

Improve safety, accuracy and consistency of carbon concentration measurements in CIL/CIP circuits



Carbon Scout developers Dr Teresa McGrath and Adjunct Professor Bill Staunton from Curtin University

AUTOMATED OPTIMASATION PROCESS INCREASES PROFITS

Gekko offers simulated CIP modelling (SIMCIL) as developed by AMIRA/P420 project as part of its Carbon Scout service package.

Carbon density data generated within the Carbon Scout is compared to the optimum density set points derived by SIMCIL modelling.

This data undergoes logic based calculations that provide electronic feedback via the processing plant's control system (SCADA) to automatically control the operation of lift pumps, which are utilised to forward carbon media in the CIP/CIP tanks of the circuit.

This optimisation system significantly reduces soluble gold loss from the circuit.

The Carbon Scout technology helps gold mine operators optimise process plant efficiency and reduce soluble gold losses.

The self-contained device collects slurry samples from Carbon In Pulp and Carbon In Leach tanks to determine the distribution of the activated carbon in the pulp for each tank, to an accuracy of ±0.5 grams of carbon per litre of pulp.

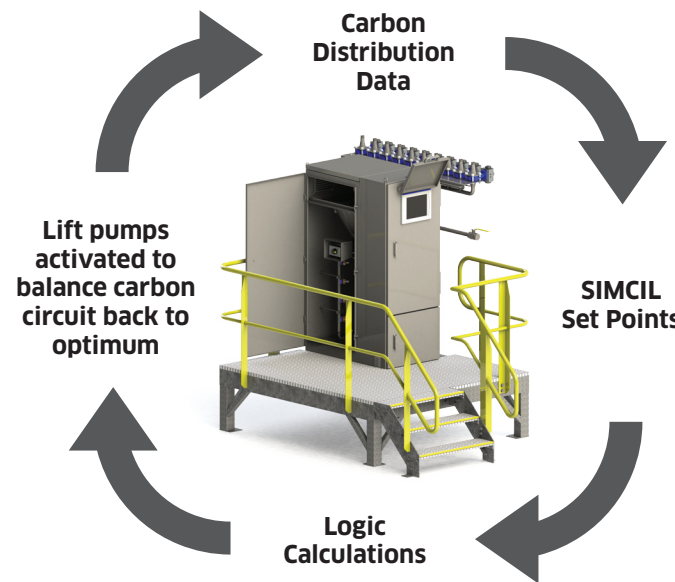
The machine improves the accuracy, regularity and consistency of carbon density measurements in carbon-in-leach and carbon-in-pulp circuits.

The Carbon Scout also improves safety by reducing operator exposure to cyanide and other hazards.

Constructed of stainless steel, the ground-based system enhances operator efficiency by removing the need to undertake time consuming manual sampling.

UNIQUE SOLUTION

- Online detection of Carbon levels
- Analyses 10 times more slurry than manual sampling to determine carbon density levels
- Single point of measurement for up to 10 CIL/CIP tanks
- Extendable to pH and Dissolved Oxygen measurement
- Integratable to process control systems such as SCADA
- Ground level sampling system for easy collection of GIC samples
- Programmable sampling frequency
- Lease + service package for higher ROI



