

MASAN  
RESOURCES



# 2014

Sustainable  
Development



## Global Reporting Initiative

The Global Reporting Initiative (GRI) is an internationally used framework for reporting on the sustainable development aspects of projects and programs. In this report, the GRI 4 core guidelines have been referred to in deciding on the content for the report.

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## Message from the CEO



Dominic Heaton

Chief Executive Officer

I reported in our inaugural Sustainability Report in 2013 that we aimed to build Masan Resources into the **premier Vietnamese private-sector resources company**. I believe we have made strong progress towards this goal in 2014.

Our focus in 2014 was on achieving stability in production and export activities, maintaining our excellent safety record, and continuing to improve on our environmental and community performances. I'm pleased to report that in September we achieved sustained optimal throughput and production, with record production for the months of November and December. At year-end we had amassed 7.5 million man hours lost time injury free.

Within the business we restructured our executive committee, adding additional expertise through the employment of a Chief Human Resources Officer (read more on page 15). We also separated the reporting lines for environment from production to ensure robust accountability for our environmental performance. We continued to deliver on our community commitments with the commencement of our third resettlement site at Dong Bong, and the relocation of the Catholic Church to Nam Song Cong.

These outcomes over 2014, consistent with our company values of Respect, Action, and Results, were appropriate rewards for the efforts of all of our people in 2014. We are a young, energetic Vietnamese Company with a great team in place to convert our vision into outcomes. We will continue to develop our team as our delivery platform for success.

A major business endeavour during the year was the implementation of the Nui Phao H.C. Starck Tungsten Chemicals Manufacturing Joint Venture. The Joint Venture will process all of Nui Phao's tungsten concentrate into higher value-add tungsten chemicals used in the growth industries of mining and engineering, medical technology, automotive and energy. The tungsten that comes from Nui Phao represents about six percent of global supply and so the joint venture brings enormous opportunity for ourselves and Vietnam. Our joint venture partner, H.C. Starck, is one of the world's leading technology metals manufacturers with unique expertise in application engineering and production technology. The joint venture will greatly advance expertise in producing tungsten chemicals here in Vietnam. Personnel will benefit from both the insertion of H.C. Starck's personnel into the project, and through the training of Vietnamese personnel that has occurred at H.C. Starck's chemical factory in Goslar, Germany (read more on page 15).

We were delighted to be publically recognised for our efforts in 2014 receiving a number of prestigious awards, described on page 5.

Over the course of 2014 some of our readers may have noticed drilling rigs operating around the pit margins at Nui Phao. This successful mine life extension project has extended the

mine life towards 20 years, making Nui Phao a world class (Tier 1) asset.

We continue to review strategic opportunities for growing both the company and the business. In 2014 we assessed several exploration opportunities within Vietnam and externally. The country is highly prospective and we believe we will identify future projects that will enhance our resources portfolio. I am excited about the outlook for 2015 for both Masan Resources and Nui Phao, and reporting on our further execution of plans to deliver on our vision by:

- Ø continuing to build the culture of success that achieves stated production targets, further develops our positive safety behaviours, improves our environmental performance, whilst delivering on our commitments to our community and stakeholders.
- Ø implementing our Future Leaders program, ensuring we have supported our talented staff into leadership roles within the company.
- Ø acting decisively to grow our business through developing or acquiring assets.

Together we have achieved much in 2014 whilst overcoming many challenges. Our successes and challenges are described throughout this report – our second annual sustainable development report, which I hope you enjoy. I encourage readers to make contact with us at Nui Phao if they wish to discuss any aspects of this report.

Dominic Heaton  
CEO Masan Resources

## Review by the Deputy General Director



Vu Hong

Deputy General Director

The most pleasing aspect of 2014 for me was the continued support we received from the central and provincial governments, the district and commune authorities, our host communities and other stakeholders. Mining is inherently a difficult activity in that it often displaces people from the land on which they have lived for generations. If not displacing residents' homes, still acquiring the land from which people have generated their income. Negotiating for land acquisition generates the potential for social conflict that is difficult for both the relevant parties – undoubtedly more for landowners – and I am grateful that, in the main, we continued to enjoy constructive communication with our host communities. This is not to say that we did not face difficulties in 2014.

We had several protests at the project site during our activities to realign the national highway and rail line, other construction activities and plant operations. Some of these protests were not concluded as successfully as we would have liked, thus we will continue to try and resolve outstanding land issues using mediation and not conflict, with the objective of achieving win-win outcomes for all parties.

Our compensation and resettlement activities continued in 2014 and, while difficult for those affected, we hope we have conducted our activities with decency and respect. A third resettlement area was constructed in 2014 at the request of more than 130 affected households. Resettlement, blasting and construction activities required for the road and rail realignment caused community concern throughout 2014, and some issues remained unresolved at year's end. We will continue to work at achieving mutually satisfactory outcomes on these fronts in 2015 (read more on page 37).

I am very pleased that in 2014 we enjoyed greater participation from the local authorities and our host communities in identifying impacts and finding the solutions for them. We implemented a new schedule of weekly and monthly meetings with each of the communes and villages in 2014, providing an opportunity for issues to be raised and discussed by all parties. We conducted 76 meetings in 2014 which involved 2,093 participants.

We also increased our efficacy in resolving community complaints – we received 626 complaints in 2014, mainly relating to resettlement and

compensation, and environmental matters (such as noise, dust and water from the operations), and resolved 90% of those.

Our economic restoration program continues to build momentum and return viable results for participants. In 2014, more than 950 project affected people (38% of the total workforce, including contractors) were employed at Nui Phao (compared with 37.4% in 2013). Four enterprises had been established as part of our economic restoration programs providing employment for 67 project affected people and an average monthly income for workers of approximately US\$160.

We contributed US\$342,500 (including US\$115,725 with the economic restoration fund) to community development in 2014 (compared with US\$258,000 in 2013).

The successes we achieved in 2014, outlined throughout this report, were only possible because of the contribution of our people, the cooperation of our stakeholders (particularly government authorities) and the support of our partners. For this, we are grateful. With the ongoing support of our host communities, employees and stakeholders we will continue to make Nui Phao a showcase model of mining in Vietnam.

I trust you will enjoy reading about our efforts in 2014 and I welcome your feedback.

Vu Hong  
Deputy General Director

## Review by the Operations Director

The development of Nui Phao has been quite rapid by industry standards. I am extremely proud of our people and how far we have come in 2014 in overcoming challenges as we moved from commissioning to commercial production to delivering consecutive production records in November and December 2014.

We achieved a number of milestones throughout the year. Our first earthworks for Nui Phao occurred in December 2011 and yet by June 2015 we reached 15 million tonnes of material removed from the pit. In March, we achieved an important milestone with the commencement of commercial production and sale of five of our products – copper, bismuth, tungsten, sodium tungstate and fluorite. We handed over operation of the sodium tungstate plant to the joint venture with H.C. Starck. The sodium tungstate plant, constructed by Nui Phao, formed the key foundation for undertaking the joint venture with H.C. Starck. The Joint Venture then commenced continued construction to progressively convert the facility from sodium tungstate to ammonium para tungstate (APT), yellow and blue tungsten oxide, with first APT production expected in early 2015.

The Nui Phao processing plant throughput in November 2014 reached an impressive 288,750 tons - the highest monthly volume we had achieved to date (we repeated record

production in December). We also achieved:

- Ø record availability at 98.4%
- Ø record copper production of 483 tons at just under target recovery of 75%.
- Ø our highest recovery of bismuth of 47%.
- Ø record tungsten production of 447 tons at target recovery of 53%
- Ø our largest quantity of quality acid grade fluor spar ever made following the production of 9,000 tons of fluorite concentrate.

Our production achievements were made even more meaningful for us in light of our ongoing safety record. Although we were devastated to sustain a lost time injury in February 2014, we maintained a fatality-free project and achieved 7.5 million man hours without another lost time injury by year-end. We were pleased that our injured worker made a full recovery and we will continue to make every effort in our safety initiatives to ensure every member of our workforce returns safely home at the end of their shift.

We made sound progress in improving our water discharge management in 2014 with the installation a new water treatment plant and a natural aeration mechanism (a 'waterfall')(read more on page 29). On this matter, in March 2014, we hosted a site visit to Nui Phao for representatives of Phuc Linh Commune to observe our water discharge management system and the activities we undertake to monitor and control water discharge in order to mitigate against water pollution.



Craig Bradshaw

Operations Director

We enjoyed the opportunity to openly discuss these issues with some of our stakeholders.

Personally I would like to thank our people for their contributions and efforts in building our company. I believe anyone can buy equipment, acquire machinery and set up a project, but what differentiates the good from the great, is the quality of the people and the culture of success. We are well on our way to building a great company and this has been made possible by the quality and commitment of our people.

I invite you to read this report, see what we have achieved, what our people are capable of, what we have done well and the areas where we have opportunity to improve. If you have any comments, ideas or suggestions, please send them to us via the email address on the back cover of this report or visit us at one of our community information centres.

Craig Bradshaw

Operations Director, Nui Phao Mining

# 2014 Highlights

- Ø We achieved stability in production and export activities, with record production for the months of November and December.
- Ø We achieved an important milestone with the commencement of commercial production and sale of five of our products – copper, bismuth, tungsten, sodium tungstate and fluorite.
- Ø We maintained our excellent safety record. Despite one lost time injury sustained, at year-end, we had amassed 7.5 million man hours lost time injury free. Read more on page 22.
- Ø We were delighted to be publically recognised for our efforts in 2014 receiving a number of prestigious awards, described below.
- Ø We implemented the Nui Phao H.C. Starck Tungsten Chemicals Manufacturing Joint Venture.
- Ø We made sound progress in improving our water discharge management with the installation a new water treatment plant (see page 29).
- Ø We implemented a new schedule of weekly and monthly meetings with each of the communes and villages, conducting 76 meetings with 2,093 participants. Read more on page 36.
- Ø More than 950 project affected people (38% of the total workforce, including contractors) were employed at Nui Phao (compared with 37.4% in 2013). Four enterprises had been established as part of our economic restoration programs providing employment for 67 project affected people and an average monthly income for workers of approximately US\$160 (see page 34).
- Ø We contributed US\$342,500 (including US\$115,725 with the economic restoration fund) to community development in 2014 (compared with US\$258,000 in 2013). Read more on page 36.

## Awards

We were delighted to be publically recognised for our efforts in 2014 receiving a number of prestigious awards.

- Ø In October, we received an 'outstanding enterprise' award (one of only 40 in Vietnam and the only mining company) at the Asia Pacific Excellence Awards. This award recognised our contribution to national socio-economic development.
- Ø In November, we were the only enterprise from Thai Nguyen honoured with a Green Brand Award. The Green Brand Awards are presented by the Economy and Forecast magazine, and the Ministry of Planning and Investment for strong environmental performance.
- Ø As a business we were also recognised as a Top 1000 enterprise for tax contribution (V1000), receiving an award at the 6th Outstanding Entrepreneurs Thai Nguyen 2014.
- Ø Nui Phao was awarded the Golden Cup from the Thai Nguyen Provincial People's Committee (PPC) in conjunction with the Department of Labour, Invalids and Social Affairs (DOLISA), in February. The Golden Cup award recognised excellent enterprises and businesspeople in the province. Nui Phao was recognised for its significant contribution to the Thai Nguyen Province's economic and social growth, attributed to injecting approximately US\$17.8 million into the local economy and creating almost 2,000 jobs, paying an average salary of US\$517 per month.



# Operations

## Nui Phao, Thai Nguyen Province, Vietnam

### Vietnam

The Socialist Republic of Vietnam (Vietnam) is the easternmost country on the Indochina Peninsula in Southeast Asia. The country is bordered by China to the north, Laos to the northwest, and Cambodia to the southwest, and the South China Sea to the east. Its capital city is Hanoi. Nui Phao is located 80km northwest of Hanoi by road.

