

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN SUMMARY

Project Title: DAKAR CONTAINER TERMINAL
Project Number: P-SN –DD0-002
Country: SENEGAL
Department: OPSM
Division: OPSM.3

a) Brief description of the project and key environmental and social components

As part of its economic and social development, the Republic of Senegal released an international invitation to tender for a long-term concession relating to the construction and operation of container terminals. As the successful bidder, DP World FZE signed a 25-year Concession Agreement on October 7th 2007 (start date 1st January 2008) with the Republic of Senegal (via the Department of Maritime Economy and Autonomous Port of Dakar – Dakar Port Authority or PAD). The location of the port is shown in Figure 1.

Figure 1 Geographical context of Port of Dakar and Container Terminal



DP World manages 49 marine Terminals and 12 new developments across 31 countries and has a workforce of around 30,000 staff. It is a top four international marine terminal operator with a total throughput in 2008 of approximately 46.8 million TEU¹. Since 2008, DP World Dakar has operated an existing container terminal, with a throughput of 14,500 TEU with a current team of 361 people. The area of this terminal is 18 hectares (ha).

Known as the TAC (Container Terminal) Extension, “The Project” is a first phase extension of the existing container terminal, whereby DP World Dakar intends to carry out improvements, rehabilitation and the construction of new infrastructures on “the Site”. The objective of the Project is to make the overall container terminal (i.e., existing and extended) competitive by modernizing equipment, increasing storage capacity, and enhancing trading volumes. The future projection of potential TEU throughput is 31,735 by the end of 2010. Further benefits of the Project include additional employment for local people, economic stimulation and indirect benefits for third party businesses (e.g., suppliers, subcontractors) via the multiplier effect.

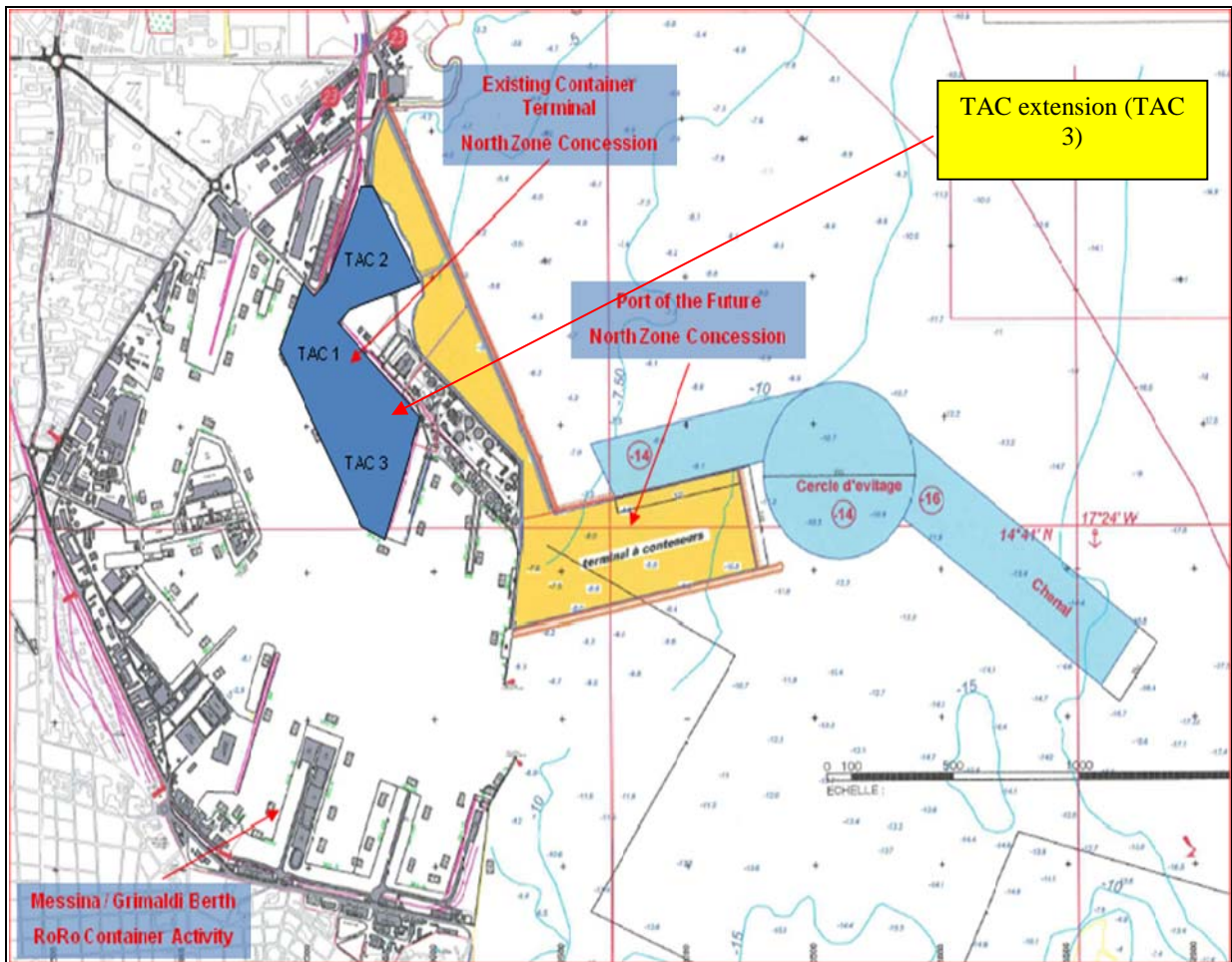
¹ Twenty-foot equivalent unit. Container boxes of both twenty and forty-foot standardised length are used worldwide.

The project cost for this first phase is estimated at EUR 210 million, of which the equipment (24%), civil works and development (24%), and concession fee (22%) are the most important items. The African Development Bank (AfDB) has been invited to provide 50% of the total debt, on a par with Standard Chartered Bank (SCB). The AfDB is proposing to extend a senior loan of EUR 47.5 million with an 8-year tenor to part-finance the capital expenditure.

The key potential environmental and social negative impacts identified for this Project relate to risks of pollution from construction and operational activities on Site leading to pollution incidents (e.g., accidental spills), waste management, vehicle movement, housekeeping and the presence of workers. Environmental and social mitigation is included in both the design and through specific measures that will be implemented by DP World Dakar and its contractors. Where negative impacts cannot be avoided, management techniques, tools, controls and documents will reduce residual impacts to acceptable levels. Progress will be checked, monitored and audited by all parties.

This team approach, incorporating the use of well-planned and practical techniques for environmental and social management, is the best approach for ensuring best practice performance on the Site and for delivering a Project that is successful and acceptable to all parties. The key features of the Project are shown in Figure 2.

