

## NICHOLAS MARCHANT TATE

Trading as: **GEOMAP** (ABN: 80 947 275 426)

Managing director: **GEOMAP LAOS Co. Ltd.**

### Personal Information:

**Address:** *15 Verhoeven Drive  
Douglas, Townsville  
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**Date of Birth:** September 4, 1962

**Place of Birth:** Ottawa, Canada

**Citizenship:** Australian and Canadian

**Marital Status:** Single

**Languages:** English, some Lao, Bahasa Indonesia & Pidgin.

**Drivers Licence:** Qld classes LR, RE (car, motorcycle, 30 seat bus)

**Computer Literacy:** Windows. Business applications, Mapinfo, Photoshop, Illustrator.

**Education:** BSc Flinders University of South Australia 1980-1982.  
BSc Hons 1st Class (Geology major) James Cook University of North Queensland 1983.

**References:** *Dr. Roger Taylor  
Consulting Geologist  
10 Knapp St. West End, Townsville Qld, 4810  
Telephone: (07) 4721 5110*

*Dr. Gregg Morrison  
Manager, Klondike Exploration  
7 Mary St. Townsville, Qld 4810  
Telephone: (07) 4721 5793*

**Professional Affiliations:** Geological Society of Australia  
Australian Institute of Geoscientists.

## WORK EXPERIENCE SCHEDULE:

2015	Metal Bank	Yerington Porphyry Cu skarn systems USA	Geological mapping
2014	Terrasearch	Charters Towers Gold Deposits. Australia	Data compilation and review.
2014	Meryllion Minerals	La Blanca Porphyry Breccia system. Argentina	Geological mapping
2013	Freeport McMoran	May Pong Porphyry Cu Au system Laos	Geochemical sampling
2013	Ok Tedi Mining	Ok Tedi Porphyry Skarn Cu Au system PNG	Geological mapping and prospect review.
2012	Dundee Precious Metals	Kapan Cu-Ag vein system, Armenia.	Geological mapping and prospect review.
2012	Locrian Resources	Nam Mouan Prospect, Laos	Geological mapping, soil and stream geochem.
2012	Dominion Lao	Mouang Pha Platinum, Laos	Soil geochemical sampling program.
2012	Phu Bia Mining	Phu Bia Mine sites	MapInfo and Mapping training
2012	OM Tin Co	Nong Xeun Tin project, Laos	Soil geochem and pitting program.
2011	Newcrest Mining	Cadia district NSW Australia	Geological mapping and training.
2011	Locrian Resources	Mouang Long Cu-Au, Laos	Prospect assessment
2011	Argonaut Resources	Ban Bak Xekong project Laos.	Geology review, mapping and drilltargeting.
2011	Geomap Laos	Pak Mie Cu-Au Laos	Mapping and geochem survey
2011	Kingsgate Consolidated	Sanakham Cu Au Laos	Mapping and geochem survey
2011	Vongphasouk Mining	Phu Phou Cu-Au Laos	Prospect assessment and drill program design
2011	Phonesak Co ltd	KSO gold mine, Laksao, Laos	Exploration program review and design
2011	Kingsgate Consolidate	Project generation Laos	Regional geochem program design and management.
2010	NCD mining	Nong Xeun Tin alluvials Laos	Drill program design and management.

