

Ready Resources, Inc. / Ready Clean

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TECHNICAL MANUAL



OIL & FUEL ABSORBENT

NON TOXIC

NON ABRASIVE



TECHNICAL MANUAL ©

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1.1 Product Overview

Over the past few years, major oil spills and the removal of hazardous contaminants from the industrial workplace have received a high level of attention. Environmental issues concerning the clean-up of contaminants that were dumped and neglected for over fifty years now require environmentally safe and effective clean-up services, equipment and products. In addition to the heightened awareness of contamination problems, new laws affect every phase of the clean-up process. These laws have recently been strictly enforced requiring us to rethink how to deal with contamination problems. What will be required are services and products that provide safe, effective, cost efficient products and services that will pick-up contaminants and can be easily disposed or remediated.

Cleanup of hydrocarbons, PCB's, resins, and fatty acids are difficult for numerous reasons. New laws recently enacted, affect and restrict tried and true methods of the way we contain, control, pickup, transport, and dispose of contaminants. These new regulations bring increased liabilities for everyone involved in the cleanup process. Gone are the days where once the contaminants were picked up, we could breath a sigh of relief and go back to the business at hand.

Major expenses and liabilities for spills now rest with the storage, transportation, and disposal of contaminants. In fact, over 1/2 of the total cleanup costs will increase significantly. New laws governing disposal methods leave fewer disposal options. This creates higher fees to pay for the storage and provide funds for future litigation as a result of the new laws. In some cases, "disposal laws" may be retroactive, requiring additional cleanup of landfill sites. New legislation will significantly affect disposal options. These new laws will vary depending upon which area of the county the spill cleanup takes place

Permitting new state-of-the-art incineration facilities has become almost impossible. Even when approved, construction funds are hard to generate in today's economy. The general public is reluctant to allow new incineration to be in their own backyards and have successfully blocked construction of new facilities. People are concerned with present and future air quality along with additional contaminants that may filter into their neighbourhood resulting from stack emissions. Without new facilities we will have to burden existing incineration systems that clearly require high levels of maintenance and new additions to conform to clean air laws.

Presently, landfill space is difficult to find even for non-hazardous waste. Municipal trash and contaminants labelled non-hazardous are shipped quite a distance to their destination. Hazardous waste landfills are expansive and also fall under changing legislation that makes it difficult for storage. Ground water contamination in landfills and underground fuel tanks pose serious environmental problems. A recent EPA study determined 34% of underground fuel tanks leak.

Liability, (for contaminants in a hazardous landfill), is a term used to describe the shared liability the landfill owner has with all of his clients and their hazardous waste. The push is on to reduce the volume of hazardous material disposed in landfills. As a result, landfill owners charge a premium for space. They also have become increasingly selective on the types of contaminants stored at their site, going as far as rejecting cleanup products made of synthetic materials that add to contamination problems.

The full cleanup cycle of operation must be taken into account when considering the cleanup of spilled

materials. Focus must take place from first response, containment, control, pick-up, storage, transportation, and disposal. Different laws that are changing rapidly regulate all of these steps. Products utilised in clean-up must conform to the new law changes. They must have flexibility to work under a variety of clean-up conditions and quickly absorb different types of contaminants. Using absorbents that cause additional disposal problems are both counter productive and costly.

Ready Resources, Inc., is constantly working to solve difficult spill problems. We have developed natural products to meet the needs for cleanup operations while complying with local, state and federal laws. Ready Sorb products can be used as stand-alone products, or work in conjunction with other equipment on larger spills. Our absorbents are effective, cost effective and minimise disposal costs.

Ready Sorb, the natural oil absorbent, is manufactured from 100% Canadian Sphagnum Peat Moss, and has been successfully used for absorbing hydrocarbons for many years. Our products have been primarily used in “oil patch”, for cleanup of oil spilled as a result of drilling spills or spills associated in the transport of oils. Within the last year, we have been working to introduce Ready Sorb into the industrial marketplace to absorb an entirely new and diversified group of contaminants.

We have used Ready Sorb to absorb PCB’s resins, fatty acids, and thick hazardous coal tars. The success of Ready Sorb has been primarily due to its high absorption rate along with its non-leaching capability that enables cleanup crews the luxury of controlling contaminants. Ready Sorb has the flexibility to provide many solutions to difficult cleanup situations.

In order to understand the flexibility and capabilities of Ready Sorb, basic product knowledge is required. Horticulture peat moss has a moisture content of approximately 55%. It is used in gardens to store water for our trees and flowers in time of need. Ready Sorb works in reverse of this theory.

