

A Company Profile of Ganeca Group

# FROM ENVIRONMENTAL CHALLENGES IN MINING SECTOR TO MEASURABLE PERFORMANCE.

Science-Led Solutions • Technology • Operations

**Bandung, Indonesia - 2026**

## Science with Purpose.

**Postal Address :**

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[www.ganeca.co.id](http://www.ganeca.co.id)





## A Focused Profile for the Mining Industry

This edition highlights Ganeca's **science-led environmental solutions, technologies, and operational capabilities tailored to the mining and mineral processing sector.** To explore Ganeca's full corporate profile and solutions for other industries, visit the **Ganeca Resource Center:**

[www.ganeca.co.id/ganeca-resource-center](http://www.ganeca.co.id/ganeca-resource-center)



**Ganeca**

WHO WE ARE

# Turning Science into Environmental Performance

Ganeca is an integrated environmental solutions company helping industries manage complex environmental challenges through science, engineering, technology, and field operations.

Established in Bandung in 2014, we build solutions for real operating conditions, covering studies and permitting, treatment, monitoring, laboratory testing, and long-term operations.

**Science-led. Field-proven. Built for operations.**



## Ganeca at a Glance

**120 +**

Environmental  
projects

**50 +**

Trusted  
clients

**19**

Provinces across  
Indonesia

**7**

Mining  
commodities

Experience across industrial and mining environments where environmental solutions must balance compliance, technical performance, operating practicality, and long-term business needs.

# OUR CLIENTS IN MINING INDUSTRY



# One Partner. Integrated Capabilities.

- |    |                                     |                                           |
|----|-------------------------------------|-------------------------------------------|
| 01 | <b>Environmental Advisory</b>       | Studies, permitting & regulatory support  |
| 02 | <b>Water &amp; Wastewater</b>       | Engineering, treatment & optimization     |
| 03 | <b>Environmental Laboratory</b>     | Sampling & reliable analytical data       |
| 04 | <b>Smart Monitoring</b>             | Sensors, dashboards & reporting           |
| 05 | <b>Operations &amp; Maintenance</b> | Site teams, maintenance & process control |

PLAN → ASSESS → DESIGN → IMPLEMENT → MONITOR → OPERATE → IMPROVE

# Environmental Performance Should Create Business Value

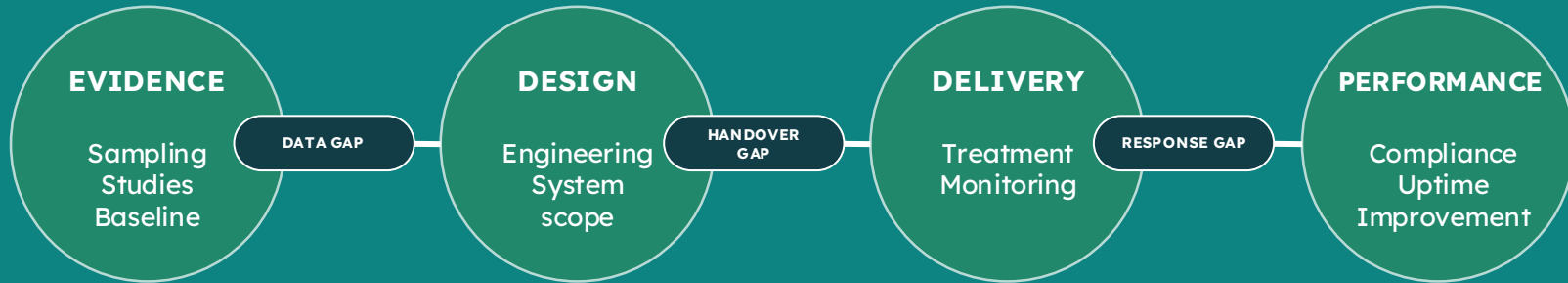
Good environmental management does more than satisfy regulation. It reduces risk, improves resource efficiency, strengthens resilience, and supports responsible growth.



**Technically defensible. Operationally practical. Measurable.**

# Mining Sector - Environmental Challenges

## Disconnected systems create operational gaps



### Fragmented evidence

Sampling, studies and design use different datasets.

### Reactive response

Teams act after excursions, alarms or reporting deadlines.

