Eamonn Murtagh

From: Sonya Paw
Sent: 27 September 2011 10:29
To: Eamonn Murtagh
Subject: Re: Consultation Paper on the High Level Design of the Petroleum Safety Framework CER/11/137 (12)

Dear Sir,

Please read our submission on Fracking,

yours sincerely,

The People's Association Watchdog

www.facebook.com/groups/p.a.watchdog

We, the members of the People's Association Watchdog (PAW), call upon the government to BAN FRACKING in Ireland.

The People's Association Watchdog (PAW) is a group of informed concerned citizens who engage ourselves in addressing current issues. As citizens of Ireland we are angered at decisions being taken for short term gain regardless of their inherent destructiveness. It is much more prudent, responsible and ethical to plan and make decisions based on long term success and ecologically sustainable ways forward.

We believe that fracking, with or without chemicals, is in direct contravention of existing environmental and water legislation, is unconstitutional and is a danger to Irish citizens, wildlife, environment and culture. Until such time as it is proven that fracking will cause no environmental or social damage that will affect Irish citizens, our children and our children's children the Precautionary Principle must apply. (Aarhus)

We believe that allowing fracking will place not only our own but also our children's health and their inheritance of this country at risk, through contamination of the water supply, the release into the atmosphere of unknown compounds and destruction of large areas of the countryside. Furthermore, any financial gains to the country through facilitating this devastating process would not answer any immediate requirements in reducing this countries financial deficit. Also, should there eventually be a financial gain; it would take a considerable time to filter through to the exchequer. The taxation levels currently proposed would provide insignificant returns in terms of the amounts that are required to balance the country's books and there is in fact no actual guarantee that there would be any return at all.

In addition, it is obvious that the safety regulations proposed in the Consultation Paper on the High Level Design of the Petroleum Safety Framework will be neither adequately robust nor adequately enforced to prevent serious environmental, social and economical damage to the country as a whole and in particular to the areas where permission for fracking exploration has been facilitated to date by the State.

Fracking contravenes Article 45.2.ii of the Irish Constitution.

Article 45.2.ii states: That the ownership and control of the material resources of the community may be so distributed amongst private individuals and the various classes as best to subserve the common good.

Fracking also contravenes:

- **STATUTORY INSTRUMENTS. S.I. No. 272 of 2009, EUROPEAN COMMUNITIES ENVIRONMENTAL OBJECTIVES (SURFACE WATERS) REGULATIONS. 2009.**

- **STATUTORY INSTRUMENTS. S.I. No. 9 of 2010 European COMMUNITIES ENVIRONMENTAL OBJECTIVES (GROUNDWATER) REGULATIONS, 2010**.

- **European Communities (Environmental Liability) Regulations, 2008.**

To date, fracking has been banned in France (1), Quebec in Canada (2), George Washington National Forest in the U.S. (3), New York in the U.S. (4); also moratoriums have been placed on fracking in New South Wales in Australia (5), South Africa (6), U.K (7), New Jersey in the U.S.(8), and Pittsburgh in the U.S. (9).

Within the European Community, legislation is currently under review with respect to hydraulic fracturing activity, following the controversy surrounding the industry in the U.S. The European Parliament's Committee on Environment, Public Health and Food Safety has commissioned a report:

'Impacts of shale gas and shale oil extraction on the environment and on human health' (10).

It would at least be prudent on the part of the current Government to await the results of this report and the American Environmental Protection Agency (EPA) study into the practice of fracking. The results of this study will be available in late 2012 (11).

Current Proposed Regulations.

