

CRUDE OIL

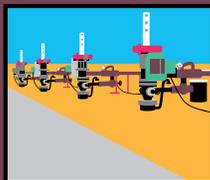
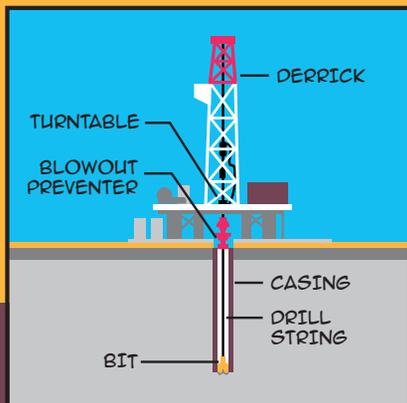
CRUDE OIL IS A YELLOW-TO-BLACK LIQUID, AND REFERS TO LIGHT, MEDIUM, AND HEAVY HYDROCARBONS. IT IS FOUND IN UNDERGROUND RESERVOIRS, OIL SANDS DEPOSITS, OR OFFSHORE RESOURCES.

CONVENTIONAL CRUDE OIL

ONCE OIL IS DISCOVERED IN AN UNDERGROUND RESERVOIR, THE SITE IS PREPARED FOR DRILLING. A DRILLING RIG IS USED TO HOUSE THE TOOLS AND PIPES NEEDED TO DRILL HOLES IN THE EARTH AND BRING OIL TO THE SURFACE.

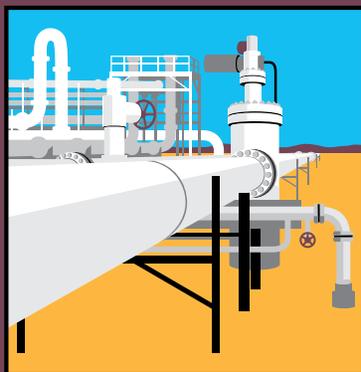
AFTER THE RIG IS REMOVED, THE CREW PUTS A PUMP ON THE WELL HEAD, WHICH PULLS OIL UP THROUGH THE WELL. WHEN COMPLETED, THE WELL BRINGS A STEADY FLOW OF OIL TO THE SURFACE.

THE CRUDE OIL IS THEN KEPT IN STORAGE TANKS OR TAKEN TO REFINERIES TO BE PROCESSED INTO VARIOUS PETROLEUM PRODUCTS.



OIL EXTRACTED FROM THE OIL SANDS, KNOWN AS BITUMEN, IS TOO HEAVY AND THICK TO FLOW ON ITS OWN, SO IT'S DILUTED, PUMPED UNDILUTED, OR HEATED. SOME BITUMEN IS FOUND WITHIN 70 METRES FROM THE MINING SURFACE, BUT THE MAJORITY IS FOUND DEEPER UNDERGROUND AND IS EXTRACTED. THE BITUMEN IS THEN PROCESSED INTO LIGHTER, SYNTHETIC CRUDE OIL.

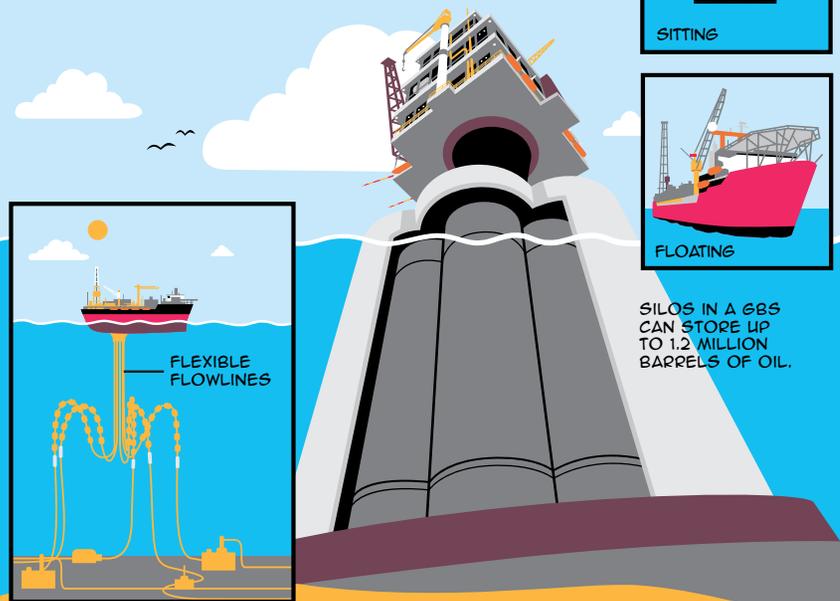
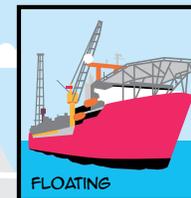
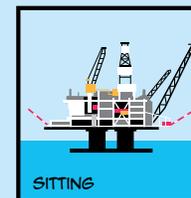
OIL IS PRIMARILY TRANSPORTED BY PIPELINES—CANADA HAS A PIPELINE NETWORK OF MORE THAN 840,000 KILOMETRES. IT IS ALSO TRANSPORTED BY RAIL, TRUCKS, OR TANKER SHIPS TO WHERE IT NEEDS TO GO.



OFFSHORE PRODUCTION

ALL OFFSHORE OIL PRODUCTION FACILITIES CONSIST OF TWO PARTS. THERE IS A PLATFORM, WHICH SITS ON THE SEAFLOOR OR FLOATS ON THE OCEAN SURFACE, AND A TOPSIDE, WHERE THE PRODUCTION OPERATIONS TAKE PLACE.

MOBILE OFFSHORE DRILLING UNITS (MODULS) ARE USED TO ACCESS OIL BENEATH THE OCEAN FLOOR. THEN EITHER OFFSHORE PLATFORMS OR FLOATING PRODUCTION STORAGE AND OFFLOADING (FPSO) VESSELS ARE USED TO EXTRACT AND STORE THE OIL.



IN A FPSO VESSEL SYSTEM, FLEXIBLE FLOWLINES ATTACH TO WELLHEADS IN THE SEAFLOOR, WHICH ALLOWS FOR THE VESSEL TO MOVE AROUND TO ADAPT TO WEATHER CONDITIONS. THE EXTRACTED OIL IS THEN SHIPPED TO SHORE BY SHUTTLE TANKERS.

IN A GRAVITY-BASED STRUCTURE (GBS), A PLATFORM IS BUILT ON STEEL AND CONCRETE PILLARS THAT ATTACH TO THE SEAFLOOR AND CONTAIN OIL STORAGE TANKS. THESE TYPES OF STRUCTURES ARE BUILT TO WITHSTAND COLLISIONS WITH ICEBERGS AND STORMS.

DRILL RIGS AND WELLHEADS ARE FITTED WITH BLOWOUT PREVENTERS TO PREVENT ACCIDENTAL RELEASES OF OIL.