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CV *Blasting*

Nick Elith

Total 7 pages

Explosives Technology, Risk Assessment, Training and Controlled Blasting Applications

Thanks for the opportunity to send my CV relating to explosives & blasting. You may wish to make reference to our expertise when discussing details of your projects with your associates or clients.

If required, I am able to:

- conduct feasibility studies
- conduct blasting "Risk Assessment" JSA study with stakeholders
- assess blasting options for safety, technical, cost effectiveness
- make appraisal of other's proposals
- specify for Vibration, Environmental Impact, Damage Protection
- conduct site inspection / assessments
- produce detailed blast designs
- write safe operating procedures
- conduct hands-on blasting including initial establishment shots
- train local blasting operators / contractors /engineers / authorities
- audit safe operations
- expert witness, legal liability examinations

NAME NICK ELITH
Bachelor of Engineering (Mining)
University of Sydney 1971

POSITION Principal Blasting Consultant
technick Consulting P/L. - Consulting Mining Engineers

DATE OF BIRTH 1948

AFFILIATIONS Member; Australasian Institute of Mining & Metallurgy
Member; International Society of Explosives Engineers

EXPERIENCE Over 35 years involvement with explosives and blasting practices.

1977 - Present:

Principle Blasting Consultant : technick Consulting Pty. Ltd.
Consulting to the mining, quarrying and construction industries in :

- ✓ Blasting principles and Blasting Physics applications
- ✓ Safety and Cost Efficiency in blasting; Opencut and Underground
- ✓ Blast Design and implementation - Opencut and Underground
- ✓ Conducting On-site drilling & blasting Operational Audits
- ✓ Initiation Systems application and design
- ✓ Field evaluation of new explosives and Initiation Systems technologies
- ✓ Technical writing: Blasting manuals, Operational Procedures
- ✓ Training resources, graphics, Safety / promotional materials
- ✓ Competency-based Shotfirer training
- ✓ Author of Opencut and Underground blasting manuals
- ✓ Demolitions: Structures, Buildings, Machinery (steel, concrete etc.)
- ✓ Submarine / Underwater blasting and demolitions
- ✓ Environmentally sensitive blast design, analysis and supervision
- ✓ Investigation of explosives accidents and Incidents
- ✓ Legal "Expert Witness" representation

1971 - 1976 Explosives Engineer with ICI Australia (Australia's largest explosives supplier) working as a blasting engineer throughout Australia in:

- *Opencut and Quarry Blast Design and improvement*
- *Civil engineering, Construction, Roadworks and Excavations*
- *Initiation Systems design and development*
- *Underground blast design, Tunnelling, Shaft sinking, Stopping*
- *Safety and skills Training*
- *Submarine blasting, Harbour deepening, Offshore Oil-well operations*
- *New explosives development and field testing*

ADVANCED BLASTING ENGINEERING & TECHNIQUES

Summary 1971 - present

- *Opencut and Quarry Blast Design and improvement*
- *Civil engineering, Construction, Roadworks and Excavations*
- *Initiation Systems design and development*
- *Underground blast design, Tunnelling, Shaft sinking, Stopping*
- *Accredited Safety and Blasting skills Training*
- *Submarine blasting, Harbour deepening, Offshore Oil-well operations*
- *Advise, design, execute unusual / sensitive construction / demolition projects:*
- *Control vibrations, air blast, flying fragments, underwater concussion*
- *Buildings, foundations, underwater, mechanical equipment,*
- *Recovery of jammed drill rods, pipes, liners, slag, operating equipment*
- *Calculate, predict environmental effects of blasting in critical areas*
- *Feasibility studies for controlled explosives applications*
- *Legal investigations, reporting and representation*

Mining, Quarry & Construction Blasting

Current: All Aspects of opencut commercial blasting

- ✓ Tender Assistance, Safety, Risk management,
- ✓ Designs, Cost Estimations, Product Recommendations,
- ✓ Auditing of Mine Drill & Blast Safety, Procedures and Optimisation
- ✓ Problem Solving, Incident and Misfire Response Management
- ✓ Special Methods, Wall Control, Fragmentation
- ✓ Productivity, Optimisation, Mine-to-Mill Studies

