Content

Title：	Water Pollution Control Measures and Test Reporting Management Regulations Ch
Date：	2016.10.28
Legislative：	One hundred and one articles promulgated by Environmental Protection Administration Order Huan-Shu-Shui-Tzu No. 0950080183 on October 16, 2006. Revisions promulgated by Environmental Protection Administration Order Huan-Shu-Shui-Tzu No. 0990060084 on July 7, 2010. Revisions promulgated by Environmental Protection Administration Order Huan-Shu-Shui-Tzu No. 1020018345 on March 8, 2013. Revisions to Articles 106, 107 and 108 promulgated by Environmental Protection Administration Order Huan-Shu-Shui-Tzu No. 1020044374 on May 31, 2013 Revisions promulgated by Environmental Protection Administration Order Huan-Shu-Shui-Tzu No. 1040095824 on November 24, 2015. Revisions promulgated by Environmental Protection Administration Order Huan-Shu-Shui-Tzu No. 1050086697 on October 28, 2016.
Content：	Water Pollution Control Measures and Test Reporting Management Regulations Chapter 1 General Principles Article 1: These Regulations have been established pursuant to the Water Pollution Control Act (herein referred to as this Act), Article 18, Article 19 where the regulations of Article 18, Paragraph 3 of Article 20, Article 22, Paragraph 2 of Article 31 and Paragraph 4 of Article 32 apply. Article 2: Terms used in these Regulations are defined as follows: I. Items of water pollution control measures are as follows: (I) Establish wastewater or sewage treatment/pre-treatment facilities. (II) Draining sewage into sewage systems. (III) Soil treatment. (IV) Commissioning treatment and commissioned treatment. (V) Install pipeline to discharge into the sea. (VI) Store wastewater or sewage. (VII) Dilute wastewater or sewage. (VIII) Recycle and reuse wastewater or sewage. (IX) Runoff wastewater pollution reduction measure. (X) Discharging and other wastewater or sewage management. (XI) Plan for implementing liquor and fiber digestate as fertilizer for farmlands. (XII) Effluent collection management in industrial areas. (XIII) Installation of automatic monitoring (surveillance) facilities and online transmission. (XIV) Maintenance precautionary measure and emergency response measure. II. Jointly established wastewater or sewage treatment/pre-treatment facilities: means

II. Jointly established wastewater or sewage treatment/pre-treatment facilities: means wastewater or sewage treatment/pre-treatment facilities that were jointly invested in, established by, and jointly used by two or more enterprises.

III. Commissioned operator: means the party commissioned by an enterprise or sewage system to operate and manage the wastewater or sewage treatment/pretreatment facilities.

IV. Soil treatment: means methods for the discharge of wastewater or sewage via pipelines or ditches for irrigation or percolation into the soil for the removal or reduction of pollutants.

V. Commissioning wastewater or sewage treatment: means discharging wastewater or sewage via pipelines or ditches to be treated by a commissioned party (herein referred to as "commissioning treatment").

VI. Commissioned wastewater or sewage treatment: means the acceptance of wastewater or sewage treatment commissioned by another party at established wastewater or sewage treatment/pre-treatment facilities.

VII. Initial dilution ratio: means the dilution multiples from the mix of wastewater column or sewage column and the surrounding seawater after the wastewater or sewage drains from the pipeline into the sea and reaches a stable level in the seawater.

VIII. Discharging wastewater or sewage using a drainage pipe to the sea (herein referred to as a sea drainage pipe): means the use of a pipeline to transport wastewater or sewage to the sea; with an initial dilution ratio of 100:1 or greater.

IX. Storing: means delivering wastewater or sewage to storage facilities and then implementing reuse, commissioning treatment, using containers, tank trucks or other non-pipelines or ditches facilities to remove or transport wastewater or sewage to the area outside the range of operations, or returning water seepage in a landfill to the surface of the landfill.

X. Recycling wastewater or sewage: means collecting wastewater or sewage that has not been discharged into a water body and has not undergone soil treatment to be reused for other water resource purposes.

XI. Non-continuous discharge: means effluent that is not drained from a discharge point into the receiving water body continuously for 24 hours every day, or that is not drained from a discharge point approved by the sewage management authority into a sewage system continuously for 24 hours every day.

XII. Pure hot spring wastewater: means wastewater from hot spring baths with no other added substances.

XIII. Plan for implementing liquor and fiber digestate as fertilizer for farmlands: refers to the liquor and fiber digestate generated from livestock excrements, or the livestock excrements collected by the management operator of livestock excrements resource treatment center (or methane recycling center) after anaerobic fermentation or aeration treatment, and then used on farmlands for fertilization.

XIV. TUa: is the reciprocal of LC50 (Lethal Concentration 50%) for bioacute toxicity test.

XV. Farmland: means the land used for farming, it is divided into general or specific agricultural regions according to the use zoning as recorded in land registration transcript, and the land use category is limited to farming and grazing lands.

Article 3: The types of industrial wastewater are as follows:

Ⅰ. Workstation wastewater: means the wastewater that comes into direct contact with people or objects in the processes of manufacturing, processing, repair, disposal, operation, cooling, washing, counter flow washing, treatment, provision of services, livestock raising, development of natural resources, or other operations.

Ⅱ. Blowdown wastewater: means the wastewater removed from the industry water usage cycle in order to reduce the concentration of pollutants that have accumulated in the water

cycle.

III. Non-contact cooling water: means water used exclusively for calibrating temperature in heat exchange pipelines.

IV. Runoff wastewater: means the wastewater generated when rainwater falls on outdoor facilities, the surface of buildings, or the surface of outdoor work environments, as well as raw or other materials.

Materials as stated in the foregoing paragraph, Subparagraph 1, include raw materials, intermediate products, products, by-products, waste, waste gases, animals, plants or other articles.

Article 4: Enterprises or sewage systems shall carry out the water pollution control measures (herein referred to as the "pollution control measures") approved by the municipality, county or city competent authority or government agency commissioned by the central competent authority (herein referred to as the "issuing authority"), and operate according to the contents of the approved pollution control measures.

Article 5: If there is a concern of leaking pollutants or wastewater from the sewerage of industrial wastewater or sewage into the water body or soil, protective and preventive measures shall be taken. The pollutants or wastewater or sewage leaked to the operation environment shall be collected for treatment with record on the date and time, the cause of leaking, the quantity of water and the status of collection for treatment. The record shall be kept for 3 years.

If there is a concern of leaking pollutants or wastewater from the sewerage of industrial wastewater or sewage into the water body or soil, emergency measures shall be taken at once, and report to the competent authorities of the municipality or county (city) within 3 hours after the leaking was detected. The date, time, and cause of leaking, and the types of pollutants, quantity, water quality, water quantity, the means of notifying the competent authorities, the targets of contact, the date and time of contact, and the responding measures shall be tracked on record. Within 10 days after the response to the emergency, the parties concerned shall report to the competent authorities of the municipality or county (city) on the record of responding to the emergency and the measures taken for referencing filing and keep related record for 3 years.

The particulars for aforementioned record on response to the emergency and the measures taken in response to the situation shall include the following:

I. The particulars for tracking on record.

II. The content of response and the method of the elimination and cleanup of leaking.

III. The personnel participating in the response and their duties.

IV. The plan for the monitoring and testing of the water body and soil affected by the leaking.

V. Methods for prevention and improvement.

VI. Any others as required by the competent authorities.

Article 6: When a natural disaster or emergency situation occurs, enterprises or sewage systems shall dispose of wastewater or sewage in accordance with the orders of the competent authority.

Chapter 2 Runoff Wastewater Management

Article 7: The wastewater or sewage generated by enterprises or sewage systems shall be collected within the work environment via ditch, pipeline or container. This wastewater or sewage shall not flow into and be collected with the rainwater. However, runoff wastewater is not subject to this restriction.

Established enterprises or sewage systems that have technical difficulties meeting the regulations in the foregoing paragraph shall provide proof and have facilities that prevent combined wastewater or sewage from being discharged directly. Combined collection may

be implemented only after the competent authority has given its approval.

Article 8: If the runoff wastewater of an enterprise or sewage system storing or piling the following substances is found to contain the said stored or piled substances or components, the runoff wastewater shall be collected and treated:

Ⅰ. Sludge produced from wastewater or sewage.

Ⅱ. Coal cinder, coal ash, fly ash, slag, or bottom ash.

Ⅲ. Raw materials, materials, scrap materials, products or by-products that, when washed out by rainwater, dissolve into or produce substances harmful to health as officially announced under this Act.

Ⅳ. Hazardous industrial waste.

Ⅴ. Waste light source, waste dry batteries, pesticide waste containers, special environmental agent waste containers, waste lead acid batteries, waste lubricant, waste motorized vehicles, and recovered materials or derivative waste produced in the disposal or treatment process.

Article 9: Mining enterprises, earth and gravel extraction enterprises, earth and gravel processing enterprises, cement enterprises, earth and gravel storing (disposal) sites, and construction sites shall install rainwater blocking and channeling facilities over the area of excavation or storage sufficient enough to prevent rainwater from entering the site. However, those that find it difficult to install rainwater protection facilities are not subject to this restriction provided they receive the approval of the competent authority.

Cement enterprises as stated in the foregoing paragraph means enterprises transporting granular cement or concrete plus additives mixed together with water to worksites for use in casting.

Enterprises in Paragraph 1 shall construct a grit chamber to collect and dispose of initial rainfall and the wastewater from carwash platforms; the grit chamber shall meet the following specifications:

Ⅰ. The total design capacity shall be equal to or greater than the total surface area of the entire workplace or worksite multiplied by 0.025 meters.

Ⅱ. When not raining, the distance from the water surface to the top of the chamber shall be greater than one-half of the depth of the chamber.

Ⅲ. Water impermeable materials shall be used.

The rainwater blocking and channeling facilities and grit chamber shall be maintained and cleared of grit on a regular basis; the time and method of maintenance and cleaning shall be recorded and kept on file for three years as a reference.

The runoff wastewater of enterprises following the rules of Paragraph 1 and Paragraph 3 in accordance with content approved by the issuing authority shall be discharged from an approved runoff drainage opening after treatment in grit chamber.

When the rainfall is greater than the total design capacity of the grit chamber as stipulated in Paragraph 3, Subparagraph 1, the drainage of runoff wastewater volume that exceeds the total design capacity shall be rerouted.

Domestic sewage produced by human activity in the office space and employee housing of the enterprises stated in Paragraph 1 shall be collected and disposed of in an appropriate manner.

Article 10: Before proceeding to work at construction sites, the parties concerned shall present a plan for the reduction of pollutants from runoff wastewater (hereinafter referred to as "Reduction Plan") to the competent authorities of the municipality or county (city) for approval, and proceed as approved.

The Reduction Plan shall contain the following [illegible]

The Reduction Plan shall contain the following requirements:
I. Basic information.
II. The measures for the mitigation of pollution as mentioned in the previous article and the engineering plan.
III. The photocopy of the certification documents issued by the competent authority.
If any of the following occurs to the Reduction Plan, the construction site concerned shall propose the change in the Reduction Plan to the competent authorities of the municipality or county (city) for approval by designated deadline and proceed as approved:
I. Any change in the particulars specified in I or III of the previous paragraph shall be proposed to the competent authority within 30 days from the day after the change. For changes requiring the approval of the competent authority, proceed to the change within 30 days after approval.
II. Change in the particulars as specified in II of the previous paragraph shall be proposed to the competent authority before proceeding to change.
III. If there is a concern of the competent authority that the Reduction Plan is insufficient for the protection of the water body after reviewing the plan and pollution is still possible, the construction site concerned will be ordered to take corrective action by designated deadline and shall accomplish the corrective action for improvement by the deadline.

