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RÉPUBLIQUE ISLAMIQUE DE MAURITANIE

Ministère du Pétrole, de l'Energie et des Mines

U.S. Department of the Interior
U.S. Geological Survey
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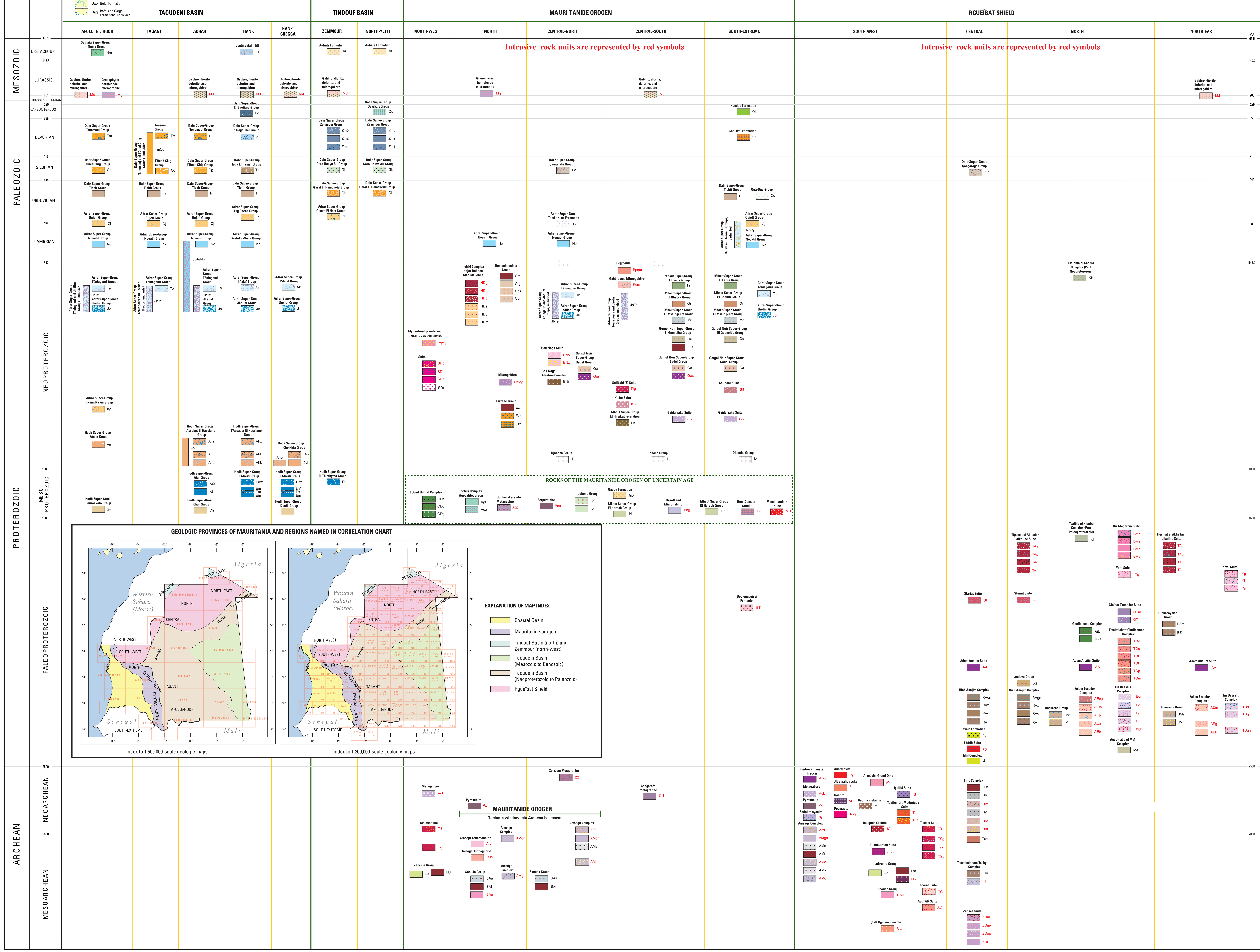
Open-File Report 2013–1280
Chapter A1
Deliverable 51c

Explanation for the Geologic Map of Mauritania



EXPLANATION OF STRUCTURAL COMPONENTS

Faults, shear zones

- Fault, sense of displacement unknown or not specified
- Fault, sense of displacement unknown or not specified (hidden or inferred)
- Thrust fault (teeth on hanging wall)
- Thrust fault (teeth on hanging wall) (hidden or inferred)
- Left-lateral strike-slip fault
- Right-lateral strike-slip fault
- Normal fault (bars on hanging wall)
- Shear zone (shown as polygon if larger)
- Shear zone (hidden or inferred)

