



Engineering Solutions for Sustainability

www.uskconsulting.com

Corporate Philosophy

At USK, our mission is to empower clients across Africa with innovative, sustainable, and cost-effective solutions that drive growth and operational excellence. We are dedicated to fostering strong client relationships by delivering tailored, high-quality services that address the unique challenges of each organization we partner with.

Our vision is to be the Preferred Partner for Mineral Exploration Drilling and Geo-Environmental Services on the African continent, recognized for our integrity, expertise, and forward-thinking approach. We aim to shape the future of consultancy by consistently delivering results that exceed expectations and set new industry standards.

Guided by our core values of high integrity, commitment to people and the environment, excellence, and innovation, we strive to provide long-term solutions that promote success for our clients and communities. Our highly qualified teams are driven by proficiency, passion, and a relentless pursuit of excellence, ensuring that we remain at the forefront of industry trends and advancements.

We believe in the power of responsible business practices, not only for our clients but also for the communities we serve. At USK, we are committed to ethical practices and making a positive impact on society. Our internal culture prioritizes the safety of our people and care for the environment, reflecting our dedication to sustainable development and corporate responsibility.

Together, we bring innovative solutions that lead to profitable growth and shared success, ensuring that every project we undertake contributes to a better, more sustainable future for Africa.

Our Ethos

High Integrity:

We build trust through unwavering integrity and honesty in all our interactions.

People and Environment:

We prioritize safety for our employees and demonstrate a strong commitment to environmental stewardship.

Excellence:

We strive for the highest standards in every endeavor, delivering exceptional quality and results.

Innovation:

We embrace innovative solutions that drive profitable growth and foster shared success.





Steve K Kalule, PhD, Pr.Sci.Nat
CEO, USK

Message from the CEO

Dear Valued Clients and Partners,

As the CEO of USK, I am proud to lead a team that is dedicated to excellence, integrity, and innovation in the fields of Exploration Drilling, Environmental Engineering, and Geotechnical services across Africa.

Our mission is clear: to empower our clients with sustainable solutions that not only drive growth but also contribute positively to the communities we serve.

In an ever-evolving industry, we understand the importance of adaptability and foresight. Our highly qualified team is not only passionate about their work but is also committed to staying at the forefront of industry trends. We believe that by fostering a culture of continuous learning and collaboration, we can deliver tailored solutions that meet the unique needs of each client.

At USK, we recognize that our success is intrinsically linked to the success of our clients. Therefore, we prioritize building strong relationships based on trust and transparency. Your challenges are our challenges, and together, we can navigate the complexities of today's business landscape.

As we move forward, we remain steadfast in our commitment to high standards of safety, environmental stewardship, and ethical practices. We are particularly focused on integrating Environmental, Social, and Governance (ESG) principles into our operations and decision-making processes. By prioritizing ESG considerations, we aim to create lasting value for our clients and contribute to a more sustainable future for all.

We are not just consultants; we are your partners in achieving sustainable growth and shared success.

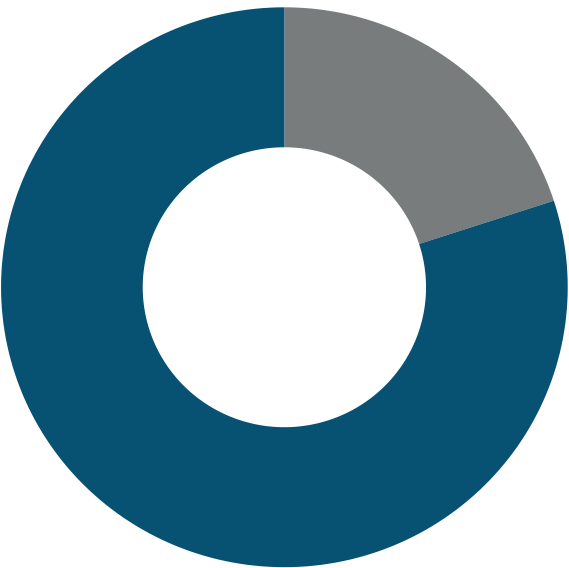
Thank you for your continued trust in USK. Together, let's shape a brighter sustainable future.