### Thai Nguyen Province

Nui Phao is located within Thai Nguyen province in the northeast region of Vietnam. Thai Nguyen has a land area of 3,534 km<sup>2</sup> and a population of more than 1.27 million people. It is a multi-ethnic society, and known as an educational centre (3rd nationwide) with 21 universities and colleges. The province is rich in mineral resources and is the centre of the tea industry in the country with production of 100,000 tonnes/year.

Tea produced in Thai Nguyen has the reputation as the finest in Vietnam.

### Site Summary

Nui Phao project is a polymetallic open pit mine, owned by Masan Resources and operated by the Nui Phao Mining Company (NPMC).

Nui Phao produces two primary commodities – tungsten and fluorspar. Tungsten is commonly used to make wear-resistant cutting tools and drill bits, as well as filaments in light bulbs and as a steel alloy. Fluorspar is used to produce hydrofluoric acid, used in electroplating, stainless steel, refrigerant and plastics industries.

Nui Phao also produces bismuth (used in pharmaceuticals, chemicals, ceramics, paints and catalysts), copper (used in electrical cables and wires, chemicals and pharmaceuticals and alloys including bronze and brass) and a small

amount of gold (used in the dental, medical, electronics industries and for jewellery).

The major project components are:

- Open pit mine
- Waste rock disposal facilities
- Modern mine plant and facilities, including a crushing plant, grinding, thickening, flotation, and gravity recovery
- A sodium tungstate (ST) plant that processes tungsten concentrate into higher value-add sodium tungstate.
- A tailings storage facility (TSF) with water management ponds
- Buffer zones, relocation sites, haul roads, and mine services.

Product from Nui Phao is shipped to worldwide markets from Quang Ninh Port (in Ha Long City, 197 km to the southeast of the Project). The port is also used to receive equipment and materials required to run the mine.



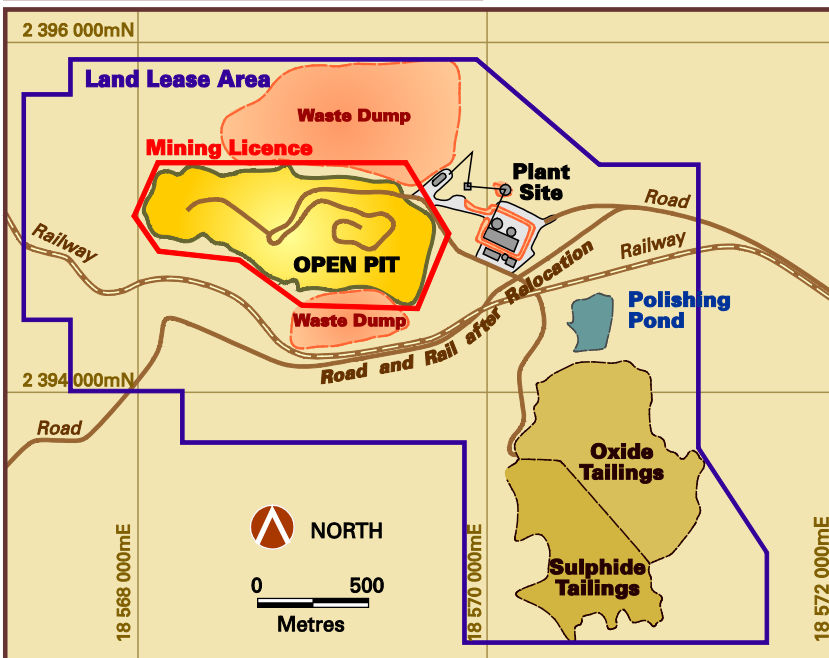


### Country facts

*Population:* 92.5 million (2014).  
*Density:* 289/km<sup>2</sup>.  
*GDP:* \$171,390 billion (57<sup>th</sup>).  
*Ethnic groups:* 85.7% Kinh (Viet), 1.9% Tay, 1.7% Tai, 1.5% Muong, 1.4% Kho me, 1.1% Hoa, 1.1% Nung, 1.0% Hmong, 4.1% others.  
*Religion:* Buddhist 9.3%, Catholic 6.7%, Hoa Hao 1.5%, Cao Dai 1.1%, Protestant 0.5%, Muslim 0.1%, none 80.8%.  
*Literacy:* 93.4%  
*Urbanisation:* 31% of total population (2011), 3.03% annual rate of change (2010-15 est.).  
*Drinking water source:* Improved: urban 99.5%, rural 93.8%, total 95.6%. Unimproved: urban 0.5%, rural 6.2%, total 4.4% (2011 est).  
*Main exports:* Petroleum, rice, coffee, clothing, fish.

### Province facts

*Population:* 1.27 million.  
*Density:* 325/km<sup>2</sup>.  
*Ethnic groups:* Kinh, Tay, Nung, San Diu, H'Mong, San Chay, Dao, Hoa.  
*Urbanisation:* 32% population.  
 Sources: General Statistics Office of the Government of Vietnam, World Bank, CIA Factsheet.





2000

## History of Nui Phao

Significant polymetallic deposit discovered at Nui Phao.



2010

Masan Group establishes Masan Resources and acquires Nui Phao. New mining licence issued. Compensation and resettlement process commences.



2011

Earthworks commence.



2012

Construction continues. Focus on operational readiness (primarily staff recruitment, training and development).



2013

Transitioned from construction to operations. Began production and made first shipments of tungsten and copper. Reached full throughput capacity. Achieved 12.5-million man hours LTI-free.



2014

A year of stable operations. Sustained optimal throughout and production, and record production for the months of November and December. Constructed the APT plant to process tungsten into higher value-add chemicals.

## Environmental setting

The Project is set amidst considerable historic and ongoing mining activities, which have resulted in a variety of environmental and social impacts. It is also located in a region where elevated concentrations of arsenic and other heavy metals naturally occur in local soils. The local climate is classified as tropical monsoon, with two distinct rainfall periods. Average temperatures range from 16° C in December and January to 28° C in May through September. Average annual rainfall is 1,963 mm, most of which falls between May and September. The region is an agricultural area with rice farming in the valleys and tea cultivation on the hill slopes.



## How we make our products



Explosive charges are set in the open pit and detonated to break up the rock.



The rock, called ore, is trucked to the two-stage crusher system where it is crushed into smaller sizes.



Ore is fed into a grinding circuit where it is ground into a fine powder.



The ore is fed into flotation tanks where copper is separated.



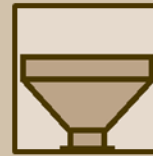
Tungsten concentrate is further processed in a separate plant to form Ammonium paratungstate crystals.



Tungsten concentrate and fluorite concentrate are produced.



Tungsten and fluorspar are separated using a gravity process (tungsten) and flotation (fluorspar).



The remaining ore is fed into the bulk sulphide flotation circuit.



Copper concentrate is dewatered and bagged.



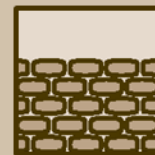
A bismuth cement is made and then used to make bismuth metal briquettes.



Bismuth can be separated by further leaching and refining.



Bismuth concentrate is produced and bagged.





# Sustainable Development

## Sustainable Development at Nui Phao

### Governance

Our vision is to build the *premier Vietnamese private-sector resources company*. Our mission emphasises the equal importance of investor returns, people and community, the environment and sound governance.

We have determined three values that guide all our people's decision making - *respect, action and results* - and they are reflected in the company's Code of Ethics and Business Conduct. Our values are translated to our people via a document outlining the behaviours that would demonstrate the values in day-to-day activities. Our policies set out what we believe in and what we promise to achieve in the areas of health and safety, environment, community relations, and goods and services procurement.

### Code of Ethics and Business Conduct (Code)

Our Code reaffirms the high standards of business conduct required of all our employees, officers and directors. It was created as part of our continuing effort to ensure we comply with all applicable laws, and act responsibly, with integrity to our customers, suppliers and the wider community. Anyone who violates the Code may be subject to disciplinary action, including possible dismissal.

### Standards, Codes and Practices

Consistent with international mining practices, Nui Phao is being developed in a manner that complies with Vietnamese regulatory requirements and World Bank guidelines/policies on the social and environmental safeguards. A primary objective is to ensure that proper

environmental protection measures are implemented so that specific interests of local people are accounted for and any adverse effects on local communities are minimised. We aspire that the people affected by land acquisition for the project (project affected people (PAP)) are not worse off as a result of our project and we provide assistance to vulnerable groups such as the poor, ethnic minorities and disabled people.

We seek to meet the requirements for funding sought by financial institutions which are signatory to the Equator Principles, a set of guidelines, adopted by financial institutions for determining, assessing and managing environmental and social risk in projects.





*In 2014, Nui Phao and its employees donated clothing and gifts to underprivileged communities. ABOVE: A Nui Phao employee presents gifts to children in one community. BELOW: The girl on the left dressed in traditional costume for the gift-giving ceremony.*

### Stakeholders

Our stakeholders are the many and varied groups and individuals who have a 'stake' in our project in that they are impacted (positively or negatively) in some way by our development, or they have the ability to impact our project. Our stakeholders include our employees and contractors, surrounding communities, the Thai Nguyen provincial and National government, investors and program partners. Our stakeholders are the intended audience for our sustainable development report.





# People

## People

### Objectives

Now that we have transitioned from a construction environment in 2013 to one of stable operations in 2014, our focus has also moved – from recruitment and workforce preparation to the ongoing professional development of our people. We aim to assist them to progress from work-ready to technical experts and/or effective leaders.

### Performance

At end-December 2014, there were 2,493 people working at Nui Phao (compared with 2,439 in 2013). They were made up of 1,301 permanent employees (compared with 1,281) including 1,095 staff and workers and 206 casual workers and 1,192 workers employed by contractors (compared with 929). A total of 56% of direct employees were from project affected areas (compared with 60% in 2013) and more than 76% of workers

were from within Thai Nguyen province (the same proportion as 2013). From our entire workforce (including contractors) 38% of workers were from affected areas (compared with 37%) and 61% from within the province (compared with 57% in 2013).

A total of 22.1% of our workforce was women (compared with 20% in 2013) and we had 11 women in middle management (supervisor and superintendent roles) and four in senior management (compared with three and one respectively in 2013). Our turnover for the year was 7.8% (compared with 21.2% in 2013), reflecting a more stable working environment from 2013 when we had many construction contractors on site. A total of 95.3% of our direct employees (excluding casuals) are represented by a trade union (compared with 82% in 2013). Membership is voluntary.

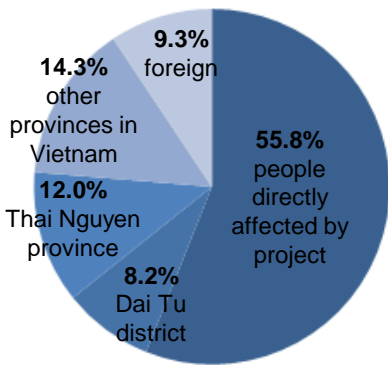
### Local employment

We continued to recruit in accordance with our recruitment hierarchy in 2014. The hierarchy gives preference to our host district (Dai Tu), the Thai Nguyen province, and Vietnam more broadly, in that order, and then internationally. This hierarchy aims to maximise the economic benefit of our project to those who are affected by it. The percentage of our workforce comprised of project affected people in 2014 was 38% (including employees and contractors), a small increase from 37.4% in 2013. This was particularly pleasing given many of the lesser skilled construction jobs were completed the previous year.

