REPUBLIC OF IRAQ

MINISTRY OF PLANNING

Iraq "Social Fund for Development" Project (SFDP)

ENVIRONMENTAL AND SOCIAL MANAGEMENT CHECKLIST

FOR THE

REHABILITATE OF WATER SUPPLY STATION IN AZIZ BALAD

IN SALAH AL-DIN GOVERNORATE

> 15^{тн} November 2019

IRAQ: Social Fund for Development Project

PART A: GENERAL PROJECT AND SITE INFORMATION

INSTITUTIONAL &	& ADMINISTRATIVE
Country	IRAQ
Project Title	Rehabilitate of Water Supply Station in Aziz Balad in Salah Al-Din Governorate
Institutional arrangements	Project Owner: Ministry of Planning Person in Charge: To be named later Name: Title: Contact: Email: Local Counterpart(s): Person in Charge: Name: To be named later Title: Contact: Local Counterpart(s): Project Engineer (Supervision): Name: Title: Contact: Contact: Project Engineer (Supervision): Name: Title: Contact:
Environmental and Social Management Implementation arrangements	Resident Engineer Name: To be named later Contact: PMT Supervision: Name: To be named later Title: Contact: Local Site Supervision: Name: To be named later Title: Dotact: Local Site Supervision: Name: To be named later Title: Directorate: Contact: Local Counterpart Supervision: Contractor: Safeguard Supervision Name: To be named later Title: Contractor: Safeguard Supervision Name: To be named later Title: Contractor: Safeguard Supervision Name: To be named later Title: Contact:

PROJECT LOCATION & SITE DESCRIPTION The project is located in the neighborhood of the Village of Aziz Balad, Salah Al-Din Governorate, approximately 75 km north of the capital city of Baghdad. The village is situated on the bank of the Tigris River. Map below shows the project location. Legend Aziz Balad Statio **Project** Location **Figure 1: Project Location** The main objective of the project is the rehabilitation of the water supply station in Aziz Balad for the provision of the drinking water to the community of the residential settlements. The capacity of the project is 200m³/hr. Aziz Balad water station which is a compact unit station that needs to be rehabilitated consists of: Intake pipes and structure **Project** Submersible pumps with raw water pipeline • **Description** Intermediate storage tank. • Coagulation system. • Steel clarifier tanks. • Pressure steel filter tanks. • Air blowers. . Chlorine Sterilization system. • High lifting pumps. (pumping the potable water to the consumers)

Site Google Map	$\begin{tabular}{ c c c c c c } \hline Coccele Earth & Coccele Ear$
	part of the area. The predominant agriculture in the area is the irrigated fruit plantations with limited vegetable cultivation. The distance between the station and the residential area is about 1km. There are no protected areas or endangered species (there is no critical or high biodiversity values that might be affected) in the vicinity of the sites. There are no close buildings or sensitive receptors located to the subprojects site except the Tigris river which represent the source of the
	raw water. At present the unit is not operational properly due to the damage during
Current Station Condition	 the combat operations in the area. The damage can be described as severe and includes the following: Damage to mechanical parts in the filtration process and also in the pumps in addition to the coagulation and chlorination systems. Moreover, there are some parts such as rusted and broken pipes; destroyed network connections, destroyed sanitary facilities. That needs to be rehabilitated. Damage to electrical network: electric wires torn out from the wall; destroyed distribution circuit boards, damaged beyond repair automated systems, broken or in very poor condition pumps.

	Figure 3: Damage to the Facilities
Project Duration	According to contract agreement, the expected project duration is 6 months
Proposed Project Activities	 Rehabilitation of the water station will include at least the following activities: 1- Rehabilitation the pressure filters that have a dimension of length of 3.75 meters and diameter of 2.3 meters by cleaning with proper maintenance. 2- Replacing the old electrical pumps with new pumps with a power of 50hp and75 hp and new chlorination and alum systems. 3- Provision and installation of pipes and its fittings which includes valves and elbows 4- Provision and installation of generator (200 KVA).

Land Acquisition	The project was built on state owned land. The rehabilitation and maintenance activities will take place within the project area. The establishment of the camp is envisioned to be located inside the surrounding fencing of the existing unit of which the land matter is already settled and therefore, no temporary or permanent land acquisition is required at any stage of the project.	
Contactor's Camp	 acquisition is required at any stage of the project. The contractor will establish his storage for equipment and mat within the station as there will be no heavy equipment or mate required for achieving the rehabilitation. The contractor shall setup his camp within the water station. Contractor's main camp, will contain, the operational center, prefabricated offices and parking areas for administration and techn staff. The need for residential accommodation is likely to be relatiminor, except for security personnel and operators working in 3 shift persons for each shift. It is to point out that the sub project and the compact unit run by t shifts, each shift consists of two operators and one guard. The total number of personnel including technical, administrative and skilled and unskilled labor is expected not to exceed 20 persons daily basis. The employed personnel will be mostly from neighbourhood areas and Iraqi nationals. 	
PROJECT BASELI	electricity, and the septic tank for the working team effluent disposal.	
Description of Geographic Conditions	The terrain is characterized as relatively flat. In the project area the	
Description of Climate - Air Quality and noise Description of Climate - Air Quality and noise The climate in the project area is characterized as hot desert climate The average temperature is 22.2°C. The warmest month, on average, July with an average temperature of 34.6°C. The coolest month average is January, with an average temperature of 4°C. The avera amount of precipitation per year is 180 mm. The predominant with direction is Northeast in the months November through to April, at predominantly north-west in the months May-October. The me average wind speed is 10-12 km/h. The main sources of the air pollution is dust generated by moving of the		

dusty conditions, especially with the wind gusts. The area is rural residential and noise is limited to the passenger vchicle movement.Description of Geological ConditionsThe area surrounding the treatment plant represents a flat area that starts from the middle of Iraq to the north of Iraq.Description of Hydrogeology ConditionsFlooding of the area near the project has not been reported in the past years. The depth of ground water in the area ranges from 2 to 50 meters. The general trend of the groundwater movement is mainly from north and northwest towards south and southeast. The groundwater quality in the project area is slightly brackish with the salinity of 1000-3000 ppm. The intake of the subproject is on the Tigris river which has normal characteristics for the raw water to be used in the water treatment. The project area does not contain any globally important habitats or ecosystems. There are no Nature Reserves or other legally protected areas in the vicinity of the project or in a close proximity (more than 2K). No conservation practices are exercised in the project area apart from the control of hunting to the extent they are controlled and monitored throughout the country.Description of Physical Cultural ResourcesThe total population of the Salah Al-Din Governorate is 1.5 million people; the population growth rate is 2.6%, according to the available statistics until 2014; Age category of less than 15 years is 40% in 2012; the category of 15-64 years of age is %56.9 in 2012. Population growth rate is centered on agriculture. 44% of the governorate's workforce is employed in the agricultural sector, the highest percentage among all 18 provinces.Description of Physical ContextSalah Al-Din has 18% unemployment rate, and 39.9% live below the poverty line of		passenger vehicles on unpaved surfaces, in dry condition and natural
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LEGISLATION & POLICIES	LEGISLATION & P	

	The applicable national legislation is as following:
	• The Law for the Protection and Improvement of Environment No. 27, 2009;
	• Forests and Woodlands Law No. 30 of 2009;
	• Protection of Wild Animals and Birds No. 21 of 1979;
	• Regulating Exploitation and Protection of Aquatic Life No. 46 of
	1976;
	• Ministry of Water Resources Law No. 50 of 2008;
	• Public Health Law No. 89 of 1981, amended by Resolution No.54 of 2001;
	 Iraqi Drinking Water Standard No. (417)-2001;
	 Regulation for the Provision of Water Resources, No. 2, 2001;
	• Regulation for the Protection of Rivers No. 25, 1967;
	• Law No. 27 of 1999 concerning the establishment of the General
	Authority for
	 Water and Sewage; Instructions No. 2 of 2014 on Environmental Protection from
	• Instructions No. 2 of 2014 on Environmental Protection from Municipal Waste;
	• Directive No. (67) of 1986 Regulating the Debris Collection Areas;
National &	• Clean Air Act No. 1 of 2004;
Local	• Noise Prevention Law No. 21 of 1966;
Legislation	• Directive No. 4 of 1993 concerning occupational health, protection of
and World	workers against vibration;
Bank Policies	 Instructions No. 3/1985 Concerning Occupational Safety;
that Apply to the Project	• Law No. 6 of 1988 concerning the National Commission for
ine i rojeci	Occupational
	• Hygiene and Safety;
	• Law No. 55 of 2002 for The Antiquities & Heritage of Iraq;
	 Acquisition Law No.12. of 1981 Labor Law No. 37 of 2015.
	At present, there is no national Building Code in Iraq and the most
	commonly used are the ACI 318 codes.
	The main WB safeguard policies triggered are:
	• OP/BP 4.01 Environmental Assessment.
	• WB Access to Information Policy.
	Since there are no excavation activities and no impact on cultural sites and no involuntary taking of land, therefore, OP 4.11 and OP 4.12 do not
	apply for this project. The EHS Guidelines applicable to the project are:
	• Environmental, Health, and Safety General Guidelines
	EHS Guidelines for Water and Sanitation
	When host country regulations differ from the levels and measures
	presented in the EHS Guidelines, projects will be required to achieve whichever is more stringent.
	Air quality standard and the drinking water standard are

