A&S General Contractors Inc.
De Hoop Branch Road, Plantation Klyzenaar, Mahaica, East Coast Demerara
Existing Asphalt Plant

Introduction

This document presents a summary of the above project containing the details to enable an appreciation of the project.

The area where the Asphalt Plant is situated is De Hoop Branch Road, Plantation Klyzenaar, Mahaica, East Coast Demerara. Appendix A: Site Location Map and Appendix B: Land Use Map provides a description of the area.

A&S General Contractors Inc. during its operation has ensured that it activities do not negatively impact the surrounding environment by means of implementing as reasonable as possible, pollution control measures and safety and health best practices. On this note, the Operator has maintained a positive track record of environmental stewardship and social corporate responsibility within the community.

The Contractor will however implement the necessary steps to ensure that the environmental requirements outlined under the Environmental Protection Act and the Environmental Protection Regulations are complied with to mitigate any negative affect on the surrounding environment.

Site of Operation

The topography of the area is flat consisting predominantly clay soils. The surrounding area has some rice cultivation on-going. The total area occupied is 107 X 210 metres (0.5 acres) of which 30 X 30 metres area is used for asphalt production. The entire area which houses the facility is contained under a complete roof system with sufficient space to accommodate ease of access for the suitably positioning all items.

Attached for referencing are the following:

- Appendix A - Land use Map
- Appendix B – Site Location Map
- Appendix C - Site Layout Plan

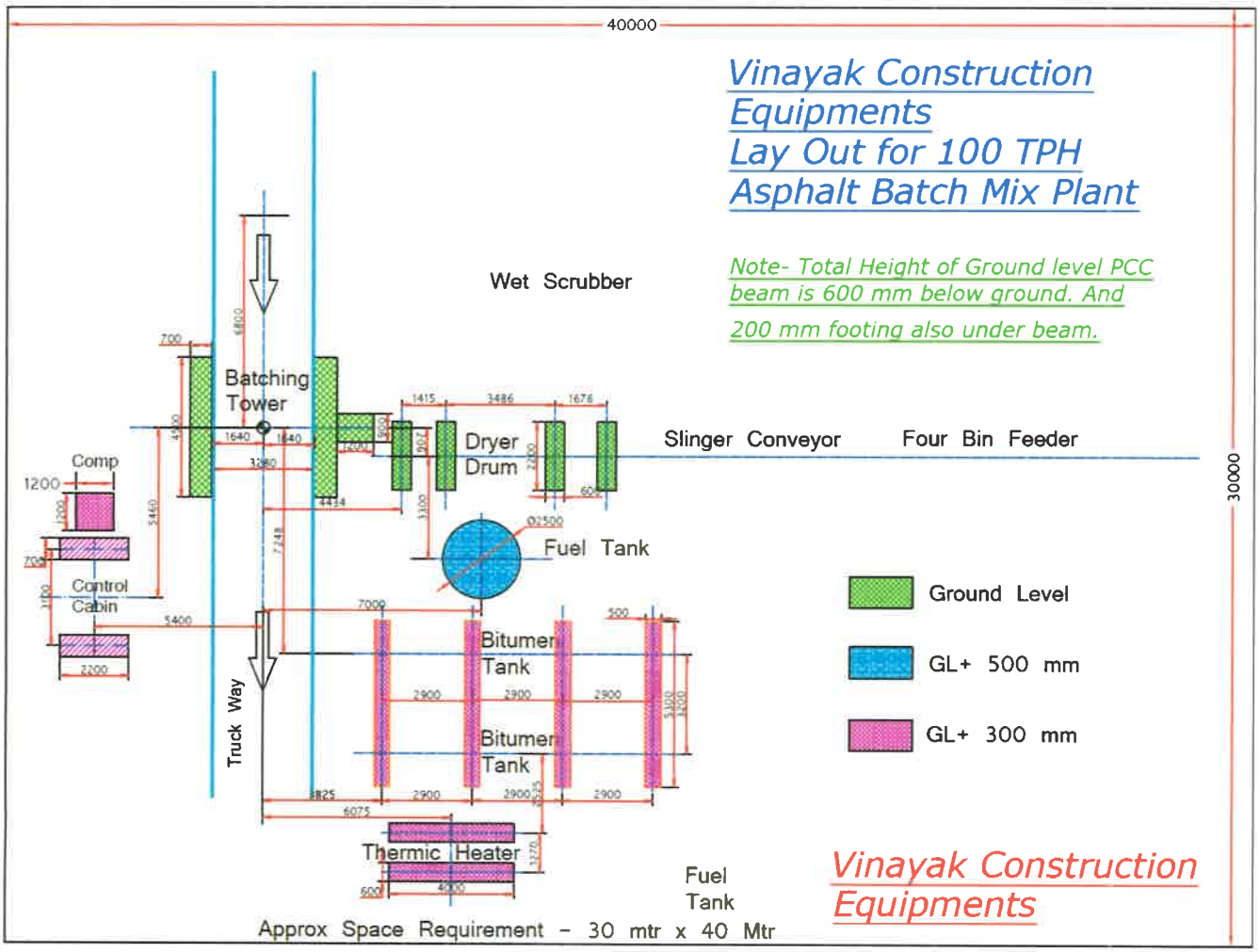
The established Plant site has been utilised by the contractor over the past ten (10) years as a staging yard during the construction of Roads, Drainage Structures, Revetment, Sea Defences, Land Development and Installation of Water Distribution Mains and Transmission Lines.

