

# Vale's Base Metals Video Series

## Video 5: Technology

Video	Audio/Narration
Announcer intro over graphic title:	Vale's Base Metals Business Series — Focusing on Technology
See new screen technologies, can be quite futuristic, should not be brand-specific  Montage of high-tech [not mining] visuals  Dissolve through to Vale technology beauty shots	The world is constantly changing as a result of new and innovative technologies.  At Vale's base metals business we're transforming mining... and we're doing it with new technology.
See Sheridan Park, establishing beauty shot montage  See research, pilot plants, etc emphasize high-tech	Vale is the acknowledged leader in technological innovation in the mining industry.  This reputation was developed and is fostered at our main research facility in Mississauga, Ontario, Canada as well as in our operating locations around the globe.
See new refining processes, mine planning and environment	We imagine a better way... We constantly seek new approaches to mineral exploration, mine engineering, metal refining and environmental sustainability.
See mining [various]	We imagine a new kind of mine... We're developing technologically-advanced equipment and mining methods to make mining at depth safer and more efficient.
See mine planning process, emphasize software	We imagine a new path to mine planning...  Sophisticated software is dramatically improving recovery rates and reducing risk underground.

## Video 5: Technology (cont'd)

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<p>See smelting process shots</p> <p>See Vale Clydach refinery and Vale Acton refinery</p> <p>See images of Mond</p> <p>See newer high-tech installations at Clydach</p>	<p>We imagine a safer, better way to refine metal...</p> <p>Improving refining processes has long been a major technological focus for the scientists and researchers who are a part of Vale's base metals business.</p> <p>One of the first great breakthroughs in nickel refining, was developed in the London laboratory and pilot plant of Ludwig Mond. This carbonyl process was further advanced right here in these Vale facilities.</p> <p>Because of our research, equipment has continuously improved over time to make the process safer for people and for the environment.</p>
<p>See hydromet pilot plant</p> <p>See Long Harbour</p>	<p>Vale researchers have made significant improvements to the hydrometallurgical process, an alternative to traditional smelting, that reduces sulphur dioxide and dust emissions.</p> <p>Otherwise know as hydromet, Vale adapted the process for use with sulphide ores at our Long Harbour plant in, Canada.</p>
<p>See Goro, establish overview then into the plant</p>	<p>In Goro, New Caledonia, Vale's state-of-the art, hydrometallurgical techniques are already in use processing laterite ores.</p>
<p>See PT Inco, establish overview then into the plant, dust capture process shots</p>	<p>In Sulawesi, Indonesia, new technology and recent changes in processing have improved recoveries and increased through-put.</p>
<p>See environmental activities montage</p> <p>VNL water monitoring</p> <p>Green overview</p>	<p>We imagine... alternative ways to reduce mineral and industrial waste everywhere.</p> <p>In Voisey's Bay Canada,, real-time water monitoring helps ensure a safer approach to land use.</p> <p>By reducing waste and focusing on cleaner energy Vale's engineers are making mining more efficient and more sustainable.</p>

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<p>Guest speaker at Sheridan Park, etc</p> <p>St. John's, Memorial University: Innovation Centre</p>	<p>We are proud of our close connection to academic research as well.</p> <p>We regularly engage in dialogue with leading scientists and experts to expand and complement our knowledge base.</p> <p>And Vale is a major supporter of industry-led, university-partnered research, including the Centre for Excellence in Mining Innovation and the Innovation Centre in Canada.</p>
<p>See high-tech end use, alloys, hybrid vehicles, etc</p>	<p>Vale-led research helps us build stronger ties to our customers, too. They rely on our depth of knowledge, expanding into new uses for base metals in the economy of the 21st Century.</p>
<p>Montage of technology and research moments, emphasize the people</p>	<p>Vale's base metals business is imagining a better way... We are transforming mining through leading-edge technology and advanced research.</p>
<p>Title rundown</p>	<p>To learn more about how we are transforming mining please watch the other videos in this series.</p>
	<p>Music out</p>