REC ULUSLARARASI	**Pollution Prevention Plan**	**Document No: REC-ÇYS-KMO-PL-19** **Rev No** : **Issue Date :** **Page:I**

İşveren /Employer

T.C. ULAŞTIRMA VE ALTYAPI BAKANLIĞI

EPC Contractor

REC ULUSLARARASI

PROJECT

NORTHERN MARMARA MOTORWAY SECTION 8 PPP PROJECT

REV	*DATE*	*REMARKS*	*PREPARED BY*	*CHECKED BY*	*AUTHORIZED BY*
0	*06.04.2022*	*FIRST PUBLICATION of the Procedure in line with the holding / project standards*	*Seda BAKAN*	*Muzaffer KOÇOĞLU*	*Selim SÖNMEZ*

STATUS		***PUBLICATION OWNER***	SIGNATURE	DATE
	FOR INFORMATION ☐	REC ULUSLARARASI		
	FOR REVIEW ☐			
	FOR APPROVAL ☒			
	APPLICABLE TO DESIGN ☐			
	APPLICABLE FOR PURCHASING ☐			
	APPLICABLE TO CONSTRUCTION ☐			
	FINAL ☐			

DOCUMENT NO	***DOCUMENT TITLE***
REC-ÇYS-KMO-PL-19	**Pollution Prevention Plan**

TABLE OF CONTENTS

1. PURPOSE 1
2. SCOPE 1
3. REFERENCES 2
3.1 RELEVANT NATIONAL LEGISLATION 2
3.2 RELEVANT INTERNATIONAL STANDARDS AND GUIDELINES 3
3.3 OTHER IMPORTANT REFERENCES 3
4. LINKS TO OTHER PLANS/PROCEDURES 3
5. ROLES AND RESPONSIBILITIES 4
SPV SENIOR MANAGEMENT: 4
6. MANAGEMENT AND MITIGATION 7
6.1 GENERAL POLLUTION PREVENTION MEASURES 7
6.2 HAZARDOUS MATERIALS MANAGEMENT 11
6.3 WASTE MANAGEMENT 13
6.4 IN THE EVENT OF POLLUTION (SPILL RESPONSE) 14
6.5 EQUIPMENT REQUIREMENTS 17
7. TRAINING 18
8. MONITORING, ASSURANCE AND VERIFICATION 19
9. REPORTING REQUIREMENTS 21
IN ADDITION, THE FOLLOWING EXTERNAL REPORTING WILL BE DONE: 21
10. KEY PERFORMANCE INDICATORS 22
11. APPENDIX 23
POLLUTION PREVENTION INSPECTION AND AUDIT CHECKLIST 23

Abbreviations and Acronyms

CLO	Community Liaison Officer
EHS	Environmental, Health, and Safety
EPA	Environmental Protection Agency
EPRP	Emergency Preparedness and Response Plan
EBRD	European Bank for Reconstruction and Development
EBRD PR	EBRD Performance Requirement
EPC	Engineering, Procurement and Construction
ERT	Emergency Response Team
EPRP	Emergency Preparedness and Response Plan
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
CESMP	Construction Environmental and Social Management Plan
ESMS	Environmental and Social Management System
EHSS	Environmental, Health, Safety, and Security
ESHS	Environmental, Social, Health and Safety
EHS	Environmental, Health and Safety
GIIP	Good International Industry Practice
GN	Guidance Note
HSE	Health, Safety and Environment
IFC	International Finance Corporation
ISO	International Organization for Standardization
KPIs	Key Performance Indicators
NCR	Non Compliance/Conformance Report
NMM	Northern Marmara Motorway
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
PPP	Pollution Prevention Plan
IFC PS	IFC Performance Standards
REC	REC International
SDSs	Safety Data Sheets
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
WHO	World Health Organization

1. PURPOSE

This Pollution Prevention Plan was prepared by the EPC Contractor "REC International" (hereafter called "REC") which is applicable to the construction phase of the Project.

The ultimate responsibility for its implementation resides with REC, and REC's sub-contractors & suppliers will be required to demonstrate compliance of their activities against this plan. This plan is intended to be 'living document' that can be refined and modified as situations change.

The purpose of this Plan is to provide the relevant measures, controls, protocols and safeguards to prevent pollution of the environment from occurring due to activities taking place during the construction phase. This Plan aims to:

- Identify potential sources of pollution, including polluting substances and activities and mitigation measures to avoid or limit impacts to environmental or social receptors;
- Identify and ensure that the relevant requirements of national legislation/regulations and international standards (i.e. IFC Performance Standards, EBRD Performance Requirements) are complied with during the project;
- Define the roles and responsibilities of relevant personnel involved in the implementation of this plan;
- Define pollution prevention monitoring and reporting requirements;
- Define training requirements with regard to pollution prevention during the construction phase.

2. SCOPE

This Plan covers potential sources of environmental pollution, which can arise during construction activities associated with the construction phase of the Northern Marmara Motorway Section 8 PPP Project (NMM -Nakkaş -Başakşehir Motorway) and identifies the measures envisaged to minimize any impacts to identified receptors (includes soils, habitats and watercourses (streams/creeks).

The Plan applies to the construction zone where construction activities are taking place, temporary works areas, construction camps, materials storage and equipment laydown areas, any workshops, concrete batching plants, asphalt plants, borrow areas/quarries and material dump

sites where there is the risk of environmental pollution occurring. The Plan applies to REC as well as any and all sub-contractors.

