

Frontier Analysis, Ltd.

TECHNICAL SERVICE RESPONSE NO.: UT007

Subject: Analysis of a Sample from the Shikmona Beach, Israel UFO Event of September 28, 1987

Date: September 25, 2000

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Background/Objective:

On the evening of September 28, 1987 a 27-year-old auto mechanic witnessed a disc-shaped craft hovering above the sands of Shikmona Beach (south of Haifa, Israel). It emitted a bright red flash before disappearing. He returned to the site two days later with an ufologist (Hadassa Arbel). They noted the sand contained a display in the image of the UFO. The display material appears to melt at very low temperature, ca. 50°C (120°F). The object is to identify this material in order to determine its source.

Conclusions:

The analysis shows the UFO site sample is composed of the following materials:

<u>Composition</u>	<u>Wt.%</u>
•Rust	>50
•Paraffin Type Wax	20-35
•Lubricant Base Oil (Slightly Oxidized) (Specifically a High viscosity Aromatic Hydrocarbon Base Oil)	14-15
•Carbonate (Probably Calcium Carbonate)	<1

The presence of the wax causes the melting effect at elevated temperatures. The presence of wax and lubricant shows these materials have been through a partial oil refining process, i.e. these materials have been isolated from crude oil. The lubricant is not a finished one because there are no additives. Additionally all lubricants are dewaxed in their processing. This lubricant still contains wax. The only known source of this material is from a refinery. All other industry and retail outlets would have finished products. So this would be difficult for the average person to obtain. The rust indicates some kind of rusted container or pipeline. All this evidence points to the source of the material as from an oil refinery release. This is substantiated by a recent Greenpeace citation of oil refineries (among other companies) for toxic release of materials into the Kishon River, supposedly the most polluted river in Israel. See the attached article and/or the Greenpeace website (www.greenpeace.org/pressreleases/toxics/20000sep12/html)

It is the opinion of this analyst that this material is a toxic waste dump that coincidentally was present on the beach at the time of the UFO sighting and mistakenly assumed to be part of the same event.¹

Procedure:

Samples: The samples were submitted with the following identifications.

- KS-02-118 "UFO Site" Sample #4
- KS-02-118 Normal Soil #4 (a control sample for comparison to the above.)

Infrared spectra were obtained from the "as received" sample and control using the Harrick SplitPea® cell on the Nicolet Avatar 360 spectrometer. The "UFO Site" sample was extracted with progressively polar solvents: pentane; followed by chloroform; and then 1:1 acetone:methanol. Additional infrared spectra were obtained of these extracts and the insolubles. Note: weights of each extract were obtained to determine the amounts of solubles and insolubles. An EDS elemental analysis was done by another laboratory and is included in this report.

Results:

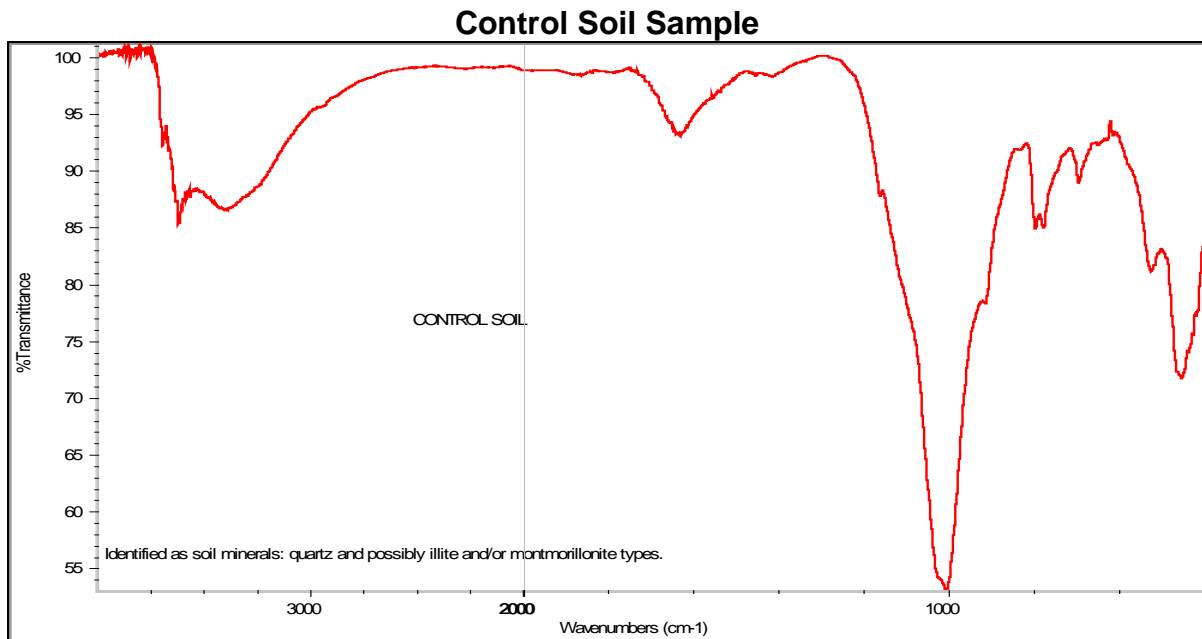
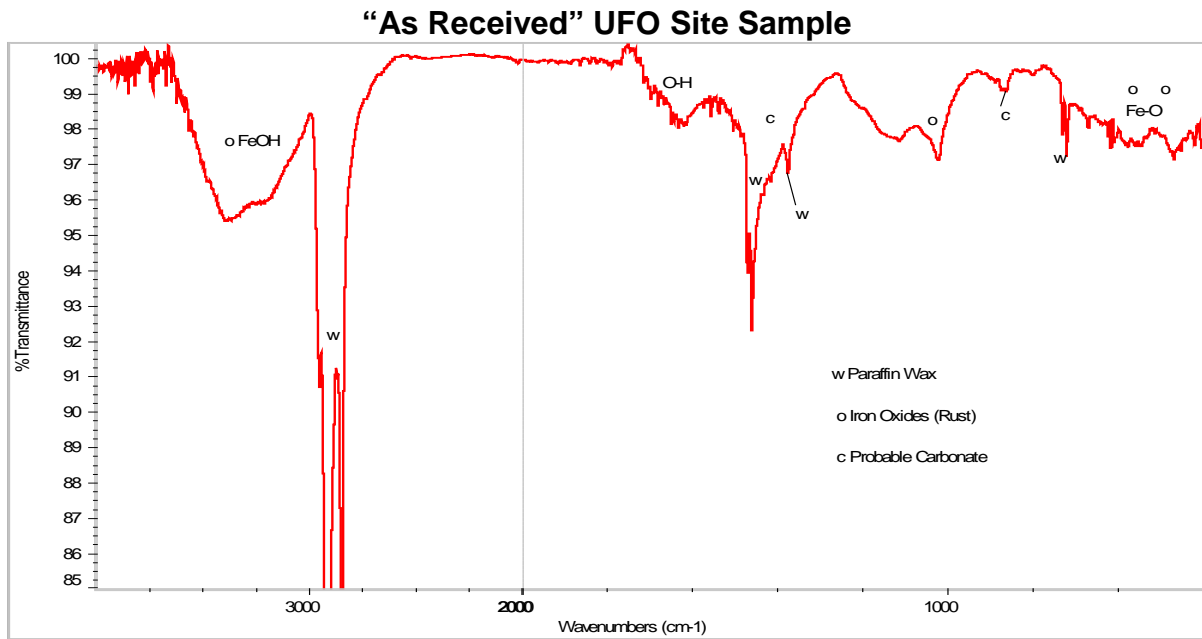
The results of the individual tests done on the three samples follow. These results are summarized in the conclusions section on the first page of this report.

Data from the Sample "As Received"

The infrared spectrum of the "as received" UFO site sample shows primarily wax and iron oxides (rust) and a small amount of probable inorganic carbonate (most

¹ This analyst is 100% confident in the results of this analysis. My experience has been as an analytical chemist for 35 years in the petroleum industry. Therefore, I have specialized in analyzing and recognizing these types of products. I also have in depth knowledge in the refining processes of these products.