Figure 2 Plan of the Existing Container Terminal and Extension “Project”



b) Major environmental and social impacts

By way of context, the port is situated within an Industrial Zone with no sensitive receptors, i.e., neither protected areas nor residential areas close to the site.

Potential Risks and Impacts in the Natural Environment

▪ Topography, Soil and Geology

The construction of a road bypass system and site buildings, and the resurfacing of the Terminal will modify the topography and the surrounding area. While this modification is long-term, there are no sensitive ground areas and all improvements are within the dedicated existing industrial zone.

The overall effect on transportation is that circulation will be more fluid on improved roads, therefore the risk of accidents will be lessened and the ground conditions stabilised such that the generation of airborne dust, leaching and erosion of bare soil will be avoided or minimised.

A potential “offsite” and indirect impact could occur from the use of quarries by the company carrying out the construction work for sourcing materials (used for resurfacing).

Another potential negative risk exists with regards to ground pollution by hazardous liquids used by the contractors’ site plant, equipment and machinery, for example, lubricants, oils, greases, cleaning solvents, coolants) in the event of leakage due to an accident or engine maintenance being carried out poorly and refueling on the construction site could lead to losses on the ground. The resulting impact would be contamination of surfaces, subsoil, groundwater and any underlying water features such as water table (can be high in arid environments). This effect could be further accentuated by any rain that could leach runoff into the receptors mentioned below.

▪ Air Quality

During construction work, atmospheric emissions may arise from the following primary sources:

- Dust and particulates arising from the excavation of surface layers for new foundations.
- Windblown dust arising from general building site operations and granular construction materials (e.g. sands) stored in open stockpiles.
- Dust and particulate emissions that will result from the movement of site vehicles and mobile plant on bare ground.
- Exhaust gases from mobile plant, including vehicles delivering sand, rock and gravel material to the Site.

During operation, the main contributor will be the source of vehicles’ movement. The dispersion of airborne emissions from static sources takes place over distances of about 400m, depending on wind prevalence and velocity. In the context of the existing environment and prevailing meteorological conditions, this will be an impact of minor significance and again it is short-term, during construction. During operation, the impact will be from additional normal truck movements.

▪ Noise and Vibration

Noise could arise during the construction works as follows:

- Noise and vibration generated by plant and machinery (e.g., engine noise, the pumping of water, normal use of generators), which may impact upon workers and visitors
- Construction traffic noise and other late night disturbance (in terms of nuisance effects) off-site where vehicles pass through villages and residential areas *en route* to the Site.

However, the number of sensitive receptors is very low as there are no permanent residents located in the industrial zone. The impact on humans and other receptors is considered to be temporary and of minor significance.

▪ **Marine Environment: Ecology, Water and Sediment**

The works for this Project do not “directly” affect the water environment. The Dakar Port Authority (PAD) has already completed marine works (dredging to -13m and quay wall construction) and therefore capital dredging etc. is not included in the TAC Project.

Stormwater has the potential to create runoff that might pass over contaminated surfaces and drain into the harbour. However, the natural ecology of the area of water in question is quite poor; the ecological diversity is weak due to the fact that the harbour is a highly disturbed environment. The intense movement of ships, presence of waste and some accidental releases of pollutants in the water from other operations in the port is not conducive to the proliferation of a wide range of marine species.

Nevertheless, water quality must not be compromised. Potential indirect impacts may occur, for example, the transfer of pollutants present on the ground near the water. Dust transferred into the water will increase turbidity and have an impact on any present marine species. The same would be true of fuel spills in that heavy metals have the potential to bio-accumulate in the food chain of the ecosystem, creating disturbance and damage to the limited species (e.g., fish).

▪ **Waste**

DP World Corporate Group requires that all our Sites (and contractors) know the difference between “inactive” (i.e., “non-hazardous”, sometimes also referred to as “normal”, “domestic” or “garbage” wastes) and “active” (“hazardous”), the latter having properties that are harmful either to human health or the natural environment. Inactive wastes include clean soils, rocks, concrete, masonry and brick rubble whereas active waste would include acids, wood preservative, oily sludge, waste oils, plastics etc.

The two types should be segregated on site, i.e., stored securely and disposed of separately so that cross-contamination does not occur. “Medical waste” (e.g., sharps, blood-contaminated items separately) – another discrete category of hazardous waste – must be dealt with separately by a specialist contractor and are always disposed of according to legislations in force.

During the operation stage, DP World Dakar will manage its waste in line with Senegalese legislation and international best practices required by the lenders – when DP World releases its Environmental Standard No.2 on “Waste Management”, DP World Dakar will be required to process waste in a best practice manner adopting an “avoid, reduce, reuse, recycle, dispose” ordered approach.

The PAD has responsibility for applying national legislation on waste. PAD is responsible for ship-to-shore wastes when vessels come into the port.

The PAD already has formal procedures in place for ship-to-shore waste, for example, incoming vessels must contact one of the companies approved (by PAD) for the management of waste and that company recovers the wastes directly from the ships when it berths. Their vehicles are subject to the usual security and safety checks upon entering the DP World site. The ships must express their needs to PAD before they arrive in port. DP World Dakar does not accept or handle ship-to-shore waste itself and refers any direct requests/enquiries to PAD.

DP World Dakar will communicate and work alongside PAD where appropriate to continuously improve measures and activities on waste management from ships in line with relevant international regulations and the principles of:

- Annex 1, Chapter II, Regulation 12 of MARPOL 73/78
- International Maritime Organization (IMO) MEPC.3/Circ.4/Add.1, 20 December 2004.

Both PAD and DP World Dakar are aware of international guidance documents such as the “*IMO Comprehensive Manual on Port Reception Facilities*”. DP World will conduct its approaches to waste management in line with its contents and principles and this will be reinforced, later in 2009, by the release from the corporate Global Safety & Environment team of DP World “Environmental Standard No.2” on “Waste Management” (and accompanying guidance manual including minimization techniques) which will set-out minimum global standards for all the company’s Sites. This standard is based on international regulations and guidance on waste management.

DP World Dakar manages only the waste which it produces on site. Waste liquids are collected in pits and for sewage, septic tanks are used before being pumped onto trucks and transported away by an approved company (e.g.

Mbaye Ndiaye). Surface water on the DP World site is recovered by a network of drains which is connected to the general drainage network of the Port.

Solid waste is collected on the terminal in dustbins located around the terminal; dock workers collect the dustbins to deposit them in the containers which are emptied by the approved collection company (i.e., Dakar Assainissement Plus). Used motor oils and hydraulics and the spent liquids from cooling are collected in sealed drums until recovery by the approved company (SRH).

