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Project Pollution Control Procedure

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Project Pollution Control Procedure

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Project Pollution Control Procedure

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1.0 PURPOSE

The purpose of this Procedure is to identify the correct way to store potentially polluting substances both within designated areas and within the field. Potentially polluting substances must be stored in such a way that environmental harm does not result, nor is likely to result.

2.0 SCOPE

The scope of this procedure applies to all works performed under all Government Construction Contracts executed throughout the Kingdom of Saudi Arabia.

3.0 DEFINITIONS

Definitions	Description
Asbestos Containing Material (ACM)	A substance composed of asbestos of any type and in an amount equal to or greater than 1 percent by sample volume, whether alone or mixed with other fibrous or non-fibrous constituents. If a substance contains asbestos but is not considered to be ACM because of the percentage, a negative exposure assessment shall be performed to ensure employees' safety.
Berm	Shaped dike or mound of material that separates two areas. When used for containment the berm construction shall be impervious to material that it is separating.
Construction and Demolition Waste	(Debris) Concrete, brick, asphalt, and other such building materials discarded in the construction or demolition of a building or other alterations to property.
Contaminant	Substance that is identified by the as having a regulatory standard.
Developer	Team responsible for planning, design, construction, and operation of the proposed project.
Geotextile	Permeable fabrics that when used with soil, can separate, filter, reinforce, protect, or drain.
Hazardous Material	Materials harmful to human health and/or the environment that is solid, semi-solid, liquid, or gas and may include hazardous wastes.
Impacted	Area affected by an environmental contaminant(s)
Impermeable	Not allowing a fluid to pass through.
In-situ	Meaning to leave or treat in place, usually referring to earth material (soil, groundwater, sediment) during construction or contaminants during remediation.
Landfill	A place, location, tract of land, area, or premises used for the disposal of solid wastes. The term is synonymous with "solid waste disposal site" and is also known as garbage dump and trash dump.
Life Cycle	A series of stages through which a material or project passes from the beginning of its existence to the end.
Life Cycle Assessment	An assessment that analyzes and quantifies the life cycle(s) of a material, facility, or process during its production, use, and disposal.
Migrate/Migration	The movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface.
Mitigate	An act to make impacts less severe.

Definitions	Description
Pollutant	A substance, condition, or energy introduced into the environment that has undesired effects, or adversely affects the usefulness of a resource.
Potentially Polluting Substances	Diesel, petrol and oil, or “fuels” and Liquid chemicals, such as thinners, solvents, paints, glues, acids, fertilizers and pesticides. The reference to “chemicals” here also includes unused chemicals, liquid mixtures made from dry chemicals and water or other liquids, and residues from chemical use (for example, the wash fluids resulting from cleaning of paint brushes). The reference to “fuels” here also includes waste fuels, such as waste oil, and waste emulsions (i.e. mixtures) of water and fuels. Water-based paint is also considered a chemical and therefore a potentially pollution substance
Project Charter	A physical document that defines project scope, objectives, participants, roles, responsibilities, authority, and other references that define the project.
Release	Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles containing any hazardous substance, pollutant, or contaminant).
Secondary Containment	Safeguarding method used to prevent unplanned releases of compounds into uncontrolled areas and which is external to and separate from primary containment.
Solid Waste	Any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded materials including solid, liquid, semi-solid, or contained gaseous material, resulting from industrial, commercial, mining and agriculture operations and from community activities.
Source	The point of emission or discharge of a pollutant or effluent.
Stage	A temporary location for storage of earthwork on a site with the future intent to use, transport, or dispose of the material.
Stationary Field Equipment	Any diesel or petrol fueled construction equipment which is operating in a fixed position for a period longer than 1 hour.
Wastewater	Water that (1) is or has been used in an industrial or manufacturing process, (2) conveys or has conveyed sewage, or (3) is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.
Safety Data Sheet (SDS)	A document that states the material’s hazardous constituents, chemical and physical properties, health hazards, permissible exposure levels, first-aid procedures, emergency procedures, and the recommended handling and use requirements. The manufacturer must provide an SDS for all potentially hazardous materials.
Start Task Analysis and Risk Reduction Talk (STARRT) card	A check-sheet of potential hazard briefed to the workforce, signed and recorded daily for each work activity.
Job Hazard Analysis (JHA)	The identification of all tasks that contain installation steps which may pose a hazard risk to personnel.
PPE	Personal Protective Equipment
Potentially Polluting Substances (PPS)	Diesel, petrol and oil, or “fuels” and Liquid chemicals, such as thinners, solvents, paints, glues, acids, fertilizers and pesticides. The reference to “chemicals” here also includes unused chemicals, liquid mixtures made from dry chemicals and water or other liquids, and residues from chemical use (for example, the wash fluids resulting from cleaning of paint brushes). The

