

Curriculum Vitae

Richard Way – Mineral Processing Engineer



Profession:

Education:

**Registrations
Affiliations**

Mineral Processing Engineer

- M.Sc. (Eng) in Mineral Process Design, Royal School of Mines, Imperial College of Science and Technology, University of London, (1970)
- Diploma of Imperial College (D.I.C.) (1970) (Mineral Processing)
- B.Sc. (First Class Honours) in Chemistry and Physics, University College of Rhodesia, University of London, (1968)
- Executive Development Program, University of Witwatersrand, (1980)
- Fellow, South African Institute of Mining and Metallurgy.
- Member, South African Mine Metallurgical Managers Association.

Specialisation

Design and operation of mineral processing operations. Trouble-shooting on operating plants. Pre-feasibility and feasibility studies and due diligence. Sampling and metallurgical accounting. Review, design and management of metallurgical testwork programs.

Expertise

Richard has spent his entire career in mineral processing and metallurgy since graduating in 1968. Experience includes plant design, management of operations, consulting to operations, sampling and metallurgical accounting.

Commodity experience includes gold, platinum group metals, copper, copper-nickel, iron ore, chrome, manganese, mineral sands, uranium and thermal coal.

Country experience includes the operation of mineral processing plants in South Africa, Botswana and Zimbabwe, performing prefeasibility and feasibility study reviews of projects in Mozambique, Australia, Brazil, Chile and South Africa, and Due Diligence and Pre-Acquisition reviews on projects and operations in the Democratic Republic of Congo, South Africa, Mauritania, Ethiopia, Zambia, Argentina, Peru, Chile and Canada.

Employment History

2008 - Present	Principal Metallurgist	Independent Consultant
2001 - 2007	Manager Mineral Processing	BHP Billiton SA Ltd
1999 - 2001	Manager Metallurgical Engineering	Billiton SA Ltd.
1994 – 1999	Consulting Metallurgist (Projects)	Billiton SA Ltd.
1993 – 1994	Concentrator Manager	Impala Platinum (Gencor)
1990 – 1993	Consulting Metallurgist (Gold)	Gengold
1986 – 1989	Manager Metallurgical Services	Gengold
1980 – 1986	Plant Superintendent	Buffelsfontein Gold Mining Company
1976 – 1980	Reduction Manager	Barberton Mines Ltd, General Mining
1975 - 1976	Plant Metallurgist	Shangani Nickel Mine, Zimbabwe
1975	Plant Metallurgist	Selebi-Pikwe Mine, BCL, Botswana
1969 - 1974	Plant Met – Metallurgical Supt	Corsyn Mines, Lonrho, Zimbabwe.

Key Experience

- Concept Study, Houtpoort gold project, South Africa
- Concept Study, Mamatwan manganese project, South Africa
- Peer Review, Lesogo platinum project, South Africa
- Concept Study, Royal Horse Artillery tungsten project, Zimbabwe
- Concept Study, Jacomynspan nickel project, South Africa
- Due Diligence, Mooihoek chrome mine, South Africa
- Due Diligence, Navachab Gold Mine, Namibia
- Due Diligence, Langer Heinrich uranium mine, Namibia
- Feasibility Study, Gold One Ventersburg project in South Africa.
- Technical review of Xstrata’s South African chrome and PGM operations
- Review of Cascades iron ore project, South Africa.
- Review of the feasibility study of the Kongoni manganese project, South Africa.
- Due Diligence, Consolidated Murchison Mine, South Africa.
- Due Diligence of Galaxy Gold Mines, South Africa.
- Review of Passendro Gold Project BFS, Central African Republic.
- Pre-feasibility study, Witwatersrand Consolidated Goldfields DBM project.
- Owner’s metallurgical engineer for the Indarama refractory gold project in Zimbabwe.
- Due Diligence of Eastplats PGM operations.
- Expansion of the Bulyanhulu gold mine plant, Tanzania, Upper East project.
- Metallurgist advising the Barbrook gold mine feasibility study.
- Assistance with the design of the new Lily mine gold plant.

- Ventersburg gold mine, Concept Study.
- Review of the Jungle uranium project in Namibia.
- Due Diligence of the UMK manganese project, Northern Cape.
- Metallurgist on the pre-feasibility study for the Bon Accord nickel project (African Nickel) in Mpumalanga.
- Metallurgist on the pre-feasibility study for the Indarama gold mine, Kwe Kwe, Zimbabwe.
- Process Engineer for the feasibility study of the Ntsimbintle Manganese project in the Northern Cape.
- Owner's metallurgical engineer on the Kalukundi copper-cobalt project in the DRC.
- Review of the Wesizwe platinum project.
- Owner's metallurgical engineer for Great Basin Gold on the Burnstone project.
- Metallurgical representative for BHP Billiton on the Richards Bay Minerals Technical Committee.
- Review of metallurgical accounting and sampling in the concentrators and mineral separation plant at Richards Bay Minerals.
- Review process engineer - Douglas-Middelburg and Klipspruit coal processing plants feasibility studies (BHP Billiton Energy Coal South Africa).
- Review process engineer - Corridor Sands mineral sands project feasibility study (Mozambique).
- Review process engineer - Spence bioheap leach project feasibility study (Chile).
- Process engineer on a project to recover chromite from PGM UG2 tailings.
- Owners process engineer on the construction of two small chromite mineral processing plants (Samancor).
- Review process engineer - Escondida sulphide leach dump leaching project feasibility study (Chile).
- Review process engineer - Mt Arthur dual product thermal coal project feasibility study (Australia).
- Review process engineer - Cannington silver-lead-zinc mine plant expansion project feasibility study (Australia).
- Review process engineer - Escondida coarse particle recovery project and water supply project pre-feasibility studies (Chile).
- Process Engineer - Lanping lead - zinc pre-feasibility study project (China).
- Metallurgical representative – the La Granja copper project Concept Study steering committee (Peru)
- Process engineer on the acquisition of Rio Algom by Billiton. Subsequently involved in a consulting role on the Cerro Colorado bioheap leach plant, Spence Bioheap leach feasibility study (both in Chile) and the Alumbrera milling and flotation plant (Argentina).
- Process Engineer - Zaldivar Due Diligence (copper heap leach) (Chile).
- Investigation of potential copper-cobalt projects in the DRC – Kolwezi, Tenke-Fungurume and Ruashi-Etoile.



- Process engineer - Perkoa zinc project prefeasibility study in Burkina Faso (milling and flotation).
- Pre-purchase review of the Guelb-Moghreign copper-gold project in Mauritania.
- Pre-purchase reviews of the Lega-Dembi and Poura gold mines in Ethiopia.
- Review process engineer - Zambia Consolidated Copper Mines – Due Diligence.
- Review process engineer - Hope Downs iron ore project in Western Australia.
- Concentrator Manager - Impala Platinum Mines – management of the two milling and flotation concentrators.
- Consulting Metallurgist for the Gengold gold mines in the Western Transvaal and Free State.
- Processing Consultant for the conversion of the Beatrix gold plant to a full CIL plant.
- Process engineer - design and commissioning of the Buffelsfontein waste rock ROM milling and flotation gold recovery plant.
- Process engineer - design of the Weltevreden ROM milling and CIL gold plant.
- Plant Superintendent - Buffelsfontein Gold Mine – operation of the gold, uranium, acid and flotation plants.
- Reduction Manager, Fairview Gold Mine, Barberton. Operation of a refractory gold plant – milling, flotation, roasting (subsequently converted to BIOX), and cyanidation.