

APP-003117

**CONSUMER FUEL INSTALLATION FOR CITY SAND &
BRICKS AT BRAKWATER**

UPDATED ENVIRONMENTAL MANAGEMENT PLAN




Assessed by:



Assessed for:

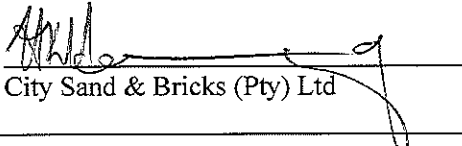
**City Sand & Bricks
(Pty) Ltd**

November 2021

Project:	UPDATED ENVIRONMENTAL MANAGEMENT PLAN FOR THE OPERATIONS OF A CONSUMER FUEL INSTALLATION FOR CITY SAND & BRICKS AT BRAKWATER
Report Version/Date	Final November 2021
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Report Approval	 André Faul Conservation Ecologist

I HENCO K. HENNING acting as the Proponent's representative (City Sand & Brick (Pty) Ltd), hereby confirm that we approve the Environmental Management Plan as presented in this document. All material information in the possession of the proponent that reasonably has or may have the potential of influencing the Environmental Management Plan was provided to the consultant.

Signed at WINDHOEK on the 15th day of DECEMBER 2021.


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2001/110
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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management System
HIV	Human Immunodeficiency Virus
LNAPL	Light Non-Aqueous Phase Liquids
MEFT	Ministry of Environment, Forestry and Tourism
MSDS	Material Safety Data Sheet
PPE	Personal Protective Equipment
SANS	South African National Standards

GLOSSARY OF TERMS

Assessment - The process of collecting, organising, analysing, interpreting and communicating information relevant to decision making.

Competent Authority - means a body or person empowered under the local authorities act or Environmental Management Act to enforce the rule of law.

Construction - means the building, erection or modification of a facility, structure or infrastructure that is necessary for the undertaking of an activity, including the modification, alteration, upgrading or decommissioning of such facility, structure or infrastructure.

Cumulative Impacts - in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Environment - As defined in the Environmental Assessment Policy and Environmental Management Act - "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, palaeontological or social values".

Environmental Impact Assessment (EIA) - process of assessment of the effects of a development on the environment.

Environmental Management Plan (EMP) - A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.

Environmental Management System (EMS) - An Environment Management System, or EMS, is a comprehensive approach to managing environmental issues, integrating environment-oriented thinking into every aspect of business management. An EMS ensures environmental considerations are a priority, along with other concerns such as costs, product quality, investments, PR productivity and strategic planning. An EMS generally makes a positive impact on a company's bottom line. It increases efficiency and focuses on customer needs and marketplace conditions, improving both the company's financial and environmental performance. By using an EMS to convert environmental problems into commercial opportunities, companies usually become more competitive.

Evaluation – means the process of ascertaining the relative importance or significance of information, the light of people's values, preference and judgements in order to make a decision.

Hazard - Anything that has the potential to cause damage to life, property and/or the environment. The hazard of a particular material or installation is constant; that is, it would present the same hazard wherever it was present.

Mitigate - The implementation of practical measures to reduce adverse impacts.

Proponent (Applicant) - Any person who has submitted or intends to submit an application for an authorisation, as legislated by the Environmental Management Act no. 7 of 2007, to undertake an activity or activities identified as a listed activity or listed activities; or in any other notice published by the Minister or Ministry of Environment, Forestry and Tourism.

Public - Citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.

Significant Effect/Impact - means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

1 OBJECTIVES OF THE EMP

City Sand & Bricks (Pty) Ltd (the Proponent) requested Geo Pollution Technologies (Pty) Ltd to update the environmental management plan (EMP) for their existing consumer fuel installation in Brakwater, Windhoek. The updated EMP will be submitted to the Ministry of Environment, Forestry and Tourism (MEFT) to renew their environmental clearance certificate (ECC) for the facility. The renewed ECC is required for operations and construction (care and maintenance) of their consumer fuel installation situated at their brick making premises on Plot 20, Brakwater. City Sand & Bricks requires fuel for both their fleet of commercial vehicles and earthmoving equipment. Operations of the facility ensure a reliable supply of fuel for sand mining and brickfield related operations. The facility is constructed and operated according to South African National Standards (SANS) requirements as prescribed by Namibian legislation.