ONGOING: optimisation design and controls – critical environments

2004 to 08 Advanced technical support to Mining / Quarrying industries Aust-wide

2003 Hydro dam tunnel blast designs NSW

2003 Underground shaft risk assessment and design approvals – City Melbourne

1971 – current: Design Blasting, Initiation, Optimisation

Environmental Blasting and Controls

Current: Regular assessment and prediction of blasting effects

Environmental calculations & design near optics, cables, pipes, shafts, liquid tanks, bridges, 'green' concrete and sensitive sites

- 2009 Review / Approve blast design damage Risk – Dam refurbishment - NSW
- 2009 Blasting near ventilation services –Tunnel development Narrabri NSW
- 2009 Blasting near critical services – UG Coal mine NZ
- 2009 Environmental impacts of blasting underwater near marine habitats (SA, WA)
- 2009 Blasting near critical underground pipes – Tunnel development NSW coal mine
- 2009 Blast design & Risk Assessments – Dam construction near infrastructure ACT
- 2008 Blast design & Risk Assess – construction near infrastructure WA, NSW
- 2006 - 2008 Risk manage / Design / Audit proximity blasting procedures for sensitive Heritage sites Karratha WA,
- 2005 Design & environment calcs for blasting near Melb city hospital
- 2002 /06 Various mine extension EIS supporting reports: Drilling & Blasting effects
- 2001 Mine extension environmental effects, blast designs NZ
- 2000 /06 Guest lecturer – Melbourne University “Environmental Risk”
- 2000 /04 Conduct Risk Assessment studies for sensitive blasting near dams, electronic switchgear, sensitive facilities, overhead / underground services
- 2001 Blast mine Portal Tasmania, 5m from pipelines, 30m from workshops
- 1998 Close proximity blasting 3 metres from highway; Wollongong NSW
- 1998 Blasting consultant to Botany underground LPG tanks study
- 1998 Controlled blasting amongst major LPG tanks - Woodside Petroleum; WA
- 1996 Investigation / Clearances at Canberra Hospital Implosion
- 1993, 94 Blast design, vibration, air blast monitoring of tunnelling works in Taiwan - homes, school, temples, within tens of metres
- 1971 – 2008 Design blasting to optimise productivity and minimise disruption to locality

Underwater Blasting

Design & Risk Assess – near structures, preserve marine life/habitat

- 2009 Environmental impacts of blasting near marine habitats (Perth & NWWA)
- 2009 Environmental impacts of blasting underwater near marine habitats (SA)
- 2008 Designs & Risk Assessments – Blasting underwater outfall – Perth WA
- 2008 Designs & Risk Assessments – near structures, marine habitat NWWA
- 2006 / 07 Risk, Design assessment UW blasting sheetpiles next to wharf (NZ)
- 2004 Design Underwater marine pile blasting next to wharves (NWWA)
- 2003 Risk, Design assessment Underwater blasting next to facilities (WA)
- 2001 Coral channel blasting design / environmental calculations - Micronesia
- 2001 Risk, Design assessment blasting next to operating wharf (NZ)
- 2000 Underwater boulder blasting to clear shipping channel Mackay Qld
- 1994 Train and supervise divers in Submarine Blasting Licences; Qld
- 1990 Marine pier demolition - Underwater; Port of Melbourne. Concussion research, calculations - safety of personnel, shipping, port facilities.
- 1986 Underwater demolition training; Principles, Demonstrations and Practical
- 1986 Develop “Advanced Demolition and Underwater Blasting Course” for NSCV
- 1974 – 1976 Underwater harbour deepening, blast monitoring - Bunbury WA.
- 1971 – 1995 Developed deep ocean explosives well-cutting techniques:
 - *Cutting ‘Well Heads’ below ocean bed - Bass Strait, New Zealand, Timor Sea*
 - *Train explosives engineers for underwater and offshore steel demolition*

Legal Investigations, Reporting, Expert witness

Current:

- 2006 - 2009 “Expert” witness - Blasting Flyrock fatality – VIC Workcover
- 2006 “Expert” witness - Blasting flyrock incident – VIC Workcover
- 2005 “Expert” report - Explosives Storage & Handling Incident – VIC
- 2005 “Expert” report - Potential terrorist structural blasting hazard
- 2005 /06 “Expert” report - Blasting flyrock incident – VIC Workcover
- 2004 /06 “Expert” report - Mining environmental dispute
- 2002 /06 “Expert” report - Blasting Flyrock fatality – VIC Workcover
- 2003 “Expert” report - Fireworks Storage Incident – Qld
- 2003 “Expert” report - Alleged Explosives Incident – NT Police
- 2001 “Expert” report - Alleged Bomb Device – VIC Police
- 2001 “Expert” report - Airblast damage dispute - Tas
- 2000 “Expert” witness - Flyrock damage dispute - Tas
- 1999 “Expert” report - Flyrock damage dispute - Tas
- 1999 “Expert” report - Underwater blasting dispute
- 1996 Investigation / Clearances at Canberra Hospital Implosion
- 1995 “Expert” report - Shaft sinking dispute
- 1990 “Expert” report - Civil engineering blasting dispute
- 1990 Damage to equipment by flyrock claim

Demolition and Precision Materials Blasting

Current: Blast structures of; reinforced concrete, cast iron, steel, brickwork

- *Cutting Steel 'Well Heads' below the ocean bed - Bass Strait, NZ, Timor Sea*
- *Train explosives engineers for underwater and offshore steel demolition*
- *Cutting of steel, cast iron, steel alloys, aluminium, brass*
- *Cutting bars, pipes, rail track, "I"- beam, angles, massive blocks*
- *Metal forming, deforming using explosives*
- *Fabrication and firing of basic 'shaped charges'*
- *Demolition of suburban chimneys - to over 50m , built-up areas - Melb / Perth.*
- *Demolition of major industrial site facilities at city chemical complex;- work done inside buildings, control vibrations, air blast, flying fragments*
- *Demolish Furnace & storage kilns ~ 8 structures to 20m high*
- *Demolish Chimneys and towers near operating facilities*

Demolition and Precision Materials Blasting

Current: Designs, Risk Assessment & Supervision – various structures

- 2009 Review / Approve blast design & Risk – Dam refurbishment blasting - NSW
- 2009 Blasting near ventilation services –Tunnel development Narrabri NSW
- 2009 Blasting near critical services – UG Coal mine NZ
- 2009 Design, RA. demolition of reinforced concrete crusher station – PNG
- 2009 Blasting near critical underground pipes – Tunnel NSW coal mine
- 2009 Blast design & Risk – Dam construction near existing facilities ACT
- 2008 Designs & Risk Assessments – Bridge, River pylons, Adjacent structures
- 2007 Risk, Design, Blast demolition of Post-stressed concrete bridge Canberra
- 2006 Risk Assess, Design Shaft & Tunnel Adit – Inner city Bne 15m from bldg
- 2006 Design, gain approval for collapse of failed steel shiploader conveyor
- 2006 Blast Eastlink tunnel electronic dets under houses – Suburban Melb
- 2006 Design, Procdrs & calcs to blast sewer shafts – VIC roads, Melb Water
- 2005 Risk manage, Design & calcs to blast hot, solid slag in furnace - WA
- 2005 Risk manage, Design & calcs to collapse elevated conveyor - Indonesia
- 2005 Design & calcs for blasting jammed 400 mm auger near Melb city hospital
- 2005 Design & calcs - blasting massive suspended boulder overhanging roadway
- 2004 Demolition of reinforced concrete silos – near Canberra NSW
- 2003 Underwater steel pylon Risk Assess & design for demolition W.A. harbour
- 2001 Reinforced Concrete Dam intake tower demolition design & Risk Assess VIC
- 2001 Blast 55 m concrete bunker building – Newcastle steelworks

