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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: IVANHOE

ALTERNATE NAMES:

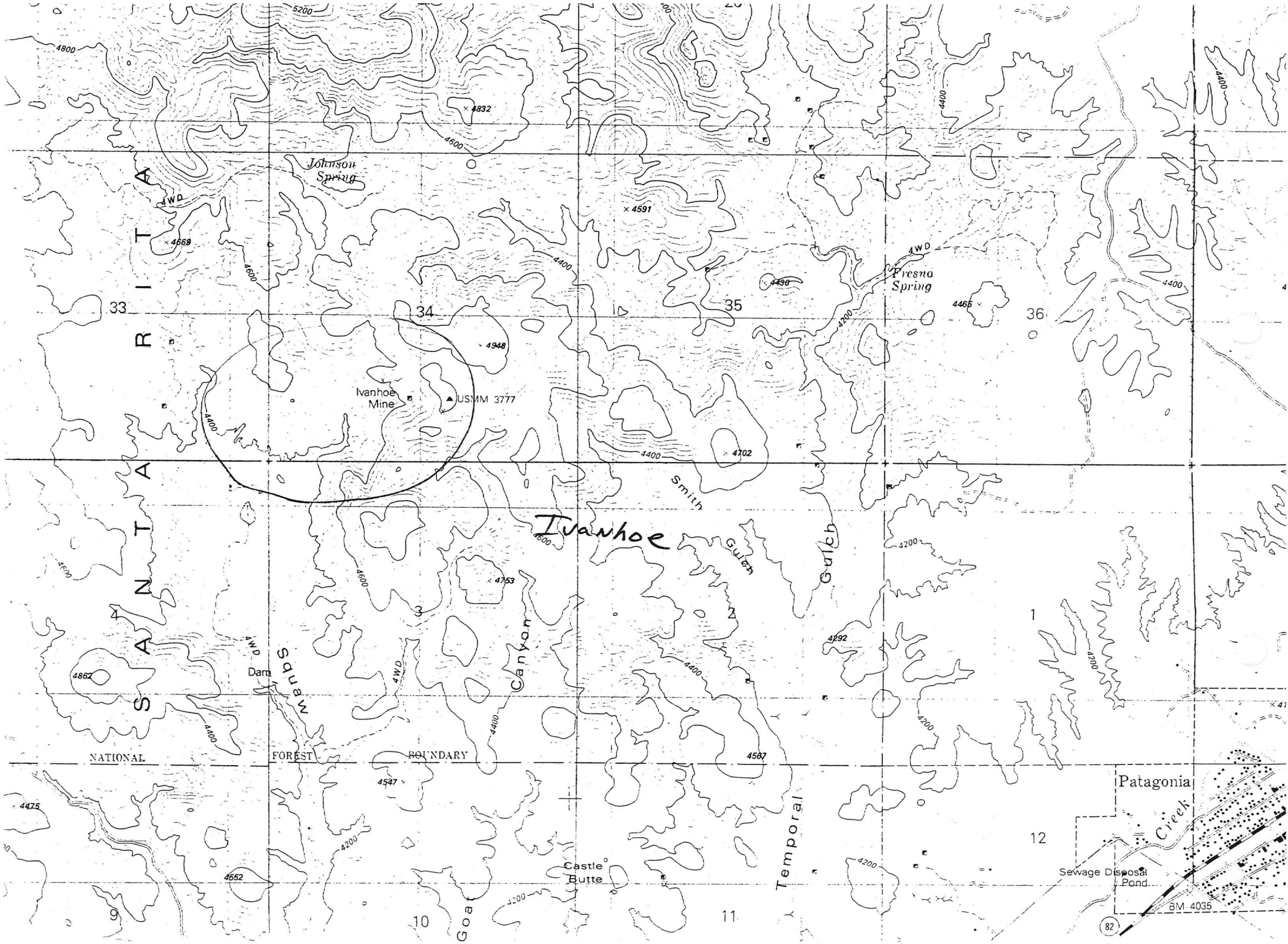
SANTA CRUZ COUNTY MILS NUMBER: 114B

LOCATION: TOWNSHIP 21 S RANGE 15 E SECTION 34 QUARTER SW
LATITUDE: N 31DEG 33MIN 42SEC LONGITUDE: W 110DEG 48MIN 02SEC
TOPO MAP NAME: MOUNT WRIGHTSON - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
SILVER
COPPER
LEAD
GOLD
MOLYBDENUM