The EMP provides management options to ensure impacts of construction and operations of the facility are minimised. An EMP is a tool used to take pro-active action by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigation measures might be included if necessary. The EMP acts as a stand-alone document, which can be used during the various phases (planning, construction, operational and decommissioning) of any proposed activity or development. The construction phase of the facility was completed and now includes regular maintenance and periodic upgrades to ensure continued compliance with industry standards. All contractors and sub-contractors taking part in the construction and operations of this facility should be made aware of the contents of the EMP, so as to plan the relevant activities accordingly in an environmentally sound manner.

The objectives of the EMP are:

- ◆ to include all components of the various activities;
- ◆ to prescribe the best practicable control methods to lessen the environmental impacts associated with the construction and operations of the facility;
- ◆ to monitor and audit the performance of construction and operational personnel in applying such controls; and
- ◆ to ensure that appropriate environmental training is provided to responsible construction and operational personnel.

City Sand & Bricks may choose to implement an environmental management system. At the heart of an EMS is the concept of continual improvement of environmental performance with resulting increases in operational efficiency, financial savings and reduction in environmental, health and safety risks. An effective EMS would need to include the following elements:

- ◆ A stated environmental policy which sets the desired level of environmental performance;
- ◆ An environmental legal register;
- ◆ An institutional structure which sets out the responsibility, authority, lines of communication and resources needed to implement the EMS;
- ◆ Identification of environmental, safety and health training needs;
- ◆ An environmental program(s) stipulating environmental objectives and targets to be met, and work instructions and controls to be applied in order to achieve compliance with the environmental policy; and
- ◆ Periodic (internal and external) audits and reviews of environmental performance and the effectiveness of the EMS.
- ◆ The EMP

2 THE EMP

The following general guidance for the EMP is based on the findings of the initial EIA and risk assessment carried out by Geo Pollution Technologies (Faul & Botha, 2016).

2.1 Identified Impacts

The following is the summary of the identified impacts:

- ◆ The facility aid in a secure fuel supply for operations.
- ◆ The risk of an accidental spill resulting in pollution of groundwater and soil exist.
- ◆ Health and safety risks are mainly related to the exposure to hydrocarbons during the operational phase.

2.2 Mitigating Measures

The following is a summary of the proposed Management Plan, which will make the facility safe taking into consideration all the risk perceptions raised by all stakeholders:

- ◆ To prevent product loss through ruptures of pipelines or hose during the offloading operations, all nozzles on road tankers and storage tanks are fitted with excess flow check valves. These are designed to allow only specific flow rates and the moment it exceeds this, the process is stopped. Small quantities lying in the hose that could leak would be captured by spill containment structures. The facility must be operated according to SANS 10089 standards.
- ◆ All health and safety regulations must be adhered to. Dust control must be practised when necessary. Emergency procedures must be in place.

3 THE IMPLEMENTATION OF THE EMP

Table 1 to Table 3 outline the management of the environmental elements that may be affected by the different activities, grouped in each phase of development. These groups are as follows:

- ◆ Planning Phase
- ◆ Construction Phase (maintenance, upgrades etc.)
- ◆ Operational Phase
- ◆ Decommissioning Phase

The EMP is a living document that must be prepared in detail, and regularly updated, by the proponent as the project progress and evolve. Impacts addressed and mitigation measures proposed are seen as minimum requirements which have to be elaborated on. Delegation of mitigation measures and reporting activities should be determined by the proponent and included in the EMP.

All monitoring results must be reported on as indicated. Reporting is important for any future renewals of the ECC and must be submitted to the Ministry of Environment, Forestry and Tourism. Renewal of ECC will require bi-annual (six monthly) reports based on the monitoring prescribed in this EMP.