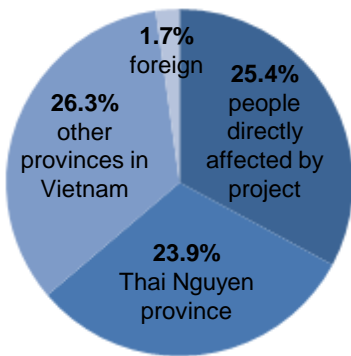
Our employee workforce comprised 1% in senior management positions, 20% in management and supervisory positions and the balance, 79%, in non-supervisory roles. One senior manager (0.08% of our employee

workforce) and six managers (0.5% of employees) were Vietnamese. Foreigners made up 9% of our employees in 2014 (6.7% of the total workforce of employees and contractors, compared with 6.4% in 2013). The origin of contractor workers in 2014 was: foreign 48, other provinces 621, Thai Nguyen 116, district 183, project affected people – 224.

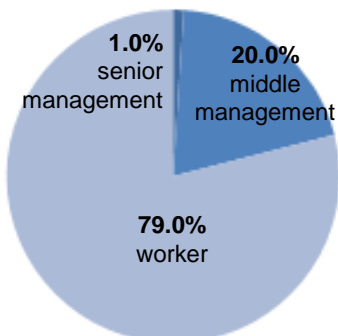
**Employment by origin, all workers (Dec 2014)**



**Women employed by origin, direct workers (Dec 2014)**



**Workforce breakdown by position, direct employees (Dec 2014 ex. casuals)**



Of our contractor companies in 2014, eight were Vietnamese and two were foreign.

**Turnover**

We enjoyed a low turnover rate of employees in 2014 at only 7.8% (against the industry average for manufacturing of 10.4%). This turnover rate rightly excludes 237 people whose employment was transferred from Nui Phao to the Nui Phao H.C. Starck Joint Venture when it came into effect in July 2014. In reality, those people continued to work for the project, but their employment contracts were transferred to the joint venture which now formally operates the ST plant. Turnover amongst employees in supervisory or management positions was 0.5%.

**Women**

Our workforce comprised 22.1% of women in 2014 (compared with 20% in 2013). The majority of our female employees were from project affected areas. The breakdown of women employed by the project by origin is shown in the chart (left). 2013 comparisons are included in brackets.

**Systems**

More than 250 positions at Nui Phao were assessed by the human resources department in 2014 and classified according to the difficulty of the role and the level of technical proficiency and/or responsibility required for performing the role. The aim was to standardise the positions so they could be transparently situated within a wage bracket reflecting the nature of the role. The process was important in ensuring employees were paid fairly for the role they performed and equally across different departments. The role classifications and wage brackets were determined in consideration of the Government minimum wage, advice from the Trade Union and a benchmarking survey of market rates.



## 2014 Highlights

- Ø Completed standardised job evaluation for more than 250 positions, ensuring transparency and equity in employees' wages
- Ø Awarded 53 Nui Phao Star awards recognising employees acting above and beyond the requirements of their roles.
- Ø Increased employee capability in a range of areas through several technical and professional training programs.
- Ø Developed the framework for the Future Leaders program which will be implemented in 2015 to ensure outstanding employees are supported.

We also completed automating the human resources system at Nui Phao in 2014, meaning that now all employee records are managed electronically. Timesheets are submitted into the system and pays, and leave balances, for example, are now automatically calculated. The new system has enabled greater efficiency with the human resources department.

### Training

In conjunction with the Mechanical and Metallurgy College in Thai Nguyen (which provided the training and resulting qualification), Nui Phao supported a total of 400 employees through either forklift operator or hoist crane operator training in 2014. The three month courses resulted in recognised qualifications for successful participants.

We continued to deliver English classes in 2014, in the categories of beginner, intermediate and advanced.

A total of 120 employees completed courses. Nguyen Thi Thanh Hang (from the External Relations department) and Nguyen Anh Tu (from the environment



*Graduates of the English classes.*

department) were acknowledged as outstanding learners. Mai Gia Tien was also recognised for his hard work and dedication to study. English classes are planned to continue in 2015 with the expectation of another 100 participants enrolling to learn English.

Members of the human resources department also developed professionally in 2014 with the support of Nui Phao. Two supervisors – Le Thi Ly and Phan Dang Hoan – commenced degrees in law (having already completed degrees in

business administration). They will continue their studies online through Tra Vinh University for two-and-a-half years until complete. Nui Phao pays for tuition and provides study leave for exams.

Three other human resources department employees – Vu Thi Thang, Pham Thi Hue and Nguyen Thi Hue – attended a six-month basic human resources course at the EduViet Centre in Hanoi, receiving a recognised qualification at the completion of the course.

### 2014 Performance

Target	2014 Result	2014	2013
Maximise local employment according to our recruitment hierarchy.	●	76% of directly employed workers were from Thai Nguyen including 56% from project affected areas.	77% of directly employed workers were from Thai Nguyen including 60% from project affected areas.
Foster diversity and gender equity in our workforce.	●	In 2014, 22.1% of our workers were women.	In 2013, 19% of our workers were women.
Reduce turnover to establish a stable and productive workforce.	●	Our turnover was 7.8%, reduced from last year and below the industry average of 10.4%.	Our turnover was 21.2% (including construction workers).
Continue to develop our workers and increase human capacity in the province.	●	We facilitated a range of training programs in 2014 from technical and trade tickets, to university degrees. Approx. US\$37,070 was spent on training.	500 workers received government-issued safety tickets and 125 received their licences for operating forklifts and cranes. We spent approx. US\$214,382.
Recognise examples of outstanding performance.	●	We awarded 53 Nui Phao Star awards to outstanding employees.	The Star Awards were implemented in August 2013 and recognised 18 of our star performers.

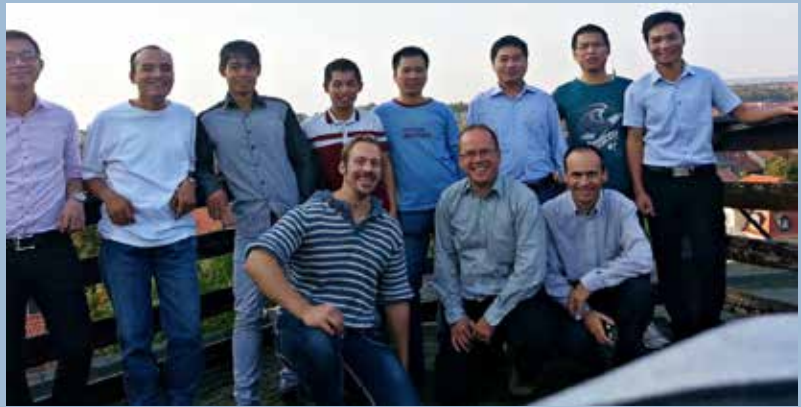


### Intensive training in Germany

One of the benefits of the Nui Phao H.C. Starck Tungsten Chemicals Manufacturing Joint Venture was the opportunity for 16 employees to travel to H.C. Starck's tungsten chemical plant in Goslar, Germany for two months of intensive training ahead of taking roles within the Chemical plant at Nui Phao.

The first training course – attended by eight employees – was conducted in August 2014. The second – attended by a further eight employees – was conducted in December 2014.

Both courses exposed Vietnamese employees to one of the world's most innovative chemical production lines, enabling them to gain knowledge and



*The VIP Team of Thai Nguyen Provincial Peoples Committee in Germany.*

share experiences in tungsten chemical purification with their German colleagues. They were also directly involved in operating the plant and in production management. This hands-on experience at the Goslar

plant helped familiarise Vietnamese employees with state-of-the-art solvent extraction technology and production processes. In turn, the participating employees will both apply their knowledge at Nui Phao and pass it on to other colleagues.



### Welcome Eddie

Nui Phao welcomed Eddie Arsyad as the Chief Human Resources Officer in 2014. Eddie comes to Nui Phao from PT Media Djaya Bersama (MDB Coal, Reswara Group, ABM Holding group) where he was the Director of Projects Development. Eddie has more than 30 years' experience in the mining and smelting industries in Indonesia. Prior to that, he spent seven years in consulting and government public works in Australia. Eddie brings strong management, leadership in technical, maintenance and operations areas, and experience in government and community relations, and human resources.

### Future Leaders

In 2014, Nui Phao developed the framework for a Future Leaders program that will be implemented in 2015. The Future Leaders program aims to identify outstanding performers and ensure those employees receive the support and professional development they need to become future leaders at Nui Phao. We recognise that in order to succeed as the premier Vietnamese Resources Company and to meet our growth ambitions, we will need exceptional people in key position within the company. The Future Leaders program will invest in ensuring our own people fill key positions. To bring the program to fruition, department managers will review the six monthly performance appraisals of their staff and locate their performance on a nine box performance potential matrix. The matrix helps identify the employees that are excelling and those that are

not. For those that are excelling, individual development plans will be created to ensure they continue to thrive professionally and go on to become Nui Phao's leaders. The process will also assist with succession planning at Nui Phao and where outstanding performers are not identified as existing within the organisation, strategic recruitment will occur to fill those gaps.

### Focus for 2015

- Ø Implement the Future Leaders program, described above.
- Ø Strengthen the performance management system with the development of specific key performance indicators for all employees in supervisory and management roles.
- Ø Build capability and capacity within the organisation to meet NPMC's future growth ambitions.

## Nui Phao Stars

### Recognising outstanding contributions

We reported in 2013, that we had commenced our Nui Phao Monthly Star Awards program, designed to acknowledge and reward outstanding contributions to our project by our workers. This program continued in 2014 and we presented 53 awards throughout the year to deserving recipients. Nominations are made by department managers who identify one of their colleagues (or a group of colleagues) who have gone 'above and beyond' in their efforts, shown excellent performance or identified useful initiatives. Winners are selected by Nui Phao's Board of Directors. Winners receive a voucher to the value of VND2 million (approx. US\$93) to share and celebrate with their families, and, of course, the accolades of their colleagues.



ABOVE: Luong Quang Huong (left) and Pham Trung Thanh (right) were awarded Nui Phao Monthly Star awards for their efforts in learning new skills for condition monitoring (including non-destructive testing techniques) and applying their skills for the preventative maintenance activities undertaken on site. They conducted condition monitoring activities which resulted in improved reliability of equipment in the Nui Phao Plant.

ABOVE: Processing supervisor, Le Van Thien, was awarded a Nui Phao Monthly Star award for demonstrating the company values – Respect, Action, Results – in conducting his supervisory duties. Through his actions he enabled the effective and efficient operation of his area of responsibility, greatly improving productivity in the section.



ABOVE LEFT: Doan Duc Thinh was awarded a Nui Phao Monthly Star award for his dedication and professionalism during each end-of-month process, which he often completed while at home on break. Thinh also always offered his availability while on break to act as interpreter for meetings in Hanoi. While on site, he was regularly called away from his normal duties to act as translator and still managed to ensure that his usual responsibilities were met.

LEFT: Vu Hai Cuong was awarded a Star award following his efforts in April 2014 to facilitate the requirements of the operation for blasting. He facilitated the temporary or permanent relocation of households in the blasting area of Hung Son and Tan Linh communes and was on-hand during blasting (even during his time off) to ensure the exercise went smoothly and that community members could contact him if required.

## Nui Phao Stars



Le Duy Khanh was awarded a Nui Phao Monthly Star award for his leadership of the emergency response team (ERT). In 2014, the ERT:

- Ø Conducted their work responsibilities proactively and positively.
- Ø Became proficient in the use of fire and emergency response equipment.
- Ø Showed rapid improvement in their safety knowledge and awareness.
- Ø Demonstrated a high degree of responsibility in maintenance and troubleshooting of fire equipment.
- Ø Learned to recharge powder fire extinguishers to reduce fire prevention cost.
- Ø Coordinated with other sections to achieve a high rate of performance.
- Ø Performed various drills to enhance their skills.
- Ø Provided effective support to solve surrounding environment and community matters.