BIBLIOGRAPHY:
KEITH, S.B., 1975 AZBM INDEX OF MINING PROP.
IN SANTA CRUZ CO.
AZBM CARD FILE SANTA CRUZ CO.
SCHRADER, F.C., 1915, USGS BULL. 582,
P. 216-219
ADMMR IVANHOE FILE



Patagonia 7.5'

IVANHOE

SANTA CRUZ COUNTY, ARIZONA

MLS# 114 B

IVANHOE

SANTA CRUZ COUNTY, ARIZONA

EXPLANATION

Qg	Gravel	QUATERNARY
	UNCONFORMITY	
Qgtl	Alluvium capping lowest terraces	
Qgth	Alluvium capping highest terraces	
	UNCONFORMITY	
QTg	Gravel and conglomerate	TERTIARY AND QUATERNARY
	UNCONFORMITY	
Tq	Quartz vein	TERTIARY
Tguw	Gringo Gulch Volcanics, rhyolite tuff	
Tgl	Gringo Gulch Volcanics, rhyolitic tuff and flows	
Klp	Quartz latite porphyry	CRETACEOUS
Kj Kjq	Josephine Canyon Diorite, coarse grained; fine grained	
Ksu	Salero Formation, tuffaceous sandstone, conglomerate, tuff breccia	
	UNCONFORMITY	
Kbm	Bathtub Formation, rhyolitic tuff	
	UNCONFORMITY	
Kbls	Bathtub Formation, andesitic sandstone	
	UNCONFORMITY	
Ktmu	Temporal Formation, volcanic and sedimentary rocks	
Ktl	Temporal Formation, volcanic and sedimentary rocks	
	UNCONFORMITY	
Js Jsa	Squaw Gulch Granite, granite and quartz monzonite; aplitic bodies	JURASSIC
	UNCONFORMITY	
Rwm	Mount Wrightson Formation, rhyolitic and latitic volcanics	TRIASSIC

fault

quartz vein (Tq)

Type: Stockwork
Structurally controlled

PORPHYRY COPPER PROBABILITY STUDY
OCCURRENCE DESCRIPTION OUTLINE

I. SULFIDE SYSTEM

A. Name Ivanhoe County Santa Cruz State Arizona

*B. Length: Exposed 7,000 ft; Extrapolated 10,000 ft.

*C. Width: Exposed 6,000 ft; Extrapolated 7,000 ft.

*D. Azimuth of Elongation 315 °; Sulfide Concentration 1 Vol. %

*E. Capping (circle one for each)

Oxidized Capping	yes	(no)	minor	no data
Leached Capping	yes	(no)		no data
Intensity in Outcrop	subtle	apparent	(obvious)	no data
Color	red-brown	(maroon)	bleached-yellow	no data

*F. Absolute Age (m.y.); Min. _____; Max. _____; Average _____
Relative Age (bracket): _____

*G. Drillholes

1. Maximum Depth 2055 ft.

2. Comments One hole by BCM. Mineralization and alteration decrease with depth. The best intercept is 120' of 0.16% Cu.

*H. Geologic Setting (age, host rocks, intrusive relationships, oldest to youngest formations, contacts, alteration halo to core zone).

(See back of page)

I. Reference:

Horlocker, N., 1969, Progress Report Ivanhoe Examination: BCMC-AD.

Lacy, W. C., 1960, A Reconnaissance Study of Structure and Mineralization of the Tyndall Mining District, Arizona: BCM-SWD.

Mt. Wrightson 15' Quad.

*Note: See Rules and Conventions.

Geologic Setting

Triassic flows and tuffs with lenses of quartzite are intruded by Jurassic granite which is partly covered by Mesozoic and Cretaceous acid to intermediate flows, pyroclastics, and sediments.