	presented in Annex 1.
PUBLIC CONSUL	TATION & GRIEVANCE REDRESS MECHANISMS
	According to the WB policies, it is required that broad and open public consultations be held with PAPs on the project. These consultations are to ensure that the PAPs are provided with the opportunity to engage in the rehabilitation planning process, to raise questions and receive input and responses to their concerns. In order to fulfill the WB requirements, public consultation and also one
	on one interviews were adopted to obtain sound information on the possible impacts on the local communities. Accordingly, a questionnaire was formatted to cover the key environmental and social aspects related to the subproject. It was difficult to conduct the public consultation with the women due to the tribe's habits that exist in the area of the project. However, individual interviews with women was conducted to take the women's opinions freely.
Public Consultation Process	 According to the results revealed from public consultation and individual interviews, the local community agreed that, the rehabilitation activities will have a positive impact on their social daily life. The total number of people interviewed 24 (19 men and 5 women). During the interview the team presented the description of the project and discussed the issues of concern of the stakeholders. The following are the main findings of the consultation process which took place on Monday 1st October 2019. "See evidence of consultations in Annex 3". 1) All questioned local stakeholders agreed that the rehabilitation activities will have a strong positive impact from the social perspectives on the local residents. 2) No claims from any local population were recorded or alleged regarding the ownership of the land where the rehabilitation activities to take place; all agreed that is governmental land property. 3) No vegetation covers, crops, plants, treesetc. will be removed in order to execute the rehabilitation activities. 4) No infrastructure will be affected negatively due the rehabilitation activities. 5) No deportation, dislocation of any of the local community will be needed due to these activities.
	Information about a grievance mechanism was introduced during the public and individual consultation. All interviewed people were informed that they can submit their complaint either to site engineer, or to

	community loader representative, or to PMT during the rehabilitation
	community leader representative, or to PMT during the rehabilitation. The proposed GRM for the SFD aims to resolve issues that could come across implementation promptly, more efficiently, and accurately. The design of the GRM system should provide means for collecting supportive documents and evidences, investigating the problem, and supporting the final decision. An effective GRM is characterized by: diversity, clear procedures, swift responses, and allowing for two-way communication. Complainants would commonly approach this GRM for many reasons, including those related to incomplete or no service, vague procedures, inappropriate/ unfair treatment by the staff, and harm (environmental and/or social) to individuals or groups as a result of carrying out the
	Project's interventions. It is important to mention that the complaints can be raised and addressed even from anonymous person(s).
GRM Process	The complaint/ grievance, once received, should be promptly resolved or undergone further investigation. Complaints are sorted out according to complexity. Direct responses should be given to simple inquiries by concerned staff members in 3-6 working days as a maximum, and should be documented and archived as per the relevant procedure. While, more comprehensive measures should be applied to complex issues, including field investigation and communicating with higher management for final decisions within a timeframe of 20 working days as a maximum. After the completion of the proceedings, the complaint is closed, and information is included in the system, including the action(s) taken and the result(s) required. The complainant shall be notified of the result and the action immediately and informed of the possibility of objecting to the procedure. See detailed procedures in the main ESMF report. In addition to PMO, the MOP, project offices in governorates, and
	Community Development Groups (CDGs), the World Bank's Grievance Redress can also be approached for reporting and resolving issues.
	In any case, the PMT must maintain records of grievances and complaints, including minutes of discussions, recommendations and resolutions made. Participants were informed that they can submit their complaint to either site engineer, or to community leader or to PMT during construction. The PMT contact information (office and mobile phone numbers) will be available before implementation starts and will be posted at the entrance of the project site
	Contact Information for GRM:

		#	Name	Job Title	Phone Number	E-mail
		1	Ahmed Ibrahim	clerk	07701830500	Basmamohammed337@yahoo.com
		2	Hussam Shaael	Transla tor	07827793093	hussamshail@yahoo.com
		3	Ibtisam Jasim	Deputy head	07724674469	Sfd.iraq.2018@gmail.com
INSTITUTIONAL O	CAF	PAC	ITY BUILDI	NG		
Will there be any capacity building?		here		U		fficers whom are responsible for ion of project infrastructure.

ENVIRONMENTAL /SOCIAL SCREENING FOR SAFEGUARDS TRIGGERS						
	Activity / Typology	Status	Triggered Actions			
	1. Reconstruction of private homes, housing estates, public buildings, or facilities and installations for public services (e.g. substations, water treatment plants, pumping stations or similar)	[<mark>X]</mark> Yes []No				
Will the site	2. Reconstruction of / impacts on surface drainage system	[] Yes [X]No				
Will the site activity include/involve	3. Activities in Historic building(s) and districts	[] Yes [<mark>X</mark>]No				
any of the following?	 Required acquisition of land¹ or temporary / permanent impacts on livelihoods 	[]Yes [<mark>X</mark>]No				
	5. Handling or presence of hazardous or toxic materials ²	[<mark>X</mark>] Yes []No				
	6. Impacts on forests and/or protected areas	[]Yes [<mark>X</mark>]No				
	7. Risk of unexploded ordinance (UXO)	[] Yes [<mark>X</mark>] No				
	8. Traffic and Pedestrian Safety	[] Yes [X]No	If "Yes", see Section C below			

PART B: SAFEGUARDS SCREENING AND TRIGGERS

¹ Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

² Toxic / hazardous material includes, but is not limited to, asbestos, toxic paints, noxious solvents, removal of lead paint, etc.

	Potential				
No.		Mitigation Measures			
No.	Potential Impacts	 Mitigation Measures 1) The local construction and environment inspectorates and communities have been notified of upcoming activities 2) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works) 3) All legally required permits have been acquired for construction and/or rehabilitation 4) The Contractor formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighbouring residents and environment. 5) Workers' PPE will comply with international good practice 6) (always hardhats, as needed masks and safety glasses, harnesses and safety boots) 7) There is posted material indicating the nearest police station and hospital (with accident and emergency facilities). 8) The contractor must take reasonable steps to prevent unauthorized people accessing the site. 9) Prohibit the burning of materials on site. 10) Provide a first aid kits in different places of the work site with the appropriate number of materials given the number of workers on site. The workers will be noted about the locations of the first aid kits. 11) Providing extinguishers which distributed within the working area. 12) If work involving the use of flammable materials is being carried out or any other material that might make any danger, stop people smoking and do not allow other work activities involving potential ignition sources to take place nearby. 13) Providing site boundaries (if any) by installing suitable physical boundaries (barriers, tape or fence). 14) Marking excavation holes with physical boundaries (barriers, tape or fence). 15) The contractor should put up barriers or covers in the area of openings and excavations. 16) Store building materials (such as pipes, manhole rings, and cement bags) so that they cannot topple or roll over.			
		15) The contractor should put up barriers or covers in the area of openings and excavations.16) Store building materials (such as pipes, manhole rings, and cement bags) so that they cannot topple or roll over.17) Keep walkways and stairways free of tripping hazards such as trailing cables, building materials, and debris.			
		 19) Contractor to ensure PPE (personal protective equipment) is used by all workers on site. 20) Materials and equipment are tidily stacked, protected and covered where necessary. Additionally, there is adequate space for new materials to be stored in secured covered areas to avoid damage, theft, and to protect these items from weather conditions. 21) Scaffolding for work in elevated areas such as ceiling painting should comply with the OSHA "General Requirements for Scaffolds §1926.451" 			
		22) Appropriate signposting of the sites will inform workers of key rules and regulations to follow.			
	Generatio n, storage,	 Waste collection and disposal pathways and sites will be identified for all major waste types expected from rehabilitation activities. Construction and demolition waste, if any, will be separated from general 			
2					

PART C: MITIGATION MEASURES/ REHABILTATION PHASE

No.	Potential Impacts	Mitigation Measures
	on,	4) The records of waste disposal will be maintained as proof for proper
	hazard,	management as designed.
	and	5) Whenever feasible Contractor will reuse and recycle appropriate and viable
	domestic	materials
	waste	6) Simple waste management plan for specific waste streams must be developed.7) General waste must be collected and transported to local council approved
		7) General waste must be collected and transported to local council approved disposal sites.
		8) Food wastes must be collected, where practicable, considering health and
		hygiene issues, for disposal off-site through licensed contractors.
		9) Waste containers must be located at each worksite with sufficient numbers.
		10) Storage, transport and handling of all chemicals must be conducted in
		accordance with all legislative requirements, through licensed contractors and
		in coordination with the local authority.1) Hydrocarbons, including lubricants, which will be very limited and resulted
		just from machines/truck shall be collected for safe transport outside the site
		for recycling, transport or disposal at approved sites to be nominated by the
	TT - 11.	Municipality and the Ministry of Health and Environment
	Handling	2) The site will be cleaned from all wastes frequently and wastes will be stored in
	of hazardous	safe containers until transported
3	wastes	3) The waste shall be transported by specially licensed tankers and disposed of in the special areas away from the city to be determined by the paddies.
	and	4) Paints containing solvents, solvents or lead-based paints shall not be used as
	materials	per requirements, instructions and coordination with the Ministry of Science
	11111011415	and Technology
		5) During Operation, safe storage and handling of chemicals used in the
		treatment process shall be practiced.
		6) Empty containers of treatment chemicals shall be returned to suppliers.1) Demolition debris, excavated soil and aggregates shall be kept in controlled
		area and sprayed with water mist to reduce debris dust
		2) During pneumatic drilling or breaking of pavement and foundations dust shall
	Deteriorat	be suppressed by ongoing water spraying and/or installing dust screen
4	ion of	enclosures at site 3) The surrounding environment (sidewalks, roads) shall be kept free of soil and
ч	air	debris to minimize dust
	quality	4) There will be no open burning of construction / waste material at the site.
		5) All machinery will comply with Iraqi emission regulations, shall well
		maintained and serviced and there will be no excessive idling of construction
		vehicles at sites1) Construction noise will be limited to restricted times agreed to in the permit
	Increased	 During operations the engine covers of generators, air compressors and other
5	level of	powered mechanical equipment shall be closed, and equipment placed as far
	noise	away from residential areas as possible
		3) All the workers will be supplied with fully safety measures including earmuffs.
		1) Storm water drainage systems will be designed and constructed as not to silt, pollute, block or otherwise negatively impact natural streams, rivers, ponds
		and lakes; including during construction activities
	Disruptio	 Procedures will be put in place for rapid response to accidental spills of fuels,
	n of the	lubricants and other toxic or noxious substances, and for their recovery and
	runoff	appropriate disposal
6	water and	3) Construction vehicles and machinery will be washed only in designated areas
	drainage	where runoff will not pollute natural surface water bodies4) There will be no unregulated extraction of groundwater, nor uncontrolled
	systems	4) There will be no unregulated extraction of groundwater, nor uncontrolled discharge of process waters, cement slurries, or any other contaminated waters
	-	into the ground or adjacent streams or rivers;
		5) Contractor will obtain all necessary licenses and permits for water extraction
		and regulated discharge into the public wastewater system.

