

1934



2024.

1934

90 Years Strong: Shaping the Future through Innovation



Mintek, established in 1934 by an Act of the South African Parliament, celebrates its 90th anniversary this year, marking a significant milestone in its journey. The organisation was founded as a national mineral research organisation to support the development of the South African minerals industry, operating under the executive authority of the Minister of Mineral Resources and Energy.

With a global footprint in over 60 countries, Mintek is widely recognised as one of the world's leading technology organisations, specialising in mineral processing and extractive metallurgy.

Mintek derives its mandate from the Mineral Technology Act No. 30 of 1989, which articulates its mission to promote mineral technology and foster the establishment and expansion of industries in the field of minerals and products through research, development, and technology transfer.

This longstanding commitment underscores Mintek's dedication to advancing mineral-related industries nationally and internationally.

2024.

Mintek General Information

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Bankers: ABSA

List of Abbreviations/Acronyms

Abbreviation	Expanded Form
AGSA	Auditor-General South Africa
B-BBEE	Broad-based Black Economic Empowerment
CSFR	Client Satisfaction Frequency Rate
D&O	Derelict and Ownerless
DMRE	Department of Mineral Resources and Energy
DSI	Department of Science and Innovation
GRAP	Generally Recognised Accounting Practice
HVAC	Heating, Ventilation and Air Conditioning
HySA	Hydrogen South Africa
ICT	Information and Communication Technology
IP	Intellectual Property
IPAP	Industrial Policy Action Plan
KPI	Key Performance Indicator
LTIFR	Lost Time Incident Frequency Rate
MOTT	Mintek Office of Technology Transfer
MQA	Mining Qualifications Authority
MTEF	Medium-term Expenditure Framework
MTSF	Medium-term Strategic Framework
NDP	National Development Plan
NIPMO	National Intellectual Property Management Office
PFMA	Public Finance Management Act
PGM	Platinum Group Metals
PPPFA	Preferential Procurement Policy Framework Act
R&D	Research and Development
RDI	Research, Development and Innovation
REE	Rare Earth Element
RMP	Reference Material Producers
SET	Science, Engineering and Technology
SHEQ	Safety, Health, Environment and Quality
SLA	Service-Level Agreement
SMART	Specific, Measurable, Achievable, Realistic and Timely
SMME	Small, Medium and Micro Enterprises
TRL	Technology Readiness Level
UG2	Upper Group 2 Reef

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Board Chairperson's Overview

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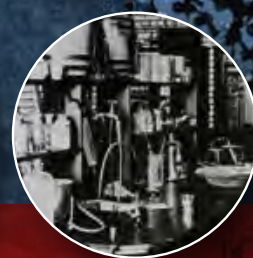
1935
Building of Minerals
Research Lab



1936
Main Minerals
Research Laboratory



1938
MRL's
Metallurgical Lab



1940
Mintek's First
Chemist and
Assayer



1942
The Shelf-kin

Left: DC Arc Furnace and Mintek@90 group photo.



Dr Thibedi Ramontja

Chairperson
Mintek Board

1.1 Board Chairperson's Overview

This year marks a significant milestone for both South Africa and Mintek. As a country, we celebrate 30 years of a thriving democracy, a testament to our nation's resilience and determination. As Mintek turns 90, we stand proudly alongside this journey, recognising the profound impact our work has on the very foundation of our economy, and by extension, the promise of our democracy.

On behalf of the Board of Directors, I have the honour of presenting Mintek's 2023/24 Annual Report. The Mintek board's responsibilities include guiding Mintek towards achieving financial performance goals, strategic direction, upholding environmental, social, and governance (ESG) principles, and contributing to local economic development in accordance with South African Statements of Generally Recognised Accounting Practice (GRAP) and the Public Finance Management Act (PFMA).

At the heart of our strategic vision lies an unwavering dedication to supporting the growth of South Africa's minerals industry. Despite decreasing public funding and challenging macro-economic conditions such as unstable commodity prices, we continue to strategically position ourselves to leverage focused initiatives that drive commercial income growth and promote collaboration with industry partners. Balancing public funding optimisation with strategic alignment to national priorities remains pivotal, underlining our commitment to showcasing Mintek's value proposition through impactful research outcomes that emphasise industry expansion, job creation, resource security, and economic diversification.

The board acknowledges the critical need to enhance our income diversification as a key priority over the medium

and long terms, recognising the strategic importance of diversified revenue streams. Contract research, consulting services, and technology licensing—which Mintek continues to cultivate—have been pivotal in propelling our sustainable growth thus far. This growth is evident in our global reach, with Mintek's products used in over 60 countries and our expertise in measurement and process control employed on every continent.

Our bioleaching technologies have found applications in countries like Australia, China, and Finland, demonstrating our commitment to international collaboration and knowledge exchange. We actively engage in joint research initiatives, contributing to global advancements in mining technology and responsible resource management.

This global perspective reinforces our mission, which remains resolutely focused on supporting South Africa's industry growth. By leveraging our expertise and international collaborations, we deliver cutting-edge solutions that address the evolving needs of the mining sector, both domestically and internationally. We are committed to driving innovation through collaborative research, strong industry relationships, and a culture that fosters creativity and ingenuity.

The Mintek board deeply values our exceptional workforce, recognising them as our most valuable asset. We believe that investing in their continuous development is not just beneficial, but crucial to Mintek's ongoing success. We applaud the ongoing commitment to training and development, which plays a pivotal role in attracting and retaining top research talent. Mintek's staff have demonstrated a strong commitment to enhancing their skills, education, and knowledge. They understand the significance of staying updated with the evolving needs of the industry. Their dedication to continuous improvement empowers them to effectively respond to emerging challenges and opportunities, fostering innovation and solidifying Mintek's leadership position. This proactive approach not only benefits our organisation but also contributes significantly to the advancement and sustainability of the industry. The Board also acknowledges the strides made in prioritising comprehensive skills development and creating a diverse, inclusive workplace. These efforts are instrumental in maintaining Mintek's status as a dynamic hub of innovation and a beacon of excellence in the mineral and metallurgical sector.

As leaders of a responsible entity, we take pride in upholding Environmental, Social, and Governance (ESG) principles, demonstrating our unwavering commitment to sustainable mineral and metallurgical practices, technology development, and ethical conduct. This ensures that Mintek's contributions are in alignment with broader societal goals. Our efforts include significant work in rehabilitating ownerless and derelict mines, providing training to small-scale miners, and implementing responsible practices in waste management.

As we celebrate Mintek's 90th anniversary in 2024, we pay homage to our founders' pioneering spirit, which continues to inspire our commitment to innovation and positive change in the minerals and metallurgical industries.

In conclusion, I extend heartfelt gratitude to our dedicated staff, esteemed partners, and supportive government agencies. Together, we uphold Mintek's legacy of innovation and leadership in South Africa's mining landscape, driving sustainable development and positive impact.



Dr Thibedi Ramontja

Chairperson
Mintek Board



UDkt Thibedi Ramotja

USihlalo

Ibhodi le-Mintek

1.1 | Umbiko Kafuphi KaSihlalo Webhodi

Lo nyaka uqopha umlando obalulekile eNingizimu Afrika naseMintek. Njengezwe, sigubha iminyaka engama-30 yentando yeningi ethuthukayo, okuwubufakazi bokuqina nokuzimisela kwesizwe sethu. Njengoba iMintek ihlanganisa iminyaka engama-90, siyaziqhenya kulolu hambo lwethu, njengoba sibona umsebenzi wethu unomthelela omkhulu esisekelweni somnotho wethu, futhi ngaphezu kwalokho, nakusithembiso sentando yeningi yethu.

Egameni leBhodi Labaqondisi, ngiyajabula ukwethula uMbiko Wonyaka We-Mintek wonyaka wezimali ka-2023/24. Imisebenzi yebhodi le-Mintek ihlanganisa ukuhlala i-Mintek indlela ukuze ikwazi ukufinyelela izinjongo zokusebenza kwezimali, impokophelo kwezamasu, ukulandela imigomo yezemvelo, yezehlalakahle, kanye nokubusa (ESG), kanye nokubamba iqhaza ekuthuthukisweni komnotho wendawo ngokuhambisana ne-South African Statements of Generally Recognised Accounting Practice (GRAP) kanye noMthetho Wokuphathwa Kwezimali Zikahulumeni (PFMA).

Inggikithi yenhlosombono wethu kwezamasu uncike ekuzinikeleni kwethu ekwesekweni ukukhula kwemboni yezokumbiwa phansi yaseNingizimu Afrika. Naphezu kokwehla kwezimali zomphakathi kanye nezimo zomnotho omkhulu eziyinqanaba ezifana namanani ezinto angazinzile, siyaqhubeka nokuzibeka esimweni sokuthuthukisa izinhlelo ezigxilile ezithuthukisa ukukhula kwemali yezohwebo futhi sikhuthaze ukusebenzisana nabalingani bethu kwezezimbongi. Ukulinganisa ukuthuthukiswa koxhaso lomphakathi nokuhleleka kwamasu okubalulekile kuzwelonke kusalokhu kubalulekile, kugcizelela ukuzibophezela kwethu ekukhombiseni ukubaluleka kwe-Mintek kumthelela wemiphumela wocwaningo eqhakambisa ukwanda kwezimbongi, ukwakhiwa kwamathuba emisebenzi, ukuvikeleka kwezinsiza, kanye nokuhlukahluka komnotho. Ibhodi liyasiqaphela isidingo esibalulekile sokuthuthukisa ukwehlukahlukana kwethu kwemali engenayo njengento

ebaluleke kakhulu esikhathini esimaphakathi neside, ngokuqaphela ukubaluleka kwemithombo yemali ehlukahlukene. Ucwano lwezinkontileka, izinsizakalo, kanye nokunikezwa kwamalaysensi ezobuchwepheshe—iMintek elokhu iphezu kwayo—kuba semqoka ekuqhubekiseni ukukhula kwethu okuzinzile kuze kube manje. Lokhu kukhulakubonakala ekufinyeleleni kwethu emhlabeni jikelele, nemikhiqizo ye-Mintek esetshenziswa emazweni angaphezu kwama-60 kanye nekhono lethu lokulinganisa nokulawula inqubo esetshenziswa kuwo wonke amazwekazi.

Ubuchwepheshe bethu be-bioleaching sebuyasetshenziswa emazweni afana ne-Australia, i-China, ne-Finland, okubonisa ukuzibophezela kwethu ekusebenzisane kwamazwe ngamazwe kanye nokwabelana ngolwazi. Sizibandakanya ngokuhlanganyela ezinhlelwenizocwaningo ezihlanganyelwe, ezifaka isandla entuthukweni yomhlaba wonke kwezobuchwepheshe bezimayini kanye nokuphathwa kwezinsiza ngendlela efanele.

Lo mbono womhlaba wonke uqinisa umgomo wethu, osagxile ngokuqinile ekusekeleni ukukhula kwezimbongi zaseNingizimu Afrika. Ngokusebenzisa ubuchwepheshe bethu nokusebenzisana namanye amazwe, siletha izixazululo ezisezingeni eliphezulu ezibhekana nezidingo ezithuthukayo zomkhakha wezimayini, ngaphakathi nangaphandle. Sizibophezele ekusunguleni izinto ezintsha

ngocwaningo oluhlanganyelwe, ubudlelwano obuqinile kwezezimbongi, nesiko elikhuthaza ukusungula nobuhlakani.

Ibhodi ye-Mintek ibazisa kakhulu abasebenzi bethu abakhethekile, ibathatha njengabayigugu elibaluleke kakhulu. Sikholelwa ukuthi ukutshala imali ekuthuthukisweni kwabo okuqhubekayo akuzuzisi nje kuphela, kodwa kubalulekile empumelelweni eqhubekayo ye-Mintek. Sikushayela ihlombe ukuzibophezela okuqhubekayo ekuqeqesheni nasekuthuthukisweni, okudlala indima ebalulekile ekuheheni nasekugcineni ikhono eliphezulu locwaningo. Abasebenzi bakwa-Mintek bakhombise ukuzinikela okuqinile ekuthuthukiseni amakhono abo, imfundo, kanye nolwazi. Bayakuqonda ukubaluleka kokuhlala unolwazi mayelana nezidingo eziguqukayo zemboni. Ukuzinikela kwabo ekwenzeni ngcono okuqhubekayo kubanika amandla okusabela ngempumelelo ezinseleleni ezisafufusa namathuba, kugququzelwa ukuqamba izinto ezintsha kanye nokuqinisa isikhundla sobuholi be-Mintek. Le ndlela yokwenza izinto ngokuqhubekayo ayizuzisi nje kuphela inhlangano yethu kodwa futhi inegalelo elikhulu ekuthuthukisweni nasekusimameni kwemboni. Ibhodi futhi liyawabonga amagxathu enziwe ekubekeni eqhulwini ukuthuthukiswa kwamakhono okuphelele nokudala ukuthi indawo yokusebenza ibe ngebantakanya wonke umuntu. Le mizamo ibalulekile ekugcineni isimo se-Mintek njengesizinda esiguququkayo sokusungula izinto ezintsha kanye nokubayi yisibani sokuphumelela emkhakheni wezimbiwa kanye nensimbi.

Njengabaholi benhlangano abaqotho, siyaziqhenya ngokulandela imigomo Environmental, Social, and Governance (ESG), okukhombisa ukuzibophezela kwethu ekusebenzeni ngamaminerali nangensimbi, ekuthuthukisweni kwezobuchwepheshe, kanye nokuziphatha ngendlela efanele. Lokhu

kuqinisekisa ukuthi igalelo le-Mintek lihambisane nezinjongo zomphakathi ngobubanzi. Imizamo yethu ihlanganisa umsebenzi obalulekile wokulungisa izimayini ezingenabanikazi nezingasebenzi, ukuhlazeka ngoqeqesho kubavukuzi abasafufusa, nokusebenzisa izindlela ezifanele zokulawulwa kwemfucuzo.

Njengoba sigubha iminyaka engama-90 i-Mintek yasungulwa ngonyaka wezi-2024, sihlolipha umoya wabasunguli bethu, oqhubeka nokukhuthaza ukuzibophezela kwethu ekusunguleni izinto ezintsha kanye noshintsho oluhle ezimbongini zamaminerali nezimbiwaphansi.

Sengiphetha, ngidlulisa ukubonga okusuka enhliziyweni kubasebenzi bethu abazinikele, ozakwethu abahlonishwayo, kanye nezinhlela zikahulumeni ezisekayo. Ngokubambisana, sisekela ifa le-Mintek lokusungula izinto ezintsha kanye nobuholi endaweni yezimayini zaseNingizimu Afrika, siqhubekisela phambili intuthuko esimeme kanye nomthelela omuhle.



UDkt Thibedi Ramotja

USihlalo

Ibhodi le-Mintek

**Ng Thibedi Ramontja**

Modulasetilo
Boto ya Mintek

1.1 | Tshobokanyo ka Modulasetilo wa Boto

Monongwaga ke letshwao la kगतokgolo go Aforika Borwa mmogo le Mintek. Jaaka naga, reketeka dingwaga di le 30 tsa temokerasi ka katlego, e leng bopaki jwa boitshoko le boikaelelo jwa setšhaba sa rona. Jaaka Mintek e tshwara dingwaga di le 90, re eme mo leetong leno ka boikgantsho, re lemoga seabe segolo se se gona go tiro ya rona go motheo wa ikonomi ya rona, ka tlaletso, tshepiso go temokerasi ya rona.

Mo boemong jwa Bakaedi ba Boto, ke tlotlomaditswe go tthagisa Pegelo ya ngwaga ka ngwaga ya Mintek 2023/24. Maikarabelo a Boto ya Mintek a akaretso go kaela Mintek go fitlhelela maikaelelo a tiragatso ya ditšhelete, kaedi ya togamaano, go tshegetsang melawana ya tikologo, loago le bobusi (ESG), le go nna le seabe go tthabololo ya ikonomi ya selegae go latelwa dipolelo tsa Aforika Borwa tsa Ditlwaelokakaretso tsa Akhaonting (GRAP) le Molao wa Botsamaisi jwa Ditšhelete tsa Setšhaba (PFMA).

Kwa moding wa tebo ya togamaano go letse boikaelelo jo bo tsepaemeng jwa go tshegetsang kgolo ya intaseteri ya diminerale tsa Aforika Borwa. Le mororo matlole sa setšhaba a tswelletse go welatlase, mmogo le mathata a dikgwetlho go ikonomikgolo tse di jaaka ditlhotlha tse di tekatekang tsa kuno, re tswelletse ka kemotogamaano go laola maitlamo ao a kgweetsang kgolo go letseno la kgwebo le go tswelletsa tirisano mmogo le balekane go intaseteri. Go tshegetsang tokafatso ya matlole a setšhaba ka kamanyo togamaano go ditlapele tsa bosetšhaba go santse go le botlhokwa, re gatisa maitlamo go tthagisa tshitsinyo ya boleng ya Mintek ka dipolelo tsa patlisiso e e botlhokwa eo e tthomamisang kgodiso ya intaseteri, tthamo ditiro, tshireletso ya didiriswa, le pharologanyo go ikonomi.

Boto e dumela gore tlhokokgolo go natlafatsa pharologanyo ya rona go letseno jaaka ditlapelekgolo go dipaka magareng le -tlang, e santse e lemoga botlhokwa jwa togamaano go

metswedi ya letseno le le farologantsweng. Patlisiso ya konteraka, ditirelo tsa kgakololo, le go dira laesense ya thekenoloji—tseo Mintek e tswelletse go di lema—di ntse di le botlhokwa go tswelletsa kgolo e e tswelletse ya rona go fitlha gajaana. Kgolo eno e bonagala lefatshe lotlhe, ka ditlhagiswa tsa Mintek tse di dirisiwang mo dinageng di feta 60, fa bokgoni jwa rona ka tekanyo le taolo ya tsamaiso di diragadiwa go kontinente nngwe le nngwe.

Dithekenoloji tsa rona tsa bayolitšhe di bone ditiragatso mo dinageng tse di jaaka Australia, China, le Finland, go bontsha maitlamo a rona go tirisano mmogo ya boditšhabatšhaba le kanaanyo ya kitso. Re matlhagatlhaga go maitlamo kopanelwa a patlisiso, go tsayakarolo go tswelletso ya lefatshe, go thekenoloji ya meepo le botsamaisi jwa didiriswa ka boikarabelo.

Ntlhatebo eno ya lefatshe e gatelela thomo ya rona, eo e santseng e tsepame mo go tshegetsang kgolo ya intaseteri ya Aforika Borwa. Ka go dirisa bokgoni jwa rona le ditirisano mmogo tsa boditšhabatšhaba, re neelana ka ditharabololo tsa makoya tse di mekamekanang le ditlhoko tse di runyang go lephatsa la meepo, fa gae le boditšhabatšhaba. Re itlama go kgweetsa boitlhamelo ka patlisiso ya tirisano, botsalano jwa intaseteri jo bo tiileng, le setso seo se agelelang botlhami le botlhale.

Boto ya Mintek e tlotla bodiredi jwa rona mo go maswe, e ba bona e le thoto e e boleng go feta. Re dumela gore go beeletsa go tthabololo ya bona e e tswelletse ga go molemo fela, mme go botlhokwa go katlego e e tswelletse ya Mintek. Re akgola maitlamo a a tswelletse go katiso le tthabololo, tseo di tsayangkarolo e e botlhokwa go ngoka le go tshola talente e e kwa godimo ya patlisiso. Badiredi ba Mintek ba bontshitse maitlamo a a tiileng go nonontsha bokgoni, thuto le kitso ya bona. Ba tthaloganya botlhokwa jwa go nna ba le mo dinakong ka ditlhoko tse di runyang mo intasetering. Maikaelelo a bona go tokafatso e e tswelletse a ba kgontsha go ikarabela ka nonofo go dikgwetlho le ditšhono, go amantsha boitlhamelo le go tiisa kemo ya boeteledipele jwa Mintek. Mokgwa ono ga o ungwele fela setheo sa rona mme gape o na le seabe go tthatloso le tswelletso ya intaseteri. Gape, Boto e dumela go maiteko a a tserweng go tllisa kwa pele tthabololo ya dikgono ka botlalo le go tthama bodiredi jo bo farologaneng mme bo tsenyeletsa. Maiteko ano a botlhokwa go tshola maemo a Mintek jaaka motswedi o o matla wa boitlhamedi le lebone la botswerere go lefapha la diminerale le ditshipi.

Jaaka baeteledipele ba setheo se sa maikarabelo, re ipela ka go tshegetsang melawana ya Tikologo, Loago, le Bobusi (ESG), go diragatsa maitlamo a rona a a tsitsitseng go ditlwaello tse di tswelletse go diminerale le ditshipi, tthabololo ya thekenoloji, le maitsholo a a siameng. Seno se netefatsa gore diabe tsa Mintek di tsamaisana le maikaelelo a baagi ba bophara. Maiteko a rona a tsenyeletsa tiro ya botlhokwa ya go tsosolosa meepo e e senang beng le e e tlogetsweng fela, go neelana ka katiso go borameepo-potlana, le go tsenyatirisong ditlwaello tsa botsamaisi jwa matlakala jo bo boikarabelo.

Jaaka re keteka segopotso sa bo90 sa Mintek ka 2024, re

gopola mewa ya bomabudisatselaba basimolodi, eo e tswelletse go rotloetsa maitlamo a rona go boitlhamedi mmogo lephetogo e e siameng go diintaseteri tsa diminerale le ditshipi.

Kwa bokhutlong, ke fetisa ditebogo go badiredi ba rona ba ba nang le maikaelelo, balekane ba tlotlego, le ditheo tse di re tshegetsang tsa puso. Mmogo, re tshegetsang boswa jwa Mintek go boitlhamedi le boeteledipele go lephata la meepo la Aforika Borwa.

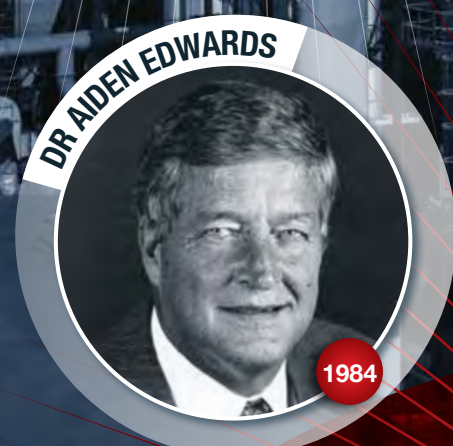
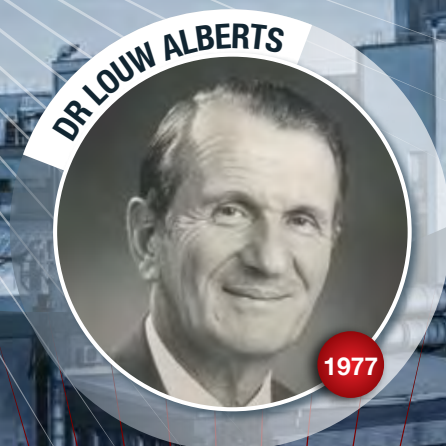
Ng Thibedi Ramontja


Modulasetilo
Boto ya Mintek

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Chief Executive Officer's Review

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Umbiko Kafuphi Wesikhulu Sesigungu Esiphezulu	20
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Left: Mintek top leadership since 1934.



Dr Molefi Motuku
Chief Executive Officer

2.1 Chief Executive Officer's Review

This year marks a period of significant achievement for Mintek, coinciding with our 90th anniversary. We reflect on a rich legacy of innovation, resilience, and excellence that has helped grow South Africa's minerals industry. From pioneering work on Upper Group 2 (UG2) that doubled the country's Platinum Group Metal (PGM) reserves, to innovative measurement and control systems used globally, and driving the revival of the ferrometals industry, we have much to celebrate.

We stand poised to continue shaping the future of minerals and metallurgy, setting new standards for excellence, sustainability, and industry leadership.

We're pleased to report that Mintek has not only successfully executed our key strategic and RDI initiatives but exceeded targets in key performance areas. This report highlights the financial performance, technological advancements, and unwavering commitment we've brought to building a sustainable future for the minerals and metallurgy industry. Launched in 2021, Mintek Strategy 2030 sought to address declining commercial revenue and resource constraints head-on. We resolved to capitalise on the anticipated rise in global mineral demand, while also focusing on developing a highly capable workforce. Market engagement and cultural transformation were central to achieving our strategic objectives.

Our financial performance this year has been exceptional, exceeding our target. We recorded R765.6 million in total revenue at the end of the financial year, a 31% increase over our budgeted income of R584.6 million. This outstanding result is a testament to the strong performance of our products and services, particularly in the area of closing and rehabilitating ownerless and derelict mines in South Africa, where we experienced greater demand than anticipated.

We've strengthened our workforce, driven high-quality research aligned with Mintek Strategy 2030, and ultimately delivered exceptional value. Innovation remains core to Mintek's operations. The projects we detail in this report not only showcase our technological prowess but also establish new benchmarks for industry efficiency and environmental responsibility.

Furthermore, Mintek made significant strides in additive manufacturing and metal powder production through the acquisition of cutting-edge technologies such as the Amazemet rePowder ultrasonic atomisation and alloy development machine, the only one in South Africa, possesses the capability to process nearly any material, ranging from alloys with low melting points to those with high melting thresholds. Mintek is also proud to have been awarded the prestigious RMP0018 (Reference Material Producers 0018) accreditation for its production facilities of Certified Reference Materials (CRMs). These advancements position Mintek as a leader in advanced manufacturing techniques, fostering greater independence and innovation within the local manufacturing sector. The impact extends beyond our operations, contributing to the broader industry ecosystem.

Mintek continues its pivotal role in addressing national priorities, collaborating closely with the Department of Mineral Resources and Energy (DMRE) on the rehabilitation and closure of derelict mines. We acknowledge the progress made while recognising the need for continued efforts to meet the industry's evolving needs. We continue to work tirelessly to contribute to the revitalisation of South Africa's ferroalloys industry. We are developing energy-efficient process flow sheets and carbon-free production techniques, paving the way for a sustainable and competitive domestic mining landscape. Additionally, advancements in heap leaching technologies have unlocked opportunities for processing low-grade ores, enhancing resource extraction and promoting industry-wide economic viability.

Mintek recognises the importance of a skilled and inclusive workforce. We prioritise employee well-being and professional development initiatives throughout the year. During the 2023/2024 period, Mintek proudly supported 68 employees in advancing their studies. We extend our congratulations to all recipients for their commitment to continuous learning and development. Among these, 11 employees obtained their PhDs, and 32 achieved master's degrees in Science, Engineering, and Technology (SET) disciplines. These bursaries, covering a wide range of qualifications and fields, play a crucial role in enhancing Mintek's workforce capabilities and qualifications profile.

We also commend all employees who funded their own studies for their dedication and contributions towards driving innovation and excellence within Mintek. On behalf of the executive management, I express sincere gratitude

to the entire Mintek team for their dedication, passion, and resilience that has brought us to this point.

Thank you for your continued support and partnership as we embark on this exciting journey towards Mintek's centenary and beyond.

Sincerely,



Chief Executive Officer
Dr Molefi Motuku

**Dkt Molefi Motuku***Isikhulu Sesigungu Esiphezulu*

2.1 | Umbiko Kafuphi Wesikhulu Sesigungu Esiphezulu

Lo nyaka uqopha isikhathi sempumelelo ebalulekile ye-Mintek, ehambisana nokugubha iminyaka yethu engama-90. Sicabanga ngohambo oseluhaniwe mayelana nokusungulwa kwezinto ezintsha, ukuqina, kanye nokwenza kahle okusize ukukhulisa imboni yezimbiwaphansi eNingizimu Afrika. Kusukela emsebenzini wokuqala we-Upper Group 2 (UG2) ophinde waphinda kabili izindawo ezigciniwe zezwe ze-Platinum Group Metal (PGM), kuya kumasistimu okulinganisa nokulawula asetshenziswa emhlabeni wonke, futhi aqhubekisela phambili ukuvuselelwa kwemboni ye-ferrometals, sinokuningi okufanele sikubungaze. Simi ngomumo wokuqhubeka nokubumba ikusasa lezimbiwaphansi kanye nensimbi, sihlela amazinga amasha okusebenza kahle, ukusimama, kanye nobuholi bemboni.

Siyajabula ukubika ukuthi i-Mintek ayigcinanga nje ngokuphumelela ekusebenziseni amasu ethu abalulekile kanye nezinhlelo ze-RDI kodwa yeqo imigomo emikhakheni yokusebenza ebalulekile. Lo mbiko ugqamisa ukusebenza kwezimali, intuthuko yezobuchwepheshe, kanye nokuzinikela okungantengantengi esikulethe ekwakheni ikusasa elisimeme lemboniyezimbiwaphansi kanye nensimbi.

Njengoba uhlelo lwethu lwe-Mintek Strategy 2030 olwethulwa ngo-2021, okwakuhloswe ngalo ukubhekana ngqo nokwehla kwemali engenayo yezentengiselwano kanye nezinkinga zezinsiza. Sinqume ukusebenzisa imali ngokwenyuka obekulindlekile kwesidingo sezimbiwa emhlabeni wonke, sibe sigxile ekuthuthukiseni abasebenzi abanekhono eliphezulu.

Ukusebenzelana nezimakethe kanye noguquko lwamasiko bekuyingqikithi yokufeza izinhloso zethu zamasu.

Ukusebenza kwethu kwezimali kulo nyaka kube kule kahulu, kweqa umgomo wethu. Sirekhode isamba sezigidi ezingu-R765.6 emalini engenile ekupheleni konyaka

wezezimali, okube wukunyuka ngama-31% kubhajethi yezigidi ezingu-R584.6. Lo mphumela oncomekayo uwubufakazi bokusebenza okuqinile kwemikhqizo namasevisi ethu, ikakhulukazi endaweni yokuvala nokuvuselela izimayini ezingenabanikazi nezingasebenzi kahle eNingizimu Afrika, lapho sibe nesidingo esikhulu kunalokho esasikulindele.

Siqinise abasebenzi bethu, saqhuba uchwephesho lwezinga eliphezulu oluhambisana nohlelo lwe-Mintek Strategy 2030, olube yimpumelelo enkulu. Ukusungula okusha kusalokhu kuwumgogodla wemisebenzi ye-Mintek. Amaphrojekthi okukhulunywa kabanzi ngawo kulo mbiko awabonisi nje kuphela amandla ethu kwezobuchwepheshe kodwa futhi asungula izilinganiso ezintsha zokusebenza kahle kwemboni nokuzibophezela kwezemvelo.

Ngaphezu kwalokho, i-Mintek yenze amagxathu abalulekile ekukhiqizeni okungeziwe kanye nokukhiqizwa kwempushana yensimbi ngokutholwa kobuchwepheshe obusezingeni eliphezulu obufana ne-Amazemet rePowder ultrasonic atomisation nomshini owenza i-alloy, okuwukuphela kwawo eNingizimu Afrika, onekhono lokucubungula cishe noma

iyiphi impahla, kusukela ancibilika ngokwezinga eliphansi kuya kulawo ancibilika ngokwezinga eliphezulu.

IMintek iyaziqhenya futhi ngokuthi iklonyelise nge-RMP0018 (Reference Material Producers 0018) okuyisiqinisekiso sokugunyazwa mayelana nezikhungo zayo zokukhiqizwa kwe-Certified Reference Material (ama-CRM). Le ntuthuko ibeka i-Mintek njengomholi kumasu okukhiqiza athuthukile, akhuthaza ukuzimela okukhulu kanye nokuqanjwa okusha ngaphakathi komkhakha wezokukhiqiza wasekhaya. Umthelela udlulela ngalé kwemisebenzi yethu, unegalelo ohlelweni olubanzi lwezinhlelo zemisebenzi mayelana nemboni.

I-Mintek iyaqhubeka neqhaza layo elibalulekile ekubhekaneni nezinto ezibalulekile kuzwelonke, isebenzisana noMnyango Wezokumbiwa phansi Namandla (i-DMRE) ekuvuselelweni nasekuvalweni kwezimayini ezingasebenzi. Siyayibonga inqubekelaphambili eseyenziwe ngenkathi sibona isidingo semizamo eqhubekayo yokuhlangabezana nezidingo ezithuthukayo zemboni. Siyaqhubeka nokusebenza ngokuzikhandla ukufaka isandla ekuvuseleleni imboni ye-ferroalloys yaseNingizimu Afrika. Sakha amashidi okugeleza kwenqubo yokongiwa kwamandla kanye nobuchwepheshe bokukhiqiza ngaphandle kokukhiphela ikhabhoni emoyeni, nenghloso yokuvula indlela yokusimama nokuncintisana kwezimayini zasekhaya. Ukwengeza, intuthuko kubuchwepheshe be-heap leaching iye yavula amathuba okucubungula ama-ore asezingeni eliphansi, ukukhulisa ukukhishwa kwezinsiza kanye nokukhuthaza ukusebenza kahle kwezomnotho embonini yonke.

I-Mintek iyakubona ukubaluleka kwabasebenzi abanamakhono nababandakanyayo. Sibeka eqhulwini inhlalakahle yabasebenzi kanye nezinhlelo zokuthuthukisa amakhono un-

yaka wonke. Esikhathini sika-2023/2024, i-Mintek ngokuziqhenya yesekela abasebenzi abangama-68 ekuthuthukiseni izifundo zabo. Sidlulisa ukuhalalisela kwethu kubo bonke abamukeli ngokuzibophezela kwabo ekufundeni nasekuthuthukeni okuqhubekayo. Kulaba, abasebenzi abayi-11 bathole iziqu zabo ze-PhD, kanti abangama-32 bathole iziqu ze-master in Science, Engineering, and Technology (SET). Le mifundaze, ehlanganisa inhlobo-nhlobo yeziqu kanye nemikhakha, idlala indima ebalulekile ekuthuthukiseni amakhono abasebenzi be-Mintek kanye nephrofayili yeziqu.

Siphinde situse bonke abasebenzi abazifunde ngemali yabo ngokuzinikela kwabo kanye neqhaza labo ekuthuthukiseni ukusungula izinto ezintsha kanye nokwenza kahle e-Mintek. Egameni labaphathi besigungu esiphezulu, ngidlulisa ukubonga okukhulu kulo lonke ithimba le-Mintek ngokuzinikela, ngentshiseko, kanye nokuqina okusenze sikwazi ukufinyelela kuleli qophelo.

Siyabonga ngokuseseka kwenu okuqhubekayo kanye nokubambisana nathi selokhu saqala lolu hambo olujabulisayo nolubheke eminyakeni eyikhulu ye-Mintek nangale kwayo.

Ozithobayo,


*Isikhulu Sesigungu Esiphezulu***Dkt Molefi Motuku**

**Ng Molefi Motuku***Mokhuduthamagamogolo*

2.1 | Tebosešwa ka Mokhuduthamagamogolo

Monongwaga e tshwaya phitlhelelo e e botlhokwa ya Mintek, e kopanelwa le segopotso sa bo90. Re lebagape boswa jo bo humileng ka boithamelolo, boithshoko, le botswerere tseo di thusitseng go gidisa intaseteri ya diminerale ya Aforika Borwa. Go tloga go tiro ya ketapele go Upper Group 2 (UG2) eo e godisitseng Platinum Group Metal (PGM) ya naga e tshotse, go itlhamela ditekanyo le taolo ya ditsamaiso tseo di dirisiwang mo lefatsheng, le go kgweetsa tsosoloso ya intaseteri ya diferometale, go gontsi go re go ketekang. Re malala a laotswe go tswelela go bopa isago ya diminerale le ditshipi, go baya maemo a maswa a bokgoni, tswelletso, le boeteledipele jwa intaseteri.

Re itumelela go bega gore Mintek ga e a atlega go togamaanokgolo le maitlhamo a RDI fela, mme e fetile diphitlhelelo go dintlha tsa tiragatsokgolo. Pegelo eno e tlhagisa tiragatso ya ditšhelete, tokafatso ya thekenoloji, le maitlamo a a tsitsitseng ao re a tsenyang mo go ageng isago e e tswelletso ya intaseteri ya diminerale le ditshipi.

E thankgolotswe ka 2021, Mintek Togamaano 2030 e batla go mekamekana le letseno la kgwebo le dikgoreletsi go didiriswa ka tlhamalalo. Re sweditse go ngotla tlhokego e e golang e e lebeletsweng ya diminerale lefatsheng ka bophara, re ntse gape re tsepile mo go ageng bodiredi jwa bokgoni jo bo kwa godimo. Ikgolaganyo ya mmakete le phetogo ya setso di nnile bothokwa go fitlhelela maikaelelo a togamaano ya rona.

Monongwaga, tiragatso ya rona ya ditšhelete ke e e gaisang, e feta dipeelo tsa rona. Re fitlhetse rekoto ya dimilione di le R765.6 ya letseno mo ngwageng ono wa ditšhelete, e leng koketsego ka 31% go feta letseno la rona la tekanyetso la dimilione di le R584.6. Dipholo tseo tse di kgatlhisang ke bopaki go tiragatso e e matla ya ditlhagiswa

le ditirelo tsa rona,segolo mo lephateng la go tswala le go tsosolosa meepo e e senang beng le e e tswetsweng mo Aforika Borwa, koo re itemogelang tlhoko e kgolwane go feta e e neng e lebeletsweng.

Re matlafaditse bodiredi jwa rona, patlisiso ya boleng go-dimo eo e amanang le Mintek Togamaano 2030, mme kwa bokhutlong e neelane ka boleng jo bo duleng diatla. Diporojeke tse di tlhalositsweng fano ga se fela go bontsha manontlhotlho a a thekenoloji ya rona mme gape ke go tlhama ditekanyo tsa nonofo ya intaseteri le maikarabelo a tikologo.

Go feta fao, Mintek e tsere dikgato go dira ditlaleletsi le tlhagiso ya poere ya mmetale ka go fitlhelela dithekenoloji tsa maemogodimo tse di jaaka Amazemet rePowder aleterasonike athomaesenshene le motšhini wa tlhabololo ya tshipi, o le mongwe fela mo Aforika Borwa, o o nang le bokgoni jwa go tsamaisa e ka nna materiale mongwe le mongwe, go tloga go ditshipi tse di nyerolosiwang ka dintlhana tse di kwa tlase go ya go tseo di tlhokang go nyelosiwa ka tekanyetso e e kwa godimo. Gape, Mintek e ipela ka go bo e amogetse

RMP0018 (Reference Material Producers 0018 – Batlhagisa Kaedi ya Materiale) ya maemogodimo go didiriswa tsa yona tsa tlhagiso ya (Dimateriale tsa Kaedi e e Netefaditsweng) Certified Reference Materials (diCRM). Dikgatotsweletso tseo di baya Mintek jaaka moeteledipele wa ditegeniki tse di tokafetseng tsa bothagisi, di tsenya ikemelo le itlhamelo tse di kgolwane go sektara ya bothagisi. Seabe se atologela go feta ditiragatso tsa rona, le go tsayakaro go tikologo ya intaseteri ka bophara.

Mintek e tswelela ka karolo ya yona e e botlhokwa go mekamekana le ditlapele tsa bosetšhaba, ka tirisanommogo le Lefapha la Didiriswa tsa Diminerale le Eneji (DMRE) ka ga tsosoloso le go tswalwa ga meepo e e tlogetsweng fela. Re dumelana le kgatelopele e e dirilweng ntse re lemoga tlhokego ya maiteko a a tsweleng go fitlhelela ditlhoko tse runyang tsa intaseteri. Re tswelela go dira ka bopelotelele go nna le seabe go tsosolosa intaseteri ya feroaloye mo Aforika Borwa. Re aga ditegeniki tsa tsamaiso ya keleelo ya shiti e e nonofileng ya eneji mme e dirwa e sena khabone, e e fetilhang tsela go boemophara jwa meepo ya selegae e e tsweleng mme e na le bogaisani. Go tlaleletsa, tokafatso go dithekenoloji tsa go tlhatswa ka motlele go lokotse ditšhono tsa go dira diminerale tsa maemotlase, go natlafatsa go ntshiwa ga didiriswa le go tlhatlosa itsholelo ya (ikonomi) go intaseteri ka bophara.

Mintek e lemoga bothokwa jwa bodiredi jo bo nang le kgono mme bo tsenyeletsa. Re baya kwa pele botsogo jwa badi-riedi le maitlhamo a tlhabololo ya seporofeshenale go ralala ngwaga. Mo pakeng ya 2023/2024, Mintek e ipela go bo e thusitse badi-riedi ba le 68 go tsweletsa dithuto tsa bona. Re akgola baamogelathuso botlhe ka maikaelelo a bona go ithuta le go itlhabolola go go tswelletseng. Magareng ga bona, badi-riedi ba le 11 ba amogetse di PhD,mme ba

le 32, ba fitlhetse digerata tsa Mmasetase go maphata a Saense, Boenjiniere le Thekenoloji (SET). Dibasari tseo, di akaretsa ditshwanelego mo maphateng ka mefuta, di tsayakaro e e botlhokwa go nonontsha porofaele ya bokgoni le ditshwanelego tsa bodiredi jwa Mintek.

Go feta fao, re leboga badi-riedi botlhe bao ba dueletseng dithuto tsa bona go bo ba nnile lemaikaelelo le diabe mo go kgweetseng boithlamedi le bokgoni mo Mintek. Mo boemong jwabotsamaisikhuduthamaga, ke romela ditebogo go setlhophisa sotlhe sa Mintek ka maitlamo,lerato, le boithshoko tseo di re gorositseng fano.

Ke lebogela tshegetso le bolekaneng jo bo tswelletsengpele fa re semelelela go leeto le le itumedisang la ngwagakgolo le go feta la Mintek.

Weno,


*Mokhuduthamagamogolo***Ng Molefi Motuku**

3

Statement of Responsibility for Confirmation of Accuracy of the Annual Report

We confirm the following to the best of our knowledge and belief:

All information and amounts disclosed in the annual report are consistent with the annual financial statements audited by the Auditor-General.

The annual report is comprehensive, accurate, and does not contain any omissions.

The annual report has been prepared following the guidelines for annual reports issued by the National Treasury.

The annual financial statements have been compiled in accordance with the Financial Reporting Standards applicable to Mintek.

The annual report accurately represents Mintek's operations, performance information, human resources data, and financial affairs for the fiscal year ended 31 March 2024.



Chief Executive Officer
Dr Molefi Motuku
26 July 2024



Chairperson of the Board
Dr Thibedi Ramontja
26 July 2024

1934 - 1943



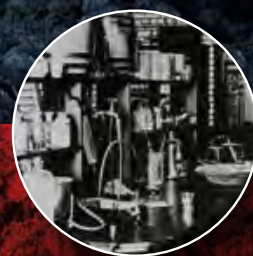
1935
Building of Minerals
Research Lab



1936
Main Minerals
Research Laboratory



1938
MRL's
Metallurgical Lab



1940
Mintek's First
Chemist and
Assayer



1942
The Shelf-kin

Left: The preparation of samples in mineral processing is crucial for the separation of valuable mineral from its ore.

4

Overview of Mintek

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1944 - 1953



1944

Large-scale
Ore-dressing Lab



1945

The Pyrometallurgy
Lab



1946

A Bay at Govern-
ment Metallurgical
Lab



1952

Dr D.F. Malan & Sir
George Albu



1953

The Activity in the
Minerals Research
Lab

Left: Mintek's mineralogical services offer cutting-edge equipment designed for precise characterisation of complex ores.



4.1 | Our Mandate

Mintek's mandate is to promote mineral technology and foster the establishment and expansion of industries in the field of minerals and their derived products through research, development, and technology transfer. Fulfilling this mandate is crucial in addressing significant challenges faced by South Africa, including economic deceleration and the urgent need to combat the triple challenges of poverty, unemployment, and inequality. By fostering industrial growth and development, Mintek actively contributes to overcoming these challenges and promoting a more prosperous future.

In executing our mandate, Mintek tailors its industry-focused interventions based on an understanding of each customer's level of development and the industry segments. This approach enables Mintek to design and implement fit-for-purpose programmes that can meet the needs of new, emerging, mature, and declining industries. Mintek plays a developmental role that may necessitate decisions that are not always optimal from a commercial perspective but contribute to growth and development in South Africa and the rest of the continent.

4.2 | What We Do

At Mintek, we possess a comprehensive range of capabilities and operations encompassing research, development, and innovation throughout the minerals value chain. Our services encompass supporting exploration services through sample analysis and ore characterisation, mineral processing, extraction, refining, and production of metal-based products, process development, and post-mining support. Our product line extends from end-user consumer products to physical and virtual solution-based products and services.

At Mintek, our aim is to transform minerals to impact lives positively. We fully recognise the significant influence minerals have on economies, and through our innovative approaches, we aim to unlock their value and catalyse opportunities within our mineral-based economy. We employ a focused approach that emphasises scientific excellence and technological breakthroughs that positively impact the industry. We take great pride in leading the way in mineral technology innovation, not only within Africa but also globally.

Mintek's core business is centred on the following three pillars:

- R&D and Technology Innovation:** Mintek conducts research and development to create efficient mineral processing technologies and develop value-added products and services. This pillar focuses on improving technical processes and methods to enhance mineral production. Mintek also offers comprehensive metallurgical feasibility studies and a range of services to companies evaluating opportunities to explore the development of new mineral initiatives. These services include initial investigations, process development and design, construction, and the commissioning of industrial plants.
- Industry Support:** This pillar focuses on fostering the establishment and expansion of industries in the field of minerals and products derived thereof whilst transferring Mintek-developed technologies to industry. We maintain close contact with the industry to ensure a clear understanding of industry needs so we can incorporate them into our research and development pipeline. Mintek works closely with the sector by forming strategic collaborations with industry players, academic institutions, research institutions, government bodies, state-owned entities, and communities.
- Human Capital Development:** Mintek is dedicated to investing in the development of its human capital and organisational skills to establish world-class excellence in research and development. Recognising its workforce's value, Mintek strongly emphasises nurturing and enhancing its employees' skills, knowledge, and expertise, ensuring they remain at the forefront of their respective fields.

4.3 | Our Vision

Our vision is to be a global leader in mineral and metallurgical innovation.

4.4 | Our Mission

Our mission is to lead innovation and technology excellence in mineral resources to drive development and inclusive economic growth.

4.5 | Our Values

Excellence is the unwavering standard we relentlessly pursue, defining our ethos. It drives us to exceed expectations, establish new benchmarks, and create a legacy of unparalleled achievement in every endeavour we undertake.

Teamwork is the heartbeat of our character; we invest in each other's growth as we collectively strive for excellence.

Agility - In the face of constant change, our agility is our advantage. We don't just adapt; we anticipate and innovate on the go, staying ahead in a dynamic environment.

Integrity is our compass, guiding us to prioritise ethical actions and unwavering accountability.

Respect is at the core of our culture, embracing diversity, actively listening, and fostering an environment where ideas flourish and dignity is commonplace. Even in challenging times, we prioritise mutual respect over personal differences.

Innovation: We embrace a mindset of continuous exploration, allowing for inventive approaches to enhance our operations, services to clients, and our impact on the broader industry. We view innovation as a catalyst for progress, driving us to stay at the forefront of mineral and metallurgical excellence.



