U. S. DEPARTMENT OF THE INTERIOR

U. S. GEOLOGICAL SURVEY

Preliminary geologic map of the Van Nuys 7.5' quadrangle Southern California

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INTRODUCTION

This map is a preliminary product of the Southern California Digital 1:100,000 Geologic Map Series (Southern California Areal Mapping Project-SCAMP; Morton and Kennedy, 1989). The 1:24,000 manuscript for this map was compiled from original sources, chiefly at 1:24,000, and scanned and processed digitally using the U. S. Geological Survey Alacarte menu-driven interface (Wentworth and Fitzgibbon, 1991) for ARC/INFO, a commercial geographic information system (GIS) avaialable from Environmental Systems Research Institute, Redlands, California.

This 1:24,000 quadrangle is one of sixteen that form the east half of the Los Angeles 1:100,000 quadrangle; the 1:24,000 quadrangles form the basic data supporting the regional-scale quadrangle, and thus include available data on exploratory oil wells and fossil collections.

Stratigraphic nomenclature is largely that of the source materials; it is subject to further modification as compilation progresses. Minor adjustments have been made in geologic boundaries to conform to the metric base, which was enlarged from 1:100,000.

Base-map layers, drainage, roads, and topo contours, were prepared from publicly-available digital line graph (DLG) data for the 1:100,000 Los Angeles metric topograhic map by R. H. Campbell, U. S. Geological Survey, Reston, VA.

