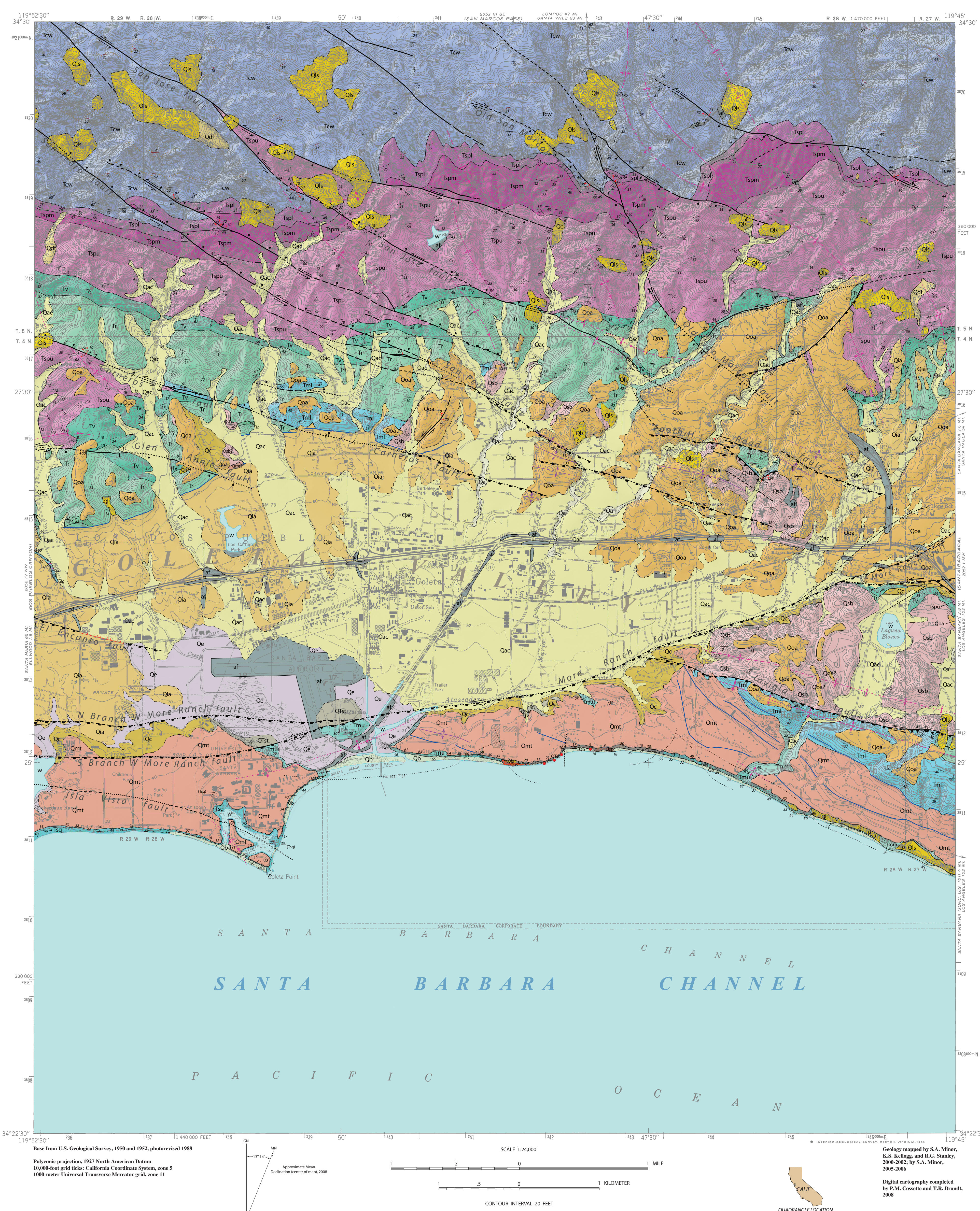




GEOLOGIC MAP OF THE GOLETA 7.5' QUADRANGLE, SANTA BARBARA COUNTY, CALIFORNIA

Version 1.0  
By  
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CORRELATION OF MAP UNITS

| Qf         | Qa | Qb | Qc | Qd | Qe | Qf | Qg | Qh | Qi | Qj | Qk | Ql | Qm | Qn | Qo         | Qp | Qq | Qr | Qs | Qt | Qu | Qv | Qw | Qx | Qy | Qz | Qaa | Qab | Qac | Qad        | Qae | Qaf | Qag | Qah | Qai | Qaj | Qak | Qal | Qam | Qan | Qao | Qap | Qaq | Qar | Qas        | Qat | Qau | Qav | Qaw | Qax | Qay | Qaz | Qba | Qbb | Qbc | Qbd | Qbe | Qbf | Qbg | Qbh        | Qbi | Qbj | Qbk | Qbl | Qbm | Qbn | Qbo | Qbp | Qbq | Qbr | Qbs | Qbt | Qbu | Qbv | Qbw        | Qbx | Qby | Qbz | Qca | Qcb | Qcc | Qcd | Qce | Qcf | Qcg | Qch | Qci | Qcj | Qck | Qcl        | Qcm | Qcn | Qco | Qcp | Qcq | Qcr | Qcs | Qct | Qcu | Qcv | Qcw | Qcx | Qcy | Qcz | Qda        | Qdb | Qdc | Qdd | Qde | Qdf | Qdg | Qdh | Qdi | Qdj | Qdk | Qdl | Qdm | Qdn | Qdo | Qdp        | Qdq | Qdr | Qds | Qdt | Qdu | Qdv | Qdw | Qdx | Qdy | Qdz | Qea | Qeb | Qec | Qed | Qee        | Qef | Qeg | Qeh | Qei | Qej | Qek | Qel | Qem | Qen | Qeo | Qep | Qeq | Qer | Qes | Qet        | Qeu | Qev | Qew | Qex | Qey | Qez | Qfa | Qfb | Qfc | Qfd | Qfe | Qff | Qfg | Qfh | Qfi        | Qfj | Qfk | Qfl | Qfm | Qfn | Qfo | Qfp | Qfq | Qfr | Qfs | Qft | Qfu | Qfv | Qfw | Qfx        | Qfy | Qfz | Qga | Qgb | Qgc | Qgd | Qge | Qgf | Qgg | Qgh | Qgi | Qgj | Qgk | Qgl | Qgm        | Qgn | Qgo | Qgp | Qgq | Qgr | Qgs | Qgt | Qgu | Qgv | Qgw | Qgx | Qgy | Qgz | Qha | Qhb        | Qhc | Qhd | Qhe | Qhf | Qhg | Qhi | Qhj | Qhk | Qhl | Qhm | Qhn | Qho | Qhp | Qhq | Qhr        | Qhs | Qht | Qhu | Qhv | Qhw | Qhx | Qhy | Qhz | Qia | Qib | Qic | Qid | Qie | Qif | Qig        | Qih | Qij | Qik | Qil | Qim | Qin | Qio | Qip | Qiq | Qir | Qis | Qit | Qiu | Qiv | Qiw        | Qix | Qiy | Qiz | Qja | Qjb | Qjc | Qjd | Qje | Qjf | Qjg | Qjh | Qji | Qjj | Qjk | Qjl        | Qjm | Qjn | Qjo | Qjp | Qjq | Qjr | Qjs | Qjt | Qju | Qjv | Qjw | Qjx | Qjy | Qjz | Qka        | Qkb | Qkc | Qkd | Qke | Qkf | Qkg | Qkh | Qki | Qkj | Qkk | Qkl | Qkm | Qkn | Qko | Qkp        | Qkq | Qkr | Qks | Qkt | Qku | Qkv | Qkw | Qkx | Qky | Qkz | Qla | Qlb | Qlc | Qld | Qle        | Qlf | Qlg | Qlh | Qli | Qlj | Qlk | Qll | Qlm | Qln | Qlo | Qlp | Qlq | Qlr | Qls | Qlt        | Qlu | Qlv | Qlw | Qlx | Qly | Qlz | Qma | Qmb | Qmc | Qmd | Qme | Qmf | Qmg | Qmh | Qmi        | Qmj | Qmk | Qml | Qmm | Qmn | Qmo | Qmp | Qmq | Qmr | Qms | Qmt | Qmu | Qmv | Qmw | Qmx        | Qmy | Qmz | Qna | Qnb | Qnc | Qnd | Qne | Qnf | Qng | Qnh | Qni | Qnj | Qnk | Qnl | Qnm        | Qnn | Qno | Qnp | Qnq | Qnr | Qns | Qnt | Qnu | Qnv | Qnw | Qnx | Qny | Qnz | Qoa | Qob        | Qoc | Qod | Qoe | Qof | Qog | Qoh | Qoi | Qoj | Qok | Qol | Qom | Qon | Qoo | Qop | Qoq        | Qor | Qos | Qot | Qou | Qov | Qow | Qox | Qoy | Qoz | Qpa | Qpb | Qpc | Qpd | Qpe | Qpf        | Qpg | Qph | Qpi | Qpj | Qpk | Qpl | Qpm | Qpn | Qpo | Qpp | Qpq | Qpr | Qps | Qpt | Qpu        | Qpv | Qpw | Qpx | Qpy | Qpz | Qqa | Qqb | Qqc | Qqd | Qqe | Qqf | Qqg | Qqh | Qqi | Qqj        | Qqk | Qql | Qqm | Qqn | Qqo | Qqp | Qqq | Qqr | Qqs | Qqt | Qqu | Qqv | Qqw | Qqx | Qqy        | Qqz | Qra | Qrb | Qrc | Qrd | Qre | Qrf | Qrg | Qrh | Qri | Qrj | Qrk | Qrl | Qrm | Qrn        | Qro | Qrp | Qrq | Qrr | Qrs | Qrt | Qru | Qrv | Qrw | Qrx | Qry | Qrz | Qsa | Qsb | Qsc        | Qsd | Qse | Qsf | Qsg | Qsh | Qsi | Qsj | Qsk | Qsl | Qsm | Qsn | Qso | Qsp | Qsq | Qsr        | Qss | Qst | Qsu | Qsv | Qsw | Qsx | Qsy | Qsz | Qta | Qtb | Qtc | Qtd | Qte | Qtf | Qtg        | Qth | Qti | Qtj | Qtk | Qtl | Qtm | Qtn | Qto | Qtp | Qtq | Qtr | Qts | Qtt | Qtu | Qtv        | Qtw | Qtx | Qty | Qtz | Qua | Qub | Quc | Qud | Que | Quf | Qug | Quh | Qui | Quj | Quk        | Qul | Qum | Qun | Quo | Qup | Quq | Qur | Qus | Qut | Quu | Quv | Quw | Qux | Quy | Quz        | Qva | Qvb | Qvc | Qvd | Qve | Qvf | Qvg | Qvh | Qvi | Qvj | Qvk | Qvl | Qvm | Qvn | Qvo        | Qvp | Qvq | Qvr | Qvs | Qvt | Qvu | Qvv | Qvw | Qvx | Qvy | Qvz | Qwa | Qwb | Qwc | Qwd        | Qwe | Qwf | Qwg | Qwh | Qwi | Qwj | Qwk | Qwl | Qwm | Qwn | Qwo | Qwp | Qwq | Qwr | Qws        | Qwt | Qwu | Qwv | Qww | Qwx | Qwy | Qwz | Qxa | Qxb | Qxc | Qxd | Qxe | Qxf | Qxg | Qxh        | Qxi | Qxj | Qxk | Qxl | Qxm | Qxn | Qxo | Qxp | Qxq | Qxr | Qxs | Qxt | Qxu | Qxv | Qxw        | Qxx | Qxy | Qxz | Qya | Qyb | Qyc | Qyd | Qye | Qyf | Qyg | Qyh | Qyi | Qyj | Qyk | Qyl        | Qym | Qyn | Qyo | Qyp | Qyq | Qyr | Qys | Qyt | Qyu | Qyv | Qyw | Qyx | Qyy | Qyz | Qza        | Qzb | Qzc | Qzd | Qze | Qzf | Qzg | Qzh | Qzi | Qzj | Qzk | Qzl | Qzm | Qzn | Qzo | Qzp        | Qzq | Qzr | Qzs | Qzt | Qzu | Qzv | Qzw | Qzx | Qzy | Qzz |  |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |  |  |  |  |  |  |  |  |  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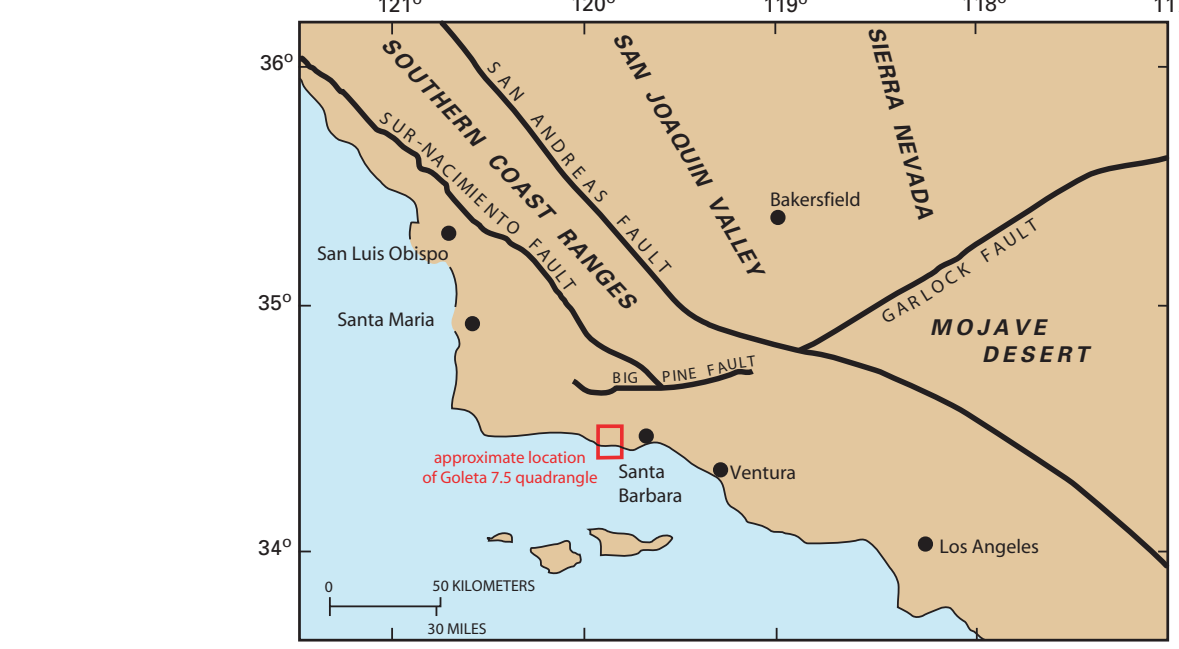


Figure 1. Generalized index map of the southwestern part of California showing location of the Goleta 7.5' quadrangle and location of major tectonic faults

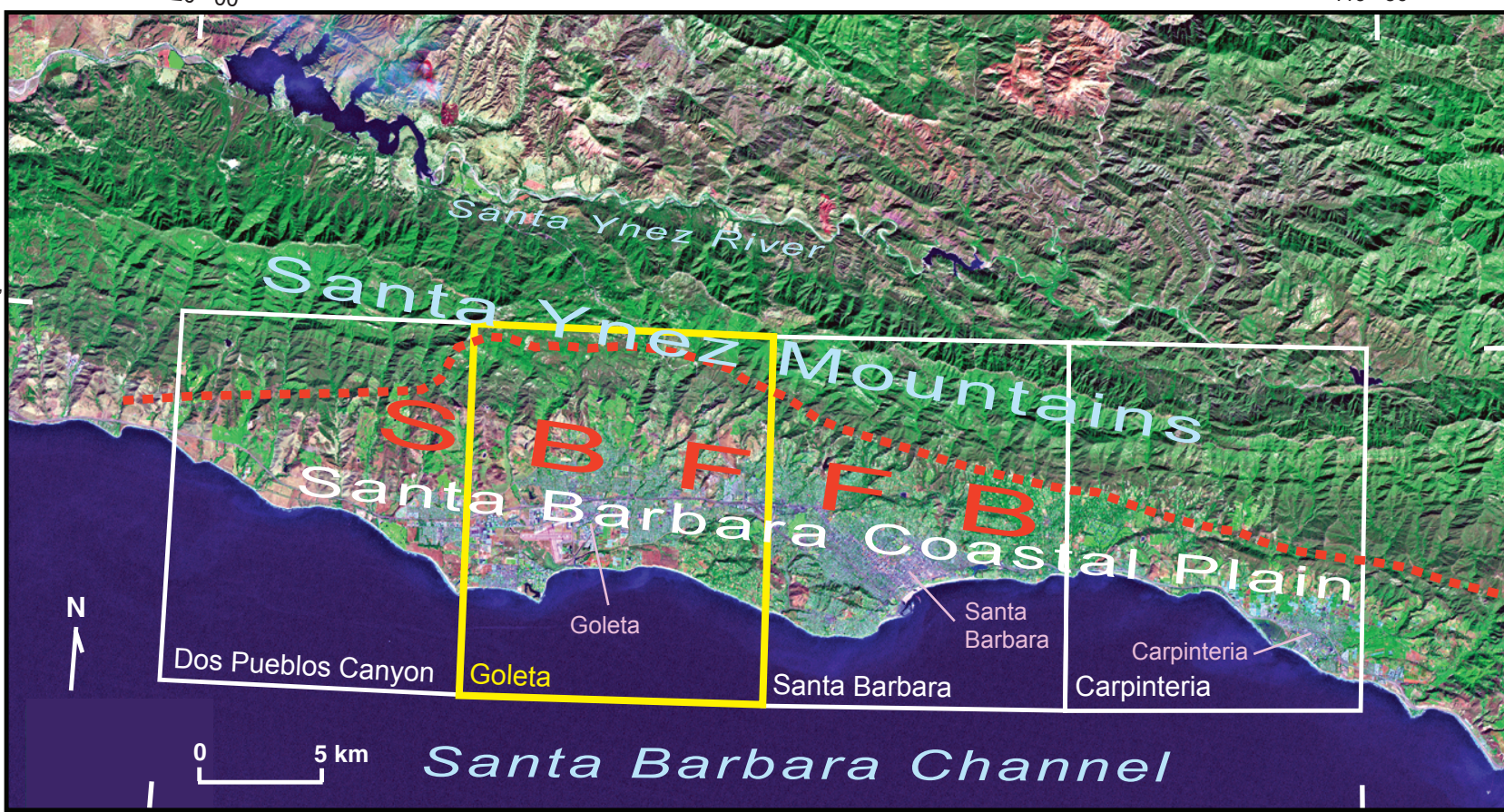


Figure 2. Image of Santa Barbara coastal plain region showing location of Goleta quadrangle (yellow rectangle) and adjacent 7.5' quadrangles (white rectangles). Approximate northern boundary of Santa Barbara fold belt (SBFFBL) is shown by dashed red line.