Respect



Integrity



Agility



Teamwork



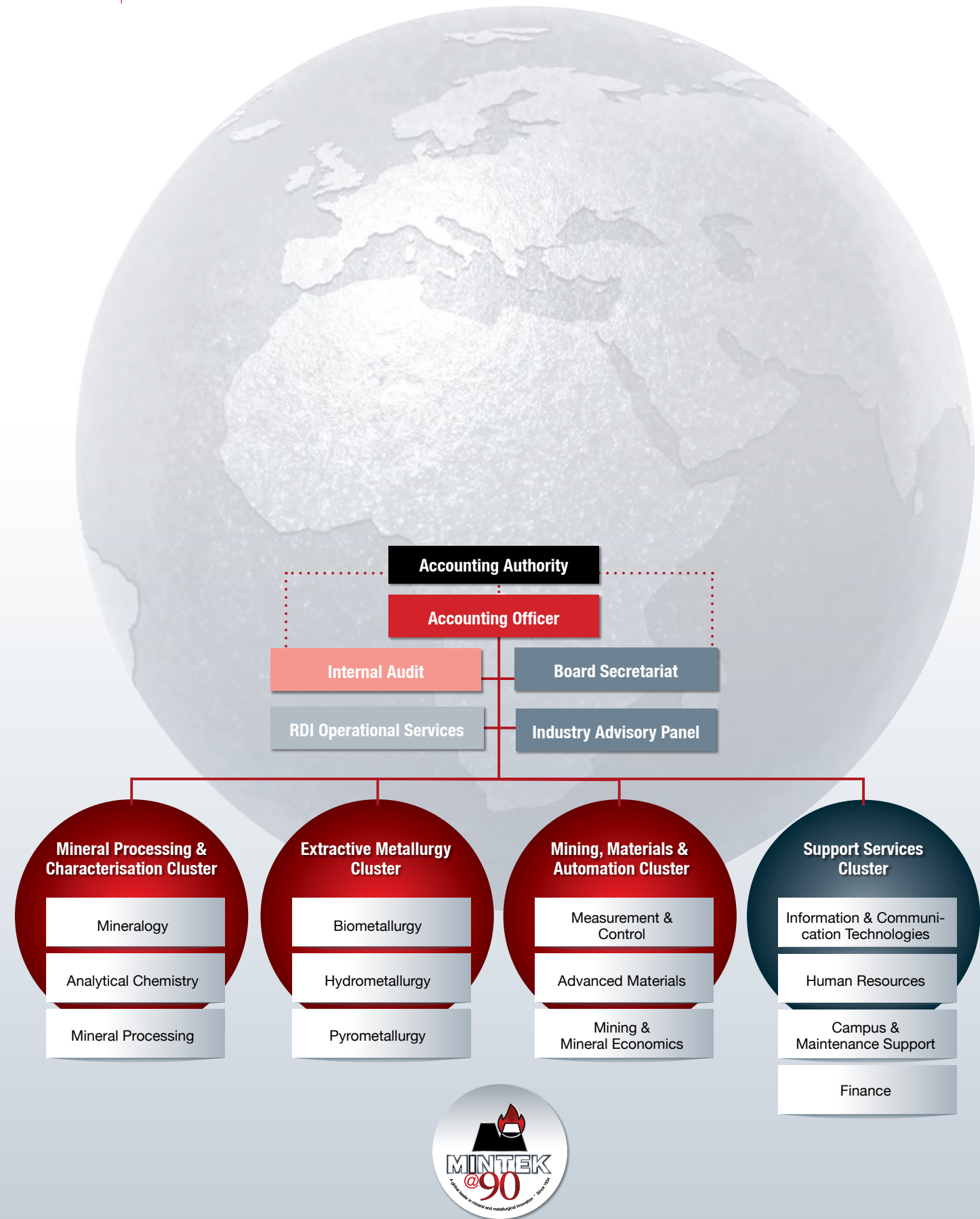
Innovation



Excellence



4.6 | Organisational Structure



4.7 | Our Strategic Objectives

To fulfil its mandate and achieve its strategic goals, Mintek focuses its operations on the following key strategic objectives:

The first objective is to **conduct relevant applied research** that is both useful and impactful, yielding high-impact scientific outputs and outcomes that contribute to advancements in the field.



The second objective is to **foster industry growth and development**. This objective highlights Mintek's commitment to the growth and development of industries within the minerals sector, supporting the establishment and expansion of existing industries in this crucial field.



The third objective is the **development of a capable and diverse workforce**. Recognising people as our most valuable asset, we strive to attract and develop a workforce aligned with its strategy and representing our broad cultures and communities.



The fourth objective focuses on **infrastructure development**, specifically the creation of a Mintek campus of the future equipped with state-of-the-art facilities and resources to support its scientific research goals and drive innovation in the industry.



The fifth and final objective is **to achieve financial sustainability**. Attaining this objective will enable the organisation to continue its impactful research and development activities, ensuring their long-term viability and impact.





4.8 | Mintek Value Chain

Mintek uses its broad array of abilities and operations, covering research, development, and innovation across all stages of the minerals value chain.



4.9 | Mintek Global Footprint

Mintek operates on a global scale, although it is geographically located in Randburg. Our products and services are utilised in over 60 countries worldwide, including major economies such as the US, France, China, India, Saudi Arabia, and Australia.

Our global footprint reflects not only our expertise, but our dedication to global collaboration. We actively participate in joint research initiatives and technology transfer programmes with partners across the globe, contributing to global advancements in mineral practices.

In the past year, Mintek's global engagement was exemplified by diverse international collaborations spanning technology deployment, training and development, research partnerships, and conference participation. We have commissioned advanced technologies like the Minfurn25 in Zimbabwe and installed and serviced Cynoprobe systems in various countries. Our commitment to knowledge sharing is evident in training initiatives for partners and participation in the Tanzania Global Immersion programme. We actively collaborated on research projects, such as the SA-Japan study on shape memory alloys, EU-funded Horizon 2020 projects with partners across Europe and engaged in international forums like the EU SUNSHINE meeting. Additionally, we showcased our expertise and foster connections at prominent international conferences. These multi-faceted collaborations underscore Mintek's dedication to advancing the mining industry through global knowledge exchange, technological innovation, and sustainable practices.



Top right: The Minfurn furnace offers energy efficiency in the regeneration of activated carbon.

Middle right: The Cynoprobe analyses, controls and monitors cyanide concentration during the gold recovery process.





4.9 | Mintek Global Footprint



MEASUREMENT & CONTROL

Instruments Only

Argentina, Armenia, Burkina Faso, Ghana, Guyana, Indonesia, Kyrgyzstan, Laos, Mauritania, Namibia, Peru, Philippines, Russia, Saudi Arabia, Guinea, Tanzania, Sudan, Serbia, Montenegro, South Sudan, Ecuador, Liberia.

Instruments and Process Control

Chile, Brazil, United States, France, Kazakhstan, Finland, Australia, Papua New Guinea, South Africa, Zimbabwe, Zambia, DR Congo, Cote d’ Ivoire, Mali, New Zealand, Mexico, Turkey, Canada.

PROCESS CONTROL

Botswana
India
Iran
China
Sweden
Portugal
Egypt
Poland
Malaysia

TANK BIOLEACHING TECHNOLOGIES

Australia
China
Mexico

HEAP BIOLEACHING TECHNOLOGY PILOTING

South Africa
Chile
Zambia
DR Congo
Namibia

PYROMETALLURGY – FERROCHROME, COBALT, NICKEL AND BATTERY RECYCLING

South Africa
Kazakhstan
Zambia
New Caledonia
Switzerland

5

90 years of Excellence in Research, Development & Innovation

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1954 - 1963



1955

The Mezanine Floor at GML



1959

Celebration of the 25th Anniversary



1960

Monitoring Radioactivity in the Uranium-refining Pilot Plant



1961

Part of Training for Metallurgists



1963

Rössing uranium project

Left: Over 200 units of the Cynoprobe have been sold globally.

5.1 Introduction



For nine decades, Mintek has been at the forefront of innovation across the mineral value chain, from mining and mineral processing to extraction and post-mining support.

Top left: Mintek Employees commemorating 90 years of Mintek.

Bottom left: DC Arc Furnace technology.

Top right: Furnace tapping



With over 90 years of experience, Mintek is at the forefront of innovation across the mineral value chain, from mining and mineral processing to extraction and post-mining support. Renowned for our work in mineral processing, mineral extraction expertise, energy, and water solutions, Mintek's skilled workforce contributes significantly to various industry sectors. Our Core RDI programmes form the foundation of pioneering research and development initiatives within the mining and metallurgical sectors. These programmes focus on enhancing mineral production productivity, efficient waste processing, and recovery of valuable by-products. By driving fundamental innovation, Mintek plays a crucial role in advancing industry practices and competitiveness.

Aligned with national priorities, our Strategic Programmes focus on value addition, economic diversification, and industrial growth within the mining and mineral processing sectors. Initiatives such as the revival of the ferroalloys industry, integrated solutions for mine effluent management, and energy storage for a just energy transition demonstrate Mintek's commitment to sustainable development and industry resilience.

This section delves into our achievements in Core RDI and strategic projects over the past nine decades before honing on our key achievements in the past financial year, highlighting Mintek's continuous innovation and impactful contributions to the mineral and metallurgical sectors.

5.2 Mintek, 90 Years of Transforming the Minerals Industry through Innovation

In 2024, Mintek celebrates its 90th anniversary, marking nine decades of innovative contributions to the minerals industry. This milestone provides an opportunity to reflect on Mintek's enduring legacy of innovation, collaboration, and transformative impact on South Africa's mineral sector and beyond.

Mintek's research and development efforts have consistently pushed the boundaries of mineral processing. By developing innovative processes and methodologies, Mintek has significantly improved the efficiency of extracting valuable minerals from ore. These advancements have not only boosted productivity in mines but have also prioritised environmental sustainability by reducing waste and energy consumption. The global reach of Mintek's expertise is evident in the export of its products to over 60 countries, solidifying its position as an international leader in mineral processing solutions.

A testament to Mintek's problem-solving capabilities is its pivotal role in unlocking the potential of South Africa's platinum group metals (PGMs) reserves in the early 1970s. Faced with the challenge of extracting PGMs from the difficult UG2 reef, Mintek collaborated with industry partners to develop a flotation process to reduce chromite content and a novel smelting technique capable of processing high-chromium concentrates. This breakthrough effectively doubled the country's PGM ore reserves, establishing South Africa as the world's leading PGMs producer. Mintek's DC (direct current) arc furnace technology, initially developed for PGMs, has since found widespread application in various commodities, showcasing its adaptability and transformative potential.

In the face of declining gold ore deposits in the 1980s, Mintek played a pivotal role in revitalising the gold industry through the development of carbon-in-pulp (CIP) technology. Collaborating closely with industry partners, Mintek introduced a cutting-edge approach to gold processing, not only increasing global production but also setting a new benchmark for the industry. Mintek's unique CIP approach, along with variations like resin-in-pulp, strategically manages carbon in the process, ensuring optimal efficiency. Additionally, the development of Minfurn, a highly energy-efficient furnace for regenerating activated carbon, has been instrumental in ensuring the long-term viability of the global gold processing industry.

Mintek's commitment to environmental sustainability and inclusivity is evident in initiatives like the ConRoast process. Developed in collaboration with industry partners, ConRoast addresses the environmental challenge of sulphur emissions while also enabling the treatment of PGMs-containing materials with high chromium contents. By assisting junior miners in their smelting operations, ConRoast has not only been successfully commercialised but has also contributed to the economic well-being of smaller players in the industry.

Mintek's commitment to efficiency extends beyond process innovations to encompass cutting-edge measurement and control technologies. In gold processing, Mintek's Cynoprobe instruments and Carbon (C2) meters have set new industry standards. The Cynoprobe, introduced in the 1970s, accurately measures cyanide concentration in leaching tanks, optimising the gold liberation process. The C2-meters, designed for the CIP process, ensure efficient carbon management, minimising gold losses. This integration of process breakthroughs with advanced measurement and control technologies exemplifies Mintek's comprehensive approach to enhancing efficiency and sustainability in the minerals industry.

In the pursuit of energy efficiency and production optimisation, Mintek's Furnstar control system for submerged arc furnaces stands as a testament to the institution's expertise in electrical control. With patented models and control systems, Furnstar achieves significant energy savings and production enhancements, proving its value in the energy-intensive smelting sector. The widespread adoption of Furnstar in smelters worldwide demonstrates Mintek's ability to deliver solutions that address real-world challenges and contribute to economic growth.

As Mintek commemorates its 90th anniversary, it looks towards the future with the Mintek@90 conference. This event will not only celebrate Mintek's past achievements but also serve as a platform for industry leaders, experts, and innovators to collaborate and shape the next chapter of the minerals industry. The conference will address critical topics such as energy, critical minerals, emerging technologies, resource unlocking, advanced materials, and the environmental, social, and human capital aspects of mining.

Mintek's 90-year journey of innovation, collaboration, and industry leadership serves as a strong foundation for future advancements. Building on this pedigree, Mintek remains committed to pushing the boundaries of mineral science and technology, driving sustainable practices, and fostering a thriving minerals industry for South Africa and the world.

5.3 | Shaping the Future through Innovation

Advanced Imaging and Scanning

Mintek's growing expertise in imaging, scanning, and analytical technologies is an important game-changer for precision analysis and security against illicit activities, showcasing our commitment to technological excellence and industry leadership across the minerals value chain.

Mintek continues to advance its expertise in imaging, scanning, and analytical technologies, employing state-of-the-art techniques such as 3D computed tomography, automated microscopy, non-destructive X-ray fluorescence (XRF), hyperspectral imaging, robust desktop X-ray diffraction (XRD), XRF spectroscopy, and advanced laser-based analyser instruments. These advanced tools provide unparalleled insights into the composition of precious and base metals, enabling precise material analysis, characterisation, and semi-quantitative confirmation of elements/phases of interest. Mintek's proficiency in these areas has significant

implications across industries, driving innovative developments in metallurgical research and development, enhancing precision mining operations, and swiftly confirming the authenticity of shipments. Moreover, Mintek's advanced material analysis capabilities play a crucial role in detecting and preventing the smuggling of precious stones, demonstrating Mintek's commitment to leveraging technology for societal impact and industry advancement.

Mintek's CRMs Achieve RMP0018 Facility Accreditation: Elevating the Mining Industry through Measurement Precision

Mintek's RMP0018 accreditation for Certified Reference Material production heralds a new era of excellence, trust, and transparency in mineral processing, empowering stakeholders with precision tools for responsible resource management.

Mintek has achieved a remarkable feat by securing the prestigious RMP0018 facility accreditation for its Certified Reference Material (CRM) production facilities. CRMs are materials or substances with known properties used as a calibration standard or reference in analytical chemistry, quality control, and scientific research. They are crucial for ensuring the accuracy, reliability, and traceability of measurements and analysis in the mining and related fields. This accreditation marks a significant milestone for Mintek, solidifying its position as a leader in ensuring the highest standards of measurement accuracy and reliability within the minerals industry and its related sectors.

CRMs are key in analytical chemistry, quality control, and scientific research. These vital tools function as benchmarks, allowing laboratories to calibrate their instruments and verify the accuracy and consistency of their analytical methods. In the mining industry, where precise measurement of valuable minerals is critical for economic viability and responsible resource management, CRMs play an indispensable role. This accreditation holds significant historical importance for Mintek and South Africa's mineral industry. Mintek first established its CRM brand, South African Reference

Materials (SARM) in 1974, and for the past 50 years has earned their reputation as the go-to reference materials for countless laboratories, mines, and institutions globally. This accreditation will further strengthen Mintek's ability to deliver excellent services to its clients.



Mintek produces and sells certified reference materials under the SARM brand

Right: An autogenous mill is used in mineral processing to grind the ore without using traditional grinding media like steel balls or rods.



Innovating for Efficiency: Mintek's AutoMill leads the way in Mineral Processing

Mintek's AutoMill project sets new standards in mineral processing efficiency. It not only reduces waste and emissions but also embodies a steadfast commitment to sustainability and pioneering progress.

Acknowledging the environmental impact of steel grinding media in comminution processes, Mintek continues its work on the AutoMill project, an innovative technology that sets a new standard for efficiency. By shifting from high ball load semi-autogenous (SAG) milling to autogenous (AG) milling, Mintek not only addresses energy wastage but also significantly reduces CO₂ emissions. Equipped with state-of-the-art instrumentation, the AutoMill enables

reliable prediction of circuit performance, facilitating seamless transition and optimisation on an industrial scale. This innovation not only opens new opportunities for Mintek to expand its expertise but also contributes to the advancement of AG milling in mineral sand processing, showcasing Mintek's commitment to sustainability and technological progress in the mining industry.

5.4 | Innovation in Unlocking Resources: Supporting Industry in Unlocking Value from Ores

Mintek's strategic initiatives in energy-efficient ferroalloy processes signify a significant step towards reviving the industry amidst formidable energy challenges.

Resurrecting South Africa's Ferroalloys Industry: Mintek's Pioneering Efforts for the Industry's Revival

The South African ferroalloys industry faces formidable challenges such as soaring electricity costs, outdated technologies, and ore price hikes. The sector has struggled to maintain its global competitiveness and financial sustainability. In response, Mintek has embarked on a series of pilot-scale projects spanning diverse areas, from increasing energy flexibility and reducing the overall energy consumption and CO₂ emission in manganese alloy production to pioneering the production of carbon-free silicon metal from secondary raw materials. Moreover, our research extends to revolutionary processes like hydrogen

pre-reduction and aluminothermic reduction, paving the way for carbon-free production of manganese and its alloys. These ventures, undertaken in collaboration with esteemed local and international partners, signify a transformative leap towards adopting globally competitive technologies within the South African ferroalloys industry.

Through these visionary projects, Mintek envisions not just revitalising the ferroalloys sector but also catalysing a paradigm shift towards sustainability, efficiency, and international competitiveness.

Innovating to Unlock Value: Mintek's Advances in Heap Leaching

Mintek is developing advanced techniques for copper recovery from low-grade ores, unlocking value previously deemed unfeasible. This commitment to innovation and sustainability positions Mintek at the forefront of driving efficiency in the industry.

Heap leaching presents a cost-effective solution for processing low-grade ores and waste rock, expanding the economic viability of various mineral resources. Leveraging its world-class capabilities and facilities, Mintek has actively undertaken large-scale column heap leach projects for clients throughout the past year.

Mintek's metallurgical test work has focused on chloride leaching for copper recovery from ore, culminating in the development of a commercial plant currently in the design phase. Additionally, Mintek is engaged in a comprehensive process development programme for an international mining company, specifically targeting the heap leaching of copper from low-grade ore. This initiative is projected to be

implemented over the coming years, showcasing Mintek's commitment to advancing innovative solutions in mineral processing.

Furthering its research, Mintek is exploring advanced heap leaching techniques for low-grade ores. This includes a patented heap leach process incorporating an acid-proof binder, designed to effectively treat ores with high clay and/or silt content. The application of this innovative process has the potential to unlock previously untapped resources that were once considered technically and economically unfeasible, demonstrating Mintek's dedication to driving efficiency and sustainability in the mining industry.



Left: Bacterial cultures are preserved in the laboratory for use in tank and heap leaching processes.



Right: Heap leaching is used to recover low grade ores

5.5 Expanding Global Reach: Mintek's Success in International Instrument Sales

Mintek's global instrument sales success and strategic partnerships inspire innovation and excellence, driving advancements in mineral processing and metallurgy worldwide.



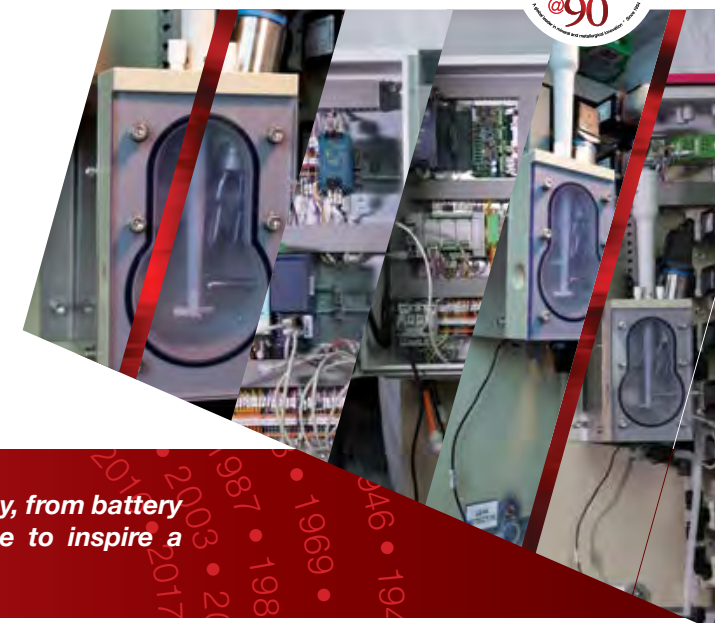
Left: Cyanide analysing cell of the Cynoprobe

Mintek continues to achieve significant success in international instrument sales, overcoming a myriad of supply chain challenges. Our flagship product, the Cynoprobe, continues to gain substantial traction among customers in many countries and the past year gained traction in several countries including the Democratic Republic of Congo, Canada, Ghana, Turkey, Australia, Tanzania, and Mexico, expanding our global presence. Moreover, our Lab Cynoprobes have attracted customers in Tanzania, Australia, India, Canada, and Russia. The Carbon Concentration Meter (C2M) has also seen successful

sales in Australia and Turkey, highlighting Mintek's strong presence in these markets.

In a strategic move to further expand Mintek's global product footprint, we have established an organisation-wide memorandum of understanding (MoU) with Molycop, Australia. This partnership aims to strengthen collaboration in the measurement and control domain and has since been extended to other technical areas within Mintek, including mineral processing and physical metallurgy.

Right: The Cynoprobe monitors and regulates cyanide levels in the gold recovery process.



5.6 Energy and Minerals Industry: Spearheading Sustainability and Efficiency

Mintek's innovative strides in sustainable energy, from battery technology to the HySA programme, continue to inspire a brighter, cleaner future.

Energy Storage as a Catalyst for a Just Energy Transition

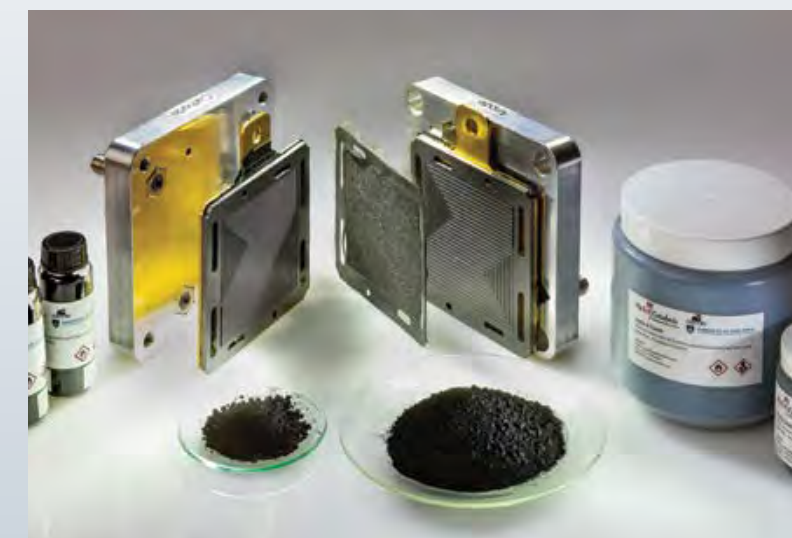
In the global push towards sustainable energy practices, the subject of just transition continues to gain prominence as a crucial aspect of achieving environmental and social sustainability. Mintek, as a leading institution in mineral and metallurgical innovation, plays a pivotal role in this context. Mintek is positioned to play a significant role in advancing energy storage technologies. Mintek's expertise in manufacturing high-purity battery precursors such as nickel sulphate, cobalt sulphate, and manganese sulphate monohydrate positions us as leaders in battery precursor technology development. Collaborating with industry partners, Mintek contributes to optimising and piloting

technology for extracting and purifying battery materials from diverse sources.

Several ongoing research projects focus on rare earth element extraction and separation from ores and waste materials. Collaboration with the mining sector remains a priority, with large-scale pilot projects executed for mining companies. Mintek is piloting an integrated process for rare earth element extraction from phosphogypsum waste for a company planning to commercialise this process in South Africa.

Fuelling Energy Innovation: The Hydrogen South Africa (HySA) National Programme

The Hydrogen South Africa (HySA) National Programme continues to evolve steadily, serving as a catalyst for innovation in energy and sustainability. In recent times, it has garnered significant interest from potential collaborators, both locally and globally. Born from a visionary collaboration between the South African Government and the Department of Science and Innovation (DSI), this pioneering initiative aims to nurture a sustainable hydrogen economy in South Africa while fostering opportunities for platinum beneficiation. Mintek's pivotal role as the co-host of the HySA Catalysis Centre of Competence (HySA/CoC) has been pivotal. With its expertise and intellectual property in platinum-based fuel cell catalyst production and membrane electrode assemblies for hydrogen fuel cells and electrolyzers, Mintek is at the forefront of research in energy innovation. Currently, there is an ongoing initiative to scale up catalyst and membrane electrode assembly (MEA) production, coupled with the construction of cutting-edge facilities, marking a significant stride towards sustainable energy technologies.



The HySA/Catalysis Centre of Competence at Mintek produces platinum-based fuel cell catalysts and their scale-up.

5.7 Innovative Solutions for the Industry's Future: Mintek's Amazemet Acquisition

Mintek's acquisition of the AMAZEMET rePowder ultrasonic atomisation machine and GE Additive Concept laser 3D printer, alongside its advancements in imaging, scanning, and analytical technologies, marks a significant leap towards providing cutting-edge solutions across industries, driving innovation, economic growth, and sustainability in South Africa and beyond.

As part of our goal to provide the highest technologically advanced solutions to our clientele, Mintek acquired the AMAZEMET rePowder ultrasonic atomisation and alloy development machine. This cutting-edge machine, the first of its kind in South Africa, has far-reaching applications across various industries. Building on this success, Mintek added the GE (General Electric) Additive Concept Laser Mlab Cusing R laser powder bed fusion 3D printer to its repertoire.

This advanced technology enables Mintek to efficiently process a diverse range of materials into metal powder, a

capability previously reliant on imports. This achievement not only positions Mintek as a leader in metal powder production within South Africa but also fosters greater independence and innovation in the local manufacturing sector.

From producing components for the medical, dental, aerospace, and automotive sectors to contributing to tooling, jewellery, energy generation, petrochemical, rail, and maritime applications, Mintek's expanded capabilities promise to drive innovation and economic growth in South Africa and beyond.



5.8 Mineral Innovation for Health Outcomes

Mintek's dedicated effort to develop a locally produced HIV rapid diagnostic test marks a significant stride towards accessible and accurate diagnostics. This initiative not only promises enhanced testing capabilities but also brings hope for markedly improved healthcare outcomes in regions with high disease prevalence.

The HIV test kits developed by Mintek have met stringent requirements of the World Health Organisation.

Minerals Science and Innovation for Health

In the landscape of global healthcare, the need for accurate and accessible diagnostic tools for diseases like HIV/AIDS remains paramount. Mintek, as a leading innovator in nanotechnology and diagnostic solutions, has embarked on a journey to develop a locally produced HIV rapid diagnostic test (RDT) kit. This endeavour is not only a testament to Mintek's commitment to advancing healthcare but also underscores the broader global effort to enhance diagnostics, particularly in regions with high disease prevalence.

In collaboration with Ubuntu Clinical Research, Mintek evaluated the performance of the test kits against the rigorous WHO specifications in high HIV prevalence areas within Gauteng. Following the South African Health Products Regulatory Authority (SAHPRA) and Pharma Ethics approved protocols, 1550 patients underwent testing for HIV1 and 2. The clinical trials yielded promising outcomes, demonstrating that the Phila-Test HIV1/2 Test Kit, developed

by Mintek, met the stringent requirements outlined in TSS-1 of the World Health Organisation (WHO). This breakthrough positions Mintek's test kit as a frontrunner in the race to achieve World Health Organisation (WHO) standards for HIV diagnostics. The stability tests that are required for the WHO prequalification process are also ongoing. The results thereof will be pivotal for the RDT products attaining WHO approval, thus unlocking expanded commercial opportunities.

The kits are now undergoing the WHO approval process and are concurrently being introduced to both the South African and the broader African market. As a pathway towards commercial exploitation, Mintek continues to hold strategic discussions with potential commercial partners that already have a market footprint both locally and in the African continent, with the objective of accelerating product entry into these markets.

Right: The NICMeR® low-fouling ultrafiltration membrane are used in the treatment of mine impacted water.



5.9 Water Resource Sustainability: Mintek's Integrated Solutions for Mine Effluents and Impacted Water

Mintek's water recycling solutions reflect our commitment to industry sustainability. These solutions not only address water scarcity challenges but also mitigate environmental impact.

Revolutionising Water Recycling in Mineral Processing

Water recycling presents a significant challenge in mineral processing activities, driven by factors such as water scarcity, financial considerations, and environmental regulations. As a response, innovative solutions are sought to tackle these challenges. Mintek has been at the forefront of developing tailored solutions to meet industry demands. In this regard, a new R25 million water recycling reticulation system has been pioneered by Mintek, functioning as a large-scale slurry (water & ore) filter. Initially commissioned in a flotation pilot plant, this system is slated for integration into other processes utilising recycled water. Such pilot plants, crucial to industry operations, simulate real-plant operations based on flowsheets developed at a laboratory scale, thus proving the robustness of their designs at intermediate feed rates of up to one tonne of ore per hour of operation. Equally

important in the Mintek ecosystem, such plants contribute significant revenue for each successful run. Additionally, Mintek has designed membranes for producing filtered water from ore slurry. The current focus lies in upscaling membrane design to meet processing requirements of three tonnes of water per hour of operation, addressing the challenge of producing required tonnages efficiently. To assess the success or failure of the proposed solutions, Mintek's Analytical Chemistry Division has developed expertise in analysing process water for toxic contaminants like Arsenic or Cyanide and features like dissolved solids or ionic strength. Through these collaborative efforts, Mintek aims to optimise water recycling processes and enhance sustainability within the minerals processing industry.

Mintek's Integrated Solutions for Mine Effluents and Impacted Water

Mintek's integrated solutions for mine effluents and impacted water demonstrate our commitment to water resource sustainability. Through the cloSURE® process and the advancement of the NICMeR® low-fouling ultrafiltration membrane, Mintek plays a pivotal role in mitigating the environmental impact of mine-impacted water and promoting the responsible management of water resources.



NICMeR® low-fouling membranes are crucial in mitigating the effects of contaminated water.

cloSURE® Technology

Mintek has developed cloSURE® technology for the treatment of acid mine drainage. This biological technology is considered low-cost, low-maintenance and semi-passive, and is appropriate for sites that are typically not suitable for the use of conventional processes. The effluent produced from the treatment process may be suitable for re-use in irrigated agriculture. Re-using the treated water, instead of discharging it, has the potential to provide an alternative water source to the agricultural sector, which is the largest water user in South Africa.

Mintek has partnered with Thungela Resources, the Technology Innovation Agency, The Moss Group, and the University of Pretoria to demonstrate the process at scale,

treating 50m³ of acid mine drainage per day, and integrate the process with irrigated crop trials. The demonstration plant has been successfully designed, constructed, and commissioned and is currently being operated continuously. The plant will be run over several months to demonstrate performance through winter and summer cycles and to produce treated water that will be used to integrate different types of summer and winter crops.

The partners hosted a successful open day in October 2023 at Thungela's eMalahleni water reclamation plant to showcase the cloSURE® demonstration project to potential commercial end-users.



The cloSURE® process is piloted at large scale to treat mine impacted water in Emalahleni.

NICMeR® Membrane Technology



The NICMeR® membrane, developed in collaboration with the Department of Science and Innovation's Nanotechnology Innovation Centre (DSI/Mintek NIC), is a low-fouling ultrafiltration membrane which not only addresses the harmful metal concentrations inherent in mine-impacted water but also extends its applications to the potential reuse of industrial and domestic wastewater. Moreover, this innovative technology purifies raw water to meet potable standards by removing particulates and pathogens, contributing to improved water quality. The membrane's low-fouling design is crucial when treating mine-impacted water, as these waters often contain elevated levels of contaminants that can adhere to the membrane's surface.

Adopting these technologies is an initiative-taking stride towards a resilient and environmentally responsible future. Mintek's commitment extends to collaborating closely with industries, showcasing the tangible impact of these solutions, and fostering their widespread adoption.

Left: A jacketed glass reactor is used for the upscaling of powder modifications

Right: Rehabilitation of asbestos mines in the Penge and Buisvlei mines.



5.10

Addressing Challenges of Ownerless and Derelict Mines

"The Department of Mineral Resources and Energy, through Mintek, continues to seal ownerless and derelict mines.

Since 2019, the department has closed and sealed 251 derelict holes and shaft. Over the next 3 years, the department intends to close a further 352 shafts".

President Cyril Ramaphosa, Mining Indaba 2024

Revolutionising Water Recycling in Mineral Processing

Derelict and ownerless (D&O) mines present significant risks, not only to the environment but also to local communities. Mintek recognises the importance of responsible mine closure for environmental conservation and social and economic stability. These abandoned mining sites often become breeding grounds for criminal activities, such as illegal mining, theft, and trespassing. These activities compromise the safety and security of nearby communities and have detrimental effects on the environment and natural resources.

Mintek continued to implement the Derelict and Ownerless Mines Rehabilitation Programme, which is being conducted in collaboration with and funded by the Department

of Mineral Resources and Energy (DMRE). In FY2024, 44 holings were closed in the West Rand, Riverlea and Ekurhuleni and two (2) asbestos rehabilitation sites were completed in the Limpopo province. By sealing dangerous mine shafts and holings, Mintek prevents unauthorised access and illegal activities and ensures the safety and well-being of surrounding areas.

Furthermore, our efforts in mine closure and rehabilitation help to address the environmental degradation caused by these abandoned mining sites. By restoring and reclaiming the land, we mitigate the release of harmful substances into the environment, protect water resources, and promote ecosystem recovery.



The Mareitlwane mine site in Limpopo Province, underwent rehabilitation efforts to address environmental impacts from mining activities.

5.11 Unlocking Innovation's Potential: Strategies for IP Protection and Market Access

In the past year, Mintek successfully transferred seven technologies to various industries, paving the way for transformative advancements and tangible impacts.

Right: MNL and ACD capabilities.

Technology Transfer and Commercialisation

During the 2023/24 fiscal year, Mintek achieved significant success in transferring technologies from research and development (R&D) to commercial application. A total of seven technologies were successfully transitioned, spanning key sectors advancements in minerals processing, health, with a focus on diagnostics, and water-related technologies with social impact potential. These sectors align closely with

Mintek's core focus areas, highlighting the organisation's commitment to innovation across industries. It's essential to note that these technologies underwent rigorous validation in collaboration with industry partners to ensure their suitability for real-world applications, marking the beginning of their commercial journey.

Partnerships and Collaboration for Accelerated Commercialisation

Mintek's strategic approach to partnerships and collaborations played a pivotal role in accelerating the commercialisation of its innovations during the reporting period. The organisation entered into new partnerships, both domestically and internationally, with objectives ranging from research and development to co-development and technology advancement. These partnerships, spanning across the private and public sectors, as well as with funders, contributed significantly to Mintek's commercialisation pipeline.

Leveraging these collaborations, Mintek actively engaged stakeholders, including industry partners and potential investors, to validate technologies and secure resources for development initiatives. This proactive engagement not only drives commercialisation but also fosters a culture of industry-informed R&D, ensuring that Mintek's innovations address tangible market needs while contributing to economic growth and sustainability.



Pipetting samples is crucial in ensuring accurate and precise measurements during laboratory analysis.



Top left: Mintek's Phila•Test HIV/1/2 test kits. **Bottom left:** cloSURE® mine impacted water treatment demonstrations plant was unveiled to industry partners in Emalahleni. **Bottom right:** The fuel cell demonstration plant in collaboration with HYSA.



6

Fostering a Capable Workforce for Innovation Excellence

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1964 - 1973



1964

Flotation Pilot Plant



1965

The Yale Road Site



1969

An Atomic Absorption Spectrophotometer



1971

NIM Board Meeting



1973

Neutron Developer Installation

Left: Preparation of chemical samples for Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) analysis is key to ensure results.



Mintek's unwavering dedication to cultivating a skilled workforce embodies our vision of championing innovation and excellence in the SET sector. Our strategic focus on talent acquisition, talent development, and employee well-being reflects a comprehensive approach to human resources. By nurturing a highly motivated team, we not only fulfill our mandate but also foster a Talent Pipeline prepared to tackle future challenges with innovation and agility.

Left: Furnace tapping is a critical step in the metal smelting process.



Top: Mintek's diverse workforce in action.

1936 • 1937 • 1938 • 1939 • 1940
1961 • 1962 • 1963 • 1964
1981 • 1982 • 1983 • 2012 • 2013

6.1 Introduction

The science, engineering, and technology (SET) sector consistently grapples with the challenge of securing top talent. As a leading technology organisation, Mintek prioritises attracting and retaining exceptional individuals. The nature of our work and the experience that our employees acquire make them highly sought-after within the industry. It is crucial for us to continuously find ways to retain our best talent, highlighting our utmost priority in attracting, nurturing, and retaining top-tier talent.

Mintek's strategic investment in its workforce underscore our commitment to cultivating a highly skilled and motivated team. Through targeted recruitment, talent development, and employee well-being initiatives, Mintek's holistic approach to human resources management aims to build not only a motivated and highly capable workforce but also a Talent Pipeline ready to contribute effectively.

The demand for skilled SET professionals continues to rise, with industry leaders actively recruiting from talent pools like Mintek's. To address this challenge, Mintek implements a two-pronged approach.

6.2 Strategic Recruitment

Mintek continually seeks out highly skilled professionals across disciplines. This ongoing effort ensures access to the expertise needed to tackle complex challenges posed by our mandate and drive innovation in our solutions. Through strategic recruitment methods such as online job boards, industry publications, and partnerships with leading universities and scientific research institutes, we consistently seek to attract top talent. This commitment to talent acquisition and development helps cultivate a dynamic and capable workforce, empowering Mintek to maintain its position as a leader in mineral and metallurgical innovation across diverse sectors and global markets.

6.3 Investing in Future Talent

Recognising the growing trend of professional development within the workforce, Mintek provides financial support for postgraduate studies (PhD and Masters) in relevant SET and support fields through its bursary programme. This empowers employees to enhance their skills and contribute to Mintek's future success. This report highlights success stories of employees who have benefitted from the bursary programme, showcasing the positive impact on employee development and retention. During the 2023/2024 period, Mintek funded 68 employees to enhance their studies both in Technical and Support divisions. 11 are PhD and 32 masters' degrees for SET staff members. These bursaries are critical to strengthening Mintek's SET staff qualifications profile and providing employees with meaningful learning and development opportunities.

6.4 Advancing Expertise at Mintek

The total headcount at Mintek at the end of March 2024 was 566 staff members. The total staff complement consists of 249 SET staff, equating to 44% of SET staff. The employee gender split is 44% (250) female and 56% (316) male for the entire staff complement.

Mintek strengthened and expanded the SET staff with an aim of delivering the strategic objectives and KPI effectively. At the end of the reporting year, Mintek had appointed 62 new SET staff. The addition of new SET staff aligns with Mintek's strategy to enhance its capabilities and meet strategic objectives effectively. This proactive approach to workforce planning is crucial for maintaining competitiveness and innovation in mineral and metallurgical innovation. Monitoring the retention and integration of new staff, especially in critical SET roles, will be crucial for Mintek's long-term success. Strategies for onboarding, training, and career development can further optimise the contributions of both existing and newly hired employees.

6.5 Advancing Research Excellence Through Postdoctoral Fellowships

Mintek's commitment to research excellence is exemplified through its Postdoctoral Fellowship Programme, which has been instrumental in deepening technical capabilities, enhancing RDI outputs, and attracting top talent. Over the past eleven years, 46 postdoctoral fellows have been welcomed into Mintek, with a noteworthy representation of Africans (90%) and females (40%). The programme, historically funded by NRF, transitioned in 2022 to include a significant number of Mintek funded post-doctoral fellows. This strategic shift aims to strengthen research capabilities, with 19 fellows already successfully integrated into Mintek. These postdoctoral researchers have contributed significantly to Mintek's research output, including publications in journals, book chapters, and advancements in methods development, showcased at international conferences. Access to prestigious resources like the Nature Masterclass further enhances their expertise, ensuring a well-rounded and impactful research journey for Mintek's postdoctoral fellows.

6.6 Workforce Diversity

Mintek's diverse workforce across age ranges and genders plays a crucial role in both fostering innovation and guiding effective workforce planning. The mix of perspectives, experiences, and expertise from different age groups fuels creativity and leads to more innovative solutions. This diversity also informs strategic workforce planning by identifying skills gaps, succession needs, and opportunities for talent development. It enables Mintek to leverage a balanced and inclusive talent pool, ensuring a dynamic and forward-thinking approach to innovation while laying the groundwork for a resilient and skilled workforce for future challenges and opportunities.

6.7 Work Integrated, Learnership, and Internship Programme

Mintek implements a number of internship programmes aimed at providing young people with an opportunity to learn, gain work experience, and improve their skills. These are provided in partnership with organisations such as Mining Qualifications Authority (MQA), Department of Science and Innovation and Human Science Research Council (DSI-HSRC), the National Research Foundation (NRF), South African Agency for Science and Technology Advancement (SAASTA). In collaboration with the Tshwane Technology of Technology (TUT) and the Vaal University of Technology (VUT), Mintek hosts Work Integrated Learners (WIL) providing valuable learning opportunities and practical work experience. The primary partnership is with MQA because it is the Sector Education and Training Authority (SETA) for the Mining Sector and the SETA to which Mintek pays over skills development levies. Included in the MQA partnership are a number of pivotal capacity-building programmes.

6.8 Employee Development Programme

Mintek has had to contend with high SET staff turnover, resulting in a younger, less experienced SET workforce with qualification levels that are not competitive with their global R&D institute peers. The future state business model depends on new ways of attracting and retaining employees to ensure adequate capabilities are developed, and the workplace environment inspires innovative thinking and collaborative ways of working. Mintek has invested in soft and technical skills training. In partnership with MQA, Mintek provides support in professional certification through the Artisan Learnership Programme.



6.9 Coaching and Mentoring

Mintek has a coaching and mentoring programme which was initiated for the development of Mintek employees. MQA is funding the programme to support this initiative. Our mentors and coaches are responsible for mentoring and coaching graduates with variable qualifications ranging in Chemical, Chemistry, and Analytical Chemistry as well as Metallurgy and Extractive Metallurgy.



Mintek provides skills training programme to the Artisanal & Small Scale Mining Sector.

6.10 Notable Achievements and Accolades

Dr Mehdi Safari was recently awarded the prestigious C1 rating by the National Research Foundation (NRF). A C1 rating confirms Dr Safari’s sustained and established research track record in the field of mineral processing where he specialises in flotation and novel design strategies for new flotation equipment. The growing international recognition of Dr Safari’s work is an exemplar of Mintek’s critical contribution to the field of mineral concentration. The multi-phase nature of the flotation process is amongst the most complex flow problems known to science, and Mintek is proud to contribute to the solution under the strong leadership of Dr Safari.

Dr Quinn Reynolds was invited to participate on the organising committee for the 15th International Conference on Computational Fluid Dynamics in the Oil and Gas, Metallurgical and Process Industries, to be held in Norway in June 2024.

Mr Buhle Xakalashe was elected to be the organising committee chairperson for the third Southern African Pyrometallurgy International Conference which took place in March 2024.

Dr Tebogo Mokhena, Chief Scientist in the Advanced Materials Division authored a book titled: “Handbook of Carbon-based Fillers Reinforced PLA Biocomposites: Fundamentals to Application. This is a notable achievement for both Dr Mokhena and Mintek, given that Mintek has not published a book in about two decades.



Mr Flacco Ndlovu, Head of Mine Closure and Rehabilitation at Mintek, successfully led a team that was pivotal in responding to a recent national crisis that was caused by fatal illegal mining activities in the neighbourhood of Riverlea in Johannesburg. At the request of the DMRE, all 24 Shafts were sealed and closed as a matter of emergency as directed by the DMRE. The other consideration was for health reasons, in order to prevent any further incidents to local communities and affected parties. This urgent project was executed in addition to the mine rehabilitation and mine openings and shaft closures as part of the national derelict and ownerless (D&O) mines rehabilitation programme.



6.11 Mintek Occupational Health and Wellness

Mintek prioritises employee health and wellbeing through a comprehensive Occupational Health and Wellness programme. In 2023/2024, the programme conducted 619 medical assessments, including entrance, periodic, transfer, and exit examinations, to ensure employee fitness. Pulmonary screenings, audiometry tests, and biological monitoring for elements like uranium and nickel protect employees from occupational hazards. The programme also manages injury-on-duty cases and offers non-occupational health consultations, resulting in reduced lost work time due to injuries. Additionally, wellbeing events, blood drives, and employee wellness programmes, including mental health support and HIV management, promote a culture of wellbeing. Employees have access to on-site health risk screenings and consultations with medical professionals, ensuring their physical and mental wellbeing is prioritised.



6.12 SHEQ

Mintek expanded capacity within its Safety, Health, Environment and Quality (SHEQ) function and invested in comprehensive SHEQ training for employees. This included formal tertiary studies and regular safety forums to enhance awareness and knowledge. The organisation’s dedication to maintaining high safety standards was validated through successful recertification and accreditation of multiple ISO management systems, including ISO 9001, 14001, 17025, 13485, and ISO 17034. These certifications not only demonstrate compliance but also offer valuable recommendations for further improvement.



Centre and bottom right: Mintek employees participated in fun walks as part of the wellness and health activities.

7

Advancing Society Through Science: Our Sustainable Development Initiatives

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1974 - 1983



1975

Carbon-in-pulp
Plant



1976

Smelting Tests
on Ilmenite
Concentrate



1977

NIMCIX Columns
for Loading Ura-
nium



1981

The Milling Circuit



1982

Refining of Platinum
Groups

Left: A control room for a DC Arc furnace monitors and control the furnace's performance during smelting.



7.1 | 90 Years Strong: Innovating for a Sustainable Future

For nine decades, Mintek has been a pillar of innovation within South Africa’s mining sector. Over these years, we’ve not only sharpened our expertise but also fostered a deep commitment to the communities we serve. We believe in utilising the skills and knowledge amassed over these 90 years to actively participate in initiatives that address pressing social and environmental challenges.

At Mintek, we go beyond simply developing cutting-edge solutions. We are a catalyst for positive change, actively participating in initiatives that promote not only

environmental sustainability but also economic development within communities. Our collective efforts strive to make a lasting societal impact, creating a better future for all.

This chapter explores a selection of initiatives that exemplify Mintek’s unwavering dedication to shaping a more inclusive, sustainable, and prosperous world. By actively engaging with these initiatives, we aim to leverage our 90 years of experience and contribute meaningfully as a responsible entity, driving positive change for the communities we’ve called home for nearly a century.

