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Administrator Asserts Authority to Back Construction of Environmental Facilities

The prevalence of not-in-my-backyard (NIMBY) thinking in Taiwan virtually ensures a local protest with the unveiling of any new landfill project. As the highest government environmental authority and charged with promoting the construction of environmental facilities, the EPA is often forced to deal with such conflicts. This leaves the EPA in the double bind of trying to achieve environmental goals while maintaining the trust of local residents. Since taking office as EPA Administrator, Lung-Bin Hau has often traveled to the front lines trying to reason with local residents. Hau emphasizes that everything must proceed according to the law. If a project is legal then civil authority must be used to ensure that it is smoothly implemented. Two recent examples, Kaohsiung's Meinung incinerator and Nantou's Tsaotun landfill, are excellent testimonies to the Administrator's philosophy.

While speaking about raising efficiency after taking office as EPA Administrator, Lung-Bin Hau urged his colleagues to always be on the front lines in the case of any serious pollution incidents to deal with the problems as rapidly as possible. The Administrator also reminded EPA colleagues that they should use the civil authorities legally granted to them by the government in order to prevent pollution. In the time following his speech, Administrator Hau put his ideas to action during two controversies over the Meinung incinerator and the construction of the Tsaotun landfill.

The Meinung incinerator was constructed as a build-own-operate (BOO) project in 1999 as a solution to longstanding local trash problems. However, after beginning operations, in December of 1999 it came to light that the operator had accepted unapproved waste materials for incineration at Meinung, giving rise to local protests. As a result, beginning in August of 2000 local Meinung residents began requesting immediate closure of the incinerator and an end to its operations. Over time protest activities have grown increasingly intense, creating difficulties for local government and environmental agencies.

On May 4, Administrator Hau traveled to Meinung in an attempt to put an end to this thorny problem. Accompanied by Kaohsiung County Magistrate Yu Cheng-Hsien (余政憲), the Administrator met with local residents and environmental groups to exchange ideas. The Administrator explained the government position in the face of local accusations that serious health threats existed due to the factory's failure to install dioxin control facili-

ties and calls for its immediate closure.

Administrator Hau pointed out to local residents that the EPA had originally responded to local requests in subsidizing construction of the Meinung incinerator, and that all of the budget came from taxpayers wallets. There is no way that the government can accept further use of taxpayer dollars to compensate the owners for shutdown of the incinerator. What is within the EPA's current abilities is to work actively on monitoring with local authorities to ensure that the Meinung incinerator operates in full compliance with environmental regulations.

The EPA Administrator faced his first public environmental protests in handling a controversy over construction of the Tsaotun landfill. Surprisingly vehement protests by local residents had led to a "trash war," and mounds of trash bags littered the streets of the Tsaotun township.

Although the township of Tsaotun is the one of the four large residential centers in Nantou County they have never managed to build a landfill. In 1999 the town office proposed plans for construction of the Peishihnan Landfill Site (北勢浦垃圾掩埋場), inciting strong protests from nearby residents. The residents since organized a group and staged a series of dramatic protests against the town office.

On April 6, Administrator Hau made a special visit to County Magistrate Peng Pai-Hsien (彭百顯) to express his concern over trash problems in Tsaotun, the governments halt of trash collection, and the effect on residents health and sanitation. The Administrator also asked the town office to immediately resume trash collection to protect the rights of residents.

Under the guard of 500 police officers, on the morning of April 25 construction officially began on the Tsaotun Peishihnan Landfill Site. However, continuing scattered protests required police officers to be stationed 24-hours onsite to prevent further conflict and any sabotage of the project.

That evening Administrator Hau visited the construction site to look in on police officers, showing his resolve to defend civil authority. The Administrator stated that two expert assessments proved that engineering measures could be taken to protect area groundwater and that it would not affect the upstream tap water source lying nearly 2 km away. For this reason, it is unacceptable to sacrifice the right of 100 thousand people to sanitary living conditions due to the opposition of 100. How-

ever, the Administrator also expressed hopes that the town office would continue communications efforts with local residents and stated that the EPA would give it's full support to the Nantou County Government if it actively looked for a suitable construction site for a large scale incinerator.

His handling of these two incidents clearly demonstrate Administrator Hau's staunch support for civil authority. These incidents also reveal his resolution to be on the front lines and his competence and affinity for resolving environmental problems. 

Explosion Leads to First Activation of Toxic Chemical Disaster Response System

The explosion of a boiler and the resulting fire at the Fukuo Company in Hsinchu County led the EPA to set up a central government emergency disaster response center to coordinate the efforts of involved agencies. EPA Administrator Lung-Bin Hau visited the scene of the disaster to better understand the situation and help direct rescue work. Because the involved agencies were able to organize a concerted response and reduce the degree of damage this has become a model for operation of the toxic disaster response system.