2010	Golf Long Tanh Co Xaysettha Sanxay Au Laos		Mapping and prospect assessment
2010	Gimpex	Phu Lek Iron mine, Laos	Geology mapping, geochem exploration, drillprogram design and management
2009	Hill End Gold Limited	Egg project, Loas	Regional geochem sampling program.
2009	Dominion Mining	Laos	Regional reconnaissance program
2009	Heibei Construction	Xekong Laos	Stream sediment sampling program
2009	Dominion Mining	Vientiane	Lao GIS data and prospectivity review
2008	CommSystems	Vientiane	Supply and install GIS data for vehicle tracking
2008	Phu Bia Mining	Vientiane	MEPA boundary definition review for GIS.
2008	Constitution Mining	Atena Gold prospect Argentina.	1:2000 Geological mapping.
2008	Phu Bia Mining	Operations sites, Laos	Imap GIS DGPS Training courses
2008	Phu Bia Mining	Operations sites, Laos	MapInfo software training.
2008	Phu Bia Mining	KTL Copper deposit, Laos	Geological assessment.
2008	Constitution Mining	Cerro Amarillo Copper prospect Argentina.	1:2000 Geological mapping.
2007	Southern Gold Ltd	Phnom Penh	GIS GPS training
2007	Pan Australian Resources	Put1 Copper deposit, Thailand	Geological assessment.
2007	Pan Australian Resources	Ban Houay Xai gold deposit, Laos	Review 3D geology model.
2007	Pan Australian Resources	Pha Gnai Copper prospect.	Mapping and Geological assessment.
2007	Pan Australian Resources	Bohr Thong & Tharkhek Copper prospects, Laos	Geological assessment.
2007	Pan Australian Resources	Phu He gold deposit, Laos	Geological assessment.
2007	Ankor Wat Minerals	Central Cambodia gold prospects	Recon and geological assessment

2007	Lao Army Mining Unit	Laksao gold deposit, Laos	Exploration management.
2007	Batu Mining Mongolia	Tuvd & Batshireet prospects, Mongolia	1:2000 Geological mapping.
2006 2007	Geomap Laos	Copper and gold prospects, Lao PDR	Company setup, prospect generation and assessment.
2007	Southern Gold Ltd	Eastern Cambodia gold prospects	District review + field prospect assessments.
2006	Batu Mining Mongolia	Dalain Els prospect, Gobi desert Mongolia.	1:2000 Geological mapping interpretation and drill planning.
2003- 2006	Pan Australian Resources.	Phu Kham, Ban Houay Xai and Long Chieng Track deposits, Laos	1:1000 Geological mapping, drill planning detailed core logging, assessment and review.
2003 2004	Macmin Silver Pty Ltd.	Mt Gunyan Prospect, Texas, Queensland, Australia.	1:2000 Geological and structural mapping.
2002 2003	Newcrest Mining Australia	Randal's, Triangle Park & Willow Park prospects, Orange, NSW, Australia.	1:2000 Geological and structural mapping.
2002	A.S. Marton & Assoc.	Anastasia Prospect, Chillagoe, North Queensland Australia.	1:2000 Geological and structural mapping.
2002	A.S. Marton & Assoc.	Mt Cameron Prospect, Paluma, North Queensland Australia.	1:2000 Geological and structural mapping.
2001	Carpentaria Gold	Ravenswood vein system (Comstock, Bristol, Donnybrook) Queensland, Australia	1:1000 Geological and structural mapping.
2001	Delta Gold	Bimurra prospect Drummond Basin, North Queensland, Australia	1:1000 Geological and structural mapping.
2001	Newcrest Mining Australia	Gooley's prospect, Orange, NSW, Australia.	1:5000 Geological and structural mapping.
2000	Newcrest Mining Australia	Cadia East prospect, Orange, NSW, Australia.	1:5000 Geological and structural mapping.
2000	Newcrest Mining Australia	Big Cadia skarn, Orange, NSW, Australia.	1:1000 Geological and structural mapping including sun compass survey.
1999	Cyprus Amax PNG	Imou prospect, April River PNG	1:2500 mapping, prospecting and drill planning,

