

▶ Positive results from ▶ bunker barge contracts

In early February, SAPREF signed contracts with two barge operators who will take over the supply of all bunker fuel to ships in the port of Durban. The deal, worth some \$75 million over five years, was structured to create a positive effect on black economic empowerment, the environment, safety and the local shipbuilding industry.

SAPREF is managing the contracts on behalf of BP, Shell and Engen, and will supply about two million metric tons of bunker fuel per year to ships in Durban.

Smit Amandla Marine (Pty) Ltd and Unicorn Calulo Bunker Services (Pty) Ltd were the successful bidders. Commenting on the contracts, SAPREF's MD, Bart Voet said: "We encourage our contractors to migrate towards BEE compliance



Southern Venture, one of the two new bunker barges that will operate in Durban.

and I am pleased to say that both these companies are compliant with the new B-BBEE Code of Good Practice."

The deal comes at the same time as the withdrawal by the port of the bunker supply pipeline to ships at the container terminal; this is due to safety, environmental and other factors. Bunkers in Durban are thus now available only via a barge or directly from a berth at Island View.

Says marine manager George Franklin, "Both the bunker-barge operators will be bringing double-hull barges into service. The double hulls are part of the requirements of MARPOL Annex 1, which provide for the phasing-out this year of single-hull tankers carrying fuel oil. Obviously, this



Smit Lipuma was built in Durban and came into service in February.

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▶ From the editor



The photograph shows part of the food gardening project at Thamela school in Umlazi.



Mrs Gambushe shows one of the school uniforms made by the Zamukuziphilisa job creation project for neighbouring schools in Umlazi.

SAPREF invests in the development of communities in its neighbourhood. Three recent investments were:

Gardens

Mrs Futhi Gcwensa, a teacher at Thamela Primary School in Umlazi, felt that the HIV-positive learners at the school were not getting an adequate diet. She roped in some of the parents and together they established an organic garden, to supply the school kitchen with fresh carrots, spinach, cabbage, beetroot and lettuce. SAPREF has invested R10 000 in the project to fence off the gardens from neighbouring animals, and to buy seeds and build tunnels for growing spinach.

Trauma training

SAPREF invested R20 000 in specialised training for ten volunteers from the trauma room at the Merewent Community Policing Forum. The two-week course focused on methods in obtaining evidence to improve the conviction rate in cases of sexual abuse of children. The course was conducted by members of the Bobbi Bear organisation.

Job creation

R10 000 from SAPREF was used by Mrs Gambushe of the Zamukuziphilisa Community Project in Umlazi for training and to buy materials for their Zulu-culture-style artefacts project. Skills have now been developed among women in the area who can make clothing and work with beads and skins. Their artefacts are sold at the project's premises to tourists, street vendors and direct to the public.

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will make for increased safety and will significantly reduce any risk to the environment."

Smit Amandla Marine have brought into service a new double-hulled barge which was built by Dormac at Bayhead. Named SMIT LiPuma, she will be able to deliver bunkers at rates of up to 1000 tonne/hr. Characterised by manoeuvrability, safety features and the capacity to carry some 5000 tonnes of marine fuel (fuel oil, gas oil and diesel oil), the 'SMIT LiPuma' epitomises the latest in international barge design.

Unicorn Calulo are also going to use a new double-hull barge, the Southern Venture. It is one of the most advanced vessels of its type afloat today and embodies many "big ship" features to meet or exceed current and envisaged tanker safety legislation.

Says George, "These new barges are built to the latest international specifications, and can only result in the better, safer, faster, and more environmentally friendly delivery of bunkers in Durban. We are delighted, too, that these contracts have played and will continue to play a part in rejuvenating the local shipbuilding business and in supporting skills development in the shipbuilding industry."

The contracts will run for a period of five years, with the option of extensions thereafter amounting to a further \$75 million.



SAPREF is proud to have achieved ISO 14001 and ISO 9001 certification.



COLUMNS is the in-house magazine of SAPREF, the Shell and BP South African Petroleum Refineries (Pty) Limited, Durban, South Africa.

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Nipho



Sreejeetha



Tim



Nipho Khathi joined SAPREF as a technologist on 1 January, giving support to operations on the hydro-treater and on the desulphuriser.

He grew up in Hlabisa, Zululand, excelling in the science Olympiad while at school. He studied chemical engineering at the University of KwaZulu-Natal with sponsorship from Eskom, completing his degree in 2005. He then worked at Thermtron, and at Foster Wheeler in Johannesburg. He loves to play indoor soccer.