At 1:24 PM on the afternoon of May 18 at the Hsinchu Industrial Park, a boiler explosion ripped through the Fukuo Industrial Co., Ltd. (福國工業股份有限公司). The explosion also damaged the nearby Fujida and Bridgestone corporations. At 2:10 PM, after being notified of the incident, which resulted in 1 dead and over 100 injured, the EPA immediately moved to establish a central government toxic chemical substance emergency disaster response center according to Article 13 of the *Disaster Prevention and Response Act* (災害防救法). Personnel from relevant central government authorities were stationed at the EPA to assist with communications and a coordinated response to the disaster.

EPA personnel immediately rushed to the site to assist local agencies and prevent this unexpected disaster from endangering local residents and polluting the environment. By 4:00 PM EPA Administrator Lung-Bin Hau had arrived at the scene of the explosion to try and better understand the rescue efforts and the effects of the explosion on the environment. According to onsite monitoring concentrations of acrylonitrile and acrylamide were very low, presenting no danger to the ambient environment or human health. He further stressed that environmental agencies would continue monitoring of any possible effects that could have been precipitated by the explosion.

The following day the EPA sent personnel to cooperate with local environmental officials and the company to investigate the cause of the explosion.

Initial investigation pointed to loss of control of the reactor which caused a rise in temperature and an outflow of combustible gases from the boiler, leading to the explosion. Based on this assessment the explosion could be categorized as an industrial safety accident. Because the container that exploded contained less than 1% acrylonitrile and all toxic chemical materials were incinerated during the fire, air monitoring the following day revealed no toxics and the incident was considered to pose no further safety threat.

The EPA further contacted the Department of Health to check on the condition of those persons that were injured during the incident. The Department of Health indicated that preliminary diagnosis of the injured individuals showed no clinical symptoms or blood tests indicating acrylonitrile poisoning. Further, testing of blood samples from fire fighters on the scene also indicated no toxic poisoning.

Following the main incident, on May 22 a strong odor was emitted from underground storage tanks at the Fukuo Co. containing styrene and other organic solvents when they were warmed by sunny weather. A number of students and teachers at a middle school 800 meters away required medical attention due to the odor. To ensure public safety, the EPA asked Formosa Plastics Co. to help remove the organic solvents responsible for the smell. The EPA also immediately notified the Industrial Development Bureau, Council of Labor Affairs, Fire Control Administration, and the Ministry of Education to watch the situation and prevent any reoccurrence.

The EPA pointed out that since it's creation this is the first time an incident has activated the central government toxic chemical disaster response system. Because both the central and local governments were able to quickly mobilize their resources and effectively reduce the degree of damage, this incident has become a model for toxic disaster response. 

First Policy EIA Review Completed – Golf Course Development

On April 30 the EIA Review Committee passed Taiwan's first ever government policy EIA review, directed at a policy for the development of golf courses. The committee concluded that the National Council on Physical Fitness and Sports should improve oversight of 23 illegally developed golf courses and, in consideration of environmental loading, that no new golf courses should be developed in Taiwan's northern or central regions before the year 2011.

The *Environmental Impact Assessment Act*, intended to ensure a proper balance between economy and environment, stipulates that environmental impact assessment (EIA) procedures should be followed for all government policies that may have adverse consequences on the environment. However, procedures for performing a policy EIA review are sufficiently different than for general development plans and it is only of late that the supporting infrastructure for policy EIAs has been established.

On April 30 the EPA EIA Review Committee passed the first review of a government policy – a national level policy designed to guide development of golf courses proposed by the National Council on Physical Fitness and Sports. According to the assessment report provided by the Council, there was a rapid growth in the number of Taiwan's golf courses in the 1980s which resulted in the Executive Yuan banning their further development in 1992. As of the present, Taiwan has a total of 82 golf courses, of these 40 have been approved for use and 23 opened without receiving approval.

By region, northern Taiwan is home to 42 golf courses occupying a total of 3,179 hectares. Of these, 20 have received government approval while 14 have not and another 8 are under construction. Central Taiwan has 23 golf courses occupying a total of 1,665 hectares, of these only 9 have received government approval while 4 are illegal and 10 are under construction. In the south, of a total 15 golf courses, 9 are open legally while 5 are open in violation of the regulations and 1 is under construction.

According to an assessment by the National Council on Physical Fitness and Sports the maximum number of golf courses Taiwan can sustain is somewhere between 87 and 97, meaning that there is still room for a roughly 15% increase.

The Council stressed that in the future any golf courses would be prohibited from being developed in protected water source areas, wildlife preserves, important reservoirs or watersheds, national forests, experimental or protected woodlands, forests, mountain areas with average slope above 30%, and other areas where development is restricted by law. In this manner the environmental impact of golf course development will be minimized to the greatest extent possible.

