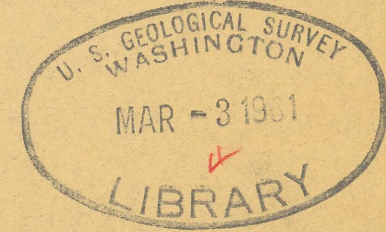


- MISSISSIPPIAN**
- Mmu**  
Madison group, undifferentiated  
Massive, cliff-forming, buff to gray dolomite
  - Ew**  
Wolsey shale  
Greenish fissile shale, poorly exposed
  - Et**  
Flathead quartzite  
Massive buff to reddish quartzite, locally  
glauconitic
  - UNCONFORMITY**
  - pg**  
Pegmatite  
Mostly coarse-grained pink microcline pegmatite;  
locally white, albite. Shown only in outcrop
  - gr**  
Granite  
Fine to medium grained, pink to white, foliated.  
Shown only in outcrop
  - px**  
Metaproxenite  
Dark green to black, medium grained; in places  
largely altered to black hornblende. Shown  
only in outcrop
  - pcd**  
Metaperidotite  
Massive, black on fresh surfaces, buff where  
weathered. Original serpentized olivine  
largely altered to amphibole with preservation  
of original texture
  - qt**  
Quartzite  
Micaceous quartzite, garnet quartzite, biotite-  
garnet quartzite and vitreous quartzite. Some  
beds of vitreous quartzite separately designated  
in outcrop (qv). Contains several beds of  
iron-formation (qif) composed mostly of  
interlayered magnetite and quartz, locally  
with abundant garnet
  - gn**  
Gneiss  
Gray to green diopside gneiss, dark hornblende  
gneiss and hornblende-garnet gneiss, and  
hornblende-diopside gneiss, generally well  
layered. Scarce thin discontinuous beds of  
vitreous quartzite in lower part of unit,  
designated in outcrop (qvq). Contains  
principal iron-formation of the area (gif),  
a streaky to well-layered rock composed mainly  
of magnetite and quartz, with subordinate  
garnet and pyroxene
  - mq**  
Mottled garnetiferous quartzite  
Massive brownish weathering feldspathic quartzite  
mottled with evenly distributed clusters of  
reddish garnet
  - nt**  
Gneiss and quartzite  
Very poorly exposed. Lower part apparently  
consists mostly of micaceous quartzite, upper  
part of hornblende-diopside gneiss
  - dol**  
Dolomite  
Lower part is coarse-grained white to cream  
dolomite marble; upper part is medium-grained  
cream-colored dolomite spotted with granules  
of serpentine and small flakes of phlogopite
- CAMBRIAN**
- PRECAMBRIAN**

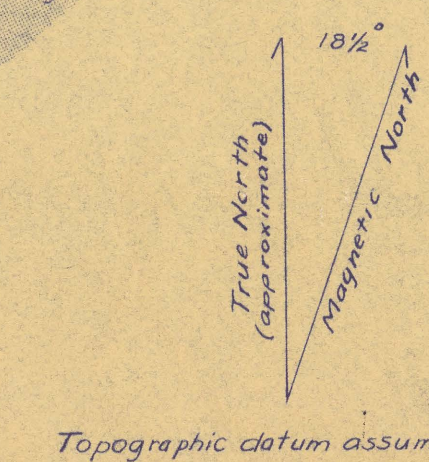
- Geologic Contacts  
Dashed where approximately located, queried  
where location is uncertain.
- Shear zone  
Closely spaced shears, generally vertical or  
nearly so
- Fault  
Dashed where approximately located. Direction  
and amount of dip shown where known. U,  
upthrown side; D, downthrown side
- Fault, showing relative movement
- Anticline  
Approximate position of crest, showing direction  
of plunge. Overturned anticlines not  
separately distinguished
- Syncline  
Approximate position of trough, showing  
direction of plunge. Overturned synclines not  
separately distinguished
- Plunge of closely spaced minor folds
- Plunge of linear element (minor fold axis,  
grooving)
- Strike and dip of beds and of compositional  
layering in gneissic rocks. Overturned bedding  
not separately distinguished
- Strike of vertical beds
- Generalized strike of contorted beds and of  
compositional layering, with dip
- Strike and dip of foliation in granite
- Strike and dip of fracture cleavage
- Strike and dip of beds or of compositional  
layering and plunge of lineation
- Outcrop or group of outcrops
- Trench or cut
- MAGNETIC SURVEY  
(Sheet 2 only)
- Isomagnetic contour  
Value in gammas of vertical intensity. Shown  
only in central part of area
- Closed contour around magnetic depression
- Station occupied by survey  
Value measured with Jander fluxgate  
magnetometer
- Station with strongly negative value caused by  
polarization. Value not considered in drawing  
isomagnetic contours
- Crest of magnetic anomaly  
Shown only in areas not contoured. Size of  
circle roughly proportionate to size of  
anomaly



THIS MAP IS PRELIMINARY AND  
HAS NOT BEEN REVIEWED OR REVIEWED  
FOR CONFORMITY WITH U.S.  
GEOLOGICAL SURVEY STANDARDS  
AND NOMENCLATURE.

SCALE  
0 200 400 600 800  
in feet

Mapped by H.L. James and K.L. Wier, 1960



Topographic datum assumed

# GEOLOGIC MAP OF THE KELLY IRON DEPOSIT, MADISON COUNTY, MONTANA

Sheet 1: Geology and topography  
Sheet 2: Magnetic survey and geology

Montana (Kelly iron deposit). Geol. 1:2400. 1960.



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