Potential sources of pollution covered by this Plan include:

- Accidental spills of hydrocarbons (petrol, diesel, oils) during refueling/storage;
- Accidental spills of chemicals (e.g. paints, thinners, solvents, lubricant, pesticides, herbicides) during storage and usage;
- Wastewater generated during vehicle maintenance, washing, etc.;
- Wastewater generated during concrete batching at batch plants;
- Mishandling or spillage of domestic solid waste or wastewater generated by the Project during construction;
- Mishandling or spillage of hazardous waste generated by the Project during construction; and
- Sediment generated during excavation and vegetation clearing works or from soil stockpiles.

Other forms of pollution not covered specifically by the Pollution Prevention Plan are listed below (with reference to which plans cover these aspects):

- Noise pollution is covered comprehensively under the 'Noise and Vibration Management Plan'
- Dust and emissions from hydrocarbon powered vehicles and equipment is covered comprehensively under the 'Air Quality and Emission Control Plan'

3. REFERENCES

3.1 Relevant National Legislation

Table 1. National legislation of relevance.

Title	Reg. , Gaz. Date
Environment Law	2872, 11/09/1983
Soil Protection and Land Use Law	5403, 19/07/2005
Regulation on Water Pollution Control	25687, 31/12/2006
Regulation on Control of Air Pollution Originated from Industrial Establishments	26236, 22/07/2006
Regulation on Soil Pollution Control	28831, 31/05/2005
Regulation on Protection of Wetlands	25818, 17/05/2005
Regulation on Waste Management	29314, 02/04/2015
Regulation on Control of Soil Pollution and Point Source Polluted Fields	27605, 08/06/2010

Title	Reg. , Gaz. Date
Regulation on Health and Safety Conditions Regarding Use of Work Equipment	28628, 25/04/2013

3.2 Relevant International Standards and Guidelines

Table 2. International standards/guidelines of relevance.

Source	Document Title
IFC (2012)	IFC Performance Standards (PS) and Guidance Notes (GN) IFC PS3 and GN3: Resource Efficiency and Pollution Prevention
IFC (2007)	IFC General EHS Guidelines: including Environmental, Occupational Health and Safety, Community Health and Safety, and Construction and Decommissioning
IFC (2022)	IFC EHS Guidelines for Cement and Lime Manufacturing
IFC (2007)	IFC EHS Guidelines for Construction Materials Extraction
IFC (2007)	IFC EHS Guidelines for Toll Roads
IFC & EBRD	Common Note on Workers' Accommodation: Processes and Standards
EBRD (2019)	EBRD Environmental and Social Policy: Performance Requirement (PR) 3: Resource Efficiency and Pollution Prevention and Control[1]
EBRD (2010)	EBRD Sub-sectoral Environmental and Social Guidelines: Building and Construction Activities
EBRD (2010)	EBRD Sub-sectoral Environmental and Social Guidelines: Cement Production

3.3 Other Important References

Key documents used in developing this Plan are:

- CESMP (Construction Environmental and Social Management Plan) developed by ERM (2022).

4. LINKS TO OTHER PLANS/PROCEDURES

This Plan is to be read and implemented in conjunction with the CESMP.

The following Management Plans are also relevant and should be read and implemented together with this Plan:

[1] EU environmental standards/directives pertaining to water quality to be applied at the project level where the EU secondary legislative document contains clear quantitative or qualitative requirements that are applicable at the project level (EBRD, 2019).

- Waste Management Plan (REC-ÇYS-KMO-PL-02)
- Medical Waste Management Plan (REC-ÇYS-KMO-PL-03)
- Soil Management Plan (REC-ÇYS-KMO-PL-10)
- Wastewater Management Plan (REC-ÇYS-KMO-PL-20)
- Surface Water and Groundwater Management Plan (REC-İSG-ÇYS-KMO-PL-09)
- Camp Management Plan (REC-İSG-ÇYS-KMO-PL-16)
- Noise and Vibration Management Plan (REC-ÇYS-KMO-PL-05)
- Air Quality and Emission Control Plan (REC-ÇYS-KMO-PL-04)
- H&S Plan (REC-İSG-ÇYS-KMO-PL-01)
- Hazard and Risk Management Procedure (REC-İSG-KMO-PR-04)
- HSE Training Procedure (REC-İSG-ÇYS-KMO-PR-05)

5. ROLES AND RESPONSIBILITIES

Roles and responsibilities of each are as follows:

SPV Senior Management:

- Has overall accountability for the Project on behalf of Nakkas Otoyol A.Ş, including delivery in line with applicable national and Lenders standards.
- Ensure allocation of sufficient resources for the Plan implementation including for ESHS organization, permitting, training, equipment and qualified personnel.
- Ultimate responsibility for ensuring implementation of required corrective actions including in response to identified ESHS non-compliances or incidents.
- Periodical review of the ESHS management effectiveness.

REC Project Manager:

- The REC Project Manager has the overall responsibility for the implementation of the Project activities stated in this plan. They will be suitably competent and have a strong understanding of construction best practice aligned with national law and applicable Lender requirements.

- The REC Project Manager is accountable for overall ESHS performance and making the human and financial resources available to ensure compliance with Project ESHS requirements.

REC Construction Manager:

The Construction Manager is responsible for implementation of the ESHS mitigation measures of this plan through method statements and site working practices.