After discussions the EIA Review Committee resolved that future golf course development should be done in accordance with the capacity of the local environment. Further, in consideration of regional capacity and the environmental burden caused by existing golf courses, it was decided that no new golf courses should be established in northern or central Taiwan before the year 2011. Whether or not these regions will be opened to further development at that time will be based on future reviews of regional environmental capacity. In addition, the 23 golf courses that have been developed and opened for use in violation of the regulations will be turned over to the Council for oversight and assistance in making improvements.

The EPA pointed out that the policy for development of golf courses is the first EIA policy review that has been passed according to the *Regulations Governing Environmental Impact Assessment of Government Policies* (政府政策環境影響評估作業辦法). The EPA also stated that the National Council on Physical Fitness and Sports should use the review conclusions to modify their assessment report, which will be sent along with the rest of the case to the Executive Yuan as a reference to use while reviewing the policy. 

EPA's Inspection Team Gains Legal Foothold

On May 21 the Legislative Yuan finished initial review of amendments to the *EPA Organic Statutes*. In the future, the EPA's Central Taiwan Division will be combined with the EPA's Inspection Team to form a Chief Inspectorate. The Chief Inspectorate will be further subdivided into northern, central, and southern inspection taskforces in charge of carrying out investigations into environmen-

tal affairs at the city and county level.

In conjunction with government efforts to slim down Taiwan's provincial government, in 1999 the provincial Department of Environmental Protection (台灣省環境保護處) was temporarily reconstituted as the EPA's Central Taiwan Division (環保

署中部辦公室)。The EPA recently proposed draft legislation which was reviewed jointly by the Legislative Yuan's Legal Committee and Health, Environment, and Public Welfare Committee and that would further the provincial reorganization process and strengthen the EPA's environmental inspection abilities. The draft amendments to the *Environmental Protection Administration Organic Statutes* were passed in principle by the two committees on May 21.

Administrator Hau pointed out that the amendments originally proposed by the EPA would combine the EPA Central Taiwan Division (formerly the provincial Department of Environmental Protection) with the EPA Inspection Team. From this merger the EPA proposed establishing northern, central and southern environmental management departments. Because this plan reconstitutes the EPA and legally institutionalizes environmental inspections it would have huge impact on environmental work.

After a read through of the proposed amendments, the joint legislative committee decided that to handle regional environmental affairs the EPA should establish a Chief Inspectorate (督察總隊), rather than environmental management departments, with northern, central and southern inspection taskforces operating below it.

The EPA established a mission-based Inspection Team with northern, central, and southern inspection taskforces in 1992 acting on orders from

the Executive Yuan. The taskforces, which constitute the EPA's inspection manpower, were drawn from highly educated and experienced inspection personnel. The Inspection Team was designed to supplement deficiencies in environmental inspection manpower, carry out EPA enforcement actions, investigate major pollution incidents, and handle cross-district pollution cases. Although the Inspection Team always posted good results, they have been limited because of their mission-based status under the current form of organization. Thus, one of the key reasons for establishment of a Chief Inspectorate is to legally institutionalize environmental inspection work.

A number of incidents over the last few years have shown that response time is the critical factor in limiting the effects of pollution. To help improve response time, the joint legislative committee added provisions that allow the EPA in cases of emergency to order local governments to cease unfair punishments or to directly order polluters to halt polluting activities when local governments fail to properly enforce the law.

During the session a few legislators also suggested establishment of a pollution remediation department to help with overall planning on soil and groundwater pollution problems. Because of its contentiousness it was decided that this issue would be decided in further negotiations to be held before the second reading of the draft. 

EPA Urges Local Governments to Properly Treat Medical Waste

Taiwan has sufficient treatment capacity to handle all the domestically generated infectious medical waste, however, proper treatment in certain areas, particularly northern Taiwan, has run into bottlenecks due to community protests. In the spirit of resolving a crisis situation, the EPA has negotiated with Taipei City government to allow medical waste that has been sterilized to be treated in municipal waste incinerators. Subsequent monitoring data has shown that dioxin emissions have remained below emissions standards, demonstrating the effectiveness of this method of treating infectious wastes.

Medical facilities in Taiwan generate approximately 280 tons of solid waste per day, 238 tons of which falls under the definition of general waste and can be disposed of with other general wastes. The remaining 42 tons is typically infectious waste and must be treated by incineration or other methods. Taiwan's licensed infectious waste treatment capacity currently exceeds the amount generated. However, numerous hospital incinerators and waste

disposal companies have been forced to stop using their treatment facilities due to community protests. At the same time, many local governments are refusing to accept waste from other cities and counties. As a result, some generators of infectious waste have no access to treatment facilities.

The EPA stated that Taipei City accounts for approximately 25% of the medical waste generated in Taiwan, but there are no dedicated medical waste treatment facilities within the city's jurisdiction. As most of the treatment companies in northern Taiwan have ceased operations, the pressure to find ways to treat the waste has been growing daily.

