

understanding our process

The Syncrude operation encompasses four major technologies: mining, extraction, upgrading and utilities. Syncrude surface mines oil sand, extracts the raw oil known as bitumen and upgrades it into high-quality, sweet light crude oil. The upgrading process subjects the bitumen to fluid coking, hydroprocessing, hydrotreating and reblending.



STEP 1.0:
MINING



STEP 2.0:
EXTRACTION



STEP 2.1:
FROTH
TREATMENT



UTILITIES



STEP 3.0:
UPGRADING



STEP 3.1:
SECONDARY
UPGRADING



STEP 4.0:
BLENDING/
STORAGE

After removing the overburden –the rock, sand and clay material typically found above the oil sands layer – Syncrude’s fleet of trucks and shovels excavate the oil sand. The oil sand is subsequently mixed with water to create a slurry that is pumped to extraction facilities.

Slurry from the mines is fed into the Primary Separation Vessels. There, bitumen floats to the surface as froth. The bitumen froth is diluted with naphtha and then fed into centrifuges that further separate the liquids and solids.

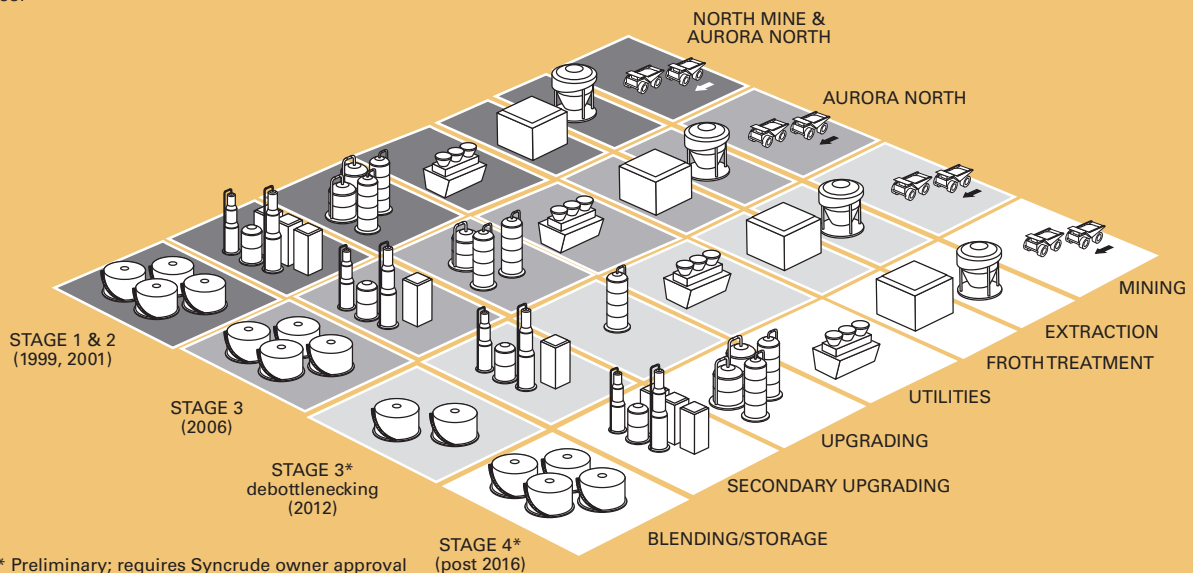
In the final step of the extraction process, the naphtha is removed in the Diluent Recovery Units, leaving only pure bitumen.

Syncrude’s utilities operations produce primarily steam and electricity as well as treat the water required to run plant operations. Syncrude is self-reliant in electrical power generation and is a net exporter of electricity to the Alberta power grid.

The bitumen is fed into either a coker or the LC finer where it is thermally cracked or hydroprocessed to produce hydrocarbon gases, naphtha and gas oil. The liquid products are conveyed to the hydrotreating units for final clean-up.

Hydrotreating is the final step in converting bitumen to synthetic crude oil. In the hydrotreating units, hydrogen is used to remove sulphur and nitrogen compounds.

The hydrotreated components are blended together, resulting in a sweet synthetic crude oil. The oil is then transported via pipeline to refineries throughout Canada and the U.S.



* Preliminary; requires Syncrude owner approval

STAGE 4* (post 2016)