**Marine, Offshore and Costal Harsh Environment**

-Definition and characteristics-

Humidity varying up to 100%

* Origin: From heavy rains, fog and tropical environment.

Sea salt aerosol (alkali)

* Origin: Calcium from sea water (usual).
* Possible references to:
  + Vienna ASME Turbo Expo 2004, GT2004-53113 SALT IN THE MARINE ENVIRONMENT AND THE CREATION OF A STANDARD INPUT FOR GAS TURBINE AIR INTAKE FILTRATION SYSTEMS Peter T McGuigan Altair Filter Technology Ltd Omega Park Alton Hampshire GU34 2QE.
  + Lt. Cdr. M.J. Cutland, 1975, “Marine Gas Turbine Air Filtration Testing Procedures at NMW, NGTE”, Royal Navy (UK), Naval Marine Wing (NMW) note 59/75.

Alkali dust

* Origin: From potassium used for drilling activity (but remains unusual)

Fog

* Origin: From climate conditions.

Oil mist

* Origin: From atmospheric vent (lube oil system vent).

Fumes

* Origin: From flare, gas turbine, gas engine, diesel engine exhaust stack.

Soot and carbon black

* Origin: From Diesel engine generator, from Diesel engine powering supply boat.

Dust

* Origin: From wind-blown dust like Harmattan, Shamal, Brickfielder, etc...
* Possible references to:
  + Montreal, ASME Turbo Expo 2007 GT2007-27820 IDENTIFYING AREAS PRONE TO DUSTY WINDS FOR GAS TURBINE INLET SPECIFICATION Charles Brake GE Energy, Altair Products Omega Park Alton Hampshire GU34 2QE England.

SO2

* Origin: From combustion of fuel gas containing H2S or liquid fuel containing sulphur.

Grit and paint dust (temporary)

* Origin: From mineral or metallic abrasive and paint removal process.

Paint mist (temporary)

* Origin: From painting campaign at site.

Welding fumes (temporary)

* Origin: From hot work at site.