It was only in 2015 that an Asphalt Plant was established at the location for the production and supply of asphaltic concrete of a high quality to mostly Government funded projects through several ministries including the Ministry of Public Infrastructure and the Ministry of Communities (CHPA). Despite being located at De Hoop, Mahaica, A&S General Contractors Inc. was able to come in below the competition for the supply of Asphaltic Concrete at various locations along the East Bank of Demerara, West Coast Demerara and even East Bank Essequibo. Photo 1 & 2 provide an illustration of the Asphalt Plant.

Photo 1: Erected plant at De Hoop, Mahaica, ECD

Photo 2: Automated Control Cabin and material storage area

Technical Specifications of the ABP 100



Impacts to the Environment

Over the years of operation, the Plant has been managing its activities to avoid and mitigate any the possible environmental impacts associated with asphalt production. The major environmental impacts are related to air emission (particulate matter), effluent discharge and noise nuisance.

Environmental management actions relating to operation activities include, but not be limited to, the following:

- Air Quality, Dust and Noise
- Water Quality
- Waste Management
- Hazardous Materials Management
- Health and Safety

Air quality, dust and noise

Emissions

Operation of Plant will result in combustion emissions from the use of mostly diesel fired heavy duty equipment. Combustion emissions will be minimal, short-term and localised to the area of the vicinity of construction and operation of Asphalt. Emission impacts are also expected to be unavoidable.

Mitigation measures to reduce potential impacts associated with exhaust emissions

- ✓ Maintaining construction equipment in accordance with manufacturer's specifications in order to operate at optimal efficiency.

Dust

The project has the potential to generate dust at levels which can significantly affect the air quality within the project area. However, most of these impacts are expected to be localized and can either be prevented or reduced.

Dust will also be generated from several aspects of operation including:

- Emissions of dust particles from loading and off loading of aggregates from trucks and material stockpiles.
- Operation of Asphalt plant for the production of asphaltic materials.

Impacts associated with dust nuisance

- Dust can also be generated from material stockpile as a result of wind, especially during dry conditions.
- Workers exposed to prolong dust pollution can develop acute respiratory ailments.
- Further, dust poses a nuisance for residents within the vicinity of works.

These impacts are controllable and are expected to be short-termed and localised. When not managed they may present significant impacts to the surrounding areas.

Mitigation measures to reduce potential impacts associated with dust nuisance

The following measures would be implemented to reduce the impact of dust within the project environment:

- ✓ The Asphalt Plant will be fitted with a Pollution Control Unit (PCU) to significantly reduce particulate emissions.
- ✓ Material stockpile will be positioned away and downwind from offices and working environments.
- ✓ Personnel working within dusty environments would be required to use dust masks or respirators or other necessary personal protective equipment (PPE).
- ✓ Loaded Trucks tray will be covered when transporting material to minimize dust emission.
- ✓ Material stockpile will be kept to a minimum height to reduce wind action on materials.
- ✓ Employing dust suppression techniques such as applying water to bare surfaces.

Noise

Noise will be generated mainly from power generation, Asphalt production and the use of heavy duty machinery. These impacts are unavoidable and are expected to be short-term and localised.

