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## GEOGRAPHIC INFORMATION SYSTEMS

### ESRI APPLICATIONS OF GIS TECHNOLOGY - MINERAL RESOURCE DEVELOPMENT

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#### GIS Applications

During the past 3 years, there has been a rapidly increasing demand for GIS applications for large scale regional assessment related to projected and existing mineral resource development. Interest has ranged from locating resources and identifying candidate sites for related industries and settlements to locating and evaluating candidate sites for waste disposal.

#### ESRI Technology - Geographic Data Bases

Since 1978, ESRI has participated in the creation of geographic data bases for large land areas in the United States and abroad. Some of the efforts have involved a full transfer of ESRI technology including on-site and off-site training in the following —

- Remote Sensing Techniques
- Data Rectification
- Cross-Comparison
- Compositing & Integration
- Automation
- Land Capability/Suitability Analysis
- Computer Display
- Software Applications

Efforts have been conducted at scales ranging from 1:3,000,000 to 1:25,000. In several instances, broad screening was conducted for large areas at a very general scale with more detailed studies subsequently undertaken in promising areas windowed out of the generalized data base. Increasingly, the systems which are being developed are being structured as the spatial framework for the long-term collection, storage, referencing and retrieval of vast amounts of data about large regions. Typically, the reconnaissance data base for a large region is structured at 1:250,000 scale, data bases for smaller areas being structured at 1:25,000, 1:50,000 or 1:63,360. An integrated data base for the coterminous US was implemented at a scale of 1:3,000,000 for two separate efforts.

Most of the data bases have been used for the purpose of assessing natural opportunities and constraints in a region and for evaluating land capability/suitability for specific uses. In some instances, they have subsequently been used to assess the relative impacts of alternative development plans.