These are detailed in the Consultation Paper on the High Level Design of the Petroleum Safety Framework CER/11/137 (12) which we believe will lead to a complete lack of regulation and unsafe practices because of a likely low level of enforcement of its requirements. The Commission for Energy Regulation (CER) has a responsibility to ensure that safety regulations are consistent and within best international regulatory practice. In the foreword of this paper, Dermot Nolan (CER Chairperson) and Garrett Blaney (CER Commissioner) have both signed that it is their intention to *deliver a safe Irish petroleum exploration and extraction industry.*
However, by page iii of the executive summary this has been reduced to a mere
vision of a safe Irish petroleum exploration and extraction industry and the role of the CER is reduced to ***fostering*** *and* ***encouraging*** *safety in petroleum exploration and extraction activities.*

The goals of CER are that *petroleum undertakings reduce risks to safety to a level that is ALARP*, which translated means '**as low as practically reasonable**'. Whilst there is within this paper a whole section devoted to how ALARP is to be achieved, there is no clear statement on who sets the level that is as low as reasonably practical, or who should set these limitations, CER or the petroleum companies.

We have absolutely no confidence in the safety levels currently set by the petroleum companies based on the many environmental catastrophes already recorded and even were these set by CER, we have no confidence in the enforcement of those limitations.

Whilst the reasons are clearly given as to why the intention that the framework should be 'goal setting' rather than prescriptive in its nature, regulation can not be discretionary. Limitations and safety measures must be clearly defined and regulated to ensure that operators act in a safe and responsible manner toward the environment and Irish citizens. At this point this is impossible given the poor levels of research, knowledge and experience therefore hydrofracking must be banned.

In the introduction to Consultation Paper on the High Level Design of the Petroleum Safety Framework CER/11/137, it

states that CER is responsible for the safety regulation of petroleum undertakings as covered by the Petroleum (Exploration and Extraction) Safety Act 2010. It further states that safety is not defined by the Act nor in any other Acts but is taken to mean (section 3.2.2.3) a state of the absence of danger. We believe that hydrofracking in any form will not allow this state to exist in any normal sense of the word. Fracking presents a high level of danger to the environment, our citizens and future citizens regardless of how well regulations are enforced or adhered to.

No Chemical Fracking

To date fracking has never been carried out anywhere in the world without the use of chemicals. Richard Moorman, Chief Executive of Tamboran, one of several companies who now hold licences for exploration in this country has stated that no chemicals will be used in the fracking process. (13) (27)

- Fracking expert Dr Anthony R Ingraffea, a professor of engineering at Cornell University in New York, with 30 years experience in rock fracture mechanics, who worked directly for the world's leading oil and gas completion company stated **"It is highly unlikely that there could be an economically produced shale gas well, of the scale that is commonly being used in the United States, using only water and sand."** (29)

It is widely recognised that fracking releases numerous hazardous materials from shale rock including methane, heavy metals and high levels of radiation, these having been found in water returning to the surface following fracking. These are substances which are released from the shale itself and in addition, thousands of gallons of toxic chemicals will be likely to be used for every well that is drilled. The area proposed is known to be a high radon area.

There is also the issue of the disposal of the fracking solutions which is posing huge problems in areas where fracking has been allowed as well as the high incidence of accidents during the processing. The transportation of fluids is yet another risk which would face Ireland's already highly challenged water and road systems.

Information currently available to you through the EU can show that highly toxic chemicals are added to the water/sand mix (15).

- Scientist Dr. Aedin McLoughlin, a resident of Ballinaglera, Co. Leitrim, advised a recent meeting (16) that she had serious concerns regarding the consequences of fracking, for water, land and the community. She described as "misinformation" an assertion by Tamboran that the company will not use chemicals to extract the gas, stating this part of the process would be subcontracted to other companies. Dr. McLoughlin stated: "I think they are being very clever saying 'we' will not be using chemicals", because Tamboran only carry out the exploratory stage of the process – but they are not actually stating that the company who will follow on to produce the gas won't use these potentially lethal chemicals".

