



**CORRELATION OF MAP UNITS**

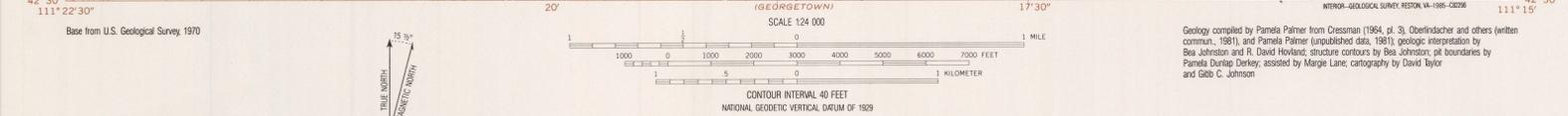
Qa	Qs	}	QUATERNARY
Qts			QUATERNARY AND TERTIARY
Qtb	}	}	QUATERNARY OR TERTIARY
Tsl			Pliocene or Pliocene and Miocene
Tw			TERTIARY
Jt			JURASSIC
Tt	}	}	TRIASSIC
Td			
Ppr			PERMIAN
Ppm			PERMIAN AND PENNSYLVANIAN
PPw			PERMIAN AND PENNSYLVANIAN
Mc			MISSISSIPPIAN
Mm			MISSISSIPPIAN

- DESCRIPTION OF MAP UNITS**
- Qa ALLUVIUM (QUATERNARY) - Unconsolidated sedimentary deposits along stream valleys; may include colluvium in Fossil Canyon quadrangle and hillwash and alluvial fans in Dry Valley quadrangle
  - Qs SURFICIAL DEPOSITS (QUATERNARY) - Includes colluvium, older alluvium, hillwash, talus, alluvial-fan, landslide, mudflow, and boulder deposits
  - \* Qts SEDIMENTARY DEPOSITS (QUATERNARY AND TERTIARY) - Undivided surficial deposits and Salt Lake Formation
  - Qtb BASALT (PLEISTOCENE OR PLOCENE) - Olivine and augite-olivine basalt
  - Tsl SALT LAKE FORMATION (PLIOCENE AND MIOCENE) - Limestone, sandstone, and chert conglomerate and rhyolite tuff. Approximately 1,000 ft thick
  - \* Tw WASATCH FORMATION (LOWER EOCENE) - Red conglomerate and sandstone
  - \* Jt TWIN CREEK LIMESTONE (MIDDLE JURASSIC) - Limestone, siltstone, and sandstone
  - Tt THAYNE LIMESTONE (LOWER TRIASSIC) - Sandstone, limestone, siltstone, and shale. As mapped, may include the Lanes Tongue of the Ankara Formation. Approximately 1,700 ft thick
  - Td DINWOODY FORMATION (LOWER TRIASSIC) - Siltstone, shale, and limestone. As mapped, may include tongue of the Woodside Shale. Approximately 1,400 to 1,800 ft thick
  - Ppr PHOSPHORIA FORMATION (PERMIAN) - Chert. As mapped, may include cherty shale member of the Phosphoria Formation and lentils of the Franson Member of the Park City Formation. Approximately 240 to 300 ft thick
  - Ppm Meade Peak Phosphatic Shale Member (Lower Permian) - Phosphorite and mudstone. Approximately 150 to 200 ft thick
  - PPw WELLS FORMATION (PERMIAN AND PENNSYLVANIAN) - Sandstone and limestone. As mapped, may include the Grandeur Tongue of the Park City Formation. Approximately 1,500 to 2,000 ft thick
  - \* Mc CHESTERFIELD RANGE GROUP (UPPER AND LOWER MISSISSIPPIAN) - Limestone, sandstone, and siltstone
  - \* Mm MADISON LIMESTONE (UPPER AND LOWER MISSISSIPPIAN) - Limestone

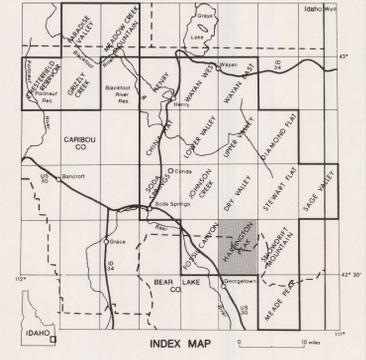
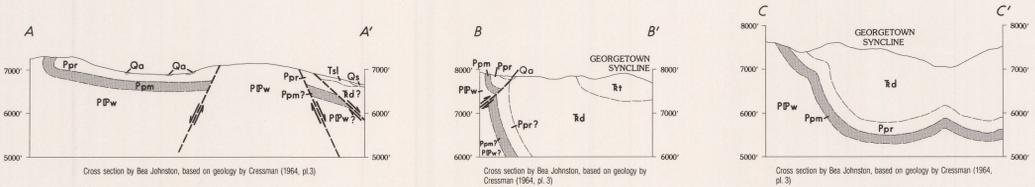
- CONTACT - Dashed where approximately located, gradational, indolinite or inferred; dotted where concealed; queried where doubtful
- FAULT - Dashed where approximately located or inferred; dotted where concealed; queried where doubtful; U, upthrown side; D, downthrown side; arrows show relative horizontal movement
- THRUST FAULT - Sawtooth on upper plate. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful
- ANTICLINE - Showing crestline. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful
- SYNCLINE - Showing troughline. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful
- OVERTURNED ANTICLINE - Showing direction of dip of limbs. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful
- OVERTURNED SYNCLINE - Showing direction of dip of limbs. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful
- STRIKE AND DIP OF BEDS - Inclined; overturned; vertical; horizontal
- PHOSPHATE DRILL HOLE - For computing resource tonnages
- PHOSPHATE TRENCH - For computing resource tonnages
- PHOSPHATE MINE PIT BOUNDARY - As of September 1979

- FAULT SEPARATION - No calculated resource
- FAULT OVERLAP - Twice calculated resources if covered by 1500 ft. or less of overburden
- FAULT TRACE AT DEPTH
- STRUCTURE CONTOURS - On top of the Meade Peak Phosphatic Shale Member of the Phosphoria Formation. Contour interval 200 feet. Approximately located; dashed where contours are projected past control points or where structure is uncertain
- Index Contour
- Intermediate Contour

\* Map units and symbols shown with an asterisk are not on this map.



Geology compiled by Pamela Palmer from Cressman (1964, pl. 3), Oberlander and others (written commun., 1981), and Pamela Palmer (unpublished data, 1981); geologic interpretation by Bea Johnston and R. David Hovland; structure contours by Bea Johnston; pit boundaries by Pamela Dunlap Derkey, assisted by Marge Lane; cartography by David Taylor and Gibb C. Johnson



**STRUCTURE CONTOURS ON THE TOP OF THE MEADE PEAK PHOSPHATIC SHALE MEMBER  
MAPS SHOWING SELECTED GEOLOGY AND PHOSPHATE RESOURCES OF THE HARRINGTON PEAK QUADRANGLE,  
BEAR LAKE AND CARIBOU COUNTIES, IDAHO**

By  
**Pamela Dunlap Derkey,<sup>1</sup> Bea Johnston,<sup>1</sup> Pamela Palmer,<sup>1</sup> and R. David Hovland<sup>2</sup>**  
<sup>1</sup>Idaho Bureau of Mines and Geology  
<sup>2</sup>Bureau of Land Management  
1985



MR-74  
MR 74  
sheet 1  
3 1818 00178368 5