These are intruded by Laramide granite, acid to intermediate porphyritic dikes, and small masses (volcanic?), and cut by Laramide diabase dikes.

Tertiary (postmineral) acidic dikes, flows, and pyroclastics overlie or cut the older rocks.

Qal and slope wash are locally present.

Alteration

A few patches of propylitic alteration (epidote and chlorite veinlets with partial chloritization of biotite) surround an extensive area of clay-sericite alteration superimposed on a smaller (3000' diameter) aureole of quartz veining and silicification.

Sulfide System Name Ivanhoe

II. Diagnostic Reconnaissance Characteristics

A. District Prospect Zoning Outside of Sulfide System

1. Prospects/Mines

Metal/Type	Min. Diam. (feet)	(M) Mines (P) Prospects	Rock Types	Deposit Types
Cu ✓		P	Jurassic granite and Cretaceous volcanics	quartz limonite veins
Pb-Zn ✓			"	"
Ag-Au ✓			"	"
Mn				
Other				
Other				

B. Dike Swarms

Rock Types	diabase(?)			
Length (ft.)				
Width (ft.)				
Azimuth (°)				
Age	Laramide(?)			
* Spatial Rel.	projects into sulfide system			
Contacts				
Other				

*C. Important Regional Structures (other than dike swarms)

Type	quartz veining	zone of structural weakness	Wrench Fault
Length	32,000	72,000	
Azimuth (°)	285-270	330	290°
Recognition Factors	limonites in outcrop color granite red	alignment & elongation of Triassic-Jurassic-Tertiary intrusives	
Age	Laramide	Triassic-Tertiary	
Spatial Rel.	cut across sulfide system	system is elongated roughly parallel to it	
Contacts		irregular	
Other	mineralized Py, Ag, Au, Pb		transects the range

*D. Other Reconnaissance: (See back of page)

Reconnaissance

Jurassic granite appears to have been domed up by Laramide(?) intrusion. Local faults have a radial pattern with the focus being in the area intruded by the Laramide(?) porphyritic rocks.

The Jurassic granite contains prominent joint systems particularly in the annular zone of quartz limonite veining. Inside this zone, very close-spaced north-trending (345°-355°) shear planes (sheeting?) predominate.

Numerous erosional remnants of Tertiary volcanics resting directly on Jurassic granite indicate possible weak oxidation prior to the period of Tertiary volcanism and very limited oxidation during the current erosion cycle. Only minor secondary chalcocite enrichment can be expected.

Within the target area there is no evidence of significant disseminated sulfides. Mineralization is restricted mostly to joints, shears, and associated quartz-limonite veins. The (so-called) host rocks are devoid of mineralization and alteration.

Postmineral tilting about 20° E. is postulated.

Sulfide System Name Ivanhoe

III. Center of Mineralization (zone of best copper)

A. Name Ivanhoe target

*B. Copper Mineralization

1. Type	*%	Av. Grade	Rock Type	*Other Data
a. Primary ✓				
b. Enriched				only incipient
c. Skarn (replacement)				
d. Oxide				
e. Mixed ✓				max. 200' deep