Water Supply

It is ironic that at the very time the government is going to install water meters to conserve already scarce water and is also considering using the river Shannon for water supply to Dublin to satisfy scarcity, it is considering developing an industry which relies on huge supplies of water in its processes. How will this resource be found? Provision of such large quantities of water to this industry is likely to hugely impact on already scarce supplies of water for domestic use. (28)The Lough Allen basin contains a myriad of linked waterways and underground water systems, it also contains the source of the Shannon River. Tamboran MD Richard Moorman states 'We plan to utilize between 1 million and 2 million gallons of water per well, sourced only from rainwater and 1 to 4 ground water wells next to the drilling pad (all to be stored onsite in a fresh water pond). We will utilize the groundwater wells to frequently test the quality of water at the wellsite.' **This amount of water could not be sourced from rainwater, it would be extracted from ground wells and from the loughs and rivers.** (31)

Water Quality

Water quality, whether with or without chemicals, will be affected. In areas where fracking has taken place, water supplies have been seriously contaminated by the gas produced, rendering the ground water and the lakes, rivers and streams totally unfit for human or animal use and leading to the poisoning of all of these water supplies and the

subsequent loss of plant and animal life. This has been demonstrated in many studies by reputable organisations globally and so far not one study has proven that fracking is not the cause of these disastrous consequences. MD of Tamboran, Richard Moorman has said 'Ireland's shales are quite shallow (1.0 to 1.5 km), so do not require the extensive water requirements of the much deeper US shales' (28) (31)

Responding to years of complaints of water contamination and illnesses from citizens in rural Wyoming, the EPA investigated the water quality of 39 wells surrounding a small community besieged by gas drilling. The agency found a wide range of contaminants, including heavy metals such as lead, arsenic, copper, vanadium, and methane gas in the water. (17)

Waste Water

Waste water is difficult and expensive to treat, one of the already existing reasons that Ireland does not use ocean water for agriculture and residential applications. If fracking is allowed, millions of gallons of waste water will be generated. Where fracking has already been allowed, this has led to issues such as accidental spills, cases of non-containment and road accidents. In particular, the waste water from fracking has been shown to contain high levels of radium and radon; this would clearly have devastating effects on both citizens and the environment.There is no infrastructure in Ireland for treating this toxic/radioactive water, so what will happen to it? The contaminated water would either be stored on the sites of the well pads or transported in large trucks along the poor quality roads in the proposed areas. This would be a very high risk operation and likely to lead to many accidents (29)

Irish Countryside and Tourism industry

Much of the land designated on the Fracking map is in rural Ireland, areas whose economies are based on long term sustainable industries such as farming, fishing and tourism. These industries will be devastated by fracking industry.

As a tourist, would you consider visiting a location that has:

Shale Gas Pads placed every 2-4 km (1-2 miles) which may contain up to 16 wells per pad, are made of flattened concrete and take up an area of 12 acres per pad. (26) **There would be one of these pads roughly every half to 1 mile.**

This will render large areas of the countryside, loughs and forestry currently attracting tourists through its natural beauty, wildlife and flora, destroyed and leave even those areas in-between totally unattractive and dangerous to both local residents and visitors.

These pads will require an access road suitable for heavy trucks and will have a 60 ft drilling tower and 4 flowback containers (40ftx40ftx15ft) per well, along with a water pit the size of a soccer pitch.

There will be machinery of various kinds, including tankers, trucks, pipelines and containers creating a heavily industrialised zone, causing damage and danger to already restricted country roads and likely causing pollution with the high risk of accidents.

While drilling is taking place, local residents are likely to be subjected to noise and light pollution on an unimaginable and intolerable scale.(28)

The areas in Ireland where licences for exploration have been allocated to-date are scenic and coastal locations which rely totally on agriculture or tourism and other sustainable industries. These would be severely negatively impacted by fracking.

