

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 98-581
SHEET 2 OF 2

The locations of five nappes comprising the Oquirrh Mountains are indicated. Approximate locations of cross sections A-A' through L-L' show the mapped and inferred geologic structures in the nappes. East-west-trending cross sections M-M' not shown on the index map, lies across the northern border of the Bingham mine. Because these cross sections are reductions from published and open-file maps (listed in the following table), some type is poorly legible and stratigraphic units shown on this map are generalized from original sources. However, the cross sections convey the structural features intended by these figures, the original publications contain more detailed information.

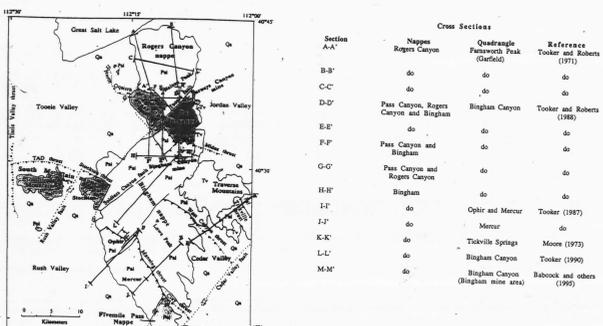


Table with 4 columns: Section, Nappe, Quadrangle, Reference. Lists cross sections A-A' through M-M' and their corresponding geological references.

