

# RADIATION ALERT: BEWARE OF



شركة الخليج العربي للنفط  
ARABIAN GULF OIL COMPANY

# NORM

## NORM: Naturally Occurring Radioactive Material In Oil & Gas Operations

During our production activities in which oil/water is extracted from the reservoir, **NORM** precipitates on the interior of production equipment as scale (Barium/Radium Sulphate scale) and solids such as (sand/clay and silts) deposit with the oil in vessels and separators. Wax from pigging activities on the inside of pipes may also contain some NORM and should be treated as contaminated.

### Warning

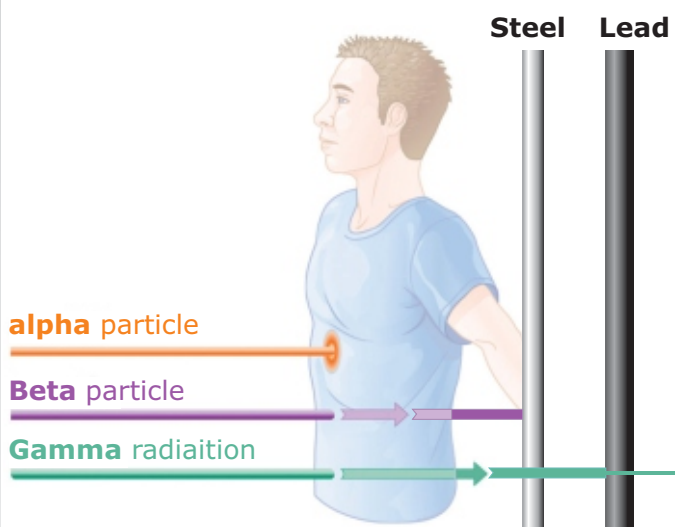
For **alpha** particle Inhalation is the major route of exposure. Alpha Radiation cannot penetrate our clothing.

**Beta** Radiation enters the body by Ingestion, absorption or inhalation. Beta radiation requires shielding, such as aluminum foil, heavy leather working gloves, or polycarbonate plastic to protect the body from absorbing the radiation.

**Gamma** Radiation can also travel through the body. Gamma radiation requires the shielding of lead

### Emergency & First Aid

- Flush eyes with clean, low-pressure water for at least 15 minutes .
- In case of skin contact, thoroughly wash affected area with soap and water.
- Precautions should be taken to avoid ingestion .



## Special Instructions

**Supervised Area:** where the radiation contour exceeds 2.5µSv/h then the area is considered & designated as a radiologically Supervised Area.

**Controlled Area:** Where the radiation contour exceeds 7.5 µSv/h, the area is considered & designated as a Controlled Area.

**Physical Controls:** Physical controls for these areas will be identical. Boundaries of these areas shall be marked with warning signs and roped off with marking tape.

**Monitoring of Personnel:** Where the radiation contour could be equal or in excess of 7.5 µSv/h, the dose of individuals shall be recorded and registered in a database. Workers performing their jobs in this area must be in possession of personal 'Dosi Meter'.

**Inhalation or Ingestion:** Suitable PPE (e.g. filter masks) shall be used to prevent inhalation/ingestion of radioactive substances arising from dust generating activities. Note: An inhalation risk only exists where NORM contaminated scale, sludge, pigging wax or production water becomes airborne.

**Recommendations & rules for working:**

**Only trained personnel shall be allowed on the job.**

Access to the area shall be controlled by the work supervisor/Safety Advisor & via barrier.

**Access shall be restricted only to personnel directly involved in the work.**

Prior to entering, the area personnel shall wear PPE as specified.



**Controlled  
Radiation  
Area**



**No  
Unauthorized  
Entry**

Upon leaving the area, personnel shall first undergo a check for external contamination.

All equipment and tools shall be checked for contamination before proceeding to the clean area.

The PPE shall be removed before entering the clean area.

Ver. 1.00 - March 2015

# Think safe, Work safe

For more information please contact us at HSE page:  
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