Gas versus Coal

Although gas burns cleaner than coal and oil, the extraction, processing and transport of natural gas emits large amounts of methane, a potent greenhouse gas (GHG). Methane has a global warming potential 21 times greater than carbon dioxide on a 100-year scale, and 72 times greater than carbon dioxide on a 20-year scale. A recent, ongoing Cornell University analysis suggests that the footprint of shale gas may be 1.2 to 2.1-fold greater than coal's on a 20-year timeframe. Recently the EPA drastically increased estimates of methane leakage from the natural gas industry. The revised percent figures estimate emissions from unconventional natural gas operations at 9,000 times higher than previous estimates. Yet, due to inadequate data regarding unconventional natural gas extraction from resources such as shale gas, the EPA maintains that these revised percent figures likely underestimate the total amounts.

Professor Robert Howarth and colleagues from Cornell University, using EPA estimates of methane leakage from natural gas operations, put natural gas ahead of coal in terms of GHG emissions. The EPA recently estimated that fugitive methane from the petroleum and natural gas sector equals the annual equivalent of 40 million passenger cars. (18)(31)

Dr. Theo Colborn of The Endocrine Disruption Exchange (TEDX) reports that once drilling is complete, produced water continues to surface for the life of the well for 20 to 30 years. (19)

A 2009 Department of Energy report suggested that between 30 and 70 percent of fracking Fluids remain underground, however the DOE noted the uncertainty of determining the exact fate of the fluids: "it is not possible to unequivocally state that 100 percent of the fracturing Fluids have been recovered or to differentiate flow back water from natural formation water." (20)

Destruction of Woodland

The proposed areas contain large tracts of Coillte woodland. Is it the case that fracking companies have already negotiated purchase/use of these lands? It may be significant that Richard Moorman of Tamboran has stated that they foresee working primarily in wooded areas. (21) (Reference comment thread on Journal.ie article)

Roads and Other Infrastructure

The roads in the proposed areas are rural and are not constructed to withstand the weight of traffic currently using them let alone the passage of oil tanker sized trucks. These roads would be severely damaged and dangers of pollution risks are highly likely due to the obvious likelihood of accidents and spills of toxic chemicals and waste water.

Will fracking companies be required to upgrade, maintain and repair roads that their trucks use or will this place a further severe burden on the already overstretched roads budget?

Existing Evidence:

- The N.Y. Dept. of Transportation believes that as much as $222 million in damage to local roads could occur because of the massive influx of heavy plant traffic necessary to operate fracking wells. (22)

- One Denton, Texas study determined that for all three phases of a gas well -- drilling, fracking, and maintenance -- approximately 592 one-way truck trips were required per well. Some individual trucks weighed as much as 80,000 to 100,000 lbs when fully loaded. (23)

Politicians and People Unite in Their Call for "No Fracking"

- "Tamboran is giving false promises on the basis that they will subcontract the actual fracking to another company who have not made the no chemical pledge. The process will kill fish, burn the ground and destroy tourism." - Leitrim County Councillor Gerry Dolan (IND)

- "What we are facing is outrageous. This area has the richest heritage in Europe and this will ruin our heritage and tourism potential. (16)
- Mayor of Roscommon Cllr Eugene Murphy (FF) "Although fracking might bring in a once off €15B to the economy, agriculture brings in €24B every year."
- Independent TD Luke "Ming" Flanagan (IND) "It is illegal to put poison in someone's tea, but not to put it in the rivers and seas. Why should we give a multinational [company] a resource that belongs to Ireland? The people need to stand up and be counted. They might think that in Leitrim we are poor, and maybe we are – but we are not cheap and we will not be bought off." (16)
- Leitrim Councillor Martin Kenny (SF) said tax incentives had helped bring a building boom, but the lesson from that was "a fast quick buck just does not work". He believed gas firms had met quarry owners and local

trucking firms regarding potential for business. "They might think that in Leitrim we are poor, and maybe we are – but we are not cheap and we will not be bought off," (16)