7.2 | Supporting Artisanal and Small-Scale Miners



Mintek’s dedication to empowering communities shines bright through initiatives like the Women Miners Programme, standing tall as a beacon of empowerment and opportunity for all.

A 3D printer is used in the design and prototyping of moulds in jewellery making.

Women Miners Programme

The Women Miners Programme stands as a beacon of empowerment, training beneficiaries across various provinces since its inception in 2020. As a testament to its ongoing success, the programme recently concluded another intake in the previous financial year, marking a milestone in Mintek’s dedication to uplifting communities. With over 200 beneficiaries trained to date, this initiative, conducted in collaboration with the Mining Qualifications Authority (MQA) and the Department of Mineral Resources and Energy (DMRE), continues to foster skills and opportunities for women in the mining sector.

Mintek’s Small-Scale Mining Project

In partnership with the MQA, Mintek’s Small-Scale Mining Project has been a driving force in cultivating skilled workforces and championing sustainable practices within the Gauteng and Northern Cape provinces. This continuous effort exemplifies Mintek’s dedication to empowering small-scale miners, fostering economic growth through industry establishment, and ensuring environmental well-being through responsible mining techniques. By equipping

individuals with the necessary skills and knowledge, the project directly contributes to job creation and empowers local communities through increased employment opportunities within the burgeoning small-scale mining sector.



Jewellery training is offered to communities as part of the skills development programme.

The Small-Scale Mining Training Project

The Small-Scale Mining Training Project, introduced in the previous financial year, marked a significant advancement in Mintek’s community empowerment efforts. Seventy-five beneficiaries from the North-West and Mpumalanga Provinces underwent rigorous training, showcasing Mintek’s proactive collaboration with MQA to equip individuals with essential skills for success in the mining industry. These beneficiaries successfully completed final assessments and moderations, with their achievements endorsed and certified by MQA. Notably, all programme participants hailed from the North-West and Mpumalanga Provinces, and the training sessions, totalling three, were conducted across key centres in Middelburg, Barberton, and Klerksdorp. Additionally, during the reporting period, jewellery learnerships were provided to learners trained at Mintek, culminating in their successful completion of training and attainment of competency certificates.



Metals are being transformed into valuable materials for the jewellery industry.

Empowering Barberton Artisanal Miners with Sustainable Practices

Continuing our commitment, Mintek remains actively engaged in supporting artisanal miners in Barberton. This year, we’re building on the initial success of the iGoli™ process roll-out implemented in collaboration with Above Average Mine.

The iGoli™ process offers a safer and more efficient alternative to traditional mercury-based gold extraction methods used by artisanal miners. By promoting its continued adoption, Mintek strives to achieve the following outcomes:

- The iGoli™ process significantly reduces mercury use, minimising environmental damage associated with artisanal mining practices. The

- process eliminates exposure to harmful mercury, creating a safer work environment for miners.
- Increased Efficiency and Productivity: iGoli™ offers a more efficient gold extraction method, potentially leading to higher yields for artisanal miners.
- Through this ongoing collaboration, Mintek is empowering Barberton’s artisanal mining community to achieve economic prosperity while safeguarding their health and the environment.



Mintek supported artisanal miners in Barberton with the iGoli™ process, which is safer and more environmentally friendly.



7.3 Science and Environmental Sustainability

Mintek's commitment to sustainability is ingrained in every aspect of our operations, from proactive risk mitigation to water conservation, energy efficiency, and responsible waste management.

In the 2023/24 financial year, Mintek maintained its reputation as a leader in sustainable mining solutions. Environmental responsibility isn't just a checkbox – it is woven into the fabric of our operations.

Mintek transcended mere regulatory compliance. We leveraged our comprehensive SHEQ system to proactively identify and mitigate environmental risks before they arose. High-risk activities, like tailings storage facilities and dust generation, were under constant scrutiny. We implemented robust safeguards like advanced monitoring systems and innovative dust suppression techniques, minimising environmental impact.



Sustainability in Water Usage

Recognising South Africa's water scarcity, Mintek emerged as a water warrior. We meticulously monitored water usage, employing cutting-edge smart metering technology to pinpoint areas for optimisation. We maximised recycling efforts through advanced water treatment plants, allowing us to reuse a significant portion of process water. Additionally, effluents were treated to stringent standards before discharge, preventing contamination of natural water sources. Sustainable practices like utilising borehole water for irrigation, coupled with the development of drought-resistant landscaping, further reduced our reliance on freshwater resources. These initiatives directly address South Africa's National Water Resource Strategy, which emphasises water conservation and responsible water management.



Top left: Gas furnaces are utilised in fire assaying as part of Mintek's energy efficiency programme. **Top right:** The Mintek effluent plant treats waste water before discharge. **Bottom right:** Water quenching of molten slag is a process used to cool and solidify molten slag following smelting.

Sustainability in Energy Usage

Reducing our energy footprint remained a continuous battle. We rigorously analysed energy consumption throughout the year, implementing measures that boosted efficiency across all operations. This included upgrading energy-efficient equipment, optimising process flows to minimise energy waste, and exploring the use of renewable energy sources like solar power. Every watt saved represented a victory for the environment, contributing to South Africa's transition towards a cleaner energy future as outlined in the Integrated Resource Plan.

Sustainability in Waste Management

Our waste management strategy prioritises reduction, reuse, recycling, and recovery before disposal. We implemented innovative processes to minimise waste generation at the source. For unavoidable waste streams, we partnered with reputable waste contractors who operate seamlessly within our protocols, ensuring responsible waste handling from start to finish. This focus on responsible waste management aligns with South Africa's National Waste Management Strategy, which promotes a circular economy and minimises the environmental impact of waste disposal. Mintek's waste management practices are driven by a commitment to environmental responsibility and regulatory compliance. We prioritise the segregation and recycling of various waste types, ensuring hazardous materials like cyanide and uranium solutions are treated to stringent standards. Our efforts extend to efficient handling of general waste, with a focus on minimising environmental impact.

Additionally, our air quality monitoring remains within acceptable regulatory limits, with ongoing assessments to uphold environmental standards. Although we encountered two minor chemical spills during the reporting period, our emergency response protocols swiftly contained and remediated these incidents, showcasing our preparedness and commitment to environmental stewardship.

Collaboration for a Sustainable Environment

Environmental stewardship wasn't a solo act. Mintek fostered a collaborative culture, working hand-in-hand with employees to ensure adherence to our policies and encourage continuous improvement in sustainability practices. Through training programmes and employee engagement initiatives, we empowered our workforce to become active participants in our sustainability journey.

By prioritising these key areas, Mintek not only minimised its environmental impact in the 2023/24 financial year, but also established itself as a leader in pioneering sustainable mining solutions. We are committed to leaving a legacy of responsible resource utilisation for generations to come, while contributing to a more sustainable future for the South African mining industry and the nation as a whole.



8

Performance Information

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1984 - 1993



1985

Roof with Alumina Base is Built for Plasma Furnace



1988

Casting of Special Alloys



1989

A Bay at Government Metallurgical Lab



1991

Milling of PGMs



1993

Development of Digilevel Meter

Left: Molten material flows from the DC arc furnace during a smelting campaign at Mintek.



8.1 Introduction

Mintek enters into a Shareholder Compact agreement with the DMRE annually. The Shareholder’s Compact contains Key Performance Indicators (KPIs), a long-term strategic plan, and a detailed operational plan. Regular quarterly reports submitted to the DMRE are the primary means of monitoring performance against the established KPIs.

During the 2023/24 financial year, Mintek worked tirelessly to ensure that many of our large-scale commercial projects, with outcomes applicable to our ongoing research, were finalised with some nearing completion. All this work happened against the backdrop of persistent challenges caused by escalated stages of load shedding, generator outages and water restrictions. All these factors had adverse effects on operations throughout the Mintek campus resulting in increased project overheads, particularly on overtime, diesel, and generator equipment rental costs. Despite these challenges, Mintek sustained its exceptional performance in Scientific and Technical work, and we met or exceeded targets in all strategic objectives.



The continuous record of productivity and the high quality of work not only validates the current research strategies but also sets a benchmark for future endeavours, fostering an environment where cutting-edge research thrives and contributes significantly to the global scientific community. Such high-quality outputs talk to the significance of the research and eminence of our researchers, with publications enjoying prestigious international collaborations. This achievement can be attributed to various initiatives that were introduced to strengthen the capable workforce in critical technical functions to facilitate high quality research and technology development tailored toward our ongoing Mintek Strategy 2030. Notably, we are proud to report that our Analytical Chemistry Division (ACD) achieved Facility Accreditation (RMP0018) for producing Certified Reference Materials (CRM), marking a major milestone in our 90-year history. This accreditation showcases our commitment to excellence and innovation in the mineral and metallurgical sectors. This success reinforces Mintek’s position as an industry leader and highlights our capability to deliver high-quality products and services, while strengthening its financial position.

The following section outlines progress towards achieving the five strategic objectives and targets set for the 2032/24 financial year. The Auditor-General of South Africa (AGSA) provides reasonable assurance on performance information once the audit procedure is concluded. For the Auditor’s Report, refer to page 104.

8.2 Strategic Objective 1: Conduct relevant, applied research and technological innovation

Mintek maintained its exceptional performance in scientific and technical outputs and produced 67 journal papers, exceeding the annual target by 49%. Of the 67 journal papers, 33% are publications with an impact factor (IF) greater than 4. High impact factor publications lead to wide readership and citations by peers for the significance of the output and are most often produced by researchers with high H-indices, a critical measure of the researchers standing in the peer reviewed scientific community.

Mintek published 50 conference papers, exceeding the annual target by 11%. This achievement is attributable to attendance at all planned conferences and subsequent publication of conference papers as per conference

proceedings. With respect to knowledge generation, we published 17 book chapters, exceeding the annual target by 142%, and we met our annual target for books by publishing a book titled ‘Handbook of Carbon-Based Fillers Reinforced PLA Biocomposites: Fundamentals to Applications’, a significant improvement in comparison with the previous year’s performance.

The overachievement can be attributed to various programmes and initiatives implemented at Mintek to strengthen and increase the Science, Engineering, and Technology (SET) staff complement to deliver on its strategic objectives and KPIs more effectively. This has included a focused recruitment drive to strengthen capacity in critical

technical functions, leveraging postdoctoral research candidates and postgraduate interns to develop new areas of expertise and facilitate the execution of projects, and providing research funding and bursaries to staff to enable them to upgrade their qualifications to a postgraduate level.

Mintek exceeded its annual target for invention disclosures by 25%, filed 1 patent on wound dressing and registered 5 trademarks titled; Minshield™ for advanced corrosion protection metallic coating, GravCS™ for mineral processing using spirals, Platalite™ for premium fuel cell and electrolyser catalysts, HVGm™ for High vanadium grinding media and MINTROL™ for the development of a roll

bonding process. There has been remarkable improvement in the performance of these KPIs, notably the success in patent filing in comparison to the two previous financial years, with no patents filed.

The overall achievement in Strategic Objective 1 (SO1) is a demonstration of the quality and impact of Mintek’s research outputs driven by the exceptional Mintek researchers who continue to lead and pioneer new avenues of discovery and innovation which is the critical foundation upon which all other objectives outlined in the Mintek Strategy 2030 will be realised. Overall, we achieved 100% of the annual targets for SO1.

Table 8.1: Mintek Performance: Conduct relevant, applied research and technological innovation.

Output indicator	Audited performance			Planned Target 2023/24	Actual Achieved 2023/24
	2020/21	2021/22	2022/23		
Number of journal papers	36	61	69	45	67
Number of conference papers	24	36	45	45	50
Number of book chapters	12	9	7	7	17
Number of books	1	0	0	1	1
Number of invention disclosures	13	8	10	8	10
Number of patents	5	0	0	1	1
Number of new trademarks	5	3	3	5	5

8.3 Strategic Objective 2: Foster industry establishment and expansion

Mintek demonstrated/validated 6 prototypes, 5 processes, and 4 models, exceeding the annual target by 87%. A list of these innovative solutions can be found on table 8.3. We generated R389.6m worth of revenue, exceeding the annual target by 77% due to an increase in the provision of expert services to clients and overall execution of projects. The annual target for IP licenses was met and an agreement that aims to commercialise the Mintek process for the recovery of gold from carbon fines as described by ZA patent 1015/00028 was signed. This is a significant accomplishment in comparison to the previous financial years. Four certified reference materials were produced, and we met the annual target for accredited methods developed and maintained. The continuous record of productivity and the high quality

of work not only validates the current research strategies but also sets a benchmark for future endeavours, fostering an environment where cutting-edge research thrives and contributes significantly to the global scientific community. Such high-quality outputs talk to the significance of the research and eminence of our researchers, with publications enjoying prestigious international collaborations. This achievement can be attributed to various initiatives that were introduced to strengthen the capable workforce in critical technical functions to facilitate high-quality research and technology development tailored toward our ongoing Mintek strategy 2030. Overall, we achieved 100% of the annual targets for SO2.



Table 8.2: Mintek Performance: Foster industry establishment and expansion

Output indicator	Audited performance			Planned Target 2023/24	Actual Achieved 2023/24
	2020/21	2021/22	2022/23		
Number of new products, services, prototypes, processes and/ or models demonstrated/ validated in a relevant environment	12	14	12	8	15
Income from the sale of products & services, royalties, and licenses (Rm)	103.04	142.17	149.74	219.4	389.6
Number of IP Licenses	0	0	0	1	1
Number of certified reference materials	n/a	6	4	4	4
Number of accredited methods developed and maintained	n/a	17	18	19	19

Table 8.3 represents a list of innovative solutions that emanate from Mintek’s knowledge-generation activities within the commercialisation value chain. Mintek has intensified its efforts through the Mintek Office of Technology Transfer (MOTT) to ensure co-creation with industry partners and potential end-users of the technology.

Table 8.3: List of new prototypes, processes and models demonstrated/validated in a relevant environment.

Title	Type
Process used to conduct corrosion study for the Phalaborwa Rare Earth Project - Pilot Plant	Process
Shisacolumn - the leaching column prototype comprises an adiabatic ("Shisa") column for the demonstration of an externally heated, acidic chloride heap leaching process for the treatment of refractory, low-grade, chalcopyrite ores	Prototype
Prototype StarCS v8.0 - the StarCS platform is the foundation of the advanced process control products developed in the Measurement and Control Division for milling, flotation, and submerged arc furnaces.	Prototype
AMD Prediction with the aid of Accelerated Kinetic Humidity Tests	Model
MC23: Prototype: Advanced Remote Commissioning Support Systems (ARCSS) v1.0 - the Advanced Remote Commissioning Support Systems product is a package of devices intended to support remote commissioning and servicing Measurement and Control Division products.	Prototype
Mill Model PowerDraw updated - the development and subsequent testing of a mathematical model for the power draw of each size class in tumbling mills.	Model
Optimised PGM Processing of High Chrome Ores	Process
Electrical Resistivity Tomography Model- for tailings characterisation	Model
First-Principles Study to Explore Possibility of Inducing Martensitic Transformation in Ordered B2 Ti50Ru50 by Alloying with Pd	Process
Development and Scale-up of Carbon Supported PGM-based Fuel Cell Electrocatalysts -	1 Process, 3 Prototypes
Mine Cooling Analysis Models	Model
Demonstration of integrated preheating and Mn alloy production at Mintek	Process

8.4 Strategic Objective 3: Developing a capable workforce

The total headcount at the end of the financial year was 566 employees. The total staff complement consists of 249 SET staff, and 317 Support staff, equating to 44% of SET staff. In terms of employment equity, 44% of the workforce are females and 56% are males.

Mintek exceeded the annual target for the number of SET employees by 4%, exceeded the percentage of SET staff with doctoral degrees by 12%, exceeded the percentage of SET staff at AO1-AO3 by 11% and exceeded the percentage of black SET staff at middle and senior level (MP and SE) by 30%. We fell slightly behind the target for percentage of female SET staff by -2%, percentage of SET staff with master’s degrees by -4%, percentage of SET staff at junior level (SP) by -6% and percentage of SET staff at middle and senior level (MP and SE) by -22%.

It is important to note that, although we are expected to report on SO3 targets as percentages set within the threshold of the 2023/24 Shareholder’s Compact, the performance against actual numbers reflect an achievement of 80% of the targets, with only two KPIs not achieved. An increase in the SET capacity changed the denominator of the actual numbers and this had a negative impact on the percentage performance in SO3. Even though we missed the target for SET staff at middle and senior level (MP and

SE), we exceeded the target for black SET staff at middle and senior level, which reinforces our commitment to build a transformed SET base.

The retention and attraction of SET staff at middle and senior levels remain a challenge due to intense competition for high-end scarce and critical SET skills in the market. We will however continue improving our SET staff at junior levels. We are working toward this by identifying suitably qualified candidates and encouraging them to join Mintek as well as making additional effort to grow our own complement toward achieving our transformation targets. The drive to enhance the qualifications of SET staff has improved the number of doctoral degree graduates. Mintek has been successful at attracting and recruiting candidate engineers, post-doctoral fellows, and engineers in training at AO1-AO3 levels. The employment equity target mainly for SET middle management level was achieved.

There has been improvement in the performance of SO3 as compared to previous years, and this indicates Mintek’s commitment to build a transformative SET base with suitable and qualified staff. Overall, we achieved 50% of the annual targets for SO3.

Table 8.4: Mintek Performance: Developing a capable workforce

Output indicator	Audited performance			Planned Target 2023/24	Actual Achieved 2023/24
	2020/21	2021/22	2022/23		
Total number of SET employees	243	237	239	240	249
Percentage of Female SET staff	53%	49%	49%	47%	46%
Percentage of SET staff with doctoral degrees	19%	25%	34%	31%	35%
Percentage of SET staff with master’s degrees	22%	22%	25%	25%	24%
Percentage of SET staff at AO1-AO3	58%	55%	56%	56%	62%
Percentage of SET staff at Junior level (SP)	15%	16%	17%	17%	16%
Percentage of SET staff at middle and senior level (MP and SE)	25%	26%	26%	27%	21%
Percentage of black SET staff at middle and senior level (MP and SE)	62%	73%	73%	62%	81%



8.5 Strategic Objective 4: Develop and maintain a world-class RDI infrastructure

The actual spend of investment in plant, property and equipment stood at R74.2m at the end of the financial year, which is 118% above the annual target of R34.1m, mainly attributed to the carry-over from the previous financial year (FY2022/23). We exceeded our target for investment in human capital by 27% and this is based on employee training and conferences undertaken as well as post-graduate studies.

All SHEQ targets were achieved at the end of the financial year. The Client Satisfaction Rate (CFSR) exceeded the target, with 95% achieved over and above the set target of 90%. Mintek successfully maintained its certification for

ISO 45001, 14001, and 9001, thereby meeting the annual target of 4.

Also important to highlight is the accreditation of the ACD Facility by SANAS under ISO 17034 for the production of CRMs, marking a major milestone in our 90-year history.

This accreditation showcases Mintek’s commitment to excellence and innovation in mineral and metallurgical sectors while reinforcing Mintek’s position as an industry leader with the capability to deliver high-quality products and services. Overall, we achieved 100% of the annual targets for SO4.

Table 8.5: Mintek Performance: Develop and maintain a world-class RDI infrastructure

Output indicator	Audited performance			Planned Target 2023/24	Actual Achieved 2023/24
	2020/21	2021/22	2022/23		
Total investment in plant, property, and equipment (R million)	46.35	21.44	13.00	34.1	74.2
Total investment in human capital (R million)	9.11	9.13	8.45	9	11.5
Lost Time Injury Frequency Rate	0	0	0.6	<1	0.4
Client Satisfaction Rate	94%	100%	97%	90%	95%
Number of accredited facilities maintained	n/a	3	3	4	4
Safety, Health, Environment and Quality	Accreditation Maintained	Accreditation Maintained	Accreditation Maintained	Maintain Accreditation	Accreditation Maintained

8.6 Strategic Objective 5: Ensure financial sustainability

(NB: these are unaudited financial results. The external audit of the 2023/24 financial year is underway).

Mintek receives funding from the DMRE monthly to fulfil its mandate. All funds received were applied to research activities. At this preliminary stage, FY2023/24 was a good year for Mintek. The budgeted income of R584.6m was surpassed by 31% at the end of the financial year and this can be attributed to the sale of our expert products and services, which performed greater than expected. We also exceeded the target for our net result by 731% because of our ability to efficiently execute projects including the large pilot plants and the D&O within the financial year. We fell slightly short on the target by 10% for revenue generated from contract R&D attributed to persistent challenges caused

by escalated stages of load shedding and water restrictions as well as delayed contract finalisation with clients. These factors had adverse effects on operations throughout the Mintek campus. We exceeded the target for BEE spend by 11% because of significant spending on B-BBE Level 1 & 2 vendors. We performed exceptionally well regarding good governance, the organisation achieved a commendable clean audit opinion from the Auditor-General of South Africa (AGSA), an affirmation of our efforts to maintain financial diligence and uphold ethical processes in our operations. Overall, we achieved 100% of the annual targets for SO5. Mintek maintains a strong balance sheet, and the liquidity ratio averages around 1.6:1. This remained unchanged from the audited figures of FY2022/23 and further highlights the organisation’s stability.

Table 8.6: Mintek Performance: Ensure Financial Sustainability

Output indicator	Audited performance			Planned Target 2023/24	Actual Achieved 2023/24
	2020/21	2021/22	2022/23		
Total income (R million)	554.34	610.09	649.50	584.7	765.6
Net result (R million)	4.85	19.6	4.88	2.2	19.5
Contract R&D Income (R million)	56.92	74.48	51.09	70.625	62.9
BEE spend as a percentage of procurement spend	94.01%	103.32%	97.42%	90%	100.1%
Audit opinion	Unqualified	Unqualified	Unqualified	Unqualified	Clean Audit Opinion



9

Governance

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1994 - 2003



1994

Lab Testwork on Separation of the PGMs



1996

Pupils Competing at Mintek Quiz



1997

Piloting the MINRIP Process



1999

Pilot-scaling Milling and Flotation Tests



2001

Mintek's Pilot plant in Pennsylvania

Left: Water filtration plant is used to filter out solids in mineral processing.

9.1 Corporate Governance

Introduction

Mintek, as a public entity established under the PFMA Act 1 (of) 1999 (PFMA), is firmly committed to the principles of good corporate governance. We uphold these principles through sound policies, transparency, accountability, ethical leadership, and active stakeholder participation.

The Mintek Board of Directors

The Mintek Board of Directors (the “Board”) plays a vital role in guiding the organisation towards achieving its strategic objectives and fulfilling its mandate. To ensure Mintek’s credibility and effective governance, the Board oversees structures, policies, and capabilities that manage financial performance, regulatory compliance, risk mitigation, and social and ethical responsibilities.

The Mineral Technology Act 30 of 1989 (the “MTA”) dictates the Board’s composition: The Chairperson, 6 to 9 Non-Executive Directors (NEDs), and the Chief Executive Officer (CEO) who serves ex officio.

Board Composition and Expertise

The MTA establishes “fit and proper” criteria for board membership. A designated panel evaluates nominated shareholder-elected candidates, considering their experience, skills, relevant business acumen, knowledge, and diversity. This ensures a board that functions with integrity and possesses the necessary expertise and diversity of thought to fulfil its governance responsibilities.

To navigate the complexities of decision-making, the Board benefits from a diverse composition. This allows for issues

to be approached from various perspectives, reflecting the cultural, racial, gender, and age demographics of the directors. The Board leverages its specialised experience and diverse skill sets to provide informed counsel, rigorous oversight, and independent analysis as the organisation pursues integrated thinking. They act as independent, objective judges, constructively challenging and monitoring the leadership’s execution of strategy within the approved framework and risk tolerance.

The Role of the Board

The Board holds ultimate responsibility for Mintek’s business operations and achievements, ensuring the organisation upholds high ethical standards. This responsibility is grounded in a fiduciary duty to the organisation as outlined by common law, the MTA, and the PFMA. As the accounting authority, the Board believes that the core objective of the corporate governance framework is to ensure both the Board and executive management operate ethically and effectively.

Mintek maintains a clear separation of responsibilities at its leadership level: The Board Chair leads the Board, while the CEO leads Mintek’s business operations.

The Board’s responsibilities include:

- Ensuring the adequacy of technology and systems for efficient business operation and competitive advantage through effective resource utilisation (assets, processes, human resources).
- Ensuring Mintek’s compliance with all relevant laws, regulations, and best business practices.
- Regularly evaluating its own performance and effectiveness, as well as that of individual executives, including the CEO.
- Monitoring and evaluating the implementation of strategies, policies, management performance criteria, and business plans.
- Ensuring that procedures and practices are in place to safeguard Mintek’s assets and reputation.
- The Board is accountable to the Minister of Mineral Resources and Energy. As a result, a shareholder performance agreement, known as the Compact, has been established between the Board and the Executive Authority. To further enhance Board functioning, Mintek maintains a dedicated Board Secretariat to provide essential support.

Table 9.1 Mintek Board Composition on 31 March 2024

Director	Date of Appointment	Category	Gender		Board	ARC	HR & Remco	RDIC
Dr T Ramontja	30/08/2022	Non-Executive Director	Male		Chairperson			
Ms PN Zikalala Mvelase	01/06/2023 reappointment	Non-Executive Director	Female		Deputy Chairperson	Member	Chairperson	
Mr PR Heydenrich	01/06/2023 reappointment	Non-Executive Director	Male		Member			Member
Dr T Madzivhandila	01/06/2023	Non-Executive Director	Male		Member			Member
Ms P Maruping	01/06/2023 reappointment	Non-Executive Director	Female		Member			Chairperson
Dr M Motuku	01/01/2019	Executive Director	Male		Member	Invitee	Member	Member
Mr L Nengovhela	01/06/2023	Non-Executive Director	Male		Member	Member	Member	
Ms NF Ngcwabe	01/06/2023 reappointment	Non-Executive Director	Female		Member		Member	
Prof L Ngubevana	30/08/2022	Non-Executive Director	Male		Member	Member		Member
Dr S Simayi	01/06/2023	Non-Executive Director	Male		Member			Member
Ms M Thomani	01/06/2023	Non-Executive Director	Female		Member	Chairperson	Member	
Ms M Dzivhani	18/07/2023	Independent Non-Board Member	Female			Member		
Adv. B Zulu	18/07/2023	Independent Non-Board Member	Male			Member		



9.2 Profiles of Non-Executive Directors



Dr Thibedi Ramontja
PhD; MSc (Eng.)
Chairperson

Dr Ramontja holds an honorary adjunct professor position at the School of Mining Engineering at the University of the Witwatersrand. He supervises PhD and MSc students at the School of Mining Engineering, University of the Witwatersrand. He is also an independent consultant, providing consulting services to mining companies. He has been involved in vanadium and magnesite projects in the Limpopo Province and a gold project in the North West Province. He has in-depth technical expertise within the mineral and mining industry, educational background, and many years of working experience serving on public sector Boards. Additionally, he has a thorough understanding of research in the entire value chain of the minerals and mining sector.



Ms Ntombifuthi Zikalala Mvelase
LLB; B. Proc
Deputy Chairperson

Ms Zikalala Mvelase is an admitted Attorney of the High Court and practices as such as an Associate Attorney at Friedrich Incorporated. She has served in various executive roles in both public and private sector, including State Diamond Trader, DMRE, and Commission on Gender Equality, and Centre for Criminal Justice including being admitted as an attorney in 1991. She serves in various Boards that include the Airports Company South Africa (ACSA), Chairperson of the Human Resources, Remuneration and Nominations Committee at ACSA, Chairperson of the Board of JIA Piazza Park which operates the InterContinental Hotel OR Tambo Hotel, Committee Member of various other Board Committees at ACSA. She is also a Board member of the South African Diamond and Precious Metals Regulator and the Chairperson of the Board of the Limpopo Jewellery Business Incubator. She is also a guest lecturer at the Wits Law School, Wits University.



Mr Philippus Rudolf Heydenrich
M Eng. (Chemical);
B Eng. (Chemical)

Mr Heydenrich is the CEO at Heydenrich Consulting Pty (Ltd). He has established himself as a leader in the fields of New Business Development, Research and Development, Technology Assessments and Technology transfer in the field of Energy and Chemicals technologies. He served on a number of Divisional Boards, Advisory Boards and JV constructs during his career. His strengths are in the strategic domain but has also demonstrated the ability to translate strategy into tactical plans and then provide the oversight on the delivery against plan.



Ms Pontsho Maruping
MBA; Masters in Space Systems
Engineering; BEng (Hons) (Management of Technology); BSc-Eng. (Mineral processing);
Dip. in Economic Geology;
Dip. in Science Education

Ms Maruping is the Managing Director at the South African Radio Astronomy Observatory. Her experience spans both the private and public sector with more than ten years at executive level. She was an executive at the Technology Innovation Agency (TIA) responsible for Innovation Funding and Pre-commercialisation Support. Her major career highlights include coordinating the development of the National Nanotechnology Strategy which was approved by Cabinet in 2006 and coordinating the development of the Health and Safety Culture Transformation Framework for the Mining industry.

9.2 Profiles of Non-Executive Directors



Dr Takalani Madzivhandila

PhD (Engineering Management); M-tech, B-tech, N.dip (Metallurgical Engineering), Diploma in Advanced Business Management

Dr Madzivhandila is currently a Senior Lecturer in the Department of Metallurgy: Faculty of Engineering and the Built Environment, University of Johannesburg. He specialises in mining and mineral beneficiation, waste management, physical metallurgy, and foundry technology. He was also a senior Manager at the Gauteng Department of Economic Development. He was elected the President and Chair of the BRICS foundry association and the South African Institute of foundrymen. The scope of his leadership experience includes Board Chairperson, SEDA Platinum Incubator (TPI), Board Chairperson: Technology station in Electronics, Advisory board member: Process Energy and Environment Technology Station.



Mr Livhuwani Nengovhela

LLM (Labour Law); International Executive Development Program; Management Development Program (MAP); BCom Honours (Labour Relations); Post Graduate Diploma in Industrial Relations; B. Admin Degree

Mr Nengovhela is a private employment law consultant and a Board of Directors member. He is also a Part-Time Commissioner with the CCMA. He has over 25 years of employment law experience and over 15 years at the Executive level. He served as the CEO of the Mining Qualifications Authority (MQA) for almost seven years and was the establishing General Secretary of the Printing and Packaging Statutory Council. He has served on several Boards as a Director and has Chaired Board Committees. He is a Council member of the South West Gauteng TVET College and has served as a Board member of the Petroleum Agency of South Africa.



Ms Ntokozo Ngcwabe

BA Geography; BA (Hons) Geography and Environmental Management; LLB

Ms Ngcwabe is the DDG: Mineral Policy and Promotion at the Department of Mineral Resources and Energy. She is an experienced researcher of relevant information on global competitiveness and the attraction of new investment. Ngcwabe participated in the drafting and publishing of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA). She represented South Africa at the United Nations Environmental Initiatives and other several related government engagements overseas including the Kimberly Process Certification Scheme. She also served as a board member at the State Diamond Trader between 2009 and 2011.



Prof Lwazi Ngubevana

PhD (Chemical Engineering); MBA; BSc.Eng. (Chemical)

Prof Ngubevana is the Director of the African Energy Leadership Centre (AELC) at the Wits Business School. He holds a PhD in Chemical Engineering and an MBA from the University of the Witwatersrand. His career spans 18 years in the energy, mining, minerals, and water sectors. He has held roles in engineering, project management, and executive roles both locally and internationally. His diverse experience encompasses energy policy and legislation, environmental management strategy as well as working for the world's largest water desalination company.

9.2 Profiles of Non-Executive Directors



Dr Siyabonga Simayi

PhD, Pr Tech Eng.; B-Tech Degree:
Metallurgical Engineering; MBA

Dr Simayi is a Programme Director at Coega Development Corporation and a Technical Advisor at the Industrial Development Corporation Project Management Unit. He has seasoned technical experience in Metallurgy, Mineral processing, strategy formulation and development and Special Economic Zones (SEZs). He published a book Application of Lean Management in the Provisioning of Textbooks. He has served on several Boards in the public and private sectors and a sound experience at the Executive level. He has twenty-three (23) years of operations experience, understanding the importance of working towards specific goals and timelines, resulting in a high standard work ethic.



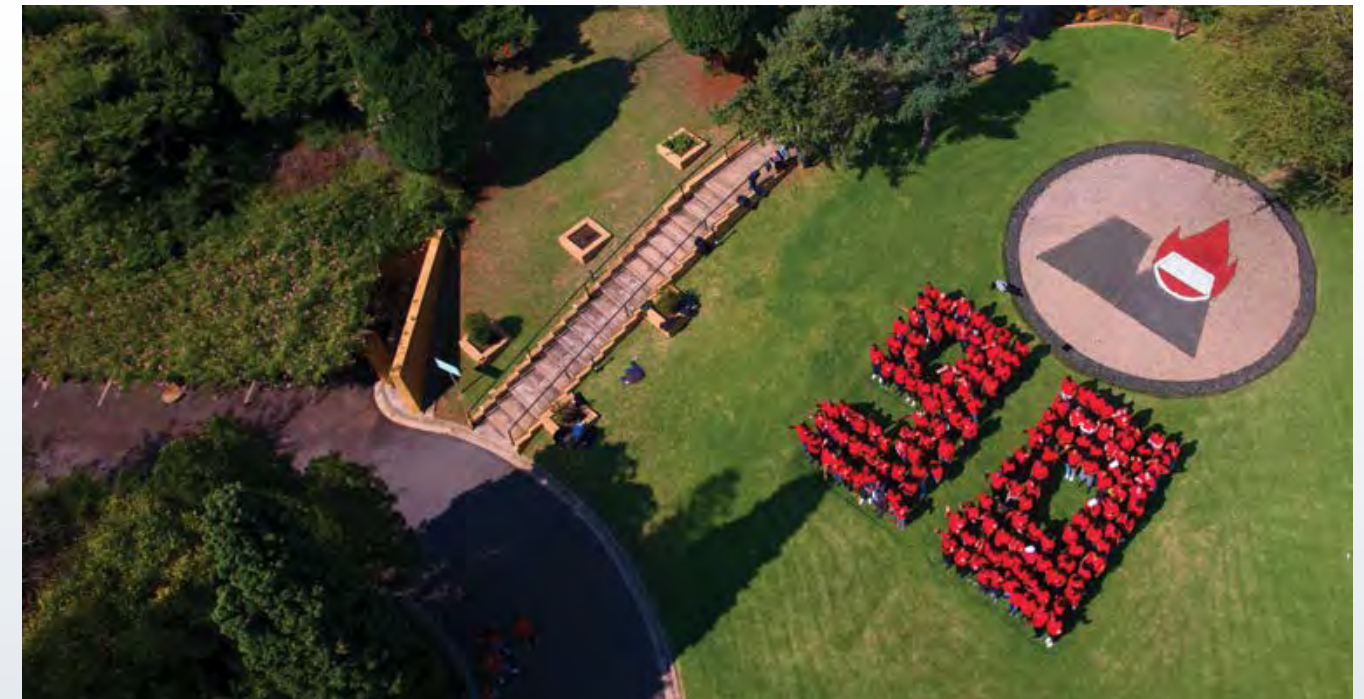
Ms Mavis Thomani

CA (SA); B. AccSC (Hons)/CTA;
B.com (Accounting)

Ms Thomani is a Chartered Accountant (SA) with over 25 years of experience in finance. Her expertise spans across financial management, asset & supply chain management, and strategic planning, in both public and private sectors. She founded Ephphatha Wealth Streams and currently serves as a non-executive Board member and Audit and Risk Committee member for both Dynamic Fluid Control (DFC) and Copaflo. Ms. Thomani brings a wealth of leadership experience to the table, having held various roles in public and private companies for over 17 years. These roles included Executive Director, Non-Executive Director, and Company Secretary. Notably, she served on the boards and Audit and Risk Committees of organisations like TIHMC, Datacentrix, SARS, Pioneer Foods, SANEDI, and AEMFC.

9.3 Executive Management Committee

The Executive Management Committee consists of the Chief Executive Officer (CEO) and four (4) Group Executives who are responsible for business development, research and technology development, support services and the financial health of the organisation. The CEO reports directly to the Board and his primary responsibilities include formulating and implementing the strategy approved by the Board, approving and monitoring business plans, cultivating partnerships with stakeholders and providing high-level leadership. The Committee is also responsible for Mintek's budget, operating structure, management policies and key procurement processes. In addition, the Committee ensures that governance procedures are put in place to enable proactive corporate governance systems to be regularly assessed to maintain their soundness and compatibility with world-class standards.



Right: Mintek employees came together to commemorate the Mintek@90, creating a formation of 90.



9.3 Executive Management Committee

Profiles of Members of the Executive Management Committee
The Executive Management Committee of Mintek consists of the following:



Dr Molefi Motuku
Chief Executive Officer
PhD (Materials Engineering);
MSc (Materials Engineering);
BSc (Physics); BSc (Mechanical Engineering).



Mr Sakhiseni Simelane
Chief Financial Officer/ Group Executive: Support Services
MBA; B Com (Hons); B Com (Accounting)



Ms Mariekie Gericke
Group Executive: Extractive Metallurgy
MSc (Microbiology); BSc (Hons) Microbiology; BSc (Microbiology & Chemistry)



Prof Indresan Govender
Group Executive: Mineral Processing and Characterisation
PhD (Mechanical Engineering); BSc Hons (Physics); BSc (Physics & Mathematics); HDE (Maths & Physics)



Dr Jones Papo
Group Executive: Mining, Materials and Automation
PhD (Materials Engineering); MSc (Materials Engineering); MSc (Applied Science in Materials Engineering); BSc (Chemistry & Mathematics)



Dr Motuku is the current CEO of Mintek. With a wealth of leadership experience, he has held various positions, including Group Executive: Research, Development, Innovation, and Acting CEO at the Council for Scientific and Industrial Research (CSIR), as well as CEO of the National Metrology Institute of South Africa (NMISA). Before his tenure at NMISA, Dr Motuku successfully managed the Advanced Materials Division at Mintek and served as General Manager: Research & Development; Director of Fort Hare Institute of Technology (University of Fort Hare), and an Assistant Professor of Mechanical & Materials Engineering at Tuskegee University, USA. He was a member of the American Society of Mechanical Engineers (ASME) and The Minerals, Metals & Materials Society (TMS) in the USA. Dr Motuku graduated with a PhD and MSc in Materials Engineering at the University of Alabama at Birmingham (UAB), USA. He holds a BSc in Mechanical Engineering and a BSc in Physics from Tuskegee University, USA. Dr Motuku is an accomplished author and has made significant contributions through presentations at numerous international conferences and forums.

Mr Simelane is Mintek's CFO/Group Executive for Support Services. He is a seasoned executive with an extensive background spanning over 20 years in accounting, auditing, and supply chain management. Prior to joining Mintek, Mr Simelane served as the Chief Financial Officer of the Department of Minerals and Energy and as the Chief Audit Executive of the South African Revenue Service (SARS). He has gained recognition for his efforts, including being awarded Internal Auditor of the Year (SA) in 2004. He currently chairs the Risk Committee of the Department of Basic Education and has served in various leadership capacities, including as a member and Chairperson of the University of South Africa Council. Moreover, Mr Simelane has played integral roles in numerous boards and committees across government entities and institutions, further demonstrating his commitment to advancing governance and strategic leadership at both national and institutional levels.

Ms Gericke is a distinguished scientist with a strong background in biohydrometallurgy and the treatment of mining-related water and waste. She began her career at the CSIR before joining Mintek in 1995. With a BSc in Chemistry and Microbiology, an Honours degree in Microbiology, and an MSc in Microbiology, Ms Gericke has actively contributed to research and development through collaborative projects with industry and research partners. She was Divisional Manager for the Biometallurgy Division before becoming the Group Executive for Extractive Metallurgy at Mintek in 2022. Ms Gericke's expertise is showcased through her publications, book chapters, and presentations at local and international conferences in the field of Biometallurgy.

Prof. Govender has over 20 years of R&D experience. He joined the organisation with a proven track record across the whole value chain of mineral processing research. Prof. Govender earned a PhD from the University of Cape Town (UCT), where he spent 15 years working in Physics and Engineering. He then accepted a position as Professor of Particle Technology and Mineral Processing at the University of KwaZulu-Natal. Mechanistic modelling of mineral processing unit operations has uniquely positioned Prof Govender's research to offer robust and practical solutions to the mining industry while ensuring that the underlying physics is accurately recorded.

Dr Papo is Mintek's Group Executive: Mining Materials and Automation. He earned a BSc in Chemistry and Mathematics and an MSc in Applied Science in Materials Engineering from the University of Cape Town (UCT). He earned his MSc in Materials Engineering and PhD in Materials Engineering from the University of Alabama in Birmingham (UAB) as a Fulbright Scholar. He has worked on a variety of research programmes, including the Metals Affordability Initiative (MAI) consortium managed by the US Department of Defence (US DoD) and a National Institutes of Health-funded project on Nanocrystalline Diamond Coatings for Medical Implants. Dr Papo joined Mintek in 2004 and has held several positions, including Chief Scientist, Head of Physical Metallurgy, and Manager of Advanced Materials Division. During his tenure in the Advanced Materials Division (AMD), he managed a number of National Programmes funded by the Department of Science and Innovation (DSI). This included the Advanced Materials Initiative (AMI), the Technology Assistance Programme (DST-TAP) for the foundry industry and other programmes geared towards the enhancement of technical skills required in the mining and metals-related industries. His current concentration is on technology transfer and commercialisation.

Aerial shots of Mintek Campus.

9.4 Governance Structure

Statement

The Board hereby considers Mintek's annual financial statements to be a fair depiction of the organisation's financial position at year-end in terms of the South African Statements of Generally Recognised Accounting Practice (GRAP) and as required by the (PFMA).

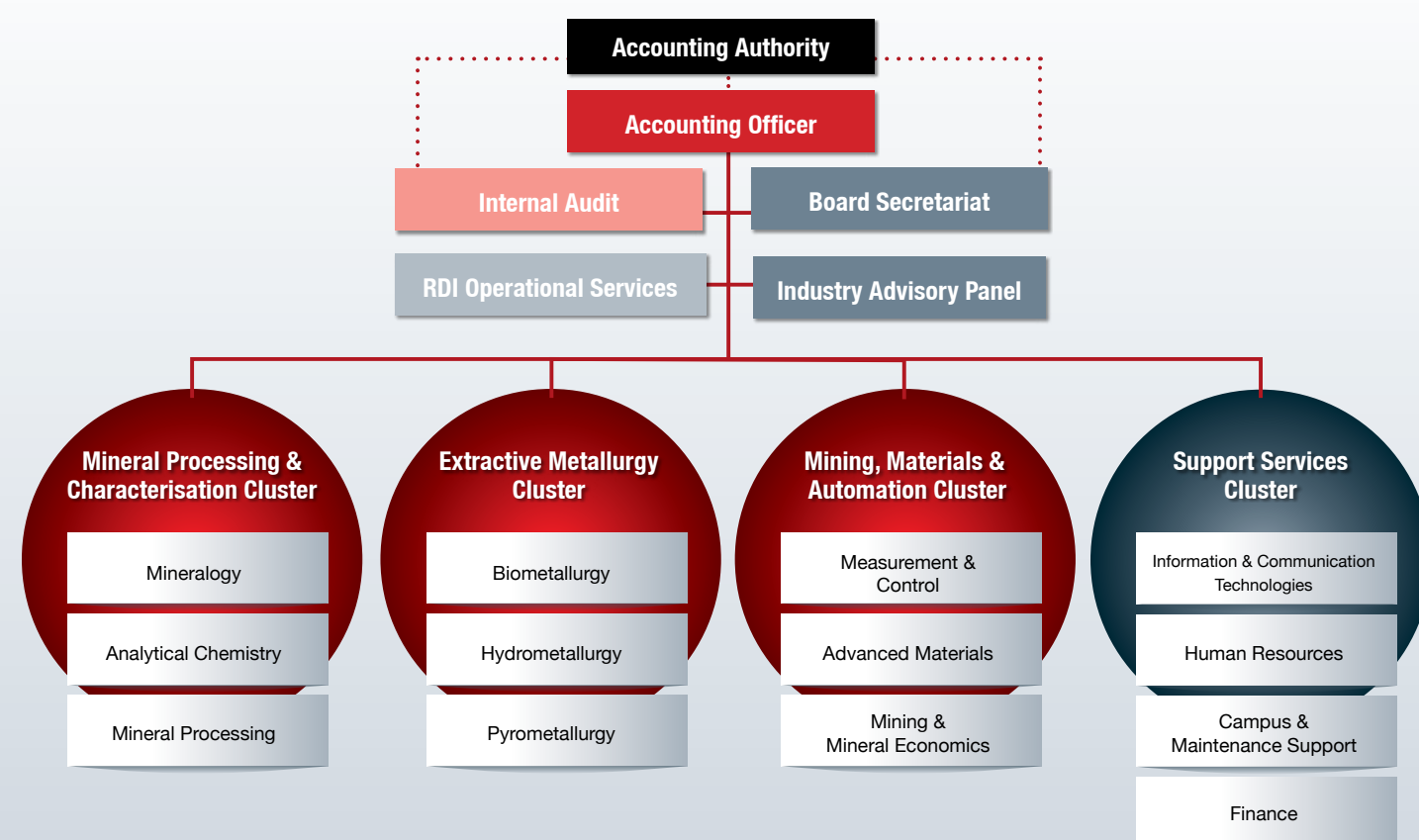
Mintek Governing Structure

The Board is ultimately responsible for the performance and strategic affairs of the organisation. It ensures that the organisation adheres to the highest standards of ethical behaviour.

The Board is accountable to the Minister of Mineral Resources and Energy (DMRE). As a result, the Board and the Executive Authority have signed a shareholder

performance agreement (the compact). Mintek has a Board Secretariat that supports the Board and ensures its optimal functioning and efficiency.

The Board's duties are stated in the MTA, the PFMA, and the Board Charter. Board members participate in the Board's deliberations and decision-making process while exercising independent judgment. Its function is to provide strategic direction, monitor and assess strategic targets and objectives, approve policies, capital expenditure, acquisitions, and disposals, and oversee governance, internal controls, and risk management.