2. Current Mineral ~~Inventory~~ target

a. Tons _____ ; Av. Grade 1.0 %; Cutoff _____ %

b. Other Credits _____

3. Past Production

a. Tons modest ; Av. Grade _____ %; Cutoff _____ %

b. Other Credits Ag Pb Au

C. Cover

1. 95+ % Exposed at time of discovery

2. Projected Post Mineral Cover

a. Thickness (ft.) _____

* b. Formations Tertiary acidic volcanic flows, sedimentary rocks, pyroclastics

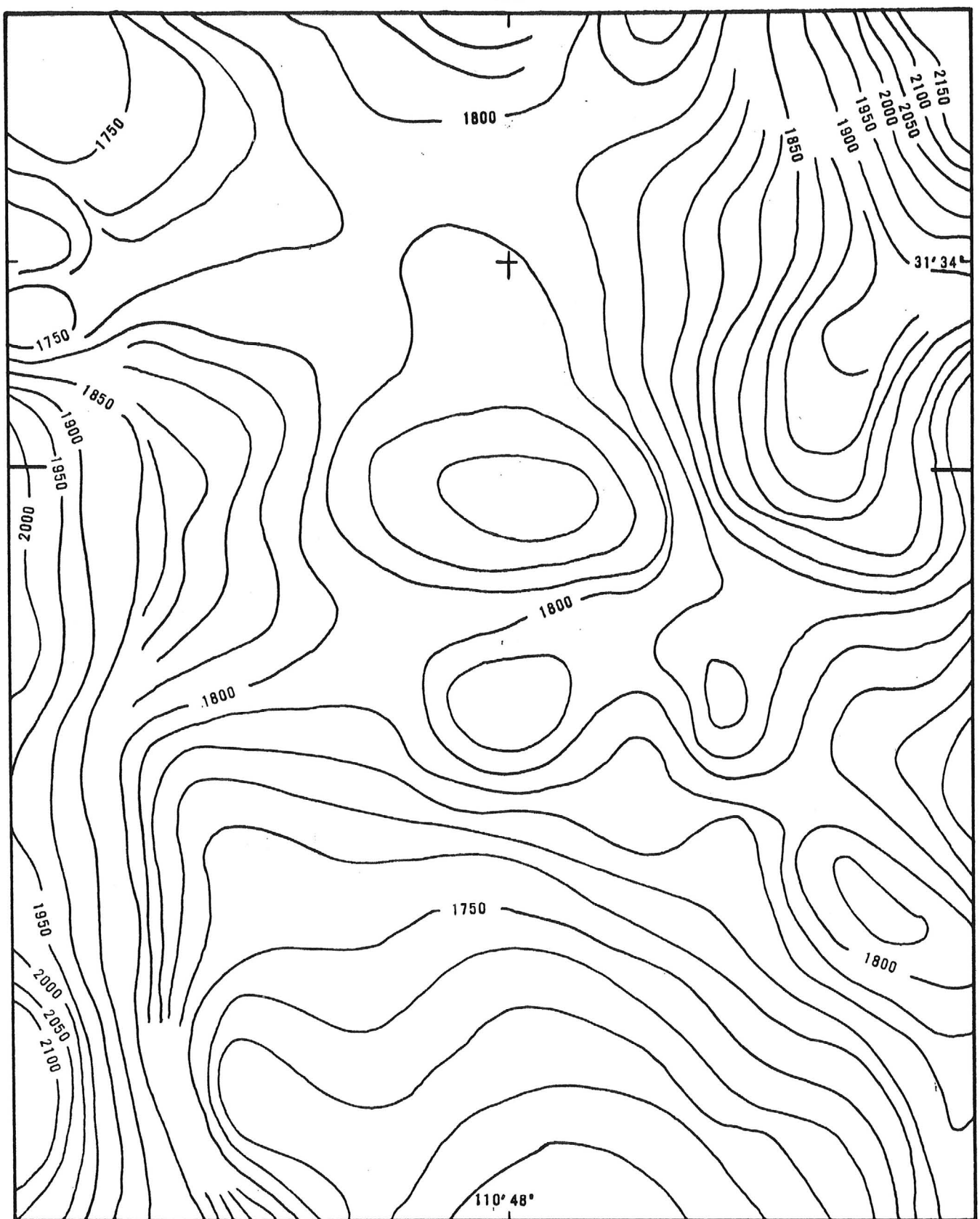
* c. Estimated Δ elevation of base of cover to top of cc blanket (ft.) ___

