

A Study on the presence of Depleted and Enriched uranium used by Israeli Bombardments on Lebanon during the July\August Conflict 2006.

By

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PS: The interpretations in this report are the sole responsibility of the author. Any comments or critic toward this report is welcomed. (“Die Wharheit Macht Euch Frei” .stated at Freiburg University, Gemany)

ABSTRACT

In this report we present results of the investigation on the possible use of depleted, enriched and natural uranium by the Israeli bombardments on Lebanon during the July/August conflict 2006. The study was made on soil samples collected from appropriate craters of several areas in Lebanon using Mass-spectroscopy techniques. Most of the results of the studied samples showed no contaminations by DU except in the two craters in Khiam area where DU was detected and high radio activity of uranium was present, which indicates the use of weapons equipped with dirty natural uranium.

We have carried out a study on 24 hours collection of urine samples taken from individuals, who were exposed to explosive missiles dusts in South Beirut. The study showed the presence of Depleted , Natural and Enriched Uranium in 4 samples out of 15.

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1-Introduction

a)- In the war Zone in South Lebanon

The 33 days war waged on Lebanon by Israel starting on July 12th-2006, has left a large part of the Lebanese infrastructure in a complete destruction. Weapons of highly powerful explosives were used with a tremendous efficiency, so that homes, schools, high rise buildings and highway bridges have been flattened to the ground. Road communications between the cities in south Lebanon and elsewhere in the country were cut using weapons such as bunker busters. Hundreds of thousands of civilians of the population were forced to leave the south to other safe community places in the country. Children suffered the most and many were killed and some were burned in indiscriminate attacks.

During the first 20 days of the war, I remained in my residential area in Nabatyeh in South Lebanon witnessing the Israeli war planes throwing missiles on towns including schools, markets, moving cars and fleeing civilians. The craters caused by these missiles ranged from small size of depth of 4 meters to about 10 meters and larger in some cases

b) South Beirut under Attacks

On August 2, I moved to a residential place in the suburb of Beirut on a hill, overlooking the southern city. During the following days, south Beirut was rained by the Israeli missiles causing huge clouds of dusts mixed with flames of fires.

.Being a nuclear physicist and knowledgeable in nuclear radiation, these phenomena brought to my mind the possible use by the Israelis of missiles equipped with Depleted Uranium (DU) as was the case in the war on Iraq and Yugoslavia

Directly after the cessation of the bombardment on August 14th-2006, and knowing the effect of the use of DU on the health of the population, I went to South Beirut to explore the situation there. The whole section looked like Berlin during World War II as was presented by the media. Flattened high rise buildings were sandwiched to the ground, black dust, suspected to be Uranium Oxides, covered the remaining of concretes, and bad smells originated from dead human bodies buried under the ruins and from the weapons chemicals.

2-Radiation Activities in the Craters of the Khiam Town in South Lebanon

On August 20th and after I returned to my residence in the South, I received a telephone call from the town of Khiam stating that they are detecting radiations in one of the missiles craters in a residential area of the town and asking for my help. Using a very sensitive Geiger-Muller counter(GM), I went down to the bottom of that crater. The counter registered doses between 750 and 850 nSV/h (850 nano-Sievert per hour) at the deep point. This dose was 14 times more than the measured dose value of 50 to 70 nSV/h I have obtained at the surface area in the surroundings of that crater. This event was reported in the Lebanese press in the next day (Daily Star, Al-Akhbar, An-Nahar).

This news prompted several Organizations abroad to follow up such an event with the thought that the Israelis might have used weapons equipped with depleted uranium (DU). Thereafter I have taken the decision to set up a research plan to investigate Depleted Uranium (DU) in the target sites and carry it out in reputable research Laboratories in Europe and in the United Kingdom run by experts on uranium .

3-The running after the DU and collection of samples for investigation:

3-1 The Crater A

In the following day, I have decided to collect soil samples from that crater in Khiam, which showed high radiation activity and coded crater **A** in this report, and from other craters in the town and outside it.