Article 11: Enterprises or sewage systems other than those stated in Article 9 and Article 10 shall adopt runoff pollutant reduction measures (herein referred to as the reduction measures) according to their pollution characteristics. When the reduction measure is modified, or further investigation by the competent authority reveals that the contents of the reduction measure are insufficient for maintaining quality of the water body and there is concern of pollution, revision shall be proposed prior to modifications or within the deadline given by competent authority, and implement the plan accordingly after approval.
For enterprises or sewage systems which adopt reduction measures pursuant to the foregoing paragraph, when the runoff wastewater quality is unable to comply with effluent standards and confirmed by the municipality, county or city competent authority that the water quality may cause pollution, such runoff wastewater shall be collected and treated.
For the enterprises and sewage systems that need to collect and treat the runoff wastewater pursuant to the foregoing paragraph and Article 8, the collected and treated runoff wastewater volume shall be reviewed and approved in a case by case manner. When the rainfall is greater than the collected and treated runoff wastewater volume, the discharge of runoff wastewater may be rerouted.
For the enterprises and sewage systems pursuant to the foregoing paragraph, the collectable quantity of the runoff wastewater collecting facilities shall be greater than the approved collectable and treating quantity within 5 days after the raining stopped.

Chapter 3 Wastewater or Sewage Treatment/Pre-treatment Facilities

Article 12: Those conducting commissioned treatment, recycling or diluting of wastewater or sewage, or those designated by the competent authority shall establish independent cumulative water measurement facilities upstream from wastewater or sewage treatment facilities exclusively for measuring water influx.

Those that have jointly established wastewater or sewage treatment/pretreatment facilities mentioned above shall use pipelines or ditches as the method of transport for wastewater or sewage.

Article 13: Enterprises or sewage systems with backup power for production equipment generating wastewater or sewage shall also have sufficient backup power supply for its wastewater or sewage treatment/pre-treatment facilities.

Article 14: For the sludge generated from the wastewater or sewage treatment/pre-treatment facilities of enterprises or sewage systems, reduction measure shall be adopted. Wastewater or sewage treatment/pre-treatment facilities shall be maintained regularly and be repaired in a timely manner, and a log thereof shall be recorded and kept on file for five years as a reference.

Article 15: Where the wastewater or sewage treatment/pre-treatment facilities established by an enterprise or sewage system cannot maintain normal operation, if ordered by competent authority for improvement within a deadline, such enterprise or sewage system shall maintain the normal operation of installed facilities during the improvement period as notified, and implement measures for the reduction or stop of production or service levels, or the improvement of wastewater or sewage treatment/pre-treatment facilities. Such an enterprise or sewage system may not exceed the operating parameters during the improvement period as determined by the competent authority. And other operating parameters shall also fall within the normal operating range, otherwise violators will be penalized per violation.

Those implementing improvement methods stated in the foregoing paragraph that require the demolition of existing facilities to further construction work shall begin only after registering modifications with the issuing authority.

Article 16: Enterprises or sewage systems equipped with operating parameter measuring facilities and independent electricity meters for wastewater or sewage treatment/pre-treatment facilities that employ continuous automatic recording shall make recordings based on the design specifications and frequency of the measuring facilities. Those adopting non-continuous automatic recording shall record the cumulative amount of electricity consumed and the operating parameters once a day. The amount of chemical agents used in the wastewater or sewage treatment/pre-treatment facilities, amount of sludge generated by the said facilities, and storage and clearance volumes shall be recorded, in that order, and calculated as monthly statistics.

In case that the approved pollution control measures and permit (document) contain operation procedures for special situations such as better quality of original wastewater or sewage, lower quantity of original wastewater or sewage, storms or power outage etc., when any of the special situation occurs, the contents of the situation, the time the situation starts and ends and the duration of the situation shall be recorded. And relevant data shall be recorded pursuant to the requirements of foregoing paragraph.

A photocopy of the logs, invoices and receipts stated in the foregoing paragraph shall be kept on record for five years as a reference.

Article 17: The independent electricity meter installed by an enterprise or sewage system for its wastewater or sewage treatment/pre-treatment facilities shall comply with the following items:

Ⅰ. Specifications shall comply with relevant provisions of Weights and Measures Regulations and shall be able to measure the entire amount of electricity consumed by wastewater or sewage treatment/pre-treatment facilities.

Ⅱ. The electric meter shall have a transparent viewing window.

Ⅲ. The competent authority or electric power company shall seal the electric meter with lead sealing. Once confirmed by the competent authority the seal shall not be broken arbitrarily.

IV. The source and destination of incoming and outgoing electric circuits shall be clearly marked.

When the electric meter as stated in the foregoing paragraph requires servicing or replacement, the seal shall be broken only after notifying the competent authority. The amount of electricity consumed shall still be recorded while servicing or replacing the electric meter; the method of recording shall be approved by the competent authority. The competent authority shall be informed of service or replacement within a week of servicing or replacement.

Those unable to install an independent electric meter for the wastewater or sewage treatment/pre-treatment facilities may, with the approval of the competent authority, use facilities with automatic control measurement and recording functions to measure and record the electricity consumption.

Article 18: When the wastewater or sewage treatment/pre-treatment facilities of an enterprise or sewage system malfunction for more than 24 hours, the wastewater or sewage that cannot be treated shall be properly stored without being discharged. If the time required for repairs should exceed 30 days, the production of wastewater or sewage shall be suspended temporarily.

The time of the malfunction as described in the foregoing paragraph; the name of the facilities; the cause of the incident; the generated volume of wastewater or sewage and collection status; and repair method and status shall be recorded for an enterprise or sewage system, and kept on file for three years as a reference.

Article 19: Enterprises or sewage systems may employ commissioned operators to operate wastewater or sewage treatment/pre-treatment facilities.

When an enterprise or sewage system is found to have one of the following circumstances in the past year while facilities were being operated by a commissioned operator, such an enterprise or sewage system may not use the said commissioned operator to operate its wastewater or sewage treatment/pretreatment facility:

I. The competent authority discovers that the discharge has been rerouted;

II. The competent authority determines that a discharge of large quantities of pollutants has seriously impacted the quality of nearby water bodies;

III. The competent authority determines that there is concern of the endangerment of public health due to the discharge of wastewater or sewage that contains substances harmful to health as officially announced under this Act; or

IV. The competent authority has disciplined the enterprise or sewage system by ordering the suspension of work or business.

For enterprises or sewage systems that are required to employ dedicated wastewater treatment personnel, commissioned operators shall have credentials identical to those of the dedicated wastewater treatment personnel. For enterprises or sewage systems that are required to establish a dedicated wastewater treatment unit, commissioned operators shall have Grade A dedicated wastewater treatment personnel credentials.

Enterprises or sewage systems shall create a log recording commissioned operators' time of arrival at, and departure from, the worksite, as well as operating and maintenance conditions and a signature confirming the said items. The log shall be kept on file for three years as a reference.

Chapter 4 Draining Sewage into Sewage Systems

Article 20: Enterprises within a sewage system area that do not drain wastewater or sewage into the sewage system (hereinafter referred to as sewer-connected), may discharge wastewater or sewage into a surface water body only after obtaining the approval of the

wastewater or sewage into a surface water body only after obtaining the approval of the sewage management agency and a surface water body discharge permit or a simple discharge permit.

Article 21: The wastewater or sewage generated by such an enterprise in the foregoing article shall not discharge wastewater or sewage into rainwater drainage pipes inside the said area of discharge. However, those obtaining approval from the sewage management agency and competent authority are not subject to this restriction.

Article 22: If a sewage management agency investigation reveals that a sewer-connected enterprise is not in compliance with sewage system standards, the sewage management agency shall inform the sewer-connected enterprise of the need to make improvements within a given deadline. Sewer-connected enterprises that employ pollution control measures other than by connecting to a sewage system shall apply for the necessary permits (documents) to the issuing authority.

In the case where an enterprise in the foregoing paragraph is unable to complete improvements within the given deadline and the sewage management agency refuses sewer access or orders the enterprise to suspend use pursuant to the provisions of Sewerage Act, the said enterprise shall suspend the production of wastewater or sewage prior to obtaining a permit (document) approved by the competent authority.

When the sewage management agency refuses sewer access or orders an enterprise to make improvements within a limited time period, the competent authority shall be notified at the same time.

Chapter 5 Soil Treatment

Article 23: Enterprises or sewage systems that treat soil shall implement other pollution control measures approved by competent authority as a substitute method when soil treatment is temporarily suspended. Enterprises that already dispose of wastewater or sewage using methods based on regulations under the Waste Disposal Act that allow for transport other than pipelines or drainage ditches, such as the use of containers or tank truck for the disposal of wastewater or sewage not conforming to effluent standards to an area outside the range of operations, are not subject to this restriction.

Article 24: Wastewater or sewage from the sewerage of industrial wastewater or sewage shall be subject to pretreatment in conformity to the standard for soil treatment before proceeding to soil treatment.

Article 25: If any of the following occurs to the sewerage of industrial wastewater or sewage, the requirements under this chapter shall be waived:

I. The excreta from animal farming have been approved by the competent authority of agriculture for recycled use in agricultural irrigation in accordance with the Regulations Governing the Recycled Use of Agricultural Wastes.

II. Permission from the competent authority of agriculture has been granted for the recycled use of liquor and fiber digestate for fertilizing in farmland.

III. Business of animal husbandry and animal excreta or bioenergy treatment center (or biogas center) approved by the competent authorities of the municipality or county (city) for the delivery or transmission of effluent of wastewater or sewage from animal husbandry conforming to applicable standards for irrigation in farmland.

IV. The effluent from the sewerage of industrial wastewater or sewage other than those specified in the previous subparagraph has been approved by the

than those specified in the previous subparagraph has been approved by the competent authorities of the municipality or county (city) in conformity to applicable standards for discharge for irrigation in plantation.

V. Installation of facility with impermeable materials for isolating wastewater or sewage from contact with soil.

Article 26: Enterprises or sewage systems shall construct a containment pool on the lower slope of the section of land used for soil treatment and properly collect and treat wastewater or sewage spillover. Those that do not have wastewater or sewage spillover after soil treatment are not subject to this restriction.

Article 27: Wastewater or sewage may be drained out from the sewerage for the industrial wastewater or sewage in the duration specified in the permit for the treatment of soil from discharge of wastewater or sewage, and shall be halted temporality if any of the following situations occurs:

I. From the day on which the Central Weather Bureau announced heavy rain and rainstorm to 3 days after the warning signal is clear.

II. The conductivity of soil saturation extraction fluid is at 4μS/cm at 25°C.

III. The soil test result indicated pollution level of soil is at the upper limit of the standard.

IV. The test result of underground water indicated pollution level of underground water is at the upper limit of standard. This standard is not applicable if the NH background value of underground water is higher than the upper limit of the monitoring standard of underground water pollution, and the test value of NH of underground water is lower than the background value.

If the discharge of wastewater or sewage is temporarily halted on circumstances specified from subparagraphs II to IV, present a test report to the competent authorities of the municipality or county (city) for approval, and, if approved, proceed to the discharge of wastewater or sewage into soil.

Article 28: Enterprises or sewage systems that adopt soil treatment shall establish a sampling orifice before wastewater or sewage is discharged into the soil.

The sampling orifice shall comply with the following rules:

Ⅰ. A pathway to allow competent authority personnel access to the sampling orifice.

Ⅱ. Independent cumulative water measurement facilities shall be installed exclusively for measuring the quantity of wastewater or sewage deposited into the soil.

Ⅲ. A sign shall be erected and marked with coordinates.

Ⅳ. Direct sampling shall be allowed. There shall not be any means that prevents, hinders or rejects the direct sampling by the competent authority without the approval of the municipal, county or city competent authority.

