



# MCL NEWS

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## VISION - MAAMBA



### HIGHLIGHTS

MCL Flags off Road Works  
in Maamba Township

Thermal Power Plant Service  
Building Inaugurated

MCL Donates Garbage Handling  
Equipment to Sinazongwe Town  
Council

MCL Conducts Free  
Eye Screening Services

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## On the cover

The CEO of MCL inaugurating the Sinazongwe District 'Eye Outreach' Program



# Executive Messages



■ Mr Ashwin Devineni - Resident Director

## Foreword by the Resident Director(RD)

**A**s we draw close to the end of 2017, it is time to take stock of our activities during the year. Our 300-MW Thermal Power Plant is now firmly up and running, accounting for 10.6% of Zambia's installed electricity generation capacity, and is an integral part of the nation's energy security. Apart from supplying power, improving the lives of local populace and environment in which we operate is not only paramount to MCL, but also forms part of our core values and ethos.

As part of our CSR initiatives to better the conditions of our community, we are investing large sums of money for developing and improving infrastructure of Maamba. Today, MCL is providing a facelift to the road network of Maamba Township, repairs that have been overlooked for over four decades.

We also take keen interest in the health of people in our community, for which we have partnered in building an Eye Clinic to prevent, and in some cases, reverse avoidable blindness among the people of Maamba and Sinazongwe.

Importantly, maintaining high standards of hygiene and cleanliness is important to our operations and the environment. We hope by empowering the Sinazongwe District Council with solid waste collection equipment, we will be supplementing the efforts of the local authority in keeping our district healthy and clean.

Happy Reading

***Ndalumba kapati, Natotela sana, Dzikomo kwambiri***



■ Rear Admiral Venkat Shankar (Retd.) - CEO

## Message by the Chief Executive Officer (CEO)

**I**n this quarter, MCL took over the plant from EPC contractor and handed over the operation and maintenance of the plant to Nava Energy Zambia Limited (NEZL) which is staffed with qualified engineers with previous experience of operating thermal power plants. In some terms, this effectively symbolises the movement of MCL from a construction stage to production stage. I wish NEZL the very best in the challenging task that has been entrusted to them.

This quarter also witnessed significant contributions in terms of money spent towards Corporate Social Responsibility activities in the form of donation of a Tipper Truck and a Back Hoe Loader worth K1.2 million to the Sinazongwe Council for garbage cleaning, inauguration of an eye camp in partnership with Universal Eye Sight and Ministry of Health at a total cost of US \$1.2 million, commencement of reconstruction of township roads at the total cost of K20 million and other activities. This reiterates MCL's commitment to continually and innovatively uplift the living conditions of the community members and employees.

I hope you enjoy this edition of MCL News as much as we enjoy sharing what we do at Maamba.

# MCL Conducts Free Eye Screening in partnership with Universal Eye Sight



■ CEO, Rear Admiral Venkat Shankar (Retd) addressing the audience that came to seek Free Eye Screening Services

**M**aamba Collieries Limited has partnered with the Ministry of Health and Operation Eyesight Universal to establish an Eye Clinic at Maamba General Hospital. The Eye Clinic will help the residents of Sinazongwe and its surrounding areas, which statistically has the highest level of blindness in Zambia, seek modern and timely eye care without travelling long distances.

The goal of the partnership is to eliminate avoidable blindness in Sinazongwe District on a sustainable basis, by establishing a functional eye unit as an integral part of the Maamba General Hospital, and also enhancing quality of services offered by the hospital.

In order to realize the dream of making comprehensive eye care and prevention of vision-related problems a sustainable reality, Maamba Collieries Limited has entered into a Memorandum of Understanding with Operation Eyesight Universal. The MOU when implemented, will culminate in the setting up of a 'state of the art' eye clinic at Maamba Hospital. The project is estimated to cost US \$1.3 million which will be contributed to by the partners over a period of five years.

