UTAH GEOLOGICAL AND MINERAL SURVEY
UTAH DEPARTMENT OF NATURAL RESOURCES
in cooperation with
THE UNITED STATES GEOLOGICAL SURVEY

Published and sold by
UTAH GEOLOGICAL AND MINERAL SURVEY
Genevieve Atwood, Director
606 Black Hawk Way
Salt Lake City, Utah 84108

Base from U.S. Geological Survey,
Lucin 4 NW Quadrangle 1983

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

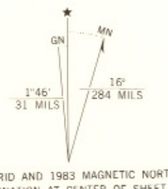
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Field mapping by authors in 1984-85.
Patricia H. Speranza, Cartographer

GEOLOGIC MAP OF THE LUCIN 4 NW QUADRANGLE, BOX ELDER COUNTY, UTAH

by
Linda L. Glick and David M. Miller
U.S. Geological Survey



UTM GRID AND 1983 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

QUADRANGLE LOCATION

1986

UTAH GEOLOGICAL AND MINERAL SURVEY
UTAH DEPARTMENT OF NATURAL RESOURCES
in cooperation with
THE UNITED STATES GEOLOGICAL SURVEY

CONTACT

Dashed where gradational

TRACE OF LAKE SHORELINE

—S——S— Stansbury

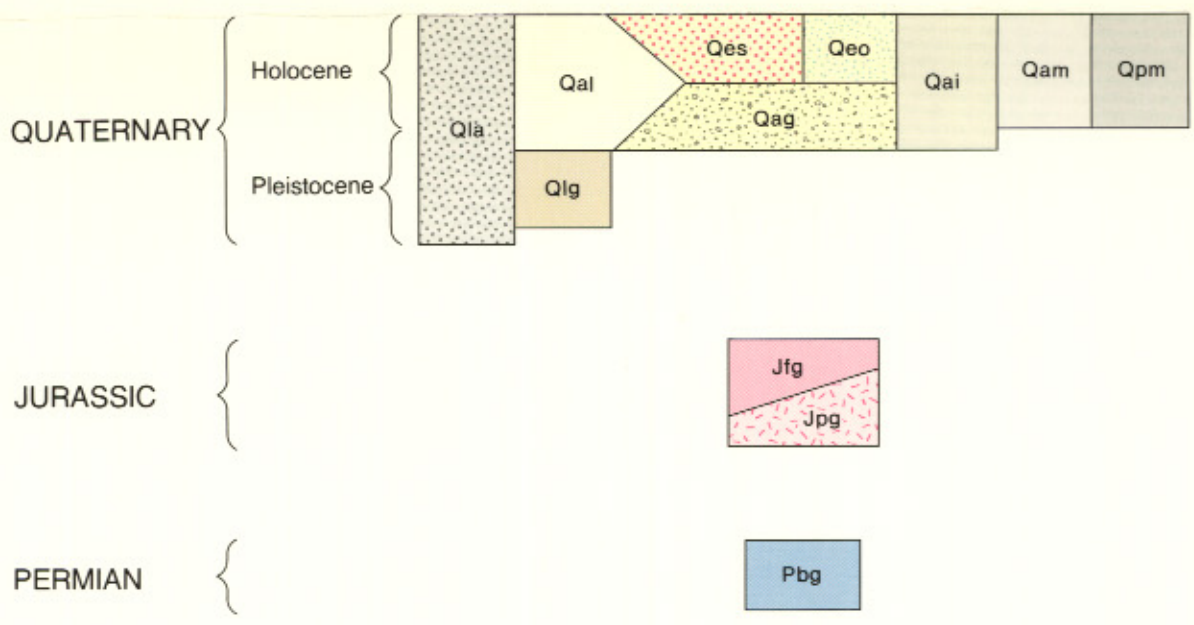
—G——G— Gilbert

ZONE OF ALTERATION

DRILL HOLE

FORMATION	SYMBOL	THICKNESS feet (meters)	LITHOLOGY
Badger Gulch Formation	Pbg	400 (120)	

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

Qla — Lacustrine and alluvial deposits, undivided—*Alluvium older than Lake Bonneville etched by erosional shorelines, and locally covered by thin lacustrine gravel and sand deposits.*

Qal — Alluvium—*Unconsolidated silt, sand, and fine pebble gravel in ephemeral streams and washes.*

Qes — Eolian sand—*Unconsolidated tan to light-brown, fine- to medium-grained sand and tan silt, occurring as complexes of small (2-m-high) dunes. Commonly contains detrital evaporite minerals; locally also ooids. Most dune complexes are vegetated.*

Qeo — Eolian oolitic sand—*White oolitic sand sheets and dunes as high as 11 m. Clasts are predominantly spherical and elliptical ooids with lesser quartz silt and evaporite minerals.*