Various potential and definite impacts will emanate from the operations, construction and decommissioning phases. The majority of these impacts can be mitigated or prevented. The impacts as well as prevention and mitigation measures are listed below.

Table 1. Planning for Construction, Operations and Future Decommissioning of the Project

Activity	Objective	Action	Timing	Proof of Compliance	Responsible Body
Compliance	To comply with all legal requirements for the construction and operations of the facility in Namibia.	Apply for the necessary permits from the various ministries, local authorities and any other bodies that governs the construction and operations of the proposed activity. Importantly this includes permits from the Ministry of Mines and Energy. Finalise negotiations and resolve any outstanding issues, if any, over the allocation of user rights and zoning of the property on which the proposed activity will be located.	Ongoing throughout operations as well as possible future decommissioning of the development	All contracts, permits, certificates and other legal documents on file.	Proponent
Appointments	To appoint reputable contractors and operational personnel and establish the EMP, a legal requirement that forms part of the contract with the contractor and employees.	Appoint contractors and employees and enter into agreements which includes the EMP. Ensure that the contents of the EMP are understood by the contractor, sub-contractors, employees and all personnel who will be present on site.	Ongoing throughout operations as well as possible future decommissioning of the development	Contracts on file	Proponent; Contractor
Management	Establish a management system to implement and monitor Health, Safety and Environment.	Make provisions to have a Health, Safety and Environmental Coordinator to implement the EMP and oversee occupational health and safety as well as general environmental related compliance at the site. Have the following emergency plans, equipment and personnel in place to deal with all emergencies: Risk Management / Mitigation / Environmental Management Plan/ Emergency Response Plan and HSE Manuals Adequate protection and indemnity	Ongoing throughout operations as well as possible future decommissioning of the development	Documentation on file Personal Protection Equipment (PPE) on site Signage related to restricted areas, dangerous areas, and PPE requirements on site Emergency response material on site	Proponent; Contractor

Activity	Objective	Action	Timing	Proof of Compliance	Responsible Body
		<p>insurance cover for incidents; Comply with the provisions of all relevant safety standards; Procedures, equipment and materials required for emergencies.</p>			
Restoration Fund/Insurance	To establish a fund/insurance for future environmental restoration or pollution remediation if ever required.	To establish a fund for future ecological restoration of the project site should project activities cease and the site is decommissioned and environmental restoration or pollution remediation is required.	Ongoing throughout operations as well as possible future decommissioning of the development	Financial statements of restoration fund/insurance	Proponent; Independent Specialist Consultant
Reporting	To establish a reporting system to report on monitoring aspects of construction, operation and decommissioning as outlined in the EMP.	Establish a reporting system to report on aspects of construction, operation and decommissioning as outlined in the EMP. Keep monitoring reports on file for submission with Environmental Clearance Certificate renewal applications where needed.	Ongoing throughout operations as well as possible future decommissioning of the development	Bi-annual monitoring reports	Proponent; Contractor
Environmental Clearance Renewal	To renew the Environmental Clearance Certificate every three years.	Appoint a specialist environmental consultant to update the EIA and EMP and apply for renewal of the Environmental Clearance Certificate. Renewal of the certificate requires the submission of all monitoring reports on a bi-annual basis as stipulate in the EMP.	Prior to expiry of Environmental Clearance Certificate	Renewed Environmental Clearance Certificate	Proponent; Independent Specialist Consultant

