MINING PHOTO CAPTIONS

1.	Diamond Drill	At a remote exploration site a diamond drill and driller are assisted by helicopters that will transport people as well as equipment and supplies. Here, a diamond drill is being assembled piece by piece as the helicopter brings in the different parts to the site.
2.	Bush Plane	Airplanes are used to bring supplies into remote sites. Here, fuel and groceries are being unloaded from a single engine Otter floatplane.
3.	Hovercraft	This sophisticated water vehicle is used to access remote mine sites that have no road system linking them to major routes. The Hovercraft will transport materials, supplies, equipment, and people.
4.	Underground Miners	The underground miner (left) is surveying underground using a total surveying station, and is assisted by his partner (right) who is adjusting a laser guide. The laser guide assists the underground mine workers by setting direction and pattern.
5.	Underground Miner operating a Jackleg drill	This miner is operating a small drill called a Jackleg, used where only a few holes are needed or where there is little space to work. This is often the case in small-scale mines but this type of drill was used extensively before larger ones were designed.
6.	Miner operating a twin boom jumbo	The miner in this picture is using a much larger and more modern drill, called a jumbo, which can drill two holes at once and drill them more quickly.

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7.	Miner operating a remote controlled scoop tram	In some mining operations, equipment is operated by remote control. Here a miner operates a scoop tram by remote control to load ore into an ore cart.
8.	Rotary Drill	A worker examines the drill bit for wear. The hole shown in this slide has been drilled in preparation for blasting. It is filled with explosives.
9.	Drilling	A Drill Unit drills holes in rows for blasting a specified area in the mine. The hardness of the rock determines how far apart the holes are spaced.
10.	The Blast	The blast occurs after preparation of the blast area, which includes setting the blast, and then detonation. Note a shovel remains in the pit but is at a safe distance from the blast.
11.	Haul Truck & Cable Shovel	This truck has a 170 ton capacity. The cable-shovel is used to load the truck with rock that has been blasted. A cable shovel is not hydraulic. A hydraulic shovel is called an excavator.
12.	Shovel Bucket	The bucket of the shovel is used to dig and load the rock into the haul trucks. It is from a P&H 2300 series shovel and holds 19 m^3 of material.
13.	Haul Truck	This is a large truck that has a capacity of 220 tons. Notice that this truck has two rear axles. Any truck over the 170 ton capacity requires two axles.

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14.	Haul Truck	This truck is smaller - 120 tons. Note the smaller axle system.
15.	Haul Truck	Each wheel of this large 250 ton truck runs on its own electric motor.
16.	Open Pit	Equipment is dwarfed by the size of an open pit mine. The portable crushing station looks very small here.
17.	Waste Rock Dumps	This view of waste dumps is taken from the air. Note the gravel mine road for scale at the bottom of the photo and ice covered open pit at the top right.
18.	Haul Truck at the Crushing Station	The haul truck positions itself at the crushing station in preparation to dump its load of ore.
19.	Truck Dumping into Crusher	The truck dumps a load at the crushing station. Here, it is crushed into smaller, more manageable pieces for the plant.
20.	Conveyor Belts	From the crusher, the conveyor belt takes the rock to a transfer point where it is fed to the plant.
21.	Conveyor Belts	As in photo 20, the conveyor belt system is shown at a distance and demonstrates the distance that must be covered to transport the ore.
22.	Ball Mill	This is a ball mill from the outside. The purpose of this mill is to grind the material to a finer consistency.
23.	Ball Mill Maintenance	Inside the ball mill, workers are inspecting the plates for wear. Here they are in the process of removing a plate. The large steel balls are used to help grind the rock.

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24.	Flotation	This is a COLUMN CELL flotation unit. Flotation is a process used to remove the valuable minerals from the ground ore.
25.	Flotation Unit	This is another type of flotation unit and is more commonly used than the column cell.
26.	Flotation Bubbles	A close up of the bubbles of the flotation process. The valuable minerals cling to the bubbles and rise to the surface to be skimmed off for further processing.
27.	Control Room for the Mill Complex	The entire mill complex is monitored by computers which are housed in a separate room. Everything has a computer connection.
28.	Continuous Filter	The continuous filter is used to dewater the concentrate (remove the moisture) through a suction application. Heat application is another method of removing the moisture from the concentrate.
29.	Concentrate Storage	A conveyor belt dumps the concentrate in a storage facility where it will be stored until it is transported to port.
30.	Bagging Molybdenum Concentrate	Large canvas bags which lined with plastic are used to hold the molybdenum concentrate. The plastic will keep the moisture away from the concentrate and the canvas is durable and will take rough handling.
31.	Assay Lab	A chemist uses special techniques to determine the concentration of metals in soil and plants.

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32.	Grader and Water Truck	A grader is used to level and prepare roads and other surfaces that will be used during mining and reclamation. A water truck works along with a grader to keep the dust level under control.
33.	Train	This train engine is one of many locomotives used to pull railcars filled with concentrate or other mineral products to port facilities.
34.	Port of Vancouver	In Vancouver, mineral products are transferred onto ships for shipment to smelters in other parts of the world.
35.	Ship	This ship will carry precious concentrate cargo to destinations in other parts of the world. Here concentrate is loaded by conveyor into the ship's hold.
36.	Assay Furnace	Small crucibles are used to hold concentrate or tailings to determine metal content. They are heated in this assay furnace.
37.	Gold Bullion Bars	One finished product - gold. Refined product looks very different from the ore.