



CNT RECORDS

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FINAL DOCUMENT STATUS :

A - Approved
 B - Approved as Noted
 C - Revise & Resubmit
 D - Rejected

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Workflow Comments Log

Step #	Role Name	Action Date	Action Time	Action By	Action Type	Team Input Names	Comments	Pending Team Input From
0		26-AUG-2023	6:16 PM	Puneeth HS (sedra345@chec.bj.cn)	Submit			
1	ECEC-DC-SEDRA 345	10-SEP-2023	1:27 PM	Mahmoud Al Bakri (mahmoud.albakri@ecec.com.sa)	UserDelegate			
1	ECEC-DC-SEDRA 345	11-SEP-2023	9:21 AM	Mohammad Ramiz (mohammad.ramiz@ecec.com.sa)	Return		Document without title, resubmit...	
0		13-SEP-2023	9:19 AM	Puneeth HS (sedra345@chec.bj.cn)	Resubmit			
1	ECEC-DC-SEDRA 345	13-SEP-2023	11:32 AM	Mohammad Ramiz (mohammad.ramiz@ecec.com.sa)	UserDelegate		QA Check	
0		24-SEP-2023	12:52 PM	Puneeth HS	--Pending--			
1	ECEC-DC-SEDRA 345	24-SEP-2023	12:52 PM	Ayaz Ahmed Mirza (ayaz.ahmed@ecec.com.sa)	Return		As we agreed in the meeting add ECEC logo and change the date and resubmit to us for approval contractor must submit the documents separate for each phase (3,4,5)	



Infrastructure works for Riyadh SEDRA 3,4 & 5 Projects

Doc - No:	00103-CHE-PLN-HSE-000001
Rev:	00
Date:	07 Nov 2023

Construction Environmental Management Plan (CEMP)



فرع شركة شاينا هاربور إنجنيرنج كمبني ليمتد
BRANCH OF CHINA HARBOUR ENGINEERING CO., LTD.
中国港湾工程有限责任公司沙特分公司

Infrastructure works for Riyadh

SEDRA 3 Project

00103-CHE-PLN-HSE-000001

07 Nov 2023

Construction Environmental Management Plan (CEMP)

00	07 Nov 2023				Issued For Approval
Rev No.	Date	Prepared By	Reviewed By	Approved By	Remarks
		Asad Raza	He Hao Xiang	Liu Tao	
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فرع شركة شايـنا هـاربـور إنـجـنـيرنج كـمـبـني لـيـمـتـد
BRANCH OF CHINA HARBOUR ENGINEERING CO., LTD.
中国港湾工程有限责任公司沙特分公司

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Part A. General

A.1 Objective

The objective of the plan is to protect the Environment on the construction sites. Comply with relative environmental legal and contractual requirements ensure that all construction activities are carried out in a manner that causes minimum adverse impact to the environment Achieve the set environmental objectives and targets through the implementation of the environmental protection plan;

PURPOSE

The purpose of this plan is to ensure the implementation of environmental management and provide a good work environment for personnel.

- Develop waste management practices based on prevention, minimization, recycling, treatment or disposal of wastes.
- Define steps for corrective and preventive actions with regards to noncompliance issue.
- Train employees regard to environmental and social obligations.
- Identify potential issues and methods for addressing social impacts in the areas of Cultural Heritage and Labor/Worker Conditions.