Governance Framework

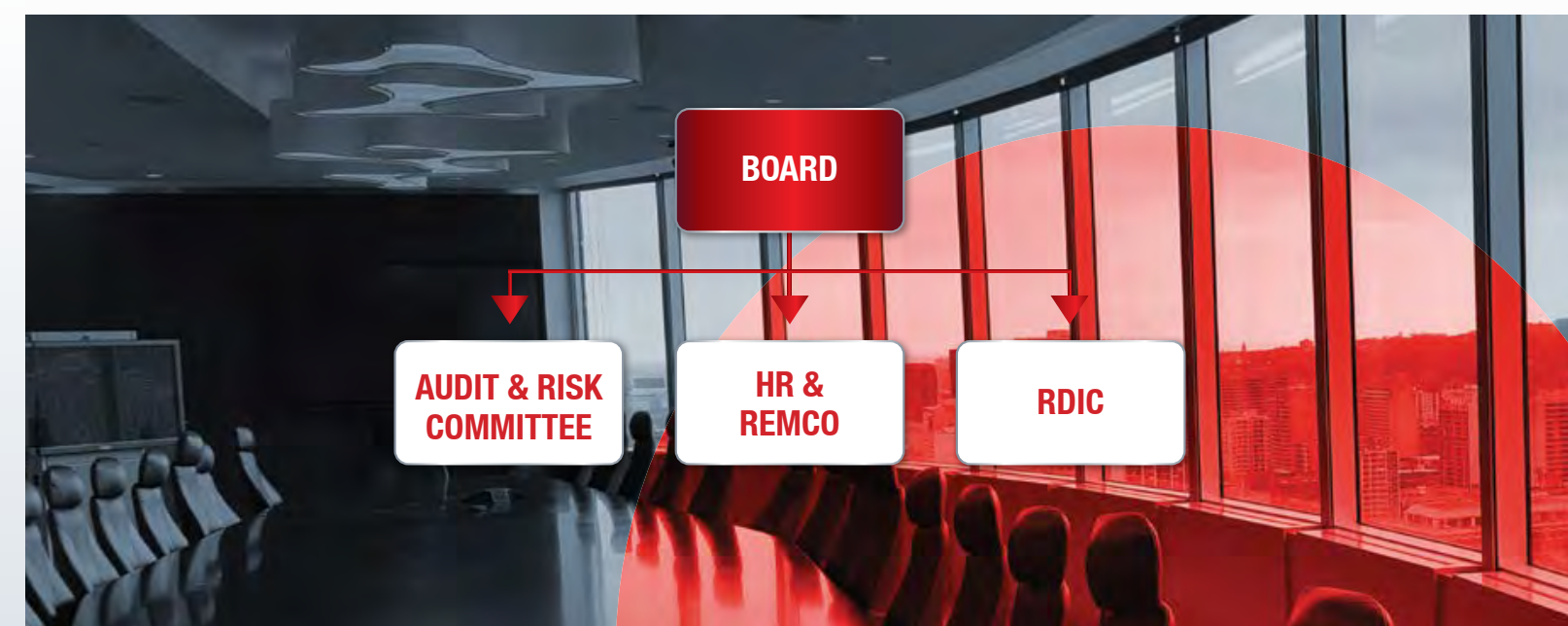
Mintek seeks to ensure that business processes, systems, and controls adhere to governance principles while ensuring corporate efficiency, in accordance with universal best practices. As a science council, Mintek plays a significant role in South Africa's research, innovation, service delivery, development, and growth.

We operate within the framework of a variety of relevant legislation. These are:

- The Mineral Technology Act No. 30 of 1989;
- Mintek is regulated by the PFMA, which also governs its undertakings as a Schedule 3B organisation;

- The King IV Report, which intends to promote best practices in corporate governance across organisations, applies to public entities and public enterprises that fall under the PFMA; and
- The Governance Protocol provides guidelines to the public sector and its institutions working in the political and economic spheres. Although the Protocol applies to Mintek, it is not intended to replace the King Code, but rather to supplement it. Boards are the fundamental foundation of corporate governance, according to the Protocol, and Mintek must be led and regulated by an effective and efficient Board formed in accordance with the Mineral Technology Act.

The Board consistently analyses its governance structures and procedures to ensure that they promote effective and ethical leadership, corporate citizenship, and sustainability. Policies are in place to ensure compliance with applicable legal and regulatory requirements and best practice standards. Well-constituted committees assist the Board in discharging its duties while it remains fully accountable. This formal delegation process includes documented and approved terms of reference that are reviewed annually.



Board Committees and Their Functions

Three well-constituted committees support the Board in carrying out its duties. The Board receives reports on governance and oversight matters from the committees. These committees are selected according to the skill sets required for the committees to fulfil their functions. The three committees are the Audit and Risk Committee (ARC), the Human Resources and Remuneration Committee (HR & Remco) and the Research, Development, and Innovation Committee (RDIC). Each of these committees has its own Charter.

Audit and Risk Committee (ARC)

The ARC covers all aspects of the PFMA, and the Auditing Standards as outlined in the regulations. The committee conducts a final review of the organisation's key risk issues, such as asset maintenance and safeguarding, as well as financial sustainability. It oversees the effectiveness of internal financial controls, along with external and internal audit operations, to ensure the financial statements' integrity.

Human Resources and Remuneration Committee (HR & Remco)

HR & REMCO develops and monitors policies and values-based processes to guarantee that the organisation's operations are compliant with labour laws and industry best practices. It assures that the organisation's remuneration policies and strategies are designed to recruit, retain, and motivate the best employees.

Research, Development and Innovation Committee (RDIC)

RDIC ensures that core research and innovation processes are carried out ethically, effectively and in accordance with international best practices and that research outputs, organisational climate and credibility remain compatible with the role and objectives of the organisation. Advises on the utilisation of expertise, project proposals and financing thereof, looking into various co-operatives and related strategies and the possible expansion of the organisation's business within the said mandate.

Table 9.2 Audit and Risk Committee (ARC) as at 31 March 2024

Committee Objectives	Highlights of Activities
The ARC supports the Board in discharging its responsibilities relating to: Effectiveness and efficiency of operations.	Reviewed all key internal and external audit findings and monitored management's responses to them. The committee was pleased with the audit quality and independence of the external auditors.
Compliance with applicable laws, regulations, and supervisory requirements.	Supported the appointment of Ms Siphelele Mtshengu as the Head of Internal Audit.
Oversee and provide advice on the organisation's risk management.	Recommended to the Board for approval the revised ARC Charter for 2024. Additionally, the committee approved the Internal Audit Charter.
Evaluate the effectiveness of mitigating strategies implemented to address the material risks of the organisation.	Recommended to the board the group financial statements; assets write-offs; risk management policy; Mintek fraud policy; and the strategic risk register for final approval.
Supporting Mintek's business sustainability under normal as well as adverse operating conditions.	Recommended to the Board the Mintek Shareholder Compact 2024 including sections dealing with the group financials and risk management for final approval by the Board.
The preparation of accurate financial reporting and statements in compliance with all applicable legal requirements and accounting standards; and	Deliberated and provided oversight on the risk management action plan, enterprise risk register, finance operations quarterly reports, and ICT quarterly reports.
The operation of adequate systems and control processes.	Deliberated and recommended to the Board the quarterly performance reports.
	Monitored the committee's annual work plan.

Table 9.3 Human Resources and Remuneration Committee (HR&Remco) at 31 March 2024

Committee Objectives	Highlights of Activities
The HR & Remco is established to assist the Board, amongst others with the following: Reviewing and determining human resource-related policies, including conditions of employment, reward, remuneration and retention policies.	Discussed and recommended to the Board the reviewed 2024 HR&Remco Charter for final approval by the Board.
Appraise annually the performance of the chief executive.	Recommended to the Board, the HR-related policies viz. employee leave administration policy; conditions of service policy; employee development policy; prevention and elimination of violence and harassment in the workplace policy; and employee relations policy for approval by the Board.
Review annually the committee's charter and recommend for approval by the Board.	Discussed and recommended to the Board the Salary Review and Incentive Bonus Pay-out for approval by the board.
Consideration of the annual review of remuneration packages; and	Deliberated on and noted the employment equity plan; litigation quarterly report; submission on organisation culture transformation and HR quarterly report.
Studying aspects of the shareholder's compact that relate to human resource development and reviewing performance against target.	The committee provided oversight on the Group Executives' Performance Contracts and the Executive Managers' 5-year fixed-term contract.
	Tracked the committee's annual work plan.

Table 9.4 Research, Development and Innovation Committee (RDIC) at 31 March 2024

Committee Objectives	Highlights of Activities
The RDIC is established to support the Board in discharging its duties relating to: To ensure that key innovation and research processes are conducted ethically, effectively and benchmarked against international best practices and that research outputs, organisational climate and credibility remain consistent with the mandate, objectives, and role of the organisation;	Recommended to the reviewed 2024 RDIC Charter for final approval by the Board.
Advises on utilisation of expertise, project proposals and financing thereof, looking into various co-operatives and related strategies and the possible expansion of Mintek business within the said mandate.	Received quarterly presentations on the status of the six strategic programmes.
Provides a forum for discussing technical issues for consideration by the Board in informing strategy development and implementation in Mintek; and	Recommended to the Board the following: the responsible conduct of research policy; communications policy; marketing, communication and stakeholder engagement and deregistration of Philisa Sechaba for final approval.
Assists the Board in accomplishing its duties relating to the legal mandate of Mintek regarding its core business.	Discussed the MTEF submissions; and received presentations on strategic projects.
	Received update on the critical mineral strategy.
	Monitored the committee's annual work plan.
	Deliberated on the Mintek's 90th Celebration proposal.



Board and Committee Meeting Attendance

The Board meets at least four times a year. Circumstances might arise and necessitate ad hoc meetings to deliberate on urgent, substantive matters. The Board reserves at least one day per year to discuss the strategic long-term

plan of the organisation and its subsidiaries. All members of executive management attend Board meetings. Furthermore, selected members of executive management and senior management participate in certain committee meetings.

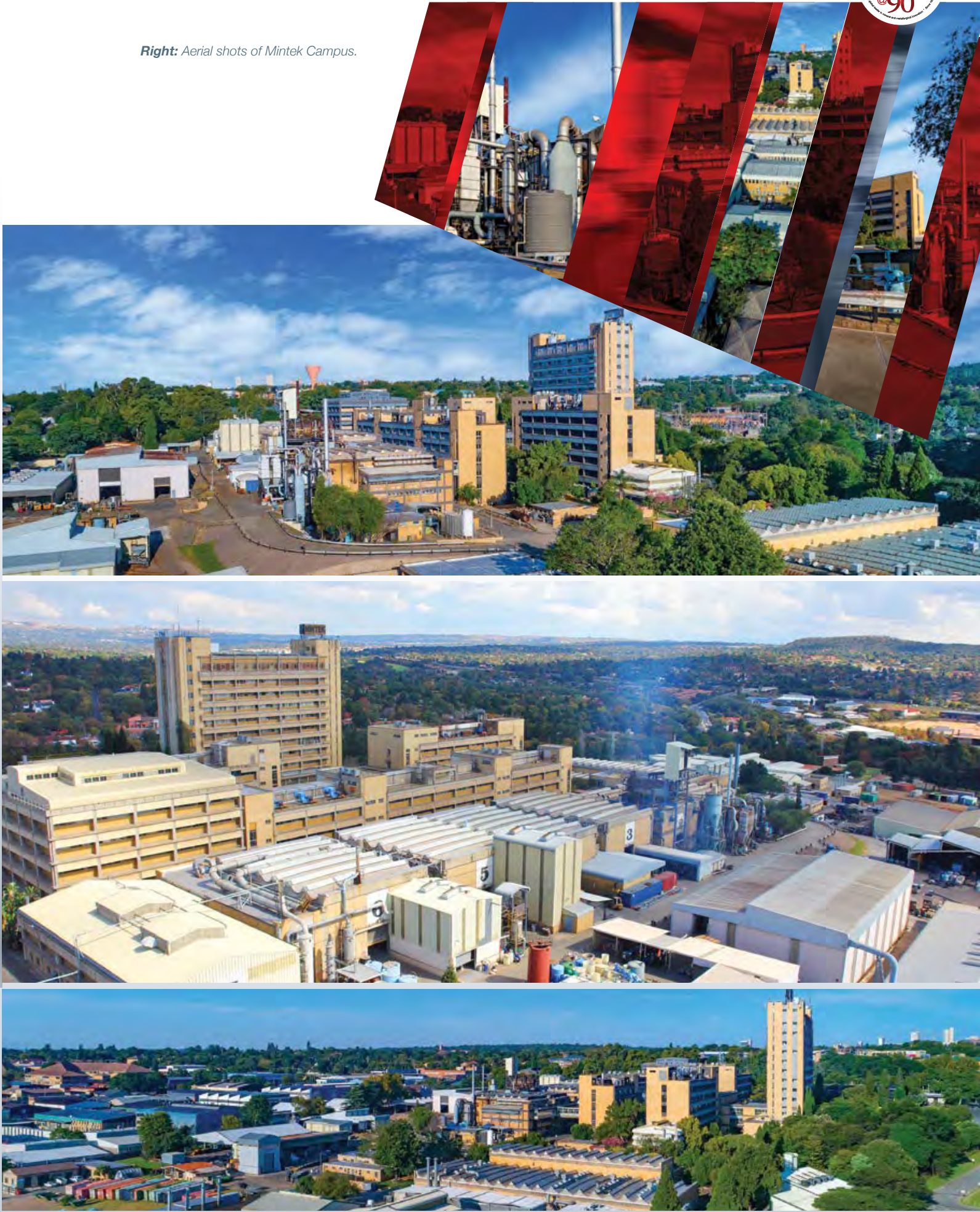
Table 9.5 Board and Committee Meeting Attendance

Name of Directors and/ or Committee Members	Scheduled			
	Board	ARC	HR & Remco	RDIC
Total Numbers of Meetings	*9	*8	*6	4
Dr Thibedi Ramontja	9/9	n/a	n/a	n/a
Ms Ntombifuthi Phydels Zikalala Mvelase (Deputy Chair) (reappointment)	9/9	8/8	6/6	n/a
Mr Philippus Rudolf Heydenrich (reappointment)	8/9	n/a	5/6	4/4
Dr Takalani Madzivhandila (appointed 1/6/2023)	8/9	n/a	n/a	3/4
Ms Pontsho Maruping (reappointment)	7/9	n/a	n/a	3/4
Dr Molefi Motuku	9/9	8/8	6/6	4/4
Mr Livhuwani Nengovhela (appointed 1/6/2023)	8/9	7/8	5/6	n/a
Ms Ntokozi Faith Ngcwabe (reappointment)	6/9	n/a	5/6	n/a
Prof Lwazi Ngubevana	9/9	8/8	n/a	4/4
Dr Siyabonga Simayi (appointed 1/6/2023)	8/9	n/a	n/a	3/4
Ms Mavis Thomani (appointed 1/6/2023)	8/9	8/8	5/6	n/a
Ms Mulalo Dzivhani (appointed 18/7/2023)	n/a	7/8	n/a	n/a
Adv. Bhukumuzi Zulu (appointed 18/7/2023)	n/a	6/8	n/a	n/a

*The board had five special meetings to approve reports.
*ARC had five special meetings to recommend reports to the Board for final approval.
*HR&RECOM had two special meetings to recommend the report to the Board

The Board and committee meetings are conducted in an atmosphere of honesty, forthrightness, and mutual respect. These meetings call for high-quality executive management reports and rigorous and constructive challenge and debate among all Board and committee members.

Right: Aerial shots of Mintek Campus.



10

Risk Management

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2004 - 2013



2004

Mintek's Plant for
Wastewater Treat-
ment



2007

SAVMIN™ Pilot
Plant



2008

Mintek Scientist in
Bio Medical Lab



2010

Pottery and Ceram-
ic Training at Mintek



2011

The EN403 Fire
Escape Gas Mask

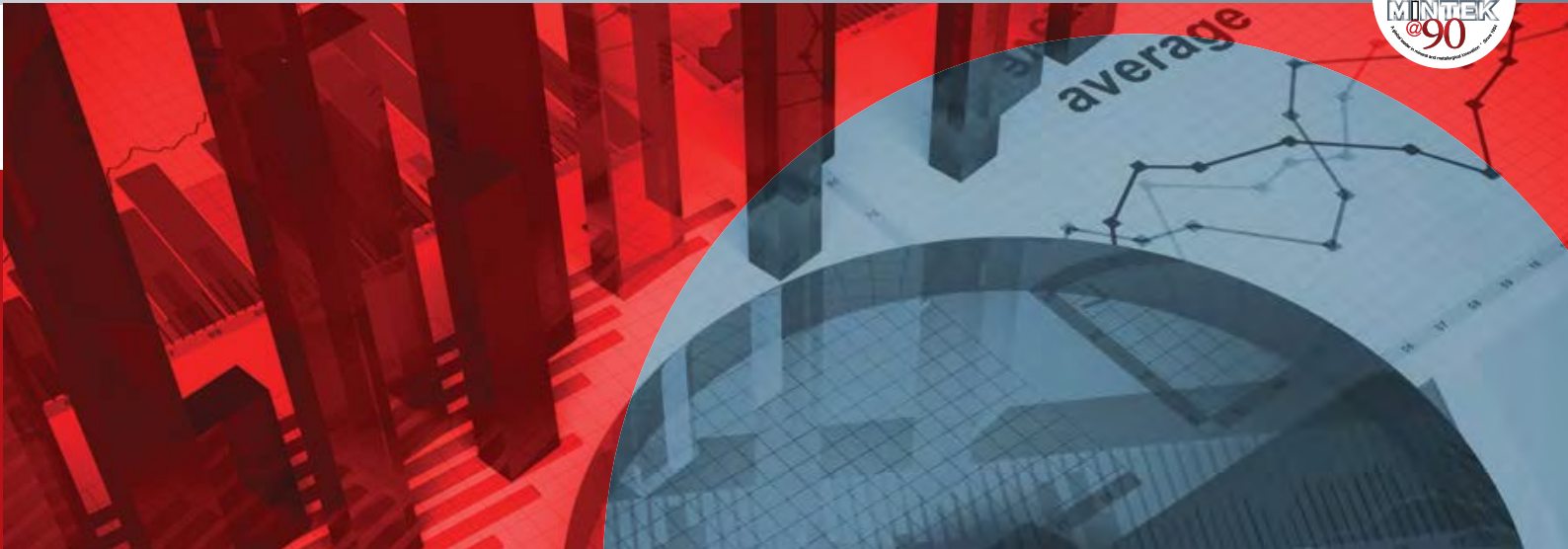
Left: A spiral concentrator is used to separate particles of different sizes in mineral processing.



10.1 | Introduction



Mintek operates in a dynamic environment and faces various risks that could impact its operations, reputation, and financial performance. Effective enterprise risk management (ERM) is crucial for identifying, assessing, and mitigating these risks to ensure Mintek’s sustainability and success. This report provides an overview of the key risks faced by Mintek and outlines the strategies implemented to manage them effectively.



10.2 | Governance and Framework

The Mintek Board, supported by the Audit and Risk Committee (ARC), delegates responsibility to the management team for the establishment, execution, and monitoring of the risk management process. The Risk Steering Committee (RSC), appointed by the Chief Executive Officer to assist in discharging his responsibilities as the Accounting Officer, is a Management Committee. The Operational Risk Management Committee comprises Risk Champions, who are change agents and troubleshooters. Mintek is committed to integrating and embedding risk management principles and practices into its institutional culture, governance and accountability arrangements, planning, reporting, performance review, and business improvement processes.

10.3 | ERM Objectives and Approach

Mintek’S ERM process aims to achieve an appropriate balance between exploiting opportunities for gain while minimising the adverse impacts of potential risks. Its goal is to realise an empowered, risk-intelligent, and resilient organisation. This empowerment refers to a sound risk culture and full integration of risk management practice into normal management practices and performance reviews, where risk management is seen as a value-creation mechanism. Risk intelligence implies an organisation that pursues sustainability through a comprehensive understanding, analysis, and integrated management of risk to optimise organisational value, performance, and sustainability. Risk resilience is the ability to spot, react, and recover from disruptive challenges, and, most importantly, adapt and evolve in response to more significant disruptive changes.

10.4 | Integration of Strategy and Risk Management

Mintek’s Enterprise Risk Management Framework developed and subsequently approved by the Board, provides the necessary foundation and organisational arrangements for managing risk across Mintek. A risk policy that stipulates clear, measurable principles that Mintek’s risk management program must achieve was updated, reviewed, and approved by the Board. Executive Management discusses risk management activities at various governance structures every quarter.

The ERM unit designed a risk management strategy in response to the assessment of Mintek’s risk management maturity level. The strategy aligned with the expectations set by good governance practices for a robust risk management function. At its core, the risk management strategy emphasised the cultivation of a strong risk management culture, characterised by shared attitudes, values, and practices. Establishing the right tone at the top and maintaining consistent, ongoing communication regarding expected risk management practices and programs were pivotal in fostering this culture, as well as appropriate behaviour and performance. Dedicated resources are required for this strategy’s full implementation to ensure its success. This ongoing process ensures that the unit is adequately resourced and equipped with the relevant skills to drive risk maturity to the desired level.

To ensure strategy and risk integration at the highest level, Mintek conducted strategic risk assessments as part of the strategic planning process.

Table 10.4 Mintek has three lines of defence elaborated as follows:

First Line	Second Line	Third Line
Risk Owners/ Managers	Internal Control, ICT Governance, ERM, SHEQ, Legal	Audit (Internal and External)
Selects and develops a balance of ongoing and separate evaluations, considering the rate of change in business and business processes, and varying the scope and frequency of separate evaluations depending on risk.	Performs ongoing and separate evaluations to monitor the status of various components of the system of internal control as directed by management.	Provides assurance that ongoing management evaluations are built into business processes and adjusted to changing conditions as appropriate.
Ensures that evaluators performing ongoing and separate evaluations have sufficient knowledge to understand what is being evaluated.	Performs ongoing and separate evaluations to monitor whether achievement of objectives is within established risk tolerances.	- Provides assurance that information provided by management evaluations is fair and accurately presented. - Provides assurance that the system of internal control is operating as expected and risks are managed within the organization’s risk appetite and tolerance

11

Financial Performance

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2014 - 2023



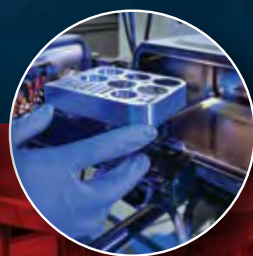
2023

AMAZEMET re-Powder Ultrasonic Atomisation



2023

Analysis for ICP-OES and UV



2023

Fuel Cell Catalysis



2023

Phila•Test HIV 1/2 Lateral Flow Device



2023

Upscaling of Polymer Powder Modification

Left: Heap-leaching processes are utilised to extract valuable metals from their ores.



11.1 | General Information



Controlling Entity	Department of Mineral Resources and Energy
Financial Statements relate to	MINTEK Group and Mintek
Domicile, Legal Form and Jurisdiction	Mintek is a research institution, constituted in terms of the Mineral Technology Act No. 30 of 1989, and operates from a Central Office situated in Randburg, South Africa.
Nature of Business and Principal Activities	Mintek’s mandate is to serve the national interest through research, development and technology transfer, to promote mineral technology and to foster the establishment and expansion of industries in the field of minerals and products derived therefrom.
Board Members	Non-executive Board Members Dr T Ramontja (Chairperson) Ms NP Zikalala-Mvelase (Deputy Chairperson) Ms NF Ngcwabe Ms P Maruping Mr R Heydenrich Prof L Ngubevana Ms AM Thomani (Appointed 1 June 2023) L Nengovhela (Appointed 1 June 2023) Dr T Madzivhandila (Appointed 1 June 2023) Dr S Simayi (Appointed 1 June 2023) Mr H Motaung (Term ended 31 May 2023) Ms MM Phiri (Term ended 31 May 2023) Mr LL Makibinyane (Term ended 31 May 2023) Dr MW Ngobeni (Term ended 31 May 2023) Executive Board Member Dr M Motuku
Chief Executive Officer / President (CEO)	Dr M Motuku
Chief Financial Officer (CFO)	Mr AS Simelane
Registered office	200 Malibongwe Drive, Randburg, 2125
Business address	200 Malibongwe Drive, Randburg, 2125
Postal address	Private Bag X3015, Randburg, 2125
Bankers	ABSA Limited
Auditors	Auditor-General (South Africa)

11.2 | Board’s Responsibilities and Approval Statement of Responsibility



The directors are required by the Public Finance Management Act (Act 1 of 1999), as amended, to maintain adequate accounting records and are responsible for the content and integrity of the annual financial statements and related financial information included in this report. It is the responsibility of the members to ensure that the annual financial statements fairly present the state of affairs of the entity as at the end of the financial year and the results of its operations and cash flows for the year then ended, in conformity with GRAP. The Auditor-General was engaged to express an independent opinion on the annual financial statements and was given unrestricted access to all financial records, related data and relevant parties.

The financial statements have been prepared in accordance with the Standards of GRAP including any interpretations, guidelines and directives issued by the ASB and in the manner required by the PFMA and Companies Act for the controlled entities.

The annual financial statements are based on appropriate accounting policies consistently applied and supported by reasonable and prudent judgements and estimates.

The directors acknowledges that they are ultimately responsible for the system of internal financial control established by Mintek and place considerable importance on maintaining a strong control environment, which includes the safeguarding of assets and compliance with relevant legislation. To enable the directors to meet these responsibilities, the directors sets standards for internal control aimed at reducing risk of error deficit in a cost effective manner. The standards include the proper delegation of responsibilities within a clearly defined framework, effective accounting and other procedures, and adequate segregation of duties to ensure an acceptable level of risk. These controls are monitored throughout Mintek and all employees and management are required to maintain the highest ethical standards in ensuring the entity’s business is conducted in a manner that in all reasonable circumstances is above reproach. The focus of risk management in the economic entity is on identifying, assessing, managing and monitoring all known forms of risk across Mintek. While operating risk cannot be fully eliminated, the economic entity endeavours to minimise it by ensuring that appropriate infrastructure, controls, systems and ethical behaviour are applied and managed within predetermined procedures and constraints.

The board accepts its responsibility to ensure that Mintek is managed in a responsible manner, considering the interest of all stakeholders, including the DMRE, employees, local communities and creditors. Responsible management entails, inter alia, compliance with applicable statutory and regulatory requirements, including risk management.

The directors are of the opinion, based on the information and explanations given by management, that the system of internal control provides reasonable assurance that the financial records may be relied on for the preparation of the financial statements and that the financial statements are free from material misstatement, whether due to fraud or error. However, any system of internal financial control can provide only reasonable, and not absolute, assurance against material misstatement or deficit.

The board has reviewed Mintek’s cash flow forecast and budget for the year to 31 March 2025 and, in the light of this review and the current financial position, it is satisfied that Mintek has, or has access to, adequate resources to continue in operational existence for the foreseeable future.

Although the directors are primarily responsible for the financial affairs of the entity, they are supported by the entity’s external auditors. The Auditor-General is responsible for independently reviewing and reporting on Mintek’s annual financial statements and her report is presented with these financial statements.

The financial statements set out on page 110 to 179, which were prepared on the going concern basis, were approved by the directors on 26 July 2024 and were signed on its behalf by:


Chairperson of the Board
Dr Thibedi Ramontja
26 July 2024


Chief Executive Officer
Dr Molefi Motuku
26 July 2024



11.3 | CFO’s Report



Mr AS Simelane
Chief Financial Officer
Mintek

Mintek’s performance for the financial year ending 31 March 2024 highlights the entity’s resilience amid a challenging economic environment. As a Schedule 3B institution, Mintek is mandated to ensure financial sustainability by supplementing government funding with revenue generated from commercial sources. To this end, we have continued to pursue a balanced revenue portfolio, integrating diversified public sector revenue streams with increased local and global commercial income through technology commercialisation and strategic expansion of our international sales and operations. The positive financial results affirm the efficacy of this approach.

We recorded an **18% increase in revenue**, reaching **R765 million**, primarily driven by a **40% rise in commercial income**, which now constitutes **59% of total revenue**.

This robust performance underscores our competitive edge in the global market.

Staff-related expenses are the principal cost driver for Mintek, attributable to our reliance on highly skilled personnel essential to our operations. Our ongoing commitment to attracting and retaining top talent, coupled with the strategic filling of key vacancies, has inevitably led to increased staff costs.

In addressing these cost pressures, we continue to implement rigorous cost management strategies and efficient resource

allocation to ensure prudent staff cost management while maintaining a highly skilled and motivated workforce.

Notably, despite the challenges posed by rising expenditure, Mintek achieved a surplus of R14.8 million. Our financial management practices, characterised by judicious cost control and strategic resource allocation, have been instrumental in enhancing our long-term financial resilience. Additionally, we are pleased to report that Mintek achieved a clean audit for the financial year. This clean audit reflects our commitment to transparency and accountability, reinforcing stakeholder confidence and affirming the robustness of our financial management practices.

Mintek’s strong financial standing is further evidenced by our robust total assets, which are close to the R1 billion milestone. Our improved working capital management highlights our capacity to meet short-term obligations while ensuring organisational stability. Moreover, our substantial cash reserves, exceeding R390 million, validate the soundness of our investment strategies and prudent financial oversight.

Looking forward, Mintek remains steadfast in its pursuit of financial sustainability and strategic execution. Our medium-term budget adopts a conservative yet forward-looking approach, reflecting prevailing economic conditions and strategic priorities. We are dedicated to diversifying funding sources, forging strategic partnerships, and optimising revenue generation to ensure Mintek’s long-term financial stability and continued success.

In conclusion, Mintek is well-positioned to drive transformative advancements in the minerals sector, making significant contributions to South Africa’s continued growth and prosperity.

11.4 | Report of the Audit and Risk Committee | Part A

Board Committees and their Functions
Report of the Audit and Risk Committee (ARC)

The ARC covers all aspects of the PFMA and the Auditing Standards as outlined in the regulations. The Committee conducts a final review of the organisation’s critical risk issues, such as asset maintenance and safeguarding, as well as financial sustainability. It oversees the effectiveness of internal financial controls, along with External and Internal Audit operations, to ensure the integrity of financial statements.

The Audit and Risk Committee (ARC)
(1 April 2024 to 31 March 2025)

The ARC supports the Board in discharging its responsibilities relating to:	
Committee Objectives	Highlights of Activities
Effectiveness and efficiency of operations; Compliance with applicable laws, regulations and supervisory requirements;	Approved the revised ARC & Internal Audit Charters for 2023/24.
The operation of adequate systems and control processes. - Oversee and provide advice on the organisation’s risk management; - Evaluate the effectiveness of mitigating strategies implemented to address the material risks of the organisation; - Supporting Mintek’s business sustainability under normal as well as adverse operating conditions; - The preparation of accurate financial reporting and statements in compliance with all applicable legal requirements and accounting standards.	- Approved the Combined Assurance Framework. - Actively interacted with the Head of Internal Audit in ensuring that the Internal Audit strategic and operational plan for 2024/25 is practical and achievable. - Approved and recommended the Mintek annual strategic risk register for final approval by the Board. - Monitored that the risk register is reviewed on a continuous basis for any emerging risks, and provided regular feedback to the Board on the adequacy and effectiveness of risk management. - Approved and recommended the Mintek Shareholder Compact 2024/25 including sections dealing with the group financials and risk management for final approval by the Board. - Approved and recommended the 2023/24 Annual Integrated Report including Annual Financial Statements.



11.4 | Report of the Audit and Risk Committee | Part B

Report of the Audit and Risk Committee (ARC)

As required by the PFMA, the report of the Audit and Risk Committee (ARC) is prepared in terms of Treasury Regulation 27 and in line with the recommendations of the King IV Report on Corporate Governance for South Africa and its Code of Governance principles. The ARC is a Committee established by the Board to fulfil statutory duties in terms of section 51(1)(a)(ii), section 76 and section 77 of the PFMA, read together with Treasury Regulation 27 and section 94(7) of the Companies Act, as well as other duties assigned to it by the Board.

The ARC pays attention to key accounting issues, and audit matters and ensures that proactive risk management is in place that appropriately applies to the environment that MINTEK operates in while playing an essential role in ensuring the integrity and transparency of corporate reporting.

ARC Charter

ARC adopted a Charter that was approved by the Board and confirms that it has complied with its statutory obligations of the Charter during the financial year under review. The Charter is continuously reviewed in line with changes in legislation, business circumstances and corporate governance principles. The Charter has been reviewed during the period under review in accordance with King IV’s principles and current best practices.

The ARC assists the Board in fulfilling its oversight responsibilities, in particular, with regard to the evaluation of the adequacy and efficiency of accounting policies, internal controls and financial and corporate reporting processes, risk management and compliance. In addition, the ARC assesses the effectiveness of the internal auditors and the independence and effectiveness of the external auditors.

The Chief Executive Officer, Chief Financial Officer, Head of Internal Audit, Group Executives, RDI Operational Services Executive Manager, and representatives of the external auditors attend all the ARC meetings by permanent invitation.

Composition and Number of Meetings

The Minister appointed members of the Board for a period of three years, which commenced on 1 June 2023. The Board subsequently appointed the following as Members of the ARC:

Audit and Risk Committee Members

Committee Members	Total Number of Meetings Attended by Each Member
Ms Mavis Thomani	Chairperson
Ms Ntombifuthi Phydelsi Zikalala Mvelase	Member
Mr Livhu Nengovhela	Member
Prof Lwazi Ngubevana	Member
Ms Mulalo Dzivhani	Independent Member
Adv Bheki Zulu	Independent Member

Audit and Risk Committee Members and Attendance

The ARC held four scheduled meetings and four special meetings during the year under review and attendance by members was as depicted in the table below:

Committee Members	Total Number of Meetings Attended by Each Member
Ms Mavis Thomani	8/8
Ms Ntombifuthi Phydelsi Zikalala Mvelase	8/8
Mr Livhu Nengovhela	7/8
Prof Lwazi Ngubevana	8/8
Ms Mulalo Dzivhani	7/8
Adv Bheki Zulu	6/8

Committee Mandate

The ARC supports the Board in discharging its responsibilities relating to (a) Effectiveness and efficiency of operations; (b) Compliance with applicable laws, regulations, and supervisory requirements; (c) Overseeing and provision of advice on the organisation’s risk management; (d) Evaluation of the effectiveness of mitigating strategies implemented to address the material risks of the organisation; (e) Supporting Mintek’s business sustainability under normal as well as adverse operating conditions; (f) The preparation of accurate financial reporting and statements in compliance with all applicable legal requirements and accounting standards; and (g) The operation of adequate systems and control processes.

External Audit

The Auditor-General of South Africa (AGSA) remains the external auditor of Mintek Group in terms of Section 4(3) of the Public Audit Act, No. 25 of 2004.

During the year, the ARC:

- a) Considered the 2024/25 Draft Group AFS with management and assurance providers for audit, and recommended the Draft Group AFS to the Board;
- b) Concurred that the adoption of the going concern premise in preparation of the financial statements was appropriate;
- c) Recommended the 2024/25 draft Annual Integrated Report to the Board;
- d) Considered with management the quality and effectiveness of the external audit process, areas of concern and the improvement plans being developed to mitigate identified risks;
- e) Reviewed significant accounting practices, judgements and estimates adopted by the Company in the application of the Standards of Generally Recognised Accounting Practice and found those to be appropriate; and
- f) Reviewed the AGSA Management report and management’s response thereto. Reviewed and noted progress reports on the 2024/25 findings as per the Management report.

The Internal Audit Section (IAS)

The Internal Audit Section performs an independent assurance function. The Head: Internal Audit reports functionally to the ARC and administratively to the CEO.

The ARC evaluates the adequacy and effectiveness of internal controls, assesses the effectiveness of the IAS, and approves the Annual Audit Plan.



Financial Reporting

The ARC received quarterly reports from management regarding the performance of Mintek, the tracking and monitoring of key performance indicators, details of budgets, forecasts, capital expenditure, and reliability of management information used during the financial reporting process. The ARC monitored consistency in the application of the accounting and financial policies of Mintek and compliance with accounting standards.

Risk Management

The Board owns the Risk Management Policy of the entity and has delegated the responsibility to the ARC to oversee both risks and opportunities and to ensure that they are appropriately identified, monitored, managed and properly provisioned within Mintek’s defined risk appetite. The ARC Charter defines the minimum requirements for the Committee to give effect to its risk oversight responsibilities. The ARC concludes that the system of risk management within Mintek has improved. The ARC will continue to monitor risk management processes during the 2024/2025 financial year.

Internal Financial Control

During the 2023/24 financial year, the ARC:

- a) Reviewed the effectiveness of Mintek’s system of internal financial control, including receiving assurance from management, internal audit, and external audit; and
- b) Reviewed significant issues raised by the internal audit and the audit processes.

Discussions were held with external auditors on the results of their audits that an adequate and effective system of internal control is being maintained. The required preventative or detective controls were in place to identify, prevent, detect and correct significant internal control weaknesses. The ARC has reviewed the findings by the Internal Audit and External Audit and concurs with the findings. The ARC noted that Mintek obtained an unqualified audit outcome with no findings in the current year, which is an improvement from prior year’s outcome. The audit findings raised were not material and the proposed action plans were indicated by management to address the findings and continue improving the control environment. Based on the processes and assurances obtained, the ARC believes that the significant internal financial controls are adequate and effective.

Other Matters

During the 2023/24 financial year, the ARC:

- a) Recommended to the Board the reviewed Delegation of Authority; and
- b) Reviewed proposed changes to the ARC Charter and Annual Work Plan, which sets out its deliverables for the year for recommendation to the Board.

Regulatory Compliance

The ARC complied with all applicable legal and regulatory responsibilities. It is crucial to deliver a sustainable and effective compliant regulatory operating model, which is underpinned by a direct link to the strategic benefits of establishing a winning regulatory environment.

Finance Function

The ARC believes that the accounting practices adopted are effective, based upon the processes and assurance obtained.

Financial Statements

The ARC considered and recommended the Group and Company Annual Financial Statements to the Board for approval, based on processes and assurances obtained.

Auditor General’s Report

The ARC concurs, accepts the conclusions of the AGSA on the Annual Financial Statements, and believes that the audited Annual Financial Statements must be accepted and read together with the report of the AGSA.

Appreciation

The Committee wishes to acknowledge the work performed by the Mintek officials and express its appreciation to Executive Management, the AGSA and the Internal Audit Section for the co-operation and information they have provided to enable the Committee to discharge its responsibilities.

On behalf of the Audit Committee

During the reporting year, the ARC:

- a) Approved the 2024/25 Internal Audit Plan and rolling three-year plan;
- b) Reviewed and approved the Internal Audit Charter;
- c) Considered Internal Audit Quarterly Reports relating to the effectiveness of Mintek’s internal control environment, systems and processes together with the adequacy and appropriateness of related Management’s Corrective Action Plans;
- d) Considered the effectiveness of the internal audit section;
- e) Reviewed the internal audit resources to ensure the internal audit is able to discharge its functions.

A Head of Internal Audit was appointed in August 2023. The internal audit section conducted seventeen (17) key audit projects across the Group in line with its risk based audit plan, four (4) ad-hoc projects and on-going follow up projects. 100% of the audit projects planned were completed within the 2023/24 financial year. The Audit and Risk Committee concluded that the Internal Audit Section was effective due to the successful execution of the audits by in-house Internal Audit with the assistance of the appointed co-source Internal Audit service provider.





11.4

Report of the Auditor-General to Parliament on the Mintek Group for the year ended on 31 March 2024

Report on the audit of the consolidated and separate financial statements

Opinion

1.
- I have audited the consolidated and separate financial statements of the Mintek Group and its subsidiaries (the group) set out on pages 110 to 179, which comprise the consolidated and separate statement of financial position as at 31 March 2024, consolidated and separate statement of financial performance, statement of changes in net assets, and cash flow statement and statement of comparison of budget and actual amounts for the year then ended, as well as notes to the consolidated and separate financial statements, including a summary of significant accounting policies.
2.
- In my opinion, the consolidated and separate financial statements present fairly, in all material respects, the financial position of the Mintek Group as at 31 March 2024 and its financial performance and cash flows for the year then ended in accordance with the Standards of Generally Recognised Accounting Practice (GRAP) and the requirements of the Public Finance Management Act 1 of 1999 (PFMA) and the Companies Act 71 of 2008 (Companies Act).

Basis for opinion

3.
- I conducted my audit in accordance with the International Standards on Auditing (ISAs). My responsibilities under those standards are further described in the responsibilities of the auditor-general for the audit of the consolidated and separate financial statements section of my report.
4.
- I am independent of the group in accordance with the International Ethics Standards Board for Accountants' International code of ethics for professional accountants (including International Independence Standards) (IESBA code) as well as other ethical requirements that are relevant to my audit in South Africa. I have fulfilled my other ethical responsibilities in accordance with these requirements and the IESBA code.
5.
- I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Responsibilities of the accounting authority for the consolidated and separate financial statements

6.
- The board of directors, which constitutes the accounting authority is responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with the GRAP and the requirements of the PFMA; and for such internal control as the accounting authority determines is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.
7.
- In preparing the consolidated and separate financial statements, the accounting authority is responsible for assessing the group's ability to continue as a going concern; disclosing, as applicable, matters relating to going concern; and using the going concern basis of accounting unless the appropriate governance structure either intends to liquidate the group or to cease operations, or has no realistic alternative but to do so.

Responsibilities of the auditor-general for the audit of the consolidated and separate financial statements

8.
- My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error; and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with the ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in

9.
- aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.
- A further description of my responsibilities for the audit of the consolidated and separate financial statements is included in the annexure to this auditor's report. This description, which is located at page 6 forms part of my auditor's report.

Report on the audit of the annual performance report

10.
- In accordance with the Public Audit Act 25 of 2004 (PAA) and the general notice issued in terms thereof, I must audit and report on the usefulness and reliability of the reported performance against predetermined objectives for the selected strategic outcome-oriented goal presented in the annual performance report. The accounting authority is responsible for the preparation of the annual performance report.
11.
- I selected the following material performance indicators related to conduct relevant, applied research and technological innovation presented in the annual performance report for the year ended 31 March 2024 for auditing. I selected those indicators that measures the group's performance on its primary mandated functions and that is of significant national, community or public interest.
 - Number of journal papers
 - Number of conference papers
 - Number of book chapters
 - Number of books
 - Number of invention disclosures
 - Number of new patents
 - Number of new trademarks
12.
- I evaluated the reported performance information for the selected material performance indicators against the criteria developed from the performance management and reporting framework, as defined in the general notice. When an annual performance report is prepared using these criteria, it provides useful and reliable information and insights to users on the group's planning and delivery on its mandate and objectives.

13.
- I performed procedures to test whether:
 - the indicators used for planning and reporting on performance can be linked directly to the group's mandate and the achievement of its planned objectives
 - all the indicators relevant for measuring the group's performance against its primary mandated and prioritised functions and planned objectives are included
 - the indicators are well defined to ensure that they are easy to understand and can be applied consistently, as well as verifiable so that I can confirm the methods and processes to be used for measuring achievements
 - the targets can be linked directly to the achievement of the indicators and are specific, time bound and measurable to ensure that it is easy to understand what should be delivered and by when, the required level of performance as well as how performance will be evaluated
 - the indicators and targets reported on in the annual performance report are the same as those committed to in the approved initial or revised planning documents
 - the reported performance information is presented in the annual performance report in the prescribed manner.
 - there is adequate supporting evidence for the achievements reported and for the reasons provided for any over- or underachievement of targets.

11.4 Report of the Auditor-General to Parliament on the Mintek Group for the year ended on 31 March 2024

Report on the audit of the annual performance report (continued)

14. I performed the procedures for the purpose of reporting material findings only; and not to express an assurance opinion or conclusion.
15. I did not identify any material findings on the reported performance information for the selected material performance indicators.

Report on compliance with legislation

18. In accordance with the PAA and the general notice issued in terms thereof, I must audit and report on compliance with applicable legislation relating to financial matters, financial management and other related matters. The accounting authority is responsible for the group's compliance with legislation.
19. I performed procedures to test compliance with selected requirements in key legislation in accordance with the findings engagement methodology of the Auditor-General of South Africa (AGSA). This engagement is not an assurance engagement. Accordingly, I do not express an assurance opinion or conclusion.

Other information in the annual report

22. The accounting authority is responsible for the other information included in the annual report which includes the directors' report, the audit committee's report and the company secretary's certificate, as required by the Companies Act. The other information referred to does not include the consolidated and separate financial statements, the auditor's report and those selected strategic outcome-oriented goals presented in the annual performance report that have been specifically reported on in this auditor's report.
23. My opinion on the consolidated and separate financial statements, the report on the audit of the annual performance report and the report on compliance with legislation do not cover the other information included in the annual report and I do not express an audit opinion or any form of assurance conclusion on it.
24. My responsibility is to read this other information and, in doing so, consider whether it is materially inconsistent with the consolidated and separate financial statements and the selected strategic objective presented in the annual performance report or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

Other matter

16. I draw attention to the matter below

Achievement of planned targets

17. The annual performance report includes information on reported achievements against planned targets and provides explanations for over- or under achievements.

20. Through an established AGSA process, I selected requirements in key legislation for compliance testing that are relevant to the financial and performance management of the group, clear to allow consistent measurement and evaluation, while also sufficiently detailed and readily available to report in an understandable manner. The selected legislative requirements are included in the annexure to this auditor's report.

21. I did not identify any material non-compliance with the selected legislative requirements.

25. The other information I obtained prior to the date of this auditor's report is the draft annual report, and the financial performance is expected to be made available to me after 31 July 2024.

26. If, based on the work I have performed on the other information that I obtained prior to the date of this auditor's report, I conclude that there is a material misstatement of this other information, I am required to report that fact.

27. When I do receive and read the financial performance, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance and request that the other information be corrected. If the other information is not corrected, I may have to retract this auditor's report and re-issue an amended report as appropriate. However, if it is corrected this will not be necessary.

Internal control deficiencies

28. I considered internal control relevant to my audit of the consolidated and separate financial statements, annual performance report and compliance with applicable legislation; however, my objective was not to express any form of assurance on it.

29. I did not identify any significant deficiencies in internal control.

Auditor-General

Johannesburg

31 July 2024





11.5 | Annexure to the auditor’s report

Report on the audit of the consolidated and separate financial statements

The annexure includes the following:

- The auditor-general’s responsibility for the audit
- The selected legislative requirements for compliance testing

Auditor–general’s responsibility for the audit

Professional judgement and professional scepticism

As part of an audit in accordance with the ISAs, I exercise professional judgement and maintain professional scepticism throughout my audit of the consolidated and separate financial statements financial statements and the procedures performed on

Financial statements

In addition to my responsibility for the audit of the consolidated and separate financial statements as described in this auditor’s report, I also:

- identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error; design and perform audit procedures responsive to those risks; and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group’s internal control
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made
- conclude on the appropriateness of the use of the going concern basis of accounting in the preparation of the consolidated and separate financial statements.

Communication with those charged with governance

I communicate with the accounting authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

reported performance information for selected strategic objective and on the group’s compliance with selected requirements in key legislation.

I also conclude, based on the audit evidence obtained, whether a material uncertainty exists relating to events or conditions that may cast significant doubt on the ability of the group and its subsidiaries to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor’s report to the related disclosures in the consolidated and separate financial statements about the material uncertainty or, if such disclosures are inadequate, to modify my opinion on the consolidated and separate financial statements. My conclusions are based on the information available to me at the date of this auditor’s report. However, future events or conditions may cause a group to cease operating as a going concern

- evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and determine whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I also provide the accounting authority with a statement that I have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on my independence and, where applicable, actions taken to eliminate threats or safeguards applied.