Table 2. The Operational Phase

Criteria	Nature	Mitigation	Monitoring	Responsible Body
Skills, Technology & Development	<p>People need skills to perform their jobs. The technology to do something is often not found locally. Development of people and technology are key to economic development.</p>	<p>Source local employees or contractors where possible.</p> <p>Skills development and improvement programs to be made available as identified during performance assessments.</p> <p>Employees to be informed about parameters and requirements for references upon employment.</p> <p>The proponent must employ Namibians where possible. Deviations from this practise should be justified appropriately.</p>	<p>Bi-annual summary report based on actual training and the enhancement of skills and transfer of technology should be compiled.</p>	<p>Proponent</p>
Demographic and Community Health	<p>New developments attract people who seek work. This in turn can increase the extent of informal settlements and its associated problems. The increased trucking and distribution of goods to and via could contribute to the spread of HIV / AIDS.</p>	<p>The implementation of an educational program on HIV / AIDS for all the staff.</p> <p>Restricted employment for locals only should be practiced. Deviations from this practice should be justified appropriately. Training of local people should be considered from the start. These measures will reduce the influx of newcomers to the town and thereby reduce growth in the informal settlement.</p>	<p>Bi-annual summary report based on employee demographics, on educational programmes and training conducted.</p>	<p>Proponent and Contractor</p>
Employment	<p>Limited employment is created by the facility, however the facility plays an important role supporting the construction industry</p>	<p>If skills exist locally Namibians must be employed. Alternatively training must be provided to Namibians to ultimately employ a predominantly Namibian workforce. Deviations from this practice should be justified appropriately.</p>	<p>Bi-annual summary report based on employee records.</p>	<p>Proponent</p>
Fire and Explosion Hazard	<p>Outbreak of an uncontrolled fire.</p>	<p>A holistic fire protection and prevention plan is needed. This plan must include an emergency response plan, firefighting plan and spill recovery plan.</p> <p>Maintain firefighting equipment, good housekeeping and personnel training (firefighting, fire prevention and responsible housekeeping practices).</p> <p>Maintain regular site, mechanical and electrical inspections and maintenance.</p> <p>Clean all spills / leaks.</p>	<p>A report should be compiled bi-annually of all incidents reported. The report should contain dates when fire drills were conducted and when fire equipment was tested.</p>	<p>Proponent</p>

Criteria	Nature	Mitigation	Monitoring	Responsible Body
		<p>Special note must be taken of the regulations stipulated in sections 47 and 48 of the Petroleum Products and Energy Act, 1990 (Act No. 13 of 1990).</p> <p>Follow SANS standards for operation and maintenance of the facility.</p> <p>In case of a fire, the firefighting plan must be initiated immediately and all emergency procedures must be performed as practiced during training.</p>		
Health, Safety & Security	Risks include work related injuries or exposures to harmful products, theft and sabotage.	<p>All Health and Safety standards specified in the Labour Act should be complied with.</p> <p>All staff members to be briefed about the potential risks of exposure to hydrocarbons or injuries on site.</p> <p>Adhere to the following:</p> <ul style="list-style-type: none"> ● Health and Safety Regulations pertaining to personal protective clothing, first aid kits being available on site, warning signs, etc.; ● Selected personnel should be trained in first aid. The contact details of all emergency services must be readily available; ● Dermal contact with hydrocarbons must be avoided and all products handled according to their MSDS. 	A report should be compiled bi-annually of all incidents reported. The report should contain dates when training was conducted and when safety equipment and structures were inspected and maintained.	Proponent
Noise	Noise will exist due heavy vehicles accessing the site for deliveries and refuelling.	<p>Follow City of Windhoek guidelines for limits on noise pollution (Council Resolution 215/09/2006). The facility is situated in an industrial area. Noise should be limited to 70 decibels (limit for industrial properties).</p> <p>All machinery must be regularly serviced to ensure minimal noise production.</p> <p>Hearing protectors as standard PPE for workers in situations with elevated noise levels.</p>	Any complaints received regarding excessive noise should be recorded with notes on actions taken.	Proponent