- 2001 Blast mine Portal, Tasmania, 5m from main pipelines, 30m from workshops
- 1999 Precision blasting rock outcrop, 4 metres from swimming pool - Cairns
- 1999 Demolition of mine headframe structure at Cobar NSW
- 1999 Demolition of 2 reinforced concrete chimneys in Brisbane suburban area
- 1998 Close proximity blasting 3 metres from highway; Wollongong NSW
- 1998 Controlled blasting amongst major LPG tanks - Woodside Petroleum; WA
- 1996 Investigation / Clearances at Canberra Hospital Implosion
- 1996 Demolition of reinforced concrete silos - Mt Isa
- 1996 Demolition of NZ dam bulkhead, internal to dam.
- 1996 Subsurface demolition of NSW dam floodgates, internal to dam.
- 1994, '95 Blast-furnace demolition within factory complex; BHP Whyalla
- 1994 Controlled blasting of reinforced concrete foundations within factory complex; Brisbane city. Operating equipment at less than 5 m.
- 1991 Demolition 900 t Bucket wheel excavator - Electricity Commission Vic.
- 1990 Demolition of two 4-storey buildings - Wiluna Mine, West Australia
- 1987 Concrete Crusher demolition - within mine office area; Wattle Gully mine.
- 1986 Demolition of reo-concrete bridge foundations – Lake Eildon, Victoria
- 1973 Research International demolition blast formulae with 'Plastic' explosives
- 1972 Blasting concrete, steel, brick foundations inside factory complex; Melbourne
- 1970's Developed deep ocean explosives well-cutting techniques and systems
- 1970's Explosives metal hardening of steel rail tracks other components

Training, Courses, Blasting Handbooks, Manuals

Current; Competency training courses for most blasting applications

- ONGOING Upgrade Underground Coal Shotfirer courses to new QLD and NSW legislation – Conduct Accredited Shotfirer Competency training
- 2009 Opencut / UG, Coal, Metal, Misc Blast training & Optimisation – NZ / Aust
- 2007 / 08 Opencut & UG Blasting training & Optimisation – China, Mongolia
- 2007 Upgrading Underground, Opencut, Metals, Coal, Extractive and specialised / Advanced courses in all aspects of blasting
- 2006 Opencut / UG, Coal, Metal, Misc Blast training & Optimisation – NZ / Aust
- 2005 Opencut Blasting training & Optimisation – Mongolia / NZ / Aust
- 2005 Opencut Blasting training & Optimisation - China
- 2005 /06 Underground Coal Shotfirer courses - MNCU48, MNCU49 NSW & Qld
- 2004-06 Opencut Shotfirer courses Coal & Metal – Nationally Accredited Training
- 2004 Underground Coal Shotfirer courses – Accredited Competency training
- 2003 Prepare, present O’Cut courses in Russian language – Kyrgyzstan
- 2003 MNC 98 Coal Shotfirer course training & Assessment – O’cut and UG
- 2002 Shotfirer courses - Produce & deliver Nationally accredited for O/C and UG
- 2000 - 2004 Guest lectures – Melbourne University “Risk Management”
- 2002 Conduct Quarrying and Advanced Training courses
- 2001 Create & conduct Avalanche / Snow Control Blasting course (NZ)
- 2001 - 2004 Conduct National Competency Shotfirer Training courses
- 2000 Produce National Underground Shotfirer Training course & manual
- 1999 Certificate 4 in Workplace Training, Assessor
- 1999 NZ Extractive Industries Training Organisation; Registered Assessor
- 1998 Advanced Underground Blast Management training
- 1995 Advanced Efficient Blasting training – Quarry, Construction, Mining:
- 1986 Author Underwater demolition training course; Principles, Demonstrations and Practical - National Safety Council of Aust. / Victoria
- 1986 Develop “Advanced Demolition and Underwater Blasting Course” for NSCV
- 1983 - 1987 Conduct training courses “Handling, Use of Explosives”; (NSCV)
- 1983 - 1987 Joint Author of textbook “Handling and Use of Explosives” National Safety Council of Aust. / Victoria; (NSCV)

