Our way is clear as we march on
And see! Our flag on high
Is never furled throughout the world
For hope shall never die!
We must unite for what is right
In friendship true and strong
Until the earth
In its rebirth
*Shall sing our song! Shall sing our song!**

Guiding The Way

Hendrick and friends at the University of Oxford in 1994.

With vim and vigour, Natasha Hendrick has embraced the varied nature of her role as Principal Geophysicist at DownUnder GeoSolutions (DUG), having made a conscious decision to move away from primarily research-focused work to a more interactive, people-orientated role.

Hendrick, who joined DUG earlier this year, describes herself as a "a great believer in serendipity", stating she very much believes in taking and making the most of the opportunities that present themselves.

"It was an opportunity to take the next step in my career", she said of her move to DUG. "Leading a team of people, having the opportunity to be a mentor to others—like people have been to me—to try and help make people realise the fun and adventure of working in our industry, and to make the workplace a great place to be."

Hendrick, who grew up south of Brisbane in Victoria Point, said since childhood she has always had an interest in science.

"I enjoyed science at school—I never really gave joining the oil and gas industry a lot of thought. But, as I went through high school, I loved the investigative nature of science classes; I had brilliant teachers that taught those subjects very well and who enthused us about maths and physics and chemistry.

"And so, it was natural then to take on a science-related topic at university. I actually started off signing up for engineering, and I was convinced I wanted to be an aeronautical engineer; but it turns out I wasn't really suited to a mechanical engineering degree!

"I was literally flicking through the university handbook trying to find something else that was more relevant and I stumbled across geophysics. So, it was a bit of an accident that I ended up in geophysics, but I love it—it's a perfect mix of sciences and, at that time, the outdoor nature of it appealed to me because I'd grown up on a property and I had been very much involved in the outdoors. I liked the idea of field trips and being outside—although, ironically, I've done only a little field work since I graduated!"

At university, with encouragement from her lecturers, Hendrick became involved with ASEG. She noted the social and networking benefits that membership provides students looking to establish themselves in the petroleum industry.

"Brisbane's a fairly small community, in terms of the oil and gas industry, so it was easy to get to know lots of people in that industry. ASEG held lots of student evenings. We'd have barbeques with the students, and as students completed their honours projects they could present the results at local ASEG branch meetings. There was a heavy emphasis on encouraging students to move up through ASEG.

"When I became a postgraduate student, I became involved in the organising committee of the Queensland branch of ASEG and helped keep that tradition alive—encouraging students to be active in all of the ASEG activities, and really promoting geophysics to students.

"I've been out to high schools, visiting science students to encourage them to study Earth science, and have helped the University of Queensland promote women in science. I'm really proactive in promoting science to young people, and I love supporting the industry—it's given me so much, so I like to give something back."

After completing her honours degree on seismic trace inversion, Hendrick successfully applied for a Rhodes Scholarship. She looks back fondly on her time at Oxford University.

"It was my first time travelling through the UK and Europe. I met extended family for the first time while I was over there and I made friends from all over the world—there was an incredible number of nationalities represented at my college", she said.

"In between study we had lots of fun, visiting London, and planning regular holidays—we went backpacking through Scotland, and trekking through Wales, and touring across Ireland, and through Europe—I started my love affair of travel during this time."

Upon her return to Australia, Hendrick took up a part-time position as a research assistant in the Department of Earth Sciences at the University of Queensland. She subsequently took on a full-time position with Digicon Geophysical (now Veritas) and, with the support of Digicon and APPEA, embarked upon her PhD at the University of Queensland.

"My PhD research was in multi-component seismic, so I'm very passionate about multi-component seismic exploration", she said. "The biggest challenges I've faced have been convincing the industry how to use converted wave seismic, and recognising the benefit that it can bring them. It's always exciting to work on a multi-component seismic project.

"One of my technical highlights would be working with the coal industry in Queensland—with Velseis and the Australian Coal Association Research Program—and being able to demonstrate that they could use converted-wave seismic to help with coal mining operations. One of the applications that involved

Hendrick and friend at a Girl Guide adventure camp in 1998.

using converted-wave seismic enabled us to successfully map very shallow coal seams that were suitable for open-cut mining", she said.

"The seismic industry as a whole hasn't yet nailed multi-component seismic. We don't have all of the tools to handle the extra shear-wave data. One of the really difficult things about multi-component seismic is that you have to so carefully integrate geology and geophysics at the time you're working with the converted-wave seismic data.