Soon after making an official announcement about the

MOU to benefit the residents of Sinazongwe District, MCL and its partners held a free Comprehensive Eye Health **Outreach Camp** within the District from 24th – 28th July, 2017. The exercise saw the team reach some of remotest parts of the District, including Kafwambila on the shores of Lake Kariba.

On Friday, 28th July, 2017, the camp shifted to Maamba Township. People from all walks of life, within and outside Maamba Township, flocked to the venue of the camp to access free eye screening services. Patients who needed immediate eye treatment were attended to on site during the screening period, while those with advanced complications were booked for surgery at Maamba Hospital by the visiting surgeons who commenced conducting operations from 31st July, 2017. The visiting surgeons remained at Maamba Hospital till 4th August, 2018.

Speaking before flagging off the event, MCL CEO, Rear Admiral Venkat Shankar (Retd), thanked the cooperating partners for taking such vital medical services to members who lived in rural areas without access to such services due to various inhibiting factors. He reiterated MCL's commitment to uplifting people's living conditions through its Corporate Social Responsibility activities.



■ CEO symbolically flagging off the Free Eye Screening Exercise



■ A number of surgical cases were attended to during the free Medical Camp

The official opening of the event was attended by the Sinazongwe District Commissioner, Mr Protacial Mulenga, Planner - Health, Mr. Breven Mapepula and other senior District Government Officials and other dignitaries. The District Commissioner thanked MCL for complementing Government efforts in providing quality health care to the people.



# Thermal Power Plant Service Building Inaugurated

■ MCL Resident Director, Mr. Ashwin Devineni and MCL Director, Mr. GRK Prasad, jointly inaugurating the Thermal Power Plant (TPP) Service Building

In a significant milestone towards sustainable operations of the Thermal Power Plant and future developments, Maamba Collieries Limited inaugurated the Service Building built to house the offices of TPP staff.

The Service Building which serves for undertaking all operational and administrative functions of the Thermal Power Plant, was jointly commissioned by MCL Resident Director, Mr Ashwin Devineni and Director, Mr. GRK Prasad. The inauguration ceremony was witnessed by the MCL Chairman, Mr. Ashok Devineni, Senior Executives and staff members of MCL, Nava Energy (Zambia) Limited and SEPCO.

The Service Building can accommodate up to 60 people, including operations, administrative and management staff. About 90% of personnel occupy workstations while individual rooms are used by senior executives such as Directors, Plant Head and Heads of Departments. Open office culture offers better inter-employee communication - a concept that promotes teamwork and gives a feeling of camaraderie. Other facilities available in Service Building include a Meeting Room which can seat up to 20 people; Training Hall with tables and chairs for 18 participants with 15 additional

seats for audience, a Discussion Room, a Pantry with tables and chairs for 12 people, Plotter Room, Server Room and a Mini-Library that can seat 6 people.



■ MCL Chairman Mr. Ashok Devineni with Directors and executive members from MCL and SEPCO during the Inauguration Ceremony of the TPP Service Building

## JAPANESE INTERNATIONAL COOPERATION AGENCY (JICA) SPONSORS MCL TPP ENGINEER

The Japanese International Cooperation Agency (JICA) sponsored TPP Engineer Sain Kamuna Phiri to undergo training in Japan on *"Improvement of Maintenance Skills for Gas Turbines and Coal Fired Steam Turbine Power Engineering (B) – J1704303"* from 23rd August to 20th October, 2017.

Mr. Phiri is one of the Zambian graduate engineers MCL recruited from the University of Zambia four years ago. After recruitment, these engineers underwent a two-year rigorous training programme

in Operations and Maintenance of the TPP at MCL's Vocational Training Centre. This training will stand him in good stead, while the training in Japan will help him gain international expertise and enhance his performance at the TPP.

MCL offers its best wishes to Mr. Phiri for his training stint in Japan.