Criteria	Nature	Mitigation	Monitoring	Responsible Body
Waste Production	Waste can be of domestic origin or hazardous waste that include hydrocarbon contaminated materials.	<p>Waste reduction measures should be implemented and all waste that can be re-used / recycled must be kept separate. Ensure adequate waste storage facilities are available. Ensure waste cannot be blown away by wind. Prevent scavenging (human and non-human) of stored waste. Waste should be disposed of regularly and at appropriately classified disposal facilities, this includes hazardous material (empty chemical containers, contaminated rugs, paper water and soil). The spill catchment traps and oil water separator should be cleaned regularly and waste disposed of appropriately. Surfactants (soap) may not be allowed to enter the oil water separator. See the material safety data sheets available from suppliers for disposal of contaminated products and empty containers. Liaise with the municipality regarding waste and handling of hazardous waste.</p>	<p>A register of hazardous waste disposal should be kept. This should include type of waste, volume as well as disposal method/facility. Any complaints received regarding waste should be recorded with notes on action taken. All data to be compiled in a bi-annual report.</p>	Proponent
Groundwater, Surface Water and Soil Contamination	Leakages from storage tank and reticulation and accidental spills of fuel	<p>All fuel offloading and refuelling should be conducted on surfaces provided for this purpose. Proper training of operators. Spillage control procedures must be in place according to SANS standards or better and connection of all surfaces where fuel is handled with an oil water separator. Regular inspection and maintenance of all equipment and especially the oil water separator. No surfactants (soap) may be allowed to enter the oil water separator. Any spillage of more than 200 l must be reported to the relevant authorities and remediation instituted.</p>	<p>A report should be compiled bi-annually of all spills or leakages reported. The report should contain the following information:</p> <ul style="list-style-type: none"> ● date and duration of spill ● product spilled ● volume of spill ● remedial action taken ● Comparison of pre-exposure baseline data with post remediation data (e.g. soil hydrocarbon 	Proponent, Independent Specialist Consultant

Criteria	Nature	Mitigation	Monitoring	Responsible Body
Cumulative Impact	<p>These are impacts on the environment, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of who undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. In relation to an activity, it means the impact of an activity that in itself may not be significant, may become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertakings in the area.</p> <p>Possible cumulative impacts associated with the operational phase include increase in noise and traffic that may occur as a result of trucks frequenting the site.</p>	<p>Addressing each of the individual impacts as discussed and recommended in the EMP would reduce the cumulative impact.</p> <p>Reviewing biannual reports for any new or re-occurring impacts or problems would aid in identifying cumulative impacts and help in planning, if the existing mitigations are insufficient.</p>	<p>concentrations)</p> <ul style="list-style-type: none"> Copy of documentation in which spill was reported to Ministry of Mines and Energy <p>Soil sampling and testing should a leak be suspected.</p> <p>All data to be compiled in a bi-annual report.</p>	Proponent
			<p>Bi-annual summary reports based on all other impacts will give an overall assessment of the impact of the Operational Phase.</p>	Proponent

Table 3. Maintenance and Decommissioning Phases

Criteria	Nature	Mitigation	Monitoring	Responsible Body
Waste Production	<p>During maintenance and upon decommissioning waste will be produced in the form of building rubble, obsolete equipment and structures, obsolete or residual products and equipment or structures that can be used elsewhere or sold as scrap.</p> <p>Soil polluted by hydrocarbons must be treated as hazardous waste.</p>	<p>To reduce the amount of waste all re-usable pipelines, pumps, tank, valves and other equipment must be removed to another site owned by City Sand & Bricks or sold.</p> <p>Those items that cannot be used again must be scrapped in the appropriate manner.</p> <p>Upon demolition of the buildings and concrete the rubble must be removed from the property and taken to an approved dumpsite designated by the Windhoek Municipality.</p> <p>Rehabilitation if necessary are to be done using funds designated for the purpose.</p>	<p>Regular visual inspection.</p> <p>A register of waste produced and disposal methods should be maintained.</p>	Proponent; Contractor
Employment	<p>Maintenance activities may require contractors and thus support employment.</p> <p>Decommissioning of the facility may lead to retrenchments or re-location of staff no longer required.</p>	<p>Use local Namibian contractors where possible.</p> <p>Plan in advance for meeting the Labour Acts requirements for retrenching of staff if required.</p> <p>Where possible staff can be relocated to another facility or town where business continues in the same way.</p>	<p>During normal operations of the facility, planning should include handling of employees should the facility be decommissioned. The plans should include budgeting for retrenchments and possible alternative positions elsewhere.</p>	Proponent
Dust	Dust may be generated during the decommissioning phase and might be aggravated during periods of strong winds.	<p>It is recommended that regular dust suppression be included in the decommissioning phase, when dust becomes an issue.</p> <p>Personnel should be issued with dust masks for health and safety reasons.</p>	<p>Regular visual inspection.</p> <p>A complaints register must be maintained, in which any complaints from the community must be logged. Complaints must be investigated and, if appropriate, acted upon.</p>	Proponent; Contractor
Noise	Noise pollution will exist due to heavy vehicles accessing the site for maintenance or to collect rubble from demolished building materials. Cranes may be used for removing the storage	<p>It is important to refer and adhere to the City of Windhoek Council Resolution Guidelines 215/09/2006 with regards to noise emissions.</p> <p>All personnel must be issued with hearing protectors and neighbours must be notified of the time and duration of</p>	<p>A complaints register must be maintained, in which any complaints from the community must be logged. Complaints must be</p>	Proponent; Contractor.