3-2 Crater B

At about 22 meters from first crater **A**, a house has been there and was hit by a large missile, creating a large crater, which has replaced the house. The crater is coded **B** in this report. The house itself disappeared completely from the place. A nearby 25 cm in diameter water pipe, which supplied the town of Khiam, was destroyed and water flowed into the crater forming a small pond. I took soil sample from that crater, and pond water sample.

Also I took water from the same then repaired pipe as a control sample, which it turned out to be polluted with DU as we will see later bellow.

3-3. The creation of a Reference artificial Ditch.

In order to have reliable scientific and accurate results, I have decided during my samples collection in Khiam area to ask the municipality to dig for me a large ditch at a distance 5 to 6 meters away from the missile crater **A** and of equal depth and size, where the depth was 3 meters at the lowest point of the ditch.. This was done in order to investigate the nature of the nuclear radiations in that area and use that ditch as a reference and control for my measurements. I took samples from the bottom of that ditch at 3 meters depth. At the time of my testing the radio activities in that area, using GM instrument, I found that the dose in the artificial ditch was about 300-350nSV/h, this is about one third the dose I have measured in the missile crater **A**. The measurements were done at a depth of 3 meters in the ditch . Thereafter, I extended my samples collections to other towns in south Lebanon.

During the samples collections, radiations in all locations were tested by the same GM detector. The measured doses in the chosen craters were about 3- 5 times more as the surface dose and not as high as the one I have measured in the very first crater **A in Khiam**.

The samples collections were done in the period of **22-26 of August 2006 and were kept and ceiled in glass jars to avoid moistening and other contaminations**

To carry out such a task of research, as I have mentioned above, I contacted my colleagues in Europe and elsewhere to help in such investigation, **using Gamma, and Mass-Spectroscopy methods**. At a later stage, things developed to extend these contacts to the United Kingdom.

4-Motivation of the Task

At the time of my detecting a high level of radiation in Khiam and the media presentation of such event, I have been a member at the Board of the Lebanese Council for Scientific Research (Here I do not speak in the name of the Council) .Administratively the

Council is directly under the auspices of the Lebanese Cabinet. I was requested not to give any statements or information about the presence of radiations in my position as a member of the Council. I suspended my membership from the Council and kept my free route for research and investigation of the radiation problem caused by the war action of Israel on Lebanon.

It is well known that uranium, in addition to its radioactivity, is toxic and has very damaging effect on the body biology. But it must be noted that Uranium Health Effect is not completely understood yet and thus it is necessary to monitor and carry out research on such substance in the environment of the war action in Lebanon.

5-URANIUM COMPOSITION:

In Table –U-1 we show the isotopic composition of Natural ,Depleted and Enriched Uranium

Table- U-1-: The % Abundance of the important isotopes in Natural, Depleted, and Enriched Uranium				
ISOTOPE	NATURAL	DEPLETED	ENRICHED	HALF-LIFE, $t_{1/2}$
U-238	99.2749%	99.7947%		4.49×10^9 years
U-235	0.7196%	0.2015%	3.2 – 3.6%	7.1×10^8 years
U-234	0.0055%	0.0008%		2.48×10^5 years

For natural uranium the isotopic ratio of the isotopes U-238 and U-235 is given by $\{(U-238)/(U-235)\} = 137.9$ or $\{(U-235)/(U-238)\} = 0.723$. This value changes depending on whether the uranium is depleted or enriched .This can be monitored by investigating the isotopic content of uranium in the environment using certain measuring methodologies.

