MINERAL FACILITIES MAPPING PROJECT

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U.S. Geological Survey
OUTLINE

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INTRODUCTION

- Minerals Information Team (MIT):
  - Annually reports on the minerals facilities of more than 180 countries.

- Create Structural Table and Mineral Facilities Map:
  - Collects and analyze information on mineral facilities showing the production of:
    - Metals
    - Industrial Minerals
    - Fuel Minerals
PROJECT

- Created a database using the Structural Table of Mineral Industry, which includes the location of main mineral commodity sites for two regions of the world:
  - Africa and Middle East
  - Commonwealth of Independent States

- The mineral facilities database included:
  - Type of facility:
    - Mine (open pit, underground)
    - Plant ( refineries, smelters, etc.)
  - Location
  - Commodity
  - Company information
  - Annual production capacity

- Collected data were incorporated into Geographic Information System (GIS) using ArcGIS software.
METHODOLOGY

The primary sources of information were:
- MIT's Country Specialist
- USGS Minerals Yearbook
- Satellite Images
- Online Resources:
  - Companies official web site
  - National Geospatial-Intelligence Agency
  - Geonames Search

Locate mineral facilities:
- ©Google Earth 2009 and ArcGIS explorer software's
- Determined Latitude and Longitude
  - Decimal-minute-second
- Converted coordinates to decimal degrees
Methodology

- Created the Mineral facilities map:
  - Database worksheet
  - ArcMap 9.3 software
  - Environmental System Research Institute (ESRI)
    - World shapefiles

- Minerals Questionnaires database:
  - Assisted with the preparation of Mineral Questionnaires.
  - Update the data that pertaining to MIT’s contacts worldwide.
BOJNOURD CEMENT PLANT

- **Location**: 37 kilometers from Bojnourd, Iran
- **Commodity**: Cement
- **Capacity**: 700 metric tons per year
Sungun Copper Mine

- **Location**: Azarbaijan Province, Iran
- **Commodity**: Copper Concentrate
- **Capacity**: 150 metric tons per year

Google Earth, 2009
Refrinery at Tabriz

- Location: Tabriz, Iran
- Commodity: Petroleum refined products
- Capacity: 1,728 thousand 42-gallon barrels per year
ALGERIA

Northwest of Africa

Scale: 1:9 km

Legend
- Mine
- Oil and Gas
- Plant

Algeria Mineral Facilities

Tunisia
Mineral Facilities of the Commonwealth of Independent States

By

Michael S. Baker, Nurudeen Elias, Eric Guzmán, and Yadira Soto-Viruet

2009
CONCLUSION

The reports created by MIT’s country specialist, combined with the maps and databases provides:

- Information to assist in the analysis of availability and trade of mineral commodities for the U.S. economy.
- Estimation of future production for different commodities from individual countries, regions and the world’s global market.
- The distribution of resources and potential new reserves.

The maps will be used to complete a world-wide project that shows the mining and production of mineral commodities globally.
THANK YOU!