Hoang Trong Binh and Duong Van Du were awarded Nui Phao Monthly Star awards for outstanding performance during a total plant shutdown in September 2014. They facilitated the completion of the shut down on time and without any incidents or injuries. Part of their success was due to their efforts in ensuring that the contractors who were brought in to assist with the shutdown complied with Nui Phao's policies and safety standards.



Nguyen Thi Mien was awarded a Nui Phao Monthly Star award for her outstanding performance in November and December 2014 when she helped treat two difficult emergency cases in the clinic. In conjunction with other staff at the clinic, Mien also completed more than 1,000 medical checks ahead of schedule, participated in training a new nurse and provided support during his familiarisation period, demonstrated a high degree of safety in driving the ambulance and completed her usual responsibilities with efficacy.

### Solving safety problems

On two occasions in 2014, workers at Nui Phao identified modifications to the plant and equipment that improved their safe use. In the first instance, workers were regularly using the fire hose for washing down the plant, causing damage to the plant and unnecessarily occupying the firefighting system. Instead, the health and safety department installed an additional water line for washing purposes, and secured all fire cabinets and hoses against inappropriate use. The fire line valves were also isolated in open position to ensure their readiness in the event of a fire.

In the second instance, the health and safety department repaired and refurbished all of the firefighting equipment (lines, hoses, nozzles, extinguishers and storage cabinets) to protect them against environmental wear and ensure their readiness for use. High quality anti-corrosive paint was used to protect equipment and make the firefighting system more visible to plant workers. This initiative was also expected to reduce the frequency in which equipment needed to be replaced, saving the company cost.



*Le Thi Ly (left) and Phan Dang Hoan commenced degrees in law, supported by Nui Phao in 2014. Read about them on page 14.*



# Health

## Health

### Objectives

Our health objectives are to ensure our workers are not exposed to occupational hazards that negatively affect their health, and that we have a well-equipped, capable medical team available to support the health and wellbeing of our workers and the broader community (including in emergency situations).

### Performance

In 2014 the health and safety department overcame staff shortages within the medical team, attended to more than 3,330 patients in the clinic, continued to assess and ensure the health of the working environment across the project site, increased their professional development and gave blood to bolster local supplies. They were also instrumental in saving the lives of two local people who were involved in private vehicle accidents in close proximity to the project.

### Workforce health

Nui Phao runs a well-equipped and fully staffed medical clinic on site. Despite overcoming staffing shortages, by end-2014, the project employed three doctors, six nurses, one pharmacist and one health officer. The medical team runs regular health monitoring to identify and manage potential occupational health risks and workers can also access the clinic for general health monitoring. In 2014, more than 3,330 patients attended the clinic (compared with 2,350 in 2013) for complaints related to ear, nose and throat illnesses primarily, skin infections, gastroenterology issues, muscular skeletal issues and a range of other illnesses. The medical team provided first aid treatment to 135 patients. The team also provided the government regulated 'health check' to more than 1,000 employees in 2014. The health check classifies

workers into grades of health, ranging from very good to poor and this determines the type of work that worker can perform. The majority of Nui Phao employees were classified in the top three categories, signifying well to reasonable health. Contractors' workers are assessed by the contractors' medical staff.

The medical team also conducts quarterly monitoring of the working environment in potentially high-risk areas (such as the processing plant and APT plant). The monitoring assesses potential health risks relating to noise, dust and/or air pollution and where high results are returned, corrective action is taken. For example, in 2014, high levels of carbon dioxide were identified in an area of the processing plant. As a result, extraction fans were installed to improve ventilation. The team also purchased two new noise monitors to use for this quarterly monitoring.

### Fitness for work

A total of 3,426 random blood alcohol tests were conducted in 2014, with 20 positive results (0.6%). This compares with 28,222 blood alcohol tests conducted in 2013, with 13 positive results (0.04%). The increase in positive blood alcohol tests was attributed to new short-term contractors performing short-term projects not familiar with our safety culture and fit for work program. Furthermore, in 2014 we performed more random blood alcohol tests within the workplace of our contractors' facilities.

Random drug testing was also implemented in 2014 with 92 tests conducted, returning zero positive

results. Workers were also checked for drugs during pre-employment medical screening.

As part of our Fitness for Work program, workers can volunteer to a drug and alcohol test at the gate (prior to entry) if they believe they may be unfit for work. A positive result from a voluntary test prior to entering the site does not result in disciplinary action, rather the affected worker is permitted to go home and only return when they are fit for work. However, a positive result at a random test on the project site, results in instant disciplinary action. Disciplinary action was taken in six cases of positive blood alcohol tests in 2014.



*Employees are randomly breath tested by health and safety officers as they arrive onsite for work.*





### Vaccinations

We progressively vaccinate high-risk workers against infectious or transmittable diseases such as hepatitis A and B, typhoid, tetanus and meningitis. In 2014, nine vaccinations were administered to the medical team (compared with 67 vaccinations administered to high-risk workers in 2013. High-risk workers from processing had already received tetanus vaccinations in 2013. Flu vaccinations were administered to members of the medical team considered at risk.

### Hearing protection

Many of the activities involved in the mining and processing of material from Nui Phao are noisy. An initiative of the health and safety department in 2014 was to deliver hearing protection awareness to more than 650 workers across the project. The awareness program aimed to inform workers about the importance of wearing hearing protection when working in loud environments in order to avoid long-term hearing damage.

## 2014 Performance

Target	2014 Result	2014	2013
Continue health monitoring across the workforce.		Health monitoring continued	100% coverage of employees was achieved.
Provide key vaccinations for at-risk workers.		Vaccinations were administered to nine medical staff.	76 vaccinations administered to our most at-risk workers.
Achieve 100% coverage for the workforce for random blood alcohol testing.		137% coverage of the entire workforce was achieved. 0.6% returned positive results.	1,157% coverage of the entire workforce was achieved. 0.04% of random tests returned positive results.
Kick off health awareness program		Two health alerts were issued covering Ebola and measles. Hearing protection sessions were delivered.	Two health alerts were issued to the workforce in 2013, covering food hygiene and foot hygiene.

## Training and awareness

In 2014, we issued two health alerts (bulletins) to the workforce on Ebola and measles, delivered two first aid courses for 43 employees, provided triage training for 20 medical and emergency response staff and training in the use of automated external defibrillators (AED) for 10 staff, and taught 30 employees (over two classes) how to conduct a water rescue.

The emergency response team also conducted monthly drills to test their preparedness in managing incidents such as a fire in the plant, a blasting incident, a trauma or an incident in a confined space.

## Community health checks

In July 2014, Nui Phao cooperated with Dai Tu District's Medical Center and the Dai Tu District Red Cross to provide free health checks and medicine for 181 people in Cat Ne and Tan Linh communes. The checks were available to returned servicemen and women, and sick and invalid people and relatives.



Health checks and medicine were provided to people in Cat Ne and Tan Linh communes.

## 2014 Highlights

- Ø Commenced random drug testing and returned zero positive results.
- Ø Provided free health checks and medicine to 181 returned servicemen and women, and sick and invalid people in Cat Ne and Tan Linh communes.
- Ø Overcame staff shortages (doctors) and recruited two new doctors to the medical team.
- Ø ERT effectively responded to two public road accidents in 2014, providing potentially life-saving first aid and treatment to accident victims.

## Focus for 2015

- Ø Relocate the clinic from its existing location (at the camp) to the plant site and continue to upgrade its facilities.
- Ø Develop and distribute medical emergency pocket books for all employees.
- Ø Develop and implement a treatment procedure for chemical exposure.
- Ø Conduct health awareness about family planning and preventing back injuries.
- Ø Continue to build strong relationships with other medical facilities and providers in the area.

**Good water, good food**

In response to a concern expressed by an employee, the drinking water located at various drinking stations across the mine site was tested to ensure it met the standard QCVN 06-1:2010 for drinking and bottled water. The employee's concern had been whether the drinking water stations were being inappropriately refilled with water that was not of an adequate standard. In conjunction with the environment team, which took corresponding samples by which to verify the results, the health and safety team randomly selected and tested a range of drinking water stations. The testing was conducted on two separate occasions. The results of the testing indicated no contamination and drinking water that met or exceeded standard QCVN 06-1:2010 for drinking and bottled water at all stations tested.

The health and safety department also conducted weekly inspections of



*The health and safety team conduct random drinking water testing.*

food preparation and consumption areas in 2014. The site contains a number of kitchens and crib rooms from which food is prepared and/or consumed and concern had arisen about the cleanliness of those facilities. The health and safety department conducted weekly

inspections and provided recommendations, where required, to improve hygiene and food handling, storage and preparation practices. The aim was to avoid any food poisoning or disease outbreak affecting the health of workers.

**Blood donation saves lives**

Continuing an initiative it was involved in in 2013, Nui Phao helped coordinate and promote a monthly blood donation drive in 2014. Coordinating with the trade union, Thai Nguyen A Hospital and Dai Tu District Red Cross, employees were encouraged to donate blood to bolster the reserves held at the Thai Nguyen A Hospital. The initiative also served to build a database of blood types that may be requested in the event of a shortage of supplies in the blood bank. The monthly blood collection clinics commenced in October 2014 and at the end of 2014 approximately 20 employees had donated blood.

The value of this initiative was demonstrated soon after its commencement when the emergency response team responded to a community traffic accident (on the public road). The accident involved a person travelling on a motorbike and

another driving a truck. The motorbike rider was seriously injured, suffering significant blood loss and requiring a blood donation. Although seriously injured, the rider survived the accident.

*Nui Phao employees donate blood for the monthly blood drive.*





# Safety

## Safety

### Objectives

Having established a strong safety presence onsite last year, the safety and health department focused on building a strong safety culture and upskilling workers to recognize and apply safe work practices. Our primary objective – now and always – is to ensure that our entire workforce gets home safely after every shift, and we expect the same from our contractors.

### Performance

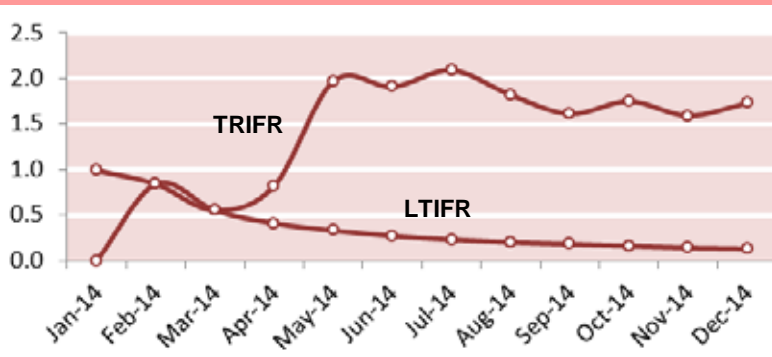
Nui Phao remained fatality free at the end of 2014, a statistic we will stringently work to maintain as long as the project operates. Our resolve to this objective was strengthened in February 2014 when we suffered our first lost time injury in 617 days of operating. The incident was attributed to fatigue and resulted in a roller being driven off the side of the tailings facility embankment. The roller

### Safety measures

LTIFR – A lost-time injury is defined as an occurrence that resulted in a fatality, permanent disability or time lost from work of one day/shift or more. Frequency rate is determined by the number of occurrences per 1,000,000 hours worked.