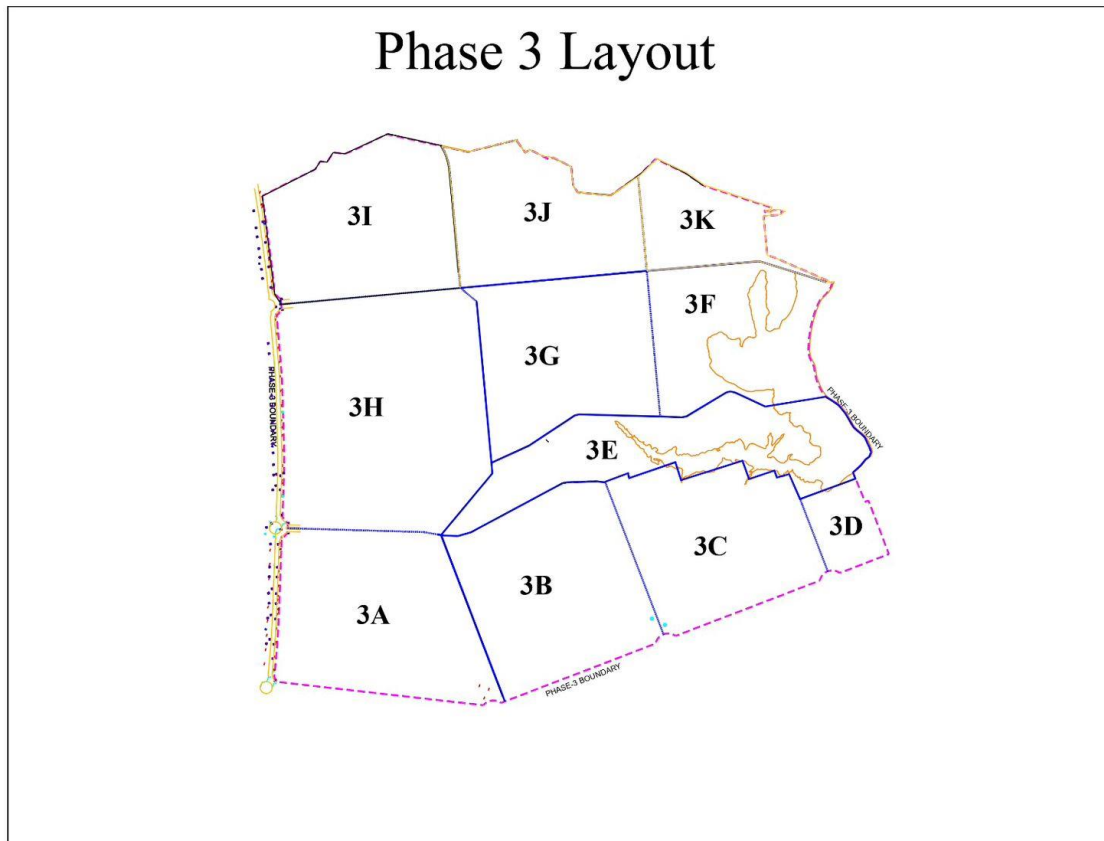
All specified laws and requirements covered with this plan will be communicated to all personnel including Subcontractors involved and working on the project

- Protect indigenous flora and fauna.
- Minimize soil erosion and sedimentation.
- Transition arrangements from construction phase to operations.
- Adopt the best practicable means available to prevent or minimize adverse environmental consequences.
- Compliance with all pertinent laws, regulations, standards and guidelines to protect the environment.
- Requirements for environmental management during the stages of planning, implementation, evaluation and review of project construction and commissioning activities.
- Project delivery standards including environmental controls to ensure that project objectives and targets are achieved.
- Responsibilities for the proactive implementation of this Environmental Management Plan.

- An overview of the environmental monitoring programs and contingency plans and associated management suitable actions.
- Provision of rational and practical guidelines to:
 - Reduce disturbance of the natural environment.
 - Preclude all forms of pollution.

A.2 Project Information

Project Title:	Infrastructure Works for Riyadh SEDRA 3
Location:	North Eastern Side of Riyadh
Client:	ROSHN Real Estate Company – KSA
Consultant:	East Consulting Engineering Company -ECEC.
Contractor:	China Harbour Engineering Company Limited



5.0 ACRONYMS

CEMP	Construction Environmental Management Plan
DAF	Dissolve Air Floatation
EN	Environment
EMP	Environmental Management Plan
H & S	Health and Safety
HazMat	Hazardous Materials
HSE	Health, Safety and Environment
ISO	International Organization for Standardization
EIA	Environmental Impact Analysis
ALARP	As Low as Reasonably Practicable
WMP	Waste Management Plan
ERA	Environmental Risk Assessment
EPRP	Emergency Preparedness & Response Plan
EMS	Environmental Management System
MSDS	Material Safety Data Sheet
PM	Project Manager
PMC	Project Management Consultant
PR	Procedure
PWA	Public Works Authority
KSACS	KSA Construction Specification
Contractor	General Construction Contractors
TSE	Treated Sewage Effluent
GAME& P	General Authority for Meteorology Environmental & Protection

Description of Works

The implementation of the Environmental management plan will apply to all areas under CONTRACTOR responsibility: construction areas warehouse and lay down area's yards and temporary facilities (offices and camp) and during the execution of the activities at site.

