

# ANALYZE THIS

Volume 1, Issue 2

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**Special points of interest:**

- Site elevation is 3,200 m above sea level
- Total conveyor length is 12,700 m
- 1,300 m drop between the primary crusher and the concentrator
- System is regenerative producing up to 25,000kW of electricity
- Design capacity is 8,700 MTPH

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## WipFrag Operates 3,200 Meters Above Sea Level

High in the Andes, at 3,200 metres above sea level, two WipFrag systems have been installed at Minera Los Pelambres. The first system, which is located at the primary crusher, measures copper ore before the fragments are transported on, what is to date, the most impressive downhill conveyor system in the world.

This overland conveyor system consists of 3 conveyors running downhill through almost 13 km of avalanche-proof tunnels. Copper ore travels a total length of 12,700 metres from the primary crusher to the concentrator where the second WipFrag system has been installed to measure the fragments before they enter the mill. After processing, the Copper concentrate slurry is pumped 120 km to a slurry port facility on the coast at Los Vilos where it is separated prior to shipment to smelters overseas.

The 1,300-metre drop from the primary crusher to the concentrator provides an added bonus for Los Pelambres. Installed on



An uncovered section of the Overland Conveyor System at Minera Los Pelambres, Chile

the conveyor system are frequency converters that control the downward speed of the copper ore and act like generators, producing up to 25,000 kW of electricity.

Los Pelambres is truly a world class operation and a credit to the people who designed and operate it. Look for it to be amongst the world's lowest-cost copper producers. WipWare is proud to be part of their successful operation. ■

## Measuring Crazy Horse

In the Black Hills of South Dakota, a magnificent work in progress is emerging from the mountainside. It is the largest sculptural undertaking in the world towering 563 feet



*Crazy Horse's left profile. The nine-story high face of Crazy Horse nears completion with the mouth now defined and the chin emerging.*

high and 641 feet long. Once completed, this monument will honour the Native American chief, Crazy Horse.

Crazy Horse was born in Rapid Creek, South Dakota in the 1840s. A native warrior who defended his people and their way of life, Crazy Horse has become a legend. His memorial began in 1939, before the faces on Mount Rushmore were completed.

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## Micron Scientific to Distribute in South Africa

WipWare Inc. is pleased to announce the newest addition to its international portfolio of distributors. Micron Scientific (Pty) Ltd. will provide sales, services and applications support for our products to the South African market under a special agreement with NECSA (Nuclear Technology Products Division of Atomic Energy Corp. in South Africa)

With expertise in the field of particle characterization and their strong reputation in the industry, WipWare is convinced that Micron will provide excellent sales backup and support for our WipFrag Photoanalysis Systems. ■

For a complete listing of distributors in your area see Around the Globe on page 3



The Micron Crew in South Africa

## The Crazy Horse Memorial Foundation continued from cover

A Sioux chief named Standing Bear, wrote to Korczak Ziolkowski, a renowned sculptor, inviting him to carve a native memorial. The letter read, "My fellow chiefs and I would like the white man to know the red man has great heroes, too." After seven years of consideration, Korczak accepted the invitation.

The first blast took place on June 3, 1948 when Korczak single-jacked four holes, taking off only 10 tons of rock. Now over 50 years and nearly 32,000 tons of rock later, the sculpture has become a spectacular sight. With the delicate work of the face nearly complete, the memorial will now be concentrating on the body of the sculpture and the horse.

Kevin Hachmeister, a representative of the Crazy Horse Memorial Foundation, pre-

sented the story of this work in progress at the 27<sup>th</sup> Annual ISEE Conference in Orlando Florida. Impressed with their achievements thus far, WipWare Inc. decided to donate a WipJoint for Window's system to the Foundation. This software will assist in characterizing the in-situ jointing structure of the rock around the horse, help to design ways to remove the surplus material, stabilize the rock mass and document changing conditions. ■



Once completed in the round, the horse's head will stand 219 feet high (22 stories) Opening under-arm will be 110 feet wide, 100 feet high

*"My fellow chiefs  
and I would like the  
white man to know  
the red man has  
great heroes, too."  
-Standing Bear-*

## COREM Membership Announcement

In June this year the Board of Directors of COREM (formerly the Centre de Recherche Minérale in Quebec "CRM") awarded WipWare Inc. Associate Membership in their organization. Membership is ordinarily reserved for participating mining companies but ongoing collaboration and new product development has lead to this liaison.