The Construction Manager will ensure that:

- Construction activities (undertaken by REC itself or by the subcontractors), are in compliance with Project ESHS requirements;
- All construction staff receive appropriate safety and environmental training, prior to commencement of work;
- A thorough investigation is carried out for any accidents or incidents which may occur;
- A self-regulatory review and/or audit of implementation of this plan is carried out on a regular basis.
- Relevant authorities are informed immediately in case of damages on utilities such as underground and aboveground electricity lines, water lines, gas lines, oil pipelines, etc;
- The worksites are secured (secured trenches, temporary bridges, traffic controls, barricades, signs and warning lights, etc.); and
- Appropriate site boundary- and access controls are implemented near settlements to prevent unauthorized entry to construction or activity sites especially by children (e.g., fencing of construction section in the vicinity of settlements or communities).

REC E&S and H&S Managers:

E&S and H&S Managers are responsible for the following:

- Monitoring and assurance of the EPC Contractor’s subcontractors ESHS system performance and requirements of the Project.
- Develop CESMP and other ESHS plans and procedures and assures that Project requirements are considered.
- Review subcontractors and suppliers ESHS documentation and ensure that they are aligned with Project ESHS requirements.

- Monitor performance through Key Performance Indicators (KPIs), reports, audits, and meetings.
- Report ESHS performance to REC Project management, Nakkas Otoyol A.Ş ESHS Management, and other related parties.
- Establish Emergency Response Teams (ERT) and define roles and responsibilities of ERT members.
- Ensure that all ESHS training needs are identified, provided and recorded.
- Disclose relevant ESHS information to Project staff and public and coordinate activities for raising awareness.

REC Environmental Engineer and H&S Inspector:

- Conduct daily ESHS inspections.
- Ensure that all construction personnel (including subcontractors) working or visiting the site understand the ESHS requirements of the Project and comply fully with them.
- Make sure that the ESHS risk assessments are performed prior to the activities.
- Monitor subcontractors' ESHS performance, their compliance to ESIA and ESHS plans.
- Report and record the ESHS accidents, incidents to H&S Supervisor.
- Monitor that all personnel (including contractors) has undergone all necessary trainings.
- Assist subcontractors and suppliers to develop and implement their site specific plans and procedures.
- Monitor implementation of all relevant management plans and procedures, including on site.
- Track the impacts of the Project against the Project Objectives and Key Performance Indicators as defined in the Management and Monitoring Plans and work with the subcontractors where amendments to the mitigation measures are required.
- Identify breaches of management plans, recommend corrective actions.
- Stop work activities in the event of serious breaches of rules that may cause serious impacts on health and safety, environment and community or on the reputation of the Project. (All workers have the obligation to intervene in case of a dangerous situation and have to report to the supervisor).

Sub-contractors:

- Will monitor construction activities and their compliance with this Plan, and other procedures, and instructions,
- Will ensure that Environmental Inspectors are fully informed on every environmental issue, including when significant ('major') spill incidents occur as per legislative requirements in Turkey (a major spill constitutes greater than 0.1 m3 or 100 liters spilled product, by volume)
- Will implement the environmental management system on site and provide as necessary toolbox talks on impact mitigation method for pollution prevention.
- Will be responsible for the supervision of the pre-construction and construction works in line with this Plan,
- Will be responsible for monitoring of management of potential pollutant sources.
- Will be responsible for any spillage and actions regarding the accidents and incidents.
- Ensuring compliance with all relevant project standards, statutory requirements, permit and license conditions.
- It is the responsibility of every construction supervisor (for each sub-contractor) to identify potential contaminant release situations. The Environmental Manager and Inspectors will support the supervisors in this duty. Typical warning signs of a pollution incident include:
- container in poor condition, such as excessive rust, dents, or puncture marks;
- non-segregated materials or incompatible materials stored in the same area;
- material storage areas without bunding;
- containers stored near moving or vibrating equipment;
- containers lacking or having insecure lids;
- materials placed in inappropriate containers (ie corrosives in metal);
- improperly labelled containers;
- inappropriate materials handling/transferring operations;
- leaking equipment (ie fuel, transmission, and hydraulic systems).

6. MANAGEMENT AND MITIGATION

6.1 General Pollution Prevention Measures

(see Pollution Inspection and Audit Checklist in Appendix 10.1)

Prevention of leaks/spills:

- Use of storage tanks and vessels only for their intended purposes.
- Inspect and maintain the integrity of tanks and containers and always store in bunded areas by considering the details given in Section 6.2.
- Construction machinery that may cause leaks and spills in the project area will be regularly maintained (as per maintenance schedule which will depend on the intensity of individual machinery use) to prevent spills.
- Daily visual inspections of construction vehicles will be conducted to identify and repair leaks or damaged fuel/lubricant lines.
- All vehicle/plant will be inspected before it enters an area close to a watercourse to avoid contamination from oil/fuel leakages.
- Mobile plant will be regularly maintained in accordance with the manufacturers' guidance, and all crews will be instructed in the use of clean up equipment and will carry absorbent pads within their vehicles.
- Site roads and approaches to watercourse crossings will be kept free from deposits in order to prevent silt, oil or other materials entering any drain or watercourse.
- Drainage channels will be constructed where required in order to drain the surface water into to prevent erosion [see Surface Water and Groundwater Management Plan (REC-HSE-EYS-KMO-PL-09) for details on surface water management and drainage).
- Sediment filters, silt fences, straw bales, etc. will be placed where required to prevent the pollution caused by sediments.
- A circulation plan will be determined for the project vehicles and the vehicles will be prevented from causing soil pollution by choosing off-route roads as detailed in the circulation plan. Drivers and operators will be informed about the routes and must use these.
- Oil-water separators will be designed, operated and maintained to achieve the desired water treatment results. These will be installed at all camp sites where workshops and vehicle repair, refueling takes place.
- All temporary/portable toilets will be secured adequately to the ground to prevent them from toppling over.
- Spill kits, including containment and treatment equipment and materials, will be provided at the site, located near where equipment is being used.
- All personnel on the site will be familiar with the use of the spill clean-up kit and procedures for the clean-up and disposal of waste.