The sampling orifice of an enterprise or sewage system that is revealed by a competent authority investigation to have rerouted discharge, or that conducts non-continuous discharge of wastewater or sewage as designated by competent authority, shall be established at the location designated by competent authority.

The erection of a sign as stated in Paragraph 2, Subparagraph 3, shall comply with the following rules:

Ⅰ. The sign shall record the title, regulatory control number, sampling orifice number, coordinate, and the maximum daily discharge quantity of the enterprise or sewage system according to the approved contents.

II. The specifications of the sign shall be at a length greater than 32cm; a width greater than 15cm; white as the background color on the face of the sign; black as the color of the text; and a clearly visible font no smaller than 1.5 centimeter square. And pictures or drawings shall not be added arbitrarily (see Attached Figure 1).

III. The sign shall be fixed in a prominent place beside the sampling orifice at a height between 50 centimeters and 2 meters above ground level.

IV. The materials used to make the sign shall be sturdy and durable.

V. The sign shall have a firm grounding and be difficult to remove.

Chapter 6 Commissioning Treatment and Commissioned Treatment

Article 29: The enterprise or sewage system that has acquired the pollution control measures approval document or permit (document), has registered items for redundant capacity, and meets one of the following conditions, shall treat wastewater or sewage by commission only after applying to the issuing authority and completing the registration of commissioned treatment modifications:

I. The enterprise or sewage system has not been penalized for violating Article 7 of this Act more than twice in the one year period prior to the date of application. Or, the sewer-connected enterprise has not been refused sewer access or been ordered to suspend use by the sewage management agency in the one year period prior to the date of application.

II. In three years prior to the date of application the competent authority has not determined that public health has been endangered due to the discharge of wastewater or sewage that contains substances harmful to health as officially announced under this Act.

III. The enterprise or sewage system has not been ordered by the competent authority to suspend work or business in the three year prior to the date of application for violating this Act.

IV. A competent authority investigation has not revealed the rerouting of discharge in the three years prior to the date of application.

Article 30: Enterprises or sewage systems that have been commissioned to treat wastewater or sewage (herein referred to as the “commissioned party”) shall comply with the following rules:

I. Commissioned treatment shall be limited to treating the same category or type of wastewater or sewage. Those that obtain the approval of the issuing authority are not subject to this restriction.

II. The quantity of wastewater or sewage commissioned for treatment shall not exceed the approved daily maximum redundant capacity.

III. Wastewater or sewage shall be treated within 24 hours of receiving the wastewater or sewage.

Article 31: Enterprises or sewage systems that commissions treatment of wastewater or sewage (herein referred to as the “commissioning party”) shall establish wastewater or sewage treatment/pre-treatment facilities or storage facilities to store wastewater or sewage.

The commissioning party and the commissioned party shall establish independent cumulative water measurement facilities at the water influx and outflow points of the pipeline or ditch exclusively for measuring water quantity at these locations.

Article 32: When the commissioned party is unable to treat wastewater or sewage due to a malfunction in wastewater or sewage treatment/pre-treatment facilities, they shall contact the commissioning party to suspend the transport of wastewater or sewage and then carry out the necessary improvements. If unable to conduct commissioned treatment of wastewater or sewage for more than 30 days, commissioned treatment shall be suspended

wastewater or sewage for more than 30 days, commissioned treatment shall be suspended and application shall be submitted to the issuing authority for the modification of pollution control plan approval document or permit (document).

If the commissioned party does not make modifications according to the foregoing paragraph, the issuing authority shall modify the permit items directly.

The commissioned party shall record the reasons for not being able to conduct commissioned treatment, the time when the commissioning party was contacted to suspend transport, and the status of ongoing improvements. These records shall be kept on file for three years as a reference.

Article 33: When the commissioning party is informed of the suspension of commissioned treatment by the commissioned party, wastewater or sewage shall be collected and stored. If the storage of wastewater or sewage exceeds 30 days and the commissioning party has not obtained the approval of the issuing authority for any other pollution control measures, the production of wastewater or sewage shall be suspended. Enterprises that already dispose of wastewater or sewage using methods based on regulations under the Waste Disposal Act that allow for transport other than pipelines or drainage ditches, such as the use of containers or tank truck for the disposal of wastewater or sewage not conforming to effluent standards to an area outside the range of operations, are not subject to this restriction.

The commissioning party shall record the time when the commissioned party notified them of the suspension of transport, the maximum daily output and storage capacity of wastewater or sewage, the storage facility unit numbers and total number of units. These records shall be kept on file for three years as a reference.

Article 34: In case that the commissioned party violates the relevant regulations of this Act thereof two or more times in one year while conducting commissioned treatment, such a party shall not increase the quantity of commissioned treatment or the number of parties from which commissioned wastewater or sewage is received for one year starting on the date of the second violation.

While conducting commissioned treatment the commissioned party shall suspend commissioned treatment under any one of the following circumstances:

Ⅰ. The commissioned party violates Article 7 of this Act and is penalized by the competent authority more than twice. The sewer-connected enterprise is refused sewer access or ordered by the sewage management agency to suspend use.

Ⅱ. The competent authority determines that there is concern of the endangerment of public health due to the discharge of wastewater or sewage that contains substances harmful to health as officially announced under this Act.

Ⅲ. The commissioned party who violates this Act will be ordered by the competent authority to suspend work or business.

Ⅳ. The competent authority discovers that the path of discharge has been rerouted.

Chapter 7 Sea Discharge Pipes

Article 35: Enterprises or sewage systems that use a sea discharge pipe to discharge wastewater or sewage to the sea shall proceed according to the following rules:

I. The installation or modification of the sea discharge pipe shall be reported to the competent authority within 30 days following construction or modification as a reference to keep on file.

II. The structure integrity of the sea discharge pipe shall be inspected on a yearly basis to confirm that it is able to achieve an initial dilution ratio of 100:1 or greater. The inspection shall be recorded and kept on file for three years as a reference.

III. When there is concern of an impact on normal discharge or the safety of maritime traffic due to the malfunction or structural damage of a sea discharge pipe, repairs and clean-up shall be conducted immediately. The competent authority shall be informed within three hours of discovering the damage or malfunction.

Article 36: When the sea discharge pipe of an enterprise or sewage system who discharges wastewater or sewage into the sea is damaged or malfunctions and prevents the initial dilution ratio from reaching 100:1 or greater, such enterprise or sewage system shall proceed according to the following rules:

I. The discharge wastewater or sewage shall comply with effluent standards.

II. When unable to discharge into the sea, wastewater or sewage may be discharged into a surface water body via a discharge point approved by the competent authority. However, if the duration of discharge exceeds 90 days, a change of permit (document) is required at the issuing authority.

The enterprise or sewage system shall record the time of the malfunction or damage, the time the competent authority was informed, the cause of the incident, and the status of repairs. These records shall be kept on file for three years as a reference.

Chapter 8 Storing and Diluting

Article 37: For an enterprise or sewage system for which dilution of wastewater or sewage is permitted, the mixing and diluting shall take place at the mixing facility in the wastewater or sewage treatment/pre-treatment facilities.

An independent cumulative water measurement facility shall be installed exclusively for the mixing facility mentioned in the foregoing paragraph.

For circumstances defined in Paragraph 3, Article 18-1 of this Act, where dilution takes place at a major treatment facility recognized by rescue workers or competent authority due to emergency, the times that the dilution starts and ends, cause, quantity and reporting time shall be recorded and a written report for the actions taken during the dilution shall be submitted to the municipality, county or city competent authority and the issuing authority in twenty days.

The written report mentioned above shall include the following:

I. Cause of the dilution and the time it takes place;

II. To whom, how and when it is reported;

III. Action(s) taken during the dilution;

IV. Personnel involved in the action(s) and their tasks;

V. Water body monitoring results in response to the dilution;

VI. Subsequent response and improvement; and

VII. Others

Article 38: Enterprises or sewage systems that dispose of wastewater or sewage using methods other than pipelines or drainage ditches, such as the use of containers or tank trucks for the disposal of wastewater or sewage into an area outside the range of operations, shall establish storage facilities within the work environment and store wastewater or sewage that has not yet been cleared and transported.

Storage facilities shall be established for a landfill where seeps water back to the surface in order to collect the water seepage, as well as pump facilities and a ditch to intercept wastewater runoff.

Article 39: Independent cumulative water measurement facilities shall be installed in the storage facilities of enterprises or sewage systems that adopt storage methods to exclusively measure water influx and outflow quantities; or water measurement facilities with functions to automatically record fluid levels and display water storage quantities shall

with functions to automatically record fluid levels and display water storage quantities shall be installed in the said storage facilities.

Such enterprises or sewage systems shall make a daily record of the time each batch of wastewater or sewage is stored, the method of transport, water quantity, and treated water quantity. These records shall be kept on file for three years as a reference.

Storage facilities carrying out emergency response measures pursuant to Article 18, Paragraph 1, or Article 33, Paragraph 1, shall proceed according to the foregoing two paragraphs.

In the case where wastewater or sewage is first stored and then disposed of using methods other than pipelines or drainage ditches, such as using containers or tank trucks to dispose of wastewater or sewage into an area outside of the range of operations, and the storage period exceeds 30 days and no other pollution control measures have been approved by the competent authority, the production of wastewater or sewage shall be suspended.

Article 40: The storage facilities of an enterprise or sewage system shall have such a capacity as to accommodate emergency response requirements.

Chapter 9 Recycling and Reuse

Article 41:

The effluent from the sewerage of industrial wastewater or sewage may be recycled and reuse only when the quality meets the standard for discharge, and shall take sampling at the outlet area before recycled for use except under any of the following situations:

I. The wastewater or sewage produced is for production process use.

II. The wastewater or sewage produced is for tower rinsing or other pollution prevention equipment and the waster after recycling has been treated by the water treatment (pretreatment) facility of wastewater or sewage before using.

The recycling of industrial wastewater or sewage from the sewerage which is not conforming to the standard of wastewater or sewage for discharge shall be regulated by the following rules:

I. The recycling of wastewater or sewage without the using of facility installed for the treatment/pretreatment of wastewater or sewage and the effluent not conforming to applicable standards of wastewater or sewage cannot be used for any other purposes beyond production process.

II. The use of water supply conforming to standard without treatment as supplementary source for mixed use shall be subject to the approval of the competent authorities of the municipality or county (city) with the presentation of the following information and shall keep track on the quantity of supplementary water supply. The record shall be kept for 3 years.

(I) The necessity of supplementary water supply, the source of

supplementary water supply, the maximum daily capacity of supplementary water supply and the measurement methods.
(II) Explanation on the balance of water quality shall be presented to the competent authorities of the municipality or county (city) for the recycled use of wastewater or sewage without the facility for treatment/pretreatment of wastewater or sewage or where the competent authorities of the municipality or county (city) deems necessary.
If the competent authority discovered the sewerage of the industry wastewater or sewage not being approved as specified in subparagraph (II) of the previous paragraph, notify the enterprise, or the effluent from the sewerage without treatment in conformity to applicable standards cannot be used as supplementary water supply. In addition, the competent authorities of the municipality or county (city) shall notify the enterprise or the sewerage to make change in the water supply plan or permit (documents). Those who fails to comply on due time shall be subject to punishment under this law as an act of violation.