Other types of waste such as batteries, tires are currently stored at the workshop/garage. DP World manages its waste in alignment with Article 8 of the Code of the Environment of Senegal, which includes provisions for the national plan of action for the management of waste. Chapter III of the Code entitled *Management of Waste* contains all the rules relating to waste disposal and respect of the environment. The Project's waste will be subject to the same regime, management and control.

Workers are provided with the necessary PPE for handling waste such as gloves, masks etc.).

▪ **Visual Aspect**

There is no legislation or guidance in Senegal relating to changes to visual character and impacts upon landscape. The construction of new infrastructure in an industrial environment generally does not produce a significant negative impact. In this case, the construction will be mainly beneficial as the existing Project site is a succession of building or demolition sites, or foundations. The Project, once commissioned and operational, will be integrated seamlessly into the existing TAC site.

Potential Risks and Impacts in the Social Domain

The geographical position of the Project means that negative impacts on the local population are reduced because it is a designated "industrial zone" and there are no residential areas nearby. Thus, the social impacts of the Project can be summarised as follows:

- The growth of traffic due to bringing in construction equipment by road could be considered a negative social aspect. In effect, the circulation in the area surrounding the Dakar Port and inside the area where the Project is located (Môle 8) will be increased and congestion during certain peak hours may be augmented. This may cause a nuisance to some residents and workers, however, the impact is considered to be temporary and therefore short-term in nature.
- The quality of road surfaces may deteriorate generating some additional noise from the increase in traffic; however, this is likely to affect the duration of noise rather than the intensity.
- With regards to air quality, low health risks could be cited as a negative social impact in the sense that increased traffic flow releases particles (e.g., PM₁₀) into the air from exhaust fumes and dry surfaces. The transport of construction equipment is also a contributor. Again, the additional traffic volumes are relatively small in the context of the city of Dakar and, in terms of construction traffic, short-term in duration.

There are also a number of significant social "benefits" to the Project, including:

- The creation of both direct and indirect job opportunities for Dakar's (and the surrounding areas) population during the construction phase as well as during the operation phase. This direct (DP World) and indirect (contractor) employment creation will have far-reaching positive indirect consequences including economic enhancement for the families of those recruited. The current workforce of 361 (2008 figures) will be increased to 426 (by Dec. 2009) and is predicted to rise to 433 by the end of 2010.
- The completion of this Project will inject money into the Senegalese economy by the economic activities and operations it will stimulate and generate.

In contrast, there are risks of accidents by employees, who disregard safety measures, (for example, on the 2nd April 2009, an agent injured his finger in spite of wearing gloves). After an investigation of this incident, recommendations were made to reinforce security rules with daily safety and security awareness training.

Health risks are those brought on by the invasion of mosquitoes and influenza due to climate change, which is a national and international issue rather than a Project-specific impact. Nevertheless this is acknowledged.

c) Enhancement and mitigation program

Solutions and Mitigation Measures in the Natural Environment

▪ Topography, Soil and Geology

In terms of potential off-site impacts, close control of management techniques will help ensure that only official quarries are used for sourcing aggregate and activities will adhere to the stipulations in the Senegalese Environmental Code (official document justifying the exploitation of the quarry). Of importance is documentation control and a “Control of Quantities Used” Form, excess materials and dust/particulate emissions will be avoided. Furthermore,

A “Plan de Gestion Environnementale”, (Environmental Management Plan - EMP) used by Eiffage Senegal (construction contractor) states that: *“the basalt will be extracted from the quarry at Diack and the sand from the quarry at Diakhirate. These quarries are subject to approval by the engineer. The exploitation cannot begin until authorisation required by regulation texts has been acquired.”*

A number of proactive measures shall be taken to minimize risks and reduce the potential for an impact to occur, for example:

- Eiffage Senegal’s own on-site “Environmental Management Plan” (EMP) has a dedicated section on solid waste management that includes provisions for: *“Waste from the construction site will be stored in a specific reserved zone before elimination (...). Oil filters will be stored in airtight containers and batteries stored in retention before evacuation for elimination conforming to regulation (...). Used oils will be stored in retention tanks. The zone will be enclosed (wire fencing) (...).* Furthermore, the contractor will also maintain a Procedure for Recuperation of Used Oils.
- For refueling, the fuel tank shall be surrounded by an impermeable secondary containment basin whose capacity is equal to that of the tank. The use of the fuel tank should strictly comply with instructions and procedures in order to avoid all risk of fuel spillage during refueling, (the guidelines for fuel tanks are clearly defined in Eiffage Senegal’s EMP).
- In the Hydrocarbon Management, Diesel Provisions section of the EMP: *“The diesel tank will be installed near to the construction site base in a retention tank (...) The refueling zones will be concreted, usage precautions and necessary technical measures will be taken in order to avoid any pollution.* The use of the fuel tank should strictly follow instructions and procedures in order to avoid all risk of fuel spillage during refueling. A tracking sheet for the maintenance of hydrocarbon tanks shall also be completed by an on-site HSE agent from Eiffage Senegal.

In order to minimize the risks of ground pollution by accidental liquid spillages and leaks from site machinery, the contractor has been advised by DP World Dakar to install a dedicated “maintenance area” for engines/vehicles. This area shall be capable of capturing such hazardous substances followed by the recycling and/or appropriate treatment of wastes.

For accidents during which liquid pollutants are spilt directly on the ground, spill response equipment and materials will be kept close at hand to minimise penetration (e.g., absorbent mats, sand, and sawdust). The Head of HSE (Eiffage Senegal) will regularly verify the readiness of these two measures.

Leaching by rainwater can generate ground pollution where run-off flows over contaminated soils and surfaces. In order to reduce this risk, spills will be reported immediately to Eiffage Senegal’s On-Site Head of HSE and the further spread of hazardous substances on the ground shall be halted and controlled as far as possible (part of the role of the Head of HSE at Eiffage Senegal is to treat all pollution incidents). Adequate and appropriate numbers of spill-kits will be made available on site during construction and operation.

All parties will work together to ensure that good practice is maintained on these issues and any lessons’ learned are shared at appropriate meetings.

▪ **Air Quality**

In order to minimise the potential negative impacts on air quality from site activities, the movement of mobile site plant and machinery should be kept to a minimum by the contractor (e.g., by having “job descriptions for machinery”, monitoring by the Head of HSE at Eiffage Senegal) in order to minimize the emissions of airborne dust particles and the polluting gases.