No.	Potential Impacts	Mitigation Measures
7	Deteriorat ion of groundwa ter quality	 The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in canalization and nearby streams and rivers Sewage from construction offices and rest areas will be collected in septic tanks and transferred by trucks to the nearest sewage treatment plant
8	Disruptio n of traffic	 In compliance with national regulations the Contractor will insure that the construction site is properly secured and construction related traffic regulated. The site will be clearly visible and the public warned of all potential hazards by signposting and barriers / fencing Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement If required, active traffic management by trained and visible staff at the site for safe passage for the public Ensuring safe and continuous access to all adjacent office facilities, shops and residences during construction
9	Deteriorat ion of health & safety conditions	 Provide adequate signage to prevent accidental falling into open areas Fencing of the work areas. The contractor should develop and implement "EHS Procedures". Include Construction OHS Plan (submitted and approved by the Resident Engineer) prior to the start of construction. Deployment of HSE procedures for the construction personnel (Annex 2 and Annex 4)
10	Social Impacts	 Reducing impacts on the community through community and neighbour engagement. In cases of where there are minority communities speaking a different language in the area or working on site, notices are printed in the common local language. Provide the proper GRM for handling complaints
11	Child labor and Gender Based Violence	 Rigid obligations and penalties will be added to the contractor contracts in order to warrantee no child labor exist in the subproject The PMT will oblige the contractor to keep a copy of IDs of laborers in order to monitor the hired staff (Chapter 11 of the 2015 Labor Law of Iraq sets the age for hazardous works 18 years old). Labor influx should also be managed by contractor and ensure Code of Conduct is introduced and applied to avoid impact on local community and provide mitigation measure for GBV risks The contractor also will be obliged to maintain daily attendance sheets in order to verify the attendance of workers in case of accidents and provide the injured persons with proper health insurance The code of conduct for workers/contractors should be introduced to prevent misconducts, including prevention of sexual harassment and gender based violence and also training and awareness rising for workers should be continued, through daily toolbox talks and other training opportunities.

PART D: MONITORING PLAN/ REHABILITATION PHASE

	Potential			Respor	sibility	Additional	Cost in USD
No.	Impacts	Mitigation Measures	Monitoring	Implement ation	Monitoring	Mitigation measures	Monitoring
1	General Conditions	 The local construction and environment inspectorates and communities have been notified of upcoming activities The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works) All legally required permits have been acquired for construction and/or rehabilitation The Contractor formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighbouring residents and environment. Workers' PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots) There is posted material indicating the nearest police station and hospital (with accident and emergency facilities). The contractor must take reasonable steps to prevent unauthorized people accessing the site. Prohibit the burning of materials on site. Provide a first aid kits in different places of the work site with the appropriate number of materials given the number of workers on site. The workers will be noted about the locations of the first aid kits. Providing extinguishers which distributed within the working area. If work involving the use of flammable materials is being carried out or any other material that might make any danger, stop people smoking and do not allow other work activities involving potential ignition sources to take place nearby. Providing site boundaries (if any) by installing suitable physical boundaries (barriers, tape or fence). Marking excavation holes with physical boundaries (barriers, tape or fence) 	Bi-monthly: record of all the licenses and permits obtained; Compliance with the HSE requirements	Contractor	Resident engineer PMT	No additional cost	No additional cost

	Potential			Respor	sibility	Additional	Cost in USD
No.	Impacts	Mitigation Measures	Monitoring	Implement ation	Monitoring	Mitigation measures	Monitoring
		 of openings and excavations. 16) Store building materials (such as pipes, manhole rings, and cement bags) so that they cannot topple or roll over. 17) Keep walkways and stairways free of tripping hazards such as trailing cables, building materials, and debris. 18) Everyone who works on any site must have access to adequate toilet and washing facilities, a place for preparing and consuming refreshments, and an area for storing and drying clothing and personal protective equipment (PPE). 19) Contractor to ensure PPE (personal protective equipment) is used by all workers on site. 20) Materials and equipment are tidily stacked, protected and covered where necessary. Additionally, there is adequate space for new materials to be stored in secured covered areas to avoid damage, theft, and to protect these items from weather conditions. 21) Scaffolding for work in elevated areas such as ceiling painting should comply with the OSHA "General Requirements for Scaffolds §1926.451" 22) Appropriate signposting of the sites will inform workers of key rules and regulations to follow. 					
2	Generation , storage, disposal of constructio n, hazard, and domestic waste	 Waste collection and disposal pathways and sites will be identified for all major waste types expected from rehabilitation activities. construction and demolition waste, if any, will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. Construction waste will be collected and disposed properly by licensed collectors to authorized area. The records of waste disposal will be maintained as proof for proper management as designed. Whenever feasible Contractor will reuse and recycle appropriate and viable materials Simple waste management plan for specific waste streams must be developed. General waste must be collected and transported to local council approved disposal sites. Food wastes must be collected, where practicable, considering health and hygiene issues, for disposal off-site 	Weekly site inspections and verifying the records on waste disposal	Contractor	Resident engineer PMT	No additional cost	No additional cost

	Potential			Responsibility		Additional Cost in USD	
No.	Impacts	Mitigation Measures	Monitoring	Implement ation	Monitoring	Mitigation measures	Monitoring
		 through licensed contractors. 9) Waste containers must be located at each worksite with sufficient numbers. 10) Storage, transport and handling of all chemicals must be conducted in accordance with all legislative requirements, through licensed contractors and in coordination with the local authority. 					
3	Handling of hazardous wastes and materials	 Hydrocarbons, including lubricants, which will be very limited and resulted just from machines/truck shall be collected for safe transport outside the site for recycling, transport or disposal at approved sites to be nominated by the Municipality and the Ministry of Health and Environment The site will be cleaned from all wastes frequently and wastes will be stored in safe containers until transported The waste shall be transported by specially licensed tankers and disposed of in the special areas away from the city to be determined by the paddies. Paints containing solvents, solvents or lead-based paints shall not be used as per requirements, instructions and coordination with the Ministry of Science and Technology 	Weekly site inspections and verifying the records on waste disposal	Contractor	Resident engineer PMT	No additional cost	No additional cost
4	Deteriorati on of air quality	 Demolition debris, excavated soil and aggregates shall be kept in controlled area and sprayed with water mist to reduce debris dust During pneumatic drilling or breaking of pavement and foundations dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site The surrounding environment (sidewalks, roads) shall be kept free of soil and debris to minimize dust There will be no open burning of construction / waste material at the site. All machinery will comply with Iraqi emission regulations, shall well maintained and serviced and there will be no excessive idling of construction vehicles at sites 	test, 1 time prior to construction to obtain the baseline Air quality parameters: PM10, PM2.5, SO2, NOx, CO, Ozone and HC Compliance with dust abatement measures	Contractor	Resident engineer PMT	Additional cost of water 1500	Testing done by accredited Laboratorie s. Additional cost 750 US \$Camera: 250 US \$
5	Increased level of noise	 Construction noise will be limited to restricted times agreed to in the permit All the workers will be supplied with fully safety measures including earmuffs. 	Weekly site inspection: Compliance with the time limitations;	Contractor	Resident engineer PMT	No additional cost	No additional cost

	Potential			Respor	nsibility	Additional Cost in USD	
No.	Impacts	Mitigation Measures	Monitoring	Implement ation	Monitoring	Mitigation measures	Monitoring
6	Disruption of the runoff water and drainage systems	 Storm water drainage systems will be designed and constructed as not to silt, pollute, block or otherwise negatively impact natural streams, rivers, ponds and lakes; including during construction activities Procedures will be put in place for rapid response to accidental spills of fuels, lubricants and other toxic or noxious substances, and for their recovery and appropriate disposal Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies There will be no unregulated extraction of groundwater, nor uncontrolled discharge of process waters, cement slurries, or any other contaminated waters into the ground or adjacent streams or rivers; Contractor will obtain all necessary licenses and permits for 	 Switching off the equipment not in use; Use of protective gear Weekly site inspection during rainy season; Bi-weekly site inspection during dry seasons: debris accumulation in water drainage areas; Alteration of water courses; Signs of spillage of hazardous materials Testing in case of 	Contractor	Resident engineer PMT	additional cost: contingenc y for removal of accidental hazardous spills 1000 US \$	No additional cost
7	Deteriorati on of groundwat er quality	 water extraction and regulated discharge into the public wastewater system. 1) The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in canalization and nearby streams and rivers 2) Sewage from construction offices and rest areas will be collected in septic tanks and transferred by trucks to the nearest sewage treatment plant 	accidental spills of hazardous materials Weekly site inspection during rainy season; Bi-weekly site inspection during dry seasons Water testing: in case of accidental spills of hazardous materials: pH, Turbidity, (EC), Color, Total Suspended Solids (TSS), (TDS), (COD), (BOD), Polychlorinated	Contractor	Resident engineer PMT	No additional cost	Testing done by Accredited Laboratorie s. Additional cost 750 US \$

