**Second Projet de Renforcement Institutionnel du Secteur Minier de la République Islamique de Mauritanie (PRISM-II) Phase V**

**Prepared in cooperation with the Ministry of Petroleum, Energy, and Mines of the Islamic Republic of Mauritania**

**Note: This report has both and English language and a French Language edition.**

**U.S. Geological Survey Open-File Report 2013–1280**

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**GIS readme file for Metadata and Maps**

Most GIS shapefiles have English and French attributions in the same dataset.

Metadata for all files are in the Metadata folder of each chapter (English only).

Full size maps from the various reports (in English and French) are in the Map PDF folder for each chapter.

Chapter A1 – Geology

 Data:

Geochronology\_Argon\_IRM.zip = point shapefile of new Argon (40Ar/39Ar) age dating results of 19 rock samples taken in the Islamic Republic of Mauritania (IRM), Africa in 2007 by joint USGS-Mauritanian scientists during field trips to mineral exploration targets. Samples were taken from various metamorphic rocks and hydrothermal veins. See geology report more detailed information.

Geochronology\_Detrital\_Zircon\_IRM.zip = point shapefile of new detrital zircon (U-Pb) age dating results of 41 rock samples taken in the Islamic Republic of Mauritania (IRM), Africa in 2007 by joint USGS-Mauritanian scientists during field trips to mineral exploration targets. See the geology report for more detailed information.

Geochronology\_Historical\_IRM.zip = point shapefile of various geochronology age results of samples taken in the Islamic Republic of Mauritania (IRM), Africa. Compiled from historical published literature.

Geochronology\_Igneous\_Zircon\_IRM.zip = point shapefile of new igneous zircon (U-Pb) age dating results of 11 rock samples taken in the Islamic Republic of Mauritania (IRM), Africa in 2007 by joint USGS-Mauritanian scientists during field trips to mineral exploration targets. See the geology report for more detailed information.

Geology\_IRM.zip = polygon shapefile representing the geology in the Islamic Republic of Mauritania (IRM), Africa at 1:1 million scale as compiled by Dwight Bradley and explained in the geology report.

Geology\_Simplified\_IRM.zip = polygon shapefile representing the simplified geology in the Islamic Republic of Mauritania (IRM), Africa at 1:1 million scale as compiled by Dwight Bradley and explained in the geology report.

Chapter A2 – Structure

 Data:

Geology\_Structure\_IRM.zip = line shapefile representing geological structure features (faults, folds, dikes, geophysical anomalies, lineaments, and shear zones) in the Islamic Republic of Mauritania (IRM), Africa.

Geology\_Structure\_Strike\_Dip\_IRM.zip = point shapefile representing stike/dip measurements of geologic structual features (bedding, cleavage, fold axis, foliation, lineation, paleocurrents, and veins) in the Islamic Republic of Mauritania (IRM), Africa.

Chapter B1 – Geophysics

 Data:

 GRIDS:

depth\_0\_7.zip = ESRI grid representing depth estimates based on Euler depth analysis of the magnetic data in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data were calculated from the total field anomaly data set using a structural index of 0 and a window size of 7.

depth\_0\_7\_hs.zip = ESRI grid representing the hillshade calculated from depth estimates based on Euler depth analysis of the magnetic data in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. The hillshade is calculated from the depth\_0\_7 grid and is for display purposes.

depth\_1\_7.zip = ESRI grid representing depth estimates based on Euler depth analysis of the magnetic data in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data were calculated from the total field anomaly data set using a structural index of 1 and a window size of 7.

depth\_1\_7\_hs.zip = ESRI grid representing the hillshade calculated from depth estimates based on Euler depth analysis of the magnetic data in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. The hillshade is calculated from the depth\_1\_7 grid and is for display purposes.

k.zip = ESRI grid representing percent potassium as measured from gamma ray spectrometry in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report.

k\_hs.zip = ESRI grid representing the hillshade of percent potassium as measured from gamma ray spectrometry in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report.

kthucomp.zip = ESRI grid representing color composite of gamma ray spectrometry data measured in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report.