Dikes and veins

- Carbonatite dike (Mesozoic)
- Postbirimian dike (predominantly Mesozoic)
- Neobirimian dike (Paleoproterozoic)
- Anorthosite dike
- Dike or inferred dike of unspecified type
- Quartz vein (shown as polygon if large)
- Ferruginous quartzite marker bed

EXPLANATION OF OTHER SYMBOLS

- Dunite breccia pipe
- National boundary
- Railroad
- Major cities
- Road - major
- Road - minor

Intrusive rock units are represented by red outlines

EXPLANATION OF GEOLOGIC UNITS

CENOZOIC ROCKS AND SEDIMENTS

- Qa — Alluvial fans, cones, and talus, undifferentiated (Quaternary)
- Qca — Calcrete and silcrete (hamada) (Quaternary)
- Qd — Dunes and sand cover (Quaternary)
- Qf — Fluvial deposits, alluvium (Quaternary)
- Ql — Lacustrine deposits (Quaternary)
- Qm — Marine and marginal marine deposits (Quaternary)
- Qn — Sand over desert pavement and calcrete (Quaternary)
- Qr — Desert pavement gravel (reg) (Quaternary)
- Qs — Inactive sebkha: gypsum, gypsum dunes (Quaternary)
- Can — Analcimite (Tertiary)
- Cca — Chalky limestone with local basal conglomerate (Tertiary)
- Cld — Detrital laterite, ferricrete (Tertiary)
- TIM — **Mbidane Formation (Continental Terminal)**—Sandstone and clayey sand, kaolinitic clay, iron pan (Upper Tertiary)

Bababé Group

- Bar — **Rinndiao Formation**—Argillaceous sandstone, yellow siltstone and mudstone; locally fossiliferous or glauconitic (Upper Tertiary)
- Bab — **Bofal Formation**—Dolomitic limestone, argillaceous sandstone, mudstone, phosphorite, and fine sandstone (Middle Tertiary)
- Bag — **Bofal and Gorgol Formations, undivided**—Ferruginous sandstone, argillaceous sandstone, claystone, mudstone, and dolomitic limestone (Middle Tertiary)

MESOZOIC ROCKS

- Aï — **Aïdiate Formation**—Arkosic conglomerate, cross-stratified sandstone, and chert with sponge spicules (Cretaceous)
- Ci — **Continental infill**—Quartz-rich sandstone with fossilized wood (Cretaceous)

Oulata Super-Group

- Nm — **Néma Group (Adeïlé, Brazer, Saïlé, and Zemraguié Formations, undifferentiated)**—Multicolored mudstone, green siltstone, and fine-grained, cross-stratified sandstone (Cretaceous)
- Md — Gabbro, diorite, dolerite, and microgabbro (Jurassic)
- Mg — Granophyric hornblende microgranite (Jurassic, 200±4)

PALEOZOIC ROCKS

- Kd — **Kandou Formation**—Polymict conglomerate (Carboniferous)
- Gd — **Godiovol Formation**—Feldspathic sandstone; fossiliferous microconglomerate (Lower Devonian)

Dahr Super-Group

- Eg — **El Guettara Group**—Fossiliferous sandstone, limestone, and marl with brachiopods and corals (Carboniferous)
- Id — **In Dagouber Group**—Fine-grained sandstone with brachiopods and trilobites, fossiliferous claystone, coralline limestone (Devonian)
- Tm — **Tenemouj Group (Aouïnet Zbel, Dhlaïet el Ateuch, El Ahguid, and Guelb Makhsar Formations, undifferentiated)**—Sandstone, commonly ferruginous and (or) quartzitic, with brachiopods (Devonian)

Zemmour Group

- Zm1 — **Sub-group 1**—Unfossiliferous argillite, marly limestone, brachiopod coquina (Devonian)
- Zm2 — **Sub-group 2**—Phosphate-pebble conglomerate, limestone with orthoceras and brachiopods, sandstone, siltstone, and claystone (Devonian)
- Zm3 — **Sub-group 3**—Argillaceous siltstone, coquinoid sandstone, unfossiliferous claystone (Devonian)
- TmOg — **Tenemouj and l'Oued Chig Groups, undivided**—See individual descriptions for Tenemouj and l'Oued Chig Groups (Silurian to Devonian)
- Cn — **Çangarafa Group (Kediat Mourzak, Ten Oumodje, and Kediat Taggoura Formations)**—Sandstone, quartz-rich sandstone, argillaceous sandstone, ferruginous sandstone with brachiopods, and sandy shale (Silurian)
- Gb — **Gara Bouya Ali Group**—Black argillite with graptolites (Silurian)
- Og — **l'Oued Chig Group**—Sandy argillite, mudstone, and graptolitic black shale, sandstone and siltstone with skolithos, locally ferruginous and phosphatic (Silurian)
- Th — **Toba el Hamar Group**—Argillite with graptolites (Silurian)
- Gh — **Garat el Hamoueïd Group**—Glaciogenic conglomeratic sandstone, fine grained sandstone, and siltstone (Ordovician)
- Ti — **Tichit Group (Dakhlet Thiar, Khneg Ten Titane, Tabarit el Kbir, Oued Nouehjenna and Aghoueijilt Formations, undifferentiated)**—Quartzose cross-bedded sandstone; argillaceous micro-conglomerate and micaceous siltstone; argillaceous sandstone with boulders; quartzite; argillaceous sandstone and micro-conglomerate with skolithos (Upper Ordovician)
- Oo — **Oua-Oua Group**—Quartzite and quartz-rich sandstone with heavy mineral horizons; included in El Ghabra Group north of 16 degrees (Ordovician)

