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Chilean Contractor Buys V8 Multifunction System

Wellfield Services of Antofagasta, Chile, has acquired two V8 multifunction systems to enhance its surface geophysics capabilities.

In December 2006, Wellfield's General Manager Juan Bascur visited Phoenix for negotiations. The equipment was delivered in January 2007; Phoenix engineers Carlos Guerrero and Lu Yi and geophysicist Wang Fei carried out on-site acceptance and training of engineers Hector Zuñiga, Marco Alvear and Oriel Arriagada, and geophysicist Maritza Humpire. The field area was typical, dry and hilly with relatively high surface resistivity. Various tests were carried out with the V8 systems to determine optimal operating parameters and procedures. Both systems were immediately put into service for a mining company client.

Chile has an active mining exploration industry. It produces more copper than any other country, approximately 35% of the world's supply (5.4 million tonnes in 2006). Most Chilean copper comes from mines in the dry northern part of the country. Strong demand for copper has stimulated exploration worldwide, not just in Chile.

Founded in 1993, Wellfield provides geophysical services and consulting to the mining, oil and water industries of Chile, Argentina, Bolivia, Peru and the USA. Since 1996, the ISO-certified company has grown by providing sophisticated geophysical services and leading edge geotechnology.

Wellfield's main base of operations is



Above: Cacti, crew and copper ore broil beneath the hot sun during a survey in Chile.



Left: Bundled up against the cold of late December, Juan Bascur (Wellfield's General Manager) and Carlos Guerrero (Phoenix) test Wellfield's new equipment just outside Toronto.

in the port city of Antofagasta in northern Chile, a city founded on the sodium nitrate mining boom of the 1800s. Not far away is the Atacama Desert, made up of salt basins, sand and lava flows. Renowned as "the driest place on Earth", some areas of the Atacama did not receive rain for more than 400 years. ■

For more about Wellfield, visit www.wellfield.cl



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ON THE ROAD

New Orleans, USA

Right: Marianne Mulrey and Arnie Orange of AOA Geophysics (Austin, TX) and Michael Wilt of Schlumberger-EMI visit Leo Fox in our booth at the SEG. In mid-2006, Phoenix provided onshore MT remote reference stations in Louisiana for a Schlumberger marine project in the Gulf of Mexico.



Ashgabat, Turkmenistan

Right: The Turkmenistan Minister of Oil and Gas, G. Atauev, and the United Arab Emirates' Minister of Energy, visit the Phoenix booth during the Turkmenistan International Oil and Gas Expo last September. At right, A. Antonov and S. Musatov prepare to discuss Phoenix equipment and services.



Almaty, Kazakhstan

Left: In October our Central Asia representatives staffed a booth at the 14th Kazakhstan International Oil and Gas Exhibition. Staff of the Canadian Embassy visiting the Phoenix booth are, left to right, First Secretary M. Berdichevsky, Honourary Consul and Phoenix representative Alexander Antonov, Ambassador Margret Skok, Antonov's assistant Anton Petukhov and Business Development Counsellor A. Iralin.

PRESIDENT'S MESSAGE

Congratulations to four Phoenix employees on the births of their beautiful daughters. At right are geophysicists Caroline Finateu and Yann Avram with Jade, born November 22, 2006; webmaster André Collin at the Phoenix holiday lunch with Violette, born May 23, 2006 and Alice, born October 31, 2005, daughter of geophysicist Alex Golyashov and his wife Marina.



I joined Phoenix during the PDAC convention in 1982. In those days the PDAC was a cozy event in the Royal York Hotel and Phoenix was selling its third generation IP receiver and its first generation MT system. Now, a quarter century later, we are selling our 8th generation receiver, the V8 wireless multifunction data acquisition system, and our 3rd generation of MT equipment, the MTU-5A.



Phoenix is committed to constant improvement and innovation. The strong market lends an air of excitement to the industry. It's a good time to be in the geophysical business!

~ Leo Fox

NEWS FROM AROUND THE WORLD

China

■ Recent PRC buyers of V8 multifunction systems include: Hubei Geophysical Technical Institute, Wuhan, Hubei Province; Henan Geological Survey, Zhengzhou, Henan Province; and Fujian Coalfield, Fuzhou, Fujian Province. The Geophysical and Geochemical Research Institute in Langfang, Hebei Province, ordered a 20-channel MT system, adding to the 10-channel system purchased in 2006.