	Potential			Responsibility		Additional Cost in USD	
No.	Impacts	Mitigation Measures	Monitoring	Implement ation	Monitoring	Mitigation measures	Monitoring
			Biphenyls (PCBs)				
8	Disruption of traffic	 In compliance with national regulations the Contractor will insure that the construction site is properly secured and construction related traffic regulated. The site will be clearly visible and the public warned of all potential hazards by signposting and barriers / fencing Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement If required, active traffic management by trained and visible staff at the site for safe passage for the public Ensuring safe and continuous access to all adjacent office facilities, shops and residences during construction 	Monthly site surveillance for the presence of fencing/barriers and warning signs, and traffic speed limitations	Contractor	Resident engineer PMT	No additional cost	No additional cost
9	Deteriorati on of health & safety conditions	 Provide adequate signage to prevent accidental falling into open areas Fencing of the work areas. The contractor should develop and implement "EHS Procedures". Include Construction OHS Plan (submitted and approved by the Resident Engineer) prior to the start of construction. Deployment of HSE procedures for the construction personnel (Annex 2 and Annex 4) 	Inspection and photo evidence Maintaining records of injuries and accidents with cause and location	Contractor	Resident engineer	No additional cost	No additional cost
10	 10 Social Impacts 1) Reducing impacts on the community through community and neighbour engagement. 2) In cases of where there are minority communities speaking a different language in the area or working on site, notices are printed in the common local language. 3) Provide the proper GRM for handling complaints 		Bi-weekly monitoring of response to complaints	Contractor	Resident engineer PMT	No additional cost	No additional cost
11	Child labor and Gender Based Violence	 Rigid obligations and penalties will be added to the contractor contracts in order to warrantee no child labor exist in the subproject The PMT will oblige the contractor to keep a copy of IDs of laborers in order to monitor the hired staff (Chapter 11 of the 2015 Labor Law of Iraq sets the age for hazardous works 18 	Inspection and Bi- weekly monitoring	Contractor	Resident engineer PMT	No additional cost	No additional cost

Potential Potential				Respor	nsibility	Additional Cost in USD	
No.	Impacts	Mitigation Measures	Monitoring	Implement ation	Monitoring	Mitigation measures	Monitoring
		 years old). 3) Labor influx should also be managed by contractor and ensure Code of Conduct is introduced and applied to avoid impact on local community and provide mitigation measure for GBV risks 4) The contractor also will be obliged to maintain daily attendance sheets in order to verify the attendance of workers in case of accidents and provide the injured persons with proper health insurance 5) The code of conduct for workers/contractors should be introduced to prevent misconducts, including prevention of sexual harassment and gender based violence and also training and awareness rising for workers should be continued, through daily toolbox talks and other training opportunities. 					
Expected additional mitigation costs: USD 2500							
		Expected monitoring costs	3:				USD 1750

PART D: MONITORING PLAN/ OPERATION PHASE

	Potential			Responsi	bility	Additiona	l Cost in USD
No.	Impacts	Mitigation Measures	Monitoring	Implementation	Monitoring	Mitigation measures	Monitoring
1	Generation, storage, disposal of construction and domestic waste	 Use of non-toxic paints for repairs of the buildings; Storage of hazardous materials used for repairs in sealed containers; Disposal of waste to authorized disposal sites; Avoid disposal of effluent into the river. Slurry produced from the sand filters backwash and it is just wet mud and it can be used as soil in municipal parks and green areas since it does not contain any pollutants (originates from the river). 	Monthly surveillance; Maintaining records of quantities of waste and location of its disposal	Operator	Water Directorate	No additional cost	No additional cost
2	Deterioration of air quality	 3) Timely disposal of effluent from sanitary facilities in office buildings; 4) Timely disposal of domestic waste 	during the dry season: Air quality Parameters: PM10, PM2.5, SO2, NOx, CO, Ozone and HC		Water Directorate	No additional cost	1500 US \$ for air quality monitoring
3	Increased level of noise	maintenance and repair activities; 2) The operational period for the probable noisy	Ensure the noise levels are within the acceptable	Operator	Water Directorate	No additional cost	No additional cost

	Potential			Responsi	bility	Additional Cost in USD		
No.	Impacts	Mitigation Measures	Monitoring	Implementation	Monitoring	Mitigation measures	Monitoring	
4	Damage to fauna, flora	 Adequate waste disposal; Re-vegetation with the plants native to the area 	Monthly inspection: • Condition of the manholes and ditches; • Level of re- vegetation;	Operator	Water Directorate	No additional cost	No additional cost	
5	Deterioration of groundwater quality	 Timely and adequate disposal of debris generated by maintenance activities and solid and liquid waste from office building; 	hazardous materials:	Operator	Water Directorate	No additional cost	500 US \$ for water testing.	
6	Drinking water quality issues during operation	 Regular checking for the condition of the storm water and sewerage networks for the presence of leaking; Adequate waste disposal; Timely draining of ponds to avoid breeding of insects 	Regular water quality testing	Operator	Water Directorate	No additional cost	No additional cost	
7	Deterioration of health & safety conditions	 Provision and use of personal protective equipment to workers Installing warning signs. "EHS Procedures" should be developed and implemented. Fencing the site of purification plant Control unauthorized persons' access to the site Place warning signs in the right place in dangerous places 	 Inspection and photo evidence Maintaining records of injuries and accidents with cause and location 	Operator	Water Directorate	No additional cost	No additional cost	

No. Impacts Mitigation Measures Monitoring Implementation Mitigation measures 7) Carry out regular examination of equipment by highly qualified staff, as well as make regular safety audits, 8) Provide first aid and safety training to construction staff 9) Training of staff. 10) Providing the workers with full PPEs 11) Prevent using of empty containers for storage of other materials 12) Disposing of empty data sheet (MSDS) on each chemical container 11) Providing the lab. with all OHS requirements including first aid kits, special frie extinguishers, etc. 15) Implement disinfecting of water supply pipelines with chlorine according to technical specifications 16) Provide appropriate technical means 16) Provide appropriate technical means		Potential			Responsi	bility	Additional	Cost in USD
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technical means			-					
			,					
17) Install chlorine emission								
sensors alert								

	Potential			Responsi	bility	Additiona	Additional Cost in USD	
No.	Impacts	Mitigation Measures	Monitoring	Implementation	Monitoring	Mitigation measures	Monitoring	
8	Child labor and Gender Based Violence	 The Water directorate will oblige the operator to keep a copy of IDs of laborers in order to monitor the hired staff (Chapter 11 of the 2015 Labor Law of Iraq sets the age for hazardous works 18 years old). Labor influx should also be managed by contractor and ensure Code of Conduct is introduced and applied to avoid impact on local community and provide mitigation measure for GBV risks The water authority also will be obliged to maintain daily attendance sheets in order to verify the attendance of workers in case of accidents and provide the injured persons with proper health insurance. The code of conduct for workers should be introduced to prevent misconducts, including prevention of sexual harassment and gender based violence and also training and awareness rising for workers should be continued, through daily toolbox talks and other training opportunities. 	Inspection and Bi- weekly monitoring	Operator	Water Directorate	No additional cost	No additional cost	
		Expected additional	mitigation costs:			No addi	No additional cost	
		Expected monit	toring costs:			USI	D 2,000	

Annexes:

Annex 1: Drinking Water Quality Standard:

Characteristic	Maximum Allowable Limit
Natural Characte	
Color	10 units
Turbidity (NTU)	5 units
Smell	acceptable
Taste	acceptable
pH value	6.5-8.5
Chemical Characteris	stics (mg/L)
Arsenic	0.01
Cadmium	0.003
Chrome	0.05
Cyanide	0.02
Fluoride	1
Lead	0.01
Mercury	0.001
Nitrate (NO3)	50
Nitrite (NO2)	3
Selenium	0.01
Aluminium	0.2
Chloride (Cl	250
Copper	1
Total Hardness (as CaCO3)	500
Iron	Iron 0.3
Manganese	0.1
Sodium	200
T.D.S	1000
Sulphate (SO4)	250
Zinc	3
Calcium	50
Magnesium	50
Barium	0.7
Nickel	0.02
Dissolved H.C	H.C 0.01
Carbon-chloroform Extracted	0.3
Industrial Detergents	0.3
Phenolic compounds	0.002
Biological Charac	teristics
Coliform (100 ml after 24hr at 35°C)	<1.1
E.coli (100 ml after 24hr at 44°C)	<1.1
Escherichia coli (250 ml after 24hr at35°C)	Zero
Plate count (1ml after 24hr at 35°C)	Zero
Pesticides (mg	
Organic chloro (chlorinated)	0.7
Organic Phosphorous	0.000005
Multi chloro-diphenolic	0.001
Radiation (Becque	
Total Alfa radiation	0.1
1 otul 1 liiu luululoli	
Total Beta radiation	1

Air Quality Standard

Pollutant	Concentration	Averaging Time
00	10 ppm	8 hours
СО	35 ppm	1 hour
	0.1 ppm	1 hour
SO2	0.04 ppm	24 hours
	0.018 ppm	1 year
NO2	0.05 ppm	24 hours
NOZ	0.04 ppm	1 year
03	0.06 ppm	1 hour
PM10	150 µg/m3	24 hours
	65 μg/m3	24 hours
PM2.5	15 μg/m3	1 year
	350 µg/m3	24 hours
Total Suspended Particles	150 µg/m3	1 year
	10 t/km2/month -residential zone	30 days
Flling Dust	20 t/km2/month - industrial	30 days
Hydrocarbons	0.24 ppm	3 hours
	2 µg/m3	24 hours
Pb	1.5 μg/m3	3 months
	1 µg/m3	1 year
Benzene	0.003 µg/m3	1 year
Dioxin	0.6 pico g/m3	1 year

Annex 2:

Occupational Health's' and Safety

The objectives of occupational health and safety (OHS) procedures plan that should be applied for the project are to:

- 1. Develop, in the workplace, a collaborative approach to managing Occupational health and Safety between management and workers.
- 2. Provide and maintain safe working procedures and operations.
- 3. Ensure awareness of all potential work related risks and hazards and to develop preventive strategies against these risks and hazard.
- 4. Provide appropriate training to all concerned to work safely and effectively.
- 5. Maintain a constant and continuing interest in the improvement of occupational health and safety performance and to provide the required resources necessary for the implementation and maintenance of the OHS plan.

For the projects of the Rehabilitation of Civil Works Project, the occupational health and safety primarily focuses on work equipment and protective gear. The following section provides guidelines for work equipment, and safety and health signs.