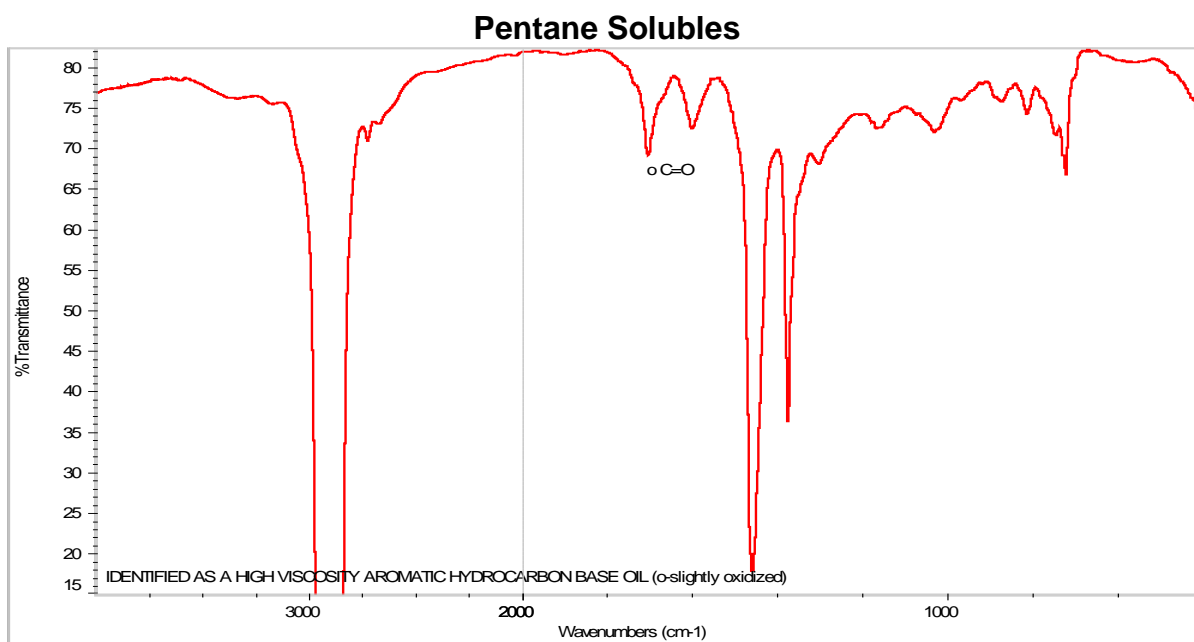
likely calcium carbonate). It does not compare to infrared spectra of the control sample which shows primarily soil minerals. The control sample minerals are specifically suggested to be a mixture of quartz and possibly illite and/or montmorillonite types. The spectra of the sample and the control follow:



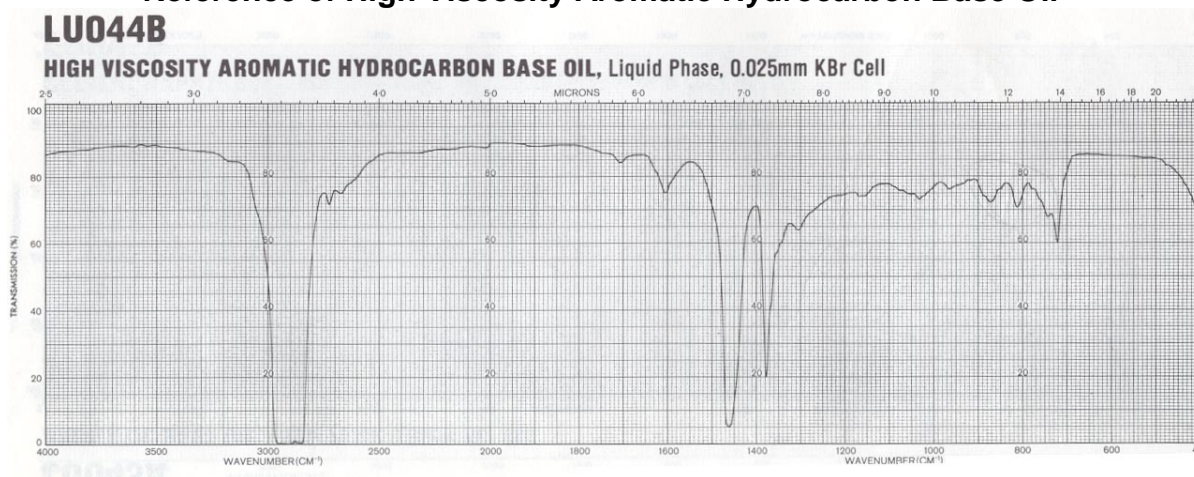
It was also noted that much of the UFO site sample was attracted to a magnet suggesting a high concentration of iron containing component. Additionally, EDS elemental analysis shows a high concentration of iron. This analysis is attached in an addendum. These tests support the infrared observation of iron oxides.

