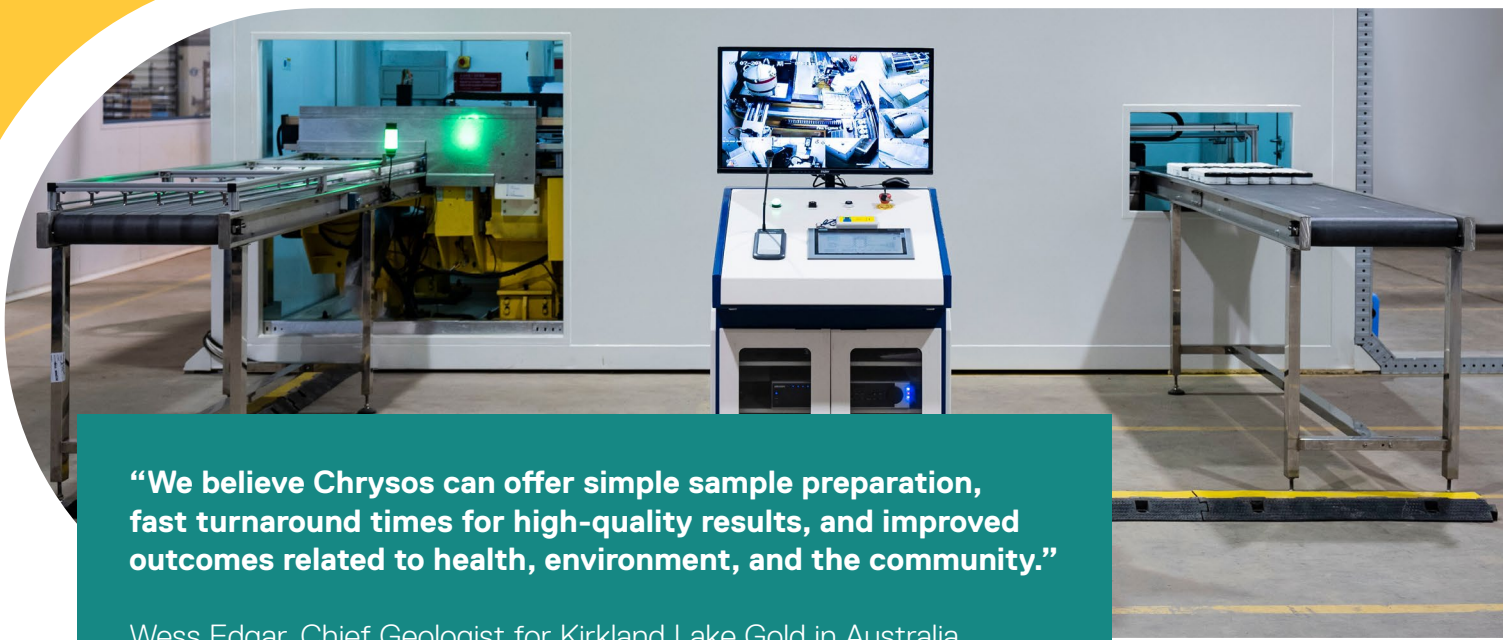


# Faster, more accurate gold analysis

Delivering faster, safer, and more accurate gold analysis, Chrysos PhotonAssay™ is an environmentally-friendly replacement for fire assay on-site and in the laboratory.

Hitting samples with high-energy X-rays, Chrysos PhotonAssay causes excitation of atomic nuclei allowing enhanced analysis of gold, silver and complementary elements.

Chrysos PhotonAssay's fast turnaround on high sample volumes provides critical operational information and drives optimisation through the entire mining value chain.



**“We believe Chrysos can offer simple sample preparation, fast turnaround times for high-quality results, and improved outcomes related to health, environment, and the community.”**