Compliance with legislation – selected legislative requirements

The selected legislative requirements are as follows:

Legislation	Sections or regulations
Public Finance Management Act 1 of 1999 (PFMA)	Section 50(3)(a) Section 51(1)(a)(iii) Section 51(1)(e)(iii) Section 51(1)(b)(i) Section 51(1)(b)(ii) Section 52(b) Section 54(2)(c) Section 54(2)(d) Section 55(1)(b) Section 55(1)(c)(i) Section 57(b)
Treasury Regulations	Regulation 29.1.1 Regulation 29.1.1(a) Regulation 29.1.1(c) Regulation 29.2.1 Regulation 29.2.2 Regulation 29.3.1 Regulation 33.1.1 Regulation 31.1.2(c) Regulation 31.2(5) Regulation 31.2.7(a) Regulation 33.1.3
National Treasury Instruction Note 3 of 2021/22	Paragraph 4.1 and 4.2
PFMA compliance & reporting framework	Paragraph 4.12
National Treasury Instruction Note 5 of 2020-21	Paragraph 4.8,4.9 & 5.5
Treasury Regulation Note 11 of 2020-21	Paragraph 3.1,3.4(b) and 3.9
Second amendment to National Treasury Instruction No. 5 of 2020-21	Paragraph 1
Erratum National Treasury Instruction Note 5 of 2020-21	Paragraph2
Construction Industry Development Board (CIDB) Act 38 of 2000	Section 18(1)
CIDB Regulations	Regulation 17; Regulation 25(7A)
Preferential Procurement Policy Framework Act 5 of 2000	Section (1) Section 2(1) (a) Section 2(1)(f)
Preferential Procurement Regulations, 2017	Regulation 4(1), 4(2), 5(1), 5(3), 5(6), 5(7), 6(8), 7(8), 9(1), 10(1) & (2) & 11(1)
Preferential Procurement Regulations, 2022	Regulation 4(4) and 5(4).
Prevention and Combating of Corrupt Activities Act 12 of 2004	Section 34(1)

11.6 Statement of Financial Position at 31 March 2024

		GROUP		CONTROLLING ENTITY	
DESCRIPTION	NOTE	2024	2023	2024	2023
		R	R	R	R
ASSETS					
Current Assets		551,927,086	598,293,478	551,927,086	598,293,478
Inventories	1.	25,490,323	21,440,475	25,490,323	21,440,475
Receivables from Exchange Transactions	2.	127,518,938	69,117,372	127,518,938	69,117,372
Cash and Cash Equivalents	3.	398,917,825	507,735,631	398,917,825	507,735,631
Non-Current Assets		438,993,371	411,533,250	438,993,471	411,533,350
Property, Plant and Equipment	4.	436,747,167	408,676,496	436,747,167	408,676,496
Intangible Assets	5.	2,246,203	2,856,754	2,246,203	2,856,754
Non-current Investments	6.	-	-	100	100
Total Assets		990,920,457	1,009,826,728	990,920,557	1,009,826,828
LIABILITIES					
Current Liabilities		314,485,364	347,183,091	314,485,364	347,183,091
Provisions	7.	265,173	318,609	265,173	318,609
Payables from Exchange Transactions	8.	178,109,385	159,639,198	178,109,385	159,639,198
Cash received in advance from Government	9.	135,508,698	186,044,650	135,508,698	186,044,650
Current Portion of Employee Benefit Liabilities	10.	602,108	1,180,634	602,108	1,180,634
Non-Current Liabilities		4,785,998	5,854,472	44,301,041	45,369,515
Borrowings	6.	-	-	39,515,043	39,515,043
Employee Benefit Liabilities	10.	4,785,998	5,854,472	4,785,998	5,854,472
Total Liabilities		319,271,362	353,037,563	358,786,405	392,552,606
NET ASSETS		671,649,094	656,789,165	632,134,151	617,274,222
Reserves	11.	163,326,687	165,469,214	163,326,687	165,469,214
Accumulated Surplus		508,322,408	491,319,951	468,807,464	451,805,008
Total Net Assets and Liabilities		990,920,457	1,009,826,728	990,920,557	1,009,826,828

11.7 Statement of Financial Performance at 31 March 2024

		GROUP		CONTROLLING ENTITY	
DESCRIPTION	NOTE	2024	2023	2024	2023
		R	R	R	R
REVENUE					
Revenue from Non-exchange Transactions					
Government Grants and Subsidies Received	12.	278,933,709	296,325,981	278,933,709	296,325,981
Interest Earned from Non-Exchange Transactions	15.	1,155,018	888,759	1,155,018	888,759
Revenue from Exchange Transactions					
Rendering of Services	13.	452,619,157	323,407,894	452,619,157	323,407,894
Rental of Facilities and Equipment	14.	3,000,353	3,435,564	3,000,353	3,435,564
Interest Earned from Exchange Transactions	15.	28,518,847	21,108,865	28,518,847	21,108,865
Other Revenue	16.	1,407,913	4,294,634	1,407,913	4,294,634
Total Revenue		765,634,998	649,461,697	765,634,998	649,461,697
EXPENDITURE					
Employee Related Costs	17.	360,949,439	312,063,127	360,949,439	312,063,127
Depreciation and Amortisation	18.	42,891,145	39,244,420	42,891,145	39,244,420
Impairment Losses	19.	3,482,508	1,137,355	3,482,508	1,137,355
Bursary Costs	20.	4,886,256	3,146,433	4,886,256	3,146,433
Finance Costs	21.	710,000	919,199	710,000	919,199
Professional Services	22.	19,448,858	24,323,986	19,448,858	24,323,986
Rehabilitation Services	23.	125,630,025	95,161,856	125,630,025	95,161,856
General Expenses	24.	201,421,683	165,428,001	201,421,683	165,428,001
Loss on Disposal of Property, Plant and Equipment	4.	1,096,326	1,014,210	1,096,326	1,014,210
Total Expenditure		760,516,240	642,438,586	760,516,240	642,438,586
OPERATING SURPLUS FOR THE YEAR		5,118,758	7,023,111	5,118,758	7,023,111
OTHER REVENUE / EXPENDITURE INCURRED (Losses) / Gains on Other Operations:					
Losses on Actuarial Valuations	10.	1,701,057	752,174	1,701,057	752,174
Gains / (Losses) on Foreign Exchange		8,040,117	(2,895,051)	8,040,117	(2,895,051)
TOTAL OTHER REVENUE / EXPENDITURE INCURRED		9,741,174	(2,142,876)	9,741,174	(2,142,876)
SURPLUS FOR THE YEAR		14,859,932	4,880,235	14,859,932	4,880,235

11.8 Statement of Changes in Net Assets for the Year Ended 31 March 2024

DESCRIPTION	REVALUATION RESERVE	ACCUMULATED SURPLUS / (DEFICIT)	TOTAL
	R	R	R
Group			
2023			
Balance at 31 March 2022	167,611,742	484,297,188	651,908,930
Surplus for the year	-	4,880,235	4,880,235
Offsetting of Depreciation	(2,142,527)	2,142,527	-
Balance at 31 March 2023	165,469,215	491,319,950	656,789,165
Surplus for the year	-	14,859,932	14,859,932
Offsetting of Depreciation	(2,142,527)	2,142,527	-
Balance at 31 March 2024	163,326,688	508,322,409	671,649,097
Mintek			
2022			
Balance at 31 March 2022	167,611,742	444,782,242	612,393,984
Surplus for the year	-	4,880,235	4,880,235
Offsetting of Depreciation	(2,142,527)	2,142,527	-
Balance at 31 March 2023	165,469,215	451,805,004	617,274,219
Surplus for the year	-	14,859,932	14,859,932
Offsetting of Depreciation	(2,142,527)	2,142,527	-
Balance at 31 March 2024	163,326,688	468,807,463	632,134,151

Details on the movement of the Funds and Reserves are set out in Note 11.

11.9 Cash Flow Statement for the Year Ended 31 March 2024

		GROUP		CONTROLLING ENTITY	
DESCRIPTION	NOTE	2024	2023	2024	2023
		R	R	R	R
CASH FLOWS FROM OPERATING ACTIVITIES					
Receipts					
Government Grant and Subsidies		277,112,174	282,569,565	277,112,174	282,569,565
Rendering of Services		365,508,532	336,535,527	365,508,532	336,535,527
Interest Received		29,673,865	21,997,624	29,673,865	21,997,624
Other Receipts		4,266,314	5,716,309	4,266,314	5,716,309
Payments					
Employee Related Costs		(342,837,281)	(323,487,161)	(342,837,281)	(323,487,161)
Interest Paid		-	(753,892)	-	(753,892)
Suppliers		(174,571,886)	(94,882,202)	(174,571,886)	(94,882,202)
Payments for General Expenses		(193,435,002)	(168,709,733)	(193,435,002)	(168,709,733)
NET CASH FLOWS FROM OPERATING ACTIVITIES	29.	(34,283,284)	58,986,037	(34,283,284)	58,986,037
CASH FLOWS FROM INVESTING ACTIVITIES					
Purchase of Property, Plant and Equipment	4.	(74,225,895)	(13,002,395)	(74,225,895)	(13,002,395)
Purchase of Intangible Assets	5.	(308,623)	-	(308,623)	-
NET CASH FLOWS FROM INVESTING ACTIVITIES		(74,534,509)	(13,002,394)	(74,534,509)	(13,002,394)
NET INCREASE / (DECREASE) IN CASH AND CASH EQUIVALENTS					
		(108,817,806)	45,983,643	(108,817,806)	45,983,643
Cash and Cash Equivalents at Beginning of Period	3.	507,735,631	461,751,988	507,735,631	461,751,988
Cash and Cash Equivalents at End of Period:					
- Realised Cash and Cash Equivalents		399,294,551	506,520,711	399,294,551	506,520,711
- Unrealised Foreign Exchange Gains / (Losses)		(376,726)	1,214,920	(376,726)	1,214,920
Cash and Cash Equivalents at End of Period	3.	398,917,825	507,735,631	398,917,825	507,735,631

11.10 Statement of Comparison of Budget and Actual Amounts for the Year Ended 31 March 2024

DESCRIPTION	ORIGINAL TOTAL BUDGET	ACTUAL	VARIANCE	% VARIANCE OF FINAL BUDGET
	R	R	R	%
FINANCIAL PERFORMANCE				
Revenue from Non-exchange Transactions				
Government Grants and Subsidies Received	277,112,374	278,933,709	1,821,335	0.66%
Interest Earned from Non-Exchange Transactions	-	1,155,018	1,155,018	
Revenue from Exchange Transactions				
Rendering of Services	290,000,000	452,619,157	162,619,157	56.08%
Rental of Facilities and Equipment	4,384,000	3,000,353	(1,383,647)	-31.56%
Interest Earned	13,159,000	28,518,847	15,359,847	116.73%
Discount Received	-	1,407,913	1,407,913	
Other Revenue	584,655,374	765,634,998	180,979,624	30.95%
Total Revenue	590,165,472	649,504,648	59,339,176	10.05%
Expenditure				
Employee Related Costs	304,823,371	360,949,439	56,126,068	-18.41%
Depreciation and Amortisation	47,146,000	42,891,145	(4,254,856)	9.02%
Impairment Losses	-	3,482,508	3,482,508	
Finance Costs	900,000	710,000	(190,000)	21.11%
Bursary Costs	7,266,000	4,886,256	(2,379,744)	32.75%
Asbestos Rehabilitation	83,790,000	125,630,025	41,840,025	-49.93%
Professional Services	14,220,956	19,448,858	5,227,902	-36.76%
General Expenses	124,601,474	201,421,683	76,820,209	-61.65%
Loss on Disposal of Property, Plant and Equipment	-	1,096,326	1,096,326	
Total Expenditure	582,747,801	760,516,240	177,768,439	-30.51%
Operating Surplus for the Year	1,907,573	5,118,758	3,211,185	268.34
Losses / (Gains) on Actuarial Valuations	(212,460)	1,701,057	1,913,517	900.65%
Losses / (Gains) on Foreign Exchange	500,000	8,040,117	7,540,117	-1508.02%
Surplus for the Year	2,195,113	14,859,932	12,664,819	576.96%

Details on the movement of the Funds and Reserves are set out in Note 11.

Financial Performance: Explanation of Variances between Approved Budget and Actual

Reasons for Variances greater than 10% between Approved Budget and Actual Amount on the various items disclosed in the Statement of Financial Performance are explained below :

Interest Earned from Non-exchange Transactions:	The interest earned from non-exchange transactions are not budgeted for.
Rendering of Services:	The execution of projects, particularly those involving large pilot plants, played a significant role in driving revenue growth. Additionally, revenue from D&O also contributed to the overall revenue increase. This suggests a diverse revenue stream and successful project management strategies.
Rental of Facilities and Equipment:	The rental space didn't yield the expected returns because one of the tenants took a leave of absence. This vacancy impacted the revenue projections for the rental property, resulting in lower-than-anticipated returns.
Interest Earned:	The increase in interest rates and the higher levels of cash reserves during the year weren't initially accounted for.
Other Revenue:	Other revenue is not budgeted for in full as it relates to sundry income that is received through sources as SDL Levy refund, breach of contract income, insurance recoveries.
Employee Related Costs:	Mintek successfully sourced skills during the year to execute the mandate. Further, the increase in commercial activity, especially the number of pilot plants, required additional resources and also resulted in increased overtime. The successful recruitment and required additional temporary resources to execute projects can be seen in higher income. A provision for an incentive bonus have been made.
Depreciation and Amortisation:	The lower-than-budgeted depreciation results from the reassessment of the useful lives of assets, leading to an adjustment that processed a write-back of depreciation for assets with an extended useful life.
Impairment Losses:	During the review period, Mintek evaluated outstanding receivables and identified indications that some balances may not be recoverable. As a result, provisions for impairments were recognized on those receivables, reflecting a proactive approach to managing financial risks. Additionally, certain plant and equipment were identified as currently not in use. Given the research-focused nature of the business, it was deemed prudent to temporarily impair these assets. This decision was not anticipated and thus not included in the budget.
Finance Costs:	Total finance costs was lower than expected due to decreased deemed interest cost on the long term post retirement medical liability.
Bursary Costs:	Mintek incurred lower-than-anticipated bursary costs during the review period. This was primarily due to a lower number of students receiving bursaries, as well as the temporary suspension of the bursary support program for support staff.
Asbestos Rehabilitation:	Mintek completed more site and holing closures than initially anticipated, with a particular focus on the Riverlea holings. This increased activity directly impacted the revenue generated during the review period.
Professional Services:	Professional consultancy services incurred were higher than anticipated as these were driven by increased economic activity. The increased expenditure contributed to the execution of projects which ultimately lead to increased revenue from the rendering of services.
General Expenses:	Mintek experienced higher general expenditure primarily due to increased consumable costs, which were necessary to execute commercial projects effectively. The execution of these projects required more resources and materials than initially anticipated, leading to higher expenses. Additionally, the increase in general expenditure can also be attributed to higher-than-anticipated inflationary pressures.



11.10 Statement of Comparision of Budget and Actual Amounts for the Year Ended 31 March 2024

Financial Performance: Explanation of Variances between Approved Budget and Actual

Reasons for Variances greater than 10% between Approved Budget and Actual Amount on the various items disclosed in the Statement of Financial Performance are explained below :

Loss on Disposal of Property, Plant and Equipment:	Mintek retired several assets during the review period. However, it's worth noting that Mintek does not budget for write-offs. While write-offs typically occur when assets are retired or deemed no longer useful, they are not explicitly budgeted for as they are often unplanned events. Write-offs are recorded when assets are impaired, disposed of, or no longer expected to generate future economic benefits.
Gains on Actuarial Valuations:	Actuarial gains can occur in pension plans due to various factors such as changes in assumptions, demographic experience, or economic conditions.The challenge with budgeting for actuarial differences upfront is that they are often difficult to predict precisely because they depend on future events and uncertainties.
Gains on Foreign Exchange:	This relates to the foreign exchange differences incurred on foreign exchange denominated transactions recorded during the year. A net gain was recorded as the ZAR currency was quite volatile during the financial year and closed the year from R17,79 to R18,96.

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

1. BASIS OF PRESENTATION

The Annual Financial Statements have been prepared in accordance with Standards of Generally Recognised Accounting Practices (GRAP), as approved by the Minister of Finance, including any interpretations, guidelines and directives issued by the Accounting Standards Board applicable to Public Entities in terms of Directive 5.

Where appropriate and relevent, additional information has been disclosed to enhance the usefulness of the financial statements and to comply with the statutory requirements of the Public Finance Management Act 1 of 1999 (as amended by Act 29 of 1999) and Treasury Regulations issued.

The Statement of Financial Performance has been prepared to classify expenses by nature, whilst revenue is classified in a manner appropriate to Mintek's operations. The Cash Flow Statement has been prepared using the Direct Method.

In the absence of an approved and effective standard of GRAP, accounting policies for material transactions, events or conditions were developed in accordance with paragraphs 8, 10 and 11 of GRAP 3 as read with Directive 5.

The financials are representative to the Group and company and the results are reflective of this. The information contained within the notes are representative of Group and company except where indicated as such.

A summary of the significant accounting policies, which have been consistently applied in the preparation of these annual financial statements, are disclosed below. These accounting policies are consistent with the previous period.

1.1 Presentation Currency

The Annual Financial Statements are presented in South African Rand, rounded off to the nearest Rand which is the Entity's functional currency.

1.2 Changes in Accounting Policy and Comparability

Accounting Policies have been consistently applied, except where otherwise indicated below.

For the years ended 31 March 2023 and 31 March 2024 the Entity has adopted the accounting framework as set out in paragraph 1 above. The details of any resulting changes in comparative restatements are set out below and in Note 27. to the Annual Financial Statements.

1.3 Critical Judgements, Estimations and Assumptions

In the application of the Entity's Accounting Policies, which are described below, management is required to make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be reasonable under the circumstances, the results of which form the basis of making the judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

These estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both current and future periods.

The following are the critical judgements and estimations that management have made in the process of applying the Entity's Accounting Policies and that have the most significant effect on the amounts recognised in Annual Financial Statements:

1.3.1 Impairment of Financial Assets

Accounting Policy 3.4 on Impairment of Financial Assets describes the process followed to determine the value at which Financial Assets should be impaired. In making the estimation of the impairment, the management of Mintek considered the detailed criteria of impairment of Financial Assets as set out in GRAP 104 (Financial Instruments) and used its judgement to identify assets that are not in use and make assumptions about possible future usage that are mainly based on market conditions existing at the end of the reporting period. The management of the Entity is satisfied that impairment of Financial Assets recorded during the year is appropriate.

• Impairment of Trade Receivables:

The Entity assesses its financial assets for impairment at the end of each financial year. In determining whether an impairment loss should be recorded in surplus or deficit, the Entity makes judgements as to whether there is observable data indicating a measurable decrease in the estimated future cash flows from a financial asset.

The Entity has implemented a policy to classify all debts as irrecoverable where they have been outstanding for

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

more than two years (24 months) for staff debtors or where indicators for irrecoverability exist for commercial debtors. These amounts are then transferred to a provision for doubtful debts which is adjusted annually. All non recoveries of these amounts impaired are then recognised as bad debts written off in the following year through the statement of financial performance. This practice of 24 months consideration for Staff debtors is based on the past patterns of history of payments by students/default employees after considering the period the debt has been outstanding for. Attempts at recovery of all debt include sending letters of demand and handing debts over to collection agencies as guided in the financial policy of Mintek.

1.3.2 Useful lives of Property

As described in Accounting Policy 5.2, the Entity subsequently measures its Buildings and Land in terms of the Revaluation Model.

The valuation of assets are based on management's estimation. Management considered the impact of valuation techniques and market information in order to determine the current valuations, and more specific as follows:

- **Buildings and Land** are stated at revalued amounts based on valuation techniques and market information. The actual value of these items could differ from those estimated.

1.3.3 Useful lives of Property, Plant and Equipment and Intangible Assets

As described in Accounting Policies 7. and 6.2, Mintek depreciates its Property, Plant & Equipment and amortises its Intangible Assets over the estimated useful lives of the assets, taking into account the residual values of the assets at the end of their useful lives, which is determined when the assets are available for use.

The estimation of residual values of assets is based on management's judgement as to whether the assets will be sold or used to the end of their useful lives, and in what condition they will be at that time.

1.3.4 Impairment: Write-down of Property, Plant & Equipment, Intangible Assets and Inventories

Property, Plant & Equipment and Intangible Assets Accounting Policy 7. on Impairment of Assets, Accounting Policy 6.2 on Intangible Assets – Subsequent Measurement, Amortisation and Impairment describe the conditions under which non-financial assets are tested for potential impairment losses by the management of the Entity. Significant estimates and judgements are made relating to

impairment testing of Property, Plant and Equipment and impairment testing of Intangible Assets with regards to recoverable amounts.

In making the above-mentioned estimates and judgement, management considered the subsequent measurement criteria and indicators of potential impairment losses as set out in GRAP 21 (Impairment of Non-cash Generating Assets) and GRAP 26 (Impairment of Cash Generating Assets). In particular, the calculation of the recoverable service amount for PPE and Intangible Assets involves significant judgment by management.

Inventories

Accounting Policy 2.2 on Inventory – Subsequent Measurement describe the conditions under which non-financial assets are tested for recoverability by the management of the Entity. Significant estimates and judgements are made relating to write-down of Inventories to the lowest of Cost and Net Realisable Value.

In making the above-mentioned estimates and judgement, management considered the subsequent measurement criteria and indicators of potential impairment losses as set out in GRAP 21 (Impairment of Non-cash Generating Assets) and GRAP 26 (Impairment of Cash Generating Assets). In particular, the calculation of the Current Replacement Cost for Inventories involves significant judgment by management.

Estimated impairments during the year to Property, Plant and Equipment, Intangible Assets and Inventory are disclosed in Notes 1., 4. and 5. to the Annual Financial Statements, if applicable.

1.3.5 Defined Benefit Plan Liabilities

As described in Accounting Policy 12.2, Employee Benefits – Post-employment Benefits, the Entity obtains actuarial valuations of its Defined Benefit Plan Liabilities. The defined benefit obligations of the Entity that were identified are Post-retirement Health Benefit Obligations. The estimated liabilities are recorded in accordance with the requirements of GRAP 25. Details of the liabilities and the key assumptions made by the actuaries in estimating the liabilities are provided in Note 10. to the Annual Financial Statements.

1.3.6 Provisions and Contingent Liabilities

Management judgement is required when recognising and measuring Provisions and when measuring Contingent Liabilities. Provisions are not discounted due to the short time period that they are active.

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

1.4 Materiality

Material omissions or misstatements of items are material if they could, individually or collectively, influence the decisions or assessments of users made on the basis of the financial statements. Materiality depends on the nature or size of the omission or misstatement judged in the surrounding circumstances. The nature or size of the information item, or a combination of both, could be the determining factor.

Assessing whether an omission or misstatement could influence decisions of users, and so be material, requires consideration of the characteristics of those users. The Framework for the Preparation and Presentation of Financial Statements states that users are assumed to have a reasonable knowledge of government, its activities, accounting and a willingness to study the information with reasonable diligence. Therefore, the assessment takes into account how users with such attributes could reasonably be expected to be influenced in making and evaluating decisions.

1.5 Consolidation

Consolidated Annual Financial Statements are the annual financial statements of Mintek presented as those of a single entity.

The Consolidated Annual Financial Statements incorporate the annual financial statements of the Mintek Group and all controlled entities, including special purpose entities, which are controlled by Mintek.

Consolidated Annual Financial Statements are prepared using uniform accounting policies for like transactions and other events in similar circumstances.

Control exists when Mintek has the power to govern the financial and operating policies of another entity so as to obtain benefits from its activities.

The Annual Financial Statements of Mintek and its subsidiary used in the preparation of the Consolidated Annual Financial Statements are prepared as of the same date.

All intra-entity transactions, balances, revenues and expenses are eliminated in full on consolidation.

Non-controlling interest in the net assets of the economic entity are identified and recognised separately from the controlling entity's interest therein, and are recognised within net assets.

Changes in Mintek's ownership interest in Mindev that do not result in a loss of control are accounted for as transactions that affect net assets.

1.6 Going Concern Assumption

Management and the Board have made the assessment that Mintek is a going concern and the financial statements have been prepared on a going concern basis based on the expectation that the entity will continue to operate as a going concern for at least 12 months. Management considered the current business environment and the company's expected performance.

1.7 Standards, Amendments to Standards and Interpretations issued but not yet Effective

There are no new Standards, Interpretations, Directives, or Guidelines, approved not yet effective at 31 March 2024 which are applicable to the Entity.

2. INVENTORIES

2.1 Initial Recognition and Initial Measurement

Inventories comprise current assets held-for-sale, current assets for consumption or distribution during the ordinary course of business. Inventories are initially recognised at cost. Cost generally refers to the purchase price, cost of conversion, transport costs and any other costs in bringing the Inventories to their current location and condition. Where Inventory is manufactured, constructed or produced, the cost includes the cost of labour, materials and overheads used during the manufacturing process.

Where Inventory is acquired by Mintek for no or nominal consideration (i.e. a non-exchange transaction), the cost is deemed to be equal to the fair value of the item on the date acquired.

2.2 Subsequent Measurement

Subsequently inventories are measured at the lower of cost and net realisable value.

2.2.1 Consumable Stores and Finished Goods

Inventories sold are valued at the lower of cost and net realisable value (net amount that the Entity expects to realise from the sale on Inventory in the ordinary course of business). The cost is determined using the Weighted Average Method.

Consumable stores items is distributed at cost and finished goods are valued at the lower of cost and



11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

current replacement cost (the cost the Entity would incur to acquire the asset on the reporting date). The cost is determined using the Weighted Average Method.

- The fair values of quoted investments are based on current bid prices.
- If the market for a Financial Asset is not active (and for unlisted securities), the Entity establishes fair value by using valuation techniques. These include the use of recent arm's length transactions, reference to other instruments that are substantially the same, discounted cash flow analysis, and option pricing models making maximum use of market inputs and relying as little as possible on Entity-specific inputs.

2.2.2 Other Arrangements

Redundant stock is classified as stock that has no future use. Slow-moving Inventories relates to inventory that has not moved in 12 months. These items are identified through stock reports and are measured at lower of cost or net realisable value. If no future use or consumption can be identified the assets are written off.

Differences arising on the measurement of such Inventory at the lower of cost and current replacement cost or net realisable value, are recognised in Surplus or Deficit in the year in which they arise. The amount of any reversal of any write-down of Inventories arising from an increase in current replacement cost or net realisable value is recognised as a reduction in the amount of Inventories recognised as an expense in the period in which the reversal occurs.

The carrying amount of Inventories is recognised as an expense in the period that the Inventory was sold, distributed, written off or consumed, unless that cost qualifies for capitalisation to the cost of another asset in instances such as capital work-in-progress.

3. FINANCIAL INSTRUMENTS

Mintek has various types of Financial Instruments and these can be broadly categorised as Financial Assets, Financial Liabilities or Residual Interests in accordance with the substance of the contractual agreement.

Initial Recognition and Initial Measurement

Financial Assets and Financial Liabilities are recognised when it becomes party to the contractual provisions of the instrument.

The Entity does not offset a Financial Asset and a Financial Liability unless a legally enforceable right to set off the recognised amounts currently exist and the Entity intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Fair Value Methods and Assumptions

The fair values of Financial Instruments are determined as follows:

3.1 Financial Assets – Classification

The Entity has the following types of Financial Assets:

TYPE OF FINANCIAL ASSET	CLASSIFICATION IN TERMS OF GRAP 104
Non-current Investments	Financial Assets at Cost
Receivables from Exchange Transactions	Financial Assets at Amortised Cost
Bank, Cash and Cash Equivalents - Current Investments	Financial Assets at Amortised Cost
Bank, Cash and Cash Equivalents - Bank	Financial Assets at Amortised Cost
Bank, Cash and Cash Equivalents - Cash	Financial Assets at Amortised Cost

Trade and Other Receivables exclude Value Added Taxation.

Cash includes cash-on-hand (including petty cash) and cash with banks (including call and fixed deposits). For the purposes of the Cash Flow Statement, Cash and Cash Equivalents comprise cash-on-hand and deposits held on call with banks, net of bank overdrafts.

3.2 Financial Liabilities – Classification

The Entity has the following types of Financial Liabilities:

TYPE OF FINANCIAL LIABILITIES	CLASSIFICATION IN TERMS OF GRAP 104
Long-term Liabilities	Financial Liabilities at Amortised Cost
Payables from Exchange Transactions	Financial Liabilities at Amortised Cost
Current Portion of Long-term Liabilities	Financial Liabilities at Amortised Cost

3.3 Initial and Subsequent Measurement

3.3.1 Financial Assets:

Financial Assets measured at Amortised Cost

Financial Assets at Amortised Cost are initially measured at fair value plus transaction costs that are directly attributable to the acquisition or issue of the Financial Asset. Subsequently, these assets are measured at amortised cost using the Effective Interest Method less any impairment, with interest recognised on an Effective Yield Basis.

3.3.2 Financial Liabilities:

Financial Liabilities held at Amortised Cost

Any other Financial Liabilities are classified as Other Financial Liabilities (All Payables, Loans and Borrowings are classified as Other Liabilities) and are initially measured at fair value, net of transaction costs. Trade and Other Payables and Non-interest-bearing Debt are subsequently measured at amortised cost using the Effective Interest Rate Method. Interest expense is recognised in the Statement of Financial Performance by applying the effective interest rate.

3.4 Impairment of Financial Assets

Financial Assets, other than those at fair value, are assessed for indicators of impairment at the end of each reporting period. Financial Assets are impaired where there is objective evidence of impairment of Financial Assets (such as the probability of insolvency or significant financial difficulties of the debtor). If there is such evidence the recoverable amount is estimated and an impairment loss is recognised through the use of an allowance account.

3.4.1 Financial Assets at Amortised Cost

A provision for impairment of Accounts Receivables is established when there is objective evidence that Mintek will not be able to collect all amounts due according to the original terms of receivables. The provision is made whereby the recoverability of accounts receivable is assessed individually and then collectively after grouping the assets in financial assets with similar credit risk characteristics. The amount of the provision is the difference between the Financial Asset's carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate. Future cash flows in a group of Financial Assets that are collectively evaluated for impairment are estimated

on the basis of historical loss experience for assets with credit risk characteristics similar to those in the group. Cash flows relating to short-term receivables are not discounted where the effect of discounting is immaterial.

The carrying amount of the Financial Asset is reduced by the impairment loss directly for all Financial Assets carried at Amortised Cost with the exception of Trade Debtors, where the carrying amount is reduced through the use of an allowance account. When a Trade Debtor is considered uncollectible, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against revenue. Changes in the carrying amount of the allowance account are recognised in Surplus or Deficit.

3.4.2 Financial Assets at Cost

If there is objective evidence that an impairment loss has been incurred on an investment in a Residual Interest that is not measured at fair value because its fair value cannot be measured reliably, the amount of the impairment loss is measured as the difference between the carrying amount of the Financial Asset and the present value of estimated future cash flows discounted at the current market rate of return for a similar financial asset. Such impairment losses shall not be reversed.

3.5 Derecognition

3.5.1 Derecognition of Financial Assets

The Entity derecognises Financial Assets only when the contractual rights to the cash flows from the asset expires or it transfers the Financial Asset and substantially all the risks and rewards of ownership of the asset to another entity, except when Mintek approves the write-off of Financial Assets due to non-recoverability.

If Mintek neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, Mintek recognises its retained interest in the asset and an associated liability for amounts it may have to pay. If the Entity retains substantially all the risks and rewards of ownership of a transferred Financial Asset, Mintek continues to recognise the Financial Asset and also recognises a collateralised borrowing for the proceeds received.

3.5.2 Derecognition of Financial Liabilities

Mintek derecognises Financial Liabilities when, and only when, it's obligations are discharged, cancelled or they expire.



11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

Mintek recognises the difference between the carrying amount of the Financial Liability (or part of a Financial Liability) extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, in Surplus or Deficit.

3.5.2 Derecognition of Financial Liabilities

Mintek derecognises Financial Liabilities when, and only when, it's obligations are discharged, cancelled or they expire.

Mintek recognises the difference between the carrying amount of the Financial Liability (or part of a Financial Liability) extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, in Surplus or Deficit.

4. CASH AND CASH EQUIVALENTS

Cash and cash equivalents comprise cash-on-hand and demand deposits, and other short-term highly liquid investments that are readily convertible to a know amount of cash and are subject to an insignificant risk of changes in value. These are initially recognised at cost and subsequently recorded at fair value.

5. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are tangible non-current assets (including infrastructure assets) that are held for use in the production and supply of goods and services, rental to others, or for administrative purposes, and are expected to be used during more than one period.

5.1 Initial Recognition and Initial Measurement

Property, Plant and Equipment are initially recognised at cost.

The cost of and item of Property, Plant and Equipment is the purchase price and other cost attributable to bring the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Trade discounts and rebates are deducted in arriving at the cost. Costs include costs incurred initially to acquire or construct an item of PPE and costs incurred subsequently to add to or replace part or. If a replacement cost is recognised in the carrying amount of an item of PPE, the carrying amount of the replaced part is derecognised.

Where an asset is acquired by the Entity for no or nominal consideration (i.e. a non-exchange transaction), the cost is deemed to be equal to the fair value of that asset on the date acquired.

Repairs and Maintenance are expenses incurred through servicing equipment or repairing of existing assets. These expenses are not recognised in the carrying value of the asset, but directly recognised in Surplus or Deficit and measured at cost.

5.2 Subsequent Measurement

Property, Plant and Equipment, excluding Buildings and Land

Subsequently all Property Plant and Equipment is measured at cost, less accumulated depreciation and accumulated impairment losses.

Buildings and Land

Subsequent to initial recognition Buildings and Land are carried at a revalued amount based on valuations, less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Revaluations are performed by experienced valuers with sufficient regularity (every 5 years) such that the carrying amount does not differ materially from that which would be determined using fair value at the reporting date. Any accumulated depreciation at the date of revaluation is eliminated against the gross carrying amount of the asset, and the net amount is restated to the revalued amount of the asset.

5.3 Depreciation

Depreciation on assets other than land is calculated on cost, using the Straight-line Method, to allocate their cost or revalued amounts to their residual values over the estimated useful lives of the assets. Each part of an item of Property, Plant and Equipment with a cost that is significant in relation to the total cost of the item is depreciated separately.

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

The depreciation rates are based on the following estimated useful lives:

ASSET CLASS	YEARS	ASSET CLASS	YEARS
LAND		OTHER	
Improved Property	Indefinite	Equipment	5 - 10
		Furniture and Fixtures	5 - 10
BUILDINGS		IT Equipment	3 - 5
Improvements	50	Motor Vehicles	5
		Plant and Machinery	5 - 10

5.4 Land

Land is stated at the revalued amount and is not depreciated as it is deemed to have an indefinite useful life. The revaluation of land is done once every 5 years.

5.5 Incomplete Construction Work

Incomplete Construction Work is stated at historical cost. Depreciation only commences when the asset is available for use.

5.6 Derecognition

Items of property, plant or equipment are derecognised when the asset is disposed of or when there are no future economic benefits or service potential expected from the use of the asset. The gain or loss arising from the derecognition of an item of Property, Plant and Equipment is included in surplus or deficit when the item is derecognised. Gains are not classified as revenue.

6. INTANGIBLE ASSETS

6.1 Initial Recognition and Initial Measurement

Identifiable non-monetary assets without physical substance are classified and recognised as Intangible Assets.

For internally generated Intangible Assets, such as brands, publishing titles, customer lists and other items similar in substance are not recognised as intangible assets. In the Mintek environment only acquired software is classified as intangible assets. Internally created goodwill is also not classified as an intangible asset.

Intangible Assets are initially recognised at cost.

Where an Intangible Asset is acquired by the Entity for no or nominal consideration (i.e. a non-exchange transaction),

the cost is deemed to be equal to the fair value of that asset on the date acquired.

The cost of an Intangible Asset acquired in exchange for non-monetary assets or monetary assets, or a combination of monetary and non-monetary assets, is measured at the fair value of the asset given up, unless the fair value of the asset received is more clearly evident. If the acquired item could not be measured at its fair value, its cost is measured at the carrying amount of the asset given up.

Repairs and Maintenance are expenses incurred through servicing equipment or repairing of existing assets. These expenses are not recognised in the carrying value of the asset, but directly recognised in Surplus or Deficit and measured at cost.

6.2 Subsequent Measurement, Amortisation and Impairment

After initial recognition, Intangible Assets are carried at cost less any accumulated amortisation and any accumulated impairment losses.

Amortisation is charged on a Straight-line Method over the Intangible Assets' useful lives. The residual value of Intangible Assets with finite useful lives is zero, unless an active market exists. Where Intangible Assets are deemed to have indefinite useful lives, such Intangible Assets are not amortised. However, such Intangible Assets are subject to an annual impairment test.

The amortisation rates are based on the following estimated useful lives:

ASSET CLASS	YEARS
Computer Software	3-5

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

6.3 Derecognition

The gain or loss arising from the derecognition of an item of Intangible Asset is included in Surplus or Deficit when the item is derecognised. Gains are not classified as Revenue.

7. IMPAIRMENT OF ASSETS

Mintek classifies all assets held with the primary objective of generating a commercial return as Cash Generating Assets. All other assets are classified as Non-cash Generating Assets.

7.1 Impairment of Cash Generating Assets

The Entity assesses at each reporting date whether there is any indication that an asset may be impaired.

If there is any indication that an asset may be impaired, the recoverable amount is estimated for the individual asset. If it is not possible to estimate the recoverable amount of the individual asset, the recoverable amount of the cash generating unit to which the asset belongs is determined.

The recoverable amount of an asset or a cash generating unit is the higher of its fair value less costs to sell and its value in use.

If the recoverable amount of an asset is less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. That reduction is an impairment loss.

An impairment loss of assets carried at cost less any accumulated depreciation or amortisation is recognised immediately in Surplus or Deficit.

An impairment loss is recognised for cash generating units if the recoverable amount of the unit is less than the carrying amount of the unit. The impairment loss is allocated to reduce the carrying amount of the assets of the unit pro rata on the basis of the carrying amount of each asset in the unit.

The Entity assesses at each reporting date whether there is any indication that an impairment loss recognised in prior periods for assets may no longer exist or may have decreased. If any such indication exists, the recoverable amounts of those assets are estimated.

The increased carrying amount of an asset attributable to a reversal of an impairment loss does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior periods.

A reversal of an impairment loss of assets carried at cost

less accumulated depreciation or amortisation is recognised immediately in Surplus or Deficit.

Any reversal of an impairment loss of a revalued cash-generating asset is treated as a revaluation increase.

7.2 Impairment of Non-cash Generating Assets

The Entity assesses at each reporting date whether there is any indication that an asset may be impaired.

If there is any indication that an asset may be impaired, the recoverable service amount is estimated for the individual asset. If it is not possible to estimate the recoverable service amount of the individual asset, the recoverable service amount of the non-cash generating unit to which the asset belongs is determined.

The recoverable service amount of a non-cash generating asset is the higher of its fair value less costs to sell and its value in use.

If the recoverable service amount of an asset is less than its carrying amount, the carrying amount of the asset is reduced to its recoverable service amount. That reduction is an impairment loss.

An impairment loss of assets carried at cost less any accumulated depreciation or amortisation is recognised immediately in Surplus or Deficit.

An impairment loss is recognised for non-cash generating units if the recoverable service amount of the unit is less than the carrying amount of the unit. The impairment loss is allocated to reduce the carrying amount of the assets of the unit pro rata on the basis of the carrying amount of each asset in the unit.

The Entity assesses at each reporting date whether there is any indication that an impairment loss recognised in prior periods for assets may no longer exist or may have decreased. If any such indication exists, the recoverable service amounts of those assets are estimated.

The increased carrying amount of an asset attributable to a reversal of an impairment loss does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior periods.

A reversal of an impairment loss of assets carried at cost less accumulated depreciation or amortisation is recognised immediately in Surplus or Deficit.

8. INVESTMENT IN CONTROLLED ENTITIES

Investments in controlled entities are consolidated in Mintek

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

annual financial statements. Refer to the accounting policy on Consolidations (Note 1.5).

In Mintek's separate Annual Financial Statements, investments in controlled entities are carried at cost. The entity applies the same accounting for each category of investment.

Investments in controlled entities that are accounted for in accordance with the accounting policy on Financial Instruments in the consolidated annual financial statements, are accounted for in the same way in Mintek's separate annual financial statements.

9. PROVISIONS

9.1 Initial Recognition and Initial Measurement

The best estimate of the expenditure required to settle the present obligation is the amount that the Entity would rationally pay to settle the obligation at the reporting date or to transfer it to a third party at that time and are determined by judgment of Mintek management, supplemented by experience of similar transactions and, in some cases, reports from independent experts. The evidence considered includes any additional evidence provided by events after the reporting date. Uncertainties surrounding the amount to be recognised as a provision are dealt with by various means according to the circumstances. Where the provision being measured involves a large population of items, the obligation is estimated by weighting all possible outcomes by their associated probabilities.

Future events that may affect the amount required to settle an obligation are reflected in the amount of a provision where there is sufficient objective evidence that they will occur. Gains from the expected disposal of assets are not taken into account in measuring a provision. Provisions are not recognised for future operating losses. The present obligation under an onerous contract is recognised and measured as a provision. An onerous contract is a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it. The unavoidable costs under a contract reflect the least net cost of exiting from the contract, which is the lower of the cost of fulfilling it and any compensation or penalties arising from failure to fulfil it – this unavoidable cost resulting from the contract is the amount of the provision to be recognised.

9.2 Subsequent Measurement

Provisions are reviewed at reporting date and the amount of a provision is the present value of the expenditure expected to be required to settle the obligation. When the effect of discounting is material, provisions are determined by discounting the expected future cash flows that reflect current market assessments of the time value of money. The impact of the periodic unwinding of the discount

is recognised in Surplus or Deficit as a finance cost as it occurs.

The Entity's provisions are made up of warranties. Warranties arise from the Entity recognising its probable liability for meeting its obligation in terms of products and services as stipulated in its contract with customers.

10. LEASES

10.1 The Entity as Lessee

10.1.1 Operating Leases

The Entity recognises operating lease rentals as an expense in the Surplus or Deficit on a Straight-line Basis over the term of the relevant lease. The difference between the amounts recognised as an expense and the contractual payments are recognised as an operating lease asset or liability.

10.2 The Entity as Lessor

Rental revenue from Operating Leases is recognised on a Straight-line Basis over the term of the relevant lease.

11. BORROWING COSTS

Borrowing Costs are recognised as an expense in the period in which they are incurred.

12. EMPLOYEE BENEFIT LIABILITIES

12.1 Short-term Employee Benefits

Remuneration to employees is recognised in the Statement of Financial Performance as the services are rendered, except for non-accumulating benefits which are only recognised when the specific event occurs.

Mintek has opted to treat its provisions for annual bonuses and leave pay as accruals.

The costs of all short-term employee benefits such as annual bonuses and leave pay, are recognised during the period in which the employee renders the related service. The liability for leave pay is based on the total accrued leave days at year-end and is shown as a creditor in the Statement of Financial Position. The liability for annual bonuses is based on the bonus accrued at year-end for each employee and is shown as a creditor in the Statement of Financial Position. The Entity recognises the expected cost of performance bonuses only when Mintek has a present legal or constructive obligation to make such payment and a reliable estimate can be made.

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

The Entity pays employees for absence for various reasons including holidays, sickness and short-term disability, and maternity or paternity. The expected cost of short-term employee benefits in the form of paid absences for accumulating paid absences is recognised when the employees render service that increases their entitlement to future paid absences. The expected cost of non-accumulating paid absences is recognised when the absences occur.

12.2 Post-employment Benefits

The Entity provides retirement benefits for its employees, and has a defined benefit post-employment plan.

12.2.1 Defined Contribution Plans

The Entity's contributions to the defined contribution funds are established in terms of the rules governing those plans. Contributions are recognised in Surplus or Deficit in the period in which the service is rendered by the relevant employees. The Entity has no further payment obligations once the contributions have been paid. The contributions are recognised as employee benefit expense when they are due. Prepaid contributions are recognised as an asset to the extent that a cash refund or a reduction in the future payments is available.

12.2.2 Defined Benefit Plans

Post-retirement Health Care Benefits

The Entity has an obligation to provide Post-retirement Health Care Benefits to certain of its retirees. According to the stipulations of the benefit, qualifying employees are entitled to a medical aid benefit upon retirement.

The defined benefit liability is the aggregate of the present value of the defined benefit obligation and unrecognised actuarial gains and losses, reduced by unrecognised past service costs. The plan is unfunded. The present value of the defined benefit obligation is calculated using the Projected Unit Credit Method, incorporating actuarial assumptions and a discount rate based on the government bond rate. Valuations of these obligations are carried out annually by independent qualified actuaries.

Defined Benefit Cost is made up of the following components:

- (a) Service Cost, comprising:
 - Current Service Cost
 - Settlements

- Past Service Cost, comprising:
 - (1) Plan Amendments
 - (2) Curtailments
- (b) Net Interest Revenue / Expense
- (c) Remeasurements, comprising:
 - Actuarial Gains and Losses
 - Return on Plan Assets, excluding amounts included in net interest on the net defined benefit liability (asset)
 - Any change in the Effect of the Asset Ceiling, excluding amounts included in net interest on the net defined benefit liability (asset)

Actuarial Gains or Losses, and Past Service Costs, are recognised immediately in Surplus or Deficit.

12.3 Termination Benefits

The Entity provides termination benefits for its employees in terms of the Entity's Employee Benefit Plan.

Termination Benefits to employees is recognised as an expense in the Statement of Financial Performance and as a liability in the Statement of Financial Position when the Entity can no longer withdraw the offer of those benefits.

13. NET ASSETS

Included in the Net Assets of the Entity are the following items that are maintained in terms of specific requirements:

13.1 Reserves

13.1.1 Revaluation Reserve

The surplus arising from the revaluation of land and buildings is credited to a non-distributable reserve. The revaluation surplus is realised as revalued buildings are depreciated, through a transfer from the Revaluation Reserve to the Accumulated Surplus/(Deficit). On disposal, the net revaluation surplus is transferred to the Accumulated Surplus/(Deficit) while gains or losses on disposal, based on revalued amounts, are credited or charged to the Statement of Financial Performance.

13.2 Accumulated Funds

Accumulated Funds comprise of rolled over funds from the current and prior years based on the recorded surplus or deficit for the period. The funds are not cash backed.

14. SHARE CAPITAL

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

An equity instrument is any contract that evidences a residual interest in the assets of an economic entity after deducting all of its liabilities.

15. REVENUE RECOGNITION

15.1 General

Revenue is derived from a variety of sources which include state grant, grants from other tiers of government and revenue from trading activities and other services provided.

Revenue comprises the fair value of the consideration received or receivable for the sale of goods and services in the ordinary course of the Entity's activities. Revenue is shown net of value-added tax, returns, rebates and discounts.

15.2 Revenue from Non-exchange Transactions

15.2.1 Government Grants and Subsidies

Conditional grants, donations and funding are recognised as revenue to the extent that Mintek has complied with any of the criteria, conditions or obligations embodied in the agreement.

Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Entity with no future related costs, are recognised in Surplus or Deficit in the period in which they become receivable.

Interest earned on investments is treated in accordance with grant conditions. If it is payable to the funder it is recorded as part of the creditor and if it is the Entity's interest, it is recognised as interest earned in Surplus or Deficit.

Revenue is recognised when all conditions associated with the contribution have been met or where the contribution is to finance property, plant and equipment, when such items of property, plant and equipment are brought into use.