Safety Guidelines for Work Equipment

- It is the Contractor's obligation that every possible measure is taken to ensure the safety of the work equipment made available to workers. During the selection of the work equipment the employer shall pay attention to the specific working conditions, which exist at the workplace, especially in relation to safety and health of workers. A brief list of work equipment safety issues is given below:
- 1. Work equipment control devices which affect safety must be clearly visible and identifiable and appropriately marked where necessary.
- 2. Work equipment presenting hazards due to emissions of gas, vapor, liquid or dust must be fitted with appropriate containment and/or extraction devices near the sources of the hazard.
- 3. Where there is a risk of mechanical contact with moving parts of work equipment, which could lead to accidents, those parts must be provided with guards or devices to prevent access to danger zones or to halt movements of dangerous parts before the danger zones are reached.
- 4. Work equipment may be used only for operations and under conditions for which it is appropriate.
- 5. Work equipment must bear the warnings and markings essential to ensure the safety of workers.
- 6. All work equipment must be appropriate for protecting workers against the risk of the work equipment catching fire or overheating, or of discharges of gas, dust, liquid, vapor or other substances produced, used or stored in the work equipment.
- 7. All work equipment must be appropriate for preventing the risk of explosion of the work equipment or of substances produced, used or stored in the work equipment.
- 8. All work equipment must be appropriate for protecting exposed workers against the risk of direct or indirect contact with electricity.
- 9. Mobile work equipment such as Bulldozer or Road Rollers with ride-on workers must be designed to restrict, under actual conditions of use, the risks arising from work equipment roll-over.

- 10. Fork-lift trucks carrying one or more workers must be adapted or equipped to limit the risk of the fork-lift truck overturning.
- 11. Self-propelled work equipment, such percussion drills, which may, when in motion, engender risks for persons must have facilities for unauthorized start-up.
- 12. Machinery for lifting loads, such as Crane, must be clearly marked to indicate its nominal load, and must where appropriate be fitted with a load plate giving the nominal load for each configuration of the machinery.
- 13. Work equipment must be erected or dismantled under safe conditions, in particular observing any instructions, which may have been furnished by the manufacturer.
- 14. First aid facilities must be available on site at all times.
- 15. All equipment is maintained in a safe operating condition.
- 16. Personal Protective Equipment (PPE) available for all construction staff. Helmets and safety shoes must be worn at all times and other PPE worn were necessary i.e. dust masks, ear plugs etc.
- 17. Adequate warning signs of hazardous working areas.
- 18. Emergency numbers for local police and fire department will be placed in a prominent area.
- 19. Firefighting equipment will be placed in prominent positions across the site where it is easily accessible. This includes fire extinguishers, a fire blanket as well as a water tank.
- 20. No open fires will be allowed on site.

Annex 3: Public Consultation

Questionnaire Form in English:

Nan	ne of the project:		
Loc	ation of the project:		
Nan	ne of the respondent:		
Occ	upation of the respondent:		
Dat	e of visit:		
1	In your opinion, would the rehabilitation of the project have positive impact on the residents of the area?	yes	no
2	Are there any claims on private land ownership in the project area?	yes	no
3	Would there be any damages to income generating crops, trees, and vegetation due to the rehabilitation activities?	yes	no
4	Would there be any losses of income of local residents due to the rehabilitation activities?	yes	no
5	Would there be any damages whether permanent or temporary which would affect the livelihood of the residents due to the rehabilitation activities?	yes	no
6	Would the rehabilitation activities require relocation of the residents of the area, whether permanent or temporary?	yes	no
7	Is there any usage by local residents of the facilities or land of the facilities by the local residents?	yes	no
8	In your opinion, would there be any negative social impacts due to the rehabilitation activities?	yes	no
9	Would there be any changes to the demographics or social structure in the project area induced by the rehabilitation activities?	yes	no
10	Is there any need for warning and directional signage during the rehabilitation activities?	yes	no
Nan	ne and signature of the interviewer:	<u> </u>	<u> </u>

Minutes of meeting for the public consultation

اسم القرية : عزيز بلد/ قريه البوقراج موقع القرية ad ais/a/ 2 1/ ster in 2/ 4/ de bo أولويات القرية : ١- تأصل محم الماء الكام الوره - انشاء مركز على فرع في لناصم أسباب اختيار المشاريع : ۱- الأطاهو ووجور هو عاره عضمه ٥٠ همات والله عضمه الدخولات م ٥٧ همات ولا تقد عد حاليا" الخ معاكر بالكلور (ار الت)، ترجب للولق وترها وهذا بإرب الم في في في ما على العراك م . ٥- حالي المنطق لا تهتداد اي مرد حمي الوسة حمي ومامو مو ديداره من كرمانا ت عدد 2 عكر عامل و متم تعد الرحر و المصاحق 1) مستق ملد العام ، إر كامس المكومين وصف المشاريع : ۱- تأصل معد الماء (صخد المعي و كار في للحرّانا = ، درميز معخف غسل حدد / ا ومنى = ديم واطئ عدد/ ، ومعنه ديم والي عدد/ ، مكاف الاي ا المطلوب (تتعمّل المحفة مشكل كامل ٥- استا و مرد صحى على ما م ٢٥٠ م عمي المتحق العمل استا و بنايه من طابق وا حد ومتحما (۱۱ عزم (عزم الطب ، ورضحاد ، حد له، ، ورف اللقاحات عدفر ، لمب استان ، بران تذار ، الحداره) بالاعاد () عام محيد عد /) و مرار در السيا، والسيا، والارامي .

التوقيع الاسم التسلسل شاكر الراهم احمد SA -1 کاله نقیلی که لئم Sh C - 5 ٢ - قدم المحد عبد اللم ٥٠ عرتان جسني اسي عل P میکان مرهون معن مرا کر ایر م - 1 تابت ايراهيم المحد \bigcirc - ^ . ۱ - باسن حسن عدالل ۱۱- على جيب عرد/ تاجة دَزر بم ۱۰ منزر عرب المفرعل كال

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Photos during the public consultation



Arabic Questionnaire with Responses

			(أستبيان)	
		(ā	م المشروع: تأصل محمل ما مر (الد ا	اس
			من منان ست كر ابراهيم	NI
	P	5	م. 🛶 انڈ نئر 🗆 انڈ	
			ت جربة	
الملاحضات		1		
الملاحصات	كلا	نعم	السوال	ح
	1	/	هل تعتقد أن عملية أعمار المشروع لها اثار أيجابية من الناحية الاجتماعية بالنسبة للسكان القاطنين في المناطق	-
		1	التاجية الاجتماعية بالنسبة للسحان العاملين في المسحق	- 1
		-	القريبة من المشروع. هل هنالك ادعاءات او مطالبات من قبل السكان	1000
	/		المحلبين بعاندية الأرض المقام عليها المشروع؟	۲
			يسبب اعمال الاعمار ، هل هذالك عمليات رفع	
	/		لمحاصيل زراعية او اشجار او اي غطاء نباتي تعود	٣
			عانديته لمواطنين او السكان المحليين؟	A.
	/		هل تضررت مصالح المواطنين القاطنين بالقرب من	٤
	-		المشروع بسبب اعمال الاعمار؟ هل هنالك اي بنى تحتية دانمية او مؤقتة تلعب دورا	
		/	هن هناك اي بني تحديد داميد او موت من ورز	0
	/		بعملية اعمار المشروع؟	
			هل ان اعمال اعمار المشروع ستتسبب باجراءات	-
	/		اعادة توطين لشخص او لاشخاص الى مناطق جديدة؟	٦
	/		هل تمت عملية استخدام ارض المشروع من قبل	Y
	1	-	السكان المحليين، علما ان الارض تابعة للدولة؟	
	1		هل تتوقع وجود تاثيرات أجتماعية سلبية بالمنطقة	٨
			نتيجة اعمال المشروع؟ هل هناك تغيير ديموغرافي او ضرر في النسيج	TIME
	/		هن هات لغيير ديموغرادي أو تعترر في المسيح. الاجتماعي نتيجة عمليات الاعمار؟	٩
2135 N. 21 21 22			هل يحتاج المواطنون القريبون من المشروع لوضع	-
	/		علامات تحذيرية او استدلالات لزيادة معدلات الامان؟	1.

			(أستبيان)	
			المشروع: إمادة تأصل ما وعزيز بد	
			م: عرب محود الراهيم	
	P	ى	نس: ذکر 🗆 انڈ	
			ينة: رينم بيرك	
				-
الملاحضات	كلا	نعم		F
			هل تعتقد ان عملية أعمار المشروع لها اثار أيجابية من	İ
		R		
		-	القريبة من المشروع. هل هنالك ادعاءات او مطالبات من قبل السكان	and the second second
	NG		هل هالك العاءات أو مصابك من بن المسل	No. of Lot, No.
	1		المحليين بعدي الاركس محم منه موالك عمليات رفع	ALC: NOT THE OWNER.
	3		لمحاصيل زراعية او اشجار او اي غطاء نباتي تعود	
			عانديته لمواطنين او السكان المحليين؟	1.195.0
	yes		هل تضررت مصالح المواطنين القاطنين بالقرب من	
	1		المشروع بسبب اعمال الاعمار؟ هل هنالك اي بنى تحتية دائمية او مؤقتة تلعب دورا	COLUMN TWO
	de		اساسيا في النشاطات الحيوية اليومية للسكان ستتاثر	
			يعملية اعمار المشروع؟	
	JS		ها، إن إعمال إعمار المشروع ستتسبب باجراءات	ALC: NO.
		_	اعادة توطين لشخص او لاشخاص الى مناطق جديدة؟	
	JS		هل تمت عملية استخدام ارض المشروع من قبل السكان المحليين، علما ان الارض تابعة للدولة؟	
	10		السكان المكتبين، علمه ال الرك عبد مود من المنطقة هل تتوقع وجود تاثيرات اجتماعية سلبية بالمنطقة	
	JS		نتيجة اعمال المشروع؟	
	as		هل هناك تغيير ديموغرافي او ضرر في النسيج	
	-		الاجتماعي نتيجة عمليات الاعمار؟	
	B		هل يحتاج المواطنون القريبون من المشروع لوضع	
			علامات تحذيرية او استدلالات لزيادة معدلات الامان؟	