The works to be carried out under this Contract include, but not limited to the following major items:

- Ground Investigation
- Demolition and Site Clearance
- Earthworks
- Structural Metal Works
- Roads and Paving
- Potable Water Network Works

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- Irrigation Network
- Sewerage Network
- Drainage Network
- Electrical Works (HV, LV, MV)
- Irrigation Water tank
- Guard House
- Pump room
- Irrigation Water tank
- Guard House
- Control room Substation Building

ENVIRONMENTAL POLICY

CHEC is committed to developing and implementing an effective Environment Management System as part of an integrated framework for sustainable environmental control and management. This Environment Management system shall be robustly applied and mandatorily followed in all sectors of the intended construction activities and by all employees and Subcontractor's personnel. CHEC will implement environmental management based on ISO system as well compliance with the environmental laws and regulations of Saudi Arabia , as well as ROSHAN , requirements.

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Environmental Policy Statement

China Harbour Engineering Company Ltd (CHEC) recognises that its business activities may have a direct or indirect impact on the environment and as such we are committed ensuring such activities are undertaken in a manner sensitive to the environment by conserving natural resources, reducing waste and minimising pollution to land, water and air. To achieve this goal the company has established detailed procedures, documented in the Quality, Environmental and Health & Safety Manual, to give guidance to its employees. The objectives of these procedures are:

- To minimise negative effects of the company's activities on the environment
- To observe local legislation and other relevant requirements
- To ensure continued compliance with ISO14001: 2015
- To maintain a high standard of environmental protection on the company's work sites
- To provide training to employees to enable them to realise the company's environmental goals
- To set targets for achievement and improvement
- To monitor the effectiveness of the Environmental Management System
- To provide adequate resources and priority for the implementation of the policy

Mr Zhang Xiaoqiang is hereby appointed responsible for the overall co-ordination and implementation of this policy. Environmental consideration, however, remains a prime responsibility of every employee. All staff shall ensure this policy is understood, implemented and maintained. As an integral part of the company's aim to continually improve, this policy will be reviewed and updated annually.

环境政策声明

中国港湾工程有限责任公司 (CHEC) 认识到在作业过程中可能直接或间接的对环境造成影响, 因此我们承诺: 保证在进行此类操作时时刻注意保护环境及自然资源, 减少废物, 并把对土地、水、空气的污染减到最低限度。为了实现这一目标, 公司建立了详细的操作规程, 并体现在质量、环境、职业健康安全手册中, 供员工参照。该规程的目标为:

- 把对环境的负面影响控制在最低限度
- 遵守地方法规及相关要求
- 确保持续遵守 ISO14001: 2015 标准
- 在施工现场高标准的对环境进行保护
- 提供员工培训, 以确保其实现公司的环保目标
- 设定改进及成果目标
- 监控环境管理体系的有效性
- 提供适当的资源, 优先实施该政策

任命张晓强副总经理为此政策协调及实施的全权负责人。环境保护是每位员工的首要责任。所有人员应确保理解、贯彻、保持此政策。作为公司目标不可分割的一部分, 应不断改进, 重审更新。



Mr. Bai Yinshan

President

7th May 2022



A.3 Duties and Responsibilities

To ensure the establishment and implementation of the Environmental Protection Plan, each personal within the project shall have his/her duties and responsibilities.

3.1 Project Manager

The Project Manager has responsibility for coordinating all environmental matters and reporting on these to the CHEC's Board and is responsible for all aspects of environmental issues within the project, which are managed with the Environmental Protection Plan.

The Project Manager is also responsible for ensuring commitment and assigning resources to provide an effective environmental management program in the work. The Project Manager shall comply with the EMP by:

- Identifying and classifying waste.
- Storing classified waste in skips or containers that are color coded and/or have clear signs
- Disposing or recycling waste appropriate to its nature

3.2 Construction Manager / Technical Manager

The responsibilities of the Construction Manager and Technical Manager are as follows:

- Ensure works are executed in accordance with the Environmental Protection Plan.
- Arrange routine joint site inspection with HSE Engineer and Engineering Staff.
- Monitor and control the works including those subcontractor(s) to ensure compliance with specified requirements.
- Ensure appropriate environmental protection and pollution control mitigation measures are properly implemented in accordance with the relevant procedures.
- Assist in handling any complaints received from the public.
- Ensure remedial action to be taken immediately if there is a non-compliance of statutory or contractual requirements in respect of environmental protection issues.