Article 42: Recycled and reused water of the foregoing article may be discharged into a surface water body only after complying with effluent standards. Recycled water that is used for indoor purposes such as rinsing office space, employee housing and other activity spaces within the work environment, however, shall comply with effluent standards for building sewage treatment facilities.
Physical contact with the recycled water in the foregoing paragraph shall be avoided so as not to affect human health.
Article 43: Those that recycle wastewater or sewage shall establish independent cumulative water measurement facilities downstream from the generation and treatment of wastewater or sewage to exclusively measure water quantity; independent cumulative water measurement facilities shall also be established upstream from the recycling process exclusively for measuring water quantity.
Those that recycle and reuse wastewater or sewage shall establish wastewater or sewage treatment/pretreatment facilities or storage facilities to store wastewater or sewage before recycling and reuse.
Article 43-1 This chapter shall be waived if any of the following is applicable to the
industrial sewerage or the sewage system:
I. The wastewater or sewage has not passed through the wastewater or sewage treatment/pretreatment facility and is just in circulation of the production process.
II. Reversal or flowing back between different components of the wastewater or sewage treatment/pretreatment facility before discharge to the collection pool (tank, outlet).
III. A purification system for the recycling of wastewater has been installed. Wastewater will be used in the production process after purification. The purification system and the subsequent wastewater or

sewage treatment facility could be separated independently and there is no wastewater or sewage from the recycling system directly discharged to the water body or soil.
If there is a concern of the competent authority that the purified wastewater was recycled for using in the production process as stated in subparagraph III cannot perform the function of purifying wastewater, the competent authorities of the municipality or the county (city) shall notify the enterprises or the sewerage to provide related materials for justifying the purification system of recycling can help to reduce water pollutants from the wastewater within stipulated time span. If no explanation could be provided by the deadline, or, the competent authority deems there is no function for purifying the quality of original wastewater, the competent authorities of the municipality or county (city) shall notify the enterprise or the sewerage to following the rules in this chapter, and proceed to change in the water treatment plan or permit (document). Those who fails to make change on due time shall be subject to punishment as an act of violation.

Chapter 10 Discharging and Other Wastewater or Sewage Management

Article 44: Aboveground fuel storage facilities in a fuel storage site shall comply with the following rules:

Ⅰ. The base shall be made of concrete or covered by impermeable materials.

Ⅱ. Overflow protection dikes with a height greater than 50 centimeters shall be erected on all sides. The containment capacity of the overflow protection dikes shall be 110% or greater than the capacity of the storage facilities. Those that have difficulty in erecting overflow protection dikes may use an alternative method provided they obtain the approval of the competent authority.

Enterprises in the foregoing paragraph shall, based on the capacity of fuel storage facilities, maintain a sufficient supply of equipment and materials for the prevention of pollution leaks. The facilities, equipment and materials in the foregoing two paragraphs shall be serviced regularly.

Fuel from a fuel leak at storage facilities as stated in Paragraph 1 shall be collected and disposed of properly.

Article 45: Shipbreaking enterprises shall erect interception facilities on all sides of the dismantling site and implement the following measures. Those that have difficulty in erecting interception facilities, however, may install facilities adequate to block the flow of wastewater or a polluted water body provided they first obtain the approval of the competent authority:

Ⅰ. Equipment to contain or remove floating oil shall be installed around the perimeter of the water surface in the worksite.

Ⅱ. Appropriate receiving facilities for waste oil, wastewater or other pollutants shall be established in the worksite area; and

Ⅲ. Other measures designated by the competent authority

Article 46: Livestock enterprises engaged in general fish farming operations shall comply with the following rules:

Ⅰ. The daily quantity of wastewater discharged into fish-raising ponds shall be less than four cubic meters per hectare.

Ⅱ. Each hectare of fish-raising pond shall contain wastewater from fewer than 200 hogs.

Ⅲ. Dissolved oxygen in the fish-raising pond shall be greater than 1.0 milligrams/liter.

IV. The distance from the surface of the fluid to the highest point on the perimeter of the fish-raising pond shall be maintained at 30 centimeters or greater. However, this restriction is not applicable during the rainy season.

V. The time when the barn or sty is cleaned, the quantity of wastewater discharged into the fish-raising pond, and the time when it is discharged into the fish-raising pond shall be recorded; these records shall be kept on file for three years as a reference.

VI. General fish farming enterprises shall take the initiative to inform the competent authority of any discharges three days prior to the scheduled discharge.

Article 46-1 Livestock industry engaged in pig or cattle farming shall take any of the following measures in the treatment of animal excreta for recycled use:

I. The competent authority of agriculture approved the recycling and reuse of animal excreta from livestock farming for irrigation of farmland in accordance with the Regulations Governing the Recycling and Reuse of Agricultural Waste.

II. Approved by the competent authority of agricultural in accordance with this Regulation for using liquor and fiber digestate as fertilizer for farmland.

III. Approved by the competent authorities of the municipality or county (city) transmission or delivery of wastewater or sewage complying with the standard of discharge for irrigation of plantation land.

The limit of the ratio of the aforementioned treatment of animal excrete into regenerated energy is shown below:

I. Animal farms approved for registration after the amendment to this Regulation on December 27 2017 shall meet the level of 10% of the total capacity of wastewater generated.

II. Animal farms approved for registration prior to the amendment to this Regulation on December 27 2017 and have discharged wastewater from animal farming to the ground surface water body:

(I) The ratio of the treatment of animal excreta for regenerated energy for animal farms keeping more than 2,000 pigs or 500 cattle will be 5% of the total capacity of wastewater generated in 5 years, and 10% of the total capacity of wastewater generated in 10 years from December 27 2017.

(II) The ratio of the treatment of animal excreta for regenerated energy for animal farms keeping 20 to 2,000 pigs or 40 to 500 cattle will be 5% of the total capacity of wastewater generated in 8 years and 10% of the total capacity of wastewater generated in 12 years from December 27 2017.

The aforementioned capacity of wastewater generated refers to the capacity of wastewater generation stated in the permission certificate (document) or the wastewater or sewage management plan. If the exact number of herds being kept falls below the number stated in the registration, the animal farms may present the actual number of herds being kept to the competent authorities of the municipality or county (city) for recognition and approval of the total capacity of wastewater permitted for generation.

Livestock industry as stated in subparagraph (II), Paragraph II that have taken measures for the treatment of animal excreta for regenerated energy as stated in Paragraph I prior to the amendment to this Regulation on December 27 2017 could have the ratio of the treatment of animal excreta for regenerated energy combined in the calculation.

Article 47: In order for tap water treatment facilities to maintain a normal supply of tap

water, when the Central Weather Bureau issues a warning for torrential rain or when a natural disaster occurs, and the concentration of suspended solids in the source water exceeds 2,000 milligrams/liter or the turbidity exceeds 2,000 NTU, subsequently preventing wastewater treatment facilities from operating normally, emergency response measures shall be taken and the wastewater shall be discharged directly.

Tap water treatment facilities shall include the emergency response measures stated in the foregoing paragraph in the pollution control plan approval document or permit (document), and shall proceed according to the following rules:

Ⅰ. The settling pond and sludge thickener shall be cleaned and cleared first.

Ⅱ. Downstream water users and the local competent authority shall be notified of the discharge in advance.

Ⅲ. A daily inspection and record of the turbidity and suspended solid concentration of the source water and the suspended solid concentration of the effluent shall be made during the period of discharge. These records shall be kept on file for five years as a reference.

If the emergency response measures taken by the tap water treatment facilities result in damage or accumulation of sludge, the tap water treatment facilities shall be responsible for clean-up or repair.

Article 48: Dining enterprises or tourist hotels that provide dining services shall install grease traps to remove grease from dining wastewater.

For dining enterprises or tourist hotels that provide hot spring bathing services, pure hot spring wastewater generated from large pools of existing facilities and the bathing facilities of newly-established structures shall be collected and treated separately from other wastewater.

The pure hot spring wastewater in the foregoing paragraph shall be passed through equipment to filter hair and suspended solids. However, slurry spring water is not subject to this restriction.

Apart from water temperature, when other water quality items for treated effluent in the foregoing paragraph surpass effluent standards but do not surpass the water quality values of the source water, the treated effluent may be discharged into the surface water body of the springhead.

Article 49: The grease trap and filters for hair and suspended solids installed by dining enterprises or tourist hotels shall be cleaned and serviced regularly. A record shall be made of the time and method of cleaning and servicing. This record shall be kept on file for three years as a reference.

The design and technical specifications of the grease traps in the foregoing paragraph shall conform to regulations for building sewage treatment facilities.

Article 49-1 For the enterprise operating materials are the organic matters in pollutant items as stated in the Groundwater Pollution Control Standards, the facilities of storing and transporting the foregoing materials shall adopt the proper leak-proof materials by checking their leakage potential, and implement regular inspection to prevent the pollution in soils and groundwater.

Those regular patrol and investigation pursuant to the foregoing paragraph shall be recorded and preserved for three years for subsequent reference.

Article 49-2 For the enterprise treating construction produced soils such as sludge or soil with more than 30% water content, bentonite yielded from the diaphragm wall etc., the enterprise shall make a daily record for the access situations of transporting vehicle of the foregoing construction produced soils, soil types of treatment, accepted quantity and

treatment quantity, and preserved for three years for subsequent reference.

Article 49-3 In case that deposit of sludge/silt is visible at the bottom of surrounding ditches and discharge pipeline, where the discharge enters a water body and the surrounding environment while construction activities take place at a construction site, the owner of the construction project shall be responsible for the cleaning, or the deposit of materials shall be cleaned in three days as ordered by the competent authority.

The spent or spilled oil, lubricants and diesel fuel from construction machines, vehicle servicing and/or maintenance shall be collected and contained in an appropriate container for treatment by the owner of construction project. These materials shall not be discharged or allowed to overflow through/with wastewater or sewage or runoff wastewater to outside of the operation environment.

For the cleaning of deposit of sludges and the collection and treatment of the spent oil mentioned in the foregoing two paragraphs, the owner of the construction project shall record the time and method of cleaning, collection and treatment for every occurrence. The records and document of proof for proper treatment shall be kept at the construction site for reference until the construction is completed and the control under this Act is lifted by the municipality, county or city competent authority.

Article 49-4 If the enterprises of the industry are clinics with the installation of beds or benches for dialysis (hemodialysis) (hereinafter referred to as “dialysis clinics”), they shall, prior to the commencement of operation, present a plan for the management of wastewater or sewage to the competent authorities of the municipality or county (city) for approval and proceed as approved before they could discharge wastewater or sewage. Prior to the approval of the wastewater or sewage management plan, competent authorities of the municipality or county (city) shall conduct an on-site inspection and study.

Wastewater or sewage from dialysis clinics may be treated by the sewage system of the building. The wastewater or sewage management plan shall contain particulars in conformity to the following requirements:

Basic information.

Information on the source of water supply and capacity of consumption, the generation, treatment and discharge of wastewater or sewage and sludge.

The outfall.

Statement of undertaking on content of the revocation of the water pollution prevention plan or permission certificate (documents) already granted.

The dialysis clinics may elect to modify the wastewater or sewage management plan, and shall proceed to the following procedure by petitioning with the competent authorities of the municipality or county (city) for approval, and proceed as approved. Where necessary, the competent authorities of the municipality or county (city) shall conduct an on-site inspection and study for confirmation prior to the change:

For modification of the particulars specified in subparagraph (I) of the previous paragraph, petition for the change within 30 days from the day after the change. If prior approval of the competent authority is necessary, proceed within 30 days after the approval.

For modification of the particulars specified in subparagraph (II) of the previous paragraph, petition for the change prior to proceeding. For modification of the particulars specified below, proceed within 30 days from the day after the change:

The facilities for the measurement and testing of the capacity of wastewater or sewage and sludge, the method of measurement, calibration and maintenance.
If the excessive capacity is permitted for commissioning for treatment, the capacity of wastewater or sewage permitted for commissioned treatment.
The replacement of obsolete components of the wastewater or sewage treatment facility, and the specification condition and function shall be relevant with the plan previously approved.
If only the components of wastewater or sewage are petitioned for change, the subsidiary tools and equipment.
Petition in advance is required for changes in the particulars specified in subparagraph (III) of the previous paragraph.
Dialysis clinics that have acquired the water pollution prevention plan or permission certificate (document) but the wastewater or sewage management plan has not yet been approved by the competent authorities of the municipality or county (city) shall proceed with the particulars previously approved. Upon approval of the wastewater or sewage management plan by the competent authorities of the municipality or county (city), they may petition for revoking the water pollution prevention plan or permission certificate (document).
Dialysis clinics that have acquired the water pollution prevention plan or permission certificate (document) could be exempted from the petition for making change or extension of the water pollution prevention plan or permission certificate (document) and proceed to the application for the permission of approval for the wastewater or sewage management plan as stated in paragraph I.
The wastewater or sewage management plan of dialysis clinics shall be submitted online for approval via the Internet from the day designated by the competent authority at the national level.

