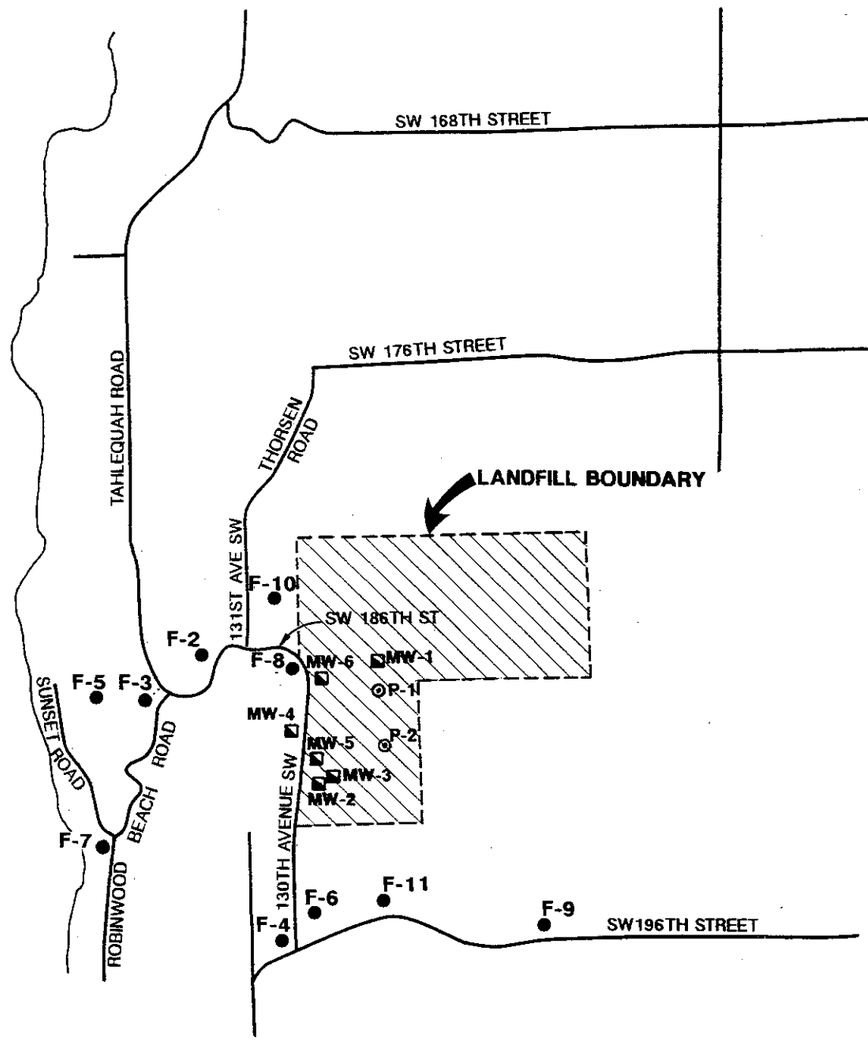
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 5.5

DRAFTER: SAC
APPROVED: LER
CHECKED:
DRAWING:
FILE NO.:
PRJCT NO.: WA028.02
DWG DATE: MAR 1993

163135

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA028.02 | DWG DATE: APR 1993



LEGEND

F-2 ● Sampling Location Outside Vashon Landfill

MW-1 ▣ Monitoring Well Inside Vashon Landfill

P-1 ⊙ Piezometer Inside Vashon Landfill

N

NO SCALE

SOURCE: SKCHD 1993.

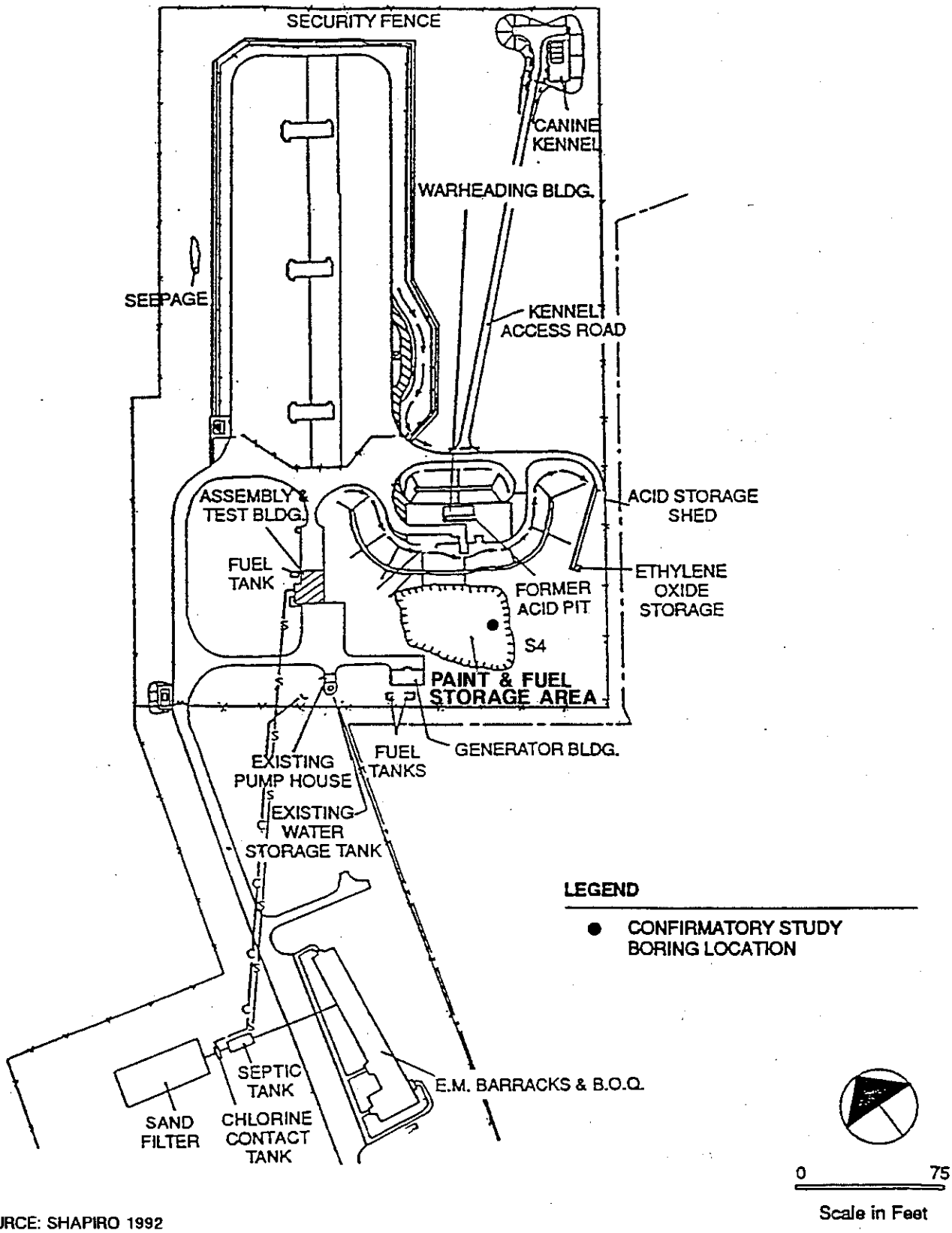
GERAGHTY & MILLER, INC.
Environmental Services

SAMPLING LOCATIONS OUTSIDE OF VASHON LANDFILL

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 5.6

156186



SOURCE: SHAPIRO 1992

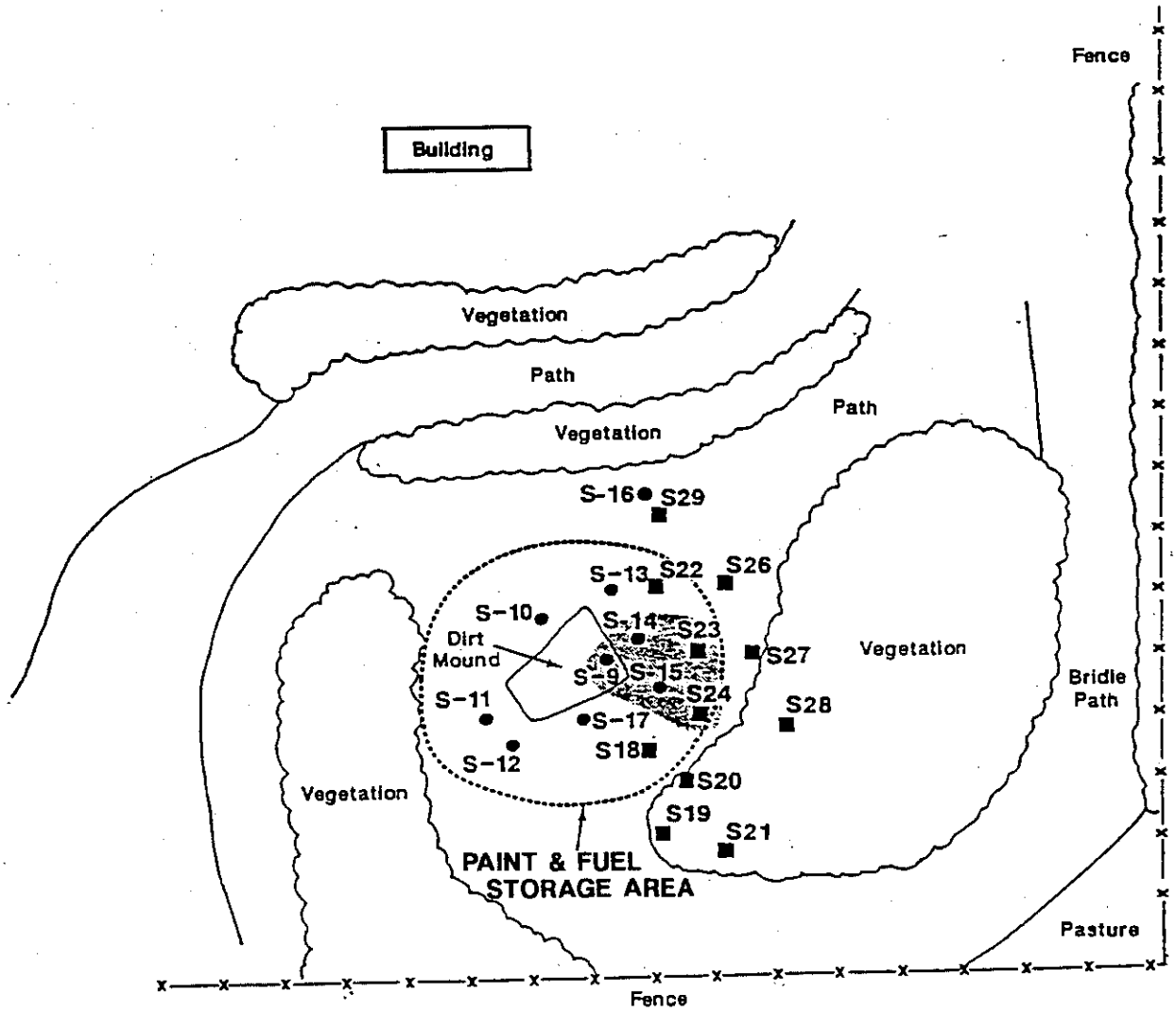
GERAGHTY & MILLER, INC.
Environmental Services

LAUNCH SITE MAP
FORMER NIKE MISSILE SITE
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE
5.7

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA028.02 | DWG DATE: MAR 1993

156186



LEGEND

S-11 ● Soil Boring number & approximate location

S23 ■ USACE Test Pit number & approximate location

Approximate horizontal extent of soil contamination defined by the presence of volatile organic compounds and fuel hydrocarbons above their Method A cleanup levels. Vertical extent of these contaminants vary (see text). This area was estimated using field boring logs and chemical results.

0 25 50
Scale in Feet

SOURCE: SHAPIRO 1992

GERAGHTY & MILLER, INC.
Environmental Services

EXTENT OF SOIL CONTAMINATION
FORMER NIKE MISSILE SITE

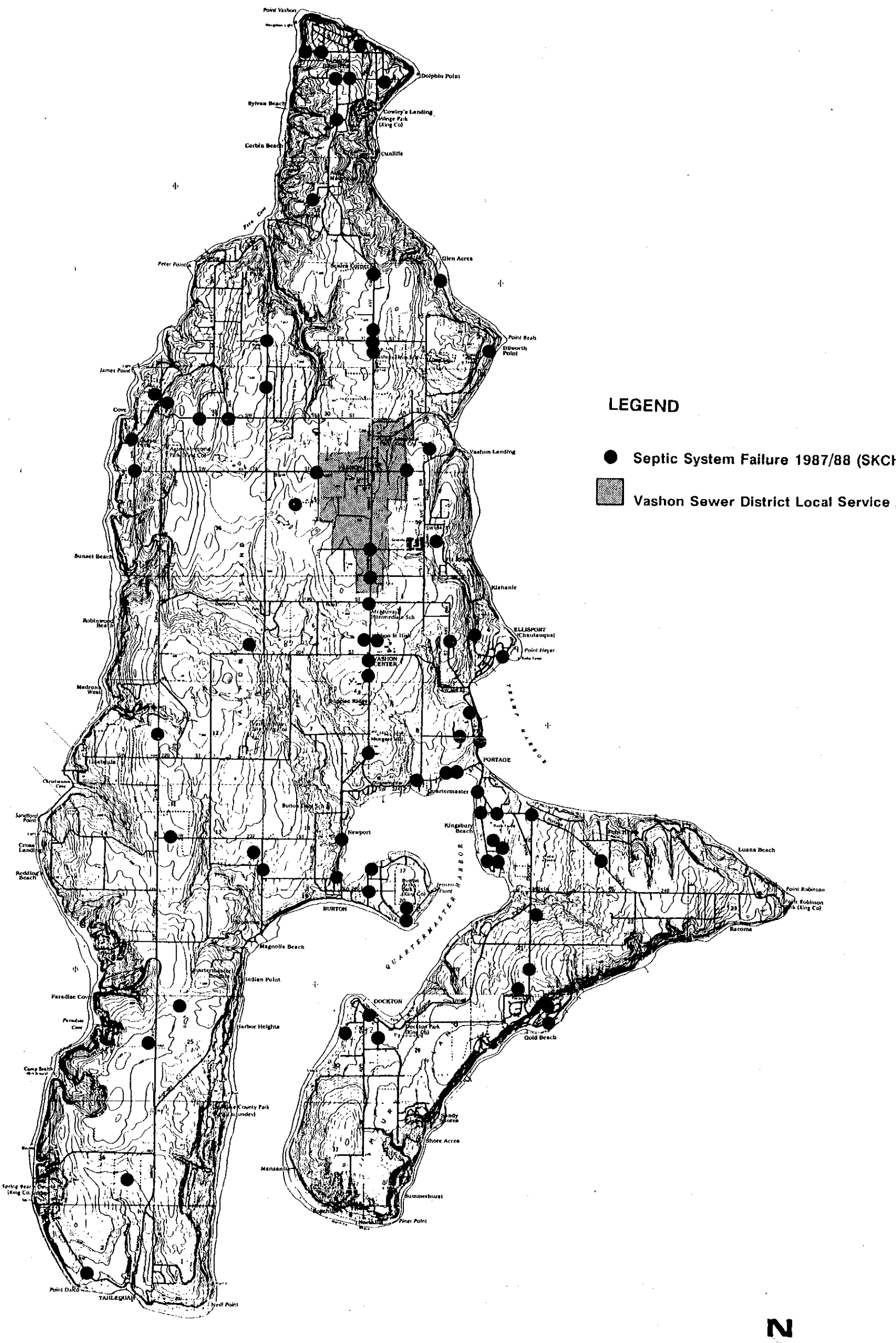
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE
5.8

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA028.02 | DWG DATE: MAR 1993

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



SOURCE: Geraghty & Miller 1991

GERAGHTY & MILLER, INC.
Environmental Services

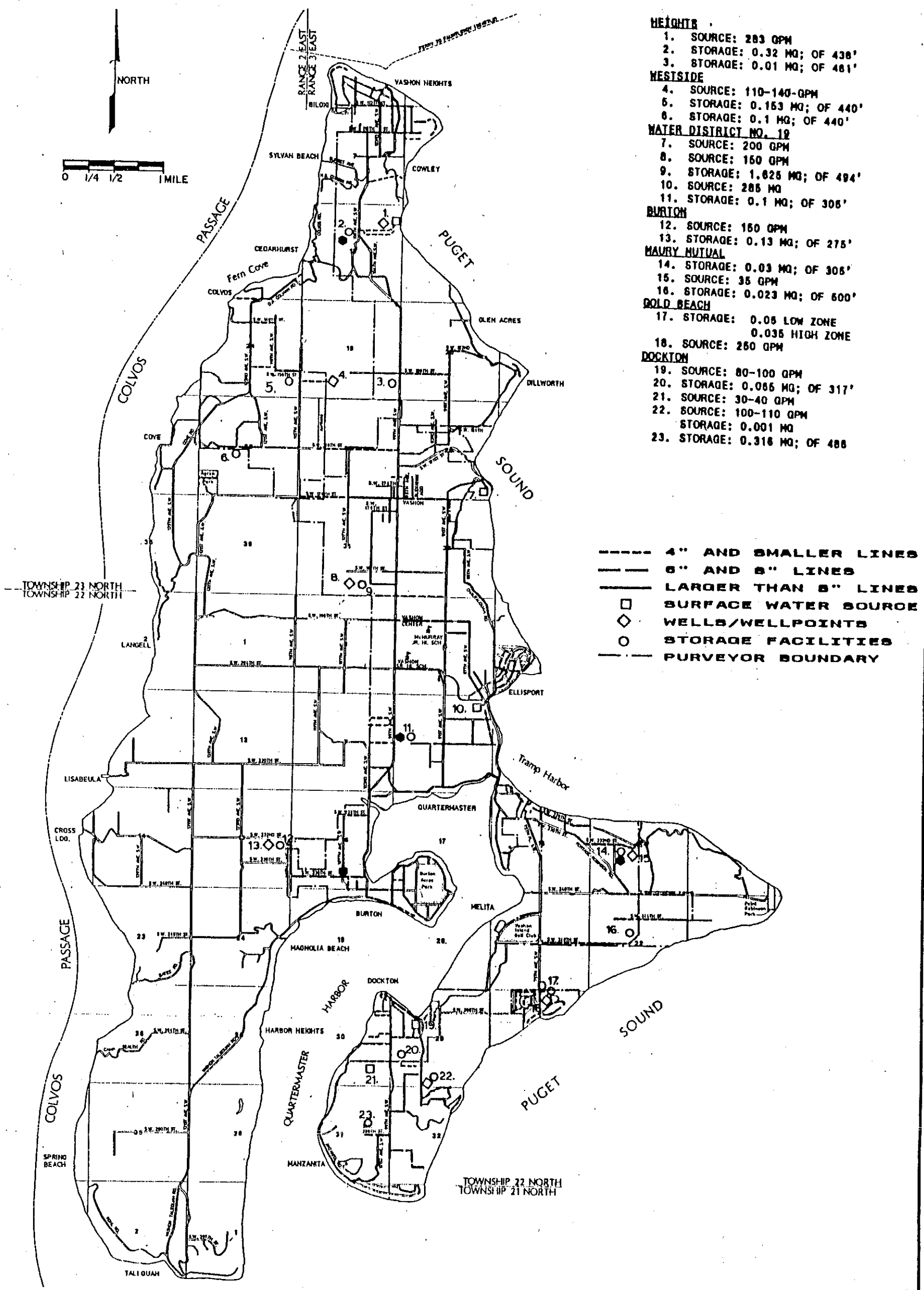
VASHON SEWER DISTRICT LOCAL SERVICE AREA AND SEPTIC SYSTEM FAILURES REPORTED TO SKCHD 1987/88

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 5.9

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



HEIGHTS
1. SOURCE: 283 GPM
2. STORAGE: 0.32 MG; OF 438'
3. STORAGE: 0.01 MG; OF 461'

WESTSIDE
4. SOURCE: 110-140 GPM
5. STORAGE: 0.153 MG; OF 440'
6. STORAGE: 0.1 MG; OF 440'

WATER DISTRICT NO. 19
7. SOURCE: 200 GPM
8. SOURCE: 150 GPM
9. STORAGE: 1.625 MG; OF 494'
10. SOURCE: 285 MG
11. STORAGE: 0.1 MG; OF 305'

BURTON
12. SOURCE: 150 GPM
13. STORAGE: 0.13 MG; OF 275'

MAURY MUTUAL
14. STORAGE: 0.03 MG; OF 305'
15. SOURCE: 35 GPM
16. STORAGE: 0.023 MG; OF 500'

GOLD BEACH
17. STORAGE: 0.05 LOW ZONE
0.035 HIGH ZONE
18. SOURCE: 250 GPM

DOCKTON
19. SOURCE: 80-100 GPM
20. STORAGE: 0.065 MG; OF 317'
21. SOURCE: 30-40 GPM
22. SOURCE: 100-110 GPM
STORAGE: 0.001 MG
23. STORAGE: 0.316 MG; OF 488

SOURCE: HORTON DENNIS 1989.