1998 1999	Cyprus Amax PNG	Frieda River prospect PNG	1:2500 mapping, prospecting, drill planning detailed core logging, assessment and review.
1998 1997	PT Newcrest Nusa Sulawesi Cyprus Gold Australia	Bulagidun prospect Sulawesi, Indonesia. Ewan prospect North Queensland	Project review and assessment of potential. 1:50,000 scale field mapping and sampling. Alteration and mineralisation assessment.
1997	Cyprus Amax Indonesia	Bulagidun prospect Sulawesi, Indonesia.	1:2,500 scale field mapping and sampling. Alteration and mineralisation assessment.
1997	Normandy Group	Mt Remarkable prospect Pentland, North Queensland.	Prospect assessment & rockchip sampling.
1996	Kidston Gold Mines	Kidston Gold Mine,  Einasleigh, Qld	Detailed core logging of vein and alteration types to isolate low recovery ore.
1996	Normandy Group	Old Pirate prospect, Charters Towers, Qld	Alteration and mineralisation system interpretation.
1996	Cyprus Amax Indonesia	Petulu prospect Sulawesi, Indonesia.	1:2,500 scale field mapping and sampling. Alteration and mineralisation assessment.
1996	Cyprus Amax Indonesia	Wonggahulu prospect Sulawesi, Indonesia.	1:2,500 scale field mapping and sampling. Alteration and mineralisation assessment.
1996	North Flinders Exploration	The Granites-Tanami N.T.	Development of geological reference set for core logging system.
1996	North Flinders Exploration	The Granites-Tanami N.T.	Structural analysis of oriented drill core data.
1996	Cyprus Gold Australia	Barkers Lease, Chillagoe Qld.	1:10,000 scale field mapping and sampling. Alteration and mineralisation assessment.
1996	Cyprus Gold Australia	Mountain Maid prospect Chillagoe, North Queensland.	1:10,000 scale field mapping. Alteration and vein system analysis.

1995	Cyprus Gold Australia	Pelican Dam Complex Chillagoe Qld.	1:10,000 scale field mapping and sampling. Alteration and mineralisation assessment.
1995	Charters Towers Gold Mines	Charters Towers Qld.	Underground mapping, sampling, drill program design and management.
1994	North Flinders Exploration	Pine Creek Geosyncline N.T.	Regional assessment of mineralisation styles with relevance to those in the Granites region. Mid Proterozoic metamorphic gold province.
1994	Mt. Leyshon Gold Mines	Sandy Creek prospect, Charters Towers	Detailed petrographic alteration study.
1994	Burdekin Resources	New Star	Reconnaissance mapping, sampling and target assessment in complex acid igneous and metamorphic gold district.
1994	North Flinders Exploration	The Granites-Tanami N.T.	Characterisation of alteration and mineralisation system.
1994	Charters Towers Gold Mines	Charters Towers Qld.	Development of exploration and target generation strategies + a systematic alteration mapping system.
1994	Burdekin Resources	McKinnons Gold, Cobar NSW.	Delineation of mineralisation controls via detailed mapping, logging and petrology.
1993	Ballarat Goldfields	Jasper Ridge Prospect Cloncurry Qld.	Collate literature and exploration data to model mineralisation style.
1993	Intercontinental gold and Minerals	Mt. Leslie Prospect, Collinsville	Organise and manage percussion drilling program + 1:1,000 mapping.
1993	MPI	Scrubby Ck prospect, Pentland	Manage diamond & percussion drilling program + regional mapping.
1993	K Richter	Dittmer Mine, Proserpine	Detailed petrographic alteration study.
1993	Mt. Leyshon Gold Mines	Mt. Leyshon Mine Charters Towers	Computer modelling of ore body.

