

SIMERA TRACE

Digital Ore Quality Control

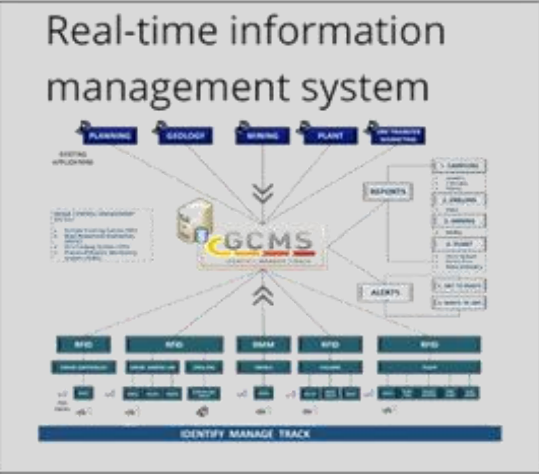


4TH DIGITAL TRANSFORMATION
IN MINING CONFERENCE 2025

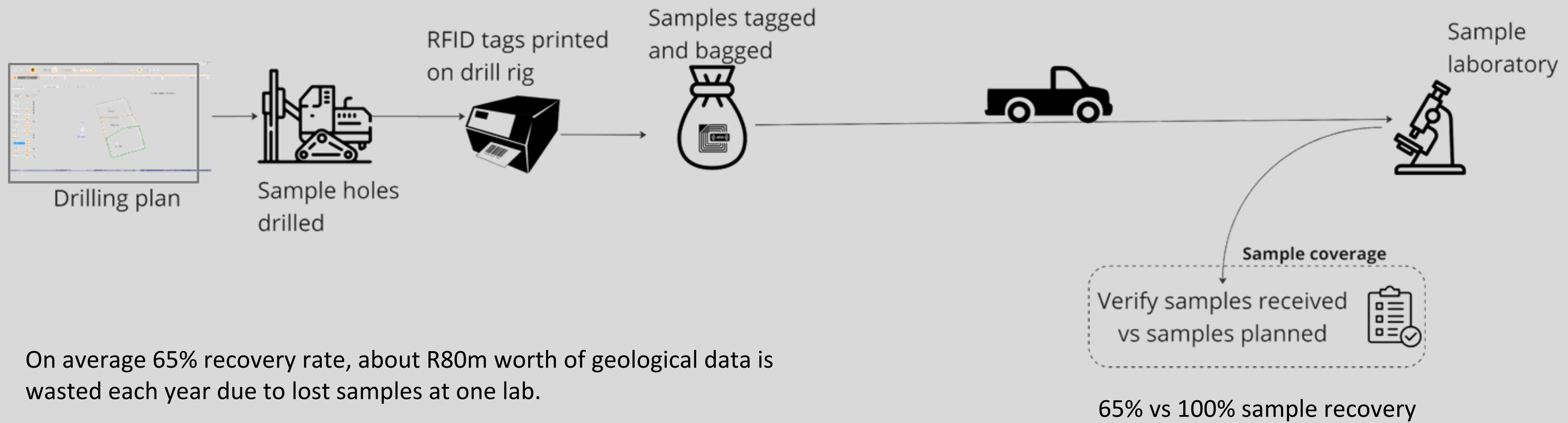
25-26 JUNE 2025
GLENBURN LODGE AND SPA, MULDERSDRIFT