Warm regards,
Steve K Kalule, PhD, Pr.Sci.Nat
CEO, USK

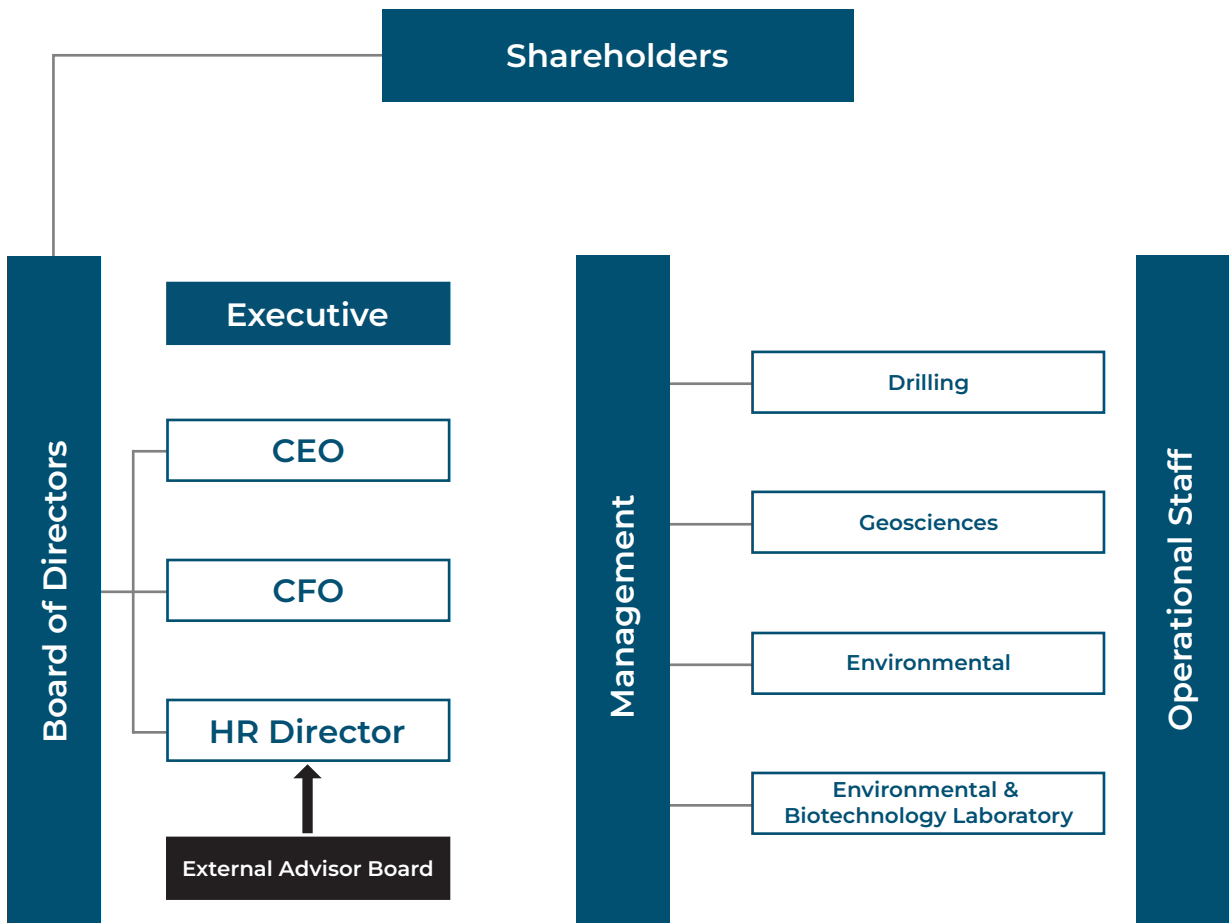
Corporate Operating Structure

USK is structured to support our mission of delivering exceptional services in Exploration Drilling, Environmental Engineering, and Geotechnical solutions across Africa. Our ownership model reflects our commitment to Broad-Based Black Economic Empowerment, with 80% of our shares held by previously disadvantaged individuals in South Africa and 20% owned by an employee trust. This structure not only promotes inclusivity but also empowers our workforce to actively participate in the growth and success of the company.