The maintenance of site equipment, engines and machinery should be regular, well managed and documented; a correctly maintained vehicle makes it more fuel efficient and thus less likely to release excess volumes of exhaust emissions. Newer vehicles fitted with catalytic converters produce fewer pollutants and the contractor will be encouraged to utilise these, where available. “Tracking sheets” for vehicle maintenance will ensure these directives are adhered to under the direction of the Technical Director at Eiffage Senegal, and followed up by the Head of HSE.

In their EMP, Eiffage Senegal has committed to the following: “Dust Emissions - “(...) *sand will be stored under a tarpaulin (...)*”. It is necessary to provide the drivers of these vehicles with anti-dust masks as they are exposed to airborne dust particles, (in the definition of Personal Protection Equipment (PPE) Requirements produced by the Head of HSE at Eiffage Senegal).

In addition to this, DP World will encourage the contractor to spray water on unsurfaced roads where critical amounts of workers are engaged in activities including up- and downwind. Selection of these areas will be made upon discussion and consideration of the activity being carried out.

▪ **Noise and Vibration**

Personnel exposed to noisy machinery shall be equipped with protective earphones (PPE Requirements, Head of HSE at Eiffage Senegal). In order to minimise noise production from the engines they shall be subject to regular maintenance, conform to legislation and well-documented using “tracking sheets”, which can be audited.

To diminish noise and nuisance vibrations caused by vehicles driving-by, the drivers must respect adequate speed limits and only travel on roads in a good condition.

▪ **Marine Environment: Water, Sediment and Ecology**

In order to avoid transferring pollutants by air or water, Eiffage Senegal shall ensure that:

- Control of accidental ground spillage by completely clearing them up before they reach water.
- Securely stock hazardous substances as far away from the water as possible in a manner that prevents potential pollution into pathways. These shall comply with legal standards.
- Adhere to all the protocols for accident and emergency management
- Cover stockpiles of dry material (e.g., sand) deposits spray any surfaces where significant amounts can be carried away by the wind with water, especially where dust and materials can be blown into the water.
- Manage and restrict the movement of machinery and vehicles around the quayside. For vehicles that are required to work in these zones, awareness of this issues shall be raised with drivers during the “1/4 HSE training” led by Eiffage Senegal’s HSE agent with site operators). A DP World Dakar will also be present at this training.

Stormwater for the Project is dealt with by a complete drainage system including gutters, underground drainpipes and outlets etc. The Technical Director at DP World Dakar has confirmed that captured runoff water is treated by sedimentation tanks and separation before being ejected through the outlets into the sea. The main discharge system will consist of a covered gutter equipped with a wall of head and mural valve. This valve will function as a preventative measure against seawater returning to the drainage system in the event of high tide. As well as this the resurfacing of the terminal will be sloped allowing all water to flow to the drainage system in order to be treated before being disposed of through the outlets in to the sea. A detailed drainage plan for the Site is available and will be utilised by all parties. The new specifications for the Extension area will be integrated into other documents and training programs, including the Emergency Response Plan.

▪ **Waste**

In the EMP established by Eiffage Senegal for construction, measures are described and the Head of HSE ensures that these measures will be applied. For Solid Waste Management: “*Dustbins will be put in place around the*

construction site for household waste (...) Used batteries will only be stored on site provisionally before being destroyed, in accordance with regulations, by an agreed company (SRH) (...).

The following principles of waste management shall be integrated and documented on site:

- **Storage:** All wastes must be stored in designated waste areas that are isolated from surface water drains, open water (e.g., washing area) and are contained to retain any spillage. Skips must be covered to prevent dust and litter from being blown out and rainwater entering. Where possible, separate skips should be provided so that wastes can be segregated for recycling or to prevent cross contamination. Most active/hazardous wastes must be put in sealed bags and segregated from other normal waste streams. It is important that all waste containers are clearly labeled with their contents and are not allowed to accumulate (i.e., to be stockpiled).
- **Monitoring and documentation:** Particularly during then operational regime, the S&E and Technical managers should arrange for correct management and good organization of waste as a normal business practice and whereby waste audits can be carried out at regular intervals to look at:
 - The quantities of raw material wastage;
 - The quantities of each type of waste generated;
 - The way in which wastes are being handled and stored; and
 - The costs of disposal for different types of wastes.

The following points need to be noted for documentation purposes, when the contracted waste carrier collects each waste load:

- Check the contractor is licensed (e.g., valid and in-date licence) and/or authorised to take waste away
 - An accurate description of the waste is made with the volume, time and date noted. Also the registration plate of the truck in case we need to investigate or make reference to the collection. It would be good practice to record the name of the driver and ask him to sign the completed waste record.
 - File the waste record (often referred to as a “Waste Transfer Note”) correctly.
- **Spot checks:** It may be useful to undertake a small number of “spot checks” on the waste contractor to check that the waste does actually arrive at the agreed destination (e.g., Municipal landfill site). Such checks are very important, as usually the waste producer (DP World) is legally responsible for making certain that the material to be disposed of is done properly.

In terms of ship-to-shore waste, DP World Dakar will continue to communicate with the PAD in respect of the current procedures and continue to inform vessels that the marine terminal cannot accept such waste. Ongoing monitoring of this situation to ensure that illegal wastes are not left on the quay from ships, are included in the ESMP matrix/table.

▪ **Visual Aspect**

Good housekeeping is an important part of environmental practice on site as it helps everyone to maintain a more efficient and safer site. The site needs to be kept tidy, secure and have clear access routes that are well signposted. When planning the Site layout, all temporary offices/cabins and equipment should be sited to minimise visual intrusion. In coastal areas, consideration must be given to minimising impact, both on neighbouring businesses and on recreational users.

DP World Dakar will consider “greening” the areas around the administrative buildings by planting vegetation. This would contribute to the enhancement of the site and potentially provide a feeling of well-being among the employees. Such greenery should not however, place an increased demand on freshwater resources for irrigation.

Solutions and Mitigation Measures in the Social Domain

The positive impacts in the social domain such as creation of employment and additional commercial activities can be promoted by maximising the number of Senegalese people employed and contracted.

Other social risks are workplace accidents which could happen during construction and operation. To limit this, it will be important to reinforce employees’ training (e.g., at induction and ongoing shift briefings), to make available

necessary protection materials, follow DP World corporate safety guidelines (particularly on the “Fatal Risk Standards”, applied globally) and for all parties to ensure that security guidelines are strictly adhered to.

For health risks, several solutions will be implemented:

- Against malaria: free distribution of mosquito nets and prophylactics.
- For employees who disregard safety and security measures, there is a systematic retraining requirement before they are allowed to work back on site.

The possibility of an anti-flu vaccine (this is currently being considered).