GERAGHTY & MILLER, INC.
Environmental Services

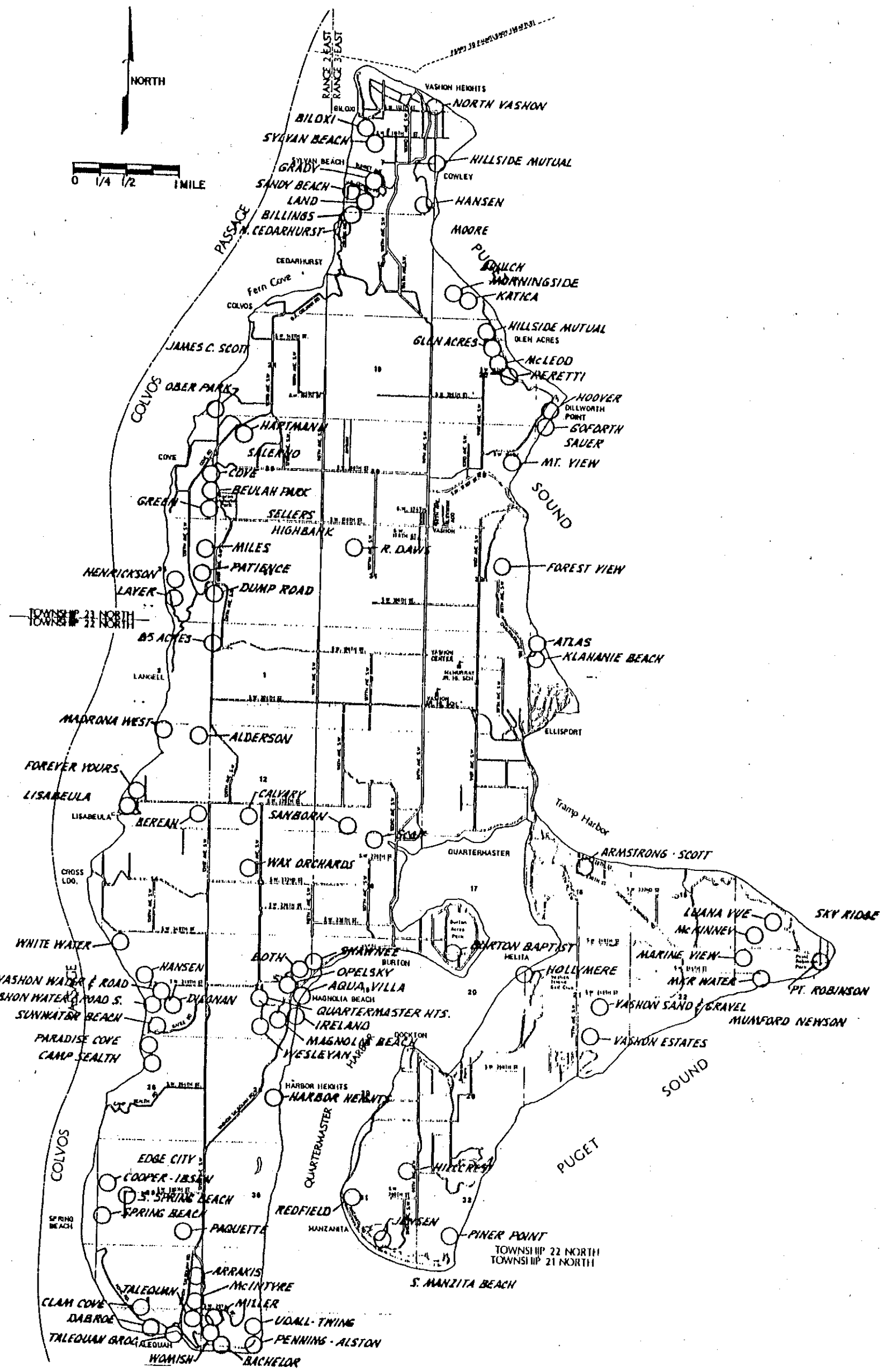
THE SEVEN MAJOR PURVEYORS' WATER SYSTEMS IN THE VASHON GROUND WATER MANAGEMENT AREA: SOURCES, AREAS OF DISTRIBUTION, AND STORAGE FACILITIES

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE **6.1**

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



SOURCE: HORTON DENNIS 1989

GERAGHTY & MILLER, INC.
Environmental Services

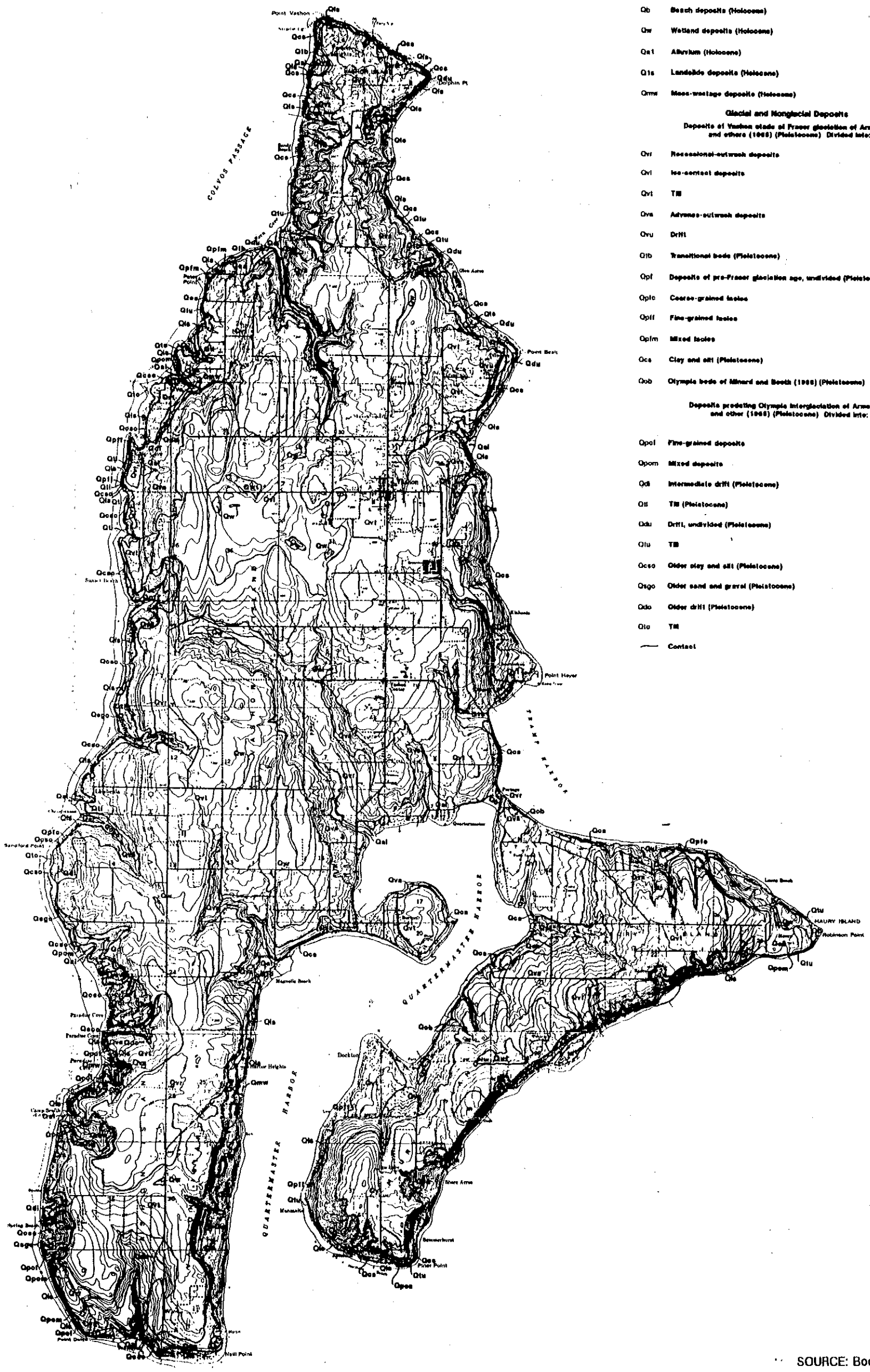
GROUP B WATER SYSTEMS IN THE VASHON GROUND WATER MANAGEMENT AREA: SOURCES, AREAS OF DISTRIBUTION, AND STORAGE FACILITIES

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE **6.2**

DWG DATE:	PRJCT NO.:	FILE NO.:	DRAWING:	CHECKED:	APPROVED:	DRAFTER:

163135



DESCRIPTION OF MAP UNITS

Postglacial Deposits

m	Modified land (Holocene)
Qb	Beach deposits (Holocene)
Qw	Wetland deposits (Holocene)
Qal	Alluvium (Holocene)
Qls	Landslide deposits (Holocene)
Qmw	Mass-wastage deposits (Holocene)

Glacial and Nonglacial Deposits

Deposits of Vashon stade of Fraser glaciation of Armstrong and others (1965) (Pleistocene) Divided into:

Qvr	Recessional-outwash deposits
Qvl	Ice-contact deposits
Qvt	Till
Qvs	Advance-outwash deposits
Qvu	Drift
Qlb	Transitional beds (Pleistocene)
Qpf	Deposits of pre-Fraser glaciation age, undivided (Pleistocene)
Qpfc	Coarse-grained facies
Qpff	Fine-grained facies
Qpfm	Mixed facies
Qcs	Clay and silt (Pleistocene)
Qob	Olympia beds of Minard and Booth (1966) (Pleistocene)

Deposits predating Olympia interglaciation of Armstrong and other (1965) (Pleistocene) Divided into:

Qpol	Fine-grained deposits
Qpom	Mixed deposits
Qdi	Intermediate drift (Pleistocene)
Qtl	Till (Pleistocene)
Qdu	Drift, undivided (Pleistocene)
Qtu	Till
Qcso	Older clay and silt (Pleistocene)
Qsgo	Older sand and gravel (Pleistocene)
Qdo	Older drift (Pleistocene)
Qto	Till
——	Contact

SOURCE: Booth 1991.

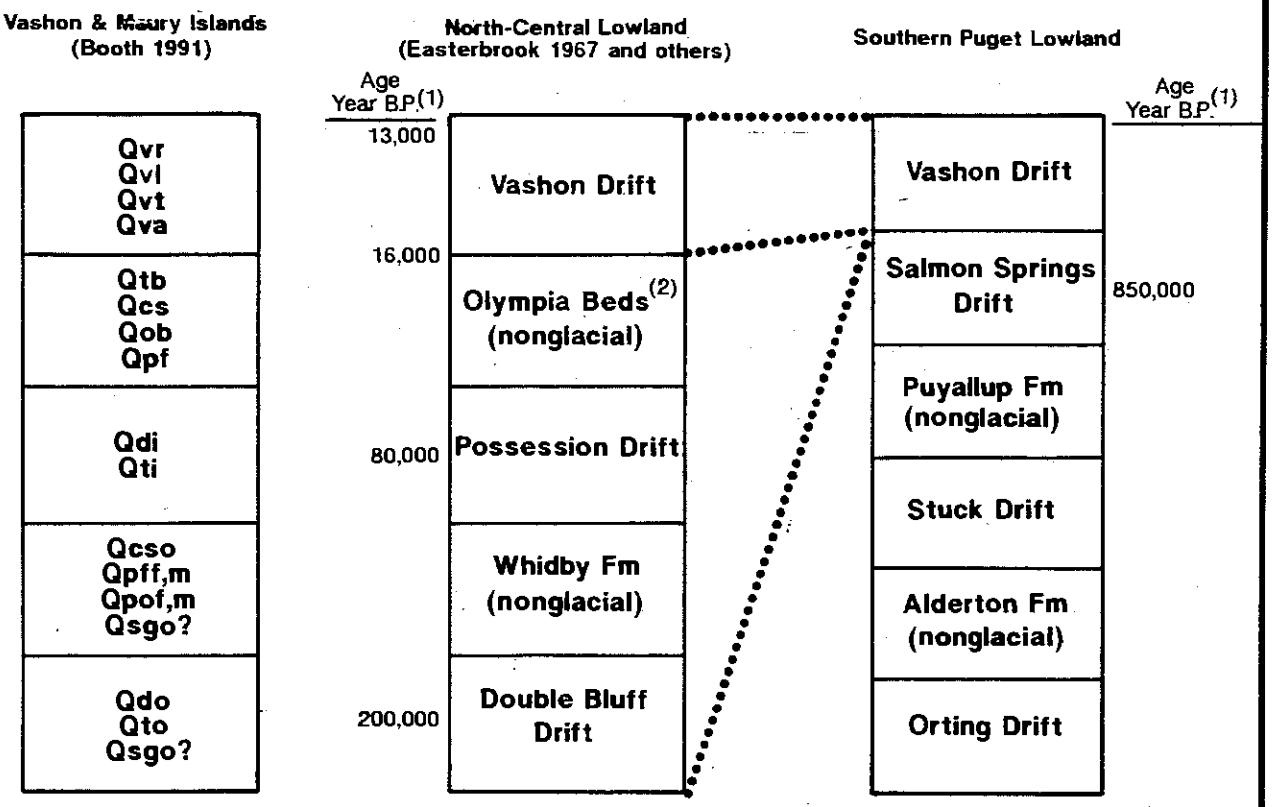
GERAGHTY & MILLER, INC.
Environmental Services

GEOLOGIC MAP OF VASHON ISLAND

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 8.1

156186



DESCRIPTION OF GEOLOGIC UNITS(3)

Qvr Recessional-Outwash Deposits

Qvi Ice-Contact Despoits

Qvt Till

Qva Advance-Outwash Deposits

Qtb Transitional Beds

Qcs Clay and Silt

Qob Olympia Beds

Qpf Pre-Fraser Deposits

Qdi Intermediate Drift

Qti Intermediate Till

Qcso Older Clay and Silt

Qsgo Older Sand and Gravel

Qdo Older Drift

Qto Older Till

Year B.P. - Years before present

(1) All dates from Easterbrook (1986)

(2) Informally named Olympia Beds From Minard and Booth (1988)

(3) See Glossary for description of geologic units

GERAGHTY & MILLER, INC.
Environmental Services

PUGET LOWLAND REGIONAL CORRELATIONS AND SPECULATIVE VASHON AND MAURY ISLAND CORRELATIONS

VASHON GROUND WATER MANAGEMENT PLAN

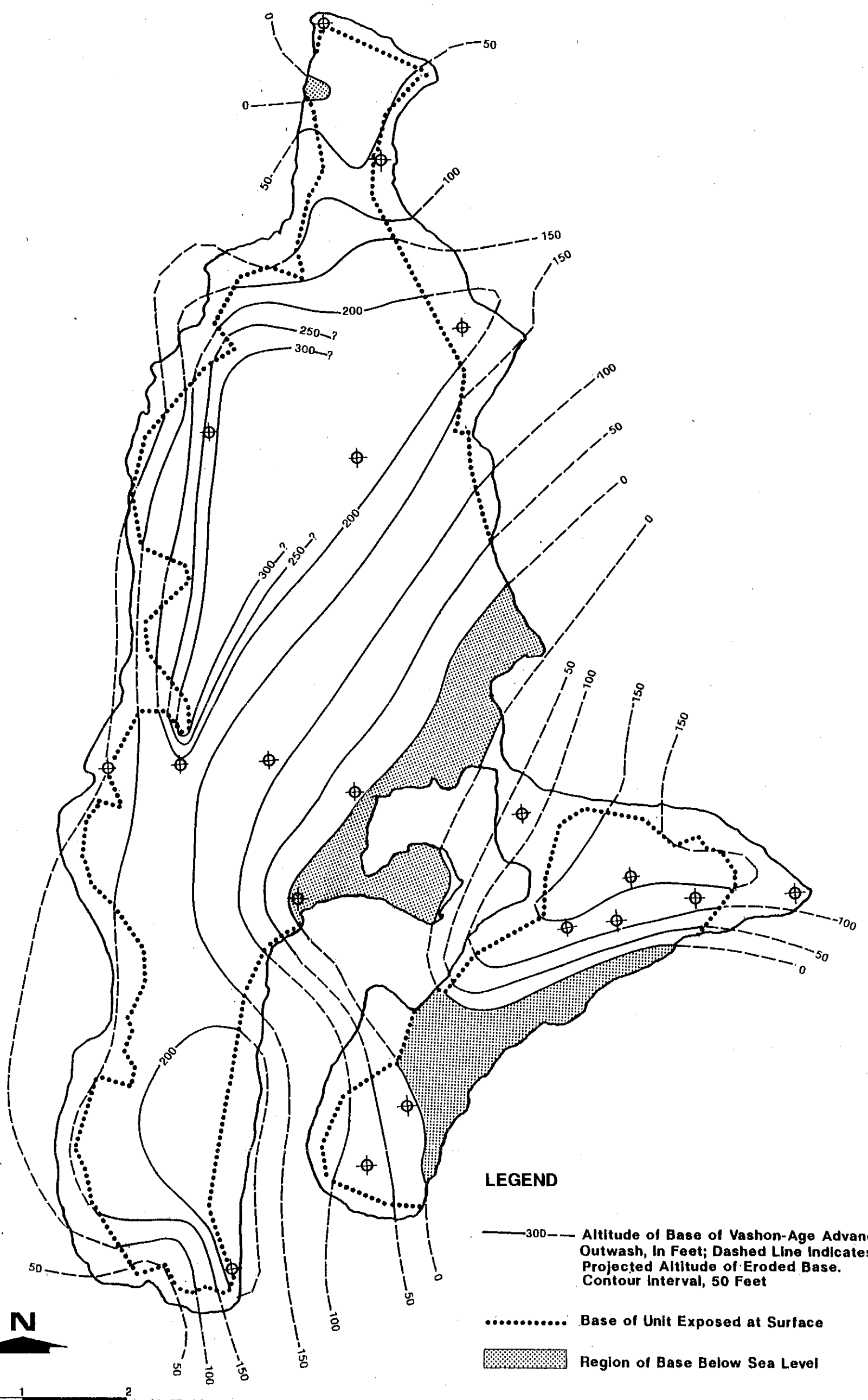
FIGURE **8.2**

Data current as of 1994

DRAFTER: SAC | APPROVED: MM | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA0028.00B | DWG DATE: FEB 1994

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



0 1 2
Approximate Scale In Miles

Modified from: Booth, D.B.,1991, Geologic Map of Vashon and Maury Islands, King County, Washington. U.S. Geologic Survey Miscellaneous field studies Map MF-2161.