Under the principle of dealing with an emergency situation, the EPA, the Department of Health, and Taipei City have developed a plan to resolve the situation. Medical facilities in Taipei will be required to file with the Taipei City Environmental

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Feature Article

At Source Controls on Oil Product Quality Delivers Results

With the number of vehicles in Taiwan rapidly increasing, the quality of oil products has a direct impact on air quality in municipal areas. In the spirit of managing pollution by targeting the source, the EPA initiated a long-term program in 1987 to phase out lead gasoline, culminating in a complete ban in 2000. In addition, the sulfur content of diesel fuel has decreased from 0.5% to 0.05% over the last ten years. In 2000, the EPA promulgated standards for the composition and properties of gasoline and diesel fuels, thereby completing the establishment of a comprehensive set of regulatory measures to manage the quality of oil products.

As the economy has grown the number of vehicles in Taiwan has increased, causing the impact of mobile pollution sources on air quality to grow. Recognizing that the quality of oil products used in vehicles has a significant impact on the operation of the engine as well as air pollution emissions, the EPA has chosen to regulate the quality of oil products as one of the major strategies in reducing air pollution at the source.

1. Controls on Lead in Gasoline

Extensive research has proven that lead poses a significant health risk to the human body and developed countries have long adopted controls on the amount of lead allowed in oil products. In 1987, Taiwan launched a program to promote the use of unleaded gasoline. In 1993, the Executive Yuan approved a plan to promote supply and use of unleaded gasoline as the blueprint for Taiwan's efforts to eliminate the use of leaded gasoline.

The plan laid out a phased program to gradually reduce the permitted lead content of gasoline from the standard set in 1983 of 0.34 g/l to a com-

plete phase-out in 2000.

Following the implementation of the policy, the concentration of lead in the air in Taiwan has decreased from 0.47 $\mu\text{g}/\text{m}^3$ in 1989 to 0.09 $\mu\text{g}/\text{m}^3$ in 1997, a mere tenth of the concentration allowed under domestic air quality standards. In addition, the concentration of lead in the blood of newborn babies in Taiwan has decreased from 7.48 $\mu\text{g}/\text{dl}$ in 1986 to 3.5 $\mu\text{g}/\text{dl}$ in 1991.

2. Controls on Sulfur Content in Diesel Fuel

Following announcement of controls on leaded gasoline, the EPA began to develop measures to control the sulfur content in high-performance diesel fuels. After extensive discussion with Taiwan's only oil supplier at that time, the state owned Chinese Petroleum Corporation, the EPA announced a phased program to lower the sulfur content in fuels to the levels of developed countries. Starting from 0.5% in 1989, standards for sulfur content were progressively lowered to 0.3% in 1993, 0.15% in 1997, and finally 0.05% in 1998.

Following the promulgation of controls on sulfur content, pollution monitoring stations located in high traffic areas showed a significant drop in SO_2 concentrations. From 1994 to 1997, overall levels of SO_2

improved by 47.8% and levels of particulate matter improved by 40%.

3. Adopting Gasoline & Diesel Quality Standards

After bringing traditional lead and sulfur pollutants under control, the EPA followed the example of other developed countries and turned its attention to the physical and chemical composition of

Standards for Fuel Composition and Properties		
	Item	Standard
Content Standards	Benzene content	1.0 vol%, max
	sulfur content	275 ppmw, max
	RVP	8.9 psi, max
	oxygen content	2.0 wt%, max
Property Standards	VOC + NO _x	1,770 mg/km, max
	hazardous air pollutants	49.8 mg/km, max
Notes	Characteristic and performance standard are based on calculations derived from the use of the Complex Model	

Standard for Composition of Diesel Fuel		
	Item	Standard
	Sulfur Content	0.05 wt%, max

gasoline and diesel fuels. In addition to influencing the performance of the engine, the specifications of gasoline and diesel fuel also have a significant impact on the type and quantity of pollutants emitted.

Following a period of extensive research and consultation with key stakeholders, the EPA promulgated the *Standards for the Composition and Properties of Automobile Gasoline and Diesel Fuels* (車用汽柴油成分及性能管制標準) on December 15, 1999. The new standards (see Table 1) went into effect on January 1, 2000. Promulgation of the standard was significant as it marked the completion of the progression of Taiwan from a policy based on controls of a single item to a comprehensive set of controls on oil products. In addition, the new policy was important for encouraging domestic producers and importers to provide high quality oil products. To provide a direct incentive to suppliers of oil products, the EPA adjusted the struc-

ture of the gasoline air pollution control fee to levy fees based on three standards of quality.

4. Future Plans for Quality Controls on Oil Products

EPA officials stated that following the promulgation of standards on gasoline and diesel fuel characteristics and composition, Taiwan's regulatory regime has already achieved a level equal to that of developed countries. At this point, the most important task is to strengthen enforcement and inspections to guarantee the quality of domestic oil products.