Figure 3. Digital Elevation Model (DEM) image of Goleta 7.5' quadrangle as viewed from the south and illuminated from northeast.

DESCRIPTION OF MAP UNITS (ABBREVIATED)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    |
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| Artificial fill (Holocene)—Fill used for construction of highways, roads, buildings, airport runways, and dams                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Qa |
| Active channel alluvium (Holocene)—Unconsolidated sediments, primarily pebbles to boulder grade, in modern stream channels. Thickness less than 5 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Qb |
| Beach deposits (Holocene)—Unconsolidated sand along coastal beaches. Thickness varies seasonally and rarely exceeds 5 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Qc |
| Estuarine deposits (Holocene)—Locally organic-rich clay, silt, and subordinate sand deposited primarily in peritidal environment in low-lying coastal areas of modern and historically active sloughs. Maximum thickness probably less than 20 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Qd |
| Asphalt deposits (Holocene)—Black, tar-like asphalt that represents weathered and lithologized oil derived from nearby oil seeps. Typically near asphalt-filled fractures in bedrock exposed on sea cliffs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Qe |
| Debris-flow deposits (Holocene and upper Pleistocene)—Massive, weakly consolidated rock-debris breccia derived from rock units exposed upslope. Mainly located along lower flanks of Santa Ynez Mountains, where deposits estimated to be less than 5 m thick                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Qf |
| Alluvium and colluvium (Holocene and upper Pleistocene)—Poorly consolidated silt, sand, and gravel deposits of modern drainage and piedmont alluvial fans and floodplains. Exposed thickness generally less than 10 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Qg |
| Colluvium (Holocene and upper Pleistocene)—Poorly consolidated, poorly stratified, and poorly sorted deposits that mantle gentle to moderate slopes and are chiefly derived from weathering and down-slope movement of nearby bedrock. Maximum thickness probably less than 15 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Qh |
| Landslide deposits (Holocene to middle Pleistocene)—Deposits of debris-lake movement processes ranging from poorly sorted, dispersed mixtures of rock fragments and soil to relatively intact bedrock slump blocks. Larger landslide deposits may be as thick as 50 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Qi |
| Travertine and caliche? deposits (Holocene? and Pleistocene?)—White, massive, locally vuggy deposits of calcium carbonate. Deposits, depicted by point symbols on the map, are localized along or near faults                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Qj |
| Intermediate alluvial deposits (upper Pleistocene)—Weakly consolidated, stratified silt, sand, and gravel that form low, rounded, moderately dissected terraces and piedmont alluvial fans that rest at higher elevations than the modern coastal piedmont alluvium and are typically composed of resistant and competent volcanic rocks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Qk |
| Marine-terrace deposits (upper Pleistocene)—Weakly to moderately consolidated, variably stratified gravel, sand, and silt deposited as marine intertidal, beach, and estuarine deposits (foreshifts) basal ~1 m and overlying nonmarine terrace, alluvial, and alluvial deposits. Marine-terrace deposits rest on elevated marine wave-cut platforms and form single terraces or flights of terraces ranging in elevation from 10 to 90 to 180-300 ft and in age from 0.5 ka (youngest terrace) to 50 to 105 ka (oldest terrace). Maximum exposed thickness about 20 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Ql |
| Older alluvial deposits (upper and middle Pleistocene)—Moderately consolidated, variably stratified, poorly sorted sand and gravel, conglomerate, and breccia, and rare interbeds of clay, silt, and silty sand comprising gravel to boulder grades of alluvial fans shed from the Santa Ynez Mountains. Unit forms dissected, gently south sloping elevated terraces, intertidal caps, and other erosional remnants as thick as 50 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Qm |
