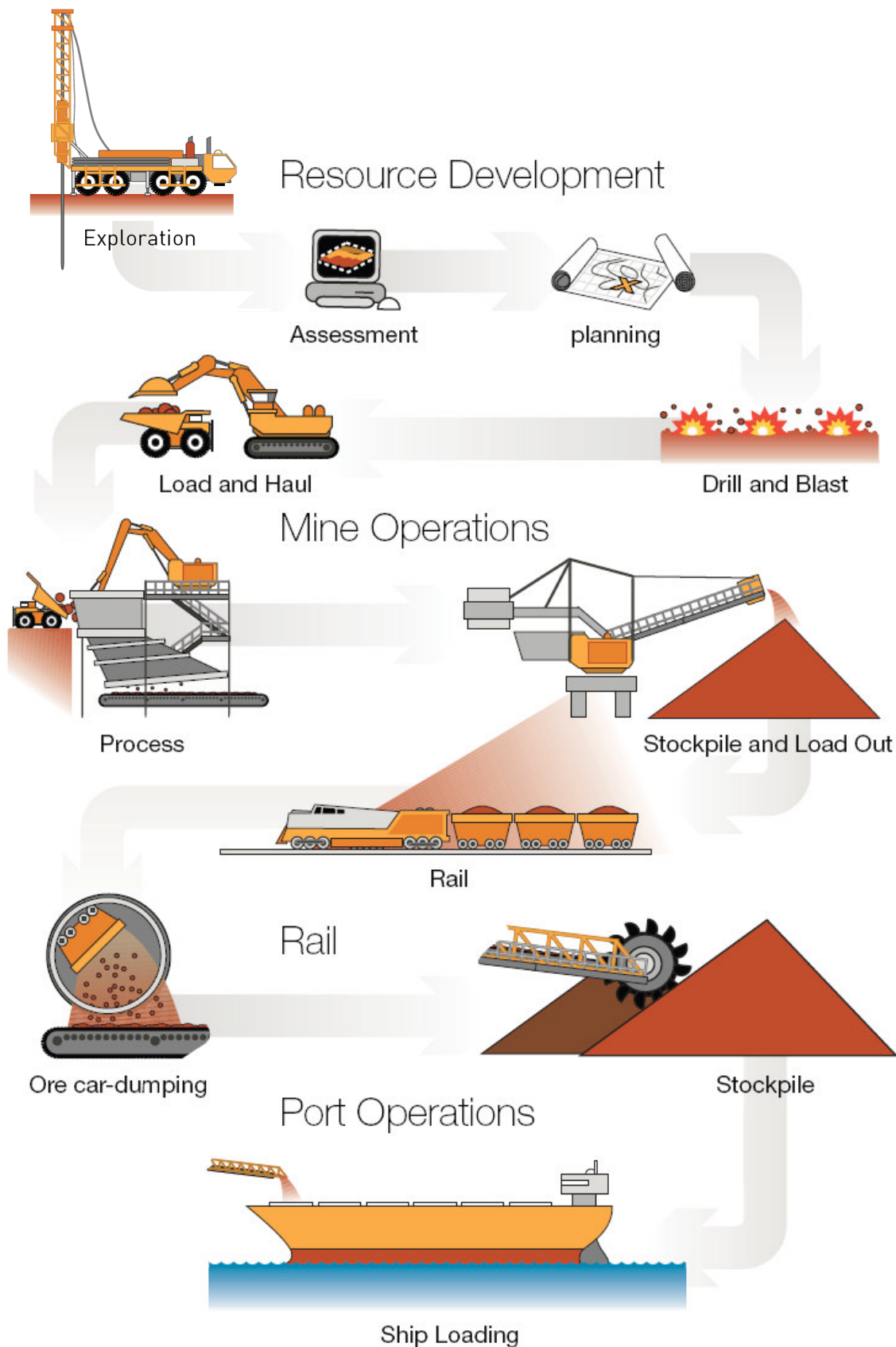


Iron Ore production in the Pilbara

Activities involved in finding, mining and processing iron ore at our Pilbara operations have been simplified in the following diagram. Rio Tinto operates 11 iron ore mines in the Pilbara and the specific sequence of activities varies from mine to mine. Excellence in planning, scheduling and quality control are fundamental to the process.



Iron Ore production in the Pilbara

Resource development



Exploration and evaluation

The team identifies and quantifies ore bodies, by using a range of geological, geophysical and metallurgical techniques. In its simplest form exploration involves drilling in remote areas to sample areas.



Metallurgical assessment

The data from exploration activities is logged, mapped, analysed and interpreted through models.



Mine planning and scheduling

The team develops a detailed plan of which ore bodies to mine in what sequence, to deliver the required product quality at an appropriate cost. The process of mine planning commences many years before a mine is developed, and continues on a day-to-day basis once the mine is operational.



Iron Ore production in the Pilbara

Mine operations



Drill and Blast

Areas for open-pit mining are selected using the mine plan. Identified areas are tagged, and then holes are drilled in an appropriate pattern by rigs. The drill holes are filled with an explosive, most often ANFO (Ammonium Nitrate/Fuel Oil) and then charged. The resulting blast breaks the material to a size required for digging.



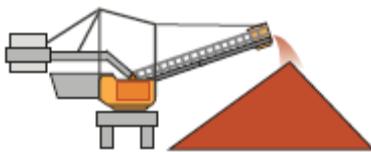
Load and Haul

The broken material is loaded for transport by face shovels, excavators or front-end loaders into haul trucks. Haul trucks at our operations are typically in the 190 tonne and 240 tonne class. Overland conveyors are used to transport partially crushed feed at sites where there are long distances between the pits and process plants.



Process

Processing of the ore ranges from simple crushing and screening to a standard size, through to processes that beneficiate or upgrade the quality of the iron ore products. This is done by physical processes, which remove impurities by differences in particle density or size gravity or size separation. Processing may be wet or dry.



Stockpile and rail-load out

The processed ore is stockpiled and blended to meet product quality requirements, before being reclaimed and conveyed to rail load-out. The ore is loaded into ore cars for transport to the port facilities.



Iron Ore production in the Pilbara

Rail and port operations

Rail



Ore is railed up to 460 kilometres to the coast along a dedicated privately owned rail system. A typical train consist comprises 2 GE Dash 9 locomotives, 230 ore cars and is over 2.4 kilometres long. A single driver, supported by centralised track control, operates the train.



Ore car dumping

Once the train arrives at the port the ore cars go through the car-dumper. The ore cars are rotated and the ore flows out into bins and then is discharged onto conveyors.



Stockpile

The ore is stockpiled according to product type and the quality control plan. The travelling stackers create 250m long stockpiles. Rotary bucket-wheel reclaimers later reclaim the ore, which will be conveyed to the ship loader.



Ship-loading

Vessels are loaded at the berths alongside the ore wharf. Lump ore is re-screened to remove undersize material. Reclaimed ore is conveyed along the wharf and the ore is loaded into the vessel's holds by travelling, slewing and luffing shiploaders.