Protection of watercourses:

- Water containing pollutants will be discharged into a temporary storage facility such as a conservancy tank, where appropriate, for removal from site.
- No grey water runoff or uncontrolled discharges from the site/working areas (including vehicles/machinery wash down areas) should be discharged into adjacent or downstream water bodies.
- Mixing of any chemical substances near rivers/streams is strictly prohibited.
- No refueling activities will take place within 50m of watercourses such as rivers and creeks/streams
- The placing of wet concrete and cement in, or close to, any watercourse will be controlled to minimize the risk of discharge into the watercourse. This must include the following pollution prevention control measures:
    - Cement/concrete to be stored away from watercourses (>50m);
    - Install temporary bunds to prevent migration of any stored cement/concrete product;
    - Wet cement/concrete to be place on an artificial surface and not bare ground when being temporarily stored;
    - Ensure that pour sites are free of standing water and plastic covers will be ready in case of sudden rainfall event; and
    - Any proposed dewatering required prior to installation of cement/concrete works must be pre-approved, licensed/permitted and detailed in the construction site/layout plan and undertaken in line with the requirements of the Surface Water and Groundwater Management Plan (REC-HSE-EYS-KMO-PL-09).
- Further details are contained in the Surface Water and Groundwater Management Plan (REC-HSE-EYS-KMO-PL-09).

Protection of soils:

- In the demolition of buildings containing asbestos, wet demolition will be carried out to minimize the asbestos mixture in the soil. An asbestos survey will be commissioned prior to demolition works taking place if it is uncertain whether asbestos is present in existing buildings.

- Before and after construction activities take place, samples will be taken from the region to investigate soil pollution/contamination.
- Additional measures are contained in the Soil Management Plan [REC-HSE-EYS-KMO-PL-10]

Dust controls:

- Land transfers and stockpiles of material will be carefully managed (eg by use of a suitable covering sheet material) to minimize the risk of wind-blown material and dust.
- Construction sites with movement of vehicles will be dampened by controlled application of water sprays (eg, by water bowser) as conditions dictate.
- Particular attention will be paid to dust suppression on the working width or at construction sites when working within 500m of residential areas or individual dwellings during dry weather conditions.
- Hard standing areas will be regularly inspected and kept clean of all mud and dusty materials.
- All vehicles delivering dusty construction materials to the site or removing spoil will be enclosed and covered to prevent escape of dust.
- In areas where the soils contain large quantities of silt and fine sand, which tends to blow in dry conditions, particular attention will be paid to dust suppression.
- Dust screens will be used in areas adjacent to agricultural land, residential areas and commercial operations.

Emissions:

- Best available control technology will be adopted to reduce combustion emissions from engines and mobile incinerators and any other temporary equipment [use of high efficiency mechanical and electrical equipment designed to meet the latest emission standards (e.g., EURO 3 or US EPA Tier 2 EURO VI or US EPA Tier 3 emission standards emission standards)] and maintained in a reasonable working order.
- Engines will not be left running unnecessarily.
- All vehicle and equipment engines and exhaust systems will be maintained to ensure that exhaust emissions do not breach Turkish statutory limits set for that vehicle/equipment type and mode of operation, and that all vehicles and equipment are maintained in accordance

with manufacturers' guidance. Any breaching of limits will trigger an inspection and required repairs/maintenance to resolve the source of limit exceedance.

- Exhausts of engines on the construction site will be positioned at a sufficient height to ensure dispersal of exhaust emissions.

6.2 Hazardous Materials Management

- All hazardous materials shall be properly assessed before they are taken to site in order to ensure that effective spill prevention and control procedures will be implemented in the event of an unintended release/spill. This process will include a materials characterisation that includes the following information:
  - names/types of materials (commercial and chemical name);
  - container type and size/volume;
  - delivered and potential maximum volume of substance;
  - hazardous characteristics of the substance(s);
  - storage requirements and information on compatibility of storage with other chemicals based on substance type and storage class;
  - consequences due to spill (ie fire, injury, illnesses, and damage to the environment).
- An inventory of chemicals used in the project site will be kept and, according to these inventories, necessary sealing and application measures will be taken to prevent chemicals from damaging the soil.
- All storage containers are to be clearly labelled in Turkish and English.
- Copies of MSDS (Material Safety Data Sheet) (also known as 'Control of Substances Hazardous to Health' data sheets, or similar) for all hazardous materials to be maintained on-site in an SDS register along with other site safety documentation at locations where the materials are stored (for all substances stored and used on site).
- Clearly signed eye-wash stations are to be provided in close proximity to the fuel and chemicals storage areas.
- Appropriate PPE (Personal Protective Equipment) including chemical gloves, eye protection (safety glasses), masks and/or respirators are to be provided depending on the type of substances and PPE requirements as per individual SDS.