Adrar Super-Group

- Ec — **l'Erg Chech Group**—Large-scale cross-stratified quartzose sandstone (Ordovician)
- Oh — **Oumat el Ham Group (Sub-group 1 and Sub-group 2)**—Conglomerate, coarse-grained quartzo-feldspathic sandstone; quartzite with scolithos, fossiliferous pelite (Ordovician)
- Oj — **Oujeft Group (Aghaoujeft Sub-group and Beddamez, Chinguetti, Moudjéria, Rachid, Ganeb, l'Oued Touerga, Oued Touerga, Foum Nbeïka, and Terguent Formations, undifferentiated)**—Predominantly red and pink quartzose sandstone (≤524); also feldspathic sandstone, microconglomerate, micaceous siltstone, and mudstone (Cambrian to Ordovician)
- NoOj — **Oujeft and Nouatil Groups, undifferentiated**—See individual descriptions for the Nouatil and Oujeft Groups (Cambrian to Ordovician)
- No — **Nouatil Group (Aouint Amogjar, Amogjar, Achram, Aïn-Tourfine, Terjit Aguinjob, Dakhlet Barda, Ferlankobé, Hofret ej Jenna, l'Oujaft, Serize, and Toueïjigjït Formations, undifferentiated)**—Red, fine-grained sandstone (≤601) and siltstone; minor dolostone (Cambrian)
- Kn — **Kreb En Naga Group**—Coarse-grained sandstone, red pelite, and calcareous mudstone; minor bioclastic limestone with brachiopods (Cambrian)
- Tk — **Tamkarkart Formation**—Quartzite, micaceous quartzite, and semipelitic microconglomeratic schist, locally mylonitic (Cambrian)

PALEOZOIC TO PROTEROZOIC ROCKS

- Az — **l'Azlaf Group (Sub-group 1 and Sub-group 2)**—Blackish laminated, silicified pelites grading to multicolored, poorly indurated pelites. (Neoproterozoic to Upper Cambrian)
- JbTeNo — **Nouatil, Téniagouri and Jbéliat Groups, undifferentiated**—See individual unit descriptions (Neoproterozoic to Cambrian)

PROTEROZOIC ROCKS

Taoudeni Basin

- Te — **Téniagouri Group (Koumba Ndao Sub-group, Tichilit Dhlémi Unit, and Ould Yenje, Ourkem, Goure Téniagouri, Bhtaat Ergil, Bouly Formations, undifferentiated)**—Basal baritic dolostone, locally sandy; silicified green and mauve mudstone with felsic tuff layers; feldspathic, micaceous, and calcareous siltstone and shale; and feldspathic sandstone turbidites (≤601) with interbedded tuff (635±7; 604±6; 610±5; 615±18, 624±6) (Neoproterozoic)
- JbTe — **Téniagouri and Jbéliat Groups, undivided**—See individual unit descriptions for the Téniagouri and Jbéliat Groups (Neoproterozoic)
- Jb — **Jbéliat Group (Kouériat el Khadra Unit and Nagara Formation)**—Green mudstone and diamictite, interbedded with mauve to red, parallel laminated mudstones and grey sandstones (Neoproterozoic)
- Kg — **Khang Naam Group (Lehbilé and El Aguer Formations, undifferentiated)**—Shale, siltstone and fine sandstone with rare granite pebbles; fine to coarse-grained quartzose sandstone with megaripples (Neoproterozoic; ≤870)