## MCL Recruits Trainee Engineers for Thermal Power Plant (TPP)

MCL has recruited fourteen (14) more TPP Trainee Engineers as part of its 'Zambianisation' process. The latest trainees inducted by MCL, brings the total number of Zambian Engineers recruited so far, to 48 – all of whom are part of the success story of the TPP. As part of their orientation, the new trainees were jointly addressed by the Chief Executive Officer, the Head of the Power Plant and the Human Resource Manager.

The CEO encouraged the trainees to be well disciplined, hardworking and courteous to all, considering that they have joined a multi – cultural working environment. The trainees were reminded that their progression from the one-year training programme would depend on their performance and conduct. The trainees include four female engineers.



■ Newly recruited TPP Trainee Engineers undergoing orientation



# MCL Donates Garbage Handling Equipment to Sinazongwe Town Council

**M**aamba Collieries Limited has donated a new 30-tonne Sino Tipper Truck and a Back Hoe Loader to Sinazongwe Council, in a move that reiterates MCL's commitment to improving the conditions of the community in the region in which it operates.

The equipment costing K1.2 million, are to be used for solid waste management in the Maamba township as well as in the Sinazongwe District as a whole. This will help the District Council, which has hitherto been struggling with the problem of effective solid waste management in the area.

The handover ceremony was attended among others by His Royal Highness Chief Sinazongwe, Sinazongwe District Commissioner, Mr Protacial Mulenga, Heads of Government Departments in the District and Headmen around Maamba Township.



■ His Royal Highness Chief Sinazongwe conferring with the CEO during handover ceremony of the equipment, while DC Sinazongwe, Mr. Protacial Mulenga, looks on

Speaking during the handover ceremony, Maamba Collieries Limited CEO, Rear Admiral Venkat Shankar (Retd), urged the local authorities to put the equipment to good use for the benefit of all members of the community.

The CEO observed that solid waste management in the Maamba Township and the entire District was a source of great concern which needed concerted efforts from all the stakeholders if the conditions are to be improved.



■ Solid waste management equipment handed over to Sinazongwe Town Council

He thanked the Community members who, in the past, had turned up for 'Keep Maamba Clean' campaigns organized by MCL in large numbers. The CEO expressed optimism that the equipment will bring a sigh of relief to the local authorities with regard to solid waste handling and disposal.

The CEO pledged that MCL will remain committed to executing MCL's CSR Policy Initiatives, that will benefit the Community and thanked the Community for their continued support. He mentioned that the Company's CSR Policy will continue to be centered on:

- Environment Management
- Education
- Health
- Infrastructure Development and
- Sports & Recreation

In this regard, the community will witness investment in infrastructure development thanks to the company's Corporate Social Responsibility programme.

Sinazongwe Council Secretary, Mr Every Nga'ndu, speaking at the occasion said the donation was opportune, as it came at the time when the District was grappling with challenges of solid waste management and reassured all present that the District Council will put the equipment to good use to change the face of District.

The District Commissioner, Mr Protacial Mulenga, who also spoke, appealed to other private investors in the district to emulate MCL. Mr Mulenga observed that since the new management took over the operations of the Mine, the district had witnessed a lot of development in various fields. He said the Government will forever remain grateful for the development brought about in the district by MCL and assured all present of the Government's continued support.





## MCL flags off Road Works in Maamba Township

■ CEO Rear Admiral Venkat Shankar (Retd) flanked by the District Commissioner, Mr Protacial Mulenga (left) and Sinazongwe Member of Parliament, Honorable Gift Sialubalo (right) inaugurating Township Road Works on Wednesday 30th August, 2017

The long awaited reconstruction of Township Roads by Maamba Collieries Limited has kicked off, much to the delight of large number of community members who attended the flagging off ceremony.

Among others, the ceremony was attended by Sinazongwe District Commissioner, Mr Protacial Mulenga, Sinazongwe Constituency Member of Parliament, Honorable Gift Sialubalo, Sinazongwe Town Council Secretary, Mr. Every N'gandu, Ward Councilor, Mr. Zachariah Chikete, Heads of Government Departments within Sinazongwe District, Village Headmen, MCL Management Staff and several community members.