Qai — Alluvial silt—*Unconsolidated tan silt, clay, and fine sand. Generally underlies flat surfaces, but locally includes eolian mounds less than one meter high. Dessication features, vegetation, and black algae are common.*

Qam — Alluvial mud—*Unconsolidated clay, silt, and soluble salts in low-lying areas with characteristic development of ephemeral, low-gradient drainage systems.*

Qpm — Playa mud—*Unconsolidated clay, silt, and white soluble salts in nearly level, undrained, vegetation-free basins.*

Qag — Alluvial gravel—*Fine to coarse pebble gravel deposited in stream channels discordant with present drainage systems. Maximum clast size is about 3 cm. Deposits generally form narrow, sinuous ridges.*

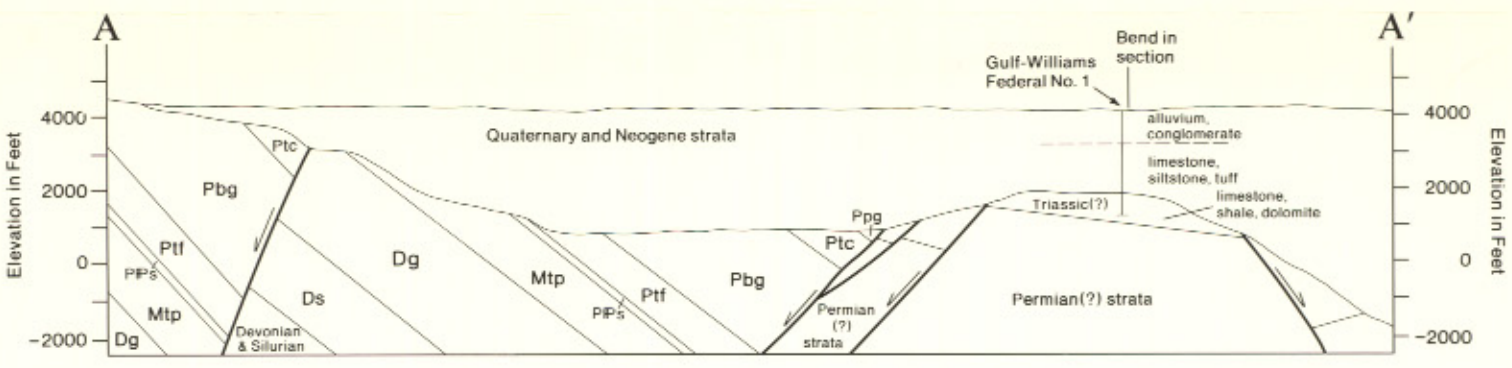
Qlg — Lacustrine gravel and sand, undivided—*Unconsolidated gravel and sand forming shoreline deposits of Lake Bonneville. Clasts are well rounded and size-sorted, commonly with little matrix. Locally forms beachrock cemented by calcareous silt.*

Jfg — Fine-grained granite—*Pale-gray, fine-grained, biotite monzogranite with sparse phenocrysts of biotite, quartz, plagioclase, and potassium-feldspar.*

Jpg — Porphyritic granodiorite—*Pale-gray, biotite granodiorite that contains phenocrysts of pink potassium-feldspar as large as 2.5 cm diameter in a medium- to coarse-grained groundmass of quartz, plagioclase, potassium-feldspar, and biotite. Diorite inclusions and pink aplite dikes common.*

Pbg — Badger Gulch Formation—*Dark-gray to black, platy, silty limestone with bioclastic beds.*

One possible configuration of subsurface structure and stratigraphy, based on outcrops, drill hole data and gravity data.



DESCRIPTION OF CROSS SECTION UNITS

Q N — Quaternary and Neogene strata —*Contains lacustrine, alluvial, eolian, and playa deposits, and tuff, sandstone, siltstone, and limestone.*

Ppg — Grandeur Formation of the Park City Group—*Cherty dolomite with thin interbeds of laminated sandstone and bedded chert.*

Ptc — Trapper Creek Formation—*Bioclastic limestone alternating with thin beds of silty limestone, ribbed sandy limestone and dolomite, gray-brown dolomite, and clean gray limestone.*

Pbg — Badger Gulch Formation—*Platy, silty limestone with bioclastic beds.*

Ptf — Third Fork Formation—*Calcareous sandstone; Upper part contains interbeds of gray to black, fossiliferous, platy limestone.*

PIPs — Strathearn(?) Formation—*Conglomerate and sandstone.*

Mtp — Tripon Pass Limestone—*Black, platy, shaly to silty limestone.*

Dg — Guilmette Formation—*Massive to thick-bedded, dark-gray limestone and dolomite.*

Ds — Simonson Dolomite—*Interlayered dark- to light-gray calcareous dolomite.*