

# CURRICULUM VITAE: TONY JACKSON

BSc(Eng), ARSM, CEng, FIMMM

## PERSONAL INFORMATION

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- **Address:** 6 Coxburn Brae  
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Stirling  
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e-mail: [tony@TJ-Met.co.uk](mailto:tony@TJ-Met.co.uk)
- **Marital Status:** Married with three boys aged nineteen, twelve and ten years.
- **Nationality:** British.
- **Place of Birth:** England, 19.3.1958

## EDUCATION

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**1976 - 1980 BSc(Eng) 2<sup>nd</sup> Class Mineral Processing**  
Royal school of Mines  
Imperial College  
London

## EXPERIENCE/ SKILLS

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As a senior metallurgist I am experienced in most areas of mineral processing, particularly;

- **Froth Flotation:** Base metals (copper, lead, zinc) and industrial minerals (fluorite and barite).
- **DMS and Gravity:** As a pre-concentration tool and for production of concentrates.
- **Gold:** Knelson concentrators and CIL (mainly design and evaluation).

In my career to date, I have demonstrated a capability in the following areas;

- **Evaluation of Projects and Operations.** Greenfield sites and existing operations. Testwork programme development and management, and feasibility studies of base metal and gold deposits.
- **Consultation and Management.**
- **Project Management.**
- **Computer literate.** Metsim, Excel, Powerpoint and SureTrak.

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## CURRENT POSITION

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### *Self-employed: TJ Metallurgical Services*

After leaving Navan Mining in March 2002 I went self-employed and since then I have worked for a number of mining and consultancy companies, including;

- **European Goldfields Ltd.** *Certej Project, Romania. 2005 to Present.*

Since March 2005 I have been heavily involved in the development of the Certej refractory gold project in Romania. During process selection the Albion process was chosen to recover the gold and silver from a sulphide flotation concentrate. I supervised of the testwork programme and pilot plant trials at HRL, Brisbane, and was principally involved in process design, the cost studies at Aker Kvaerner and the Bankable Feasibility Study. In 2009 I was responsible for the Basic Engineering carried out by Aker Solutions and the subsequent Technical Project Report (Detailed Engineering) by Cepromin in Romania. In 2010 I was also heavily involved with the issue of the EIA/EIS.

- **Ormonde Mining Ltd.** *Barruecopardo Project, Spain. 2007 –Present.*

Initially development of scoping testwork and a preliminary process flowsheet and leading to pilot plant testwork and Cost and Definition studies.

- **Celtic Resources Holdings Ltd.**

Project metallurgist and stand-in Project Manager at the Suzdal project in Kazakhstan; Flotation/ BiOx/ CIL. Evaluation studies at Nezdansinoye, Yakutia and elsewhere in Russia.

- **Cambridge Mineral Resources plc.** *Los Poyatos polymetallic deposit, Spain. 2002.*
- **ACA Howe International Ltd.** Various due diligence studies

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## DETAILS OF PREVIOUS EMPLOYMENT

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*May 1992- March 2002*

Navan Mining plc  
Norden House  
Basing View  
Basingstoke  
Hampshire RG21 4HG

*Position: Navan Group Consulting Metallurgist*

*Duties :*

- Operational audits of Navan's operations in Hungary, Bulgaria, and Spain and recommendations to local management.

- Evaluation of new projects or potential acquisitions. This invariably necessitated the construction of detailed cash flow models and financial spreadsheets to assess the potential of new projects and their sensitivity to key variables.
- Final post was the Project Manager for the Almagrera Gold Plant Project.

During my time with Navan, the company expanded from being a junior Irish exploration company to a medium sized European mining company and in that time I had to be versatile and multi-skilled. The majority of my time was spent abroad, mainly on-site at operations, but when in the U.K. I worked from a fully equipped small office at my home.

*Final Project : Almagrera Gold Plant Project. (1999-2002).* This involved the preliminary design of a CIL plant to recover copper and gold from a Fluidised Bed Roaster feed of 240,000 tpa refractory pyrite. It included the design and management of a detailed testwork programme and the overseeing of a tender process with various potential contractors to construct a plant on a LSTK basis. The EIS was finalised and was ready to be presented to the local authority when low metal prices, and a variety of other factors, forced the Spanish operations to close.

#### *Other Project Evaluations for Navan:*

- **Treatment of auriferous arsenopyrite concentrates.** Investigations into the treatment of arsenopyrite by the volatilisation of arsenic in a roaster and its disposal in an environmentally acceptable manner as ferric arsenates.
- **Bacterial leaching of copper/ gold concentrates.** Preliminary investigations and amenability testwork into the use of bacterial leaching to treat 'dirty' copper concentrates.
- **Installation of zinc leach electro-winning facilities.** Pre-feasibility investigation into the expansion of the Almagrera acid plant complex to allow production of SHG zinc.