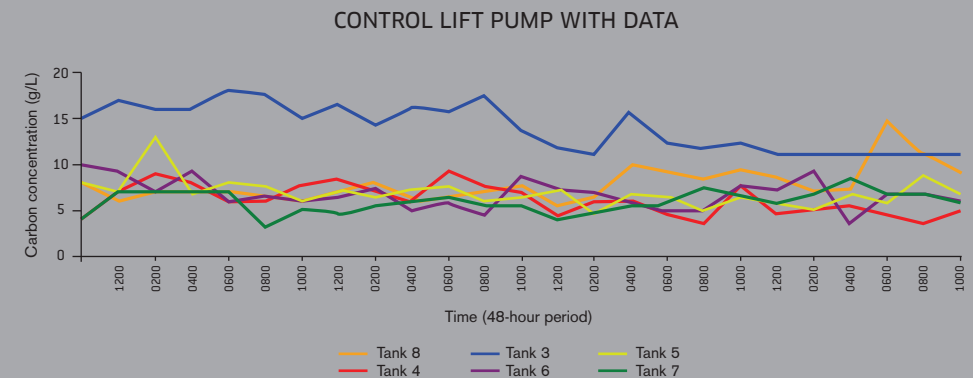
ECONOMIC GAINS FROM REDUCING SOLUBLE GOLD LOSS TO TAILS

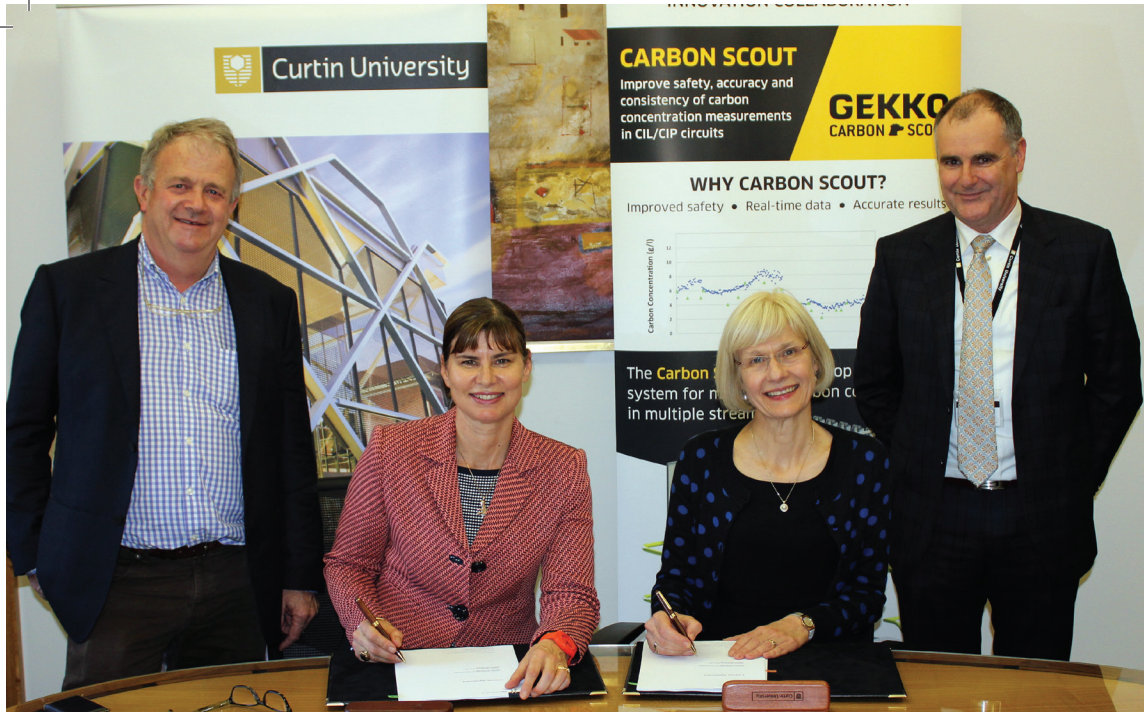
Throughput (tonnes/annum)	Solution Loss (g Au/t solution)					
		0.005	0.01	0.02	0.05	0.1
1,000,000	ounces	161	322	643	1,608	3,215
	value	\$241K	\$482K	\$965K	\$2.4M	\$4.8M
5,000,000	ounces	804	1,608	3,215	8,039	16,077
	value	\$1.2M	\$2.4M	\$4.8M	\$12M	\$24M
10,000,000	ounces	1,608	3,215	6,431	16,077	32,154
	value	\$2.4M	\$4.8M	\$9.6M	\$24M	\$48M
20,000,000	ounces	3,215	6,431	12,862	32,154	64,309
	value	\$4.8M	\$9.6M	\$19.3M	\$48.2M	\$96.4M

Notes:
 1. Assumes 50% w/w pulp density in tails - lower pulp density will result in higher losses
 2. Assumes gold price AUD\$1,500/ounce
 3. Figures are gross losses - often reduced by process waer recycling

Higher sampling accuracy and frequency = Higher gold recoveries

CARBON INVENTORIES





From left to right: Technical Director Sandy Gray (Gekko Systems), and Managing Director Elizabeth Lewis-Gray (Gekko Systems), Vice-Chancellor Prof. Deborah Terry (Curtin University) and Deputy Vice-Chancellor, Research & Innovation Prof. Chris Moran (Curtin University).

The Carbon Scout was developed by Dr Teresa McGrath and Adjunct Professor Bill Staunton from Curtin University, in association with Bill McCallum from Havilah Consulting.

Gekko Systems has licensed the technology from Curtin and will be responsible for the development, marketing, manufacture, sales and aftermarket support of the Carbon Scout system.

The agreement between Curtin University and Gekko Systems sets the path for further development of the Carbon Scout and process control systems utilising its sampling and data collection abilities.

"Initial indications during the development of the Carbon Scout are promising in meeting the requirements for accurately and consistently measuring carbon concentrations in our CIL circuit."

Better carbon management through automation of carbon forwarding pumps will help to minimise gold solution losses and will require less input from operators allowing them to better use their time in other areas."

Chris Ypelaan
Project Metallurgist
Sunrise Dam, Anglo Gold Ashanti



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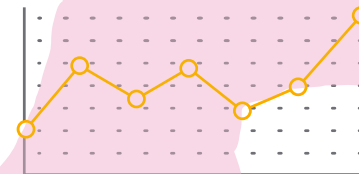
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GEKKO CARBON SCOUT

Higher recoveries • Improved safety • Reduced soluble gold loss



*Store your gold in the bank,
not your tailings dam*

GEKKO
CARBON SCOUT

Smarter together