- Leitrim County Councillor Gerry Dolan said he believed tourism and farming industries could be "wiped out" if gas exploration companies get the go-ahead. (16)
- Independent TD Luke "Ming" Flanagan, who is opposed to fracking, warned of its impact on the tourism industry, which in Roscommon and south Leitrim had potential to grow by €90 million. (16)
- Mayor of Roscommon Cllr Eugene Murphy (FF) noted fracking was banned in a number of countries and called for "an absolute and total ban" here. (16)
- Under questioning by the councillors, Mr. Moorman did admit that there is no evidence the process will work, but he said "I am confident it can be done." (25)
- Cllr. Sinead Guckian said her concern was that "our county will be used as a guinea pig." Protesters outside also said they did not want Leitrim to be a "guinea pig" for Tamboran. Mr Moorman said Tamboran will use sub-contractors for some of the work but they too will not use any chemicals and will have the same views as Tamboran.(25)
- Leitrim Observer Tuesday 13 September 2011. Dr. McLoughlin, the "rural enabler" for Co. Leitrim under the EU-funded Peace III programme, which supports reconciliation projects in the Border area, said the region, known for its natural beauty, would effectively become an "industrialised zone" comprising a series of shale gas pads every 2km to 4km. Each pad would have a flattened concrete foundation of 2.5 acres, with eight wells, access roads for trucks, 60 ft. drilling towers and water pits the size of soccer pitches, she said. (16)

Aside from sand and chemicals, the process of fracking uses phenomenal amounts of water forced at high pressure (typically 10000 psi) into the wells. This part of the process, even if all else is proven safe, will be difficult to justify in Ireland - a country with water shortages which with climate change will likely increase.

An Taisce (National Trust for Ireland)

T**AKEN FROM THE EUROPEAN PARLIAMENT SCIENTIFIC STUDY INTO THE IMPACTS OF SHALE GAS AND SHALE OIL EXTRACTION ON THE ENVIRONMENT AND ON HUMAN HEALTH 2011**

POLICY DEPARTMENT AN ECONOMIC AND SCIENTIFIC POLICY:

Environmental Impact Key Findings:

1. Unavoidable impacts are area consumption due to drilling pads, parking and manoeuvring areas for trucks, equipment, gas processing and transporting facilities as well as access roads.

2. Major possible impacts are air emissions of pollutants, groundwater contamination due to uncontrolled gas or fluid flows due to blowouts or spills, leaking fracturing fluid, and uncontrolled waste water discharge.

3. Fracturing fluids contain hazardous substances, and flow-back in addition contains heavy metals and radioactive materials from the deposit.

4. Experience from the USA shows that many accidents happen, which can be harmful to the environment and to human health. The recorded violations of legal requirements amount to about 1-2 percent of all drilling permits. Many of these accidents are due to improper handling or leaking equipments.

5. Groundwater contamination by methane, in extreme cases leading to explosion of residential buildings, and potassium chloride leading to salinization of drinking water is reported in the vicinity of gas wells.

6. The impacts add up as shale formations are developed with a high well density (up to six wells per km^2).

Human Health Concerns:

Because of trade secrets the composition of the additives is not fully disclosed to the public. [Wood et al 2011]

An analysis of a list of 260 substances provided by New York State leads to the following results:

- 58 of the 260 substances have one or more properties that may give rise to concern.

- 6 are present in list 1 of lists 1-4 of priority substances, which the European Commission has published for substances requiring immediate attention because of potential effects to man or the environment: Acrylamide, Benzene, Ethyl, Isopropylbenzene (cumene), Naphthalene, Tetrasodium Ethylenediaminetetraacetate.

- One substance (Naphthalene bis (1-methylethyl) is currently under investigation as, bio accumulative and toxic (PBT).

- 2 substances (Naphthalene and Benzene) are present on the first list of 33 priority substances established under Annex X of the Water Framework Directive (WFD) 2000/60/EC - now Annex II to the Directive on Priority Substances (Directive 2008/105/EC).

- 17 are classified as being toxic to aquatic organisms (acute and/or chronic).

- 38 are classified as being acute toxins (human health) such as 2-butoxy ethanol.