psgrav.zip = ESRI grid representing the pseudogravity calculated from the total field anomaly of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

psgrav\_hs.zip = ESRI grid representing the hillshade derived from the pseudogravity calculated from the total field anomaly of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

res\_mag.zip = ESRI grid representing the residual magnetic field anomaly of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

res\_mag\_hs.zip = ESRI grid representing the hillshade derived from the residual magnetic field anomaly of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

rtp.zip = ESRI grid representing the reduced-to-pole anomaly of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

rtp\_hs.zip = ESRI grid representing the hillshade derived from the reduced-to-pole anomaly of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

rtp\_as.zip = ESRI grid representing the analytic signal of reduced-to-pole anomaly of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

rtp\_as\_hs.zip = ESRI grid representing the hillshade derived from the analytic signal of reduced-to-pole anomaly of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

th.zip = ESRI grid representing thorium concentration as measured from gamma ray spectrometry in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report.

th\_hs.zip = ESRI grid representing the hillshade derived from thorium concentration as measured from gamma ray spectrometry in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report.

u.zip = ESRI grid representing uranium concentration as measured from gamma ray spectrometry in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report.

u\_hs.zip = ESRI grid representing the hillshade derived from the uranium concentration as measured from gamma ray spectrometry in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report.

xtl\_bsmnt.zip = ESRI grid representing the crystalline basement of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

xtl\_bsmnt\_hs.zip = ESRI grid representing the hillshade derived from the crystalline basement of the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the mineral resources and the crystalline basement within the country.

 Shapefiles:

Aeromagnetic\_Anomalies\_IRM.zip = line shapefile representing aeromagnetic lineaments in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the crystalline basement within the country.

Banded\_Iron\_Formation\_Analytical\_Signal\_IRM.zip = polygon shapefile representing potential banded iron formations in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data were calculated from the analytic signal filtered data set.

Isobaths\_IRM.zip = line shapefile representing maximum depth to basement derived from Euler analysis of aeromagnetic data in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report.

Mauritania\_susceptibility\_2007.zip = point shapefile representing locations where magnetic susceptibility values were acquired in the Islamic Republic of Mauritania (IRM), Africa and explained in the geophysics report. These data help with understanding the aeromagnetic data within the country.

Chapter C – Hydrogeology

 Data:

Hydrology\_Equipotential\_Lines\_IRM.zip = line shapefile representing hydrologic equipotential lines of hydraulic head in the Islamic Republic of Mauritania (IRM), Africa. Created by interpolating contours from various measurements of hydrologic charge throughout the country.

Hydrology\_Flowlines\_IRM.zip = line shapefile representing hydraulic groundwater flowlines, hydraulic barriers, and inflow/ouflow boundaries in the Islamic Republic of Mauritania (IRM), Africa. Groundwater flowlines were created by drawing lines orthogonally to equipotential lines of hydraulic head.

Hydrology\_Salinity\_Contours\_IRM.zip = line shapefile representing contour lines of groundwater salinity (mg/L) in the Islamic Republic of Mauritania (IRM), Africa.

Hydrology\_Units\_IRM.zip = polygon shapefile representing hydrogeologic units in the Islamic Republic of Mauritania (IRM), Africa. Grouped primarily by categorizing the lithology and age of geologic units (based on the nature, type, productivity and transmissivity of bedrock geologic units). Geophysical data were also used to refine units in areas under cover (sand dunes).

Water\_Samples\_IRM.zip = point shapefile representing water sample sites in the Islamic Republic of Mauritania (IRM), Africa.

Chapter D1 – Geochemistry

 Data:

Basic Statistics

BasicStatistics.xls = Basic statistics on geochemical data for rocks and unconsolidated materials from the six regions.

Master Chem

MasterChem.mdb - Geochemical data combined from all PRISM I sources, and separated by region.

Master Location

MasterLocations.mdb - Locations for samples from all PRISM I sources.

QAQC

Duplicates\_Au.xls - Summary tables and graphs for Au analyses.

Duplicates\_BaseDeDonnees.xls - Summary tables and graphs for duplicate samples in the PRISM I Base de Données database.