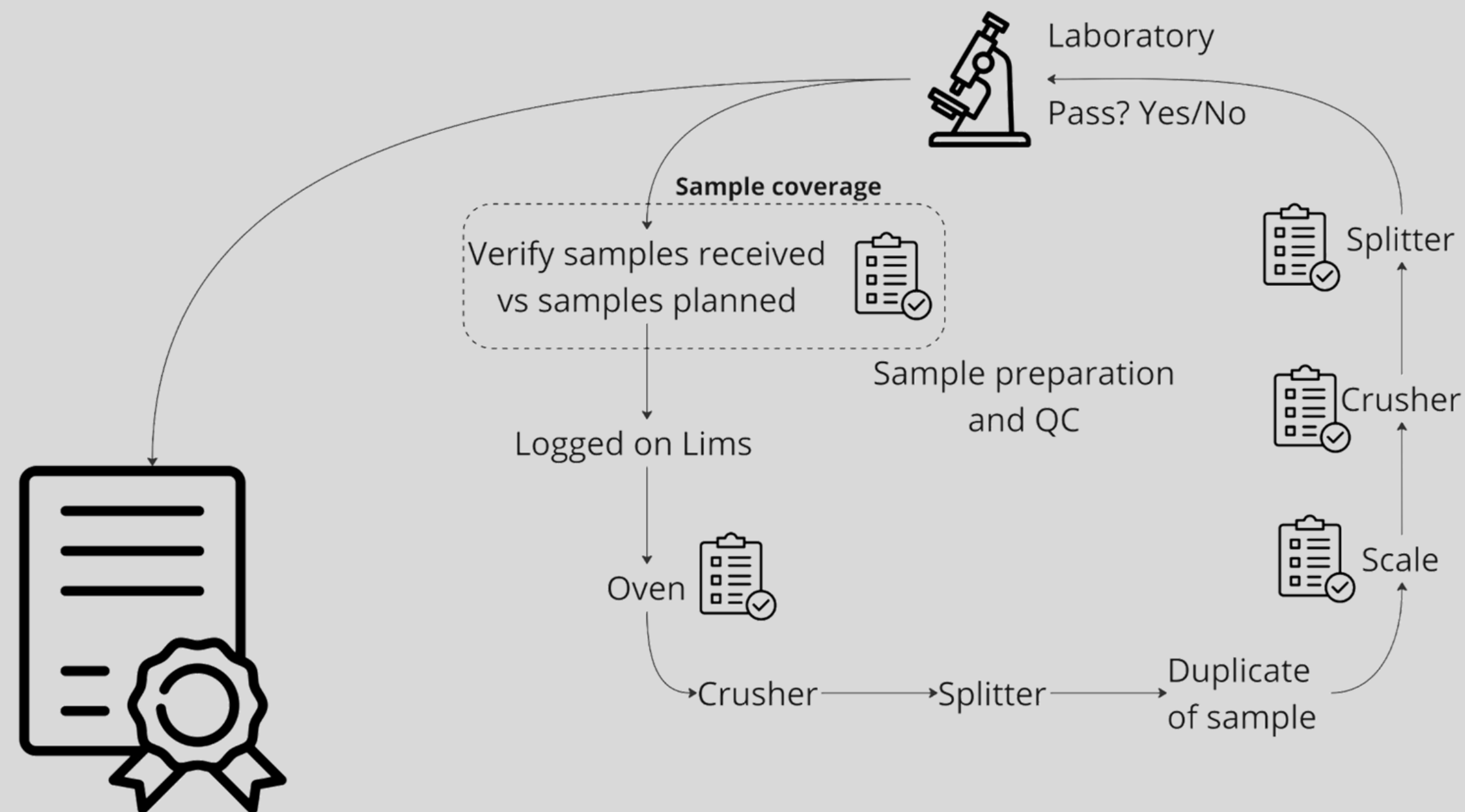
Current industry focus



Sample tracking



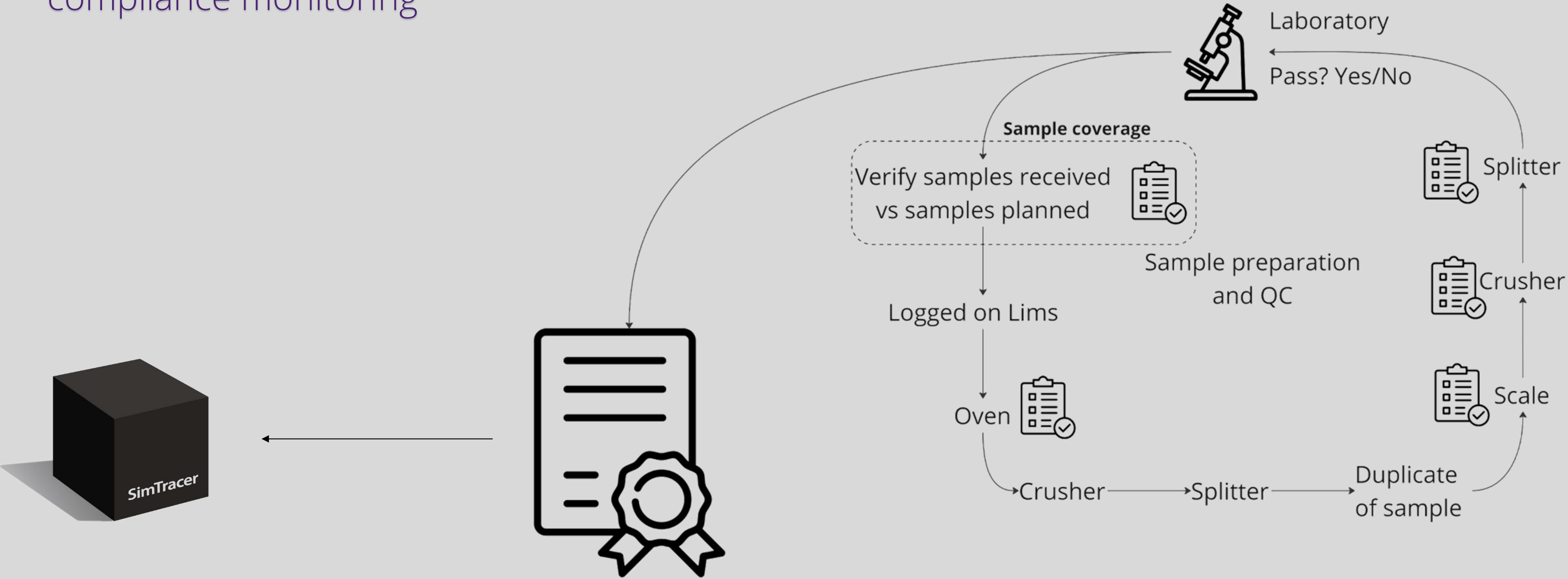
Laboratory protocol compliance monitoring



R5m is lost each year caused by rejected test results due to unreliable sample analysis protocols.