The road reconstruction works are an in-house project under the supervision of MCL Head of Civil Engineering, Mr. G. V. B. Pantulu, with technical support from Bicon Zambia Limited.

The first phase of the project will cover 5.3 kilometers of the Township road network at a cost of K 20 Million. The reconstruction of the roads will definitely bring a sigh of relief to motorists in the area who have had to endure the hardships of driving on worn-out roads that last witnessed repair work in the late 1960s.

Both Hon Sialubalo and the Council Secretary hailed MCL for ploughing back into the community despite the Thermal Power Plant being in operation for only a short period. The Area Councilor, Mr. Zacharia Chikete,

reiterated the need for the community of Maamba to support the project. The District Commissioner urged other investors within the District to show similar commitment in lifting standards of living of the people by undertaking similar CSR projects.

The CEO assured the community of MCL's commitment to improving communal infrastructure in Maamba Township as pledged by the new MCL Management in 2010 when the Company was privatized. He appealed to the community to protect the roads against any form of vandalism once completed.



■ Dozer ripping the road to signify commencement of road works



# Maamba Private School Pupils Tour Zambia's Tourist Capital, Livingstone

By Webster Mafuta

■ Maamba Private School pupils touring Harry Mwaanga International Airport, Livingstone

**M**aamba Private School, wholly-owned by MCL, took pupils in national examination classes on a conducted educational tour of Livingstone, maintaining a tradition that has been practiced by the school in the past.

The continuing sponsorship of the pupils on this education tour reaffirms MCL's commitment to supporting the school as a critical component of its Corporate Social Responsibility. Livingstone, Zambia's tourist capital, has always been the Maamba Private School's favourite tour destination.

This year, the pupils of grades seven and nine set off for their tours on 7th and 11th September 2017 respectively, using two Mitsubishi Rosa buses hired kind courtesy of MCL. While in Livingstone, the pupils visited several sites of historic and cultural importance.

On the first day, the pupils visited the Livingstone Museum where they appreciated its role in preserving the cultural and historic heritage of Zambia.

The tour of the museum gave the pupils an insight into one of the greatest expeditions in history – the missionary contribution to African development,

with David Livingstone taking centre stage in Zambia.

The pupils then visited the Musi-o-Tunya National park where they had a close view of the elephants -the biggest land mammals. The pupils also saw the lion, buffalo, leopard, and rhinoceros, completing their appreciation of the 'Big Five' family. The pupils also studied the features of carnivores and how animals keep a balance in the eco system.

It was an experience that would help the pupils appreciate and preserve nature.

On the second day the pupils started with a visit to the Meteorological Centre, where they learned about the weather elements and the equipment used to record different parameters of the weather, such as, the sunshine recorder, the analog and digital rain gauges, anemometer, wind vane and the barometer.

The pupils were also introduced to the content of the Stevenson Screen (used for measuring the amount of rainfall) and its features, which is an important part of the curriculum both at Grade 7 and 9 levels of education.



■ A Meteorological Officer explaining some of the weather elements to pupils

After a visit to the Meteorological Department, the pupils proceeded to visit the magnificent Victoria Falls – one of the seven natural wonders of the world. The main interest of the pupils was to confirm that the Victoria Falls was one of Zambia’s main physical features and to discover its economic value to the local people and the country at large. It provides a ready market for Zambian craft products, photography, bungee jumping and water rafting.

On the same day they visited the gorge swing, an experience that provided them an opportunity to distinguish a gorge from a valley. The children appreciated Victoria Falls’ economic benefit through the various innovations some tour companies had put in to attract tourists. The pupils, during their tour, visited one of the renowned villages in the country, the Mukuni Village. During the visit, the pupils got first-hand experience of a typical layout and set up of a Zambian Village - with emphasis on its social, political, economic and spiritual organization - a very important component at all levels of Zambia’s Social Studies syllabus.