Additional Data Revealed by the Extraction Procedure

The pentane soluble material amounts to 12.8 wt.%. An infrared spectrum identifies this substance as a “high viscosity aromatic hydrocarbon base oil”. This spectrum follows along with a reference of high viscosity aromatic hydrocarbon base oil for comparison. The spectra match!

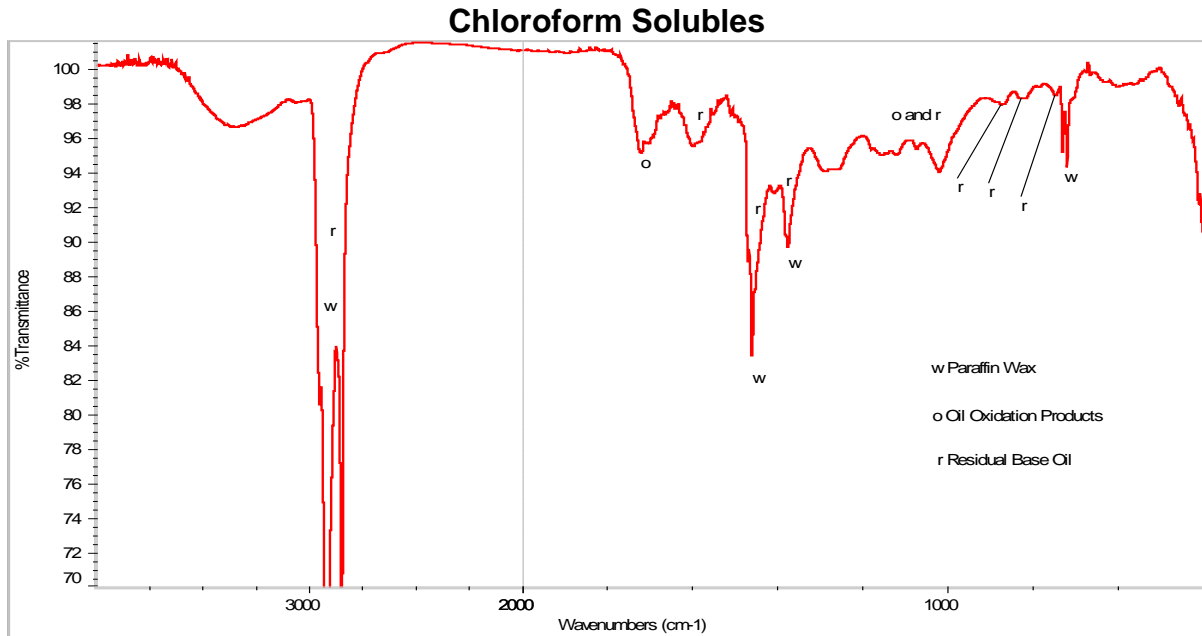


Reference of High Viscosity Aromatic Hydrocarbon Base Oil²