Wess Edgar, Chief Geologist for Kirkland Lake Gold in Australia



Reduced  
labour and  
operating  
costs



Better  
social and  
environmental  
outcomes



Quantitative  
results in as  
little as  
2 minutes



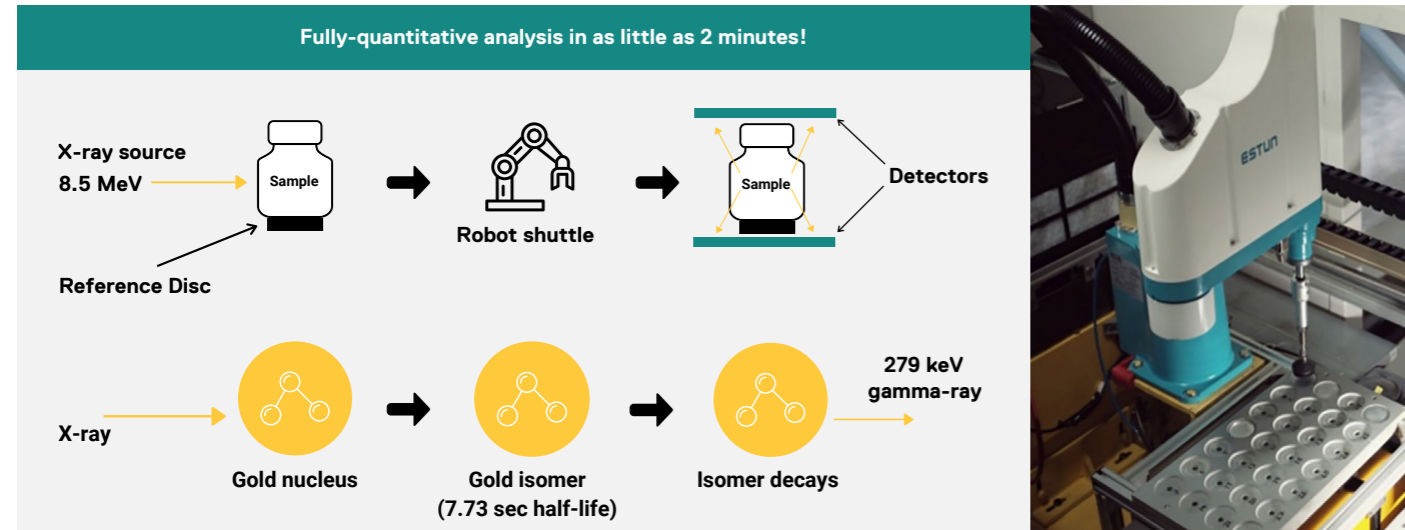
Improved  
occupational  
health and  
safety



Enhanced  
accuracy and  
precision

### How does Chrysos PhotonAssay work?

Using much higher energies than traditional X-ray methods, Chrysos PhotonAssay detects and counts atoms of gold, silver and complementary elements.



### With Chrysos PhotonAssay, gold producers achieve faster, simpler and more accurate gold analysis on larger samples with reduced costs and safety risks.

**Chrysos PhotonAssay helps gold miners running their own laboratory to achieve faster, simpler and more accurate gold analysis on larger samples with reduced costs and safety risks.**

- Optimised plant performance, grade control and geological modeling
- Improved definition of reserves and resources
- Reduced sample preparation with lower costs and better sample quality
- No contaminated waste or disposal and associated costs

**For gold producers outsourcing to external laboratories, Chrysos PhotonAssay delivers faster, more accurate gold analysis on larger samples with lower costs.**

- More representative sample analysis and results
- Improved definition of reserves and resources
- Lower labour requirements, less chance of human error and/or accident
- Reduced supply chain cost, reliance and management

### Why replace fire assay with Chrysos PhotonAssay?

PhotonAssay allows large samples to be measured and provides a true bulk reading independent of the chemical or physical form of the sample. Using uniquely-numbered sample jars, the process is completely non-destructive, and all samples can be retained for further analysis or testing if required.



### The speed and simplicity of Chrysos PhotonAssay

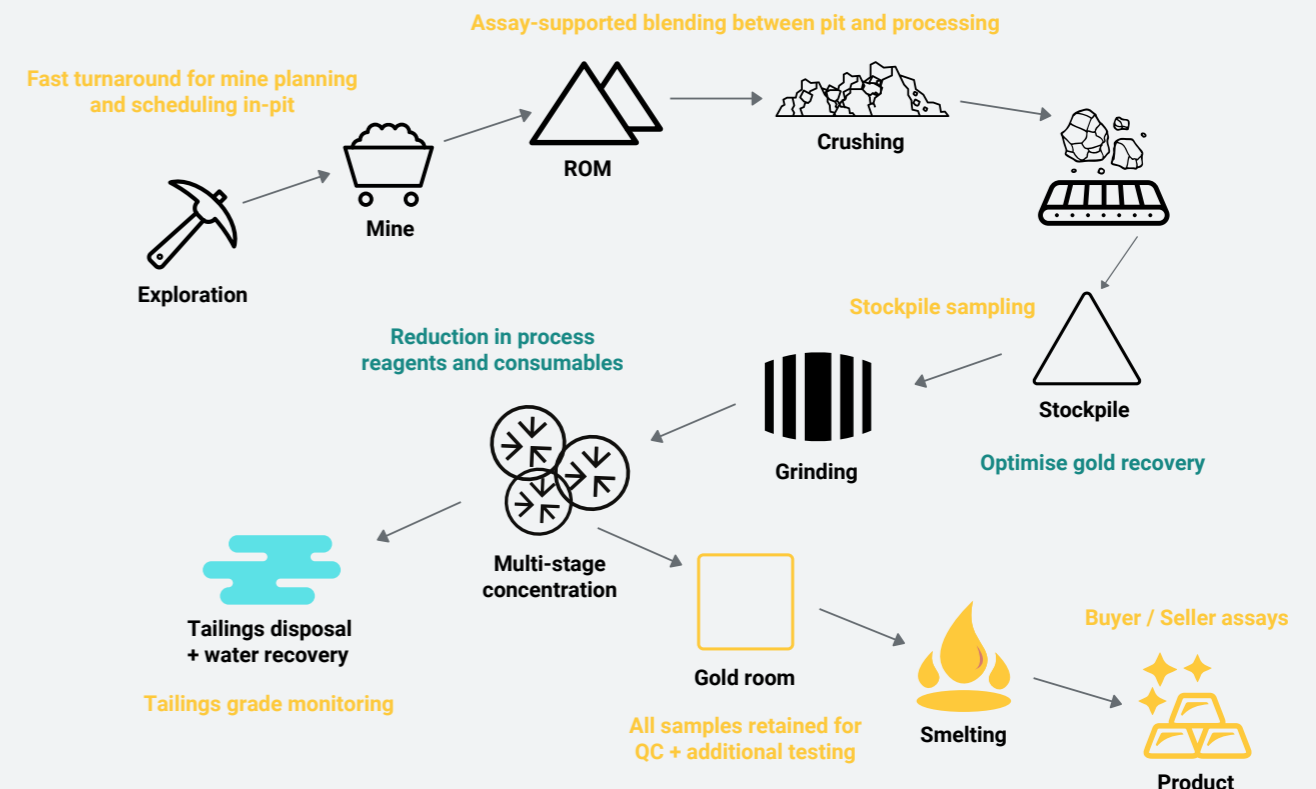
Bulk samples received from the field, mine or plant