Ready Sorb is 100% Canadian sphagnum peat moss harvested and dried through a dehydration process to approximately 7% moisture content. [1] Our unique drying process allows the fibres to absorb hydrocarbons where the water was once stored. The fibre encapsulates the hydrocarbon and will not allow leaching of hydrocarbons. Ready Sorb offers true absorption not adsorption that other products offer. Once hydrocarbons are truly absorbed and controlled, contaminants can be quickly picked up and disposed.

Due to our unique drying process Ready Sorb actually repels water. Because of this, Ready Sorb actually floats on water while absorbing contaminants. Ready Sorb has an instant wicking action that allows quick and effective absorbing and continues to absorb hydrocarbons until it reaches saturation. Ready Sorb can be used on land, water or any combination thereof. (I.e.: marshes, estuaries, wetland, shorelines, rivers, lakes and streams, etc.).

Ready Sorb has made significant inroads in the industrial cleanup marketplace. Industry has more than hydrocarbons to absorb and dispose. Ready Sorb, with its unique qualities, has been able to solidify and absorb resins, PCB’s, coal tars, and fatty acids. Since Ready Sorb is an organic material in nature, new markets for our products are rapidly developing in attempt to cleanup industrial by-products.

Ready Sorb is sold in double compressed 1.4 & 4 Cu absorbing capacity bags. The material is lightweight and will pick up approximately 1 gallon of oil to 1 pound of Ready Sorb. Ready Sorb is

able to pickup an entire range of hydrocarbons from gasoline to crude oil.

Ready Sorb has many other bonus advantages for many spill cleanups. It is non-abrasive to machinery. This is particularly important due to the many hydraulic leaks that occur, as machinery cannot shut down during a work shift. Oil cleanup around machines is easy and creates a safer area for workers.

The vapour suppressive and static resistant qualities of Ready Sorb are a significant safety feature for response crew. Ready Sorb has the ability to absorb flammable liquids and aid in the prevention of flashbacks. Efficiency and worker safety is main reasons for response teams using Ready Sorb.

Transporting hazardous contaminates is a risky business. In addition to the insurance bonding, payments of high premiums, and nightmare of administrative work, there are serious problems in physically relocating hazardous materials. Vibration of trucks hauling over the road causes some leakage. Tarps required to cover the top of roll-off boxes sometimes come off, allowing material to “fly off” the truck. Even if the tarp stays on, there is a tendency for solid contaminates to “cook” in sunny weather. There are problems that Ready Sorb can easily solve instead of risking heavy fines or trying to pick-up runaway liquids. Ready Sorb will solidify liquids and prevent leaching. In the event that a 200 Litre drum accidentally falls off a transport vehicle, contaminates packed in Ready Sorb make the clean up operations easier, safer and less costly. Picking up solidified PCB's (Polychlorinated-biphenyl) or other contaminates absorbed in Ready Sorb will take less time and require less equipment than PCB's suspended in liquid form. Dramatic savings are realised in transporting solid contaminates.

Disposal of contaminates absorbed by Ready Sorb offers many options depending upon the contaminates and the local laws governing the area of disposal. Ready Sorb prevents leaching of contaminates. Because of the non-leaching properties of Ready Sorb, some waste oils can be disposed in regular landfills in many states. Waste oils absorbed by Ready Sorb that meet ID 27 guidelines can be disposed in regular landfills.

When forced air incineration can be utilised as a disposal method, Ready Sorb will save in disposal costs and limit your liability. Ready Sorb delivers approximately 8,430 BTU/lb or 18,546 BTU/Kg and has been used as a fuel source on its own in several countries. In some cases, users of Ready Sorb have been able to soak up oils and burn them (with DNR approved) on site without costly transport or disposal fees. Incineration costs are affordable and your liability ends after incineration.

Bio-remediation of oils and other contaminates absorbed by Ready Sorb is becoming a cost effective option. Ready Sorb is a non-toxic organic, it serves as an excellent matrix for microbes to eat away at hydrocarbons. This option has been successful in restoring highly contaminated dirt to non-detect levels in less than three weeks.

Ready Sorb contains a unique organic catalyst (H.A.C.) which is coated inside the walls of the barrel-cell structure. On contact with hydrocarbons the catalyst synergies with the available micro-organisms, initiating the bio-remediation process. The barrel cells also contain essential stores of oxygen, which are vital to the natural eco systems, and in turn, the remediation process.