- An appropriate number of portable fire extinguishers are to be provided at the fuel and chemical storage facilities and are to be maintained in good working order and inspected regularly as required.
- In order to prevent pollution of soils, surface water and groundwater resources in the vicinity of fuel storage or handling, measures will be implemented for the safe storage and handling of all fuels and lubricant oils on site.
- The loading, unloading, and transfer of all hazardous substances shall wherever practicable be undertaken in bunded areas and always on impervious surfaces.
- Ensure that all hoses and gaskets are properly fitted prior to receiving and dispensing fuels and other liquids.
- Secure hose connections, especially cam-lock levers.
- Install secondary containment around tanks or storage areas to limit spills with a minimum containment of 110% of the stored volume. For more than one oil storage tank in the system, the secondary containment must be capable of storing 110% of the largest capacity tank or 25% of the total capacity, whichever is the greater. For non-bulk tanks or oil/fuel drums, these will employ temporary bunds and drip trays.
- Hazardous substances handling will be carried out by suitably trained personnel only.
- Fuel, oil and chemicals (if any) will be kept in a designated, secure, covered area that will be locked and clearly labelled as containing hazardous materials.
- Any fuels, lubricant oil and chemicals not stored within the centralized, bunded store, will be stored in such a way that they do not pose a risk to the environment. As a minimum, this will include the use of drip trays for temporary storage whilst works are being undertaken, but this method of storage after working hours and overnight will not be permitted and substances are to be returned to secure storage facilities at the camp site as soon as works are completed for the day. Portable bunds will be used outside of formally (semi-permanent) bunded areas such as camp sites.
- Fuel refueling points will be determined and refueling will be provided only in these areas. By making these areas impermeable, soil and groundwater pollution will be prevented. Filling and re-fueling activities will be strictly controlled, and, together with any storage tanks, will be confined to a location remote from any environmentally sensitive receptors.
- A supply of suitable absorbent materials as part of the spill kits will be available at refueling points for use in dealing with minor spillages.
- Vehicles will not be left unattended during refueling.

- Hoses and valves will be regularly checked for signs of wear and to ensure they are turned off and securely locked when not in use.
- Drip trays and temporary bunds will be used to contain leakage from equipment such as generators and pumps. Drip trays and bunds will be inspected daily, maintained and kept drained of rainwater at all times. Checks will be conducted to ensure rainwater is not contaminated (e.g. with fuel/oil for example), before release to the environment is permitted, otherwise treatment and disposal offsite will be required for any contaminated rainwater.
- Oil-water separators will be installed in the drainage system for oil storage and handling areas.
- For fertilizing during landscaping in the Right of Way, only natural fertilizer will be used as required in KGM's Technical Specification for landscaping of Highways, published in 2008.
- If pest infestations are detected the competent authority needs to approve the respective pesticide/biocide used for pest control. The EBRD PR3 guidelines on pesticide use and management (EBRD, 2019) apply and include the following:
    - avoiding, or if not possible, minimising, the impacts of pesticides on biodiversity, human health and the broader environment;
    - replacing the most dangerous pesticide types with safer (including non-chemical) alternatives;
    - selecting pesticides that are low in toxicity, known to be effective against the target species, and have minimal effects on non-target species, such as pollinating insects and the environment;
    - minimising damage to natural enemies of target pests and preventing the development of resistance in pests; and
    - handling, storing, applying and disposing of pesticides in accordance with Good International Industry Practice (GIIP).
- *See also Section 7.16 'Hazardous Materials Management' in the CESMP.*

6.3 Waste Management

- Refer specifically to the Waste Management Plan [REC-HSE-EYS-KMO-PL-02] for details on waste management.
- Refer specifically to the Wastewater Management Plan [REC-HSE-EYS-KMO-PL-20] for details on wastewater management.

- See also Section 7.18 'Waste Management' in the CESMP.

6.4 In the event of pollution (spill response)

- The on-site REC Environmental Inspector will immediately be informed of all spill incidents. In the event of a minor spill (small spills include splashes and drips during re-fueling, broken oil, hydraulic fluid, or coolant hoses, and oil and lubricant drips from equipment during normal operation and may involve minor quantities and are readily contained and can be typically cleaned up at the local level, for example less than 0.1 m3 or 100 litres by volume) an incident report will be issued to NMM immediately. The Contractor will also comply with the reporting requirements of local and national authorities in consultation with NMM representative. Contact with the media, etc will only be by NMM or as authorised.
- For major contamination (involving a significant release of chemicals or materials that pose a major health and safety risk to persons or damage to the environment - i.e. a major spill constituting greater than 0.1 m^3 or 100 litres by volume), an external service provider may be required for clean-up and contaminated land remediation. Major spills and contamination events are to be considered 'emergency' situations and trigger the need to implement the Emergency Response Procedure and reporting of the spill situation to the relevant environmental regulating authority.
- For minor spills, onsite teams can undertake spill response and cleanup.
- Construction crews will be trained to spot signs of contamination. Any contaminated soils/wastes encountered during construction must in any case be reported to the local responsible authorities and further measures conducted as agreed with the authorities and local enterprises.
- Any spillages from handling fuel and other hazardous liquids will be immediately contained on-site using appropriate barriers such as sandbags, digging containment trenches, etc. (depending on the size of the spill) and the contaminated soil will be removed from the site for suitable treatment and/or disposal.
- Petroleum product spillages will be immediately cleaned up with appropriate absorbent materials along with remediation of the area as required.
- Spill kits including containment and treatment equipment and materials will be provided at the site, near where equipment is being used. A map will be developed showing the specific locations where spill kits will be required (e.g. different construction areas, camp sites, concrete/asphalt batching plants, refueling areas, fuel/oil/chemical storage areas, etc.).