6 -Formalism of Gamma measurements

The relationship between the activity of uranium 235 and 238 is given by:

$$A_{(Pa-234)} = 0.158 \cdot \frac{(1-e)}{e} \cdot A_{(U-235)}$$

Here we have taken into consideration the half-life of the nuclides U-238 and U-235. With some calculation we get the following relation:

$$f = 0.158 \cdot \frac{1-e}{e}$$

or

$$e = \frac{0.158}{f + 0.158}$$

where

$$f = \frac{A_{Pa-234}}{A_{U-235}} = \frac{A_{U-238}}{A_{U-235}}$$

and (A_{Pa-234}) and A_{U-235} are the activities of Pa-234 and U-235 respectively. In secular equilibrium, $(A_{Pa-234}) = (A_{U-238})$

For natural uranium with an enrichment of 0.72%, ($e = 0.0072$) we get

$$f = \{A_{(Pa-234)} / A_{U-235}\} = \{(A_{U-238}) / A_{U-235}\} = 21.7$$

Table-1 shows the results of gamma measurements of samples taken from the crater A. One sample indicates the presence of depleted uranium but the error margin(15%) is too large to

confirm that. But the activity for both samples is too high as compared with the background of existing natural uranium in the environment. Thus high precision technique is needed to affirm our results. Mass- spectroscopy is going to be used as a final confirmation, since this methodology offers much higher precision than. **the gamma methodology.**

7-The Search for Higher Precision Measurements.

The results I have obtained by gamma and Alpha spectroscopy methods do not affirm with high certainty the presence of DU or EU due to the large error window in the measurements. This has motivated us to resort to a more precise method such as the (ICP-MS) technique discussed bellow.

7-1- Mass-Spectroscopy Method:

7-2-Mass-Spectroscopy (MS) formalism

The relationship for uranium enrichment **e** is given by:

$$m_{(U-235)} = e\{m_{(U-235)} + m_{(U-238)}\}$$

with

$$e=1/(1+F_m),$$

Table-1: gamma results : Samples AAX shows high natural uranium activity. Sample BXX shows the same high activity but depleted uranium. Control sample shows natural uranium but 3 times less activity as the other 2 samples.						
Crater A Sample AAX	Nuclide	Energy (keV)	Activity(Bq)	f	e=enrichment	
	Pa-234m	1001.03	989.1	22.1	0.71%(natural)	
	U-235	163.33	43.8			
	U-235	205.31	45.8			
Sample BBX	Nuclide	Energy (keV)	Activity(Bq)	f		
	Pa-234m	1001.03	842.2	26.2	0.60%(DU)	
	U-235	163.33	33.8			
	U-235	205.31	30.4			
Sample EX	Nuclide	Energy (keV)	Activity(Bq)	f		
	Pa-234m	1001.03	238.1	23.3	0.67%(NU)	
	U-235	163.33	9.3			
	U-235	205.31	11.1			

where

$F_m = m_{(U-238)} / m_{(U-235)}$ where $m_{(U-238)}$ and $m_{(U-235)}$ represent the specific mass content of the isotopes **U-238** and **U-235** respectively. For natural uranium with an enrichment of **0.72%**,

we obtain for F_m a value of : $F_m = 137.9$.

For depleted uranium of **0.35%** enrichment of the isotope U-235, we get a value of $F_m = 285$.

Results of our measurements at Harwell Laboratories are given in Table-2

8-The United Nation Measurements

The United Nation for Environmental Protection(UNEP) has taken measurements on dust and soil samples in order to determine whether Israel has used Uranium metal in its weapons against Lebanon. Results of soil sample measurements are shown in **Table-3**. These measurements were taken for samples obtained at different depths in crater **A** and at different distances from crater **A** center.

Table-2: Our Results from soil Samples measured at Harwell Laboratory			
	U238 mg/kg	U235 mg/kg	U235/U238 % ratio
_____	_____	_____	_____
_____	_____	_____	_____
Crater A in Kham	43.2	0.314	0.721± 0.009
_____	_____	_____	_____
Control Ditch	18.5	0.134	0.719±0. 004
_____	_____	_____	_____
Dardara field	4.36	0.0313	0.713±0.022
Dardara field	5.23	0.0378	0.714±0.013
Water sample obtained from CRATER B			
	U238 µg L⁻¹	U235 µg L⁻¹	U235/ U238 % ratio
Crater B	7.11	0.0456	0.637± 0.005 Depleted
Water pipe sample	0.527	0.00344	0.648± 0.015 Depleted
Jallahieh ,Crater B in Kham:control soil Sample			
	2.01	0.0144	0.711±0.04

