



INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

Auditor Credentials Form

Facility Audited: Bollore Africa Logistics Ghana

Date: 27 – 28 July 2012

Auditor and Technical Specialist Credentials

Lead Auditor: Tom Carmichael
Auditor Certification Number: 14544 (Registered as an Auditor since 1996 and as a Lead Auditor since 1998)
Certifying Organisation: RABQSA International
Telephone Number: +61 2 4728 4600
Address: Suite 102, 148 Henry Street, Penrith BC NSW 2751
Web Site Address: www.rabqsa.com

The following list is representative, not exhaustive, of the audits I have undertaken. The scope of the environmental management audits generally included review of chemical storage and handling practices on the sites.

Year	Type of Facility, Type of Audit	Country & State/Province
2012	Bollore Africa Logistics Ghana, Lead Auditor and Technical Expert, ICMI Certification Audit	Ghana
2012	Bollore Africa Logistics Sénégal, Lead Auditor and Technical Expert, ICMI Recertification Audit	Senegal
2012	Hebei Chengxin Co Ltd, Technical Expert, ICMC Certification Audit	China, Hebei Province
2011	Cowal Gold Mine, Lead Auditor and Technical Expert, ICMC Recertification Audit	Australia, NSW
2011	Boddington Gold Mine, Lead Auditor and Technical Expert, ICMC Certification Audit	Australia, WA
2011	Tanami Gold, Technical Expert, ICMC Pre-Recertification Audit	Australia, WA
2011	KCGM, Technical Expert, ICMC Recertification Audit	Australia, WA
2011	Chemical manufacturing facility, environmental and dangerous goods management	Australia, NSW
2010	Waste management company, including landfills and waste transfer stations, environmental management	Australia, NSW
2010	Major gold mine, environmental management	Indonesia
2009	Major copper mine, environmental management	Zambia
2008	Chlorine manufacturing plant No. 1, environmental management	Australia, NSW
2008	Chlorine manufacturing plant No. 2, environmental management	Australia, NSW
2008	6 coal testing laboratories, environmental management	Australia, NSW and QLD
2008	Explosives manufacturing plant, environmental management	Australia, QLD



**ICMI AUDITOR CREDENTIALS - TOM CARMICHAEL, BOLLORE
AFRICA LOGISTICS GHANA CERTIFICATION AUDIT**

Year	Type of Facility, Type of Audit	Country & State/Province
2008	Cyanide manufacturing plant, environmental management	Australia, QLD
2008	Minerals sands mining and processing facility, environmental management	Australia, NSW
2008	Chemical manufacturing plant, environmental management	Australia, NSW
2008	Herbicide production facility, environmental management	Australia, NSW
2008	Industrial printing plant, environmental management	Australia, NSW
2008	Timber products manufacturer, environmental management	Indonesia
2008	Oil storage facility, environmental management	Australia, NSW
2008	Electrical products manufacturer, environmental management	Australia, NSW
2008	Metal products manufacturer, environmental management	Australia, NSW
2008	Chemical products manufacturer, environmental management	Malaysia
2007	Semi-conductor manufacturers, environmental management	Philippines
2007	Industrial printing plant, environmental management	Australia, NSW
2007	Chemical manufacturing plant, environmental management	Australia, NSW
2006	Gas processing facility, environmental management	Australia, NSW
2006	Pharmaceutical manufacturer, environmental management	Australia, NSW
2006	Freight Handling Facility, environmental management	Australia, NSW
2006	Building products manufacturer, environmental management	Australia, NSW
2006	Building products manufacturer (2), environmental management	Australia, NSW
2006	Machinery assembler, environmental management	Australia, NSW
2005	Petroleum products manufacturer, environmental management	Australia, NSW
2006	Electronics manufacturer, environmental management	Philippines
2006	Electronics manufacturer (2), environmental management	Philippines
2006	Vehicle dealership, environmental management	Australia, NSW
2005	Timber products manufacturer, environmental management	Australia, Tasmania
2005	Timber products manufacturer, environmental management	Australia, NSW
2005	Whitegoods manufacturer, environmental management	Australia, NSW
2005	Timber products manufacturer, environmental management	Australia, NSW
2005	Building products manufacturer, environmental management	Australia, NSW
2005	Building products manufacturer, environmental management	Australia, NSW
2005	Building products manufacturer, environmental management	Australia, NSW
2005	Aeronautical servicing facility, environmental management	Australia, QLD
2005	Cold Storage Facility, environmental management	Australia, NSW
2005	Warehousing, environmental management	Australia, NSW



