Report on Environmental Damage Caused by U.S. Military Bases in South Korea

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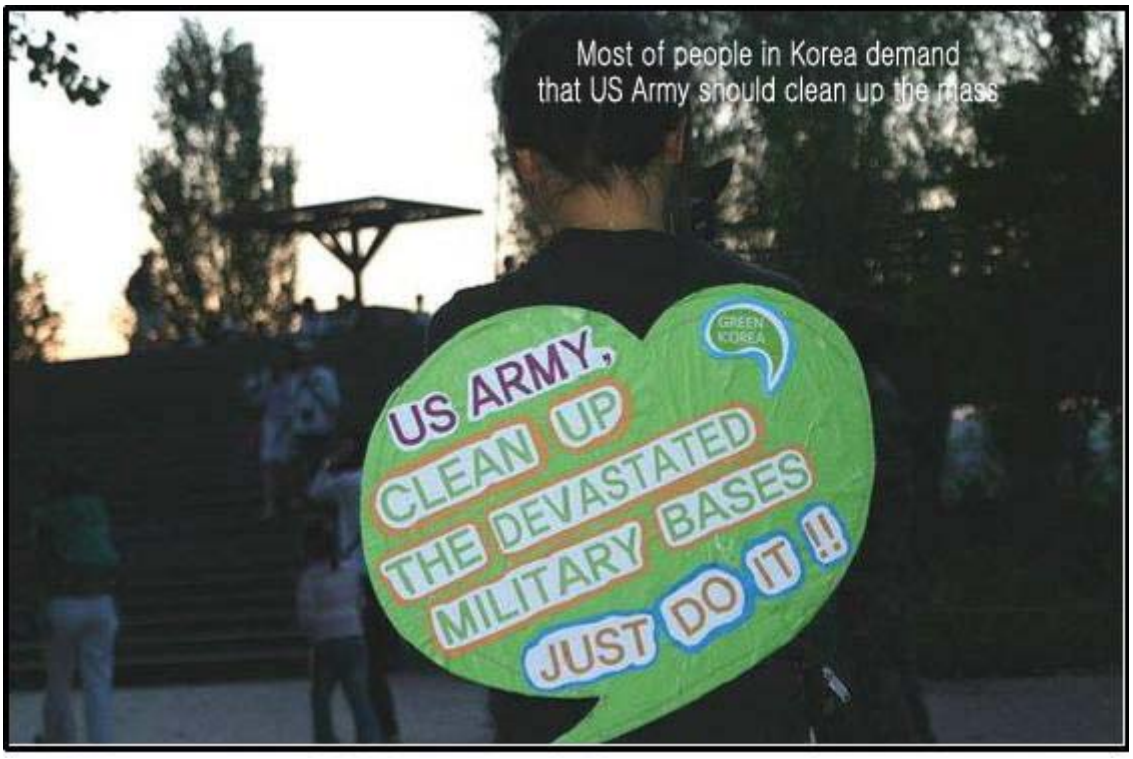

The working group for environmental research
on damage caused by the U.S. military

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Chapter 1. Prologue

1. Behind the production

During the process of receiving returned U.S. military bases, according to the Land Partnership Plan (2002), the Yongsan Relocation Plan (2004), and the Revised Land Partnership Plan (2004) have agreed upon the United States and South Korea. South Korea has received some U.S. bases without the U.S. taking responsibility for the environmental cleanup.

As the Environment Protection Policy was established, the 'MEMORANDUM OF SPECIAL UNDERSTANDINGS ON ENVIRONMENTAL PROTECTION' in 2001(Memorandum of special understandings), the 2002 'THE JOINT ENVIRONMENTAL INFORMATION EXCHANGE AND ACCESS PROCEDURES'(The environmental information procedures), and the 2003 'PROCEDURES FOR ENVIRONMENTAL SURVEY AND CONSULTATION ON REMEDIATION FOR FACILITIES AND AREAS DESIGNATED TO BE GRANTED OR RETURNED'(Procedures on remediation) was arranged. There were a number of institutional developments made to solve and prevent the environmental damage caused by the U.S. military bases. We, the Korean civil groups, expected the U.S. army's efforts for environmental protection to adhere to the principle that polluters are responsible for cleanup according to the polluter responsible principle. But we once again found, in numerous oil leak incidents and in the lack of environmental restoration in returned bases, that the institutional developments were not actually reflected in reality.

Through the document 'National Assembly Hearing about the returned the U.S. Military bases' environment recovery' in June 2007, we confirmed the following items : ▷There is no agreed-upon standard about the pollution and clean-up cased by U.S. military bases in Korea ▷The problem of environmental damage in returned bases was not considered for the development of the relationship between Korea and the United States ▷The revision of the Status of Armed Forces Agreement (SOFA) is necessary for the realization of the newly established Environment Protection Policy within SOFA.

As we once again confirmed that environmental problems were not solved in a way that protects local residents' human rights and their environmental rights, but rather ignored or concealed in the name of the Korea-U.S. alliance and the stable stationing of the USFK (United States Forces in Korea), we felt the need to write this report about the process of raising issues about environmental problems in the U.S. military bases for over 10 years.

The environmental damage in the returned bases are fundamentally the result of the U.S. neglecting to address pollution incidents during the station period or sufficiently checking and managing the pollution-causing facilities.

Considering the fact that there are nine more bases planned for return, including the Camp Hialaeh in Busan in 2008, and that there are repeated oil leak incidents (as in the case of Kunsan and Wonju-area facilities), we decided to write this report to research and understand the cases of military-related environmental damage in Korea and to search ways to solve these urgent and large-scale environmental problems.

2. Objectives

This report intends to report on the reality of environmental pollution in Korea and to present the record of environmental damage and the impact on the health and lives of citizens caused by U.S. military bases. Ten years have passed since the environmental issues caused by U.S. bases have been raised as a social problem in Korea, but the problem has not yet been resolved because of the passive attitude of the Korean government and USFK towards this problem. Over the past ten years, the Korean Civil Movement/ people's movement has urged the revision of SOFA and they have succeeded in some ways, especially in making the Korean public aware of the various costs and impacts of U.S. military bases. However, we absolutely need public activities/ engagement within the U.S. and other countries that the U.S. army is currently stationed in, such as Japan, the Philippines, and Germany. There is a need to resolve the lack of an environmental law regulating the problem of U.S. military environmental pollution. The reality is that there is little interest in the lack of appropriate environmental regulations about the U.S. military in foreign countries. Environmental rights should be guaranteed for all citizens in

every country. There should be no difference between the protection afforded to citizens within the U.S. and those outside. Not only should each government, but also the U.S. congress and government and international organizations such as the United Nations Environmental Programme (UNEP),should do their best to understand the situation and find solutions for the actualization of environmental justice.

3. Research Sources & Methods

○ Research sources

We focused our research on past and present cases of environmental damage surrounding the U.S. military bases as confirmed by the records and research activities of organizations working on U.S. military base issues and on press reports.

○ Research methods

- Research Data: Cases of damages secured through organizational activities, press publications, data submitted to Congress, data secured through information requisition, related policies and research data, etc.

- Field investigation : The investigation focused on actual sites of military pollution in Seoul, Pyeongtaek, Kunsan, Wonju, northern areas of the Gyeonggi province, other places where environmental damage from U.S. military bases are still ongoing, and places with returned bases. In addition, we visited 5 U.S. military bases in Japan for 10 days for comparative research. However, we did not conduct sample investigations, such as noise measurement and sample gathering.

○ Investigation period : 2007. 10 ~ 2008. 5

4. Limits of investigation and future tasks

○ Non-disclosure of information

Most of the cases of damage in the report were known by reports of local area residents. The U.S. military, Korea's Ministry of the Environment, and local governments are involved to solve the reported cases. The Ministry of National Defense practically manages the returned bases, and the Ministry of Foreign Affairs and Trade is in charge of the adoption and interpretation of related principles.

The biggest problem in this research was the lack of disclosure and absence of information about the management of environmental problems. When we demanded that this information be disclosed and asked the Ministry of the Environment or local governments for analysis based on truth and not assumption, almost all rejected the requests. The closure of information about the environment of the U.S. military bases has been pointed out as a problem for the last ten years. We have sued and won both the first and the second trials to disclose information about the decision of Chuncheon's Camp Page environment research information. However, the case is at the Grand Court because of the government's appeal, but for almost a year the trial has not proceeded. As we were given an answer for the cases that have already ended that there was no data or that the manager was changed, we were still unable to gain access to information. The fact that information about environmental damage is not disclosed is the biggest hindrance to solving these problems and thus there are cases in the report that are not able to be resolved.

○ The need for additional research on U.S. bases in other countries and the regulations of the U.S. Department of Defense regarding the environment

In this research, we tried to compare the situation of U.S. bases not only in Korea but also in other countries. To overcome the limited information, we confirmed the damage by directly visiting U.S. military bases in Japan and meeting local civil organizations, local congress persons and local resident organization in November, 2007. We found similarities to those in Korea, but there were also some better situations in Japan. In this research, we focused on cases in Japan, but felt the need to research and analyze U.S. environmental policy, the U.S. Department of Defense's policy of foreign military bases, and the use of the U.S. military bases in Europe.

Chapter 2.

Environmental Damage Caused by U.S. Military Bases in Korea : Current Conditions

In 1996, "Green Korea" and the advanced preparation of "National Countermeasure Commission for the Return of Our Land from U.S. Bases"planned a joint research project on the environment surrounding the U.S. military bases. We needed a fair amount of money, time and technology to research the water and soil quality and measure noise levels around U.S. bases.

There were also some people that said it was unrealistic to raise the issue of environmental problems caused by U.S. military bases. Most people thought that problems of the U.S.-ROK SOFA and the crimes committed by the U.S. military in Korea were serious, but that it was not likely for there to be environmental damage when the environmental policy of the U.S. is highly regarded around the world.

But we already had a grasp of the environmental damage near various U.S. military stations. From October 1996 to November 1996 we researched 11 areas, including about 30 military stations in Dongducheon, Uijungbu, Seoul, Pyeongtaek, Bupyeong, Busan, Daegu, Kunsan, Wonju, Chuncheon, and Hanam. After we prepared the necessary funds with difficulty and conducted research with some of our own activists, the resulting findings on noise pollution and other pollution levels were hard to believe, even for the researchers themselves.

Using this, we began to report the environmental problems of the U.S. military bases to the public, including the impact of practice bombing in Maehyang-ri, the discharge of toxic chemicals in the Han River in 2000, and the oil leak incident in Camp Long, Wonju in 2001, which alerted people of the severity of the environmental damage caused by U.S. bases.

With these actions and findings, an environmental stipulation was

established in the 2001 revision of the SOFA agreement, and the agreements were added in 2002 and 2003.

But because these environmental stipulations are being ignored and because the question of responsibility in the U.S. bases has returned to the Korean government, once again, social interest and efforts regarding environmental problems are necessary.

The field results of the 1996 research project still remain a main problem even after 10 years. The soil, water and noise pollution around U.S. bases still represent an environmental problem in Korea.

We divided the cases of damage into oil leaks, environmental damages in the U.S. bases returned to Korea, and noise pollution.

First, oil and water pollution caused by oil leaks is the most frequent case of pollution in and near the U.S. military bases. Other causes of water pollution is the improper discharge of waste water and the illegal handling of toxic chemicals. The main cause of oil leaks are because of old and insufficiently maintained oil storage facilities. The main causes of water pollution from the illegal discharge of waste-water from the bases is because either the sewage disposal facility is too old or because the facility itself is too small. When this was raised as a social problem in the cases of Kunsan and

Pyeongtaek, U.S troops managed the situation by connecting the sewage disposal facility of the base to that of the local government. But there are still reports from residents near Kunsan Air Base that the waste-water is still illegally discharged when it rains.

Second, the conditions of environmental pollution in U.S. military bases returned to Korea are serious. In those that were returned, it was evident that there were no regular checks to prevent pollution and no environmental restoration efforts had taken place. But the U.S. refused to recover the damages according to Korean law and returned it without further agreement.

Finally, the noise pollution and concussion damage caused by the flight and bombing practice of U.S. fighter planes and helicopters have become part of everyday life for Korean citizens and a commonplace environmental problem ever since the U.S. military bases were established in Korea. While the seriousness of the noise pollution situation has been proven through lawsuits, there is not much known about the situation of the concussion damage that has led to house and other property damage. The noise pollution measurement machine has been installed only in Pyeongtaek, which will assist in the research of concussion situation from July 2008. The noise pollution is so serious that it violates the education rights of students in nearby schools, and causes physical and psychological damages to the residents.

Figure 1. The overall report of water pollution research in 1996

Items	Wonju	Dongducheon	Uijungbu	Incheon	Pyeongtaek	Kunsan
Ph levels	6.9	6.9	6.9	6.9	6.9	6.9
COD	7.5	10.0	5.5	18.5	14.5	39.0
Total amount of Nitrogen	3.0	4.9	4.9	3.7	19.4	0.012
Total amount of phosphorus	0.034	0.042	0.011	0.228	0.092	0.092
Flotage	26	26	24	42	144	110
SURFACE ACTIVE AGENT	0.08	0.03	0.02	0.25	0.02	0.02
Manganese	0.28			0.1	0.07	0.155
zinc	0.06			0.04	0.02	0.04

Note) During the water quality research, we tookwater samples directly from outlets from the U.S. military base. Researchers were not able to check

inside the bases. If the stream passed through the bases, we got the water from the stream of an outlet that was exposed. In the cases of water outside the bases, we got the water directly from the outlet.

Figure 2. Overall levels of noise pollution in 1996 (Unit : dB)

Measure locations	Average	Maximum	Cause	Moment Maximum noise
Camp Stanley in Uijeongbu	74.0	78.4	Helicopters	81.4
Camp Page in Chuncheon	71.1	82.0	Helicopters	89.3
Camp Market in Incheon	63.9	68.8	Factories	68.8
Pyeongtaek Osan Air Force Base	81.4	96.0	Jets	112.0
Kunsan Air Force Base	83.6	94.0	Jets	107.0
Daegu Airfield	87.8	99.2	Jets	118.3
	81.2	87.4	Helicopters	88.2
Camp Hialaeh in Busan	66.7	78.4	Facility operations	78.6

Korea's Standards of noise pollution (Equivalent sound units Leq dB(A))

Districts	Application areas	Standards	
		Day(06:00~22:00)	Night(22:00~06:00)
Normal areas	Environment protection areas, tourism/leisure areas, villages (To 50 meters from the borders of residential zones, Green areas, areas only for living, schools or hospitals)	50	40
	Zones except for residential zones among village zones, residential or semi-residential areas	55	45
Along streets	Same with "Normal areas"	65	50

Note) We conducted noise measurements in adjacent residential and semi-residential areas. In the cases where noise was emitted by airplanes and industrial sites, we measured them from the alleys and gardens, away from the actual sites to find out how much residents are exposed to the noise.

1. Oil Leak Incident

The most common cases of environmental pollution on the U.S. military bases are soil and water pollution caused by oil leaks. In the last 10 years, 77% of environmental incidents were oil leaks. The U.S. military is taking this seriously and forwarding policies to supplement the underground oil storage facilities with above-ground facilities, or to rely on alternative fuels. USFK announced that they would bring out the UST(Underground Storage Tank) above ground, repair and remove those in Osan and Kunsan Air force bases until October 1, 2004. Since every base has oil storage facilities, they are the most common pollution-causing facilities and there are possibilities for pollution incidents on every base.

1) Cause of oil leaks

The most common causes of oil leaks can be divided mainly into two categories : oil leaking from old oil storage facilities, and oil leaking during training.

(1) Oil leaking occurs because oil storage tanks and pipes are old.

Until recently, the U.S. military had used underground storage tanks(UST). The pipes connected to the UST are hard to check and maintain because they are buried underground. The most common energy source of the U.S. military is oil-based, such as kerosene and gasoline.

In the case of the Air Force, they need large oil storage facilities for the operation of battle equipment. In addition, most administration facilities such as base lodgings and schools have their own oil storage facilities.

Oil pollution incidents include the incident in Madison Base in 1998, in Osan Air Force Base in 2000, in Noksapyung station in 2001, and Kunsan Air Force Base in 2003. Because the U.S. military had not purified the polluted soil when they installed the above-ground oil storage facilities, when it rained the oil components leaked and polluted the nearby river.

Above-ground oil storage is also a problem. We do not know whether the

reason is because regular checks have not been done or not. In the case of Wonju, there was an oil leak incident because of pipe damage, and in the case of Kunsan, because of frozen pipe valves and malfunction.

That is why there is a need to examine if the inspection of oil storage facilities inside U.S. military bases is being done regularly by the U.S. military. Currently, for example, there is a rumor that when there was an oil leak incident in Camp Howze, which is now returned to Korea, the U.S. army couldn't find the cause.

(2) Carelessness of management during training

Oil leaks during training do not occur on an ordinary basis but sometimes during training when the U.S. army uses oil tank vehicles. Thus, the circumstances to prevent pollution are worse.

In the Pocheon Yeongpyeong shooting range site in 2004, oil leaked because the valve of the oil tank was not locked properly. In addition oil leaked into the town stream because there were no facilities installed in the floor ground where the car was located. Moreover, in an accident in Paju a vehicle turned upside down on the town bridge and leaked oil.

In another case in 2004 about 30,000 gallons of oil leaked into the ground because of pipe damage during the process of providing helicopter fuel in Pyeongtaek's Camp Humphrey.

In these cases, public education is necessary. Because oil facilities cause large-scale damage when they leak, there should be precise guidelines about the installment and management of these facilities.

Also, because this involves the military, there should be an inspection about whether those guidelines are being properly followed, and whether the military's education about these guidelines is adequate.

2) Patterns of incident confirmation - Discovery and Report

It can be said that almost all of the confirmed cases of oil leak incidents are confirmed because the oil leaked outside the base boundary and was discovered by residents or local governments. The oil leak incident in the

Baekun mountain, Uiwang, was reported by a citizen. The Kunsan oil leak incident was confirmed by farmers and Wonju's Camp Long oil leak incident was revealed by oil rings and a nasty smell around the area by residents.

In the case of the Baekun mountain oil leak incident, which was reported by a citizen and is under a recovery process with the U.S. army, the U.S. army reported the incident to the Korean Ministry of the Environment after 49 days. Until then, Uiwang City did not either confirm or approach the oil causing facilities inside the base, other than the discovered oil-polluted area outside the base.

The reality is that the U.S. army does not report oil leak incidents to Korea when it judges that oil has not leaked outside the base. Rather, the army informs the Korean government about the incident only when the media reports the incident or demands confirmation from the U.S. army. Even though the U.S. army can confirm whether or not the oil had leaked outside the base through close examination, it does not carry out these procedures.