15.2.2 Revenue from Recovery of Irregular, Fruitless and Wasteful Expenditure

The recovery of irregular, fruitless and wasteful expenditure is based on legislated procedures, including those set out in the Public Finance Management Act (Act No 1 of 1999) and is recognised as revenue when the recovery thereof from the responsible officials became virtually certain in a financial period subsequent to the period when the actual unauthorised, irregular, fruitless

and wasteful expenditure was incurred.

15.3 Revenue from Exchange Transactions

15.3.1 Sale of Goods

Revenue from the sale of goods is recognised when all the following conditions have been met:

- (a) The Entity has transferred to the buyer the significant risks and rewards of ownership of the goods;
- (b) The Entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;
- (c) The amount of revenue can be measured reliably;
- (d) It is probable that the economic benefits or service potential associated with the transaction will flow to the Entity; and
- (e) The costs incurred or to be incurred in respect of the transaction can be measured reliably.

Revenue received from the sale of Products and Services is generated during the ordinary course of business from commercial customers. This includes the sale of finished goods to local and international clients and the provision of scientific or engineering services as required.

15.3.2 Services Rendered

When the outcome of a transaction involving the rendering of services can be estimated reliably, revenue associated with the transaction is recognised by reference to the stage of completion of the transaction at the reporting date. The outcome of a transaction can be estimated reliably when the following conditions are satisfied:

- (a) The amount of revenue can be measured reliably;
- (b) It is probable that the economic benefits or service potential associated with the transaction will flow to Mintek;
- (c) The stage of completion of the transaction at reporting date can be measured reliably; and
- (d) The costs incurred for the transaction and the costs to complete the transaction can be measured reliably.

Revenue is generated on a project basis and is recognised based on the percentage of completion as outlined in project agreements for the rendering of services.

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

Contract Research revenue is received for projects funded mainly by the Department of Science and Innovation (DSI). Research proposals are submitted for consideration and funding is received for approved research projects.

Revenue received from the sale of Products and Services is generated during the ordinary course of business from commercial customers. This includes the sale of finished goods to local and international clients and the provision of scientific or engineering services as required.

Contract Revenue - Rehabilitation relates to the revenue generated on the Asbestos Rehabilitation projects where the revenue is calculated based on the percentage completion. The funding for these projects is made available by the Department of Mineral Resources and Energy (DMRE).

Contract Revenue - Other is revenue recognised for work performed where the Entity is the programme coordinator. Revenue is therefore agreed upon on a project-by-project basis for the services performed.

Revenue from Exchange Transactions are recognised on a percentage of completion basis where the actual cost is considered as a percentage of the total planned cost relative to the planned revenue. The recognisable revenue is then adjusted against what has been billed. The state of completion is adjusted throughout the accounting period and is reflective of the progress made on the projects.

When the outcome of the transaction involving the rendering of services cannot be estimated reliably, revenue is recognised only to the extent of the expenses recognised that are recoverable.

15.3.3 Interest, Rental Income and Other Income Items

Revenue arising from the use by others of entity assets yielding interest, royalties, rental income and other income is recognised when:

- it is probable that the economic benefits or service potential associated with the transaction will flow to Mintek; and
- The amount of the revenue can be measured reliably.

Interest earned on investments is recognised in Surplus or Deficit on the Time-proportionate Basis that takes into account the effective yield on the investment.

Rental income is recognised on a Straight-line Basis over the term of the lease agreement.

Other income refers to income generated during the normal course of business, which does not fall into any of the classes of revenue from exchange transactions. This is recognised based on the revenue recognition principles as set out above.

16. TREATMENT OF ADMINISTRATION AND OTHER OVERHEAD EXPENSES

The costs of internal support services are transferred to the various services and departments to whom resources are made available. This is distribution is based on several statistical keys such as head count and usage.

17. FOREIGN CURRENCIES

Transactions in foreign currencies are translated to the functional currency of Mintek at exchange rates at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the exchange rate at that date. The foreign currency gain or loss on monetary items is the difference between amortised cost and fair value in the functional currency at the beginning of the period, adjusted for effective interest and payments during the period, and the amortised cost in foreign currency translated at the exchange rate at the end of the reporting period.

Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are retranslated to the functional currency at the exchange rate at the date that the fair value was determined. Foreign currency differences arising on retranslation are recognised in the Statement of Financial Performance.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction.

Cash flows arising from transactions in a foreign currency are recorded in Rand's by applying, to the foreign currency amount, the exchange rate between the Rand and the foreign currency at the date of the cash flow.

18. CHANGES IN ACCOUNTING POLICIES, ESTIMATES AND ERRORS

In such cases the Entity shall restate the opening balances of assets, liabilities and net assets for the earliest period for which

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

retrospective restatement is practicable.

Changes in accounting estimates are applied prospectively in accordance with GRAP 3 requirements. Details of changes in estimates are disclosed in Note 28. to the Annual Financial Statements where applicable.

Correction of errors is applied retrospectively in the period in which the error has occurred in accordance with GRAP 3 requirements, except to the extent that it is impracticable to determine the period-specific effects or the cumulative effect of the error. In such cases Mintek shall restate the opening balances of assets, liabilities and net assets for the earliest period for which retrospective restatement is practical.

Details of Correction of Errors are disclosed in Note 27. to the Annual Financial Statements.

19. UNAUTHORISED EXPENDITURE

Unauthorised Expenditure is expenditure that has not been budgeted for, expenditure that is not in terms of the conditions of an allocation received from another sphere of government and expenditure in the form of a grant that is not permitted in terms of the Public Finance Management Act (Act No 1 of 1999).

All expenditure relating to Unauthorised Expenditure is accounted for as an expense in Surplus or Deficit in the year that the expenditure was incurred. The expenditure is classified in accordance with the nature of the expense, and where recovered, it is subsequently accounted for as revenue in Surplus or Deficit.

20. IRREGULAR EXPENDITURE

Irregular Expenditure is expenditure that is contrary to the Public Finance Management Act (Act No 1 of 1999), or is in contravention of the Entities' Supply Chain Management Policies. Irregular Expenditure excludes Unauthorised Expenditure.

Irregular Expenditure is accounted for as an expense in Surplus or Deficit in the period it occurred and where recovered, it is subsequently accounted for as revenue in Surplus or Deficit.

21. FRUITLESS AND WASTEFUL EXPENDITURE

Fruitless and Wasteful Expenditure is expenditure that was made in vain and would have been avoided had reasonable care been exercised.

All expenditure relating to Fruitless and wasteful expenditure is accounted for as expenditure in Surplus or Deficit in the year that the expenditure was incurred. The expenditure is classified in accordance with the nature of the expense, and where recovered, it is subsequently accounted for as revenue in Surplus or Deficit.

22. COMMITMENTS

Commitments are future expenditure to which the Entity committed and that will result in the outflow of resources. Commitments are not recognised in the Statement of Financial Position as a liability or as expenditure in Surplus or Deficit, but are included in the disclosure Notes. A distinction is made between capital and current commitments.

23. RELATED PARTIES

Individuals as well as their close family members, and/or entities are related parties if one party has the ability, directly or indirectly, to control or jointly control the other party or exercise significant influence over the other party in making financial and/or operating decisions. Management is regarded as a related party and comprises the Board Members, Chairman, Group Executive Members, Chief Executive Officer, Chief Financial Officer and all other managers reporting directly to the Chief Executive Officer or as designated by the Chief Executive Officer if they are deemed to have significant influence.

Only transactions with related parties not at arm's length or not in the ordinary course of business are disclosed. Mintek does however disclose certain transactions which occurred during the financial year for information purposes.

24. CONTINGENT ASSETS AND CONTINGENT LIABILITIES

Contingent Assets and Contingent Liabilities are not recognised. Contingencies are disclosed in Notes to the Annual Financial Statements.

25. TAXATION

Current tax for current and prior periods is, to the extent unpaid, recognised as a liability. If the amount already paid in respect of current and prior periods exceeds the amount due for those periods, the excess is recognised as an asset. Current tax liabilities/assets for the current and prior periods are measured at the amount expected to be paid to/(recovered from) the tax authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

25.1 Income Tax

The Entity is exempted from paying Income Tax in terms of section 10(1) cA(i) of the Income Tax Act, No 58 of 1962. Mindev and PhilisaSechaba is registered for Income Tax. The subsidiaries' liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

11.11 Accounting Policies to the Annual Financial Statements for the Year Ended 31 March 2024

25.2 Value Added Tax

The Entity accounts for Value Added Tax on the Invoice Basis in accordance with section 15(2)(a) of the Value-Added Tax Act (Act No 89 of 1991).

26. EVENTS AFTER THE REPORTING DATE

Events after the reporting date are those events, both favourable and unfavourable, that occur between the reporting date and the date when the financial statements are authorised for issue.

Adjusting events are those that provide evidence of conditions that existed at the reporting date. Events after the reporting date that are classified as adjusting events have been accounted for in the Annual Financial Statements.

Non-adjusting events are those that are indicative of conditions that arose after the reporting date. The events after the reporting date that are classified as Non-adjusting Events after the Reporting Date have been disclosed in Notes to the Annual Financial Statements.

27. COMPARATIVE INFORMATION

When the presentation or classification of items in the Annual Financial Statements is amended, prior period comparative amounts are reclassified. The nature and reason for the reclassification is disclosed.

28. SEGMENT REPORTING

The mandate of the Entity is to serve the national interest through research, development and technology transfer, to promote mineral technology and to foster the establishment and expansion of industries in the field of minerals and products derived therefrom.

In order to properly execute its mandate and achieve its strategic goals, internal management reporting is produced and reviewed per cluster in order to make decisions on the allocation of resources and to assess performance, and these have therefore been identified as its reportable segments for reporting in terms of GRAP 18.

The following components have been identified as individually significant segments for purposes of reporting in terms of GRAP 18 (Segment Reporting):

- The provision of research services in extractive metallurgy disciplines
- The provision of research in mineral processing and characterisation
- The provision of research services in mining, materials and process automation

- The provision of support services

These clusters are categorised based on the fact that they have similar economic characteristics and share a majority of the aggregation criteria such as, nature of the goods and/or services delivered, the type or class of customer to which goods and/or services are delivered and the method used to distribute the goods or provide the services.

Management have assessed the characteristics of its sections and is of the opinion that these sections have similar economic characteristics and have therefore been aggregated in the segmental disclosures, with any other non-project items reported as Support Services.

Mintek only operates in a single geographical location and accordingly does not report separately on each location within its jurisdiction.

The accounting policies for segmental reporting in the management accounts are aligned to the requirements of GRAP as described in these accounting policies.

No changes were made from prior periods measurement methods used to determine reported segment surplus or deficit. The Segmental Reporting is disclosed in Note 40. to the Annual Financial Statements.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

1. INVENTORIES

	2024	2023
	R	R
Consumable Stores	21,821,097	14,016,750
Finished Goods	2,223,752	3,542,910
Work-in-Progress	1,445,474	3,880,815
Total Inventories	25,490,323	21,440,475

Inventories in the Consumable Stores are held for own use while Finished Goods are sold to potential customers. Inventory is measured at the lower of Cost and Net Realisable Value. No write downs of Inventory to Net Realisable Value were required as there are no indications of impairment for any of the inventory held.

Consumable Stores Include:

Stationery and Paper	985,032	920,611
MAC Raw Materials and Consumables	14,047,175	7,420,848
General Consumables	6,056,729	5,037,594
Workshop Consumables	732,162	637,698
	21,821,097	14,016,750

The cost of Inventories recognised as an expense during the period was R24,795,464 (2023: R20, 823,030).

No inventories are expected to be utilised only after more than twelve months.

No Inventories have been pledged as collateral for Liabilities as per Note 8.

2. RECEIVABLES FROM EXCHANGE TRANSACTIONS

	GROSS BALANCES	PROVISION FOR IMPAIRMENT	NET BALANCES
	R	R	R
As at 31 March 2024			
Trade Debtors	66,158,731	341,012	65,817,719
Prepaid Expenses	12,695,223	-	12,695,223
Deposits	3,398,513	-	3,398,513
Government Debtors	8,362,620	-	8,362,620
Project Work-in-Progress	34,286,416	-	34,286,416
Staff Debtors	2,989,708	31,261	2,958,447
Total Receivables from Exchange Transactions	127,891,211	372,273	27,518,938
As at 31 March 2023			
Trade Debtors	22,155,393	144,898	22,010,495
Prepaid Expenses	14,698,133	-	14,698,133
Deposits	275,093	-	275,093
Government Debtors	4,720,260	-	4,720,260
Project Work-in-Progress	24,628,919	-	24,628,919
Staff Debtors	4,010,683	1,226,212	2,784,471
Total Receivables from Exchange Transactions	70,488,480	1,371,108	69,117,372

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

2. RECEIVABLES FROM EXCHANGE TRANSACTIONS (Continued)		
	2024	2023
	R	R
The Carrying Amount of Trade Receivables are denominated in the following Currencies:		
SA Rand	45,924,221	17,641,019
US Dollar	17,974,335	2,910,450
EUR	621,677	372,900
AUD	1,456,553	1,069,779
CAD	181,945	161,244
Total Receivables	66,158,731	22,155,393

Trade Debtors include outstanding debtors for local and international customers where services were rendered or products sold.

Prepaid Expenses include transactions where Mintek made payment in advance for goods/services that would only be delivered/rendered after year-end.

Deposits include funds held at the local municipality for municipal charges deposit.

Government Debtors refers to monies outstanding from government organisations for work performed on specified projects.

Project Work-in-Progress relates to the recognition of an asset receivable where project work has been performed but no billing has taken place yet.

Staff Debtors include staff advances for travel and amounts owing by employees who are studying fulltime. It also includes debtors where breach of contract occurred.

Debtors are billed as per project proposal/purchase order and collected in terms of the standard collection procedures.

The credit risk of all new debtors are assessed considering the nature of the company and the credit required. Some credit applications are referred to an external company for review and their assessment is considered when the decision to grant credit is made. Credit limits are reviewed periodically.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

2.1 AGEING OF RECEIVABLES FROM EXCHANGE TRANSACTIONS					
As at 31 March 2024					
	CURRENT 0 - 30 DAYS	PAST DUE			TOTAL
		31 - 60 DAYS	61 - 90 DAYS	+ 90 DAYS	
Trade Debtors:					
Gross Balances	36,045,688	3,032,126	2,553,227	24,527,690	66,158,731
Less: Provision for Impairment	-	-	-	(341,012)	(341,012)
Net Balances	36,045,688	3,032,126	2,553,227	24,186,678	65,817,719
Prepaid Expenses:					
Gross Balances	11,154,666	108,293	48,288	1,383,977	12,695,223
Net Balances	11,154,666	108,293	48,288	1,383,977	12,695,223
Deposits:					
Gross Balances	3,123,513	-	-	275,000	3,398,513
Net Balances	3,123,513	-	-	275,000	3,398,513
Government Debtors:					
Gross Balances	5,955,042	-	-	2,407,578	8,362,620
Net Balances	5,955,042	-	-	2,407,578	8,362,620
Project Work-in-Progress:					
Gross Balances	27,032,759	1,392,504	1,247,341	4,613,812	34,286,416
Net Balances	27,032,759	1,392,504	1,247,341	4,613,812	34,286,416
Staff Debtors:					
Gross Balances	1,760,917	12,436	-	1,216,355	2,989,708
Less: Provision for Impairment	-	-	-	(31,261)	(31,261)
Net Balances	1,760,917	12,436	-	1,185,094	2,958,447
As at 31 March 2024 Receivables of R42,446,354 were past due but not impaired. The age analysis of these Receivables are as follows:					
All Receivables:					
Gross Balances	85,072,584	4,545,359	3,848,856	34,424,412	127,891,211
Less: Provision for Impairment	0	-	-	(372,273)	(372,273)
Net Balances	85,072,584	4,545,359	3,848,856	34,052,139	127,518,938

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

2.1 AGEING OF RECEIVABLES FROM EXCHANGE TRANSACTIONS (Continued)					
As at 31 March 2023					
	CURRENT	PAST DUE			TOTAL
	0 - 30 DAYS	31 - 60 DAYS	61 - 90 DAYS	+ 90 DAYS	
Trade Debtors:					
Gross Balances	18,241,152	1,215,050	(1,235,012)	3,934,203	22,155,393
Less: Provision for Impairment	-	-	-	(144,898)	(144,898)
Net Balances	18,241,152	1,215,050	(1,235,012)	3,789,305	22,010,495
Prepaid Expenses:					
Gross Balances	13,157,576	108,293	48,288	1,383,977	14,698,133
Net Balances	13,157,576	108,293	48,288	1,383,977	14,698,133
Deposits:					
Gross Balances	275,093	-	-	-	275,093
Net Balances	275,093	-	-	-	275,093
Government Debtors:					
Gross Balances	4,528,323	-	518	191,420	4,720,260
Net Balances	4,528,323	-	518	191,420	4,720,260
Project Work-in-Progress:					
Gross Balances	21,043,298	435,000	717,123	2,433,498	24,628,919
Net Balances	21,043,298	435,000	717,123	2,433,498	24,628,919
Staff Debtors:					
Gross Balances	1,757,056	-	-	2,253,627	4,010,683
Less: Provision for Impairment	-	-	-	(1,226,212)	(1,226,212)
Net Balances	1,757,056	-	-	1,027,415	2,784,471

As at 31 March 2023 Receivables of R10,114,875 were past due but not impaired. The age analysis of these Receivables are as follows:

All Receivables:					
Gross Balances	59,002,496	1,758,343	(469,083)	10,196,724	70,488,480
Less: Provision for Impairment	-	-	-	(1,371,109)	(1,371,109)
Net Balances	59,002,496	1,758,343	(469,083)	8,825,615	69,117,371

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

2.2 RECONCILIATION OF THE PROVISION FOR IMPAIRMENT		
	2024	2023
	R	R
Balance at beginning of year	1,371,109	910,958
Impairment Losses recognised	488,127	1,227,780
Impairment Losses reversed	(92,541)	(90,426)
Amounts written off as uncollectable	(1,394,422)	(677,203)
Balance at end of year	372,273	1,371,109

In determining the recoverability of Receivables, reviews were conducted by the respective divisional managers. Provision for impairment of Receivables has been made for all debtor balances outstanding for more than 120 days where it is unlikely that the outstanding amounts will be recovered.

The impairment recognised represents the difference between the carrying amount of these Receivables and the present value of the expected liquidation proceeds. The Entity does not hold any collateral over these balances.

Trade and Other Receivables which are less than 4 months past due are not considered to be impaired unless there are specific indicators such as business rescue.

2.3 DERECOGNITION OF FINANCIAL ASSETS

No Financial Assets have been transferred to other parties during the year.

3. CASH AND CASH EQUIVALENTS

	2024	2023
	R	R
Current Investments	303,493,065	463,800,035
Bank Accounts	95,363,547	43,905,131
Cash-on-Hand	61,212	30,465
Total Bank, Cash and Cash Equivalents	398,917,825	507,735,631

For the purposes of the Statement of Financial Position and the Cash Flow Statement, Cash and Cash Equivalents include Cash-on-Hand, Cash in Banks and Investments in Money Market Instruments.

Current Investments are Fixed Deposits with a maturity period of less than 12 months, deposited for fixed terms, and earn interest rates varying from 7,250% to 8,00% (2023: 7,250% to 8,00%) per annum.

Deposits of R135,508,698 (2023: R186,044,650) are attributable to Cash Received in Advance from Government. Interest accrued on funds held is capitalised to the project dependant on the contract terms. These funds were received mainly for research work but also for project management and the scope of work for these funds are as per contractual agreement. The funds are utilised as work is performed. Refer Note 9.

An amount of R5,294,497 (2023: R5,041,973) is held as a cession by Rand Merchant Bank for guarantee facilities. No other Cash and Cash Equivalents are pledged as security for financial liabilities of the Entity. There are currently no Guarantees outstanding.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

4. PROPERTY, PLANT AND EQUIPMENT									
31 MARCH 2024									
RECONCILIATION OF CARRYING VALUE									
Description	Land	Buildings	Computer Equipment		Furniture and Fittings	Plant, Machinery and Equipment	Motor Vehicles	Catering, Building and Office Equipment	Total
	R	R	R		R	R	R	R	R
Carrying values at 01 April	124,656,851	103,478,851	15,715,176		3,021,263	146,357,123	2,139,987	13,307,245	408,676,496
Cost	124,656,851	156,573,588	37,150,390		10,064,477	393,497,520	6,535,885	29,644,140	758,122,851
- Completed Assets	124,656,851	156,446,312	37,150,390		10,064,477	369,035,754	6,535,885	29,640,629	733,530,297
- Under Construction	-	127,276	-		-	24,461,766	-	3,512	24,592,554
Accumulated Impairment Losses	-	-	(5,563)		-	(26,538,371)	-	(285,483)	(26,829,417)
Accumulated Depreciation	-	(53,094,737)	(21,429,651)		(7,043,214)	(220,602,026)	(4,395,898)	(16,051,412)	(322,616,938)
Acquisitions	-	270,535	10,195,254		118,890	43,872,147	599,249	455,052	55,511,127
Capital under Construction - Additions	-	573,364	13,251,636		-	4,889,768	-	-	18,714,768
Depreciation:	-	(3,504,081)	(6,992,001)		(811,069)	(27,604,499)	(804,270)	(2,256,053)	(41,971,973)
- Standard Depreciation	-	(3,504,081)	(8,465,015)		(919,619)	(30,418,337)	(884,120)	(2,404,985)	(46,596,158)
- Re-Assessment: Change in Estimate	-	-	1,473,014		108,550	2,813,838	79,850	148,932	4,624,185
Carrying value of Disposals:	-	-	(447,014)		(28,321)	(575,200)	-	(45,792)	(1,096,327)
- Cost	-	-	(1,870,702)		(298,362)	(6,050,390)	-	(1,017,376)	(9,236,830)
- Accumulated Depreciation	-	-	1,423,688		270,041	5,475,190	-	971,584	8,140,503
Impairment Losses	-	-	-		-	(3,086,923)	-	-	(3,086,923)
Capital under Construction - Completed	-	(700,640)	(13,251,636)		-	(3,867,175)	-	(3,512)	(17,822,963)
Transfers	-	700,640	13,251,636		-	3,867,175	-	3,512	17,822,963
Carrying values at 31 March 2023	124,656,851	100,818,669	31,723,051		2,300,763	163,852,416	1,934,966	11,460,451	436,747,167
Cost	124,656,851	157,417,487	58,726,578		9,885,005	436,209,045	7,135,134	29,081,816	823,111,916
- Completed Assets	124,656,851	157,417,487	58,726,578		9,885,005	410,724,686	7,135,134	29,081,817	797,627,557
- Under Construction	-	-	-		-	25,484,359	-	-	25,484,358
Accumulated Impairment Losses	-	-	(5,563)		-	(29,625,294)	-	(285,483)	(29,916,340)
Accumulated Depreciation	-	(56,598,818)	(26,997,964)		(7,584,242)	(242,731,335)	(5,200,168)	(17,335,882)	(356,448,409)

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

4. PROPERTY, PLANT AND EQUIPMENT (CONTINUED)									
31 MARCH 2023									
RECONCILIATION OF CARRYING VALUE									
Description	Land	Buildings	Computer Equipment		Furniture and Fittings	Plant, Machinery and Equipment	Motor Vehicles	Catering, Building and Office Equipment	Total
	R	R	R		R	R	R	R	R
Carrying values at 01 April	124,656,851	107,802,798	17,076,159		3,956,918	161,335,129	2,821,228	17,776,556	435,425,639
Cost	124,656,851	156,446,309	34,062,112		9,846,956	384,060,107	6,535,885	31,551,971	747,160,191
- Completed Assets	124,656,851	137,385,160	34,062,112		9,846,956	359,885,536	6,535,885	29,925,703	702,298,203
- Under Construction	-	19,061,149	-		-	24,174,571	-	1,626,268	44,861,988
Accumulated Impairment Losses	-	-	(5,563)		-	(26,538,371)	-	(285,483)	(26,829,417)
Accumulated Depreciation	-	(48,643,511)	(16,980,389)		(5,890,038)	(196,186,607)	(3,714,657)	(13,489,931)	(284,905,134)
Acquisitions	-	-	4,026,362		43,245	7,944,999	-	93,906	12,108,512
At Cost	-	-	4,026,362		43,245	7,944,999	-	93,906	12,108,512
Capital under Construction - Additions	-	132,867	-		-	658,565	-	102,451	893,883
Depreciation:	-	(4,451,226)	(4,927,763)		(1,054,960)	(24,819,076)	(681,241)	(3,076,354)	(39,010,620)
- Standard Depreciation	-	(4,451,226)	(6,485,190)		(1,180,324)	(29,851,669)	(822,499)	(3,673,223)	(46,464,131)
- Re-Assessment: Change in Estimate	-	-	1,557,427		125,364	5,032,593	141,258	596,869	7,453,511
Carrying value of Disposals:	-	-	(556,179)		(14,638)	(141,866)	-	(11,967)	(724,650)
- Cost	-	-	(1,348,701)		(56,731)	(557,622)	-	(46,983)	(2,010,038)
- Accumulated Depreciation	-	-	792,522		42,093	415,756	-	35,016	1,285,387
Capital under Construction - Completed	-	(19,066,740)	-		-	(371,370)	-	(1,725,207)	(21,163,317)
Transfers	-	19,061,149	96,598		90,698	1,750,742	-	147,860	21,147,047
Carrying values at 31 March 2023	124,656,851	103,478,850	15,715,176		3,021,263	146,357,123	2,139,987	13,307,245	408,676,496
Cost	124,656,851	156,573,587	37,150,390		10,064,477	393,497,520	6,535,885	29,644,140	758,122,851
- Completed Assets	124,656,851	156,446,312	37,150,390		10,064,477	369,035,754	6,535,885	29,640,629	733,530,297
- Under Construction	-	127,276	-		-	24,461,766	-	3,512	24,592,554
Accumulated Impairment Losses	-	-	(5,563)		-	(26,538,371)	-	(285,483)	(26,829,417)
Accumulated Depreciation	-	(53,094,737)	(21,429,651)		(7,043,214)	(220,602,026)	(4,395,898)	(16,051,412)	(322,616,938)

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

4. PROPERTY, PLANT AND EQUIPMENT (Continued)				
4.1 Market Value of Properties				
The Market Values as at the previous valuation date of 31 March 2021 of all the properties that the Entity recognises on its Statement of Financial Position are listed below. Land and buildings is revalued every five years and the next valuation is due in 2026.				
			2024	2023
			R	R
City / Property	Address	Title Deed	Land	Buildings
JOHANNESBURG Farm Klipfontein, 203-IQ, Portion 175	200 Malibongwe Drive	T14633/1970	97,525,956	64,911,249
JOHANNESBURG Farm Klipfontein, 203-IQ, Portion 226	200 Malibongwe Drive	T22082/1998	27,130,895	4,947,920
JOHANNESBURG Malanshof Heights, 203-IQ, Erf 560	16 Hans Schoeman Street Sectional title units 15, 28, 29 and 30	T20072/1981	-	1,875,420
			124,656,851	71,734,589

4. PROPERTY, PLANT AND EQUIPMENT (Continued)		
	2024	2023
	R	R

4.2 Impairment of Property, Plant and Equipment

Impairment losses have been recognised on Mintek Property, Plant and Equipment at the reporting date. Impairment losses originated from assets previously used in research or commercial activities but it is forecasted that no future economic benefit will flow from these assets in the foreseeable future.

Plant, Machinery & Equipment	3,086,923	-
Total Impairment of Property, Plant and Equipment	3,086,923	-

During the year under review, several assets not currently in use were identified for impairment.

The main cause of this is that assets have aged and due to technology changes, it is costly to maintain these assets for them to be operated at full capacity to suit the needs of the various Mintek Divisions. There are plans to use some of the assets in future hence they have not been written off. However this is solely dependant on the ability to repair them.

A review of possible impairment was conducted in the current financial year but assets to the value of R3,086,923 was impaired. No impairment was identified in the prior year.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

4. PROPERTY, PLANT AND EQUIPMENT (Continued)		
	2024	2023
	R	R
4.3 Change in Estimate - Useful Life of Property, Plant and Equipment reviewed		
The Entity reassesses the useful life of all assets at period end. For items that are still in use and have future economic value, the useful lives are extended based on the assumptions that assets will be replaced in the next two years due to a capitalisation plan. The original acquisition value for these assets were R133,800,273 (2023: R38,465,101).		
The change in the estimated useful life of various assets of the Entity, as indicated in Note 28., has resulted in the following decreases in depreciation for the financial year:		
Catering, Building & Office Equipment	148,932	596,869
Computer Equipment	1,473,014	1,557,427
Furniture & Fittings	108,550	125,364
Motor Vehicles	79,850	141,258
Plant, Machinery & Equipment	2,813,838	5,032,593
Total Change in Estimate for Useful Life of Property, Plant and Equipment	4,624,185	7,453,511

The change in estimates will result in an increase of R4,624,185 in the depreciation expense for the Entity over the next three financial years.

4.4 Land and Buildings carried at Revalued Amount

The value of the land and building complexes were estimated by Sheldon Gordon trading as Resurgent Projects, an independent retail estate broker, during the financial year ending 31 March 2021. The valuation is done every 5 years and the latest valuation report was issued on 21 April 2021. The key assumptions used were that the value of the property be based as sale of vacant land and buildings for rental investment using various rental income figures for different areas of the Mintek property. These calculated rentals were then capitalised at 11.0%.

The following assumptions were used:

Discount Rate	11.00%	11.00%
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Had the Entity's Land and Buildings (other than Land and Buildings included in a disposal group) been measured on a historical cost basis, their carrying amount would have been as follows:

Cost	67,904,959	66,933,784
Accumulated Depreciation	23,325,049	21,963,495
Net Carrying Value	44,579,910	44,970,289

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

4. PROPERTY, PLANT AND EQUIPMENT (Continued)		
	2024	2023
	R	R

4.5 Revaluation Surplus

The Revaluation Reserve arises on the revaluation of Land and Buildings. Where revalued Land or Buildings are sold, the portion of the Revaluation Reserve that relates to that asset, and is effectively realised, is transferred directly to Accumulated Surplus.

The Revaluation Surplus is reconciled as follows:

Balance at beginning of year	165,469,214	167,611,742
Depreciation offset to Income Statement	(2,142,527)	(2,142,527)
Balance at end of year	163,326,687	165,469,214

4.6 Work-in-Progress

The Entity has incurred expenditure on capital projects which were not completed at year-end. The details of the carrying amounts of expenditure included in each class of assets are listed below:

Buildings	-	127,276
Catering, Building & Office Equipment	-	3,512
Plant, Machinery and Equipment	25,484,358	24,461,766
Total Carrying Amounts of Work-in-Progress	25,484,358	24,592,554

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

4. PROPERTY, PLANT AND EQUIPMENT (Continued)		
	2024	2023
	R	R

4.7 Delayed Projects

The Entity has projects that are currently experiencing delays or were halted. For each project, the reason for the delay or halting of the project are noted. The carrying amount of those assets included in the balance of Property, Plant and Equipment are listed below:

Project Details	Delayed or Halted		
Other equipment: Batch Autoclave	Delayed	1,696,165	1,683,805
Reason: The project encountered delays in 2022 due to resource constraints in execution of the project.			
Plant: Thyristor stack	Delayed	144,234	-
Reason: Progress constrained by lack of instrumentation resources. To be prioritised for completion in FY24 using C&I resources recruited in Q4 FY23.			
Plant: Feed System Bay 1	Delayed	255,422	-
Reason: Progress constrained by lack of instrumentation resources. To be prioritised for completion in FY24 using C&I resources recruited in Q4 FY23.			
Plant: TiMag Rotary kiln and demonstration plant	Delayed	22,142,093	21,536,778
Reason: Technical delays are being experienced as old infrastructure is not supported and competent service providers for the integration is a challenge.			
Total Carrying Amounts of Delayed or Halted Projects		24,237,915	23,220,583

4.8 Expenditure incurred to Repair and Maintain Property, Plant and Equipment

The following specific costs included in the amount of Repairs and Maintenance were incurred by Entity during the reporting period:

Consumables/Materials	1,510,797	4,086,356
Equipment Service Cost	2,231,577	3,781,113
Repairs & Maintenance: Contractors	7,380,063	1,564,617
Repairs & Maintenance: Labour	7,092,152	2,558,097
Other Repairs and Maintenance	153,836	254,536
Total Expenditure incurred to Repair and Maintain	18,368,425	12,244,718

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

5. INTANGIBLE ASSETS		
	2024	2023
	R	R
At Cost less Accumulated Amortisation and Accumulated Impairment Losses	2,246,203	2,856,754
The movement in Intangible Assets is reconciled as follows:		
Computer Software:		
Carrying values at 01 April 2023	2,856,754	3,363,840
Cost	8,722,816	9,675,993
Accumulated Amortisation	(5,727,939)	(6,174,030)
Accumulated Impairment Losses	(138,123)	(138,123)
Acquisitions:	308,623	-
Purchased	308,623	-
Amortisation:	(919,174)	(233,797)
- Standard Amortisation	(1,023,646)	(1,433,350)
- Re-Assessment: Change in Estimate	104,472	1,199,553
Disposals:	-	(289,559)
At Cost	-	(982,876)
At Accumulated Amortisation	-	693,317
Transfers:	-	16,270
At Cost	-	29,699
At Accumulated Amortisation	-	(13,429)
Carrying values at 31 March 2024	2,246,203	2,856,754
Cost	9,031,439	8,722,816
Accumulated Amortisation	(6,647,113)	(5,727,939)
Accumulated Impairment Losses	(138,123)	(138,123)

The amortisation expense has been included in the line item "Depreciation and Amortisation" in the Statement of Financial Performance (see Note 18).

All of the Entity's Intangible Assets are held under freehold interests and no Intangible Assets had been pledged as security for any liabilities of the Entity.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

5. INTANGIBLE ASSETS (Continued)		
	2024	2023
	R	R
5.1 Change in Estimate - Useful Life of Intangible Assets reviewed		
The Entity reassesses the useful life of all assets at period end. For items that are still in use and have future economic value, the useful lives are extended based on the assumptions that assets will be replaced in the next two years due to a capitalisation plan. The original acquisition value for these assets were R 2,675,483 (2023: R5,152,248).		
The change in the estimated useful life of various assets of the Entity, as indicated in Note 28., has resulted in the following decreases in depreciation for the financial year:		
Computer Software:	104,472	1,199,553
Total Change in Estimate for Useful Life of Intangible Assets	104,472	1,199,553
The change in estimates will result in an increase of R104,472 in the amortisation expense for the Entity over the next three financial years.		
6. NON-CURRENT INVESTMENTS		
Unlisted		
Investment in Controlled Entities - at cost	100	100
	100	100
Total Non-current Investments	100	100
Board's valuation of Unlisted Investments		
Investment in Controlled Entities	100	100
	100	100
Unlisted Investments comprise the following:		
(i) Investments in Controlled Entities as described below.		

6.1 Investment in Controlled Entities

The Entity exercises control in the following company, which has been dormant for several years, where the value of the investment is considered to be R100 as the company does not have share capital which can be valued in an open market:

Mindev (Pty) Ltd:		
Issued Share Capital (R)	100	100
Percentage controlled by Board (%)	100.00%	100.00%
Non-Current Liabilities	39,515,043	39,515,043

The Entity's maximum liability towards the Controlled Entity is R100.

Mintek owns 100% of Mindev (Pty) Ltd and Mindev owns 100% of Philisa Sechaba. Philisa Sechaba is in the process of deregistration as at year-end.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

7. PROVISIONS														
	2024	2023												
	R	R												
Warrantees	265,173	318,609												
Total Provisions	265,173	318,609												
Warranties arise from Mintek recognising its probable liability for meeting its obligation in terms of products and services as stipulated in its contracts with its customers. The provision is an estimate of the amount due at the reporting date. The movement in provisions are reconciled as follows: Current Provisions: Warrantees: <table> <tr> <td>Balance at beginning of year</td><td>318,609</td><td>705,286</td></tr> <tr> <td>Warranty additions</td><td>265,173</td><td>318,609</td></tr> <tr> <td>Amounts reversed during the year</td><td>(318,609)</td><td>(705,286)</td></tr> <tr> <td>Balance at end of year</td><td>265,173</td><td>318,609</td></tr> </table>			Balance at beginning of year	318,609	705,286	Warranty additions	265,173	318,609	Amounts reversed during the year	(318,609)	(705,286)	Balance at end of year	265,173	318,609
Balance at beginning of year	318,609	705,286												
Warranty additions	265,173	318,609												
Amounts reversed during the year	(318,609)	(705,286)												
Balance at end of year	265,173	318,609												

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

8. PAYABLES FROM EXCHANGE TRANSACTIONS		
	2024	2023
	R	R
Trade Creditors	45,413,765	46,853,790
Income Received In Advance	55,562,819	36,424,339
Accruals	21,165,311	29,725,141
Deposits	26,854	26,798
VAT Payable	2,130,275	11,566,872
Salary Related Payables	11,962,684	10,725,094
Staff Bonus Accrual	28,176,175	11,743,610
Staff Leave Accrual	13,671,501	12,573,555
Total Payables	178,109,385	159,639,198

Trade Creditors:

Trade Creditors are in respect of amounts due to suppliers for services rendered and goods supplied. The average credit period on purchases from Trade Creditors is 46 (2023: 35) days. Creditors are paid within 30 days from receipt of invoice as required by Treasury Regulations.

No interest is charged for the first 30 days from the date of receipt of the invoice. Thereafter interest is charged in accordance with the credit policies of the various individual creditors that the Entity deals with.

Income Received in Advance:

Income Received in Advance relates to billing in advance on projects where work is yet to be completed.

Accruals:

Accruals are recognised for known amounts owing to suppliers where invoices have not yet been received.

Deposits:

Deposits are in respect of amounts held for tenants that have lease agreements with Mintek.

Salary Related Payables:

Salary Related Payables relates to amounts owing to third parties such as medical aids, provident fund and SARS for PAYE, UIF and SDL at year-end.

Staff Bonus Accrual:

Employees may elect to structure a bonus as part of their total package. This accrual relates to bonuses that have accrued at year-end. Also included in this balance is a provision for performance bonuses which has been provided for in terms of the Mintek Remuneration Policy.

Staff Leave Accrual:

The Leave Accrual relates to the value of vacation leave for staff at year-end.

VAT Payable:

Mintek is a category C and VAT payable is for the taxes payable at the end of the period.

The Entity's liquidity risk management processes are disclosed in Note 33.6 to the Annual Financial Statements.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

9. CASH RECEIVED IN ADVANCE FROM GOVERNMENT		
	2024	2023
	R	R
DMRE - MTEF Conditional Grant	18,336,763	20,158,299
DMRE - Asbestos Rehabilitation Project	80,480,223	119,261,755
Other government departments and entities	36,691,712	46,624,596
Total Cash Received in advance from Government	135,508,698	186,044,650

The grants are project related where conditions are yet to be fulfilled.

The Cash received in advance are cash backed by cash reserves. The Entity complied with the conditions attached to all grants received to the extent of revenue recognised. No grants were withheld.

10. EMPLOYEE BENEFIT LIABILITIES		
10.1 Post-retirement Health Care Benefits Liability		
Present Value of the Defined Benefit Obligation		
Non-current Liabilities	4,785,998	5,854,472
Current Liabilities	602,108	1,180,634
Defined Benefit Liability recognised in Statement of Financial Position (wholly unfunded)	5,388,106	7,035,106

Characteristics of the Defined Benefit Plan

Medical cover is provided to employees through a number of different schemes. Post-retirement medical cover in respect of qualifying employees is recognised as an expense over the expected remaining service lives of the relevant employees.

Mintek has an obligation to provide medical benefits to certain pensioners and dependents. These liabilities have been provided for in full, calculated on an actuarial basis. As the number of retirees increases, these benefit payments could represent a larger outflow of cash.

These liabilities are unfunded. The short term portion of this liability relates to an estimated value for employees who will be retiring in the next 12 months. Periodic valuation of this obligation is carried out by an independent actuary every year, latest one being 31 March 2024.

The entity does not provide any other post-retirement or long service benefits beyond this.

Risks of the Defined Benefit Plan

Longevity Risk: There is a risk that participants live longer than expected, potentially increasing the liability of the plan.

Interest Rate Risk: Changes in interest rates affect the discount rate used to calculate the plan's liabilities. A decrease in interest rates increases the present value of future benefit obligations.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

10. EMPLOYEE BENEFIT LIABILITIES (Continued)		
	2024	2023
	R	R
The entity employs several strategies to manage the risks associated with the assets and liabilities of its defined benefit health care plan. These strategies are designed to ensure that the plan's assets align with its obligations, particularly in terms of timing and amount, thereby securing the plan's financial health and sustainability.		
The most recent actuarial valuations of plan assets and the present value of the defined benefit obligation were carried out at 31 March 2024 by Mr S Ramdass, Member of the Actuarial Society of South Africa. The present value of the defined benefit obligation, and the related current service cost and past service cost, were measured using the Projected Unit Credit Method.		
The members of the Post-employment Health Care Benefit Plan are made up as follows:		
In-service Members (Employees)	17	22
Continuation Members (Retirees, widowers and orphans)	7	8
Total Members	24	30

The liability in respect of past service has been estimated as follows:

In-service Members (Employees)	2,449,000	3,485,106
Continuation Members	2,939,106	3,550,000
Total Liability	5,388,106	7,035,106

The benefits payments are scheduled based on the expected retirement ages of current employees and the provisions of the plan that determine the timing of benefits payments. The distribution of these payments is subject to changes in demographic factors such as retirements, mortality rates, and changes in employment within the entity.

The Interest Cost for the year ending 31 March 2024 is estimated to be R710,000, whereas the cost for the ensuing year is estimated to be R710,000 (31 March 2023: R900,000 and R710,000 respectively).

The principal assumptions used for the purposes of the actuarial valuations were as follows:

Discount Rate - In-service Members	13.40%	11.90%
Discount Rate - Continuation Members	11.80%	10.10%
Health Care Cost Inflation Rate - In-service Members	9.10%	8.20%
Health Care Cost Inflation Rate - Continuation Members	8.10%	7.00%
Expected Retirement Age	60	60

General:

Fixed investment held with various financial institutions is partly earmarked as financing for post- retirement medical aid liability. Mintek has not assigned a specific fund to hedge the post-retirement medical aid liability.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

10. EMPLOYEE BENEFIT LIABILITIES (Continued)			
		2024	2023
		R	R
Movements in the present value of the Defined Benefit Obligation were as follows:			
Balance at the beginning of the year		7,035,106	8,400,000
Service Cost:			
Past-service costs	Note 25	(217,713)	(188,258)
Interest Expense:	Note 21	710,000	900,000
Payments from the Defined Benefit:			
Payment of Benefits	Note 17	(438,230)	(1,324,461)
Remeasurement of Defined Benefit:			
Actuarial Gains / (Losses) from Changes in Financial Assumptions	Note 25	(1,701,057)	(752,175)
Total Recognised Benefit Liability		5,388,106	7,035,106
The amounts recognised in the Statement of Financial Position are as follows:			
Present value of fund obligations		5,388,106	7,035,106
Unfunded Accrued Liability		5,388,106	7,035,106
Total Benefit Liability		5,388,106	7,035,106
The amounts recognised in the Statement of Financial Performance are as follows:			
Interest cost		710,000	900,000
Actuarial losses / (gains)		(1,701,057)	(752,175)
Vested past service costs		(217,713)	(188,258)
Total Post-retirement Benefit included in Employee Related Costs (Note 17).		(1,208,770)	(40,433)
Assumed rates for health care cost trends significantly impact the figures recorded in surplus or deficit. The effect of a 1% movement in the assumed rate of health care cost inflation is as follows:			
Increase:			
Effect on the aggregate of the current service cost and the interest cost		(383,000)	(360,000)
Effect on the defined benefit obligation		394,000	830,000
Decrease:			
Effect on the aggregate of the current service cost and the interest cost		442,000	860,000
Effect on the defined benefit obligation		(377,000)	(360,000)
There are no additional contributions made to this benefit plan as it merely relates to a vested benefit that accrues to qualifying employees that were in employ on 31 December 1999.			

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

11. RESERVES		
	2024	2023
	R	R
Revaluation Reserve	163,326,687	165,469,214
Total Reserves	163,326,687	165,469,214
The Revaluation Reserve arises on the revaluation of Land and Buildings. Where revalued Land or Buildings are sold, the portion of the Revaluation Reserve that relates to that asset, and is effectively realised, is transferred directly to Accumulated Surplus.		
Reconciliation of the Revaluation Reserve:		
Balance at beginning of year	165,469,214	167,611,742
Depreciation transferred to surplus	(2,142,527)	(2,142,527)
Balance at end of year	163,326,687	165,469,214
Refer to Statement of Changes in Net Assets for more detail and the movement on Reserves.		

12. GOVERNMENT GRANTS AND SUBSIDIES		
	2024	2023
	R	R
Grants:	278,933,709	296,325,981
MTEF	1,821,535	13,756,417
SciVote	277,112,174	282,569,565
Total Government Grants and Subsidies	278,933,709	296,325,981

13. RENDERING OF SERVICES		
	2024	2023
Contract Research	62,930,675	51,088,479
Products and Services	232,228,528	137,956,207
Contract Revenue - Rehabilitation	147,070,228	122,480,417
Contract Revenue - Other	10,389,726	11,882,791
Total Rendering of Services	452,619,157	323,407,894

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

14. RENTAL OF FACILITIES AND EQUIPMENT		
	2024	2023
	R	R
Rental Revenue from Conference Venue	80,958	53,229
Rental Revenue from Land and Buildings	2,919,395	3,382,335
Total Rental of Facilities and Equipment	3,000,353	3,435,564

Rental revenue earned on Facilities and Equipment is in respect of Non-financial Assets rented out.

15. INTEREST EARNED		
Call Account and Fixed Term Deposits	1,155,018	888,759
Interest from Non-Exchange Transactions	1,155,018	888,759
Interest from Exchange Transactions		
External Investments:		
Bank Account	1,126,104	966,303
Call Account and Fixed Term Deposits	27,392,743	20,142,561
	28,518,847	21,108,865
Total Interest Earned	29,673,865	21,997,624

16. OTHER REVENUE		
Bad Debt Recovered	-	32,961
Library Income	2,687	1,722
Sale of Scrap Material	162,441	75,485
Sundry Income	1,165,285	4,119,511
Tender Fee Income	77,500	64,955
Total Other Revenue	1,407,913	4,294,634

The amounts disclosed above for Other Revenue are in respect of services rendered which are billed to or paid for by the users and is ancillary to the core business of Mintek.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

17. EMPLOYEE RELATED COSTS		
	2024	2023
	R	R
Employees:		
Basic Salaries	347,180,061	302,612,956
Overtime	8,136,556	4,563,993
Social Contributions (Medical Aid, Pension, UIF, etc)	1,760,328	1,741,226
Leave Accrual	2,849,316	2,574,018
Other Employee related costs	1,023,178	570,935
Total Employee Related Costs	360,949,439	312,063,127

18. DEPRECIATION AND AMORTISATION		
Amortisation: Intangible Assets	919,174	233,797
Depreciation: Property, Plant and Equipment	41,971,971	39,010,623
Total Depreciation and Amortisation	42,891,145	39,244,420

The prior year amount for Depreciation and Amortisation has been adjusted. Refer to Note 27.4 on "Correction of Error" for details of the restatement.