**ICMI AUDITOR CREDENTIALS - TOM CARMICHAEL, BOLLORE
AFRICA LOGISTICS GHANA CERTIFICATION AUDIT**

Year	Type of Facility, Type of Audit	Country & State/Province
2005	5 Vehicle dealerships, environmental management	Australia, QLD, NSW, VIC
2005	Chemical manufacturer, environmental management	Australia, NSW
2004	Building products manufacturer, environmental management	Australia, NSW
2004	Electricity generator, environmental management	Australia, NSW
2004	Petroleum products manufacturer, environmental management	Australia, NSW
2004	2 Plastic products manufacturers, environmental management	Australia, NSW
2004	Warehousing, environmental management	Australia, NSW
2003	Food products manufacturer, environmental management	Australia, NSW
2003	Chemical products manufacturer, environmental management	Australia, NSW
2003	Paper products manufacturer, environmental management	Australia, NSW
2003	Paper products manufacturer, environmental management	Australia, NSW
2003	Building products manufacturer, environmental management	Australia, NSW
2003	Petroleum products manufacturer, environmental management	Australia, NSW
2003	Chemical products manufacturer, environmental management	Australia, NSW
2003	Plastics products manufacturer, environmental management	Australia, NSW
2003	3 Building products manufacturing sites, environmental management	Australia, NSW
2002	Cooling tower manufacturing facility, environmental management	Australia, NSW
2002	Chemical storage facility, environmental management	Australia, NSW
2002	Transportation company, environmental management	Australia, NSW
2002	Building products manufacturer, environmental management	Australia, NSW
2002	Timber products manufacturer, environmental management	Australia, NSW
2002	Cleaning products manufacturer, environmental management	Japan
2002	Food products manufacturer, environmental management	Australia, NSW
2002	Chemical products manufacturer, environmental management	Australia, NSW
2001	Transport company, environmental management	Australia, NSW
2001	Electrical / mechanical components manufacturer, environmental management	Australia, NSW
2001	Electronics service centre, environmental management	Australia, NSW
2001	Gas heater manufacturer, environmental management	Australia, NSW
2001	Car products wholesaler, environmental management	Australia, NSW
2001	Plastic products manufacturer, environmental management	Australia, NSW
2001	Household appliances manufacturer, environmental management	Australia, NSW
2001	Metal processing facility, environmental management	Australia, NSW



**ICMI AUDITOR CREDENTIALS - TOM CARMICHAEL, BOLLORE
AFRICA LOGISTICS GHANA CERTIFICATION AUDIT**

Year	Type of Facility, Type of Audit	Country & State/Province
2000	2 Food products manufacturing sites, environmental management	Australia, NSW
2000	Household appliance manufacturer, environmental management	Australia, NSW
2000	Metal products manufacturer, environmental management	Australia, NSW
2000	Resin products manufacturer, environmental management	Australia, NSW
2000	Metal cable manufacturer, environmental management	Australia, NSW
2000	Electrical equipment manufacturer, environmental management	Australia, NSW
2000	Paper carton manufacturer, environmental management	Australia, NSW
2000	Metal products manufacturer, environmental management	Australia, NSW
2000	International Airport, environmental management	Australia, NSW
2000	Aircraft products manufacturer, environmental management	Australia, QLD
2000	Stone products manufacturer, environmental management	Australia, NSW
1999	Metal products manufacturer, environmental management	Australia, NSW
1999	Storage and workshop facility, environmental management	Australia, NSW
1999	Metal products manufacturer, environmental management	Australia, NSW
1999	Paper products manufacturer, environmental management	Australia, NSW
1999	Plastic products manufacturer, environmental management	Australia, NSW
1999	Metal products manufacturer, environmental management	Australia, NSW
1999	Ship painting operation, environmental management	Malaysia
1999	Ship painting operation, environmental management	Indonesia
1999	Forestry products manufacturer, environmental management	Australia, NSW
1998	Metal products manufacturer, environmental management	Australia, NSW
1998	Chemical products manufacturer, environmental management	Australia, NSW
1998	2 Timber products manufacturing facilities, environmental management	Australia, NSW
1998	Shopping centre, environmental management	Australia, NSW
1998	Landfill, environmental management	Australia, NSW
1998	Major manufacturing facility, environmental management	Australia, NSW
1998	Concrete products manufacturer, environmental management	Australia NSW
1998	Major hospital site, environmental management	Australia, NSW
1998	5 Major chemical manufacturing facilities, environmental management	Australia, NSW
1998	Commercial laundry, environmental management	Australia, NSW
1998	Scientific research facility, environmental management	Australia, NSW
1998	Brick manufacturer, environmental management	Australia, NSW
1998	Building products manufacturer, environmental management	Australia, NSW



