

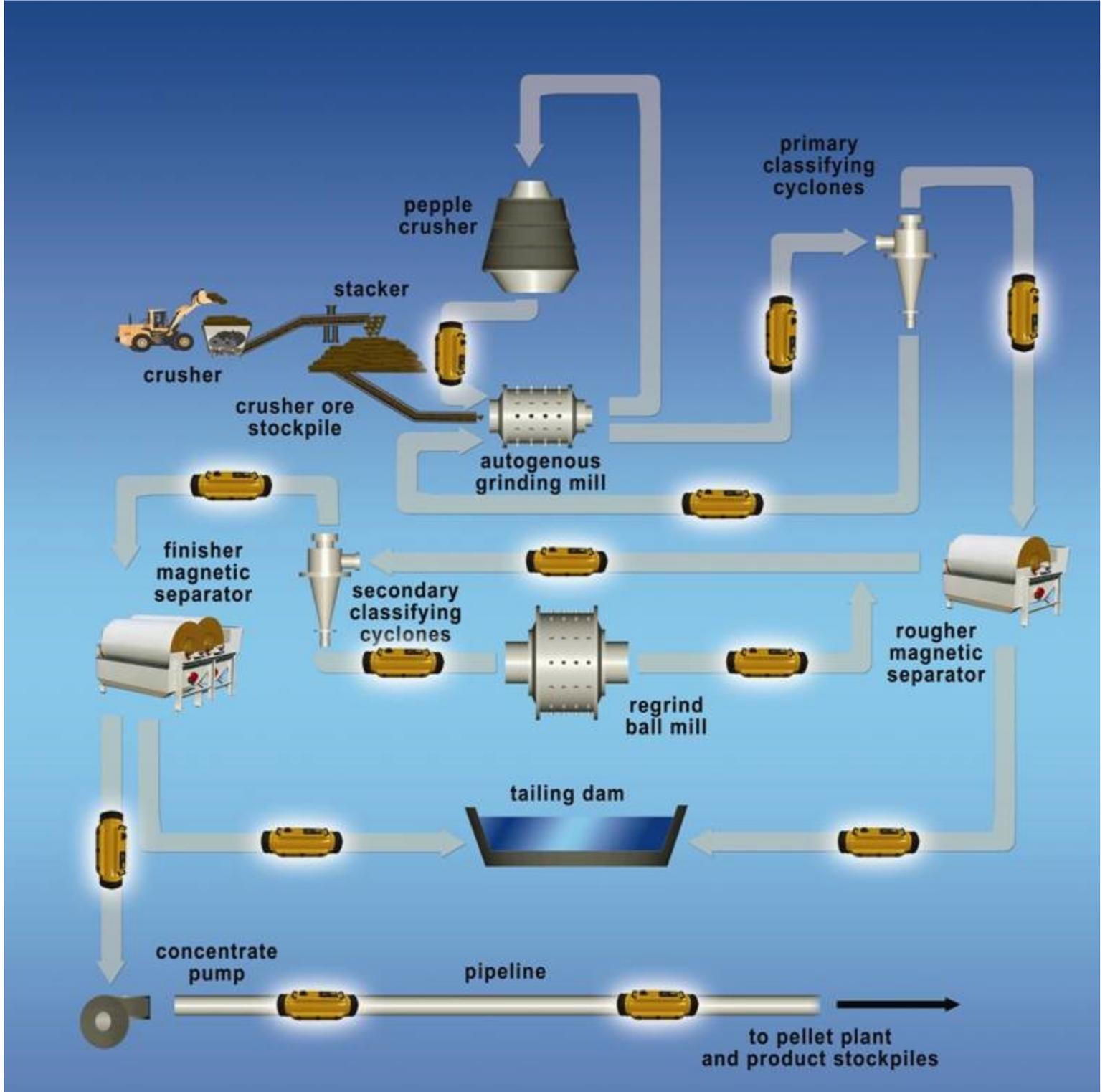


## **CiDRA Minerals Processing -magnetite concentration process solutions**

- The only guaranteed volumetric flow and gas volume fraction solution
- Improve material balance accuracy and reliability
- Enables tighter classification control in the presence of changing ore conditions and operating constraints
- Enhanced management of magnetic concentrate-to-tails ratio
- Improved tailings/pipeline pump efficiency
- A breakthrough in process measurement technology