### Project-only delivery

Systems are installed without sustained operating support.

### Complex accountability

Multiple parties own parts of the outcome, but no one owns performance.

### Science, technology and operations in one delivery model

Ganeca brings environmental advisory, engineering, treatment systems, laboratory services, connected monitoring and field operations into one coordinated scope. The result is clearer accountability from early evidence through sustained site performance.



# Move Projects Forward With Confidence.

We support mining companies in navigating *environmental regulations* and *managing environmental risks*, from study to compliance for **sustainable operations**.



## Environmental Permitting

- AMDAL
- UKL-UPL
- SPPL
- DELH-DPLH



## Technical Approvals

- Wastewater
- Emissions
- Hazardous Waste
- SLO



## Compliance & Performance

- PROPER
- LCA
- ESG Report
- Water/Energy Audit



REGULATORY  
COMPLIANCE



RISK  
MANAGEMENT



SUSTAINABLE  
DEVELOPMENT

# Better Decisions Begin With Better Evidence.

We support mining operations with *science-based studies*, *regulatory compliance*, and *practical solutions* to **manage environmental risks** and **create long term value** for the environment.



## Environmental Baseline

- Site environmental condition assessment
- Biophysical and social baseline studies



## Risk and Modelling

- Environmental risks assessment
- Contaminant fate and transport
- Air, water and sediment quality



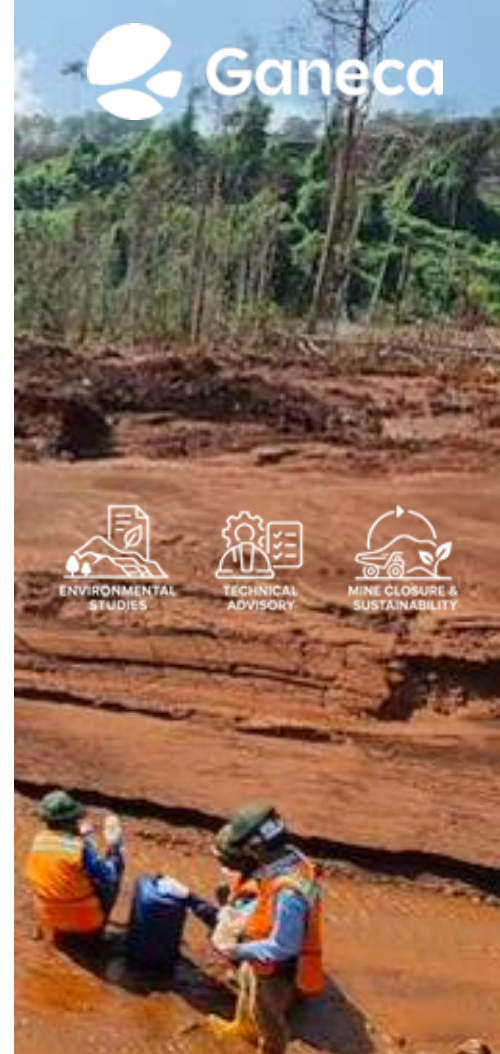
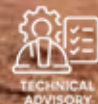
## Water Management

- Surface, ground & mine water studies
- Hydrology, hydrogeology & water balance
- AMD/ARD risk assessment



## Mining Closure

- Progressive reclamation
- Mine closure planning



SMART ENVIRONMENTAL TECHNOLOGIES



# Smarter Technologies. Better Decisions.

Through its business lines, **PT Ganeca** strengthens its integrated capability by delivering various types of water treatment products to meet the needs of industrial, commercial, and residential customers.