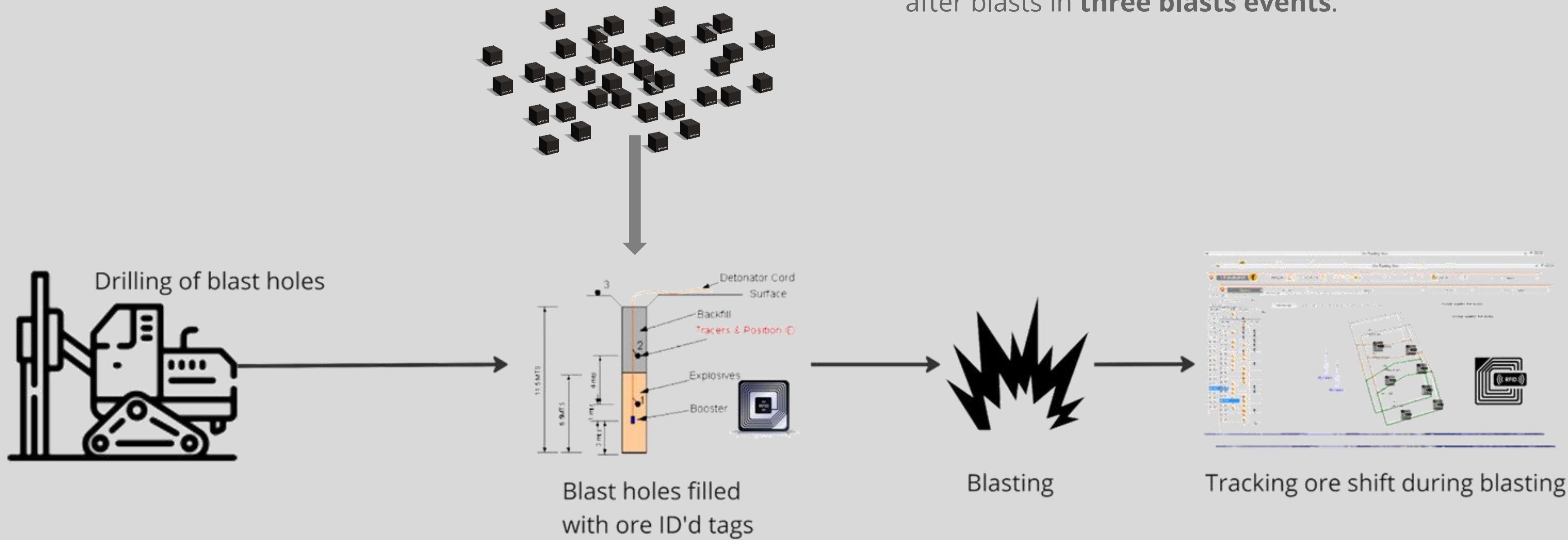
Laboratory protocol compliance monitoring

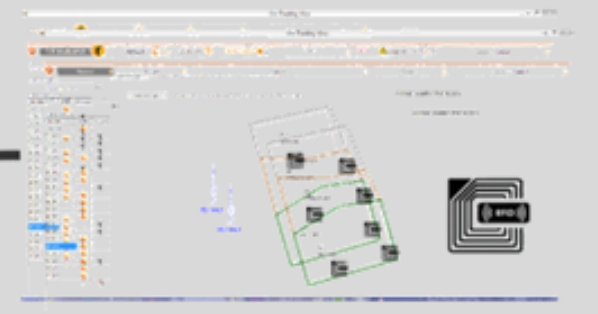


. R5m is lost each year caused by rejected test results due to unreliable sample analysis protocols.

Ore tracking during blasting

\$1,35m (ZAR24m) worth of lost iron ore could have been recovered by using ore detection after blasts in **three blasts events**.





