



Curriculum vitae

Michael Cramer (Director)

Summary

Michael Cramer is an environmental impact assessment and management specialist with over 20 years professional experience working in the resource development and management sectors. Areas of expertise include:

- Environmental and social impact assessment (ESIA)
- Rehabilitation and site closure planning
- Environmental auditing and due diligence
- Environmental management and management systems

His ESIA and environmental management experience includes project managing environmental impact assessments and preparing management plans for major projects in the mining, oil and gas, industrial, energy, water and waste sectors. This includes experience with complex, multi-faceted mining and industrial developments, in both temperate and high-rainfall environments in Australia, Asia, Africa and Papua New Guinea. He is a Qualified Environmental Social and Health Impact Assessment (ESHIA) Facilitator for Chevron Corporation.

Michael also has expertise in preparing site rehabilitation and mine closure plans, including the preparation of fully-costed plans, and the preparation and auditing of financial assurance estimates and rehabilitation bonds. Additionally, he has completed over 30 environmental management and compliance audits and due diligence assessments of mining, industrial and other sites.

His experience also includes providing advice on sustainability, resource efficiency, carbon accounting and climate change adaptation.

He has undertaken projects in Australia (all states and territories), Lao PDR, Thailand, Indonesia, Ghana, Tanzania, Angola, Mali, Togo, Benin, Papua New Guinea, Fiji and New Zealand.

Employment history

Accent Environmental Pty Ltd (www.accentenvironmental.com.au) (September 2012 – present) – Director

AECOM Australia Pty Ltd (October 2005 until August 2012) – Workgroup Manager/Associate Director Environment

Earth Systems Pty Ltd (March 2001 until September 2005) – Principal Environmental Consultant

NSR Environmental Consultants Pty Ltd (November 1993 until February 2000) – Senior Environmental Consultant

Chris Prowse and Associates (January 1991 until June 1993) – Consulting Geologist (casual)

Geological Survey of Victoria (January 1990 until June 1990) – Geologist

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Education, qualifications, training and memberships

Education

- Master of Environmental Science, Monash University, 1998
- Bachelor of Science, Honours (Earth Sciences), University of Melbourne, 1989

Other qualifications and training

- Workshop on IFC Sustainability Framework & Performance Standards, Bangkok 2015
- Managing AECOM Projects (MAP) Project Management Training Course, 2010
- Qualified Environmental Social and Health Impact Assessment (ESHIA) Facilitator, Chevron Corporation, Houston, 2009 (updated 2012)
- WorkSafe OH&S Induction ('Red Card'), 2007
- QAS Certificate for auditing of Environmental Management Systems, 2001

Memberships

- Environment Institute of Australia and New Zealand
- Australasian Institute of Mining and Metallurgy (The AusIMM)
- Australia Africa Business Council

Experience

Environmental and social impact assessment

Managing ESIA studies for major resource development projects in Australia (Victoria, South Australia, NSW), Lao PDR, Papua New Guinea, Angola, Ghana and Tanzania. Experience includes: project procurement and budget control; scoping of impact assessment; developing approvals strategies and advising on regulator and community management; conducting and reviewing technical studies; providing advice to client and project engineers on management and mitigation measures; undertaking government and community liaison; and authorship of impact assessment reports. Selected projects:

- Technical direction and review for preparation of Environmental and Social Impact Assessment (ESIA) for alumina production facility for Sino-Lao Aluminium Corporation Limited (SLACO), in association with ESL, Lao PDR (2014-2015).
- Technical direction and review for preparation of Land and Asset Survey along right-of-way of 170 km hydroelectric project transmission line for Xe-Pian Xe-Namnoy Power Company Limited (PNPC), in association with ESL, Lao PDR (2014-2015).
- Technical review of MMG LXML Sepon Gold Oxide Expansion Project Social and Economic Impact Assessment, and preparation of cumulative impact assessment section, for ESL and Sustainable Solutions, Lao PDR (2013-14).
- Technical manager (contracted to ERIAS Group) for the Environmental, Social and Health Impact Assessment (ESHIA) for the P'nyang Gas Project, ExxonMobil, Papua New Guinea (2012-2013).
- Managing the preparation of a Mining Proposal for the Wonnerup South Project (heavy mineral sands) (Cristal Mining) for Ennovate Environmental, Western Australia (2013).

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- Koonda Iron Ore Project, technical inputs into Planning and Environmental Scoping Study, Victorian Iron, Victoria, Australia (2012).
- Whyalla Rare Earths Processing Facility, Project Director for investigations in support of Environmental Impact Statement, for Arafura Resources Limited, Whyalla, South Australia (2010-2012).
- Stockman Base Metals Project, technical inputs and direction for the Environmental Effects Statement, for Independence Group, Victoria, Australia (2010-2012).
- Victorian Advanced Resource Recovery Initiative (VARRI) project, environmental assessment of advanced waste management technologies for input into business case, for Department of Sustainability and Environment, Victoria, Australia (2009).
- PIBSA chemical production facility, Works Approval, for Orica Australia, Victoria, Australia (2008).
- Goldfields Superpipe Project (Bendigo to Ballarat water pipeline), Environmental Assessment Report for project approval, for Central Highlands Water, Victoria, Australia (2007).
- Barwon Biosolids Project, environmental assessment and Works Approval, for Barwon Water, Victoria, Australia (2007).
- Phu Kham Copper-Gold Project, Environmental and Social Impact Assessment, for PanAust Limited, Lao PDR (2005).
- North Mara Gold Project (initial Nyabirama development and the later Gokona-Nyabigena development), Environmental and Social Impact Assessment, for Afrika Mashariki Gold Mines, Tanzania (2001-03).
- North Mara Gold Project, acid rock drainage assessment including establishing on-site column leach tests, for Afrika Mashariki Gold Mines, Tanzania (2001).