3.3 HSE Manager

- From time to time review the Environmental Policy.
 - To established and develop an environmental management system and implantation strategies.
 - Ensure that all management decisions are communicated.
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- Supervise and monitor implementation of the Environmental Management Plan.
Attend relevant Committee Meetings.
- Carry out environmental inspection.
- Liaison with external Authorities (i.e. The Employer and relevant Authorities).
- Report any incident/accident to Client through Consultant HSE Manager.
- Weekly HSE Assessment Inspections will be carried out by contactor HSE Manager and the contactor and/or Sub-contractor supervisory personnel and develop weekly Environmental checklist and will submit to Consultant HSE Manager.

3.4 HSE Engineer

The HSE Engineer will provide advice to project management in respect of any environmental protection issues including noise abatement, air pollution control, water pollution control, and refuse disposal etc.

The HSE Engineer with assistance of the engineering staff would assume environmental duty on site.

The HSE Engineer will work in parallel with the design team and project management to ensure environmental issues are fully considered during the design and implementation stages.

The HSE Engineer will also be responsible for the following:

- Prepare, implement and update the Environmental Management Plan;
- Advise on measures to be taken in the interest of environmental protection, and implement such measure;
- Liaise on all matters relating to environmental monitoring;
- Carry out inspections of the Site for identifying potential hazards to the environmental, and to report findings with recommendations for corrective actions;
- Check and ensure that any polluting or potentially polluting situation is promptly rectified;
- Attend Environmental Management Committee meetings
- Arrange and provide the environmental training including the site specific induction training and talks on every day for the staff and workers on the Site, and to organize environmental promotional activities;
- Advise the company on the implementation of an environmental management system;
- Report to the Project Manager/ HSE Manager regarding non-compliance of any environmental protection issues and ensure any non-compliance is handled;
- Advise emergency actions or alternative arrangements when monitoring results show exceedances of Limit and Action levels;
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- Co-ordinate with the The Employer to ensure all environmental issues is properly handled

3.5 Sub Contractors

- Follow the requirements of this EMP and of the Environmental Coordinator.

Report any potential environmental issues to the Environmental Coordinator, including spilt oil, excess waste, excessive dust generation, dirty water running off the site.

3.6 Environmental Coordinator

- The environmental coordinator shall report to the HSE manager and his responsibilities include the following:
- Coordinate and oversee environmental operations to ensure regulatory compliance.
- Oversee waste disposal and approved waste contractors.
- Provide assistance and Environmental trainings to workers all around the site.
- Development, following and implementation of environmental procedures
- Identify areas of improvements to reduce environmental damages and wastes.
- Develop hazard control programs to reduce contaminations and accidents.
- To conduct emergency drills at regular intervals as required by the ROSHAN procedures.
- Investigate and report any environmental incident to HSE manager.
- Conduct environmental inspections.

3.7 Engineering Staff

The Site Engineers / Foremen have the following duties in relation to environmental control:

- Assist the Construction Manager, Technical Manager and HSE Engineer in implementing the Environmental Protection Plan;
- Monitor and control the works including those of sub-contractors to ensure compliance of both contractual and
 - statutory requirements;
- Report to the Construction Manager / Technical Manager regarding non-compliance of any environmental protection issues;
- Investigate and verify the complaint received from public;
- Ensure the remedial actions or mitigation measures are carried out as planned and; Carry out environmental monitoring as required.

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3.8 Site Foremen

- The duties of the Site Foremen shall, for the purpose of environmental management under the Contract, include but without limitation to the followings:
 - Assist the Environmental Engineer carrying out his/her duties;
 - Carry out inspections of the environmental protection works for which he is responsible, and to ensure that follow-up actions have been taken promptly against defects and deficiencies identified;
- Advise the HSE Engineer on the up keeping of environmental performance and standards of the Site;



- Attend the weekly environmental walk if required;
- Supervise and promote the execution of environmental work by the workers on the Site;
- Attend SEC meetings;
- Conduct Attendance List of Weekly Employee Environmental Talks as assigned by the Construction Manager after acquiring the necessary
- Assist the Site Engineers/ Assistant Engineers to implement the EMP;
- Control the works, including those of sub-contractors, to fulfill environmental protection requirements;
- Report to the Site Engineers any non-compliance of environmental protection and mitigation measures;
- Investigate the complaint received from public;
- Carry out remedial actions or mitigation measures to rectify the non-compliance.