Hodh Super-Group

- Ou — **Ouarkziz Group**—Pelitic sandstones with marine fauna; limestones with large brachiopods (Carboniferous)
- An — **Aioun Group (Bou Habcha, Freïdi, and Seyal Formations, undifferentiated)**—Quartzose sandstone and conglomeratic sandstone, channeled and cross bedded (Neoproterozoic; ≤878)

l'Assabet el Hassiane Group

- Ah — **Abiodh Sub-group, Taleb and Akhdar Formations, undifferentiated**—Sandstones (medium to fine grained); siltstone and argillite (Neoproterozoic)
- Ahb — **Ti-n-Bessaïs Formation**—Coarse-grained, cross-bedded sandstone; glauconitic sandstone with hummocky cross stratification (Neoproterozoic; ≤975)
- Aht — **Taguilalet and Oued Oreoua Formations, undifferentiated**—Fine-grained ferruginous and glauconitic sandstones, siltstone, and laminated dolostone (Neoproterozoic)
- Ahz — **Zreigât Sub-group**—Medium- to coarse-grained, cross-bedded and ripple-laminated sandstone (Neoproterozoic)

Cheikhia Group

- Ck1 — **Sub-group 1**—Coarse- to fine-grained sandstone; minor pelite (Neoproterozoic)
- Ck2 — **Sub-group 2**—Glauconitic sandstone and laminated dolostone (Neoproterozoic)

Atar Group

- At1 — **Foum Chor, Ksar Torchane, and Tod Formations, undifferentiated**—Sandstone, variably quartz-rich and locally pebbly, overlain by gray shale, silstone, and minor dolomitic limestone (Mesoproterozoic)
- At2 — **Aouinet Ould Bou Derballe, Aouleigate, Tarioufet, Terrarit, Tifounke, Touidergui, and Tawaz Formations, undifferentiated**—Dolostone and dolomitic limestone including stromatolitic, microcrystalline, macrocrystalline, ferruginous, and carbonate-conglomerate facies; minor sandstone, siltstone, and glauconitic shale (Mesoproterozoic)
- Ch — **Char Group (Agueni and Azougui Formations, undifferentiated)**—Lower part: cross-bedded sandstone with subordinate conglomerate and mudstone; upper part: red mudstone, siltstone, sandstone and dolostone (Mesoproterozoic)
- Do — **Douik Group**—Conglomeratic sandstone interbedded with pelitic carbonates (Mesoproterozoic)

El Mreïti Group

- Em — **Aguelt el Mabha Formation**—Organic-rich pelite with lenses of intraformational carbonate breccia and fine-grained, hummocky cross-stratified sandstone (Mesoproterozoic)
- Em1 — **Sub-group 1, and En Nesoar, Gouamïr, Khatt, Tenoumer, and Touirist Formations, undifferentiated**—Basal sandstone, pelite, laminated dolostone, stromatolite biostromes (Mesoproterozoic, 1106±10)
- Em2 — **Sub-group 2**—Glauconitic sandstone, pelite, carbonate breccia, stromatolitic dolostone (Mesoproterozoic)
- Et — **El Thlethyate Group**—Stromatolitic dolostone interbedded with dolomitic sandstone and minor quartzite (Mesoproterozoic)
- So — **Souroukoto Group (El Gleïta, Maoudass, Rhaïfara, and Téguel Ouézé Formations, undifferentiated)**—Fine- to medium-grained feldspathic, micaceous, and glauconitic sandstone-quartzite (Mesoproterozoic)

PROTEROZOIC ROCKS

Mauritanide Orogen—Intrusive Rocks

- Pgmy — Mylonitized granite and granitic augen gneiss (Neoproterozoic)
- Ppqm — Quartz+muscovite±tourmaline pegmatite (Neoproterozoic)

Inchiri Complex

- HDg — Metagranite, feldspar+quartz megacrystic granite with garnet and cordierite, protomylonitic; leucocratic granitic orthogneiss, locally migmatized and (or) mylonitized (Neoproterozoic, 599±8)
- HDt — Metatonalite (Neoproterozoic)
- SB — **Sélibabi Suite**—Muscovite leucogranite (Neoproterozoic, 639±7)
- Plg — **Selibabi (?) Suite**—Foliated, coarse biotite+muscovite granite and metagranite (Neoproterozoic, 637±5)

Soueïdiyat Suite

- SDa — Garnet amphibolite (Neoproterozoic)
- SDb — Biotite granodiorite (Neoproterozoic)
- SDm — Garnet+hornblende metatonalite to metadiorite (Neoproterozoic, 643±6)
- SDt — **Tarf Magneïna Sub-suite**—Eclogite, amphibolite (Neoproterozoic)

Guidamaka Suite

- Agg — Metagabbro; also hornblendite, chloritite, pegmatitic gabbro, and and ultramafic rocks; inclusions of metachert and metabasalt (Neoproterozoic)
- GD — Gabbro, tonalite, and granodiorite (Paleoproterozoic to Neoproterozoic, 665±3)
- Hd — **Houi Damour Granite** (Neoproterozoic, 675±10)