A systematic “induction training” is carried out by an HSE agent from Eiffage Senegal for visitors, consultants, Eiffage Senegal operators, subcontractors agents etc.) before they are allowed to enter the construction site. This induction is carried out with the help of a Welcome Booklet on Hygiene, Safety and Environment. The booklet covers on-site hygiene problems, recommendations and safety obligations, measures to be taken in order to preserve the environment and an Aids Awareness session. An induction tracking sheet is completed by Eiffage Senegal’s HSE agent.

Eiffage Senegal (which as an international company has a social policy and framework for workers and local communities) shall also contribute to general social welfare of construction workers and staff in the following ways:

- Sponsorship of HIV/AIDS awareness initiatives
- Make donations for religious festivals
- Sponsor and help in the organization of sports festivals
- Local beach cleaning sponsored initiative (on June 06-07.06.09 in Dakar).

DP World Dakar management and staff will support and encourage these events.

DP World Dakar releases an annual report on its own social aspects and initiatives. The sphere of social activities will naturally be expanded to include all parts and workers of the TAC Extension; examples of activities planned for 2009 are included below:

- Administrative management of the IPM (Institute Providing for Sickness)
- Installation of IPM project
- Restaurant for employees
- Social bench marking exercise
- Assistance and advice service to employees
- Co-operative housing and construction project for DP World Dakar Employees
- Health insurance management
- Bonuses for employees during major religious holidays

DP World Dakar has been investigating fatigue and safety of driving of workers because of the long distances between workers’ homes and the Site. As a result, the Site will invest in one or two minibus or coaches for safer transportation. This will, of course, include staff involved in the TAC Extension project, as appropriate.

d) Monitoring program and complementary initiatives

In order to comply with environmental and social aspects required under Senegalese law, the Lenders’ requirements and DP World itself (as a corporate entity and international operator with strong internal standards etc), DP World Dakar has produced an “Environmental and Social Management Plan” (ESMP) for the Project. This Plan will cover both the construction and operation phases but once the extension becomes operational, DP World corporate standards, guidance and requirements (e.g., from Global Engineering, Global Procurement and Global Safety & Environment teams) will heavily influence and regulate normal terminal activities. The ESMP has been produced by DP World staff with the assistance of a team of international and local environmental, social, safety, and health and Human Resource specialists.

The ESMP is therefore a document – agreed with interested parties (e.g., chosen construction contractors) – that usefully collates: the technical, operational and institutional mitigation measures; management issues (e.g., time/programme, estimated costs); and monitoring initiatives relating to environmental and social aspects. The

overall aim of the ESMP is to eliminate, avoid and ameliorate potential adverse impacts or reduce/minimise them to acceptable levels.

The other key aims of the Project ESMP will be to:

- Document the approach, control and management of strategies and actions to be taken to avoid, reduce and minimise, as appropriate, negative environmental and/or social impacts identified during preparatory investigations.
- Highlight, describe, explain and promote the positive impacts of the project.
- Inform the lenders, stakeholders and other interested parties about the Project and the associated approaches and strategies to be used and employed by DP World Dakar.
- Outline which organizations, institutions and personnel have responsibilities for mitigating and monitoring environmental and social impacts.
- Provide a practical table/matrix (of commitments and actions) that can be used during the construction stage to document activities, check that recommended solutions and actions are being carried out and confirm progress.

The overall effectiveness of the mitigation measures will be assessed through monitoring during construction. The monitoring programs shall be designed to gauge the Project's compliance against relevant environmental guidelines and targets. Monitoring of good conduct and the on-site respect of environmental and social obligations will be ensured by the site representative from Sogreah. Sogreah is an experienced French consulting engineering company that works internationally. Their role is the "supervision" of the construction site according to approved plans; weekly site meetings; invoice approbation, and provisional delivery of works are carried out in the presence of the main building contractor – Eiffage Sénégal, and the site operator DP World Dakar.

The overall effectiveness of the ESMP shall be regularly audited during the construction of the Project. An environmental checklist is completed daily by the Site Director and Eiffage Senegal's HSE agent; once per week, the Head of Sogreah carries out a site inspection with them.

Regular formal meetings (at least weekly) will take place between DP World and the contractor's site managers. In any case, as is the nature of construction sites, there is likely to be daily communication between these parties. All checking and progress monitoring results shall be recorded in tabular digital form in a matrix/table (DP World Dakar's ESMP) and documented in the contractor's Environmental Social Monitoring Program "site register". Information to be recorded will include: field observations regarding weather conditions; nearby activities and other relevant information likely to influence the monitoring results.

The On-Site HSE agent for Eiffage Senegal will have two HSE files on site:

- 1. A Reference File in which general data is identified: legislation, obligations, job descriptions etc.;
- 2. Filing of all tracking sheets, non-conformity records, supporting documentation etc.

In order to ensure that the ESMP is followed, Eiffage Senegal's HSE agent shall ensure that the following tracking sheets are completed (in turn, his controls will be checked and signed-off by the Head of Sogreah, i.e., overall Project Manager).

- Environment Checklist
- HSE Monthly Report
- Safety Material Register
- Fire Permits Form
- Non-Conformity Form
- Used Oils Monitoring Form

In the event that Sogreah identified a non-compliance of environmental or social aspects against regulations in force, they will order compliance with the relevant requirements. If this is not implemented, Eiffage Senegal will be required to stop work until the situation is remedied. The same approach will be taken for Eiffage Senegal's subcontractors.

Maintenance dredging of the TAC Extension berths adjacent to the new quay wall will be carried out by PAD. Nevertheless, DP World Dakar will be closely involved in terms of:

- Continuing dialogue with PAD on the timing, management and potential impacts/mitigation measures of this activity
- Carry out its own independent monitoring, for example, on water quality to ensure that DP World, national and international thresholds are not being breached. The S&E and Technical Engineering teams at DP World Dakar will be responsible for organizing this.

In terms of “external auditing”, the following activities are planned:

- Two Environmental and Social Independent Evaluation Audits (by a local experienced specialist) – estimated to be around July/August and November 2009
- A post project Evaluation Audit
- Lenders’ annual audit.

In addition, the extended DP World Dakar site will be included in DP World’s series of formal “Safety & Environment Assessments” carried out on a rolling three-year programme (each terminal is visited within that timeframe) by the Global Safety & Environment team. This programme allows for high priority visits should they be required.