On the third and final day, the pupils visited Avani Hotel. The visit stimulated their interest in Home Economics and the hospitality industry. They saw how art, craft and various skills in Home Economics work together to boost Zambia’s economy.

*The author is the Head Teacher of Maamba Private School*

# Effects of alcohol in a workplace

By Maurice Mwisiya (Safety Officer)

**A**lcohol in a workplace can cause significant problems, both socially with regards to health and to safety. An intoxicated employee or one under the influence of alcohol can endanger both himself and others. For example, a drunk-driver may endanger the lives of all his passengers as well as his own. What then are the effects of alcohol on an employee?

## Reduced Concentration

Alcohol tends to reduce an individual's concentration span. Safety-critical jobs, such as, control room operators, field operators, crane operators, bus drivers, etc. may therefore compromise not only their own safety but also that of other individuals, groups of workers and organizations that they work for.

## Reduced Perception of Risk

Different people view the same situation in very different ways. One person's interpretation of a hazard or danger is not necessarily the same as that of their work colleague.

Distortion is defined as "the way in which people perceive things not as they actually are".

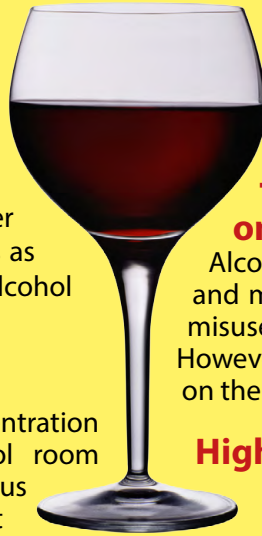
Distortion mainly occurs due to two main causes:

- **Failure to notice things:** This may be due to failure of the senses (e.g. not noticing a particular smell, or seeing a particular warning sign) or more usually because of selectivity and familiarity (being selective in those things we pay attention to and tending to ignore the familiar and routine). Failure in our senses and in recognition of the familiar (e.g. ignoring routine safety procedures) can be influenced by the effects of alcohol as well as by fatigue, overwork, stress, etc.
- **Different interpretations:** This may be due to individual knowledge (or lack of it) and attitudes towards a particular event or situation. Different interpretations may also arise from allowing other factors to cloud judgments about an event or situation. Research has shown that there is a clear distinction between how we perceive risks to personal safety, general dangers to health, and dangers to society and the use of alcohol may impair such judgments.

Distortions affecting the perception of risk can be intensified by the use/misuse of alcohol especially where health and safety is a priority, and possible distortions may have disastrous effects.

## Reduced Inhibitions

Another possible side effect of alcohol is that inhibitions are reduced with an associated lessening of people's attitude to safety, especially in positions which require



a high level of alertness in relation to the job taking place. Such problems can affect the mood and expectations of individuals and others at work.

## The effects of the misuse of Alcohol on an Organisation

Alcohol can harm the individual both physically and mentally and, through the actions of those who misuse alcohol, other people and the environment. However, such misuse can also have an adverse effect on the organization the individual works for.

## High Absenteeism

Alcohol is estimated to cause 3-5 percent of all absences from work.

One indication of effects of alcohol at a work place may be a high incidence of absences on Mondays. Certain individuals view the weekend as a time to relax from the pressures of the working week by perhaps drinking to excess.

## Poor Morale

A high staff turnover is a general indicator of problems in a workplace. One such problem may manifest itself due to the use/misuse of alcohol.

## Poor Quality and Output

Alcohol consumption may result in reduced work performance, damaged customer relations, and resentment among employees who have to 'carry' colleagues, whose work output declines because of their drinking or drug abuse.

## Increased Accident Rate

There are no precise figures on the number of workplace accidents where alcohol is a factor, but alcohol is known to impair judgment and physical co-ordination. Drinking even small amounts of alcohol before or while carrying out work that is 'safety sensitive' will increase the risk of an accident.