Ore shift traced





Ore is identified on route to the dump site

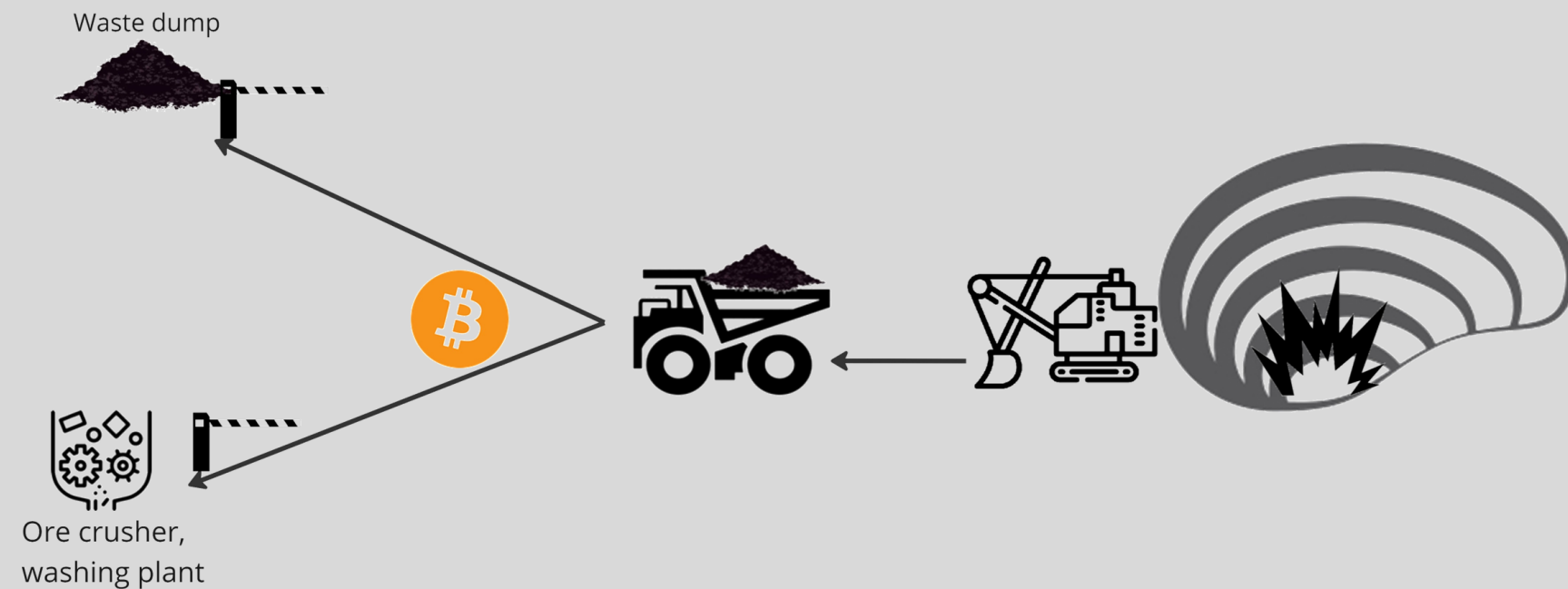




A green light confirms that the driver may dump the ore

Ore RFID reader at the ore tip to confirm ore and not waste.



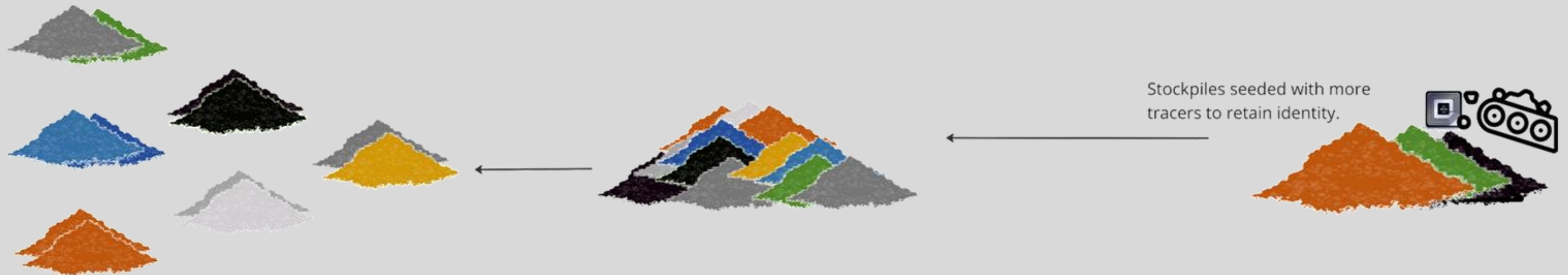


- 13% of ore was incorrectly dumped at the waste site
- The Net Profit Value of this ore was \$30m (R555m) during the 3-month trial. (\$120m (R2,4B) over 12 months)



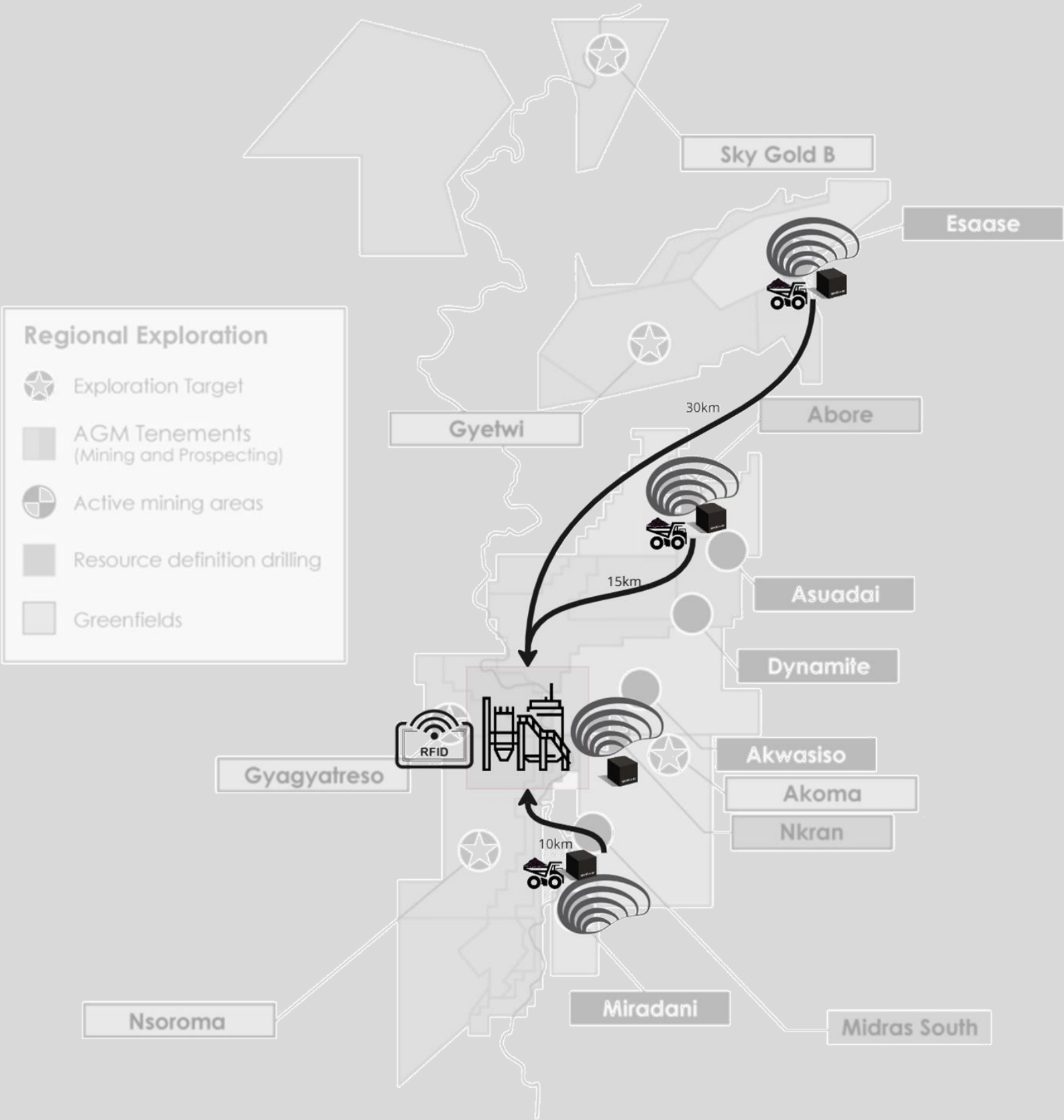
Stockpile mapping, ore blending and processing optimization