Owned by an Employee Trust. 20%



Held by Previously Disadvantaged Individuals in South Africa. 80%



At the helm the leadership is our esteemed Board of Directors, responsible for providing strategic direction and governance. The board comprises both Non-Executive and Executive Directors, ensuring a balanced and comprehensive oversight. Complementing our executive leadership team, is an external Board of Advisors. This group of industry experts brings invaluable insights and guidance, significantly enhancing our strategic initiatives and positioning USK for sustained growth and success.

Our Core Services



Drilling

- ▶ Mineral Exploration Drilling
- ▶ Geotechnical Drilling
- ▶ Environmental Drilling
- ▶ Foundation Pile Drilling



Geosciences

- ▶ Hydrogeology
- ▶ Hydrology
- ▶ Geophysics
- ▶ Mining Geotechnics
- ▶ Hydrographics
- ▶ Bathymetry



Environmental

- ▶ Air Quality
- ▶ Environmental Noise
- ▶ Permitting & Licensing
- ▶ Contaminated Site Assessment & Remediation
- ▶ Waste Management Engineering
- ▶ Chemicals & Dangerous Goods Risk Management



Environmental & Biotechnology Laboratory

- ▶ Microbial Genomics
- ▶ Biotechnology Testing
- ▶ Treatability Bench Testing
- ▶ Dust & Particulates
- ▶ Radionuclides
- ▶ Vapor Intrusion

Drilling

At USK, we are committed to excellence in mineral exploration drilling, ensuring that every project we undertake is executed with precision, safety, and a focus on delivering results that exceed expectations. Let us partner with you on your next exploration endeavor, where our expertise and innovative solutions will pave the way for your success.



Diamond Drilling:

Our diverse fleet is capable of both conventional and wireline drilling, producing S to B diameter core samples across various geological formations. With a current depth capacity of up to 2,500 meters for NQ and NRQ core, we provide high-quality samples that deliver valuable geological insights.

Reverse Circulation (RC) Drilling:

Designed for efficiency, our RC drilling capabilities reach depths of up to 400 meters. This technique effectively retrieves samples while minimizing contamination, making it ideal for rapid exploration.

Air Core (AC) Drilling:

Our AC drilling capacity ranges from 250 to 300 meters, depending on geological conditions. This cost-effective solution is particularly suited for shallow drilling in soft and unconsolidated materials.

Auger Drilling:

We offer auger sampling with diameters of up to 8.5 inches, providing versatility for various soil types and effective shallow sampling for site investigations.

Sonic Drilling:

This technique is effective in both consolidated and unconsolidated formations, particularly useful for sampling waste rock dumps and mineral sands. Sonic sampling offers continuous core samples with minimal disturbance, ensuring high-quality data collection.

Geotechnical Services

At USK, we pride ourselves on delivering comprehensive geotechnical investigative services tailored to meet the diverse needs of our clients. Our specialized team employs state-of-the-art multifunctional geotechnical drill rigs and tools, ensuring precise and efficient data collection for a variety of projects.



Geotechnical Drilling Capabilities

- Rock Core Drilling (N – S size Core)
- Wireline Diamond Coring Drilling
- Conventional Diamond Core Drilling
- Geobore S Wireline
- Inclined Hole Drilling
- Casing Advancer
- Mud Rotary (Wash-boring Drilling)
- Rotary Air Blast
- Air Core
- Air Percussion
- Overwater / Burge Drilling
- Standard Penetration Test (SPT)
- Shelby Tube Sampling
- U50/63/75 Window Sampling
- Solid Stem Flight Augers
- Hollow Stem Augers
- Jet Grouting / Packer Grouting