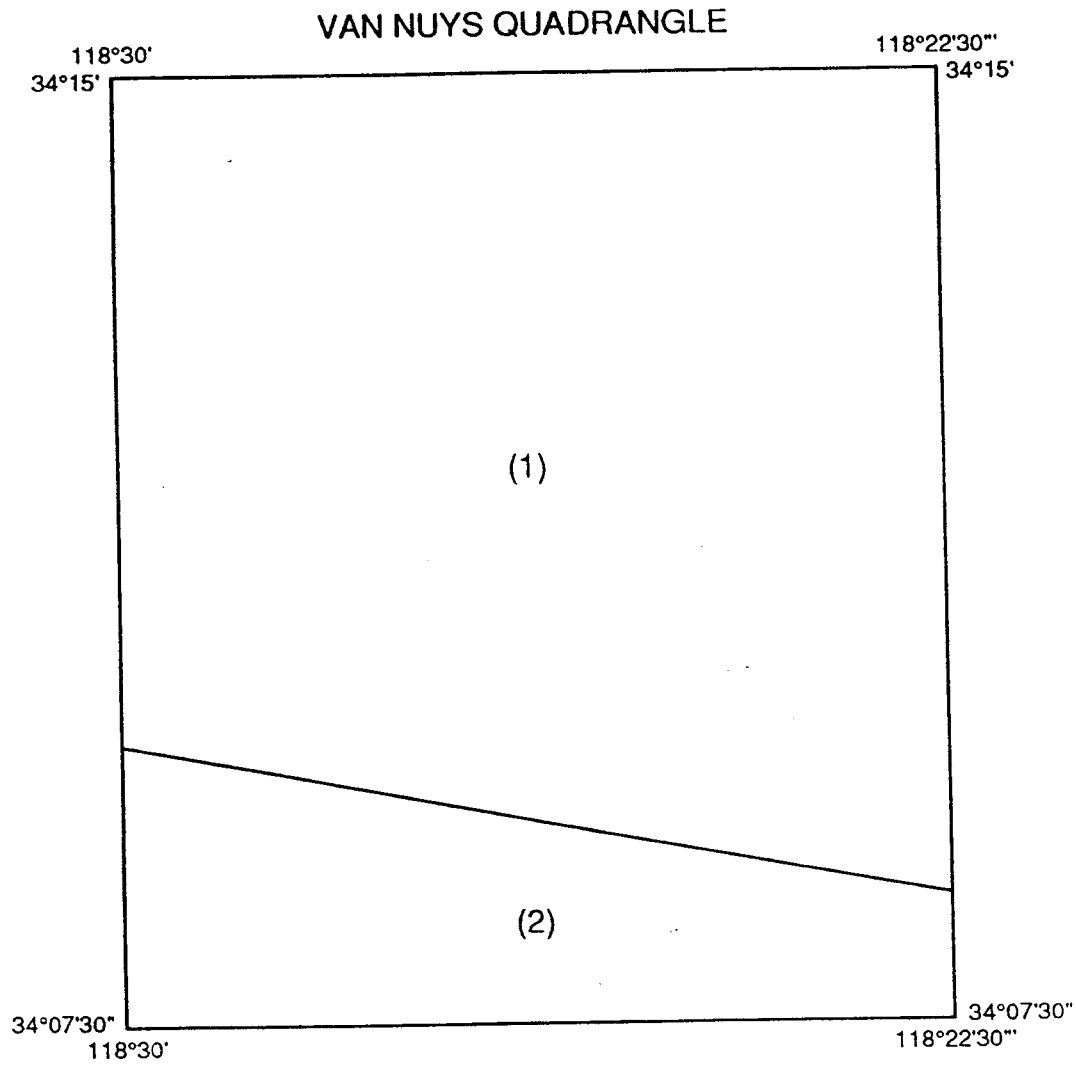
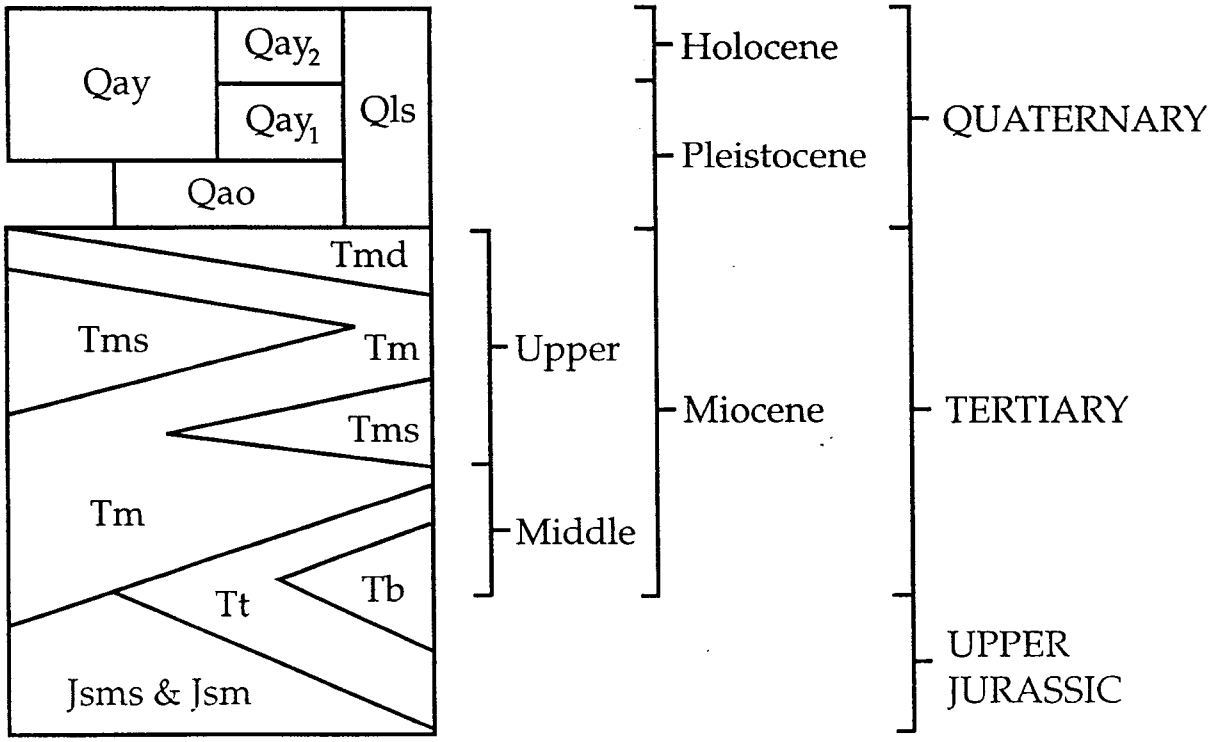


Figure 1-INDEX MAP SHOWING SOURCES OF GEOLOGIC MAPPING

1. Tinsley and others, 1985
2. Hoots, 1931; Tan, 1995

CORRELATION OF MAP UNITS, PRELIMINARY GEOLOGIC MAP OF VAN NUYS QUADRANGLE



EXPLANATION, PRELIMINARY GEOLOGIC MAP, VAN NUYS QUADRANGLE

DESCRIPTION OF MAP UNITS

Qay **Alluvium** (Holocene)-Gravel, sand, silt, and clay; unconsolidated and uncemented; **Qay2**, underlies areas flooded historically; thickness 0-3 m, age less than 1000 years; **Qay1**, undifferentiated Holocene alluvium, age 1000-10,000 years

Qls **Landslide deposits** (Holocene and Pleistocene)-materials include both surficial deposits and bedrock, resulting from slides, slumps, falls, and flows

Qao **Older alluvium** (late Pleistocene)-Gravel, sand, silt, and clay; moderately to well consolidated, slightly to well cemented