Map current as of 1991

GERAGHTY & MILLER, INC.
Environmental Services

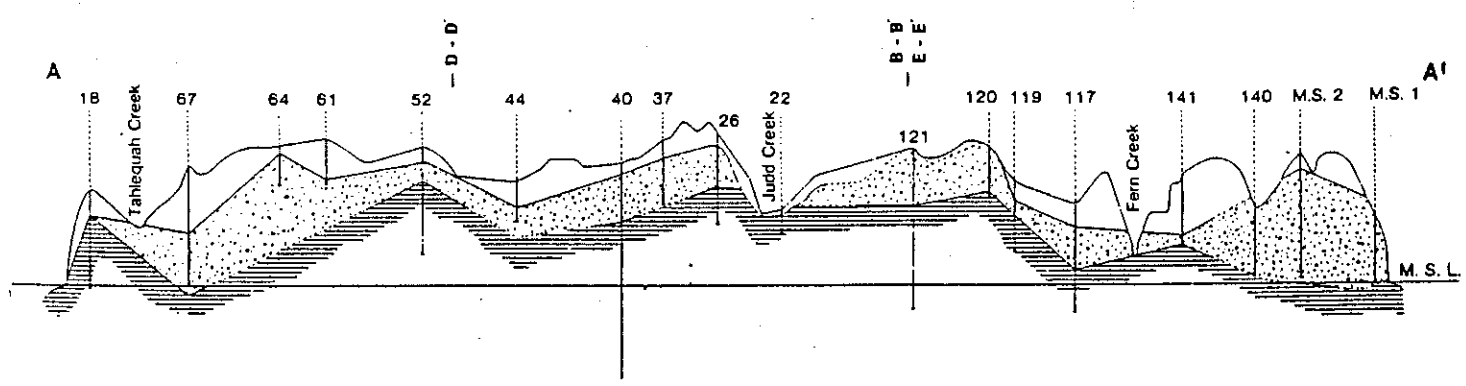
STRUCTURE CONTOUR MAP SHOWING ALTITUDE OF BASE OF VASHON AGE ADVANCE OUTWASH, IN FEET

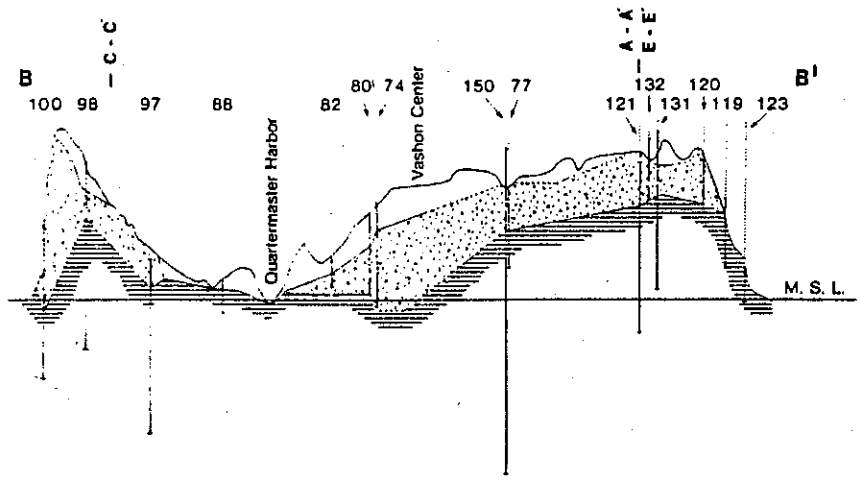
VASHON GROUND WATER MANAGEMENT PLAN

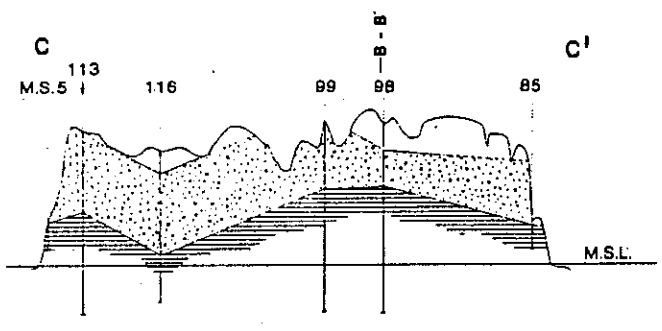
FIGURE **8.3**

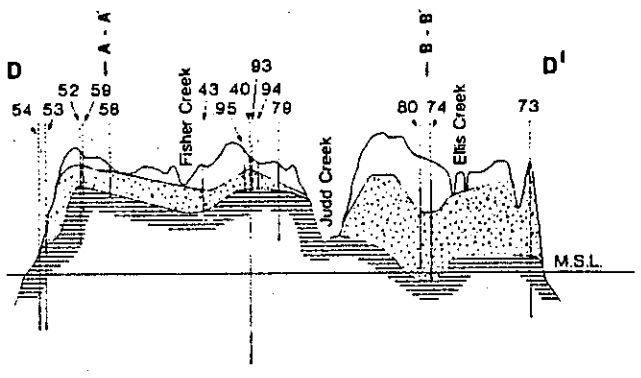
DWG DATE: MAR 1994 | PRJCT NO.: WA0028.0OB | FILE NO.: | DRAWING: | CHECKED: | APPROVED: LER | DRAFTER: SAC

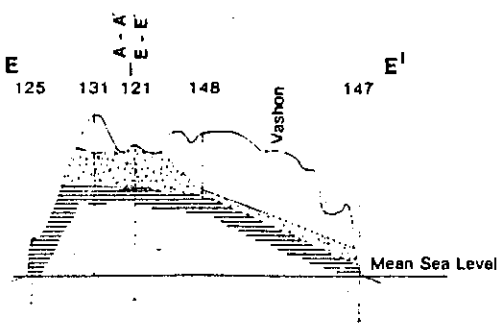
163135

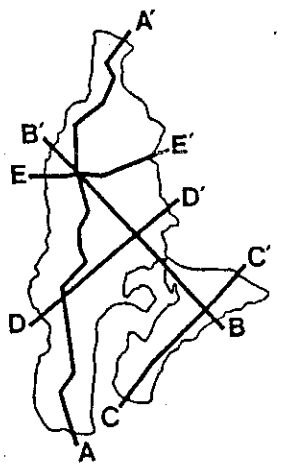








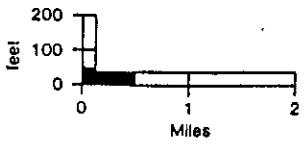




LEGEND

- Unit I Vashon Drift (includes till or related deposits)
- Unit II Principal Aquifer
- Unit III Predominantly silt and clay

Scale



SOURCE: Carr 1983.

GERAGHTY & MILLER, INC.
Environmental Services

GEOLOGIC CROSS SECTIONS

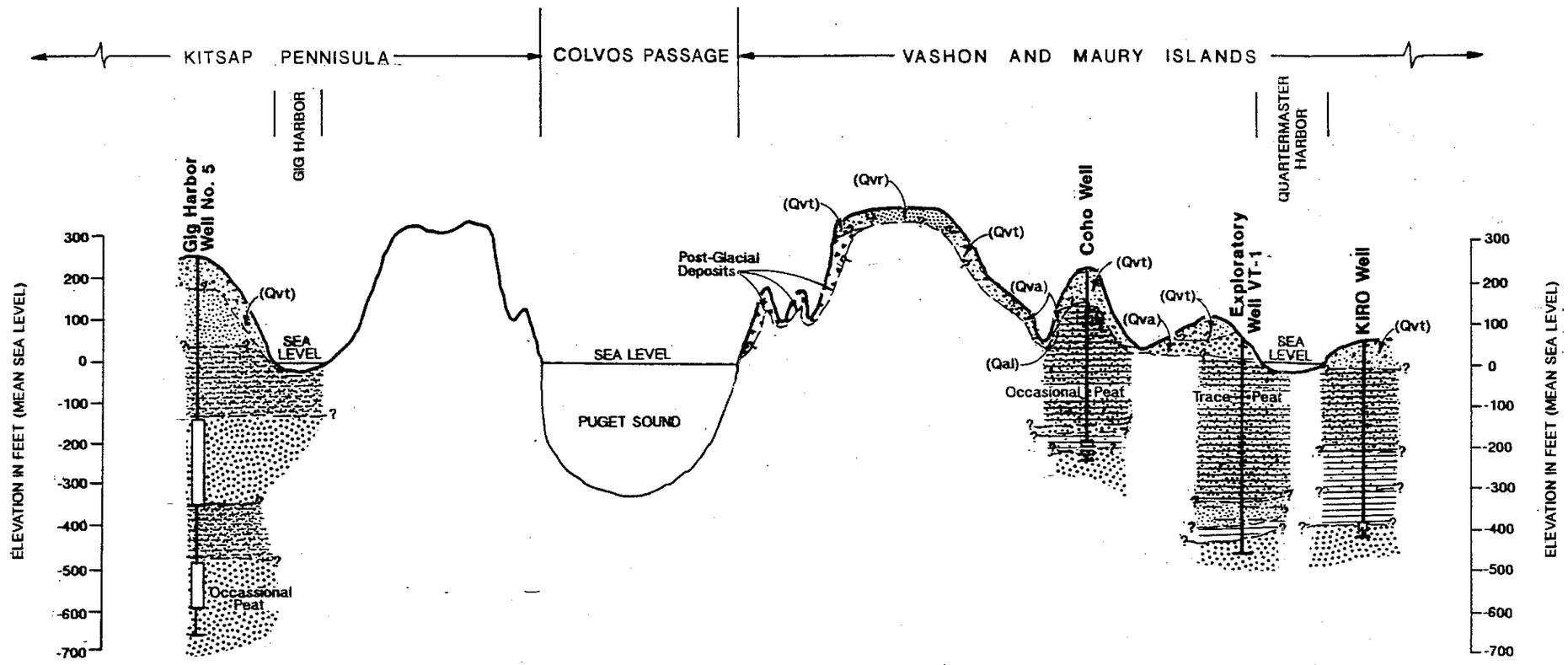
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.4

163135

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA028.02 | DWG DATE: APR 1993



SUBSURFACE UNITS LEGEND

- Clay
- Sandy Clay
- Interbedded Silt, Silty Clay and Clay
- Interbedded Silty Sand and Silt
- Sand
- Interbedded Sand, Silt and Sandy/Silty Gravel

Well Screen Interval

?— — —? Approximate Lithologic Contact

NOTE: Gig Harbor Well No. 5 data obtained from Hart Crowser Consultants, report dated May 1990. Coho Well data obtained from Carr/Associates, report dated June 11, 1991. KIRO Well data obtained from State of Washington water well log, dated October 1941.

SCALE: 1" = 1 MILE HORIZONTAL
VERTICAL EXAGGERATION 17.6X

SURFACE UNITS LEGEND

- Post Glacial Deposits: Landslide, mass wasting, beach deposits
- Alluvium (Qal): Cobble, gravel, sand and sandy silt
- Vashon Till (Qvt): Compact diamicton with subangular to rounded clasts
- Advance Outwash (Qva): Well-bedded sandy gravel and fine to medium grained sand
- Recessional Outwash (Qvr): Stratified sandy gravel and fine to medium grained sand

Surface units interpreted from Booth, D.B., 1991. Geologic Map of Vashon and Maury Islands, King County, Washington. U.S. Geologic Survey. Miscellaneous field studies Map MF-2161.

Ground surface elevations from Gig Harbor and Vashon Island, Washington 7.5 Minute U.S.G.S. Topographic Quadrangle Maps, Photorevised 1981 and 1968, respectively.

Map current as of 1993

GERAGHTY & MILLER, INC.
Environmental Services

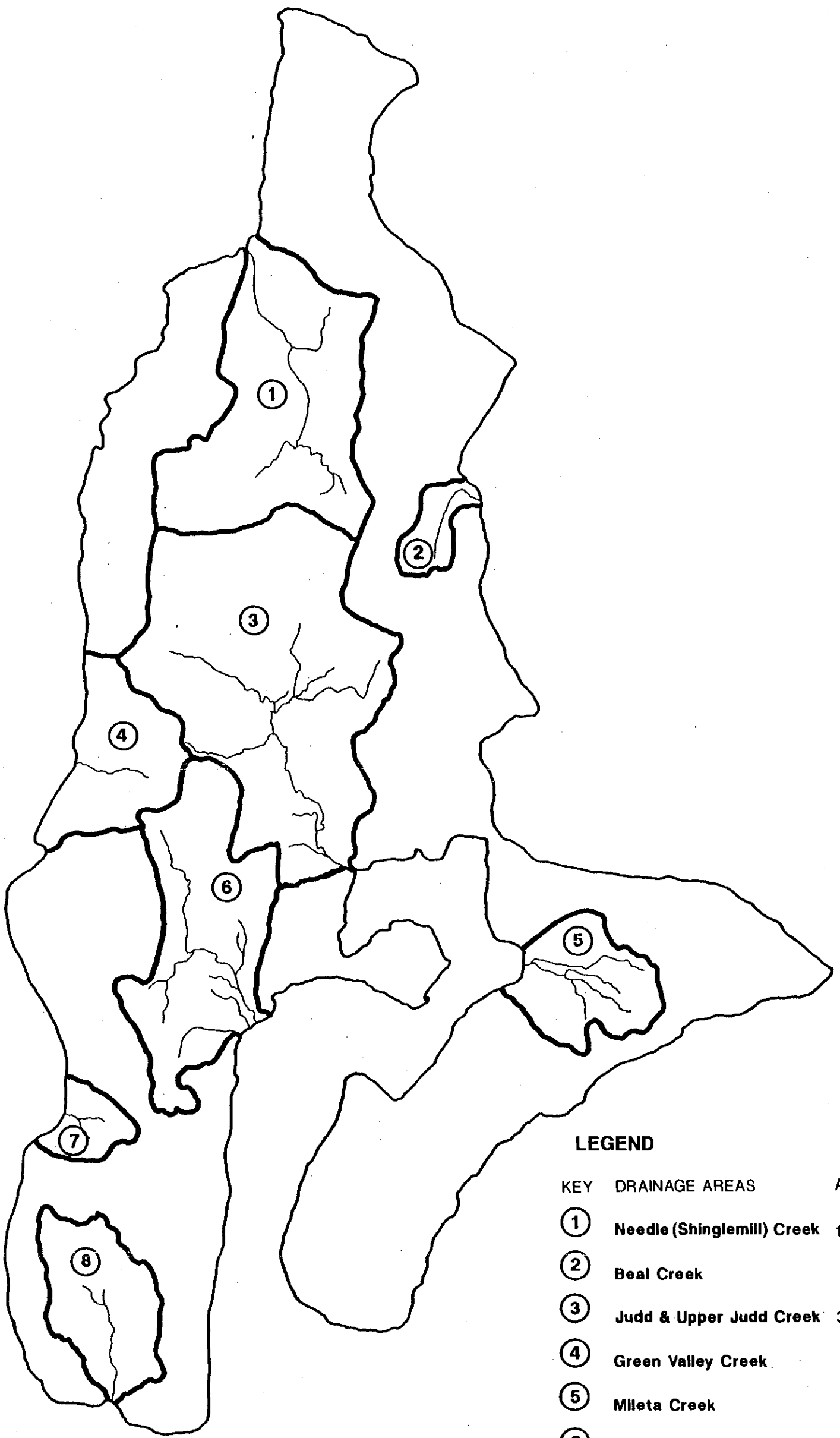
CROSS SECTION A-A' SHOWING HYDROSTRATIGRAPHY OF DEEP PRODUCTION WELLS

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 8.6

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



LEGEND

KEY	DRAINAGE AREAS	ACRES
1	Needle (Shinglemill) Creek	1996
2	Beal Creek	211
3	Judd & Upper Judd Creek	3149
4	Green Valley Creek	762
5	Mileta Creek	700*
6	Fisher Creek	1549
7	Paradise Cove Creek	200*
8	Tahlequah Creek	780

N

0 1 2

Approximate Scale In Miles

SOURCE: Modified from Carr 1983

* Estimated

GERAGHTY & MILLER, INC.
Environmental Services

DRAINAGE BASIN MAP

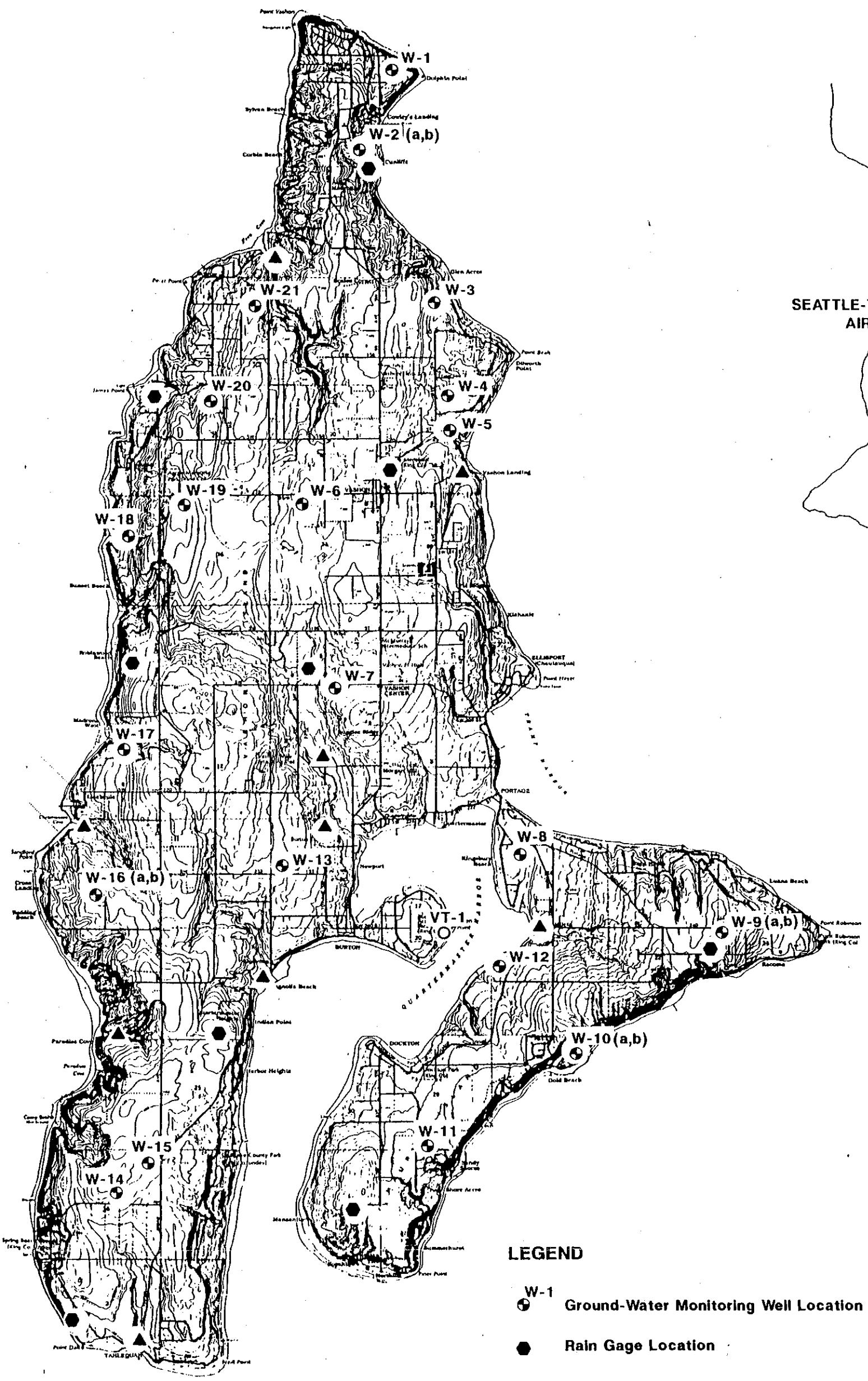
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.7

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



SOURCE: Geraghty & Miller 1993.