# CiDRA Minerals Processing

## -magnetite concentration process solutions



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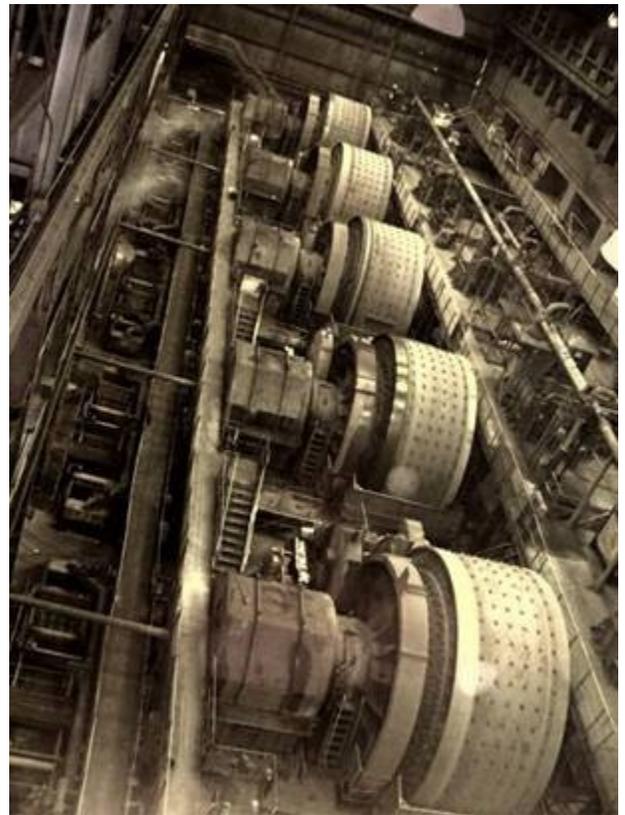
The *SONARtrac*® clamp-on system provides a non-contact, on-line, real-time measurement of the volumetric flow and amount of entrained air/gas present in any liquid-continuous-phase process fluid. The system also provides a measurement of only the liquid portion of the flow by compensating for the amount of entrained gas/air in the process line.

Insensitive to changes in magnetite density, the *SONARtrac* clamp-on system is completely immune to the magnetic properties of magnetite. It does not suffer from abrasive wear (compared with in-line devices) or signal attenuation (as in ultrasonics) associated with medium to high solids contents.

The *SONARtrac* Process Measurement System is the ideal solution for your concentrator.

*SONARtrac* Process Measurement Systems have been installed in magnetite concentration and processing facilities in U.S., Canada, Mexico, Chile, Sweden and Australia.

- Accurate/repeatable low life cycle cost volumetric flow
- Enables accurate mass balance in the presence of air
- Enables tighter classification control in the presence of changing ore conditions and operating constraints
  - Increased recovery
  - Increased mill throughput
  - Reduced mill electrical power consumption
- Enhanced management of magnetic concentrate to tails ratio
- Improved tailings/pipeline pump efficiency
- Pipeline product identification
- Pump monitoring and rock/ball detection



*SONARtrac* Process Measurement Systems, sonar based clamp-on technology for the most challenging processes.