## MWTP

Mine Water Treatment Plant

## CSTP

Containerized Sewage Treatment Plant

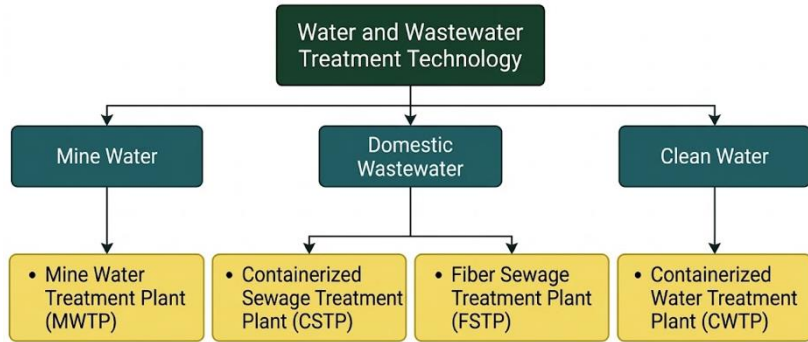
## CWTP

Containerized Water Treatment Plant

## FSTP

Fiber Sewage Treatment Plant





# Smarter Monitoring. Better Decisions.

Connected monitoring should turn environmental data into operational intelligence, faster detection, clearer reporting, and better response.

**SPARING**

**ONLIMO**

**SPAS**

Water Quality

River Station

**CEMS**

Emission

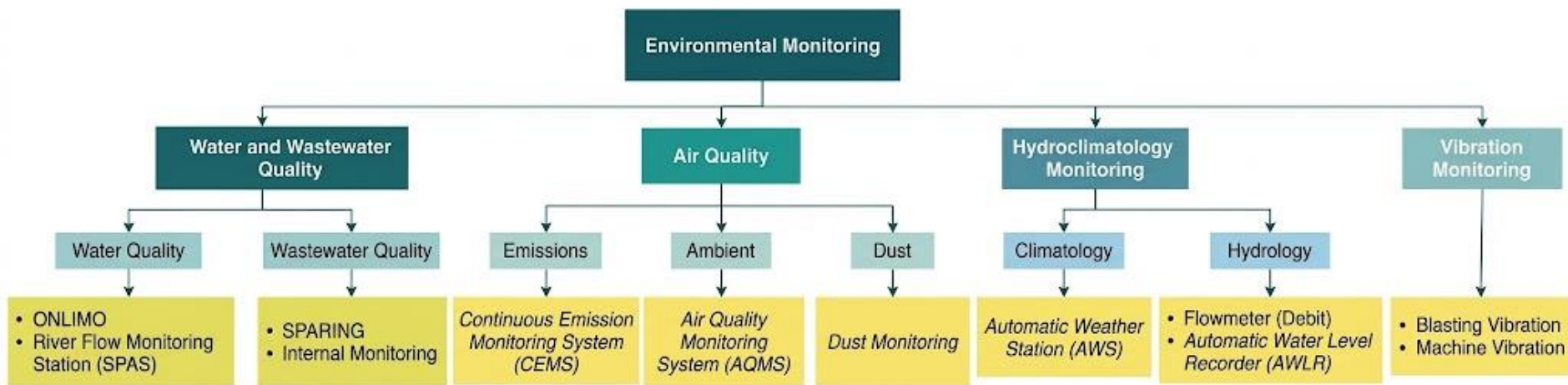
**AQMS**

Ambient Air

**AWS**

Weather

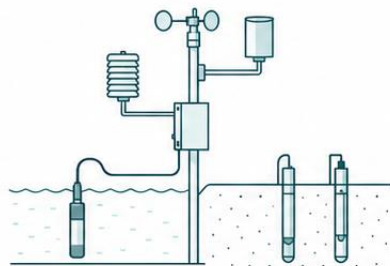
# Comprehensive environmental monitoring solutions tailored for mining operations



## Our Sensor & Datalogger



## 01 Field Data Acquisition



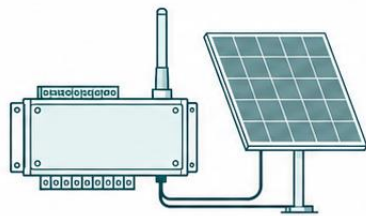
**Water quality sensors**  
pH, TSS, DO, turbidity

**Air quality stations**  
PM2.5, PM10, SO2, NOx

**Automatic weather stations**  
Rainfall, wind, temperature

**Geotechnical monitoring**  
Piezometers and inclinometers

## 02 Data Processing & Transmission



**GanecaLink**

**RTU / data logger**  
Field data acquisition and processing

**Solar-powered operation**  
Rugged systems for 24/7 monitoring

**Signal conversion**  
Analog / digital to serial

**Wireless transmission**  
4G/LTE, SatCom or LoRaWAN

## 03 Cloud Platform



**GanecaHub**

**Centralized data**  
Cloud storage and management

**Analytics and trends**  
Real-time analysis and forecasting

**Early warning system**  
Threshold alerts via SMS / email

**Automated reporting**  
Support for regulatory reporting

## 04 User Insights & Action



**Web and mobile dashboards**  
Interactive monitoring views

**Operational decisions**  
Support for teams and management

**Resource optimization**  
Efficiency and compliance support

**Stakeholder access**  
Public awareness portals

# Ganecahub

A connected environmental ecosystem designed to bring monitoring, environmental data, reporting, analytics, remote control, and laboratory information into one operating environment.



