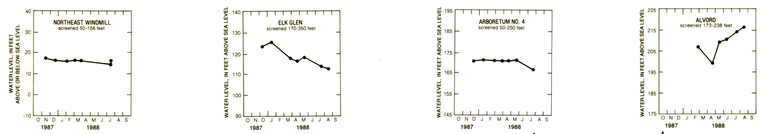


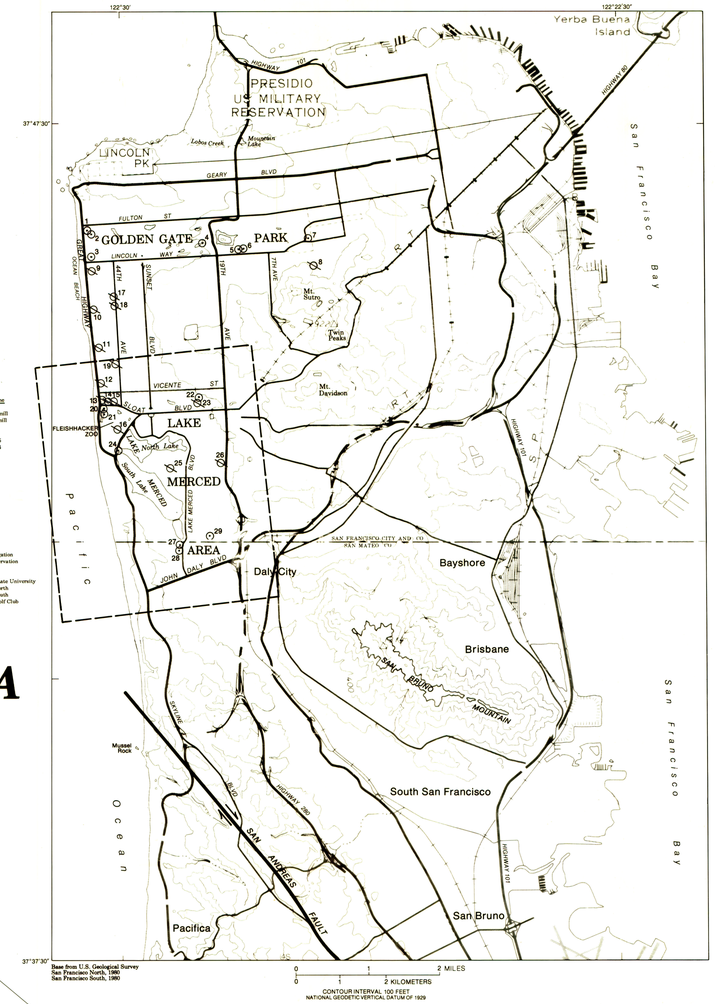
Water levels in four wells in Golden Gate Park during water year 1988

B

EXPLANATION

- OUTCROP OF THE FRANCISCAN COMPLEX AND GREAT VALLEY SEQUENCE
- 140 — WATER-LEVEL CONTOUR - Shows altitude at which water level would have stood in tightly cased wells. Contour interval 10 feet. Datum is sea level
- DIRECTION OF GROUND-WATER FLOW
- BOUNDARY OF GOLDEN GATE PARK
- 15.5 ● WELL - Number is measured water level in feet above sea level

Location of wells and lakes in Golden Gate Park



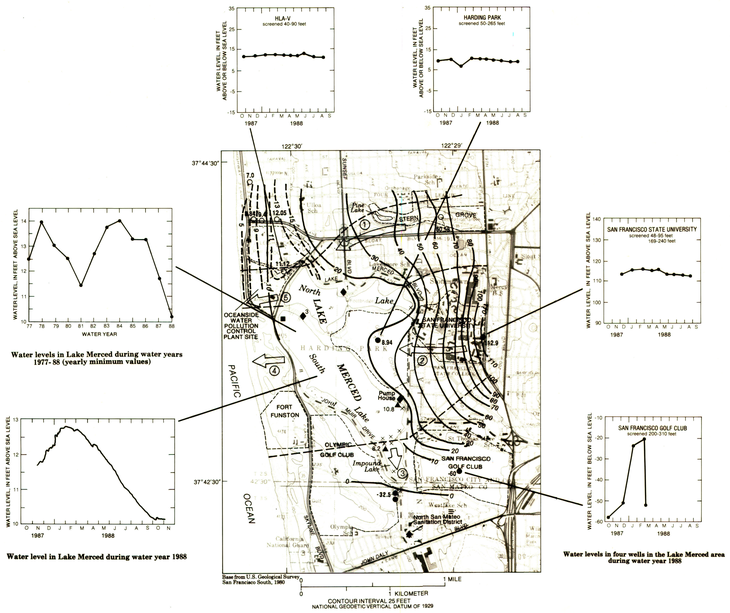
A

Map Number	Well Name
1	Northwest Windmill
2	Northeast Windmill
3	South Windmill
4	Elk Glen
5	Arboretum No. 5
6	Arboretum No. 4
7	Alvord
8	Hillway Street
9	HLA A
10	HLA E
11	HLA G
12	HLA J
13	HLA K
14	HLA L
15	HLA O
16	HLA V
17	Lawton North
18	Moraga North
19	Santiago South
20	Zoo No. 4
21	Zoo No. 3
22	Stern Grove irrigation
23	Stern Grove observation
24	Lake Merced
25	Harding Park
26	San Francisco State University
27	Olympic Club North
28	Olympic Club South
29	San Francisco Golf Club