Ore tracking enables accurate stockpile mapping, and
optimal ore blending since you can detect the ore identity.



Whats the grade of ore coming to the plant?

Real-time actual data

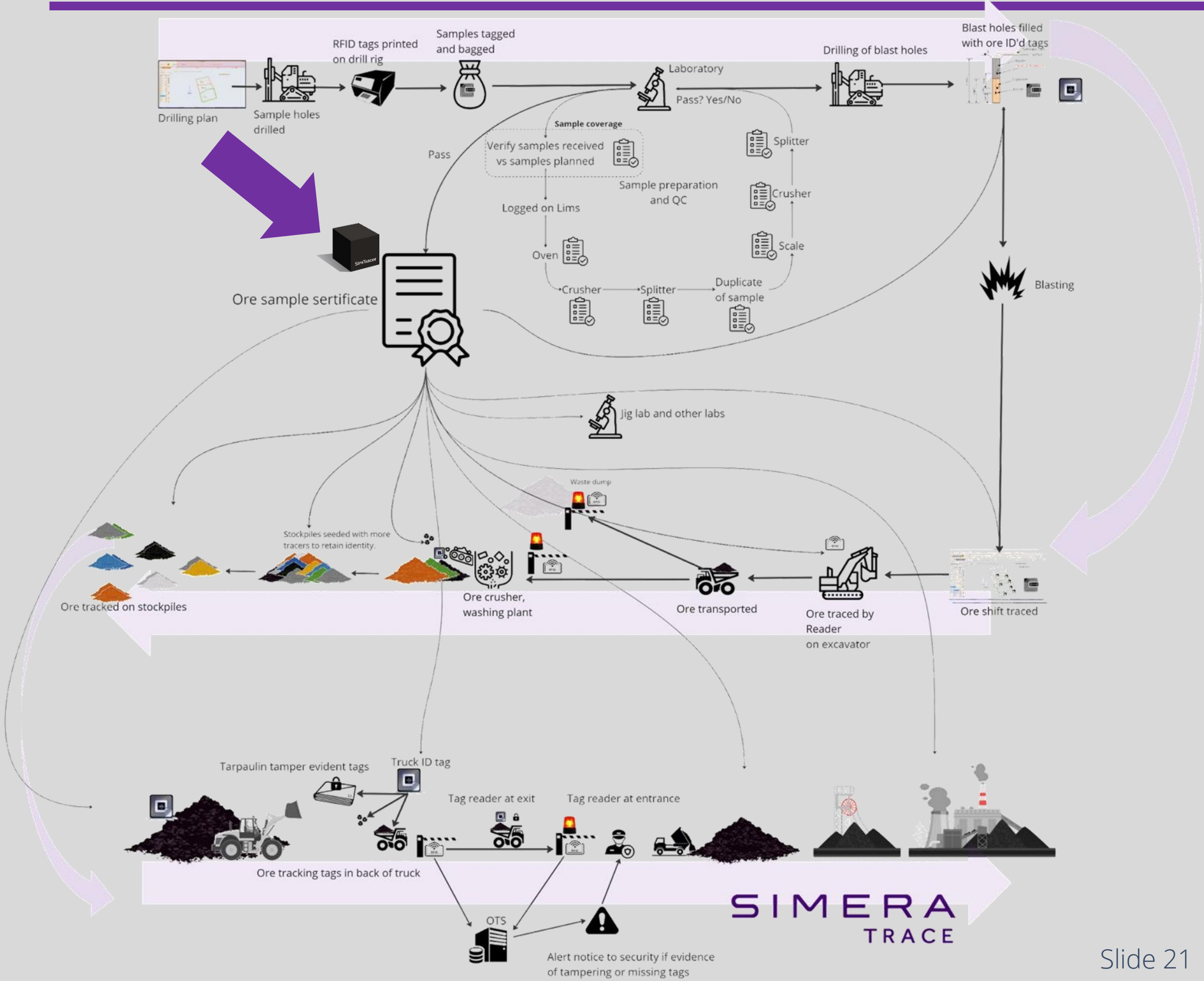


Ore security during transport

Seeding tracers in haul trucks enables you to verify whether the ore that was loaded is the same ore that is delivered.