TABLE-3 :The following measurements were taken by UNITED NATION MEASUREMENTS (UNEP) at several depths in Crater A and at several distances away from the crater center. Notice the variation of U-content??			
Location : Jallahieh+(distance) soil	U-238 mg/kg	U235 mg/kg	U-235/U-238% ratio
Khiam crater A (+70 m)	27.2	0.193	0.706
Khiam crater A (+30 m)	21	0.150	0.708
Khiam crater A (+20 m)	3.5	0.25	0.708
Khiam crater A (<5)	20.8	0.149	0.708
Khiam crater A (0 m)	14.20±0.6	0.101	0.711±0.004
Khiam crater A(-1m)	35.10±1.5	0.249	0.710±0.007
Khiam crater A(-2m)	42.50±1.8	0.304	0.715±0.004
Khiam crater A(-2)*	52.40±2.2	0.372	0.710±0.007
Khiam crater A(-3)	19.20±0.8	0.137	0.713±0.004
Dardara	6.53±0.28	--	0.726±0.004
Dardara	6.57±0.28	--	0.728±0.005

* Close to a missile metal piece(Ref..5)

It can be seen that in our measurements of the soil samples the uranium content in crater A is much higher than the background and higher than uranium content obtained from the control ditch. and from Dardara field in Khiam area. These results show natural uranium but with high activity. The same can be said for UNEP results .UNEP data show uranium contaminations as the uranium values increase with depth, than they drop to the background value of 19.2 mg/kg at final 3 meter depth, indicating that the soil was contaminated with industrial uranium introduced by the missile . The soil sample which was stuck to a missile metal piece and taken by UNEP showed the highest contamination by Uranium.

Also results given by UNEP indicate that the environment of the crater A was contaminated as compared with the control samples we have taken from the surrounding area. For clarity we present in Table-4 a comparison between our results and UNEP,s ones. It is seen that our data agree very well with the corresponding UNEP data. Water sample we have taken from Crater B shows depleted uranium and so does the pipe water.

Table-4 Comparison of our data with UNEP results.							
:United Nation Results (UNEP)				Our Results from Samples measured at Harwell Laboratories			
Crater A	U238 mg/kg	U235 mg/kg	U235/ U238 % ratio		U238 mg/k g	U235 mg/kg	U235/U238 % ratio
S(0m)	14.20±0.6	0.101	0.711±0.004	—	—	—	—
S(-1m)	35.10±1.5	0.249	0.710±0.007	—	—	—	—
S(-2m)	42.50±1.8	0.304	0.715±0.004		43.2	0.314	0.721± 0.009
S*(-2m)	52.40±22	0.372	0.710±0.007	—	—	—	—
S(-3m)	19.20±0.8	0.137	0.713±0.004		18.5	0.134	0.719±0.004
S*= close to missile metal piece							
Dardara	6.53±0.28		0.726±0.004	Dardara	4.36	0.0313	0.713±0.022
Dardara	6.57±0.28		0.728±0.005	Dardara	5.23	0.0378	0.714±0.013
Water Sample From Crater A				Water sample obtained from CRATER B			
	U238 µg L ⁻¹	U235 µg L ⁻¹	U235/ U238 % ratio		U238 µg L ⁻¹	U235 µg L ⁻¹	U235/ U238 % ratio
S(-3m)	5.30	0.0377	0.711± 0.02	crater B	7.11	0.0456	0.637± 0.005 Depleted
				water pipe	0.527	0.00344	0.648± 0.015 Depleted
Jallahieh ,Crater B :control soil Sample							
					2.01	0.0144	0.711±0.04

9-Measurements of Uranium Content in Urine of some Exposed People to Missiles Explosives. Dust.