Definitions	Description
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HSE	Health, Safety and Environment
dB	Decibel
CSM	Construction Site Manager
FM	Facility Manager

4.0 REFERENCES

- Pollution Prevention Act of 1990 42 USC §13101 et. seq.
- Clean Air Act (1970) 42 USC §§7401–7671q, 40 CFR Part 50
- Clean Water Act (1977) 33 USC §121 et. seq. 40 CFR Parts 100–140; 400–470
- Toxic Substances Control Act (1976) 15 USC §2601 et. seq. 40 CFR Parts 700–799
- EPM-KSS-PR-000024 Project Hazard Communication Procedure
- EPM-KSH-PR-000005 Project Air Surveillance Program Procedure
- EPM-KSH-PR-000009 Project Asbestos Management Procedure
- EPM-KSH-PR-000010 Project Hearing Conservation Program

5.0 RESPONSIBILITIES

5.1 Project Manager

The Project Manager is responsible for ensuring the resources and arrangements are available for the implementation and management of this procedure.

5.2 Construction Site Manager (CSM)/Facility Manager (FM)

- The CSM/FM shall ensure that this procedure is implemented.
- While the project is in its concept and planning phase, a project charter and schedule shall be created to establish a foundation for the project details, ensuring that environmental responsibility is a priority.
- If an onsite Waste Management representative has not been designated, the responsible CSM/FM shall coordinate with the designated HSE manager to determine requirements.
- Provide medical surveillance of workers exposed at or above permissible exposure limits for hazardous substances, conducted (1) at least annually, (2) when a worker moves to a new worksite, (3) when a worker experiences exposure from unexpected or emergency releases and (4) at the end of employment.

5.3 Supervisors

Superintendents, foremen, and other responsible supervisors are responsible for:

- Enforcing the requirements of this Procedure.
- Ensuring that work areas and tasks under their responsibility have been assessed for potential sources of pollution.
- Ensuring that adequate pollution control measures such as drip trays and spill kits are available throughout the work area and that these are inspected / maintained as required.
- Ensuring that employees have been trained in accordance with the project’s training requirements.
- Identify the following:

  - Oil storage locations.
  - Potential spill pathways (how can oil get into the environment and into our creeks, bays, lagoons, or the sea).
  - The direction, rate of flow, and total quantity of oil that could be discharged where experience indicates a potential for equipment failure.

- Ensure employees receive training; mentor new employees.
- Learn the system (layout, valves, shutoffs, etc.).
- Know and follow operational procedures for your project.
- Ensure equipment is maintained to prevent leaks and spills.
- Visually inspect oil storage locations for container or tank condition and spills.
- Make sure others follow appropriate delivery and handling procedures.
- Know spill response procedures and keep a well-stocked cache of supplies easily accessible.

5.4 Employees

Employees are responsible for:

- Adhering to the requirements of this Procedure.
- Review Safety Data Sheet (SDS) for information regarding proper personal protective equipment, appropriate spill cleanup materials, and proper disposal of used cleanup materials.
- Try to stop or control spills at the source.
- Use appropriate materials in spill kit to block the flow and prevent the release from discharging into a storm drain.
- Reporting if instances of leakage, missing covers, or misuse of material receptacles or any concerns regarding pollution control to their line manager.