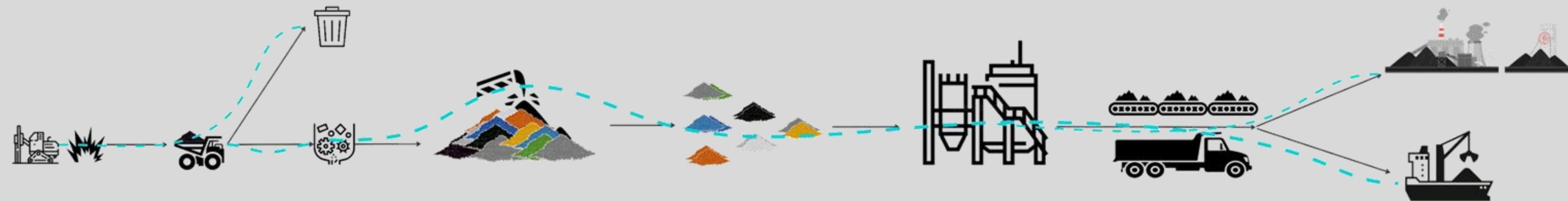


Ore sample certificate linked to ore body throughout the entire value chain



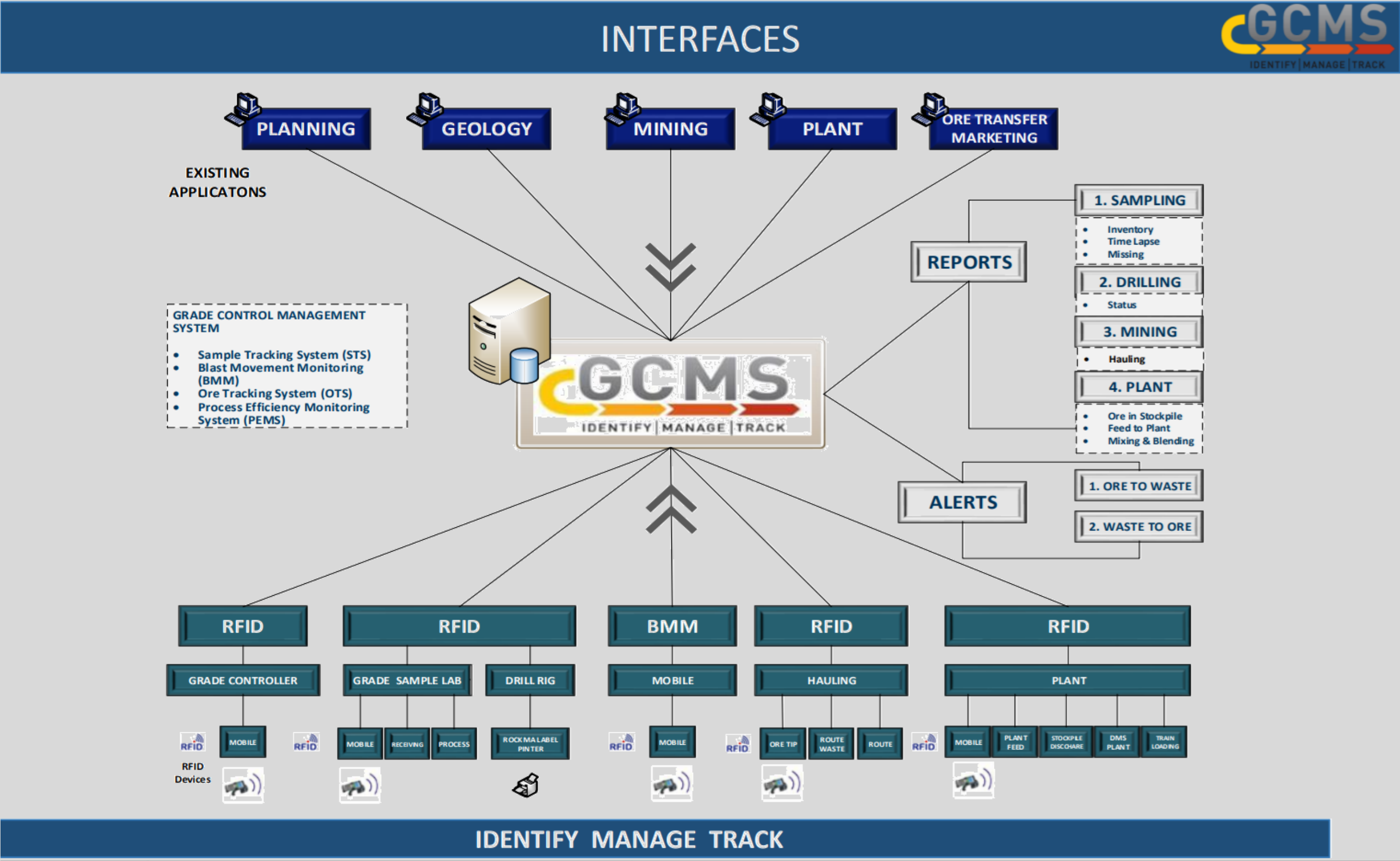
Digital ore identity and trail

- Optimize ore grade control (ore quality) for plant optimization
- Auditable verification of ore quality



