

PETROSAFE

Petroleum Safety & Environmental Services Co.



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Technologically Enhanced Naturally Occurring
Radioactive Materials

TENORM

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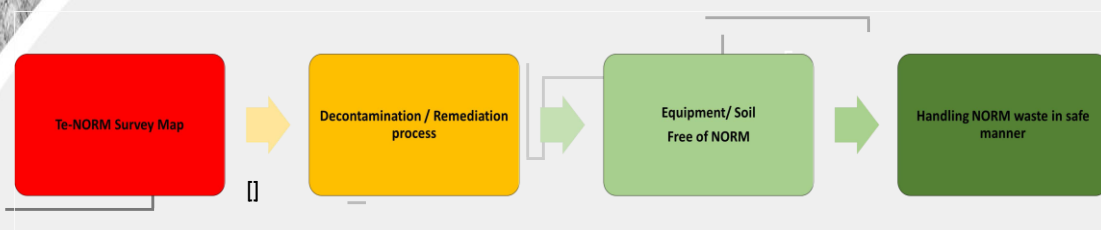
Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) is defined as, "Naturally occurring radioactive materials that have been concentrated or exposed to the accessible environment as a result of human activities such as manufacturing, mineral extraction, or water processing."

"Technologically Enhanced" means that the radiological, physical, and chemical properties of the radioactive material have been concentrated or further altered by having been processed, or beneficiated, or disturbed in a way that increases the potential for human and/or environmental exposures.

Where management of TENORM is expected to form part of oil and gas production operations, a management plan is required to monitor and control the risk in an appropriate and proportional manner complying with relevant national and international legislation.

PETROSAFE provides an integrated service to manage the pollutants of natural occurring radioactive materials and deal with them by identifying and removing them from oil and gas fields in the drilling equipment, production facilities and oil tanks. Then, transferring them safely to storage places allocated in a safe place and in accordance with relevant laws and legislations.

TENORM process is performed as follows:



TENORM Industries and Sources

Radioactive elements are present in many soils and rock formations, and consequently in the water that comes into contact with them. Extraction and processing of these resources may expose or concentrate NORM, causing them to be classified as TENORM.

This list of TENORM sources is not comprehensive, as TENORM is known to occur in other processes, but provides a general sense of the hazards posed by this class of radioactive substances.



TENORM

Why PETROSAFE ?

PETROSAFE has a highly qualified team of well-trained engineers and technicians – licensed from the Egyptian Nuclear & Radiological Regulatory Authority (ENRRA) to deal with TENORM in a safe manner, with advanced scientific instruments and rangers with all protective equipment.



RADIATION PROTECTION
SERVICES, LTD.

Key Projects

- GEMPETCO - 2002.
- NORM Decontamination [PETROBEL].
- NORM Consultation [GUPCO].
- NORM Decontamination {GPC}.
- Radiation protection Consultation { GUPCO } .
- Radiation protection Consultation {Qarun Co.}
- Radiation protection Consultation { Badr Co.}
- Radiation protection Consultation{BP EXPLORATION (DELTA) LTD }

The major industrial sectors that generate TENORM are:

- Mining
 - Hard Rock Metal Mining
 - Rare Earths Mining Wastes
 - Uranium Mining Wastes
 - Copper Mining and Production Wastes
 - Bauxite and Alumina Production Wastes
- Energy production
 - Oil and Gas Production Wastes
 - Coal Combustion Residuals
- Water treatment
 - Drinking Water Treatment Residuals
 - Wastewater Treatment Residuals
- Consumer products
 - Fertilizer and Fertilizer Production Wastes
 - Cigarettes
 - Building Materials
 - Granite Countertops

A strategy for TENORM management is essential. It is important that TENORM management is planned and carried out with consideration. Specifically, the approval of the regulatory authorities may be required. Given the high degree of technical knowledge that is required, it is necessary to engage specialized company within the TENORM management process. This is why specialists are there for – your partner in protection against the potential exposures to TENORM.

If you are uncertain about the hazards in your industry or you are working with natural resources or oil and gas sectors, and need technical support, PETROSAFE is there for you – ready to serve.

PETROSAFE services include the following:

1. Consultation Services:

PETROSAFE – through its qualified team of radiation experts, licensed by ENRRA – provides all forms of TENORM consultation services to oil & gas sister companies & other companies dealing with radioactive wastes in Egypt.

2. Measuring and Removing of TENORM:

PETROSAFE also provides the following services:

- Measuring, cleaning and removing of radioactive wastes existed in oil fields, storage tanks and facilities.
- Disposal of radioactive waste safely and in accordance with legislation and laws.

NORM services provided by PETROSAFE became a necessary service to all companies dealing with or exposed to TENORM sources to work safely and to be adopted with laws, legislations and ENRRA instructions and recommendations.

PETROSAFE is a pioneering company in providing TENORM services in Egypt, due to its well-trained engineers, licensed team, radioactive measuring equipment and protective equipment.

PETROSAFE aims to have a major sand blast unit specially designed for cleaning oil pipelines, pumps, fittings and treatment facilities contaminated by TENORM.



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