In-Situ Testing and Instrumentation:

- Standard Penetration Test (SPT)
- Cone Penetrometer Test (CPT)
- Dynamic Penetrometer Super Heavy (DPSH)
- Dynamic Cone Penetrometer (DCP)
- Single Packer Lugeon Testing
- Straddle Packer Lugeon Testing
- Core Orientation
- Vane Shear Testing
- Pressuremeter Testing
- Inclinometers
- Standpipe Piezometers
- Vibrating Wire Piezometers
- Tiltmeter
- Magnetic Extensometers
- Data loggers

Additional Geotechnical Services:

- Geotechnical Test Pits / Trial Pits using Tractor Load Backhoe (TLB)
- Trenching with a variety of hydraulic excavators
- Non-Destructive Digging – Hydroexcavation
- Concrete Coring
- Vacuum Truck for sump clean-out
- Non-destructive Excavation

Mine Geotechnics

USK specialized consulting and contracting services for the mining sector, focusing on site characterization, design, and construction. Our multidisciplinary team, including experts in geotechnical and civil engineering, soil and rock mechanics, and engineering geology, collaborates with specialists in structural geology, hydrogeology, tailings management, mine engineering, and mine closure to provide innovative solutions to mining challenges.



Key Services:

Slope Stability:

We address slope stability for:

- Surface/Open Pit Mines
- Tailings Storage Facilities
- Embankments
- Waste Dumps and Landfills
- Large Excavations

Our approach includes:

- Assessing and monitoring slope stability
- Collecting and interpreting geological data
- Developing safe and efficient slope designs

Safety and Monitoring:

We implement advanced early warning systems and continuous monitoring to detect hazards, supported by a data-driven decision-making platform and cloud-based data storage.

Geotechnical Instrumentation:

- Vibrating Wire Piezometers
- Extensometers
- Inclinometers
- Tiltmeters
- Settlement Plates
- Pressure Cells
- Thermistor Arrays
- Data Loggers
- Cloud-Based Real-Time Monitoring Systems

In-Situ Testing:

- Standard Penetration Test (SPT)
- Cone Penetrometer Test (CPT)
- Core Orientation
- Vane Shear Testing
- Pressuremeter Testing
- Flat and Seismic Dilatometer Testing

Geophysics

At USK, we take pride in delivering a comprehensive range of geophysical survey techniques, meticulously tailored to cater to the varied needs of our clients. Our extensive knowledge and experience in geophysical methodologies enable us to offer bespoke solutions, ensuring that we tackle every challenge with accuracy and proficiency.



Surface Geophysics

- **Mineral Exploration**
- Electromagnetic surveys
- Magnetotellurics
- Magnetometry
- Electrical resistivity imaging
- Induced polarization
- **Groundwater Exploration**
- Electrical resistivity tomography
- Seismoelectric
- Electromagnetics
- Contaminant Hydrogeology / Geotechnical Engineering
- Seismic reflection /refraction tomography
- Multichannel analysis of surface waves (MASW)

Utilities Detection

- Ground Penetrating Radar (GPR)

Downhole Geophysics

- High Resolution Acoustic Televiewer (HRAT)®
- High Resolution Optical Televiewer (Hi-OPTV)®
- 3-Arm Caliper
- Formation Density Probe
- PS Logger Probe
- Full Waveform Triple Sonic Probe
- Dual Neutron Probe
- Sonar Caliper Probe
- Elastometer
- Verticality and/or Gyro
- Nuclear Magnetic Resonance (NMR)

Environmental Management



By keeping up to date with industry best practice and ever-changing environmental legislation at all levels of government, we are able to deliver straightforward solutions to balancing environmental obligations with optimal project outcomes.

