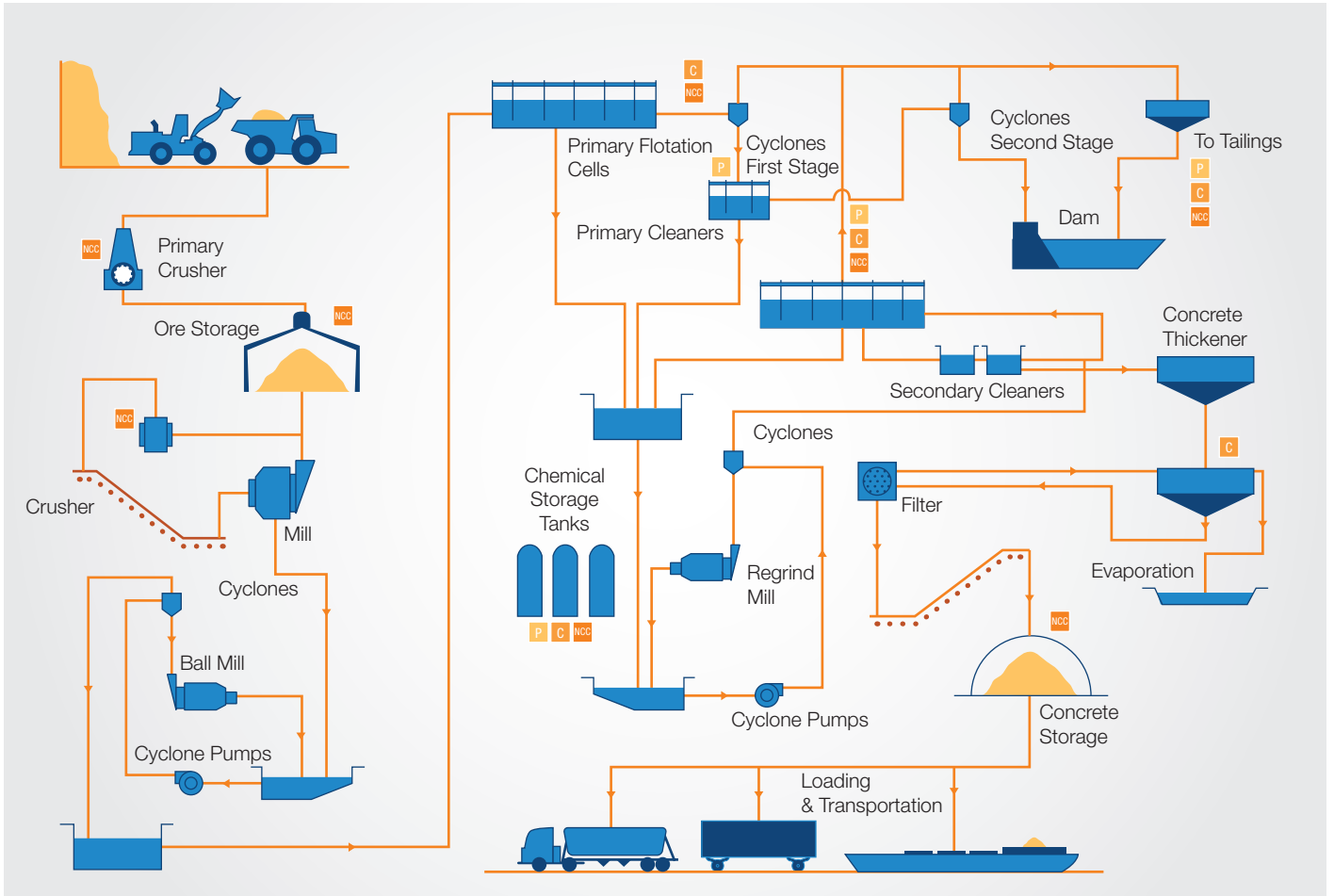


Mining Process







Industry specific process diagram

Most mining operations follow similar process lines, removing large quantities of rock or minerals from the ground and then processing them to a final product. ABB's well developed level products are proven and tested to measure levels throughout the entire process. The need for non-contact technology is a major advantage as nearly all minerals are either crushing, abrasive or corrosive. ABB's lasers and ultrasonics are the best of both worlds and are able to measure levels in almost every application in a mining or mineral processing environment. Ultrasonic transmitters can be used to measure most liquid applications and lasers can be used in non-dusty environments over long distances. ABB also offers a complete line of contact transmitters and switches to meet the demanding level requirements in mining applications