Article 49-5 Livestock enterprises keeping 20 to 200 herds and acquired registration certificate after the amendment to this Regulation on December 27 2017 shall present the wastewater or sewage management plan to the competent authorities of the municipality or county (city) for approval before the commencement of operation that discharges wastewater or sewage.
The competent authorities of the municipality or county (city) shall conduct an on-site inspection and study before approving for the revocation of the wastewater or sewage management plan.
Livestock enterprises keeping 20 to 200 herds and acquired registration certificate before the amendment to this Regulation on December 27 2017 shall comply with the following and present the wastewater or sewage management plan by relevant deadlines in accordance with the procedures specified in the previous paragraph:
Livestock enterprises keeping 100 to 200 pigs: completed by June 30 2019.
Livestock enterprises keeping 20 to 100 pigs: completed by June 30 2020.
The wastewater or sewage management plan as stated in the previous two paragraphs shall contain the following:
Basic information.
The information on the source of water supply and consumption capacity, the generation of wastewater or sewage and sludge, the treatment and discharge.

The outfall.

The ratio of the treatment of animal excreta for regenerated energy in compliance with the requirement in Article 46-1.

The wastewater or sewage management plan shall be submitted online via the Internet or may be submitted in hard copy at the consent of the competent authorities of the municipality or county (city).

Article 49-6 In the event of change in the particulars specified from subparagraphs (I) to (III) as stated in the wastewater or sewage management plan in paragraph III of the previous article, livestock enterprises keeping 20 to 200 pig shall proceed as follows in presenting the revised wastewater or sewage management plan to the competent authorities of the municipality or county (city) by the designated deadline, and proceed as approved. Where necessary, the competent authorities of the municipality or county (city) shall conduct an on-site inspection and study before approval:

For modification of the particulars specified in subparagraph (I), paragraph III of the previous article shall be petitioned within 30 days from the day after the change, or, if approved by the competent authority, within 30 days after the approval.

For modification of the particulars specified in subparagraph (II), paragraph III of the previous article, petition in advance is required. For modification of the particulars specified below, petition within 30 days from the day after the change:

The facilities for the measurement and testing of the capacity of wastewater or sewage and sludge, the method of measurement, calibration and maintenance.

If the excessive capacity is permitted for commissioning for treatment, the capacity of wastewater or sewage permitted for commissioned treatment.

The replacement of obsolete components of the wastewater or sewage treatment facility, and the specification condition and function shall be relevant with the plan previously approved.

If only the components of wastewater or sewage are petitioned for change, the subsidiary tools and equipment.

Collection sac or storage tanks for anaerobic methane.

Petition in advance is required for changes in the particulars specified in subparagraph (III) of the previous paragraph.

Article 49-7 Livestock enterprises keeping 20 to 200 pigs that commissioned other enterprises with installation of anaerobic fermentation and power generators fueled by methane under government subsidy for the treatment of animal excreta may apply for approval of the application for wastewater or sewage management plan or modification of related requirement in accordance with plan of the competent authority at national level for subsidy of the regional governments.

The competent authorities of the municipality or county (city) shall, upon passing the completion of work, include the content of the treatment of animal excreta for regenerated energy plan as an integral part of the wastewater or sewage management plan in accordance with the requirement of the plan specified in the previous paragraph, and notify relevant livestock enterprises to confirm the particulars and approve or replace their wastewater or sewage management plan.

Article 49-8 Power plants using coal as fuel shall note the following with effect on January 1 2018 and keep the record for 3 years:
The source of each lot of coal supply and the total quantity of mercury contained in the coal.
The quantity of fuel coal consumption daily or each dispensing and the monthly quantity.
The total quantity of mercury as stated in paragraph II could be based on the information on acceptance of purchase or data analysis findings.
Power plants using coal as fuel shall follow the designated format of the competent authority at the national level in declaring the source of coal supply in the purchase and the total quantity of mercury contained in the coal covering the period of the last 6 months and the monthly consumption volume of fuel coal with the competent authorities of the municipality or county (city) online via the Internet by the end of January and July each year.
If the total quantity of mercury contained in the coal in each shipment of purchase as specified in paragraph I exceeds 0.45mg/kg on dry basis, or the weighted average quantity of total mercury contained in the fuel coal purchase in the previous year exceeds 0.3mg/kg on dry basis, relevant enterprises shall present a plan for the management of total mercury quantity subject to the approval of the competent authorities of the municipality or county (city), and proceed as approved.
The weighted average quantity of mercury contained in the fuel coal from purchase will be calculated under the following equation:
(Σ▒〖(M_i×C_i)〗)/(Σ▒M_i)
i：The lot number of coal fuel purchase.
Mi: the quantity of fuel coal in each shipment of purchase.
Ci: The total quantity of mercury contained in each shipment of fuel coal from purchase.
The plan for the management of the total quantity of mercury as stated in the previous paragraph shall contain the following:
Basic information.
The characteristics of wastewater or sewage discharge.
The objective and schedule for the management of the total quantity of mercury.
The action plan and content for the management of the total quantity of mercury.
The methods for the evaluation and validation of the result of the management of total quantity of mercury.

Article 49-9 If any of the following is applicable to wafer foundry and semiconductor manufacturing, optoelectronic materials and components manufacturing, PCB manufacturing, electroplating and metallic surface treatment industry, the wastewater from production process shall be collected and treated through a split-flow process:
The invitation to tender for work was unaccomplished before December 27 2017.
Introduction of new production process and facility for the treatment of wastewater or sewage after December 27 2017.
The competent authority has discovered by-pass discharge that required improvement.
Violation of this law and ordered by the competent authority for

discontinuation of operation or business, or declare for the discontinuation of operation or business for improvement within stipulated period and petition for reinstatement of operation or business.
The requirements for the collection and treatment of wastewater from split-flow process as stated in the previous paragraph are specified below:
Wafer foundry and semiconductor manufacturing, optoelectronic materials and components manufacturing, and PCB manufacturing:
Wastewater from grinding or cutting.
Fluoric series wastewater (with F element).
Organic wastewater containing TMAH.
Cyanogen series wastewater (containing Cn element).
Chromium series wastewater (containing Cr element).
Cooper series wastewater (containing Cu element).
Electroplating and metallic surface treatment industry:
Cyanogen series wastewater (containing Cn element).
Cooper series wastewater (containing Cu element).

Article 50: Enterprises or sewage systems that establish the following water pollution control facilities and pipelines shall clearly mark the name of the enterprise or sewage system and the name of the transported fluid and its direction of flow, and the mark thereof shall conform to the contents approved in water pollution control plan or permit (document):
Ⅰ. Pipelines and treatment units for water, wastewater or sewage collection, pre-treatment, treatment, backflow, discharge, and storage.
Ⅱ. Emergency pipeline for rerouting.
Ⅲ. Storage tank units and pipelines for storing, diluting, and recycling.
Ⅳ. Independent cumulative water measurement facilities and independent electricity meter for wastewater or sewage treatment/pre-treatment facilities.
Ⅴ. Pipelines and treatment units for sludge collection, treatment and storage.
If competent authority reveals that an enterprise or sewage system fails to mark according to the stipulations as stated in foregoing paragraph, competent authority shall order it to make correction within a time limit, enterprise or sewage system who fails to complete correction within the given time limit shall be punished pursuant to the violation of these Regulations.
Article 51: If water is taken from a water body by an enterprise or sewage system for cooling or circulation purposes and qualifies as non-contact cooling water, the enterprise or sewage system may discharge the water into the ground water body from where it was originally taken when all water quality items, except for water temperature and hydrogen ion concentration index, surpass effluent standards but do not surpass the water intake quality values.
Article 52: For circumstances defined in Paragraph 3, Article 18-1 of this Act occurring to an enterprise or sewage system, where discharge is rerouted for a major treatment facility recognized by rescue workers or competent authority due to emergency, the times that the rerouting starts and ends, cause, quantity and reporting time shall be recorded and a written report for the actions taken during the rerouted discharge shall be submitted to the municipality, county or city competent authority and the issuing authority in twenty days.
The foregoing written report shall contain the following items:
Ⅰ. The cause and time of the said rerouted discharge;
Ⅱ. The recipient, method and time of the correspondence;
Ⅲ. The response action during the said rerouted discharge;

Ⅳ. Personnel involved in the action(s) and their tasks;
Ⅴ. The monitoring result for the water body in the said rerouted discharge;
Ⅵ. Follow-up response and improvement; and
Ⅶ. Others
Article 53: The discharge point of an enterprise or sewage system shall comply with the following rules:
Ⅰ. The discharge point shall be positioned outside the work environment, on the ground before entering the receiving water body.
Ⅱ. There shall be a pathway outside the work environment to allow sampling personnel to access to the discharge point; a sampling platform with a size of 1 square meter or greater shall also be erected.
Ⅲ. Independent cumulative water measurement facilities shall be established exclusively for measuring effluent quantity. However, discharge points for runoff wastewater are not subject to this restriction.
Ⅳ. A sign shall be erected and marked with coordinates.
Ⅴ. Direct sampling shall be possible. Installation of a facility that prevents, hinders or refuses the access of competent authority for direct sampling is prohibited without the approval of the competent authority.
Ⅵ. If the discharge point is a hidden well, the effluent shall be mixed evenly with the well water.
An alternative procedure approved by the competent authority may be implemented for an enterprise or sewage system that has difficulty in realizing the requirements in Subparagraph 1 and Subparagraph 2 of the foregoing paragraph. The discharge point of an enterprise or sewage system that is in any of the circumstances specified in Paragraph 1, Article 56, or is revealed by a competent authority investigation to have rerouted discharge, or that conducts non-continuous discharge of wastewater or sewage as designated by the competent authority, shall be established at a location outside of the work environment designated by the competent authority.
Article 54: Enterprises or sewage systems that discharge wastewater or sewage into the sea using a jointly managed sea discharge pipe shall jointly establish a discharge point at an appropriate location between the wastewater or sewage treatment/pre-treatment facilities and the sea discharge pipe. If an enterprise or sewage system does not jointly operate wastewater or sewage treatment/pre-treatment facilities, such enterprise or sewage system shall establish separately its own discharge point at an appropriate location between the peripheral boundary of the enterprise or sewage system and the sea discharge pipe.
For an enterprise or sewage system for which the wastewater or sewage is discharged through an attached pipe along irrigation or drainage channels of various levels, the entrance point for the wastewater or sewage entering the receiving water body shall be installed at the discharge point. For those for which the wastewater or sewage is discharge through a jointly operated discharge pipeline, a sampling orifice shall be installed at a proper location between the operating environment of the said enterprise or sewage system and the jointly operated pipeline.
The foregoing article shall govern for the installation of the sampling orifice. The wastewater or sewage discharged from the sampling orifice is considered as rerouting discharge.
For those having been operating with jointly operated pipeline before the promulgation of amendment of these Regulations, the installation of the sampling orifice and the change of permit (document) for water pollution control shall be completed no later than March 31 2016.

2016.

Article 55: Article 28, Paragraph 4 shall apply to the erection of a sign for the discharge point.