COREM is a research consortium dedicated to technological advancement in the mining industry. They are ISO 9001 certified and employ specialists in mineral processing, process control, extractive metallurgy, industrial data processing, mineral analysis and

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### COREM's Various Research Activities Include:

- Mineral Processing for Sustainable Development
- On-line Analysis
- Environmental Projects
- In Situ Process Optimization
- Ore Preparation through Thermal Methods
- Analytical and Mineralogical Specialized Services



## AROUND THE GLOBE - A Complete Listing of WipWare's Agents

<p><b>Brazil</b> VMA Av. Getulio Vargas, 671 - sala 12 Belo Horizonte, Minas Gerais 30112-020 Brazil Tel: 31-3221-2000 Fax: 31-3227-5825 E-mail: vmasismo@estaminas.br</p>	<p><b>Canada</b> DMA Enterprises 9 Jardins de Merici, Apt. 1202 Quebec, QC GIS 4S8 Canada Tel: 418-683-4088 Fax: 418-683-2990 E-mail: dubema@videotron.ca</p>	<p><b>Chile</b> CastOring Ltd. Av. Tobalaba 6029 La Reina Santiago, Chile Tel: 56-2-227-5946 Fax: 56-2-227-5946 E-mail: castoring@entelchile.net</p>	<p><b>Chile</b> Tricom S.A. Av. 11 de Septiembre 2155 Of. 803, Torre A Providencia, Santiago, Chile Tel: 56-2-231-3220 Fax: 56-2-233-6684 E-mail: bzuniga@tricom.cl</p>
<p><b>China</b> CRT International Resources Brokerage Rm M, 8/F, Blk 6, Cardado Garden Tai Wai Station Hong Kong, China Tel: 852-2836-8151 Fax: 852-2836-8388 E-mail: crt@crt-resources.com</p>	<p><b>Finland</b> Kalliotekniikka Oy Laipatie 19A Helsinki 880 Finland Tel: 358-9-755-7644 Fax: 358-978-3394 E-mail: pertti.pavola@kalliotekniikka.com</p>	<p><b>France</b> DCI—Delta Caps International Espace Icardo B 234, route de Grenoble Nice 6200, France Tel: 33-49-725-7676 Fax: 33-49-725-7679 E-mail: sales@deltacaps.com Website: www.deltacaps.com</p>	<p><b>Greece</b> Exorixi S.A. PO Box 134 Eptamyloi, Serres 62101 Greece Tel: 30-3-215-7292 Fax: 30-3-215-7293 E-mail: exorixi@otenet.gr</p>
<p><b>India</b> Globe Agencies HS — 6 Kailash Colony Mkt. New Delhi 110048 India Tel: 99-11-643-2884 Fax: 91-11-646-8485 E-mail: globeagc@del2.vsnl.net.in</p>	<p><b>Ireland</b> Environmental Measurements Ltd. Castle Bagot House Baldonnell, Co. Dublin Ireland Tel: 353-1-403-4300 Fax: 353-1-403-4399 E-mail: kevobrien@procon.com</p>	<p><b>Italy</b> Aces Consulting SRL Via G. Donizetti, 37 San Sisto, Perugia 06132 Italy Tel: 39-075-527-9995 Fax: 39-075-528-6980 E-mail: aces@acesconsulting.it Website: www.acesconsulting.it</p>	<p><b>WipWare Inc. would like to welcome our newest agents in:</b></p> <p><b>The Mining Industry Micron Scientific (South Africa)</b></p> <p><b>&amp;</b></p> <p><b>The Aggregate Industry Aggregate Processing Systems (Albuquerque, NM)</b></p> <p><i>If your country is not listed or our agent is outside your geographic region, contact us directly at:</i></p> <p><b>WipWare Inc.</b> 145 Palangio Road Bonfield Ontario P0H 1E0 Canada Tel: 705-776-1882 Fax: 705-776-1580 E-mail: tom@wipware.com www.wipware.com</p>
<p><b>Japan</b> J. Osawa &amp; Co. Ltd. 2-8, Shibaura 4-chome, Manito-ku Tokyo 108 Japan Tel: 81-3-3455-0111 Fax: 81-3-3456-0277</p>	<p><b>Korea</b> Baytech Korea Inc. Kumok Bldg. 700-32 Yok Sam-Dong Kang Nam-Gu Seoul, Korea Tel: 82-2-558-1040 Fax: 82-2-558-1156 E-mail: hanba@baytech.co.kr</p>	<p><b>Mexico</b> Excavaciones Sporte Y Tecnologia, Tomas Balcazar No.5178 Paseos Del Sol Zapopan, JA 45070 Mexico Tel: 52-1-542-3596 Fax: 52-3-634-8307 E-mail: dribarra@jal1.telmex.net.mx</p>	
<p><b>Netherlands</b> Syscom BV Hub van Doorneweg 10 Sassenheim 2171 KZ Netherlands Tel: 31-25-224-0900 Fax: 31-25-224-0909 E-mail: gp@syscom.nl Website: www.syscom.nl</p>	<p><b>Peru</b> Tecnoil S.A. Cerro Negro 480 San Ignacio Monterrico Surco, Lima 33 Peru Tel: 51-1-275-0847 Fax: 51-1-275-0847 E-mail: tecnoil@amauta.rcp.net.pe</p>	<p><b>South Africa</b> Micron Scientific (Pty) Ltd. PO Box 14100 175 Princess Ave. Benoni Farramere, Gauteng 1518 South Africa Tel: 27-11-422-4303 Fax: 27-11-845-2923 E-mail: micscien@global.co.za</p>	
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<p><b>USA</b> P-F Rentals 12529 Mountain Ridge Place NE Albuquerque, NM 87112 USA Tel: 505-294-9313 Fax: 505-250-7983 E-mail: pfr rentals@compuserve.com</p>	<p><b>USA</b> Terra Dinamica/ Lucca-Brown, LLC 5 Meadow Brook Road Granby, CT 6035 USA Tel: 860-844-0506 Fax: 860-844-0507 E-mail: flucca@terradinamica.com Website: www.terradinamica.com</p>	<p><b>USA</b> Vibronics Inc. PO Box 5488 Evansville, IN 47716-5488 USA Tel: 812-853-2300 Fax: 812-853-3354 E-mail: vibronic@evansville.net Website: www.vibronics.com</p>	<p><b>Western Australia</b> Adept Electronic Solutions Pty Ltd 195 Bank Street East Victoria Park 6101 Western Australia Tel: 61-8-9470-3180 Fax: 61-8-9470-3041 E-mail: mfimeri@adept.net.au Website: www.adept.net.au</p>

