

EDUCATION

B. Sc. Geology, University of Auckland, New Zealand
M. Sc. (1st Class Honours), University of Auckland, New Zealand
Engineering Geology, Environmental Monitoring and Management, Hazard Management and Emergency Response. Experienced in difficult geological areas, including those containing existing landslides and swelling clays.

AFFILIATIONS

Member New Zealand Geotechnical Society
Member New Zealand Society for Earthquake Engineering
Member New Zealand Society for Large Dams
Member New Zealand Coastal Society
Member Civil Engineering Testing Association of NZ

EXPERIENCE

2007 - Present

RESOURCE DEVELOPMENT CONSULTANTS LTD (RDCL)
ENGINEERING GEOLOGIST

NEW ZEALAND

PIKE RIVER COAL MINE, PIKE RIVER COAL LTD

Lead field engineering geologist, provision of geotechnical support, data management and analysis for design of vent raises and underground support.

ENGINEERING GEOLOGY IN HAWKES BAY

Multiple geotechnical investigations supporting resource consent applications, including a 17 Lot subdivision in the Tuki Tuki Valley in geotechnically difficult terrain.

DIDIPIO CU/AU PROJECT, PHILIPPINES. OCEANA GOLD PHILIPPINES INC

Construction supervision, field assessment and design, core logging and drilling program supervision for new mine access road, heavy plant site, 500 person accommodation village, underground and open pit mine. This new mine project is situated in mountainous country comprising pyroclastics, lateritic and residual soils with rainfall <3m / annum.

2003 - 2005

GNS SCIENCE, LOWER HUTT,
ENGINEERING GEOLOGIST

NEW ZEALAND

PROBABILISTIC LANDSLIDE HAZARD MODELING

Time-series aerial mapping of New Zealand geological terrains to identify historic landslides for the GNS Science Large Landslide Database. This information provided in-put parameters for generation of a **Probabilistic Landslide Hazard Model** for New Zealand. Principally responsible for compiling available geological, geotechnical, and seismic data (active faults) and landslides identified during aerial photograph interpretation.

STABILITY MODELING OF CLOSELY JOINTED GREYWACKE ROCK-MASSSES

A study aimed at calibrating the commonly used Hoek Brown Failure Criterion for use with **New Zealand Greywacke rock-masses**. Detailed defect surveys of greywacke exposures in the Wellington region, generally highway embankments and road cuts, coastal cliffs and local aggregate quarries. Responsible for all field data collection, database creation and management.

DAM WATCH SERVICES LIMITED

Large scale **Geotechnical Investigations** at Arapuni Dam, part of the Mighty River Power network of hydro dams. Geotechnical investigations comprised geotechnical logging of drill cores, drilling supervision, sample gathering for water dating and analysis, database management and report writing. The purpose of these investigations was to accurately locate leakage paths, essentially locating and determining the extent of a set of infilled fissures (joints), for the design of remedial works (completed between December 2005 & August 2007).

PROFESSIONAL PURSUITS LTD (NOW STRATA GROUP CONSULTING ENGINEERS)

Preparation of preliminary engineering geological reports for development projects in the Hawkes Bay. These reports generally comprised a summary of **geological hazards** (landslide, liquefaction, and landslide) and aerial photograph interpretation. These reports were principally used to assess the likely feasibility of a particular project.

ENVIRONMENT BAY OF PLENTY

Data collection and GIS analysis for Seismic Hazard Microzonation study of the Whakatane Urban Area for Environment Bay of Plenty. Hazards at the centre of this study included **liquefaction, landslides and fault rupture**. Principally responsible for compiling available geological, geotechnical (obtained from searches of council records), and seismic data and analysing the relationships in a GIS environment.

NORTH SHORE CITY COUNCIL

A multi-organisational pilot study to produce a methodology for assessing **coastal cliff erosion rates** in the East Coast Bays Formation. Tasks included time-series aerial photograph interpretation, engineering geological field mapping, review of past investigations and publications, and generation of a GIS model for the project.

HAZARD & RISK MANAGEMENT

Assisting Opotoki District Council and Civil Defense staff with **Incident Management** relating to the February 2004 flooding that caused extensive landslide damage and related hazards in the region.

Responsible for advising and supporting land owners and community groups in the most severely affected areas prior to the arrival of EQC assessors. Providing a "First Response" service giving on-site assessments of properties in immediate danger, as a pre-cursor to EQC damage-assessments. Completed region-wide field mapping to enable quantification of overall landslide damage in the area for Environment Bay of Plenty.

Assessment of the risk posed by rising water levels within the crater lake on White Island, Bay of Plenty. Tasks included field mapping and monitoring rising lake levels as a means to predict the likely break-out point, timing of, and potential impacts of the imminent crater lake breach.

Research project for the **Auckland Engineering Lifelines Group** assessing potential the impact of ashfall on water supply in the Auckland Region. The project involved review of eruption scenarios from international experience, knowledge of likely ashfall thickness and composition from the Auckland Volcanic Field and from further afield (Taupo and Okataina Volcanic Fields) combined with a thorough review of water storage, treatment, and reticulation processes employed in the Auckland Region.

2002 - 2003

TONKIN & TAYLOR LTD, NELSON
ENGINEERING AND ENVIRONMENTAL GEOLOGIST

NEW ZEALAND

PRIVATE DEVELOPERS

Engineering geological field mapping investigations.

Geotechnical field testing and reporting for construction compliance including earthworks testing for certification at Tasman Heights Subdivision.

NELSON CITY COUNCIL

Environmental projects in the Nelson and Marlborough Regions. Work included compliance monitoring of Nelson City's York Valley landfill, which involved daily, weekly, and monthly monitoring of a number of environmental indicators; monthly and quarterly sampling of the landfill and catchment area, including groundwater (borehole) and surface water sites, and soil and leachate sampling; additional to this was monthly, quarterly and annual reporting to local council.