EXPLANATION

- FAULT - Arrows show direction of movement
- OUTLINE OF MODELED AREA DISCUSSED IN TEXT
- IRRIGATION WELL
- OBSERVATION WELL

Northern San Francisco peninsula showing well locations in Golden Gate Park and the Lake Merced area



Water levels in Lake Merced during water years 1977-88 (yearly minimum values)

Water level in Lake Merced during water year 1988

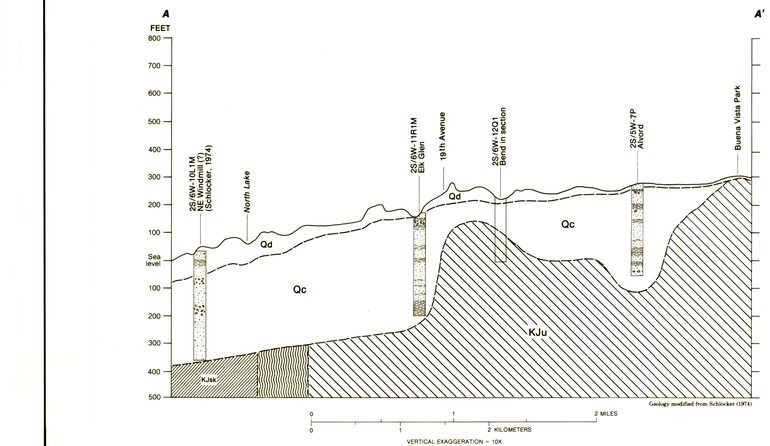
Water levels in four wells in the Lake Merced area during water year 1988

C

EXPLANATION

- 5 — WATER-LEVEL CONTOUR IN SHALLOW AQUIFER - Shows altitude at which water level would have stood in tightly cased wells. Contour interval 10 feet and dashed intermediate contours with variable interval. Datum is sea level
- DIRECTION OF GROUND-WATER FLOW
- BOUNDARY OF FLOW TUBE
- 1 FLOW-TUBE NUMBER
- 50.58 WELL - Number is measured water level in feet above sea level. Solid circles indicate wells perforated partly or entirely below the shallow aquifer
- LOCATION OF SEEPAGE MEASUREMENT
- 10.8 LAKE STAGE-STAFF PLATE - Number is measured water level in feet above sea level for August 1988
- RAIN GAGE AND NUMBER OR NAME
- EVAPORATION PAN

Location of wells, rain gages, and evaporation pan in the Lake Merced area



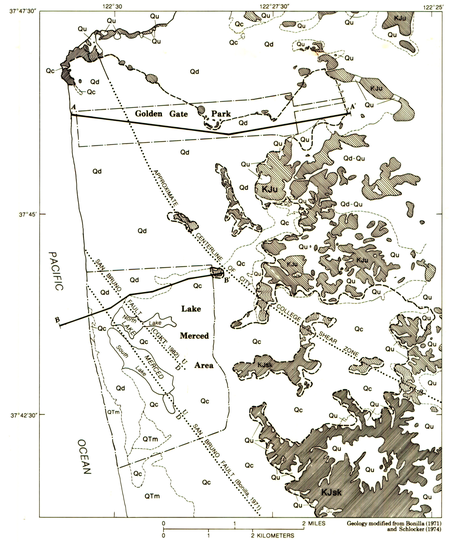
EXPLANATION

QUATERNARY	Pleistocene and Holocene	Qd	DUNE SAND - Clean, well-sorted fine to medium sand
		Qc	COLMA FORMATION - Unconsolidated fine to medium sand with small to moderate amounts of silt and clay
LATE JURASSIC AND CRETACEOUS		KJsk	CITY COLLEGE SHEAR ZONE - Sheared rocks of the Franciscan Complex and Great Valley Sequence
		KJJu	FRANCISCAN COMPLEX - Consolidated and fractured sandstone, shale, chert, greenstone, and serpentine
		KJgvs	GREAT VALLEY SEQUENCE - Consolidated, fractured sandstone generally containing more than 2 percent potassium feldspar

- CONTACT - Approximately located
- 2S/5W-7P Alvord — WELL IDENTIFIER - State well number and name

