

Only the land classification categories present in the quadrangle are colored in the explanation and on the map; asterisk (\*) preceding a colored classification category in the explanation indicates that the category includes all land in the quadrangle and so, to reduce clutter, the color is omitted from the map. Categories not colored in the explanation are not present in the quadrangle. All withdrawn lands are prospectively valuable for the mineral for which they are withdrawn. Land classification applies only to public lands within category boundaries. Leasable minerals are coal, oil and gas, and oil shales, phosphates, or phosphate rock; chlorides, sulfates, carbonates, borates, and silicates or nitrates of potassium and of sodium; sulfur in Louisiana and New Mexico; and native asphalt, solid and semisolid bitumen, and bituminous rock (including oil-impregnated rock or sands from which oil is recoverable only by special treatment after the deposit is mined or quarried). However, all minerals are leasable on Federal acquired lands and restricted allotted and tribal Indian lands. Leasable mineral outcrops are not shown. A symbol preceding a mineral name on the selected minerals list indicates the mineral is present in the map area. Active mines are not differentiated from inactive mines, the size and grade of the mineral occurrence are not indicated, and names are given hereon for only a few of the mines.

- MINERAL LAND CLASSIFICATION**
- WITHDRAWN LANDS**--Showing withdrawal number and date (month-day-year)
- Coal
  - Phosphate
  - Oil shale
- CLASSIFIED LANDS**
- Coal
  - Phosphate
  - Oil shale
  - Sodium
- AREAS DESIGNATED FOR COAL LEASING**--Showing name and effective date (month-day-year)
- Known recoverable coal resource area (KRCRA)
- KNOW LEASING AREAS**--Showing name and effective date (month-day-year)  
Note: Not all areas have been assigned names
- Known geologic structure of producing oil and gas field (KGS)
  - Known geothermal resources area (KGRA)
  - Known oil shale leasing area
  - Known phosphate leasing area
  - Known potassium leasing area
  - Known sodium leasing area

- WATERPOWER LAND CLASSIFICATION**
- Classified or withdrawn for waterpower or reservoir sites

**DESCRIPTION OF MAP SYMBOLS**

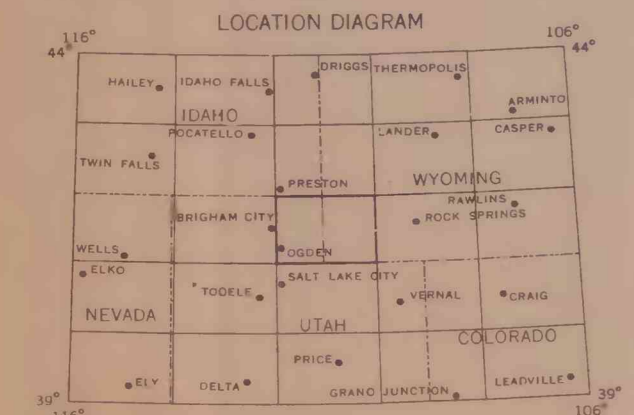
**SELECTED MINERALS**--Symbol shows location of mineral occurrence to the nearest 40-acre tract; multiple occurrences of a mineral within a quarter section (160 acres; 64.75 hectares) are not differentiated from a single occurrence. For cartographic reasons mineral occurrence may be shown by a dot and a leader to the symbol in parentheses.

Metallics		Nonmetallics	
Aluminum	Cobalt	Carbon dioxide	Iodine
Antimony	Columbium and Tantalum	Clay, refractory	Kaolin
Arsenic	Copper	Diatomite	Kyanite group
Beryllium	Gallium	Dumortierite	Limestone
Bismuth	Germanium	Feldspar	Lithium minerals
Cadmium	Gold	Fluorspar	Magnesite
Cesium and Rubidium	Iron	Fuller's earth	Magnesium sulfate
Chromium	Lead	Gem and ornamental stones	Meerschaum
		Graphite	Mica
		Gypsum	Mineral pigments
			Nephelite
			Olivine
			Quartz
			Serpentine
			Silica sand
			Strontium minerals
			Sulfur
			Talc, Soapstone
			Vermiculite
			Volcanic ash, Pumice, Perlite
			Wollastonite

**SYMBOL COMBINATIONS**--Certain symbols (silver, lead, and zinc, or uranium and vanadium) are combined into a single symbol to show several minerals at the same locality as shown in three examples below. Where individual symbols cannot be combined into a single symbol or where cartographic reasons dictate, occurrences of several minerals at the same locality are shown by a dot at the locality and a leader to the composite symbol or series of symbols in parentheses as shown in fourth example below.

- ☉ Copper, gold, lead, zinc
  - ⊗ Chromium, cobalt, nickel
  - ⊕ Uranium and vanadium
  - ☉☉☉ Silver, lead, zinc, and bismuth at same location
  - ☉☉☉☉ Eureka mine--Gold, silver, lead, zinc, and fluorspar mine at location of dot
- WIDESPREAD MINERAL OCCURRENCES**--An area of numerous or widespread occurrences of one or more minerals is shown by a dotted outline and a symbol or symbols. A single occurrence of another mineral or minerals within such an area is shown by a dot at the locality and a leader to the symbol or symbols in parentheses. An overlapping area of mineral occurrence is outlined by a short dashed line.

- OTHER SYMBOLS**
- ✕ Leasable mineral mine
  - ✕ Mine or prospect where mineral is not known
  - + Pit (bentonite or clay)
  - ✕ Gravel or sand pit
  - ◇ Quarry



SCALE 1:250000  
0 5 10 15 20 25 MILES  
0 5 10 15 20 25 KILOMETRES

**LEASABLE MINERAL AND WATERPOWER LAND CLASSIFICATION MAP  
OF THE OGDEN QUADRANGLE, UTAH, WYOMING**  
LANDS WITHDRAWN, CLASSIFIED, AND PROSPECTIVELY VALUABLE FOR LEASABLE MINERALS;  
OCCURRENCES OF OTHER SELECTED MINERALS; AND LANDS WITHDRAWN OR  
CLASSIFIED FOR WATERPOWER AND RESERVOIR SITES  
Compiled by  
E. G. Allen, E. M. Pera, J. E. Smedley, and G. A. Lutz  
1977

All information on this map compiled as of June 1, 1977.

- 1/ Orange color indicates overlapping coal and phosphate withdrawals.
- 2/ Previously designated as known coal leasing area (KCLA)

U. S. Geological Survey  
OPEN FILE REPORT  
This map has not been edited for conformity with Geological Survey editorial standards or stratigraphic nomenclature.