3.9 Other Employees

Every employee including site administrative staff and site workers has the duty to carry out agreed site environmental practices as instructed by the HSE Engineer, Site Engineers and Foremen.

Every employee will report promptly to HSE Engineer/ Foremen any non-compliance of environmental protection and mitigation measures.

Every employee will actively participate in and co-operate with the Project Management to achieve the environmental objectives.

A.4 Environmental Training

To ensure that all Project personnel carrying out activities affecting environmental are sufficiently trained and competent in performing their assigned duties, all employees shall receive appropriate trainings on environmental and waste management as followings:

4.1 Environmental Site Specific Induction Training

All the staff and workers employed on the Project directly or in connection with the Project indirectly shall attend the Environmental Site Specific Induction Training delivered by the HSE Engineer. They shall also attend the refresher training per every half-year. The training should cover but not limited to legislation and regulations, policy, organization structure, duties and responsibilities, mitigation measures, targets in Environmental Management Plan, in-house rules and regulations.

Submit the Trainings record to consultant HSE Manager for review.

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4.2 CONSTRUCTION ENVIRONMENTAL MANAGEMENT

- All the workers employed on the Project directly or in connection with the Project indirectly shall attend the Talks regularly regarding the environmental nuisance abatement and waste management. The topics of the Talks shall include but not limited to:
 - Emphasize the importance of HSE.
 - HSE Policy and Philosophy.
 - Orientation of the Site layout and the work place, using maps/drawings, etc.especially for the restricted areas to entry.
 - Outline of the work scope.
 - HSE Organization and the individual's duties and responsibilities for HSE.
 - EMP requirements & environmental issues including employee responsibilities.
 - EMP requirements for the avoidance of environmental contamination.
 - Working rules (duty hours, over-time work, holidays, transportation, housekeeping, etc.).
 - EMP requirements for Waste Management.
 - HSE and Security rules and regulations (gate control, possession of ID card, smoking rules, substance abuse rules, traffic rules etc.).
 - Enforce use of proper personal protective equipment (safety harness, helmets, goggles, gloves, dust/gas masks, respirators, etc.).
 - Proper working garment and footwear.
 - Outline of HSE Contractual Procedures.
 - Work Permit procedures (Work items or locations to be subjected, obtaining procedure, etc.).
 - Emergency and evacuation procedure (emergency alarm system, emergency communication system, evacuation route and assembly area, etc.).
 - Participation in HSE Tool Box Meeting (when, where, how).
 - Keep clean (after day's work, weekly site cleaning, etc.).
 - Encourage reporting accidents and near-misses.
 - Encourage reporting unsafe acts and unsafe working conditions.
 - First-Aid Facilities (location, how to use, etc.).
 - HSE incentive scheme to create interest and enthusiasm in safety effort.
 - Confirmation of Personal Information submitted prior to the HSE induction training (individual's work experience, license/permits, physical condition, etc.).
 - Working in the community (courteous behavior, site security, maintaining access to local businesses and facilities).
 - Evening and night time construction activities.



- Archaeological Watching Brief.
- Procedures when contaminated land is found.
- Toolbox talks are to be held periodically with site staff. Training topics to be addressed during toolbox talks include:
 - Emergency response procedures.
 - Use of spill prevention and clean-up kits.
 - Implementation of specific environmental safeguard measures.
 - Cultural change towards environment.
- Toolbox talk topics and who was involved will be noted in a register to be maintained by the HSE Manager.
- All visitors will undergo an induction into significant HSE hazards on the sites, and the rules they are required to follow. In addition, visitors will be accompanied by a designated person at all times while on site.

A.5 Committees

The overall environmental performance including the identified environmental issues and the arrangement for follow-up actions shall be discussed monthly amongst the HSE Engineer, Contractor and subcontractors in Site Environmental Committee (SEC) to enhance the communication in environmental aspect.