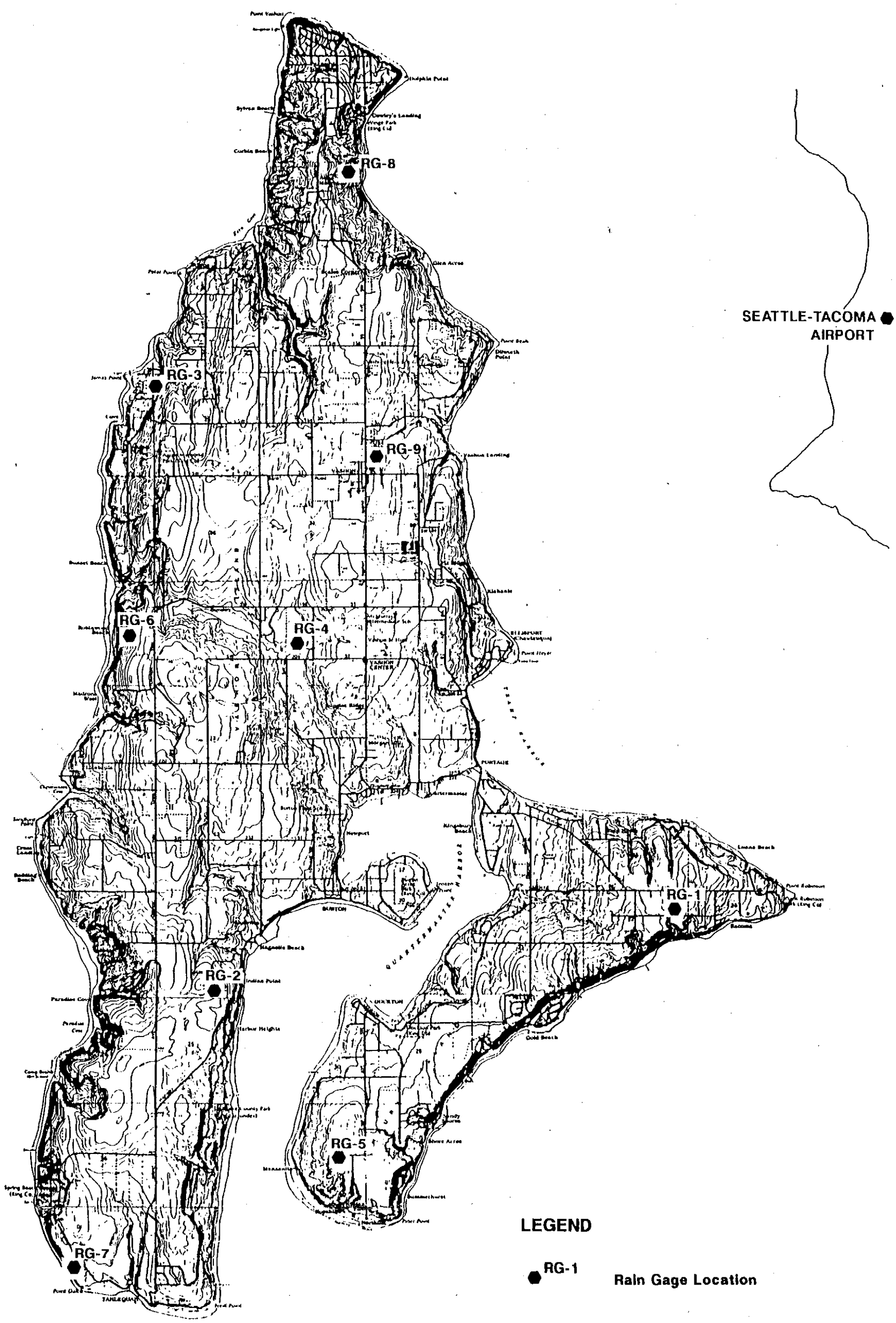
GERAGHTY & MILLER, INC.
Environmental Services

RAIN GAGE, STREAM GAGE, AND WELL LOCATIONS

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE **8.8**

DWG DATE: MAR 1994	PRJCT NO.:WA0028.0OB	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC



NOTE: RG-7 and the Krimmel gage in Carr (1983) are the same.
RG-9 and Water District 19 rain gage are the same.

SOURCE: Geraghty & Miller 1993.

GERAGHTY & MILLER, INC.
Environmental Services

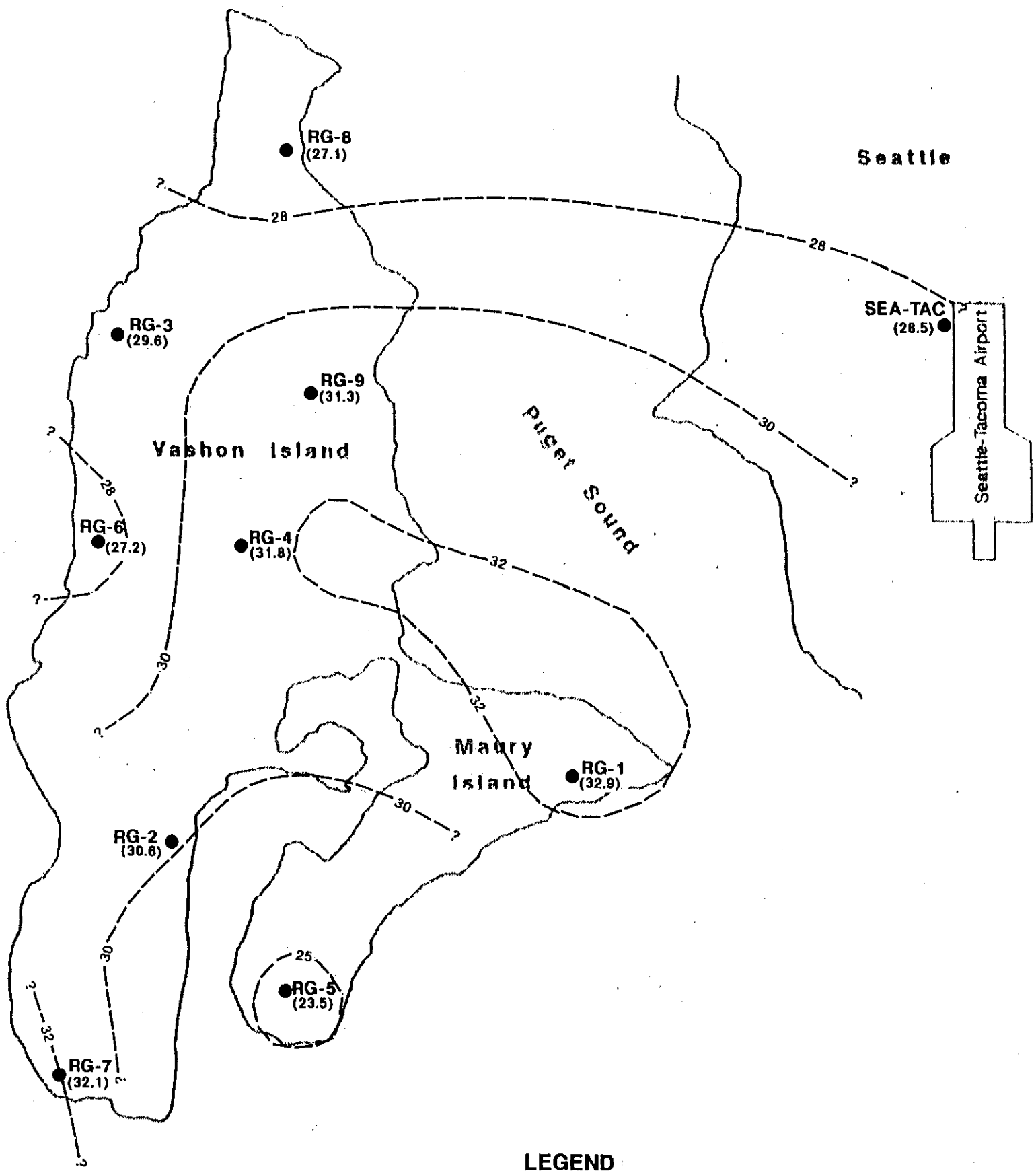
RAIN GAGE LOCATIONS

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE **8.9**

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LR	DRAFTER: SAC

163135



LEGEND

RG-1 ● Location of Rainfall Gaging Station

(27.2) Total Rainfall Shown in Parentheses; *Rainfall Data Included Are March-December 1989

——— Lines of Equal Total Rainfall

N

0 1/2 1 1 1/2 2
Approximate Scale in Miles

SOURCE: Geraghty & Miller 1993.

GERAGHTY & MILLER, INC.
Environmental Services

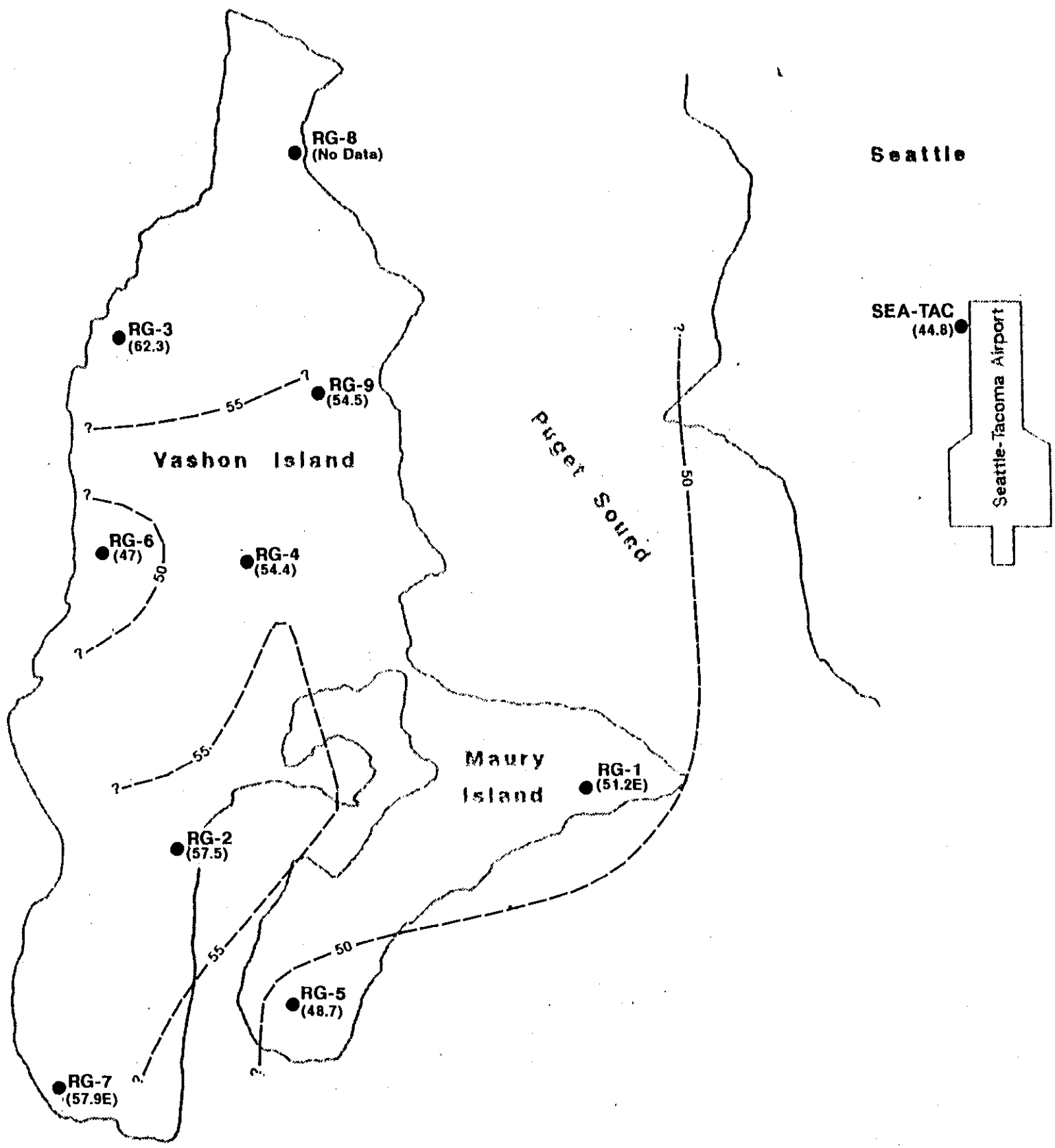
1989 ISOHYETAL (TOTAL RAINFALL) MAP*

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE **8.10**

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LR	DRAFTER: SAC

163135



LEGEND

● RG-1	Location of Rainfall Gaging Station
(62.3)	Total Annual Rainfall Shown in Parentheses; Qualified with E Where Estimated Data Are Included
———	Lines of Equal Total Rainfall

N

0 1/2 1 1 1/2 2
Approximate Scale in Miles

SOURCE: Geraghty & Miller, 1993.

GERAGHTY & MILLER, INC.
Environmental Services

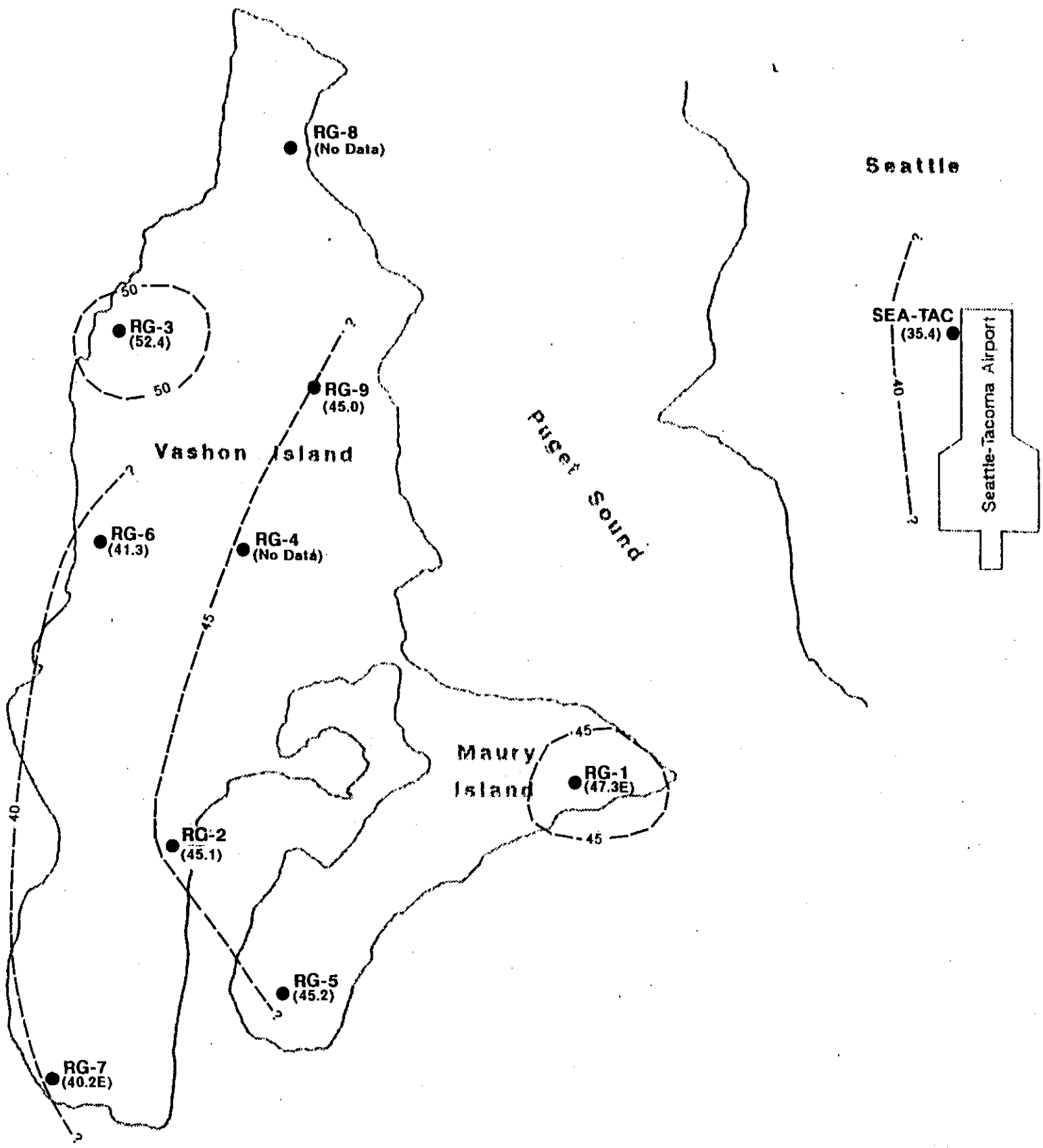
1990 ISOHYETAL (TOTAL RAINFALL) MAP

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE
8.11

DWG DATE: MAR 1993 | PRJCT NO.: WA028.02 | FILE NO.: | DRAWING: | CHECKED: | APPROVED: LR | DRAFTER: SAC

163135



LEGEND

● RG-1	Location of Rainfall Gaging Station
(41.3)	Total Annual Rainfall Shown in Parentheses; Qualified with E Where Estimated Data Are Included
———	Lines of Equal Total Rainfall

N

0 1/2 1 1 1/2 2
Approximate Scale in Miles

SOURCE: Geraghty & Miller 1993

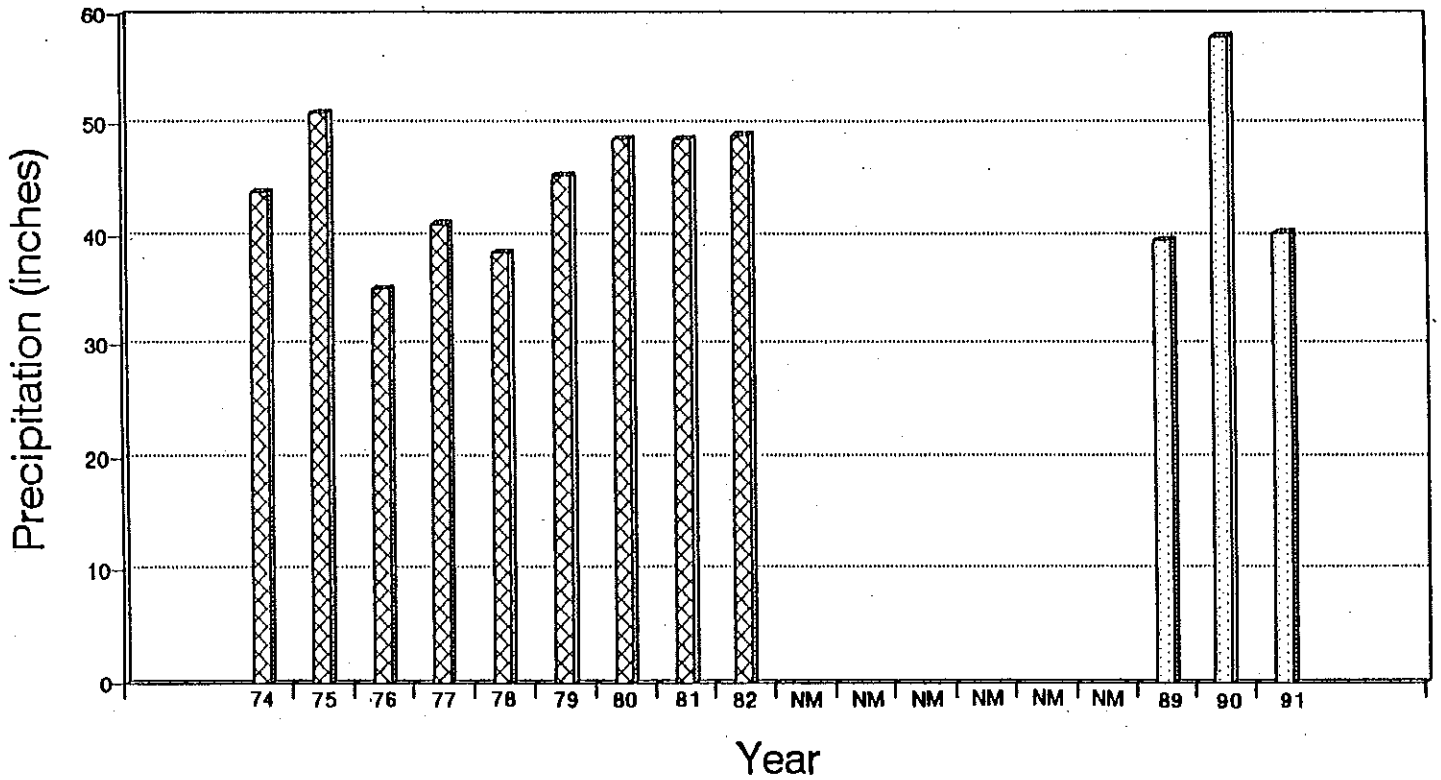
GERAGHTY & MILLER, INC.
Environmental Services

1991 ISOHYETAL (TOTAL RAINFALL) MAP

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE **8.12**

DWG DATE: MAY 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC



Krimmel Rain Gage | Rain Gage 7

NOTE: Rain gage 7 is called Krimmel rain gage in Carr 1983.

NM = Not Measured

Source of 1974-1982 Data: Carr 1983.