Complementary Initiatives

In terms of supporting and ancillary projects, DP World Dakar will be carrying out the following:

- Training the contractors’ HSE Directors in site familiarization, nuances of the site, Port rules and regulations (including PAD’s responsibility for waste handling and disposal from vessels)
- Ongoing training within DP World (e.g., for operators, induction for new workers)
- Purchase of PPE for all relevant workers. At a minimum this includes: high quality safety helmets, safety vests, harnesses, safety shoes, anti-dust masks and ear defenders.
- Investment in general site protection equipment such as fire protection equipment and materials
- Investment in environmental protection (i.e., bunding for overground tanks holding hazardous liquids such as fuel, litter and normal waste bins, spill kits and spill trailer container (for transporting leaking containers to a secure area), a waterproof covering for the storage of hazardous materials area, signage, awareness posters and labeling etc.).

In addition, DP World will also plan, undertake and promote a number of social and community initiatives, in conjunction with the appointed contractors. The key initiatives, which are in line with the intentions of DP World’s Corporate Social Responsibility Plan (see also Section ‘e’) and its objectives to promote health, hygiene and social progress are:

- Distribution of mosquito nets (DP World Dakar)
- Vaccination campaign (contractors)
- Communal transport for operational workers (DP World Dakar)
- AIDS/HIV awareness (contractor and subcontractors)
- Ongoing DP World donations for: food to homeless; assistance with schoolchildren, religious festivals (DP World Dakar)
- Sports competitions (DP World Dakar)
- Repeat “beach clean” initiatives (organised by Eiffage Senegal)

e) Institutional arrangements and capacity building requirements

The division of responsibilities among the stakeholders in this Project are outlined in the table below.

Organisation	Role	Responsibilities
DP World Dakar	Project proponent and operator	Overall construction and development of terminal extension; legal compliance; overall environment, safety, social etc. performance; training; operation of site; HR
DP World Corporate teams from Head office (e.g., Business Planning, Global Safety & Environment, Global Engineering	Head office of proponent	Support to DP World Dakar in a wide range of disciplines. Follows-up and monitors the Site to ensure compliance with DP World's standards which reflect best international practice.
Sogreah (consultant engineers)	Supervising contractor	Resident works – progress, technical content and quality
Eiffage Sénégal	Main civil contractor	Executing civil and ancillary works; safety, environmental, security and hygiene performance of its workers and subcontractors; any activities delegated by DP World Dakar in contracting documents including legal compliance; some social initiatives
Port Autonome Dakar (PAD)	Port Authority and regulator in terms of environmental legislation	Land ownership; Port security; constructing marine works (completed); carrying out harbourmaster activities; legal issues; oil spill and emergency response; waste management from vessels.
Ministry of Environment, Senegal	Regulator	Legal instruments such as the Environment Code
Standard Chartered Bank (SCB)	Commercial lending institution	Financing and compliance monitoring
African Development Bank (ADB)	International financing institution	Financing and compliance monitoring
Neighbouring businesses: ICS, ORIX, SHELL and SPP	Stakeholder to original environmental audit and this ESMP	Responsible for all main issues relating to their business activities on their sites.

There are two levels of training: that delivered by DP World Dakar; and that of the main contractor.

DP World employees and the employees of their contractors are present on the construction and operational sites; therefore it is these employees who shall be trained in “environmental management” awareness as well as hygiene and security (and any other social aspects, e.g., relating to health, disease, respecting local rules and culture, proper behaviour).

DP World ensures the training of its agents with an induction course relating to safety and security in which the major risks are detailed, as well as information on PPE and emergency procedures/assembly points and how to raise the alarm upon discovering such an event. The principles of waste management, where to store waste and how to handle it, as well as identifying and cleaning-up accidental spills or leaks from equipment will be included in training. Furthermore, training initiatives shall incorporate contractors, subcontractors and agents who will also have ongoing training specific to their area of work. These training courses will be held in the national and local languages, as relevant, to ensure that the information has been properly understood by all. Attendance lists will be kept on file.

Since January 2009, DP World Dakar became the first and only port in West Africa to gain certification in ISO28000 relating to the safety management for the supply chain. Customers have this extra assurance on the safety of their goods, which is aligned with the safety of our workers in the other policies of the company. Indeed, from its

installation, DP World Dakar has taken action relating to the reliability of its installations and obtained certification to the International Ship and Port Facility Security (ISPS) Code² in November 2008.

Eiffage Senegal ensures an environmental, hygiene and security induction for each person who is supposed to work on the construction site. This induction training consists of the correct behaviour to adopt on the construction site, obligatory PPE, hygiene rules and the rules on protection of the environment to be adhered to within the construction site and HIV/AIDS awareness.

Each week, a fifteen minute HSE session takes place which allows the major risks incurred on the actual construction site to be discussed. Each incident, even the smallest ones, is subject to an enquiry and an information session shall be organised so that on-site personnel are made aware of the problem and share the lessons' learned. This the best method to tackle a repeat incident.

The positioning of posters on the construction site constitutes a form of continuous and highly visual ongoing "awareness raising"; in this way Eiffage Senegal shall put in place on the construction site base general notice boards and in appropriate locations relating to:

- Notices promoting energy saving.
- Instructions in case of an emergency.
- Security notice around the fuel tanks.

Furthermore, a wide range of complementary initiatives have been, and are being, planned by the Social Committee (Comité Social) of DP World Dakar under its new Corporate Social Responsibility programme (to be known as "Responsible Business Practices" under a new framework in DP World). From January to October 2008, the two main social activities already undertaken were:

- Charity in kind:
 - 4 Islamic centres at different locations in the country that provide free educational coverage to children.
 - 1 Care Centre for abandoned Children - donation
 - 1 Care Centre for deaf-and-dumb Children - donation
 - 1 Primary School established in DP World Dakar activity zone - donation
 - 1 Medical Treatment Centre for Child Cancer - donation.
- Disaster relief participation
 - An Amount of \$50,000.00 donated to assist in facing the flood occurred in Dakar during September 2008.

While not yet approved by the corporate Head office, the programme in Dakar has been planned in detail and the intentions are to invest and support local and regional initiatives to promulgate progress and improvements in the areas of education, health, hygiene and social perspectives. The following examples are planned.

- Education
 - Refurbishment of Talibou DABO Centre, which is an Education Centre exclusively taking care of disabled children. Also a fuel allocation to assist with transportation.
 - Scholarships - sponsorship over one school year to promote excellence and provide financial support to underprivileged secondary school students graduating for bachelor level classes and students in specialisation education.
- Health
 - Financial contribution to assist purchasing medical materials for traumatology and orthopaedics at the General Hospital.
 - Participation in the fight against malaria, one main endemic disease in Senegal, through the donation of medical nets to medical centres located in Dakar suburban areas where most of our employees live.
- Culture
 - Equipping youth and cultural centres with financial assistance to various cultural gatherings (e.g., festivals, expositions, newsletters/magazines etc.)