Bou Naga intrusive suite

- BNs — **Sebkha Bou Naga Sub-suite**—Feldspathoid syenite and monzosyenite cut by narrow dikes of phonolite (Neoproterozoic)
- BNz — **Zellaga Sub-suite**—Syenite, quartz syenite, trachyte, and alkali feldspar granite (Neoproterozoic, 680±10)
- KB — **Kelbé Suite**—Deformed biotite+muscovite granite and leucogranite (Neoproterozoic, 666±83, 772±49, 685±18)
- Pbg — Basalt and microgabbro (Neoproterozoic)
- Pse — Serpentinite (Paleoproterozoic to Neoproterozoic)
- MB — **Mbédia Achar Suite**—Harzburgite and dunite, variably serpentinized (Neoproterozoic)
- Pgm — Gabbro and microgabbro (Neoproterozoic)
- Gas — **Gadel Group**—Serpentinite and ultramafic rocks Paleoproterozoic to Neoproterozoic)
- OcMg — **Gabbro and microgabbro** (Paleoproterozoic to Neoproterozoic)
- BT — **Boutounguissi Formation**—Metabasalt and metagabbro (Mesoproterozoic)

PROTEROZOIC ROCKS

Mauritanide Orogen–Stratified Rocks

Inchiri Complex

Hajar Dekhen Group–Kleouat

- HDa — Interlayered amphibolite and metasedimentary rocks, metamicrogabbro, quartzite (Neoproterozoic)
- HDc — Marble, calc-silicate rocks, mafic schist, clinopyroxene+potassium feldspar calcic skarn (Paleoproterozoic to Neoproterozoic)
- HDm — Metasedimentary rocks (quartzitic gneiss (≤538), quartz-mica schist, and garnet-cordierite gneiss) interlayered with gneiss and leucogranite (Proterozoic to Paleozoic)

Oumachoueima Group

- Ocf — **Sainte Barbe, Atomai, and Akjoujt Formations, undifferentiated**—Banded iron formation, undifferentiated (Proterozoic to Paleozoic)
- Oci — **Irarchene El Hamra Formation and Atilis quartzite Member**—Basal quartzose metasandstone with local migmatite, tourmalinite, and marble; phyllite, slate, pelitic schist, and metagraywacke with minor metavolcaniclastic rocks (Proterozoic)
- Ocj — **Akjoujt Formation**—Metabasite, microgabbro, meta-andesite, calc-chlorite schist, and metasedimentary schist (Proterozoic)
- Ocs — **Sainte Barbe and Atomai Formations, undifferentiated**—Volcanogenic siltstone and greywacke metamorphosed to chlorite±sericite+quartz±carbonate schist; intermediate to felsic volcanic rocks and related volcaniclastics (Proterozoic to Paleozoic)

Eizzene Group

Khmeiyat Formation

- Ezf — Banded iron formation (Paleoproterozoic to Neoproterozoic)
- Ezk — Pelitic and semipelitic phyllite and schist; minor quartzite and metasubgraywacke (Paleoproterozoic to Neoproterozoic)
- Ezr — **Raoui Formation**—Metabasalt; minor orthoquartzite (Paleoproterozoic to Neoproterozoic)

Bou Naga alkaline complex

- BNr — **l'Oued Tidoumaline Formation**—Rhyolite, rhyolitic metatuff, and rhyodacitic, ignimbrite; subordinate volcaniclastic rocks and dacite; locally mylonitic (Neoproterozoic, 680±10)

Gorgol Noir Super-Group

Gueneiba Group

- Gu — **Hamdallaye, l'Oued Amour, and El Aoueïja Formations, undifferentiated**—Calc+chlorite schist, chlorite±talc±amphibole schist, and deformed metabasalts (pillow lavas and breccias) metamorphosed to middle upper greenschist facies (Neoproterozoic)
- Guf — **l'Oued Amour Formation**—Banded iron formation, ferruginous jaspilite (Paleoproterozoic to Neoproterozoic)
- Ga — **Gadel Group**—Mélange of serpentinite, talc schist, chlorite schist, and pelitic schist, banded iron formation, quartzite, and amphibolite, locally mylonitized (Neoproterozoic, 637±4 (minimum age))
- Dj — **Djonaba Group (Dôouâra Formation and Aguerj, Chelkhet undifferentiated)**—Quartzose sandstone, pebbly sandstone, chloritic metasiltstone, and quartz-sericite schist (Neoproterozoic; ≤982)

Mbout Super-Group

- Fr — **El Fadra Group (Barkéoual and Oued Kav Formations, undifferentiated)**—Schistose volcaniclastic and epiclastic metasedimentary rocks (≤553) with subordinate felsic to mafic volcanic rocks (Neoproterozoic)
- Gr — **El Ghabra Group (Oued Erdi, Ould Moïlid, and Oua Oua Formations, undifferentiated)**—Chlorite+quartz+sericite+hematite schist and phyllite; micaceous quartzite (≤594); and mafic and felsic metavolcanic rocks (Neoproterozoic to Paleozoic)
- Ms — **El Mseigguem Group (Bathet Jmel Formation)**—Basal chlorite schist (meta-andesite); phyllite and sericite+feldspar+quartz schist (meta-felsite); pelitic schist, chlorite schist, metatuff, and metabasaltic breccia (Neoproterozoic)