GERAGHTY & MILLER, INC.
Environmental Services

163135

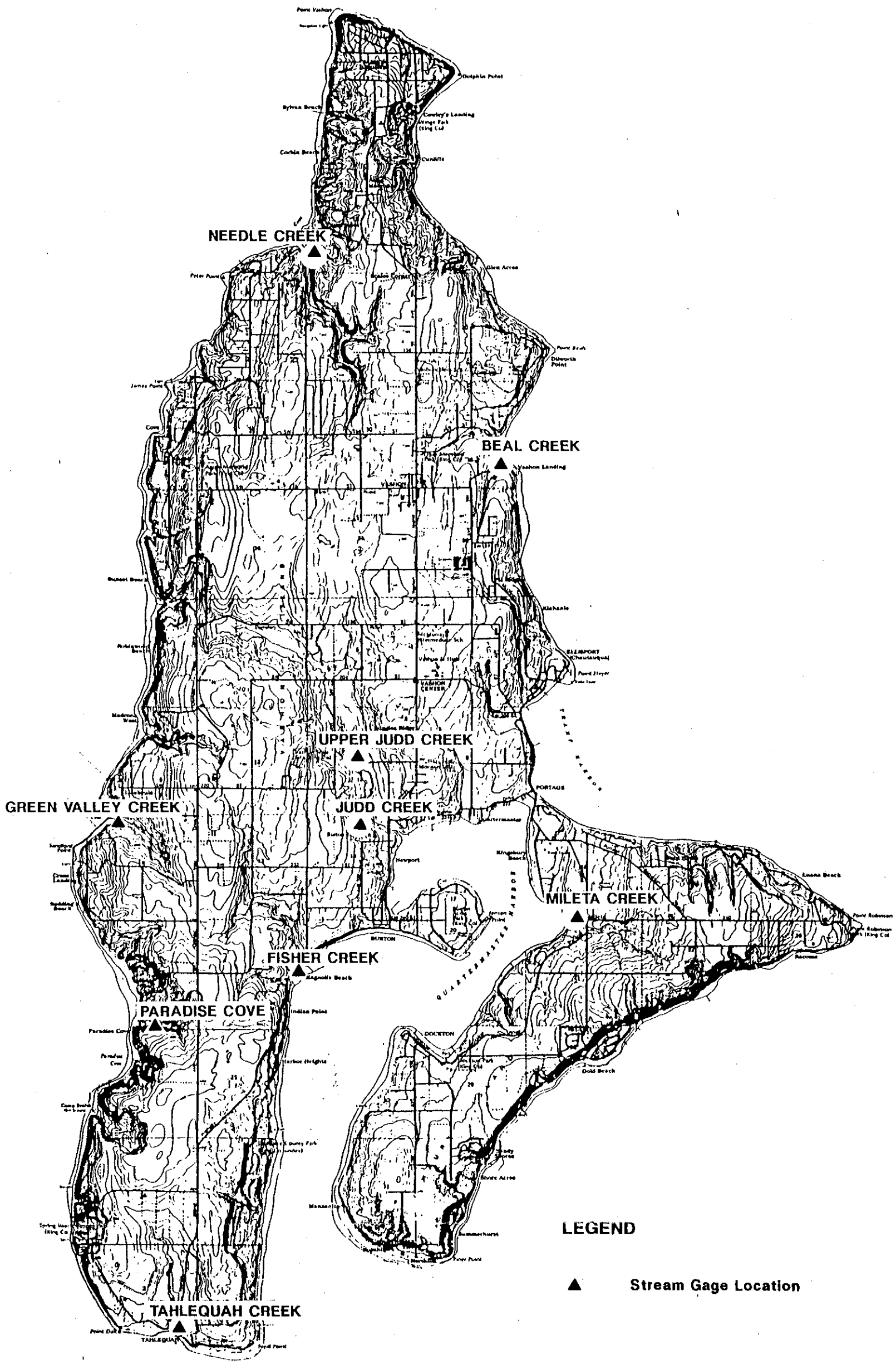
ANNUAL RAINFALL AT RAIN GAGE 7

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.14

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC



SOURCE: Geraghty & Miller, 1993.

GERAGHTY & MILLER, INC.
Environmental Services

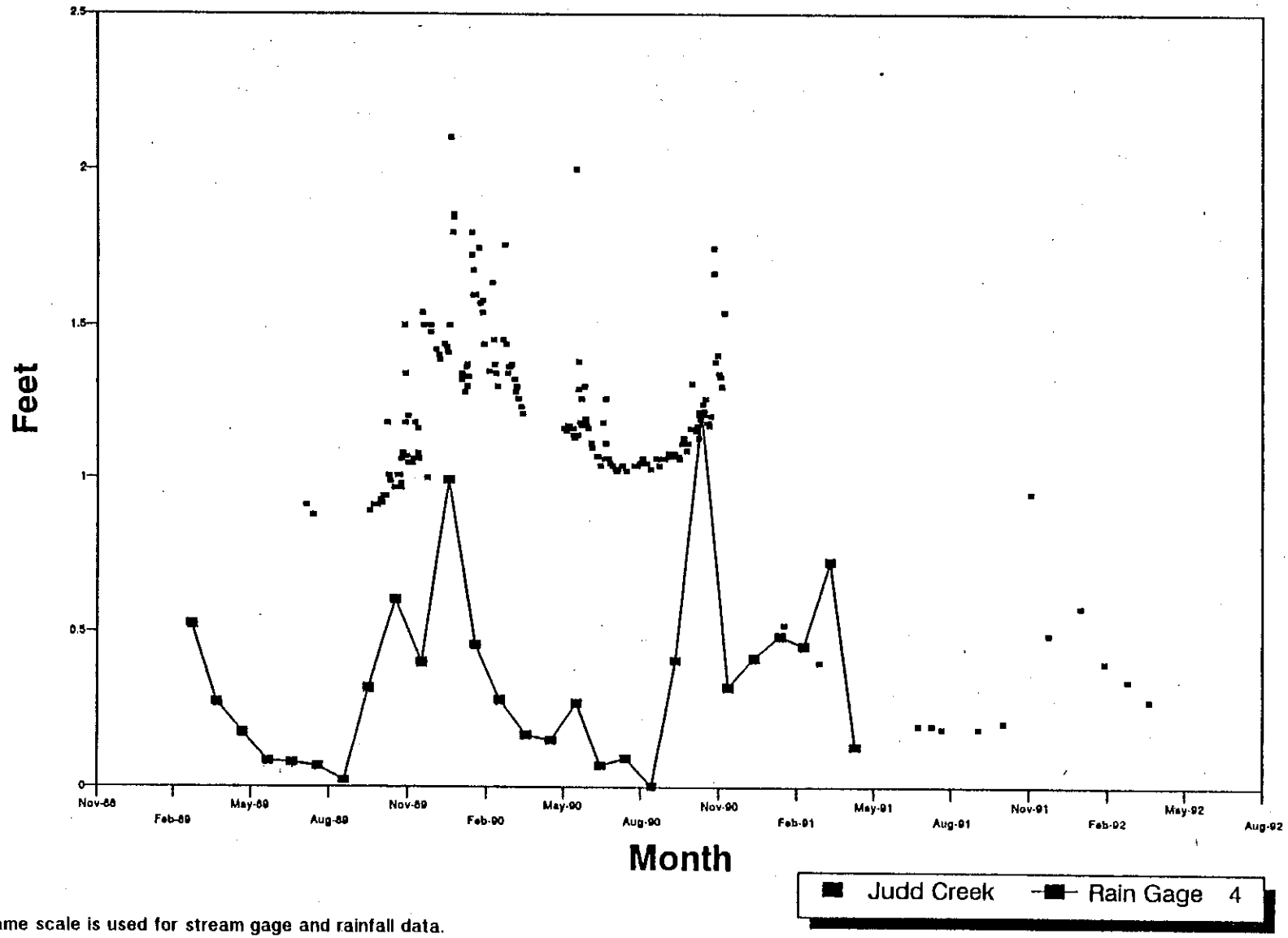
STREAM GAGE LOCATIONS

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.15

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC



NOTE: The same scale is used for stream gage and rainfall data.

GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

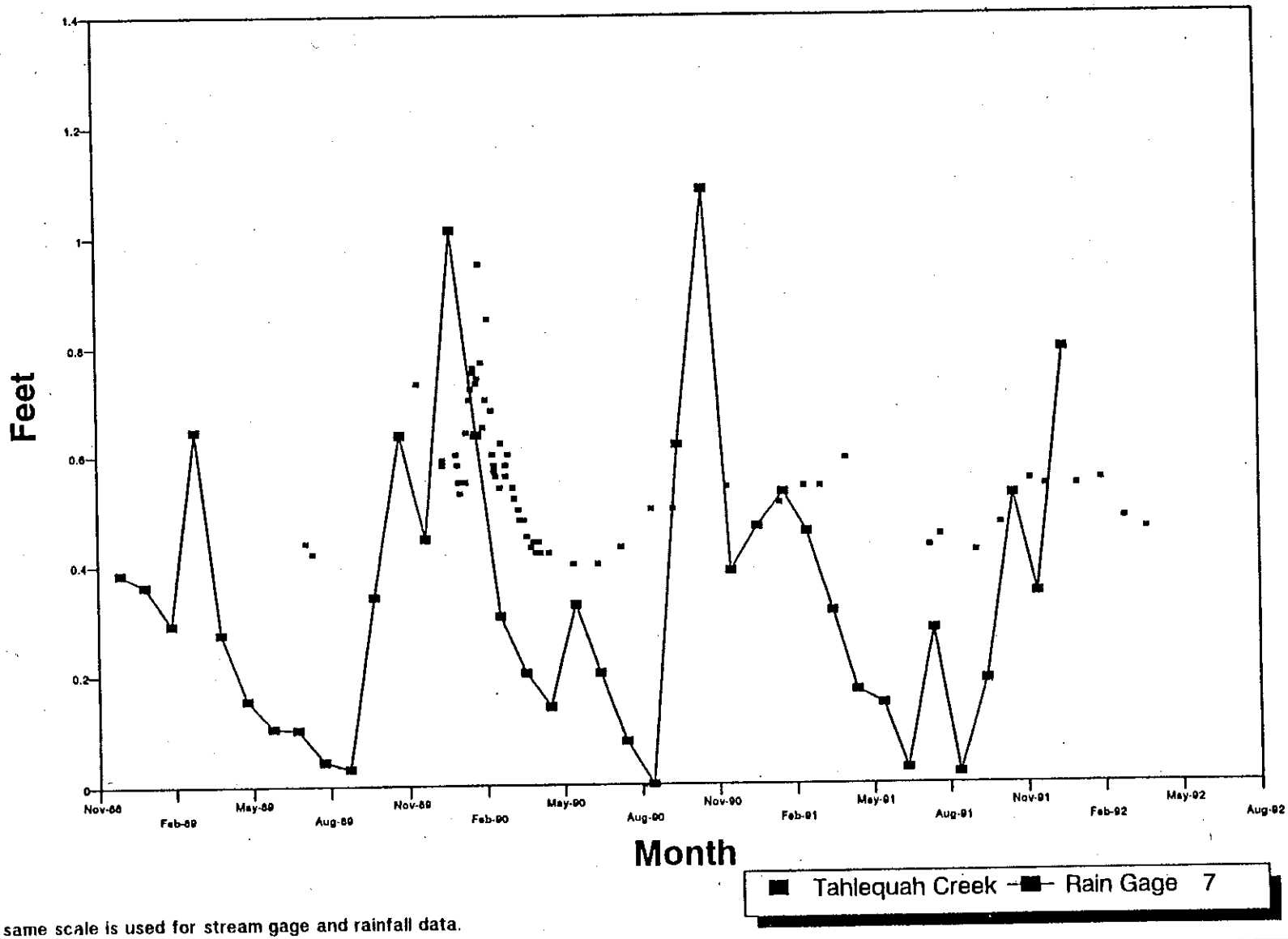
STREAM GAGE DATA VS. RAIN GAGE DATA
JUDD CREEK VS. RAIN GAGE 4

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE
8.16

163135

DWG DATE: MAR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC



NOTE: The same scale is used for stream gage and rainfall data.

GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

STREAM GAGE DATA VS. RAIN GAGE DATA
TAHLEQUAH CREEK VS. RAIN GAGE 7

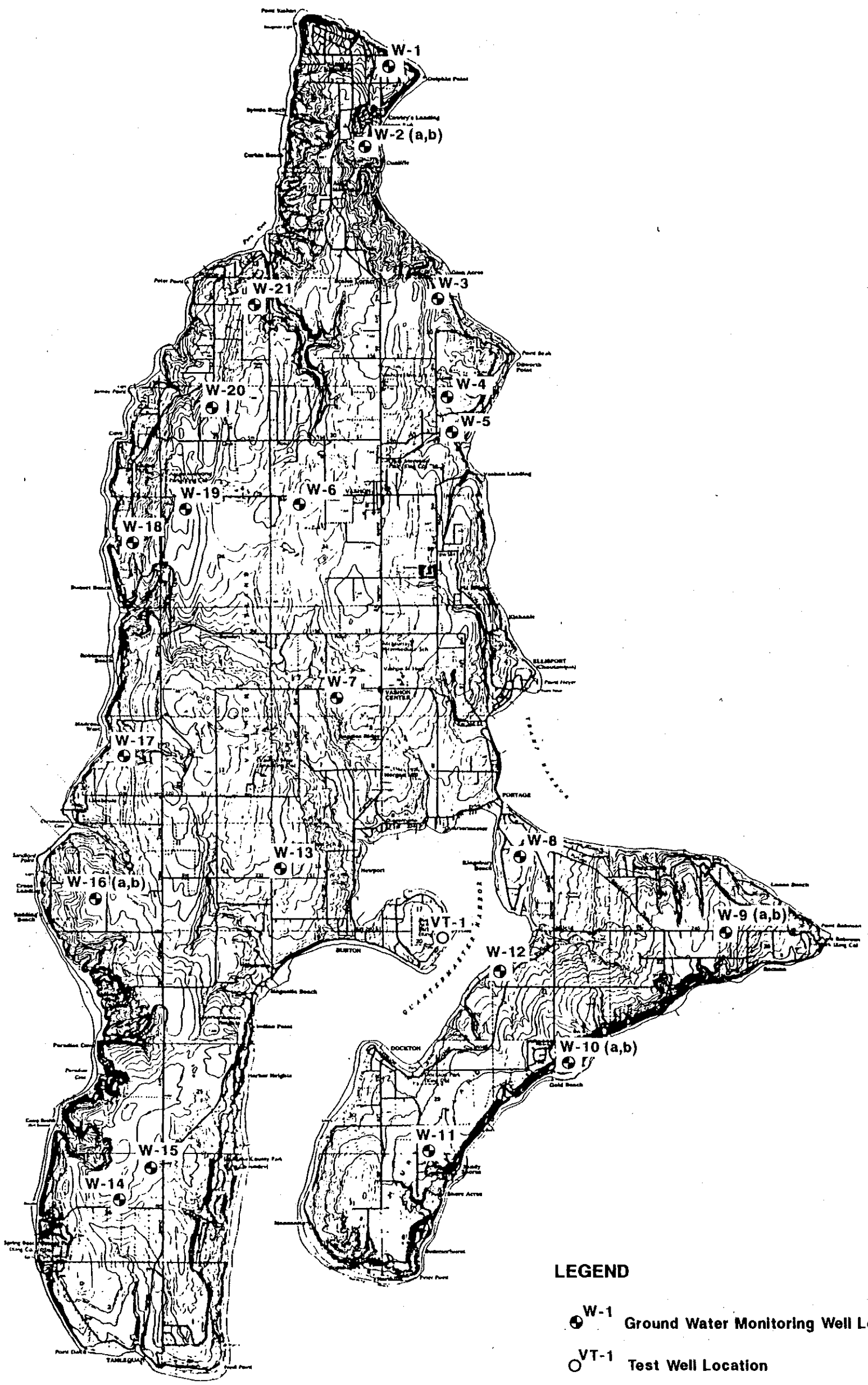
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE
8.17

163135

DWG DATE: APR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



SOURCE: Geraghty & Miller 1993.

GERAGHTY & MILLER, INC.
Environmental Services

WELL LOCATIONS

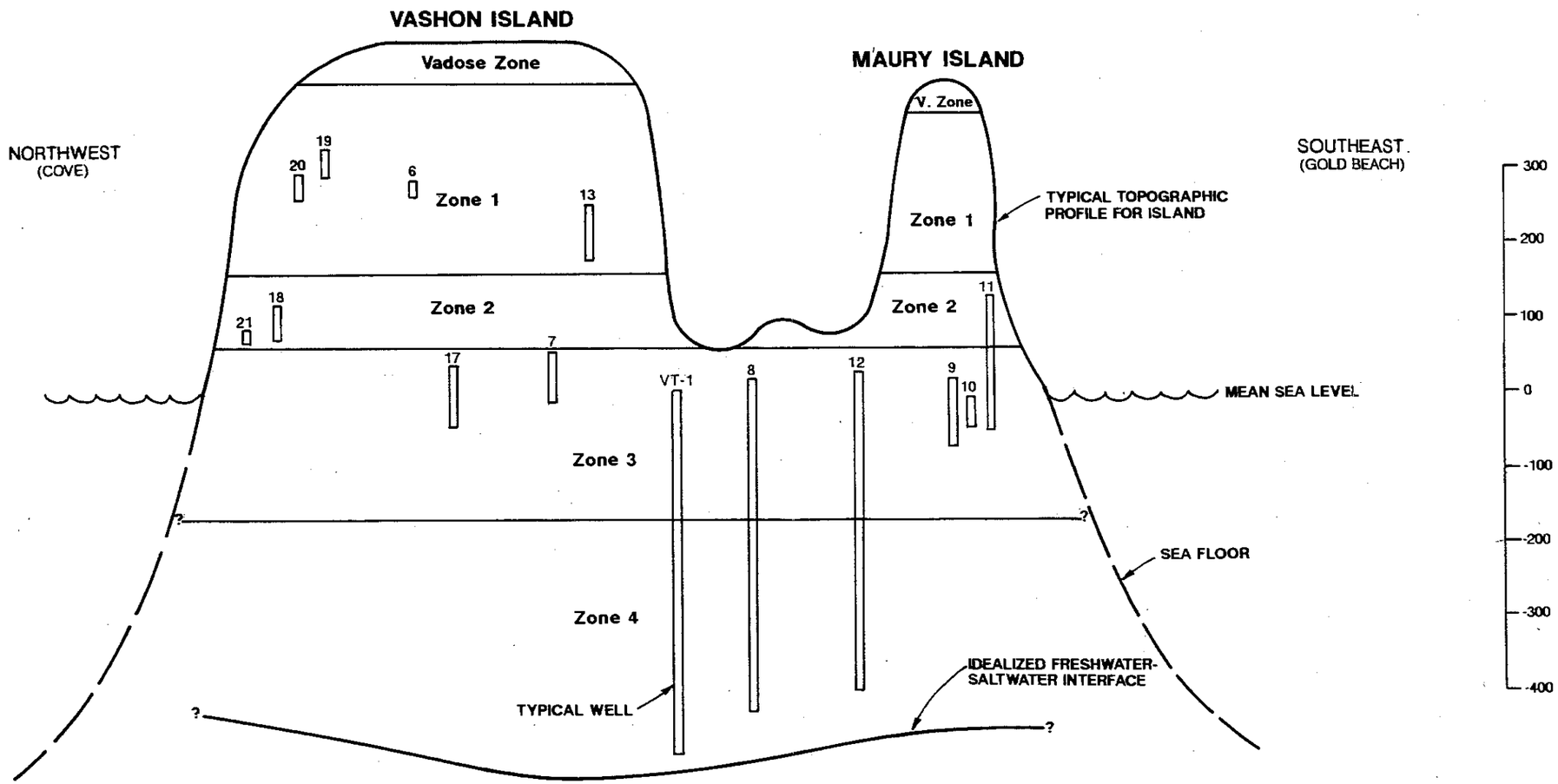
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.18

156186

DRAFTER: SAC. | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA0028.0OB | DWG DATE: MAR 1994



NOTES: Hydrostratigraphic zones do not necessarily relate to geologic zones.

Aquifer zones shown have been simplified. Actual zones are more complex.

Wells were projected onto section line. Well ID noted above well.