- Regular (monthly) inspections of spill kits to be undertaken (and immediately following any spill response initiated) to ensure contents are replenished.
- Further measures will be conducted as agreed with the authorities and local enterprises.
- All staff and subcontractors will be required to report any incidents, and these will be subject to investigation and remedial and preventive actions will be taken.
- Any spillages from handling fuel and other hazardous liquids will be immediately contained on-site and the contaminated soil will be removed from the site for suitable treatment and/or disposal.
- Appropriate spill response equipment will be available along the route, with particular emphasis on quick-response in areas of higher ecological settings.
- The spill response procedure (as contained in the CESMP) is as follows:
    - A spillage risk assessment will be undertaken as part of the development of the Emergency Preparedness and Response Plan (EPRP), to determine the optimal location and type of emergency response equipment and the required capacities for handling liquid spills;
    - Emergency Response Team (ERT) team will be trained about roles and responsibilities and regular drills will be conducted;
    - Spill response kits will be available, including absorbent materials suitable for the materials to be handled on-site, will be held at secure, clearly signposted locations, instructions will be provided with the kits and personnel will be trained in their use; and
    - All staff and subcontractors will be required to report any incidents, and these will be subject to investigation and remedial and preventive actions will be taken.
    - In case of any accidental spill occurring, the relevant person responsible will notify the incident to management. The operative procedure to be followed in case of spill and release of chemicals, in accordance with the EPRP, are indicated in the flow chart in Figure 1.

In case a contamination event occurred due to an accidental spill, sampling of the soil and subsoil must be conducted to check compliance with threshold reference limits. The detailed actions to be conducted are documented in the EPRP Plan.

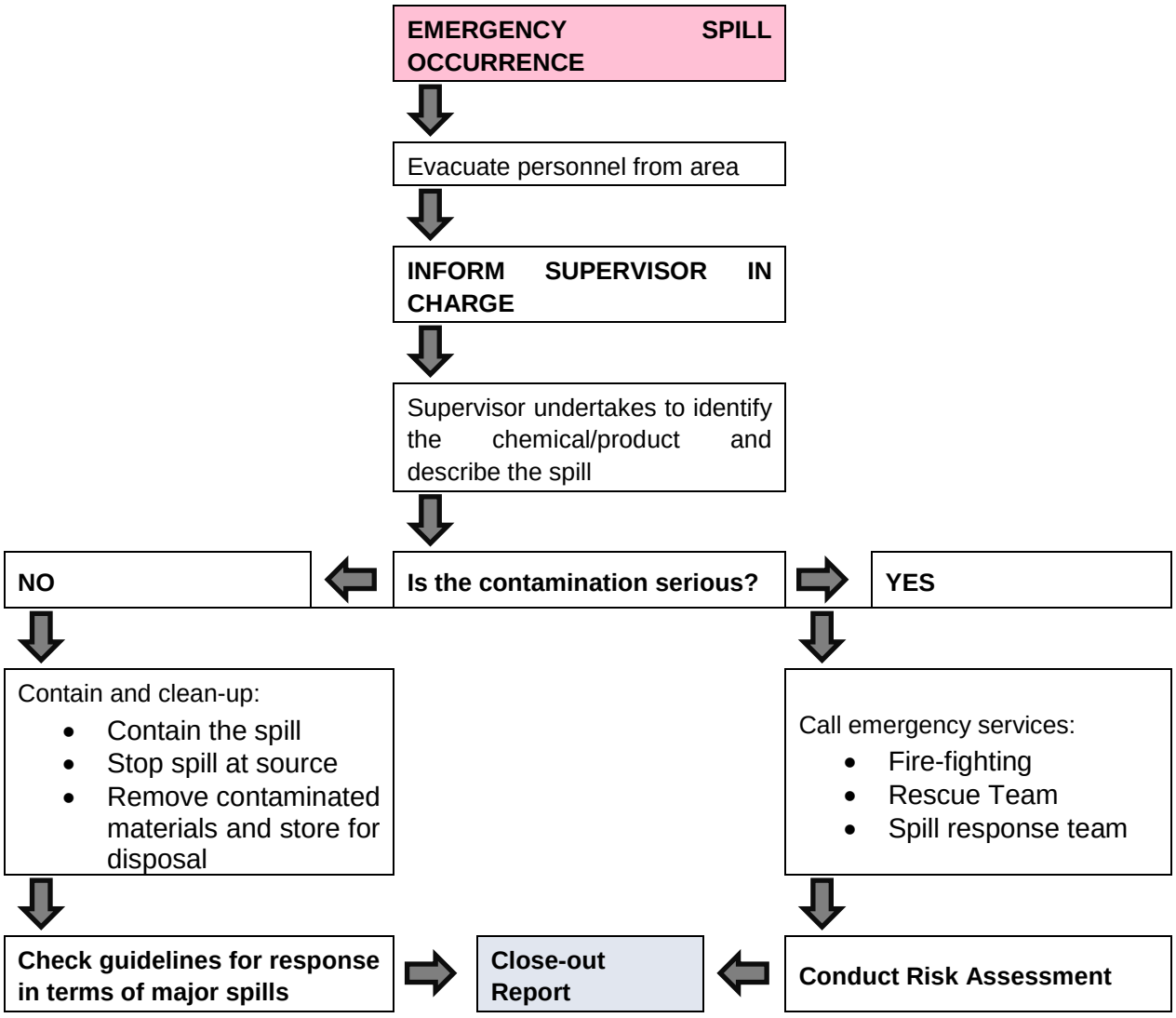


Figure 1 Emergency Spill Response Flow Chart

While the respective Contractor will be fully responsible for responding to any pollution incident occurring in the course of their activities, Contractors shall also ensure that their own pollution response procedures are consistent with the NMM project Emergency Response Plan. Specifically, mechanisms for liaison with NMM Emergency Response Team shall be addressed.