Due to the fact that vehicle and oil markets are global in nature, Taiwan's policies on oil products must take into consideration the policies of developed countries. The EPA will continue to monitor policy trends and developments overseas as a basis for continued review of its domestic policies. 

Cleanup of MV Amorgos Oil Spill Accelerated

Handling of the oil spill created by a Greek tanker, the MV Amorgos, has captured the attention of Taiwan's citizens. On May 9 removal of remaining oil in the ship's hold began and on May 12 removal of remaining iron ores was expected to begin. After being disassembled the ship will be towed 6 nautical miles northeast of its current location and scuttled. The entire operation should be completed in around 80 days. On May 12 Administrator Hau revisited the site for an inspection, during which he advised workers to thoroughly prepare against the event of a typhoon. The EPA is also actively working to secure compensation for pollution damages caused by the incident.

In mid-January the Greek tanker MV Amorgos ran aground in shallow waters off the coast of the Kenting National Park, spilling tons of oil and polluting the shores and reefs of the Lungkeng Ecological Preservation area. On February 9 the EPA and other related agencies established an emergency response center in Kenting. With the help of the armed forces and local residents most of the pollution has been removed from the nearby coast. However, adverse conditions have prevented clearance of remaining oil and iron ores from the ship's hold. After numerous delays and difficulties, the EPA and armed forces worry that as typhoon season nears the tanker could become a source of serious secondary pollution.

The EPA pointed out that the Ministry of Transportation has already overseen the vessel owner's contracting of a Singaporean firm to remove oil and iron ores from the ship. On May 4 a

multifunctional workboat from Singapore arrived at Kaohsiung Harbor, and after stocking necessary supplies and equipment immediately continued on to the site of the Amorgos wreck. After a detailed planning session with the incident response task force, the workboat began removal operations.

According to the plan presented by the Singapore firm, oil removal would officially begin on May 9 and complete on May 27, while removal of iron ores would begin on May 12 and finish around June 6. The entire operations (including removal of the Amorgos) should be completed within 80 working days. After remaining oil is removed the workboat will take it to Singapore for treatment. The ship, along with the iron ores, will be towed 6 nautical miles northeast of its present location where it will be scuttled.

EPA Administrator Lung-Bin Hau visited the site of the incident on May 12 to better understand the progress being made. At that time typhoon Cimaron was moving closer towards Taiwan's southernmost peninsula (where Kenting is located), prompting the Administrator to instruct the emergency response task force to take special care. The Administrator asked them to be prepared to handle any pollutant leakage caused by the storm, but to make sure that safe conditions could be ensured before undertaking any cleanup work.

The Administrator also took time to explain

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Protection Bureau for permission to send their wastes for disinfection. Treated wastes will then be sent to municipal waste incinerators for final disposal.

The EPA stated that after difficulties arose due to closure of a number of medical waste treatment facilities in August 2000, the EPA has been in consultation with the Department of Health and local government to develop emergency measures for the storage, clearance, and treatment of medical waste. Following development of the emergency measures, approximately half of Taiwan's cities and counties have resumed regular treatment of medical wastes.

In response to the concerns of local residents about incinerator dioxin emissions, the EPA stated that Taipei City's Peitou incinerator currently accepts over 1,500 tons of waste per day. The amount of disinfected medical waste expected to enter the facility will be approximately 5.2 tons per day, representing less than 1/300th of the waste handled by the facility. The facility has been fitted with air pollution control equipment and recent monitoring results

show dioxin emissions at 0.042 ng toxic equivalent/m³, below the legal limit of 0.1. Therefore, incineration of medical waste will not cause dioxin emissions to exceed emissions standards.

The EPA emphasized that the concern among Peitou residents regarding the potential health risks posed by the medical waste was understandable. The EPA promised to vigilantly monitor the local government's enforcement of the relevant air emissions standards and protect the health of local residents.

The current infectious waste emergency treatment plan will soon expire and generators with stored medical waste will face renewed challenges. On May 2, the EPA convened a meeting with local city and county representatives to discuss policy options. An agreement was reached to give cities and counties facing particularly severe disposal problems an additional three months. The EPA emphasized that even though an additional three months had been granted to temporarily relieve waste storage pressure, local governments must move aggressively to develop alternative solutions. ▲

News Briefs

Dioxin Retrofitting at Neihsu Incinerator

On May 10 Taipei City's Neihsu Incinerator Plant held a meeting to show off the results of their recent dioxin retrofitting. The plant pointed out that with the improvements dioxin emissions now comply with national standards and that fly ash and bottom ash are stored and treated separately. EPA Administrator Hau, who attended the meeting, stated that incinerator projects around the island have met with local protests so it is very good to see a model plant like Neihsu proving that incinerators that meet national standards are part of the solution to public pollution problems.