#### *Brief details of other significant projects with Navan:*

- **Almagrera Zn-Pb-Cu operation in Southern Spain. (1998-2000).** Responsible for improving the processing efficiency of an old state-run operation and to develop new metallurgical facilities for the treatment of ore from Navan's newly developed Aquas Tenidas mine. This involved an increase in capacity from 500,000 tpa to over 1 million tpa and an increase in head grade from 5% zinc to 8% zinc. A US\$2 million capital development programme was required for an Autogenous grinding circuit, the installation of new Svedala flotation cells and a new automated pressure filter (2000).
- **Bimak AD, Chelopech, Bulgaria. (1992-1997).** Due diligence on a mothballed State run copper-gold operation (1992-1993). Total plant refurbishment and the design and commissioning of two new flotation circuits following privatisation (1994). Improvements in copper flotation recovery and an increase of throughput. Successful commissioning of a Knelson concentrator circuit to recover free-gold and increase overall gold recovery (1997).
- **Hungary. (1992-1998).** Regular auditing of five Hungarian industrial minerals operations. Successful introduction of spirals at the Uveg Silica Sand operation to replace flotation circuits and lower costs (1993). Active involvement in the disposal of the assets to outside parties (1998).
- **Mazarron, Spain. (1992-1994).** Testwork, design and pre-feasibility study for a project to treat low-grade Zn-Pb ore by DMS pre-concentration and flotation. Project stalled due to delays in obtaining

planning permission.

- **Los Santos, Spain.** (1995-1996). Testwork, design and pre-feasibility study for a small operation to produce scheelite concentrates by gravity methods. Financial models showed the project not to be viable at that time.
- **Due Diligence of potential acquisitions.** Site visits and evaluations of various operations often by construction of operational/financial models. Such projects have included **Bougrine (Tunisia), Rosia Poieni (Romania), Uchaly (Urals, Russia), Macedonian Lead-Zinc Operations** and **Presur (Spain)**.

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## SUMMARY OF PREVIOUS EMPLOYMENT

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### *Oct 1989 – May 1992*

Anglo-European Minerals  
Scotland

- Industrial Minerals group. **Project Metallurgist** responsible for evaluating and developing new industrial mineral projects.

### *Aug 1988 – Dec 1988*

Europa Mining,  
London

- Exploration for gold and diamonds in a remote part of Ghana.

### *Jan 1988 – July 1988*

Fife Silica Sands  
Scotland

- **Contract engineer** installing and commissioning a small sand flotation pilot plant.

### *Nov 1986 – Jan 1988*

Ashover Mining  
Eaglesham, Scotland

- **Surface Manager** responsible for design, installation and operation of small gravity operation producing barite for drill mud.

### *April 1986 - Nov 1986*

Kenya Fluorspar Minerals  
Kenya

- **Contract Metallurgist**, working on behalf of RRM, to introduce new flotation techniques to lower the phosphorous content of the fluorspar concentrate and generally optimise the flotation circuit.

### *Dec 1984 – Aug 1985*

Strontian Minerals  
Scotland

- Barite drill mud producer. DMS Pre-concentration, Pb/Zn flotation and barite flotation followed by drying and grinding. **Plant Metallurgist.**

*Nov 1983 – Nov 1984*

Aredor Guinee  
Guinea, West Africa

- Alluvial Diamond Operation. Recovery of diamonds by DMS. **Shift Engineer** responsible for the running of the operation on a shift basis.

*Jan 1983 - Sept 1983*

Dome Services  
North Wales

- **Manager.** Building a small gravity plant to treat a lead tailings dumps.

*April 1982 – July 1982*

S.P.O. Minerals  
Derbyshire, England.

- Barite Operation: DMS, gravity and flotation. **Contract Metallurgist** commissioning a new barite flotation circuit.

*July 1980 – Jan 1982*

Dresser Minerals  
Derbyshire, England.

- Fluorspar Operation: DMS Pre-concentration followed by flotation of lead/zinc minerals, fluorspar and barite. Assistant Plant Metallurgist promoted to **Plant Metallurgist**.

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PROFESSIONAL MEMBERSHIPS

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- FIMMM and ARSM
- Chartered Engineer.

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OTHER

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- Languages: French to school level, Spanish minimal.
- Interests: Golf.
- Web site: <http://www.TJ-Met.co.uk>

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RECENT PHOTOGRAPH

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Tony Jackson December 2010