6.0 RISK ASSESSMENT

An integral aspect of the work planning process is the performance of a proper risk assessment. Risk Assessments must be conducted at the Planning Stage to identify the hazard risks and determine control measures. A pollution control risk assessment must identify whether any of the following risks could occur and what the environmental impact could be:

- Any discharge, for example sewage or trade effluent to surface or groundwater accidents or spillage.
- Odor (not for standalone water discharge and groundwater activities).
- Noise and vibration (not for standalone water discharge and groundwater activities).
- Uncontrolled or unintended (‘fugitive’) emissions, for which risks include dust, litter, pests and pollutants that shouldn’t be in the discharge.
- Visible emissions, for example smoke or visible plumes.

For each risk that applies, identify each actual or possible hazard and state (for example in a table):

- The hazard - for example dust, litter, type of visible emission.
- The receptors - people, animals, property and anything else that could be affected by the hazard.
- The pathways - how the hazard can get to a receptor.
- What measures required to be taken to reduce risks.
- Probability of exposure, for example whether a risk is unlikely or highly likely.
- Consequences - what harm could be caused.
- What the overall risk is.

The Risk Assessments that shall be conducted at the Planning Stage are as follows:

- Project Risk Assessment.

- Work Method Statements (WMS)
- Job Hazard Analysis (JHA).
- Safety Task Analysis and Risk Reduction Talk (STARRT).

It is imperative that prior to beginning any work activity, a STARRT briefing occurs to discuss the contents of the WMS/JHA which includes mitigations for any other hazards noted by the crew at the jobsite. The discussion shall also include job steps, expected hazards associated with the activity, and the mitigation and protection methods that shall be implemented to prevent incidents.

If circumstances change by way of the environment, other work crews are in the area, additional hazards are now present, change of methodology of the task etc.…. another STARRT briefing shall occur.

The Hierarchy of control shall be used to reduce the likelihood of an incident occurring.

- ***Elimination*** (Remove the Hazard)
- ***Substitution/Isolation*** (Replacing material, process or hazard with a lower risk one/ separate people from the hazard (such as suitable guarding, distance, etc.)
- ***Engineering Controls*** (Redesign or replacement of plant and equipment)
- ***Administration Controls*** (Procedures, training, signage)
- **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

No work is to commence until the above has been implemented and signed by the relevant Supervisor in charge.

7.0 REQUIREMENTS

7.1 Storage of Potentially Polluting Substances (PPS)

- All Potentially Polluting Substances, including chemicals and fuels, shall be stored at a designated area. All materials shall be used solely for their intended purpose.
- Lubricants, fuels, waste oil and chemical storage areas will be constructed on a concrete base and within a bund to contain at least 110 % of the maximum capacity of the storage facility.
- All containers of oil, fuel or chemicals shall be labeled and identified with contents and capacity.
- All materials and chemicals will be stored in a manner that conforms to their SDS requirements.
- The quantities of PPS will be minimized to the greatest extent practicably.
- Hazardous materials should not be stored in significant risk locations (e.g. within 20 meters of a water surface, waterway or 20 meters of a well, borehole or any drains.)

7.2 Bunds

- A ‘Bund’ is a concrete structure used as a form of secondary containment for bulk fuel storage tanks & static generators (normally used for office & laydown electrical power supply, but will also apply to static generators in the field i.e. for powering tower cranes).
- Secondary containment is an additional impermeable device (such as a metal tray or a concrete bund) to hold a hazardous material and contain any spillage from its receptacle in the instance of a failure.
- The bund must be constructed of reinforced concrete or sealed reinforced block-work. Bund walls must have sufficient structural strength to hold the weight of stored liquid, in the event of a tank failure when the tank is completely full.
- The base or wall of a bund must be impermeable to prevent water and oil escaping, and must not be penetrated by any valves, pipes or other openings which could be used for draining the bund. Do not drill, puncture or allow holes to be made in any bund walls.
- An impervious surface coating shall be applied to the base and walls.
- The containment area will have the capacity to contain 110% of the total volume of stored materials. Capacity of fuel tank to be marked on the tank. Capacity of the bund to be marked on the bund.