| Santa Barbara Formation (middle and lower Pleistocene)—Chiefly marine, pale-gray, buff, and tan, friable, bioturbated and massive sandstone, siltstone, and clayey sandstone. Contains diverse assemblage of marine invertebrate fossils. Base conglomerate has coarse, rounded, oblique and reverse faults of the Santa Barbara fold and fault belt that transect the coastal plain (SBFFBL, fig. 2) (Keller and Gornall, 2000; Gornall and others, 2001). Strong carbonates have occurred offshore within 10 km of the Santa Barbara coastal plain in 1925 6.3 magnitudes, 1941 6.5 magnitudes and 1979 6.1 magnitudes. These and numerous smaller seismic events located beneath and offshore of the coastal plain, likely occurred on reverse-oblique-slip faults that are similar to, or continuous with, Quaternary reverse faults crossing the coastal plain (Yerkes and Lee, 1987). The SBFFBL was a significant earthquake hazard to the approximately 200,000 people living within the major coastal population centers of Goleta, Santa Barbara, and Carpinteria. In addition, numerous Quaternary landslide deposits along the steep southern flank of the Santa Ynez Mountains (Benson and Wells, 2000) indicate the potential for continued debris failures and mass movements in developed areas. Folded, faulted, and fractured sedimentary rocks in the subsurface of the coastal plain and adjacent Santa Barbara Channel are sources and reservoirs for economic deposits of oil and gas (Trennert and Isaac, 2001), some of which are currently being extracted offshore. Shallow, localized sedimentary aquifers underlying the coastal plain provide limited amounts of water for the urban areas, but the quality of some of this groundwater is compromised by coastal salt-water contamination (Upson, 1951; Muir, 1968).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Qn |
| Unmetamorphosed sedimentary rocks east of Goleta River (Pleistocene and Holocene?)—Marine, coarse-grained sandstone, siltstone, and mudstone mapped as three unnamed, lithologically distinct units:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Qo |
| Conglomeratic unit (middle and lower Pleistocene)—Conglomerate, sandstone, siltstone, and mudstone mapped as three unnamed, lithologically distinct units:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Qp |
| Submarine channel deposits (lower Pleistocene)—Thin, rounded, subhorizontal crevasse silt and sandstone deposited in a submarine channel eroded into underlying Pleistocene and Holocene sandstone, siltstone, and mudstone. Maximum thickness derived from the Saguero Formation (Taq). Monterey Formation (Tms, Tmu, Tml, and older units). Width of paleo subchannel channelled in sea cliff about 60 ft. Minimum alluvial thickness of unit is 33 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Qq |
| Sandstone unit (lower Pleistocene)—Laminated and bioturbated sandstone, siltstone, and mudstone mapped as three unnamed, lithologically distinct units:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Qr |
| Marine fossils (Taq)—Unit contains clasts derived from the Saguero Formation (Taq) and (or) Monterey Formation (Tms, Tmu, Tml, Tml, and older units). Exposed thickness 45–60 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Qs |
| Siltstone unit (lower Pleistocene and upper Pleistocene?)—Massive and extensively bioturbated siltstone, mudstone, and silty sandstone. Contains marine fossils. Exposed thickness about 45 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Qt |
| Saguero Formation (lower Pleistocene and upper Pleistocene)—Marine, tan to white-weathering, diatomaceous mudstone and shale, conglomerate, and subordinate dolomite. Contains abundant microfossils of conglomerate containing angular clasts (commonly up to 1 m across; some blocks as large as 10 m) derived from the Monterey Formation. Base and top of Saguero Formation (Taq) are about 60 m. Maximum preserved thickness of 30 m in sea cliffs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Qm |
| Monterey Formation (Holocene)—Marine, predominantly well-bedded, tan to white-weathering, diatomaceous mudstone and shale, conglomerate, and subordinate dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of conglomerate and dolomite. Contains abundant microfossils of |    |