

RECOVERIT

The World's first truly Environmentally Friendly Solution
for Oil and Hydrocarbon Pollution



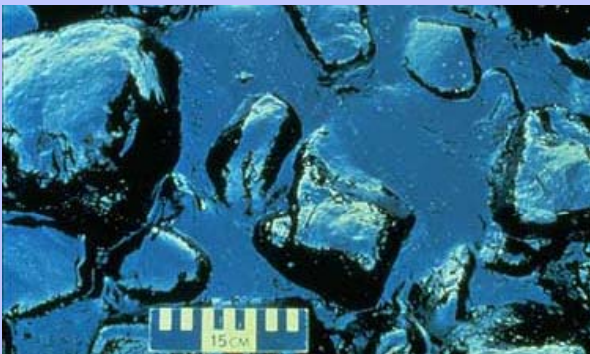
Exxon Valdez – March 1989

The Disaster

- A vessel filled with 52 million gallons of oil
- Some human mistakes and a reef
- The spilled oil affected 1,900 km of Alaskan coastline
- The total oil spilled out was 35 million gallons (110,000 m³)



RECOVERIT



Exxon Valdez – March 1989

Cleanup Measures

- Burn was conducted during the early stages of the spill
- Mechanical cleanup was started shortly afterward using booms and skimmers but the skimmers were not readily available during the first 24 hours following the spill, and thick oil tended to clog the equipment
- Transferring oil from temporary storage vessels into equipment or aircraft.
- A private company applied dispersants on March 24 with a helicopter and dispersant bucket. Because there was not enough wave action to mix the dispersant with the oil in the water, their use was discontinued

RECOVERIT



Exxon Valdez – March 1989

Costs and long term damages

- Exxon immediately set aside the amount of \$5 billion
- Court cases and environmental payments are ongoing
- Disaster response did not effectively remove much of the lost oil that washed onto the shores of coastal Alaska
- Thousands of animals died immediately (250,000 sea birds, 2,800 sea otters, 300 harbor seals, ...)
- commercial fishing was closed for the remainder of 1989, so many fishermen went elsewhere to work or reported bankruptcy

RECOVERIT

AICO



– Recover – Reduce – Recycle –

The World's first truly Environmentally Friendly Solution
for Oil and Hydrocarbon Pollution

Agenda

- **What is RECOVERIT**
- **Usage of RECOVERIT**
- **Environmental Thoughts**
- **Where RECOVERIT can be applied**
- **How RECOVERIT can be applied**
- **Comparison with similar Products**
- **Test Reports**
- **Economical Benefits**

RECOVERIT



What is RECOVERIT

- RECOVERIT comes as white or colorized granule that can ADSORB all types of oils/hydrocarbons be they Mineral, Vegetable, Animal or Synthetic
- RECOVERIT Is Hydrophobic and Oliphilic
- RECOVERIT becomes a glutinous gel when attached to oil
- RECOVERIT can be used on Water, Sand and Soil or in the Atmosphere
- RECOVERIT adsorbs up to 10 times it's own weight:
1Kilo of RECOVERIT can pick up between 100 to 250 liters of oil through re-use
- RECOVERIT additionally picks up VOCs (=Volatile Organic Compounds),
H₂SO₄ (=Sulphuric Acid) ,H₂S (=Hydrogen Sulfide)
- RECOVERIT only absorbs 0.1% water