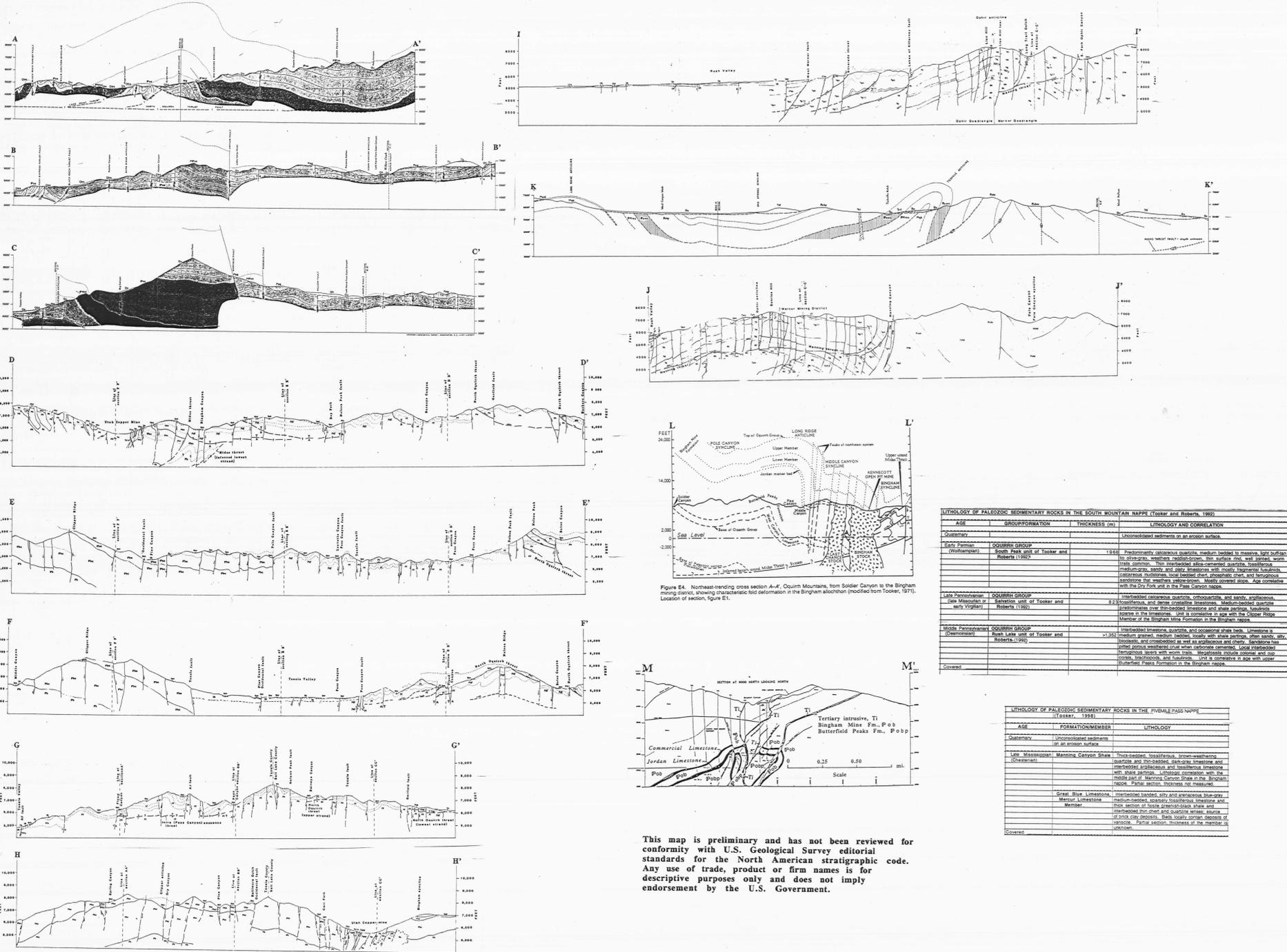


Figure E4. Northeast-trending cross section A-A', Oquirrh Mountains, from Soldier Canyon to the Bingham mining district, showing characteristic bed deformation in the Bingham allochthon (modified from Tooker, 1971). Location of section, figure E1.

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards for the North American stratigraphic code. Any use of trade, product or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Lithology of Sedimentary Rocks

The tables showing the age, lithology, and correlation of sedimentary rocks in each of the nappes also have been obtained from published and open-file reports, in which more detailed descriptions of the formational units are presented.

LITHOLOGY OF MIDDLE AND UPPER PALEOZOIC SEDIMENTARY ROCKS IN THE BINGHAM NAPPE (Tooker and Roberts, 1970)

AGE	GROUP/FORMATION MEMBER	THICKNESS (m)	LITHOLOGY AND CORRELATION
Quaternary			Unconsolidated sediments on erosion surface.
Upper Pennsylvanian	OQUIRRH GROUP BINGHAM MINE FORMATION MARKHAM PEAK MEMBER	131	Interbedded, thin to thick, interstratified, medium- to thick-bedded, weather, reddish brown and tan, silty, calcareous, calcareous quartzite, sandstone and quartzite sandstone, and thin, light-gray to black, shaly limestone, upper contact is erosional, lower contact is conformable. Sparse fossils include corals, brachiopods, and bryozoans. Quartzite prominent over limestone. Roughly correlative with the Keele Canyon Formation in the Rogers Canyon nappe.
Lower Pennsylvanian	OQUIRRH GROUP BINGHAM MINE FORMATION OQUIRRH PEAK MEMBER	810	Thin-bedded, argillaceous, calcareous quartzite, sandstone and calcareous sandstone, and medium-bedded, cherty, argillaceous and fossiliferous limestone. Limestone prominent over quartzite and sandstone. Two prominent thin, thin to medium-bedded, medium-gray limestone and tan quartzite and sandstone beds include the Jordan and Commercial limestone member beds in the area. Correlates with the Keele Canyon Formation in the Rogers Canyon nappe, and the Salt Lake unit in the South Mountain nappe. (Tooker and Roberts, 1970)
Miss. Pennsylvanian	OQUIRRH GROUP BUTTERFIELD PEAKS	1177	Cyclic thin to medium-bedded, buff to tan, locally cross-bedded calcareous quartzite, orthoquartzite, and calcareous sandstone, cherty, fossiliferous, and argillaceous limestone. Fossils include abundant coral, brachiopods, and bryozoan fauna. Generally correlative with the Erie Formation in the Rogers Canyon nappe and the Salt Lake unit in the South Mountain nappe.
Early Pennsylvanian	OQUIRRH GROUP WEST CANYON LIMESTONE	412	Cyclic thin to medium-bedded, calcareous sandstone, quartzite, argillaceous, and cherty limestone. Fossils include abundant coral, brachiopods, and bryozoan fauna. Generally correlative with the Erie Formation in the Rogers Canyon nappe and the Salt Lake unit in the South Mountain nappe.
Late Mississippian	MANNING CANYON SHALE	241	Fine-grained, shaly with thin interbeds of limestone and thin, medium-bedded dark brown quartzite in the lower part. Grades into argillaceous limestone in upper part. Transition into Oquirrh Group. West Canyon Limestone. Fossils abundant and include brachiopods, corals, and bryozoans. Correlates with the Salt Lake unit in the Rogers Canyon nappe.
	GREAT BLUE LIMESTONE		Correlative lower Paleozoic measured section continues to right.