In November 2004, Segye-Ilbo reported that there had been about 10 cases of oil leak incidents just in the Yongsan base area after 1998. Most of these were caused because the army did not take care of the pollution leaked by the oil tank when it was underground. Those incidents were not reported to the Ministry of Environment.

There are some cases when Korea found out about oil leak incidents from the U.S. troop's inquiry for permission to carry out the polluted soil inside the U.S. military bases. On August 19, 2002, Camp Walker in Daegu requested for a permit to move the polluted soil inside the base to Camp Carol. The command of Camp Walker found the abnormal soil signs on the 8th of July, but they did not report the incident to the local government right away.

The problem is that Korea's environmental officers cannot quickly enter the U.S. military bases in order to investigate these cases of pollution. When the oil leak incidents happen, it is only natural that the appropriate authorities immediately check the polluted area and address the cause of pollution. But in the cases of U.S. base pollution, because it is a military facility, the army's permission is necessary.

When an incident happens, the local government is responsible for the pollution outside the base and the U.S. military is responsible for incidents inside the base. However, the only information pertaining to the ways in

which the U.S. military addresses the pollution incidents inside the base are contained in the report submitted by the U.S. military to the Korean government.

3) Features of oil leak incidents

The most common feature in the problem of oil leak problems on U.S. military bases in Korea is that the incidents are continually caused by the same reasons. Though the cause in most cases is because of old oil facilities, these facilities have not been resolved, repaired, or replaced for over 10 years.

In principle, prevention is the most important principle in environmental pollution incidents. It costs less to prevent pollution than to take care of pollution after it has happened. Even though oil facilities require constant checks and maintenance, especially in light of the fact that oil leaks continually happen in the same type of facilities, the Korean government or local city governments cannot investigate the pollution-causing facilities without the U.S. military's permission. The inspections by the U.S. military are done according to EGS (Environmental Governing Standards), but those results cannot be confirmed by Korean authorities or experts.

When the Noksapyeong station incident (2001) occurred, the U.S. military announced that they had removed all the polluting facilities and purified the area.

But when we inspected the underground water at Noksapyeong station in 2006, we found Benzine, a cancer-causing chemical and a chemical related to oil leaks, in 5 inspection sites, exceeding the levels we found present in 1988. There is a possibility that the oil is still leaking from somewhere.

According to Korean law, pollution-causing facilities have an obligation to report to the local governments, carry out regular inspections and file reports. In case of a facility with a record of pollution, the obligations are heavier.

Korean military facilities are no exceptions to this law. The current situation, in which we can neither directly inspect the U.S. military’s oil facilities nor check the inspection results of the U.S. military, should quickly be revised.

2. Pollution on returned bases

1) Background

Up until 2004, about 59,811 acres of land were given to the U.S. military for the use of up to 100 bases, facilities and training sites. In 2004, both the Korean and the U.S. governments decided to return approximately42,219 acres to Korea, including 9,952 acres of land used as bases and 32,267 acres of land used as training sites, according to the revision of the Yongsan Relocation Plan(YRP) and Land Partnership Plan(LPP).

It is not the first time that land used as U.S. military and training sites was returned to Korea. According to the 1967 SOFA, the land confirmed to be returned to Korea was about 351,353 acres. After that, land transfer amounts decreased to 77,534 acres in 1980, 68,685 acres in 1990, and 61,070 acres in 2000.

After the 1990s, the largest return of land was in 1992, in the transfer of TKP(Trans-Korea Pipeline) to Korea, and in 1997, where4,902 acres of land were returned in Dongducheon. In the case of the TKP, the U.S. military gave oil pipes they had used for 30 years and approximately 1,225 acres of land were returned. At that time, because the national level of knowledge about military-related environmental pollution was not sufficient, and because we did not expect that the environmental problems caused by the U.S. facilities would be fatal, there was no discussion between the U.S. and Korean governments about environmental damage caused by the TKP.

However, there were frequent oil leak incidents after the oil pipes were returned to Korea due to the erosion of old pipes and incidents during construction. However, after the transfer, the Korean government was responsible for all the damage.

More people became aware of the environmental situation through the Maehyang-ri bombing accident in 2000 and the discharge of toxic chemicals from an oil leak incident in Camp Long in Wonju in 2001. And as environmental provisions were established in SOFA in 2001 and as related offices were founded in 2002 and 2003, there was a change in the process of

returning the land.

Especially since there was news that the LPP agreement between Korea and the U.S. was ongoing, there were worries that Korea would be given the land without the cleanup or restoration and non-governmental organizations started to raise issues.

In May 2003, as both countries agreed to the Tab A (PROCEDURES FOR ENVIRONMENTAL SURVEY AND CONSULTATION ON REMEDIATION FOR FACILITIES AND AREAS DESIGNATED TO BE GRANTED OR RETURNED) which focuses on environmental information sharing and resolution procedures, they pronounced that the U.S. military would clean up and restore the environment when returning land to Korea.

In one case, according to LPP, Arirang Taxi Land that was returned in December 2003, was confirmed that the U.S. military had restored the environment.

In the answer to the information disclosure demand on the 12th of May, 2004, the Department of Defense disclosed that "about 78 ㎥of polluted soil was burned by Korean companies hired by the USFK, and the polluted areas had been cleaned up according to the standards in the Soil Environment Conservation Act.

The government stated the first example that was returned according to LPP would continue in the future. However, until today, 23 bases have been returned according to LPP but the U.S. military has not restored the environment in these cases even though it was proven that the soil and the water were polluted.

2) Reality of the pollution in returned bases

According to attachment A, environmental inspections can be done one year before the return of land. Until now, the Ministry of the Environment has finished inspections of 36 bases, and inspection of the Camp Hialaeh in Busan was stopped after it exceeded the limit of 105 days, so the inspection was only 75% complete.

The results of these inspections were not officially disclosed. This is because the SOFA provision that disclosure requires both countries' permission. This

provision was adopted when the inspection results were reported in Korea Congress, which caused a small controversy between Congress and the government offices. For the first time, a portion of the inspection results were disclosed in 2005, and 14 out of 15 U.S. military bases had exceeded the limits of the soil pollution warning standard as stated in the Soil Environment Conservation Act. Through the media in February 2006, the specific pollution situation was reported.

It was estimated that the reason the pollution situation of the returned bases is so serious is because there was no regular inspections of the pollution-causing facilities in these bases. It was estimated that of the returned bases, the bases that had already had reported environmental problems such as oil leaks, would have serious pollution levels upon return. However, in the case of Chuncheon's Camp Page, which did not have very serious environmental incidents, was 100 times more polluted than the standard. And in the case of Camp Colburn in Hanam-si, the illegal burying of waste was confirmed. It is clear that when oil leak incidents spread outside base boundaries are discovered by residents or detected by smell, the cases of pollution that the U.S. military reports to the Korean government are only a small part of a big problem. In addition, even though there is illegal dumping and polluting acts carried out inside the bases, we cannot confirm them unless there is insider information.

Pollution levels that exceeded the national standard by 100 times was enough to enrage the citizens about the conditions of returned U.S. bases. In a poll conducted in 2006 by Green Korea, 79.1% of the nation's citizens argued that the U.S. military should be responsible for cleaning up the pollution in the returned bases. However, regardless of this widespread demand, the Korean government received the bases from the U.S. in polluted conditions. Thus, the basic principle of environmental policy, in which the polluter should be held responsible, was ignored.

The cost of purification in the 23 returned bases is estimated to range from about 119 billion to 276 billion won. However considering the extent of water pollution, there are opinions that it would cost from 16 billion dollars~120 billion dollars at the most, and during the Congressional hearing in 2007, civilian expert Dr. Jinyong Lee estimated that it would cost at least 600 billion won.

3) Critical issues and problems of returned bases negotiation

(1) There is no standard for pollution cleanup

The biggest problem of attachment A is that there is no clear standard for pollution cleanup. Thus, the cleanup of pollution would depend on the negotiation proceedings of Korea and the U.S. on a case-by-case basis and the political situation at the time.

The full-scale negotiations about the environmental problems in the returned bases began after the return of the Arirang taxi land in 2003. While Korea presented the Soil Environment Conservation Act as the standard, the U.S. presented KISE(Known, Imminent and Substantial Endangerment to health).

According to EGS, the commander of the U.S. military can judge violations of KISE. However, during negotiations, the U.S. military did not present evidence that serious pollution found during the inspection was not included in KISE. Because KISE is only limited to 'human health', there is a possibility that it can ignore pollution's effects on the environment.

The discussion between the Ministry of Environment, who wanted the Environmental Soil Conservation Act to be the standard, and the U.S. military, who wanted KISE to be the standard, could not proceed. When there was no agreement proposed by the SOFA environmental committee, the Ministry of National Defense raised this issue in the SPI(Security Policy Initiatives). In this meeting, the U.S. military proposed that it would take care of 8 provisions, such as the removal of underground oil storage tanks and blind shells in target practice sites. Korea had rejected the proposal because the underlying standard was KISE and not of the cleanup of pollution. But in December, Korea proposed an agreement based on the cleanup standard, including the 8 provisions proposed by the U.S. military. This was based on analysis results, mutual environment inspections results and the participation of experts from both sides. However the U.S. military said that the 8 provisions were not included in KISE. In January 2006, in the name of the USFK commander's proposal, it announced that the U.S. military has no responsibility for pollution cleanup after they eliminate the UST, lead and copper polluted soil, and waste oil for six months. Without any prior agreement with Korea, the U.S. military announced their plan and reported their plan to back the facilities of the U.S. military bases that have finished carrying out the responsibilities related to the 8 provisions. This is how, on the 14th of July in the 9th SPI meeting, Korea announced that it agreed to receive 15 bases that the U.S. military claimed to have finished cleaning up according to the 8 provisions.

The failed negotiations between the U.S. and Korea about the returned bases' environmental conditions led to a discussion around what the minimum standards for pollution and cleanup should be. There was no agreed-upon pollution cleanup standard regarding the returned bases in 2007. When the U.S. military announced that it would return the bases, the Korean government had to receive them without any other options. Thus, when the U.S. military returns other bases in the future, the lack of an agreed-upon pollution cleanup standard will continue to emerge as a problem once again.

(2) Korea did not claim its rights for the environment, but fulfilled its obligations as an ally of the U.S.

While there was a tense standoff between the two countries over the pollution purification standard, the 23 U.S. bases were returned to Korea according to U.S. military standards. When we look over the negotiation concerning the environmental problems of the returned bases, it appears that Korea did not claim its rights to environmental enforcement, but rather fulfilled its obligations as an ally of the U.S. without further argument. As a result, Korea was responsible for millions of dollars in recovery costs. This has serious implications, because if the same standards are adopted for future cases of returned bases to Korea, the costs could be much higher.

According to attachment A, the SOFA environment committee discusses and agrees on the content of the environmental inspection and recovery of the returned land. The Ministry of Environment continually confirmed that according to SOFA, the U.S. is responsible for the restoration of polluted land and water. As mentioned previously, when the situation became so serious that Korea could not agree with the U.S. military because it insisted on KISE standards, the Korea's Ministry of National Defense suggested to Korea’s Ministry of Environment that this issue be moved to an SPI meeting. Eventually, through the SPI meeting, they agreed to the returns as the U.S. had suggested. The security office of the Blue House, the Ministry of Environment, the Department of Defense, and the Department of Diplomacy participated in the SPI meeting. The main participant from the Korean side was the Ministry of National Defense. This meeting discussed the succession measures of the USFK reorganization of bases, and the plan to develop the alliance between the two countries.

The possibility that Korea's rights to environmental protection and enforcement are be emphasized by this committee is low. On March 20, 2006, the minister of the Ministry of National Defense said through regular briefing that "we agreed in NSC that for this problem's quick solution, there should be many meetings, but only the Ministry of Environment is rejecting". Also, the Ministry of Environment was negotiating with the offices of Diplomacy and Security as the Ministry of National Defense the leaders were found through the media.

It was because of the U.S.' complaints of environmental problems hindering the alliance and security situation, and as publicized through the media and public speeches that Korea's viewpoint on environmental recovery is stringent, that the general public perceived that the alliance might be endangered by environmental problems.

The reason why the U.S. backed the U.S. military bases' security on the 15th of July, 2006 through the letter of Richard P. Lawless, Deputy Under Secretary of Defense for Asia-Pacific Affairs, that the U.S. Department of Defense was cost. Commander Bell of USFK said on12th of April, 2006, through the Korea Retired Generals and Admirals Association invitation speech that 'nowadays the U.S. military is paying $500,000 every month because of the delay to return bases', and 'it would damage the alliance between Korea and the U.S. if Korea solves this multi-faceted problem unilaterally.' However, it was the U.S. that initially solved the problem unilaterally, giving the main cause as cost. While the unilateral management of returned bases by Korea is perceived as something that could threaten the alliance, the U.S. has to be embraced by Korea to maintain the alliance.

After the U.S.'s unilateral return announcement, Korea received the bases without confirming whether the U.S. military had taken care of the 8 provisions and additional measures. The Korea's Ministry of Environment inspected whether the U.S. had taken care of the 8 provisions for one month from August 7, 2006, after the U.S. military had returned the bases. It found that these promises were not kept properly. In addition, the promise that the U.S. would get rid of the oil in the water caused by bio slurping was not kept either.

When Korea visited the returned bases for the National Assembly Hearing in June 2007, they found meters of oil rings in the water underground.

(3) Main problems in the negotiation of returned bases as pointed out by the Congressional Hearing

In the National Assembly Hearing in June 2007 that focused on the environmental problems of returned bases, the Environment Labor committee pointed out the problems of the negotiation procedures as stated below.

First, many people pointed out that because the negotiation did not proceed in the SOFA environment committee that it was a violation of SOFA provisions, but was moved to SPI due to a lack of agreement within the committee.

Second, because the contract was written without the presence of the chief of the SOFA environment committee during the 9th SPI agreement meeting, it cannot be recognized. There were indications that it was the Korean government's mistake to announce that the U.S. had agreed to the 8 provisions and bio slurping even though it had not, and thus had deceived the citizens.

Third, the U.S 's proposal of 25,180 million dollars for so-called 8 provisions and the elimination of waste oil in underground water should be researched because of the conflicting testimonies about the reality of the proposition that was not written, which our government considered positive during the negotiation.

Fourth, in regards to the SOFA united committee in the 12th SPI meeting permitting the return of 9 bases, despite the member of the Environment Committee in the Assembly's inquiry to postpone the permission last 28th of May, they hurried the procedure to permit just 3 days after the inquiry on May 31st, and led to a lot of questions.

Fifth, there were questions about whether the background of easy permission of base return from Korea's side is the Wartime Operational Control early transfer problem.

Sixth, Korea’s Ministry of Environment estimated the cost of pollution purification in the returned bases to be 276 million won ~ 1,197 million won, but this cost mainly considered soil pollution. When considering the water pollution, it would cost from 2 billion/trillion won to 15 billion/trillion won at the most.

Seventh, because it is wrong to use the Special Account for the Transfer of United States Armed Forces in Korea without legal reasons for the cost of environment recovery, A fund should be reconsidered and should be approved

by the Congress about the related cost budget.

Eighth, the Korea's Ministry of National Defense should plan the countermeasures to these agreement, through the re-inspection of environmental conditions around the Maehyang-ri bombing practice, the elimination of shooting waste and establish a damage prevention policy.

Ninth, regarding the bases that have not been returned yet, the negotiation process should start after the revision of SOFA.

3. Noise pollution

Flights and bombings by U.S. fighters and helicopters cause noise and concussion damage. Damages due to excessive noise are currently being investigated with lawsuits, but the concussion damages that cause house damages are still not well understood. The city of Pyeongtaek has recently installed instruments and monitors that measure military aircraft noise and concussion. Therefore, the effects of noise damage have yet to be fully determined. Noise pollution is a serious condition that interferes with the education in affected schools and damages the residents both physically and psychologically.

1) The beginning of recognition about noise pollution

In 2000, a bombing in the Maehyang-ri shooting zone surprised the entire peninsula. Because both countries attempted to cover the incident, thousands of people from around the world visited Maehyang-ri. It shocked those who visited because of the extensive amount of flights and bomb training. The residents of Maehyang-ri have been exposed to this pain for 50 years. Maehyang-ri means so much in the U.S. military opposing actions. This place became famous because of the bombing in 2000. However, in 1997 14 residents had sued the government for noise pollution damages. The main goal of the residents, who had prepared for this case over the course of a year, was to prove the existence of noise damage. In a society in which

military security is considered to be of utmost importance, it was difficult to expose the damages from military training. The case interested many people because the residents argued that the government was obligated to compensate for the damages. The residents of Maehyang-ri had to bear all the noise, concussion, and stress because military security and the alliance between Korea and the U.S. controlled the area, and it was considered unpatriotic to raise questions about U.S. military training.

The Maehyang-ri noise pollution case was a great opportunity to expose the issues about noise pollution caused by U.S. military bases. After the residents won the lawsuits in April 2004, the residents in noise pollution areas on other U.S. military bases and areas suffering from Korean military airfields and shooting zones began to sue. The residents' logically argued that if the government admits and compensates for the damages caused by the U.S. military bases, the Korean airfields were no exception. In Japan, after the residents won the lawsuit against Osaka civilian airport, the lawsuits against the U.S. military bases began. Even though Korea's noise pollution lawsuits started 20 years later than Japan, lawsuits against U.S. military bases started earlier than the lawsuits against civilian airports or Korean military airfields. The lawsuit against the noise pollution caused by Kimpo airport, which was the first lawsuit against a civilian airport, was prepared in about 1997 and

raised in 2001. This is the result of a collective effort made by not only the union of the 'pollution out movement' and 'peace movement' that were trends in our society at that time, but also by the residents' resolution.

2) Noise pollution situation

The damages caused by military aircrafts and helicopters are divided into psychological and physical damages. The residents living near shared civilian and military airports complain that the military aircraft is worse than the civilian aircraft. The residents testify that they must converse in loud voices and are easily angered because there is a lot of internal conflict among the residents.

○ **The first health inspection of residents near the bases**

In 2002, the Korea Coalition for the Retaking of U.S. Bases and the Association of Physicians for Humanism and reported "research of health damages of residents caused by the U.S. military airfields in Kunsan, Daegu, and Chuncheon." The results showed that 3 out of 10 residents required psychiatric consultation due to severe stress, residents had impaired hearing, and the rate of infertility was 5-9 times higher than other areas. The people residing close to the U.S. military bases had serious damages in their hearing ability and the results showed that their hearing abilities were 10dB lower in almost every frequency compared to other areas. These deficits almost certainly make daily life very difficult. Stress was measured by objective means and showed that stress levels were much higher in these areas. This confirms that the damages are caused by the presence of U.S. military bases.