Grade Control Management System

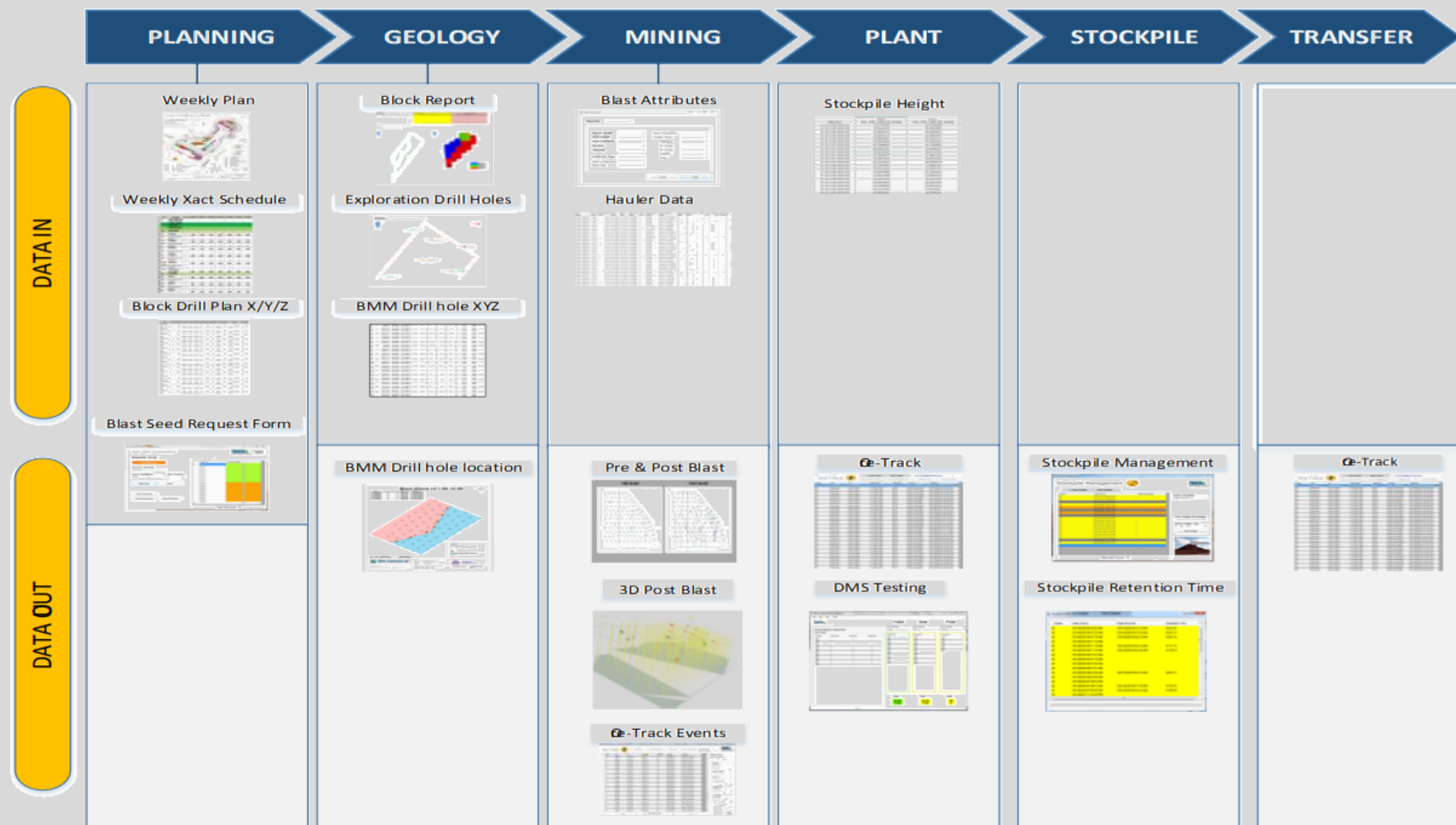
The data management platform for the entire ore tracking, grade control and other applications is mature and in operation. It has taken twenty years to develop.



The data management platform covers the entire mining process.



PROCESS DIAGRAM



Typical dash board for ore tracking and stock pile retention time monitoring

Grade	DateTime In	DateTime Out	Retention Time
A3	2014/03/27 02:46:31 PM		
A3	2014/03/27 01:09:26 PM		
A3	2014/03/27 12:45:03 PM		
A3	2014/03/27 12:35:29 PM		
A3	2014/03/27 12:35:05 PM	2014/03/27 01:46:54 PM	01:11:48
A3	2014/03/27 12:33:23 PM		
A3	2014/03/27 12:32:10 PM	2014/03/27 01:47:06 PM	01:14:56
A3	2014/03/27 12:26:18 PM		
A3	2014/03/27 12:21:07 PM	2014/03/27 01:24:12 PM	01:03:05
A3	2014/03/27 12:17:40 PM	2014/03/27 01:54:57 PM	01:37:17
A3	2014/03/27 12:15:46 PM		
A3	2014/03/27 12:15:12 PM		
A3	2014/03/27 12:14:18 PM	2014/03/27 01:31:36 PM	01:17:17
A3	2014/03/27 12:14:13 PM		
A3	2014/03/27 12:06:00 PM		
A3	2014/03/06 11:05:13 AM		
A3	2014/03/04 10:05:31 PM	2014/03/04 10:53:29 PM	00:47:57
A3	2014/03/04 09:13:12 PM		
A3	2014/03/04 06:03:56 PM		
A3	2014/03/04 05:46:09 PM	2014/03/04 07:22:16 PM	01:36:06
A3	2014/03/04 04:58:10 PM		
A3	2014/03/04 04:52:38 PM	2014/03/04 06:08:21 PM	01:15:43
A3	2014/03/04 04:40:01 PM	2014/03/04 07:47:56 PM	03:07:54
A3	2014/03/04 04:34:35 PM	2014/03/04 07:54:26 PM	03:19:51
A3	2014/02/25 04:31:43 PM		