Through USK Group, we offer the following consulting services:

- Environmental Site Assessments (Phase I, II and III)
- Environmental Impact Assessments
- Environmental Management Plans
- Environmental Management Programme Reports
- Environmental Management Frameworks
- Environmental & Social Impact Assessments to IFC/World Bank Performance Standards
- Environmental & Social Management Plans to IFC/World Bank Performance Standards
- Environmental Planning
- Strategic Environmental Assessments
- Environmental Compliance Audits
- Air Quality Impact Assessments
- Ecological Risk Assessments
- Ecological Impact Assessments
- Environmental Noise Impact Assessments
- Water Management / Hydrogeological Impact Assessments
- Visual and Landscape Impact Assessments
- Geographical Information Systems and Remote Sensing
- Reporting and Professional Advice

CONTAMINATED LAND SERVICES

Welcome to our contaminated site risk assessment and remediation services. We specialize in Environmental Site Assessments (Phases 1, 2, and 3), offering due diligence, risk assessments, and remedial action plans. Our services encompass expertly designed remedial solutions, ensuring regulatory compliance and facilitating efficient site closures. Committed to timely and budget-conscious delivery, we utilize a combination of conventional and innovative sustainable techniques to address soil and groundwater contamination. Our experienced team selects optimal methods for each unique site, ensuring effective and efficient remediation outcomes.



Our contaminated and services include:

Phase I, II and III ESA:

Our comprehensive assessments identify potential contamination and evaluate the extent of environmental impacts.

Molecular Biological Tools:

We utilize advanced molecular techniques to assess microbial communities and optimize bioremediation strategies.

Petroleum Vapor Intrusion Sampling:

We conduct thorough assessments to evaluate the risk of vapor intrusion into buildings from petroleum releases.

Sub Slab Vapor Intrusion Sampling:

This targeted sampling assesses potential vapor intrusion risks beneath structures. USK is also the official distributors of the world renowned Vapor Pins from <https://www.vaporpin.com> and VSOL's Hybrid SS Sampler.

Trial or Pilot Tests for Remediation Design:

We conduct pilot tests to evaluate the feasibility and effectiveness of selected remediation techniques.

Remedial Design:

Our team develops detailed remedial designs tailored to site-specific conditions and regulatory requirements.

Remediation Techniques

- Air Sparging (AS)-
- Soil Vapour Extraction (SVE)
- Duo Phase Extraction (DPE)
- Multiphase Extraction (MPE)
- Thermally Enhanced Soil Vapour Extraction (TESVE)
- Vacuum Enhanced Recovery (VER)
- Enhanced Natural Attenuation
- Biopile
- Free Product Recovery
- Installation of Permeable Reactive Barriers
- In-Situ Injections of various amendments. We are also the authorised installers of RPI Inc <https://www.trapandtreat.com> Trap and Treat Technologies
- Total Product and Total Fluid Recovery
- Pump and Treat

ADVANCED SITE CHARACTERISATION

Welcome to our comprehensive portfolio of Advanced Site Characterization and subsurface imaging services. Our state-of-the-art techniques and innovative tools are designed to provide unparalleled insights into subsurface conditions, enabling more informed decision-making, efficient project execution, and sustainable environmental management.



Our Expertise: High Resolution Site Characterization (HRSC)

At the core of our services is advanced site characterization, a suite of direct sensing tools utilized with Direct Push Technology (DPT) drilling rigs to achieve high resolution site characterization (HRSC).

Our HRSC toolkit includes:

- Hydraulic Profiling Tool/Electrical Conductivity (HPT/EC)
- Optical Image Profiler (OIP)
- Membrane Interface Probe (MIP)
- Groundwater Profiling Tools (HPT-GWP, HPT-GWS)
- Cone Penetrometer Testing (CPT)
- Pneumatic Slug Testing (PST)
- Real-Time Data Review
- Advanced Interpretive & 3D CSM Visualization Reports

These advanced tools offer a detailed and accurate understanding of subsurface conditions, surpassing traditional boring and monitoring methods.