Agoualilet Group

- Aga — **Adam el Bouje Formation**—Metabasalt, some pillowed, and subordinate metagabbro (Paleoproterozoic to Neoproterozoic)
- Agf — **Treïfiyat Formation**—Metabasalt (lavas and breccias), and chlorite+/-sericite schist (Paleoproterozoic to Neoproterozoic)
- Agt — **Toueirja Sub-group**—Quartz mica schist, pelitic schist and metasedimentary rocks (Paleoproterozoic to Neoproterozoic)

Ijibbitene Group

- Ib — **Ed Dab'a Formation**—Calcite+chlorite schist, sericite schist, banded iron formation, quartzite, conglomerate, and limestone (Neoproterozoic)
- Ibm — **El Freidi Formation**—Metabasite, calcite+chlorite schist, chloritic metatuff (Neoproterozoic)
- Go — **Gâoua Formation**—Sericite±hematite quartzite, locally conglomeratic, and muscovite±garnet±chloritoid schist (Neoproterozoic)
- Hr — **El Harach Group (Tâjâït Mbeïdiat Formation)**—Pelitic schist and phyllite, quartzite; minor mafic and felsic schists (Neoproterozoic)
- Eh — **El Hneikat Formation**—Mafic schist, quartz+muscovite schist, quartzite, calc-schist, and carbonate facies banded iron formation (Paleoproterozoic to Neoproterozoic)

l'Oued Dibilal Complex

- ODe — **l'Oued Erbeyib Formation**—Light green quartzite (Paleoproterozoic to Neoproterozoic)
- ODg — Undifferentiated gneiss and granofels, locally charnockitic and leucocratic, partly mylonitic (Paleoproterozoic to Neoproterozoic)
- ODt — **Tiferchaï Formation**—Basalt and olivine gabbro (Paleoproterozoic to Neoproterozoic)

PROTEROZOIC ROCKS

Rgueïbat Shield—Intrusive Rocks

Bir Moghreïn Suite

- BMa — Biotite alkali granite (Paleoproterozoic)
- BMb — Biotite granite (Paleoproterozoic)
- BMg — Granite (Paleoproterozoic)
- BMs — Sodic amphibole granite (Paleoproterozoic)

Tigsmat el Akhdar alkaline Suite

- TA — Aegyrine granite (Paleoproterozoic)
- TAg — Granite (Paleoproterozoic)
- TAp — Phonolite (Paleoproterozoic)
- TAs — Syenite, aegyrinic augite syenite, nepheline syenite (Paleoproterozoic)

Yetti Suite

- Yc — Cordierite granite (Paleoproterozoic)
- Yg — Granite (Paleoproterozoic, 2002±12, 1995±20)
- Yl — Biotite-muscovite granite (Paleoproterozoic)
- SF — **Sfariat Suite**—Granodiorite and granite, common aplite dikes (Paleoproterozoic, 2023±3)

Adam Esseder Complex

- AEb — Gabbro, hypersthene gabbro, leucogabbro, quartz diorite, ultramafic rocks (Paleoproterozoic)
- AEg — Granite and granodiorite (Paleoproterozoic)
- AEm — Monzogranite (Paleoproterozoic, 2059±4)
- AEp — Monzodiorite, commonly porphyritic (Paleoproterozoic)
- AEpg — Pegmatite (Paleoproterozoic)

Gleïbat Tenebdar Suite

- GT — Tonalite, granodiorite, and pegmatitic gabbro (Paleoproterozoic, 2073±3, 2068±6, 2068±21)
- GTm — Granophyric hornblende microgranite (Paleoproterozoic)
- AA — **Adam Anajim Suite**—Orthogneiss, tonalite, and granodiorite (Paleoproterozoic, 2129±6, 2063±4)

Tmeïmichatt Ghallamane Complex

- TGb — Biotite granite to biotite granodiorite with tourmaline+muscovite pegmatites (Paleoproterozoic)
- TGd — Biotite+amphibole diorite and amphibole gabbro (Paleoproterozoic)
- TGg — Biotite leucogranite with tourmaline pegmatite dikes (Paleoproterozoic)
- TGl — Garnet±cordierite leucogranite (Paleoproterozoic, 2078±5)
- TGp — Granite to granodiorite (Paleoproterozoic, 2103±13)
- TGm — Muscovite±garnet granite, muscovite+biotite granite (Paleoproterozoic, 2118±14)