NETAC (National Environmental Technology Applications Corporation) is testing Ready Sorb to verify product performance and expand the bio-remediation capabilities of our product line. NETAC is operating under a co-operative agreement between the U.S. Environmental Protection Agency (EPA)

and the University of Pittsburgh Trust.

New products and technology must be effective, cost effective, meet all the ever changing specifications, regulations and local, state and federal laws. Most importantly, Ready Sorb products work. We feel that today's technological breakthrough in absorbing spilled hydrocarbons, may have been right under our feet..... For a few thousand years.

Please review more detailed information about our products.

2.1 ADVANTAGES OF READY SORB

Ready Sorb is a lightweight, biodegradable, industrial oil absorbent, which is effective, economical and easy to use. Ready Sorb is manufactured from naturally occurring peat moss and is non-toxic.

Ready Sorb picks up all hydrocarbons (including PCB's) on contact from land and water. One litre of Ready Sorb absorbs approximately 1 litre of oil. Its powerful wicking action prevents the spread of the spill and helps reduce the area contaminated by spilled hydrocarbons. Hydrocarbons are solidified for safe removal and transport. Since Ready Sorb contains highly absorbed moss fibres, it is non-abrasive and will not harm machinery.

Ready Sorb is double compressed in 1.4 & 4 Cu bags. This means that each bag contains approximately double the volume of absorbent. Compression means more products per volume, hence reducing inventory space requirements. Our booms and pads are manufactured with environmental materials and Ready Sorb allowing the same absorbent qualities while providing the same easy disposal as our loose fibre. Boom, pads, mats and cushions are made in standard sizes and can be custom made.

Ready Sorb can be incinerated or disposed of in landfills. Since Ready Sorb is an energy source, it will contribute about 8,430 BTU/lb or 18,546 BTU/Kg and will assist in the incineration of absorbed oils. If accidentally ignited, Ready Sorb burns with a controlled wick action and helps reduce the potential for explosive combustion. Covering gasoline saturated Ready Sorb with a fire suppression foam will completely eliminate the escape of vapours.

Ready Sorb is an excellent medium for bioremediation. Ready Sorb absorbs hydrocarbons and prevents them from leaching allowing the microbes to digest oils more efficiently. Ready Sorb is the natural method of oil spill cleanup.

2.2 READY SORB

ABRASIVENESS OF READY SORB

A major concern with owners and operators of hydraulic or other types of machinery is the influence of Ready Sorb on the wearing surfaces. Ready Sorb is made from treated peat moss from a selected bog in Canada. Peat is the first step in the formation of coal and is little more than the partial decomposition of mosses. Inorganic matter (e.g.: sand, silt, clay, stones, etc) is rare and when peat is burnt, the ash content is usually in the order of 1% to 2% - further proof of a very low inorganic content. Ready Sorb is therefore a very soft organic matter that will not cause abrasive damage to equipment. For abrasive wear to occur, the particle must be of similar hardness of 6 while steel has a hardness of 5. Silica sand, therefore, will cause abrasive wear on moving parts. Cellulose, with a

hardness of about 1, is the major constituent of peat moss. Peat moss is much softer than steel and will not cause abrasive damage.

Ready Sorb Peat is harvested using tractors and various types of hydraulic supported equipment. Failure of hydraulic seals, wear on hydraulic cylinders and rams, or abnormal wear is not a common maintenance problem for tractors operating on peat bogs. Experience suggests that Ready Sorb will, in fact, assist in prevention of abrasive wear. Ready Sorb will soak up oil and grease on hydraulic cylinders and will reduce the amount of sand and grit that adheres to the oily surfaces and from ultimately being drawn in between moving parts, thus damaging seals, bushings and surfaces.

Some peat processing plants use wooden slats between chain conveyors. The conveyers transport peat along a sheet through to processing equipment. Inspection of the sheet metal after several years of operation did not indicate any abnormal wear patterns that could be attributed to the peat moss moving across the surface of the metal.

2.3 COMPRESSION TESTING

Release of oil from Ready Sorb was evaluated using a modified soil mechanics consolidated testing machine. Ready Sorb was mixed with various proportions of soya oil and subjected to a pressure of 50 psi. The test results show that a ratio of one and one quarter part oil to one part Ready Sorb, no oil was released. At ratios greater than 1¼ to 1, some of the oil was released under 50-psi pressure. Upon calculating the residual ratio to Ready Sorb following compression, it was found that the final ratio was close to 1¼ to 1. These tests suggest that Ready Sorb will release any excess oil above the ratio and will retain all oil below the ratio (at 50-psi pressure).