**Fire Assay complexity**      **PhotonAssay simplicity**

- Fully dry sample
- Prepare sample (crush & grind)
- Divide into 25 - 50g aliquots
- Prepare fusion samples (mix with flux / litharge)
- Fusion: fire sample at 1000 - 1200 degrees centigrade
- Separate lead button from slag
- Cupeling: re-fire button to remove lead
- Dissolve remaining metal in concentrated acid
- Analyse resulting solution via AAS / ICPMS

- Optionally-dry sample
- Crush sample to nominal 2mm (option to pulverise) then load into barcoded jar
- Place jar onto automated conveyor to receive quantitative analysis in as little as 2 minutes

- Project-wide analysis at reduced per-sample cost
- More representative results from analysis of larger samples
- Accurate analysis of all plant and geological sample types
- Optimised plant performance, grade control and geological modeling
- Improved definition of reserves and resources
- Allows sample retention for re-testing and referencing
- Reduced sample preparation requirements
- Advanced moisture measurement capability
- Online QA and QC for improved quality and efficiency of analysis
- Lower costs and less chance of human error and/or accident
- Reduced supply chain cost, reliance and management
- No contaminated waste or disposal and associated costs



**“PhotonAssay provides a significant advantage where large assay charge sizes are required, particularly in coarse gold mineralisation.”**

Dr. Simon Dominy, Principal Advisor, Novo Resources Corporation

## Performance specifications

<b>Assayed elements</b>	Gold, silver and copper * Please enquire about others.
<b>Sample size</b>	Containers hold 330 mL of sample (typically 400-650 g depending on material density)
<b>Analysis time</b>	Less than 2 minutes Standard throughput up to 1,400 samples per day
<b>Detection limits</b>	Gold: 0.012 ppm (3-sigma) Silver: 2.0 ppm (3-sigma) * Detection limit is larger for samples containing elevated levels of U, Th or Ba.
<b>Disposal</b>	Samples are retained inside unit for 2 hours post-analysis, after which time they can be safely handled or discarded.
<b>Re-analysis</b>	PhotonAssay is completely non-destructive, so materials may be sent for additional measurements if required
<b>ESG improvement</b>	Every sample analysed with PhotonAssay means reduced CO <sub>2</sub> emissions and less hazardous waste

	<b>Faster, more accurate gold analysis</b> A fully quantitative, chemistry-free replacement for fire assay on-site and in the laboratory
	<b>Going large</b> 5 continents 60 customers 1,000,000 samples
	<b>Giving confidence</b> Multiple JORC and NI43-101 compliant reports with coarse gold deposits a specialty
	<b>From months to minutes</b> Non-destructive, bulk sample analysis in as little as <b>2 minutes</b>
	<b>Knowing versus hoping</b> Chrysos PhotonAssay delivers enhanced accuracy, precision and repeatability when compared to fire assay
	<b>66% less labour</b> Fewer staff, less training, lower costs, and reduced safety risk...it all adds up!
	<b>No capital outlay</b> No delivery fees No installation costs No maintenance charges

## Who is Chrysos Corporation?

With an expanding global presence, Chrysos' team of scientists, engineers and industry specialists delivers technology that provides faster, more accurate and environmentally-friendly gold analysis across the world.

Email [info@chrysos.com.au](mailto:info@chrysos.com.au) or visit [chrysos.com.au](http://chrysos.com.au) to find out more.