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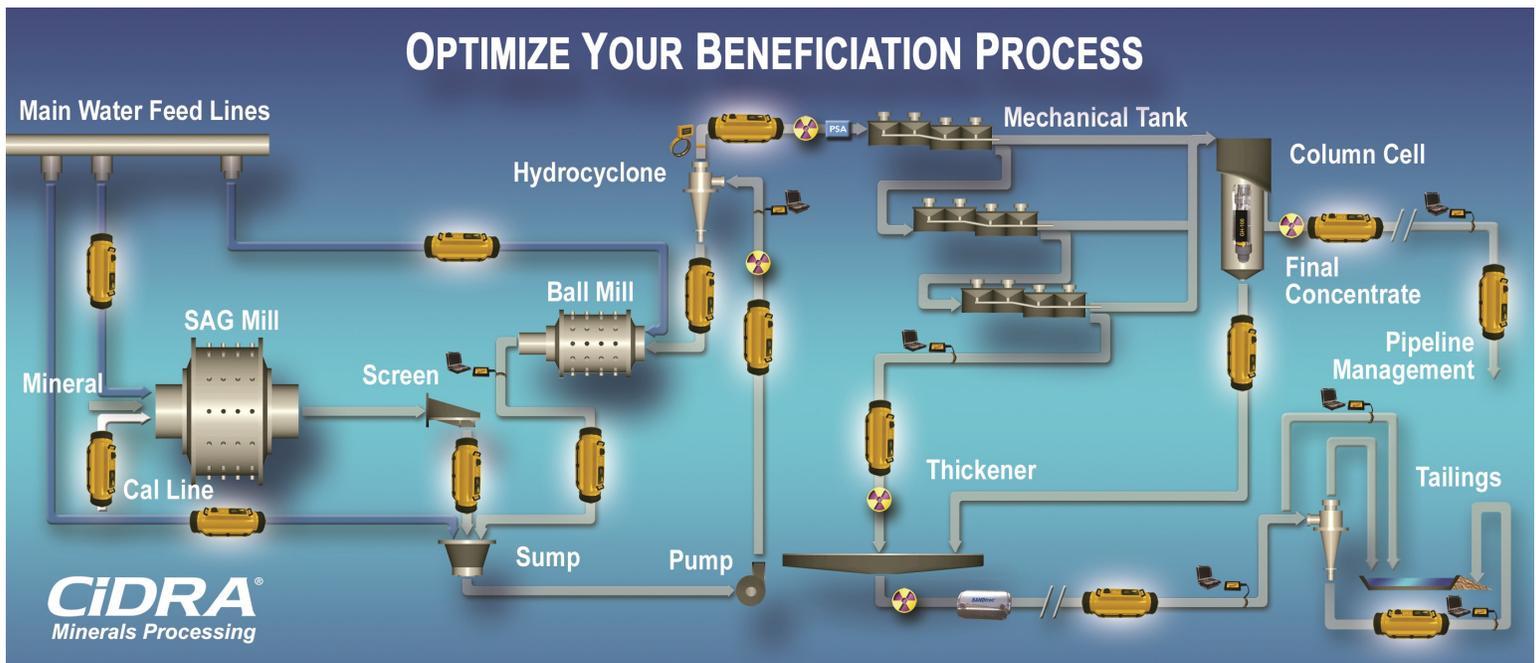
## -magnetite concentration process solutions

### Applications for SONARtrac® Technology Magnetite Concentrator Facility

Hydrocyclone Feed Lines  
Hydrocyclone Overflow Lines  
Screen Lines  
Ball Mill Discharge Lines  
Tailings Lines  
Vertical Mill Feed Lines

Final Concentrate Lines  
Flux Lines  
Underflow pumps  
Filter feed pumps  
Concentrate thickeners

### General Applications for SONARtrac Technology Beneficiation Process



Pregnant Leach Solution Lines  
Raffinate Lines  
Hydrocyclone Feed Lines  
Hydrocyclone Overflow Lines  
Hydrocyclone Underflow Lines  
Water Feed Lines  
SAG Mill Discharge Lines  
Thickner Feed - Underflow / Overflow

Ball Mill Discharge Lines  
Water Recovery Lines  
Tailings Lines  
Flotation Feed Lines  
Tanks/Column Cells (Gas Holdup)  
External Sparger Lines  
Reagent Lines  
Pipeline Monitoring

**CiDRA**<sup>®</sup>  
Minerals Processing

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