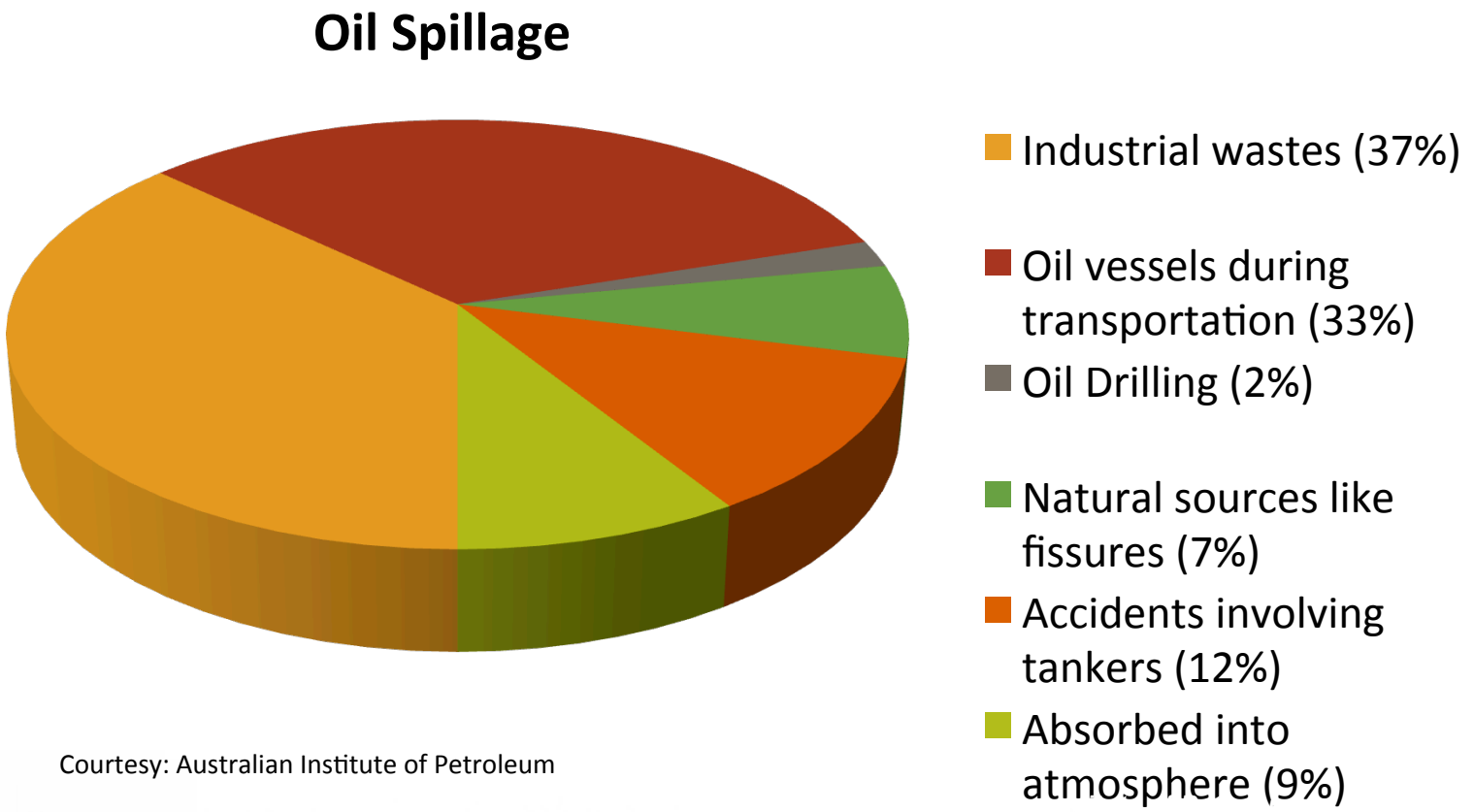
Collection of Oil Spill Pollution in Using SorbaSolv™

Mark A. Ceaser

General Manager

OMNI/ajax

Major inputs of petroleum within the marine environment



Courtesy: Australian Institute of Petroleum

Oil Spills Characteristics

- Offshore wells, tankers &pipelines
- Death of organisms
- Significant economic impacts
- Mechanical cleanup methods
- Chemical cleanup methods
- Biological

What is SorbaSolv™?

- Created out of necessity to incorporate recycled materials as a low cost alternative to virgin polypropylene materials.
- A patented (US # 4,780,518) recycled cellulose based oil absorbent.
- Contains no toxic, carcinogenic or biologically hazardous materials.
- Absorbs oil, greases and other water insoluble organics into a thick mass decreasing its mobility manifold.
- Oil Herder.

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SorbaSolv ™ Applications

- Wind and wave dispersement.
- Collection, via skimmers or vacuums.
- Sorbent boom fill material.
- Beach clean up, oil saturated soil should be disked, plowed, harrowed or rototilled to contact the oil with SorbaSolv™.
- Collection of oils from storm water run off.
- Ideal for oil recycling.

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Open Water Clean Up

- Use blowers to spray particulate
- Prevents under cutting
- Booms act as sweeps.
- Temperatures do not affect performance.