Duplicates\_ICP61.xls - Summary tables and graphs for duplicate samples done by the ICP61 method.

Duplicates\_MS61.xls - Summary tables and graphs for duplicate samples done by the MS61 method.

Standards\_BMAA-02.xls - Summary tables and graphs for the BMAA-02 standard.

Standards\_G2000\_ICP61.xls - Summary tables and graphs for the G2000 standard, ICP61 method.

Standards\_G2000\_MS61.xls - Summary tables and graphs for the G2000 standard, MS61 method.

Standards\_GEOMS-03.xls - Summary tables and graphs for the GEOMS-03 standard.

Standards\_GS01-2.xls - Summary tables and graphs for the GS01-2 standard.

Standards\_JWB-JV-1.xls - Summary tables and graphs for the JWB-JV-1 standard.

Standards\_NA-03.xls- Summary tables and graphs for the NA-03 standard.

Standards\_OX5.xls - Summary tables and graphs for the OX5 standard.

Standards\_OX8.xls - Summary tables and graphs for the OX8 standard.

Standards\_PGMS-3.xls - Summary tables and graphs for the PGMS-3 standard.

Standards\_SC-02.xls - Summary tables and graphs for the SC-02 standard.

Geochemistry\_IRM.zip – zipped shapefile of all the geochemistry.

Map PDF

Geochemistry Maps - Multi-Element 1000000: contains six multi-element map, country-wide, 1:1,000,000 scale.

Geochemistry Maps - Sample Sites 1000000: map of geochemistry areas and sample sites.

Geochemistry Maps - Single-Element 500000: contains 292 single-element geochemical maps, broken down by region, 1:500,000 scale.

Geochemistry Maps - Single-Element 1000000: contains 23 single-element geochemical maps, country-wide, 1:1,000,000 scale.

Chapter E – Remote Sensing (LANDSAT and ASTER)

 Data:

 ASTER

 ERDAS IMG - Transverse Mercator

Band ratios = Multispectral remote sensing data acquired by the Advanced Spaceborne Thermal Emission and Reflection Radiomater (ASTER) were analyzed to identify and map specific mineral groups in support of research efforts involving mineralogic and geochemical characterization in the Islamic Republic of Mauritania (IRM), Africa.

These images consist of four compound band ratios of ASTER datasets based upon the spectral response of common rock-forming and alteration minerals at ASTER spectral resolution covering several study areas. Channel 1 = ASTER 2/1. Channel 2 = ASTER (4+7)/5. Channel 3 = (5+7)/6. Channel 4 = (6+9)/(7+8).

These data have been georeferenced to the Universal Transverse Mercator projection using satellite ephemeris data. The images, in ERDAS Imagine (.img) format, have been designed for viewing and integration with other geospatial data in most image processing and GIS software packages.

Enhanced 468-RGB Composites = Multispectral remote sensing data acquired by the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) were analyzed to identify and map surface minerals and mineral assemblages in the Islamic Republic of Mauritania (IRM), Africa. The images consist of three enhanced, shortwave-infrared (SWIR) bands (4, 6, and 8) of ASTER datasets covering multiple study areas. These data have been orthorectified to the Universal Transverse Mercator (UTM) projection using satellite ephemeris data. The three ASTER bands have been saturation enhanced and sharpened to 15 m spatial resolution using edge-enhanced ASTER band 2 to modulate intensity. The images, in ERDAS Imagine (.img) format, have been designed for viewing and integration with other geospatial data in most image processing and GIS software packages.

Enhanced ratio product1 - 134rgb = Multispectral remote sensing data acquired by the Advanced Spaceborne Thermal Emission and Reflection Radiomater (ASTER) were analyzed to identify and map specific mineral and lithologic groups in support of research efforts involving mineralogic and geochemical characterization in the Islamic Republic of Mauritania (IRM), Africa.

These images consists of three compound band ratios of an ASTER dataset covering several study areas. Using Intensity/Hue/Saturation (IHS) image processing techniques, ratios 1, 3, and 4 of the band ratio image files were merged with edge-enhanced band 2 of the ASTER data to generate color composites useful for lithologic and mineral group discrimination. This particular combination is useful for identifying ferric iron, Al-OH, and carbonate-chlorite-epidote-amphibole. These images should be displayed as 123/RGB.