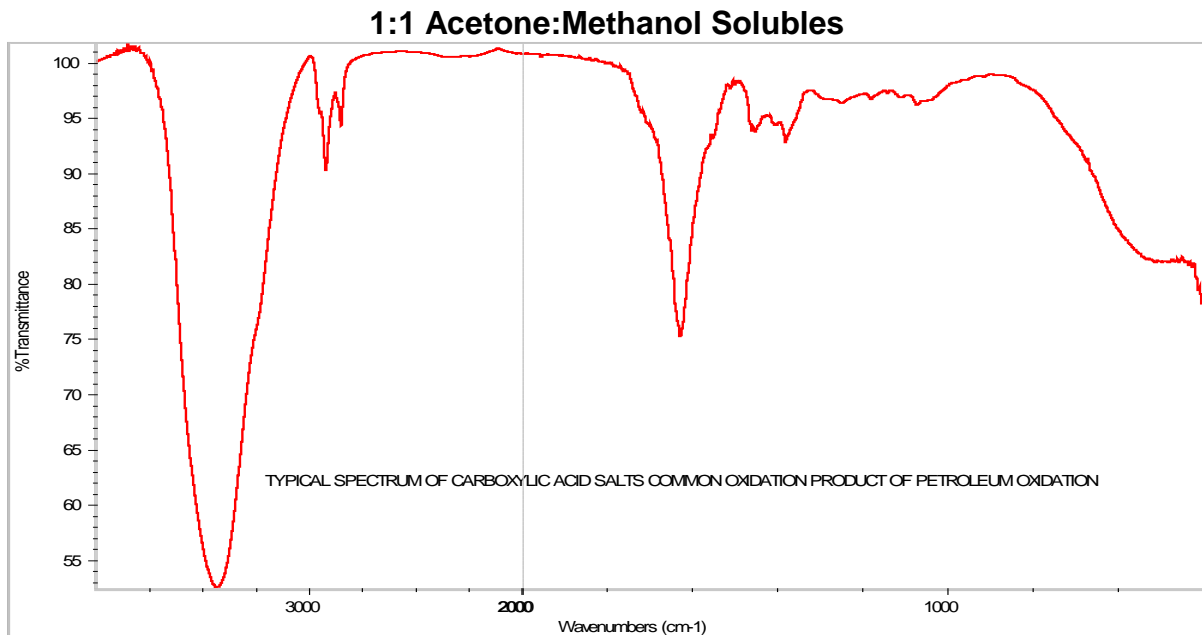


² John P. Coates, Lynn C. Setti, “Oils, Lubricants, and Petroleum Products Characterization by Infrared Spectra”, Marcel Dekker, Inc., New York and Basel, 1985, (Ref. No.LU044B).

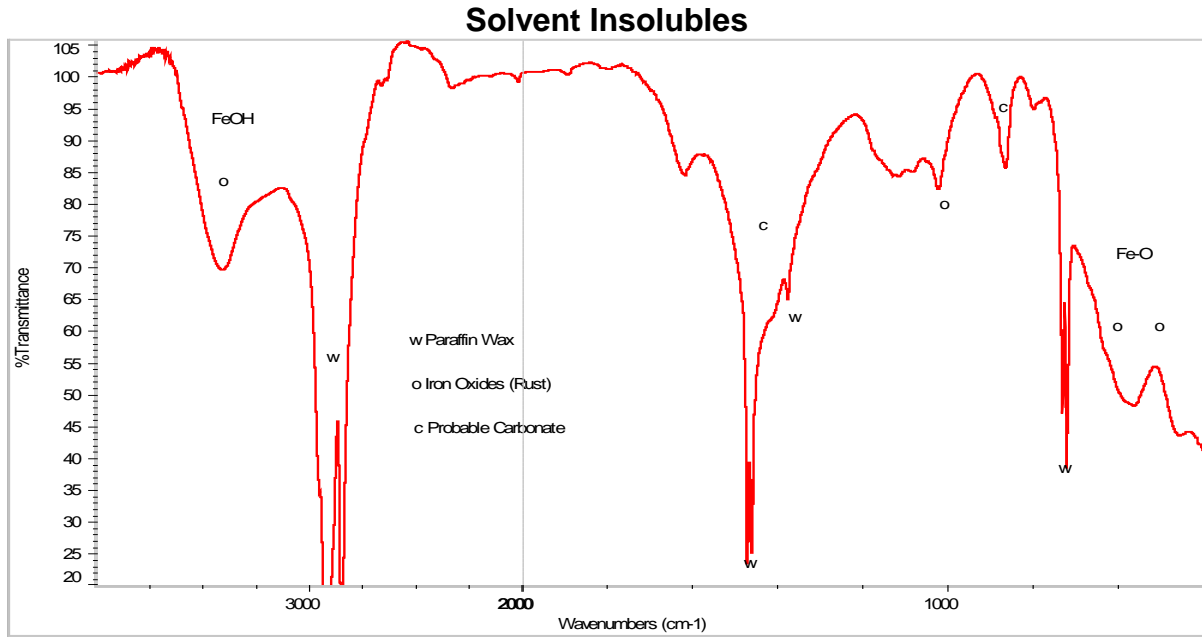
The chloroform soluble material (after pentane extraction) comprises an additional 3.2 wt.% of the sample. Infrared analysis shows some soluble wax, residual base oil and oxidized products. The spectrum follows.