Figure 3. Comparing stress levels

	residents living close	residents living nearby	residents from other areas	p-value
Number of people	171	129	126	
stress level	58.05	52.84	37.75	<0.05

At that time, this research received attention because it was the first case to inspect the health problems of residents living near major military bases. This case proved that the U.S. military bases were severely affecting the residents not only environmentally but also by the effects of noise damage. Based on the research results, salvation plans were demanded, but there was no system in place that dealt with health damages caused by military facilities such as Korean army and it was hard to ask for it directly from the government. Despite this fact, this research results became important evidence that showed the extent of the damage.

Data that shows the effects of noise pollution were included in the in the lawsuit that the residents filed against the government. There has not yet been a case in which the government has inspected the residents' health. The inspection that Pyeongtaek city conducted based on a special law about Pyeongtaek city's support regarding the U.S. military bases' transfer is the only one.

3) Situation of noise related lawsuits

After Maehyang-ri, Kunsan U.S. airfield noise lawsuit was planned by Green Korea environmental lawsuits center with Kunsan Civil Movement to Retake USFK bases and facilities. Preparations began in 1999. The residents, the environmental organization, and experts have united once again to remove the pollution produced by the U.S. military and to reclaim residents' rights. When the damages were revealed by the results of Maehyang-ri shooting zone noise lawsuit in 2001 and the Kunsan U.S. military airfield lawsuit in 2002, there were many lawsuits that followed. These lawsuits were not only against the U.S. military bases, but also against the Korean airfields. In regards to problems in soil pollution and residents' environmental rights, problem perception and reaction activities about the U.S. military bases are more active than that about the Korean military.

Because the affected areas suffering from the noise of military aircraft are extensive, the lawsuits are in the form of group suits. Because measurement standards for military-related noise are different from ordinary noise, it takes longer to obtain results. When we look at the yardstick of noise lawsuit

judgments, more than 75 WECPNL in the case of Maehyang-ri and more than 80 WECPNL in the case of Kunsan base were admitted as objects for compensation. However, as the lawsuits against other U.S. and Korean airfields increased, the judgment yardstick was fortified to more than 85 WECPNL. There is criticism that the judgments are unfavorable to the residents considering the national budget used in compensation.

Because there is not yet a legal yardstick about the noise of military aircraft, many residents complained after hearing the judgment on their cases. There is no standard that explains why their damages were determined to be less than the neighborhood village, even though their damages were the most serious. As a result of this discrepancy, noise pollution lawsuits sometimes are a source of conflict between villages and neighbors.

There are noise polluted areas caused by helicopters and there are still damages by U.S. military shooting zones in Pocheon and Yeonchun. Specifically, in the case of the Rodriguez U.S. Training Range(Pocheon-si Yungpeong), there has not been any noise measurement even though there are continuous helicopter flights throughout the night.

Noise lawsuits are positive because they raise necessary questions about military security and national advantages that violate human rights and survival rights. A limitation is the inadequate financial compensation for the realization of residents' rights and the lawsuits did not lead to the planning of counteractions to reduce and prevent the residents' damages. Because the compensation costs are just $ 30~50 a month for a maximum of 3 years, the financial compensation does not seem to cover all of the damages. In addition, even though the results of the lawsuit admitted the damage, there is still no physical and psychological treatments being provided and no solutions to reduce noise (i.e. soundproofing). However the compensation lawsuits are meaningful because it admitted that actions of the government caused damages for residents.

Chapter 3. Solutions to environmental damages

It is ideal for environmental incidents to be prevented. If early reactions are properly progressed and if there are regular checks, the progression of the pollution would be slowed and the damage kept to a minimum.

In the case of the U.S. bases, the problems usually occur because fundamental environmental policies are not kept between Korea and the U.S., or between the USFK and the local governments. The systemic problems are discussed when we think over the problems occurring during usage. That is why we would look over the solutions in the aspect of usage, and present the problems and revision directions in the aspect of SOFA provisions. Also we looked over the solutions of the returned U.S. bases and noise pollution.

1. Problems in the aspect of operation and solutions

1) Efforts to prevent damage: regular inspections and sharing of information

The oil leak incidents that are responsible for most of the environmental damages of the U.S. facilities are caused by the worn facilities and lack of management. What's even more serious is that the oil leak incidents are continuing in these same facilities. An oil leak incident occurred in 2001 at the pipe facility in Wonju Camp Long and another similar incident occurred in 2008. Also, even though the U.S. military argues that they have eliminated underground oil storage facilities, the incidents caused by them are still occurring, so this brings up the question of whether the U.S. is properly inspecting the facilities.

According to Korean law, facilities that generate pollution are required to be

inspected regularly, with the results being reported to the local government. Facilities with a history of polluting undergo stricter inspections and reports. There requirements should also be applied to U.S. military bases. U.S. facilities should be inspected by field inspection and written reports. The oil pipe facilities and storage facilities should be inspected especially quickly because they are the main cause of pollution. We should be able to check the elimination state of the underground oil storage tanks that the U.S. military claims have already been eliminated. The purity of the underground water or soil and the remaining oil wastes should be inspected as well.

2) Making reaction and report obligatory when damage happens, and guarantee of field inspection

(1) Making it obligatory to report to the local governments and the Ministry of Environment when an environmental incident happens inside the base

The U.S. military bases' environmental damages are damages that have spread outside the base or confirmation that the facilities have problems after they discover the pollution has spread outside the base. In the case of the latter, the damage should be reduced by inspecting and managing the facilities before the pollution has a chance to spread. However in case of the former, there are many cases in which the incident happens inside the base but the damage spreads because the U.S. military does not report the incident to the Korean government in a timely manner.

Even though they are aware of spreading damages, the U.S. military does not report to the Korean government. They only proceed with actions for pollution control and facility replacement inside the bases. Most of the environmental damages are discovered when residents discover the pollution by oil rings that leaked outside or by smell, and report the findings to the local government. The damages from pollution that cannot be seen or smelled are therefore still a major factor. Among the bases that were returned in 2007, even the bases that were proven not to have caused environmental damages, were confirmed that it was serious after the pollution inspection. This means

that the pollution generated on the bases was not reported outside the base. After the fact that the oil elimination was progressing in 10 sites inside the Yongsan Base was confirmed by the media, when the Ministry of Environment inquired to confirm the publication, the U.S. military then reported the pollution incident.

We can reduce damage if we can prevent the effects on an incident from spreading outside the base.

According to the SOFA environment provision and related attachments, pollution should be reported within 48 hours after an incident. If the damage spreads outside the base, proper administrational and criminal actions should be applied. The quick reports aim to prevent the damages from spreading. However this goal and its related provisions are not being applied in reality. Also current administration situation that does not report pollution that does not spread outside the base should change.

The U.S. military is obliged to report to the Korean government when an environmental incident occurs inside the base and the related provisions should be revised to emphasize this obligation.

(2) Guarantee of approach and inspection inside the base for the local governments

When environmental damage occurs, an immediate and early reaction is needed to stop the proliferation of the pollution. Proliferation to the outside should be prevented through an immediate inspection and report of the cause of the incident.

In reality, when there is an incident the U.S. military takes care of the pollution inside the base while the Korean government inspects and takes care of the pollution outside the base. Understanding the polluter is the local governments which must confirm and inspect the outside pollution. Field inspection is essential to identify the polluter. Furthermore, one must determine if actions are being taken to stop the spreading and if the spreading is causing the outside environmental incident.

The current system follows SOFA, which states that official visits are permitted only through the permission of the Environment Committee. This is

hindering the demands of the field, which are to solve the incident as quickly as possible. Despite the fact that a base visit is possible when there is an agreement between the chief of the U.S. army, who is responsible for the incident, and the local governments, problems arise because the involved parties did not go through the Environment Committee. It should be made possible for the local governments to inspect the pollution spot inside the base by consulting with the appropriate base. The government can then identify the pollutant and react quickly when there is an incident. The Environment Committee should require this consultation to be reported later, and should proceed the agreement between Korea and the U.S. on pollution purification reactions.

3) Inspection and purification : Mutual research team formation and whether polluter should be approved

(1) Making it obligatory to organize a mutual research team to guarantee quick inspection

According to current SOFA procedures, when an incident happens, EJWG, in which Environment Committee and the responsible military unit, and local government officer participate can be formed. If mutual research is agreed through administrative group committee, it can be progressed after confirming the boundary and the contents of the pollution inspection. However it has been difficult to proceed with the administrative group committee because of the uncooperative attitude of the U.S. military.

It took a year and 3 months to form an administrative group committee when an oil leak incident happened in Kunsan U.S. Air force base in 2003. The U.S. military delayed the meetings, giving reasons such as training. Also in the case of Wonju Camp Long oil leak incident, we are having difficulty forming a mutual research team through administrative group committee.

The U.S. military argues that the mutual research can be made only when the pollutant inside the base is proven to have caused the outside pollution, or when it fulfills the KISE standards raised currently. There is a premise that

they do not admit the outside pollution is caused by the problem inside the base. That means it is always hard to form administrative group committee or mutual research team, even though it is guaranteed in the agreement. The U.S. military wants to finish the problem by submitting their inspection results without our field inspection, but this is a clear hindrance of legal performance for stopping the spreading and purification.

For this reason, we should immediately inspect to identify the pollutant to prevent any spreading, and halt any spreading that may have already occurred.

(2) Inspection and confirmation of pollutants inside the base through mutual research

The most important goal of a mutual research team in administrative group committee is to determine if the pollution was produced inside the U.S. base. The U.S. military, who is uncooperative about forming a mutual research team, tends to assume that the U.S. military bases are not responsible for outside pollution. Korea has argued that pollution that affects areas adjacent to the base is almost always due to the U.S. military bases. It is highly possible that the U.S. military bases are a polluter and we need to perform mutual research to prove this.

In Seoul, when facilities such as gas stations and public bathrooms that use kerosene and gasoline were inspected, there was no sign of leakage. This finding played an important role in the formation of a mutual research team in the oil leak incident at Noksapyeong station in 2001. In this case the U.S. military admitted that the gasoline leaked from the base, but did not admit any kerosene leak. So the research was concluded without the U.S. admitting the kerosene leak.

When it is evident that the polluter comes from the base, we can find the polluter quickly through field inspection of the base and by comparing with the pollution chemicals found outside of the base. The faster the mutual research is conducted, the faster the problem is solved. However, because the U.S. military is being uncooperative and rejects mutual research, the research becomes delayed from 1 to 3 years without inspection and we have to show

excessive efforts like conducting inspections on every facility as in Noksapyeong station. This is not beneficial for both sides. Korea is spending unnecessary costs and manpower, and the U.S. is giving an impression that it is trying to cover up an environmental problem. When an incident happens, the mutual research team should investigate the base and immediate action should be taken.

4) Rights to demand : the compensation responsibility of the clean up

It is a basic principle that the polluter is responsible for the pollution. The local governments and the Ministry of Environment are obligated to supervise.

In principle, the U.S. military should investigate and clean up any pollution from the base that occurs outside of the U.S. base. However in reality, the local government is performing the inspection and purification that should be the responsibility of the U.S. military. The local governments are requesting compensation for the costs of inspection and purification, but the U.S. military is denying them.

The cases involving local governments requesting compensation are theoil leak incident in Seoul Noksapyeong station in 2001, Wonju Camp Long oil leak, Uijeongbu Camp Falling Water oil leak incident in 2003, Kunsan oil leak incident and others. The local governments claimed for the costs for the cases that were proven to be caused by U.S. military bases, after the 2001 SOFA revision. Among those cases, the U.S. military officially announced that they have no obligation to cover the costs in the Wonju Camp Long and Uijeongbu Camp Falling Water oil leak incidents. However, the U.S. military paid $30,000 to Wonju city for the first inspection in April 2003. The U.S. military promised that they would be responsible for the costs of the second inspection and purification. They have not yet fulfilled this promise and we are unsure about why they changed their minds.

The U.S. military cited SOFA article 23 clause 5 (A) and article 5 and clause 2 when they refused to pay for the Wonju Camp Long oil leak incident. In the Uijeongbu Camp Falling Water incident, they cited SOFA

article 23 clause 5. The costs are about $2,000,000, including $1,800,000 for Noksapyeong, $150,000 for Wonju, $34,000 for Uijeongbu, and $78,000 for Kunsan.

The U.S. military is refusing to provide compensation for the noise pollution as well. Despite the results of the residents' lawsuits, they are using SOFA article 5 clause 2 to deny any compensation. The estimated cost that the U.S. military is responsible for is approximately $12,000,000, about 75% of the total compensation costs. Even though the Korea Ministry of Law says that they are negotiating continuously with the U.S. military for the division of compensation costs, for it is questionable.

We would illustrate more in 'Problems of SOFA and solutions', but the SOFA provisions that were cited are not related to environment. The U.S. military has an obligation to provide compensation for the environmental incidents, according to the compensation provisions in SOFA.

Not only do we suffer the damages caused by the U.S. military but the compensation is coming from citizens' taxes. The USFK must immediately pay the related costs. We have analyze the SOFA provisions that the U.S. military is using as reasons to avoid compensation, and we have to revise the necessary provisions.

5) Attitudes of the Korean government and the local governments

The Office of Soil and Underground Water located in the Ministry of Environment, which represents Korea's side in the Environment Committee, handles all matters related to environmental problems of the U.S. army and negotiates with the U.S. army. The Ministry of Foreign Affairs and Trade is in charge of the SOFA provisions and the general relationship with the U.S. The Ministry of National Defense is in charge of the military facilities, so the agreement and teamwork is desperate to handle the environmental problems of the U.S. military bases. These departments failed to recognize the environmental problems during the negotiation of the U.S. military base return in 2007.

The Ministry of Environment failed to properly create a realistic negotiation plan because of misunderstanding in general environmental policies of the U.S. This situation must be solved before more bases return in the future. In addition, the Ministry of Environment should do its proper role of putting together the opinions of the involved parties such as the Ministry of National Defense, Diplomacy and the local governments, even though the U.S. military problems are made of military and diplomacy mostly.

The Ministry of Environment should ask for data and solutions from the U.S. military if there is no agreement between the local government and the U.S. military. If the U.S. military is uncooperative, it is impossible for the local governments to agree officially with the U.S. military. However the Ministry of Environment is either uncooperative about this role or sometimes represents the U.S. military's opinion. In March 2008, Camp Long permitted Wonju city to enter the base. However, the Ministry of Environment demanded Wonju city to control the visits because Wonju city did not follow the procedures of SOFA Environment committee. This reflects that Ministry of Environment is representing the U.S. military's opinion.

The local governments take care of the inspection and purification when an environmental incident occurs. The biggest problem for the local government is that there are hardly any rights for the U.S. military and the local governments and if the U.S. military rejects conversation, the local government cannot demand it. The official organization of Korea that takes care of problems related to the U.S. military is located in Seoul. The agreement progresses under the SOFA United Committee by forming subcommittees. The Environment Committee is one of the subcommittees, and the U.S. military says that local governments can't participate in subcommittees. However local governments suggest their opinions as participants from time to time.

The local governments justify their uncooperative attitudes by stating that they can do nothing. However it is not true that the local governments do not have any rights when it comes to U.S. military problems. Looking at the cases, there are differences from regions to regions in the level of agreement and demand with the U.S. military. There are cases in which the local governments have investigated the pollution spot inside the base by demanding the chief of the military unit, have made the U.S. military pay for the costs, and have formed regular dialogue with the U.S. military unit about environmental

problems.

There are no provisions that say 'can' but there are also no provisions that say 'can't'. These are the problems that should be solved by actively increasing negotiation efforts. The same goes for the Ministry of Environment. The focus should be on environmental protection, not military diplomacy, and it is the problem of environmental rights. It has already been proven through several lawsuits that the environmental problems of the U.S. military bases are a problem for both the environment and citizens.

The local governments and the Ministry of Environment should actively raise their own voices in solving the environmental problems.

6) Disclosure of information that violates the rights of the citizens to know

Most of the information about the USFK problems is not shared because of military and diplomatic secrecy. Most information related to U.S. military environmental problems is not considered military or diplomatic secrets. The U.S. military does not disclose the information, stating that they cannot do so unless there are permissions from both countries' chiefs of Environment committees. We further illustrated this in the 'Problems of SOFA and solutions' section.

The major reason that information is not open to the public is the U.S. military does not want it to be available. Both Korea and the U.S. disclosed information for the media, including environmental inspection research results, at the time of returning. However in case of Pyeongtaek Beta South, the Ministry of Environment wanted to agree with the U.S. military by writing the first draft of information for the media in English, but it was not disclosed because the U.S. army opposed it.

Because of such attitudes, the results of inspections by not only the U.S. military, but also by Korean government, are not disclosed. The congressmen that represent the citizens had difficulties because of the lack of the information. The government offices did not disclose any information even though Congress inquired about information such as the results of

environmental inspections in order to prepare for the Congress hearing on returned U.S. bases. To this, the Environmental Labor Committee of the Congress announced that related government officials would be inspected according to related laws. Among the information the Congressmen inquired about, information such as the results of the inspection or the results of the negotiation between Korea and the U.S., was submitted just 3~4 days before the hearing and some was even submitted a day before the hearing. The government offices therefore hindered the Congress hearing because the information search and analysis was not properly executed.

It is also a major problem that the government does not follow a consistent pattern of disclosure and information is often disclosed subjectively.

They say that the information may be disclosed only when there is a permission of both chiefs of committee in the SOFA attachment, but without the procedure that confirms the permission of both chiefs and asking the U.S. military, Korean government decides not to disclose.

Also whether it is disclosed or not depends on the office. In 2007, the Ministry of Foreign Affairs and Trade decided not to disclose "Attachment A about environment information sharing and approach procedures". However it could be downloaded from the environmental organization home pageon the internet because the Ministry of Environment had already disclosed the attachment a few months ago.

The Department of Defense annually announces the environmental pollution and the purification results in the DERP (Defense Environment Restoration Program) report. This means that they acknowledge environmental problems as a problem with environmental rights rather than national security.

According to the information disclosure law, every piece of information is based on the principle that it should be disclosed, and certain information can remain secret in special cases. In contrast, the U.S. military decides what to disclose when it comes to information about environmental problems. This is a violation of citizens' rights to know this information, which is guaranteed by the information disclosure law and is related to the constitution.

It is the residents' rights to know the exact information about the pollution because it is directly related to their daily life and security. Information that is not diplomatic or military secrets should be disclosed immediately, and the agreement to disclosure between the two countries should continue regularly.

2. Problems of SOFA and the direction of amendment

1) SOFA environmental policies about the U.S. military environment inspection and recovery

The environment provision was established in the SOFA agreement, which was revised in 2001, and The Memorandum of Special Understandings was concluded. 'Environment information share and approach procedures' were established to proceed this, and on May 30, 2003, the 'environment information share and approach procedures, (attachment A) the environment inspection of returned bases/land and the procedure agreement for agreement on environment recovery' was contracted.