- 8 substances are classified as known carcinogens such as benzene (GHS classification: Carc. 1A) and acryl amide, ethylene oxide, and various petroleum based solvents containing aromatic substances (GHS5 classification: Carc. 1B).

- 6 are classified as suspected carcinogens (Carc. 2) such as Hydroxylamine hydrochloride.

- 7 are classified as mutagenic (Muta. 1B) such as benzene and ethylene oxide.

- 5 are classified as having reproductive effects (Repr. 1B, Repr. 2).

- 2-butoxy ethanol (also called ethylene glycol monobutyl ether) is often used as chemical additive. [Bode 2011], [Wood et al 2011] It is toxic at relatively low levels of exposure. The half-life of 2-butoxy ethanol in natural surface waters ranges from 7 to 28 days. With an aerobic biodegradation rate this slow, humans, wildlife and domestic animals could come into direct contact with 2-butoxy ethanol through ingestion, inhalation, dermal sorption and the eye, in its liquid or vapour form, as the entrapped water reaches the surface. Aerobic biodegradation requires oxygen, which means that the deeper 2-butoxy ethanol is injected into underground layers the longer it will persist. [Colborn 2007].

While the EU legislation may require further consideration with regard to Energy Extraction directives, there are currently 6 clear directives in place that can be considered and will be examined by PAW and other interested parties to ensure the best interests of the environment and the population in general, these are:

Mining Waste Directive: Natura 2000
Ambient Air Quality: Ground Water Directive

BAT Note (BRAF): Habitats & Bird Directives
Seveso II: Ambient Air Strategy
EIA Directive: Water Framework Directive
REACH: Environmental Liability

Furthermore, for EU-legislation on waste alone, 36 directives, regulations, recommendations and the like are listed. In total, this collection probably comprises hundreds of documents relevant for environmental aspects.

In order to assess the current EU regulatory framework focussing on hydraulic fracturing, the lists of up to 12 directives are not exhaustive, while the collection of hundreds of regulatory documents is too encyclopaedic. Nevertheless, some of the lists were especially composed to give an overview of the EU regulatory framework relevant for the exploitation of shale gas.

Relevant EU-Directives

Below are just some of the EU Directives that PAW and others will be examining in depth at each and every stage of the proposal to inflict fracking on the population and environment of Ireland

1. 2000/60/EC
Directive establishing a framework for Community action in the field of water policy (Water framework directive).

2. 1980/68/EEC
Directive on the protection of groundwater against pollution caused by certain dangerous substances (repealed by 2000/60/EC with effect from 22 December 2013).

3. 2006/118/EC
Directive on the protection of groundwater against pollution and deterioration.

4. 1986/280/EEC
Council Directive on limit values and quality objectives for discharges of certain dangerous substances included in List I of the Annex to Directive 76/464/EEC.

5. 2006/11/EC
Directive on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community (Codified version).

6. 1998/83/EC
Directive on the quality of water intended for human consumption.

Relevant EU Directives on the Protection of the Environment

Directive:
7. 2010/75/EU
Directive on industrial emissions (integrated pollution prevention and control).
IPPC-Directive

8. 2008/1/EC
Directive concerning integrated pollution prevention and control (codified version)

Decision
2000/479/EC
Decision on the implementation of a European pollutant emission register (EPER) according to Article 15 of Council Directive 96/61/EC concerning integrated pollution prevention and control (IPPC). Annex A1: List of pollutants to be reported if threshold value is exceeded.

9. 1985/337/EEC
Environmental Impact Assessment Directive. EIA Directive

10. 2003/35/EC
Directive providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC.

11. 2001/42/EC
Directive on the assessment of the effects of certain plans and programmes on the environment
Strategic Environmental Assessment (SEA).

12. 2004/35/EC
Directive on environmental liability with regard to the prevention and remedying of environmental damage.