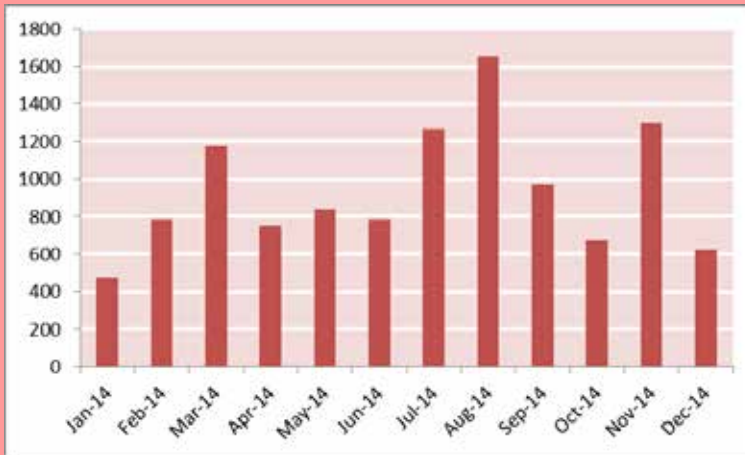
TRIFR – Total recordable injuries include fatalities, lost time injuries as well as injuries that required restricted work activities or medical treatment. Frequency rate is determined by the number of occurrences per 1,000,000 hours worked.

### Injury frequency rate 2014





**Safety training – Number of people, number of hours**



operator was seriously injured but has since made a full recovery.

Regrettably in April 2014, we had another major incident with the failure of one of the sodium tungstate drying centrifuges. This incident resulted in one medical treatment injury and seven first aid injuries. On investigation, we identified that the machinery was not being operated correctly and this misuse was the cause of the injuries.

We believe both incidents were avoidable and as a result we took actions to remind our entire workforce of the importance of working safely. The importance of using our 'Time Out to Take 5' safety tool was emphasised. It requires employees and contractors to take five minutes before they begin work to identify potential hazards, assess the risks, make appropriate changes to, and then complete the job safely.

Our lost time injury frequency rate (LTIFR) at end-2014 was 0.13 (compared with 0 in 2013) and our total reportable injury frequency rate (TRIFR) was 1.73 (compared with 0.96 in 2013). By the end of 2014, we had achieved 7.5 million man hours' lost time injury free.

**Safety culture**

We reported in 2013 how much of our workforce had never worked in

the mining industry prior to their commencement at Nui Phao. For this reason, building a strong safety culture remained as important in 2014 as previously.

In 2014, we conducted further training in our Time Out to Take 5 job hazard analysis tool. The training taught employees and contractors how to identify potential hazards associated with the task they were about to undertake, and how to avoid or minimise those hazards prior to commencing the task.

We also issued a total of 38 Safety Alerts (bulletins) that were displayed around the plant site and which provided details of incidents or near-misses, in order that workers could learn from these occurrences.

We also implemented a safety incentive program in 2014, as another means of building a strong safety culture, presenting 110 awards to workers who were observed working safely. Recipients may have properly identified a hazard prior to commencing a task, directed or taken part in actions to avoid or minimise hazards, reported an incident or taken part in an emergency response drill. Awards were presented by the recipient's department manager in front of his/her peers in order to increase awareness and encourage safety behaviour across the plant site.



2014 Performance

Target	2014 Result	2014	2013
Remain fatality free in transition from construction to operations.		We remained fatality free.	We were fatality free.
Maintain zero LTIFR.		Our LTIFR was 0.13 having suffered a LTI in February.	We had amassed 12.5 million man hours LTI-free.
Reduce the number of total reportable incidents (TRI).		Our TRIFR was 1.73, higher than 2013 (0.96).	Our TRIFR was 0.96.
Continue to encourage the reporting of near misses / non-compliances.		24 near misses / non-compliances were reported. This reflects an ongoing culture of safety awareness.	32 near misses / non-compliances were reported.
Continue to identify and implement training to address emerging negative safety trends.		We conducted more than 12,500 training hours to 5,977 workers, including Safe Work Isolation and chemical awareness training.	We rolled-out hazard identification and incident reporting training to all workers.

Training

The health and safety department conducted almost 12,500 training hours in 2014 to more than 5,977 workers (most workers attended more than one training session). This compared with approximately 10,000 training hours conducted in 2013 to approximately 6,000 workers. Training was conducted in the areas of general induction for all new starters and visitors, safe work procedures, job hazard analysis, Take Five (refer above), cyanide handling and management, sodium hydrosulfide (NaSH) and hydrogen sulfide awareness, hazardous material handling, firefighting and '5S' (an initiative aimed at ensuring proper housekeeping onsite).

Systems and tools

In 2013, we reported that we had developed 16 health and safety performance management standards to guide our people how to work safely. In 2014 we progressed the

implementation of those standards across the project. We developed specific guidelines to sit under each standard that provide detailed instructions on how to achieve each of the standards. The Permit to Work and Safe Work Isolation standards were a particular focus of our implementation efforts in 2014, and were applied strictly to all equipment works and/or confined space entry.

In February 2014, we also implemented a site-wide accident and incident reporting system, called OccSafe. The electronic system enables any person on site to report a safety accident or incident, which is then advised to the responsible department, a risk rating is assigned and corrective action is taken. The project's management team uses the system to track accidents and incidents to ensure they have been rectified and closed out. The system was developed onsite by Nui Phao employees.

2014 Highlights

- ☒ Achieved zero fatalities and 7.5 million man hours LTI free.
- ☒ Presented 110 safety awards for safe work practices by workers.
- ☒ Improved the firefighting system in the plant.
- ☒ Conducted more than 12,500 training hours to more than 5,977 workers.

Focus for 2015

- ☒ Return to zero LTIFR, achieve a TRIFR of <1.0 by end of 2015.
- ☒ Achieve 15 million man hours LTI free.
- ☒ Conduct approx. 350 safe vehicle checks, 5,000 blood alcohol tests and 150 drug tests to ensure fitness for work.
- ☒ Establish a safety, health, environment and community committee and program of meetings (this replaces the focus item reported in last year's report, which did not occur).
- ☒ Train selected staff in root case analysis and risk management.
- ☒ Roll out Management of Change safety behaviour program.



### Learning in Laos

In December, a team from Nui Phao (right), including two health and safety and three environment officers, visited PanAust's (Phu Bia Mining Limited) Phu Kham copper/gold mine in the Lao People's Democratic Republic. The mine has been in operation for approximately ten years and has a well-established health, safety and environment management system. The purpose of the study tour was to observe how a mature management system works and to learn from Nui Phao's Laos counterparts on matters of health, safety and environment.



### Training in action

In April, a container containing hydrogen peroxide situated in the processing plant site began leaking, and hydrogen peroxide spread in a large pool on the ground. In high concentrations hydrogen peroxide is an aggressive oxidizer and can corrode many materials, including human skin. The health and safety team (right) was quick to take action, shutting down the plant and evacuating all workers while they recovered the hydrogen peroxide for safe disposal. Once the plant site was safe, workers returned to business as usual. There were no injuries that occurred as a result of this incident. The success of the action taken by the health and safety team was attributed to their training and preparedness.



### Extending safety culture to communities

The health and safety department, in conjunction with the community relations team, presented more than 300 students with motorbike helmets in September (right). Students were from Tan Linh Secondary School (Dai Tu). The helmet presentation followed an awareness campaign to emphasise the importance of wearing helmets when travelling on motorbikes. Approximately 23,000 people die in traffic accidents in Vietnam every year (WHO, 2013). A similar presentation of helmets was made by Nui Phao to students in 2013.



### Bypass improved transport safety

Realignment of the national highway and rail line commenced in 2014, directing traffic around the outside of the minesite and creating safer traffic conditions for drivers/riders and pedestrians.

The road and rail line previously intersected the project plant site, making it difficult to control traffic. The realignment has resulted in the reduction of one rail crossing across the road and improved surface quality, contributing to safer conditions for all users.

### Safety week

Nui Phao marked Safety Week in March 2014 with a presentation of quality motorbike helmets to 2,500 employees. This has been an ongoing initiative of Nui Phao's – the company presented 2,000 helmets to workers in 2013. As additional incentive to wear the helmets, new rules implemented by Nui Phao prevented anyone not wearing a helmet from parking in the undercover parking area, the preferred location for parking at the site.

The workforce had a poignant reminder of the value of this initiative, and the importance of wearing helmets, in 2014. An employee was involved in a motorbike accident but avoided serious injury (or possibly death) because he was wearing a Nui Phao helmet.

*BELOW: Workers of our contractor, Licogi, found unexploded ordinance (UXO) whilst backfilling. The area was immediately evacuated and the UXO reported to management before being removed by authorized personal. The quick action of the team won them a safety award*





# Environment

## Environment

### Objectives

Having passed through the difficult construction and commissioning stage of the project, we moved into stable operations and our environmental performance continued to improve. However, we were still challenged in the areas of water, noise and in meeting community expectations of dust and blasting. These areas remain the focus of our efforts to effectively manage the impacts of our project on our host communities to make sure that Nui Phao implements its environmental management plan in compliance with the approved Environmental Impact Assessments (EIAs) and the environmental laws of Vietnam.

### Performance

#### Incidents

We experienced 22 environmental incidents with 'medium' consequence or higher (medium consequence indicates that the incident caused us to be non-compliant with external requirements, ie, a regulatory breach). They are listed on page 27. May 2014, we had an environmental incident that had the potential to impact the community when process water from the tungsten plant overflowed a bund and entered a publicly accessible stormwater drain. The incident occurred during an uncontrolled shutdown for only a short period of time (ie, less than 30 minutes). Immediate action was taken

to turn on sump pumps to empty the bund area and ensure no further overflow. An alarm and locking system was subsequently installed on the process water tank to avoid potential for recurrence.

In October, oil from a water pump at Duong Bac Stream leaked into the stream. The pump was checked and fixed the pump and absorbent pads were used to collect oil scum in the stream. Contaminated material was deposited in the hazardous waste bins and a tray was placed under the pump to prevent recurrence. Similar occurrences in March and April saw oil leak from pumping stations into and irrigation channel and the Bat Stream Sediment pond. The same actions were taken as above.

## Environmental incidents – medium and above

Incident	2014	2013	Basis
Controlled water discharge contaminant limit exceedances.	7	8	Number of discharge authority permits issues between May and December.
Noise limit exceedances in ambient air.	10	10	Number of monitoring complaints showing limits exceeding night time noise levels.
Dust levels exceeding PM10 and TSP limits.	4	11	Number of monitoring events showing limits being exceeded.
Total suspended solid limit exceedances at site discharge points.	1	26	Limit of 50mg/L.
Blast vibration limit exceedance.	0	1	Limit of 25.4mm/s.
Groundwater extraction permit volume exceedance.	1	1	Permit limit.
Surface water extraction permit volume exceedance.	0	0	Permit limit.
<b>Total</b>	<b>22</b>	<b>58</b>	

## Permitting

Nui Phao mining project continued to operate under 11 separate EIAs until 2014. They pertain to each aspect of the project (mining, processing, residential relocation sites and power stations).






The water discharge licence application reported in the 2013 report was granted by the Ministry of Natural Resources and Environment (MONRE) in May 2014. The EIA submitted for the sodium tungstate (ST) plant in 2013 was withdrawn by Nui Phao H.C. Starck Joint Venture and replaced instead by an EIA for the ammonium paratungstate (APT) plant, encompassing the ST plant. The EIA was approved by the Thai Nguyen Province People's Committee in August 2014.

A new licence was sought and granted for a mine dewatering bore, enabling mine watering to 87,000kL per month (1,044ML per year).

A groundwater bore permit for the resettlement area (Dong Bong) was renewed for a further five years, allowing groundwater extraction to 3,900kL per month. We also increased our registered hazardous waste types from 17 to 20 with the Department of Natural Resources and Environment (DONRE).