One connected ecosystem for smarter environmental management.

Please visit: [www.ganecahub.com](http://www.ganecahub.com)

## Connected

One environment for environmental information



## Monitor

Track environmental conditions across sites in real time.



## Analyze

Identify trends, anomalies, and environmental risks.



## Validate

Ensure data quality through validation and QA/QC.



## Respond

Act faster with alerts and intelligent workflows.



## Report

Turn trusted data into clear environmental reports.

# Reliable data for better mining decisions

Integrated laboratory services supporting mine-water management, environmental compliance, geochemical risk assessment, and treatment optimization.

## GEOCHEMISTRY LABORATORY

Rock • Soil • AMD Potential

## ENVIRONMENTAL LABORATORY

Water • Wastewater Characterization

**From characterization to actionable environmental insight.**

**Dedicated people, reliable systems and measurable performance at the site**

**01  
Mobilize**

Site readiness, SOPs,  
staffing and operating plan

**02  
Operate**

Treatment control, routine  
checks and safe execution

**03  
Monitor**

Data validation, alarms and  
environmental surveillance

**04  
Maintain**

Cleaning, calibration and  
preventive maintenance

**05  
Report**

Compliance records, trends  
and management reporting

**06  
Improve**

Root-cause review,  
optimization and corrective  
action

**Ganeca can operate treatment and monitoring assets, including client-owned systems subject to technical assessment.**

## OUR PORTOFOLIO

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## Applications Across Mining Technologies

### Mine Water Treatment Plant – PT Kideco Jaya Agung

Ganeca designs and constructs containerized, automatic MWTP units that operate independently using solar power (PLTS), eliminating reliance on the PLN grid. The entire water treatment process from raw water intake and chemical dosing to mixing and sedimentation is automatically managed via an integrated control system. The system incorporates backup configurations for key equipment to ensure uninterrupted operations.

Check detail in here : [Solar-Powered Mine Water Treatment – Kideco](#)



### Containerized Sewage Treatment Plant – PT Sumbawa Timur Mining

Ganeca designed a four-stage Communal WWTP (equalization–anaerobic, aerobic, sedimentation, and UV disinfection) with capacity and retention time tailored to each camp site, while keeping the aerobic and sedimentation retention times consistent across all locations to maintain treatment performance

Check detail in here : [Communal Containerized WWTP Design – STM](#)



PT Sumbawa Timur Mining



PT Sumbawa Timur Mining



PT Timah



PT Sumbawa Timur Mining



PT Kideco Jaya Agung



PT Kideco Jaya Agung

## Managed Mining Treatment

### Maintenance Environmental Services – PT Timah

Ganeca developed Standard Operating Procedures (SOPs) and provided direct support for operations and maintenance activities, including periodic flow rate monitoring via instrument readings at key system points. Specific thresholds were established to trigger operational actions, such as flow adjustments or the rescheduling of discharges from particular sources.

Check detail in here : [Modular Communal WWTP Design – PT Timah](#)



### Managed Environmental Operations – PT Sumbawa Timur Mining

Ganeca deployed a dedicated engineer integrated with PT Sumbawa Timur Mining's operational team to provide comprehensive support for CSTP operation and maintenance. Through this dedicated support model, daily operations, performance monitoring, maintenance, troubleshooting, and reporting were managed as an integrated part of the overall CSTP operation.

Check detail in here : [CSTP Operation Support - PT Sumbawa Timur Mining](#)

### Applications Across Mining Monitoring

#### Wastewater Monitoring – PT Vale Indonesia Tbk

Ganeca successfully implemented a Continuous Online Wastewater Quality Monitoring System (SPARING) across 24 distributed points in Pomalaa and Bahodopi, integrating field measurements into GanecaLink for centralized, real-time data access and automated early warnings. Enables seamless real-time data integration with the Ministry of Environment (KLH) for regulatory compliance.