19. IMPAIRMENT LOSSES		
Capital Assets	3,086,923	-
Financial Assets	395,586	1,137,355
Total Impairment Losses	3,482,508	1,137,355

No impaired capital assets were identified during the 2023 financial year hence no values for 2023.

19.1 Impairment Losses on Fixed Assets

<i>Property, Plant and Equipment</i>	3,086,923	-
Impairment Losses Recognised	3,086,923	-

19.2 Impairment Losses on Financial Assets

<i>Receivables from Exchange Transactions</i>		
Impairment Losses Recognised	256,632	1,227,780
Impairment Losses Reversed	(92,541)	(90,426)
Bad debt written off	231,494	-
	395,585	1,137,354
Total Impairment Losses	3,482,508	1,137,354

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

20. BURSARY COSTS		
	2024	2023
	R	R
Post-graduates	2,490,525	1,937,344
Workplace skills transfer	1,643,678	724,826
Undergraduates	752,053	484,264
Total Bursary Costs	4,886,256	3,146,433

21. FINANCE COSTS		
Supplier interest	-	19,199
Defined Benefit Liabilities	Note 10.1 710,000	900,000
Total Finance Costs	710,000	919,199

22. PROFESSIONAL SERVICES		
Auditor's Remuneration	3,882,704	4,136,762
Professional Consultancy Services	9,033,384	16,807,254
Legal Fees	6,532,771	3,379,970
Total Professional Services	19,448,858	24,323,986

23. REHABILITATION SERVICES		
Asbestos Rehabilitation	125,630,025	95,161,856
Total Rehabilitation Services	125,630,025	95,161,856

Rehabilitation services relates to costs incurred on the Asbestos Rehabilitation projects and mainly consist of payments made to contractors for work performed in execution of these rehabilitation of derelict and ownerless asbestos mines and sealing of the holings.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

24. GENERAL EXPENSES		
	2024	2023
	R	R
Included in General Expenses are the following:		
Bank Charges	297,946	235,427
Cellphone, Telephone and Data Costs	1,214,393	1,179,380
Consumables	46,952,201	39,529,276
Contracted Services	5,826,355	34,926
Utility Costs	28,721,205	21,930,587
Equipment Service Costs	2,238,128	3,781,113
Fuel and Oil	5,996,611	5,454,203
Gardening Services	1,092,640	485,000
Health and Safety Costs	2,150,921	1,847,212
Insurance	2,967,336	2,738,216
IT Support Costs	13,566,272	14,566,848
Laboratory Analysis	4,266,738	4,087,941
Licence Fees - Software	15,189,914	15,289,817
Marketing Expenses	734,047	495,203
Membership and Subscription Fees	4,996,414	4,076,668
Postage and Courier Costs	1,253,828	733,730
Rental of Facilities and Equipment	718,822	1,219,832
Repairs and Maintenance - Labour	7,092,152	2,558,097
Repairs and Maintenance Contractors	7,380,063	1,564,617
Research support to Tertiary Institutions	10,233,600	9,348,921
Security Services	5,387,429	4,946,964
Skills Development Levies	3,110,294	2,916,260
Training and Staff development	6,641,580	5,996,866
Travel and Accommodation	9,500,251	8,803,239
Vehicle Expenses	391,543	592,830
Warrantee Provision	(53,436)	(386,677)
Other General Expenses	13,554,435	11,444,453
Total General Expenses	201,421,683	165,470,952

The amounts disclosed above for Other General Expenses are in respect of costs incurred in the general management of the Entity and not directly attributable to a specific service or class of expense.

25. GAINS AND LOSSES ON OTHER OPERATIONS		
Actuarial Gains on Defined Benefits Liabilities	1,701,057	752,174
Gains / (Losses) in Net Foreign Exchange	8,040,117	(2,895,050)
Net Other gains and Losses	9,741,174	(2,142,876)

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

26. GAINS/ LOSSES ON DISPOSAL OF CAPITAL ASSETS		
	2024	2023
	R	R
Assets Disposed at Carrying Value:		
Losses on Disposal of PPE	(1,096,327)	(724,650)
Losses on Disposal of Intangible Assets	-	(289,559)
Total Losses on Disposal of Capital Assets	(1,096,327)	(1,014,210)

27. CORRECTION OF ERROR

Corrections were made to total income, general expenses and on disclosures of the previous financial year. Details of the corrections are described below:

27.1 Reclassification of Revenue

The prior year figures of Revenue have been restated to re-allocate discount received to general expenses.

The effect of the Correction of Error is as follows:

	Prior Year AFS 2022/23 Revenue	Current Year AFS 2023/24 Revenue	Restated Amount
Discount Received	42,951	-	(42,951)

Prior year amounts of items in Revenue included in the Statement of Financial Performance have been restated as indicated below:

	Discount Received
Balance previously reported	42,951
Re-allocation to General expenses as set-off against purchases	(42,951)
Restated Balance now reported	-

Discount Received:

The **prior year amounts** for Discount Received of R42,951 have been re-allocated to General expenses as it relates to settlement discounts received for purchases made.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

27. CORRECTION OF ERROR (Continued)

27.2 Reclassification of Expenditure

The prior year figures of Expenditure Classes have been restated to correctly classify the nature of Expenditure of Mintek.

The effect of the Correction of Error is as follows:

	Prior Year AFS 2022/23 Revenue	Current Year AFS 2022/23 Revenue	Restated Amount
General Expenses	165,470,952	165,428,001	(42,951)
Balance previously reported			165,470,952
Reclassification Discount Received as set-off against purchases			(42,951)
Restated Balance now reported			165,428,001

General Expenses:

The prior year amounts for General Expenses have been restated to incorporate discounts received from suppliers for prompt payment. This settlement discount has been offset against purchases.

27.3 Restatement of Cash Flow Statement

The prior year figures of Classes in the Cash Flow Statement have been restated to correctly classify the Cash Flows from Operating Activities, Cash Flows from Investing Activities, Cash Flows from Financing Activities and Net Increase / (Decrease) In Cash and Cash Equivalents of the Entity. It was also restated to account for revenue previously not recognised and the effect thereof on the Cash Received in Advance from Government class.

The effect of the Correction of Error is as follows:

	Prior Year 2023 Balance	Restated 2023 Balance	Amount Restated by
Cash Flows from Operating Activities			
Receipts			
Other Receipts	5,759,259	5,716,309	(42,951)
Payments			
Payments for General Expenses	(168,752,684)	(168,709,733)	42,951
	-	-	-



11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

27. CORRECTION OF ERROR (Continued)

27.3 Restatement of Cash Flow Statement (Continued)

Prior year amounts of **Items** in the Cash Flow Statement have been restated as indicated below:

Cash Flows from Operating Activities - Receipts

	Other Receipts
Balance previously reported	5,759,259
Re-allocation of Discount received	(42,951)
Restated Balance now reported	5,716,309

Other Receipts:

The **prior year amounts** for Other Receipts have been reclassified to correctly disclose the discount received to Payments for General Expenses. The effect of these reclassifications on net Cash Flow is zero.

Cash Flows from Operating Activities - Payments:

	Payments for General Expenses
Balance previously reported	(168,752,684)
Reclassification Discount Received to General Expenses	42,951
Restated Balance now reported	(168,709,733)

Payments for General Expenses:

The **prior year amounts** for Other Payments have been reclassified to correctly disclose the discount received for settlements from Other Receipts. The effect of these reclassifications on net Cash Flow is zero.

27.4 Restatement of Notes

Depreciation

The useful life adjustment pertaining to Intangible Assets have been re-allocated from Depreciation: Property, Plant and Equipment to Amortisation: Intangible Assets.

Segment Reporting

Revenue components were reclassified in Note 40.Segment Reporting from Other Revenue to Revenue from Exchange to enhance disclosure and transparency.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

28. CHANGE IN ACCOUNTING ESTIMATES

28.1 Depreciation/Amortisation Expenditure:

The residual values, estimated useful lives and depreciation methods were reviewed at 31 March 2024. For items that are still in use and have future economic value, useful life was extended. The useful lives were extended based on the assumptions that assets will be replaced in the next two years due to the capitalisation plan. The original acquisition value for these assets were R38,465,101 and the resultant depreciation write-back was R4,728,657 of which R4,624,185 relates to property, plant and equipment and R104,472 relates to intangible assets. The adjustments are as follows:

	2024	2023
	R	R
Decrease in Depreciation and Amortisation due to adjustments to Useful Lives of PPE and Intangible Assets	(4,728,657)	(8,653,064)
Decrease in Depreciation of PPE and Intangible Assets	(4,728,657)	(8,653,064)
Depreciation as previously stated - before change in useful lives	47,619,804	47,897,481
Adjustment due to Change in Accounting Estimate	(4,728,657)	(8,653,064)
Depreciation as per Note 18.	42,891,147	39,244,417

The effect per asset class is reflected in notes 4 and 5 in the financial statements. The amount of the effect in future periods is not disclosed as it is impracticable to estimate.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

29. CASH GENERATED BY OPERATIONS		
	2024	2023
	R	R
Surplus for the Year	14,859,932	4,880,235
Adjustment for Non-cash Transactions included in Surplus:		
Employee Related Costs	2,631,603	2,385,759
Depreciation and Amortisation	42,891,147	39,244,417
Impairment Losses on Capital Assets	3,086,923	-
Impairment Losses on Financial Assets	395,585	1,137,354
Finance Costs	710,000	900,000
General Expenses	(53,436)	(386,677)
Losses on Other Operations	(1,324,331)	(1,967,094)
Contributions included in Payables from Exchange Transactions	(2,849,316)	(2,574,018)
Adjustment for Cash Transactions not included in Surplus:		
Exchange Receivables: Bad Debts Written-off	(1,394,422)	(677,203)
Disposal of Property, Plant and Equipment	1,096,327	724,650
Disposal of Intangible Assets	-	289,559
Expenditure incurred from Employee Benefit Liabilities	(438,230)	(1,324,461)
Adjustment for Transactions included in Surplus / (Deficit) directly recognised in Cash Flow:		
Unrealised Foreign Exchange Gains / (Losses)	(376,726)	1,214,920
Operating surplus before working capital changes	59,235,056	43,847,440
Increase in Inventories	(4,049,848)	(4,710,302)
Increase in Receivables from Exchange Transactions	(57,402,731)	(18,788,963)
Increase/(decrease) in Payables from Exchange Transactions	18,470,187	54,369,562
Decrease in Cash Received in Advance from Government	(50,535,951)	(15,731,700)
Cash generated by Operations	(34,283,284)	58,986,037

30. NON-CASH INVESTING AND FINANCING TRANSACTIONS

The Entity did not enter into any Non-cash Investing and Financing Transactions during the 2023/2024 Financial year.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

31. IRREGULAR, FRUITLESS AND WASTEFUL EXPENDITURE		
	2024	2023
	R	R
Fruitless and Wasteful expenditure current year	-	753,891
Irregular Expenditure - Identified in prior year, paid in current year	3,200,857	16,609,221
Irregular Expenditure - Identified in current year	-	588,398
Closing Balance	3,200,857	17,951,510

Disciplinary Steps / Criminal Proceedings

Fruitless and Wasteful Expenditure 2024

No Fruitless and Wasteful Expenditure were identified in the current year.

Fruitless and Wasteful Expenditure 2023

The fruitless and wasteful expenditure relates to interest paid on an arbitration award as disclosed in the 2021/2022 Financial statements. The determination test concluded that this does not meet the definition of Fruitless and Wasteful expenditure which is supported by the National Treasury view which states "...that the transaction below does not meet the definition of fruitless and wasteful expenditure. The view is premised on the fact that interest in question was part or built into the arbitration agreement."

Irregular Expenditure 2024

No Irregular Expenditure has been identified in the current financial year.

Irregular Expenditure 2023

The irregular expenditure disclosed in 2023 relates to incidents identified in previous financial years and the process in terms of the Irregular Expenditure Framework was concluded. Only one new in the 2023 year instance of irregular expenditure was identified.

Criminal or disciplinary steps taken as a result of losses, irregular and fruitless and wasteful expenditure	2024	2023
INCIDENT DESCRIPTION		
Completed and officials disciplined	3	5
Disciplinary process in progress	0	8
Investigation completed. Process for removal from Irregular Expenditure register in progress	13	5

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

32. COMMITMENTS FOR EXPENDITURE		
	2024	2023
	R	R
32.1 Capital Commitments		
Commitments in respect of Capital Expenditure:		
Approved and Contracted for:-	25,740,286	49,506,992
Computer Equipment	-	23,653,800
Plant, Machinery and Equipment	25,726,577	25,824,615
Other Assets	13,709	28,577
Total Capital Commitments	25,740,286	49,506,992
This expenditure will be financed from current reserves.		
Own Resources	25,740,286	49,506,992
	25,740,286	49,506,992
32.2 Commitments in respect of Operational Expenditure		
Approved and Contracted for:-		
Operational Expenditure	142,674,588	72,311,156
Total Operational Commitments	142,674,588	72,311,156
This expenditure will be financed from current reserves.		
Own Resources	142,674,588	72,311,156
	142,674,588	72,311,156
32.3 Operating Lease Commitments		
At the reporting date the Entity has outstanding commitments under Operating Leases which fall due as follows:		
32.3.1 Arrangements as Lessee:		
Operating Leases relate to Property, Plant and Equipment with lease terms not longer than 5 years, with an option to extend for a further period. All operating lease contracts contain market review clauses in the event that the Entity exercises its option to renew.		
32.3.2 Amounts payable under Operating Leases:		
At the Reporting Date the Entity had outstanding commitments under Non-cancellable Operating Leases for Property, Plant and Equipment, which fall due as follows:		
Other Equipment:	1,162,957	550,563
Up to 1 year	734,499	550,563
2 to 5 years	428,458	-
More than 5 years	-	-
Total Operating Lease Arrangements	1,162,957	550,563

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS			
		2024	2023
		R	R
33.1 Classification			
FINANCIAL ASSETS:			
In accordance with GRAP 104.13 the Financial Assets of the Entity are classified as follows:			
Financial Assets at Cost:			
Non-current Investments	Unlisted Investments	100	100
Financial Assets at Amortised Cost:			
Receivables from Exchange Transactions	Trade Debtors	65,817,719	22,010,495
Receivables from Exchange Transactions	Deposits	3,398,513	275,093
Receivables from Exchange Transactions	Government Debtors	8,362,620	4,720,260
Receivables from Exchange Transactions	Project Work-in-Progress	34,286,416	24,628,919
Receivables from Exchange Transactions	Staff Debtors	2,958,447	2,784,471
Cash and Cash Equivalents	Fixed Deposits	303,493,065	463,800,035
Cash and Cash Equivalents	Bank Balances	95,363,547	43,905,131
Cash and Cash Equivalents	Cash Floats and Advances	61,212	30,465
Total Financial Assets		513,741,640	562,154,969
FINANCIAL LIABILITIES:			
In accordance with GRAP 104.13 the Financial Liabilities of the Entity are classified as follows:			
Financial Liabilities at Amortised Cost:			
Long-term Liabilities	Other Loans	39,515,043	39,515,043
Payables from Exchange Transactions	Trade Creditors	45,413,765	46,853,790
Payables from Exchange Transactions	Accruals	21,165,311	29,725,141
Payables from Exchange Transactions	Deposits	26,854	26,798
Payables from Exchange Transactions	VAT Payable	2,130,275	11,566,872
Total Financial Liabilities		108,251,249	127,687,644

No Financial Instruments of the Entity have been reclassified during the year.



11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS		
	2024	2023
	R	R

33.2 Capital Risk Management

The Entity manages its capital to ensure that the Entity will be able to continue as a going concern while delivering sustainable goods and services to customers through the optimisation of the debt and equity balance. Mintek’s overall strategy remains unchanged in 2023.

The capital structure of the Entity consists of debt comprising Accumulated Surplus as disclosed in the Statement of Changes in Net Assets.

Gearing Ratio

The gearing ratio at the year-end was as follows:

Debt	39,515,043	39,515,043
Net Debt	39,515,043	39,515,043
Equity	671,649,094	656,789,164
Net debt to equity ratio	5.88%	6.02%

Debt is defined as Long-term Liabilities, together with its Short-term Portion.

Equity includes all Funds and Reserves of the Entity, disclosed as Net Assets in the Statement of Financial Performance and Net Debt as described above.

33.3 Financial Risk Management Objectives

Mintek’s overall risk management program focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Entity’s financial performance. Risk management is carried out by management under policies approved by the Board. The Board of Directors sanctions a risk management policy which considers financial risk management in the organisation.

The Entity has limited foreign exchange risk.

Further quantitative disclosures are included throughout these Annual Financial Statements.

33.4 Significant Risks

It is the policy of the Entity to disclose information that enables the user of its Annual Financial Statements to evaluate the nature and extent of risks arising from Financial Instruments to which the Entity is exposed to on the reporting date.

The Entity has exposure to the following risks from its operations in Financial Instruments:

- Market Risk.
- Liquidity Risk; and
- Credit Risk.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS		
	2024	2023
	R	R

Risks and exposures are disclosed as follows:

Market Risk

Market Risk is the risk that changes in market prices, such as foreign exchange rates, interest rates and equity prices will affect the Entity’s income or the value of its holdings in Financial Instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimising the return.

Liquidity Risk

Liquidity Risk is the risk that the Entity will encounter difficulty in meeting the obligations associated with its Financial Liabilities that are settled by delivering cash or another financial asset.

Credit Risk

Credit Risk is the risk of financial loss to the Entity if a customer or counterparty to a Financial Instrument fails to meet its contractual obligations and arises principally from the Entity’s receivables from customers and investment securities.

33.5 Market Risk Management

The Entity’s activities expose it primarily to the financial risks of changes in interest rates (see Note 33..7 below). No formal policy exists to hedge volatilities in the interest rate market.

There has been no change to the Entity’s exposure to market risks or the manner in which it manages and measures the risk.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS		
	2024	2023
	R	R

33.5.1 Foreign Currency Risk Management

Foreign currency risk is the risk that the fair value or future cash flow of a financial instrument will fluctuate because of changes in foreign exchange rates. The Entity undertakes certain transactions denominated in foreign currencies hence exposure to exchange rate fluctuations arises. Exchange rate exposures are managed by operating a US Dollar based bank account within approved policy parameters and the group does not use derivatives to hedge its exposure.

	31 March 2024		31 March 2023	
	Amount in Foreign Currency	Amount in Rands	Amount in Foreign Currency	Amount in Rands
Trade Debtors				
US Dollar	948,974	17,974,335	166,089	2,910,450
EUR	30,383	621,677	19,417	372,900
AUD	117,836	1,456,553	88,090	1,069,779
CAD	13,000	181,945	13,000	161,244
Cash and Cash Equivalents				
Bank Balances				
ABSA - USD Forex account	1,393,309	26,365,140	1,942,404	38,009,195
Petty Cash				
AUD	240	2,967	240	2,855
GBP	160	3,828	160	3,512
Trade Creditors				
US Dollar	(42,405)	(803,183)	3,709	67,339
EUR	12,065	246,863	46,420	947,650
CHF	(2,600)	(54,679)	-	-
AUD	(11,043)	(136,501)	2,350	29,145
GBP	-	-	2,345	44,805

Foreign risk exposure have been included in the 2024 financial statements for additional information.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS		
	2024	2023
	R	R

Interest Rate Sensitivity Analysis

The sensitivity analysis has been determined based on the exposure to interest rates at the Statement of Financial Position date. The analysis is prepared by averaging the amount of the investment at the beginning of the financial year and the amount of the investment at the end of the financial year. A 100 basis point increase or decrease was used, which represents management's assessment of the reasonably possible change in interest rates. The short-term financial instruments at year-end with variable interest rates are set out in Note 32.8 below:

Cash and Cash Equivalents:

If interest rates had been 25 basis points higher / lower and all other variables were held constant, the Entity's:

Surplus for the year ended 31 March 2024 would have increased / decreased by R1,133,202 (31 March 2023: R1,134,817). This is mainly attributable to the Entity's exposure to interest rates on its variable rate investments.

33.6 Liquidity Risk Management

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities and the availability of funding through an adequate amount of committed credit facilities and the ability to close out market. Mintek's risk to liquidity is a result of the funds necessary to cover future commitments. The Entity manages liquidity risk through an ongoing review of future commitments and available funds. Cash flow forecasts are prepared to ensure adequate utilisation and optimisation of funds.

33.7 Credit Risk Management

Credit Risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to the Entity. The Entity has a sound debt management policy and obtains sufficient collateral, where appropriate, as a means of mitigating the risk of financial loss from defaults. The Entity uses its own trading records to assess its major customers. The Entity's exposure of its counterparties are monitored regularly.

Potential concentrations of credit rate risk consist mainly of trade debtors, variable rate deposit investments, bank and cash balances.

Investments/Bank, Cash and Cash Equivalents

The Entity limits its counterparty exposures from its money market investment operations (financial assets that are neither past due nor impaired) by only dealing with major banks with high quality credit standing and limits exposure to any one counterparty. No investments with a tenure exceeding twelve months are made.

Trade and Other Receivables

Trade Receivables comprise a widespread customer base. Management evaluates credit risk relating to customers on an ongoing basis. If customers are independently rated, these ratings are used. Otherwise, if there is no independent rating, risk control assesses the credit quality of the customer, taking into account its financial position, past experience and other factors. Individual risk limits are set based on internal or external ratings in accordance with limits set by the Board. The utilisation of credit limits is regularly monitored.

There were no material changes in the exposure to credit risk and its objectives, policies and processes for managing and measuring the risk during the year under review. The Entity's maximum exposure to credit risk is represented by the carrying value of each financial asset in the Statement of Financial Position, without taking into account the value of any collateral obtained. The Entity has no significant concentration of credit risk, with exposure spread over a large number of students, and is not concentrated in any particular sector or geographical area.

Mintek establishes an allowance for impairment that represents its estimate of anticipated losses in respect of trade receivables.

The Entity does not have any significant credit risk exposure to any single counterparty or any group of counterparties having similar characteristics. The Entity defines counterparties as having similar characteristics if they are related entities. The credit risk on liquid funds is limited because the counterparties are banks with high credit-ratings.

The table below shows the balance of the 5 major counterparties at the balance sheet date. Management is of the opinion that, although these parties are the 5 counterparties with highest outstanding balances, no significant credit risk exposure exists based on the payment history of the parties.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS		
	2024	2023
	R	R

33.7 Credit Risk Management (Continued)

Counterparty and Location		31 March 2024		31 March 2023	
		Credit Limit	Carrying Amount	Credit Limit	Carrying Amount
		R	R	R	R
SINTEF MATERIALS & CHEMISTRY	Norway	-	8,382,687	-	(608,071)
BlueScope Steel Limited	Australia	-	6,666,632	-	(120,347)
SINDESAR KHURD MINE	India	-	5,681,631	-	-
RAMPURA AGUCHA MINES	India	1,000,000	4,736,757	1,000,000	1,212,658
DWARSRIVIER CHROME MINE (PTY) LTD	South Africa	4,000,000	4,187,832	4,000,000	4,459,641
ANGLO CORPORATE SERVICES	South Africa	5,000,000	(265,024)	5,000,000	3,570,739
PROCESS IQ	Australia	4,000,000	1,485,339	4,000,000	3,176,749
PALABORA COPPER (PTY) LTD	South Africa	1,500,000	405,890	1,500,000	1,268,585

Mintek assesses credit worthiness of debtors based on several factors which includes payment history, credit risk, financial status, etc. Credit risk is managed through advance billing arrangements, where required, where customers are billed in advance which might exceed the assigned credit limit but with limited credit risk.

Balances for comparative years included for information purposes.

33. FINANCIAL INSTRUMENTS		
	2024	2023
	R	R

The maximum credit and interest risk exposure in respect of the relevant financial instruments is as follows:

Long-term Investments	100	100
Receivables from Exchange Transactions	127,891,211	70,488,480
Bank, Cash and Cash Equivalents	398,917,825	507,735,631
Maximum Credit Risk Exposure	526,809,136	578,224,211

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS		
	2024	2023
	R	R

The major concentrations of credit risk that arise from Mintek's receivables in relation to customer classification are as follows:

Exchange Debtors:	%	%
- Trade Debtors	51.73%	31.43%
- Government Debtors	6.54%	6.70%
- Project Work-in-Progress	26.81%	34.94%
- Staff Debtors	2.34%	5.69%
- Other Debtors	12.58%	21.24%

Total Credit Risk	100.00%	100.00%
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Bank and Cash Balances

ABSA Bank Ltd	96,042,532	91,087,900
First National Bank	81,564,940	97,820,649
Nedbank	79,297,517	108,233,901
Investec	87,607,399	104,631,265
Stanlib	53,871,166	105,931,451
Other	534,270	30,465

Total Bank and Cash Balances	398,917,825	507,735,631
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Credit quality of Financial Assets:

The credit quality of financial assets that are neither past due nor impaired can be assessed by reference to external credit ratings (if available) or to historical information about counterparty default rates. Mintek receivables from exchange transactions are of a high quality where it is anticipated that the payments will be received on time.

Receivables from Exchange Transactions

Counterparties without external credit rating:-

High	85,072,584	59,002,496
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Total Receivables from Exchange Transactions	85,072,584	59,002,496
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Credit Quality Groupings:

High - High certainty of timely payment. Liquidity factors are strong and the risk of non-payment is small.

Medium - Reasonable certainty of timely payment. Liquidity factors are sound, although ongoing funding needs may enlarge financing requirement. The risk of non-payment is small.

Low - Satisfactory liquidity factors and other factors which qualify the Entity as investment grade. However, the risk factors of non-payment are larger.

None of the financial assets that are fully performing, have been renegotiated in the last year.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS

33.9 Liquidity Risk Management

Ultimate responsibility for liquidity risk management rests with the Board, which has built an appropriate liquidity risk management framework for the management of the Entity's short, medium and long-term funding and liquidity management requirements. The Entity manages liquidity risk by maintaining adequate reserves, banking facilities, by continuously monitoring forecast and actual cash flows and matching the maturity profiles of financial assets and liabilities.

Liquidity Risk Tables

The Entity ensures that it has sufficient cash on demand or access to facilities to meet expected operational expenses through the use of cash flow forecasts.

The following tables detail the Entity's remaining contractual maturity for its non-derivative financial liabilities. The tables have been drawn up based on the undiscounted cash flows of financial liabilities based on the earliest date on which the Entity can be required to pay.

Description	Total	6 Months or less	6 - 12 Months	1 - 2 Years	2 - 5 Years	More than 6 Years
	R	R	R	R	R	R
31 March 2024						
Non-interest Bearing	68,736,206	68,736,206	-	-	-	-
Fixed Interest Rate Instruments	39,515,043	39,515,043	-	-	-	-
	108,251,249	108,251,249	-	-	-	-
31 March 2023						
Non-interest Bearing	88,172,601	88,172,601	-	-	-	-
Fixed Interest Rate Instruments	39,515,043	39,515,043	-	-	-	-
	127,687,644	127,687,644	-	-	-	-

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

33. FINANCIAL INSTRUMENTS

The following table details the Entity's expected maturity for its non-derivative financial assets. The tables below have been drawn up based on the undiscounted contractual maturities of the financial assets including interest that will be earned on those assets except where the Entity anticipates that the cash flow will occur in a different period.

Description	Average effective Interest Rate	Total	6 Months or less	6 - 12 Months	1 - 2 Years	2 - 5 Years	More than 6 Years
	%	R	R	R	R	R	R
31 March 2024							
Non-interest Bearing	0.00%	114,884,927	114,884,927	-	-	-	-
Variable Interest Rate Instruments	6.29%	95,363,647	95,363,647	-	-	-	-
Fixed Interest Rate Instruments	0.00%	303,493,065	303,493,065	-	-	-	-
		513,741,640	513,741,640	-	-	-	-
31 March 2023							
Non-interest Bearing	0.00%	54,449,703	54,449,703	-	-	-	-
Variable Interest Rate Instruments	4.35%	43,905,231	43,905,231	-	-	-	-
Fixed Interest Rate Instruments	0.00%	463,800,035	463,800,035	-	-	-	-
		562,154,970	562,154,970	-	-	-	-

The Entity does not have any financing facilities. The Entity expects to meet its obligations from operating cash flows and proceeds of maturing financial assets and to maintain current debt to equity ratio.

33.10 Other Price Risks

The Entity is not exposed to equity price risks arising from equity investments as the Entity does not trade these investments.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

34. RELATED PARTY TRANSACTIONS

Related party transactions exist within the Group. These transactions were all concluded at arm's length and therefore disclosed here only for information purposes. Details of material transactions with related parties not disclosed elsewhere in the financial statements are as follows:

34.1 Interest of Related Parties

Entities with whom the Entity has a relationship:

Controlling Entity:	Department of Mineral Resources and Energy (DMRE)
Subsidiary:	Mindev (Pty) Ltd
Subsidiary of Mindev (Pty) Ltd:	PhilisaSechaba Healthcare (Pty) Ltd
National Government	All National Government Entities

Board Members / Management with whom the Entity has a relationship:

The following Board Members and/or management of the Entity was active during the period under review:

Name of Related Person	Designation	Board Term
Ramontja T Dr	Chairperson	30 August 2022 - 29 August 2025
Zikalala-Mvelase NP	Deputy Chairperson	1 June 2020 - 31 May 2023, Extension from 1 June 2023 to 31 May 2026
Ngcwabe NF	Non-Executive Board Member	1 June 2020 - 31 May 2023, Extension from 1 June 2023 to 31 May 2026
Ngobeni MW Dr	Non-Executive Board Member	1 June 2020 - 31 May 2023
Heydenrich R	Non-Executive Board Member	1 June 2020 - 31 May 2023, Extension from 1 June 2023 to 31 May 2026
Maruping P	Non-Executive Board Member	1 June 2020 - 31 May 2023, Extension from 1 June 2023 to 31 May 2026
Ngubevana L Prof	Non-Executive Board Member	30 August 2022 - 29 August 2025
Nengovhela L	Non-Executive Board Member	1 June 2023 - 31 May 2026
Simayi S Dr	Non-Executive Board Member	1 June 2023 - 31 May 2026
Thomani M	Non-Executive Board Member	1 June 2023 - 31 May 2026
Madzivhandila T Dr	Non-Executive Board Member	1 June 2023 - 31 May 2026
Phiri MM	Non-Executive Board Member	1 June 2020 - 31 May 2023
Makibinyane LL	Non-Executive Board Member	1 June 2020 - 31 May 2023
Moatshe RA	Non-Executive Board Member (Alternate)	Initial Term 1 June 2016- 31 August 2019, Extension from 1 June 2020 to 31 May 2023
Motuku Dr M	Chief Executive Officer	
Simelane SA	Chief Financial Officer	
Papo Dr MJ	Group Executive: Mining, Material and Automation	
Govender Prof I	Group Executive: Mineral Processing and Characterisation	
Gericke M	Group Executive: Extractive Metallurgy	

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

34.2 TRANSACTIONS WITH RELATED PARTIES

34.2 Transactions with Related Parties

32.2.1 Income Received from Related Parties:

During the year funds were received and revenue recognised from the following Related Parties that are related to the Entity as indicated below. The balances at year-end contained in deferred income and debtors is disclosed.

	Funds Received	Revenue	Deferred Income	Outstanding Balance
	R	R	R	R
For the Year ended 31 March 2024				
Department of Mineral Resources and Energy - State Grant	318,679,000	277,112,174	-	-
Department of Mineral Resources and Energy - MTEF	-	1,821,535	18,336,763	-
Department of Mineral Resources and Energy - Asbestos	124,532,000	147,070,228	80,480,223	-
Department of Mineral Resources and Energy - Other	549,500	1,179,130	-	1,356,000
Department of Science and Innovation	49,278,270	56,313,700	26,472,208	-
National Research Fund	2,487,512	482,111	2,906,324	-
Mining Qualification Authority	3,463,607	6,817,221	7,313,180	4,256,757
CSIR	39,352	915,072	-	1,053,748
Water Research Council	600,000	659,701	-	458,656
Technology Innovation Agency	3,309,254	2,452,501	-	1,237,458
Total	502,938,495	494,823,373	135,508,698	8,362,620
For the Year ended 31 March 2023				
Department of Mineral Resources and Energy - State Grant	282,569,565	282,569,565	-	-
Department of Mineral Resources and Energy - MTEF	-	13,756,417	20,158,299	-
Department of Mineral Resources and Energy - Asbestos	106,871,304	122,480,417	119,261,755	-
Department of Mineral Resources and Energy - Other	-	477,826	-	549,500
Department of Science and Innovation	54,829,499	49,503,531	39,317,731	2,033,441
National Research Fund	2,309,700	1,455,081	896,827	-
Mining Qualification Authority	5,085,856	2,717,933	6,410,038	-
CSIR	40,508	37,485	-	43,108
Water Research Council	456,000	396,522	-	-
Technology Innovation Agency	1,049,010	2,575,737	-	2,094,212
Total	453,211,442	475,970,513	186,044,650	4,720,260

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

34. RELATED PARTY TRANSACTIONS (Continued)

34.2.2 Services rendered to Related Parties:

Apart from the revenue as disclosed above no further services were rendered to related parties. All transactions were concluded on an arm's length basis.

34.2.3 Services rendered by Related Parties:

The below is a summary of transactions with related parties during the year and balances due at year-end. Amounts due to these entities are subject to the same terms and conditions as normal trade payables

Expenditure	Outstanding Balance
R	R

For the Year ended 31 March 2024

Major Public Entities	25,224	-
National Public Entities	497,690	-
National Government Business Enterprises	295,619	-

For the Year ended 31 March 2023

Major Public Entities	3,469	-
National Public Entities	330,932	33,356
National Government Business Enterprises	533,578	-

34.3 Loans granted to/(from) Related Parties

The Entity does not grant loans to its Board Members. Advances, together with the conditions thereof, granted to Management, Staff and Public are disclosed in Note 2. to the Annual Financial Statements.

As disclosed in Note 6., an amount of R39,515,043 (2023: R39,515,043) is due to Mindev (Pty) Ltd. This loan relates to income received on the sale of technologies in Mindev. The funds were deposited into Mintek's bank account as Mindev does not have a bank account. These monies are held on Mindev's behalf. Mintek provides administrative support to all subsidiaries in their dormant status which includes preparation of subsidiary financial statements, audit, filing of statutory returns, company secretariat functions, etc. This support is at no cost in lieu of the interest free loan. There are no fixed terms of repayment and it is interest free.

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

34. RELATED PARTY TRANSACTIONS

34.4 Board Members and Executive Management Remuneration

Board Member Payments:

2024	Director's Fees	Expenses	Total
	R	R	R
Ramontja T Dr	122,775	-	122,775
Ngobeni MW Dr	21,463	-	21,463
Ngubevana Prof L	126,440	-	126,440
Heydenrich R	85,636	-	85,636
Maruping P	7,338	-	7,338
Zikalala-Mvelase NP	189,901	-	189,901
Nengovhela L	106,865	-	106,865
Madzivhandila T Dr	94,458	-	94,458
Zulu B*	48,811	-	48,811
Dzivhani MJ*	49,755	-	49,755
Motaung H	17,302	-	17,302
Phiri MM	25,626	-	25,626
Makibinyane LL	27,365	-	27,365
Thomani AM**	157,397	-	157,397
Mokupo P*	6,574	-	6,574
	1,087,707	-	1,087,707

2023	Director's Fees	Expenses	Total
	R	R	R
Ramontja T Dr	42,494	-	42,494
Ngobeni MW Dr	71,154	-	71,154
Ngubevana L Prof	38,442	-	38,442
Heydenrich R	78,600	-	78,600
Maruping P	78,600	-	78,600
Motaung H	89,546	-	89,546
Zikalala-Mvelase NP	164,631	-	164,631
Phiri MM	128,665	-	128,665
Makibinyane LL	120,182	-	120,182
Thomani AM*	49,838	-	49,838
Mokupo P*	67,265	-	67,265
	929,417	-	929,417

Ms NF Ngcwabe, Mr RA Moatshe, Ms P Maruping and Dr S Simayi were not paid any directors' emoluments as they are serving as government employees.

*Relates to independent committee member

**Ms Thomani was appointed to the Board on 1 June 2023 after serving as an independent committee member in the previous term.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

34. RELATED PARTY TRANSACTIONS

34.4 Board Members and Executive Management Remuneration

Executive Management Remuneration

2024		Annual Remuneration	Performance Bonus and other Expenses	Total
		R	R	R
Dr M Motuku	Chief Executive Officer	4,368,359	180,076	4,548,435
SA Simelane	Chief Financial Officer	2,918,442	131,139	3,049,581
Dr MJ Papo	Group Executive: Mining, Material and Automation	2,407,884	100,930	2,508,813
Prof I Govender	Group Executive: Mineral Processing and Characterisation	2,361,074	106,094	2,467,168
M Gericke	Group Executive: Extractive Metallurgy	2,374,652	106,704	2,481,356
		14,430,410	624,944	15,055,353

2023		Annual Remuneration	Performance Bonus and other Expenses	Total
		R	R	R
Dr M Motuku	Chief Executive Officer	4,152,011	335,110	4,487,121
SA Simelane	Chief Financial Officer	2,773,902	223,882	2,997,785
Dr MJ Papo	Group Executive: Mining, Material and Automation	2,288,631	184,716	2,473,346
Prof I Govender	Group Executive: Mineral Processing and Characterisation	2,244,139	150,359	2,394,498
M Gericke	Group Executive: Extractive Metallurgy	2,257,045	182,167	2,439,212
		13,715,728	1,076,233	14,791,961

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

34. RELATED PARTY TRANSACTIONS

34.5 Controlled Entities

The Group comprises of Mintek and its wholly owned subsidiary Mindev (Proprietary) Limited which is engaged in the commercialisation of Mintek patents and technology through the identification of suitable partners. The Group, in the ordinary course of business, enters into various sale and purchase transactions with related parties. None of the directors, officers or major shareholders of the Mintek Group or, to the knowledge of Mintek, their families, had any interest, direct or indirect, in any transactions which has affected or will materially affect Mintek or its investment or subsidiary.

Philisa Sechaba Healthcare (Pty) Ltd is a company under Mindev (Pty) Ltd which is currently in the process of deregistration. Mindev holds 100% shares.

Details of the investment in Mindev (Pty) Ltd is disclosed in Note 6.

35. CONTINGENT LIABILITIES

	2024	2023
	R	R
35.1 Guarantees:	5,294,497	5,041,973
(i) Rand Merchant Bank:	5,294,497	5,041,973
Cessions in favour of Rand Merchant Bank to meet requirements for performance guarantee facilities that have been registered.		
35.2 Court Proceedings:	344,000	344,000
(i) Dispute on Employment Contracts:	344,000	344,000

The Entity has disputed employment contracts with former employees, the aggregate of which is not expected to exceed the amount indicated. This amount includes estimated legal costs and disbursements and does not factor the success rate of the individual cases. The outcome of the cases is still uncertain.

36. CONTINGENT ASSETS

Breach of Contract:

There are two cases relating to Breach of Contract which is under legal review and based on the opinion of the attorneys, Mintek enjoys reasonable prospects of success. The matters are disclosed as contingent assets as the economic benefit and likelihood thereof is not certain and no significant movement was made in these cases in the last financial year.

37. TAXATION

	2024	2023
	R	R
Reconciliation between applicable tax rate and average effective tax rate:		
Applicable tax rate	27.00%	27.00%
Average Effective Tax Rate	0.00%	0.00%

No provision for Income Tax was made for Mintek during the current financial year as the company is exempted in terms of section 10(1) (cA)(i) of the Income Tax Act, No 58 of 1962; and the Mintek subsidiaries are dormant companies. Tax provisions and liabilities are with respect to Mindev and PhilisaSechaba and are payable through those entities.

11.12 Notes to the Annual Financial Statements for the Year Ended 31 March 2024

38. EVENTS AFTER THE REPORTING DATE

No events having financial implications requiring disclosure occurred subsequent to 31 March 2024.

39. COMPARATIVE FIGURES

The comparative figures were restated as a result of the effect of Prior Period Errors (Note 27).

40. SEGMENT REPORTING

The accounting policies of the segments are the same as those described in the summary of significant accounting policies.

For management purposes Mintek is broadly organised into business units based on the nature of operations and the services they provide. Mintek has three primary reportable segments.

No individually material operating segments have been aggregated to form the above reportable operating segments. Mintek does not monitor segments geographically.

Mintek Management monitors the operating results of its business units separately for the purpose of making decisions about resource allocation and performance assessment. Segment performance is evaluated based on non-financial metrics and the segment's operating surplus or deficit, measured consistently with the accounting policies applied in the Annual Financial Statements. However, the financing (including finance costs and finance income) and other revenue are managed on a group basis and are not allocated to operating segments.

Inter-business unit services are not valued and are deemed to have been supplied for no consideration, and are therefore not eliminated. However, the quality of services provided internally is monitored as part of the non-financial service performance information.

The segmental information for Financial Performance of Mintek is disclosed in the table below. It is not practical to segmentise Financial Position and Cash Flow operations.

Description	2024				
	Extractive Metallurgy	Mineral Processing & Characterisation	Mining, Materials & Automation	Corporate Services	MINTEK
	R	R	R	R	R
REVENUE	123,117,740	140,924,931	326,038,530	175,553,797	765,634,998
Revenue from non-exchange	25,701,442	50,946,552	63,298,184	138,987,531	278,933,709
Revenue from Exchange	97,416,298	89,960,263	262,353,754	2,888,842	452,619,157
Other Revenue	-	18,116	386,592	33,677,423	34,082,131
EXPENDITURE	151,243,700	130,140,119	312,115,251	157,275,996	750,775,066
Compensation of Employees	69,030,214	58,979,492	89,989,072	142,950,661	360,949,439
Other Operating Expenditure	74,700,998	60,943,944	215,858,444	(4,568,903)	346,934,483
Depreciation	7,512,488	10,216,683	6,267,735	18,894,239	42,891,145
Net Surplus/(deficit)	(28,125,960)	10,784,812	13,923,279	18,277,801	14,859,932

Notes to the Annual Financial Statements for the Year Ended 31 March 2024

40. SEGMENT REPORTING

Description	2023				
	Extractive Metallurgy	Mineral Processing & Characterisation	Mining, Materials & Automation	Corporate Services	MINTEK
	R	R	R	R	R
REVENUE	106,781,532	64,884,540	251,859,176	225,936,449	649,461,697
Revenue from non-exchange	32,115,308	34,903,942	39,770,994	189,535,737	296,325,981
Revenue from Exchange	74,535,962	29,980,598	212,094,348	6,796,986	323,407,894
Other Revenue	130,262	-	(6,166)	29,603,726	29,727,822
EXPENDITURE	94,039,873	79,150,743	217,432,641	253,958,206	644,581,463
Compensation of Employees	67,005,903	52,299,609	82,029,914	110,727,701	312,063,127
Other Operating Expenditure	20,397,214	16,361,078	130,799,437	125,716,187	293,273,916
Depreciation	6,636,756	10,490,056	4,603,290	17,514,318	39,244,420
Net Surplus/(deficit)	12,741,659	(14,266,203)	34,426,535	(28,021,757)	4,880,234

The prior year disclosure for Revenue from Exchange and Other Revenue have been restated to accommodate re-allocation of revenue reserves.

41. GOING CONCERN ASSESSMENT

Management considered the following matters relating to the Going Concern:

- (i) In terms of the Shareholder's Compact, Mintek is estimating a surplus of R605,000 for the following financial year (2023/24: R2,195,000) and a positive cashflow forecast. This budget was approved by the Executive Authority in February 2024. The approved budget supports the Generally Recognised Accounting Practices (GRAP) accounting framework for the compilation of the Annual Financial Statements. The anticipation of continued revenue growth amidst a recovering global economy indicates that Mintek is capitalizing on opportunities and effectively managing its operations. However, it's prudent to keep an eye on the accompanying increased costs to ensure that they are manageable and do not outweigh the revenue gains. The budget as compiled for the 2024/2025 financial year does support the ongoing execution of the Mintek mandate.

- (ii) Cost management demonstrates a proactive approach to financial management, ensuring that resources are utilized efficiently and effectively.

The use of monitoring processes, including monthly and quarterly reporting, is essential for maintaining financial oversight and identifying any deviations from the budget. By regularly assessing the actual financial position, Mintek can quickly address any emerging issues or risks, allowing for timely corrective actions to be taken.

The inclusion of associated risks and remedial actions in the reporting further strengthens Mintek's financial management framework. This enables the organization to not only identify potential challenges but also proactively mitigate them before they escalate into larger problems.

Overall, Mintek's commitment to strict cost management and robust monitoring processes underscores its dedication to financial prudence and sustainability. These practices will likely contribute to the organization's continued success and ability to achieve its objectives.

Taking the aforementioned into account, management has prepared the Annual Financial Statements on the Going Concern Basis.



Mindev (Pty) Ltd Annual Financial Statements

INDEX

The reports and statements set out below comprise the financial statements presented to the shareholders:

	Page
Statement of Financial Position	182
Statement of Changes in Equity	182
Accounting Policies	183
Notes to the Financial Statements	184

A report of the directors has not been prepared as the company is a wholly owned subsidiary of Mintek which is incorporated in South Africa.

The financial statements set out on pages 3 to 6, which have been prepared on the going concern basis, were approved by the board of directors on 26 July 2024 and were signed on its behalf by:

SA Simelane

Mindev (Pty) Ltd (Registration number 2001/018449/07)

General Information

Country of incorporation and domicile	South Africa		
Directors	MA Mngomezulu		M Mphomela
	SA Simelane		GL Rapoo
	RL Paul		
Registered office	200 Malibongwe Drive Randburg 2194		
Business address	200 Malibongwe Drive Randburg 2194	Postal address	Private Bag X3015 Randburg 2125
Holding company	Mintek (100% owned) incorporated in South Africa		



11.13. 1 **Mindev (Pty) Ltd** (Registration number 2001/018449/07)
Statement of Financial Position as at 31 March 2024

Mindev (Pty) Ltd Statement of Financial Position as at 31 March 2023			
Figures in Rand	Note(s)	2024	2023
Assets			
Non-Current Assets			
Non-Current Investments	2	100	100
Loans to shareholders	3	39,514,843	39,514,843
Total Assets		39,514,843	39,514,943
Equity and Liabilities			
Equity			
Share capital	4	100	100
Retained income		39,514,843	39,514,843
Total Equity		39,514,843	39,514,843

11.13. 2 **Mindev (Pty) Ltd** (Registration number 2001/018449/07)
Statement of Changes in Equity

Mindev (Pty) Ltd Statement of Statement of Changes in Equity			
Figures in Rand	Share capital	Retained income	Total equity
Balance at 01 April 2022	100	39,514,843	39,514,943
Balance at 01 April 2023	100	39,514,843	39,514,943
Balance at 31 March 2024	100	39,514,843	39,514,943

11.13. 3 **Mindev (Pty) Ltd** (Registration number 2001/018449/07)
Accounting Policies

Mindev (Pty) Ltd Accounting policies

1. Significant accounting policies

The principal accounting policies applied in the preparation of these financial statements are set out below.