Rehabilitation and closure

Preparing rehabilitation and site closure plans, including: strategic planning; assessment of liabilities and risks; scoping and management of technical investigations into issues such as acid and metalliferous drainage (AMD); costing, internal provisioning and financial assurance calculation (by deterministic and probabilistic techniques); multi-criteria evaluation of closure options; preparation of conceptual rehabilitation and closure plans; development of closure criteria; stakeholder consultation. Selected projects:

- Development of a rehabilitation bond model for mining and extractive industries sites in Victoria, Department of State Development, Business and Innovation (DSDBI), Victoria (2014).
- Managing the preparation of a Mine Closure Plan for the Wonnerup South Project (heavy mineral sands) (Cristal Mining) for Ennovate Environmental, Western Australia (2013).
- Input and advice regarding an updated closure liability cost estimate for the Mount Isa Mine, for AECOM Australia and Glencore, Queensland, Australia (2013).
- High-level comparison of waste rock dump and tailing storage facility closure options, including comparison of costs of walk-away solution versus perpetual management funding, for multinational mining company (confidential), Australia (2012).
- Development of Mine Rehabilitation Liability Calculator for Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE) in South Australia (2011-2012).
- Assessment of feasibility of decommissioning and closure of Nicholson River Dam for East Gippsland Water, In Victoria, Australia, (2011).

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- Provision of advice and closure cost estimates at five metals mining and processing sites, for a multinational resource development company (confidential), Western Australia (2010).
- Hunter Valley Operations South, developed mine closure criteria and final void management inputs into Rehabilitation and Land Management Plan, for Rio Tinto, NSW, Australia (2010).
- Review of cost estimates for closure and rehabilitation of seven sites within Australia owned by major energy provider (client confidential), Australia (various states) (2010).
- Cumnock Mine, Mine Closure Plan and Final Void Management Plan, for Xstrata Coal, NSW, Australia (2009).
- Ravensworth West and Narama Mines, Final Void Management Plans, for Xstrata Coal, NSW, Australia (2009).
- Training of Department of Primary Industries personnel in landscape management as part of a mine closure planning course, for SMI Knowledge Transfer, Victoria, Australia (2009).
- Goldfields Superpipe Project (Bendigo to Ballarat water pipeline), post-reinstatement inspection and management program during defects and liability period, for Central Highlands Water, Victoria, Australia (2008).
- Twin Hills Silver Mine, development of closure concept and calculation of financial assurance (FA), for MacMin Resources, Queensland, Australia (2006).
- KWR Mineral Sands Mining Project, Rehabilitation Management Plan for the Kulwin Test Pit, for Iluka Resources, Victoria, Australia (2005).
- Presenter at Australian Centre for Mining Environmental Rehabilitation (ACMER) closure workshop, Adelaide (2003) and Melbourne (2005). Member of steering committee for 2005 workshop.
- Loy Yang Coal Mine, Strategic Framework for Rehabilitation and Closure Planning, for Loy Yang Power, Victoria, Australia (2004).
- Sepon Project, Closure Plan (for both gold and copper development stages), for Oxiana Ltd, Lao PDR (2003).
- Peak Gold Mine, Closure Plan, for Rio Tinto, NSW, Australia (2001).
- Lihir Gold Mine, Closure Plan, for Rio Tinto, Papua New Guinea (1999).
- Bogoso Mining Project, closure plan prepared for International Finance Corporation (IFC), Ghana (1996).
- Abooso Gold Project, Preliminary Environmental Reclamation Plan, for Ranger Minerals, Ghana (1996).

Auditing and due diligence

Lead auditor and team member in environmental management audits, environmental monitoring audits, and due diligence assessments. Audits undertaken at numerous sites including manufacturing facilities, heavy aviation facilities and mine sites. Selected projects:

- Deer Park Quarry, technical director for audit of compliance with the *Environmental Protection and Biodiversity Conservation Act 1990* approval conditions for the quarry extension, relating to Striped Legless Lizard and Plains Rice-flower management, for Boral Australia, Victoria (2014).
- Phu Kham Copper-Gold Project, review of proposed discharge from Phu Kham tailing storage facility, in conjunction with ESL, for Phu Bia Mining, Lao PDR (2012).
- Qantas facilities at Sydney Airport, compliance audit for Sydney Airport Corporation Limited (SACL), NSW, Australia (2008).
- Twin Hills Silver Mine, audit of financial assurance calculations for MacMin Resources/Pitcher Partners, Queensland, Australia (2007 and 2008).