The members of SEC meeting include but not limited to:

- PM ;
- HSE Manager & HSE Engineer;
- Engineering Staff
- Subcontractors' representative

A.6 Performance Monitoring

To establish procedures for monitoring the environmental performance on Site including identification, recording and reporting of non-compliance and their rectification action, the followings monitoring mechanisms shall be implemented:

- Weekly Site Environmental Inspection

Site inspections will be conducted by HSE Engineer which provides a direct means to trigger and enforce the specified environmental protection and pollution control measures. The site inspections shall be undertaken



routinely, at least once per week, to inspect the construction activities in order to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented. With reference to the Project's contractual environmental requirements, pollution control and mitigation specifications and a well-established site inspection, deficiency and action reporting system would be one of the most effective tools used to enforce the environmental protection requirements on the construction site.

All observations and results will be recorded in the data record sheets, which will pass to the Project Manager, Construction Manager and Technical Manager. If non-compliance is found on site, the Event / Action Plan will be implemented.

The areas of inspection shall not be limited to the environmental situation, pollution control and mitigation measures within the site; it will also review the environmental situation outside the site area which is likely to be affected, directly or indirectly, by the site activities.

Continuing Improvement

A strategy of continuing improvement will be carried out, aimed at improving CHEC environmental performance for this project. This will be achieved by a regular review on the project performance in the Environmental Committee Meeting to be held at monthly basic. The following items will be reviewed:

- Marking comparisons between performance and targets, analyzing any variances and identifying areas of opportunity for any improvement;
 - Determining the root cause of Non-Conformance or deficiencies;
 - Developing and implementing plans of corrective and preventive action to address the root cause;
 - Verification of the effectiveness of actions taken; and
 - Documentation of any changes in procedures resulting from process improvement.
- Weekly environmental inspection check established and share weekly with consultant HSE Manager with corrective action.

A.7 Promotion

- The environmental awareness of the staff can be promoted by means of training, communication, recognition and reward.
- Talks and campaigns will be organized and bulletins or newsletters will be distributed to all site staff and subcontractors to promote the environmental awareness.
- Awareness will be maintained by including MOCK drill, meeting, audit and outcome of previous MOCK drill.



- All relevant documents will be submitted to consultant for review.
- Includes, Audit and Motivation program key points

Part B. Environmental Nuisance Abatement

We are committed to carry out all construction works in such a manner that to cause no damage and as little inconvenience as possible to all nearby residents, property, business and the public in general.

The continual improvement on environmental management of the project will be achieved by the regular environmental monitoring undertaken by the HSE Engineer and his team together with the implementation of the control measures aims to minimize negative environmental impact. In addition, mitigating measures and the practices for pollution prevention, as discussed below, will be adopted as far as possible on sites.

B.1 Air Pollution Abatement

Construction Activity and Control Measures

- In case of bad weather conditions like heavy sand storm, poor visibility and rain work suspension notification and work resumption will be issued.
- Visual air quality monitoring will be done during daily and weekly site visit by contractor environmental coordinator/Engineer, maintained log and send to Consultant HSE Manager.
- All trucks and other vehicles where possible, will have their engines turned-off when not required.
- Ensuring equipment, machinery and vehicles are properly maintained and inspected so as to reduce gaseous emissions to ALARP level.
- Storage of Cement

Every stock of more than 20 bags of cement shall be covered entirely by impervious sheeting or properly stored.

- Stockpile of Dusty Materials
- Any stockpile of dusty materials shall be covered entirely by impervious sheeting or sprayed with water or a dust suppression chemical to keep the surface wet to prevent dust from becoming airborne.
- Loading, unloading or transfer of dusty material

All dusty materials, except for cases where the moisture content of the dusty materials is a matter of concern, will be sprayed with water immediately prior to loading, unloading and transfer operation to prevent dust from becoming airborne.



- Excavation or Earth moving

The working area of any excavation or earth moving operation shall be sprayed with water immediately before, during and immediately after the operation to maintain the surface wet to prevent dust from becoming airborne.

- General Site Tidiness

The site shall be cleaned and moistened frequently to minimize the fugitive dust emissions.