9-1- The Urine case I (Group I)

Urine is an immediate test and direct indicator of the presence of uranium in human body. As a part of a pilot program, I have undertaken measurements of uranium content in urine samples taken from individuals, who were exposed to dust caused by missiles explosion used by Israeli attacks on South Beirut. This was based on the desire of these individuals to examine their urine due to their feeling of being sick with syndromes similar to those in the Gulf veterans as was reported in many publications, such as doziness, fatigue, nausea, weakness etc., after they were exposed. The ages of the individuals were 70, 55, 20 and 15 years old. The Urine samples were taken from two groups each at different time.

9-2-Procedure

The first group consisted of 4 individuals, with 24 hours collection of urine for each person was taken. The urines were accumulated in clean plastic bottles, from which urine samples were taken and sealed into special plastic bottles supplied by Harwell Laboratories. In addition, samples of drinking water consumed by these individuals were prepared. The collection of the urine samples was done ten months after exposure. The samples were sent to Harwell to be investigated for uranium content. All the samples were measured at

Harwell using Mass-Spectrometry technique (**SF-ICP-MS**). The spectrometer was calibrated using a method of isotope dilution. As quality control measure, a uranium (QC) standard was measured along with the samples.

The results of measurements are presented in **Table UR-I**. The uranium concentration values are expressed in ngL^{-1} of urine (nano-gramm per liter). The water sample, coded WH, showed the isotopic ratio U-238/U-235 as 138.14 which is in good agreement with natural uranium ratio of 137.9. This assures us that the drinking water is not contaminated with DU or EU.

9-3-The presence of enriched uranium in the Urine

One of the urine sample, **RK-2**, shows isotopic ratio of natural uranium, while the other 3 of the measured urine samples show contamination with enriched uranium as the table **Table-UR-I** indicates.

Table-UR-I: Results of uranium content in urine of some individuals exposed to missiles explosions dust in South Beirut.						
					Remarks	
Our Reference	Laboratory Reference	U Concentration	$^{238}\text{U}/^{235}\text{U}$			
WH(WATER)	IF4431	278.85±13.94	138.14±2.82			Natural
MKK-1	IF4434	13.71±0.69	135.61±2.73			????
HKK-2	IF4433	2.14±0.11	118.35±5.48			Enriched
RKK-2	IF4435	1.86±0.09	137.51±4.77			Natural
AKK-2	IF4432	7.88±0.39	129.34±4.28			Enriched
	QC:Standard	20.00±1.00	137.90±3.69			NA
	QC:Standard	20.00±1.00	137.90±5.97			NA

MK-1 sample indicates a non significant presence of enriched uranium, but it remains within the experimental error. This sample showed also an elevated (but not significant) normalized signature of **U-236**, which might indicate that the uranium in the sample stems from the waste of the nuclear power???

The samples coded **HK-2** and **AK-2** show isotopic ratio of 118.35 and 129.34 respectively, which affirms the presence of **enriched uranium** in the urine. This confirms the presence of enriched uranium in the dust inhaled by the tested individuals in South Beirut and confirms also that the Israeli missiles were equipped with uranium containing enriched uranium.

10-Group II: Results of uranium measurements in urine taken from 11 volunteers

Results from the Analysis of Urine Samples for Uranium. Table-URII- Uranium concentration results are expressed as ng.L⁻¹ . Notice the High value of the industrial natural uranium and sample with Depleted Uranium.