Tin Bessaïs Complex

- TB — Fine-grained granite with pegmatites dikes (Paleoproterozoic)
- TBd — Quartz diorite (Paleoproterozoic, 2145±5)
- TBg — Granodiorite to tonalite (Paleoproterozoic, 2121±5)
- TBgn — Orthogneiss (Paleoproterozoic)
- TBgr — Metarhyolite, metabasite, microgranite and granodiorite to tonalite (Paleoproterozoic)
- FD — **Fderik granite Suite (Guelb el Tâouorta and Oumm Khamié Sub-suites)**—Syenogranite, granite, granodiorite, gabbronorite, gabbrodiorite, anorthosite, quartz diorite (Paleoproterozoic, 2472±6)

PROTEROZOIC ROCKS

Rgueïbat Shield—Stratified Rocks

Rich Anajim Complex

- RA — Garnet amphibolite including metagabbro, metapyoxenite (Paleoproterozoic)
- RAgn — Migmatic paragneiss with calc-silicate boudins (Paleoproterozoic)
- RAq — Magnetitite-bearing quartzite, dolomitic marble (Paleoproterozoic)
- RAz — **Guelb Zednes Formation**—Magnetite-bearing quartzite, amphibolite, kyanite schist, metaconglomerate (Paleoproterozoic)
- Sy — **Seyala Formation**—Massive conglomerate with clasts of ferruginous quartzite, iron formation, and quartzite (Paleoproterozoic)
- IJ — **Ijil Complex (El Mhaoudat Unit and Achouil, El Hadej, El Hamariat, Tazadit, and Zouerat Formations, undifferentiated)**—Ferruginous quartzite, garnet±staurolite+amphibole schist, amphibolite, marble, dolostone, and micaceous metasandstone (Paleoproterozoic)

Tsalabia el Khadra Complex

- KHq — Quartzite, separated from rest of Complexe de Tsalabia el Khadra on the basis of detrital zircon results (Neoproterozoic, ≤581)
- KH — Metapyroxenite, metagabbro, metah yaloclastite, amphibolite, quartzite, marble, metaandesite, metarhyolite, metaconglomerate, and metaarkose (Paleoproterozoic)
- MA — **Aguelt abd el Maï Complex**—Amphibolite, garnet amphibolite, porphyritic metadacite, calc-gneiss, and quartzite (Paleoproterozoic)

Imourène Group

- IM — **Igneous components**—Microgranite, microgranodiorite; porphyritic andesitic to dacitic tuff; rhyolite, rhyolitic ignimbrite (Paleoproterozoic, 2067±9)
- IMs — **Sedimentary components**—Conglomerate, quartzite, locally conglomeratic, sandstone, arkose, tuff, lahar (Paleoproterozoic)

Blekhzaymat Group

- BZm — **Aïoun abd el Malek Formation**—Conglomerate, sandstone (≤2094), pyroclastite, and felsic tuffaceous schist; rhyolite sill (Paleoproterozoic, 2069±10)
- BZn — **Aguelt Nebk ha Formation**—Quartzite, quartzose metasiltstone, calcareous metasandstone, and tuff (2113±17, 2104±13) locally contact metamorphosed (Paleoproterozoic)
- LG — **Legleya Group**—Felsic volcanic rocks, tuff, granophyre, microgranite, microgabbro, and basalt (Paleoproterozoic, 2072±6)

Ghallamane Complex

- GL — Amphibolite (Paleoproterozoic)
- GLs — **Metasedimentary rocks undifferentiated**—aluminous and calcareous gneiss, quartzite (≤2083), meta-arkose, and biotite+andalusite+sillimanite+cordierite+staurolite schist (Paleoproterozoic, 2180±8)

ARCHEAN ROCKS

Rgueïbat Shield—Intrusive Rocks

- Px — Pyroxenite, metapyroxenite and metaperidotite (Neoarchean/Paleoproterozoic to Neoproterozoic)
- Apg — Quartz+feldspar+mica±garnet±tourmaline±beryl pegmatite (Archean)
- Pan — Anorthosite (Archean)
- ADu — Dunite-carbonate breccia (Neoarchean)
- AG — Gabbro (Neoarchean)
- CN — Metagranite (Neoarchean)
- Pub — Ultramafic rocks (Neoarchean)
- sy — Sodalite syenite (Neoarchean)

Tiris Complex

- Trla — Quartz+feldspar gneiss, marble, amphibolite, metapyroxenite (Neoarchean)
- Trle — Quartz+feldspar gneiss, charnockitic gneiss, sillimanite+cordierite+garnet gneiss, and migmatite (Neoarchean)
- Trm — **Mirikli Formation**—Granite, granite and monzonite, and screens of aluminous paragenesis and banded iron formation (Neoarchean, 2654±8)
- ZZ — **Zemzem Metagranite**—metamicrogranodiorite, and hornblende±biotite metagranite (Neoarchean, 2683±22)