B.2 Noise Pollution Abatement

Construction Activities and control Measure

- Activities which are potentially noisy will be performed during daylight hours only, avoiding prayer timings and public holidays.
- Any tool, vehicle or equipment found to be noisier than expected shall be removed from the site until repaired and re-inspected.
- Noise levels to be considered low, e.g. 0 to 00 dBA
- Includes, High noise area shall be identified by warning sign.
- Environmental coordinator will be monitored regularly noise on site as per Noise monitoring point and stationery equipment or any noise generated activity as well as worker camp, maintained record and share with consultant HSE Manager.
- Noise monitoring devices shall be 3rd party calibrated.
- Limit the amount of noise generating equipment to be used;
- Limit the amount of noise generating equipment to be used simultaneously;
- Use silenced or relatively Quality Powered Mechanical Equipment (PME);
- Cover noise generating equipment with acoustic enclosures if necessary;
- Erection of temporary and movable noise barrier next to the noise source to shield down the noise emission if necessary.
- Position noise generating equipment/ activities away from sensitive receivers and at locations where existing structures on site can act a noise shields.
- Switch off noise generating equipment when not in use.
- Ensure proper maintenance of noise generating equipment.



B.3 Wastewater Pollution Abatement

Management of wastewater on site

No wastewater on site neither surface-run off nor construction wastewater shall be discharged directly or indirectly into any public sewer, storm water drain, channel, or sea without prior consent of the Employer.

All the sewage (i.e. mobile toilet) generated on the Site shall be pumped away by specialist sub-contractor.

- Dewatering groundwater quality will be determined prior to disposal.
- Daily site visits to check and control any soil contamination by The Environmental Coordinator. If any soil contamination is detected it shall be disposed, stored and treated as hazardous waste.

B.4 Waste Management

CHEC shall transport all waste off the work site and accomplish disposal in compliance with local requirements. The CHEC shall obtain a permit prior to transporting any materials off the work site. Waste materials will not be burned on the site.

CHEC will pick up the waste materials and place them in a waste bin that shall be emptied on a regular schedule. Handling and disposal shall be conducted as to prevent contamination of the work site and other areas. CHEC shall transport the waste to a disposal area as designated by the Employer.

Sewage will be disposed of through connection to Riyadh sanitary sewage system. Where such system is not available, a chemical toilet will be used with waste periodically emptied.

key points of Environmental control strategies such as .

- Waste minimization.
- Waste Handling
- Waste disposal (non-hazardous waste and Hazardous waste etc)
- domestic waste collection
- General Housekeeping
- Waste Monitoring and measuring and record
- Additional statutory Requirements (Licenses and permits) but not limited.

B.5 Dust Control

Dust will be kept down at all times including nonworking hours. Soil at the site, haul roads, and other areas disturbed by the CHEC's operations and materials stockpiled for the project will be treated with dust suppressors or covered to control dust. Wet mopping or wet sweeping or wet booming will be used instead of dry booming.



CHEC will inspect all vehicles for dirt prior their leaving the construction site. Dirt, soil and rubble likely to be dislodged during transit will be removed from the trucks and other vehicles prior to leaving site.

- Provision of dust suppression through wetting during loading and unloading of trucks of substances of potential high dust impacts as deemed necessary by HSE Manager.
- Sea water will not be used as dust control.
- Construction emissions are fugitive dust but minor emissions of NO_x (nitrogen oxides), SO₂ (Sulphur dioxide) and CO (carbon dioxide) are likely from other activities.

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Part C Food Service Hygiene

- Canteen and other meal facilities will be located at safe distance from the main construction areas to prevent pollution and shall be covered to protect personnel from rains, heat and adverse weather conditions. Food scraps shall be disposed immediately after meal. Food scraps is prohibited to be brought into the work locations so as to maintain the site clean.
- All food service staff shall have valid medical certificates in accordance with Ministry of Health requirements. Physical examinations shall be conducted at the time of hire, after return from vacation and when otherwise indicated after illnesses or suspected foodborne outbreaks.

C.1 Drinking Water

- Adequate supplies of wholesome drinking water shall be provided in all places of work and accommodation.
- Cool water shall be provided during hot weather.
- Drinking water supplies shall be clearly marked and shall not be used for other purposes.
- Water shall not be dipped from containers.
- Use of a common cup shared by more than one person is prohibited without the cup being sanitized between uses.
- Potable water shall be tested regularly if delivery is from other than municipal supplies or if it is not bottled water.
- As an additional precaution, it is recommended that none municipal or none bottled water is boiled before use.

C.2 Toilets

- Separate toilet facilities to be provided for each sex.
- Suitable and sufficient toilets shall be provided.