Ref.	Lab Ref.	U Conc.	²³⁸ U/ ²³⁵ U	²³⁶ U/ ²³⁸ U	Remarks
LB7-10-01	IF6293	8.03 ± 0.40	136.915± 3.7	<0.00005	
LB7-10-02	IF6294	9.94± 0.50	139.14± 3.25	<0.00005	
LB7-10-03	IF6295	8.21 ± 0.41	137.19 ± 3.09	<0.00005	
LB7-10-04	IF6296	40.19± 1.99	138.27± 2.32	<0.00005	High U
LB7-10-05	IF6297	4.21± 0.21	137.68± 5.7	<0.00005	
LB7-10-06	IF6298	1.62 ± 0.08	138.86± 5.7	<0.00005	
LB7-10-07	IF6299	1.66 ± 0.08	138.34± 6.20	<0.00005	
LB7-10-08	IF6300	1.91± 0.10	139.05± 4.2	<0.00005	
LB7-10-09	IF6301	1.74± 0.09	138.08± 5.30	<0.00005	
LB7-10-10	IF6302	5.84± 0.31	142.6± 2.30	<0.00005	Depleted.
LB7-10-11	IF6303	8.605± 0.43	136.20 ± 4.70	<0.00005	

The procedure for these measurements is the same as for the first group. Table-URII shows the results

The urine of these individuals showed normal content of natural uranium excepting two individuals, one showed content of depleted uranium { see sample **LB7-10-10**} and the second showed the presence of abnormal high natural uranium content {see sample **LB7-10-04**} as Table-URII indicates. This is to be compared with the behavior of the crater A in Khiam, which showed high uranium activity also (see above).

Our finding agrees with results obtained by Chris Busby et al.(Green Audit) from the dust of a filter of an ambulance vehicle used in South Beirut to help wounded civilians during the attacks. Busby dust sample showed content of enriched uranium as presented in **Table-AG**. Busby used Harwell Laboratories for his measurements, which gave isotopic ratios for singlet, duplicate and triplet measurements as 113, 123 and 133 respectively, with an average of 123.

This shows that the air of South Beirut was contaminated by aerosol uranium dust particles containing enriched uranium and inhaled by our tested exposed individuals. It must be mentioned here that the ambulance vehicle was also used elsewhere in war zones during the war.

Table AG: Measurements of uranium content in the filter dust obtained by Green Audit using Harwell Laboratories.						
FILTER DUST SAMPLES						
Customer Reference	Laboratory Reference	U-238 mg/kg	U-238 mg/kg	U-Total mg/kg	²³⁸ U/ ²³⁵ U ratios	Remarks
GA231006AF	EF1671	0.12	0.001	0.121	113	Enriched
GA231006AF	EF1671D	0.10	0.0008	0.1008	123	Enriched
GA231006AF	EF1671T	0.098	0.0007	0.0987	133	Enriched
D=Duplicate						
T=TriPLICATE						

9-Conclusion:

9-1 Presence of Depleted Uranium

We have undertaken investigation on the presence of radio active uranium in the form of natural, depleted and enriched uranium in soil and dust samples taken from several areas in Lebanon bombarded by the Israelis during the July\ August conflict in the year 2006. We have investigated in addition uranium content in 15 urine samples of individuals who were exposed to missiles explosive dusts. Two urine samples out of 15 showed content of enriched uranium, while another showed depleted uranium. The urine of a fourth exposed individual to missiles dust indicated high content of natural uranium

From the above measurements we conclude that the majority of the soil samples obtained from the measured craters in South Lebanon did not show depleted uranium within the precision of our measuring instruments of the Gamma- and Mass- Spectroscopy Techniques. However one sample from Khiam crater **A** indicated the presence of DU using gamma-spectroscopy, but can not be assured due to the large margin of errors. **A water sample** obtained from a water half filled crater(**crater B**) caused by the bombardment of a house in Khiam, showed presence of DU in that crater based on the mass ratio of U-238/U-235 using ICP-MS .

9-2 Presence of Natural Uranium with high Activity

From UNEP measurements and ours, we have shown that the uranium content in one crater in Khiam town is originated from industrial background Uranium. Thus the case of the Khiam samples results, which showed high radio activity measured by us and UNEP in the crater area, leads us to believe that:

The Israelis have used weapons equipped with high radio active industrial natural uranium in their missiles in this location. This is based on the fact that the specific activity in the soil taken by us and UNEP at 2 meters depth in the crater **A** was twice as high as the one obtained from the sample taken at the point of 3 meter depth in that crater and in the control ditch, which indicates that new uranium was introduced to this location by the missiles. This fact is supported in addition by UNEP measurements at 2 meters depth in the crater **A** of a sample which was in contact with a missile metal piece, where uranium

specific mass of the isotope U-238 was **52.4 mg/kg** , indicating contamination by uranium dust carried by the missile metal piece.