² The ISPS Code is an amendment to the Safety of Life at Sea (SOLAS) Convention (1974/1988) on minimum security arrangements for ships, ports and government agencies.

- Sport
 - Partnership work with the sport society of PAD “Port Sport”.
- Other charity donations and sponsorship
 - Continued support of the organizations and institutions assisted in 2008.
 - National Schools’ Competition that identifies and rewards the country’s top pupils and students
 - “Navétans” which is the biggest national Sport and Cultural Competition taking place during Summer holidays throughout Senegal.

f) Public consultations and disclosure requirements

No specific public consultation is required under Senegalese legislation on environmental and social aspects, however, such an exercise is required by lenders. According to the Code of the Environment of Senegal (Law No 2001-01 of 15 January 2001 bearing Code of the Environment) in Title II - *Prevention and control of pollution and harmful effects, Chapter I: Installations classified for the environmental protection*, the characteristics of the classified installations are defined.

The Project is a classified installation because it is quoted in Article 9 as a building site. The classified installations are divided into two classes according to the danger or the gravity of the disadvantages which their exploitation can present (Article 10). The first class includes the installations presenting of serious dangers and the second of less danger. The terminal extension Project is in the second class and it is the object before its construction or its startup of a declaration addressed to the Minister in charge of the environment which delivers to them a receipt under the conditions fixed by decree. Article 16: The request for authorization of an installation of first class must be the subject of a public investigation prescribed by decision of the representative of the State under conditions fixed by decree. In conclusion, this Project is in class 2 thus is not subjected to public investigation.

There will be an official ceremony for reception of the two new STS gantry cranes located in the Extension being built, on June 22, 2009, and this ceremony will be attended by the media and higher authorities. Indeed, the Project as a whole has received wide ranging publicity from the media, particularly in view of its benefits.

DP World has already organised further media coverage of the Project after completion of the civil work along with a public event, at which information about the expansion and a question and answer session will take place.

A number of communication-related events have already taken place, notably:

- A reception event for the first batch of equipment in the presence of the Ministry of Transport, Director General of PAD, Senior Vice President of Africa at DP World (7th May 2008) – see Photograph 1.
- DP World’s sponsorship of, participation in, and delivery of technical information on the Project in the “7th Intermodal Africa” (two day conference, March 2009).

Photograph 1 Official Reception for First Batch of Equipment



Continuing communication with the relevant local authorities in Dakar and PAD is being progressed by DP World.

As part of the environmental and social investigations, the ESMP team was proactive in organising and carrying out site visits, discussions and meetings with the following stakeholders to the Project:

Position	Organisation	Role in Project; type of stakeholder
General Director	DP World Dakar	Proponent; Internal
Director HSE	DP World Dakar	
Technical Manager/ Project Manager	DP World Dakar	
Director of Terminal DP World Dakar	DP World Dakar	
Operations Director	DP World Dakar	
HSE Coordinator	DP World Dakar	
HSE Supervisor	DP World Dakar	
Head of Social Affairs	DP World Dakar	
Chief Medic	DP World Dakar	
Workforce and Equipment Coordinator / Operations	DP World Dakar	
Human Resources Director	DP World Dakar	
Resident Works Engineer	Sogreah	Supervising contractor; External (but on behalf of DP World Dakar)
On-site Head of Environment, Security and Hygiene	Eiffage Sénégal	Main construction works contractor: External (but on behalf of DP World Dakar)
On-site Head of Quality	Eiffage Sénégal	
Responsible HSE	Eiffage Sénégal	
Harbour Master Exploitation and Security Director	PAD	Regulatory authority/landlord; External and legal
Assistant Director in charge of Quality, Security and Environment	ICS	Neighbouring business; External
Responsible HSE	ORIX	
Stock Assistant	SHELL	
Depot Chief PN	SPP	

A number of ongoing and future meetings are planned in order to keep stakeholders and regulators informed of the status and progress of the Project; some examples are presented below.

Position	Organisation	Role in Project; type of stakeholder
Human Resources Director	Eiffage Sénégal	Main construction works contractor: External (but on behalf of DP World Dakar)
Head of Social Affairs	Eiffage Sénégal	
Responsible of « Phosphates de Thiès »	Phosphate de Thiès	External stakeholder
Anti-pollution cell	PAD	Regulatory authority/landlord; External and legal
National Direction of Environment	To be confirmed	Regulatory authority; External and legal

g) Estimated costs

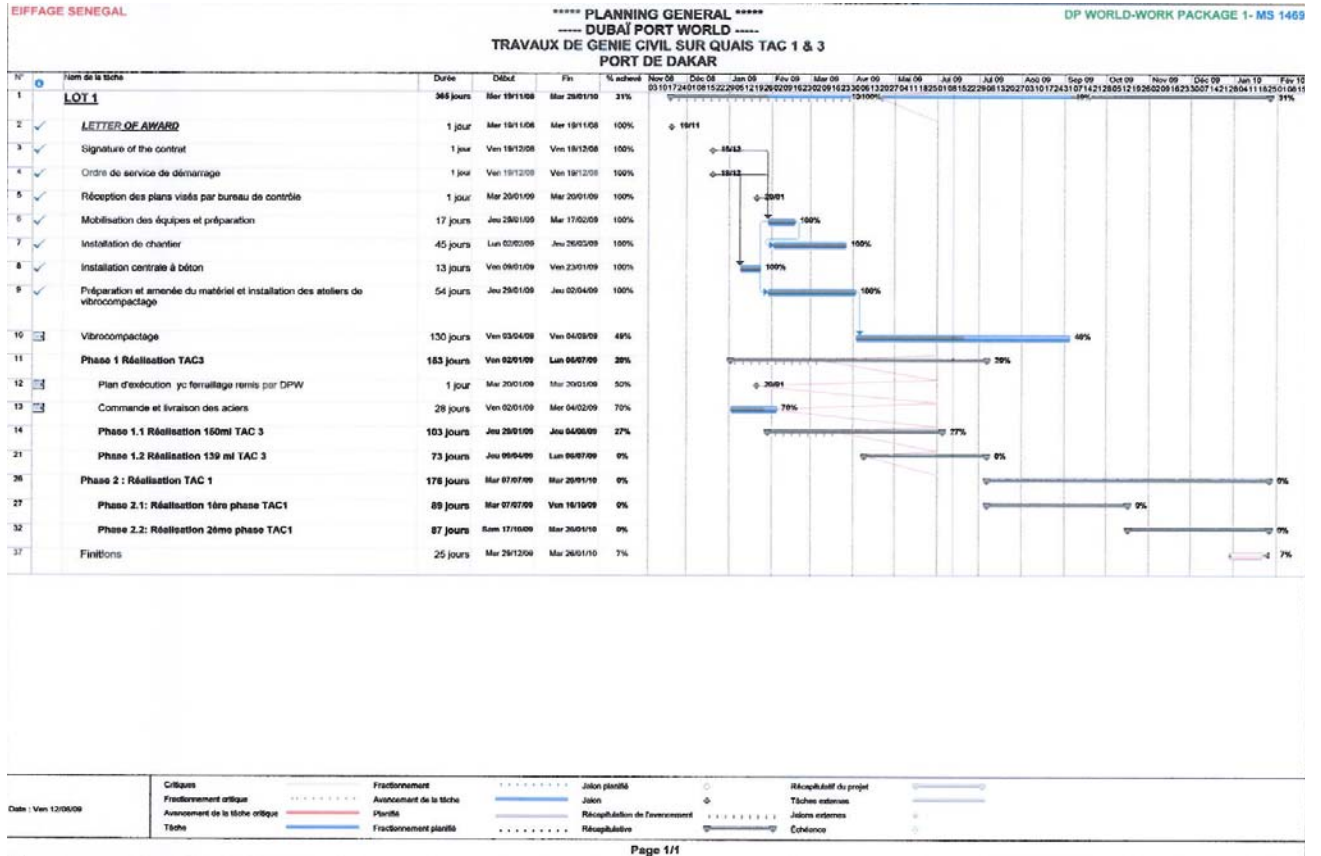
The following costs for environmental and social-related initiatives are estimated by DP World Dakar and include some investments from the construction contractors, for example, in No. 10 on social initiatives.