The 1:1 acetone:methanol extract amounts to another 1.4 wt. % of the sample. Infrared analysis shows carboxylic acid salts typical of oxidation products commonly observed in petroleum products. Following is the spectrum.



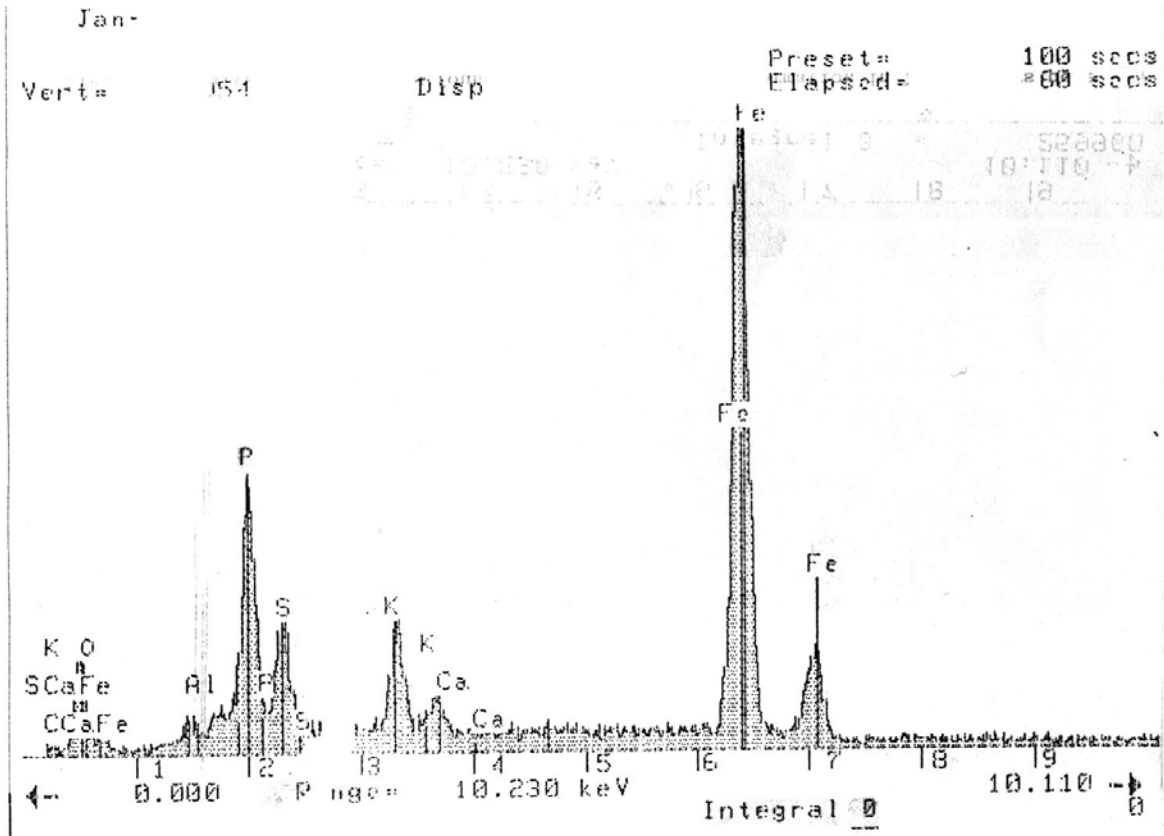
The prominent portion the sample is insoluble material which amounts to 83.4 wt.%. Infrared analysis shows it consists primarily of iron oxides and insoluble wax. (Higher molecular weight wax especially above 40 carbons is insoluble.) Some inorganic carbonate (probably calcium carbonate) is also indicated. The spectrum follows.