(1) SOFA agreement proceedings and the Memorandum of Special Understandings

According to the very first SOFA environment provision in the SOFA agreement proceedings of Article 3, clause 2, it is stated that "The U.S. government promises that it will fulfill this agreement in a way that does not disagree with the environment or the protection of human health, and confirm the policy that respects the related environmental laws and standards."

Also according to the Memorandum of Special Understandings, which was drafted at the same time, it is stated that "the U.S. government confirms the policy that performs regular environmental evaluation that inspects, confirms and evaluates the USFK activities' environmental aspects, and this is to minimize the bad effects to the environment, to secure the budget by preparing a plan, to quickly perform the purification of the pollution that causes realistic danger to human health, caused by USFK, and to examine the additional necessary reactions to protect human health.". This implies that only if pollution causes realistic dangers, the U.S., who is the polluter, would be responsible for it.

(2) Environmental information sharing and approach procedures

Specific procedures about "information sharing and visiting" was agreed by

both states in the Memorandum of special understandings and was part of the efforts to guarantee the approach about the land. It was determined that new pollution incidents should be reported. The "[e]nvironmental information sharing and approach procedures (approved by the U.S. and the Korea United Committee (SOFA) in 2002.1.18) says that any pollution incidents happening after 2002. 1. 18 are "[w]hen the case poses a serious danger to human health and environment in the USFK facilities or land of Korea nearby. This incident includes the case the poses serious danger to either of the areas". This implies that both sides should report incidents which pose a serious danger to public security, human health or to the environment.

According to the Environmental information sharing and approach procedures, it urges for an immediate and proper reaction when an accident occurs and that"the local governments and the USFK bases should cooperate to react immediately and properly to prevent the spreading."

Each piece of information given to the media should be approved by both chiefs of the SOFA environment committee prior to distribution. When both approvals are not granted, the chief of either the U.S. or Korea should do all they can to give the media information to the other chief.

(3) Environmental information sharing and approach procedures (Tab A)

- The agreement of the environmental inspection of the returned land and environment purification

According to the Environmental information sharing and approach procedures (attachment A), contracted by both countries in 2003. 5. 30, the SOFA united committee states the fundamental procedures specifically. SOFA and the Memorandum of Special Understandings states "in case of the facilities and land that would be returned after 2002. 1. 18" environment inspection procedure (consisting of 3 steps, 105 days: the exchange of fundamental information and inspection, an environment inspection plan and inspection, sharing of the results and feedbacks), information sharing and procedures related to information sharing and pollution purification (whether the object should be purified, the level of purification, method of purification, purification plan, and everything related to purification should be agreed upon.), purification reaction, procedure to return the facilities and land and so on.

According to attachment A, for "media distribution and public disclosure"

it is stated that "every information distribution to any media or public or sharing of specific information or distribution of inspection information performed according to these procedures should be approved by the both chiefs of the Environment committee."

2) Problems of SOFA environment provisions and direction of the amendment

(1) Regular environment inspection and sharing of information should be guaranteed.

Because of the particular wording of the SOFA environment provisions', regular environment inspection and sharing of information are not actually guaranteed, except for cases "when environmental incidents (are) necessary for reports to both sides" and "when the bases are returned".

To minimize the pollution causing serious environmental damages to the U.S. bases, the Korean government or the local governments should react accordingly in regards to the environment agreement, share environment information and purification guides.

However, for provisions in Environmental information sharing and approach procedures, except for cases "when environmental incidents necessary for reports to both sides" and "when the bases are returned", we cannot monitor or share information about the environmental situation of the USFK, or of the situation and the polluter caused by the U.S. military bases' usage and operation.

The new agreement to guarantee a regular monitoring system about the U.S. military bases' environmental problems is desperately needed in this situation especially without a current SOFA provision to perform regular monitoring.

(2) Revision of EGS reflecting the environment policies of Korea

According to the current SOFA Memorandum of Special Understandings, both countries are required to protect the environment by regularly checking and revising the EGS (Environmental Governing Standards). The EGS states

the environment policies of the U.S. military abroad, and reflects each country's reality in EGS by agreeing with the country's government. The U.S. force in Germany and Japan have such EGS's.

The Memorandum of Special Understandings, agreed in 2001, states that the U.S. and Korea should compare the more protective provision between the U.S.'s policies and standard with those of Korea's, and come to an agreement every 2 years. However, the current EGS was revised in 2004.3, which was the revision of the 1997 EGS. Korea gave their opinions on EGS revision 1998. Because it should be revised every 2 years, in 2006 the Ministry of Environment asked for the revision of EGS, but the revision was delayed because the U.S. said OEBGD(DoD Overseas Environmental Baseline Guidance Document) was not yet given to them. After the OEBGD was given in May 2007, the Ministry of Environment is currently preparing a revision of the EGS.

However, the opinions of the Ministry of Environment rarely get reflected in the real EGS. It should take on a more environmental-protective policy between the two countries. But when we see the attitude and opinion of the U.S. when returning the U.S. bases in 2007, we can know that they have yet to arrive at the appropriate environmental policies and revision of EGS that respects the law of Korea.

USFK should revise the standards of environment management according to the Memorandum of Special Understandings , reflect the Korean law, and should prevent and solve environmental accidents.

(3) Standards of the environmental incident report and purification should be equal.

According to environment information sharing and approach procedures, environmental incidents that should be reported to both sides are limited to the cases than pose great danger to public safety, human health and the environment in both borders of the U.S. military bases. However according to the Memorandum of Special Understandings, it stipulates that the U.S. military is responsible for pollution that poses great danger to human health. In case of pollution that poses danger to public safety, human health and the environment, it should be immediately reported and reacted upon to prevent spreading, but it is not included in the cases that the U.S. military is

responsible for.

Based on this, the U.S. military can admit the case as a pollution incident, but is not required to purify.

According to article 7 of Korea's fundamental environment policy law, "the person that has caused pollution with his/her actions or activities is responsible for purifying and recovering the polluted environment, and should be responsible for the costs." In article 3, clause 2 of the SOFA agreement procedures, it is confirmed that policies that respect Korea's environment-related laws and standards and the interpretation of pollution that poses great danger to human health stipulated in Memorandum of special understandings should be carried out logically according to the Korean law. Despite this, the U.S. argues that it is not their responsibility because Korea has no proof that it poses a great danger to the human health. This provision that classifies the subjects of report and purification should be revised.

(4) Standard of purification should be properly mentioned.

There was an argument as to which level the purification should be done. Korea demanded that the standard be the standard mentioned in the Korean law, but the USFK stated KISE as the standard. Korean negotiators demanded to see the self-written report of the USFK and the KISE, but the U.S. military rejected. The pollution cannot be purified with unclear standards.

The EPA(U.S. Environmental Protection Agency) selected more than 700 chemicals according to the related law. Korea has 16 chemicals. In the case of the U.S., if a toxic chemical is spread to the soil, no matter how dense it is, it should be purified. But in cases in Korea only chemicals with certain densities should be purified. The demands in Korea are lower than that of the U.S.. However both states that the polluter should be responsible for the pollution.

Even when leaving out the problem of the U.S. following their national law, the fact that they do not purify according to Korean law shows that they do not respect it. The reason the environment provision was established, while SOFA was being revised in 2001, is simple. The U.S. military protects the environment of Korea and it is not only limited to human health. "The U.S. government promises to follow this provision in a way that protects the environment and human health, and confirms the policy that respects the related laws and standards of the Korean government". This provision was

established in the agreement procedures.

However by not stating purifying costs and EGS as reasons does not follow the reason we established in the environment provision of the SOFA agreement. The U.S. military says that they are fulfilling SOFA provisions even though they are not purifying anything. This means that SOFA provisions are incorrect and they should be revised according to the reason why the environment provision was established.

Ambiguous provisions that cause disputes should be revised, and the standard of purification should be the Korea law. If they do not follow this, administrational or criminal penalties should be applied.

(5) In the course of returning the U.S. bases, the 'consulting' of the standard of purification should be changed to 'agreement' or 'approval'.

The notable thing in attachment A's contents that stipulates the environment inspection and purification when returning the bases is that when the U.S. military decides the object of purification and the contents, it has consult with the Korean government.

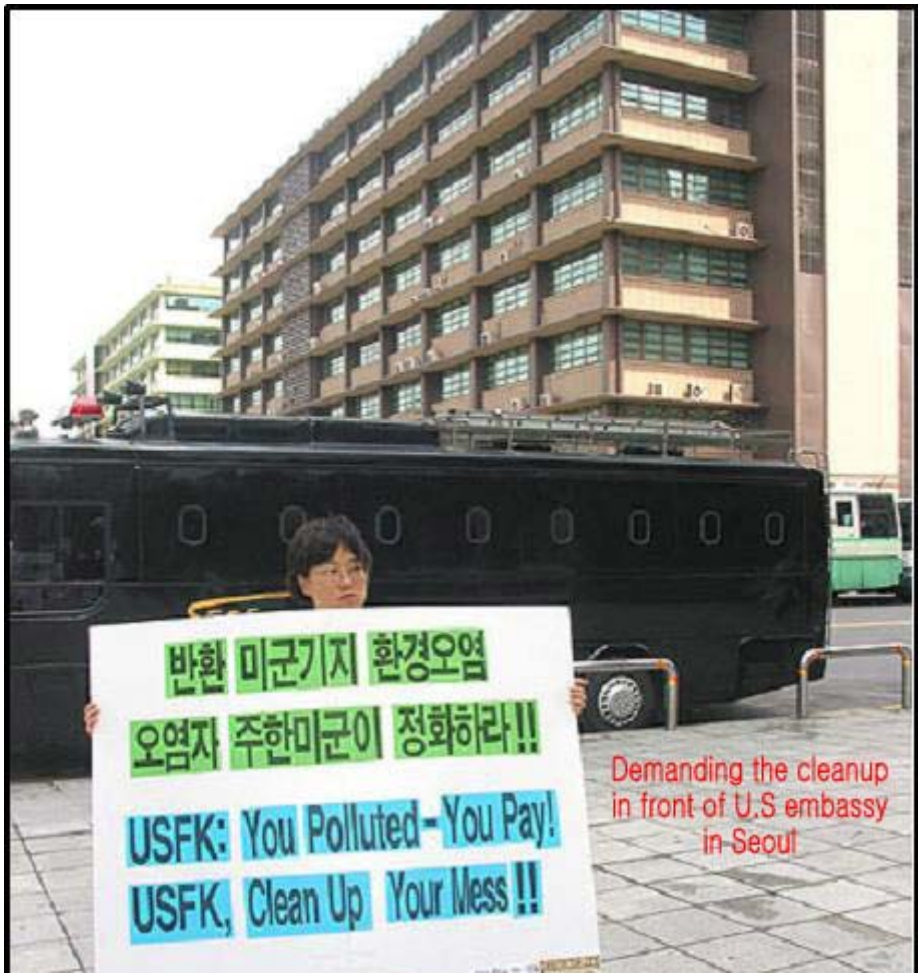
The problem here is how 'consulting' should be interpreted. If 'consulting' has restrictions, then it can mean 'agreement', and cases that have not gone through such consultations or when have, the consulted stipulations that are not kept are seen as illegal.

When we see the provisions on attachment A, officials of both countries should perform activities in distribution of new land and the U.S. military base returns, by cooperating through groups such as the U.S. and Korea SOFA United Committee, the Facilities and Area Subcommittee, the LPP Special Subcommittee, the Environment Subcommittee, and the EJWG (Environmental Joint Working Group).

Both sides cannot pursue their own benefits without cooperation. Especially, the Korean government is largely affected by the results of the decision of purification standards and contents. It is a problem related with the Korean citizens' health and security, so it is natural that the Korean government's opinion be reflected when deciding the standards and contents. And if the restrictions of 'consulting' are not admitted, then biased results would occur because the U.S., which is the polluter, would decide on its own. The word 'consulting' in this agreement should be interpreted as an 'agreement' or an

'approval' that has restrictions.

The U.S. considered Korea in deciding the purification standards and contents and can agree with the meaning of 'consulting' as to mean 'agreement' or 'approval'. But to make it clear, it should be changed to 'agreement', or 'approval'.



(6) Stipulations should be fortified for immediate reactions

Even after 2002. 1. 18, when Environment information sharing and approach procedures have been adapted, the Korean government and the local governments are not allowed to immediately inspect the environment inside the base when an incident happens.

When we go through the necessary procedures to approve the mutual approach, inspection and monitoring according to Environment information sharing and approach procedures that stipulates the fundamental procedures used to manage the environmental incidents and the reactions, it is hard to immediately approach the incident zone and perform necessary reactions.

However, even if we do as according to Environment information sharing and approach procedures, it is stipulated that the local governments and the U.S. military bases should cooperate to perform immediate and proper reactions to stop the spreading, so as this as a legal reason, the U.S. should permit the environment inspection and the visit of the local government officials when an incident happens.

When an environmental incident happens and the necessity of immediate reactions cannot be denied, the legal reasons to permit the visits and inspections of the local governments should be more clearly mentioned to enable the immediate reactions to the problem.

(7) Information about the environment situations in the U.S. base should be disclosed.

In the current SOFA provision, the related information should be shared in the case "when environmental incidents necessary for reports to both sides"and "when the bases are returned". When an environmental incident has occurred or when the base is returned, the situation information about those happenings are not disclosed to the public and the press stating the qualification of 'mutual approval of both chiefs of the environment committee'.

According to Environment information sharing and approach procedures article 5 and clause 7 of Tab A, every information's disclosure or disclosure to the public should be approved by the both chiefs. The Ministry of Environment is deciding to not disclose according to this provision, to the inquiry to disclosure information about the environment inspection of the returned bases.

The residents of Chuncheon has called for an administrational lawsuit for the information decided to remain secret. In the information disclosure denial case about the subject of environment inspection, date, contents, results, management plans, costs and the cost subjects about Camp Page in Chuncheon included in the bases that would be returned, the first and the second trials decided that since the Congress has not agreed on the agreement of attachment A, and since the contents are just agreements on the procedures to exchange information and inspection about environment inspection and purification and not stipulating the provisions related to the citizens' rights and obligations, attachment A is just an agreement that has characteristics of a

guideline about the procedures, and does not have any effects on ordinary citizens, and because of that the information should be disclosed to the general public.

Eventually, Environment information sharing and approach procedures article 5 and clause 7 of Tab A cannot be the reasons that limits the rights of the citizens to know. So the provision that requires the approval of the U.S. in every disclosure of every information should be deleted.

(8) SOFA provision 4 that is used as a tool to avoid the purification responsibility of the returned bases should be revised and environment provisions should be mentioned in the main provision.

In SOFA provision 4, it states that "1. the U.S. government does not have obligations to return the bases and facilities in the original state when these were given to the U.S. army, and does not have obligations to compensate instead of the purification to the Korean government. 2. The Korean government does not have any obligations to compensate for the revision of facilities and areas and the remaining buildings and facilities to the U.S. government."

The U.S. military interprets this as they have no responsibilities for any pollution they cause. Captain Wilson Daniel, who is the chief of the U.S. in the SOFA environment committee, answered the question that asked would he purify and pay costs for the purification after the Yongsan Base is returned to the Korean government, that 'as it is mentions in the provision 4 of the U.S. and Korea SOFA, the U.S. military has no obligations to purify and compensate for the costs. This is the agreement between the two countries, and we should follow it.'. Also the headquarters of USFK said that they have no obligations to purify according to SOFA, and in addition, because the U.S. purified everything according to the KISE standard, they have fulfilled every qualification according to SOFA. It means that they have no obligations to purify, but they have taken reactions that fits to the KISE standard in addition.

But the judgement of constitution court have already confirmed this provision to be unrelated with purification or environmental damages.2000. 7. as the discharge of toxic chemicals inside the Yongsan base was confirmed, we called for a constitution appeal that SOFA agreement article 3 and provision 1

and article 4 and provision 1 admits the management rights and police rights of the U.S. military completely, despite how the U.S. military manages the facilities, or even if they return the bases and facilities polluted, the Korean government has no authority to demand the compensation of the polluted land or facilities.

The Constitution Court said in 2001. 11. 29 that because the provisions above does not stipulate the provisions about the environment, the provisions do not have any authority to limit the Korean government's rights. It said that "Those provisions do not bestow the authorities to pollute the facilities and areas given to the U.S. military upon the U.S. military, or do not permit to return those facilities and areas polluted."

Despite this, the U.S. military still say they have no obligations to purify stating that provision. So this provision should add the content that clarifies that 'this does not stipulate the provisions about environment'. Also as according to the U.S. military, the environment protection provision is just added to provision 4 of the main agreement. So to this, environment protection provision, environment purification provision should be established in the main agreement, so that the U.S. military must fulfill it, not as something 'added', but as something 'independent'.

(9) Purification responsibility of the U.S. military should be stated and they should be responsible for the costs.

When an environmental incident happens, the U.S. military take care of the environmental incident inside the base, and for the outside the local governments perform inspection and purification, and asks for compensations to the U.S. military through the Korean government for the costs afterwards.

When we look at the procedures of the environmental damages cases, in case of the incidents happened before 2001, before SOFA environment provision was not established, when the U.S. avoided the mutual inspection or purification responsibilities we had no reasons to demand them.

The points of the incidents happened after the environmental provision establishment proves that it is caused by the U.S. military bases. In case of Wonju Camp Long oil leak incident, which Wonju city proved that the polluter was the U.S. military base through inside and outside inspection, the U.S. military have written a contract that it would be responsible for the cost

of inspection and purification. Wonju City has received the first inspection cost from the U.S. military.

Currently, the U.S. military is avoiding to pay the costs, stating ambiguous SOFA provisions as reasons. When we demanded for the compensation of the 2001 oil leak incident in Wonju Camp Long, not like the initial agreement, the U.S. military denied the compensation responsibilities by stating SOFA article 23 clause 5((A) solving the compensation problem like the Korean army), and SOFA article 5 clause 2(when providing the facilities and land, Korea makes sure that the U.S. military is not harmed from a third person's demand to compensate.)

SOFA article 23 clause 5 (A) means that just like the case of Korean army, in case of the U.S. army, we can ask for compensation as according to national compensation law procedures. However the U.S. military argues that the Korean army have not compensated for environment purification costs through lawsuits. In reverse, they are ignoring the fact that because the Korean army is purifying the pollution with their own money and regular inspections, there are no cases that led to lawsuits.

SOFA article 5 clause 2 is adapted when giving the bases. It means that the Korean government should compensate for the third person who has the rights of the land. It is not right to mention this provision to avoid compensation happening during the management and operation of the base.

As environment purification problem of returned bases rose, the U.S. military is avoiding the responsibilities of environment accidents stating KISE. Like this, the U.S. military is trying to avoid the purification responsibilities stating various reasons.