NOT TO SCALE HORIZONTALLY

GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

GENERAL SCHEMATIC OF HYDROSTRATIGRAPHIC ZONES

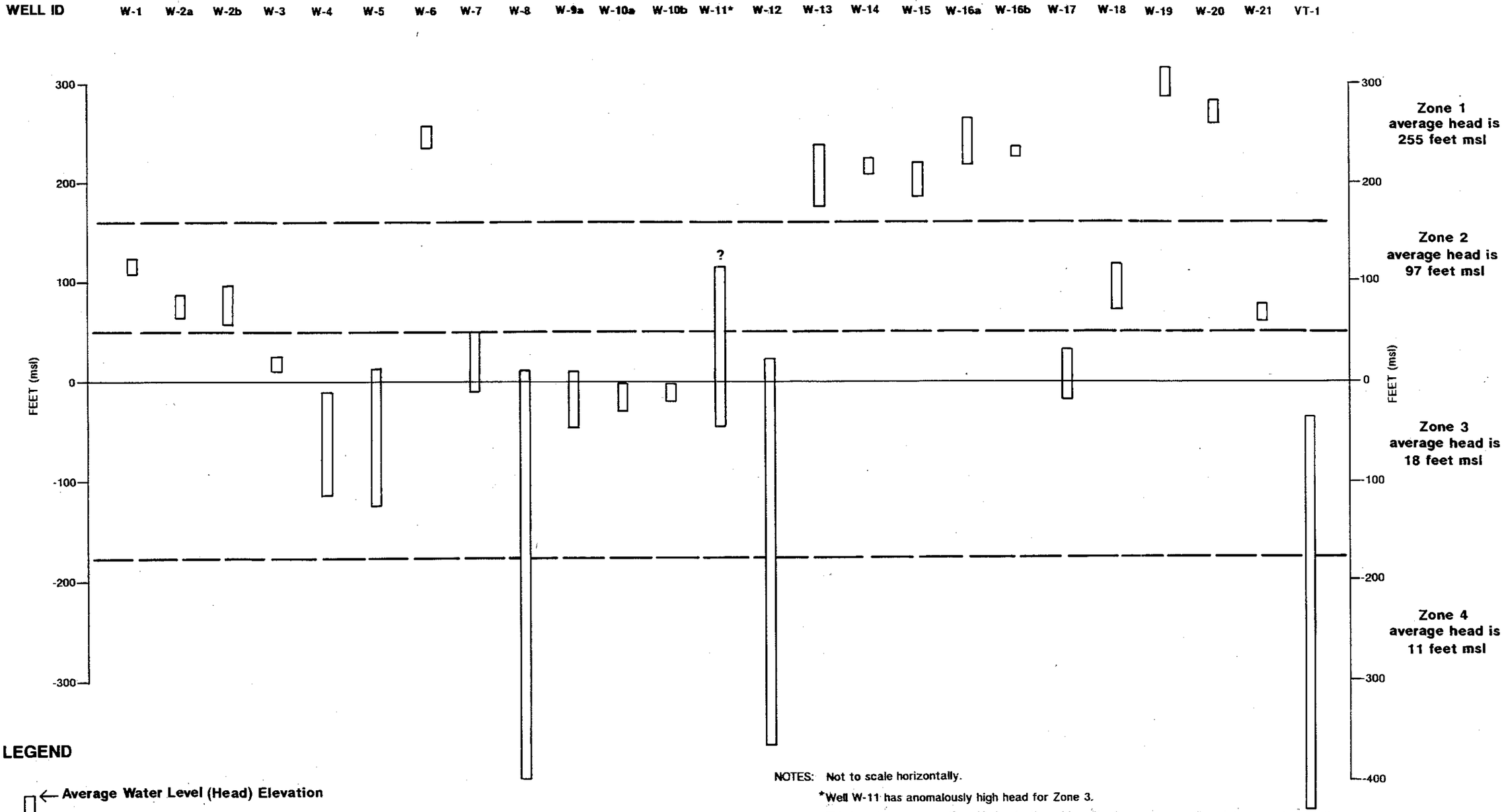
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.19

156186

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA0028.0OB | DWG DATE: MAR 1994



LEGEND

← Average Water Level (Head) Elevation

← Elevation of Mid-Point of Well Screen

msl Mean Sea Level

Arbitrary Divisions Between Water-Bearing Zones

NOTES: Not to scale horizontally.

*Well W-11 has anomalously high head for Zone 3.

This is not a cross section. Hydrostratigraphic units do not necessarily relate to geologic units.

GERAGHTY & MILLER, INC.
Environmental Services

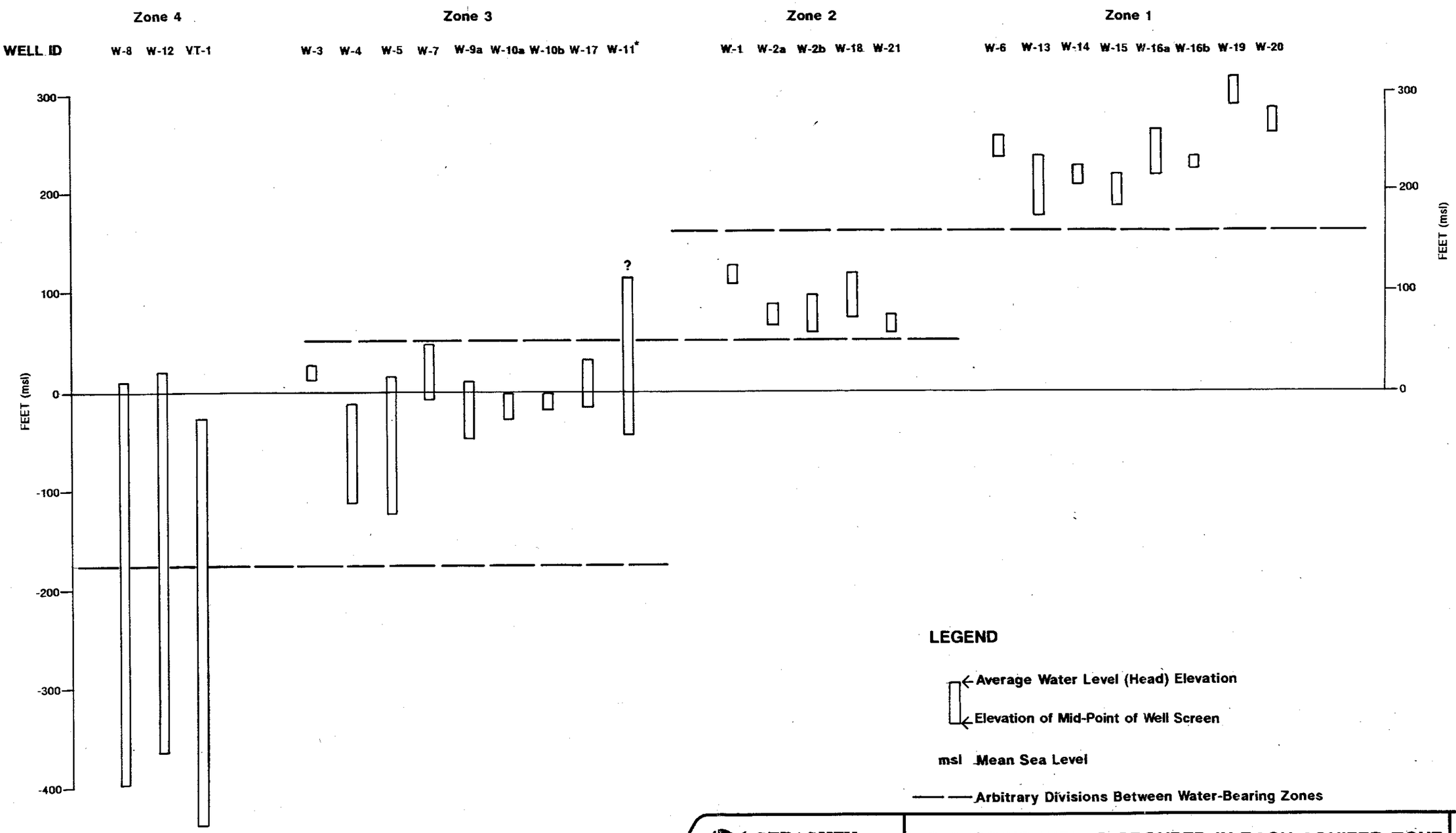
Map current as of 1993

DISTRIBUTION OF MONITORING WELLS IN AQUIFER ZONES

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 8.20

156186



NOTES: Not to scale horizontally.

* Well W-11 has anomalously high head for Zone 3.

This is not a cross section. Hydrostratigraphic units do not necessarily relate to geologic units.

GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

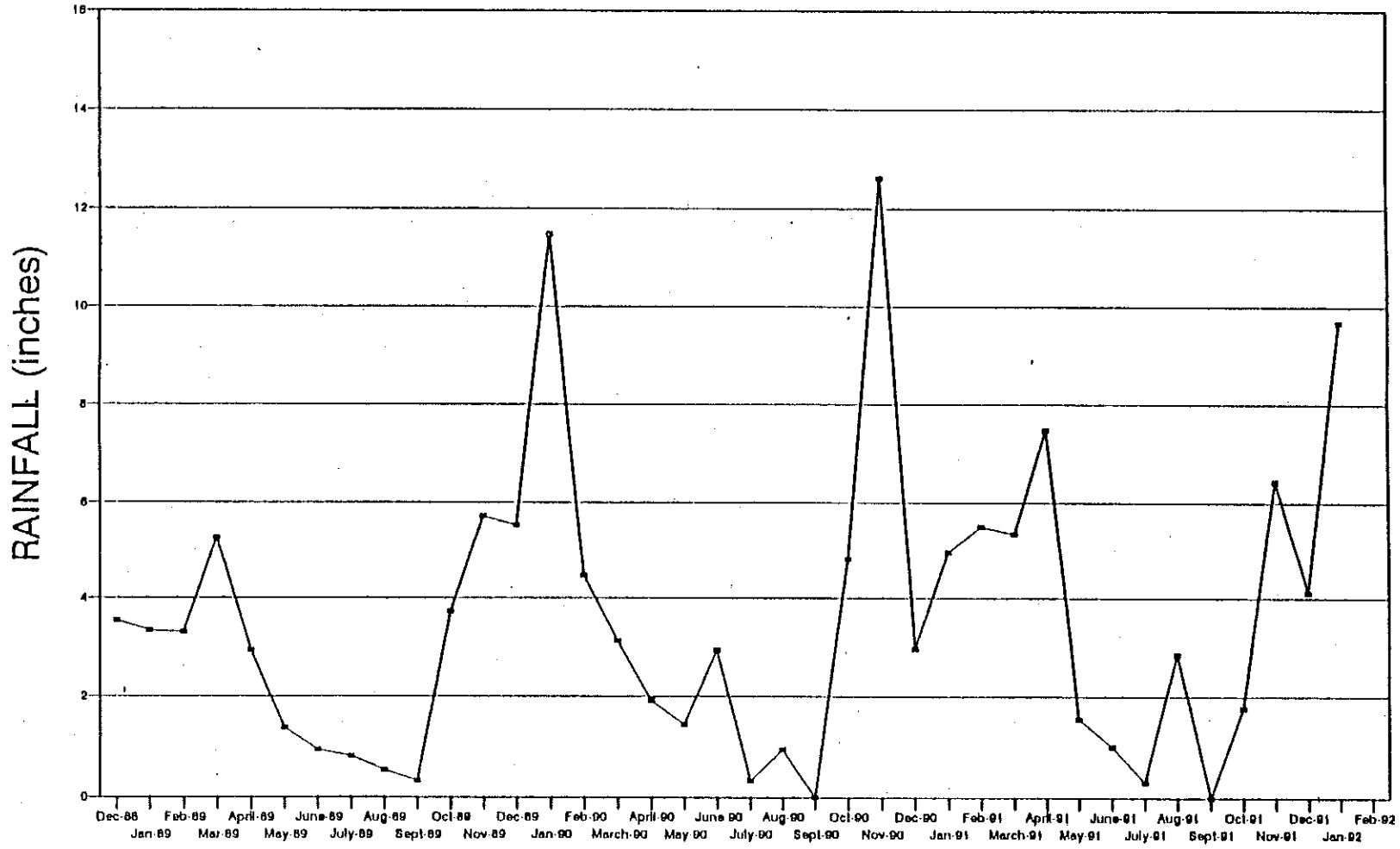
MONITORING WELLS GROUPED IN EACH AQUIFER ZONE

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 8.21

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA0028.0OB | DWG DATE: MAR 1994

DWG DATE: APR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC



SOURCE: Geraghty & Miller 1993.

GERAGHTY & MILLER, INC.
Environmental Services

MONTHLY RAINFALL, RAIN GAGE 6

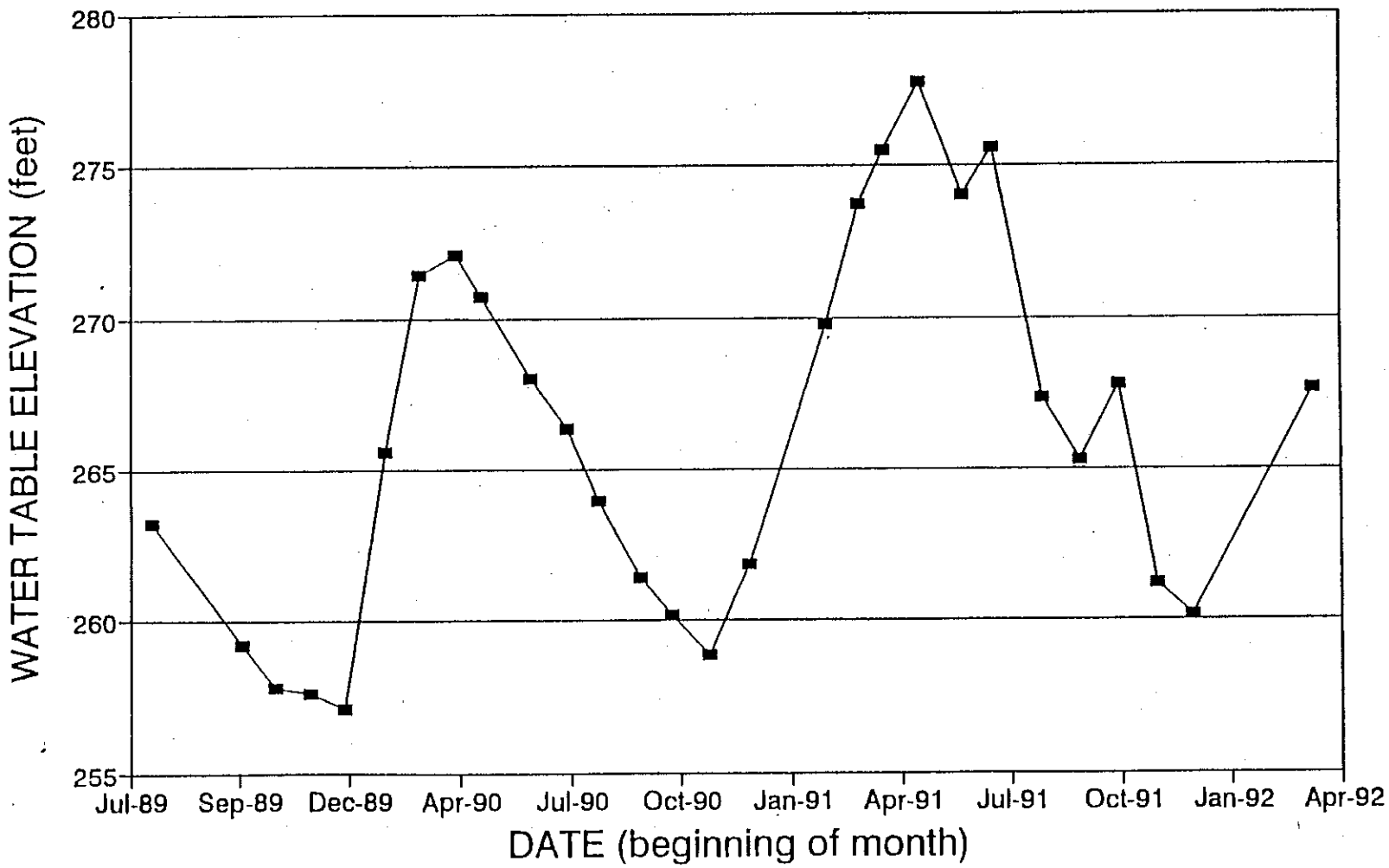
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.22

163135

DWG DATE: APR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC



SOURCE: Geraghty & Miller 1992.

GERAGHTY & MILLER, INC.
Environmental Services

WATER-TABLE ELEVATIONS, WELL W-16A

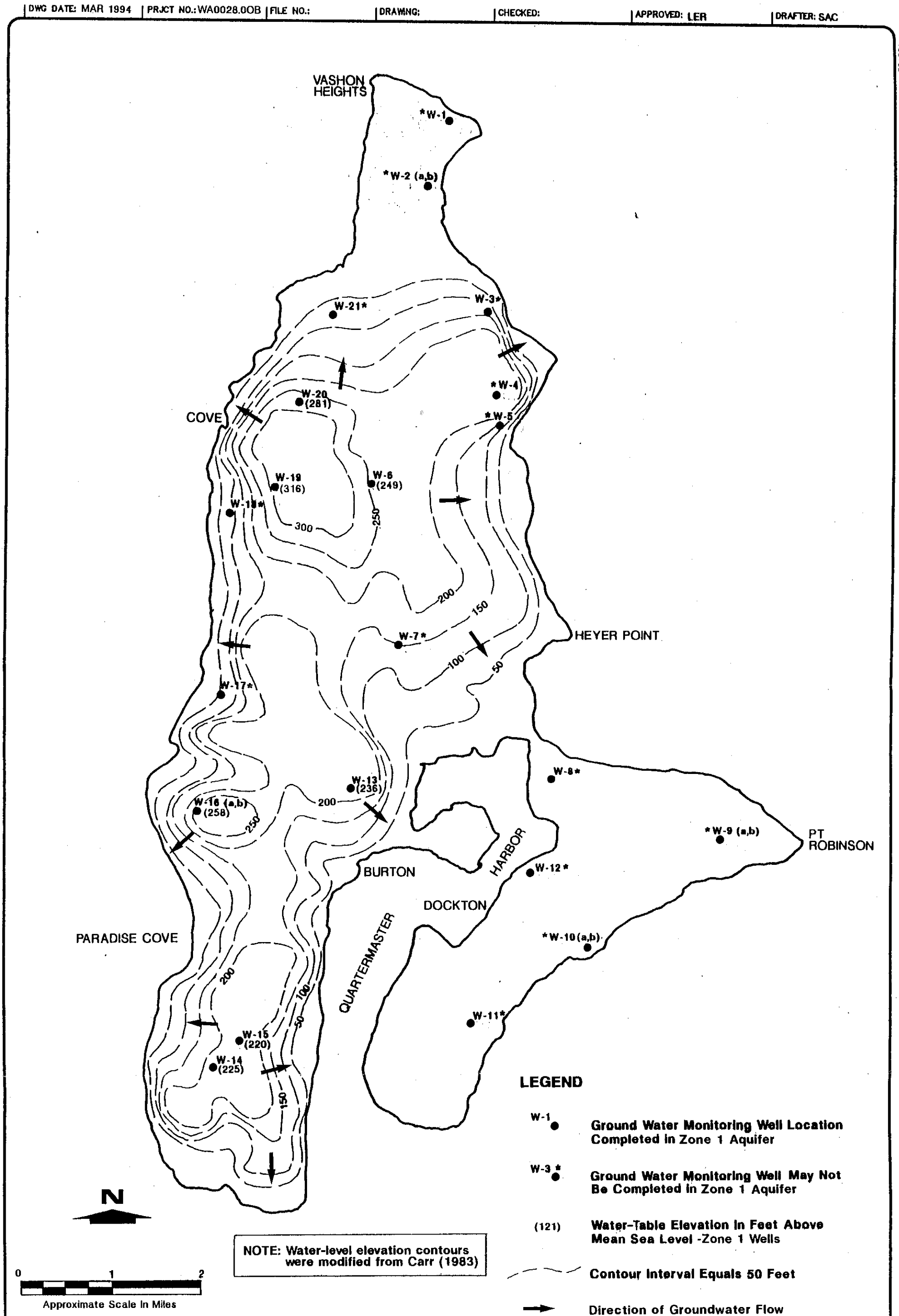
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.23