Impacts associated with noise nuisance

- Ancillary facilitates may also generate excessive noise for power generation and the production of asphaltic concrete.
- Exposure to noise levels above the internationally accepted level of 90 decibels1 can cause noise induced hearing loss. Noise levels above the tolerable threshold of 72 decibels can result in fatigue, tiredness, low morale and decreased productivity.

Mitigation measures to reduce potential impacts associated with noise nuisance

- ✓ Employing best practices on-site to minimize occupational noise levels and provide noise protection equipment to employees.
- ✓ Hearing protection will be provided to employees exposed to high noise levels.
- ✓ The generator to be used will have built-on sound proofing installed by the supplier.
- ✓ Noise levels will be controlled at the source via installation of silencers and mufflers on exhaust systems where practical. Efforts will be made to ensure machinery and equipment are working efficiently and have installed the required muffler devices.
- ✓ Night works will be avoided, to the extent practical.

Water quality

The surface water quality can become contaminated or affected from potential threats such as:

- Fuel, lubricant/oil spills;
- Sediment deposition;
- Blockage of existing drainage system from erosion and sedimentation; and
- Improper solid waste disposal by workers such as food wrappers, boxes etc.

Mitigation measures to reduce potential impacts associated with water quality

- ✓ A closed circuit Pollution Control Unit (PCU) will enable the suppression of dust particle by a Scrubber system fitted with a three-chambered sedimentation pond to aid in reusing water. This Unit therefore reduces the need to discharge effluent in the operation since the water is constantly reused.
- ✓ Storage tanks/containers will be elevated to detect any leaks which may occur. Fuel tanks will be secured in a containment berm of 110 % capacity to capture any fuel discharged during emergency situations.
- ✓ Care will be taken during the re-fuelling process and when transporting fuel from the storage tanks/trucks to the machines to avoid unnecessary spills and reduce the risk associated with contamination.
- ✓ Regular maintenance of machines and equipment must be carried out frequently to ensure proper functioning as this reduces the potential for oil leaks.
- ✓ Waste debris, especially construction waste, will have to be removed from the site in a timely manner. Any blockage of waterways as a result of sedimentation would be removed immediately.
- ✓ Care will be taken by all workers to correctly dispose of any solid waste material generated.

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1 90 dB is the level recommended for eight hours exposure to avoid hearing loss by a number of national and international institutions worldwide including the Ontario Regulation 488/01 under the Occupational Health and Safety Act.

Waste Management

The operation facility will generate waste which, if not managed properly, can result in soil and water contamination, contribute to ill health, and affect the aesthetic of the area.

Waste to be generated includes:

- Sanitary waste water/toilet waste
- Surplus/ waste soils from construction works.
- Food waste.
- Hazardous waste from the maintenance of construction machinery and equipment such as used batteries, waste oil, filters, oil containers and contaminated soils.

Impacts associated with the improper disposal of wastes

- Waste heap piles often present an eye sore and can affect the aesthetic of any environment.
- The improper disposal of waste, especially food waste can result in odour and attraction of vermin.
- Mismanagement of waste can lead to secondary sources of pollution and contamination of land and water.
- Increase in the potential of Occupational Safety & Health hazards.

Mitigation measures to reduce potential impacts associated with improper waste disposal

- ✓ Waste generated within the facility will be collected, segregated and transported to an approved off-site waste disposal/landfill site.
- ✓ Waste generated will be segregated into wastes that are reusable; inert waste such as plastics, food boxes, rubber, etc.; and hazardous waste.
- ✓ Waste will not be allowed to accumulate at facility's fronts and will be removed weekly or depending as the need arise to the dedicated waste storage area or waste bins.
- ✓ Littering will be strictly prohibited.
- ✓ Toilet fitted with septic tank treatment is installed on site.
- ✓ General refuse and litter will be temporarily stored in enclosed bins separate from hazardous wastes.
- ✓ Segregated waste disposal bins will be maintained.
- ✓ Workers will receive training on waste classification and segregation.

Hazardous Waste

Fuel (gasoline, kerosene, and diesel) and lubricants (oil and petroleum products, waste oils and grease) are classified as hazardous materials and require special consideration in terms of transportation, storage and handling.

Fuel/lubricants will be transported via fuel Tanker and stored on site in two 5000 gallons elevated steel tanks thereby localising any potential short-termed impact. Refuelling of heavy duty equipment can also present a risk to soil and surface water contamination.

Impacts associated with hazardous material management

- Fuel, lubricants and waste oil, if not properly managed, can spill which can result in water and land contamination.
- Water can also be contaminated from fuel and waste oil from leakage that may occur.