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Phyllis A. Budinger

ADDENDUM



EDS Elemental Analysis of Shikmona Beach UFO Site Sample

Israeli Soldiers Get Cancer From Toxic Waste Dumped In Mediterranean

<http://www.greenpeace.org/pressreleases/toxics/2000sep12.html>

9-12-00

HAIFA, ISRAEL -- Eight Greenpeace activists were arrested today while taking action to stop industries from pumping tonnes of toxic waste into the Kishon River, the dirtiest in Israel, which flows into the Mediterranean Sea. The river has become so polluted with the toxic waste that it poses a severe environmental hazard and has been linked to the development of cancers in at least twenty marine commando soldiers who used to dive in its waters as part of their routine training <#one(1).

Greenpeace activists constructed a dam to block one of the industrial effluent pipes that flow into the Kishon River. The activists stopped the pollution reaching the river by redirecting the effluent pipe and returning the waste to the Gadot Biochemicals factory, one of the seven companies responsible for discharging toxic waste <#two(2).

"Human health and environmental death is the cost being paid to preserve the commercial interests of these companies. The Israeli public is being denied the right to safe environment by being exposed to these toxic chemicals. By not addressing Israel's pollution problems effectively, the government continues to prioritise industrial interests over those of the public," said Liad Ortar, Greenpeace campaigner in Israel.

Samples taken last year by Greenpeace directly from the

seven effluent pipes, including one from the US owned Haifa Chemicals, revealed high levels of toxic heavy metals and other hazardous substances. <#three(3)

Greenpeace warned that the marine commandos' cases are the only ones under investigation and is concerned that other people who regularly spend time in the Kishon - fishermen, divers, sailing clubs and other youth clubs - may also have been affected by the poisons. Currently, the Israeli authorities are suggesting that a five-kilometre by-pass pipe is constructed to redirect the toxic effluent that has killed the Kishon River to the Mediterranean Sea.

"This would result in carcinogenic and other hazardous pollutants being dumped into the Mediterranean Sea instead. The Government cannot continue avoiding its responsibility by suggesting ineffectual compromises - it must accept that the only solution is to force these industries to stop creating this toxic pollution," added Ortar.

Greenpeace demanded that the Government of Israel follows up on its commitment to ratify the Land-Based Sources Protocol in the Barcelona Convention as the first step towards the formulation of a policy that will effectively stop toxic discharges to sea. The lack of action continues to endorse the environmental degradation and health hazards posed by industry in Israel.

**FOR FURTHER INFORMATION PLEASE
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For interviews with Yuval Tamir, marine commando, please call +972 54 816 588

Visit <[link](#)

A detailed press briefing on the Barcelona Convention is available at the Greenpeace Mediterranean website: <[link](#)

Photos of the marine commandos and today's action are available from the Greenpeace International picture desk +31 20 524 9580

Notes to Editors:

(1) Research linking cancers in marine commandos to the toxic pollution in the Kishon was conducted by Professor Eli Richter from the University of Jerusalem. As a result of his research, a national inquiry committee is currently investigating the case.

(2) The companies are: US-owned Haifa Chemicals, Carmel Ulipinim, Gadot Biochemicals, Gadiv, the oil refineries and the municipal sewage treatment plant.

(3) The scientific analysis was conducted at the Greenpeace International Laboratories at Exeter University in the United Kingdom. The Haifa Chemicals discharge pipe revealed elevated levels of the heavy metals chromium, copper and cadmium, as well as tribromomethane and several other brominated and chlorinated organic compounds. Chlorinated benzenes were found in the municipal waste sewerage treatment plant effluent, suggesting a significant additional input of industrial effluent to the municipal sewers. Elevated concentrations of chromium were also found in the effluents of Carmel Ulipinim. Gadiv plant was shown to be a significant contributor of complex hydrocarbon mixtures into the Kishon River. Benzene and chlorinated organic compounds were also found in Gadot Biochemicals effluents.

(Note: The above article was found on the following
website: <http://www.sightings.com/general3/medit.htm>.)