The HRSC Advantage

A recent study sponsored by the U.S. Environmental Protection Agency (USEPA) titled “High Resolution Site Characterization at Petroleum Underground Storage Tank Release Sites – Applicability, Benefits, and Costs” highlights the significant advantages of HRSC:

- Enhanced Geological and Contaminant Understanding:
- Accelerated Project Timelines
- Cost Efficiency

Air Quality

At USK, we are dedicated to providing a comprehensive suite of air quality management and emissions testing services designed to meet the stringent requirements of our clients. Our capabilities encompass Stack Air Emissions, Ambient Air, Industrial Hygiene (IH), and Indoor Air Quality (IAQ) monitoring programs, ensuring compliance national and local regulations and standards, as well as adherence to national, regional, and local regulations.

Our sampling, testing, and occupational procedures are grounded in internationally recognized standards, including those set forth by the U.S. Environmental Protection Agency (USEPA), International Organization for Standardization (ISO), the National Institute for Occupational Safety and Health (NIOSH), and the Occupational Safety and Health Administration (OSHA). This commitment to quality ensures that our clients receive accurate and reliable data to inform their air quality management decisions.

Stack Emission Sampling and Testing Services

Our stack emission sampling and testing services are designed to accurately assess emissions from industrial stacks and flues. Our offerings include:

- **On-Site Sampling:** Conducting emissions testing directly at the source.
- **Dioxins and Furans:** Comprehensive analysis of these toxic compounds.
- **Total Particulates:** Measurement of particulate matter in emissions.
- **Metals:** Assessment of heavy metals present in stack emissions.
- **Hydrogen Halides and Halogens:** Detection of hazardous gases.
- **Hydrogen Sulphides:** Monitoring of this toxic gas.
- **Volatile Organic Compounds (VOC):** Analysis of organic chemicals that can evaporate into the air.
- **Semi-volatile Organic Compounds (SVOC):** Testing for compounds that exhibit both volatile and non-volatile characteristics.
- **SO₂, NO_x, CO, CO₂, and O₂:** Comprehensive gas monitoring, including sulfur dioxide, nitrogen oxides, carbon monoxide, carbon dioxide, and oxygen levels.
- **Total Hydrocarbons:** Measurement of all hydrocarbons in emissions.



Ambient Air Sampling and Testing Services

Our ambient air sampling services monitor the quality of air in the surrounding environment. We provide:

- **On-Site Sampling:** Collecting air samples directly from the environment.
- **Particulate Matter (PM10 & PM2.5):** Measurement of fine particulate matter that can impact health.
- **Volatile Organic Compounds (VOC):** Monitoring of organic compounds present in ambient air.
- **Semi-volatile Organic Compounds (SVOC):** Analysis of semi-volatile compounds in the atmosphere.
- **Lead:** Assessment of lead levels in ambient air.
- **SO2, NOX, CO, and O3:** Monitoring of sulfur dioxide, nitrogen oxides, carbon monoxide, and ozone levels.
- **Wind Speed / Wind Direction:** Meteorological data collection to understand air dispersion.

Industrial Hygiene (IH) Sampling and Testing Services

Our Industrial Hygiene services focus on ensuring worker safety and compliance with health regulations. We offer:

- **On-Site Sampling:** Conducting assessments directly in the workplace.
- **Volatile Organic Compounds (VOC):** Monitoring for harmful VOC exposure.
- **Inorganic Acids and Organic Solvents:** Testing for hazardous substances in the workplace.
- **Heavy Metals:** Assessment of exposure to heavy metals.
- **Total Dust and Respirable Dust:** Measurement of dust levels that can affect health.
- **Physical Measures:** Evaluating noise levels, heat stress, light, ventilation, and humidity.
- **Asbestos:** Sampling and analysis for asbestos fibers.

Indoor Air Quality (IAQ) Sampling and Testing Services

Our IAQ services assess the quality of air within buildings to ensure a healthy indoor environment. We provide:

- **On-Site Sampling:** Collecting indoor air samples for analysis.
- **Respirable Dust:** Measurement of dust particles that can be inhaled.
- **Operative Temperature and Relative Humidity:** Monitoring of indoor climate conditions.
- **Air Movement:** Assessing airflow within indoor spaces.
- **Carbon Monoxide (CO) and Carbon Dioxide (CO2):** Monitoring levels of these critical gases.
- **Ozone (O3):** Measurement of ozone levels indoors.
- **Formaldehyde (HCHO):** Testing for this common indoor pollutant.
- **Total Volatile Organic Compounds (TVOC):** Comprehensive assessment of VOCs in indoor air using method EPA TO-17.