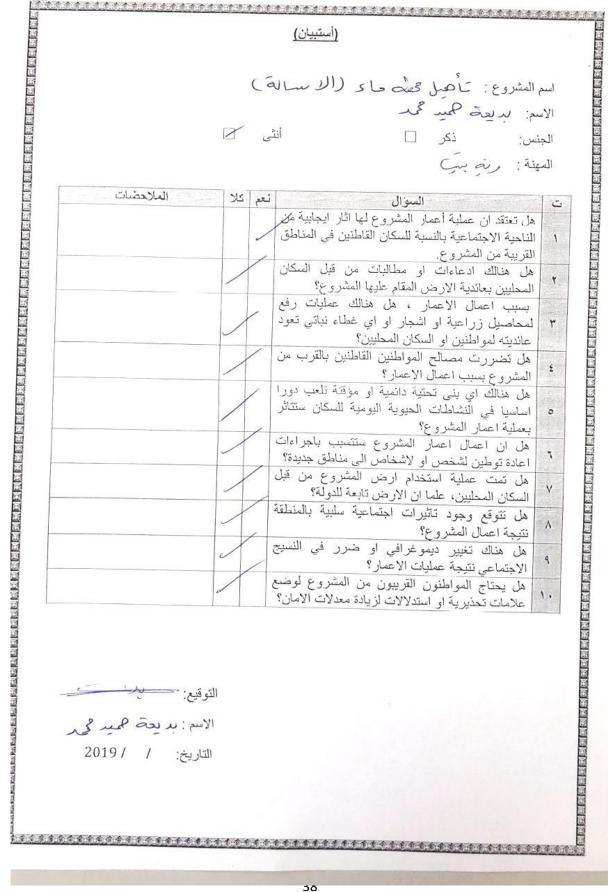
(أستبيان) اسم المشروع: تأصل محط حار (الرساله) الاسم: تعرق عجد صالع الجنس: ذكر 🗌 Ø أنثى المهنة: رية س السؤال -الملاحضات 25 نعم هل تعتقد ان عملية أعمار المشروع لها اثار ايجابية من الناحية الاجتماعية بالنسبة للسكان القاطنين في المناطق 1 القريبة من المشروع. هل هذالك ادعاءات او مطالبات من قبل السكان ۲ المحليين بعاندية الارض المقام عليها المشروع؟ بسبب اعمال الاعمار ، هل هذالك عمليات رفع ٣ لمحاصيل زراعية او اشجار او اي غطاء نباتي تعود عائديته لمواطنين او السكان المحليين؟ هل تضررت مصالح المواطنين القاطنين بالقرب من £ المشروع بسبب اعمال الاعمار؟ هل هنالك اي بنى تحتية دائمية او مؤقتة تلعب دورا اساسيا في النشاطات الحيوية اليومية للسكان ستتاثر 0 بعملية اعمار المشروع؟ هل ان اعمال اعمار المشروع ستتسبب باجراءات 7 اعادة توطين لشخص او لاشخاص الى مناطق جديدة؟ هل تمت عملية استخدام ارض المشروع من قبل ٧ السكان المحليين، علما ان الارض تابعة للدولة ؟ هل تتوقع وجود تاثيرات اجتماعية سلبية بالمنطقة ٨ نتيجة اعمال المشروع؟ هل هناك تغيير ديموغرافي او ضرر في النسيج ٩ الاجتماعي نتيجة عمليات الاعمار؟ هل يحتاج المواطنون القريبون من المشروع لوضع 1. علامات تحذيرية او استدلالات لزيادة معدلات الامان؟ التوقيع: الاسم: فعره في جداد التاريخ: / / 2019

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뉀킍셼뒚냋쀑쒭왞뺥쿿뭑옍곍뤅웩죑쏊쐺셵뙞쭸뭑둲녟뭑콎쪉믬둲볞쒭훬븮쒭븮쒭붱븮볛녩쒏쀭볋볞볋꼜볋볞꼜쒏녴볞볞븮놰쵌쎬볛휈흾볞혰롎햜븮븮졠븮븮햜쏊햜쏊햜쏊븮놰탒븮슻슻탒 1: اسم المشروع: علم مل محمد الماء (الدالة) الاسم: سَاكَر (براهم (عهر الجنس: ذكر ال المهنة: محسيح عشيرة أنثى الملاحضات كلا السوال 5 نعم هل تعتقد ان عملية أعمار المشروع لها اثار ايجابية من الناحية الاجتماعية بالنسبة للسكان القاطنين في المناطق 1 القريبة من المشروع. هل هذالك ادعاءات او مطالبات من قبل السكان ۲ U المطيين بعائدية الأرض المقام عليها المشروع؟ بسبب اعمال الاعمار ، هل هذالك عمليات رفع ٣ لمحاصيل زراعية او اشجار او اي غطاء نباتي تعود V عانديته لمواطنين او السكان المحليين؟ £ هل تضررت مصالح المواطنين القاطنين بالقرب من المشروع بسبب اعمال الاعمار؟ هل هنالك اي بني تحتية دائمية او مؤقتة تلعب دورا 0 اساسيا في النشاطات الحيوية اليومية للسكان ستتاثر 현대법법법원(관련) 위원(예) 위원(예) 위원(위원) 위원(위원) 위원(이) 위원(위원) 위원 위원 위원 이 이 위원(위원) 위원 이 이 이 위원이 가지 않는다. بعملية اعمار المشروع؟ هل ان اعمال اعمار المشروع ستتسبب باجراءات ٦ V اعادة توطين لشخص او لاشخاص الى مناطق جديدة؟ هل تمت عملية استخدام ارض المشروع من قبل Ý V السكان المحليين، علما ان الارض تابعة للدولة؟ <u>م</u> هل تتوقع وجود تاثيرات اجتماعية سلبية بالمنطقة V نتيجة اعمال المشروع؟ هل هناك تغيير ديموغرافي او ضرر في النسيج الاجتماعي نتيجة عمليات الاعمار؟ V هل يحتاج المواطنون القريبون من المشروع لوضع علامات تحذيرية او استدلالات لزيادة معدلات الامان؟ التوقيع: شاكر الراجم المحر الاسم : الملكم التاريخ: ١ /١٠ / 2019

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꿗뎶떖볞꼜껲뀀쒭꼜쁥꼜볞곜쒭꼜꼜곜곜꼜꼜뭑곜궳줮뭑첏셵첹궠웩옜붲눩흕궠쒆폟뭑쒅폟뭑붱볋쳸볋궑렮뤊놰뭑뭑볋칊쭪쏊쀍쏊쏊쏊쏊쏊쏊쏊쏊쏊쏊쏊쏊쏊쏊곜곜놰곜쏊곜쏊끹곜쏊곜쏊곜 챓딦렖땹븮꿗몓쁥뚔뫸혦몓뭑뭑룄끸뭑뭑뭑뭑삨쀸볋놼썦붱뒻뿾볋봕쏊붱롎붱좱봌첽뿺멹쭴롎덹쏹쒏븮궳훥몡쒉뭑왥붱왥븮곜쏊묝뭵썘붱뼰멷뭑윂휈뮏쩭혦믢홵롎븮췚췚킕뭵뇄빝뭑놰슻놰놧놰턗먨 (أستبيان) اسم المشروع: تأصل محل مار (الاسالة) الاسم: صحب ممي تحمد الجنس: ذكر الم المهنة: رية سي انٹی ک السوال ū الملاحضات نعم كلا هل تعتقد ان عملية أعمار المشروع لها اثار ايجابية من الناحية الاجتماعية بالنسبة للسكان القاطنين في المناطق 1 القريبة من المشروع. هل هنالك ادعاءات او مطالبات من قبل السكان ۲ المحليين بعائدية الارض المقام عليها المشر وع؟ بسبب اعمال الاعمار ، هل هنالك عمليات رفع ٣ لمحاصيل زراعية او اشجار او اي غطاء نباتي تعود عائديته لمواطنين او السكان المحليين؟ هل تضررت مصالح المواطنين القاطنين بالقرب من ٤ المشروع بسبب اعمال الاعمار؟ هل هنالك اي بنى تحتية دانمية او مؤقنة نلعب دورا اساسيا في النشاطات الحيوية اليومية للسكان ستتاثر 0 بعملية اعمار المشروع؟ هل أن أعمال أعمار المشروع ستتسبب باجراءات ٦ اعادة توطين لشخص او لاشخاص الى مناطق جديدة ? هل تمت عملية استخدام ارض المشروع من قبل ۷ السكان المحليين، علما ان الارض تابعة للدولة؟ هل تتوقع وجود تاثيرات اجتماعية سلبية بالمنطقة ٨ نتيجة اعمال المشروع؟ هل هناك تغيير ديموغرافي او ضرر في النسيج الاجتماعي نتيجة عمليات الاعمار؟ 9 هل يحتاج المواطنون القريبون من المشروع لوضع 1. علامات تحذيرية او استدلالات لزيادة معدلات الإمان؟ التوقيع: الاسم: محمد محمد فحر التاريخ: / / 2019 各有你有意意意意中,在在在在在市中在市中的东方有意意在有意意。