NCSD Strengthens Socio-Economic Development

The Executive Yuan initially approved addition of a national land development working group to strengthen the National Council for Sustainable Development's (NCSD) ability to coordinate socio-economic development. Further, on May 18 the NCSD convened its eleventh councilors meeting and approved creation of a new deputy chairman post to be assumed by the Chairman of the Council for Economic Planning and Development.

Crematoriums Placed Under Emissions Controls

Taiwan's public has long feared that emissions from crematoriums were generating dioxin pollution. The EPA notes that data from a United Nations study shows crematoriums are not a major source of pollution, a fact which is confirmed by local studies showing their dioxin concentrations to be extremely low. However, to relieve public anxiety over the issue the EPA will include crematoriums in the air pollution permit regime and begin working on suit-

able dioxin emissions control standards.

Price Hikes for Fluorescents to be Monitored

Beginning next year straight fluorescent light tubes will become a mandatory recycling item, and manufacturers will be forced to pay a treatment charge of NT\$23.98 per kilogram. To prevent manufacturers from using this as an excuse for an unfair price hike, the EPA will begin continued monitoring of fluorescent light tube prices. If any evidence of exaggerated price inflation is found the EPA will refer the case to the Fair Trade Commission for handling.

Water Act Implementation Rules Simplified

The EPA recently proposed draft amendments to the Water Pollution Control Act Implementation Rules that would greatly simplify existing administrative procedures. Under the new changes, industries that have passed environmental impact assessment (EIA) may use the EIA review documents to submit water pollution prevention plans, reducing a number of steps from the regular review process.

Gas Station Subsidy Extended 1 Year

The EPA continues to promote control of gas station volatile organic compound (VOC) emissions. To support the implementation of gas station gas vapor control standards, the EPA will extend by one year only a subsidy for existing gas stations that install vapor recapturing equipment. However, the subsidy will be reduced to NT\$10,000 per nozzle. The EPA calls on gas station owners to take advantage of this chance to install recapturing equipment while the subsidy still lasts.

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the government's expenditure of US\$1.8 million on the cleanup. From the EPA's perspective, speedy removal of the boat and remaining oil is the priority in order to avoid any secondary pollution problems. Administrator Hau further explained that the cleanup effort consists of three phases. The first phase, being removal of the remaining oil, will cost US\$1.5 million and be borne entirely by the vessel owner; the second and third phases will consist of removal of the remaining cargo and of the ship itself, and will cost a total of US\$4.3 million. Unfortunately, commercial maritime law limits financial responsibility for the salvage of wrecked vessels, and the Ministry of

Transportation and the vessel owner had been unable to agree on what to do about the US\$1.8 million of phase two costs that exceed this limit. With the approach of typhoon season the government agreed to pay the excess US\$1.8 million in order to allow the vessel owner to begin salvage operations as quickly as possible and under the best available weather conditions.

Administrator Hau stressed that the US\$1.8 million paid by the government is strictly linked to commercial maritime law and in no way related to government work to seek compensation from the vessel owner for pollution damages. To accelerate the process, the EPA has already established a taskforce to oversee compensation efforts. ☪

Draft Regulations Governing Soil & Groundwater Control Regions Released

The EPA has released a draft of the *Regulations Governing Soil and Groundwater Pollution Control Regions*. The draft stipulates that local authorities should delineate pollution control regions based on the presence of target pollutants, pollutant pathways and the degree of hazard. The regulations will help ensure sustainable use of Taiwan's soil and groundwater and protect the health of her citizens.

Following promulgation of the *Soil and Groundwater Pollution Remediation Act* (the Soil Act) on February 2, the EPA has been working to complete a host of supporting regulations that spell out just how the Act will be implemented. On May 7 the EPA posted another piece in this puzzle, the draft *Regulations Governing Soil and Groundwater Pollution Control Regions* (土壤及地下水污染管制區管制辦法). This supporting regulation stems from Article 14 of the *Soil Act* which states that, "Local Authorities shall designate and declare soil pollution and groundwater pollution control regions pursuant to the soil pollution and groundwater pollution scope of the Control Site or the Remediation Site and shall report the designation and the control to the central competent authority for reference. Same procedures apply to any change to the scope of soil pollution and groundwater pollution."

The draft divides pollution control regions into four types: specially designated soil pollution control regions; general soil pollution control regions; as well as specially designated and general groundwater pollution control regions.

Specially designated soil pollution control regions refer to areas within a control region which have high concentrations of a soil contaminant that

pose a threat of acute toxic harm to humans or airborne concentrations of a soil contaminant that pose acute toxic harm to humans living in a residential area or building. Any area that is not specially designated but falls within a soil pollution Control Site is considered a general soil pollution control region.

Similarly, there are two types of groundwater pollution control regions. Specially designated control regions occur when groundwater in a groundwater control region has contaminated or could potentially contaminate public water wells or if the pollutant concentration is more than ten times the groundwater pollution control standard. Any area that is not specially designated but falls within a groundwater pollution Control Site is considered a general groundwater pollution control region.