Benefits

- No oil drains back.
- Oil recycled from particulate by pressure.
- Recovered oil is unchanged.

Shoreline Clean Up

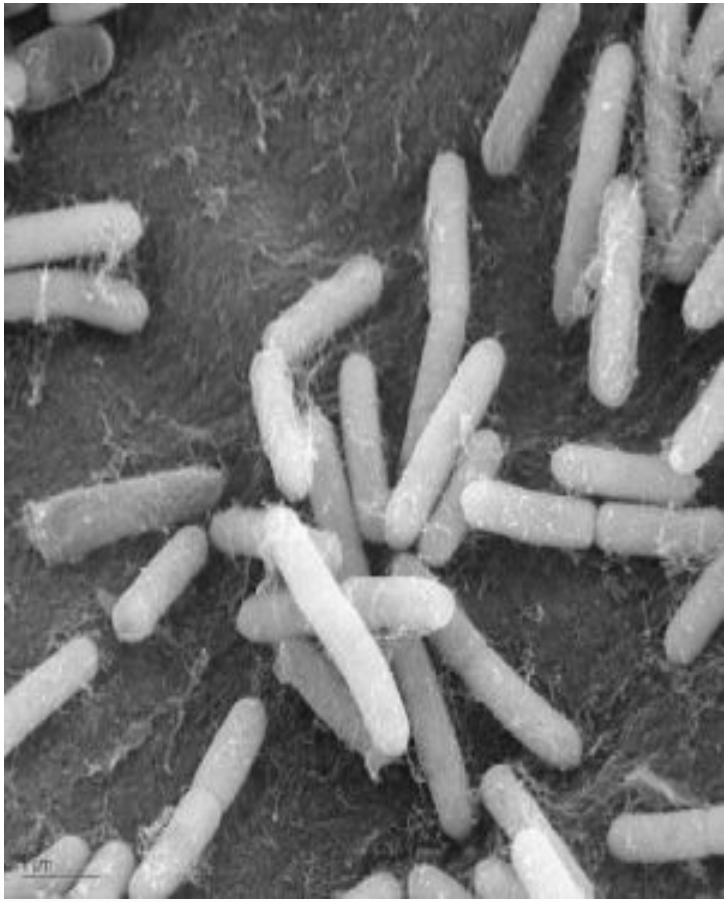
- Sprayed uniformly on beach.
- Tide penetrates deep cavities.
- Sand/stone manually applied.
- Floats to the surface.
- Its oleophilic properties will pull the oil out of porous areas.

Shoreline Clean Up

- Power washing trapped oil.
- Tidal action cleaning.
- 90% of the oil from the shore.

Bioremediation

- Bacteria to degrade oil.
- Bioremediation can be accelerated.
- SorbaSolv™ stimulates growth.
- Agglomeration properties enhances reactivity.



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Bioremediation Matrix

- SorbaSolv™ mixed with bacteria.
- Respirometer tests showed 5 times the oxygen consumption.
- Sustains critical biomass.
- Tilled into soil.
- Tests made showed was 50% less than the original.

Stormwater Runoff

- When rainwater falls on impervious surfaces, it picks up and carries with it a wide variety of harmful pollutants.
- leading source of water quality problem.
- Storm drains can be protected with booms and pillows filled with SorbaSolv™.
- Recovery of the oil pollutants is highly successful.

Critical Appraisal

- Various response techniques such as booms and skimmers, chemical dispersion, protective booming and shoreline cleanup have many limitations.
- Marine health life is not properly addressed due to adverse effects of oil spill pollution, such as the use of dispersants.
- It is inappropriate to make cost comparisons between fundamentally different oil spill events referring to a single parameter, such as total amount of oil spilled.

Methodology

- Oil forms insoluble layers
- Emulsion with water
- Limited usage on existing technologies
- Expensive
- Achieve cost effectiveness in prevention of oil spill pollution, the selection of materials should be based on the following factors:

A. Efficiency in removing oil
B. Relatively cheap cost
C. Environment friendly byproduct
D. Local availability
E. Ability to regenerate and reuse

Scope for further study

- Overcoming the challenges in large scale oil spill clean up is demanding. The following points can be considered for undertaking future research work and consideration of the usage of SorbaSolv™.

1) Because SorbaSolv™ is based on recycled fibers, its base raw cost is lower than comparable materials.
2) Further these materials may be used in combination with chemical reagents, such as modified bacteria, in order to achieve economy in experimentation.
3) SorbaSolv™ can be air deployed or sprayed on the spill by boat, to form a biomass that will allow bioremediation or, more importantly, the collection for processing to reclaim the oil into a usable product or for incorporation in a waste to energy burning unit.

Our planet's future

Acknowledgements

- Images used in this lesson were obtained from the public domain courtesy of:
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- EPA Emergency Management. Oil Spill Response Techniques. http://www.epa.gov/emergencies/content/learning/oiltech.htm

Questions?

- If you have any questions call 570-848-4186 or email info@omni-ajax.com
- Please access the link below on the OMNI/ ajax web page learn more about SorbaSolv™ and inquire about the product.

http://www.omni-ajax.com/sorbasolv.html

THANK YOU!