▶ Long servers

Congratulations to the following loyal long servers who celebrated anniversaries during January and February this year:

5 years

Nombasa Hewana, programmer
Nhlanhla Buthelezi, process operator
Charity Couch, production foreman
Earl de Boer, process operator
Mark de Kramer, process operator
Thabile Dlamini, process operator
Julian Finger, process operator
Jayshree Hiralal, instrument mechanic
Regan Jean-Pierre, process operator
Bo shabangu, process operator
Phum Xaba, process operator

10 years

Ngzi Bonginkosi, process operator
Tees Pottier, process operator
Jitesh Singh, team leader, central zone
Neeshlin Govender, chemical engineer
Rudy Reddy, process operator

25 years

Karl Hyder, maintenance fitter
Claudia Jali, laboratory technician
Daniel Mabaso, laboratory supervisor

30 years

Baba Mthembu, site technician adviser
Danny Thesan, scheduler

35 years

Ralph Adair, buyer

We welcomed Sreejeetha Datta on 4 January to the post of process development engineer. She works with the technical development team and is helping with the capex portfolio, project screening and looking at the viability of projects.

Sreejeetha grew up in India, mostly in New Delhi. She graduated from the Jawaharlal Nehru University in New Delhi with an MA in economics and worked initially as an energy economist before broadening into sustainable development and environmental management. She joined Shell in 2002 at an LNG plant in an environmental role, before moving to Kuala Lumpur, Malaysia, where she was the team leader of the sustainable development group in Shell Global Solutions.

She describes herself as outgoing, sociable and enthusiastic; it's in her nature to see projects through to the end, she says. And she has a wide range of interests including travelling, photography, and painting – she once worked as an animation artist.



Jeff Mitchell, electrical supervisor, retired recently after 33 years of service. He is seen here at his retirement party with his wife Geanne, and colleagues Wim van den Bosch and Pam Grey.

Tim Goatcher joined SAPREF on 4 January as the conversion processes support manager. He is on secondment from Shell and will be at SAPREF for about four years.

Tim grew up in England and graduated as a chemical engineer from Cambridge University. He joined Shell at Stanlow refinery, for four years in operations technology support, and for three years as technical auditor; he then moved to Shell GS in Amsterdam for four years, working in light ends conversion technology, and then to Malaysia in an equivalent job for four years.

Now in his third expat posting, Tim obviously enjoys new countries and new people, not to mention new and different ways of working. He's a keen skier, plays social squash, enjoys cycling and will be getting off-road in his 4x4.

He sees himself as dedicated, determined and reliable at work, while out of work, relaxed, lively and keen to try new things.



After 32 years as a senior laboratory technician, Adam Iqbal went on early retirement in October, 2007. He is seen here with Glynis Shaik, Eddie Chettiar, Verona Steenkamp, David Manikam and Ajeeth Pramlall.

Teamwork saves the day

SAPREF's demineralisation plant is one of those that just gets on with its job: producing ultra pure water, to be converted into steam by the boilers. Until the day comes that it does not. Such a day came in May last year, when one of the three trains in the demin plant suffered a problem. Steam shedding took place and production was affected.

As John van Belkum, plant manager for utilities explains, "We immediately contacted Mondi next door, who went to great lengths to supply us with demin water in trucks and rented a skid-mounted unit. This allowed us to do temporary repairs on the demin

unit. Three months later we also bought a skid-mounted demin unit from PrenTech. This unit was re-engineered, refurbished and installed close to the existing units. It took less than three months from initiation to delivering on-spec product.

"This unit, together with the rented unit, allows us to carry out maintenance on the existing demin units with minimal impact on the refinery processes. Our success in dealing with the original problem and the commissioning of the new unit was due mainly to the amazing



Some of the team involved in the refurbishment project.

teamwork of everyone involved – it was quite an achievement! Special thanks must go to Mondi, operations, technology, maintenance, emergency Services, C&P, and the projects team. All did excellent work."

In the meantime, the faulty demin plant has been temporarily repaired, with full preventative repairs planned for this quarter on all the streams, and the plan is to add another demin train to the plant in future to allow for maintenance on the run.

Innovation saved millions

During routine inspection of some of our storage tanks, one of our instrument preventative maintenance team members (Felicia Alva) observed something that didn't seem correct on tank T-1115 which can hold 61 400 cubic metres of product.

