No. 1

Name: **conglomerate**
Sources: Boisetown, Minto, NB
Rock Type: Sedimentary Rock
Minerals: quartz (clear/white), others

Conglomerate consists of compacted and cemented gravels composed of pebbles which are rounded by rolling in streams. Most of the pebbles are quartz, which is very hard and erodes slowly. When the grains are small the rock is referred to as sandstone.

Uses: fill

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 2

Name: **sandstone**
Sources: Shediac, Minto, NB
Rock Type: Sedimentary Rock
Minerals: quartz (clear/white)

Sandstone is formed by the consolidation of beds of sand. It consists mainly of small rounded grains of quartz that are cemented together by clay minerals.

Uses: building stone

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 3

Name: **slate**
Sources: Edmunston, Kedgwick, NB
Rock Type: Metamorphic Rock
Minerals: decomposed feldspars (clay minerals), carbonaceous (organic) debris

Grey slate is a very fine-grained rock formed when shale (like sample No. 4) is compressed and 'baked' by the pressure of overlying rock. Layers in slate are less distinct that shale and the rock is harder. The hardness depends on the degree of metamorphism.

Uses: ornamental stone, flooring, roofing

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 4

Name: **oil shale**
Sources: Albert Mines, NB
Rock Type: Sedimentary Rock
Minerals: decomposed feldspars (clay minerals), and organic debris

Oil shale is a fine-grained, dark brown rock containing up to 12% oil. Shales are formed by the compaction of bodes of slay and silt. World reserves of oil in shale are enormous but costs of recovery are high. Shales are layered and may contain fossils.

Uses: potential for oil production

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 5

Name: **gypsum**
Sources: Plaster Rock, Albert Mines, Hillsborough
Rock Type: Sedimentary Rock
Minerals: gypsum

Gypsum is white and soft. It is formed through precipitation as sea water evaporates.

Uses: wall board, plaster of paris

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 6

Name: **limestone – marble**
Sources: Haveloc, Ketepec, NB
Rock Type: Sedimentary Rock – Metamorphic Rock
Minerals: calcite

Limestone is fine-grained and is composed almost entirely of calcite. It is commonly formed by the compaction of shells of dead sea organisms. Additional heat and pressure change limestone to marble which has coarser grains and less distinct layering.

Uses: cement, agricultural lime, water treatment, smokestack scrubbers, building stone

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 7

Name: **peat**
Sources: Tabusintac, NB
Rock Type: Sedimentary
Minerals: organic, mainly carbon

Peat is an incompletely decomposed accululation of plant debris. It is usually considered the first stage in the transformation of plant remains in the series: brown coal; lignite; bituminous and anthractitic coal.

Uses: soil conditioner

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 8

Name: **bituminous coal**
Sources: Minto, NB
Rock Type: Sedimentary Rock
Minerals: organic, mainly carbon

Coal is a sedimentary rock consisting of the altered remains of plants which died and accumulated in swamps some 300 million years ago. Pressure from overlying rock formations and chemical processes have altered the plant material to form coal.

Uses: fuel, most often to generate electric power

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 9

Name: **halite**
Sources: Sussex, NB
Rock Type: Sedimentary Rock
Minerals: halite (clear/white)

Rock salt is a coarse-grained agglomeration of halite grains or crystals. It is formed through the evaporation of sea water. The salt beds can be very large, and when bent and raised, can form salt domes similar to the one from which this sample was mined. The rock has a salty taste.

Uses: road de-icing, cooking and preserving, chemical manufacture

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 10

Name: **potash ore (sylvinite)**
Sources: Sussex, NB
Rock Type: Sedimentary Rock
Minerals: sylvite (clear/white) and halite (clear/white)

Potash is an agglomeration of sylvite, halite and other salts. It is formed through the evaporation of sea water. The red colour is due to the presence of fine hematite (iron oxide) particles. Sylvite is one of the final slats to precipitate and it therefore found on the boundaries of rock salt deposits. The rock has a bitter taste.

Uses: source of potassium for fertilizer

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 11

Name: **gabbro**
Sources: St. Stephen, NB
Rock Type: Igneous (plutonic) Rock
Minerals: plagioclase feldspar (grey), olivine (black/dark green), pyroxene (black)

Gabbro is a dark-coloured, mafic, plutonic, coarse-grained rock consisting mainly of dark-green olivine and pyroxene and light grey feldspar.

Uses: monuments and building stone

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 12

Name: **granite**
Sources: St. George, Nackawic, NB
Rock Type: Igneous (plutonic) Rock
Minerals: orthoclase feldspar (red/pink), plagioclase feldspar (grey), quartz (white)

Granite is an intrusive, coarse-grained rock consisting of translucent quartz, and pink or red feldspars which give the rock its characteristic colour.

Uses: monuments and building stone

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 13

Name: **gneiss**
Sources: central New Brunswick
Rock Type: Metamorphic Rock
Minerals: feldspars (grey/pink), quartz (white/clear), biotite mica (black)

Gneiss is a coarse-grained metamorphic rock in which the grains in a rock (usually granite) have been flattened by hear and pressure over time so that they give a layered appearance.