"It's challenging. We're only just getting to the point where we've got multi-disciplinary teams working together with the end products of seismic exploration; we've now got to get them working together while we're producing those products. Of course, computers are getting more and more powerful, so that's going to help."

Along with her love of science and travel, another defining influence in Hendrick's life has been her membership with the Girl Guide movement.

"I was a Brownie, a Guide, a Ranger Guide, a Junior Leader, and then, as an adult, became a Leader", she said. "I've volunteered as Assistant State Commissioner in Queensland. Now I'm Assistant Chief Commissioner for Australia, also a volunteer role, and help look after operations of the national organisation."

Hendrick said her membership with the Girl Guides has been beneficial both personally and professionally.

"My university degree taught me the basics of the science; all of the scientific mentoring I received taught me the practicalities of working in the oil and gas industry, from a scientific point of view; but, it's been my community work that's taught me important things like communication skills, managing people, project management—all useful soft skills.

"Communication and working with teams of people has been the most important thing that I've learnt through all of my community work; it's then opened doors for new opportunities in my professional life, because I have those skills.

"Through Guiding I have gained professional qualifications in leadership and frontline management. I can translate all of that directly into my professional career—my community and professional roles are slowly merging into one type of work", she said.

Last year Hendrick spent two months travelling around the world, fully funded on a Churchill

Hiking in the Swiss Alps at an international Guide camp in 1998.

Fellowship, researching recruitment and retention of adult volunteers for Girl Guide organisations.

"I travelled to London, Edinburgh, New York, Toronto, Calgary, Edmonton, Vancouver and Victoria, and spent eight weeks on the road working with staff and volunteers in the Guide organisations of the UK, USA and Canada. I interviewed many people, and compiled a research report on action that we need to take here in Australia to boost volunteer numbers in our organisation.

"I identified priorities for Guiding in Australia, and presented the results at a national Guiding membership seminar and at the Australian Volunteering Conference—so other organisations have taken onboard the recommendations as well, which is really good", she said.

Hendrick noted the centenary celebrations of Guiding have recently started. The Guiding movement began in 1909 when Lord Robert Baden-Powell, the father of the Scout movement, enlisted his sister Agnes to oversee its establishment after a rush of interest from girls who wanted to join the Scouts. The movement has since grown on a global scale.

"The Australian Government has announced 2010 as the Year of the Girl Guide, and we're getting a commemorative coin and stamps out next year. Celebrations started with a massive camp in Queensland last month, and we've got our big Centenary Jamboree in January in Victoria", she said.

"I certainly wouldn't be where I am today, and wouldn't have achieved what I've achieved, without the support of many people from many walks of life—not just all the scientists that I've met, but all of the women that I've met in Guiding, and all of the incredible people that you meet just travelling around the world."

The confidence engendered and skills taught through Guiding have doubtless prepared Hendrick well for the challenges of her role heading up the quantitative interpretation (QI) team at DUG.

"It was only two years ago I moved away from research; prior to that I'd always been in a research-type role, where the detail of the science was primarily what I looked at every day", she said. "However, in the last couple of years I've transitioned from science being my only focus and have moved more towards the people—I want to interact more with clients, I want to lead teams of people, and I want to motivate and enthuse other scientists to do a really good job. I still keep connected with my technical work, but these days I probably get more out of the people side of things.

"I find it refreshing and invigorating to work in a small company that can react swiftly to solving technical problems; I like that you can be innovative and get creative with providing industry solutions.

"That's lots of fun. DUG's a high-tech company—it's great to be involved with the amazing group of people here, who are all extremely intelligent and enthusiastic about their work, you're learning all the time from everybody around you."

While uncertain what the future may hold, Hendrick believes her ideal balance could well be a combination of her two passions.

"Right now I'm focused on helping DUG remain at the leading edge of seismic processing and QI services. However, I have often thought that in the future my ideal job would be part-time geophysics and part-time community work", she reflected. "I also have a great desire to move back to the land—sometime in the future that's going to happen. And I have considered becoming a teacher or university lecturer, because I know how much all of my teachers had a positive influence on me. Can I play a greater role in enthusing and motivating and exciting the next generation of geophysicists? That'd be a great thing to do." ■

* The World Song—*highlighting the principles and spirit of the Girl Guide movement.*