LITHOLOGY OF LOWER PALEOZOIC SEDIMENTARY ROCKS IN THE BINGHAM NAPPE (Tooker, 1970; Tooker, 1971; and Tooker, Tooker, and Clark, 1968)

AGE	FORMATION/MEMBER	THICKNESS (m)	LITHOLOGY AND CORRELATION
Late Mississippian	GREAT BLUE LIMESTONE MEMBER	437	Interbedded, thin to medium-bedded limestone, cherty, and argillaceous limestone, calcareous sandstone, argillaceous sandstone, and argillaceous sandstone. Correlates in part with the Green Ravine Formation, Rogers Canyon nappe, and with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
	GREAT BLUE LIMESTONE LONG TRAIL SHALE MEMBER	29	Interbedded, thin to medium-bedded, argillaceous sandstone and argillaceous limestone. Upper and lower contacts are transitional and conformable.
	GREAT BLUE LIMESTONE SILVERCOURT LIMESTONE MEMBER	280	Interbedded, thin to medium-bedded, argillaceous sandstone and argillaceous limestone, cherty, fossiliferous, and calcareous sandstone or early limestone. Cherty limestone lenses prominent in middle part. Fossils include brachiopods, corals, and bryozoans. Correlates with the Long Trail Shale and the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Late Mississippian	HUMBURG	197	Interbedded, thin to medium-bedded, medium-gray limestone, weathering brown-gray, and brownish-tan quartzite and thin, black, fossiliferous limestone, coral and bryozoan fauna. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
	DESERT LIMESTONE	198	Very fossiliferous, thin to medium-bedded, blue-gray, cherty, argillaceous limestone, fossiliferous, and calcareous sandstone at the base. Brachiopods, bryozoans, and corals. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Early Mississippian	GARDNER	140	Very fossiliferous, thin to medium-bedded, argillaceous sandstone and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Miss. Devonian (?)	STOVILLE FORMATION AND PRINCE PEAK LIMESTONE, undivided	56	Coarse, crystalline gray, argillaceous sandstone, which weathers dark gray, thin to medium-bedded, argillaceous sandstone, and argillaceous limestone, which weathers dark gray. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Unconformity			
Late Cambrian	LYNCH DOLOMITE	2540	Thin-bedded, light-gray, dolomite with some dark-gray, fossiliferous, argillaceous sandstone and argillaceous limestone, and with a few limestone beds in the lower half. A prominent orthoquartzite in the lower part. The lower part weathers bluish dolomite at Tinto; the upper part is similar to the Keele Canyon Formation, Bingham nappe at Tinto (Morris and Lovings, 1961).
	BOWMAN LIMESTONE	84	Bedded, argillaceous limestone, fossiliferous, and calcareous sandstone, and argillaceous limestone. Probably correlative with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
	OPHIR FORMATION	98	Massive, shaly sandstone, which weathers dark gray, thin to medium-bedded, argillaceous sandstone, and argillaceous limestone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Early Cambrian	TYNCH QUARTZITE	92	Thin-bedded, cross-bedded, white quartzite, which weathers reddish brown. Becomes shaly toward the top, and grades into the Oquirrh Group. Correlates with the Tynch Quartzite at Tinto (Morris and Lovings, 1961).

LITHOLOGY OF PALEOZOIC SEDIMENTARY ROCKS IN THE SOUTH MOUNTAIN NAPPE (Tooker and Roberts, 1970)

AGE	GROUP/FORMATION MEMBER	THICKNESS (m)	LITHOLOGY AND CORRELATION
Quaternary			Unconsolidated sediments on an erosion surface.
Early Permian	OQUIRRH GROUP South Peak unit of Tooker and Roberts (1970)	1964	Fine-grained, calcareous quartzite, medium bedded to massive, light buff to tan, silty, calcareous, calcareous quartzite, sandstone and quartzite sandstone, and thin, light-gray to black, shaly limestone, upper contact is erosional, lower contact is conformable. Sparse fossils include corals, brachiopods, and bryozoans. Quartzite prominent over limestone. Roughly correlative with the Keele Canyon Formation in the Rogers Canyon nappe.
Late Pennsylvanian	OQUIRRH GROUP Blue Lake unit of Tooker and Roberts (1970)	82	Interbedded calcareous quartzite, orthoquartzite, and sandy argillaceous sandstone, and thin, medium-bedded, cherty, fossiliferous limestone. Limestone prominent over thin-bedded limestone and shale argillaceous sandstone. Member of the Bingham Mine Formation in the Bingham nappe.
Miss. Pennsylvanian	OQUIRRH GROUP Blue Lake unit of Tooker and Roberts (1970)	2130	Interbedded calcareous quartzite, orthoquartzite, and calcareous sandstone, and medium-bedded, cherty, argillaceous and fossiliferous limestone. Limestone prominent over quartzite and sandstone. Two prominent thin, thin to medium-bedded, medium-gray limestone and tan quartzite and sandstone beds include the Jordan and Commercial limestone member beds in the area. Correlates with the Keele Canyon Formation in the Rogers Canyon nappe, and the Salt Lake unit in the South Mountain nappe. (Tooker and Roberts, 1970)