Because the U.S. military bases are properties of the Korean government, and the pollution inside the base caused by the U.S. military is damage, it should be taken care of according to SOFA article 23, compensation provision. SOFA article 23 clause 5 means the procedures to take care of the compensations occurred by the damages to the third person other than the Korean government, caused by the incidents during the proceeding of official work of the U.S. military or incidents happened of lack of attention. Clause 6 stipulates the cases that are not results of official work. Those damages are included in the incidents happened of lack of attention, so they are included in the objects that are able for the Korean government to ask for

compensation.

It is important to make it clear that the U.S. has compensation responsibilities for the pollution caused by USFK.

3. Environmental problems and solutions for returned military bases

1) Tasks to resolve the environmental problems overturned military bases : additional return negotiations to supplement the SOFA revision

There were many problems raised as the U.S. military returned the bases without purification. The basic principle that the polluter should take care of the pollution was not followed. The responsible attitudes of the Korean negotiators are important, but the most important thing is to address problems within the SOFA.

Clear purification standards should be set, and details about the inspection period and contents should be made. If negotiations between the U.S. and Korea begin without the revision of the SOFA, then it would once again become a problem about national benefits. However, the crux of the problem concerns the environmental rights of the citizens. Also, this is a problem of environmental justice and the distinctions between environmental policies of the "host" nation and the foreign nation.

The fundamental reason of the environmental pollution of the returned bases stems from the U.S. military's poor environmental management of the bases. There were numerous oil leak incidents and clean-up actions were ineffective and not thorough. Bases returned in 2007 still remain unpurified. As time passes, pollution gets worse and it becomes more difficult to clean up. We have learned a lot from evaluating the bases which have already been returned. The problem of environmental rights and justice should be addressed in the cases of the bases that will be returned, including the Yongsan Base.

In order to do this, the Korean government should put efforts toward

solving problems submitted during Congress hearings. Before proceeding the negotiations concerning returned bases, the Korean government should immediately pursue negotiation with the U.S. to revise the SOFA provisions.

2) SOFA revision to solve returned military bases environmental problems

(1) Standard of pollution purification should be agreed upon

Contents of pollution purification standard stated in 'Problems of SOFA and direction of amendment' above are adapted in the returned bases' environmental problems. The U.S. military returned the bases in a one-sided manner after they evaded responsibilities of purification by ambiguously citing KISE. The hand-over was processed without agreement on pollution purification standards. There are no grounds with which to cite the KISE and we cannot confirm the reports written by the U.S. military. As negotiations to return bases are once again in motion, similar is surrounded with purification standards will arise. This means that the negotiation to agree about the purification standards, and environment purification of returned bases should be done as stated in the Korean law, to actualize the principles of polluter's

responsibilities.

(2) 105 days of inspection period principle should be revised

Currently, environment information sharing and approach procedures attachment A limits the inspection before returning to 105 days.

Step 1: for 30 days, we analyze the data given by the U.S. military and decide whether to proceed with further inspections through field inspection. If there is agreement between the two countries to perform further inspections, then step 2 inspection is performed.

Step 2: for 60 days, we write plans for further inspection, both parties review the plans, collect samples, and analyze.

Step 3: for 15 days, exchange information and report the results of inspections.

There was a case that came to a halt because of the periods stated in the SOFA attachment provision, and not controlled after planning. For example, Camp Hialaeh in Busan was inspected(the goal was to return the camp in 2007), but only 75% of the inspection was completed when the provisioned time ended. Korea requested an extension, which the U.S. military rejected, forbidding further field inspections; inspections stopped then, though about 60 days were needed to complete process.

Inspection period can be longer or shorter, depending on the size of the base. This can be determined during the planning stages of environmental inspection and should be what determines the period when something unexpected happens. So the current provision that limits the inspection period should be revised. Instead, the time period can be determined by the environment inspection plan specific to each base.

(3) Information disclosure provision should be revised

Currently, every document related to SOFA cannot be disclosed without permission from both chiefs of environment committee or the SOFA united committee. The Korean government does not even disclose documents about the U.S. military that they produce, stating this provision as a reason. The rights to disclosure of such documents should be guaranteed for the security and health of the citizens and the protection of the environment. However, these rights are completely ignored.

The reason that residents should know about polluted conditions of returned bases is clear: purification process must be determined, as returned bases because are converted into schools and parks. However, this information is not disclosed because of the Environment information sharing and approach procedures article 7, stating that the disclosure of information must be approved by both chiefs of the Environment Committee before releasing it to the public or the media. Two lawsuits have already found that environment information about returned bases should be disclosed. This provision stated in attachment A should be extricated and information such as the results of environmental inspection should be disclosed to Korean citizens.

4. Solutions to noise pollution

There is no government solution to noise pollution caused by flights and training exercises of U.S. military aircraft residents are still exposed to noise, without much recourse beyond their right to sue the government for compensation. To reduce the noise pollution and establish a viable solution, we must revise our laws, and make it necessary for the U.S. military to follow the law.

1) Preparation of realistic Korean Law to create solutions for noise pollution caused by the U.S. military

Currently, the Ministry of National Defense is preparing a 'law about noise prevention and supporting the nearby areas' because of the increased lawsuits against the U.S. and Korean military facilities and public criticism that there is no law related to noise pollution caused by military aircraft and military training.

According to the plan created by the Ministry of National Defense in 2008, the law should have already been submitted to Congress. However, the process is slow because of the high probably costs after legalization.

The Ministry of National Defense, which is preparing the law, is not even

performing inspections to fully understand the situation. The Ministry of National Defense listened to the local government's opinions only as a formality. It shows an uncooperative attitude and states it will only listen to the residents' opinions through internet hearings.

The biggest problem is budget arrangement to prevent noise pollution, but the Ministry of National Defense says that it will take care of it by operating golf clubs in sound buffer zones. Then there is no point of making sound buffer zones.

Not only are there criticisms that the law preparation procedures are ineffective formalities, but also the law of the Ministry of National Defense does not mention the U.S. military bases as objects of application. Also, it stipulates 'military airfield' as land or water surface used for lift-off and landing of military aircraft or facility to maintain that, and both should be inside the border. According to this law, shooting zone and helicopter fields may not be included.

The law prepared by the Ministry of National Defense is proceeded because of the noise pollution caused by military facilities already confirmed by lawsuits for many years. Throughout the procedures, the inspection of noise pollution situation should be performed and ways to reduce noise pollution prevention solutions should be researched extensively.

Especially when considering the fact that the bases usually are stationed in rural areas, solutions to damages made to homes should be made and soundproof facilities should be built for homes and barns.

2) The government should inform the public of damage caused by the U.S. military, demand compensation and preventative solutions

The Korean government should consult the U.S. military to prepare the solutions for the residents suffering from noise pollution. Currently, the consulting organization is the 'Working Group on noise pollution,' a civilian-military committee under the SOFA united committee. In this situation, in which there are numerous lawsuits of noise pollution, the fact that the

noise pollution problem is discussed in Working Group on noise pollution level and not even in subcommittee on noise pollution level shows the reality between the U.S. and Korea: they have failed to come up with a proper solution to noise pollution.

According to national law, when the provision about military airfield noise pollution is discussed, agreement in the SOFA united committee is necessary to adapt the provision. Through the SOFA united committee, night flights should be banned by controlling the flight time and plans of the U.S. military and should prepare solutions about noise pollution and resident damages together. Just like environmental purification, we need to ask for related policies to the U.S. military to make environmental provisions fair and comparable to environment policies in the U.S.

Unlike the Korean army, the U.S. military does not disclose flight records in noise pollution lawsuits. Since there is no way to estimate the damages based on the flight record, to prove the exact damage situation the residents bear the burden of measuring the noise themselves by consulting expert institutions and submitting results to the courts.

In this case, because they estimate training plan of a whole year with the results from monitoring in short time, it cannot be said that this is a precise measurement.

Residents complain that the U.S. military does not train when court-appointed or expert institutions come out for field research, in order to affect the noise data collected in their favor. It is difficult to collect accurate data on night flights.

It is a big problem that the U.S. military do not pay for compensations. Even national compensation is decided only after lawsuits. In the case of Maehyang-ri and Kunsan, although they won national compensation, the U.S. military did not pay for the 75% of the compensation; the Korean government used tax dollars to pay costs. The Ministry of Justice says that it is in the middle of negotiations, but currently there are no ways to urge them to pay for it.

Also, there is a way to lessen the costs of environment inspection and purification by negotiating. As mentioned above, Korea pays for the USFK station costs and supports the U.S. military.

As the number of lawsuits related to damages from noise pollution quickly

increases, the costs that the U.S. military does not pay will become a greater burden for Korean residents if we do not demand that the U.S. military pay for the costs,

The Korean government must ask for the U.S. military to pay for the compensation. The most comprehensive and effective solution for residents, the U.S. military and the Korean government is to exterminate the damage. There should be efforts to reduce damages outright by establishing noise prevention solutions.

Figure 4. Cases of rejection of the U.S. military to compensate to the decisions Court

contents	Korean government's compensation	Reasons why the U.S. rejected burden of paying costs	Estimated cost of compensation for the U.S.(75%)
About Maehyang-ri shooting zone noise pollution	$ 11,000,000 (11,622,350,600 won)	argued that U.S. has no responsibility by stating SOFA article 5, clause 2 and cooperation obligations stipulated in the Mutual Defense Treaty	$ 8,700,000 (8,716,762,950 won)
About Kunsan U.S. Air Base	$ 4,650,000 (4,650,522,080 won)	argued that it has no responsibility by stating SOFA article 5, clause 2 and cooperation obligations stipulated in the Mutual Defense Treaty	$ 3,000,000 (3,487,891,560 won)

Chapter 4. Main Cases of Environmental Damage

1. Oil Spill

1) Oil Spill at Baekun Mountain Madison site

• Date : The dates mentioned throughout this chapter are not the actual dates of occurrence, but rather the dates when the accident was first discovered; March 7th 1998

• Place : Madison site, Signal Company of Eighth United States Army, Baekun Mountain, Wangok-dong, Uiwang-si, Gyeonggi-do

• **Outline of the Case**

The city of Uiwang received a call from a civilian on March 7th 1998, notifying that a valley 100 meters below Mt. Baekun was contaminated with oil. The city of Uiwang made a request to the U.S Army for access to the base where the oil originated, but was denied entrance. An official letter was also sent to U.S Army requesting proper clean up and recovery of the site.

• **Progress**

After confirming the incident, the city of Uiwang took emergency measures by absorbing oil using special cloth, installing oil fence, etc. to prevent the spread. The spilled oil spread along the valley, soaked up by surrounding land and rocks and spreading a terrible odor.

In spite of preventive efforts by the city of Uiwang and the U.S army, the clean-up was very difficult and the oil spread even further with the rainy season. This kind of oil spill was not new to local residents who had experienced similar incidents in the past.

On March 1995,oil was leaked through cracks from underground oil tank pipes at the Madison site. As a similar spill occurred a few years later, there was some doubt that the U.S Army would take proper preventive measures. According to the U.S Army, the total amount of oil leaked in the more recent accident amounted to 200 gallons (about 757 liters).

What is more concerning is that the oil spilled from the top of the mountain, flowing down along the valley and into Wangrim stream, which is the main source of drinking water for local residents. This is a major threat to public health. Considering the high likelihood that mountain climbers could unknowingly drink the contaminated water, swift measures should have been taken.

However, when the accident happened, the U.S Army did not notify the city of Uiwang or the Ministry of Environment. They kept it to themselves and tried to solve it internally in a failed effort. The contamination was discovered by a local resident. The U.S Army was criticized for its lack of responsibility in informing and securing the safety of local residents and visitors. The local residents organized the countermeasure committee and demanded for the establishment of drinking water facility in each house, compensation towards land and mountain damages, compensation towards

local resident and full recovery of the damages made.

The Korean-U.S joint investigation took place two times on October 1998 and 1999, respectively. They gathered land and water sample from the contaminated site.

The results were not released, but on June 11th the Ministry of Environment told the press the following: water sample collected 150meters away from the accident spot showed HEM 23.6ppm, which is 23 times above clean zone 1.0ppm and in the soil sample collected 100 meters away from the accident spot showed TPH 12,110ppm higher than 2 times than the standard. In spite of these circumstances, on May 12th, the day of joint survey people from the Ministry of Environment revealed their irresponsible attitude, stating, "it is not so serious as inspected,' and 'there is little possibility of secondary infection".

In the additional surveys, contaminants were found at longer distances which show that contamination was spreading further through polluted underground water, valleys and land. The results of 4th ROK-U.S. Joint Survey on June 2000 did not check the current stages of contamination.

The fourth round of ROK.-U.S. Joint Survey did not confirm whether or not the area was contaminated. No organizations have conducted surveys on soil and underground water contamination except for the NGO-GO Joint Survey held by the Gyeonggi Government on 2001, when a valley water analysis was conducted by the city of Uiwang in 2002.

The experts have opined that a complete clean up is impossible in this kind of environmental accident and that in such cases, where soil is contaminated through rock cracks, nature purification is the only viable solution.

The contaminants are spreading, rinsed in water and flowing out. The U.S. Army has explained the restoration progress to the Ministry of Environment and city of Uiwang on July 2002.

They said that they have contracted Samsung C&T Co for clean up operation which went through field survey on 2000. Accordingly they have installed observation well and used surfactant from November 2001 which will go on for 2-3 more years. However after this explanation, the U.S. Army has not notified clean up results to the Ministry of Environment.

Instead, the Ministry of Environment checked directly with Samsung C&T Co. about the status of the clean up operation, and has come to the

conclusion that the clean up has been completed

• **Problem**

In this environmental accident, the U.S. Army failed to notify the local government and the Ministry of Environment, making it difficult to secure the safety of local residents and mountain climbers and making early preventive action impossible.

In addition, after hearing about the accident, the city of Uiwang along with the Ministry of Environment should have been more active in addressing the problem, but they took a backseat and did not directly participate due to complications of Status of Forces Agreement.

The problem was that local government apparatuses took up a passive attitude toward the accident by citing the "complicated"SOFA (Status Of Forces Agreement) or by saying they did not have the authority to investigate the U.S. Army. Seven years after the accident in2004, according to the people who have been to the site, foul odor and traces of oil spill can be still found.

After the early preventive measure, it took 3 years after the accident to really start the clean up. U.S. Army, being responsible for the source of the oil leak, has primary fault in acting too slow to clean up. However, the city of Uiwang and the Ministry of Environment also acted poorly and failed to consider Mt. Baekun's ecological value and safe guard local residents.

These problems, though serious matters, are repeated incidents surrounding U.S. bases because there is no regulation in the SOFA that obligates the U.S. Army to clean up environmental accidents.

Hence, the U.S. Army evades their responsibility to restore the land to the original state, through other SOFA regulation.

Therefore a new regulation should be included in the SOFA that specifies that all environmental damages caused by U.S. Army according to the host country's laws and U.S. Army should be in charge of clean up.

2) Oil Spill at Noksapyeong station

• Date: January 2001

• Place: near Noksapyeong subway station, Yongsan-gu, Seoul

• **Outline of the Case**

On January 2001, groundwater was contaminated by oil at the Noksapyeong station. At the site, the odor of the flammable pollutant was extremely strong. The oil had spilled so much that the absorption cloth was drenched in oil as soon as it was placed in the water. During February and March, the Seoul Metropolitan Government gathered samples from manholes inside a subway tunnel. After analyzing the samples, it was discovered that spilled oil at a gas station in Yongsan Garrison had flowed in the tunnel. However, it was difficult to explore when and why the oil was spilled.

• **Progress**

The Seoul Metropolitan Government checked 39 Korean oil facilities around Noksapyeong station to discover the cause of the groundwater contamination, but could not find any oil leakage. In February 2002, Korea Rural community & Agriculture Corporation submitted a report saying that groundwater near Noksapyeong station was flowing down from the vicinity of Yongsan Garrison, which was situated southwest of Noksapyeong station.

In February 2002, Korea Rural community & Agriculture Corporation submitted a report saying that the groundwater near the Noksapyeong station came from inside Camp Yongsan, flowing into Noksapyeong Station. The Seoul Metropolitan Government, the USFK and the Ministry of Environment held a Joint Expert Meeting on May 2002 and confirmed that out of kerosene and gasoline found at Noksapyeong station groundwater, gasoline was leaked from underground storage tank inside Yongsan Garrison. They called for additional surveys on the kerosene.

According to the survey done by the Seoul Metropolitan Government on April 2003, the oil found at the observation well installed at Noksapyeong station tunnel and near the site was identical to the oil found at the observation well installed inside the Eighth U.S. Army base.

The oil samples were both JP-8 oil type, which is only used by the USFK in that area. Korea Rural community & Agriculture Corporation also discovered that the kerosene was from the U.S base by examining the groundwater that flowed from South Post Yongsan base (southern side of

Eight U.S Army base) to Noksapyeong station. JP-8 is kerosene which is normally used for aviation fuel but because of its low cost, it was used for heating inside the Yongsan base no other facilities surrounding Noksapyeong station used this kind of oil. However, USFK refused to admit responsibility for the kerosene pollutant. In the end, the Seoul Metropolitan Government, the Ministry of Environment and USFK based on the mentioned survey results released to the media on December 12th 2003, which said 'it can not be verified that kerosene which contaminated groundwater near Noksapyeong station was from kerosene storage tank in Yongsan base but considering the flow of groundwater there might be a possibility'.

After a year of research, in December 2004 the Seoul Metropolitan Government came up with a "Restoration Survey on Noksapyeong Station groundwater Contamination and Clean up Report," which mentioned period of time in clean up, contaminated area and level and also raised the need to review U.S. base pollutant. However, nothing was realized.

At this time, the Seoul Metropolitan Government has pumped up the contaminated groundwater and is keeping it at pumping station but in the case of natural attenuation and it estimated that it would take 18.5 years for BTEX and 15.5 years for TPH to go below the standard value. Contamination inside the Yongsan U.S. military base has not been analyzed so it is impossible to examine the entire contaminated area, so only the contamination outside the base have been figured out. Also it is not verified whether pollutant inside U.S. base is removed or not so there is always the possibility for additional contamination.

During the Noksapyeong station accident, the U.S. announced all the pollutants inside the U.S base had been removed and cleaned up. However, in 2006 the survey results of pumping of groundwater Noksapyeong station groundwater showed that benzene, a carcinogenic substance, was found in 5 survey points. It was 14.8 times below the minimum standard and 1988 times the maximum standard. However, according to the 2006 survey into the groundwater around the Noksapyeong station which was in the process of being pump up at that time, the Benzene known for carcinogenic substance was found at 5 detecting points.

Its pollution level ranged from minimally 14.8 times to maximally 1988 times more than standard value. It is very likely that oil is still leaking today.

• **Problem**

The contamination which happened in the heart of Seoul remains an ongoing problem. In this accident, the cause of the contamination inside the U.S. base and how it happened have not been identified. It has not even been confirmed what the U.S. army has done so far.