163135

DWG DATE: MAR 1994 | PRJCT NO.: WA0028.0OB | FILE NO.: | DRAWING: | CHECKED: | APPROVED: LER | DRAFTER: SAC



GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

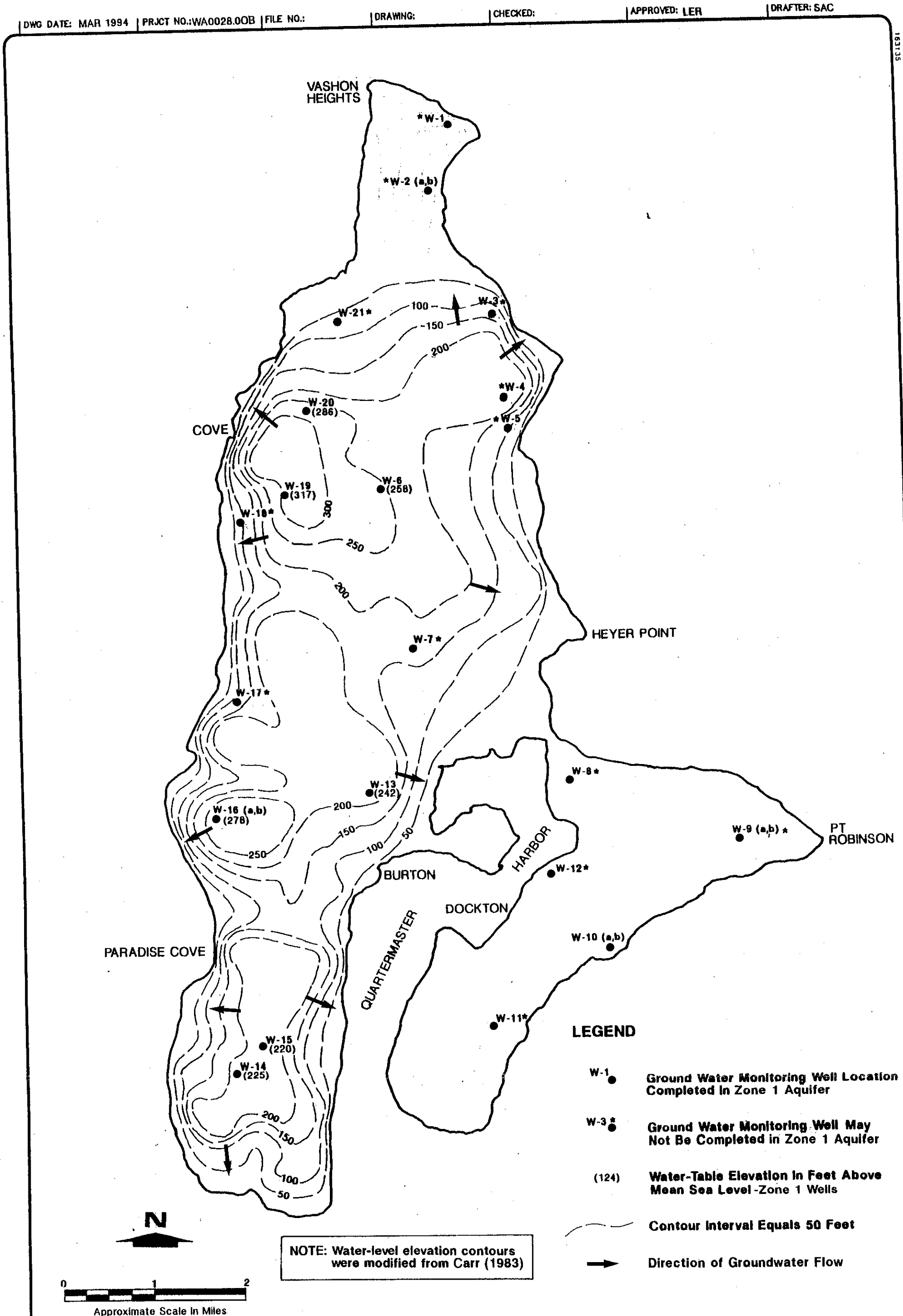
GENERALIZED WATER-TABLE ELEVATIONS FOR ZONE 1 AQUIFER, NOVEMBER 1989

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 8.24

DWG DATE: MAR 1994 | PRJCT NO.:WA0028.00B | FILE NO.: | DRAWING: | CHECKED: | APPROVED: LER | DRAFTER: SAC

163135



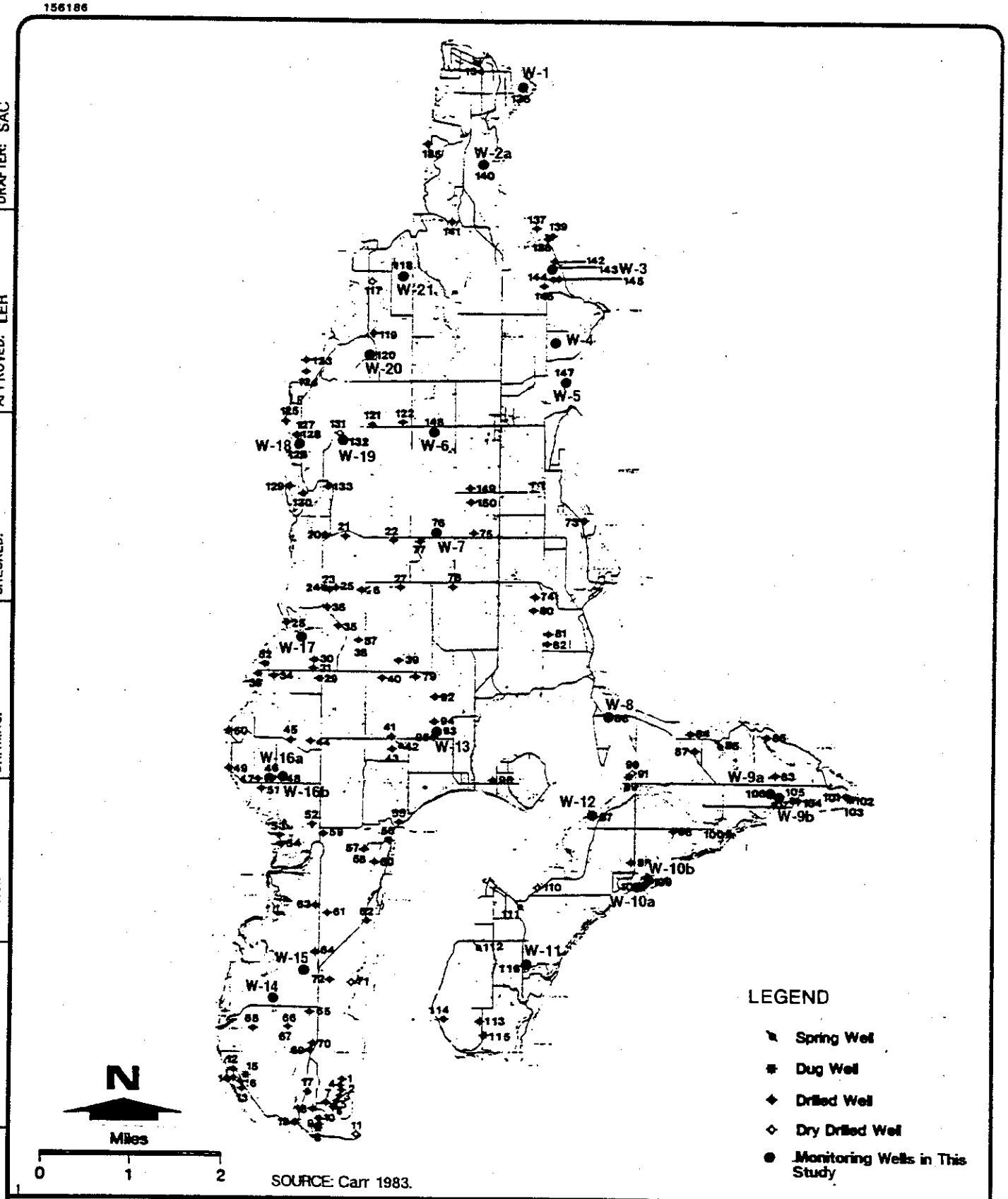
GERAGHTY & MILLER, INC.
Environmental Services

GENERALIZED WATER-TABLE ELEVATIONS FOR ZONE 1 AQUIFER, APRIL 1991

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 8.25

156186



SOURCE: Carr 1983.

GERAGHTY & MILLER, INC.
Environmental Services

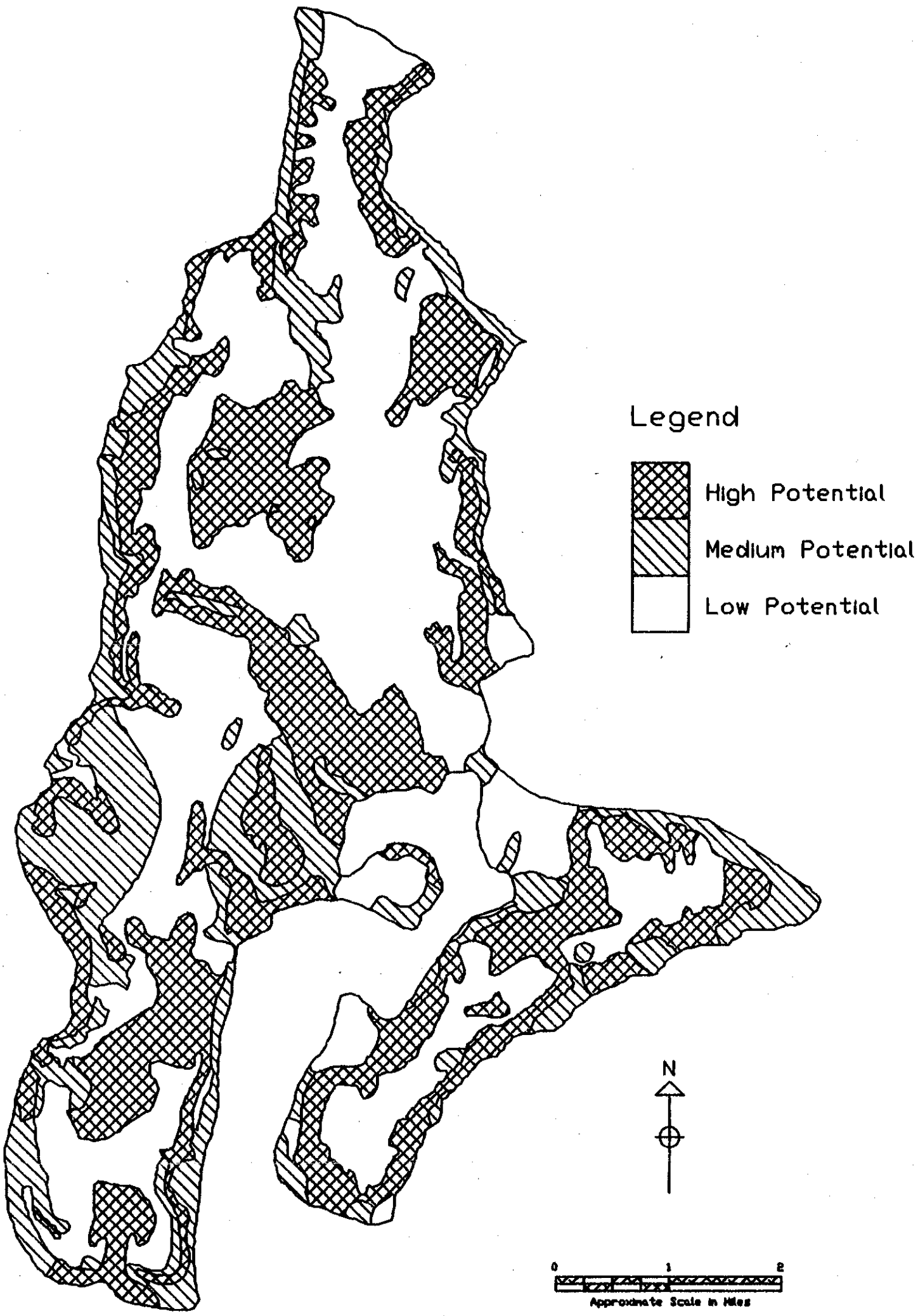
WELL LOCATION MAP

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 8.27

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA0028.0OB | DWG DATE: MAR 1994

DWG DATE: DWGDATE | PRJCT NO.: PRJCTNO | FILE NO.: FILENO | DRAWING: DRAWING | CHECKED: CHECKER | APPROVED: MANAGER | DRAFTER: DRAFTER



GERAGHTY & MILLER, INC.
Environmental Services

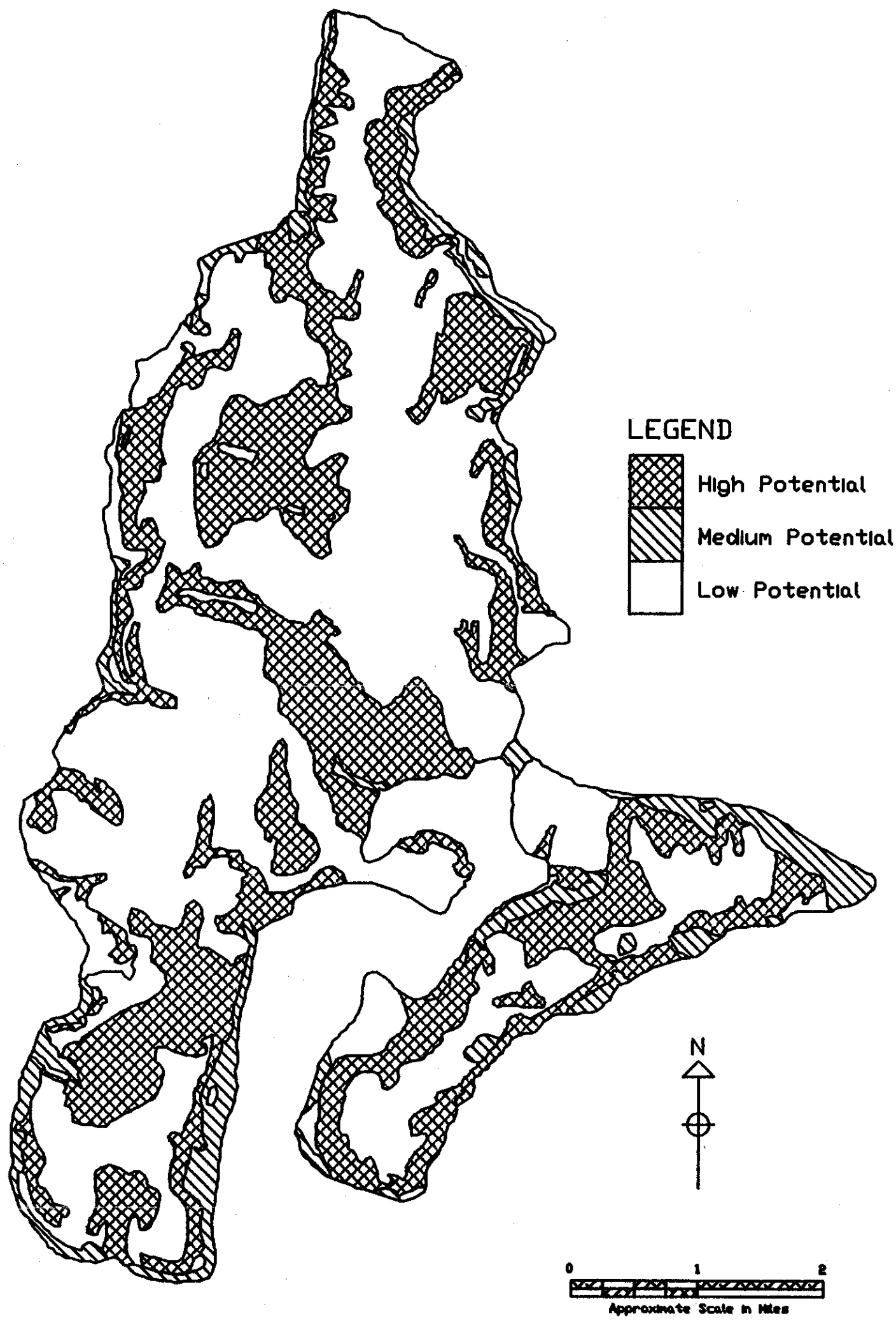
Map current as of 1993

VASHON GROUND WATER MANAGEMENT

Physical Susceptibility

FIGURE 8-28a

DWG DATE: DWGDATE | PRJCT NO.: PRJCTNO | FILE NO.: FILENO | DRAWING: DRAWING | CHECKED: CHECKER | APPROVED: MANAGER | DRAFTER: DRAFTER



NOTE: Geologic units from BOOTH (1991).

GERAGHTY & MILLER, INC.
Environmental Services

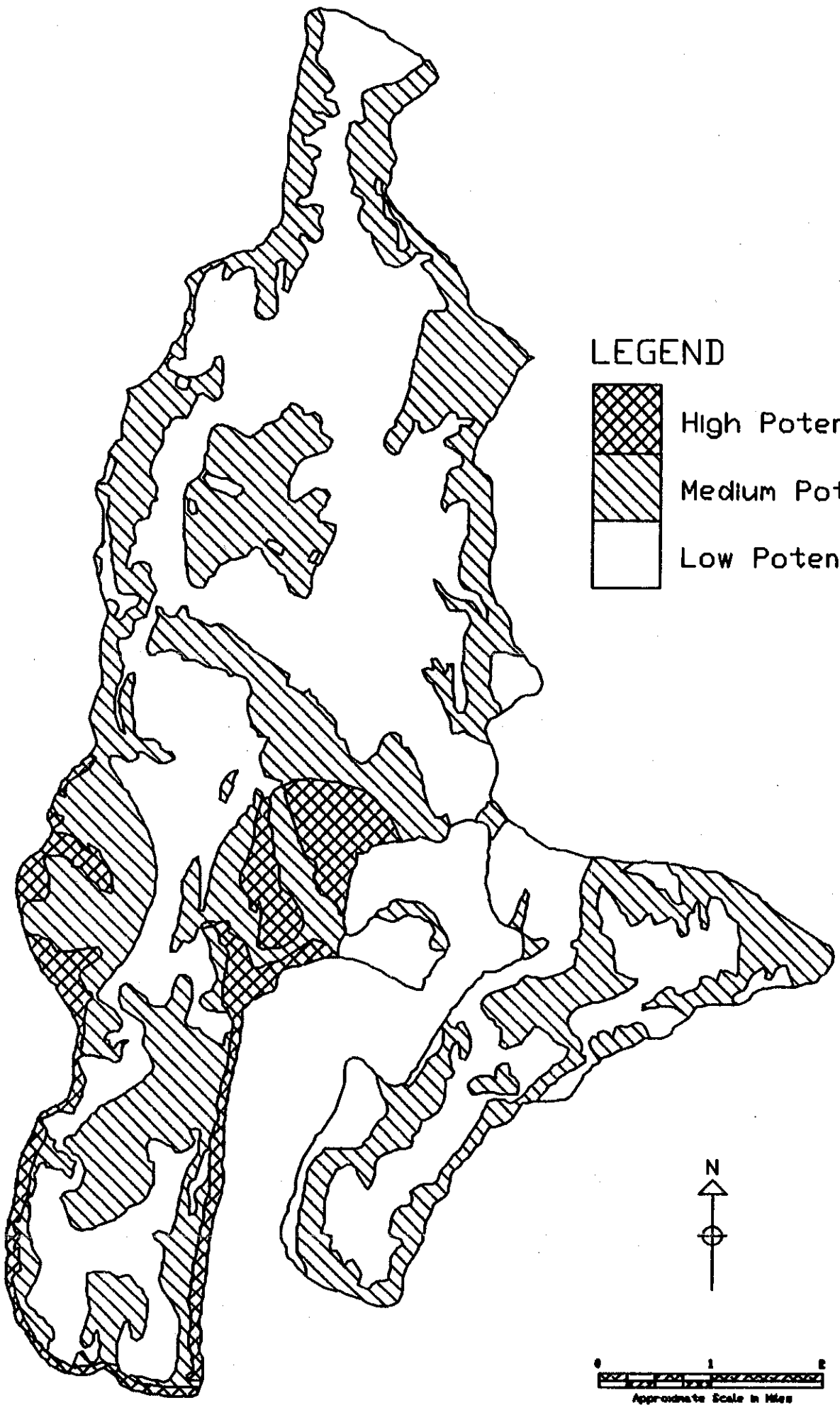
VASHON GROUND-WATER MANAGEMENT

Surface Geology Permeability Potential

FIGURE 8.29

Map current as of 1993

DWG DATE: DWGDATE | PRJCT NO.: PRJCTNO | FILE NO.: FILENO | DRAWING: DRAWING | CHECKED: CHECKER | APPROVED: MANAGER | DRAFTER: DRAFTER