Uses: fill

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 14

Name: **stibnite**
Sources: Lake George, NB
Rock Type: Igneous (intrusive) Rock
Minerals: stibnite (metallic grey)

Stibnite is the most common antimony mineral. Deposits are formed as molten material fills cracks in a host rock and cools to form veins or pockets of the material.

Uses: lead alloys for batteries, fire extinguisher agents

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 15

Name: **quartz**
Sources: Cassidy Lake, NB
Rock Type: Sedimentary Rock
Minerals: quartz (clear/white)

While the individual chunks of quartz in this deposit are of igneous origin, the deposit itself is sedimentary – likely and ancient beach. The pebbles/rocks are composed almost entirely of interlocking quartz grains and are therefore very hard.

Uses: glass manufacture, sandblasting, fiberglass, source of silicon for electronics, gels, etc.

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 16

Name: **barite**
Sources: Memramcook, NB; Walton, NS
Rock Type: Igneous Rock
Minerals: barite

Barite is barium sulphate. It can be colourless, white or lightly coloured in blue, yellow or red. It is soft and very heavy for a non-metallic mineral.

Uses: well drilling muds, medical testing

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 17

Name: **basalt**
Sources: Fredericton, Bathurst, NB
Rock Type: Igneous (volcanic) Rock
Minerals: feldspar (grey), hornblende (dark green/ black), olivine (olive-green)

Basalt is a dark coloured, basic, fine-grained volcanic rock. It is composed mainly of feldspar, hornblende and olivine. The sample may contain gas cavities (vesicles) which may be filled with some other mineral.

Uses: fill

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 18

Name: **lead-zinc ore**
Sources:Brunswick and Heath Steele mines, NB
Rock Type: Igneous (volcanic) Rock
Minerals: sphalerite (black), galena (metallic grey), pyrite (metallic yellow)

The lead/zinc ore in this sample is a mixture of very fine grains of sphalerite, galena and pyrite. Galena, the primary lead mineral is soft and very heavy. Sphalerite is also soft but not as heavy. Pyrite is shiny and hard.

Uses: zinc – rustproofing, roofing, castings; Lead – batteries, weights, shielding

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 19

Name: **copper ore**
Sources: Heath Steele, Murray Brook mines, NB
Rock Type: Igneous (volcanic) Rock
Minerals: chalcopyrite (yellow), pyrite (pale brass-yellow), pyrrhotite (bronze-yellow)

The copper ore in this sample is a mixture of copper and iron sulphides. Chalcopyrite is more yellow than pyrite and is fairly soft and heavy. It is an important source of copper.

Uses: wire, roofing, pipe, electronics

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 20

Name: **iron formation**
Sources: Woodstock, Austin Brook, NB
Rock Type: Metamorphic Rock
Minerals: magnetite (black), hematite (metallic grey) siderite (grey-white), chlorite, chert

Iron formation is sedimentary in origin, having been chemically precipitated in a shallow marine environment. It was subsequently metamorphosed. It is an important source of iron.

Uses: steel

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 21

Name: **rhyolite**
Sources: Saint John, NB
Rock Type: Igneous (volcanic) Rock
Minerals: orthoclase feldspar (red/pink), plagioclase feldspar (grey), quartz (clear/white)

Rhyolite is a fine-grained volcanic rock consisting of essentially the same minerals as granites which are coarse-grained because they cooled much more slowly.

Uses: rhyolite makes a good hard fill and is used as railroad ballast and asphalt filler

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 22

Name: **pyrite**
Sources: Caribou, Heath Steele mines, NB
Rock Type: Igneous (volcanic) Rock
Minerals: pyrite (brass-yellow)

Pyrite, an iron sulphide, is the most widespread and common sulphide mineral. It may be found in all rock types. It has little use but may indicate the presence of economic minerals. Its oxidation when exposed to air and water generates acid which may dissolve toxic heavy metals and lead to contamination of water courses.

Uses: not usually economic. May be used as a source of sulphur

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 23

Name: **Mount Pleasant ore**
Sources: Mount Pleasant, NB
Rock Type: Igneous (volcanic) Rock
Minerals: indium, galena, fluorite, scheelite, cassiterite, sphalerite, molybdenite, chalcopyrite, others

Mount Pleasant ore contains 23 different minerals. Ores containing tin, tungsten and molybdenum have been mined from the deposit. Indium has been of interest lately.

Uses: tin – solder and canning; tungsten – wear materials, heating elements and lights; fluorite – optics, smelter flux and chemicals; molybdenum – high temperature greases; indium - computers and ceramics

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]

No. 24

Name: **fossil**
Sources: Jacquet River, Cape Enrage, NB
Rock Type: Sedimentary Rock
Minerals: varied

Fossils are formed when plant and animal remains are buried by sediments. If the sediments consolidate before the remains decompose, the outlines of the plants or animals are preserved in the rock. Sedimentary rocks containing fossils include shale, sandstone, coal, limestone, and gypsum.

Uses: studying Earth history and the evolution of life

[Canadian Institute of Mining, Metallurgy and Petroleum - New Brunswick]