Article 56:

If any of the following applies to industrial or sewage system, apply with the competent authorities of the municipality or county (city) and complete the installation of water capacity automatic monitoring facility, water quality automatic monitoring facility, CCTV facility, online transmission facility (hereinafter referred to as the “automatic monitoring facility”), independent electronic electric meter (hereinafter referred to as the “electronic watt hour meter”) for the wastewater or sewage treatment/pretreatment facility. Further to the electronic electric meter, maintain normal online transmission function with the competent authorities of the municipality or county (city):

The competent authority has discovered by-pass discharge.

Violation of this law and ordered by the competent authority for discontinuation of operation or business, or declare for the discontinuation of operation or business for improvement within stipulated period and petition for reinstatement of operation or business.

Massive discharge of pollutants that the competent authority deems critical in affecting the quality of the water body in the surrounding area.

The content of wastewater or sewage contains hazardous substances to health announced under this law and there is a concern of the competent authority that these substances are harmful to public health.

In the period of the last two years prior to the day on which the application for water pollution prevention plan or permission certificate (document) was submitted that the same address and location or land section has the record of violation of this law and ordered by the competent authority to discontinuation of operation or business, or declare for the discontinuation of operation or business in the duration of making improvement, or found practicing by-pass discharge.

The function of the wastewater or sewage treatment/pretreatment facility is inadequate.

If industrial or sewage system found in violation of the offense as specified in subparagraph (I) of the previous paragraph and the outfall is located inside the operation environment, the parties concerned shall apply with the competent authorities of the municipality or county (city) and complete the installation of signboard for the automatic display of the capacity of flow discharge and water quality (hereinafter referred to as the “display signboard”), and keep normal online transmission function with the competent authorities of the municipality or county (city).

For industrial or sewage system found in violation of the offense specified in subparagraphs (I) to (IV), or (VI), paragraph I, which are known as material breach of law below, and as specified in subparagraph (V), which is known as compulsory installation below. The discharge of wastewater is prohibited for failure to complete the installation by designated deadline as specified in paragraphs I and II. The discharge of wastewater is prohibited before the installation is completed after obtaining the permission certificate (document) issued by the competent authority.

The deadlines for paragraphs I and II are shown below:

For material breach of law, the duration shall be 180 days from the day on which the ruling or written notice of the competent authority was delivered. If any of the following applies, comply accordingly:

Installation shall be completed before reinstatement of operation is

installation shall be completed before reinstatement of operation is permitted as in the case of applying for reinstatement of operation or business.
Installation shall be completed within 180 days from the day of previous punitive action as in the case of administrative remedy against the original ruling.
Installation under compulsory action shall be completed within 180 days from the day on which the application for water pollution prevention plan or permission certificate (document) was submitted.
For enterprises petitioned for administrative remedy against the original ruling as stated in subparagraph (V), paragraph I, the installation under compulsory action shall be governed by subparagraph (II) of the previous paragraph.

Installation cannot be completed by the aforementioned deadline as in the case of material breach of law or under compulsory action may petition with the competent authorities of the municipality or county (city) for an extension of the deadline within 14 days after the previous deadline except for situations under part 1 in subparagraph (I) of paragraph I, and complete the installation by the new deadline approved by the competent authorities of the municipality or county (city).
The extension granted by the competent authorities of the municipality or county (city) for the completion of installation shall not exceed 180 days accumulatively.
If the ruling or written notice as stated in paragraph V is issued by the competent authority at the national level, those in material breach of law shall apply with the competent authorities of the municipality or county (city) for the installation or extension for the installation of automatic monitoring facility electronic electric meter and display signboard.

The facilities required in paragraph I or paragraph II for installation, except the online transmission facility, display signboard, electronic electric meter, and the monitoring devices installed at the outfalls, and the outfalls included as an integral part of the sewerage, may be waived if normal operation could last for more than 365 days accumulated from the day on which the report on confirmation of the automatic monitoring facility was presented to the competent authorities of the municipality or county (city) for confirmation at the time of installation without any incident as stated in paragraph I and the approval of the competent authorities of the municipality or county (city) with the presentation of the written confirmation on normal operation.

Article 57: The automatic monitoring (surveillance) facilities, electronic watt hour meter and display board installed by an enterprise or sewage system in major violation or mandatory installation pursuant to the foregoing article shall proceed according to Table 2, and maintain normal operational functions thereof:
An enterprise or sewage system that in major violation of installing the display board pursuant to Paragraph 2 of foregoing article, if malfunction occurs in display board, it shall immediately report to the municipality, county or city competent authority by phone or by fax, and record the malfunction time, the report spokesperson, the name and job title of call receiver. During the period of malfunction or calibration maintenance, such enterprise or sewage system shall publish the monitoring data in an alternative way agreed by municipality, county or city competent authority.
If the malfunction of display board mentioned in foregoing paragraph cannot restore normal function within twenty four hours, an enterprise or sewage system shall report to the municipality, county or city competent authority on the repair measure planned to be taken

municipality, county or city competent authority on the repair measure planned to be taken and the completion date thereof.

Article 57-1 When the water volume in wastewater or sewage treatment, discharge or commissioned treatment transportation of an enterprise or sewage system is found in an investigation by the competent authority to fail to comply with the approved discharge frequency and time, the competent authority may order an enterprise or sewage system to submit relevant explanation and supporting information within a designated time.

In the event that the enterprise or sewage system fails to submit relevant explanation and supporting information within the given deadline, or the competent authority determines that the submitted data do not justify the incompliance, the competent authority may order the enterprise or sewage system in question to install automatic water volume monitoring facilities and online transmission facilities at designated positions and time, and also maintain the normal online transmission function links with the municipality, county or city competent authority.

The facilities installed pursuant to the foregoing paragraph may be exempted with the approval of the municipality, county or city competent authority, provided that they maintain normal functions for accumulated 365 days or more starting from the day on which the water volume automatic monitoring facilities confirmation report submitted upon installation has been examined and confirmed by municipality, county or city competent authority, and the frequency, time, treatment, discharge or commissioned treatment transportation has been registered according to the approval.

Article 58: (Deleted)

Article 59: An enterprise or sewage system that adopts wastewater or sewage treatment/pre-treatment facilities and that exhibits one of the following circumstances shall perform function testing by the deadline stipulated by the competent authority:

Ⅰ. Circumstances as described in Article 56, Paragraph 1, Subparagraph 1.

Ⅱ. Irregular operating parameters.

Ⅲ. Irregular balance in water quality and quantity.

Ⅳ. A concern of unapproved diluting processes.

Ⅴ. A concern of insufficient functions of the wastewater or sewage treatment/pretreatment facilities.

Upon completion of the function testing in the foregoing paragraph, a function test reports of the said enterprise or sewage system shall be submitted; and the change of the approval document(s) for the pollution control plan or permit (document) shall be carried out as required. The function test report that requires the signature of an engineer shall be done so by the engineer who participated in such function test jointly.

For an enterprise or sewage system for which the function test result indicates that the water quality fails to meet the control criteria set forth in the Act, reduction or termination of production or service, or other response measure(s) shall be enforced as appropriate.

Article 60: An enterprise or sewage system shall conform to the following rules when conducting function testing pursuant to the foregoing article:

Ⅰ. Testing on wastewater or sewage treatment/pre-treatment facilities or sludge treatment facilities shall be based on the maximum daily wastewater or sewage output approved by the issuing authority. However, those whose operating conditions cannot reach the approved daily maximum output of sewage or wastewater, the testing shall be based on the regular test reporting or the actual routine maximum output of wastewater or sewage.

Ⅱ. The duration of function testing shall be five or more working days. The competent authority shall be notified three days prior to function testing.

The following shall apply to the content of the work required on the day of the function

testing in the foregoing paragraph, subparagraph 2:

Ⅰ. The quantity of the original wastewater or sewage and the treated wastewater or sewage shall each be measured once; the water quality of the original wastewater or sewage shall be tested once; and the operating parameters for each facility unit shall be gauged once.

Ⅱ. Testing method for treated water quality:

(Ⅰ) Those that conduct 24-hour continuous discharge shall take a sample once every four hours for a total of six samples; every two consecutive samples shall be mixed to make one sample. After mixing, a total of three samples will be tested and the average of the three calculated.

(Ⅱ) Those that conduct 24-hour non-continuous discharge shall take four daily samples spread evenly over the period of discharge; every two consecutive samples shall be mixed to make one sample. After mixing, a total of two samples will be tested and the average of the two calculated.

Ⅲ. The water quality items that should be tested during function testing are based on the application and reporting items for each industry type as listed in Table 1. However, those for whom the competent authority has designated other items shall proceed pursuant to the designated items.

Ⅳ. An environmental analysis laboratory that has been issued a permit by the central competent authority shall be commissioned to perform sampling and testing of water volume and water quantity.

Ⅴ. Units participating in the function testing shall include the production line operator, treatment process operator, sampling unit, and testing unit. For those that require the signature of a professional engineer, the signing engineer shall take part in the testing.

Ⅵ. Those with two or more wastewater or sewage water sources and two or more wastewater or sewage treatment/pre-treatment facilities shall conduct volume measurements and testing on each separate water source and each set of treatment/pre-treatment equipment.

Article 60-1: (Deleted)

Article 61: An enterprise or sewage system that discharges wastewater or sewage into an irrigation ditch shall first obtain the approval of the irrigation ditch management agency or the owner before discharging.

When the management agency or owner in the foregoing paragraph refuses the enterprise or sewer system's request to discharge wastewater or sewage, the competent authority shall be notified at the same time.

Article 62: An enterprise or sewage system that discharges, stores or dilutes wastewater or sewage; injects wastewater or sewage into a groundwater water body; conducts soil treatment; reroutes discharge without permission; or operates non-compliant pipelines or facilities shall seal or remove the said pipelines or facilities within the improvement deadline ordered by the competent authority.

Article 63: For an enterprise or sewage system that discharges wastewater or sewage, when there is visible sludge deposit on the bottom of drainage pipes or the water body entry point and surrounding area, the enterprise or sewage system shall perform clean-up or clear the deposits within the deadline as ordered by the competent authority.

Article 64: When an enterprise or sewage system belongs to two or more industry types or belongs to one industry type but operates different production processes, the mixing, treatment and discharge of wastewater shall comply with the effluent standards for each industry type. When identical control items have different control limits, the stricter shall govern.

govern.
When the quantity of wastewater from one industry type is 75% or more of the total wastewater quantity from all industry types and independent cumulative measuring equipment has been installed, an application may be filed to the competent authority for the use of the effluent standards of said industry type as the basis for all control items.
The proportion of wastewater as stated in the foregoing paragraph shall be calculated according to records starting from six months prior to the date of application.
Article 65: An enterprise or sewage system shall install, calibrate and maintain cumulative water measurement facilities according to the brand specifications. Calibration shall be performed at least once every year for brands for which the frequency is not specified.
Regarding the specifications of the cumulative water measurement facilities in the foregoing paragraph, the margin of error within the range of measurable flow shall not exceed +/-5%. However, non-contact cooling water not used for circulation whose flow is calculated by motor rotation is not subject to this restriction.
When an enterprise or sewage system performs calibration and maintenance of cumulative water measurement facilities, the date of calibration and maintenance, water quantity during the calibration and maintenance, and the results of calibration and maintenance shall be recorded and kept for five years. The recording of the water quantity during the calibration and maintenance shall be performed in the way approved by the competent authority.
Should any of the following occurs during the audit on an enterprise or sewage system, the competent authority may estimate the quantity of wastewater or sewage discharge based on actual measurements, certification of water resources or water quantity equilibrium diagram:
Ⅰ. The cumulative water measurement facilities are abnormal;
Ⅱ. The wastewater or sewage discharge is far different from the quantity shown on the permit; or
Ⅲ. The cumulative water measurement facilities are not calibrated or maintained as required in Paragraph 1.
Article 66: If an enterprise or sewage system has difficulty in establishing independent cumulative water measurement facilities according to these Regulations, they may, with the approval of the competent authority, employ water measurement facilities or a water measurement method that provides sufficient proof of water quantity.
When the automatic continuous recording is employed in the facilities in the foregoing paragraph, the enterprise or sewage system shall make recordings based on the design specifications and frequency of the measurement equipment. When facilities employ non-automatic continuous recording, the enterprise or sewage system shall make a daily record of cumulative water quantity and the number of times the quantity measurement is taken. These records shall be kept on file for five years as a reference.
Article 67: The following shall govern for the management method for sewage generated from office space, employee housing, activity spaces, and other buildings within the work environment:
I. Those that perform combined treatment of wastewater and sewage shall proceed according to the industrial wastewater management method.
II. For those that separate wastewater and sewage for treatment, sewage shall be treated according to the management method for building sewage treatment facilities and a discharge point shall be established.
The discharge point as stated in the foregoing paragraph, Subparagraph 2, shall be handled pursuant to Article 53.