GERAGHTY & MILLER, INC.
Environmental Services

VASHON GROUND WATER MANAGEMENT

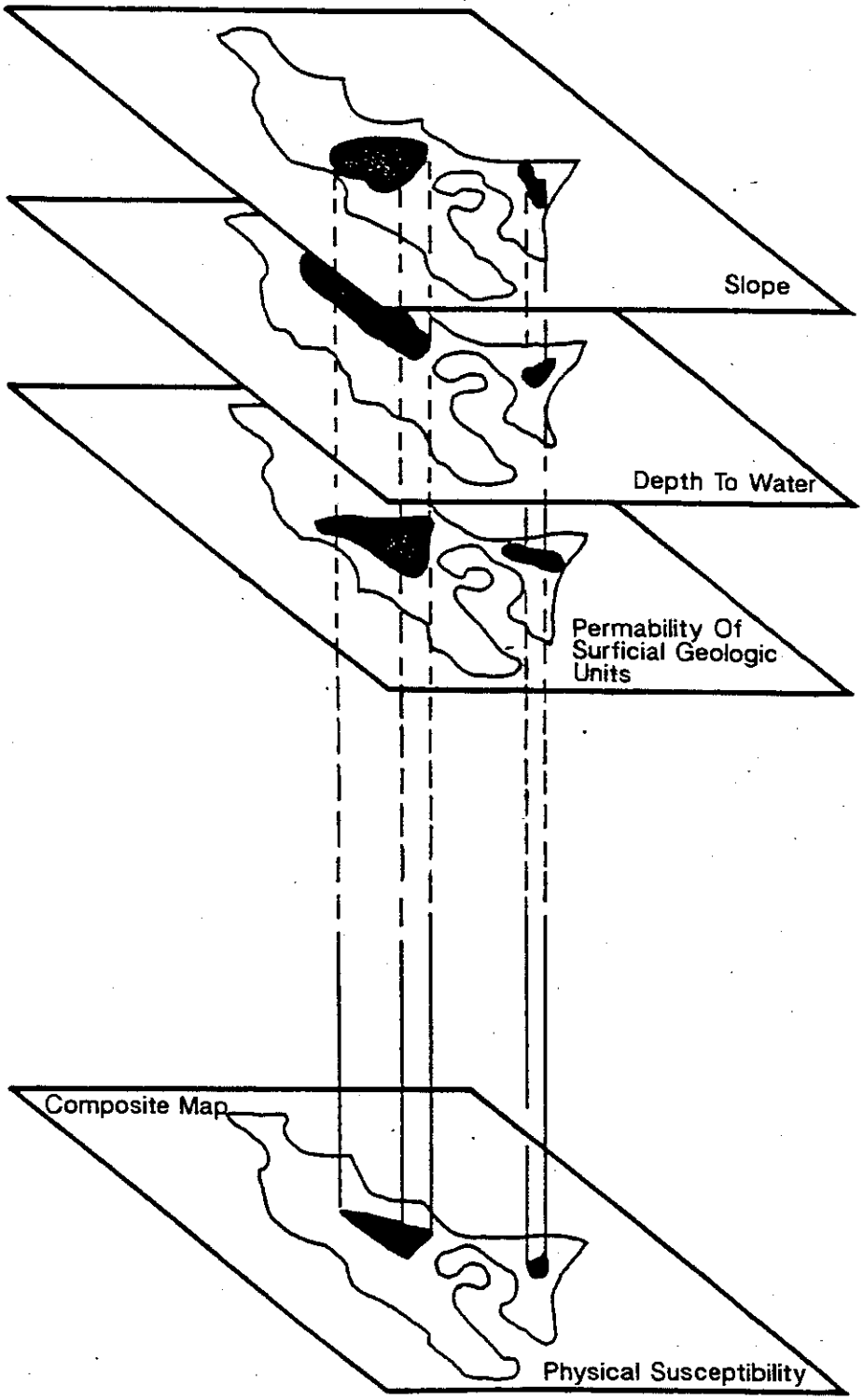
Depth-to-Water Susceptibility Potential

FIGURE 8.30

Map current as of 1993

156186

DRAFTER: SAC | APPROVED: LER | CHECKED: | DRAWING: | FILE NO.: | PRJCT NO.: WA0028.0OB | DWG DATE: MAR 1994



Modified from Carr 1983.

GERAGHTY & MILLER, INC.
Environmental Services

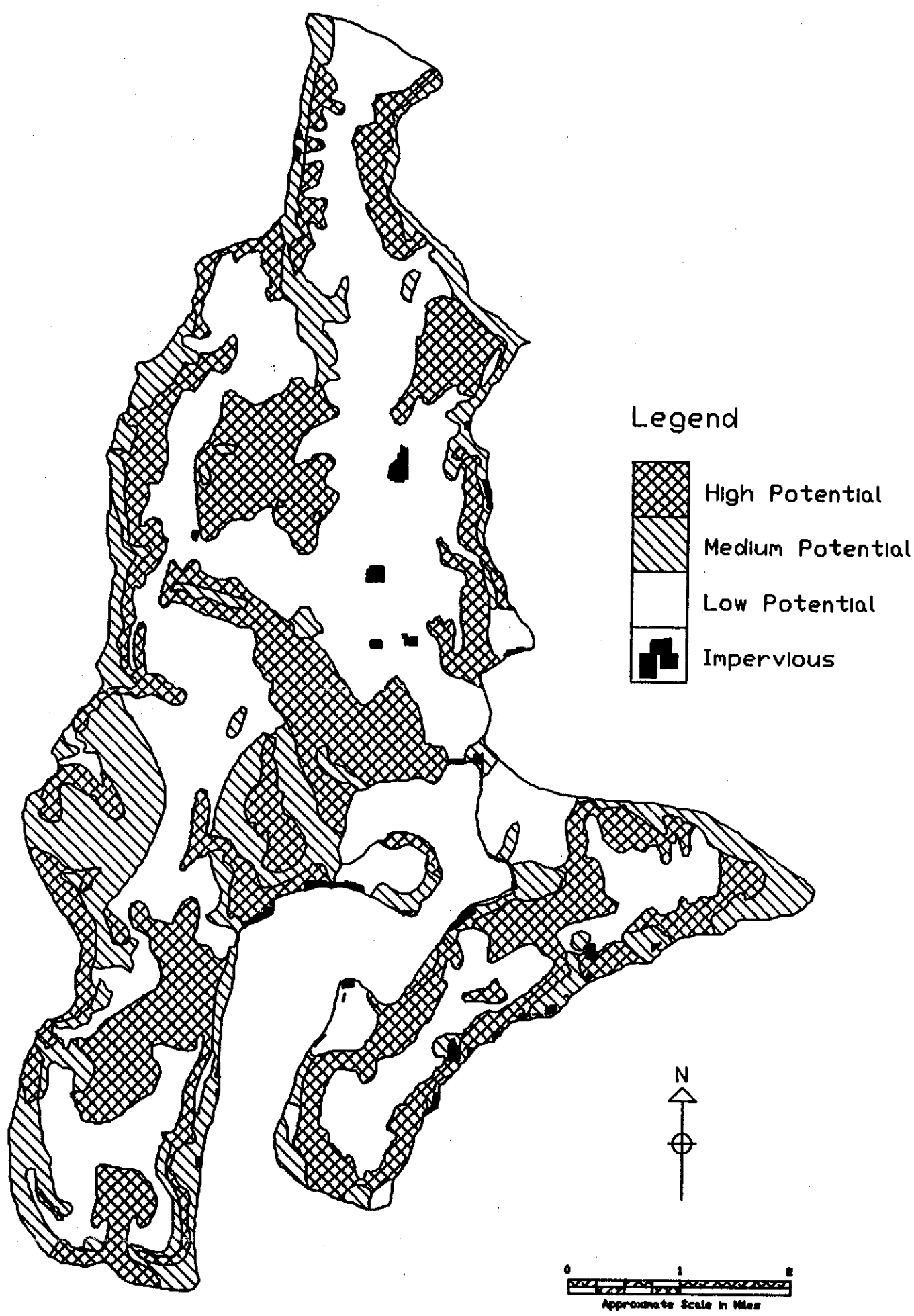
PHYSICAL SUSCEPTIBILITY MAP COMPOSITE - EXAMPLE

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.32

DWG DATE: DWGDATE	PRJCT NO.: PRJCTNO	FILE NO.: FILENO	DRAWING: DRAWING	CHECKED: CHECKER	APPROVED: MANAGER	DRAFTER: DRAFTER



GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

VASHON GROUND WATER MANAGEMENT

Physical Susceptibility with Impervious Surfaces

FIGURE 8.33

DWG DATE: MAR 1994	PRJCT NO.: WA0028.0OB	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135

LEGEND

high
medium
low

N

SOURCE: Carr 1983.

GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

1983 RECHARGE POTENTIAL MAP

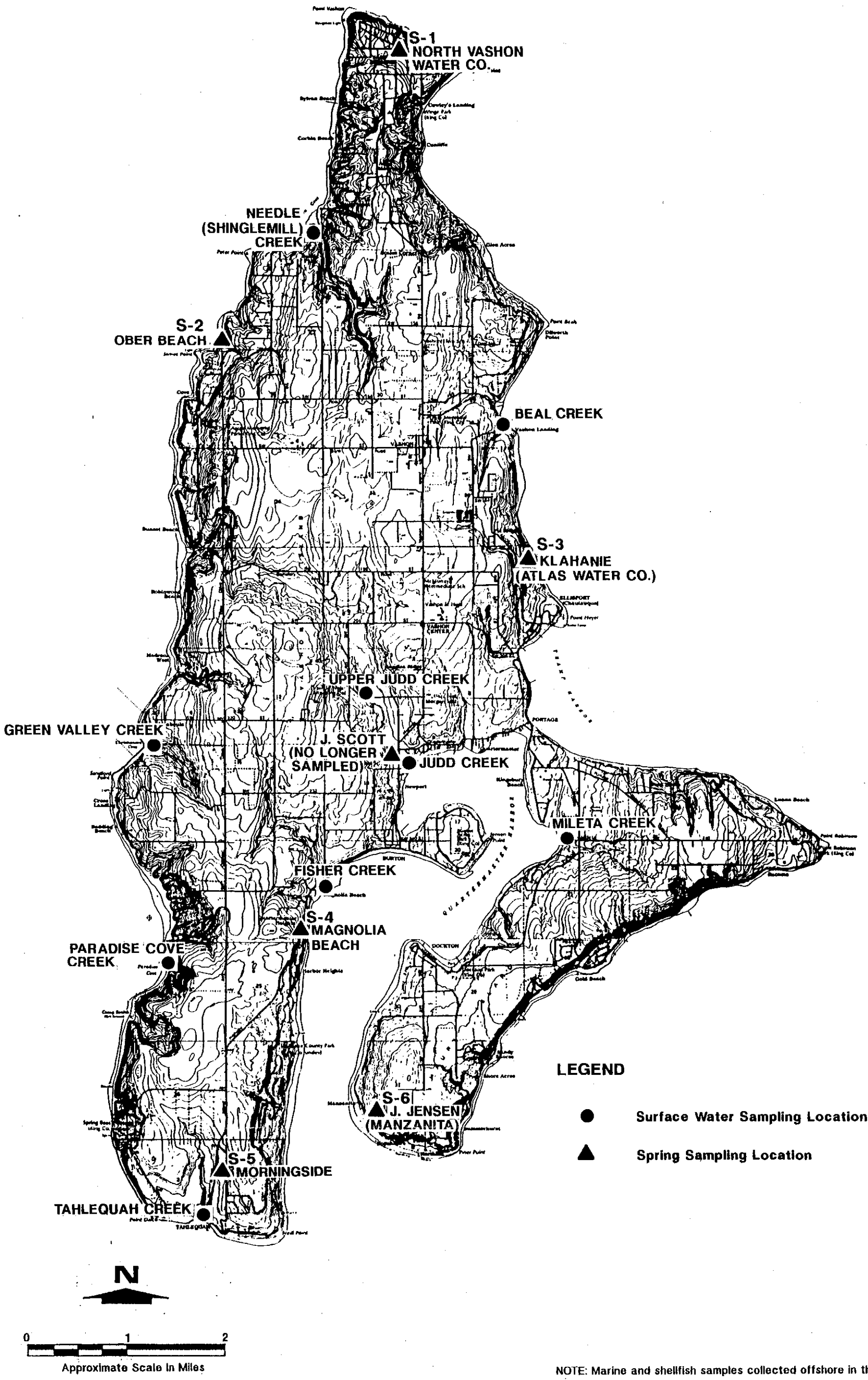
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.34

DWG DATE: APR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



NOTE: Marine and shellfish samples collected offshore in the Sound.

GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

SURFACE WATER AND SPRING WATER SAMPLING LOCATIONS

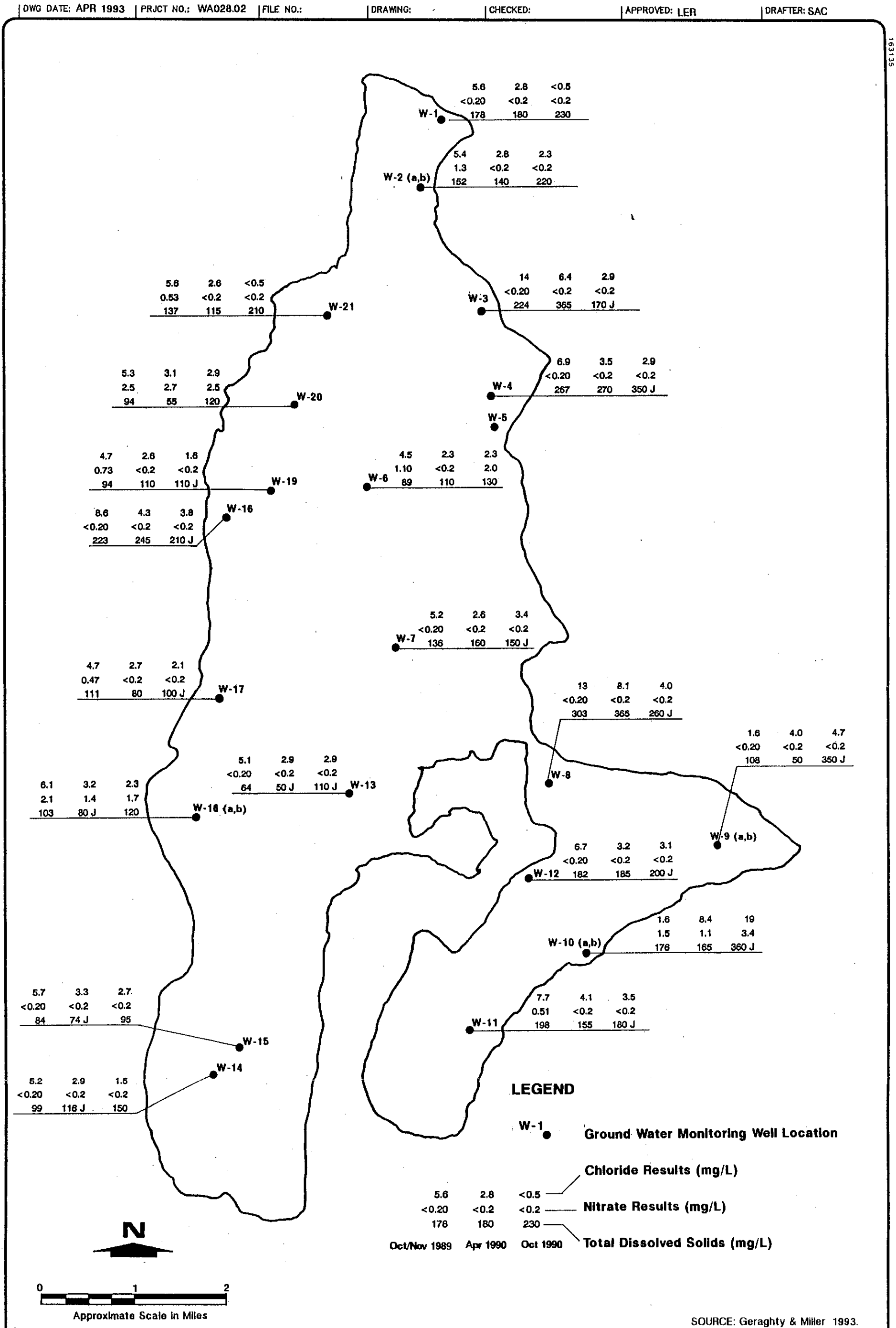
VASHON GROUND WATER MANAGEMENT PLAN

FIGURE

8.35

DWG DATE: APR 1993	PRJCT NO.: WA028.02	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC

163135



SOURCE: Geraghty & Miller 1993.

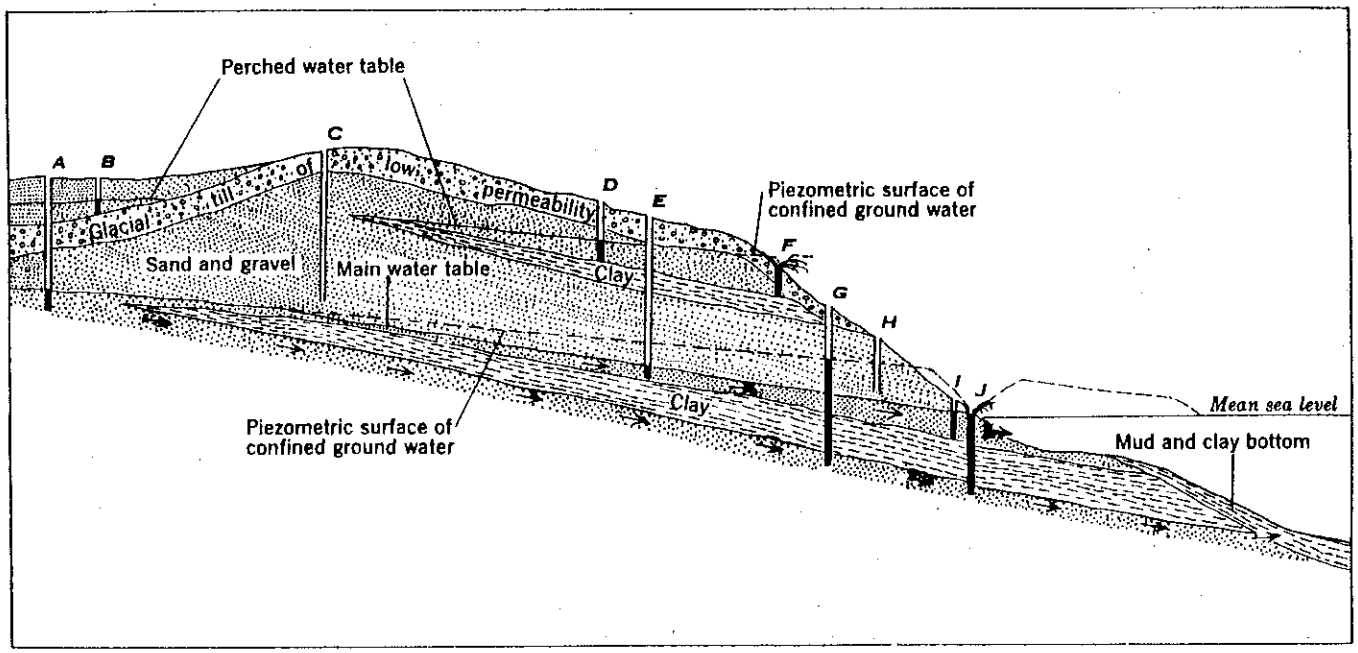
GERAGHTY & MILLER, INC.
Environmental Services

GROUND WATER QUALITY RESULTS FOR CHLORIDE, NITRATE, AND TOTAL DISSOLVED SOLIDS FOR OCTOBER/NOVEMBER 1989, APRIL 1990, AND OCTOBER 1990

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 8.36

DWG DATE: MAR 1994	PRJCT NO.: WA0028.0OB	FILE NO.:	DRAWING:	CHECKED:	APPROVED: LER	DRAFTER: SAC



Diagrammatic section showing various occurrences of ground water. Arrows indicate direction of ground-water movement. Well *A* yields unconfined water from below the water table; well *B* yields perched water from a water body perched on glacial till; at well *C* water was not encountered owing to insufficient depth; well *D* yields perched water from water body perched on clay zone; well E yields unconfined water from below the water table; well *F* yields confined perched ground water and flows because land surface is lower than the head developed on the water body as a result of the presence of the till cover; well *G* yields confined water from water body confined by clay zone; at well *H* water was not encountered owing to insufficient depth; well *I* yields unconfined water from below the water table; and well *J* yields confined ground water and flows because the land surface is below the piezometric surface.

NOT TO SCALE

SOURCE: Geology and Groundwater Resources, Kitsap County, Washington USGS Water Supply Paper 1413

GERAGHTY & MILLER, INC.
Environmental Services

Map current as of 1993

SCHEMATIC OF INTERFINGERING WITHIN GEOLOGIC SEDIMENT LAYERS

VASHON GROUND WATER MANAGEMENT PLAN

FIGURE 9.1

163135