Tm **Modelo Formation**-(upper Miocene)-silty shale or soft earthy siltstone and interbedded fine- to coarse-grained lithic or arkosic wacke; unconformably truncates all older units; maximum thickness about 1350 m; shale contains locally abundant foraminifera referred to the Mohnian Stage (table 2); **Tmd**, diatomaceous shale or siltstone, locally bentonitic, interlayered fine-grained sandstone; thickness up to 780 m; **Tms**, sandstone, massive, fine- to coarse-grained, sequences as thick as 175 m

Tt **Topanga Group, undivided** (middle Miocene)-massive sandstone, conglomerate, and concretionary shale; as thick as 730 m near southeast corner; mollusks locally present (table 2); **Tb**, basaltic extrusive rocks; as thick as 400 m

Jsm **Santa Monica Slate** (Upper Jurassic)-slate, siltstone, and fine- to coarse-grained sandstone; hard, intensely jointed, well-developed slaty cleavage, weathers to small brown chips and thin slabs; sparse late Oxfordian-early Kimmeridgian pelecypods (Imlay, 1963); **Jsms**, spotted slate, with abundant, well-developed, spindle-shaped crystals of cordierite, inferred to be a metamorphosed facies of Santa Monica Slate (Hoots, 1931)

MAP SYMBOLS

Contact or mapped horizon—Long-dashed where approximately located, short-dashed where inferred

Fault— Long-dashed where approximately located, short-dashed where inferred, dotted where concealed, queried where doubtful

Thrust fault—Dashed where approximately located, dotted where concealed; sawteeth on upper plate

Anticline— Approximately located, dotted where concealed; showing crestline

Syncline— Approximately located, dotted where concealed; showing troughline

70

Strike and dip of inclined beds

408

Exploratory well—Number refers to table 1, below

FH13

Fossil locality—F, macrofossil collection; f, microfossil collection; number refers to table 2, below

References Cited

Hoots, H. W., 1931, Geology of the eastern part of the Santa Monica Mountains, Los Angeles County, California: U. S. Geological Survey Prof. Paper 165-C, p. 83-134, pl., 16 scale 1:24,000.

Imlay, R. W., 1963, Jurassic fossils from southern California: Jour. Paleont., vol. 37, no. 1, p. 97-107.

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Tan, S.S., 1995, Map of landslides and selected geologic features: California Div. Mines and Geology, Landslide Hazard Identification Map no. 39, pl. A.

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Wentworth, C. M., and Fitzgibbon, T. T., 1991, Alacarte user manual-version 1.0: U. S. Geol. Survey Open File Rpt. 91-587, 267 p.

Yerkes, R. F., and Showalter, P. K., 1990, Exploratory wells drilled in the Los Angeles, California 1:100,000 quadrangle: U. S. Geol. Survey Open File Rpt. 90-627, 1 map at scale 1:100,000.

Table 1 - DATA ON EXPLORATORY WELLS, VAN NUYS QUADRANGLE[1]

MAP NO.	TN	RW	Sec.	OPERATOR	NAME/NUMBER	ELEV-ATION (ft)	TOTAL DEPTH (ft)	BOT-TOM[2]
408	2	15	19	Shell CPI	Andrews 1-1	912	6005	M
409	2	15	19	Chevron USA	Woo 1	896	9739	Mm
410	2	15	20	Chevron USA	Noble Prospect 1	---	----	--
410A	2	15	23	Chevron USA	Pacoima 2	930	10257	Ku
411	2	15	23	Chevron USA	Pacoima 3	940	11538	Ku
461	1	14	7	B.J. Jeffrey	2	700	1245	QT
465	1	14	18	Conoco, Inc.	Hollywood Fwy. 1	630	2995	M
468	1	15	3	Chevron USA	Leadwell 1	769	5066	Gr
469	1	15	11	Chevron USA	Hazeltine C.H. 1	689	3823	Gr
470	1	15	16	Van Nuys Oil	Van Nuys Comm. 1	600	3860	M

[1] Data from Yerkes and Showater, 1990.
[2] Gr, granitic basement; K, Cretaceous; M, Miocene; QT, Plio-Pleistocene; m, middle; u, upper.

Table 2 - DATA ON FOSSIL LOCALITIES, VAN NUYS QUADRANGLE

MAP NO[1]	TN	RW	Sec	COLL-ECTOR[2]	AGE[3]	MAP UNIT	SOURCE[4]
FH13, FH14	1	15	30	USGS	Mm	Tt	HWH
fH135	1	15	27	USGS	Mu	Tmd	HWH

[1] F, macrofossil collection; f, microfossil collection; number same as collector's number.
[2] USGS, U. S. Geological Survey.
[3] M, Miocene; m, middle; u, upper.
[4] HWH, Hoots, 1931.