Check detail in here : [24-Point SPARING Monitoring – PT Vale Indonesia](#)



#### Air Quality Monitoring – PT Citra Palu Minerals

Ganeca implemented an Air Quality Monitoring System (AQMS) integrated with wind direction tracking in Central Sulawesi, combining real-time air quality data with meteorological analysis to assess pollutant dispersion, support regulatory compliance, and protect worker health across gold mining operations.

Check detail in here : [Real-Time AQMS & Wind Monitoring](#)

## Project Portofolio

## Environmental Monitoring in Mining



PT Kuansing Inti Makmur



PT Kaltim Prima Coal



PT Halmahera Jaya Feronikel



PT Kaltim Prima Coal



PT Lembuswana Perkasa



PT Weda Bay Nickel



PT Vale Indonesia



PT Kaltim Prima Coal



PT Kaltim Prima Coal



PT Citra Palu Mineralas

## Managed Mining Monitoring

### Sparing Maintenance & Calibration – PT Borneo Indobara

Since 2022, Ganeca has maintained PT Borneo Indobara real-time wastewater monitoring system (SPARING) in South Kalimantan through routine inspections, troubleshooting, and internal calibration, ensuring optimal sensor performance and continuous, accurate data availability in demanding mining conditions.

Check detail in here : [Managed Environmental Operation - Case Studies](#)



### Continuous Support & Calibration– PT Vale Indonesia

Ganeca delivers end-to-end environmental monitoring solutions for mining operations, integrating monitoring systems, field operations, preventive and corrective maintenance, troubleshooting, data management, and technical support. Our integrated approach helps mining sites maintain reliable equipment, continuous data availability, and responsive environmental monitoring across the operational lifecycle.

Check detail in here : [Managed Environmental Operation - PT Vale Indonesia](#)

# Applications Across Mining Monitoring

## Technical Study for Wastewater Discharge to Surface Water Bodies - PT Arutmin Indonesia Batulicin Site.

Ganeca applied a scientifically based assessment approach, supporting the study through environmental data collection and laboratory testing covering the receiving water body, sediment and aqualitc ecology to establish a comprehensive understanding of the receiving environmental. For the receiving water body, sampling was conducted across two segment representing upstream and downstream conditions.

**Check detail in here :** [Technical Study for Wastewater Discharge – PT Arutmin Indonesia](#)



## Technical Study for Wastewater Discharge to Surface Water Bodies - PT Indocement Tunggal Prakarsa Tbk. Citeureup Unit

Ganeca applied a scientifically based assessment approach, supporting the study through environmental data collection and laboratory testing covering the receiving water body, sediment and aqualitc ecology to establish a comprehensive understanding of the receiving environmental. For the receiving water body, sampling was conducted across two segment representing upstream and downstream conditions.

**Check detail in here :** [Technical Study for Wastewater Discharge – PT Indocement Tunggal](#)



Persetujuan Teknis BMAL  
PT Arutmin Indonesia



Audit Air  
PT Vale Indonesia Tbk



Beyond Compliance  
PT Borneo Indo Bara



Persetujuan Teknis BMAL  
PT Arutmin Indonesia



PROPER  
PT Vale Indonesia Tbk

## Applications Across Mining Monitoring

### Electrocoagulation Technology Development Study for Nickel Mine Water Treatment – PT Vale Indonesia Tbk Sorowako Site

Ganeca demonstrated that electrocoagulation has high potential for Cr VI removal from nickel mine runoff water, with treated water meeting the applicable quality standards under the tested conditions. On the other hand, testing on coal storage runoff water showed that technology performance is strongly influenced by influent characteristics, like pH conditions.

Check detail in here : [Electrocoagulation Technology Development Study - PTVI](#)



### Study of Pit Lakes and Post Mining Concept – PT Kideco Jaya Agung

Ganeca provided a conceptual basis for PT Kideco Jaya Agung in developing a post mining program that considers changes in topography and slope, environmental characteristics, risks, as well as socio-economic and cultural aspects. The resulting concept focused on three utilization areas nature conservation, agriculture, and tourism as an effort to develop a post mining plan that is not only oriented toward land rehabilitation, but also toward long-term sustainability and increasing benefits for the surrounding area.