Also measurements by UNEP at several distances away from the center of the crater showed contaminated area.

10-Acknowledgement

The author would like to thank the Green Line Organization in Lebanon for its cooperation in achieving part in the first stage of this project.. The author would like also to thank the Society of the Austro-Arab Relations for the collaboration and facilitation in the executing of the gamma measurements in Vienna. For the last stage of the investigation at Harwell Laboratory I would like to thank those individuals who offered financial support for the measurements at Harwell and accommodation.

A Closing Prologue to the Consciousness of Mankind.

United Nations Environment Program Measurements: Quo vadis?

In its report, UNEP stated on page 165 that:

“The team also visited sites rumored to have been attacked with DU-containing weapons, including a site on Khiam. Samples were analyzed by a leading Swiss governmental laboratory in field of radiation. The results show no evidence of the use of weapons containing DU, natural uranium or any other uranium isotope composition

Well, the evidence is strongly proven in our above given results, where excess of natural industrial uranium in crater **A** and possible existence of DU in crater **B** in the Khiam site was found. Urine sample measurements confirm the use of uranium waste as dirty weapons by the Israelis.

The above statement also says:

“Samples were analyzed by a leading Swiss governmental laboratory in field of radiation.”

Fine, I have no doubt about the skills of UNEP experts.but how much independent is Spiez Laboratory Institution? Is it connected to NATO where Israeli weapons is delivered from USA arsenals? Why did not a Lebanese independent research scientist accompany UNEP during their measurements in Spiez Laboratory Institution for example in order to assure more objectivity in regard to the Lebanese true believing in the results, since the issue is very crucial to the Lebanese Nation?

Also UNEP stated that:

“The dose rates measured during the excavation of the hole never exceeded 250 (nSv/hour”.

But our measurements showed much higher dose in the order of **726 nSv/hour** as indicated by our detector shown above in this report. In some cases in our measurements, the doses were **850 nSv/hour** as I stated to the press. This value is also consistent with the Laboratory analysis obtained from the mass spectroscopy results at Harwell. UNEP might be right in measuring low doses but at what location point in the crater and what kind of the soil sample was measured in the **impact hole**, as they called it?.

Thus one can not completely exclude the use of missiles equipped with DU or dirty tank shells equipped with uranium by Israel.

Mr. Achim Steiner, Executive Director of UNEP, wrote in the UNEP final report on that war on Lebanon:

“I hope it is a measure of comfort for the local population that no evidence of the use of depleted or natural uranium-containing weapons was found. However, the large numbers of cluster bombs, which lie unexploded throughout much of southern Lebanon, do constitute a sever impediment to post-conflict recovery”.

Such statement, in regard the uranium radiation, does not meet the actual problem. The above results do not **comfort the local population**, where radio activity of uranium is much higher than the normal uranium content in the investigated area. The results of urine samples does not comfort the Lebanese either. Yes, the last part of the statement does conform with the brutal use of cluster bombs by Israel. So many children and young men have already been killed by such bombs. The agricultural land in South Lebanon became inaccessible to the land owners.

Thus our above results do not confirm Mr. Steiner nor UNEP statements regarding the no use of uranium in the Israeli weapons. Our results offer the scientific prove on the use of dirty natural uranium by the Israelis.

In a press release, UNEP stated:

”The excavation of the bomb impact hole,(crater A), clearly showed that the ground was composed of soils and material that were placed there before the bomb attack occurred.”

This is imagination and not scientific statement and it is blurring the truth and irresponsible conclusion.