## 2014 Performance

Target	2014 Result	2014	2013
Minimise the number of Level 3 (medium consequence) or above incidents.		We had 22 incidents of L3 or above. Reducing incidents will be a priority in 2015.	We had 58 L3 and above incidents in 2013.
Reduce the quantity of freshwater extracted for the operation.		We extracted more water (2,134ML). We need to better understand our water requirements in 2015.	Our total water extraction was 828,824kL in 2013.
Zero exceedances of blast vibration limits.		We did not exceed blast vibration limits.	We had one exceedance in 2013.
Management of discharge water avoids negative impacts on downstream users.		We continued to have difficulty managing water, but improved the existing water treatment system.	We had difficulty managing water in 2013.
Build strong regulator relationships to generate positive collaboration on site environmental management.		We continued to play badminton with regulators, as well as interacting at a range of social and professional events.	Monthly badminton events contributed significantly to the establishment of strong, collaborative relationships.

## Water management

Despite our desire to reduce our use of raw water for the processing plant from the Cong River, it remained our primary source in 2014. We extracted 1,332ML from the Cong River in 2014, compared with 458ML to end-December 2013 (noting that in 2013, extraction commenced in April and the plant did not operate to full capacity for most of the year). This is within with our licence limits of 1,728ML per year. We extracted 801,838kL of groundwater during 2014, compared with 370,471kL in 2013, less than our licence limit of 1,044,000kL (1,044ML) per year. We recycled 10,394ML of water back into the plant in 2014, compared with 5,255.4ML in 2013.

In 2013, we reported that our use of water from the Cong River was expected to decrease with the increase in dewatering from the pit. That was not possible in 2014 and we believe we need to do further investigative work to better understand the water table and how it refreshes, in order to best manage our water use going forward.

On a more positive note, we successfully installed seven flow gauging stations in streams within the project area catchment to measure total flow (including discharge water and natural flow). The information gained from these monitors will greatly assist us with our water management strategies.

## Water management 2015

Water	2014	2013
Total water extracted (surface and ground).	2,134ML	828,824kL
Water recycled into plant.	10,394ML	4,666ML
Water discharge.	4,635ML	5,255ML
Total freshwater use (kL per dry ton milled)	0.7kL	0.7kL

## 2014 Highlights

- Ø Secured our wastewater discharge licence from MoNRE in May.
- Ø Achieved approval of the EIA for the APT plant from Thai Nguyen Province Peoples Committee in August.
- Ø Trained a total of 445 employees and contractors on a range of environmental topics.
- Ø Installed seven flow gauging stations in all streams to measure total flow (including discharge water and natural flow).
- Ø Had two official inspections from MoNRE and Thai Nguyen Inspection Delegation Team in April and December with no environmental issues identified.
- Ø Enjoyed the participation of stakeholders in identifying impact mitigation solutions.

## Focus for 2015

- Ø Develop a rehabilitation and closure plan for the mine site and associated infrastructure.
- Ø Benchmark our energy use and greenhouse gas emissions and develop an efficiency action plan.
- Ø With an international specialist, complete the site water balance.
- Ø Progress our geochemistry program for the appropriate classification of waste rock to avoid acid rock drainage.
- Ø Install the new water treatment system outlined on page 29.
- Ø Achieve government certification for the commitment contained in the EIA for the APT plant.
- Ø Five environmental technicians will complete the quality control/assurance training course in environmental monitoring.
- Ø Complete establishment of the nursery for future rehabilitation.

### Water discharge

We reported in 2013 that we had been challenged in ensuring that our discharge water was of an acceptable standard when discharged into Thuy Tinh Stream. We continued to be challenged by our water management issues in 2014. In response to community concern about the colour and odour of water in the oxide tailings cell in May 2014, we engaged an international water specialist company to assist us in managing wastewater. As a result we installed a new water treatment plant system like setting up the chemical coagulation – flocculation pump systems to drop off the solid and charcoal filter for the purification as well as odour treatment of the OTC water prior to discharge into Thuy Tinh Stream. We also established a natural aeration mechanism (a ‘waterfall’) at the oxide tailing cell that increased oxygen levels in the water and assisted with

### Energy consumption and GHG 2014

Energy and GHG	2014	2013
Total energy consumed.	883,184GJ	1,143,400GJ
Total CO2 emissions:	68,618t	83,567t
- Direct.	31,435t	66,165t
- Indirect.	37,183t	17,402t

the breakdown of organic matter in the water.

The actions described above were taken ahead of a more complex water treatment system being installed in 2015 comprising charcoal cartridges to assist in purifying the water. The system will see water travel from a treatment tank, through a settlement pond into an artificial wetland, over a causeway and through a series of charcoal cartridges, into a second wetland and then to discharge. Using chemical and biological treatment, the aim is to improve and maintain water quality at discharge points.

### Greenhouse and energy

Power to run Nui Phao comes primarily from the grid. Grid power is generated from coal- and hydroelectric-fired power stations. In 2014, Nui Phao consumed 116,800MWh of electricity compared with 54,664MWh in 2013. The increase in consumption reflects the progression of the project from construction and commissioning in 2013 to full capacity production in 2014. We also use diesel and petrol to power back-up generators and run our vehicle and equipment. We consumed 11.8 ML of diesel (compared with 24.1ML in 2013) and 160,339L of petrol (compared with 423,083L in 2013) in 2014. Our total energy consumption was 883,184GJ (compared with 1,143,400GJ in 2013) and we emitted a total of 68,618 tonnes of carbon dioxide (compared with 83,567 tonnes in 2013). This was comprised 31,435 tonnes direct emissions from our fuel usage (compared with 66,165t in 2013) and 3737,183 tonnes indirect emissions via coal-fired power station (compared with 17,402t in 2013), assuming all our power came from coal.

### External scrutiny on water discharge

In February 2014, in response to community concerns about our water discharge management, a wastewater discharge conference was held between Nui Phao and the People’s Committee of Ha Thuong Commune.

The aim of the conference was to discuss our wastewater discharge management including the characteristics of our discharge, the effectiveness of our wastewater treatment system, the impact of wastewater discharged into a water source, and our performance in meeting our commitments to monitor water quality and ensure our discharge quality met Vietnam Standards (No. QCVN40:2011/BTNMT).

In March 2014, we hosted a site visit to Nui Phao for leaders and representatives of Phuc Linh Commune to observe our water discharge management system and the activities we undertake to monitor and control water discharge in order to mitigate against water pollution.



*Nui Phao has installed solar panels to assist in reducing its fossil fuel consumption.*

### Blast management

An integral part of Nui Phao's mining process is the blasting of rock in the open pit (see page 9 How we make our products). The process is carefully managed to ensure the safety of workers and the community. The process includes providing advanced written notice to communities of the occurrence of blasting and establishing safety exclusion zone of a minimum 300m from the blasting site. In addition, the project operates four permanent continuous blast monitoring stations at locations around the pit to ensure blasting is conducted in a way in which seismic vibration and sound overpressure are being minimised.

In 2014, we received a number of complaints from community members concerned that the seismic vibrations from our blasting activities were jeopardising the structural integrity of their houses. In response, in October, the Department of Industry and Trade in conjunction with relevant agencies conducted a site inspection to monitor blast management at Nui Phao. The Department conducted its own monitoring and concluded that blasting at Nui Phao was being performed in compliance with Vietnam National Technical Regulations (QCVN 02:2008/BCT). Specifically, vibration from blasting was measured and found to be maximum 0.580 mm/s, significantly less than the permitted range level of 25.4 mm/s. The sound overpressure from blasting was also measured and found to be maximum 112.3 dB(L), significantly less than the permitted level of 133dB (L).

*RIGHT: Nui Phao staff conducted awareness of good waste management practices at local schools.*

### Waste management

In 2014, we disposed of 661,500kg of domestic waste to landfill and 623,903kg of hazardous waste. Our domestic waste is transported to landfill by a local contractor. Our hazardous waste is transported to appropriate disposal facilities by a licenced contractor. Our hazardous waste includes used oil/grease, spent batteries, solvents and medical waste.

### Land disturbance and rehabilitation

At the end of 2013, Nui Phao had rehabilitated almost 37ha of land disturbance within the project area. In 2014, it rehabilitated a further 3.0ha, comprising 0.8ha of grass seeding which was then covered by jute, coconut fibre and rice straw, 2.1ha of daisy grass and a small amount of straw, planted 450 acacia trees and spread 280kg of grass seed and 4,000kg of bamboo grass. Progress was made in establishing an on-site nursery and cultivating a range of species to be used for future rehabilitation. The nursery now contains large quantities of acacia trees, vetiver grass and umbrella plants. Where possible, seed is collected from the surrounding environment, germinated and planted as seedlings in spring. The nursery is fully fenced and equipped with an irrigation system. An average of eight project affected people are employed there depending on the season.

### 2014 Highlights

- Ø Secured our wastewater discharge licence from MoNRE in May.
- Ø Achieved approval of the EIA for the APT plant from Thai Nguyen Province Peoples Committee in August.
- Ø Trained a total of 445 employees and contractors on a range of environmental topics.
- Ø Installed seven flow gauging stations in all streams to measure total flow (including discharge water and natural flow).
- Ø Had two official inspections from MoNRE and Thai Nguyen Inspection Delegation Team in April and December with no environmental issues identified.
- Ø Enjoyed the participation of stakeholders in identifying impact mitigation solutions.

### Environment delegation

Last year, Nui Phao received an inspection delegation from the Thai Nguyen People's Committee interested in mining, processing, explosive material and environmental protection. The delegates assessed Nui Phao's compliance with environmental laws and regulations including by conducting field inspections, against its approval documents, legal documents and permits. The delegation determined that Nui Phao fully complied with all applicable laws and regulations.





### Reforestation to assist dust management

Nui Phao is reforesting the boundary areas between the mine site and communities as a means to manage dust and improve the appearance of the mine site. In mid-August 2014 a total of 4.4 hectares along the boundary between the residential area of Tan Linh and Hung Son communes was planted with Australian acacia trees. The 'green barrier' helps ensure dust from the mine site, particularly the crusher and waste-dump, does not travel to residential areas. It also helps promote recovery of other vegetation species and prevent soil erosion. The initiative is consistent with the greening policy of Thai Nguyen Provincial People's Committee. Nui Phao also continues to care for the 47 hectares of Acacia trees planted in 2013. In the future, Nui Phao aims to reforest all of the areas of the mine site that are not required for mining activities and the buffer zones. It aims to reforest up to 120 hectares.



### Energy efficiency program

As a significant consumer of electricity, Nui Phao is committed to reducing its energy consumption and being as efficient with its energy use as possible.

Our electrical department continuously monitors and analyses how we use energy to identify opportunities for improvement. To reduce our energy consumption in 2014, we:

Operated the crushing plant during off-peak hours to reduce both peak load on the power generation network and overall power consumed by Nui Phao. This directly contributed towards a reduction in greenhouse emissions associated with generating power during peak hours.

Optimised process plant performance through implementation of automated process control loops utilising our state-of-the-art process control network.

Commissioned bulk power factor correction units to significantly reduce wasted power (we achieved site power factor of 0.95 (pf), well beyond the regulatory level of 0.85 (pf). Not only did this reduce Nui Phao's carbon footprint, but it also had material benefit to the power authority.

Rationalised and replaced high pressure sodium light fittings with more energy efficient, longer life LED light fittings.

Installed automatic on/off control of plant lighting depending on levels of darkness, with lighting only being utilised as required to meet legislative requirements for workplace safety.

Installed solar panel lighting at the magazine warehouse, a renewable free energy source reducing reliance on fossil fuel power generation.

Used high-efficiency electrical motors and variable speed drive pumps throughout the plant as well as ensuring electrical equipment is maintained to a high standard.

### Training

The environment department trained a total of 445 employees and contractors in the areas of waste management, spill response (for hydrocarbons and chemicals), dust management and environmental regulations and compliance. Environmental awareness is part of every new employee's induction process.