- Fuel leaks can also increase the potential of Occupational Safety & Health hazards, such as fires, explosions, etc.

Mitigation measures to reduce potential impacts associated with hazardous material management

- ✓ Refuelling areas will be sited at a safe distance from any waterways, offices and work areas.
- ✓ Care would be taken to prevent spillage and leakage of fuel during refuelling. When refuelling is completed, all nozzles, hoses and other materials should be stored in a proper manner to avoid secondary spills.
- ✓ Oil changes from maintenance works and repairs from vehicles and machinery will be collected by pans/trays and transferred to storage drums located in a designated area. Drums will be stored within an impervious and contained area.
- ✓ Oil changes, and/or major maintenance to equipment and machinery will be conducted a designated area in staging yard at the construction fronts. Only routine/minor maintenance activities will be allowed outside the staging yard.
- ✓ Regular maintenance of machinery would be done to avoid leakages.
- ✓ Used drums would be reused as much as possible, or would be stacked on pallets and returned to the supplier.
- ✓ Employees would also be trained in the management of hazardous materials to reduce the risk of contamination from spillages.
- ✓ Spill kits would be provided onsite to assist in any clean up as a result of accidents.
- ✓ Spill kits would be made available in the event of spillages. The kits will be placed in strategic locations that are accessible to key personnel including drivers, security officers, and foreman.
- ✓ Workers, mechanics and other staff will be trained in the proper use of these kits through the executions of drills.
- ✓ A Fuel tanker will be used to transport fuel. This Tanker will be licensed by the Guyana Energy Agency in order to comply with the necessary safety requirements.
- ✓ Appropriate fire extinguishers will be suitably placed.
- ✓ Adequate signage would be installed in the refuelling area such as 'No Smoking' and 'Highly Flammable' and 'Hot Areas'.
- ✓ Any known hazards and health risks associated with the use/handling/disposal of or exposure to fuel/lubricants would be clearly stated, and workers would be adequately trained on the proper handling procedures.

Health and Safety

In order to ensure the safety of all workers on the site, the following measures will be in place to protect workers health and safety at all times:

- ✓ Provide relevant safety gear for each worker base on work condition. Gears include; Helmets, Safety boots, Reflective vests, Goggles, Respirators and Earplugs.
- ✓ Train workers on the proper use of the safety gear.
- ✓ Provide notices and signs at construction site on the proper usage of safety gears.

Photo 3: Signage installed to maintain safety on the work ground

- ✓ Provide safe working conditions at all times. Caution would be taken if workers are in proximity of equipment, electricity, water and at unsafe heights and depths.
- ✓ Provide First Aid kits at active construction site and Asphalt Plant location.
- ✓ With respect to workers coming into contact with toxic substances, A&S General contractors Inc. will inform workers of the relevant steps to be taken such instances occur.
    a) For skin contact, clothing would have to be removed immediately followed by a dry cleaning of the skin to remove the substance. The skin would then be washed thoroughly with soap and water. Contaminated items are to be securely discarded.
    b) For eye contact immediate washing of the eyes are required.
    c) For ingestion medical attention would be required immediately.
- ✓ The Contractor will arrange with medical instituting in the environs of de Hoop (High Dam Health Centre) to deal with emergency cases.
- ✓ Adequate amounts of water for drinking and washing will be available on the site in sealed and safe water tanks.
- ✓ Toilet facilities is available on site.
- ✓ Garbage bins would be provided on all sites to promote proper disposal methods. These bins would be emptied on a regular basis as needed.

Question 18 Give a brief description of the facility/operation

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Over the few years of operation, A&S General Contractors Inc. has successfully supplied Asphaltic Concrete of a high quality to mostly Government funded works through several Ministries including the Ministry of Public Infrastructure and the Ministry of Communities (CHPA). Despite being located at De Hoop, Mahaica, we were able to come in below the competition for the supply of Asphaltic Concrete at various distant locations along the East Bank of Demerara, West Coast Demerara and even East Bank Essequibo.

A&S General Contractors Inc. will be responsible for ensuring that all the environmental requirements outlined under the Environmental Protection Act and the Environmental Protection Regulations are complied with and the activities not negatively affect the surrounding environment. As such the Plant is fitted with a wet scrubber system to mitigate dust and odour nuisance and a waste water collection facility (settling pond) to eliminate effulent discharge and encourage water reuse within the operation.