



Photointerpretation and field check 1976  
This map has not been edited or reviewed  
for conformity with Geological Survey  
standards and nomenclature.

OF THE CALIFORNIA, PA. QUADRANGLE

by  
John S. Pomeroy  
1979

OPEN FILE MAP 79-1314 (A-1)

**NOTE**

Information shown is intended as a general guide to ground conditions as of the date of field check. Additional landslides and rockfalls should be anticipated in the dominant contour in the area delineated and variations in slide stability may occur at any point in the unit. This map is suitable for general planning purposes and as a supplement to more detailed studies for site selection. The map cannot be used as a substitute for detailed geologic and engineering investigations to establish design and construction criteria of specific sites. Some symbols may not appear on this map because the description is applicable to a series of maps.

### MAN-MADE FEATURES

**STRIP FEATURES**  
Strip mines (combination of letter symbols indicates complex formed of more than one type of strip mine)

- sh bench with high wall (In Allegheny County benches and furrows are shown by sh).
- sf furrowed with high wall
- sd multiple furrows and multiple benches
- ss hilltop removed
- sr reclaimed by grading
- sru reclaimed by secondary use
- sh/r regraded in part, high wall remains

Coal refuse banks	
r	identified on aerial photographs; not classified in field check
rb	not burnt nor on fire
rbb	burnt
rbd	burning
rbs	sludge

Quarries  
q quarry site  
qub spoil bank, quarry waste

Gravel pits	
g	site of gravel pit
Slides in	man-made features
af	earth flow in fill
a/s	earth flow in strip castings
a/r	earth flow in coal refuse

PITTSBURGH 1° X 2° SHEET

80° 78°

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

H 41°  
G  
F  
E  
D  
C  
B  
A 40°

ACTIVE OR RECENTLY ACTIVE LANDSLIDE

Complex landslide composed of earthflow, debris slide, earth and rock slump. Identified from historical records, and from scars, debris and other field evidence. Ground extremely unstable; sliding accelerated by excavation, loading and changes in drainage conditions. May include areas with several active slides too small to be shown separately. Questioned where doubtful.

OLD LANDSLIDE

Area of extensive hummocky ground caused by earthflow and earth and rock slump. Lacks clear evidence of active sliding. Relatively stable in natural, undisturbed state, generally not affected by small structures properly sited in areas away from the edge of the toe; can be reactivated by extensive, rapid excavation, loading, and changes in ground water and surface water conditions. Area of old landslide probably includes recent ones not identified from field observations or otherwise documented. Upslope boundary of landslide generally defined by modified scarp, but downslope (toe) is gradational and not well defined. Questioned where doubtful.

COMBINATION LANDSLIDE

Area of recent and old slides in which individual slides are not identified.

COLLUVIAL SLOPE

**LULLVAY SLOPE**  
Lullvay wall along major streams with slope as steep as 40° (85%); stony, clayey silt soil up to 50 ft. (15 m) thick; commonly buttressed by a terrace or bench at the toe of the slope; very susceptible to sliding by cutting of toe area, removal of terrace or bench, and overloading; slide commonly activated without apparent cause.

**SCREE**  
Residual accumulations of coarse rock material lying on quartzite slopes of the Valley and Ridge province. Generally stable except where subjected to extreme rainfall.

COLLUVIAL SLOPES WITH LANDSLIDES  
Landslides too small or obscure  
individually.



**AREAS SUSCEPTIBLE TO DEBRIS FLOWS AND DEBRIS  
AVALANCHES**

Primarily shallow, narrow ravines and chutes with accumulation of stony colluvium generally 10 ft. (3 m) or less in thickness; susceptible to rapid movement during intense rainfall. Most ravines and chutes designated show evidence of former debris flows and avalanches. Symbol & designates historical debris flow or debris avalanche.

**AREAS SUSCEPTIBLE TO ROCKFALL**  
Steep, locally vertical, natural and man-made slopes and cliffs, 15 ft. (4.5 m) or more high; formed dominantly of sandstone, limestone, sandy shale, mudstone and claystone. Interbedded mudstone, claystone and shale weather rapidly leaving sandstone and limestone rock faces unsupported.

**SOIL AND ROCK SUSCEPTIBLE TO LANDSLIDING**  
Soil and rock similar to that involved in landslides elsewhere in map area; primarily areas underlain by claystone, mudstone and shale associated with other rock types. Rock weathers rapidly on exposure forming clayey soil highly susceptible to sliding. Includes coves (U-shaped, shallow valleys) containing thick layers of clayey soil that are very susceptible to sliding where excavation breaks continuity of slope and where overloaded by artificial fill.

10

**AREAS LEAST PRONE TO LANDSLIDES**  
Map areas in which no patterns or symbols are shown;  
primarily valley floors, ridge tops and broad  
benches; modification by excavation and fill may  
lead to local landslides.  
Includes slopes where landslides are sparse.

The first five digits of the open file number designate the specific 1:250,000 scale map sheet of which this quadrangle is a part. The last two digits designate the position of the quadrangle in a subdivision of the 1:250,000 scale map based on rows and tiers shown in the diagram to the right. The location of this quadrangle is shown by the black square.