These data have been georeferenced to the Universal Transverse Mercator projection using satellite ephemeris data. The images, in ERDAS Imagine (.img) format, have been designed for viewing and integration with other geospatial data in most image processing and GIS software packages.

Enhanced ratio product2 - 234rgb = Multispectral remote sensing data acquired by the Advanced Spaceborne Thermal Emission and Reflection Radiomater (ASTER) were analyzed to identify and map specific mineral and lithologic groups in support of research efforts involving mineralogic and geochemical characterization in the Islamic Republic of Mauritania (IRM), Africa.

These images consists of three compound band ratios of an ASTER dataset covering several study areas. Using Intensity/Hue/Saturation (IHS) image processing techniques, ratios 2, 3, and 4 of the band ratio files were merged with edge-enhanced band 2 of the ASTER data to generate color composites useful for lithologic and mineral group discrimination. This particular combination is to aid in the differentiation of sericite/smectite from argillic alteration bearing alunite, pyrophyllite, and/or kaolinite. Argillic alteration and other occurrences of alunite, pyrophyllite, and kaolinite will appear in hues of red, orange, or yellow in this product, whereas sericite and smectite will appear in hues and shades of green. These images should be displayed as 123/RGB.

These data have been georeferenced to the Universal Transverse Mercator projection using satellite ephemeris data. The images, in ERDAS Imagine (.img) format, have been designed for viewing and integration with other geospatial data in most image processing and GIS software packages.

ERDAS IMG – UTM – various folders of different zones within the country. Each zone contains the folders:

3-Band VNIR Composites = Multispectral remote sensing data acquired by the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) were analyzed in the Islamic Republic of Mauritania (IRM), Africa. The images consist of three visible to near-infrared (VISNIR) bands (1, 2, and 3) covering several study areas. The images are ERDAS Imagine (.img) files of ASTER bands 1 (0.556 micrometers, visible green), 2 (0.661 micrometers, visible red), and 3 (0.807 micrometers, near-infrared). These images should be displayed using the 321/RGB color combination to view "false-color" infrared color composites in which green vegetation is displayed in hues of red, and ferric iron is displayed in hues of tan to yellow to faded yellow-green.

The ASTER data in these files can be used to quickly assess vegetation cover and its seasonal variation, sand cover, surface water, infrastructure, and geologic structures.

The ASTER data in these files have been georeferenced to Geographic projection, WGS 84 spheroid and horizontal datum using satellite ephemeris metadata. The images, in ERDAS Imagine (.img) format, has been designed for viewing and integration with other geospatial data in most image processing and GIS software packages.

6-Band Edge-enhanced Composites = Multispectral remote sensing data acquired by the Advanced Spaceborne Thermal Emission and Reflection Radiomater (ASTER) were analyzed to identify and map minerals, vegetation groups, and volatiles (water and snow) in support of research efforts involving mineralogic and geochemical characterization in the Islamic Republic of Mauritania (IRM), Africa. These images consists of six bands (bands 1-4, 6, and 8) of ASTER datasets covering several study areas. These data have been georeferenced to the Universal Transverse Mercator projection using satellite ephemeris data. The data have been edge enhanced to improve clarity. The images, in ERDAS Imagine (.img) format, have been designed for viewing and integration with other geospatial data in most image processing and GIS software packages.

Remote\_Sensing\_Sample\_Points.zip = points shapefile representing remote sensing sample locations in the Islamic Republic of Mauritania (IRM), Africa taken during the 2007 field campaign and explained in the remote sensing report.

LANDSAT

ColorRatioComposites = Multispectral remote sensing data acquired by the Landsat Thematic Mapper satellite imaging system were analyzed for the Islamic Republic of Mauritania (IRM), Africa. Sixty-three individual scenes covering the entire country were processed and color-ratio composites were prepared from the band 5/band 7, band 3/band 1, and band 5/band 4 ratios color coded red, green, and blue, respectively. Color-ratio composites made from these ratios show the presence of one or more minerals in two broad mineral groups: the clay-carbonate-sulfate-mica group and the iron oxide and hydroxide group. Many minerals in these two mineral groups are often, but not uniquely, associated with hydrothermally altered rocks.

