Thin section analysis

Joana Belmiro

5/20/2022

Geological samples

SP6

Sample SP6 is a Chert, characterized by a Mudstone texture and a Massive microstructure. Two orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 10% of Dolomite, of Secondary type. Allochems are Uncommon Iron oxide. Bioclasts are Uncommon Unidentifiable fossils; Uncommon Echinoderm. There is 5% of total porosity of Vuggy type. Other sedimentary features are Non-existent.

SP7

Sample SP7 is a Chert, characterized by a Wackestone texture and a Massive microstructure. Three orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 5% of Megacrystalline moisaic granular quartz, of Essential type; 1% of Dolomite, of Secondary type. Allochems are Common Iron oxide. Bioclasts are Common Unidentifiable fossils; Uncommon Echinoid spines. There is 5% of total porosity of Vuggy type. Other sedimentary features are Non-existent.

SP9

Sample SP9 is a Chert, characterized by a Packstone texture and a Massive microstructure. Two orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 5% of Dolomite, of Secondary type. Allochems are Common Iron oxides. Bioclasts are Common Unidentifiable fossils. There is 1% of total porosity of Vuggy type. Other sedimentary features are Burrow.

SP10

Sample SP10 is a Chert, characterized by a Wackestone texture and a Massive microstructure. Two orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 5% of Dolomite, of Secondary type. Allochems are Uncommon Iron oxides; Uncommon Opaque allochems (probable iron oxides). Bioclasts are Common Unidentifiable fossils. There is 1% of total porosity of Vuggy type. Other sedimentary features are Burrow. The burrow seems to have a first stage of replacement with carbonates and dolomite, and a second stage where the silification occurred. A difference in the matrix can be seen within and outside the burrow..

SP14

Sample SP14 is a Chert, characterized by a Packstone texture and a Massive microstructure. Three orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 3% of Dolomite, of Secondary type; 2% of Fibrous chalcedony, of Secondary type. Allochems are Common Iron oxides. Bioclasts are Very Frequent Indentifiable fossils; Common Sponge spicules; Common Radiolarians. Albeit non-identifiable, based on their shapes, the fossil ghosts may probable be poorly preserved sponge spicules and radiolarians.. There is 1% of total porosity of Vuggy type. Other sedimentary features are Non-existent.

SP18

Sample SP18 is a Chert, characterized by a Wackestone texture and a Massive microstructure. Four orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 4% of Dolomite, of Secondary type; 1% of Fibrous chalcedony, of Secondary type; <1% of Shale, of Secondary type. Allochems are Uncommon Iron oxides; Uncommon Peloids. Bioclasts are Uncommon Unidentifiable fossils; Uncommon Sponge spicules; Uncommon Radiolarians. There is 5% of total porosity of Vuggy type. Other sedimentary features are Non-existent. There is a fracture which has been filled with dolomite..

SP21

Sample SP21 is a Chert, characterized by a Packstone texture and a Massive microstructure. Four orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 3% of Dolomite, of Secondary type; 1% of Fibrous chalcedony, of Secondary type; 1% of Shale, of Accessory type. Allochems are Uncommon Iron oxides. Bioclasts are Very Frequent Unidentifiable fossils. There are possibly some spicule fossils, however they are poorly preserved.. There is 1% of total porosity of Vuggy type. Other sedimentary features are Non-existent.

SP23

Sample SP23 is a Chert, characterized by a Packstone texture and a Massive microstructure. Four orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 3% of Fibrous chalcedony, of Secondary type; 2% of Dolomite, of Secondary type; 1% of Megacrystalline moisaic granular quartz, of Secondary type. Allochems are Uncommon Iron oxides. Bioclasts are Very Frequent Unidentifiable fossils; Very Frequent Echinoid spines; Very Frequent Radiolarians; Very Frequent Sponge spicules; Very Frequent Sponge spicules. Fossils were identified as being filled by three generations of quartz: 1st generation of megacrystalline quartz, around the porosity; 2nd generation of chalcedony inside the porosity but along the borders; 3rd generation of megacrystalline quartz filling the inside of the porosity.. There is 1% of total porosity of Vuggy type. Other sedimentary features are Non-existent.