- The walls of the bund must be positioned at sufficient distance from the walls of the tank, so that spray/puncture leaks will be contained within the bund. Generally, walls must be positioned at least half the height of the tank away.
- The connection point for bulk refilling of a tank by fuel tankers must be located within the bunded area.
- Fixed pipes carrying fuel to or from tanks and equipment (generators, etc.) must be positioned within the bund so far as they extend along or across the bund (instead of being attached to the outside of bund walls);
- All ancillary equipment such as valves and hoses will be contained securely within the bund when not in use
- The general storage area must have the appropriate signage, specifying the type of fuel stored, the volume of the tank, the volume of the bund (which should be painted on the outside of the bund wall in a visible location).
- Responsible Contractor shall inspect all bunds, tanks and pipework regularly for signs of damage, corrosion or leakage. To ensure the bund retains its integrity, any defects in the bund wall or lining should be repaired promptly using the appropriate technique.

Figure 1 – Example of fuel containment

7.3 Fuel Tanks

- Responsible Contractor should ensure that fuel tanks are double-skinned. A double-skinned tank has a primary tank with another "skin" placed around it with a very small gap between the two, thus allowing any leaked product to be contained in the outer tank.

- Tanks shall be protected to minimize the potential for collision. Install protection (such as a concrete curb in front of bund) to stop delivery/collection tankers from reversing into and breaking bunds and/or rupturing fuel tanks.
- Hoses between generators and fuel tanks also need to be within secondary containment (such as a bunded area).
- Responsible contractor shall provide suitable refueling facilities for construction plant, vehicles and equipment, and is to pay particular attention to the drainage of the refueling area.
- All persons involved in refueling activities must receive specific training on refueling practices and spill prevention.

7.4 Field Management of Potentially Polluting Substances

- All stationary field equipment, including power generators, water pumps, de-watering pumps, air compressors, lighting towers, are to have impervious catchment trays or drip trays placed beneath them during operation.
- These impervious drip trays (usually made of metal) shall be of a sufficient size to contain any breach of primary containment and shall extend beyond the outline of the object.
- Drip trays should be water-tight and free from cracks, breaks, dents, or any damage that would impair its liquid retaining capability.
- There is to be an adequate supply of material to soak up all fuel/oil/lubricant spills.
- Responsible contractor shall ensure that any fuel to be used on site (e.g. for generators) is stored in a container (tank, drum, jerry can) which is of sufficient strength and structural integrity that it is unlikely to burst or leak in its ordinary use.
- Metal drip trays will be provided for smaller chemical and fuel storage containers.
- Metal impervious drip trays must be used during maintenance work or emergency servicing on site to catch any spills.
- Metal drip trays must be provided at the time of fuel delivery to catch any fuel that could be lost during the coupling and decoupling of the delivery hose.
- On the construction site, refueling, oil changing and light maintenance will be undertaken using drip trays. This will prevent any release of materials from accidental spills into the underlying soil and groundwater.
- Any spillages into the metal drip trays will be treated as hazardous waste and collected for safe disposal by an approved waste Responsible contractor.
- Any spillage or leakage and resultant contaminated soil (if any) will be removed and disposed of using approved waste management providers as soon as practicable.

7.5 Air Quality Management

Contractor and its subcontractors are responsible for air quality control for the project in compliance with applicable legislative requirements and ambient air quality standards. See EPM-KSH-PR-000005 Project Air Surveillance Program Procedure, for more details. In addition, contractor will implement a comprehensive plan to control construction related dust at the Project site. Both plans will work in conjunction with each other to provide air quality protection and limits threats to the environment and human health.