■ **Right:** Personnel from Phoenix and the Geophysical Exploration Department, Ministry of Railways, are shown during the acceptance of their V8/TXU-30 systems. The TXU-30 was used with two different commercially available 25kVA three-phase 400Hz motor generator units, one from China and one from Japan.

■ The First Comprehensive Geophysical Exploration Team in Bengbu, Anhui Province, PRC, has ordered a high-powered multifunction T-200 transmitter. (See *Issues 21, 22, 25 and 33* for information about the T-200.) In 1983, the Bengbu group was the first Phoenix customer in China, purchasing a spectral IP system with the first-generation Phoenix high-powered transmitter – the 100kW IPT-6.

■ **Below:** Bengbu personnel check data of their V8 multifunction system.



Li Huibin of Lanzhou First Railway is shown with Phoenix's Liang You.



Mongolia

Khet Co. Ltd. of Ulaan Baatar, Mongolia, recently purchased a V8 multifunction system for various types of exploration.

Turkey

The state-owned Mineral Research Directorate (MTA) in Ankara has ordered two 25-channel MT/AMT systems for exploration and research.

Argentina

Geodatos SRL in Buenos Aires purchased a five-channel MT/AMT system for various applications.

Russia

■ St. Petersburg State Mining Institute acquired a 60-channel MT/AMT system for hydrocarbon and mining research.

■ Northwest of Moscow has ordered a 16-channel MT/AMT system.

NEWS FROM AROUND THE WORLD

India

The National Geophysical Research Institute in Hyderabad (NGRI) has purchased a two-station, 10-channel MT system based on the V8 receiver. NGRI will initially use the systems for monitoring. One feature implemented especially for NGRI was the ability to communicate with the recording units using a cell phone network. Dr. T. Harinarayana and Dr. D. Murthy visited Phoenix for training in October 2006. Phoenix engineers Gerald Graham and Mike Murphy traveled to India in February for the installation of the system near Koyna.

Above Right: Gerry and Dr. Murthy testing the V8 receivers in the field near Hyderabad.

Right: Dr. Harinarayana and Mike Murphy

Below: Geophysicist Tes Haile (centre) was in India in December 2006 for the installation and acceptance of two MTU-5A units purchased by the Indian School of Mines in Dhanbad, Jharkand.



Spain



The Spanish geophysical company TIHGSA (Técnicas de Investigación HidroGeológica S.A.), in cooperation with Moscow State University and the Russian Academy of Sciences, recently used Phoenix MTU-5A equipment for AMT surveys in Spain.

The surveys took place along the planned route of the Madrid–Valencia expansion of the 300 km/h “AVE” rail network. Many train tunnels will be required on this route.

Various geophysical techniques are used to reveal faults, karst zones and other features that pose danger for tunnel construction or train operation; AMT is used where tunnels must be constructed deeper than 100 metres.

Above: Specialists from Moscow State University and the Russian Academy of Sciences display their MTU-5A, TEM and FDEM equipment.

Indonesia



Yann Avram on the island of Flores, Indonesia in January 2007 providing training for the V8 system purchased earlier by Elnusa Geosains. Yann participated in an MT/TDEM survey, a cooperation between WestJEC (Japan) and Elnusa.

A Day in a Survey Camp

Camp life is usually rough, and the work is always grueling, but fun and beauty are always found too. Last fall a Phoenix crew carried out an AMT survey for uranium exploration in the Athabasca Basin of northwest Saskatchewan, Canada. The photo essay is a snapshot of a day spent in a survey camp near Canada's 60th parallel. *(Photos by Alex Golyashov and Yann Avram.)*

Clockwise from below: the crew stands by with equipment while a helicopter delivers fuel barrels; wild blueberries, and pike caught by Yann Avram and André Collin, are on the dinner menu; a bulb strung in a tree shines light upon the pike preparation; the crew pauses for a photo after pitching their sleeping and cooking tents; aurora borealis, nature's light show, casts its glow over the camp.