After informing the tankage team, some corrosion was observed at the top section of the pontoons. Taking the tank out of service for repair would have cost the refinery an immediate \$1 million (±R7.8 million) in crude demurrage, with possible additional costs of \$150 000 per month.

The OMUTDE team was challenged to find a way of keeping the tank in

service. Early proposals were rejected on safety grounds, and other options were explored until an innovative, simple and safe method was identified, thus saving SAPREF millions of rands and ensuring the overall safety of the project.

Said Olaf Koot, area engineer, "It was a challenge to make the situation safe and do the repair while the tank was in service, because we could not do any hot work. However, after input from economics and scheduling department, the tankage team including artisans, engineers,



Part of the team that found a solution to the problem on T-1115.

inspectors and operations, HSSE and fire department pulled together and executed the job – faster than anticipated. Well done to all including SGS, inspection and contractors such as Kaefer Thermal, Tekon and LTA-Grinaker tankage division."

The moral of this story is: if it does not look right, it probably is not right – this is an example of a positive outcome that started because someone had the courage to report it.

▶ New equipment, better results

To be competitive in the fuel market, SAPREF constantly strives to use the latest technology and best practice available.

Take the question of octane numbers, for example. SAPREF blends its petrol products with certain components before the petrol is pumped to the Island View depots, and it is the CFR engines and comparators at SAPREF that establish whether the correct octane numbers have been achieved.

Last year, SAPREF decided to install new equipment to help achieve higher specifications, increase reliability and speed of analysis, and to eliminate human error.

In the laboratory, the scope entailed the automization of both the RON and MON engines with Octatest hardware and software, and the installation of a six-burette blender and its associated hardware and software.

In the CORA analyser house, the scope entailed replacing the three



Octel Mk IV comparators with three Rofa N2885 on-line comparators, the replacement of three cooling towers and the three fuel bowl systems.

Said QMI engineer Roelof van Rensburg, "All the lab work has been completed, including the training of a number of lab personnel and a QMI technician. In the CORA analyser house, the upgrade has also been completed and a QMI artisan and a technician have received training.

Andre Diot from ROFA, right, and Johan Olivier from Elemental Analytics add the final touches.

"Already we are seeing the time spent by technicians on testing has been cut, and the new fuel blender is working faster and with greater accuracy. Congratulations to ROFA, their sub-contractor (Elemental Analytics), Callie de Beer and his team from projects, QMI and the lab personnel."

▶ Raising the bar on product quality

There is a close relationship between our product quality (PQ) and our reputation. That is why PQ is a Tactic that aims to raise awareness and commitment to quality each step of the way.

Says Ronnie Muruven, Island View manager, "It is essential to maintain our product quality to enhance our reputation. This requires continuous focus at all levels, to satisfy both the shareholders and our customers.

"With each zone being accountable, we have a two-part strategy: the

first is the quick wins, for example analysing all the incidents over the last two years, and verifying that effective counter-measures are in place; the second is putting robust systems in place to support 'getting it right the first time', and including the appointment of a single focal point to champion PQ; along with that goes the embedding of the importance of PQ throughout the organisation, from the shop floor to the leadership team.

"We all know about HSE because it has a high profile. Well, we want to raise the bar on quality to the same

high level, and that includes creating enthusiasm and awareness in the team.

"A quick win we have had already was oil movements embedding best practice from the operating windows template to track PQ windows; this will now be rolled out to other zones. We are also agreeing targets with sponsors, based on the 2007 key performance indicators; by drilling down through the data, we can see where we need to focus – an obvious area is in the reduction of demurrage costs."

▶ New reactor for cat cracker

After careful inspection during the 2006 shutdown, it became clear that the reactor on the FCCU (cat cracker) was nearing the end of its useful life. As the time needed to repair the reactor would have required the planning of an unacceptably long shutdown, a decision was taken to replace the reactor during the next (2009) shutdown.

The new reactor is being made in Durban, principally by Elgin Engineering and Metso ND Engineering. It will boast a state-of-the-art stripper with Pentaflo internals, cold wall riser and liftpot, cold wall regenerator standpipe, two out of three trip elements and fast-acting slide valves.

Project manager John Somerville says, “The new reactor design features provide a big improvement in terms of reliability and maintenance; plus, there are shutdown HSE wins in that we will not need to send men in to repair the reactor in confined spaces. In addition, there will be an economic benefit from the increased reliability and no unplanned shutdowns in the next three-year run period.”

The reactor will be 55 metres high; it comprises the riser of 24 metres and the reactor and stripper of about 31 metres. An 800-ton crane with a boom of 80 metres will come on site and lift the 210-tonne vessel. Specialist rigging teams will do the lift.