Below are details that shall be covered but not limited to:

- The burning of any material on site, including waste, is strictly prohibited.
- Site haulage and access roads are to be dampened down, as and when required.
- Inspections, servicing and maintenance of all construction plant, vehicles and equipment shall be carried out in accordance with the manufacturer's recommendations to reduce noise and air pollution. All servicing and maintenance records shall be made available for inspection.
- Responsible contractor must instruct employees to switch off engines when not in use.
- Consideration must be given to the public and adjacent traffic routes for all spray-painting and sand-blasting facilities.

7.6 Water Quality

7.6.1 Erosion and Sedimentation Control

Storm water management during construction is the responsibility of Contractor and its subcontractors. Each Contractor shall have a plan that describes how storm water will be managed during the site preparation and construction phase of the Project and the measures that will be implemented to minimize erosion and control sedimentation.

7.6.2 Wastewater Discharges

Construction planning dictates staged development of the waste water handling systems and facilities. Early stages of the project (first few months) will require wastewater to be sent off- site for processing, as the project progresses a sewage treatment facility may be constructed to handle processing project waste water. Waste water management will focus on meeting effluent limitations and preventing/minimizing environmental impacts due to the project activities. Responsible contractor shall seek prior approval and a valid permit for any discharge to water.

Responsible contractor shall re-vegetate or seal completed earthworks as soon as possible to prevent soil erosion and contamination of aquifers.

Toilet facilities are to be maintained and managed in such a way that effluent cannot contaminate the local environment.

7.7 Noise

This procedure relates to the following types of environmental noise:

- Noise from industrial units in areas set aside primarily for industrial facilities.
- Noise from construction activities.
- Noise from vehicles (including motorized vessels and recreational craft).
- Noise from equipment used outdoors.

Responsible Contractor must conduct a noise level survey for any area using a calibrated noise/sound level meter that is suspected of reaching 85 dB(A) where people or the environment may be adversely affected.

More information can be found in EPM-KSH-PR-000010 Project Hearing Conservation Program Procedure.

7.8 Hazardous Materials Management

Contractor and its subcontractors will manage its hazardous materials in such a manner as to minimize the potential for threats to human health and the environment. Contractor and its Subcontractors will utilize the following best management practices for all hazardous materials:

- Hazardous materials will be managed in a manner to minimize the potential for spills and releases to the environment.
- Incompatible materials will not be stored within the same secondary containment without adequate separation between the two materials to prevent potential spills from encountering one another.

More information can be found in EPM-KSS-PR-000024 Project Hazard Communication Procedure.

7.9 Environmental Awareness Training

Environmental awareness training is an important part of an effective environmental compliance program. The HSE Manager or designee will perform the environmental awareness training for Project employees.

It will be stressed during the training sessions the importance of maintaining “environmental awareness”in the employee’s everyday duties. The regulatory basis for *Environmental Requirements*, communication, and administrative procedures related to compliance, inspection and monitoring, and best management practices will be explained and discussed.

7.10 Hazardous Materials Management & Spill Response Training

Supervisors, foremen, subcontractors, and select craft personnel will receive additional hazardous material management training, which includes how to prevent spills and how to respond to spills. The employees, because of this training, will be responsible for first response to spills for the project. All attendees will be documented.

8.0 RECORDKEEPING

Maintaining records, logs, and reports is essential to demonstrate compliance with the *Environmental Requirements*. Regular inspections and incident reporting are required to meet permit stipulations. Records will be turned over to the responsible Contractor as required and at the end of the Project to meet records retention requirements. Records that will be maintained include:

- Training Records.
- Waste Management Inspection reports.
- Spill and Incident reports.
- Incident of Non-Compliance (ION) records.
- Documentation of Communications/Correspondence with Regulatory Agency representatives.
- Field Environmental Inspection reports.
- Environmental data monitoring and reports.
- Environmental Compliance Matrix.
- Environmental Self-Assessment Reports.
- Waste Management Record including manifests.
- Other documents as may be specified in the Contract and Project procedures.

The records listed above will be maintained in the Contractor document database for a period of 7 years from date of creation. Those records associated with regulatory requirements or permits will be maintained in accordance with governmental guidelines.

9.0 ATTACHMENTS

N/A