The draft also clearly states that before announcing a control region the local competent authority must inform the land owner, manager, or user as well as other relevant authorities to make an onsite inspection and confirm the scope of the control region. In addition, the demarcation and type of control region must be clearly indicated on all cadastral maps, and the local competent authority should use the map to set boundary markers and when necessary erect fencing or warning signs. The land user, manager or owner may not interfere with these precautions.

Before beginning excavation, backfill, temporary storage or transportation of polluted soil in a control region, a pollution disposal plan must first be approved by the local environmental agency. The pollution disposal plan must contain a description of

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pollution conditions, soil removal methods, hazard analysis, pollution prevention measures, and safety and emergency response plans.

The draft prohibits personnel entry to specially designated soil pollution control regions without permission of the local environmental agency. However, in general soil pollution control regions the local environmental agency should compile a registry of residents within the region and employees that must frequently enter or exit the control region. Further, when necessary the local environmental agency should organize safety training seminars and other health protection measures.

In either specially designated or general pollution control regions, after consulting with the local agricultural authority the local environmental agency can prohibit agricultural or livestock operations or request that the land in question be fallowed.

Usage of contaminated surface or ground water in specially designated groundwater pollution regions is prohibited, and the environmental agency

should contact the local waterworks agency to arrange tap water hookup. After consulting with the local waterworks agency, the local environmental agency can restrict, modify or cancel existing rights for use of surface or groundwater. Further, within general groundwater pollution control regions, local well users should report pollution concentrations to the local environmental agency on a quarterly basis.

The draft also requires local environmental agencies to review, reassess, and announce groundwater control region delineations at minimum on a biannual basis. Further, they must perform regular sampling of index wells outside of the pollution control region and post the results. This ensures protection of public health while minimizing damage to owners of land or water rights.

After releasing the draft *Regulations Governing Soil and Groundwater Pollution Control Regions* the EPA acknowledged that the regulation's wide ranging impact is certain to draw attention from all corners. Comments are welcomed on the draft in order to help the EPA perfect it and the *Soil Act* over the coming days. 

Landfill Site Selection Will Be Based on Principles of Regional Planning and Flexibility

In order to avoid a new crisis in waste management, the EPA is currently revising its policy on landfills, and plans to use the principle of regional management to integrate local waste treatment operations.

Waste management is now one of the greatest challenges facing environmental protection efforts. In addition to construction of waste incinerators, properly treating Taiwan's waste also requires development of landfills and ash treatment facilities. The EPA's Central Taiwan Division is now undertaking an initiative to better explain to the public and other external parties the government's policies and progress in the construction of landfills.

The Central Taiwan Division stated that in July 1996 the government approved the "Third Phase of the Plan for Landfills in Taiwan Province" to help improve environmental hygiene and protect public health. The plan is the basis for all municipal and county plans for the development of landfills, and calls for a total budget of NT\$ 17.3 billion for the period of July 1996 to June 2002. As of April 2001, a total of 204 landfills (50 regional landfills and 154 general landfills) had been established at a total budget cost of NT\$11.8 billion.

This fiscal year includes plans for construction or improvement of 64 sanitary landfills or effluent

treatment systems. At a total cost of NT\$1.8 billion, the projects will: resolve the waste management crises of 79 townships; provide the needed treatment for ash residues from 8 incinerators such as in Ilan County; and control effluent from the Taoyuan County landfill.

The EPA has been able to revise its waste management policies due to the successive completion of municipal waste incinerators around Taiwan and revisions to the *Waste Disposal Act* that move responsibility for treatment of household waste to the county level.

The Central Taiwan Division stated that, in the future, waste management strategies for each city and county will be designed based on regional management principles, identifying the most cost efficient method to integrate the use of incinerators, landfills, ash treatment, and landfill effluent treatment facilities. As the first step in implementing the new policy, the EPA has successfully helped each county and municipal government to develop a regional waste management plan.

EPA officials pointed out that, in the future, the EPA will carefully review the sites proposed by city and county officials for new waste management facilities in the context of regional waste manage-

ment before issuing any subsidies for construction.

Construction of new waste treatment facilities is often slowed by difficulties in obtaining land or delays in construction due to protests from local communities. The EPA stated that when projects encounter bottlenecks, the Administration will send officials to assist local government in resolving the problems. However, in cases where it appears that problems are unlikely to be resolved in the short-term, the EPA can delay construction of the site and temporarily reallocate budget to where it will be more effective. In order to maximize the efficient use of the government's limited financial resources, the EPA

has also received permission from the Executive Yuan to use a "flexible" approach in implementing their annual plans.

The EPA's Central Taiwan Division stated that currently Tainan County, Nantou County, Yunlin County, Hsinchu County, Miaoli County, Hualien County, Taitung County, Penghu County, and the Kinmen and Matsu districts are all facing serious waste management crises. In response to this crisis, this year the EPA will prioritize construction of 20 landfill facilities for cities and counties facing waste management difficulties due to delays in construction of incinerators. 