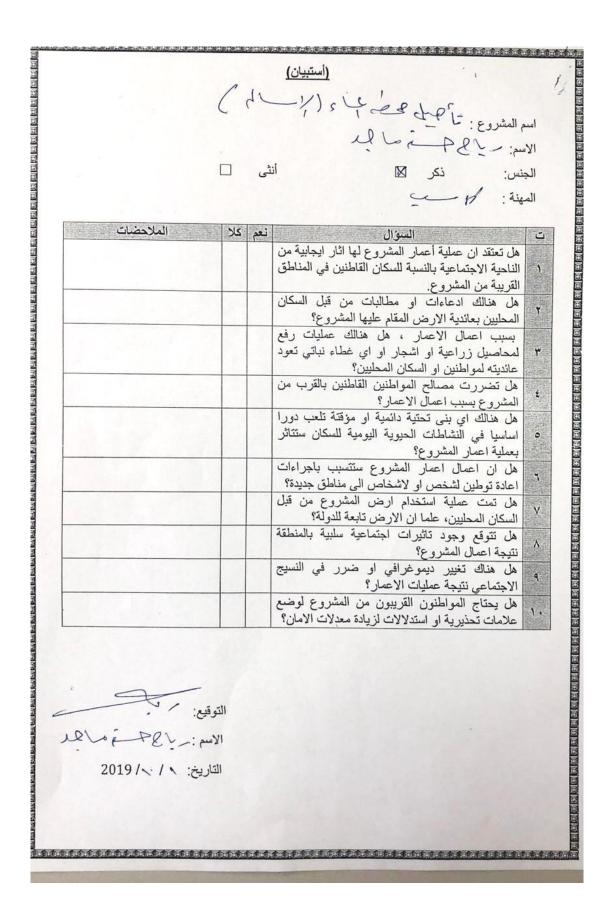
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뙨켁섿싧셒텢썭촆뽜뿯씱쏊쒅셵셵촆쟹볛뭑쒃줮숾풗묝콓렖쵔꿤뒛둰쏊졙쏊혦쏊쏊쏊쏊쏊쏊쏊쏊쏊 (أستبيان) اسم المشروع: مأ ممل محمد الماء (الحسالة) الاسم: با مر مبا رمصوب معرف الجنس: ذكر 🗹 أنثى الجنس: المهنة : الملاحضات 뉀놰궻댒쳁뛗붼휁쾺쳌옗퀒렠쒏붱뵆뙞뛎뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑뭑붱**뽜**뤙쒭햰**붱**쒉뼺쒡뼺뼺쒡휀줮퉨쥊뒢줮뤙졠졠둯홵됮쐯뤙뤙붱븮붱삠죕끹끹_쁙 21 نعم السبوال ت هل تعتقد أن عملية أعمار المشروع لها اثار أيجابية من V الناحية الاجتماعية بالنسبة للسكان القاطنين في المناطق القريبة من المشروع. هل هنالك ادعاءات او مطالبات من قبل السكان 0 ۲ المحلبين بعائدية الأرض المقام عليها المشروع؟ يسبب اعمال الاعمار ، هل هذالك عمليات رفع V لمحاصيل زراعية او اشجار او اي غطاء نباتي تعود ٣ عائديته لمواطنين او السكان المحليين؟ هل تضررت مصالح المواطنين القاطنين بالقرب من V ź المشروع بسبب اعمال الاعمار؟ هل هنالك اي بنى تحتية دائمية او مؤفَّتة تلعب دورا . V اساسيا في النشاطات الحيوية اليومية للسكان ستتاثر بعملية اعمار المشروع؟ هل ان اعمال اعمار المشروع ستتسبب باجراءات V ٦ اعادة توطين لشخص او لاشخاص الى مناطق جديدة؟ هل تمت عملية استخدام ارض المشروع من قبل ۷ السكان المحليين، علما ان الارض تابعة للدولة؟ هل تتوقع وجود تاثيرات اجتماعية سلبية بالمنطقة ٨ نتيجة اعمال المشروع؟ هل هناك تغيير ديموغرافي او ضرر في النسيج ٩ الاجتماعي نتيجة عمليات الاعمار؟ هل يحتاج المواطنون القريبون من المشروع لوضع علامات تحذيرية او استدلالات لزيادة معدلات الامان؟ التوقيع: WTL الاسم : . 2019/ / التاريخ:

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(أستبيان) اسم المشروع: إنادة تأصيل مشروع ماء بزرز M الاسم: عار مبي محمد الجنس: ذكر اللهانة: مواقع الملاحضات كلا نعم السوال ū هل تعتقد أن عملية أعمار المشروع لها اثار أيجابية من الناحية الاجتماعية بالنسبة للسكان القاطنين في المناطق 1 القريبة من المشروع. هل هذالك ادعاءات او مطالبات من قبل السكان ۲ V المحليين بعائدية الارض المقام عليها المشروع؟ بسبب اعمال الاعمار ، هل هنالك عمليات رفع لمحاصيل زراعية او أشجار او اي غطاء نباتي تعود ٣ عانديته لمواطنين او السكان المحليين؟ هل تضررت مصالح المواطنين القاطنين بالقرب من ٤ المشروع بسبب اعمال الاعمار؟ هل هنالك اي بني تحتية دانمية او مؤقنة تلعب دورا اساسيا في النشاطات الحيوية اليومية للسكان ستتاثر 0 بعملية اعمار المشروع؟ هل ان اعمال اعمار المشروع ستتسبب باجراءات ٦ اعادة توطين لشخص او لاشخاص الى مناطق جديدة؟ هل تمت عملية استخدام ارض المشروع من قبل ۷ السكان المحليين، علما ان الإرض تابعة للدولة؟ هل تتوقع وجود تاثيرات اجتماعية سلبية بالمنطقة ٨ نتيجة اعمال المشروع؟ هل هناك تغيير ديموغرافي او ضرر في النسيج ٩ الاجتماعي نتيجة عمليات الاعمار؟ هل يحتاج المواطنون القريبون من المشروع لوضع علامات تحذيرية او استدلالات لزيادة معدلات الامان؟ التوقيع: الاسم: عامي حبيب محود التاريخ: \ / / / 2019 44

Annex 4: Mitigation Measures during Rehabilitation Phase

<u>Air quality:</u>

Vehicle emissions

- Contractor to keep vehicles and machinery properly operated and maintained.
- Contractor to minimize unnecessary vehicle idling.
- Switch off any engine as soon as it is not used.

Dust

- Minimize dust from materials (such as sand, cement) and construction activities by using covers, storage, control equipment, and increasing moisture content.
- Prepare concrete before going to the site to avoid movement of materials (gravel, sand, cement) if possible
- Minimize dust from vehicle movements, using water sprays or appropriate.
- Avoid the burning of materials on site.
- Switch off any engine as soon as it is not used.

Hazardous Emissions

- Avoid storage of hazardous materials in open areas without proper covering;
- Provide adequate ventilation for work areas

Noise and vibration management

- Plan for all loud activities for times that will result in the least disturbance to the local community. Work hours should be clearly established, e.g. 0700 2000
- Avoid or minimize transport through community areas.
- Switch off any engine as soon as it is not used.
- Contractor to minimize unnecessary vehicle idling
- Muffling of the equipment;
- Additional health check-ups for personnel handling the vibrating and noisy equipment

Water run-off management (drainage plan)

- In the event that sediment is transported onto the road it should be cleaned using a street sweeper or by physically sweeping the street in cases of small areas to ensure the sediment is not washed into the drainage system with water runoff.
- Raw materials used in construction, which can be carried by water runoff, must be located and stored away from paths for water runoff.
- Where possible or appropriate, schedule works to avoid heavy rainfall periods (i.e. during the dry season) and modify activities during extreme rainfall and high winds.
- Wastewater from temporary construction camp should be adequately handled and should not be discharged to watercourses

<u>Soil</u>

- Disposal of contaminated soil by truck to nearest authorized dumping areas.
- If surface drainage is disturbing the construction process, utilizing ditches, dikes and/or sandbags to divert this drainage from entering excavations.

• Site engineer is to monitor weather on a daily basis. No construction activities to be undertaken in strong winds or rains.

Solid and Hazardous waste:

- Keeping the site clean and tidy:
- a. Ensure there is no loose materials or debris lying around the site including the perimeter; and

b. Vehicles are regularly checked for cleanliness (general aspect and making sure no leaks are occurring)

- Burning of waste is prohibited
- Reducing construction waste related to on-site construction and off-site manufacture or fabrication.
- Reusing the material on site (in situ or for new applications) whenever it is possible
- Monitoring the amount of site construction waste created to make sure it does not affect the surrounding and the adjacent areas.
 - Waste is not blocking pathways
 - Construction waste will be gathered in a specific zone of the construction site
- Contractor to evacuate any construction waste to nearest authorized dumping site and on a regular basis to avoid accumulation
- All staff will avoid littering.
- Provide the septic tank for the residential effluent from the construction camp to be disposed regularly at the designated areas.

Hazardous materials:

- Provide adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids.
- Use impervious surfaces for refuelling areas and other fluid transfer areas.
- Provide portable spill containment and clean-up equipment on site, and train staff in the safe use of it.
- Provide adequate sanitation facilities serving all workers (mentioned in HSE).
- Paints with toxic ingredients or solvents or lead-based paints will not be used
- All waste should be deposed through licensed haulers/transporters to licensed and regulated landfill sites appropriate to the type of waste generated (e.g. solid, household, hazardous)

Biodiversity:

- Provide training to the construction crew on the impact of disturbance and damage to habitats;
- Monitor the construction crew and provide punitive measures for illegal hunting and/or fishing;
- Provide the crew with fuel for cooking to avoid burning of natural materials;
- Apply waste management plan
- Strictly prohibited disposal of any of the construction materials into the river

Topography and surface drainage

- Storage areas for construction materials should be located at sites that do not permit direct runoff into watercourses and are on land sloping at less than 1.5 %.
- Time limitation on works during rainy events;

- Regular maintenance of the equipment and machinery to avoid spillage of hazardous materials;
- Re-vegetation of cleared areas
- Timely and adequate disposal of liquid and solid waste in authorized areas.