LITHOLOGY OF PALEOZOIC SEDIMENTARY ROCKS IN THE PHENIX PASS NAPPE (Tooker, 1970)

AGE	FORMATION/MEMBER	LITHOLOGY
Quaternary	Unconsolidated sediments on an erosion surface.	
Late Mississippian	MANNING CANYON SHALE	Thin-bedded, argillaceous, calcareous sandstone, quartzite, and calcareous sandstone, and medium-bedded, cherty, argillaceous and fossiliferous limestone. Fossils include abundant coral, brachiopods, and bryozoan fauna. Generally correlative with the Erie Formation in the Rogers Canyon nappe and the Salt Lake unit in the South Mountain nappe.
	GREAT BLUE LIMESTONE Member	Interbedded, thin to medium-bedded, argillaceous sandstone and argillaceous limestone, cherty, fossiliferous, and calcareous sandstone or early limestone. Cherty limestone lenses prominent in middle part. Fossils include brachiopods, corals, and bryozoans. Correlates with the Long Trail Shale and the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).

LITHOLOGY OF PALEOZOIC SEDIMENTARY ROCKS IN THE ROGERS CANYON NAPPE (TOOKER AND ROBERTS, 1970)

AGE	GROUP/FORMATION MEMBER	THICKNESS	LITHOLOGY AND CORRELATION
Quaternary			Unconsolidated sediments on erosion surface.
Tertiary (?)	Andromeda Shale	Unknown	The lower, almost reddish-brown, argillaceous sandstone, fossiliferous, and calcareous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
	Unnamed conglomerate	Unknown	Fragmental, argillaceous sandstone, fossiliferous, and calcareous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Early Permian	PARK CITY FORMATION, GARDNER MEMBER	219	Thin to medium-bedded, thin to coarse-bedded, argillaceous limestone, calcareous sandstone, and argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Late Pennsylvanian	OQUIRRH GROUP KESLER CANYON FORMATION	2145	Upper part is thin to medium-bedded, orthoquartzite, and argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Lower part is thin to medium-bedded, argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Miss. Pennsylvanian	OQUIRRH GROUP ERDA FORMATION	130	Cyclically repeated layers of medium-gray limestone, calcareous sandstone, and argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Early Pennsylvanian	OQUIRRH GROUP LAKE POINT LIMESTONE	432	Interbedded, medium- to light-gray, argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Late Mississippian	GREEN RAVINE FORMATION	233	The upper part is medium-bedded to massive, thin to medium-bedded, argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).

LITHOLOGY OF PALEOZOIC SEDIMENTARY ROCKS IN THE ROGERS CANYON NAPPE (TOOKER AND ROBERTS, 1970)

AGE	GROUP/FORMATION MEMBER	THICKNESS	LITHOLOGY AND CORRELATION
Quaternary			Unconsolidated sediments on erosion surface.
Tertiary (?)	Andromeda Shale	Unknown	The lower, almost reddish-brown, argillaceous sandstone, fossiliferous, and calcareous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
	Unnamed conglomerate	Unknown	Fragmental, argillaceous sandstone, fossiliferous, and calcareous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Early Permian	PARK CITY FORMATION, GRANDEUR MEMBER	232	Thin to medium-bedded, thin to coarse-bedded, argillaceous limestone, calcareous sandstone, and argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Late Pennsylvanian	OQUIRRH GROUP KESLER CANYON FORMATION	2145	Upper part is thin to medium-bedded, orthoquartzite, and argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Lower part is thin to medium-bedded, argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Miss. Pennsylvanian	OQUIRRH GROUP ERDA FORMATION	130	Cyclically repeated layers of medium-gray limestone, calcareous sandstone, and argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Early Pennsylvanian	OQUIRRH GROUP LAKE POINT LIMESTONE	432	Interbedded, medium- to light-gray, argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).
Late Mississippian	GREEN RAVINE FORMATION	233	The upper part is medium-bedded to massive, thin to medium-bedded, argillaceous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone, and argillaceous limestone, fossiliferous, and calcareous sandstone. Correlates with the Keele Canyon Formation in the Bingham nappe at Tinto (Morris and Lovings, 1961).

GEOLOGIC MAP OF THE OQUIRRH MOUNTAINS AND ADJOINING SOUTH AND WESTERN TRAVERSE MOUNTAINS, TOOELE, SALT LAKE, AND UTAH COUNTIES, UTAH

Compiled by EDWIN W. TOOKER AND RALPH J. ROBERTS 1978