Article 68: When an enterprise or sewage system is penalized by the competent authority with an order to suspend or terminate work or business, the statutory responsible person of the enterprise, or the owner, user or manager of the sewage system shall treat and discharge the remaining wastewater or sewage in the worksite pursuant to this Act.

Article 69: When wastewater or sewage from an enterprise or sewage system's facilities, units, pipelines, and ditches for collection, treatment, or discharge spills onto the worksite, the spill shall be collected and treated.

An enterprise or sewage system shall record the date, time, water quality, status of collection and treatment, and causes of the spill; these records shall be kept on file for three years as a reference.

Article 70: When the worksite of an enterprise has been designated by the sewage management agency as an area or site that requires an independent sewage system, the enterprise shall comply with this Act and all relevant regulations that enterprises should abide by.

Chapter 10-1 Plan for Implementing Liquor and Fiber Digestate as Fertilizer for Farmlands

Article 70-1 For using liquor and fiber digestate as fertilizer for farmland, present the plan of using liquor and fiber digestate as fertilizer for farmland (hereinafter referred to as the "Liquor and fiber digestate using as fertilizer for farmland plan") to the competent authority of agriculture for application. Upon approval, report to the competent authorities of the municipality or county (city) for reference filing and proceed in accordance with the content of registration. The following requirements shall be satisfied when using liquor and fiber digestate as fertilizer for farmland:

I. The facility for anaerobic fermentation of animal excreta shall be able to accommodate the methane generated and at least 10 days shall be allowed for the anaerobic fermentation of livestock enterprises keeping non-herbivore and at least 5 days for livestock enterprises keeping herbivore, with routine tracking of the excretion of liquor and fiber digestate. The competent authority of agriculture may determine the number of days for anaerobic fermentation on separate basis after reviewing the result and the number of days for anaerobic fermentation so determined shall prevail.

II. The site of using liquor and fiber digestate as fertilizer (hereinafter referred to as the "farmland for fertilization") will not be owned by the users of liquor and fiber digestate as fertilizer. The users shall enter into an agreement of a statement of consent with the owner of the farmland for fertilization, the managers, or the users on the joint pursuit of the plan of using liquor and fiber digestate as fertilizer for farmland.

as fertilizer for farmland.

III. The liquor and fiber digestate shall be fully diffused into soil 1 hour after applying and no residual liquor shall be left on the surface of farmland except the aforementioned fertilizer is mixed with irrigation water for furrow or flood irrigation.

IV. Liquor and fiber digestate generated from aeration after anaerobic fermentation could be used for irrigation of farmland with full quantity as fertilizer in which case a buffer quantity shall be reserved in response to the period of suspended irrigation. The buffer quantity shall be sufficient for at least 10 days of irrigation and could be supplied from the anaerobic fermentation facility, aeration facility (only for a repeated process of aeration) or other storage facility. If the quantity of out from anaerobic fermentation exceeds the limit specified in subparagraph (I), include as buffer quantity.

In reviewing the plan of using liquor and fiber digestate as fertilizer for farmland, the competent authority of agriculture shall invite the competent authorities of environmental protection of the municipality or county (city) to take part in the review. Where necessary, an on-site inspection and study shall be taken. The following items shall be subject to review in the inspection of the quality of the liquor and fiber digestate:

I. The total quantity of liquor and fiber digestate for irrigation in unit area.

II. The anaerobic fermentation facility, aeration facility (only for a repeated process of aeration), storage facility and the design capacity of the facilities.

III. The frequency of the output of liquor and fiber digestate and the method of transportation or delivery.

IV. The site and the area of the farmland for irrigation.

Article 70-2: Those that implement liquor and fiber digestate as fertilizer for farmlands shall submit the following contents and documents of the plan for implementing liquor and fiber digestate as fertilizer for farmlands to competent authority of agriculture for review:

Ⅰ. For livestock enterprises, a photocopy of livestock ranch registration certificate or animal raising registration certificate; for operators of livestock excrements resource treatment center (or biogas recycling center), photocopies of relevant permit, registration, license or other supporting documents issued by its industry competent authority.

II. Liquor and fiber digestate test report, which shall include the data of hydrogen ion concentration index, electric conductivity, total nitrogen, total phosphorous, copper and zinc etc.

III. The document(s) that proves the ownership of fertilized farmland; in case that the fertilized farmland is not owned by those that implement liquor and fiber digestate as fertilizer for farmlands, those concerned shall provide the photocopy of the contract or agreement for the plan for implementing liquor and fiber digestate as fertilizer for farmlands jointly signed by and between the owner of the fertilized farmland and the manager or user.

IV. The land number of the fertilized farmland, photocopy of land registration transcript, the size of planting and type of crops planted.

V. The test report on the water quality background values of the groundwater at the area of the fertilized farmland, which shall include electric conductivity, ammonia nitrogen (NH4+-N), nitrate nitrogen etc., and the coordinates of groundwater well(s). The groundwater well(s) may be the dug well(s) or groundwater water monitoring well(s) located in the area of fertilized farmland.

VI. The test report on the soil quality background values of the fertilized farmland, which shall include conductivity of extracted fluids from saturated soil, copper, zinc and soil texture, and the locations where samples are taken shall be marked on a map included in the report.

VII. The method and route used for the transportation (shipping) of liquor and fiber digestate.

VIII. The fertilization operation, which shall include quantity of liquor and fiber digestate to be applied, the method and frequency of application, purpose, format of fertilization record and measure(s) to be taken in the event of suspended application of liquor and fiber digestate for farmland fertilization.

IX. The commitment to monitor the quality of groundwater and soil. The items to be monitored are the same as those in the groundwater and soil quality background value test reports mentioned in Subparagraphs 5 and 6 above, except the soil texture; The monitoring shall be carried in accordance with the frequency specified in the approved plan for implementing liquor and fiber digestate as fertilizer for farmlands.

Provided that any of the following occurs in the monitoring of groundwater and soil quality as mentioned in Subparagraph 5, 6 and 9 in foregoing paragraph, the respective requirements shall be observed:

I. When the groundwater ammonia nitrogen in fertilized farmland reaches to the groundwater pollution monitoring standards, the groundwater background value at the upstream and downstream range of fertilized farmland shall be monitored.

II. If the flow direction of groundwater in fertilized farmland is not clear,

II. If the flow direction of groundwater in fertilized farmland is not clear, or the groundwater level of the dug well located in the area of fertilized farmland is too low and indicating the shortage, the monitoring data of monitoring well of the nearby environmental protection competent authority, water conservancy competent authority, local farm irrigation association or experts may be taken as supporting data.

III. For the same user implementing liquor and fiber digestate as fertilizer for farmland and applying them to more than two neighboring farmlands, the groundwater quality thereof may be determined by one of the monitoring value of the fertilized farmland; for soil quality, the mixture of individual soil samples in individual irrigation area may represent the average soil concentration value of such area.

Those that implement liquor and fiber digestate as fertilizer shall submit groundwater and soil quality test report to competent authority of agriculture and local environmental protection competent authority for reference within one month after finishing it, and keep it for five years.

Article 70-3: The plan for implementing liquor and fiber digestate as fertilizer for farmlands is effective for five years. For those that are expected to continue to use the plan after its expiration, an application for extension shall be filed to the competent authority of agriculture in three months starting from six months prior to the expiration. Every extension shall not be longer than five years. Those that file an application for extension pursuant to the foregoing paragraph shall provide required document(s) and content(s) except those specified in Subparagraphs 5 and 6, Paragraph 1 of the foregoing article.

Article 70-4: For the plan for implementing liquor and fiber digestate as fertilizer for farmlands, the review and approval documents shall include the following:

I. Name of the party implementing liquor and fiber digestate as fertilizer for farmland and fertilization operator, address and person in charge;

II. Land number of the farmland related to the fertilization operation, size, quantity of liquor and fiber digestate to be applied, quality of the liquor and fiber digestate, method, frequency and purpose of the fertilization;

III. Date of issuing and expiration date of the plan; and

IV. Other matters required.

Article 70-5 In case of modification of the plan for using liquor and fiber digestate as fertilizer for farmland, the parties concerned shall present the document specify the change and petition with the competent authority of agriculture for the change, and proceed as approved.

The plan for using liquor and fiber digestate as fertilizer for farmland may be change within stipulated time and

designated means:

I. Modification or termination of the agreement or statement of consent in the joint pursuit of the plan of using liquor and fiber digestate as fertilizer for farmland as specified in subparagraph (III), paragraph I in article 70-2 may be made with the presentation of the agreement after the change or photocopy of the agreement for termination to the competent authority of agriculture within 15 days after the day of modification or termination for reference filing.

II. For modification of the particulars stated in subparagraph (I) of the previous article, applying for change within 15 days after the day of change.

III. For modification of the particulars as stated in subparagraph (II) in the previous article, a new round of application is necessary. If the change only involves additional area of farmland for irrigation, and this area falls within 3 km from the farmland previously approved for irrigation, apply for the change before the additional of new area for irrigation.

Article 70-6: For the plan for implementing liquor and fiber digestate as fertilizer for farmlands reviewed and approved by the competent authority of agriculture, those that implement liquor and fiber digestate as fertilizer for farmlands shall suspend the use of liquor and fiber digestate for farmland fertilization in any of the following circumstances:

Ⅰ. The Central Weather Bureau announces a storm or torrential rain warning, from the day of announcement to three days after the warning is lifted; or

Ⅱ. A distinct increase is found in the pollutant indicators in the groundwater quality monitoring results or the soil quality test results reach the limits of the soil pollution monitoring criteria during the use of liquor and fiber digestate for farmland fertilization.

The response measures to be taken in event of suspended use of liquor and fiber digestate for farmland fertilization mentioned in the foregoing subparagraph shall be included in the plan for implementing liquor and fiber digestate as fertilizer for farmlands for review.

Article 70-7: In case that the municipality, county or city environmental protection competent authority detects a failure to operate in accordance with the plan for implementing liquor and fiber digestate as fertilizer for farmlands which is reviewed and approved by the competent authority of agriculture, the competent authority of agriculture shall be informed to ask the enterprise for improvement.

Article 70-8: Should any of the following occurs to those that implement liquor and fiber

Article 70-8: Should any of the following occurs to those that implement liquor and fiber digestate as fertilizer for farmlands and have been provided with the plan for implementing liquor and fiber digestate as fertilizer for farmlands, the plan shall be denunciated by the competent authority of agriculture:

Ⅰ. The contents of the application information are inconsistent with the found fact;

Ⅱ. The farmland fertilization is not performed in accordance with the approved plan;

Ⅲ. The application for change is not filed before the expiration as specified in Paragraph 2 of Article 70-5, and no improvement or resubmission is made within the given deadline as notified by the competent authority of agriculture; or

Ⅳ. Other violation(s) is found and recognized by the competent authority of environmental protection or agriculture as major offense.