<u>Traffic</u>

- Set up warning signs in the workplace:
 - All safe footpaths are marked; construction materials are not blocking pathways
 - Site entrances and exits are clearly marked for visitors and delivery drivers to see; and
 - If present, site reception is clearly signposted OR all visitors are escorted to the reception.
- Designating specific parking areas for workers' and visitors' vehicles outside the construction area.
- Avoid or minimize transport through community areas.
- Traffic management system and staff training, especially for site access and near-site heavy traffic.
- Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement

Health & safety

- Provide adequate signage to prevent accidental falling into open areas
- Fencing of the work areas

Health and safety environment (HSE)

- There is posted material indicating the nearest police station and hospital (with accident and emergency facilities).
- The contractor must take reasonable steps to prevent unauthorized people accessing the site.
- Training on handling of UXO/ERW
- Avoid the burning of materials on site.
- Provide a first aid kits in different places of the work site with the appropriate number of materials given the number of workers on site. The locations of the first aid kits will be provided to all workers.
- Providing extinguishers on work site.
- If work involving the use of flammable materials is being carried out, stop people smoking and do not allow other work activities involving potential ignition sources to take place nearby.
- Providing site boundaries by installing suitable physical boundaries (barriers, tape or fence).
- Marking excavation holes with physical boundaries (barriers, tape or fence)
- The contractor should put up barriers or covers in the area of openings and excavations.
- Store building materials (such as pipes, manhole rings, and cement bags) so that they cannot topple or roll over.
- Keep walkways and stairways free of tripping hazards such as trailing cables, building materials, and debris.
- Everyone who works on any site must have access to drinking water, adequate toilet and washing facilities, a place for preparing and consuming refreshments, and an area for storing and drying clothing and personal protective equipment (PPE).

- Contractor to ensure PPE (personal protective equipment) is used by all workers on site. Basic PPE should be protective boots, hard hats, and reflective vests. Other PPE (i.e. gloves, eye and ear protection ... etc.) to be used as appropriate
- Materials and equipment are tidily stacked, protected and covered where necessary. Additionally, there is adequate space for new materials to be stored in secured covered areas to avoid damage, theft, and to protect these items from weather conditions.
- Scaffolding for work in elevated areas such as ceiling painting should comply with the OSHA "General Requirements for Scaffolds §1926.451"

Handling Complaints

- Reducing impacts on the community through community and neighbour engagement.
- In cases of where there are minority communities speaking a different language in the area or working on site, notices are printed in the common local language.
- Provide the proper GRM for handling complaints

Physical, Cultural resources

- In case of accidental discovery stop all works and contact the responsible authority within 24 hours;
- Provide training to the construction crew on the mode of conduct in case of accidental findings

Chance find procedures will be used as follows:

Stop the construction activities in the area of the chance find;

- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Ministry of Culture take over;
- Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Ministry of Culture immediately (within 24 hours or less);
- Responsible local authorities and the Ministry of Culture would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archeologists from the Department of Antiquities and the Ministry of Culture (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- Decisions on how to handle the finding shall be taken by the responsible authorities from DA and the Ministry of Culture. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Ministry of Culture; and
- Construction work could resume only after permission is given from the responsible local authorities and the Ministry of Culture concerning safeguard of the heritage.

تدابير الحد من الأخطار اثناء مرحلة البناء

قائمة بإجراءات تخفيف المخاطر خلال أعمال إعادة التأهيل:

الشروط العامــة:

- أ. لقد أبلغت الجهات الرقابية المسؤولة عن أعمال التشييد والبيئة بالنشاط المرتقب للمشروع.
- ب. لقد أبلغ الجمهور بالأعمال المرتقبة من خلال الوسائط الإعلامية وكذلك / أو المواقع الإلكترونية ومن ضمنها موقع رب العمل.
 - ت. تم استكمال إصدار كافة الرخص القانونية والأصولية لإجازة أعمال البناء و/ أو إعادة التأهيل.
- ث. وافق المقاول رسميا على أن ينجز الأعمال وفق ضوابط السلامة لتقليل المؤثرات على المقيمين بالجوار وعلى البيئة.
- ج. أن تكون وقاية العاملين تتطابق مع التطبيقات العالمية (دائما بقبعة صلبة، أقنعة حسب الحاجة، نظارة
 السلامة، طاقم العمل ، وجزم للسلامة).
 - ح. لوحات معلقة لبيان أقرب مركز شرطة وأقرب مستشفى (مع توفير تسهيلات الطوارئ والحوادث).
 - خ. على المقاول أن يتخذ الخطوات المعقولة لمنع دخول غير المخولين إلى موقع العمل.
 - د. التدريب على التعامل مع المواد الحربية القابلة للانفجار وتلك غير المنفلقة.
 - ذ. تجنب حرق المواد داخل موقع العمل.
- ر. تجهيز مناطق مختلفة من موقع العمل بأطقم (الإسعافات الأولية) ومجهزة بعدد ملائم من المحتويات
 تتناسب مع عدد العاملين. ينبغي إعلام كافة العاملين في الموقع بأمكنة أطقم (الإسعافات الأولية).
 - ز. تجهيز موقع العمل بمطافئ الحريق.
- س. في حالة استعمال مواد قابلة للاشتعال يجب منع التدخين وعدم السماح بالاستمرار في الأعمال الموقعية المجاورة الأخرى ذات الصلة بمصادر انبعاث قدحات نارية.
- ش. تحديد حدود الموقع بنصب مواد محددة (حواجز، أشرطة أو أسيجة). ص. تأشير مواقع الحفر بنصب مواد محددة (حواجز، أشرطة أو أسيجة). ض. على المقاول أن يضع حواجز أو أغطية لمساحات الفتحات والحفريات. ط. خزن مواد البناء (كالأنابيب، إطارات أغطية المجارى، وأكياس السمنت) بشكل يمنع انقلابها
- ع. حرن مواد البناء (كالانابيب، إطارات أعطيه المجاري، وأكياس السملت) بسكل يمنع الفلابها ودحرجتها).

- ظ. تصان المماشى والسلالم خاوية من العواثر الخطرة كالأسلاك المسحوبة والمواد الإنشائية والأنقاض.
- ع. تكون لكافة العاملين وفي أية منطقة عمل سهولة الوصول إلى مرافق قضاء الحاجة والاغتسال، وحيز لتحضير وتناول المرطبات ومساحة لخزن وتجفيف الملابس وعدة الوقاية الشخصية.
 - غ. على المقاول التأكد باستخدام وعدة الوقاية الشخصية من جميع العاملين في الموقع.
- ف. تكدس المواد والمعدات بعناية والحماية من التلف وتغطى أينما كان ضروريا، بالإضافة تحدد أمكنة خزن مغطاة لمواد جديدة لتجنب تلفها، وسرقتها وكذلك لحمايتها من الظروف المناخية.
- ق. يجب أن تذعن صلاحية السقالات (السكلات) المستعملة للوصول إلى مناطق العمل المرتفعة كصبغ السقوف لنشرة المتطلبات العامة للسقالات (١٩٢٦,٤٥١).
 - ك. لوائح ملائمة ومعلقة في مناطق العمل للإبلاغ العاملين بالقواعد الرئيسية والتعليمات الواجب إتباعها. جودة الهواء:

انبعاثات المركبات

- أن يقلل من انبعاث الغبار من المواد (مثل الرمل و الإسمنت) و أنشطة البناء باستخدام أغطية أو تخزين أو معدات تحكم و زيادة محتوى الرطوبة
 تحضير الإسمنت قبل الذهاب الى الموقع للحد من عملية نقل المواد (حصى، رمل، اسمنت) اذا كان ذلك ممكنا
 تقليل الغبار الناتج عن حركة المركبات باستخدام رش المياه حسب الحاجة
 - تجنب حرق المواد في الموقع
 تجنب حرق المحركات بمجرد الانتهاء من استخدامها
 الانبعاثات الخطرة

تجنب أو التقليل من التنقل في المناطق المجتمعية
 اطفاء المحركات بمجرد الانتهاء من استخدامها

 أن كان مناسباً أو ممكنا جدولة الأعمال بحيث تتجنب المواسم المطرية (مثلا في المواسم الجافة) و تعديل النشاطات أثناء الأمطار الغزيرة و الرياح العاتية

التربة

لن تستخدم الدهانات التي تحتوي على المواد السامة أو مذوبات أو دهانات ذات قاعدة الرصاص التنوع البيولوجي

في حال الاكتشاف العرضي ، أوقف جميع الأعمال في الموقع و تواصل مع الأجهزة المعنية خلال
 ٢٤ ساعة
 قم بتدريب الكادر على طريقة التعامل المثلى في حال الاكتشافات العرضية مع الالتزام بالاشتراطات التالية:
 الإجراءات الخاصة بالعثور على الاكتشافات الأثرية عن طريق الصدفة

يتم استخدام الإجراءات الخاصة بالعثور على الاكتشافات الأثرية عن طريق الصدفة على النحو التالي:

- ج. تأمين الموقع لمنع وقوع أية أضرار أو فقدان الأشياء المنقولة. وبالنسبة للآثار القديمة المنقولة أو الأثار الحساسة، سيتم تعيين حارس ليلي لحين قدوم السلطات المحلية المسؤولة ووزارة الثقافة لاستلامها
- د. إخطار المهندس المشرف الذي يقوم بدوره على الفور بإخطار السلطات المحلية المسؤولة ووزارة الثقافة (في خلال ٢٤ ساعة أو أقل)
- م. تكون السلطات المحلية المختصة ووزارة الثقافة مسؤولة عن حماية وحفظ الموقع قبل اتخاذ قرار بشأن الإجراءات الملائمة لاحقاً. ويتطلب ذلك إجراء تقييم أولي للمكتشفات من قبل خبراء الأثار بوزارة الثقافة (خلال ٧٢ ساعة). ويجب تقييم أهمية المكتشفات طبقا للمعايير المختلفة للتراث الحضاري التي تشمل القيمة الجمالية والتاريخية والعلمية والبحثية والاجتماعية والاقتصادية
- و. يتم اتخاذ القرارات المعنية بكيفية التصرف في المكتشفات من قبل السلطات المختصة ووزارة الثقافة. ويمكن أن يتضمن ذلك تغييرات في الشكل والتصميم (مثلما هو الحال عند العثور على آثار ثقافية غير قابلة للنقل أو ذات أهمية أثرية) والحفظ والصيانة والاستعادة والإنقاذ
- ز. تقوم وزارة الثقافة بتقديم بيان كتابي حول تنفيذ القرار المتخذ من قبل السلطة المختصة بشأن
 إدارة الاكتشافات التي تم العثور عليها
- ح. لا يمكن استئناف أعمال البناء إلا بعد الحصول على تصريح بذلك من السلطات المحلية المختصة ووزارة الثقافة من أجل حماية التراث.