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## Articles Requested

If you would like us to publish an article in our next newsletter, please send your submissions to:

[info@wipware.com](mailto:info@wipware.com)

We're on the Web  
[www.wipware.com](http://www.wipware.com)

## Upcoming Events

### Extemin 2001

September 12th - 14th, 2001  
See Tecnoil S.A. & Exsa S.A  
Booths  
Arequipa, Peru

### High Technologies for Intelligent Mines

October 3rd— 5th, 2001  
Presented by Tricom S.A  
Santiago, Chile

**Because you can't manage what you can't measure!**

## COREM Membership continued from page 2

detection measurements providing a complete resource for member mining companies. COREM can improve the competitiveness of its partner companies through the development and introduction of technological innovations such as WipFrag and we are pleased to have been invited to become a member of this group.

To maximize the performance of its research programs, COREM relies on collaborations such as this one with WipWare Inc. to assist them in their R & D Projects. See their website <http://www.corem.qc.ca> for additional information. ■

## WipWare Upgrades/ Release Notes

All clients are entitled to a 1 year free upgrade. If you've missed an upgrade, please contact our office.

### WipFrag® Ver. 96

- Incorporation of user defined "exclude" zone, to remove portions of the image from the analysis. This is designed for use with images that may show machinery or conveyor belts at the fringes of the image.
- WipFrag will now work with progressive scanning camera.
- Incorporation of WipJoint software

### WipFrag® Ver. 97

- Saved scale with exclusion zone
- Added Gaudin-Schuhman Xmax parameter to the cumulative graph. This is an alternative to the Rosin-Rammler equation.
- Standard autowip.log output defined, each line: Year (last two digits), Month, Day, Hour, Minute, Second, D10, D25, D50, D75, D90, Xc, N, Xmax, Xc (calibrated solutiononly, otherwise 0.0), N (calibrated solutiononly, otherwise 0.0), Xmax (calibrated solutiononly, otherwise 0.0)
- Standard autowip RS232 output defined as above, on Com2: at 9600 baud, no parity, 7 data bits, 1 stop bit.
- Parameters now are camera specific

- User can identify a zone of fines, and assign a specific size to the fines.
- Added System II printing capabilities.
- Ability to read JPEG files from the .JPG directory, and from the A: drive
- TTL input check (system II)

### WipFrag® Ver. 98

- Added image rotation function
- Improved the Rosin-Rammer Calibration
- Added option in system II to split the autowip log files at midnight.
- There are now separate calibration files for the well graded model (calib.cnf) and highly uniform model (calib1.cnf)
- Added option in system II to digitize all images before analyzing all images or digitizing each image before analyzing each image.
- Added filters to reject bmp files that are the wrong size or color depth

### WipFrag® Ver. 99

- Added timing between images in WipFrag System II
- Added image filters to WipFrag System II
- Added security features to WipFrag - old security keys

need to be updated!

- Added module for auxiliary (custom) file outputs

### WipFrag® Ver. 100

- Option to digitize 10 images at 1 second intervals and write to disk.
- Option to digitize 20 images at 1 second intervals, alternating cameras
- Modification to set timestamp to time of digitizing rather than processing.

### WipFrag® Ver. 101

- Added option on System II to do an "autoamp" each cycle, selectable by camera
- Expanded System II 4-20 mA output
- Implemented a file based System II option in absence of imaging card (1010.37)
- Added "save to lan network." feature

### WipFrag® for Windows

#### Ver. 1.0

- Added WipJoint optional features
- Reduced graphs to 640 by 480

### WipFrag® for Windows

#### Ver. 1.1

- Added "memory" to open dialog box
- Increased stack size for larger images