



Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Direzione Generale Valutazioni Ambientali

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Los Angeles, July 25th 2014

Dear Representatives of the Italian government,

I am a professor with a Ph.D. in physics and I teach in the medical school at the University of California. I am writing you to express my concern about the proposed offshore drilling along the Abruzzo coast, according to lease d30 BC MD as proposed by Mediterranean Oil and Gas.

The Deepwater Horizon disaster focused international attention on offshore blowouts. Indeed, they happen more often onshore, with dangerous effects: releases of flammable and toxic gases, spills of oil and drilling fluid, and plumes of groundwater pollution. Blowouts can result from the failure of blowout preventers, designed to seal off the well bore and block a surge of gas or pressurized oil from underground. Gaseous muds, gas condensates, and crude oil, may bubble up around the rig accompanied by sulfurous smells wafting through the air causing problems to people's skin, respiratory, circulatory and neurological systems. Also, under normal operating conditions, one must take into account the large amount of waste associated with onshore oil and gas production such as drilling-waste fluids or muds, drilling-waste solids, produced water, and volatile organic compounds.

The drilling-waste muds may be freshwater gel, salt water (potassium chloride or sodium chloride), or oil invert-based systems. The oil invert mud systems may contain up to 50%, by volume, of diesel oil. Drilling wastes may contain drilling muds (bentonite), borehole cuttings, additives (polymers, oxygen scavengers, biocides, and surfactants), lubricants, diesel oil, emulsifying agents, and various other wastes that are specifically related to the drilling activities. Drilling-waste solids, which are made up of the bottom layer of drilling-mud sump materials, may contain drill cuttings, flocculated bentonite, and weighting materials and other additives. Additional wastes from the drilling process include used oils, cementing chemicals, and toxic organic compounds. Field processing of crude oil generates several waste streams, including contaminated wastewater, tank bottoms that may contain lead, emulsions, and heavy hydrocarbon residues, which may contain polynuclear aromatic hydrocarbons (PAHs). Cooling tower blowdown, boiler water, scrubber liquids, and steam production wastes are also generated, as well as contaminated soil, used oil, and spent solvents. Wastewaters typically contain suspended solids. To control the growth of microorganisms in sour water, a

biocide or hydrogen sulfide scavenger (for example, sodium hypochlorite) is generally used prior to reinjection or disposal of the water. Crude pipelines are routinely cleaned by pigging operations, which can lead to spills and to the generation of sludge containing heavy metals. Solid wastes that do not contain toxic material are used as backfill material. Among the main sources of air emissions are fired equipment, vents, flares (including those from compressor stations), and fugitive emissions. The emissions may contain volatile organic compounds (VOCs), sulfur oxides (SO_x), hydrogen sulfide, and nitrogen oxides (NO_x).

In 2011, the European Commission published a working paper called "Safety of offshore oil & gas Impact Assessment Annex I". The article notes that data taken from the Oil and Gas Producer association directory lists at least 98 major accidents that have occurred in the North Sea in the years 1970-2007, yielding an aggregated rate of 2.6 accidents per year. Other figures taken from the SINTEF Offshore Blowout Database show 573 offshore blowouts or oil releases occurring worldwide since 1955, similarly suggesting that incidents are not uncommon.

We can thus conclude that the recurrence rate for a major oil spill from an offshore blowout in Europe is in the order of decades rather than centuries. What are the costs associated to this in terms of property losses, pollution clean up, health effect, lost revenue for the tourism or the fishing industry?

Finally, from what I understand the petroleum in Abruzzo is of low quality (requiring an inefficient and polluting refinement process) and the reserves constitute a minuscule part of Italy's oil consumption. It would be irresponsible to sacrifice the environment by permitting oil exploration and extraction in Abruzzo and allow the few in corporations to make a quick profit at the expense of the natural environment that is clearly better suited for tourism, residences, or agriculture.

Sincerely,

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