NaturalColorComposites = Multispectral remote sensing data acquired by the Landsat Thematic Mapper satellite imaging system were analyzed for the Islamic Republic of Mauritania (IRM), Africa. Sixty-three individual scenes covering the entire country were processed and pseudo natural color composites were prepared from bands 3, 2 and 1. These images were designed to display surface materials and geologic structures in their naturally-occurring colors.

The images, in GeoTIFF (.tif) format, have been designed for viewing and integration with other geospatial data in most image processing and GIS software packages.

Landsat\_INDEX.zip = polygon shapefile representing the extent/outline of Landsat Thematic Mapper scenes/images in the Islamic Republic of Mauritania (IRM), Africa.

Chapter F – Digital Elevation Models (DEM)

 Data:

MNT\_IRM\_ASTER\_tm.img = A digital elevation model (DEM) of the entire country of Mauritania was produced using version 2 of the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Global Digital Elevation Model (GDEM V2) that was released in October, 2011 as a joint effort of the Ministry of Economy, Trade and Industry (METI) of Japan and the United States National Aeronautics and Space Administration (NASA). The data are available at http://asterweb.jpl.nasa.gov/gdem.asp. This version provides improved spatial resolution and increased horizontal and vertical accuracy from the first version that was released in June, 2009. The data are available in 1-degree by 1-degree tiles. The elevations are reported in meters, and the spatial resolution of the grids is 30 meters; 129 tiles were required to cover the entire country of Mauritania. The 129 grids were mosaicked, using ERDAS IMAGINE image processing/GIS software, to provide a 30-meter countrywide DEM. Both Geographic (longitude-latitude) and Transverse Mercator projection versions of the ASTER DEM were created in ERDAS Imagine (.img) format that is also directly compatible with ESRI ArcMap, ArcGIS Explorer, and other GIS applications. A GIS-compatible shaded relief image of the ASTER DEM that was clipped to the country boundary was also produced.

MNT\_IRM\_SRTM\_tm.img = A digital elevation model (DEM) of the entire country of Mauritania was produced using Shuttle Radar Topography Mission (SRTM) data. The Shuttle Radar Topography Mission (SRTM) obtained elevation data on a global scale as an international project directed by the National Geospatial Intelligence Agency (NGA) and the National Aeronautics and Space Administration (NASA). Those original data have subsequently been revised and processed to reduce erroneous artifacts and produce seamless continuous topography surfaces in which areas with no data (voids, or "holes") have been filled using substitutions from other DEM sources and interpolation methods.

However, close scrutiny of the data revealed that, although void areas in the original data had indeed been filled, there remained obviously incorrect flat regions in place of those empty areas. Because recent (2011) improved seamless Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) DEM coverage, also included in this report, had become available, an alternative approach was designed and used to replace those areas that were devoid of data in the original SRTM DEM. The improvements over the flat filled, originally void areas are significant. Both Geographic (longitude-latitude) and Transverse Mercator projection versions of the SRTM DEM are provided. A GIS-compatible shaded relief image of the SRTM DEM that has been clipped to the country boundary has also been included for the report. The SRTM data are provided as 3-arcsecond (approximately 90 meter) gridded arrays with geographic coordinates referenced to the WGS84 datum. The SRTM DEM has been provided in ERDAS Imagine (.img) format that is also directly compatible with ESRI ArcMap, ArcGIS Explorer, and other GIS applications. A GIS-compatible shaded relief image of the ASTER DEM that was clipped to the country boundary was also produced.

These files are also available as shaded relief files (relief\_ASTER\_IRM.img and relief\_SRTM\_IRM.img).