Based on SOFA regulations, Seoul Metropolitan Government demanded compensation for the cost and continued investigation into the accident from the Korean Government on December 2003.

Seoul District Court acknowledged that kerosene contamination originated from U.S. military base, However, the courts ruled that the Korean Government should give 1.8 billion and two thousand (won)in reparation to the Seoul Metropolitan Government on August 21st 2007. The Second trial is going on at the moment and even if the Seoul Metropolitan Government wins the final ruling following the SOFA reparation regulation it is not clear if the U.S. Army will bear costs of reparations.

3) Camp Long Oil Spill, Wonju

• Date: May 19th 2001
• Place: Jeolgol village near Camp Long, Taejang-dong, Wonju-si, Gangwon-do

• **Outline of the Case**

On May 19th2001, a local resident discovered an oil spill at Jeolgol village near Camp Long, a U.S. military base in Taejang-dong, Wonju. According to results of the ROK-U.S. joint survey, an oil supply pipe inside the base was damaged and around 200 gallons (estimated by U.S. Army, 757 ℓ) of aviation fuel was spilled contaminating 6,700㎡ of land nearby. Regarding facilities inside U.S. military base, U.S. Army made inspection and managed proper remedies. To address the contamination outside the base, the city of Wonju made inspections and progressed with the clean up. The city of Wonju received payment for the costs of the first inspection from the U.. Army, but has not received any reimbursement for the second survey and land clean up,

until to today.

• **Progress**

The site reported by the local resident had a terrible odor and in nearby fields, rice crops were severely damaged. As the news got out in the press the next day, May 21st 2001, 'Getting the U.S. Military Land Back Wonju Citizens Gathering'(Wonju Citizens Group, not active this day) and some people from Wonju Regional Environmental Management Office (WRFMO) checked the site and collected spilled oil samples. They also collected samples from the storage tank inside the military base.

On 22nd May, city of Wonju, WRFMO and Wongu Citizens Group dug a hole, 1m deep and 3m wide. In it they could see 100㎖ of oil leaking per minute into the soil. It meant that 6l of oil was leaking per hour and that the soil has been contaminated for quite some time. This coincided with some testimonies of local people, who said that for more than 10 years they could lightly smell oil. Therefore, temporary preventive measures were given by establishing oil fence and using special absorptive cloths to stop the spreading of oil.

On 23rd May, WRFMO and a research team from Sangji University made a presentation on the survey results. The results revealed that the spilled oil was

JP-8, the same component as the oil used in the U.S. military base. Hence, since there are no other pollutants found at the site, it was deduced that oil from storage tanks inside Camp Long came from an underground pipe and seeped into the soil.

However, in spite of these facts, on the same day the USFK issued a press report saying that they found no evidence that proves the spilled oils are from Camp Long. They also added that according to their sources there was a tractor accident, refusing to acknowledge that the oil was spilled from the U.S. base facility.

The city of Wonju was concerned that groundwater might be contaminated, so for a week they provided emergency water to the local residents, who had been using groundwater as drinking water and requested that the groundwater be analyzed. The city deployed 7 people, including 2 local government officials to watch the accident area and to conduct disaster prevention activities.

Wonju Citizens Group campaigned around this issue and requested the following: the immediate establishment of a fact-finding committee, an onsite survey at the U.S. base, the compensation to local residents, an official apology and resignation of the Camp Long commander and so on. They organized a press conference and protests in front of the base and held sit-in demonstrations as well as petitions and street campaigns to educate the public. They also denounced the Camp Long commander for violating land pollution regulations.

In the midst of these demands, USFK, Ministry of Environment and city of Wonju organized a joint survey team and checked the facilities inside the U.S. base and revealed that the oil spill was coming from the U.S. base. On July 24th 2001, Area III Commander Col. Glenn Desoto held press conference to apologize and promised compensation. He acknowledged that the oil component was the same and that the oil spill was coming from the U.S. base however in his statement he also said that they are not able to 'conclusively determine from where it is coming'. It clearly shows that USFK did not fully recognize their central role in this environmental catastrophe.

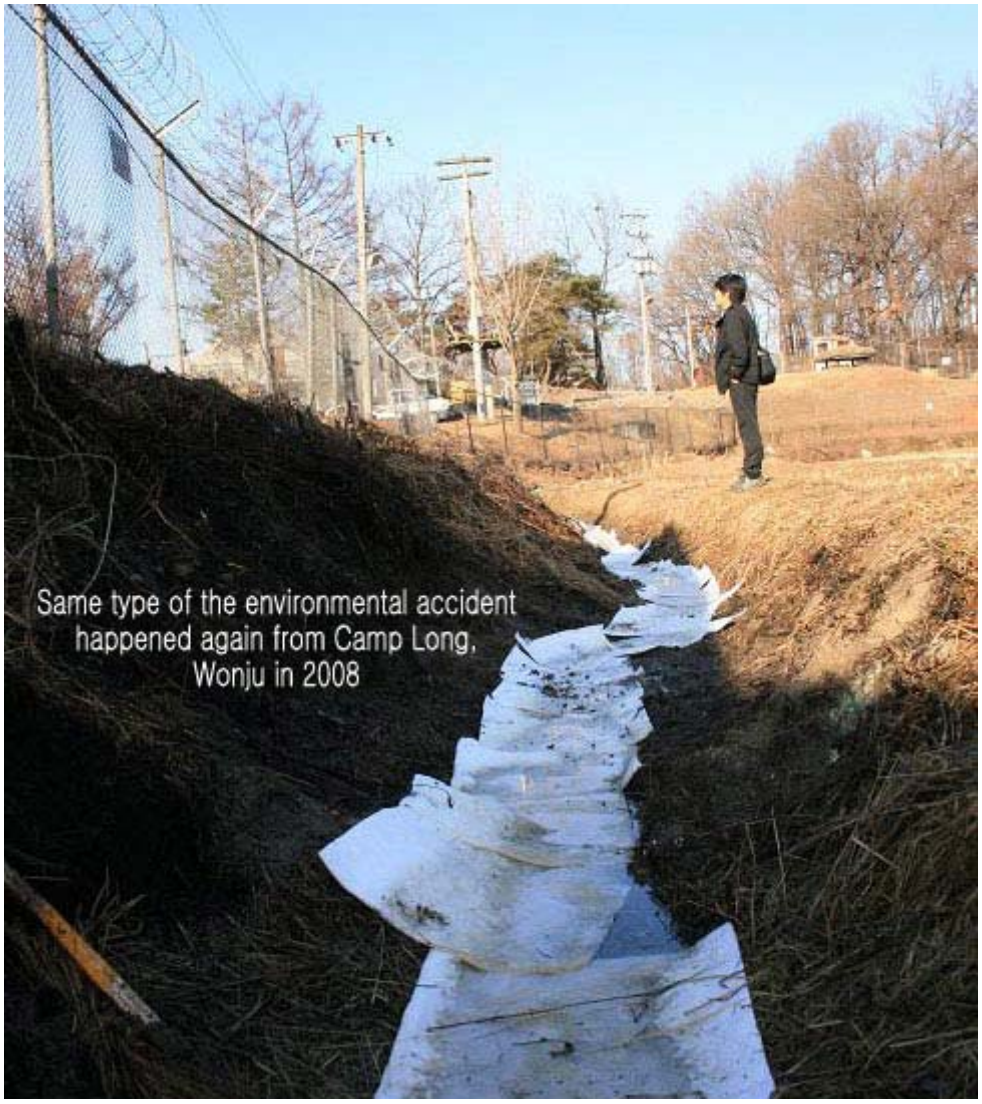
The U.S. Army inspected the inside of the base, while the outside was inspected by the city of Wonju. They decided to discuss restoration and purification efforts based on the results of the inspection. According to the results from the city of Wonju in September 2001, 6,700㎡ area with 11,000㎥

volume of soil was contaminated and it was estimated that it would take almost 5 years to clean up and cost approximately 1.1 billion won. The result from the U.S. was examined through the SOFA Environmental Subcommittee and the U.S. asked to re-survey the outside surroundings so the U.S.-ROK held a second close investigation. According to the second survey results that came out in early 2004, the contaminated area was reduced to 210㎡ and 105-210㎥volume. The estimated total costs were reduced to 150 million won with a shortened predicted time frame of a year and half. The restoration and purification efforts went on from July 2005 to February 2006, taking nearly 8 months and costing about 140 million won.

USFK made an official apology and promised compensation, so we suggested early clean up initiatives and compensation, but the process progressed very slowly. The Ministry of Environment, the main body that directly negotiates with the U.S., was not very active in its role so it was only on January 2004 that they started to discuss the establishment of a joint survey team. The city of Wonju was compensated on the first survey cost (32,636,000won) from the U.S. on April 2003.

Based on the ROK-U.S. joint survey result on August 2004, it was agreed that following the SOFA regulation the U.S. would compensate, so the city of Wonju prop up clean up operation. For the soil clean up that went on from July 2005 to February 2006, the incurred cost of 140 million won was requested but the U.S. Army said that they were not going to pay. The city of Wonju responded by criticizing the U.S. Army, saying that they should follow the previous agreement, but U.S. Army replied that following the SOFA regulation they are not obliged to compensate

The city of Wonju made an appeal in court. The court results came out on April 24, 2008, when Wonju district civil affairs division ruled that the Korean government should compensate the city of Wonju. The Korean Government appealed this ruling, and the second trial continues to this day. Meanwhile, on March 13th 2008, there was another oil spill accident at Camp Long. This continuous occurrence of incidents shows that all those survey inspection and preventive measures are lacking in force and not effectively carried through.



• **Problem**

Due to immediate action by the Wonju Citizens' Group and the city of Wonju, the USFK made an official apology and though not completed had acknowledged their fault and promised compensation up until the present day, the USFK has refused to pay the city of Wonju for the costs of the survey and clean up.

The USFK are refusing to pay by referring to Article XXIII para. 5 (a) ARTICLE XXIII para. 5 (a), "Claims shall be filed, considered and settled or adjudicated in accordance with the laws and regulations of the Republic of Korea with respect to the claims arising from the activities of its own armed forces".

The USFK also cited Article V ARTICLE IV Facilities and Areas - Return of

Facilities 2, "The Government of the Republic of Korea is not obliged to make any compensation to the Government of the United States for any improvements made in facilities and areas or for the buildings and structures left thereon on the expiration of this Agreement or the earlier return of the facilities and areas".

Mentioning Article XXIII para. 5(a), the USFK has stated that "they know of no case where claims for contamination of private or municipal property have resulted from operations on ROK armed forces Installations have been field, considered and settled or adjudicated with a finding of ROK armed forces liability under the laws and regulations of the Republic of Korea" and have insisted, "Because there is no precedent for similar claims against the ROK armed forces, it is inappropriate to adjudicate a claim of this nature involving U.S. armed forces under Article XXIII, even though the facts do suggest USFK involvement in the contamination".

Article XXIII, para.5 regulates claims for damages occurred from USFK activities and para.5 clearly states that "claims for damages should be filed, considered and settled or adjudicated in accordance with the law and regulations of ROK." Therefore, claims, judgments and settlements are done through the State Tort Liability Act. However, the USFK have interpreted the regulation strangely and are using it to ignore the environmental problems caused by them.

If we apply this article that the USFK is insisting upon, then the USFK should have surveyed and restored the contamination outside the base as the Korean Army has done. However the USFK has done nothing for the outside contamination while 5 years passed since the accident. Instead of thanking the city of Wonju who has carried out survey inspections and restoration, USFK is making ignorant excuses by referring to the Korean Army.

Also, Article V para.2, which USFK emphasizes, states that theROK should fully compensate the owners and suppliers of all the area and facilities used by USFK so that they do not ask USFK for compensation. According to the ROK-U.S. Mutual Defense Agreement and SOFA, ROK has the obligation to provide areas and facilities, but they are not obliged or have the rights to operate and administer the provided areas and facilities. Hence ROK has no right to environmental survey or right to observation. After the areas and facilities are provided to the USFK, they have total control and administration

so if there was an environmental damage due to lack of management USFK should compensate under Article XXIII of SOFA.

The excuses of USFK, such as their claims that 'based on SOFA they have no responsibility to compensate,'demonstrate that they are not willing to do anything about the damages they caused. At the time of the accident along with Wonju Citizens Group, other members of the civil society and local people were active with this issue as well as the social interest which enabled to create consensus on Joint Environmental Information Exchange and Access Procedure. Nevertheless, 5years have passed and with decreased public interest now the USFK is saying that they are not responsible. Finally, the city of Wonju pressed charges and their demand was met in the first trial, but the USFK is not acknowledging.

In the midst of these complications, there was another oil spill accident at Camp Long on March 13, 2008. The site is only 100m away from the oil spill site in 2001. It is presumed that the accident occurred through damages in the connecting pipe of the fuel tank, moreover there are difficulties in organizing ROK-U.S. joint survey team.

4) Long Term Oil Spill at Songchon Village near Kunsan Air Base

- Date : 4pm, March 10th 2003
- Place : Songchon village, Seonyeon-ri, Okseo-myeon, Kunsan-si, Jeollabuk-do

- **Outline of Case**

On March 10, 2003, an oil belt was found at Songchon village at Okseo-myeon near Kunsan Air Base. A farmer reported the spill to Okseo-myeon office when he found oil and severe smell at a field next to a U.S base fuel storage tank fence. On that day city of Kunsan performed preventive measures by removing oil from the field and the waterway. The inspection by city of Kunsan revealed that they found JP-8, aviator fuel used by the U.S., so they suggested organizing joint survey team and negotiation for restoration. On April 30, 2004 a ROK-U.S. joint survey commission was

formed and without finding precise reason, 8th Fighter Wing of Kunsan Air Base took care of the base and the outside was handled by city of Kunsan. City of Kunsan is planning to claim survey and clean up cost by pressing charges against the government.

• **Process**

2 months after the oil was found, city of Kunsan underwent soil test analysis to see if the soil was polluted or not. And through the result they found an area that exceeded the basic standard. The first survey result presumed that the oil seems to be JP-8 so the city of Kunsan planned to negotiate and organize joint team with U.S. through the Ministry of Environment. However U.S. Air force informed that they could not participate in the meeting due to exercise and their schedule, so for almost a year ROK-U.S. meeting was standstill.

On March 2004, the Kunsan Civil Movement to Retake USFK Bases and Facilities (Kunsan Civil Movement) was notified by a farmer so they informed the press and directly dug around the contaminated field. As public interest grew, the Joint Working Group was formed on April 30. Up until 2007, a total of eleven meetings were held. Twice at the SOFA Environmental Subcommittee and once at the SOFA Joint Committee, this issue was discussed and officially

U.S. Air Force denied that the pollutant found was from the fuel facility inside the base.

The fuel storage tank inside the Kunsan base was situated higher than the surrounding residential and field area, so contamination continued through soil and groundwater. In these circumstances, U.S. Air Force did not open up the pollutant inside the base nor did they clean up so in the meantime the local residents had no choice, but to drink the polluted groundwater and eat the crops harvested from oil polluted land.

Due to spreading public opinion on groundwater contamination city of Kunsan inspected the contaminated area and oil was found at near residential groundwater. Therefore on June 2nd 2004, city of Kunsan spent$ 6,300 to establish water supply facilities in 9 households. The contamination was severe.

From November 2005 to August 2006, a detailed survey was done which cost $69,000. According to results found 1,604㎡ area with 3,150㎥ volume of soil was contaminated and in the case of groundwater in 3 areas oil components were found to be above standards. Therefore, on July 2007, in order to claim for survey cost amounting to $78,000 towards U.S Air Force, city of Kunsan pressed the suit against the Korean government. The estimated restoration cost will be around $500,000 and will continue in 2008.

The Korean government is setting up plans and the budget for clean-up outside of the base, which will take place after U.S. Air force clean-up is completed. Around 2007, U.S. Air Force started pumping groundwater to separate oil and water, but it was not successful and they later confirmed that they have completed clean up through trench technique. However, this technique is done by digging up a hole to make a ditch and then removing the oil layer so it does not provide objective efficiency in groundwater purification. Also if this oil is 10 to 20 years old, we were not able to identify the following important questions; has the oil been flowing for the period of time or has it been inside the fuel storage then spilled. There is a danger in acknowledging the finish of clean up by USFK without clarifying the cause of contamination and clarity of clean up techniques because in the future even if the Korean government clean up outside the base it would not be complete.

Also, according to the policy that states that the polluter should be responsible, USFK should not only clean up inside the base but also outside.

However before ROK-U.S. committee settles the issue regarding payment, currently the Korean government clean up first and the cost is being paid through claiming for damages to the Korean government so it is unlikely that the U.S. Air Force will pay for costs of the clean-up.

2. Cases of Noise Pollution

1) Noise Damage at Koon-ni Training Range, Maehyang-ri

(1) Outline of facilities in Maehyang-ri Training Range

The fire range is situated along the coastal area of Maehyang-ri, which is a training facility for U.S. 7th Air Force stationed in Korea. The sea fire range is set up within 8,000 feet 23,000,000㎡ of Nong Island which is 1.6km away from Maehyang-ri and land-based fire range is situated 1000,000㎡ around Maehyang-ri.

It was actually established around 1951, during the Korean War, when the U.S Army started to target Nong Island in front of Maehyang-ri. After concluding ROK-U.S. SOFA in 1953, the basis for indefinite stationing of USFK troops in Korea was arranged, and the USFK began to station themselves around the coastal area in 1954.

Following the SOFA that came into effect in 1967, in 1968, coastal areas of 3000 feet surrounding Nong Island and approximately 120,000,000㎡ were expropriated.

Coastal area in 1979 and sea area in 1980 were additionally expropriated and finally were transformed into fire range training areas.

Maehyang-ri fire range is an extremely reputable Air Force training facility in Asia, due to its unique geographic characteristics. There are no high mountains nearby, days without fog, and sea- and land-based targets are close, so sea- and land-based firing ranges can be operated together. Due to its attraction, not only USFK but also fighter jets from Okinawa, Hawaii, Guam, etc. come to train as well. Fire training may continue for days and nights, which create more problems of noise pollution.

There have been continuous demands from the local residents to close down the range. There was a bomb and shooting incident that occurred on May 8, 2000 solidarity demonstrations from all sectors of civil society broke out and finally, on August 31, 2005, the fire range was closed down. The administration of the range was handed over to the Ministry of Defense and on June 1, 2007, it was turned over without any environmental clean up.

(2) Content of Training

U.S. Army operated several exercises in Maehyang-ri fire range. At the sea-based fire range, they operated bomb drops and machine gun shooting at the land-based fire range they performed machine gun training exercises.