Ready Sorb will absorb approximately seven times its weight in oil, but under pressure will release a portion of the oil. The final disposal destination should be considered when using Ready Sorb. If incineration is contemplated, then the maximum amount of oil should be absorbed. If landfilling is the final destination then a seven-to-one ratio may be used in approved “H-lined” sites and a lesser ratio may be required in non-lined landfill sites that record pressures over 50-psi. Landfill operators are familiar with local regulations and will advise users of regulatory restrictions as they relate to their site acceptances.

This is the first test on the release of oil form Ready Sorb and there are some additional considerations with respect to the use of Ready Sorb. Considering that oil is released under pressure, Ready Sorb SA has embarked on a study of the potential recovery of absorbed hydrocarbons through pressure filtration. In any spill it is theoretically possible:

- 1) to absorb the oil;
- 2) to pressure remove the oil in excess of 1¼ to 1;
- 3) to reuse the Ready Sorb for additional spill cleanup.

Equipment capable of removing absorbed oil from Ready Sorb is being sourced and the decision to pressure remove oil will depend on the size of the spill and the nature of the hydrocarbon. Since absorbent costs are a large part of any spill clean up, significant savings may result.

2.4 INCINERATION OF READY SORB

Ready Sorb is manufactured from 100% Canadian Sphagnum peat moss. Peat moss is the first step in the formation of coal and oil. Its main components are naturally occurring mosses, grasses and other plant forms. Peat is used in many countries of the world as an energy source. Ireland, Finland and Russia have used peat as a domestic and industrial fuel for centuries.

Ready Sorb is an energy source and will contribute some of the heat required for incineration. It has a heating value of about 8,430 BTU/lb or 18,546 BTU/Kg and the low ash content (less than 5%) means little waste product is generated during incineration.

Ready Sorb results in direct and indirect savings to the waste handler. Its high absorbency means less product is required to clean up a spill. Less absorbent is hauled to the landfill or incinerated. Ready Sorb saves on incineration heating costs and its low ash content reduces ash disposal costs.

2.5 EP TOXICITY ANALYSIS

An EP toxicity analysis has been performed on Ready Sorb by EMS Laboratories Inc. Kansas City, MO. The results of the analysis are as follows:

<i>Element</i>	<i>Result Mg/l</i>	<i>Maximum Allowable mg/</i>
<i>Arsenic</i>	<i>0.32</i>	<i>5.0</i>
<i>Barium</i>	<i>11.00</i>	<i>100.0</i>
<i>Cadmium</i>	<i>0.08</i>	<i>1.0</i>
<i>Chromium</i>	<i>0.38</i>	<i>5.0</i>
<i>Lead</i>	<i>0.30</i>	<i>5.0</i>
<i>Mercury</i>	<i>0.0076</i>	<i>0.2</i>
<i>Selenium</i>	<i>0.088</i>	<i>1.0</i>
<i>Silver</i>	<i>0.15</i>	<i>6.0</i>
<i>EP Tox Ext</i>	<i>N/A</i>	<i>N/A</i>

N/A – Not Applicable

The above test results clearly show that Ready Sorb (supplier's product) passes the EP Toxicity by a wide margin. With the exception of Barium all elements are at least 10 times below the maximum allowable limits set out in the EP Toxicity specifications.

3.PRODUCT INFORMATION & TESTING

TOXICITY CHARACTERISTIC LEACHATE PROCEDURE TEST (TCLP)

Ready Sorb (supplier's product) was submitted for TCLP oil test, which was submitted on 31/1/91. The sample was extracted and analysed according to the procedures outlined in the TCLP Method 1311 promulgated as Appendix II, 55 FR 11862, March 29, 1990. (Revised June 29, 1990).