SP27

Sample SP27 is a Chert, characterized by a Wackestone texture and a Massive microstructure. Three orthochems were identified: 98% of Micro-cryptocrystalline granular quartz, of Secondary type; 1% of Fibrous chalcedony, of Secondary type; 1% of Megacrystalline moisaic granular quartz, of Secondary type. Allochems are Uncommon Iron oxides. Bioclasts are Common Unidentifiable fossils. There is one unidentifiable fossils which has been filled by several generations of quartz: 1st generation of frame-like filling by chalcedony; 2nd generation of megacrystalline quartz within the fossil.. There is 1% of total porosity of Vuggy type. Other sedimentary features are Non-existent.

SP32

Sample SP32 is a Chert, characterized by a Wackestone texture and a Massive microstructure. Two orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 5% of Dolomite, of Secondary type. Allochems are Common Iron oxides; Uncommon Peloids. Bioclasts are Common Unidentifiable fossils. The unidentifiable fossils are poorly preserved. They can be found across the whole sample and seem to be mono-specific, with circular shapes which may indicate they are calcispheres or radiolarians.. There is 5% of total porosity of Vuggy type. Other sedimentary features are Non-existent.

SP34

Sample SP34 is a Chert, characterized by a Packstone texture and a Massive microstructure. Four orthochems were identified: 93% of Micro-cryptocrystalline granular quartz, of Secondary type; 3% of Fibrous chalcedony, of Secondary type; 3% of Megacrystalline moisaic granular quartz, of Essential type; 1% of Dolomite, of Secondary type. Allochems are Uncommon Iron oxides. Bioclasts are Common Opaques (possibly iron oxides); Common Possibly organics; Common Unidentifiable fossils; Uncommon Echinoid spines; Rare Bivalve shell. The Echinoid spine shows a longitudinal cut, with a somewhat preserved structure. The bivalve shell shows several generations of silicification, with the presence of fibrous chalcedony and megacrystalline quartz on the center.. There is 1% of total porosity of Vuggy type. Other sedimentary features are Non-existent.

SP39

Sample SP39 is a Chert, characterized by a Packstone texture and a Massive microstructure. Three orthochems were identified: 98% of Micro-cryptocrystalline granular quartz, of Secondary type; 1% of Fibrous chalcedony, of Secondary type; 1% of Dolomite, of Secondary type. Allochems are Common Iron oxides; Rare Oncoliths. Bioclasts are Common Unidentifiable fossils; Uncommon Sponge spicules; Uncommon Radiolarians; Rare Calcispheres. There is 1% of total porosity of Vuggy and Mold type. Other sedimentary features are Non-existent. There is a fracture filled with quartz..

SP40

Sample SP40 is a Chert, characterized by a Packstone texture and a Massive microstructure. Three orthochems were identified: 95% of Micro-cryptocrystalline granular quartz, of Secondary type; 4% of Fibrous chalcedony, of Secondary type; 1% of Dolomite, of Secondary type. Allochems are Uncommon Iron oxides; Uncommon Opaques (probably iron oxides). Bioclasts are Very Frequent Unidentifiable fossils; Very Frequent Radiolarians; Very Frequent Sponge spicules (poorly preservated); Very Frequent possibly Calcispheres. There is 1% of total porosity of Vuggy type. Other sedimentary features are Non-existent. There seem to be tonality changes in the sample, probably due to darker micro-cryptocrystalline content..

SP42

Sample SP42 is a Chert, characterized by a Wackestone texture and a Massive microstructure. Two orthochems were identified: 90% of Micro-cryptocrystalline granular quartz, of Secondary type; 10% of Megacrystalline moisaic granular quartz, of Essential type. Allochems are Uncommon Iron oxides. Bioclasts are Uncommon Unidentifiable fossils; Rare Possible ostracod. There is 5% of total porosity of Vuggy type. Other sedimentary features are Non-existent.