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- Lead auditor for Tyco environment, health and safety (EH&S) compliance audit program in Australia (two industrial sites) and New Zealand (electronics factory). Also, audit team member for EH&S compliance audits of two additional Tyco manufacturing sites in Australia (2007).
- RAAF Base Pearce, baseline environmental audit prior to redevelopment of facilities by Singapore Airforce, Western Australia (2007).
- Bendigo Gold Mine, quarterly air quality monitoring audits for Bendigo Mining Limited, included quality audits of two analytical laboratories, Victoria, Australia (2006/07).
- Barwon River and foreshore reserve (Geelong section), health, safety and environmental risk audit of public and contractor activities, for Corangamite Catchment Management Authority, Victoria, Australia (2006).
- Dutson Downs Waste Recovery Facility, EMS gap analysis and alignment audit at asbestos landfill site, Victoria, Australia (2006).
- North Lanut Mine, environmental audit and water management assessment for Avocet Mining, Sulawesi, Indonesia (2005).
- Led investigation into causes of major environmental incident (chemical discharge) at a mining project in South East Asia (2005).
- Syama Gold Mine, due diligence assessment, Resolute Limited, Mali, (2004).

Environmental management

Preparing and reviewing environmental and social management plans, environmental management systems and environmental and social monitoring programs, including: EMS development and auditing; development and auditing of management and monitoring plans; identification of key issues, impacts and risks; training of environmental staff and community representatives; government capacity building; development of monitoring protocols and procedures; design and review of quality assurance/quality control (QA/QC) protocols. Selected projects:

- Technical and program advisor for a Nitrogen Assessment and Baseline Study across the Greater Mekong Subregion (GMS), for the Asian Development Bank (ADB), (2015).
- Technical direction for preparation of an Operations Environmental Management Plan for a wind farm in southeastern Victoria, for Senvion (2015).
- Revision of construction phase Environmental Management Plan (EMP) for 170 km hydroelectric project transmission line for Xe-Pian Xe-Namnoy Power Company Limited (PNPC), Lao PDR (2015).
- Developing a *Code of Practice for Low Risk Mines* for the Department of State Development, Business and Innovation (DSDBI), Victoria (2014).
- Managed the preparation of a Fauna Management Plan, Native Vegetation Clearance Permit, and Groundwater Management Plan and Operating Strategy for the Wonnerup South Project (heavy mineral sands) (Cristal Mining) for Ennovate Environmental, Western Australia (2013).
- Goldfields Superpipe Project (Bendigo to Ballarat water pipeline), environmental supervision of construction and preparation of construction and operations environmental management plans (EMPs), for Central Highlands Water, Victoria, Australia (2007-08).
- Preparation of Environmental Management Systems, consistent with ISO14000, at two Defence sites, Victoria, Australia (2006-07).
- Phu Kham Copper-Gold Project, environmental and social management and monitoring plan (ESMMP), for PanAust Ltd, Lao PDR (2005).

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- Sepon Project, environmental management and monitoring plan, for Oxiana Ltd, Lao PDR (2004).
- North Mara Gold Project, environmental management and monitoring plans, for Afrika Mashariki Gold Mines, Tanzania (2001-03).

Sustainability and climate change

Resource efficiency assessments and waste auditing. Greenhouse gas assessments and calculation of carbon footprints. Climate change risk assessment and adaptation. Selected projects:

- Provision of advice to multinational mining company (confidential) concerning climate change risks and adaptation (2009).
- Environmental Resource Efficiency Plans (waste, water and energy efficiency) for Swift Australia at two major meat processing facilities, Victoria, Australia (2009).
- Provision of sustainability advice and coordination of 19 baseline energy audits for Target Australia (2009).
- Barwon Biosolids Project, Sustainability Management Plans (construction and operations), for Barwon Water, Victoria, Australia (2008).
- Baseline waste audits at seven Defence sites (including greenhouse gas assessments of waste management options) in Victoria and Queensland, Australia (2007-08).

Selected Publications and Presentations

Cramer, M. (2014). Red tape reforms target Victorian mine rehabilitation bonds. AusIMM Bulletin. April.

Strategic mine closure planning – taming liability. Presentation at Environment and Communities Seminar, Minerals Council of Australia (Victorian Division), 31 July 2013.

Cramer, M. (2013). Managing mine closure liability. AusIMM Bulletin. February.

Cramer, M. (2005). Early planning is the key to effective closure. Waste Management and Environment Magazine.

Missen, J., Cramer, M., & Newcomb, S. (2003). A New Technique for Long-term Sustainable Rehabilitation and Closure Planning – the Loy Yang Initiative. MCA 27th Annual Environmental Workshop, Brisbane.

Waters, J.C., Santomartino, S., Cramer, M., Murphy, N. & Taylor, J.R. (2003). Acid Rock Drainage Treatment Technologies — Identifying Appropriate Solutions. Proceedings of 6th ICARD. Cairns, Australia.