Our aim at MCL is **zero harm** to our employees and to achieve this we need to work together to curb the vice of alcohol abuse in the workplace. Consequently, breath analysis of employees is randomly conducted to ensure that employees do not report for duty while drunk. **Drink responsibly, your family depends on you and as MCL we need you.**



# Benefits of attending Conferences / Workshops

By Nalishebo Simunji,  
Internal Auditor

In line with MCL's Training & Development Policy, the company encourages continuation training of staff members to enhance skills, knowledge and competences required to improve performance in current jobs and related future responsibilities.

Training of employees offers benefits to both the company and the employees. Having a trained workforce helps the company to run efficiently and effectively, and reduces the man hours in which a job is performed.

MCL periodically sponsors its staff to attend conferences in various fields - one such conference was organized by the Institute of Internal Audit, Zambia (IIAZ) in conjunction with Information Systems, Audit and Audit Control Association (ISACA, Lusaka Chapter) in Livingstone, Zambia's tourist capital.

The conference was worth attending and from it, I learnt a lot. Usually, as individuals and as a company we depend on our academic training and experience gained from companies that we have previously worked for but this is not always adequate, as new work methods are always developing. Regular training is worth the investment because building up the skills within the business will effectively improve the company's performance. Workshops/conferences bring a wide range of benefits to the company and its employees. During the workshop, I had an opportunity to visit a number tables advertising different software and courses that would aid in improving the current procedures used in my department.

The importance of staff development through attending of conferences/workshops cannot be overemphasized. I believe some of the benefits of attending conferences / workshops include but are not restricted to the following:

## **Improvement of job knowledge and skills at all levels of the organization**

When employees attend such events, they are exposed to experts in their line of work with vast and varied experience. Staff that know more can bring more to the table, hence improving the effectiveness of the company. During the conference, I had the opportunity to learn new and improved methods on how to perform my work more efficiently and effectively to enable me to add value to the company's performance.

## **Breaking out of one's comfort zone**

Employees have a tendency of doing things the same way and when a new method is introduced, they are rigid to accept change but if they are exposed to these workshops beforehand and have an opportunity to mix with others in the same field, it helps them have an open mind to change.

## **Networking**

Attending conferences/workshops help employees to learn how others do their work and also have an opportunity to sell their company's products or services. I had an opportunity to share with my colleagues about the developments that have taken place at Maamba since privatization and what MCL is doing for the community at large.

## **New tools**

Conferences usually have an expo desk where different companies display their products and services. These desks introduce individuals to new and advanced work methods that can further aid employees in improving their skillsets and way of doing things. This helps employees to stay up-to-date with the changes in their field of work. It also exposes them to latest technological developments.

*\* The views expressed in this article do not represent the opinions of MCL or the editorial team, but purely those of the author.*



# Security Tips

By Henry Chaile, Security Manager

## The Value of Defensive Driving

It is in public domain that most accidents have several contributing causes, the main ones being human error and environmental problems.

In view of this it is of utmost importance that those privileged to drive company and/or personal vehicles should be conversant with the art of applying defensive driving that involves awareness, planning, anticipating and the maintenance of control. This entails that drivers should drive with responsibility, care, consideration and courtesy. It means putting safety above everything else.

To drive defensively, you must expect other people to make mistakes and be ready to slow or stop-even if you think that you have the right of way.

Road safety of individuals lies mainly in their own hands. The better the level of control over both vehicle and road space that you achieve, the safer you will be.

## Is Your Home Sending Wrong Signals to Burglars?

Who knows better how vulnerable your home is to a potential break-in than those who do the breaking in? In an age of ever-increasing technology, from smartphones to smart homes, it is not surprising that criminals are stepping up their game as well. Criminals are more and more taking a professional, orderly approach to burglary, casing homes for days and doing research about homeowners, neighbors and neighborhoods. In order to keep your house and loved ones safe, here are some tips about what every homeowner should do to keep burglars out.