At the land-based fire range, the training entailed fighter gets flying around Maehyang-ri, then flying from Ihwa-ri through Seokcheon-ri and towards Maehyang-ri they were to dive below, practice shooting and then zoom up again, which made serious noise pollution in the near villages. This kind of exercise went on from Monday to Thursday, usually from 9am to 10pm, on Fridays it went on from 9am to 6pm every day. If there was special military exercise, they would train in public holidays and even after 10pm.

The U.S. Army stopped bomb dropping exercise at land-based range from 1989 when the local residents made civil appeal on noise pollution made from fire range around July 1988. Again in May 2000, bomb and shooting incident occurred and as it became a huge social problem they stopped machine gun training at land-based range on August 18th 2000. They also changed the fighter jet's air route from around Maehyang-ri to coastal area.

In 1998, 14 local residents carried out a lawsuit on the damages made by noise pollution and according to legal consultation arranged by the court from February to March 1999, F-16, A-10 fighter jet, helicopter and so on participated in the training exercise and 2-4 planes made 1 formation carrying out average of 11.3 exercises daily.

(3) Damage caused by Training Exercises

U.S. Air Force fighter jets like F-16, A-10 and so on flew right above the village 180times a day, shooting machine guns and dropping bombs on sea- and land-based targets, causing missed shoots and bombing accidents. On December 1994, a house was broken down because of bomb explosion. The

residents were later compensated for the damages.

Local residents living near Maehyang-ri fire range suffered from various physical and physiological problems, such as hearing problems, high blood pressure, stress, sleeping disorder, anxiety and so on. Their daily life of watching TV, using phone, children education, daily conversation as well as their income living of dairy farming and poultry farming had severe damages because the noise effected growth and breeding of animals. In the lawsuit the court acknowledged that the local residents had been continuously exposed to noise for a long period of time. The local residents were exposed to 70dB on weekends and public holidays, everyday more than 10times, 20 minutes each time they were exposed to 90dB and at actual fire training the noise went up to 130dB.

The court not only acknowledged damages by noise pollution, but also damages from bombing and shooting accidents which in time caused death and severe damages. In 1952, a bombshell fell on a child's head causing death and in 1989 a fisherman working 4.5km away from sea-based fire range was shot on the right arm. On December 14 1994, during the U.S. Army's removal of unexploded bombs, there was a bombing accident which damaged numerous houses nearby. Also, at 8:25 am on May 8, 2000, three U.S. fighter jets dropped six bombs weighing 500 lbs all at once at Nong Island which caused tremendous noise and vibration. As a result, windows in houses broke and local residents were hurt.

(4) Compensation for Damages

In few cases which involved local residents who were injured by bombing mistakes and shooting, the U.S. and the Ministry of Defense compensated. However there has been no compensation on the national level towards the damages caused by everyday noise pollution. Therefore in 1996, Local Residents Countermeasure Committee and 14 local people for the first time filed a lawsuit on noise damages caused by USFK training. On April 2001, the court acknowledged local resident's damages and ruled the Korean government to compensate. The Korean government did not approve of this ruling and made an appeal. However, local people welcomed the court's decision and 2000 more people filed lawsuits. The compensation given to the local people who have been suffering for more then 50 years were only based on three

years of damage but the local people saw this as a victory in which the court had acknowledged their suffering.

Along with the court's ruling and efforts of local people and many organizations from the civil society, on August 31, 2005, the Korean Ministry of Defense received administrative control of the Maehyang-ri fire range, but it was not total closure of the fire range. The U.S Army requested other fire training range on the Korean side and as a result Korea provided Jikdo (Jik Island) which is in front of the Kunsan coastal area.

Following the Korean courts' ruling in the noise pollution lawsuit, the U.S. Army is supposed to bear the burden of 75% of compensation for damages/injuries. Though this is stated clearly in the claims regulation of SOFA, U.S. Army is saying that it is not their responsibility. Moreover, they are insisting that it is Korean government's fault, for failure to take care of the fire range. According to sources, in 2006, the U.S. Army is responsible to pay 870 million won in compensation due to noise pollution lawsuit.

Also, the U.S. Army returned the Maehyang-ri fire training range, which they have been bombing for years without cleaning up the contaminated soil, removing bullets and bomb shells. They have handed over clean up responsibility to the Korean government as well.

Figure 5. Results of Legal Consultation on the 14 Local Residents' Noise Pollution Lawsuit (Unit: Equivalent Noise Level dB (WECPNL))

Measuring Place	Average dB/day	Average dB/peak hour	Average dB/peak Minute
Maehyang 1st-ri	72.2(85.5)	77.7(90.7)	130.4
Maehyang 2nd-ri	74.4(87.4)	75.2(88.2)	132.9
Maehyang 3rd-ri	73.1(86.1)	79.2(92.2)	127.9
Maehyang 5th-ri	66.1(79.1)	68.5(81.5)	120.9
Seokcheon 3rd-ri	68.3(81.3)	69.7(82.7)	128.6
Ihwa 1st-ri	62.8(75.8)	68.3(31.8)	125.2
Ihwa 3rd-ri	67.7(80.7)	75.2(88.2)	129.7
AVERAGE	70.2(83.2)	73.8(86.8)	

* Average noise level without jet fight exercise: around 50dB(A)

2) Noise damage in Kunsan Air Base

(1) The outline of the 8th Fighter Wing in the Kunsan Air Base

The 'Dachiarai flying school' was founded in 1934 to train Japanese military pilots. After Japan was defeated in the Pacific War in 1945, the school's property was occupied by the U.S. Army. From 1974 on, the 8th Fighter Wing of the 7th Air Force, which is under the command of the U.S. Pacific Air Force, has occupied the territory.

The U.S. air base in Kunsan is located in the coastal area near Okseo-myeon, about 10 kilometers away from the city of Kunsan. It covers an area of about 10,347,154 m² and about 2,800 military service members are stationed there, as well as 3,400 U.S. Army civilian employees and Korean Service Corps. (As of 2005)

It has more than 60 fighters, including F-16 (a scale of two battalions) and has Chikdo Range about 40 kilometers away from it. It geopolitically occupies a very advantageous place in terms of the U.S. strategy towards north-east Asia. It also has about forty buildings of powder dumps, patriot missiles, and storage facilities accommodating 4 million gallons of fuel.

There are two main runways in the base. One runs from east to west, the other from north to south. The east-west runway is an old airstrip and the latter is a new one. They cross each other in a 'T'. The runway going from north to south has two 2.75 kilometer-long sub-sections. The Kunsan air base is quite significant in Asia in terms of combat capacity, second to the Kadena Air Base located in Okinawa, Japan. The mainstay of the base is an F-16 fighter jet. In addition to the fighters assigned to the U.S. air force in Korea, other F-16 fighters stationed in other parts of the world are deployed as part of the strategic flexibility plan.

The Stealth bombers (F-117A) were deployed in 2003, 2004, 2005 and 2007. The F-16 fighters from the Aviano Air Base in Italy were deployed in 2007. The F-16 fighters of U.S. 9th Air Force from the Shaw Air Base in U.S. mainland were deployed in 2008.

(2) Training Situation

In the Kunsan Air Base, the F-16 fighters of U.S. 7th Air Force and other U.S. Air Force fighters stationed internationally conduct their training whenever occasion demands. In2007, the WISS(Weapons Impact Scoring System) was introduced in the Chikdo international range and this made it possible to

conduct an actual bombing training. The fighters from the U.S. Air Force stationed internationally conduct training without any objections from South Korean government. In addition, military transport airplanes, A-10, offensive helicopters etc. operate there on an irregular basis.

In terms of flying patterns, training such as takeoffs and landings, circular flight, T&G(Touch & Go) happen around the clock and the number of the routine training ranges from scores to hundreds. In the case of emergency training, it normally takes about a week. But the training time is so flexible that it could even take about a month.

According to the relocation plan of the USFK, the Kunsan Air Base is now expanding and the Apache Helicopter units are supposed to be deployed in the expanded area. It is concerned that noise from fighter jets and helicopters have a devastating effect on local residents' health and lives.

(3) Damage cause by the training

In April, 2002, the Association of Physicians for Humanism conducted a fact-finding survey on the people living in the areas surrounding Kunsan Air Base to explore how base activities affected people's health. The people who were exposed to the noise complained about ear pain, hearing impairment, ringing in the ears, burning sensations, diarrhea, digestive disorders, sleeplessness/insomnia, anxiety and nervousness, distraction etc. They tend to suffer from more mental disorders and cardiovascular diseases. They tend to get angry or suffer mood swings, anxiety, and fear. In terms of mental and psychological disorders, those exposed to noise are 3.57 times more likely to suffer these conditions than people who do not experience base-related noise pollution.

The constant noise pollution causes the local residents to complain about sleeplessness, infertility, problems with child care and education, problems with daily conversation, telephone calls, and difficulty watching TV, listening to the radio, etc. Insomnia or sleeplessness effects people's performance in the workplace the next day may also cause distraction, which can lead to accidents or injuries. The women exposed to severe noise pollution are 5.36 times more likely to suffer infertility than other women. The students who are not granted the right to study tend to have less of an ability to concentrate, possibly leading to poor performance in school. The local residents are forced

to make their voices louder as a result of increasing noise pollution. This sometimes becomes an object of ridicule among people from other places.

(4) Countermeasures

The local residents have no place to appeal to because of national security even though they have long-dealt with problems of physical and mental damage. In the meantime, the residents from Maehyang-ri filed a lawsuit against the noise pollution in 1998 and the court ruled that the government should give compensation for the damage. On this, the Kunsan Civil Movement to Retake USFK bases and facilities (Kunsan Civil Movement), Green Korea and other civil groups collected legal evidence by measuring noise level near the Kunsan Air Base. The body of plaintiffs who began the lawsuit since 2002 is now growing more and more. There are, however, no other countermeasures against the noise pollution except through litigation against the government. It is necessary to work out other countermeasures, such as a ban on night flights, ban on flights into residential areas, or the installment of soundproof facilities.

The noise level measuring devices set up by the Environment Ministry at six points are not enough and need to be increased. The results of noise level available to the public are very unrealistic. Because the monthly noise level averages are collected and released every quarter, when noise damage happens as a result of the military exercises, we should wait until the results are released in the next quarter or should ask the Environment Ministry to make public the results separately. If we ask for the daily noise level, they do not release the minimal noise level values but daily noise level averages in WECPNL. For this reason, the actual seriousness of the noise pollution caused by fighter jets is not accurately assessed. Therefore, it is necessary for the authorities to release the actual results of noise level monitoring.

For the areas found to be exposed to noise pollution beyond the standard value by the noise level monitoring, a joint council that includes the city of Kunsan and the U.S. Air Force in Kunsan must be formed. It is not necessary that the government be the main negotiator for the problem caused by the U.S. military facilities. If the problem arises locally, the local government can have the authority to negotiate the problem directly with the USFK.

It is vital that the USFK make real efforts to reduce noise levels. The city

of Kunsan must demand that the USFK create countermeasures for flying routes and also ban on flight in residential areas, night flights after sunset, and engine tests. If the flight schedules and routines were adjusted, the noise levels would also be reduced. And the city of Kunsan also needs to demand that the USFK work out the regulations concerning noise-reducing devices. At the moment, since most residential areas exposed to the fighter jet noise consist of farmhouses, there are barely any soundproof facilities available to them.

Figure 6. Monthly Average WECPNL for Aircraft Noise around the Kunsan Air Base

Measuring Point Measuring Date	Point of assessment					
	Okbong-ri	Seonyeon-ri	Jangjeon hall for the aged	Sunyeoun Elementary School	Sunyeoun-ri 2	Haje public health center
'06.10	85	80.8	72.5	75.1	84.7	78.6
'06.11	85.2	81.9	74.7	76.6	86.7	81.1
'06.12	86.7	82	74.8	78.9	85.3	79.6
'07. 1	87.7	84.2	76.1	80.4	89.4	83.0
'07. 2	86.6	82.2	74.3	78.1	87.5	82.3
'07. 3	87.1	82.6	76.2	78.1	87.4	81.8
'07. 4	85.9	82.3	77.5	77.9	87.4	82.0
'07. 5	83.7	80.0	75.3	73.5	85.1	79.8
'07. 6	84.8	79.5	72.7	72.8	83.9	77.4
'07. 7	83.4	78.2	74.1	74.1	85.9	79.7
'07. 8	84.5	80.7	76.9	74.3	86.2	80.5
'07. 9	84.5	80.1	73.6	73.9	83.4	77.3
'07.10	86.8	81.9	73.8	77.5	87.2	81.6

Figure 7. The Results of the Noise Level Measurement for One Week in November

	Takeoff	Landing	Circular Flight	T&G	Total	Average dB	Maximum dB
Mon.	36	34	27	35	132	83.2	106.3
Tue.	68	68	47	29	212	89.8	108.7
Wed.	36		29		65	95.3	108.2
Thur.	62		27	5	94	92.8	109.8
Fri.	32		15		47	94.7	107.1

Note) These results show what the Kunsan consultation office of U.S. military base damage cases discovered while investigating the pattern of flights and measuring the noise levels for one week in November, 2007. Because it was difficult to investigate the pattern of flights at each measuring point, the number of takeoffs and landings do not necessarily correspond to one another.

3) Noise Damage in Pyeongtaek Area

There are two large-scale U.S. military bases. The first is Osan Air Base and the second is U.S. Army Base, Camp Humphreys

(1) Noise Damage Caused by the Fighter Jets in the Osan Air Base

Osan Air Force Base, located in Seotan-myeon and Shinjang-dong in Pyeongtaek-si, is a base where 51st Fighter Wing under 7th Pacific Air Force Command is stationed, as well as military aircraft such as F15, F16,A10, C130, etc., which are constantly taking off or landing. The damage from noise pollution here is very serious, particularly surrounding the former marketplace in Shinjang-dong, near the landing spots, and around Hwangguji-ri in Seotan-myeon near the takeoff spots among runways with 50m width and 4km length crossing Pyeongtaek from east to west.

The 'Health Survey on Residents around Pyeongtaek U.S. Armed Forces Base (January 2006)' carried out by the Dankook University College of Medicine upon a request by the city of Pyeongtaek in 2005, analyzed and compared the health status of local residents exposed to such noises to those who are not. Residents in areas with high levels of noise pollution showed tinnitus with deterioration of hearing ability in all the frequencies. In addition, it showed from the survey that the risk of arteriosclerosis increases as the aircraft noises increase the occurrence of high blood pressure and cardiovascular disease also increase considerably. The mental health survey showed the incidence of uneasiness and panic disorders in local residents. The survey for children's health showed that the I.Q. of students in noisy areas was lower on average than those of students in quieter areas. The study revealed that there was observed deterioration of reading and vocabulary

ability, depression, lack of focusing ability, etc.

The results of environmental impacts assessments carried out by the Ministry of National Defense from February to May 2006 were quite surprising. For this reason, they showed here that all the results from noises and vibrations were in compliance with standard living regulations. Such an evaluation of the noise issues would not be announced by anyone who has experienced the earsplitting noise of a fighter plane. As such, the projects to expand the bases for the American Armed Forces have been carried out while lying to the eyes and ears of our nation.

(2) Damage from Noise and Vibration caused by Helicopters in Camp Humphreys

The airfield of Japanese Armed Forces located in Paengsung-eub, Pyeongtaek-si was built in Camp Humphreys in 1919 and was later turned into the current airfield stretching approximately 8,000 feet (about 2.5km) by the American Armed Forces during the Korean War. Camp Humphreys, where Support Group and Command of the 2nd Combat Aviation Brigade are stationed, has military planes as a CH-47D (Chinook Multi-mission Heavy-lift Transport Helicopter), a UH60 (Black Hawk), an AH-64 (Apache Helicopter).

Songhwa 2nd-ri, where helicopters are taking off and landing among the areas around Camp Humphreys, shows the highest degree of noise with the highest recording of 88.3Lmax, dB(A) and average recordings of 83.6 WECPNL in areas around Camp Humphreys. We can easily identify homes of local residents in the vicinity that have had roofs repaired or improved these structures can easily collapse from the vibration of helicopters. Of course, any expense for repairing the roof is paid for by individuals residents.

(3) Noise Damage released as a result of the investigation

The city of Pyeongtaek conducted an investigation from Dec. 10, 2002 to Dec. 9, 2003. During this period, three rounds of investigations were conducted and each of the investigations took three to five days to complete.

Figure 8. Results of Noise Assessment in 2002

Point of Assessment		Daily Average Noise Level During Assessment Period		Flight Ratio (%)				
		Lmax, dB(A)	WECPNL	Take-off	Landing	Circling	TOUCH & GO	Passing
Areas surrounding Osan Air Base	Gujang-ri	104.9	97.8	12.0	56.0	22.0	5.0	5.0
	Hoehwa-ri	96.9	89.9	50.7	12.8	30.2	3.1	3.2
	Geumgak-ri	82.7	75.7	56.5	3.0	34.8	0	5.7
	Jangdeung-ri	83.9	75.9	45.8	3.4	39.2	0	11.6
	Seojeong-dong	85.4	75.8	39.3	5.5	42.3	2.5	10.4
	Sinjang 1st-dong	96.5	91.6	20.6	36.8	35.2	2.6	4.8
Areas Surrounding Camp Humphereys	Daechu-ri	74.7	67.7	23.9	4.1	51.9		20.1
	Anjeong 4th-ri	70.1	63.0	20.1	38.3	27.3		14.3
	Hamjeong 1st-ri	69.1	59.1	0	0	91.8		8.2
	Songhwa 1st-ri	79.2	71.4	2.2	41.5	38.7		17.6
	Dongchang-ri	73.1	60.5	1.1	6.7	73.3		18.9
	Songhwa 2nd-ri	88.3	83.6	5.6	57.0	13.3	14.1	

The following are the results of the noise survey carried out by the Institute for Construction and Environment, Chungang University, in 2005 at

the request of the court during litigation.

Figure 9. Noise Assessment Carried Out during Litigation in 2005

Point of Assessment	WECPNL		Lmax dB(A)	
	Weekly Average	Daily Average	Daytime	Night time
Gujang-ri, outdoors	95.5	96.9	119.0	107.0
Gujang-ri, indoors	77.1	80.1	106.0	
Hoehwa-ri, indoors	87.9	89.8	103.0	104.0
Hoehwa-ri, outdoors	77.6	77.6	92.0	
Hwangguji-ri	85.3	86.7	114.0	97.0
Jangdeong-ri	74.1	76.1	95.0	90.0
Songhwa-ri, outdoors	80.1	81.3	97.0	97.0
Songhwa-ri, indoors	72.4	73.4	86.0	
Daechu-ri	62.7	64.0		

Pyeongtaek city had the Dankook University College of Medicine carry out a health survey among residents in areas surrounding Pyeongtaek U.S. military bases for six months, from July 13, 2005 to January 13, 2006. The survey examined a wide range of issues, from noise level to epidemiology among local residents, and identified the psychological and physical harm to residents and children exposed to the noise. The following table shows the results of the noise assessment carried out among affected schools and non-affected schools from 9 a.m. to 4 p.m. on weekdays over a week from November 29 to December 2, 2005.