1993	Mt. Leyshon Gold Mines	TCP-1 prospect, Charters Towers	Detailed petrographic alteration study.
1993	PosGold	Pandanus Vale prospect, Charters Towers	Detailed petrographic alteration study.
1992	Great Mines	Stockholm Mine, Charters Towers	Detailed petrographic alteration study.
1992	K. Richter	8 Mile Charters Towers	Detailed petrographic alteration study.
1992	Klondike Exploration	Geological workshop	Design, draft and produce flyers.
1992	Klondike Exploration	North Queensland	Compile regional mineralisation and geological data from literature.
1992	Aztec Mining	Drummond Basin	Organise and host mine visit tour
1991	PosGold	Caledonia Mine Charters Towers	Detailed petrographic alteration study.
1991	James Cook University	Drummond Basin, Qld.	Regional mineralisation Database & map compilation.
1990	C.R.A. Exploration	Twin Hills, Qld.	R.C. drilling program supervision.
1990	Poseidon Exploration	Charters Towers, Qld.	Gold deposit map compilation and drafting.
1990	C.R.A. Exploration	Mareeba, Qld.	BLEG sampling program & prospect evaluation.
1990	North Qld Energy	Bowen Basin, Qld.	Regional assessment of coal bed methane resource.
1989	Elders Resources	Northwest Mungana (Red Dome), Qld.	1:10,000 mapping & prospect evaluation.
1989	James Cook University	Kilkivan, Qld.	Geological map revision & regional mineralisation study.
1989	Freeport Exploration	Broken River, Qld	1:10,000 geological mapping & prospect evaluation.
1988	James Cook University	Ukalunda Mineral Field, Qld.	AMIRA gold project. Regional mineralisation study.
1988	Freeport Exploration	Greenvale, Qld.	1:10,000 geological mapping & prospect evaluation.
1988	Paragon Gold Pty. Ltd.	Waitara, Qld.	Prospect evaluation.
1988	Sandhurst Mining N.L.	Mt. Surprise, Qld.	BLEG sampling program & prospect evaluation.

1988	Sandhurst Mining N.L.	Townsville, Qld.	Open file data retrieval.
1988	Paragon Gold Pty. Ltd.	Starke Goldfield, Qld.	Prospect evaluation.
1987	Carbine Gold N.L.	North Queensland	Project generation, database compilation & prospect evaluation.
1987	James Cook University	Bangka Is, Indonesia	Regional tin deposit assessment program.
1987	GEOMAP	Northern Thailand	Gold database compilation & synthesis.
1987	Graeme Reveleigh & Associates	Georgetown, Qld.	Prospect evaluation, mapping, rockchip sampling.
1986	Freeport Australia	Pentland, Qld.	Project generation, H.M.C., BLEG, soil sampling & detailed mapping.
1986	James Cook University	North Queensland	AMIRA regional gold deposit program.
1986	James Cook University	Peninsular Thailand	Regional tin deposit assessment program.
1985	James Cook University	Zaaipplaats, S Africa	Detailed underground structural program.
1984	James Cook University	East Coast Malaysia	Regional tin deposit assessment program.
1984	James Cook University	Zaaipplaats, S Africa	Underground mapping & fault resolution.
1984	C.R.A. Exploration	Flinders Ranges	Diamond drilling supervision & logging.
1984	C.R.A. Exploration	Northern S.A.	Helicopter diamond sampling.
1983	C.R.A. Exploration	Broken Hill, N.S.W.	Detailed mapping, drill core & chip logging, drilling supervision.
1982	Carpentaria Exploration	Tibooburra, N.S.W.	Regional mapping, drafting, rockchip sampling, SIROTEM survey.



## **HONOURS THESIS:**

Detailed study of the Boron rich Finlayson Granite and associated veins, greisens, stockworks, skarns, colluvial and eluvial Sn deposits.

## **PUBLICATIONS:**

Tate, N.M., 2005. "Geology and Mineralisation of the Phu Kham Copper-Gold Deposit in the Lao People's Democratic Republic". Contribution to the 8th SGA BIENNIAL MEETING Beijing, August 2005.

Tate, N.M., 1988. "Styles and Distribution of Gold Mineralisation in Thailand". Poster paper presented at Gold '88 Conference, Melbourne, Australia. May 16-20, 1988.

Tate, N.M. & Sirinawin, T., 1986. "A Systematic Approach to Placer Exploration for Gold and Tin". In: Proc. of the Workshop on Econ. Geol., Tectonics, Sedimentary Processes and Environment of the Quaternary in SE Asia. Thiramongkol, N. (ed). Head Yai, Thailand. 3-7 February, 1986.

## **FACILITIES AVAILABLE:**

GPS field mapping system.

Mapping & sampling equipment.

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