1.1 Financial instruments

These financial assets are classified as loans and receivables.

1.2 Investment in Controlled Entities

Investments in controlled entities are consolidated in Mindev annual financial statements.

In Mindev’s separate annual financial statements, investments in controlled entities are carried at cost. The entity applies the same accounting for each category of investment.

Investments in controlled entities that are accounted for in accordance with the accounting policy on Financial Instruments in the consolidated annual financial statements, are accounted for in the same way in Mindev’s separate annual financial statements.

1.3 Taxation

Current tax assets and liabilities

Current tax for current and prior periods is, to the extent unpaid, recognised as a liability. If the amount already paid in respect of current and prior periods exceeds the amount due for those periods, the excess is recognised as an asset.

Current tax liabilities (assets) for the current and prior periods are measured at the amount expected to be paid to (recovered from) the tax authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Tax expenses

Current and deferred taxes are recognised as income or an expense and included in profit or loss for the period, except to the extent that the tax arises from:

- a transaction or event which is recognised, in the same or a different period, to other comprehensive income, or
- a business combination.

Current tax and deferred taxes are charged or credited to other comprehensive income if the tax relates to items that are credited or charged, in the same or a different period, to other comprehensive income.

Current tax and deferred taxes are charged or credited directly to equity if the tax relates to items that are credited or charged, in the same or a different period, directly in equity.

1.4 Share capital and equity

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities.

Ordinary shares are recognised at par value and classified as ‘share capital’ in equity. Any amounts received from the issue of shares in excess of par value is classified as ‘share premium’ in equity. Dividends are recognised as a liability in the company in which they are declared.

11.13. 4

Mindev (Pty) Ltd (Registration number 2001/018449/07)

Notes to the Financial Statements for the Year Ended 31 March 2024

Mindev (Pty) Ltd Notes to the Financial Statements		
Figures in Rand		
	2024	2023
2. Non-Current Investments		
Unlisted		
Investment in Controlled Entities		
PhilisaSechaba Healthcare (Pty) Ltd	100	100
The Entity exercises control over the above company which was incorporated during the financial year.		
Issued Share Capital (R)	100	100
Percentage controlled by Board (%)	100.00%	100.00%
The directors have initiated deregistration process with CIPC of the subsidiary and the deregistration has been finalized by CIPC.		
3. Loan to shareholder		
Mintek		
The loan is interest free and has no repayment terms.	39,514,843	39,514,843
Split between non-current and current portions		
Non-current assets	39,514,843	39,514,843
Current assets	-	-
	39,514,843	39,514,843
4. Share capital		
Authorised		
1,000 Ordinary shares of R1 each	1,000	1,000
Describe any changes in authorised share capital e.g. Conversion to net present value shares.		
Issued		
100 Ordinary shares of R1 each	100	100

11.13. 4

Mindev (Pty) Ltd (Registration number 2001/018449/07)

Notes to the Financial Statements for the Year Ended 31 March 2024

Mindev (Pty) Ltd Notes to the Financial Statements			
Figures in Rand			
		2024	2023
5. Related parties			
The Group comprises of Mintek and its wholly owned subsidiary Mindev (Proprietary) Limited and Philisa Sechaba Healthcare (Proprietary) Limited its wholly owned subsidiary of Mindev. Mindev is engaged in the commercialisation of Mintek patents and technology through the identification of suitable partners. Philisa Sechaba Healthcare has been incorporated to facilitate the marketing, sale and distribution of the medical related products that Mintek will be producing. Subsequently the process to deregister the company commenced at CIPC, which has been finalised by CIPC. The Group, in the ordinary course of business, enters into various sale and purchase transactions with related parties.			
None of the directors, officers or the shareholder of the Mintek Group or, to the knowledge of Mintek, their families, had any interest, direct or indirect, in any transactions which has affected or will materially affect Mintek or its investment or subsidiary.			
Relationships			
Holding company	Mintek		
Subsidiary	PhilisaSechaba Healthcare (Pty) Ltd		
Related party balances			
Loan accounts - Owing by related parties		6	
Mintek		39,514,843	39,514,843
6. Directors' emoluments			
No emoluments were paid to the directors or any individuals holding a prescribed office during the year.			

12

PFMA Compliance and Reporting

Procurement by other means	188
Contract variations or expansions	202
Irregular Expenditure	204
Fruitless and Wasteful Expenditure	207

2024



Water filtration plant is used to filter out solids in mineral processing



300th Cynoprobe sold



Superprobe SEM used for mineralogical analysis



DC Arc Furnace



Bacterial cultures are maintained in the laboratory for ore leaching

Left: A ball mill is used to grind and blend the ore before the flotation process in mineral processing.



12 | Annual Report Disclosure

In terms of NATIONAL TREASURY INSTRUCTION NO. 4 OF 2022/2023: PFMA COMPLIANCE AND REPORTING FRAMEWORK, the following items are disclosed:

12.1 | Procurement by other means

in a specific case it is impractical to invite competitive bids, the company may procure the required goods or services by other means provided that the reasons for deviating from inviting competitive bids must be recorded and approved. Procurement by

other means includes instances of limited bidding, procurement that occurs in emergency situations and urgent cases and written price quotations within the threshold.

PROJECT DESCRIPTION	CATEGORY	NAME OF SUPPLIER	TYPE OF PROCUREMENT BY OTHER MEANS	CONTRACT NUMBER	VALUE OF CONTRACT R	CURRENCY
Agilent ICP-MS power supply	Consumables	Chemetrix export Pty Ltd	Preferred Supplier	4500190988	249,369	ZAR
Purchase of Engineered Catalyst Support for the produce advanced electrocatalysts for fuel cell and electrolyzer applications	Specialised services	Pajarito Powder	Sole Supplier	4500191780	1,700	USD
1 X Model & 1 X Control Feeder	Consumables	Eriez Magnetics	Preferred Supplier	4500190459	49,950	ZAR
100 kva induction furnace-lining	Consumables	Keegor SA	Preferred Supplier	4500190887	34,752	ZAR
Repairs to overhead crane Bay 1	Repairs- Equipment	Pro Crane (Pty)Ltd	Emergency	4500190900	5,550	ZAR
530SN/R IP66 pump	Equipment breakdown	Watson Marlow Bredel SA Pty Ltd	Preferred Supplier	4500190785	317,794	ZAR
630 SN/RE Peristaltic pump as per SQ005850-1	Equipment breakdown	Watson Marlow Bredel SA Pty Ltd	Preferred Supplier	4500190711	96,357	ZAR
Additional Chest X Rays	Specialised equipment	Medical Solutions CC	Preferred Supplier	4500192051	890	ZAR
Analysis of samples	Specialised services	UIS Analytical Services Pty Ltd	Preferred Supplier	4500191068	103,590	ZAR
Analysis of samples	Specialised services	SGS South Africa Pty Ltd	Preferred Supplier	4500191066	127,408	ZAR
Analysis of samples using XPS and FIBSEN	Specialised services	National Metrology Institute of SA	Preferred Supplier	4500192058	46,800	ZAR
JKSimMet software for the JK Drop Weight Tester	Specialised services	JK Tech	Sole Supplier	4500191856	8,600	ZAR
Bay 5 overhead crane repairs	Repairs- Equipment	Pro Crane (Pty)Ltd	Emergency	4500191081	9,424	ZAR
Supply of Massflow Controllers	Specialised equipment	Alicat Scientific	Sole Supplier	4500192026	9,975	USD
Annual Spinifex Easy Reporter maintenance licence	Maintenance	Adapt IT	Preferred Supplier	4500191491	30,482	ZAR
Armoured Cables Australian Standard	Specialised equipment	Process IQ	Preferred Supplier	4500191682	6,726	AUD
Splicing of a conveyor belt	Equipment breakdown	Belting supply services	Emergency	4500191085	13,044	ZAR
Assessment of ICP-OES	Specialised services	Chemetrix export Pty Ltd	Preferred Supplier	4500192502	27,864	ZAR
Complete Assembly fo Cynoprobes	Specialised services	Aurora Panels Assembly Enterprise	Preferred Supplier	4500192152	368,744	ZAR
Repairs to Vlakfontein generator	Repairs- Equipment	Diesel Electric services Pty Ltd	Emergency	4500190898	14,766	ZAR
IDEAS Software Maintenance Renewal 2023	Maintenance	Andritz Inc	Sole Supplier	4500190788	14,850	USD
Complete Assembly of Cynoprobe	Specialised services	Aurora Panel Assembling Enterprise	Preferred Supplier	4500191612	737,489	ZAR
Repairs to interface wires	Repairs- Equipment	Master fire industries Pty Ltd	Emergency	4500191007	18,675	ZAR



PROJECT DESCRIPTION	CATEGORY	NAME OF SUPPLIER	TYPE OF PROCUREMENT BY OTHER MEANS	CONTRACT NUMBER	VALUE OF CONTRACT R	CURRENCY
Components for the Ion Selective Electrode	Specialised equipment	MetroHM SA Pty Ltd	Preferred Supplier	4500190976	76,152	ZAR
Consumables for Auto titrators	Consumables	MetroHM SA Pty Ltd	Preferred Supplier	4500191143	66,288	ZAR
Emergency repair of the Millipore system	Repairs- Equipment	Merck Life Science (Pty) Ltd	Emergency	4500191727	27,492	ZAR
BSER-LEC022 Breakdown	Equipment breakdown	Leco Africa Pty Ltd	Emergency	4500191061	28,374	ZAR
BSER-LECO22 BREAKDOWN CS744/CS844	Equipment breakdown	Bashumi Instruments	Emergency	4500191104	29,011	ZAR
Kepware OPC - Siemens Suite License	Software	ETX Data services	Sole Supplier	4500191368	29,325	ZAR
BSER-LEC022 Repairs	Repairs- Equipment	Bashumi Instruments	Emergency	4500191062	30,126	ZAR
Consumables for the Struers Roto-Pol-11 grinding unit	Consumables	Advanced Laboratory solutions	Preferred Supplier	4500191396	37,783	ZAR
Consumables for water analysis	Consumables	Promolab Pty Ltd	Preferred Supplier	4500191499	157,760	ZAR
Crates for Cynoprobe and C2 Meter	Spares equipment	Hexagon Packaging	Preferred Supplier	4500191134	68,250	ZAR
Crates for Cynoprobes & C2 meter	Spares equipment	Hexagon Packaging	Preferred Supplier	4500191471	205,190	ZAR
ISO 17025 extension of scope and technical signatories' assessment	Specialised services	South African National Accreditation	Sole Supplier	4500192018	33,742	ZAR
Emergency supply of ION selective electrode to repair the electrode cable on the Metrohm ISE instrument	Repairs- Equipment	Metrohm S.A (Pty) Ltd	Emergency	4500191829	33,749	ZAR
Design-Expert License Renewal	Software	Nico Laubscher	Preferred Supplier	4500191535	53,287	ZAR
Emergency repairs of the ICP-MS torch-matching unit	Repairs- Equipment	Morvac CC	Emergency	4500191502	34,000	ZAR
Dura Complete Pumps for Cynoprobes	Spares equipment	Verder Pumps Sa (Pty) Ltd	Preferred Supplier	4500191804	6,213,486	ZAR
Electrical Enclosures for Cynobrobe	Spares equipment	Rittal Pty Ltd	Preferred Supplier	4500191435	423,321	ZAR
Electrodes for Cynoprobe and C2 Meter	Spares equipment	Hanna Instruments Pty Ltd	Preferred Supplier	4500191223	174,500	ZAR
Electrodes for Cynoprobe and C2 Meter	Spares equipment	Hanna Instruments Pty Ltd	Preferred Supplier	4500190750	174,500	ZAR
Supply of Autolab GC tip	Specialised services	MetroHM SA Pty Ltd	Sole Supplier	4500191220	37,970	ZAR
Emerson DeltaV Guardian licence	Software	Automation Control Solutions	Preferred Supplier	4500191709	916,097	ZAR
eWON for Cynoprobe	Spares equipment	Shorrock Automation (Pty) Ltd	Preferred Supplier	4500191877	279,446	ZAR
Filter Sock	Consumables	Sefar Filtter Pure Pty Ltd	Preferred Supplier	4500190622	105,000	ZAR
Repairs & Maintenance - Labour	Maintenance	Atlas Copco industrial SA	Sole Supplier	4500190977	44,293	ZAR
Trefimet Lance Rods	Specialised services	Neven Mathews	Sole Supplier	4500190828	45,112	ZAR
Manufacturing of Polypropylene columns	Specialised services	Polimatrix SA CC	Sole Supplier	4500192028	45,563	ZAR
Filter Sock Short for filtering sample slurry	Specialised services	Sefar Filtter Pure Pty Ltd	Preferred Supplier	4500191428	408,000	ZAR
Fischer glass cabin	Specialised equipment	Fischer safes and saecurity	Preferred Supplier	4500190743	344,400	ZAR



PROJECT DESCRIPTION	CATEGORY	NAME OF SUPPLIER	TYPE OF PROCUREMENT BY OTHER MEANS	CONTRACT NUMBER	VALUE OF CONTRACT R	CURRENCY
Flexy 205 for Cynoprobe	Specialised equipment	Shorrock Automation (PTY) LTD	Preferred Supplier	4500192396	167,668	ZAR
Supply of Trefimet Lance Rods	Specialised services	Neven Matthews (Pty) Ltd	Sole Supplier	4500191722	48,385	ZAR
FLUX UG2 NICKEL SULPHIDE	Consumables	Protea Mining Chemicals	Preferred Supplier	4500192525	64,000	ZAR
Trefimet Lance Rods	Specialised services	Neven Mathews	Sole Supplier	4500191074	49,913	ZAR
Graphite Electrodes	Consumables	Innomet	Preferred Supplier	4500190944	118,800	ZAR
Graphite Electrodes	Consumables	37328 - Matech	Preferred Supplier	4500190852	212,000	ZAR
HIV Clinical Trials	Consumables	37211 - Ubuntu Clinical Research	Preferred Supplier	4500191989	310,079	ZAR
HIV SEROCONVERSION PANEL DONOR	Consumables	Lasec SA Pty Ltd	Preferred Supplier	4500190723	94,918	ZAR
IceCube sealing sheets and H23C6 gas diffusion layer material for the fabrication of membrane electrode assemblies	Consumables	Quintech	Preferred Supplier	4500191663	5,972	EUR
Intercont Tersus Electronics	Consumables	Schenck Process Africa	Preferred Supplier	4500190686	36,668	ZAR
ISO Standard Certification	Specialised services	SGS South Africa Pty Ltd	Preferred Supplier	4500191154	101,061	ZAR
Repair of DeltaV and Vim-net software	Repairs- Equipment	Automation Control Solutions	Sole Supplier	4500191943	60,213	ZAR
ISOLATOR LOOP POWERED 2CH PHOENIX	specilaised equipment	Phoenix Contact Pty Ltd	Preferred Supplier	4500190892	75,891	ZAR
Replacement of burnt out compressor	Equipment breakdown	Airventfil Pty Ltd	Emergency	4500190705	62,082	ZAR
Repairs to the Batch Autoclave Reactor unit	Repairs- Equipment	Labotec (Pty) Ltd	Sole Supplier	4500191721	65,977	ZAR
JK Drop Weight and SMC tests	Specialised services	Geolabs Global (Pty)(Ltd)	Preferred Supplier	4500191823	106,834	ZAR
Repairs to DP3000 Mineralogy UPS	Repairs- Equipment	AH Power Systems	Emergency	4500190837	67,290	ZAR
Emergency Repair of SPS4 Autosampler	Repairs- Equipment	Chemetrix export Pty Ltd	Emergency	4500191550	67,548	ZAR
Leak Detectors for Cynoprobe	Spares equipment	Electrol Supply Corporation	Preferred Supplier	4500192401	7,126	USD
Licenses for RSLinx Classic Software	Software	Rockwell authomation Pty Ltd	Preferred Supplier	4500191141	38,151	ZAR
LIMS license renewal	Software	Labware Africa Pty Ltd	Preferred Supplier	4500191494	380,526	ZAR
Oxygen probe	Specialised services	Mocrosep	Sole Supplier	4500190674	70,981	ZAR
Linear bearings for the FEG MLA	Spares equipment	SPS Eletron Optics Services Pty Ltd	Preferred Supplier	4500190842	81,928	ZAR
Mathworks Matlab Software	Software	Opti-nun Solutions	Preferred Supplier	4500191087	118,488	ZAR
purchase and installation of nitrogen regulator for MPD Laboratory	Specialised services	FLSmith Industrial Solutions Africa (Pty) Ltd	Sole Supplier	4500192013	77,757	ZAR
Mechanical sieve shaker with a mechanical hammer	Specialised equipment	Effective Laboratory supplies cc	Preferred Supplier	4500190949	111,068	ZAR
Microbial characterisation of bioleaching microorgnisims	Specialised equipment	University of Cape Town	Preferred Supplier	4500191740	132,551	ZAR
MinION Sequencing Device	Specialised equipment	Whitehead Scientific (Pty) Ltd	Preferred Supplier	4500192325	118,430	ZAR
Native Barcoding Kit & Kit cell	Specialised equipment	Whitehead Scientific (Pty) Ltd	Preferred Supplier	4500192228	111,338	ZAR



PROJECT DESCRIPTION	CATEGORY	NAME OF SUPPLIER	TYPE OF PROCUREMENT BY OTHER MEANS	CONTRACT NUMBER	VALUE OF CONTRACT R	CURRENCY
PACKAGING CRATES	Specialised equipment	Hexagon Packaging	Preferred Supplier	4500190691	90,790	ZAR
Panelview for Cynoprobe	Spares equipment	Rockwell authomation Pty Ltd	Preferred Supplier	4500192477	379,067	ZAR
Parker Fittings	Spares equipment	ParkerStore Aeroport (PTY) LTD	Preferred Supplier	4500192405	19,682	ZAR
PC Boards assembly for Cynoprobe	Specialised services	Specialised Manufacturing Technology	Preferred Supplier	4500191715	148,470	ZAR
Peli 1500	Spares equipment	RS Components Ltd	Preferred Supplier	4500190885	48,193	ZAR
PEMFC electrolyte membranes for use in the R2R production line.	Consumables	W L Gore And Associates GMBH	Preferred Supplier	4500191355	3,300	USD
Technical spare parts for Thermo ICP-OES and ICP-MS	Specialised services	Anatech Instruments Pty Ltd	Sole Supplier	4500191202	99,494	ZAR
Polyethylene tubing For Cynoprobe	Spares equipment	Electrical Industries (Pty) Ltd	Preferred Supplier	4500191878	94,905	ZAR
Potentiostat boards for the Cynoprobe and C2 meter boards	Spares equipment	SRE Development CC	Preferred Supplier	4500191667	274,680	ZAR
Power supply	Consumables	Current Automation Pty Ltd	Preferred Supplier	4500191041	96,570	ZAR
Repairs to the Pycnometer	Repairs- Equipment	Poretech CC	Sole Supplier	4500191954	103,717	ZAR
Power Supply units for Cynoprobe and C2	SOFTWARE	LABWARE AFRICA (PTY) LTD	Proprietary Software/ License	4500189345	380,526	ZAR
Meter	Spares equipment	Current Automation (Pty) Ltd	Preferred Supplier	4500191876	44,078	ZAR
Preventative Maintenance of titrators	Maintenance	Metro HM SA	Preferred Supplier	4500190692	32,853	ZAR
Professional Consultancy Services- Chris Hockaday Hours	Professional Services	Improve IQ	Preferred Supplier	4500190708	13,800	AUD
Puls Miniline Power Supply for Cynoprobe and C2 Meter	Spares equipment	Current automation (PTY) LTD	Preferred Supplier	4500192398	43,032	ZAR
Pumps & Pumpheads	Spares equipment	Watson Marlow Bredel SA Pty Ltd	Preferred Supplier	4500192234	83,988	ZAR
Purchasing of fan coil units for HVAC system	Specialised equipment	Ahi Carrier South Africa Pty Ltd	Preferred Supplier	4500191110	278,623	ZAR
Renewal of Zoom Licenses	Software	Tertiary Education & Research	Preferred Supplier	4500192063	53,086	ZAR
LIMS Analytics Software	Specialised services	One Connect Solutions	Sole Supplier	4500190816	122,599	ZAR
Repairs of CEM discovery microwave instrument	Repairs- Equipment	Mad Technology Pty Ltd	Sole Supplier	4500190489	125,404	ZAR
Repair of AA	Repairs- Equipment	Perkinelmer South Africa Pty Ltd	Preferred Supplier	4500190947	60,114	ZAR
Emergency repair to the Gilent ICP-OES 5110	Repairs- Equipment	Chemetrix export Pty Ltd	Emergency	4500191549	131,078	ZAR
Repair of Agilent Chiller and Ginger brown Chiller	Repairs- Equipment	Ginger Brown (Pty) Ltd	Preferred Supplier	4500191672	36,845	ZAR
Repair of Assy shutter	Repairs- Equipment	Chemetrix export Pty Ltd	Preferred Supplier	4500191345	21,834	ZAR
Repairs and maintenance on forklift 15	Equipment breakdown	Criterion Equipment	Preferred Supplier	4500190899	157,216	ZAR
Repairs of the GA 160 Compressor – Strip and quote	Repairs- Equipment	Atlas Copco industrial SA	Preferred Supplier	4500191476	24,800	ZAR
Block 11000 - Installation od display panel	Equipment breakdown	Schindler Lift SA Pty Ltd	Emergency	4500190718	160,891	ZAR
Repairs of the Millipore system	Repairs- Equipment	Merck Life Science (Pty) Ltd	Preferred Supplier	4500191536	40,533	ZAR



PROJECT DESCRIPTION	CATEGORY	NAME OF SUPPLIER	TYPE OF PROCUREMENT BY OTHER MEANS	CONTRACT NUMBER	VALUE OF CONTRACT R	CURRENCY
Repairs to Block 7000 lift slam post and door	Equipment breakdown	Schindler Lift SA Pty Ltd	Preferred Supplier	4500192483	41,200	ZAR
X-Ray Diffractometer D8 Advance s/n D8-02/09-489 software	Specialised services	Bruker South Africa	Sole Supplier	4500191783	176,699	ZAR
Repairs to Forklift 2 and 6	Equipment breakdown	Criterion Equipment	Preferred Supplier	4500191443	11,839	ZAR
Repairs to forklift no 3(7T)	Equipment breakdown	Criterion Equipment	Preferred Supplier	4500191542	101,677	ZAR
Repairs to the Gas suppression system	Repairs- Equipment	Master fire industries Pty Ltd	Preferred Supplier	4500190849	46,136	ZAR
Repairs to the milling machine (strip and quote)	Repairs- Equipment	G and E Industries	Preferred Supplier	4500191282	58,343	ZAR
Replacement of elevator steel wire ropes Lift for Block 11000 lifts	Equipment breakdown	Schindler Lift SA Pty Ltd	Preferred Supplier	4500191861	177,221	ZAR
Replacement of PDD Bay 1 control room air-conditioner	Equipment breakdown	EAC Eco Air contrators	Preferred Supplier	4500192314	21,550	ZAR
TREFIMET LANCE RODS	Specialised services	Neven Mathews	Sole Supplier	4500190728	235,560	ZAR
Emergency Repairs of the natural gas line tunnel in Block 8000	Repairs- Equipment	Purechem (Pty) Ltd	Emergency	4500191867	245,468	ZAR
Request for fixing of POX reactor	Spares equipment	Labotec (Pty) Ltd	Preferred Supplier	4500191058	209,272	ZAR
diesel	Consumables	Engen Petroleum Ltd	Emergency	4500190748	260,770	ZAR
Rod Stirrer for Cynoprobe	Spares equipment	Metro HM SA	Preferred Supplier	4500192397	943,950	ZAR
Rod Stirrer for Sample Ch.	Specialised services	Metro HM SA	Preferred Supplier	4500190890	345,560	ZAR
SAP Basis Support for June 2023	Software	Nambiti Technologies (Pty) Ltd	Preferred Supplier	4500191625	16,150	ZAR
Self-Contained Leak Detection Sensor for Cynoprobe	Spares equipment	Electrol Supply Corporation	Preferred Supplier	4500191895	7,126	USD
Sensor and Isolator for Cynoprobe	Spares equipment	Endress And Hauser (Pty) LTD	Preferred Supplier	4500192399	124,120	ZAR
Service compressors	Maintenance	Atlas Copco industrial SA	Preferred Supplier	4500191243	57,854	ZAR
Service the Ion Chromatography (IC) 930 instrument	Maintenance	Metro HM SA	Preferred Supplier	4500190919	96,162	ZAR
Servicing and maintenance	Maintenance	Metro HM SA	Preferred Supplier	4500190819	106,387	ZAR
Supply & installation of SEM control PC	Specialised services	Carl Zeiss PTY Ltd	Sole Supplier	4500191135	364,980	ZAR
Servicing of the Segmented Flow Injection Analyser	Maintenance	AE Solutions (Pty) Ltd	Preferred Supplier	4500191662	109,396	ZAR
Emergency repairs to Thermo ICP-MS iCAP-Q instrument	Repairs- Equipment	Anatech Instruments Pty Ltd	Emergency	4500191161	405,682	ZAR
Settling tests on bioleach slurry samples	Specialised services	Veitti Slurrytec Pty Ltd	Preferred Supplier	4500191017	33,504	ZAR
Single 2D electrical resistance tomography (ERT) survey along 3 terraces	Professional Services	Intergrated Geoscience solutions	Preferred Supplier	4500192147	43,959	ZAR
Citrix Build Place Services	Specialised services	Application software IFS	Sole Supplier	4500190632	452,249	ZAR
Breakdown repair of the AMD clean room chiller	Repairs- Equipment	Nzwalo Investment T/A Lumacon	Emergency	4500191766	464,727	ZAR
SMC Tests	Specialised services	Geo Labs Global Pty Ltd	Preferred Supplier	4500191107	48,718	ZAR



PROJECT DESCRIPTION	CATEGORY	NAME OF SUPPLIER	TYPE OF PROCUREMENT BY OTHER MEANS	CONTRACT NUMBER	VALUE OF CONTRACT R	CURRENCY
Solenoid Valves for Cynoprobe	Spares equipment	Burkert South Africa	Preferred Supplier	4500191910	288,000	ZAR
Solenoid Valves for Cynoprobe	Spares equipment	Burkert South Africa	Preferred Supplier	4500192400	304,500	ZAR
Spares for Cynoprobe and C2 Meter	Spares equipment	EA Instruments Ltd	Preferred Supplier	4500191238	4,750	EUR
Spares for Cynoprobe and C2 Meter	Spares equipment	VAN LONDON Co.	Preferred Supplier	4500191140	6,221	ZAR
Spares for Cynoprobe and C2 Meter	Spares equipment	Specialised Manufacturing Technology	Preferred Supplier	4500191206	61,942	ZAR
Spares for Cynoprobe and C2 Meter	Spares equipment	Aurora Pnel assembling	Preferred Supplier	4500191030	205,034	ZAR
Repair The Claisse-Ox Advanced Fusion Machine	Repairs- Equipment	Industrial Analytical Pty Ltd	Emergency	4500190825	68, 690.00	ZAR
Emergency repairs to the Traka system	Equipment breakdown	Traka AfriCA Pty Ltd	Emergency	4500191415	52,049,33	ZAR
Breakdown repairs to fire detection system Block 12000	Repairs- Equipment	Master fire industries Pty Ltd	Emergency	4500192076	6,995	ZAR
Deltrav Support For Campaign	Specialised services	Automation Control Solutions	Sole Supplier	4500191078	79,629	ZAR
Agilent ICP-MS parts	Specialised services	Chemetrix export Pty Ltd	Sole Supplier	4500192066	88,817	ZAR
Repair of xCELLigence real-time cell monitoring system	Repairs- Equipment	Anatech Instruments	Sole Supplier	4500192127	356,070	ZAR
Metal lancing and refractory installation	Spares equipment	Dickinson Furnace Services	Emergency	4500192130	129,231	ZAR
6 Tons of Dry Rammable	Spares equipment	Intocast	Emergency	4500192131	128,244	ZAR
Spares for Cynoprobe and C2 Meter	Spares equipment	Rockwell authomation Pty Ltd	Preferred Supplier	4500191160	227,440	ZAR
Spares for Cynoprobe and C2 Meter	Spares equipment	Rockwell authomation Pty Ltd	Preferred Supplier	4500191055	523,238	ZAR
Procurement of detector for ICP-MS (iCAP Q)	Specialised services	Anatech Instrument Pty Ltd	Sole Supplier	4500192133	92,510	ZAR
Spares for Cynoprobe and C2 Meter	Spares equipment	Meglan Trading cc	Preferred Supplier	4500191178	531,000	ZAR
Repair and calibrate the scandium dispensers	Repairs- Equipment	Metro HM SA	Sole Supplier	4500192047	37,100	ZAR
Repair the Thermo Dionex Ion Chromatography	Repairs- Equipment	Anatech Instrument Pty Ltd	Emergency	4500192165	119,317	ZAR
Breakdown - Deionised Plant	Equipment breakdown	Agechem Water treatment	Emergency	4500192187	9,200	ZAR
Breakdown - replacement of Air conditioner in the DC drive room	Equipment breakdown	EAC Eco Air contrators	Emergency	4500192193	29,918	ZAR
Spares for upgrading melting chamber for Gas Atomiser	Spares equipment	Hot Platinum	Preferred Supplier	4500191537	83,130	ZAR
Breakdown - FL 01 Transmission leaking and oil service	Equipment breakdown	Criterion Equipment	Emergency	4500192205	56,201,37	ZAR
Emergency Bay 1 Call out	Equipment breakdown	Jeenel Technology Services	Emergency	4500192208	9,500	ZAR
Spares for upgrading melting chamber for Gas Atomiser	Spares equipment	Hot Platinum	Preferred Supplier	4500191451	51,490	ZAR
Supplier database Subscription License	Software	Tradebics	Preferred Supplier	4500191567	70,781	ZAR
Laboratory labwal HPGR	Specialised services	FLSMIDTH Industrial Solutions Africa (Pty) Ltd	Sole Supplier	4500192269	99,662	ZAR
Spinifex license renewal	Specialised services	Adapt IT	Sole Supplier	4500192298	32,158	ZAR



PROJECT DESCRIPTION	CATEGORY	NAME OF SUPPLIER	TYPE OF PROCUREMENT BY OTHER MEANS	CONTRACT NUMBER	VALUE OF CONTRACT R	CURRENCY
Cherry picker service and repair	Repairs- Equipment	Goscor Access Rental	Emergency	4500192286	54,120	ZAR
Supply of Cynoprobe weather shelters	Spares equipment	Fischer safes and saecurity	Preferred Supplier	4500191179	33,900	ZAR
Supply of Fuel Cell Catalyst	Consumables	Heraeus Precious Metals	Preferred Supplier	4500191801	12,186	EUR
Replacing of fire detection monitoring panel	Equipment breakdown	Master fire industries Pty Ltd	Emergency	4500192327	59,718	ZAR
Supply of fuel cell catalyst for fuel cell manufacturing project	Consumables	Umicore	Preferred Supplier	4500191890	6,425	EUR
Procurement of IC Columns	Specialised services	Anatech instruments	Sole Supplier	4500192339	77,724	ZAR
Breakout of the old lining and lancing of the metal ingot and the installation of	Equipment breakdown	Dickinson Furnace Services	Emergency	4500192354	208,968	ZAR
Auto transfer reactor Bank	Specialised equipment	Spiph transformers Pty Ltd	Emergency	4500192351	7,200	ZAR
Supply of Massflower Meter	Specialised equipment	Alocat Scientific	Preferred Supplier	4500192026	9,975	USD
Supply of Nafion Membranes for fuel cell manufacturing	Consumables	ION Power Inc	Preferred Supplier	4500191297	14,420	USD
Supply of rotating disk electrodes	Spares equipment	Metro HM SA	Preferred Supplier	4500191175	94,925	ZAR
TB antibodies and Antigens	Spares equipment	CD BioScience	Preferred Supplier	4500191264	6,360	USD
Technical parts of the Agilent ICP-OES	Spares equipment	Chemetrix export Pty Ltd	Preferred Supplier	4500190721	95,725	ZAR
Thermocouple CYNv3 for Cynoprobes	Consumables	Thermocouple Products (Pty) Ltd	Preferred Supplier	4500191872	68,000	ZAR
Tubing and Fittings	Consumables	ParkerStore	Preferred Supplier	4500192199	203,852	ZAR
Lance Rods	Specialised services	Neven Mathews	Sole Supplier	4500192380	56,000	ZAR
tubing and Pipe fittings	Consumables	ParkerStore Aeroport (PTY) LTD	Preferred Supplier	4500190851	486,838	ZAR
TeamMate Annual Maintenance Renewal	Maintenance	Wolters Kluwer Tax and accounting	Sole Supplier	4500192487	33,320	ZAR
Twelve heating elements	Consumables	Thermo Power Furnace Pty Ltd	Preferred Supplier	4500190627	33,000	ZAR
Verder Pumps	Specialised equipment	Verder Pumps Sa (Pty) Ltd	Preferred Supplier	4500190771	1,975,510	ZAR
Supply of a Autolab potentiostat/galvanostat and ancillary items	Specialised services	Metro HM SA	Sole Supplier	4500192469	462,193	ZAR
XRD Quantification software	Software	Malvern Panalytical Pty Ltd	Preferred Supplier	4500192322	308,623	ZAR
Consumables for Ion Chromatography	Specialised services	Anatech Instruments	Sole Supplier	4500192527	56,242	ZAR



12.2

Contract variations or expansions

The company may expand a contract by increasing the scope of work or vary a contract by changing the scope of work provided that the necessary approvals are obtained. The following contract expansions/variations were incurred in the 2022/2023 financial year. All expansions/variations are listed for information purposes.

PROJECT DESCRIPTION	NAME OF SUPPLIER	CONTRACT MODIFICATION TYPE (EXPANSION/ VARIATION)	CONTRACT NUMBER	ORIGINAL CONTRACT VALUE (VAT Exclusive)	VALUE OF PREVIOUS CONTRACT EXPANSION OR VARIATION (VAT Inclusive)	VALUE OF CURRENT CONTRACT EXPANSION OR VARIATION (VAT Inclusive)
Network Infrastructure Upgrade	Khanya Africa Networks CC	Variation	4600000274	R 23,204,129	None	R 263,791.90
Gas Boiler	Boiler and Industrial (Pty) Ltd	Expansion	4600000269	R 1,150,000	None	-
Pnet and Career Junction Database for recruitment	P-NET (Pty) Ltd	Variation	4600000265	R 497,255	None	R 189,131.25
Gas Boiler	Boiler and Industrial Plant (Pty) Ltd	Expansion	4600000269	R 1,150,000	None	R 172,878.51
Microsoft Enterprise Agreement	Microsoft	Variation	4600000244	\$ 514 704.96	None	\$ 206 885.18
Payroll & HR Software	Insight IT Solutions T/A PaySpace	Variation	4600000305	R 667,512	None	R 48,400.00
Servicing of Lifts	Schindler Lifts SA (Pty) Ltd	Expansion	4600000224	R 989,613	None	R 27 580.00
Pnet and Career Junction Database for recruitment	PNET (PTY) LTD	Expansion	4600000265	R 497,255	R 189,131.25	R 706 558.75
Bench Top Energy Dispensive X-Ray Fluorescence Spectrometer (ED-XRF)	Spectro Analytical Instruments (Pty) Ltd	Expansion	4600000239	R 1,796,605	None	R 30 240.00
Debt Collection Services	Phakamani Debt Collection Services (Pty) Ltd	Expansion	4600000270	R 180,000	None	R -
REN Services	Tertiary Education and Research Network of South Africa NPC	Expansion	4600000214	R 734,400	None	R 581,976.00
Gas Boiler	Boiler and Industrial	Extension	4600000269	R 1,150,000	R 172,878.51	R -
Supply & Installation of Fume Hoods	EC Laridon SA (Pty) Ltd	Extension	4600000295	R 4,068,518	None	R -
Labware LIMS Support Services	One Connect Solutions (Pty) Ltd	Variation	4600000291	R 4,037,974	None	Based on Ad hoc Use
Maintenance of ancillary equipment	Atlas Copco (Pty) Ltd	Extension	4600000255	R 1,186,738	None	R 150 529.75
Upgrade of control and instrumentation system	Continam Industrial Services CC	Variation	4600000337	R 2,863,271	None	R 563,608.70
Online Library and Information Services	Sabinet Online	Extension	4600000293	R 479,349	None	R 502,288.18

12.3 Irregular Expenditure

Reconciliation of irregular expenditure

	2023/2024	2022/2023	2021/2022
Description	R'000	R'000	R'000
Opening balance	52,147,411.67	35,452,463.00	26,793,140.00
Add: Irregular expenditure confirmed	3,200,856.53	17,197,652.67	8,659,323.00
Less: Irregular expenditure condoned	- 55,348,268.20	-	-
Less: Irregular expenditure not condoned and removed	-	-	-
Less: Irregular expenditure removed	-	502,704.00	-
Less: Irregular expenditure not recovered and written off	-	-	-
Closing balance	0.00	52,147,411.67	35,452,463.00

A significant portion of the irregular expenditure that has been carried forward from 2020/2021 relates to a multi-year project where payments have been made annual as the work has been executed. Amounts were revised to actual payments made following the determination test. Irregular expenditure removed relates to items that were determined at determination test to not meet the definition of irregular expenditure.

Reconciling notes to the annual financial statement disclosure

	2023/2024	2022/2023
Description	R'000	R'000
Irregular expenditure that was under assessment in the previous financial year	-	16,609,220.67
Irregular expenditure that relates to the previous financial year and paid in the current year	3,200,856.53	-
Irregular expenditure for the current year	-	588,432.00
Total	3,200,856.53	17,197,652.67

During the year ended March 2024, no instance of irregular expenditure was identified however the amount disclosed relates to a payment made in the current year regarding previously identified irregular expenditure.

The Irregular Expenditure incurred is disclosed below

b) Details of current and previous year irregular expenditure (under assessment, determination, and investigation)

	2023/2024	2022/2023
Description	R'000	R'000
Irregular expenditure under assessment	-	588,432.00
Irregular expenditure under determination	-	1,660,094.83
Irregular expenditure under investigation	-	-
Total	-	2,248,526.83

c) Details of current and previous year irregular expenditure condoned

	2023/2024	2022/2023
Description	R'000	R'000
Irregular expenditure condoned	55,348,268.20	-
Total	55,348,268.20	-

All irregular expenditure has been condoned by the Board after following all the necessary steps.



d) Details of current and previous year disciplinary or criminal steps taken as a result of irregular expenditure

	2023/2024	2022/2023
Description	R'000	R'000
Disciplinary proceedings concluded	48,399,491	837,764
Disciplinary steps in progress	-	48,399,491
Total	48,399,491	49,237,255

There was only disciplinary steps taken as no matters required criminal steps.

12.4 | Fruitless and Wasteful Expenditure

The Fruitless and Wasteful Expenditure incurred is disclosed below.

Fruitless and wasteful expenditure

Reconciliation of irregular expenditure

	2023/2024	2022/2023	2021/2022
Description	R'000	R'000	R'000
Opening balance	766,893.00	13,002.00	11,503.00
Add: Fruitless and wasteful expenditure confirmed	5,617,195.00	753,891.00	1,499.00
Less: Fruitless and wasteful expenditure condoned	- 6,384,088.00	-	-
Less: Fruitless and wastefulexpenditure not condoned and removed	-	-	-
Less: Fruitless and wasteful expenditure recoverable	-	-	-
Less: Fruitless and wasteful expenditure not recovered and written off	-	-	-
Closing balance	-	766,893.00	13,002.00

Reconciling notes to the annual financial statement disclosure

	2023/2024	2022/2023
Description	R'000	R'000
Fruitless and Wasteful expenditure for the current year	-	753,891
Total	-	753,891

b) Details of current and previous year Fruitless and Wasteful expenditure (under assessment, determination, and investigation)

	2023/2024	2022/2023
Description	R'000	R'000
Fruitless and wasteful expenditure under assessment	-	753,891.00
Fruitless and wasteful expenditure under determination	-	-
Fruitless and wasteful expenditure under investigation	-	-
Total	-	753,891.00

13

Mintek Research Outputs

Introduction	210
Journal Articles	210
Conference Papers	214
Book Chapters	217

Left: South West view of the Mintek campus.



Preparation of samples in mineral processing



Mintek turns 90



Spiral concentrator for separation of ores



Preparation of chemical samples for (ICP-OES) analysis



A ball mill is used to grind and blend the ore

13.1 | Introduction

This section provides contributions made by Mintek in the field of research during the financial year 2023-24. It provides a detailed collection of research journal articles, conference papers, and book chapters authored by Mintek's researchers, highlighting their valuable insights, discoveries, and advancements in various domains. With a strong commitment to driving innovation and pushing the boundaries of knowledge, Mintek's research outputs demonstrate the organisation's dedication to fostering scientific excellence and making a lasting impact in the minerals industry.



Far right: SavMIN™.

13.2 | Journal Articles

1. **Abongile Jijana, Ziyanda Zamaswazi Tshobeni, Jaymi Leigh January, Nokwanda Precious Pearl Ngema, Emmanuel Iheanyichukwu Iwuoha, Takalani Mulaudzi, Samantha Fiona Duman and Rachel Fanelwa Ajayi.** Thioglycolic acid-capped gold nanoparticle/cytochrome P450-2E1 electrochemical biosensor for isoniazid. Sensing and Bio-Sensing Research, Vol. 41, 2023.
2. **Agnes Modiga, Xolisa Goso, Dr Jibril Abdulsalam, Orevaoghene Eterigho-Ikelegbe and Professor Samson Bada.** Optimisation of ultrasound-assisted alkali-acid leaching of rare earth elements from run-of-mine and discard coal using the response surface methodology. Minerals Engineering, Vol. 204, 2023.
3. **Anushka Govindsamy, Rebekah Eleasa Sancho and Karen Pillay.** Optimization of Growth Conditions for Magnetospirillum magnetotacticum and Green Synthesis of Metallic Nanoparticles. Applied Sciences, Vol. 13, 2023.
4. **Ashma Singh and Dr Jon Pocock.** The Crago Process and its Applicability to a South African Sedimentary Phosphate Deposit. Mining, Metallurgy & Exploration, Vol. 40, 2023.
5. **Ashma Singh, Kagisego Shame and Carla Da Corte.** Amenability of South African Banded Iron Formation (BIF) to Fines Gravity Processing. Mining, Metallurgy & Exploration, Vol. 40, 2023.
6. **Bambesiwe May, Mokae Bambo, Olayemi J. Fakayode, Ajay K. Mishra and Edward N. Nxumalo.** Fluorescence sensing and adsorption kinetics of Gd-doped AgInS₂ I-III-VI quantum dots – A case study of Ag⁺ ions interactions. Heliyon, Vol. 9, 2023.
7. **Bongani Ngobe, Maje Phasha, Alain Mwamba and Mahlaga Molepo.** First-principles study of Ti50Ru50-x Y x (Y=Ni, Pd and Pt) with a prospect to induce SME on stable CsCl-type Ti50Ru50 phase. MRS Advances, Vol. 8, 2023.
8. **Bulelwa Ntsendwana, Abera Demeke Ambaye, Temesgen Girma Kebede and Edward Ndumiso Nxumalo.** Fe-MOF derived graphitic carbon nitride nanocomposites as novel electrode materials for the electrochemical sensing of 2,4-dichlorophenol in wastewater. Synthetic Metals, Vol. 299, 2023.
9. **Bulelwa Ntsendwana, Yokwana Kholisaw, Edward N. Nxumalo and Sabelo D. Mhlanga.** Recent advances in nitrogen doped graphene oxide nanomaterials: Synthesis and applications in energy storage, sensor electrochemical applications and water treatment. Journal of Materials Research, vol. 38, 2023.
10. **Deogratius Maiga, Terence Phadi, Rose W. Kibechu, Bhekie B. Mambaa and Titus A. M. Msagati.** Preparation of Novel Solid Phase Extraction Sorbents for Polycyclic Aromatic Hydrocarbons (PAHs) in Aqueous Media. Molecules, Vol. 28, No. 16, 2023.
11. **Deshentree Chetty, Buhle Xakalashe and Nwaila, Glen.** Fire and Water: Geometallurgy and extractive metallurgy. Elements, Vol 19, 2023.
12. **Dudu Nkomo, Bongani Ngobe, Maje Phasha and Prof Yoko Yamabe-Mitarai.** The SCF convergence criteria of the ab initio calculations of elastic properties of single-crystal B2 ZrPd phase. Materials Today: Proceedings, 20 May 2023.
13. **Gebhu Ndlovu, Kagiso Mosai and Hlanganani Tutu.** Improving acid mine drainage treatment by combining treatment technologies: A review. Science of the Total Environment, Vol. 919, April 2024.
14. **Happy Mabowa, Andile Mkhohlakali, James Tshilongo, and Prof, Luke Chimuka.** Separation and Characterization of Nickel Hydroxide from Waste Solution Using Ca (OH)₂ Precipitation in Chloride Media. Separations, Vol. 11, No.4, 2024.
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Left and middle: The Minfurn is a novel activated carbon-regeneration furnace developed at Mintek. **Centre right:** cloSURE™.

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13.3 | Conference papers

1. **Andile Mkhohlakali, Lebohang Hlatshwayo and James Tshilongo.** Modified Silicates As Dissolved Oxygen Sensors In Water: Structural And Optical Properties. Annual Conference of the National Association for Clean Air, 6 - 8 September 2023, Protea By Marriott Hotel, Ranch Resort, Polokwane.
2. **AP Brink, K Kruger, AH Basson and TT Phadi.** Digital twin enabled augmented reality application for remote assistance. *Digital Transformation in Mining 2023*, The Canvas Riversands, Fourways, Johannesburg, South Africa, 28-29 June 2023.
3. **Ashma Singh, Nichole Maistry and Candice Carelse.** Coarse processing of South African banded iron formation. *Iron Ore Conference 2023*, 18-20 September 2023, Perth, Australia.
4. **Bongani Ngobe, Maje Phasha and Mahlaga Molepo.** First-principles study on the effect of Ni addition on the stability of B2 Ti₅₀Ru₅₀ – a supercell approach. 2023 RAPDASA-RobMech-PRASA-AMI Conference, CSIR International Convention Centre, Pretoria, 31 October - 2 November 2023.
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36. **Ramogohlo Diale, Joseph Moema, Maje Phasha, Prof. Phuti Ngoepe and Prof. Hasani Chauke.** Structural and magnetic properties of Mn₅₀Pt₅₀-xNi alloys: A first principles study. The 67th Annual Conference of the South African Institute of Physics (SAIP2023), 3-7 July 2023, University of Zululand Richards Bay Campus.
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47. **Thandukwazi Bungane.** South Africas Fuel Cell Technologies Applications and Market 2023. Southern African Hydrogen And Fuel Cell Conference 2023, 24-25 April 2023, Hazendal Wine Estate, Stellenbosch, Cape Town.
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