Typical small spills include splashes and drips during refueling, broken oil, hydraulic fluid, or coolant hoses, and oil and lubricant drips from equipment during normal operation. Such spill would normally be less than 0.1m^3 in volume. Treatment of these small spills will be undertaken

immediately by the persons involved. Typically, the source of the spill will be stopped, the spill contained, and the affected soil collected with shovels and placed in appropriate containers. Treatment and repair of drip spots will be an on-going activity whereby the construction area is regularly inspected and stained soil or grease specks picked-up with a shovel and placed in an appropriate container. Construction Contractors spill response procedures for responding to this type of spill will include, but not be limited to, the following mechanisms and resources:

- techniques for isolating the source;
- use of absorbent material to mop up the spill;
- appropriate disposal of contaminated soil;
- incident reporting.

The response time for spills of this nature will be immediate and all site personnel will be trained in the procedures for responding to this type of spill.

Wherever possible, hazardous material spills/releases will be controlled by on-site personnel. The Environmental Manager/Inspector in conjunction with NMM representative will determine what external notifications are required.

6.5 Equipment Requirements

The Contractor will ensure that appropriate spill response equipment is located at the following locations:

- at all active construction sites;
- at all construction camps;
- within all hazardous materials storage facilities.
- Wherever vehicles/equipment are being re-fueled or maintained
- Wherever stationary equipment is being stored or used.

The designated ERT will proceed to the spill area with the appropriate equipment. The following spill response equipment will be held and maintained such that it can be deployed to the incident scene:

- absorbent pads;

- appropriate personal protective equipment (PPE);
- a hand operated fuel pump;
- chemical resistant storage drum of no less than 100 litres capacity;
- sandbags;
- dry granular absorbent;
- shovels made or coated with polyethylene (non-sparking material);
- hoses;
- warning tape or traffic cones.

7. TRAINING

- All employees will undergo HSE induction training.
- Generic training will be provided on a number of topics that will be provided through formal training sessions and regular Toolbox Talks. Refresher training will be provided at the following times and under the following circumstances:
  - For new employees who have completed the standard induction training and have been identified according to the training needs assessment and training matrix as requiring further training in particular aspects of their work role;
  - Whenever an existing employee is given a new job assignment (extremely important that supervisors emphasize safety during the initial task assignment);
  - Whenever new work procedures are started;
  - Whenever new equipment is installed or to be used or new hazards are introduced;
  - Whenever new materials or substances are used; and
  - Whenever a new hazard is introduced is potentially exposed to the employee
  - In response to a trend in non-conformances with the requirements of this Plan
  - In response to complaints raised via the community Grievance Mechanism in relation to pollution prevention
  - Following a major incident.
- Generic training with regards to the pollution prevention is addressed under the following topics/themes:

- Ecological sensitivities on site
- Fuel and hazardous materials storage and transportation
- Incident reporting
- Pollution prevention and control
- Vehicle and equipment operating rules
- Waste management

- Training will be provided to construction staff on how to prevent contamination, recognize and appropriately handle contaminated land encountered during construction activities. This includes broader aspects such as waste and wastewater management, characterization of spill size and classification, decisions and key actions required for minor versus major contamination.
- Spill response teams will be provided with specialized training on how to respond to and cleanup minor spills. Note that for major spills or contamination, an external service provider may be required.

  Refer to the Training Matrix in Section 9.5 of the CESMP which identifies training needs for various levels of staff.

8. MONITORING, ASSURANCE AND VERIFICATION

Implementation of this Management Plan is to be verified according to the reporting requirements included in Chapter 10 of the CESMP.

REC will be responsible for the implementation of an appropriate routine inspection and monitoring programme to the satisfaction of Nakkaş Otoyol A.Ş. during the construction phase, enabling both parties to ensure works are being carried out in accordance with this Plan and to identify and implement any corrective actions or possible improvements as necessary. Monitoring to be undertaken by the REC Environmental Inspectors shall include the following as a proactive means of preventing pollution incidents:

- Daily inspections of fuel and chemical storage areas;
- Daily inspections of refueling areas;
- Daily inspection of the construction zone;
- Daily inspection of vehicle washes down areas;

- Weekly inspections of workshops, concrete/asphalt batch plants; and
- Weekly inspections of drains, irrigation channels and culverts.

During construction, the following monitoring, inspections and checks will be done:

- Daily inspection of construction zone;
- Daily inspection checks will be completed on all plant and equipment;
- Monthly site inspections by the ECoW during the construction phase;

A written record of inspections will be maintained or available on-site.

The schedule, the frequency, the scope, and objectives of audits as well as the responsible internal auditors will be defined and updated as necessary.

Internal auditing will address the following:

- The correct implementation of this Pollution Prevention Plan;
- The correct development and implementation of REC Procedure(s);
- The correct and timely implementation of an auditing and review system by the REC.

The results of environmental audits will be communicated regularly to Project management personnel. A Corrective Action Plan will be prepared following the audits with corrective actions identified as per the Corrective Action Procedure.

The Environmental Manager and/or Inspector will document spills in an incident report with recommendations for how non-conformances have been addressed or what actions are still required. This will include recommendations for preventing future spills based on a review of the circumstances surrounding the spill event. The incident report will be forwarded to the NMM Environmental Manager who will then issue instructions on what further actions still need to be undertaken and allocate responsibilities for implementing key actions. Records of all hazardous materials releases will be maintained with the Project files. Information will include:

- time and date of incident;
- exact location of incident;
- potential causes of incident;
- those who might be involved in the incident;
- size of release;

- chemicals involved;
- names of Environmental Manager/Inspector;
- cleanup procedures;
- unusual or pertinent incidents during the cleanup;
- follow-up actions;
- notifications;
- support services required;
- safety/health hazards related to the spill;
- monitoring and investigation results;
- PPE used.