Japan Survey

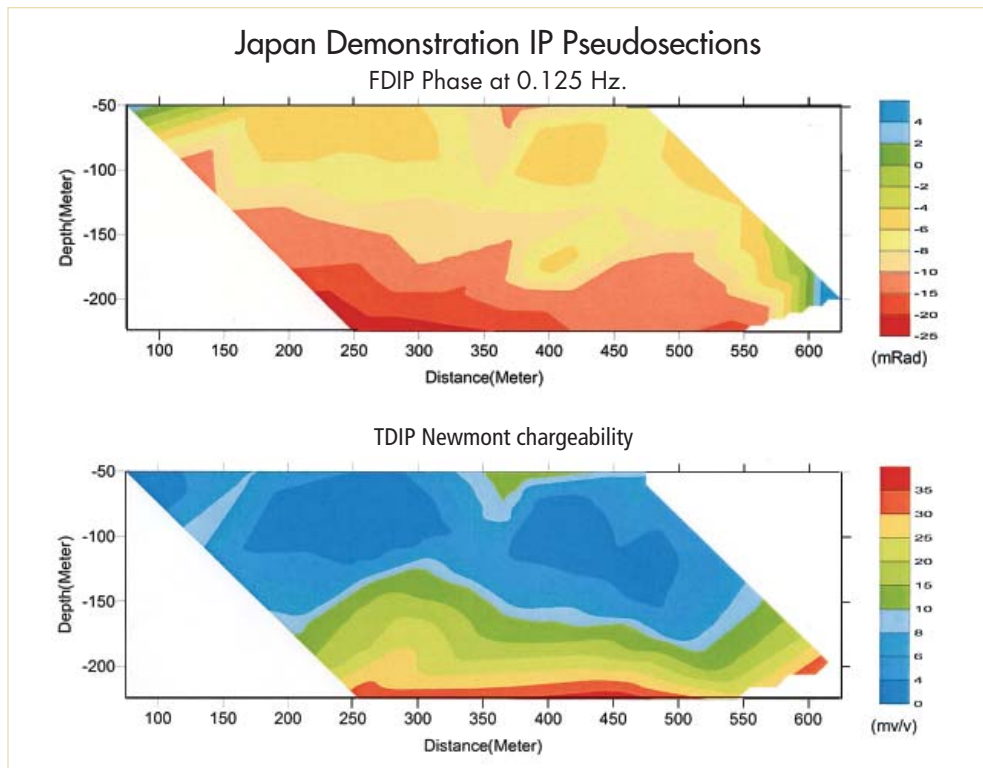
Phoenix and NMC personnel carried out a demonstration survey of the V8 wireless system east of Tokyo, in November 2006. The venue was the famous Kujukuri Coastal Plain, a low-resistivity beach terrace.

Functions demonstrated included CSAMT, TDEM, SIP and TDIP. The TXU-30 transmitter was used as a current source, with a commercially available Japanese 3-phase, 400Hz 25 kVA motor generator.

The cable-free V8 wireless system acquired excellent quality data to n=9. Absence of cables greatly reduces noise from cross-talk, capacitive coupling and common-mode, as well as reducing system weight and simplifying field operations.

Full results will be presented at future geophysical conferences.

For more information about Kujukuri, see: *Various scale electromagnetic investigations of salinity zones in a coastal plain* by Mitsuhashi, Y. et al. GEOPHYSICS Vol. 71, No. 6, 2006, p B167-B173.



Frequency domain and time domain pseudosections acquired by the multifunction V8 receiver system in Kujukuri, Japan, November 2006.

COMING UP

- March 21-23: The 5th International Seminar of Research and Applied Geophysics, St. Petersburg, Russia is co-hosted by the Saint Petersburg State Mining Institute and Phoenix Geophysics. Contact us for more information.
- March 27-29: At SibMining 2007, Novosibirsk, Russia, Phoenix will have a booth in the Ontario/Canada exhibition area.
- May 14-19: The 7th International Field School, focusing on modern electromagnetic prospecting technology, will take place at Alexandrovka, 230 km from Moscow. Co-sponsored by Moscow University, Northwest Company and Phoenix Geophysics, this year's camp will be bigger and better than ever.
The working language is Russian but, if requested, seminars can also be given in English, Spanish or French. Contact Phoenix for information.
- June 11-14: Phoenix will exhibit at the 69th EAGE, London, UK.
- June 26-29: Vice-President Olex Ingerov will represent Phoenix in our booth at the 9th Moscow International Oil and Gas Exhibition.
- September 9-12: Exploration '07, Toronto. For more details, visit www.exploration07.com

Mexico

Servicio Geologico Mexicano (SGM) purchased a V8 multifunction system in December 2006.

Below: The SGM and Phoenix crew members during the training in Pachuca.



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