no cc blanket expected

3. Premineral Cover

a. Thickness (ft.) _____

b. Formations Jurassic granite

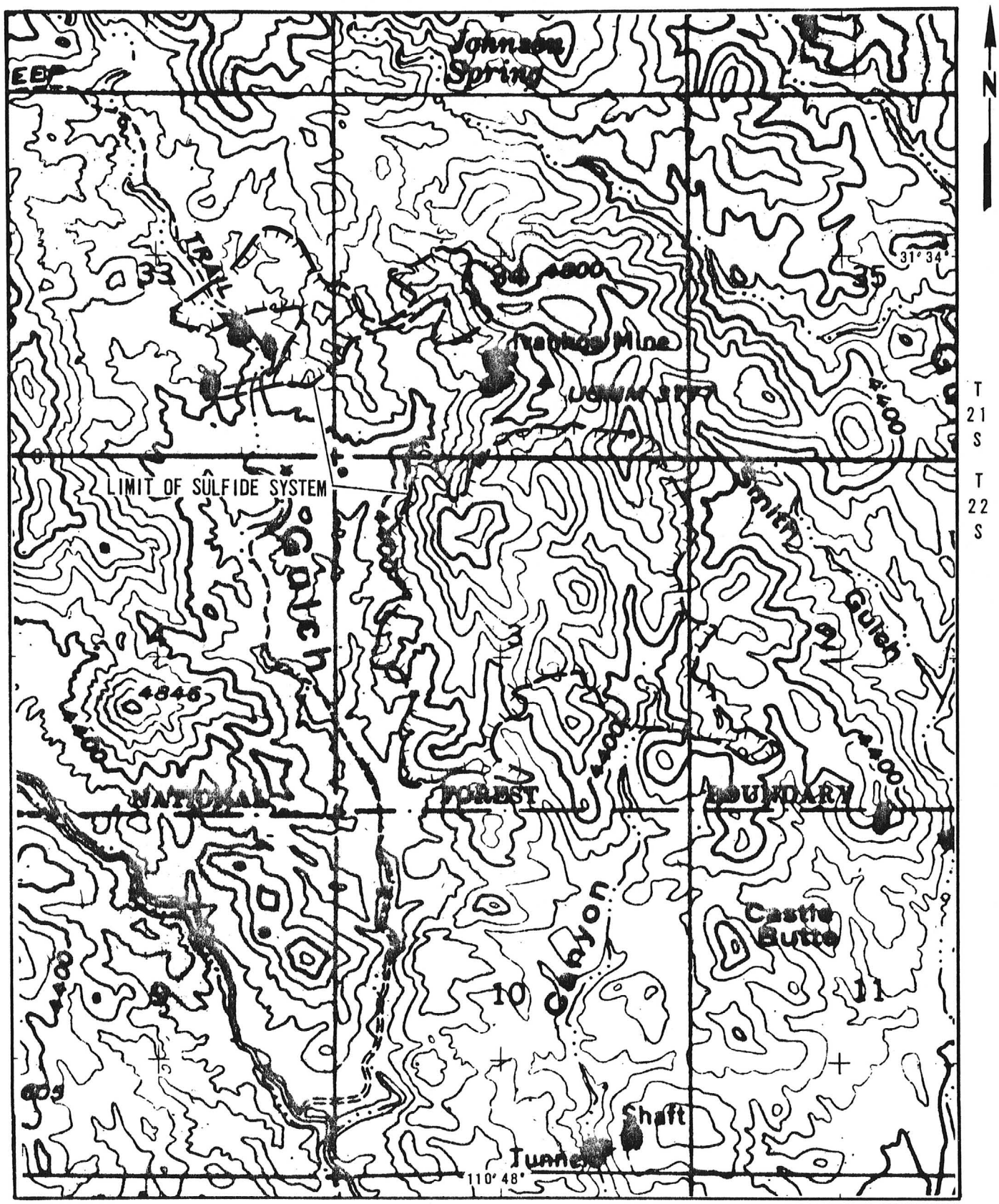


Preliminary aeromagnetic map of Area 31, Santa Rita, Arizona: Geoterrex - BCMC Geophysics Div., no. 82-90, 3 of 3, 1971.

AEROMAGNETIC MAP OF THE IVANHOE AREA SANTA CRUZ COUNTY, ARIZONA

Scale 1" = 2000'
Contour interval 10 and 50 gammas

TC 1000', FI 1/3 mile, NS.

