General Disclaimer

One or more of the Following Statements may affect this Document

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.

- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.

- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.

- This document is paginated as submitted by the original source.

- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.
"Made available under NASA sponsorship
in the interest of early and widest dissemination of Earth Resources Survey Program information and without liability for any use made thereof."

(E76-10241) REMOTE SENSING IN MINERAL EXPLORATION FROM LANDSAT IMAGERY Quarterly Report, Jun. - Sep. 1975 (Utah Univ.) 4 p
HC $3.50

22840

RECEIVED
Nov 04 1975
SIS/902.6
Mr. James Broderick  
Technical Officer, Code 902  
NASA  
Goddard Space Flight Center  
Greenbelt Road  
Greenbelt, Maryland 20771

re: Contract No: NAS 5-20955  
subject: Quarterly Report (2)  
June - Sept.

A. Problems  
The optical equipment ordered for the project was not received until late in the 2nd quarter of work.  
Image acquisitions of acceptable quality have been limited due to cloud cover during the unseasonably prolonged spring precipitation and the early fall storms which have resulted in snow cover at higher elevations.

B. Accomplishments  
Work has been carried forward utilizing LANDSAT - 1 imagery taken prior to 1974 available in our departmental files. Retrospective orders for later images have been placed to provide additional LANDSAT data.

Mrs. M.R. Smith and Mr. T.A. Belchak continue their work on the proposal on a full time basis. Several lines of investigation are progressing simultaneously.
I - Several hundred linear features (possible geological lineaments) have been recognized on the 1:250,000 paper print LANDSAT mosaic assembled during the 1st quarter. These have been plotted on the AMS topographic map coverage of the test site. We are now evaluating the possible association of these linears with known mining districts.

The relationship of linear recognition as a function of imagery scale is also under study.

II - Additionally, mining districts imaged on positive LANDSAT transparencies are being individually examined at a scale of 1:250,000 for possible relationships of local linears to local geology. The ultimate goal is to determine if a synthesis of the district patterns will account for observed regional patterns.

III - The East Tintic Mining District has been selected as one of our areas for detailed analysis. Visual and optical-mechanical methods are being pursued to delineate areas of hydrothermal alteration and chemical weathering often associated with mineral deposits and gossan formation.

The list of other mining districts that are being considered for detailed analysis include Park City and Gold Hill in Utah and Battle Mountain and Yerrington in Nevada.

C. Significant Results

None

D. Publications

None

E. Recommendations

Due to the limited number of images we are receiving we recommend that our standing order be changed as follows:
1. Time restrictions - remove
2. Imagery - All LANDSAT 1 & 2 in test area
3. Quality - 5555 minimum
4. Cloud - 20% maximum
5. Data products - # 11 (2.2" positive) $5
   # 13 (7.3" positive) $1

F. Funds Expended

Total expenditures to 9-30-75 $33,237.48

G. Data Use

Value of data allowed $9,300
Value of data ordered $4,702
Value of data received $1,382

Respectfully submitted

C.E. Cronenwett
Research Assistant for
M.P. Nackowski
L.H. Lattman

CEC:mkd

UNIV. OS UTAH
NAS 5 - 20955