The results of the analysis are as follows:

EPA HW NUMBER	CONSTITUENT	RESULT (mg/l)	DETECTION LIMIT (mg/l)	REGULATORY LIMIT (mg/l)
D005	<i>Barium (Ba)</i>	6.53	0.1	100.0
D006	<i>Cadmium (Cd)</i>	0.07	0.01	1.0
D007	<i>Chromium (Cr)</i>	0.07	0.01	5.0
D026	<i>Total Cresol</i>	BDL	0.01	200.0
D027	<i>1,4-Dichlorobenzene</i>	BDL	0.01	7.5
D030	<i>2,4-Dinitrotoluene</i>	BDL	0.01	0.13
D032	<i>Hexachlorobenzene</i>	BDL	0.01	0.13
D033	<i>Hexachlorobutadiene</i>	BDL	0.01	0.5
D034	<i>Hexachloroethane</i>	BDL	0.01	3.0
D008	<i>Lead (Pb)</i>	0.06	0.025	5.0
D036	<i>Nitrobenzene</i>	BDL	0.01	2.0
D037	<i>Pentachloropheno</i>	BDL	0.0	100.0
D041	<i>2,4,5,Trichloropheno</i>	BDL	0.01	400.0
D042	<i>2,4,6,Trichloropheno</i>	BDL	0.01	2.0

3. TOXICITY CHARACTERISTICS

(TCLP LIST – METHOD 1311)

Federal Register Vol. 55, no. 61 March 29, 1990

MBA JOB#: J-42262-1

CLIENT: Ready Sorb, (Supplier's Product) Canada SAMPLE: Bag of Ready Sorb, (Supplier's Product)

DATE: 7-23-1993

VOLATILES

Extraction

Analysis

Method: SW846-6010

date/time: 8-08-91

date/time: 8-12-1991

Analyst: Zarian

Analyst: Calbert

EPA HWY NUMBER	CONTAMINENT	CAS#	RESULT (MG/L)	REGULATORY LEVEL MG/L	DETECTINON LIMITED MG/L
D018	<i>Benzene</i>	71-43-2	Not found	0.500	0.020
D019	<i>Carbon Tetrachloride</i>	58-23-5	Not found	0.500	0.020
D021	<i>Chlorobenzene</i>	106-90-7	Not found	100.000	0.020
D022	<i>Chloroform</i>	67-66-3	Not found	6.000	0.02
D026	<i>1,2 – Dichloro-ethane</i>	107-06-2	Not found	0.500	0.020
D029	<i>1,1 – Dichloro-ethylene</i>	75-35-4	Not found	0.700	0.020
D035	<i>Methyl Ethyl Ketone</i>	78-93-3	Not found	200.000	0.020

3. TOXICITY CHARACTERISTICS

(TCLP LIST – METHOD 1311)

Federal Register Vol. 55, no. 61 March 29, 1990

MBA JOB#: J-42262-1

CLIENT: Ready Sorb, (Supplier's Product) Canada SAMPLE: Bag of Ready Sorb,
(Suppliers Product)

DATE: 7-23-1993

SEMIVOLATILES

Extraction

Analysis

Method: SW846-6010

Date/time: 8-08-91

Date/time: 8-12-1991

Analyst: Zarian

Analyst: Calbert

EPA HWY NUMBER	CONTAMINANT	CAS#	RESULT (MG/L)	REGULATORY LEVEL MG/L	DETECTINON LIMITED MG/L
D-023	<i>O-Cresol</i>	95-48-7	<i>Not Found</i>	200.000	0.020
D-024	<i>M-Cresol</i>	108-39-4	<i>Not Found</i>	200.000	0.020
D-025	<i>P-Cresol</i>	106-44-5	<i>Not Found</i>	200.000	0.020
D-026	<i>Cresol</i>	Total	<i>Not Found</i>	200.000	0.020
D-027	<i>1,4 – Dichloro-benzene</i>	106-46-7	<i>Not Found</i>	7.500	0.020
D-030	<i>2,4 – Dichloro-toluene</i>	121-14-2	<i>Not Found</i>	0.130	0.020
D-032	<i>Hexachloro-benzene</i>	118-74-1	<i>Not Found</i>	0.130	0.020
D-033	<i>Hexachloro-butadine</i>	87-68-3	<i>Not Found</i>	0.500	0.020
D-034	<i>Hexachloro-ethane</i>	67-72-1	<i>Not Found</i>	3.000	0.020
D-03	<i>Nitrobenzene</i>	98-95-3	<i>Not Found</i>	2.000	0.022
D-037	<i>Pentachloro-phenol</i>	87-66-5	<i>Not Found</i>	100.000	0.020
D-041	<i>2,4,5 – Tri-chlorophenol</i>	95-95-4	<i>Not Found</i>	400.000	0.020
D-042	<i>2,4,6 – Tri-Chlorophenol</i>	88-06-2	<i>Not Found</i>	2.000	0.020

3 TOXICITY CHARACTERISTICS

(TCLP LIST – METHOD 1311)