- Toilets must be kept cleaned and provisions made for routinely servicing and cleaning toilets.
- Disposing of sewage shall be established before putting the toilet facilities into operation.
- The method of sewage disposal and location selected shall be in accordance with local health regulations.

C.3 Washing Facility

- Washing facilities shall be provided as needed to maintain healthful and sanitary conditions.
- Each washing facility shall be maintained in a sanitary condition and provided with water (either hot and cold running water or tepid running water), soap, and individual means of drying.
- Special washing facilities are required for persons exposed to lead.

C.4 Food Handling

- All food handlers must possess a valid medical fitness certificate issued by the local ministry of health and the medical examination shall include potential communicable disease sites e.g. skin, ears, upper respiratory tract and gastrointestinal tract.
- All food handlers shall obtain food safety certification.

C.5 Catering

- Food shall only be consumed in mess rooms.
- No cooking shall be allowed in sleeping quarter
- All cafeterias, restaurants, mess facilities, and related facilities on areas, projects, or installations shall be established, operated, and maintained in compliance with the health and sanitation.

C.6 Food Waste Disposal

- Receptacles used for waste material shall be so constructed to prevent leakage and to allow thorough cleaning and sanitary maintenance.
- Emptied on a regular basis.

Part D Environmental Records

The environmental record shall be maintained and kept in a proper manner to record the environmental issue, the document shall include but not limited to:

- Inspection reports for Weekly Environmental Walks.
- Summary record of non-compliance of air, noise and wastewater pollution incidents.
- Records of environmental training/ meeting.
- All environmental reports will be submitted to consultant timely.

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D.1 Waste monitoring and recording

- Includes. Reporting and review by the contractor team is to be done on a monthly basis, recorded and shared with Consultant HSE Manager.
- To ensure project related correspondences and communications are channeled correctly and add protocol chart.

Part E EMERGENCY PREPAREDNESS AND RESPONSE with all key points.

- Includes, Environmental Incident and Near Miss Reporting and record:
- Incident Response Equipment
- Project Organization Chart
- Significant Environmental Aspects and Controls
- Updated Environmental aspects register will be shared with consultant HSE Manager and reviewed by contractor HSE Manager twice a year and submitted to Consultant HSE Manager for review

D.1 Emergency Preparedness and Response

- In the event of ground inland oil spill, the inland Oil Spill Response shall be followed. And CHEC shall take immediate action to stop a spill and promptly notify the appropriate parties.
- The Project Manager in conjunction with the HSE Manager will identify the potential for and response to environmental incidents and emergency situations in accordance with the Spill Prevention and Response Procedure provided from CHEC and relevant Emergency Procedures established for the project.
- The emergency response actions should be based on the concept of "Control", "Contain" and "Clean-up" and has its primary focus on the following key elements:
 - Preservation of human health and safety
 - Protection of plant and property
 - Protection of the environment
 - Prevention of reoccurrence.

Appendix A - RECYCLING & SUSTAINABILITY

- Contractor acknowledges the need for sustainability throughout the project so as to preserve natural resources and reduce costs in the execution of the works to protect the environment.



- To demonstrate our commitment to the environment and sustainability the following initiatives will be executed on the project:
- Rocks excavated or broken up from large rock formations during the formation of trenches are being screened to provide good materials for backfilling and rocks, which can be used for hard landscaping or that can be crushed to provide sub base materials.
- Asphalt that is milled from roads will be utilized to provide top surfaces to road diversions to give a smooth ride for drivers.
- Recycling of water from dewatering systems to be utilized for spraying haulage routes for dust suppression.
- Recycling of concrete washings after they have dried and hardened to use as sub-base for roads.
- Utilizing energy saving light bulbs.
- Recycling stationary, paper and cardboard in offices.
- Using solar powered flashing warning lights
- Recycling used engine oil from vehicles, plant & machines.
- Recycling vehicle tires by having them retread.
- Maintaining to the speed limits or below and turning off engines reducing fuel consumption
- Recycling formwork timbers
- Recycling scrap metal
- Dampening down spoil heaps to prevent dust dispersed.
- Recycling food waste to feed animals
- Legal Framework:
- Contractors are to ensure that all prescribed registers, certificates and records are maintained and available for inspection at the relevant work locations.
- Non-Compliance
- If CONTRACTOR or any of the SUBCONTRACTOR fails to correctly implement all the requirements established in this EMP shall be liable for the costs incurred in the subsequent remedial action