BOREHOLE LITHOLOGY: Sand; Silt; Clay; Gravel

Geologic section *A-A'* along an east-west line through Golden Gate Park

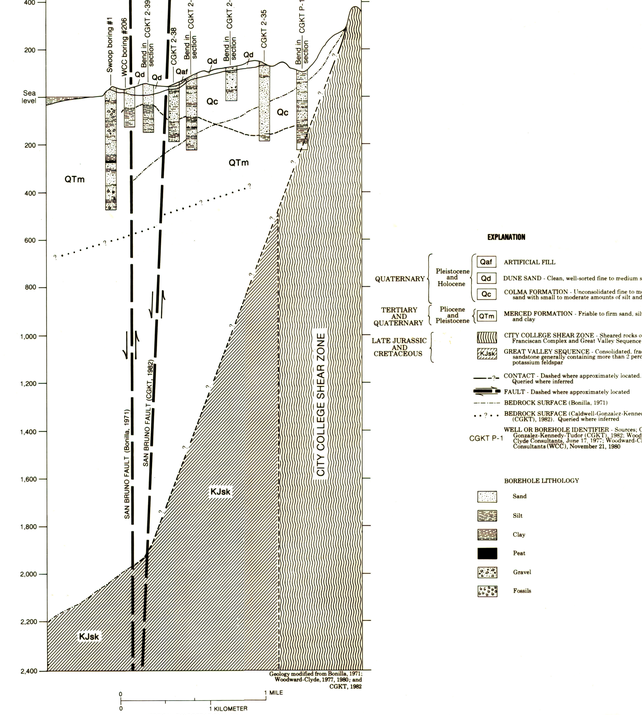


EXPLANATION

QUATERNARY	Pleistocene and Holocene	Qd	DUNE SAND - Clean, well-sorted fine to medium sand
		Qc	COLMA FORMATION - Unconsolidated fine to medium sand with small to moderate amounts of silt and clay
		Qu	SEDIMENTARY DEPOSITS, UNDIFFERENTIATED
TERTIARY AND QUATERNARY	Pliocene and Pleistocene	QTm	MERCED FORMATION - Friable to firm sand, silt, and clay
			CITY COLLEGE SHEAR ZONE - Sheared rocks of the Franciscan Complex and Great Valley Sequence
LATE JURASSIC AND CRETACEOUS		KJu	FRANCISCAN COMPLEX - Consolidated and fractured sandstone, shale, chert, greenstone, and serpentine
		KJsk	GREAT VALLEY SEQUENCE - Consolidated, fractured sandstone generally containing more than 2 percent potassium feldspar

- CONTACT - Dashed where approximately located
- FAULT - Dashed where approximately located. Dotted where concealed. U indicates upthrown side. D, indicates downthrown side
- BOUNDARY OF GOLDEN GATE PARK AND LAKE MERCED AREA
- BOUNDARY OF GROUND-WATER BASIN - Queried where approximately located
- A A' — LINE OF GEOLOGIC SECTION

Surficial geology of the western part of San Francisco and boundaries of the northern part of the ground-water basin



EXPLANATION

QUATERNARY	Pleistocene and Holocene	Qaf	ARTIFICIAL FILL
		Qd	DUNE SAND - Clean, well-sorted fine to medium sand
		Qc	COLMA FORMATION - Unconsolidated fine to medium sand with small to moderate amounts of silt and clay
TERTIARY AND QUATERNARY	Pliocene and Pleistocene	QTm	MERCED FORMATION - Friable to firm sand, silt, and clay
LATE JURASSIC AND CRETACEOUS			CITY COLLEGE SHEAR ZONE - Sheared rocks of the Franciscan Complex and Great Valley Sequence
		KJsk	GREAT VALLEY SEQUENCE - Consolidated, fractured sandstone generally containing more than 2 percent potassium feldspar

- CONTACT - Dashed where approximately located. Queried where inferred
- FAULT - Dashed where approximately located
- BEDROCK SURFACE (Bonilla, 1971)
- BEDROCK SURFACE (Caldwell-Gonzalez-Kennedy-Tudor (CGKT), 1982). Queried where inferred
- CGKT P-1 — WELL OR BOREHOLE IDENTIFIER - Sources: Caldwell-Gonzalez-Kennedy-Tudor (CGKT), 1982; Woodward-Clyde Consultants, June 17, 1977; Woodward-Clyde Consultants (WCC), November 21, 1980

BOREHOLE LITHOLOGY: Sand; Silt; Clay; Peat; Gravel; Fossils

Geologic section *B-B'* along an east-west line through the Lake Merced area

GENERALIZED GEOLOGIC MAP AND SECTIONS, WELL LOCATIONS, AND GROUND-WATER LEVELS IN GOLDEN GATE PARK AND THE LAKE MERCED AREA, SAN FRANCISCO, CALIFORNIA