RECOVERIT



Recover and Recycle

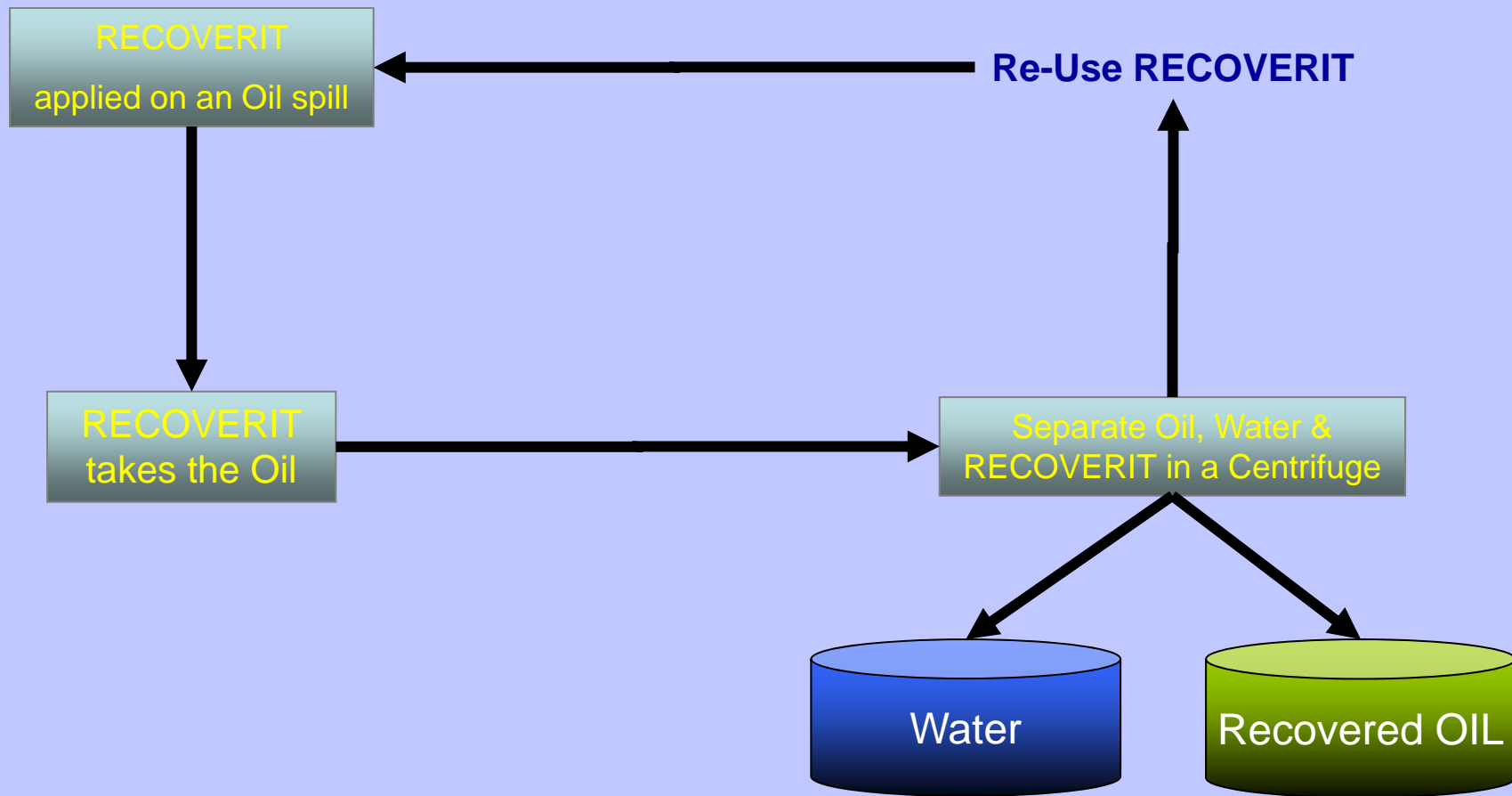
- Separates very easily from collected oils
- Separates oil/water in emulsified state
- RECOVERIT can be reused many times
- RECOVERIT is environmentally friendly and reduces or completely eliminates secondary pollution by redeeming hydrocarbons from the process and eliminating need for landfill
- Recovered hydrocarbons can be easily transformed into bio-diesel
- Spent RECOVERIT can be recycled into hot mix bitumen



RECOVERIT



How to use RECOVERIT



RECOVERIT



The Environment

- Is Non-Toxic, Non-Hazardous and Non-Flammable
- Reduces impact of oil spill on wild life as completely harmless to marine life, birds and humans
- Work “in situ“ at sea
- Work “in situ” on beaches
- Eliminates need for detergents/dispersants

Environmental Benefits

- Minimizing ecological damage due to Oil Spills
- Greatly reducing long term effect of Oil Spills
- Elimination of need for Landfill
- Safe for Animals and Marine Mammals
- Reduce risk of Personnel Hazards
- Recycling of Redeemed Hydrocarbons

Economical Benefits

- Work “in Situ”
- Reduction in Landfills, Transport, Disposal
- Reduce Insurance Costs
- Recovering and Recycling of Oil/Hydrocarbons
- Converted oils into bio-diesel is financially viable
- Transportability of System
- Reduction in Penalties from Environmental Agencies

RECOVERIT



Where RECOVERIT can be applied

Seas Major Oil Spills, Ports, Marinas, Bilges, Oil Spill Emergency Kits, Tanker Clean Out, Aquaculture

Water Rivers, Lakes, Treatment Plants, Contaminated Ground Water, Sewerage Plants, Canals, Pipes

Land Disused Petrol/Gas Stations, Petrochemical Plants, Tanker Farms, Emulsified Oil from Drilling Process, Sand/Beaches, Runways, Docklands Oil Sands and Asphalt, Telecommunication Stations, Power Plants, Grease Traps, Transportation of Hazardous Chemicals in Semi-Dry State

Air Stacks from Motorway Tunnels, Fumes from Oil Storage Silos, Confined Spaces such as Wings of Aircraft and Tankers, Power Plant Stacks, Funnels



How RECOVERIT can be applied offshore

1. Granulate:



- RECOVERIT Granulate can be applied by hand for small spills.
- RECOVERIT Granulate can be pumped slightly under the water surface. During floating up, RECOVERIT spreads out and immediately takes oil.
- RECOVERIT Granulate can be applied thru the air by helicopters and airplanes. The wind spreads out the lightweight RECOVERIT. When RECOVERIT comes in touch with the oil on the water surface it immediately starts to take the oil.