Legend

- P** Point Level Measurement
- C** Continuous Level Measurement
- NCC** Non-Contact Continuous Level Measurement

Product		Features
	RS85 Vibrating Level Switch (Liquid Level)	<ul style="list-style-type: none"> - Immune to low to medium coating or build-up on sensor - Special alloy sensors - Field selectable parameters with external magnet or internal push buttons (fail safe, density) - Extended probe lengths to 120" (3048 mm)
	KCAP400 RF Capacitance Level (Liquid & Solids Level)	<ul style="list-style-type: none"> - Dry bulk solids and liquid level detection in silos and sumps - Measures liquids and bulk solids - Single Setpoint, dual setpoint and pump control - Wide variety of 2-element sensing probes available up to 450°/3000 psig
	TX Thermal Dispersion Switch (Liquid & Solids Level)	<ul style="list-style-type: none"> - One switch can be configured for either gas or liquid flow, liquid level, interface level or temperature - Explosion proof, no moving parts - Temperature range of -320°F to 900°F (-195°C to 482°C) - Pressure to 10,000 psig (689 bar) - 316L stainless steel all welded construction standard
	Chute Master Point Level Detector (Solids Level)	<ul style="list-style-type: none"> - Blocked chute detection for a variety of bulk solid materials - Not affected by dust or particle build up - 33 ft. (10 m) range - Configurable relay output with On/Off delay
	SP60 Vibrating Level Switch (Solids Level in Liquids)	<ul style="list-style-type: none"> - Detects solids in liquid - Adjustable sensitivity - IP67 enclosure - 316 stainless steel wetted parts
	GP50 Vibrating Level Switch (Solids, Powder Level)	<ul style="list-style-type: none"> - Point level detection of solids, powders and granulars - No calibration required - Robust fork design with patented piezo crystal sensing element - Self cleaning




C

Continuous Level Measurement

Product		Features
	MT5000/MT5100 Guided Wave Radar Transmitters (Liquids & Solids Level)	<ul style="list-style-type: none"> - Measures liquids, slurries and solids - Radar signals travel along the waveguide - eliminates false echoes - The MT5000 provides reliable level measurement over varied process conditions. - Distance 2 to 200 ft. (61 m) - True level measurement regardless of temperature and pressure changes - Various material and probe options
	AT500 Magnetostrictive Level Transmitter	<ul style="list-style-type: none"> - Level measurements of different liquid chemicals - Mounts from top of tank - High accuracy: 0.02% of full scale - Loop powered to 16 ft (4876 mm) probe length - Process temperatures to 250°F (121°C) - Process pressures to 1800 psig (124.1 bar) - Stainless steel enclosure

NCC

Non-Contact Continuous Level Measurement

Product		Features
	VM3D Volumetric Measurement for Silos	<ul style="list-style-type: none"> - Volumetric measurement of bulk solid materials in silos and stock piles - 3D surface profiling - Highly visible level indication
	LM80/LM200 Laser Level Transmitters	<ul style="list-style-type: none"> - The LM80/LM200 lasers are robust laser transmitters that can accurately measure level, distance and position over long ranges in extreme environments. - LM80's long range is to 200 ft./60 m - LM200's long range is to 500 ft. / 150 m - No beam divergence = no false echoes - Measure surface at any angle with narrow beam
	LST400 Ultrasonic Transmitter	<ul style="list-style-type: none"> - Ore level measurement in bins and silos - Liquid level measurement in silos and sumps - Acids and other liquid level measurements

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