## Lock It Down

Even though locking your house up tight seems like a no-brainer, there are many ways your home can remain vulnerable even if you think you've done all you can. A locked door is useless if you leave a spare key in an easily accessible location like under a flowerpot or doormat. It is much safer to leave a spare key with a friend or neighbor. And don't forget about the windows. Leaving a window open, even a crack, can be an open invitation to a burglar. For added security, make sure all windows are locked and add a wooden or metal dowel to the track to prohibit a criminal from pushing their way in.

## Clear the Way

While it may look lovely to have a hedge of bushes lining the front or side of your house, those decorative shrubs can be akin to leaving out a welcome mat for a thief. Robbers love to hide out in bushes under windows and near doors. Not only does it give them a place to remain concealed, but bushes also give them the perfect vantage point to observe your comings and goings and get a peek at all the goodies you have inside that they want to take. Make sure that any landscaping is well maintained and designed to avoid becoming either a blind spot or hidey-hole.

## Think Outside the Sock Drawer

Believe it or not, burglars know that you really do hide your valuables in the sock drawer, freezer or empty cereal box. It is surprising that even though such hiding places seem like overblown clichés, they are very common and are some of the first places a burglar will look. Consider getting a safe or, better yet, move items you do not need regular access to into a safety deposit box.


*\*The views expressed in this article do not represent the opinions of MCL or the editorial team, but purely those of the author.*




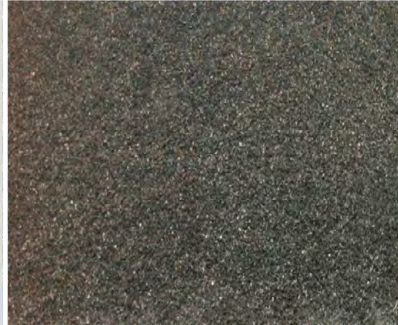
# Coal Product Specifications

MCL established a modern, Coal Handling and Processing Plant (CHPP) which has facilitated production of washed coal of different specifications with consistent quality and eliminated pollution of nearby streams.

## Product Specifications

Washed Coal Nuts	Parameter	Min & max
	Size	+20 - 50 mm
	Inherent moisture %	1.5 - 1.9
	Total moisture %	3.0 - 9.0
	Ash %	18 - 20
	Volatile Matter %	18 - 21
	Fixed Carbon %	59.1 - 60.5
	Phosphorous % (Average)	0.0025
	Total Sulphur %	0.7 - 1.5
	Gross Calorific Value (kcal/kg)	6294 - 6482

Washed Coal Peas	Parameter	Min & max
	Size	+10 - 20 mm
	Inherent moisture %	1.5 - 1.9
	Total moisture %	3.0 - 9.0
	Ash %	18 - 20
	Volatile Matter %	18 - 20
	Fixed Carbon %	60.1 - 60.5
	Phosphorous % (Average)	0.0025
	Total Sulphur %	0.7 - 1.5
	Gross Calorific Value (kcal/kg)	6294 - 6482

Washed Coal Fines	Parameter	Min & max
	Size	+0.5 - 10 mm
	Inherent moisture %	1.5 - 1.9
	Total moisture %	5.0 - 12
	Ash %	18 - 20
	Volatile Matter %	18 - 20
	Fixed Carbon %	60.1 - 60.5
	Phosphorous % (Average)	0.0025
	Total Sulphur %	0.7 - 1.5
	Gross Calorific Value (kcal/kg)	6294 - 6482

Unwashed Coal Fines	Parameter	Min & max
	Size	+0.5 - 10 mm
	Inherent moisture %	1.0 - 1.4
	Total moisture %	5.0 - 12
	Ash %	21 - 25
	Volatile Matter %	17 - 19
	Fixed Carbon %	55 - 59.6
	Phosphorous % (Average)	0.0025
	Total Sulphur %	1.6 - 2.5
	Gross Calorific Value (kcal/kg)	5824 - 6200

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