Members of the environmental department also increased their professional development in 2014. Department members attended:

- Ø A study tour to the Phu Kham copper/gold mine run by PanAust in the Lao People's Democratic Republic and three coal mines in Quang Ninh province. Read more on page 25.
- Ø A seminar on transparency in the mining industry, conducted by Thai Nguyen Province People's Committee and the Centre of Development and Integration.
- Ø A seminar about reducing the potentially negative environmental impacts of mining conducted by the Extractive Industries Transparency Initiative and DoNRE.
- Ø The third international symposium on innovative monitoring and forecasting solutions, held in Hanoi by Flinders University (Australia) and the National Centre for Water Planning and Investigation.
- Ø A seminar in saving energy held by the Department of Industry and Trade.



# Community

## Community

### Objectives

Nui Phao aims to minimise land acquisition and other social and environmentally adverse impacts from project development. Where this is not possible, people affected by the project are compensated, assisted to maintain at least the same quality of life, or preferably, to enjoy an improved quality of life. Government land acquisition policies are observed, and resettlement activities are conducted in line with World Bank guidance on involuntary resettlement.

The community relations activities of Nui Phao are centred around the impact the development of the mine has had on directly affected people. Development of the project has directly affected seven-communes and resulted in the requirement to acquire land from approximately 1,530 households in six project sectors. Of these, 953 households

require physical resettlement and the balance have been economically displaced. In addition, more than 2,000 households from other sites, such as the three resettlement sites (Nam Song Cong, Hung Son 3, Dong Bong), the economic development site (Hung Son 2) and sites required for environmental management, are also affected by Nui Phao's land acquisition. Of these, 414 households have been or will be physically resettled and the balance has been or will be economically displaced.

The community relations activities are therefore arranged into three critical areas:

- Ø economic restoration – for those people whose livelihoods have been affected by development of the project (including land acquisition for resettlement, economic restoration project, environmental management, and

community infrastructure development)

- Ø community development – recognising the role we play in helping to advance the living conditions in our host communities, and
- Ø disclosure and consultation – acknowledging the importance of having our host communities, particularly directly affected people, well informed about our activities and able to contact us with their concerns or feedback.

The key objective of our community relations activities is to ensure directly affected people and the project affected communities are not worse off as a result of us being here or otherwise improved, and further, that they realise benefits of having a successful mining project operating in the immediate vicinity.

## Performance

### Resettlement and compensation

In total, Nui Phao will resettle 1,530 households over the life of the project, making it the largest resettlement project in Thai Nguyen province and one of the larger in Vietnam (this number has increased since the 2013 report because of the project's advancement and infrastructure development such as a drainage channel downstream of the TSF and the realignment of the national highway and rail line). At end-2014, approximately 983 households had either moved to new premises, or been allocated residential blocks but were yet to relocate, in one of two new resettlement areas. By the end of 2014, both of the new resettlement areas had been reconnected by road infrastructure to the national highway, a key achievement for the year. Churches were built in Ha Thuong commune and Nam Song Cong in 2014 and one is scheduled to be built in Dong Bong in 2015. We considered this infrastructure as an important part of helping these new communities establish a meaningful connection with their new locations.

A third resettlement area, Dong Bong, was under construction towards the end of 2014 and it is expected that construction of homes will commence on the site in 2015. Dong Bong resettlement area has been constructed in response to the wishes of more than 130 affected households in Hamlet 3, 4 (school road site) who expressed a desire to be relocated to Dong Bong, rather than the other two resettlement areas (because of their community connections). Dong Bong is a 5.0ha area containing 138 lots of average 130m<sup>2</sup> each. Like the two other resettlement areas, Dong Bong

## 2014 Highlights

- Ø Commenced construction of the third resettlement area, Dong Bong, and reconnected Nam Song Cong and Cat Ne resettlement sites to the national highway.
- Ø Expanded the VietGAP tea certification program from 18 households in one commune to 99 households across three communes.
- Ø Contributed to two communes in the project affected area being rated as "modern villages" in the Vietnam Government New Rural Program.
- Ø Expanded the micro-finance program funds to more than approx. US\$115,725 benefitting 73 applicants in 2014 for household, small and medium enterprise development.

will contain electricity infrastructure, access road, water reticulation, and a sewerage system as well as other social services consistent with "Modern Village" standards (page 37).

*"In our hamlet, 115 out of 144 households shall be relocated, 50% of which wish to be settled in Dong Bong resettlement area. It is hoped that Dong Bong resettlement area brings us a comfortable, convenient and happy settlement area."*

Hoang Van Ninh, Hamlet 3 Leader, Ha Thuong Commune

For those people affected by land acquisition by the project, Nui Phao provides accommodation assistance for at least four months and income restoration for a minimum of 12 months in order that they can plan for and build their new homes and restore their livelihoods.



## Economic restoration

In our 2013 report, we described how critical it was to restore the income earning capacity of people who had been physically resettled or economically displaced by the project. This is particularly the case if people have moved off landholdings from which they earned an income to urban locations where land for income generation is not available. Economic restoration activities include employment, local outsourcing and local business development (through the economic restoration fund).

### Employment

Part of Nui Phao's strategy to ensure the economic viability of project affected people is in the priority recruitment of those people, described on page 12. In 2014, more than 950 project affected people (38% of the total workforce, including contractors) were employed at Nui Phao (compared with 37.4% in 2013).

Employment at Nui Phao will be a benefit to project affected people for the life of the project (estimated at approximately 20 years in 2014). However, our economic restoration activities must also consider how project affected people will earn an income after the end of mining.

### Local outsourcing

At the end of 2014, four enterprises had been established as part of our economic restoration programs providing employment for 67 project affected people and an average monthly income of approximately US\$160. Nui Phao is the primary customer of these enterprises at this stage, and in the future, expanded customer bases for all enterprises will be sought.

## Economic restoration enterprises

Name	Type	# PAPs	Revenue 2014 US\$		Avg mthly income employees
			From Nui Phao	From other customers	
Duong Linh Trang Company Joint Stock	Shipping bags	32	544,857	56,364	187
Ha Quang Huy Company Limited	Pallets	15	84,782	0	197
Khanh Hien Tailor	Uniforms	13	73,791	8,549	140
Ha Thuong Coop	Domestic waste collection service	7	5,636	5,167	117
<b>Total</b>		<b>67</b>	<b>709,065</b>	<b>70,080</b>	

## A stitch in time..



As part of our economic restoration activities for projected affected people, we assisted a cooperative of local tailors to produce uniforms for our workers. Khanh Hien Tailor Cooperative employs 13 project affected people. Prior to the establishment of the cooperative, its members produced tea and rice from land since acquired by the project and operated small tailoring businesses, which they have now been able to expand.

The cooperative now also produces uniforms for the Nui Phao H.C. Starck Tungsten joint venture, a large logistics company (not associated with Nui Phao) and a number of smaller customers.

The cooperative has been able to overcome initial quality issues, assisted by a study tour enabled by Nui Phao to a large clothing manufacturing factory in Thai Nguyen. The cooperative has expanded its range of products to now also manufacture jeans.




**Economic restoration fund**

The Nui Phao economic restoration fund is part of the compensation and resettlement fund according to government policy, and subsidised by Nui Phao. One part of it is the micro-finance program, established in 2007. In 2013, Nui Phao officially launched an economic restoration program to provide loans for project affected people from the communes of Ha Thuong, Hung Son, Tan Linh and Cat Ne. The micro-finance program continued to be enthusiastically accessed in 2014. In particular, in 2014, more than US\$115,000 was generated through the fund for 73 beneficiaries (compared with approx. US\$23,000 for 21 beneficiaries in 2013). Funds were used for the purchase of livestock, infrastructure, machinery, and other purposes. Notably, eligibility was expanded in 2014 to include not only households but also enterprises. Households could access up to VND 30 million (approx. US\$1,380) and enterprises up to VND 200 million (approx. US\$9,250).

The Nui Phao economic restoration fund is an important contributor to our economic restoration activities as it enables project affected people to loan money at the same interest rates of the policy bank, in order to establish income-generating enterprises for themselves, and in some cases, other project affected people. Where an enterprise is established using a loan from the micro-finance program, it is a condition of the loan that employment is filled by project affected people.

One example of an enterprise established using funds from the program is the Mr. Tran Van Dinh household who were resettled in Nam Song Cong Resettlement area. Prior to resettlement, the household farmed on 0.6ha of land. Using resettlement compensation and funds from the program, the household purchased 3.0ha on which to breed pigs. Just 12 months later, the household has significantly increased its pig production to the tune of approximately US\$7,500 net income.

**2014 Performance**

Target	2014 Result	2014	2013
Continue to negotiate compensation and resettlement agreements with affected households.		At end-2014 a total of 953 of 1,530 (62%) households requiring resettlement had been resettled or allocated residential plots.	We continued to make good progress, but the task is challenging and there is still much to do in this area.
Continue to resolve complaints quickly, to the satisfaction of both parties where possible.		90% of complaints received were resolved.	84% of complaints were resolved. We consider this a good outcome given that not all complaints are able to be resolved.
Continue to implement community development program and public consultation and disclosure in accordance with master plans.		Conducted 76 consultation meetings which involved 2,093 participants in 2014.	Six-monthly audits were conducted in February and July 2013 by Development Research and Consultancy Centre (DRCC).

**Wooden pallets & pigs**



In September 2014, applicants applied for a loan from the micro-finance program (for approx. US\$9,250) in order to purchase milling equipment and an initial stock of material to produce wooden pallets. The Provincial Government provided training to the owners in carpentry skills (see page 36). The funds contributed to the overall capital costs for establishing the business which now employs up to 16 project affected people. At this stage, Nui Phao is the sole customer, but its proprietors are planning ways to expand its customer base in the near future. By-product from the milling process (off cuts and bark) is made available to neighbours for burning in wood fires used for cooking and heating). Prior to establishing the pallet production enterprise, the owners produced tea on land since acquired by the project.

Tran Thi The family loaned funds to purchase additional piglets and expand sty facilities for a household-level pig raising enterprise. With the production boost enabled by the loaned funds, the family is able to raise three litters of pigs per year, which they sell once the piglets reach approximately 110kg each. The pigs are sold per kilo for market rates.

The pig-raising enterprise supports the family's annual income and adds diversity to their other livestock and farming activities. Prior to their land being acquired by the project, the family predominately earned its income from tea production.

## Community development

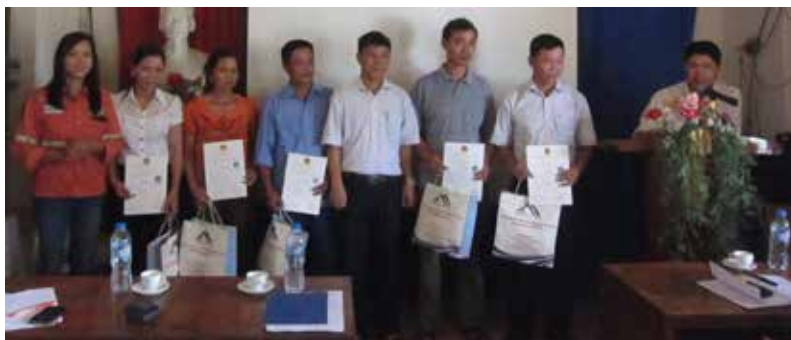
Nui Phao's community development program includes i) infrastructure, ii) capacity building and iii) agricultural development. Our total expenditure in 2014 was approximately US\$342,500 including approx. US\$115,725 of the economic restoration fund (compared with US\$258,000 in 2013).

### Community capacity building

Nui Phao, in conjunction with the Provincial Government (which provided grant funds), provided three training courses for project affected people in 2014, attended by more than 90 people. Courses included training in tea production to VietGAP standards, carpentry skills to support an economic restoration project and tailoring to fill positions in a garment factory. The Government contributed approx. US\$7,000 while Nui Phao contributed approx. US\$9,250.