Criteria	Nature	Mitigation	Monitoring	Responsible Body
<p>Groundwater, Surface Water and Soil Contamination</p>	<p>tank. Hammers, diggers and drills will be used.</p> <p>Porous substrate can allow unwanted hazardous and ecologically detrimental substances to seep down to the water table.</p>	<p>decommissioning.</p> <p>All precautions are to be taken to prevent contamination of the soil as this could enter the ecosystem. Leakages from vehicles might occur especially if they are serviced on site. Care must be taken to avoid contamination of soil and groundwater. Groundwater might spread pollutants to neighbouring receptors and may create an impact on underground utilities. Pollutants in the soil and building rubble must be transported away from the site to an approved, appropriately classified waste disposal site.</p> <p>Confirm MSDS information for any remaining that must be discarded.</p>	<p>investigated and, if appropriate, acted upon.</p> <p>Report form for all spills or leaks is to be completed by Contractor.</p> <p>A baseline study must be carried out after the decommissioning. This is to assess the condition of soil substrate and any groundwater present. Comparisons with pre-construction baseline data is to be made and any discrepancies must be addressed before the site can be signed over.</p>	<p>Proponent; Contractor</p>
<p>Health, Safety and Security</p>	<p>During maintenance and the decommissioning phase similar risks to human beings as with previous phases will be present. Once the tanks and pipelines have been emptied completely of their contents residual amounts of fuel might exist. All other risks associated with demolitions must be considered.</p>	<p>Occupational exposures are normally related to dermal contact with fuels and inhalation of fuel vapours during handling of such products. For this reason adequate measures must be brought in place to ensure safety of staff on site, and includes: (Provide forms for all end users who monitor)</p> <ul style="list-style-type: none"> ● Proper training of operators; ● First aid treatment and medical assistance; ● Prevention of inhalation of fumes (fuel); ● Protective clothing, footwear, gloves and belts; safety goggles and shields; ● Manuals and training regarding the correct handling of materials and packages should be in place and updated as new or updated MSDS' become available; Risks might be lower but still exist especially if tanks must be entered for inspections. ● 24-hour security surveillance. 	<p>A register of all incidents must be maintained on a daily basis. This should include measures taken to ensure that such incidents do not repeat itself.</p>	<p>Proponent; Contractor</p>

4 CONCLUSIONS

The above updated EMP, if properly implemented will help to continually minimise adverse impacts on the environment. Where impacts occur, immediate action must be taken to reduce the escalation of effects associated with these impacts. To ensure the relevance of this document to the specific stage of project, it needs to be reviewed throughout all phases.

The updated EMP should continue to be used as an on-site reference document during all phases of the proposed project, and auditing should take place in order to determine compliance with the EMP for the proposed site. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken.

Monitoring reports must be submitted to the Ministry of Environment, Forestry and Tourism on a bi-annual basis to allow for the future renewal of the ECC.

5 REFERENCES

Faul A, Botha P. 2016. Environmental Impact Assessment for the Construction and Operations of a Consumer Fuel Installation for City Sand & Bricks at Brakwater.