2. Tubes, Pillows, Booms

- RECOVERIT Booms are used to avoid oil from spreading out on the surface. Thru hooks and eyes the RECOVERIT Booms can be connected to almost any length.
- RECOVERIT Tubes and Pillows are used on water as well as on rigs and vessels to control small oil spills.



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How RECOVERIT can be caught offshore

1. Granulate:



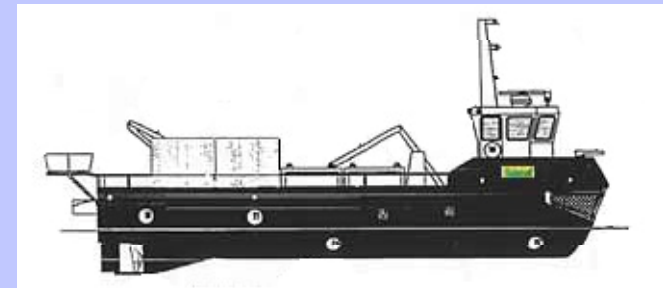
- Saturated RECOVERIT Granulate can be manually caught by a water scoop (with fine net).
- Saturated RECOVERIT Granulate can be sucked from the surface by helicoidally gear pumps.

2. Tubes, Pillows, Booms

- Saturated RECOVERIT Booms, Pillows and Tubes can be caught by hand or crane

RECOVERIT Boats:

Recovery boats have been designed specifically to pick up saturated RECOVERIT via front load conveyor belt which feeds directly into a continuous centrifuge where separation takes place. Recovered oil is then pumped into a separate vessel or external bladder and the RECOVERIT can be reapplied to the spill.



RECOVERIT



How RECOVERIT can be used on land



Specific machinery had been designed to clean soil. The machine gets feed by an excavator puts soil directly into the machine. The soil gets watered and mixed with RECOVERIT. A water bath let the saturated RECOVERIT floating. An continuous centrifuge separates the hydrocarbons from RECOVERIT.

ALL EQUIPMENT NECESSARY TO USE RECOVERIT FOR ITS DIFFERENT PURPOSES CAN BE PURCHASED FROM AICO LIMITED.

RECOVERIT



Tested Oils and Hydrocarbons

- Crude Oil
- Diesel
- Motor Oil
- Petrol
- 2 Stroke
- Kerosene
- Thinners
- Solvents
- Silicone
- Paraffin
- Bitumen
- Hydraulic
- Avgas
- Synthetic Oil
- Tramp Oils
- Sump Oil
- Vegetable Oils
- Palm Oils
- Liquid animal fats
- Mustard seed Oil
- Olive Oil
- Sewage
- Body Oils



*2 Years
and still
keeps oil*



RECOVERIT



Compare RECOVERIT with Alternatives

CHARACTERISTIC	RECOVERIT	POLYPROPLYENE	ORGANIC	VERMICULITE	CLAY
Adsorbent	5-10 times				
Absorbent		5-25 times	6 times	4-5 times	1 time
Relative Cost	Low	Low	Medium	Medium	High
Retains Water	0.1%	Yes	Yes	Yes	Yes
Cost of Retrieval	Low	Low	High	High	High
Reusable	Yes	Yes	No	No	No
Oil Recyclable	Yes	No	No	No	No
Floats on water	Yes	No	No	No	No
Storage Life	Long	Long	Limited	Limited	Limited

RECOVERIT



Test Reports

MSDS

English, Chinese, Korean

Leeder-Aust-M220238

Toxicity and Flammability

SAIC-Canada-SOR-01-059

Pick up in Oil Spill and recyclability

Institute Research
(Lebanon)-5221/064/14898

Sorbent

LabSearch-Aust-015589

Pick up of ETC's

Bodycote-Oman-MC3731

Removal of Hydrocarbons from
emulsified oil

Leeder-Aust-M250269

Pick up of hydrocarbons in air

United States - EPA

Sorbent

UK – DEFRA/FEPA 187/2006

Sorbent, Sea Surface Usage

RECOVERIT does the job of cleaning up

**- more effectively - more cost efficiently and - more environmentally friendly -
than any other product or system**

RECOVERIT is SIMPLE to understand and SIMPLE to use