Additional safety features on the new unit will be two-ply bellows with early-warning leak detectors, plus fresh and spent catalyst slide valves with new fast-acting actuators and dedicated high-pressure hydraulic power packs which will be part of the emergency shutdown of the unit. The project will cost approximately \$19 million (R139 million).



An illustration showing the new reactor (green vessel at top and left) and associated work.

▶ SAPREF invests in people development

SAPREF has chosen this year to play a bigger role in helping to alleviate the skills shortage in the country. As a result, 52 people have been accepted this year; one is an in-service laboratory trainee, 29 are being trained to be process technicians, and 22 are being trained to be artisans in three different engineering disciplines. Fourteen of the 22 are from BP Angola, and most of the rest are from our neighbouring areas.

Explains Chris Ximba, head of engineering training. “As we will not be able to offer jobs to all of the trainees, some will be released to the labour market. We are proud to be able to ‘do our bit’ and train youngsters who will then add to the skills pool in the country.”

To date, most of the learners that have trained at SAPREF have been able to get employment.

The trainees will split into four disciplines: production, mechanical, electrical and instrumentation, and after three-and-a-half years will qualify as artisans and process technicians.

As usual, the trainees started the year with four days on a team-building course at Cumberland Nature Reserve, near Pietermaritzburg. Chris said the vibe was completely different when the group returned – they had bonded.

Business Improvement Process update

A number of successes have been recorded in implementing SAPREF's Business Improvement Process (BIP). Those that are most significant are the change in the Engineering organization, the attention to Operating Windows, the introduction of News Boards and the acceleration of a number of corrosion assessment programmes.

Separate Engineering and Maintenance management departments and processes are in place. Engineering resources now support Operations from two streams, a specialist engineering support group and a separate maintenance execution group. The central planning processes supported by the PACER maintenance management system are now more effective in providing weekly maintenance plans. One of the benefits is the restructuring of the morning meetings to enhance

the focus on delivery against the plan. The Engineering Support Group has also been able to better focus on the 2009 turnaround preparation and on the current corrosion inspection programmes.

A project looking specifically at the equipment design operating parameters ("operating windows") has improved the reliability of our production processes. "We are delighted with the significant difference this has made in maintaining consistent production," said Benton Pillay, the project leader.

In mobilising the site to focus on our SIRQP priorities (safety, integrity, reliability, product quality, people), we are using fresh communication techniques. New-look notice boards and facilitators from a cross-section



Mani Naicker, Bunny Pillay and Sagie Moodley: Completion of the backlog in PACER.



Andrew McKay: completion of performance management and retention strategy.

of the business are developing effective top-down / bottom-up communications. There has been an enthusiastic response to the visibility of information about the BIP and other current news.

In our forward plan we will continue to focus on integrity and the field delivery of our improvement projects.



*Mike Axe: fixed asset verification.
Ram Ramharack : SHEQ focal point.
Eddie Chettiar: SHEQ focal point recruitment.*

Three safety successes

On 13 January, Team SAPREF achieved 1 million hours without a lost time injury. Said MD Bart Voet, "This is a great achievement. Everybody at SAPREF (staff and contractors) has contributed to this by looking out for themselves and one another. THANK YOU."

Grinaker-LTA's mechanical and electrical division, core contractors at SAPREF, were recently awarded a four-star rating by the National Occupational Safety Association.



MD Bart Voet, left, congratulates Vuli Nxumalo, Indrani Naidoo, Dixon Lowe and Chris Williams.

SAPREF is proud that the Master Builders Association has given a safety award to its pipeline contractor, WBHO-Shearwater JV, namely first prize for all civil projects in KZN.

▶ CLF celebrates successes



Members of the SAPREF Community Liaison Forum joined a number of SAPREF people at a year-end braai at the SAPREF Club on 8 December. The successes of the year were celebrated, and 'thank-yous' were said. Here are some photographs taken at the function.



▶ Duzi dudes

Three of the guys at the refinery site who completed the Duzi canoe marathon in January are, above, Oliver Burn and Mike Brett (projects alliance) and Gavin Hansson, mechanical fitter. It was Mike's 19th race, and the 6th for the Oliver and Gavin. They all agreed it is a tough race, but they will be among the 2000+ starters next year.



▶ Dancin' romancin'



A dinner dance was held at the SAPREF Club on 21 December. Charity and Reggie Mkhize were there.