Landfill Gas Monitoring Services

Our landfill gas monitoring services ensure compliance and safety in waste management. We offer:

- **Landfill Gas Lateral Migration Analysis:** Utilizing the Landtech Landfill Gas Analyzer and PIDs for accurate measurements.
- **Landfill Surface Emission Mapping:** Comprehensive mapping of gas emissions from landfill surfaces.
- **Odour Measurements:** Using Hood and Odour Hog (GPS based) for accurate odour assessments.
- **Method EPA TO-15/15A Canister Sampling:** Collecting VOCs and SVOCs for detailed analysis.



Waste and Chemicals



South Africa has a suit of complementary legislation and national standards for the classification of waste, hazardous chemicals substances and dangerous goods.

The include but not limited to:

- Waste Classification to HS SANS 10234,
- Dangerous Good Classification (SANS 10228),
- Safety Data Sheets (SANS 11014),
- Chemicals Risk Assessment (GN 635),
- Waste Disposal Classification (GN 636).

The aim of these pieces of legislation and standards is to set South Africa in line with international standards dealing with the classification of waste, hazardous chemicals substances and dangerous goods.

Our in-house toxicologists and chemists provides the following services:

- GHS classification for products, mixtures-containing multiple components
- Dangerous Goods classification assessments
- Dangerous Goods storage assessments
- Development and implementation of hazardous chemicals management systems
- Emergency response and plans
- Hazardous chemicals regulatory compliance audits
- Hazardous chemical classification assessments in accordance with local and international regulatory frameworks including Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and Classification, Labelling and Packaging (CLP).
- Preparation of hazardous chemicals manifests
- Preparation of GHS compliant labels
- Chemicals Risk Assessments
- Review and preparation of Standard Operating Procedures
- Safety Data Sheets (SDS) review, and Data Management System
- SDS authoring for the South Africa market as per the Regulation for Hazardous Chemical Agents, 2021.
- SDS authoring for the EU market as per REACH regulation and CLP regulation.1
- Comprehensive Chemicals Inventory, SDS Authorization System Automation, and many more value add-on by using our custom Sate Data Sheet Management System.

We Save companies hundreds of thousands of dollars each year through our waste, chemicals and dangerous goods classification program. Call us today and join the list of our valued clients.

SHEQ Management



Established in 2002, USK Consulting Africa is the leading Environmental & Geosciences specialist-contracting firm on the African Continent. We are sought after not only for our highly qualified teams, but also for excellence and high safety track record. We provide clients with cost-effective, innovative, and practical solutions to a wide variety of environmental and geosciences problems and have successfully completed numerous projects throughout Africa.

We, the Management and Staff of USK Consulting Africa, commit ourselves to comply with all customer and statutory requirements that we are subjected to, including but not limited to the requirements as detailed in our SHEQ management system which complies to the ISO 9001:2015 Quality Management System and ISO 45001:2018 OH&S Management system requirements.

We are committed to providing quality and a safe, healthy, and clean work environment for all our employees. We strive to eliminate hazards and associated risks that may lead to personal injury, ill health, or death.

At USK Consulting Africa, we have implemented a SHEQ Management system to ensure the following:

1. Commitment to the prevention of injury and ill health and the continual improvement in our SHEQ management and performance.
2. Establish SHEQ objectives at functional levels within the organization, which are reviewed continually to ensure suitability.
3. Communication and engagement of legislative and regulatory obligations at all levels within the organization as appropriate to ensure transparency and commitment to our quality and safety culture.
4. Our policy is documented, implemented, maintained, and available to any interested parties as required.

Our Policy is reviewed annually to ensure that it remains relevant and appropriate to our organization.





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