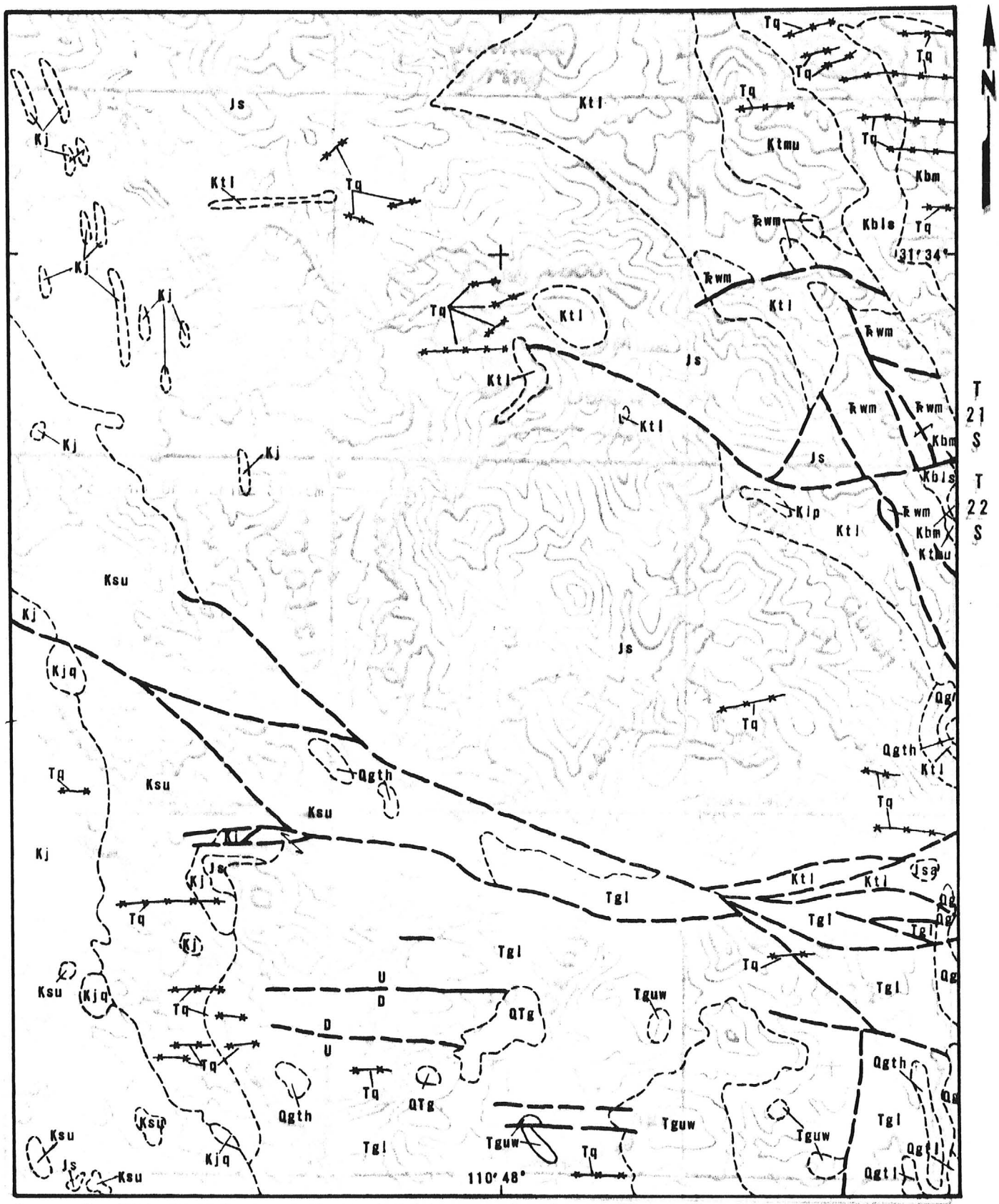


Topography from the Mount Wrightson quadrangle, Arizona: USGS, 1958.

TOPOGRAPHIC MAP OF THE IVANHOE AREA
SANTA CRUZ COUNTY, ARIZONA

Scale 1" = 2000'

R15E



Drewes, H., 1971, Geologic map of the Mount Wrightson quadrangle, SE of Tucson, Santa Cruz and Pima Counties, Arizona: USGS, map I-614.

GEOLOGIC MAP OF THE IVANHOE AREA SANTA CRUZ COUNTY, ARIZONA

Scale 1" = 2000'