Chapter G1 - Nickel, copper, platinum group elements (PGE), and chromium deposits

 Data:

PGE\_Grand\_Dyke\_Ahmeyim\_IRM.zip = polygon shapefile that represent the Ahmeyim Grand Dike that describes a permissive tract for nickel, copper, platinum-group elements (PGE), and chromium deposits in the Islamic Republic of Mauritania (IRM), Africa. See the PGE report for more details.

PGE\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for nickel, copper, platinum-group elements (PGE), and chromium deposits in the Islamic Republic of Mauritania (IRM), Africa. See the PGE report for more details.

Chapter H1 - Orogenic, Carlin-like, and epithermal gold deposits

 Data:

Gold\_Banded\_Iron\_Formation\_IRM.zip = polygon shapefile that represent permissive tracts for gold deposits associated with banded iron formations (with 5 KM buffers) in the Islamic Republic of Mauritania (IRM), Africa. See the gold report for more details.

Gold\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for gold deposits in the Islamic Republic of Mauritania (IRM), Africa. See the gold report for more details.

Gold\_Zones1B\_Aeromagnetic\_Structures\_IRM.zip = polygon shapefile that represent permissive tracts for gold - aeromagnetic structure deposits in the Islamic Republic of Mauritania (IRM), Africa. See the gold report for more details.

Chapter I1 - Polymetallic Pb-Zn-Cu vein deposits

 Data:

Polymetallic\_Pb\_Zn\_Cu\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for polymetallic lead-zinc-copper vein deposits in the Islamic Republic of Mauritania (IRM), Africa. See the polymetallic report for more details.

Chapter J1 - Sediment-hosted lead-zinc-silver deposits

 Data:

SEDEX\_MVT\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for sediment-hosted lead-zinc-silver of SEDEX (sediment exhalative) and MVT (Mississippi valley-type) deposits in the Islamic Republic of Mauritania (IRM), Africa. See the report for more details.

Chapter K1 - Sediment-hosted copper deposits

 Data:

Sediment\_Hosted\_Copper\_Jurassic\_Intrusives\_IRM.zip = polygon shapefile that represent permissive tracts for sediment-hosted copper - Jurassic intrusives deposits in the Islamic Republic of Mauritania (IRM), Africa. See the report for more details.

Sediment\_Hosted\_Copper\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for sediment-hosted copper deposits in the Islamic Republic of Mauritania (IRM), Africa. See the report for more details.

Chapter L1 - Volcanogenic massive sulfide (VMS) deposits

 Data:

VMS\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for volcanogenic massive sulfide (VMS) deposits in the Islamic Republic of Mauritania (IRM), Africa. See the VMS report for more details.

Chapter M1 - Iron oxide copper-gold deposits (IOCG)

 Data:

IOCG\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for iron oxide copper-gold (IOCG) deposits in the Islamic Republic of Mauritania (IRM), Africa. See the IOCG report for more details.

Chapter N1 - Uranium deposits

 Data:

Uranium\_Alkaline\_Intrusive\_Hosted\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for uranium - alkaline intrusive hosted deposits in the Islamic Republic of Mauritania (IRM), Africa. See the uranium report for more details.

Uranium\_Calcrete\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for uranium - calcrete hosted deposits in the Islamic Republic of Mauritania (IRM), Africa. See the uranium report for more details.

Uranium\_Granite\_Hosted\_Vein\_Shear\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for uranium - granite hosted vein shear deposits in the Islamic Republic of Mauritania (IRM), Africa. See the uranium report for more details.

Uranium\_Phosphate\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for uranium - phosphate deposits in the Islamic Republic of Mauritania (IRM), Africa. See the uranium report for more details.

Uranium\_Quartz\_Pebble\_Conglomerate\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for uranium - quartz pebble conglomerate hosted deposits in the Islamic Republic of Mauritania (IRM), Africa. See the uranium report for more details.

Uranium\_Redbed\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for uranium - redbed hosted deposits in the Islamic Republic of Mauritania (IRM), Africa. See the uranium report for more details.

Uranium\_Sandstone\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for uranium - sandstone hosted deposits in the Islamic Republic of Mauritania (IRM), Africa. See the uranium report for more details.