The carpentry skills training course commenced in May 2014 for a period of three months. Thirty project affected people from Ha Thuong Commune were trained in various aspects of furniture manufacturing such as technical drawing, price estimating, machine operating and workplace safety. Training was conducted by the Thai Nguyen Southern Vocation Training Centre. Successful participants were employed by Ha Quang Huy Company, an enterprise established as part of Nui Phao's economic restoration program to manufacture wooden pallets for transporting and storing goods.

*Participants receive their completion certificates in carpentry skills.*



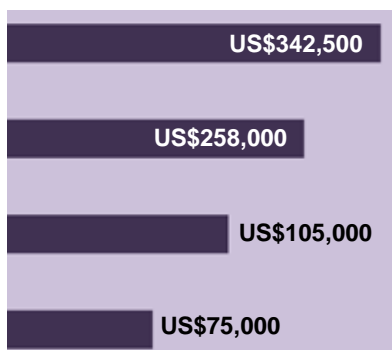
## Disclosure and consultation

Nui Phao is situated within the political boundaries of four communes – Phuc Linh, Ha Thuong, Tan Tinh and Hung Son and an additional commune, Cat Ne, remains affected by the resettlement process. Within those communes are numerous villages with which Nui Phao consults on project activities.

In mid-2014, Nui Phao implemented a schedule of weekly and monthly meetings (depending on the urgency of matters to be discussed) with each of the communes, providing an opportunity for issues to be raised and discussed by all parties. Minutes are recorded and actions are tracked until they are closed out. We conducted 76 meetings which involved 2,093 participants in 2014.

Nui Phao also maintains nine locations where project affected people can get information. More than 1,217 people visited the Nui Phao information centre in 2014.

### Community development expenditure 2011 to 2014



*Information corner in Hamlet 6, Ha Thuong commune.*

## Focus for 2015

- Ø Continue to support infrastructure development in the project affected area and neighbouring communes. In 2015, Nui Phao will provide 6.300 m<sup>3</sup> of crushed rock to Tan Linh commune for the construction of 1.6km of road.
- Ø Secure a sustainable market for the VietGAP certified tea from producers in Dai Tu.
- Ø Launch an environmental campaign to assist project affected communes to better protect their waterways and improve sanitation. This will include donating 20 large rubbish bins and waste carriage trolleys for villages and a subsidised waste collection service.
- Ø Undertake drinking water testing in villages to determine quality and, where needed, assist with improving drinking water quality. A pilot testing program conducted in one village in early 2014 determined drinking water quality was adequate. The testing will continue in other villages.
- Ø Develop a catering service business for Nui Phao employees, providing jobs for about 15 project affected people.
- Ø With the conclusion of the majority of construction activities, Nui Phao will work on beautifying areas around the mine site, landscaping, greening and erecting new signage.

### Community complaints

Nui Phao has had a complaints system in place since before it began operations. The system enables complainants to raise a complaint, have it allocated to the responsible party (which may be within or external to Nui Phao, ie, a government department) and tracked until it is closed out (noting that some complaints are of a nature that they are unlikely to be resolved in the short- or long-term). In 2014, 626 complaints (596 in 2013) were formally raised, mainly relating to resettlement and compensation and environmental matters (such as noise, dust and water). Of those raised, 90% were resolved (compared with 84% in 2013). For the first time in 2014, a third party was involved in two complaint cases formally raised with Nui Phao. In one case, the cause of the grievance rested with the Government who appointed an independent third party to determine a resolution. The other case, in which the grievance was directed towards Nui Phao, was also referred by the Government to an

independent third party which found that Nui Phao had no case to answer.

Resettlement and blasting and construction activities required for the road and rail realignment caused concern amongst affected communities throughout 2014, some which remained unresolved at years end. On several occasions, the project's security team was required to assist with the removal of protestors from land required for project activities. The weekly meetings will continue into 2015 with the aim of working through outstanding concerns.

### Community complaints and resolution 2014



*On-site problem solving meeting with project affected people by local authority and Nui Phao at Hamlet 1, Hung Son commune.*

### VietGAP

VietGAP certification for tea production was expanded in 2014 from 18 households in one hamlet (Ha Thuong) to 99 households across a further two hamlets (Hung Son and Tan Linh). Almost 24 ha are now used for producing VietGAP certified tea in the project area. VietGAP certification means that good agricultural practices were used in the production of tea and that the tea was free of chemical contamination at the time of harvest and that the product was traceable from production to consumption. Achievement of VietGAP certification is an important indicator of the quality of the product, and now efforts will focus on identifying a robust market into which to sell the tea ensuring the financial viability of tea growing.

### Modern Village

In Vietnam, more than 70% of population lives in rural areas.

In 2010, the Vietnam Government embarked on a National Target Program on New Rural Development aimed at reducing poverty and achieving sustainable economic growth in Vietnam's rural areas.



*Nui Phao subsidised affected communes to join the district tea festival in 2014.*

As part of the program, the Government classifies villages according to the level of their development. The highest level of development is a 'modern village', determined by 19 criteria that measure aspects such as their planning, transport, electricity, schools, housing and environment. In 2014, three communes in Dai Tu district were classified as 'modern villages'. Two of these communes – Ha Thuong and Hung Son – were located within the project affected area. There are only 12 communes that have achieved 'modern village' standards in Thai Nguyen. Nui Phao has spent more than US\$272,000 providing support for infrastructure, education, and public services in Ha Thuong, but credits also the efforts of local government and residents in achieving this development standard.



# Economic Development

## Economic Development

### Performance

In 2014 we crushed 3,109,824 dry tonnes of ore (compared with 1,215,898t in 2013), and milled 3,082,106 dry tonnes of ore (1,183,096t). We produced 24,898 tonnes of copper concentrate and 499 tonnes of copper cathode (4,919t), 6,602 tonnes of tungsten concentrate (1,256t), 1,716 tonnes of tungsten mags low grade concentrate (335t), 95,494 tonnes of fluorite concentrate (15,919t), 4,945 tonnes of bismuth concentrate and 2,333 tonnes of sodium tungsten. We also moved a total of 3,936,078 BCM of material in 2014 (2,750,000 BCM).

We achieved an important milestone in March with the production and sale of five of our products – copper, bismuth, tungsten, sodium tungstate and fluorite. We continued delivering on our growth plans with the Nui Phao H.C. Starck Joint Venture commissioning of the high-tech

Tungsten Chemicals Ammonium Plant in the latter part of 2014. Our final products – ammonium paratungstate and blue and yellow tungsten oxides – will be produced in 2015.

### Economic benefit

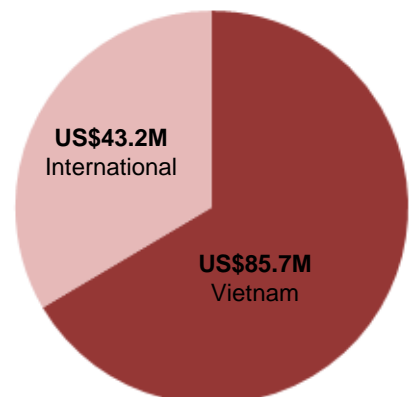
The economic benefits of the project to the people of Dai Tu, Thai Nguyen province and Vietnam more broadly are significant.

In 2014, we spent US\$19.91 million on workers' salaries and wages (including benefits and superannuation)(compared with US\$34 million in 2013). We spent approx. US\$601,770 on meal allowances paid to employees (which is spent locally). We spent a further US\$209,115 on training and recruitment (US\$454,458).

Similarly, we buy the goods and services we need to operate the mine from suppliers within the province, where they are available, then within

the nation. We spent US\$56.32 million in capital expenditure (US\$126.8 million) and US\$72.54 million in operational expenditure (US\$76.6 million), which amounted to a total expenditure of US\$128.85 million (US\$203.4 million). Of this amount, we spent US\$85.68 million in Vietnam (US\$32.3 million) and US\$43.18 million internationally (US\$72.5 million).

### Expenditure 2014





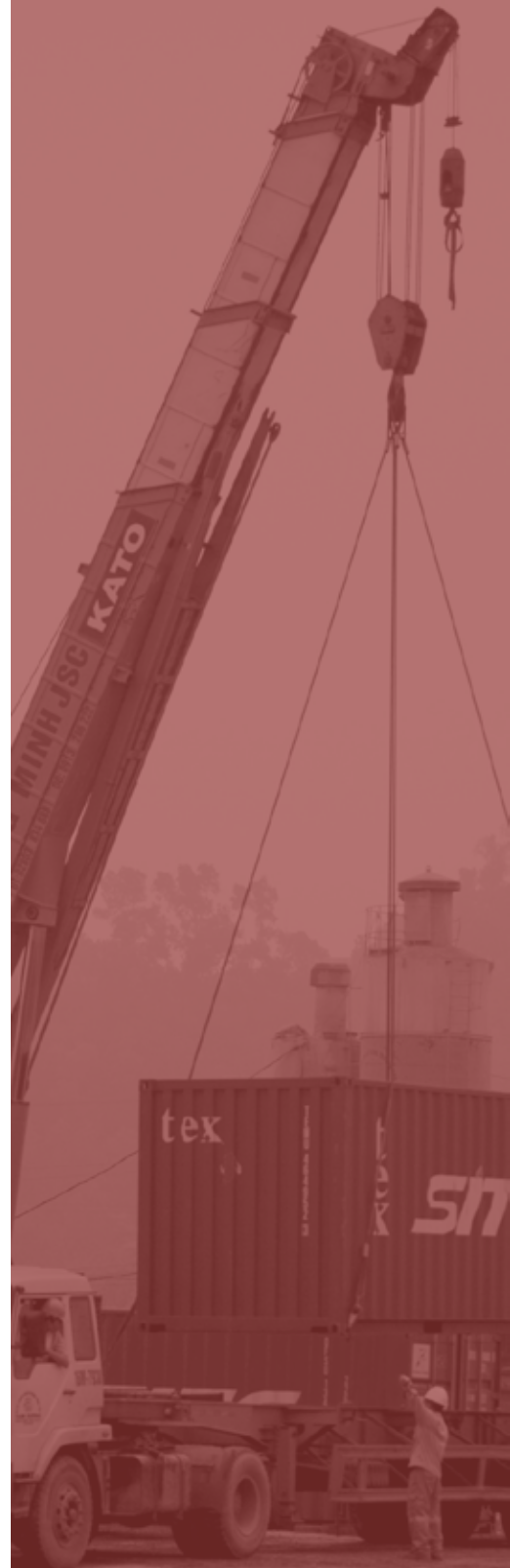
2014 Performance

Economic performance	2014 Result	2013 Result
Production	Copper concentrate: 24,898 t Bismuth: 4,945 t Tungsten concentrate: 6,602 t Tungsten HIMS Mags: 1,716 t Fluorite concentrate: 95,494 t	Copper concentrate: 4,919 t Bismuth: 0 Tungsten concentrate: 1,256 t Tungsten HIMS Mags: 335 t Fluorite concentrate: 15,919 t
Wages and salaries (US\$)	US\$19.91 million	US\$34 million
Taxes and royalties (US\$)	US\$18.59 million	US\$19.9 million
Procurement (US\$)	Capex US\$56.32 million Opex US\$72.54M million	Capex US\$126.8 million Opex US\$76.6 million

Expenditure

Our project pays taxes and royalties to the Thai Nguyen province and the Government of Vietnam, including import and export taxes, Environment Protection Fund tax and natural resources tax (NRT), also known as a production royalty tax. In 2014, we paid US\$18.59 million in taxes and royalties (compared with US\$19.9 million in 2013).

We also invest heavily in community program and infrastructure; to the tune of US\$355,770 in 2014 (compared with US\$277,931). Our community development expenditure is outlined on page 36.





## Feedback and contacts

Did you find our Sustainable Development Report useful and interesting? Do you have any questions? We'd like to hear from you.

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