A proforma sheet for use in recording the above information shall be included as part of the Construction Contractors spill response procedures.

9. REPORTING REQUIREMENTS

The following reporting requirements apply for the EPC Contractor:

- Incident reporting (as necessary, addressed in terms of the Accident and Incident Management Procedure);
- Emergency response reporting;
- Records of annual emergency response training exercises;
- Biannual reports on KPIs and performance trends;
- Monthly reports of relevant training activities completed and attendance registers to be maintained;
- Daily/Weekly/Monthly reports of site inspection activities;
- Audit reports;
- Inspection logs and status of non-compliances; and

In addition, the following external reporting will be done:

- Monthly and biannual ESHS reports on KPIs and performance trends will be submitted to Nakkaş Otoyol A.Ş.;
- All environmental and social incidents will be appropriately documented, notified and reported in accordance with established procedures to

- Incident notification and reporting to relevant Turkish regulatory bodies will be performed in line with applicable legislation in force and as stipulated in permits and licenses.
- The Lenders will be notified of incidents pursuant to the terms and conditions agreed upon in the Finance Agreements.

10. KEY PERFORMANCE INDICATORS

Table 4 summarizes the Key Performance Indicators (KPIs) and associated targets that will be used to assess the progress and effectiveness of proposed pollution prevention measures and controls during construction.

Table 3. KPIs for Pollution Prevention.

KPI	Target	Measurement / Indicator	Period of Monitoring
Hazardous substances, to be managed in accordance with the Pollution Prevention plan	No non-conformances with the requirements of the Pollution Prevention Plan in relation to the management of hazardous substances.	Site inspection / audit	Weekly
Spill incidents / soil or water contamination incidents	Zero spill / contamination incidents	Site inspection / audit	Monthly
Any ground or water contamination is addressed appropriately	Spill response implemented as per the Plan requirements. No residual soil / water contamination identified through soil / water sampling and testing	Soil / water sampling and analysis	Annually
Monitoring and communication	All spills are monitored and communicated as per plan requirements	Site inspection / audit	Monthly
Non-Compliance with the Pollution Prevention Plan	Zero NCRs reported per year	Audit	Annually
Grievances related to pollution	No grievances reported relating to pollution	Audit	Monthly
All employees have received relevant training	All employees accessing the site have received the necessary induction and generic training (and any specialised training) as required.	Audit	Monthly

11. APPENDIX

Pollution Prevention Inspection and Audit Checklist

	Subject of the Inspection Checklist	To be completed as follows		
		0	1	2
		Needs immediate attention	Needs attention	Compliant or not applicable
1	Are fuels, lubricants oils and chemicals stored on-site? If so;			
	a. Are they stored in an impervious and secure bund?			
	b. Does the bund have sufficient capacity (110% maximum volume stored)?			
	c. Does the bund have a stormwater relief valve that is CLOSED and LOCKED?			
	d. Are the storage facilities protected by secure fences and locked, covered to prevent ingress of rainwater/or comprised of bunds with appropriate disposal of rainwater?			
2	Are the drip trays properly located for generators, pumps and pipe or hose couplings?			
3	Do filling, refueling and handling activities occur in a safe distance (at least 50m) from drains, watercourses and protected from run-on and run-off?			
4	Are spill kits with suitable absorbent materials available at refueling points?			
5	Are hoses and valves turned off and securely locked when not in use?			
6	Are the drip trays kept free from rainwater at all times? Is rainwater disposed of correctly, and if contaminated taken offsite for treatment/disposal?			
7	Are the oil separators installed in the drainage system for oil storage and handling areas?			
8	Do all crews at all construction sites have access to an acceptable number of spill clean-up kits at designated locations?			
9	Are there any contaminated areas within the site? (pre-existing) If so;			
	a. Has it been recorded?			
	b. Have REC Project Manager and Nakkaş Otoyol A.Ş been informed?			
	c. Have corrective / remedial actions been developed?			
10	Do the mobile plants carry absorbent pads?			
11	Are site roads and approaches to watercourse crossings kept free from deposits?			
12	Are straw bales and filter fences installed to intercept run-off and remove sediment before it enters watercourses?			

	Subject of the Inspection Checklist	To be completed as follows		
		0	1	2
		Needs immediate attention	Needs attention	Compliant or not applicable
13	Is sheeting material being used for land transfer and stockpiles to minimize risk of windblown, material and dust?			
14	Are hard standing areas kept clean of dust and mud?			
15	Are any engines left running unnecessarily?			
16	Are all engine covers closed at all times during operation in plants where designed to operate with them?			
17	Does the plant emit noise strongly in one direction? If so;			
	a. Is it orientated appropriately to avoid noise sensitive receptor?			
18	Have secondary containment measures been installed around tanks or storage areas to limit spills?			
19	Do any containers show signs of damage or corrosion?			
20	Are there any containers near moving or vibrating equipment?			
21	Are MSDSs available where hazardous materials used and stored for all substances?			
22	Is there an ERT? If so;			
	a. Is there a specific ERT list and procedure and are they clearly posted?			
	b. Are the members of the ERT team aware of their roles and responsibilities?			
	c. Do the ERT members have proper equipment and are they in position and in good condition?			
	d. Do the ERT members conducted regular exercises / drills?			
23	Do the chemical storage areas have proper emergency shower and eye wash in a suitable place?			
24	Are proper storage, clean-up and spill-reporting procedures for hazardous materials posted in open, conspicuous and accessible locations adjacent to storage areas?			