**ICMI AUDITOR CREDENTIALS - TOM CARMICHAEL, BOLLORE
AFRICA LOGISTICS GHANA CERTIFICATION AUDIT**

Year	Type of Facility, Type of Audit	Country & State/Province
1997	Electronics manufacturer, environmental management	Indonesia
1997	Electronics manufacturer, environmental management	Philippines
1997	NSW Fire Brigades, environmental management	Australia, NSW
1997	Metal manufacturing facility, environmental management	Australia, NSW
1996	9 Sewage treatment plants, environmental management	Australia, NSW
1996	Roads works depots and chemical storage facilities, environmental management	Australia, NSW
1995	Major Airport (parts), environmental management	Australia, NSW
1996	2 Major construction sites, environmental management	Australia, NSW
1996	3 Railway rolling stock maintenance facilities, environmental management	Australia, NSW
1995	Sheep tannery, environmental management	Australia, NSW

Cyanide and Operational Related Experience

Each auditor must have at least 3 years experience; at least one auditor must have at least 7 years experience. I have been undertaking environmental audits for over 15 years and have been registered with RABQSA as a Lead Environmental Auditor since 1998.

Operation	Yrs	Relevant Position Titles	Types of Operations
Golder Associates	2	Associate, Principal Environmental Scientist	Environmental audits of various mining, chemical and industrial manufacturing operations including ICMC Audits.
Export Finance & Insurance Corporation	2	Associate-Director, Technical and Environmental Risk Assessment	Auditing of operating mines including a gold mine using cyanide to extract gold from ore.
URS Australia Pty Ltd	10	Principal Environmental Scientist	Environmental audits and liability assessments with respect to legislative compliance, dangerous goods storage and handling, EHS, development and implementation of environmental management systems, assessment of potential liabilities associated with acquisitions and divestments, and potential site contamination for over 250 sites throughout Australia, New Zealand, Fiji, Singapore, Malaysia, Indonesia, Philippines, Japan. Facilities assessed include manufacturing operations – chemicals (organic and inorganic), explosives, cyanide, water treatment chemicals, detergents, petrochemicals, oil refining, metal products, electrical cables, white goods, electrical/electronics, timber products, paper products, concrete products and brickworks; sewage treatment plants; mines/quarries; railway infrastructure; road maintenance works depots; airports; major construction sites; wool scouring facility;



ICMI AUDITOR CREDENTIALS - TOM CARMICHAEL, BOLLORE AFRICA LOGISTICS GHANA CERTIFICATION AUDIT

			forestry operations; hospitality operation; commercial laundry premises; a major hospital site; and agricultural research facilities.
Montgomery Watson Australia Pty Ltd	1.5	Environmental Manager	Environmental auditing of a range of industrial facilities including metal products manufacturers and semi-conductor manufactures.
CMPS&F Pty Ltd	5	Senior Environmental Scientist	Environmental auditing of a range of industrial facilities including sewage treatment plants and a fell monger.
Western Mining Corporation	3	Geologist	Worked on operating open cut gold mines using cyanide-in-pulp processes to extract gold from ore.

Tom is a Principal Environmental Scientist with over 20 years experience in the mining industry, environmental consulting and the finance industry.

Tom has provided consulting environmental planning, impact assessment and risk management services to various mining projects including:

- Environmental risk management reviews of gold mining operations in New South Wales and Papua New Guinea, copper mine in Zambia and three coal mines in Queensland.
- Environmental audits of cyanide and ammonium nitrate production facilities in Queensland.
- Statutory audit of compliance with consent conditions on behalf of NSW Department of Planning for a mineral sands operation in NSW.
- Preparation of erosion and sediment control plans for the construction of the Cowal Gold Mine process plant, tailings dams and water supply pipelines.
- Environmental impact assessment of Hornsby Quarry in NSW.
- Environmental impact assessment of quarries at Port Macquarie and Lauriton.
- Environmental Management Plans for quarries at Lauriton and Valla in northern NSW.
- Environmental due diligence assessment of a copper smelting and refining operation.

Statement of No Conflict

I certify that I have not audited any component of this facility for which I was responsible for design or development; nor have I within the past year been an employee of the facility, its parent company, or associated affiliates. Excluding audits, I have not derived more than 30% of my income within the past 5 years from the facility, its parent, or associated affiliates. I have not participated in more than two consecutive Cyanide Code audits of this facility. I have participated in at least 3 health, safety, and/or environmental audits in the past 7 years and am familiar with standard audit procedures as well as with the protocols developed by the International Cyanide Management Institute for implementation of the Code.

Signed,

Name
Tom Carmichael

Signature

Date
7 January 2013

Use additional pages if necessary

*The lead auditor's signature must be certified by notarisation or equivalent.