13. 1992/43/EEC
Directive on the conservation of natural habitats and of wild fauna and flora. Natura 2000

14. 1979/409/EEC Directive on the conservation of wild birds.

15. 1996/62/EC Directive on ambient air quality assessment and management.

Relevant EU Directives on safety at work

Directive

16. 1989/391/EEC
Directive on the introduction of measures to encourage improvements in the safety and health of workers at work.

17. 1992/91/EEC
Directive concerning the minimum requirements for improving the safety and health protection of workers in the mineral-extracting industries through drilling.

18. 1992/104/EEC
Directive on the minimum requirements for improving the safety and health protection of workers in surface and underground mineral-extracting industries.

19. 2004/37/EC
Directive on the protection of workers from the risks related to exposure to carcinogens or mutagens at work (codified version).

20. 1991/322/EEC
Directive on establishing indicative limit values by implementing Council Directive 80/1107/EEC on the protection of workers from the risks related to exposure to chemical, physical and biological agents at work.

21. 1993/67/EEC
Directive laying down the principles for assessment of risks to man and the environment of substances notified in accordance with Council Directive 67/548/EEC.

22. 1996/94/EC
Directive establishing a second list of indicative limit values in implementation of Council Directive 80/1107/EEC on the protection of workers from the risks related to exposure to chemical, physical and biological agents at work.

23. 1980/1107/EEC
Council Directive of 27 November 1980 on the protection of workers from the risks related to exposure to chemical, physical and biological agents at work.

24. 2003/10/EC
Directive on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise).

Relevant Directive on Radiation Protection

Directive

25. 1996/29/Euratom
Directive laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation. N.O.R.M. (Naturally Occurring Radioactive Material) Directive

Relevant EU Directives on Waste

Directive

26. 2006/21/EC
Directive on the management of waste from extractive industries and amending Directive 2004/35/EC - Mining Waste Directive

Commission Decision

2009/359/EC
Decision completing the definition of inert waste in implementation of Article 22(1)(f) of Directive 2006/21/EC concerning the management of waste from extractive industries.

27. 2006/12/EC
Directive on waste - Waste Framework Directive.

28. 1999/31/EC Directive on the landfill of waste.

Commission Decision

2000/532/EC
Decision establishing a list of (hazardous) wastes pursuant of several Directives (replacing Decision 94/3/EC)

Commission Decision

2009/360/EC
Decision completing the technical requirements for waste characterisation laid down by Directive 2006/21/EC on the management of waste from extractive industries.

Commission Decision

2009/337/EC
Decision on the definition of the criteria for the classification of waste facilities in accordance with Annex III of Directive 2006/21/EC concerning the management of waste from extractive industries.

29. Decision

2002/1600/EC
Decision laying down the Sixth Community Environment Action Programme
(Article 6 (2)(b): "…developing further measures to help prevent the major accident hazards with special regard to those arising from pipelines, mining, marine transport of hazardous substances and developing measures on mining waste…")

Relevant EU Directives on Chemicals and associated accidents

Directive
30. Regulation 1907/2006
Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency - ECE/TRANS/215 8

United Nations Economic Commission for Europe (ECE): European Agreement Concerning the International Carriage of Dangerous Goods by Road. ADR applicable as from 1 January 2011.

31. 1996/82/EC
Directive on the control of major-accident hazards involving dangerous substances - Seveso II Directive.

32. 2003/105/EC
Directive amending Council Directive 96/82/EC (Seveso II Directive) on the control of major-accident hazards involving dangerous substances (this Directive is currently under review). [The most important extensions of the scope of that Directive are to cover risks arising from storage and processing activities in mining, from pyrotechnic and explosive substances and from the storage of ammonium nitrate and ammonium nitrate based fertilizers.]

33. 1991/689/EEC Directive on hazardous waste.

34. 1967/548/EEC
Directive on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.

35. 1999/45/EC
Directive concerning the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous preparations.

36. 1998/8/EC
Directive concerning the placing of biocidal products on the market.

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