Check detail in here : [Study of Pit Lakes and Post Mining Concept – PT Kideco Jaya Agung](#)

## Environmental Managed Mining Operation

### **Dedicated Engineer for Sustainability and Community Development (PROPER) – PT Vale Indonesia Tbk Sorowako Site.**

Ganeca successfully developed a representative testing approach to characterize the wastewater and evaluate its treatment behavior. The testing program provided a clear understanding of the contaminants present and their response to different treatment conditions, enabling the identification of a suitable coagulation approach for effective pollutant removal while maintain stable water quality.

**Check detail in here :** [Dedicated Engineer for PROPER – PT Vale Indonesia](#)





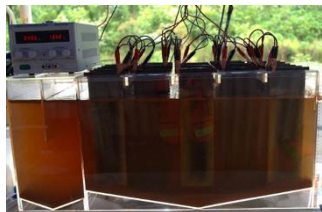
Reklamasi Pasca Tambang  
PT Kideco Jaya Agung



PT Halmahera Jaya Feronikel



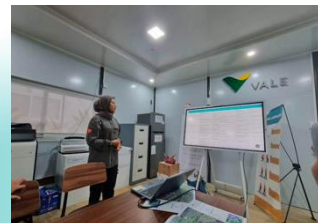
Wetland  
PT Vale Indonesia Tbk



Elektrokoagulasi  
PT Vale Indonesia Tbk



WWC  
PT Vale Indonesia Morowali



WWC  
PT Vale Indonesia Pomalaa

# Geochemistry Laboratory

Rock • Soil • AMD Potential



## STATIC TEST

Characterization of acid-forming potential and neutralization capacity to assess the potential for Acid Rock Drainage (ARD/AMD) generation from mine waste materials

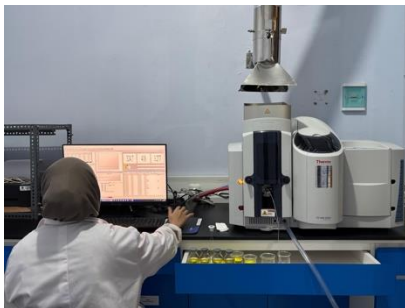
## KINETIC TEST

Long-term assessment of sulfide oxidation, acid generation, and metal release under controlled conditions to evaluate the evolution of mine waste drainage

**Predicting Mine Geochemistry Behavior  
Before It Becomes an Environmental Risk.**

# Environmental Laboratory

Water • Soil • Rock • Sediment • Wastewater Characterization



## FIELD & SAMPLING SUPPORT

Sampling plans • field parameters • preservation

## MINE WATER & WASTEWATER

pH • TSS • metals • sulfate • major ions

## TREATABILITY TESTING

Jar test • settling test • chemical screening

## SOIL & SEDIMENT

Physical and chemical characterization

## Applications Across Mining Sector

### Wastewater Characterization Study – PT Merdeka Copper Gold

The Pani Gold Project faced extremely high TSS and predominantly colloidal mine runoff, making treatment challenging. Ganeca integrated **environmental laboratory** testing and hydrological evaluation to develop a site-specific treatment approach. The study provided practical recommendations for chemical dosing and sediment pond development.

Check detail in here : [WWC - PT Merdeka Copper Gold](#)



### Wastewater Characterization Study – PT Vale IGP Morowali

Dynamic mine runoff, high TSS, and Cr(VI) presented challenges for effective water quality management. Ganeca integrated **geochemical laboratory** testing and hydrological evaluation to assess treatment requirements and runoff management. The study provided recommendations for treatment optimization.

Check detail in here : <https://www.ganeca.co.id/case-studies>

# More Than an Environmental Consultant

01

## Science-led

Evidence and technical judgment

02

## End-to-end

From advisory to operation

03

## Field-proven

Built for real site conditions

04

## Technology-enabled

Sensors, platforms, analytics

05

## Operationally focused

We help systems perform

06

## Long-term partner

Built to grow with client needs

**Real Science. Practical Solutions. Lasting Impact.**



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