No.	Topic	Description/Content	Cost estimate (USD)	Timescale
1.	Training for Contractor's HSE Directors by the HSE Department at DP World Dakar:	Time allocation and work package	6,020	7-days
2.	Training for Technical Management Dept at DP World Dakar	Ongoing training time and deliverables	99,000	15% of total time, per year
3.	Contractor's HSE Engineer's Salary	Salary payment	120,000	Over 5-years
4.	Training for operators on Site	Training days	15,000	6-days each attended by 10 people
5.	Personal Protection Equipment	Safety helmets, safety vests, harnesses, safety shoes, anti-dust masks, ear defenders etc.	50,000	USD100 per person over 5-years
6.	Protection equipment for communal areas	1. Fire fighting equipment and materials; 2. Fuel tank bunding, litter bins, waste treatment and disposal, waterproof covering for hazardous substances' storage area, signage and labelling etc.	25,000 (Made up of: 1. 5,000; and 2. 20,000)	For duration of Project
7.	Supply of anti-pollution control equipment	e.g., Spill kits, spill trailer container (for transporting leaking containers)	15,000	Project duration
8.	Studies and investigations	1. Environmental and Social Audit (x2); 2. Post-project evaluation audit (x1)	90,000 (Made up of: 1. 60,000; and 2. 10,000)	During construction
9.	DP World Dakar independent monitoring of maintenance dredging	Time, sampling and laboratory analysis (probably via a specialist contractor)	10,000	USD5,000 each for the next two maintenance efforts
10.	Social activities	Distribution of mosquito nets, vaccination campaign, communal transport for operators, AIDS/HIV awareness, donations for religious festivals, sports competitions, repeat "beach clean" maritime initiative (Eiffage contractor). Ongoing DP World donations for: food to homeless; assistance with schoolchildren	125,000	25,000 for each of 5-years.
TOTAL ESTIMATE			540,020	

h) Implementation schedule and reporting

Programme

The main construction programme for the Project is shown below:



A summary of the main milestones and environmental and social initiatives (in *italic* text) is shown below.

Category/Item	Description	Due date for completion
Construction – Quay TAC1 and 3		
LOT 1	Letter of award	19.11.08
	Signing of contracts	19.12.08
	Contractor mobilisation and preparations	02.04.09
	<i>Preparation of ESMP investigations</i>	<i>May '09</i>
PHASE 1 TAC3	Execution of plan	20.06.09
	Phase 1.1	04.06.09
	<i>Executive Summary of ESMP</i>	<i>12.06.09</i>
	<i>ESMP</i>	<i>June '09</i>
	Modifications of existing quay TAC3	25.05.09
	2 nd phase TAC	06.07.09
	<i>Independent Evaluation Audit #1</i>	<i>July/Aug/ '09 (estim.)</i>
PHASE 2 TAC 1	Phase 2.1	16.10.09
	<i>Independent Evaluation Audit #2</i>	<i>Nov. '09 (estim.)</i>
	Phase 2.2	26.01.10
FINISHING WORKS		29.12.09 – 26.01.10
COMMISSIONING & COMMENCEMENT OF OPERATIONS		Feb. '10
<i>ENVIRONMENTAL AND SOCIAL INITIATIVES</i>	<i>Ongoing training</i>	<i>June '09 onwards</i>
<i>REPORTING</i>	<i>Contractor's HSE Reports</i>	<i>Monthly</i>
	<i>Annual Monitoring Report to Lenders</i>	<i>Jan. from 2010 and yearly</i>
	<i>Internal auditing and checking</i>	<i>Weekly from July '09.</i>

Reports and Reporting Requirements

A summary of the reports required is listed below:

Milestone environmental and social reports – required by Lenders:

- Executive Summary of Environmental and Social Management Plan (June 2009)
- Full ESMP (June 2009)
- Annual monitoring report (in January of each year following commencement of construction); – DP World Dakar to supply to Lender. This is a minimum; the Lender's may require more frequent updates and potentially visit to the Site to assess performance and progress.

Routine, weekly and regular reporting:

- HSE Monthly Report (compiled by main contractor's for DP World Dakar)
- Completed matrix/table in DP World Dakar's ESMP (responsibility: S&E team, DP World Dakar)
- Contractors' EMP including waste management, housekeeping etc.
- Tracking sheet for the maintenance of hydrocarbon tanks (HSE agent, Eiffage Senegal).
- Tracking sheets for vehicle maintenance (Technical Director, Eiffage Senegal).
- Induction tracking sheet documenting all those having undergone training.
- Other contractor's checklists and tracking forms (i.e., Environmental checklist; Safe materials register, Fire permits form, Non-conformity form; Used oil monitoring form; Waste transfer note or similar information).

Future reports:

- Environmental and Social Evaluation Audit Reports (twice during construction)
- Post-project Evaluation Audit report
- Independent monitoring of maintenance dredging - report (commissioned by DP World Dakar)
- Safety & Environmental Assessment – carried out by DP World Corporate; this is not yet scheduled but the Global Safety & Environment team commits to visiting once every three years.

i) Contacts

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