EPA Targets Container Industry to Reduce Evasion of Recycling Fees

The PET Container Recycling Fund has been operating at a loss for a long period of time. After taking office in March, Administrator Lung-Bin Hau ordered the Recycling Fund Management Committee to increase its efforts to catch companies that evade paying recycling fees. Following two months of audits and investigation of infractions, the PET Container Recycling Fund showed a surplus of NT\$6,000,000 for the first time in the second period of this year. Given the strong results, inspection and auditing activities will be expanded. The EPA hopes that the business community will not take their chances, and instead will help work to make recycling efforts in Taiwan a success.

Under Taiwan's recycling regulations certain industries are required to pay a recycling fee based on their reported business volumes. Since the EPA took responsibility for recycling operations in July of 1998, the Recycling Fund Management Committee has noticed that some manufacturers and importers have been taking their chances by reporting false figures. The most common problems are companies under-reporting container use or not fully paying their recycling fees. In the worst cases, companies do not report any of the required information to the EPA. As a result, evasion by companies has led to losses of NT\$2.1 billion for the PET Container Fund. Following two months of increased auditing and enforcement, the Container Fund had a surplus of NT\$6,000,000 during the March and April period this year. While the Committee still has a long way to go before completely balancing income and expenses, the recent actions have had served to frustrate evaders.

The Executive Secretary of the Recycling Fund Management Committee, Jen-Hsiung Hsieh (謝貞雄), stated that the first round of audits of 85 container manufacturers were undertaken by

professional accountants brought in at the request of the Committee's Auditing Department. In reviewing records for the year 2000 alone, over NT\$90 million in evasions were discovered. The audits and follow-up steps to punish evaders have made a significant impression on the recycling community. Since March of 2001, reporting related to PET containers has improved significantly. The volume of sales reported has increased to 7,700 tons from 4,200 tons for the same period last year (January-February).

The second wave of audits and inspections was expanded from the above mentioned recyclers to include grocery stores and other large wholesale stores, during which the Recycling Fund Management Committee checked to see whether the markings on containers sold met required standards. On May 22, the EPA announced that the inspections uncovered 52 products that failed to meet labeling standards, including products from some of Taiwan's leading brand names. The EPA encouraged consumers not to purchase improperly labeled products, and announced plans to further investigate whether the manufacturers of the products in question had reported and paid recycling fees as required under law. The EPA urged manufacturers to accept their environmental responsibilities.

Despite having launched two waves of audits with immediate results, Jen-Hsiung Hsieh stated that the Recycling Fund Management Committee remains unsatisfied. The Committee will bring together 200 inspectors from the EPA Inspection Team to undertake further audits throughout Taiwan. In doing so, the Committee will ask the inspectors to bring their

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years of experience and skills to bear on the problem. Over the next eight months, the Committee plans to organize audits and inspections of 380 companies located throughout Taiwan.

EPA Deputy Administrator Juu-En Chang (張祖恩) stated companies should not underestimate the resolve of the EPA to crack down on fee evasion in order to maintain fair market competition and preserve social justice. The Deputy Adminis-

trator also appealed to the public to help report law-breakers. The EPA is offering rewards to the public for any evidence of illegal activity provided. If, following further investigation, a fine is levied in excess of NT\$1,200 the implementing authorities will be expected to provide a reward to the informant. Rewards will be issued each year drawn from between 5% to 20% of the total value of all fines. The exact amount is left to the discretion of the implementing authorities. ▲

EPA Seeks Orators to Promote Environmental Education

As part of its effort to support implementation of the Voluntary Service Law, the EPA announced the creation of an environmental volunteer medal of honor. The EPA also plans to choose five to fifteen environmental protection orators in each city and county to assist with the implementation of the law and the promotion of environmental education.

At the end of the year 2000, the *Voluntary Service Law* (志願服務法) passed its third reading in the Legislative Yuan. The law was designed to achieve a number of purposes, including: organize Taiwan's human resources to address social problems; cultivate the spirit of voluntary service in Taiwan; and improve the quality of life for all citizens in Taiwan. Article 19 of the law gives executive agencies the right to give awards to volunteers with outstanding performance. In accordance with the

law, the EPA has announced the creation of an environmental protection volunteer medal of honor, with the intention of making this national-level medal the highest honor for environmental protection volunteers. The new environmental protection volunteer medal of honor will be separated into three categories: gold, silver, and bronze.

Furthermore, citizens who are at least 18 years of age, have good oratory skills, and demonstrate a passion for service in environmental protection can register to participate in basic, specialized, or practical training courses. After testing, candidates with good performance may be appointed by the EPA to serve as a "Seed Teacher" for three years. The candidate will help local agencies train volunteers in environmental protection and otherwise promote environmental protection. ▲

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