Federal Register Vol. 55, no. 61 March 29, 1990

MBA JOB#: J-42262-1

CLIENT: Ready Sorb, (Supplier's Product) Canada SAMPLE: Bag of Ready Sorb,(Supplier's Product)

DATE: 7-23-1993

PESTICIDES / HERBICIDES

Extraction

Analysis

Method: SW846-6010

date/time: 8-08-91

date/time: 8-12-1991

Analyst: Zarian

Analyst: Calbert

EPA HWY NUMBER	CONTAMINENT	CAS#	RESULT (MG/L)	REGULATORY LEVEL MG/L	DETECTINON LIMITED MG/L
D-020	Chlordane	57-74-9	Not found	0.030	0.015
D-016	2,4 – D	94-75-7	Not found	10.000	0.020
D-012	Endrin	72-20-8	Not found	0.020	0.010
D-031	Heptachlor	76-44-8	Not found	0.008	0.004
D-013	Lindane	68-89-9	Not found	0.400	0.020
D-014	Methoxychlor	72-43-5	Not found	10.000	0.020
D-01	Toxapheur	0001-35-2	Not found	0.500	0.250
D-017	2,4,5 – TP (Silvex)	93-72-1	Not found	1.000	0.020

READY SORB

CONSIDERATIONS IN SELECTION OF COMMON HYDROCARBON SORBENT MATERIAL

Traditional considerations in product selection of sorbent materials largely equate price with affordability. This criteria ignores the overshadowing economic factors involving suitability and final disposal costs.

In the understanding and proper selection of sorbents, purchase price has very little influence concerning actual cost which must be determined by, and be expressed in, terms of units properly disposed of whether such be the item, cubic meter, litre or other.

Specifically, in the case of sorbents, immediate questions must be ask the worth of any product not found suitable for use for a absorbing a particular contaminate or in an unforeseen cleanup condition. What good is the availability of clay or “kitty litter” particulate for a spill that extends into water? How do you transport tons of sand onto a cleanup site involving wetlands? Price is not a qualifying answer when the product is just plain wrong.

Poly absorbent booms/sox and pads are largely sold on the basis of low cost. Few consider the leach content as the absorbents fail to retain concentrations of lightweight liquids. Poly adsorbents won't absorb heavy hydrocarbons; they also cause secondary spills, and can't be incinerated due to the release of dioxins and furans. This limits disposal options to the most expensive means, i.e., by containerisation and shipment to landfills that are rapidly closing.

The potential risks associated with vapours and static electricity are of extreme importance when dealing with industrial spills and the ensuing cleanup. One has to question the vapour suppression and static resistant qualities of any particular sorbent being considered in an industrial or closed environment.

Adsorbents adsorb by providing a surface that materials may adhere to an exterior side. Absorbents absorb and encapsulate within. The vital difference between the two amounts to thousands when considering shipment and disposal costs.

The only valid yardstick for determining actual cost is that amount calculated to be the final disposal cost.

The following comparison provides a logical basis for a practical examination of costs associated with various types of sorbents employed in one common circumstance. Such an example provides a realistic opportunity for proper evaluation utilising the proper the proper amounts of material, labour costs and final disposal costs.

3 READY SORB

CLEANUP OF HAZARDOUS MATERIALS – A QUESTION OF LIABILITIES

It is virtually impossible to answer the question of the amount, extent and duration of potential liabilities that may arise from any accident involving hazardous materials. The only thing certain is

that they will come into being and they will prove to be very expensive.

991 represented the shift from law enactment to law enforcement, including tough prosecution and massive punitive charges. Individuals learned that there was no corporate protection extended to professional and personal claims qualifying ignorance or lack of responsibility. Companies, alone and in concert, came to understand a vastly expanded universe of interwoven liabilities that completely overshadow previous concepts concerning cradle-to-grave responsibilities.

And almost above all, there came an understanding that disposal is an ambiguous term and that an “end” and twenty years does not represent in view of the specter of future legislation, possibly made retroactive to the present or past.

The risk of non-action or improper decision is – and has already proven to be – sufficient to destroy the funding capability of virtually any corporation,

Liability must be considered to start from a personal basis expanding outwards to include involvement in a business that, in turn, is now held responsible and accountable for any possible action that may represent threats to any persons or environment – virtually past, present of future.

2[1] If peat moss is dried to 0% the result is burned fibre or ash and dirt. Some competitive products are flash dried 3 times to reduce moisture resulting in charred or burnt peat moss. This results in low absorption rates not to mention the dusting that occurs.