Iguilid Suite

- IG — Metagabbro (Neoarchean, 2706±54)
- IGo — **Ioulgend granite**—pegmatitic tourmaline-garnet-biotite granite (Neoarchean)

Touijenjert Suite

- TJg — **Touyerma granite**—Biotite granite and granite with mafic xenoliths (Neoarchean, 2726±7)
- TJp — **Touijenjert granite**—Porphyritic monzogranite (Neoarchean)
- AY — **Ahmeyim Grand Dike**—Layered gabbronorite, leucogabbro, and gabbrodiorite (Neoarchean, 2733± 4 Ma)

Amsaga Complex

- Aml — Quartzofeldspathic gneiss (leptynite), with amphibole, biotite, garnet, or garnet+sillimanite (Neoarchean, 2716±5)
- AMc — Charnockitic gneiss (Mesoarchean)
- AMg — Tonalitic orthogneiss (Mesoarchean)
- Agb — Metagabbro (Mesoarchean)
- Art — **Arhdéjit leucotonalite** (Mesoarchean, 2909±20)
- TMG — **Tamagot orthogneiss**—Garnet+amphibole granitic gneiss (Mesoarchean)
- CO — **Çtel Ogmâne Complex**—Migmatic gneiss (Mesoarchean)
- GA — **Guelb Arâch Suite**—Metagabbro, anorthosite, serpentinite, hornblende±biotite gneiss and pegmatite (Mesoarchean)
- TC — **Tacarat Suite**—Biotite orthogneiss (Mesoarchean)

Tasiast Suite

- TS — Granite (Neoarchean)
- TSg — Granite (Mesoarchean)
- TSt — **Ndaouâs Sub-suite**—Tonalite and granodiorite (Mesoarchean, 2912±36)
- TSb — **Bir Igueni granite**—Biotite monzogranite (Mesoarchean, 2933±16)
- SAu — **Saouda Group**—Serpentinite; layered metagabbro (Mesoarchean)
- TT — **Temmimichate Tsabya Complex**—Serpentinized metadunite, metagabbro, amphibolite, anorthosite, and quartzofeldspathic gneiss (Mesoarchean)
- AO — **Aoutitilt Suite**—Granitic augen gneiss (Mesoarchean, 2954±11)
- Lbu — **Lebzenia Group**—Ultramafic rocks (Mesoarchean)

Zednes Suite

- ZDgp — Porphyritic granodiorite (Mesoarchean)
- ZDm — Monzogranite (Mesoarchean, 2902±11)
- ZDmy — Charnockite, foliated to mylonitic (Mesoarchean, 2915±18, 2856±6)
- ZDt — Tonalite to granodiorite (Mesoarchean, 3044±5, 2832±4)

ARCHEAN ROCKS

Rgueïbat Shield—Stratified Rocks

Tiris Complex

- TRf — **El Khadra and Mirikli Formations, undifferentiated**—Banded iron formation and ferruginous quartzite (Neoarchean)
- Trg — **El Gheicha Formation**—Sillimanite-cordierite-garnet paragneiss, locally migmatized; rare lenses of amphibolite and ferruginous quartzite (Neoarchean)
- Trk — **El Khadra Formation**—Mica+quartz schist, quartzite, biotite gneiss, migmatitic gneiss, granite, amphibolite, calc-silicate rocks, ferruginous quartzite, and BIF (Neoarchean)
- Trqf — Ferruginous quartzite (Mesoarchean)

Amsaga Complex

- AMa — Metabasite, amphibolite (Mesoarchean)
- AMf — Banded iron formation (Mesoarchean)
- AMs — **Metasedimentary rocks, undifferentiated**—sillimanite+cordierite+garnet gneiss, quartzite, schist, and marble (Mesoarchean)
- AMgn — Tectonically interleaved, variably migmatized gneiss, schist, and amphibolite (Mesoarchean)

Saouda Group

- SAa — Felsic metavolcanic rocks, marble, quartzite, and mafic metavolcanic rocks (Mesoarchean)
- SAf — Banded iron formation (Mesoarchean)
- TTc — **Temmimichate Tsabya Complex**—Marble (Mesoarchean)

Lebzenia Group

- Lb — **Aouéoua Formation**—Actinolite schist, amphibolite, quartzite, quartz+muscovite schist, and mafic and felsic metavolcanic rocks (Mesoarchean, 2968±2)
- Lbf — **Aouéoua and Sebkhet Nich Formations, undifferentiated**—Banded iron formation (Mesoarchean)

VARIOUS AGES

- my — Fault rocks: breccia, cataclasite, mylonite, and ultramylonite
- qz — Quartz and (or) carbonate veins
- mu — Ductile melange of mafic and ultramafic schists

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