Ore-Track 						
☒ Live Events		☐ Test Events		Live Updates Running		
Real Time Event Log		Tracers Registered		Pit Overview		Process View
Grade	Site	Pit	Blast Block	Hole(X/Y)	Location	Date Time
A1	Kolomela	Leeu fontein	Stockpile - A1	N/A	Buffer Stockpile	2014/02/12 08:11:24 PM
A1	Kolomela	Leeu fontein	Stockpile - A1	N/A	Buffer Stockpile	2014/02/06 08:19:07 PM
A1	Kolomela	Leeu fontein	Stockpile - A1	N/A	Buffer Stockpile	2014/02/21 09:25:53 AM
A1	Kolomela	Leeu fontein	Stockpile - A1	N/A	Buffer Stockpile	2014/02/06 03:06:41 PM
A2	Kolomela	Leeu fontein	Stockpile - A2	N/A	Buffer Stockpile	2014/02/12 03:23:13 PM
A3	Kolomela	Leeu fontein	Stockpile - A3	N/A	Buffer Stockpile	2014/03/04 06:03:56 PM
A3	Kolomela	Leeu fontein	Stockpile - A3	N/A	Buffer Stockpile	2014/03/04 05:46:09 PM
A3	Kolomela	Leeu fontein	Stockpile - A3	N/A	Buffer Stockpile	2014/03/06 11:05:13 AM
A3	Kolomela	Leeu fontein	Stockpile - A3	N/A	Buffer Discharge	2014/03/04 07:54:26 PM
A3	Kolomela	Leeu fontein	Stockpile - A3	N/A	Buffer Discharge	2014/03/04 07:47:56 PM
L	Kolomela	Leeu fontein	LF1/06/12/17	5/11	Buffer Stockpile	2014/03/25 02:53:23 PM
L	Kolomela	Leeu fontein	LF1/06/12/17	5/10	Buffer Stockpile	2014/03/25 02:35:59 PM
L	Kolomela	Leeu fontein	LF1/06/12/17	5/2	Buffer Stockpile	2014/03/23 11:24:41 PM
L	Kolomela	Leeu fontein	LF1/06/12/17	5/10	Buffer Stockpile	2014/03/23 09:27:59 PM
L	Kolomela	Leeu fontein	LF1/06/12/17	5/3	Buffer Stockpile	2014/03/23 05:14:01 AM
L	Kolomela	Leeu fontein	LF1/06/12/17	4/3	Buffer Stockpile	2014/03/23 04:40:09 AM
L	Kolomela	Leeu fontein	LF1/06/12/17	5/6	Buffer Stockpile	2014/03/05 04:06:54 AM

Simera Trace

Dashboard

Ore Tracking

Sample Tracking

Quality Control

Batches

Alerts

Reports

Simera Trace

Quality Control

Run quality assurance tests and view results

Run QA Test

Select a test type and enter measurement value

Test Type

Select test

Test Value

Select a test first

Run Test

QA Summary

Test pass rate: 60.0%

Tests Passed

3 / 5

Tests Failed

1 / 5

Tests Pending

1 / 5

Recent QA Tests

Crusher Deviation Test

PASS

Value: 12.3

Threshold: <15%

5/14/2025

Retest

Scale Calibration (1kg)

PASS

Value: 1.02

Threshold: 1.0 ± 0.05kg

5/14/2025

Retest

Splitter Deviation

FAIL

Value: 6.2

Threshold: <5%

5/14/2025

Retest

Splitter Rotation

PASS

Value: 36

Threshold: >32

5/14/2025

Retest

Scale Calibration (2kg)

PENDING

Value: -

Threshold: 2.0 ± 0.05kg

5/14/2025

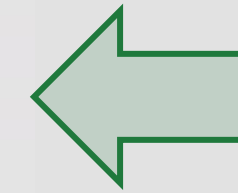
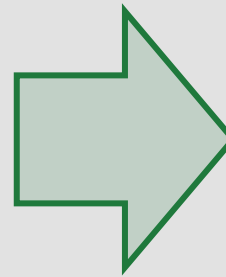
SIMERA

TRACE

Slide 26

ESG Impact

- Reduction in wasted ore
- Reduction in waste processed as ore with resultant chemical and energy waste
- Reduction of ore dumping at destinations
- Optimized process plants save chemicals, water and electricity.



- Improved accountability
- Verified data
- Auditable traceability
- Increased transparency
- Automated inventory control



- Job creation
- Skills development
- Innovation commercialization
- Increased worker safety
- Reduced ore theft during transport



More information



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