I have interviewed many citizens in the town of Khiam, young and old people and owners of land, who are very familiar with the area of that location. All stated that no outside materials was brought or introduced into that area and all the samples I have taken from that area were comparable in their nature with the samples of the control ditch I have dug in that place and other samples from different locations.

The Barbarism of Wars :

Morality and Duty of Institutions

The Duty of Sciences

I can not help it but to deviate from values of scientific numbers and go into the more humane statements concerning the crimes of the wars. Science and Humanism can not be separated due to our striving into the high values of the human existence. Thus few thoughts should be dedicated to the moral duty of the press and the scientific communities in Lebanon and abroad regarding the use of Uranium by Israel and by other powers in wars on Lebanon and on other nations.

In the last few decades and so, several wars have been conducted against humanity, where dirty weapons, such as depleted uranium, have been used. The effect of such crime on the health and the impact on the social life of the people, who were subject to such attacks, was catastrophic in countries like Yugoslavia, Afghanistan and Iraq. The case in Lebanon is still pending for further studies and investigation on the biological and health levels.

Who Should Speak out?

At a press conference, arranged in Beirut by the Lebanese Council for Scientific Research in the presence of the representatives of UNEP, WHO, IAEA and the Arab Atomic Energy

Agency, to give conclusions about their investigations on the presence of radiation problem caused by the Israeli missiles and buster bombers in Lebanon, one could hear and smell the monopoly of the politics interfering in the destiny of the people's health. This is seen in the following:

Arabism

For example, the director of the Arab Atomic Energy Agency stated: **“No one has the right to give any statement or measurements about radio activity outside the official and governmental institutions. Not any one who carry Geiger Mueller Counter has the right to declare the presence of radio active materials“**

How nice?? We ask the speaker: Is he and his researchers in official institutions the only qualified persons to do research in that matter? Must the qualified Lebanese scientists remain mute? Such statement can not be accepted by any dignified scientist who is concerned about the well being of human beings.!!!

Science or Poetry?

At that conference UNEP representatives offered results of the measurements on the smear samples taken on tapes, using mass-spectroscopy, but **did not** offer in their final report any believable analysis of the soil samples they have taken in the second visit? The report was confined to a descriptive content and no analytical presentation in the report was presented for the sake of the public.

Where is my Health Sir?

The World Health Organization(WHO) representative stated:

“ There is no need to say much about the subject, since the results by UNEP do not show the presence of DU. There is not enough research done on the effect of DU on the people's health?”. Thanks! If this is WHO attitude, then for what is WHO? Why does not WHO conduct high level and objective research on the situation in Lebanon regarding the use of weapons equipped with dirty Uranium?

All gave statements indicating the absence of harmful radiations in the missiles craters. It was a nice well orchestrated press conference covered with a political cloak.(For examples: So the officials only can speak out. No!! thanks)

And the Press

And here is also something about the free mind: It is the moral duty of the press and the media to enlighten the public based on scientific approach about the health effect of the use of Uranium on the population of Lebanon. The press and other media must adder to the principles of creating awareness among the population about the danger of nuclear radiation be it artificial or natural radiation without drumming fears and anxieties.

Governmental scientific institutions should not prevent the press or independent scientists, from enlightening the Lebanese people in **a humane manner** about the possible presence of Uranium in Lebanon caused by Israeli wars against that country, so that preventive actions can be taken. I believe that any action against enlightenment or trying to bluer the truth about the use of DU or dirty weapons against the population, is a crime toward the Lebanese people and other societies. The above statements of UNEP and others I have cited above are unjustified.

HUMANE MANNER MEANS:

Some television media, have reported on enriched uranium found by Dr. Busby. The case was presented in such a drumming manner, which has created an unjustified psychological

fear among the Lebanese population without considering the absolute truth in the scientific results.

It seems to me that the barbarism of some big powers using weapons of mass destruction has no respect to God's Human Creatures. They are simply destroying the beauty of life and making other people, such as in Iraq's Gulf Wars, a testing ground for their dirty weapons and killing. All Mankind should stand up and raise the voice of morality and justice for all.

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