Figure 10. Results of Noise Assessment among Schools.

Unit: maximum noise level Lmax dB(A)

Division		Elementary School	29th Nov.	30th Nov.	1st Dec.	2nd Dec.	Total (Average)
Non-affected Schools		Dongsak School		73.8		80.2	80.2 (77.0)
		Jukbaek School	74.4	70.3		78.8	78.8 (74.5)
Affected Schools	Neighborhood of Osan Air Base	Seotan School	73.9	84.1	80.7		84.1 (79.6)
		Songshin School	89.9	81.6	79.9		89.9 (83.8)
		Jinwi School	67.8		82.0	92.2	92.2 (80.7)
	Neighborhood of Camp Humphreys	Paengseong School	87.4	86.2		87.2	87.4 (86.9)
		Kyesong School	88.1	90.0		80.0	90.0 (86.0)

Noise Litigation in Pyeongtaek Region

In 2002, civic groups from Pyeongtaek and residents from four villages surrounding the U.S. military bases jointly filed a lawsuit against the noise. A total of 530 residents from three villages surrounding the Osan Air Base and one village near the Camp Humphreys started the lawsuit. Then, more people joined the litigation and the number increased to a total of 677. At the first trial in December 2007, the court acknowledged that damage had affected a total of 272 residents and dismissed the remaining claims to damage. Both the residents and the government of the Republic of Korea appealed the decision; the case is currently in progress.

Pyeongtaek's Countermeasures for Noise Damage

The city of Pyeongtaek installed a total of 16 automated machines for assessing noise and vibration from military jets: ten in the areas surrounding Osan Air Base, and six near Camp Humphreys. Through the Pyeongtaek city website and large electric signs along the streets, Pyeongtaek city gives its citizens continuously updated information on the noise and vibrations. In addition, the city planned to launch projects for preventing noise in affected areas and hold talks on measures of reducing noise including night flying restriction at the 10th meeting of the Korea-U.S. General Officer-Level Talks in March, 2008. However, little progress has been made since that time.

3. Water Contamination from Waste Water and Chemicals

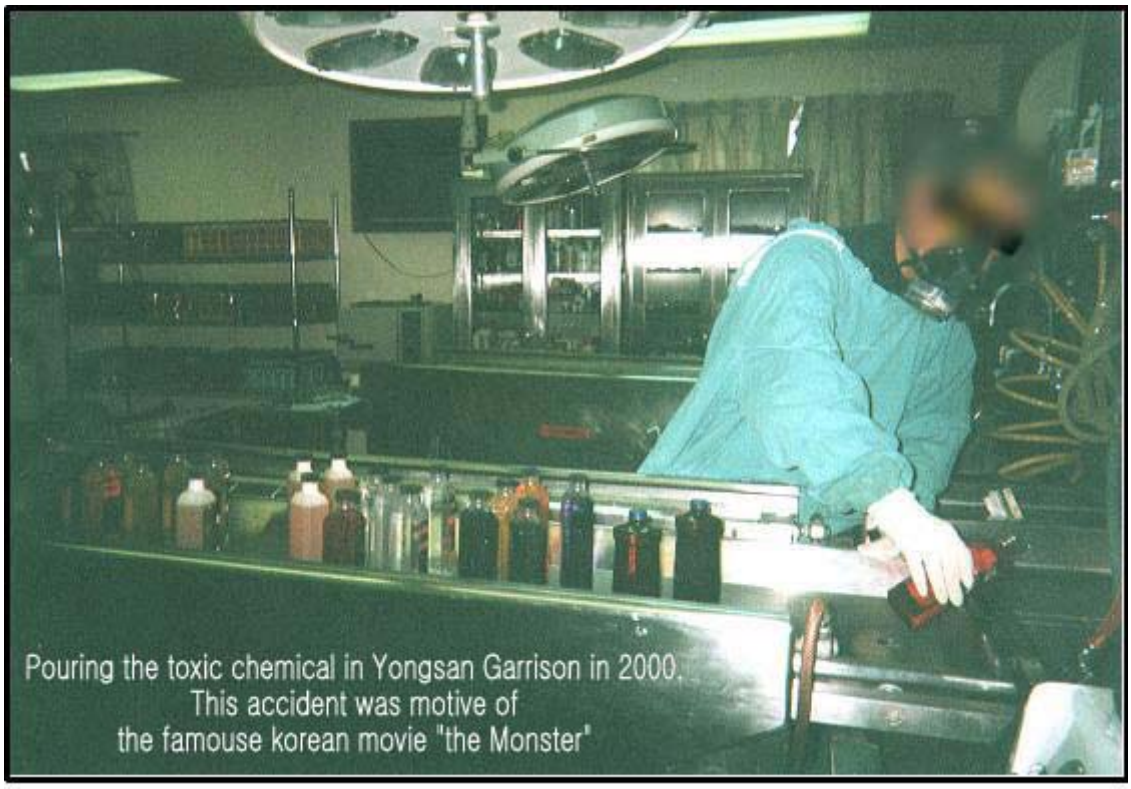
1) A Case of Toxic Chemicals Discharge

- Date : February 2000
- Place : In Morgue with in Yongsan Garrison, Yongsan-gu, Seoul

- **Brief Outline**

In February 2000, an American civilian employee at the Yongsan Garrison

dumped 470 bottles of formaldehyde (each containing 475㎖ of the chemical), a chemical used for the treatment or preservation of dead bodies, down the sink of room No. 5498 of the morgue in the Yongsan Garrison. The employee was following the orders of the deputy chief of the morgue, Albert Mcfarland. The case in which toxic chemicals were dumped without any purification treatment down the sink to the Han River system was belatedly made public in July by the civilian employee.



Lt. Gen. Daniel Petrosky of the 8th U.S. Army Headquarters officially apologized for the illegal discharge of the toxic chemical (Refer to the Asian Politics News article, Official Apologies Made by 8th U.S. Army, dated July 31, 2000). Releasing the investigation results on September 8, he admitted to the violation of the domestic law of Korea and U.S. military regulations, and announced he would review the whole surface of the environmental programs of the U.S. Forces in Korea. The deputy chief Mcfarland was disciplined by the U.S. Forces in Korea for ordering the discharge, a thirty-day pay reduction.

However, it was confirmed that Mcfarland was actually promoted to become chief of the morgue and took his position in January 2004 when the ruling of the first trial was made by the Korean court. The trial on Mcfarland, indicted for breaking the Toxic Substances Control Act, the Waste Disposal Act

and the Water Quality Conservation Act, proceeded in the absence of the accused. Mcfarland, did not appear in court, arguing that Korea does not have jurisdiction over the case since he was on duty for the U.S. Army.

The trial began three years and ten months after the incident took place and two years and nine months after the case was brought to trial in the absence of the accused. On January 9, 2004, the court ruled that Mcfarland was guilty on all charges and that the jurisdiction belonged to Korea, giving a six-month prison sentence to the accused. Differently from the position of the U.S. Army Headquaters, which decided not to appeal since they did not acknowledge the jurisdiction of the Korean court, Mcfarland appealed against the decision and appeared in court on December 16, 2004, three years and nine months after the trial began. On January 18, 2005, the appeals court sentenced him a six-month jail term, to be suspended for two years.

• **Progress**

In February 2000, an American civilian employee at the Yongsan Garrison dumped 470 bottles of formaldehyde (each containing 475㎖ of the chemical) used for the treatment and preservation of a dead body down the sink of room no. 5498 of the morgue in the Yongsan Garrison in accordance with the directions of the deputy chief of the morgue, Albert Mcfarland. The case in which toxic chemicals were dumped without any purification treatment down the sink to the Han River system was belatedly made public in July by the civilian employee.

Formaldehyde is used as an anti-decay agent for bio-specimen preservation and is highly toxic, so much so that an intake of as little as 30㎖ of the substance can negatively affect people's health. It is a carcinogenic chemical, causing cancer, including leukemia when exposed to the chemical for a long period of time. The toxicity of the chemical remains even after diluted with water. When dumped down the drain, the hazardous chemical spreads through sewer pipes.

The U.S. forces in Korea used formaldehyde for treating the corpses of U.S. soldiers, to be repatriated sent to the homeland, to prevent the bodies from being decayed. The U.S. military regulations stipulate that upon disposal, the toxic substance should be sent to and treated in the U.S. military bases in Okinawa, Japan, which are equipped with waste disposal facilities. Under the

Toxic Substances Control Act, and the Specification and Notification of Substances under Observation for Toxic Materials, Korea classifies and notifies formaldehyde as a toxic substance, a chemical with high toxicity and environmental burden at the same time. The Waste Disposal Act stipulates that formaldehyde should go through neutralization, high temperature incineration or solidification treatment prior to disposal.

On July 20, the Green Korea United made a statement against General Thomas Schwartz, Commander in Chief of the USFK, and Mcfarland, deputy chief of the morgue for violating the Toxic Substances Control Act, the Waste Disposal Act and the Water Quality Conservation Act.

On July 24, Lt. Gen. Daniel Petrosky of the 8th U.S. Army Headquarters officially apologized for the illegal and hazardous dumping of the toxic chemical. Releasing the investigation results on September 8, he admitted to the violation of the domestic Korea law and U. S. military regulations and announced he would review the whole surface of the environmental programs of the U.S. Forces in Korea. The deputy chief Mcfarland was disciplined by the U.S. Forces in Korea for ordering the discharge, a thirty-day pay reduction. However, it was confirmed that Mcfarland was still promoted to become the chief of the morgue, taking up his new position in January 2004 when the ruling of the first trial was made by Korean courts.

Due to accusations made by civic groups, the prosecution set up the

principle that it would indict Mcfarland and file a formal lawsuit. However, the final decision made on March 24, 2001 was to file a summary indictment imposing a fine of five million won. The court brought Mcfarland to a formal trial using its authority on April 5. As the case was remitted to the court, the U.S. military authorities issued on April 12 and submitted on April 15 a certificate of official duty to the Ministry of Justice of Korea, claiming Korea does not have criminal jurisdiction over cases involving on-duty U.S. military officials.

However, the Agreed Minutes to the Agreement under Article IV of the Mutual Defense Treaty between the Republic of Korea and the United States of America, Regarding Facilities and Areas and the Status of United States Armed Forces in the Republic of Korea, Re Article 22, Paragraph 3 (a) stipulates that the term "official duty" as used in this Article and Agreed Minute is not meant to include all acts by members of the United States armed forces and the civilian component during periods when they are on duty, but is meant to apply only to acts which are done as functions of those duties which the individuals are carrying out.

Therefore, given that under regulations the substance should have been sent to and treated at the U.S. military bases in Okinawa, Japan, the act of dumping toxic chemicals down the drain does not constitute an official act done by the director of the morgue on duty. As such, primary jurisdiction of the case belongs to the Republic of Korea.

However, the court expressed its firm stance to continue to proceed with the trial, seeing the behavior of the U.S. military authorities as contempt of court. The court attempted to deliver a written arraignment through a bailiff on August 22, only to be turned away in front of the Yongsan Garrison. After similar attempts were rejected several times, the court finally issued a warrant of arrest and the prosecution requested the U.S. army to deliver the accused officer, which the army also refused.

In the end, the trial began three years and ten months after the incident took place, and two years and nine months after the case was brought to trial in the absence of the accused. On January 9, 2004, the court found Mcfarland guilty on all charges and that the jurisdiction belonged to Korea, giving a six-month prison sentence to the accused. The U.S. Army Headquarters expressed its stance in the form of answers to the questions by the press that

it would neither acknowledge the decision of the court nor appeal against the ruling, claiming Korea did not have jurisdiction over the case. However, Mcfarland filed an appeal through his lawyer.

Appearing in court three years and nine months after the trial began, Mcfarland claimed that he observed the regulations in dealing with the chemical, and that the jurisdiction still belonged to the U.S. military authorities. Mcfarland appeared in court, fearing the prison sentence. He testified that the U.S. army had dumped the anti-decay agent down the sink even before the incident occurred, and has continued dumping the substance ever since, proving that the actions taken by the U.S. military authorities were not effective in ensuring that violations did not continue. On January 18, 2005, the appeals court sentenced Mcfarland to a six-month jail term, which was suspended for two years.

2) Illegal Discharge of Waste Water at Kunsan Air Base

• Date : Site Verified in October 1999 (Damage that has continued since U.S. troops were stationed)
• Place : Rain watercourse along the west coast near the U.S. military base in Sura Village, Okseo-myeon, Kunsan-si, Jeollabuk-do

• **Brief Outline**

In October 1999, the Kunsan Civil Movement to Retake USFK bases and facilities found the site where unfiltered waste water was discharged from the Kunsan Air Base; the unfiltered drainage water was flowing towards the West Sea. Similar cases of illegal waste water discharge had been previously covered by the media, in both 1995 and 1998.

The 8th Fighter Wing of the Kunsan Air Base and Kunsan city met to discuss various methods of treatment of sewage—3,000 tons daily, including an installation of pipelines connecting the sewage disposal plant of Kunsan city. An MOU was signed in August 2001. However, the construction was delayed due to late payments by air force authorities. The Kunsan Air Force paid the construction costs in November 2003, and the pipeline installation project was

completed in September 2005. Since completion, the waste water from the Kunsan Air Base had been treated by the Kunsan city sewage disposal plant. However, it was reported in March 2006 by a resident that waste water was being discharged from a rainwater drainage located along the West Coast.

• **Progress**

In October 1999, the Kunsan Civil Movement to Retake USFK bases and facilities found the site where waste water was discharged from the Kunsan Air Base without being filtered from a rainwater drainage system; it was flowing ultimately towards the West Sea. According to the results of three different inspections on water quality, a sample taken from this drainage had an average BOD of 122ppm, which is approximately four times the amount of BOD recorded at the sewage disposal plant (less than 30ppm).

In January 2000, Jeonbuk Citizens' Institute for Environmental Studies analyzed the quality of the waste water two times at three locations where waste water was discharged by the Kunsan Air Base. Depending on the location, the BOD results ranged between a minimum of 57.76ppm and a maximum of 135.36ppm. The figures are much higher than the standard value of 20ppm for sewage and 30 ppm of waste water disposal plants.

Similar cases of illegal discharge of waste water had been previously covered by the media in both 1995 and 1998. Under the pretext of deterioration of the purification facilities, the military bases had been illegally discharging 3,000 tons of waste water daily. The waste consisted of domestic sewage and pollutants from machines and fighter jet chemicals washed into the rainwater drainage system that flows toward the West Sea.

In November 1998 when the news media covered the contamination of the West Sea due to illegal discharges of waste water, Kunsan city requested that the U.S. Air Force authorities join its environmental investigation. However, the air force suggested that they postpone the discussion until early 1999 because the troops were under a tight schedule the meeting was aborted. Later, in December 1999, Kunsan city asked again for a joint investigation into the facilities inducing environmental contamination, to which the air force did not agree. Finally, Kunsan city proceeded with the talks on the connection with the sewage disposal plant, without identifying the status of the purification treatment facilities within the Kunsan Air Base.

In March 1999, the U.S. Air force asked Kunsan city for a discussion on the disposal of the daily 3,000 tons of sewage generated on the premises by connecting its sewage pipelines with those of the sewage disposal plant of Kunsan city. Responding to this, Kunsan city asked the air force for answers relating the construction cost, sharing the expenses and payment of related fees. As the first-stage waste water treatment plant with the capacity for treatment of daily 100,000 tons of sewage was completed in September 1999, the disposal of the sewage from the air force was made possible. However, its cost became a problem.

When the instances of illegal discharge of waste water by the U.S. air force was made public by the media and civic groups in the course of discussion, the air force dug out and piled the dark, contaminated sedimentary layer near the drainage along the West Sea, and then filled the pit with new sand in order to remove the evidence. The air force came under heavier criticism, with the illegal discharge of waste water appearing in newspapers almost every day. Finally, the air force installed barbed-wire entanglements—doubled and tripled—across the tidal flats in order to prevent people from approaching the drainage on the outskirts of the military base along the West Sea.

After little progress was made, in August 2001, Kunsan city and the U.S. Air Force signed an agreement under which the sewage disposal plant of Kunsan city was to be left in charge of treating the sewage from the military camp. The air force agreed to pay 2.589 billion won for the use of the disposal plant, and 83 million won for plan formulation, burdening the costs for laying the 5.2-km long pipelines according to the plan. It paid 2.672 billion won to Kunsan city in September. In June 2002, upon completion of the plan, Kunsan city estimated that a total of 1.65 billion won would be required for laying the 5.2-km long pipelines of 300mm in diameter, and notified the air force of the estimation. However, the air force did not pay the construction costs and the construction had been put on hold.

Finally in November 2003, the air force made the payment but until the very end of construction in September 2005, the waste water generated by the Kunsan Air Base continued to be discharged into the West Sea without any treatment. After the completion of the connection project, the waste water within the premises began to be treated through the sewage disposal plant of Kunsan city.

Meanwhile, in March 2006, a resident reported that dark waste water was coming out of the rainwater drainage on the West Sea. A joint investigation with Kunsan city revealed that the degree of contamination of the discharge was much worse than the existing waste water.

It is not easy to identify the origin or causes of this discharged waste water,since the drainage of the Kunsan air base on the West Sea is difficult to access. Furthermore, when waste water is dumped through the drainage on a rainy day, the traces are swept away.

Given that the air force continued to illegally discharge waste water even after the connection project was completed, it is predicted that the sewage from the air force exceeded the daily treatment capacity possibly because the pipeline construction by the U.S. Air forces was incomplete. Or, it is presumed that the air force's intention is to avoid costs of proper sewage disposal by illegally discharging part of the waste water.

Figure 11. Inspection Results of Water Quality at Sewers

Division	BOD		TN		TP	
	1st Inspection	2nd Inspection	1st Inspection	2nd Inspection	1st Inspection	2nd Inspection
Location 1	135.36	109	31.47	1.2	3.61	0.10
Location 2	82.77	98	17.78	2.7	2.69	0.30
Location 3	57.76	93	15.19	0.63	2.16	0.11

Note) Inspection Area: Three ducts of the drainage in southern Sura village, Okbong-ri, Okseo-myeong, Kunsan-si, Jeollabuk-do

Inspection Date: 1st inspection on Oct. 22, 1999, 2nd inspection on Nov. 5, 1999

Figure 12. Inspection Results of Samples Taken from Rain Watercourse on West Sea after Illegal Discharge of Waste Water in 2006

Item Sample Name	BOD (mg/L)	COD (mg/L)	SS (mg/L)
2006-1	151.0	112.5	142.0
2006-2	49.5	34.0	16.2

The working group for environmental research on damages caused by U.S. military

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