Uranium\_Unconformity\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for uranium - unconformity hosted deposits in the Islamic Republic of Mauritania (IRM), Africa. See the uranium report for more details.

Chapter O1 - Algoma-, superior-, and oolitic-type iron deposits

 Data:

Banded\_Iron\_Formations.zip = polygon shapefile that represent permissive tracts for iron deposits associated with banded iron formations (with 5 KM buffers) in the Islamic Republic of Mauritania (IRM), Africa. See the iron report for more details.

Iron\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for algoma-, superior-, and oolitic-type iron deposits in the Islamic Republic of Mauritania (IRM), Africa. See the iron report for more details.

Chapter P1 - Shoreline placer titanium deposits

 Data:

Shoreline\_Placer\_Titanium\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for shoreline placer titanium deposits in the Islamic Republic of Mauritania (IRM), Africa. See the report for more details.

Chapter Q1 - Incompatible element deposits hosted in pegmatities, alkaline rocks, and carbonatities

 Data:

REE\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for incompatible element deposits in the Islamic Republic of Mauritania (IRM), Africa. See the incompatible element report for more details.

Chapter R1 - Industrial mineral deposits

 Data:

Industrial\_Minerals\_Anorthosite\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial mineral - anorthosite deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Charnockite\_Granite\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - charnockite and granite deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Coastal\_Salt\_Deposits\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - coastal salt deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Diorite\_Dolerite\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - diorite and dolerite deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Gabbro\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - gabbro deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Garnet\_Gneiss\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - garnet gneiss deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Gneiss\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - gneiss deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Granite\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - granite deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Gypsum\_Dunes\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - gypsum dune deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Gypsum\_Salt\_Flats\_Sulphur\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - gypsum salt flats and sulphur deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Limestone\_Dolostone\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - limestone and dolostone deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Marble\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - marble deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Phosphate\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - phosphate deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Salt\_Gypsum\_Sebkha\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - salt/gypsum sebkha deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Sandstone\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - sandstone deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Sillimanite\_Gneiss\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - sillimanite gneiss deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Sodalite\_Syenite\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - sodalite syenite deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Industrial\_Minerals\_Volcanic\_Rocks\_Permissive\_Tracts\_IRM.zip = polygon shapefile that represent permissive tracts for industrial minerals - volcanic rock deposits in the Islamic Republic of Mauritania (IRM), Africa. See the industrial minerals report for more details.

Chapter S - Database of mineral deposits in the Islamic Republic of Mauritania

 Data:

Mineral Deposits Database.accdb = Microsoft Access database that represents the known mineral occurrences in the Islamic Republic of Mauritania (IRM), Africa.

Mineral\_Deposits\_Index\_IRM.zip = point shapefile that represents the known mineral occurrences in the Islamic Republic of Mauritania (IRM), Africa. Data is from the Microsoft Access database of the report.

Chapter T – Basemap GIS

 Data:

Cities\_IRM.zip = Points representing cities in the Islamic Republic of Mauritania (IRM), Africa.

IRM\_National\_Boundary\_line.zip = line shapefile representing the detailed national boundary of the Islamic Republic of Mauritania (IRM), Africa was digitized in consideration of various spatial data sources, including shaded relief images derived from Shuttle Radar Topography Mission (SRTM) elevation data, from on-line map data, and from International Boundary Study publications.

Railroad\_IRM.zip = line shapefile representing newly digitized railroads in the Islamic Republic of Mauritania (IRM), Africa.

Roads\_IRM.zip = line shapefile representing newly digitized roads/routes in the Islamic Republic of Mauritania (IRM), Africa. The National Geographic World Map from ESRI ArcGIS Online: http://services.arcgisonline.com/ArcGIS/rest/services/

NatGeo\_World\_Map/MapServer was the basemap used for digitizing the roads in 2012.

Streams\_IRM.zip = line shapefile representing newly digitized streams in the Islamic Republic of Mauritania (IRM), Africa. The National Geographic World Map from ESRI ArcGIS Online : http://services.arcgisonline.com/ArcGIS/rest/services/

NatGeo\_World\_Map/MapServer was the basemap used for digitizing the streams in 2012.