Article 70-9: Either of the following will be punished as a violation of these Regulations:

Ⅰ. Violation of Paragraph 2 of Article 70-1 or Article 70-5 for failure to operate in accordance with the plan for implementing liquor and fiber digestate as fertilizer for farmlands reviewed and approved by the competent authority of agriculture; or

Ⅱ. Violation of Article 70-6 for failure to suspend the use of liquor and fiber digestate for farmland fertilization.

Additional punishment may be imposed pursuant to applicable environmental protection regulation(s) for failure to comply with the foregoing paragraph that results in environmental pollution during the fertilization process.

Punishment will be imposed to those who use livestock excrements, liquor and fiber digestate for farmland fertilization without having the plan for implementing liquor and fiber digestate as fertilizer for farmlands reviewed and approved for violation of these Regulations.

In case that part of the livestock excrements are used for farmland fertilization and the others are discharged into a surface water body, or that the discharge to soil or surface water body is found violating the requirements set forth in this chapter, the requirements set forth in this Act shall govern for such discharge to a surface water body or soil.

Article 70-10: The competent authority of agriculture, in issuing the permit for the recycling of animal excreta as fertilizer for irrigation in farmland in accordance with the Regulations Governing Recycling and Reuse of Agricultural Wastes, or approving the plan of using liquor and fiber digestate as fertilizer for farmland in accordance with this Regulation, shall notify competent authorities at all level with the feeding of information on the approval of application, change, and extension.

For permission of using liquor and fiber digestate as fertilizer for farmland or animal excreta for irrigation of farmland for recycling, proceed to irrigation as stated in the approved plan or content from the day the competent authority of agriculture approved the recycled use of liquor and fiber digestate as fertilizer for farmland or animal excreta for irrigation of farmland.

The competent authority of agriculture shall keep record on the monitoring and testing of the execution of the plan of using liquor and fiber digestate as fertilizer for farmland and pass related information to the competent authorities of environmental protection in the municipality or county (city).

Chapter 11 Test Reporting Management

Article 71: The following enterprises or sewage systems can be exempted from handling the test reporting according to these Regulations:

Ⅰ. Gas stations with no attached car wash facilities.

Ⅱ. Construction sites.

Ⅲ. Livestock enterprises raising less than 200 hogs.

Ⅳ. Oil storage sites.

Ⅴ. Enterprises or sewage systems whose wastewater or sewage are connected to public sewage systems.

Ⅵ. Dialysis clinic.

An enterprise or sewage system whose wastewater or sewage is connected to a sewage system other than that stated in the foregoing paragraph, Subparagraph 5, shall submit test reports to the sewage management agency, who shall then compile the reports and deliver them to the municipality, county or city competent authority.

Article 72: The content of the report for an enterprise or sewage system that stores wastewater or sewage shall include the following items:

Ⅰ. Monthly scale of production or services and the production facilities related to the generation of wastewater, sewage, or sludge.

Ⅱ. Water quantity of the original wastewater or sewage and the quantity on the day of testing; the monthly wastewater or pollution source quantity, as well as the monthly quantities of generated and stored wastewater or sewage.

Ⅲ. The location and number of storage facilities.

Ⅳ. Subsequent processing after storage, which shall be reported in accordance with the contents of the applicable pollution control measure requirements.

Ⅴ. The date and method of calibration and maintenance for the automatic fluid level measurement device or measurement method of the storage facilities. Those that have already established independent cumulative water measurement facilities exclusively for measuring water quantity at intake and outflow points are not subject to this restriction.

If the enterprise in the foregoing paragraph is a landfill that returns water seepage to the surface of the landfill, the monthly quantity of wastewater returned to the surface of the landfill shall be reported.

Article 73: The reports from an enterprise or sewage system that employs wastewater or sewage treatment/pre-treatment facilities to treat wastewater or sewage shall include the following items:

Ⅰ. Monthly scale of production or services and the production facilities related to the generation of wastewater, sewage, or sludge.

Ⅱ. Water quality of original wastewater or sewage before or after treatment, and water quantity on the day of testing.

Ⅲ. Monthly quantities for the tap-water source, tap water, generated wastewater or sewage, and water treated by the wastewater or sewage treatment/pre-treatment facilities. The quantities for generated wastewater or sewage shall be reported separately for each different production process and water source.

Ⅳ. The operating method and monthly operating and servicing fees of the wastewater or sewage treatment/pre-treatment facilities.

Ⅴ. The names and monthly usage quantities of all chemical agents used.

Ⅵ. The normal operating parameters of the major treatment units and the largest and smallest values and averages of the operating parameters during testing.

Ⅶ. Monthly amount of electricity consumed as measured by the independent electricity meter for the wastewater or sewage treatment/pre-treatment facilities, and the maintenance and replacement date of such meter.

Ⅷ. Monthly amount of sludge generated, as well as its water content ratio and operating frequency.

Ⅸ. The date and method of calibration and maintenance for the intake water measurement facilities established pursuant to Paragraph 1, Article 12 or measurement method and the monthly readings or measurement values for the facilities.

Article 74: An enterprise or sewage system that employs wastewater or sewage treatment/pre-treatment facilities to treat wastewater or sewage and is in one of the following circumstances, shall submit a report pursuant to the foregoing article and proceed according the following rules:

Ⅰ. Those that use remaining capacity to conduct commissioned treatment on wastewater or sewage that is not generated on site shall include the following items in their report:

(Ⅰ) The monthly treated quantity of self-generated wastewater or sewage and remaining capacity.

(Ⅱ) The industry types for wastewater and sewage received each month and the monthly accumulated amount of wastewater or sewage for commissioned treatment.

Ⅱ. Those that dilute wastewater or sewage shall include the following items in their report:

(Ⅰ) The water quantity and quality of the water used for diluting on the day of testing.

(Ⅱ) Sources of water used for diluting and their monthly quantities.

(Ⅲ) The number and location of diluting pipelines and diluting points.

Ⅲ. The job title and full name of the commissioned operator and a notation of any changes in personnel.

Article 75: An enterprise or sewage system that employs wastewater or sewage treatment/pre-treatment facilities to treat wastewater or sewage and is in one of the following circumstances, shall submit a report pursuant to Article 73 and proceed according the following rules:

Ⅰ. An enterprise or sewage system that is required to collect the runoff wastewater pursuant the regulation stated in Article 8 or Article 11, Paragraph 2 shall report the monthly quantity of runoff wastewater that is collected and treated.

Ⅱ. Reports of enterprises as stated in Article 9 shall include the following items:

(Ⅰ) The monthly quantity of carwash platform generated wastewater that is then treated in a grit chamber.

(Ⅱ) The [illegible]

(II) The distance between the highest monthly fluid level and the highest point on the perimeter of the grit chamber, and the method of measurement.
(III) The maintenance status of the rainwater protection facilities and grit chamber and the quantity of initial rainfall collected and drained into the grit chamber for treatment.
III. A dining enterprise or tourist hotel that provides bathing services shall report the monthly date and method of servicing filters for hair and suspended solids. Those providing dining services shall report the regular monthly date and method of servicing the grease trap.
IV. For the enterprises stated in Article 49, Paragraph 2, which shall report the sludge or soil with more than 30% water content, the monthly transporting vehicle of bentonite yielded from the diaphragm wall, soil types of treatment, accepted quantity and treatment quantity.
Article 76: The report of an enterprise whose wastewater or sewage is connected to an industrial zone sewage system shall include the following content:
I. Monthly scale of production or services and the production facilities related to the generation of wastewater, sewage, or sludge.
II. The water quantity and quality of wastewater or sewage drained into the sewage system on the day of testing; the monthly tap-water source; monthly tap water quantity; and monthly amount of wastewater or sewage drained into the sewage system.
III. Those that have established wastewater or sewage pre-treatment facilities shall also report the content stated in Articles 73 through 75.
Article 77: The report for an enterprise or sewage system that commissions the treatment of wastewater or sewage shall include the following content:
I. Monthly scale of production or services and the production facilities related to the generation of wastewater, sewage, or sludge.
II. Water quantity and quality of the original wastewater or sewage on the day of testing, the monthly tap water source, and quantities of tap water and generated wastewater or sewage.
III. The commissioned treatment frequency, water quality and water quantity on the day of testing, and the monthly amount of wastewater or sewage commissioned to another party.
IV. The title and industry type of the commissioned party.
V. The date and method of calibration and maintenance for the water measurement facilities or measurement method at the outflow point and the monthly readings or measurement values for the facilities.
VI. Storage facilities that were established on the worksite prior to commissioning treatment of wastewater or sewage shall be reported pursuant to Article72.
Article 78: The report for an enterprise or sewage system that discharges wastewater or sewage into the sea via sea drainage pipe shall include the following content:
I. Monthly scale of production or services and the production facilities related to the generation of wastewater, sewage, or sludge.
II. The frequency and method of servicing the sea drainage pipe.
III. The frequency, sampling location, monitoring items and monitoring results of marine environment monitoring.
IV. Those that have established wastewater or sewage treatment/pre-treatment facilities shall also report the content stated in Articles 73 through 75.
Article 79: For the recycling of industrial or sewage from sewerage system of wastewater or sewage for industries other than the livestock industry, the content of declaration is shown below:
I. The production process facilities related to the capacity of wastewater

or sewage and sludge generated, and the scale of production or service.
II. The quality of the original wastewater or sewage and the water capacity on the day of testing, the source of monthly water supply, water consumption volume and the generation of wastewater or sewage.
III. The source of recycled water, the method of transmission or delivery, and the purpose of recycling.
IV. The quality of recycled water and the water capacity on the day of the test, and the monthly capacity of recycled water.
V. The facility for the measurement of recycled water or the date and method of the calibration and maintenance of the measurement, the monthly reading or measurement value.
VI. If the storage facility is approved for installation, declare in accordance with Article 72.
VII. For those with installation of a facility for wastewater or sewage treatment/pretreatment, declare in accordance with the content from Article 73 to Article 75.
For the livestock industry using recycled wastewater or sewage, declare as follows:
I. The statistical data on the consumption volume of recycled water by transportation or delivery means separately on a monthly basis.
II. The facility for the measurement of the recycled water for consumption or the measurement method, the date, method, and monthly reading or measurement value of calibration and maintenance.
For enterprises specified in Article 9, and recycled by just sedimentation treatment, declare in accordance with the following further to the requirement as stated in paragraph I:
I. The capacity of minerals, gravels, stone chips, or mixed concrete cement generated.
II. The monthly water consumption volume and the capacity of sludge generated in the sedimentation pool.
III. The water treatment capacity by the sedimentation pool and the removal rate monthly.
IV. The frequency and means of removal of sludge from the sedimentation pool or the concentration pool.

Article 80: The report for a general fish farming enterprise in livestock industry shall include the following content:
Ⅰ. The surface area of the fish-raising pool and the actual livestock count.
Ⅱ. The monthly frequency of, and monthly quantity of water used for, cleaning the barn or sty.
Ⅲ. The monthly quantity of wastewater discharged into the fish-raising pond and the method of measurement.
Ⅳ. The monthly amount of electricity used by the aerator in fish-raising pond.
Ⅴ. The test value for dissolved oxygen in the fish-raising pond and the date the test was performed.
Ⅵ. The monthly dates for discharging wastewater or sewage generated from general fish farming operations and the method of disposal.
Article 81: The report for an enterprise or sewage system that discharges wastewater or sewage into a surface water body shall include the following content:
Ⅰ. Monthly scale of production or services and the production facilities related to the generation of wastewater, sewage, or sludge.

generation of wastewater, sewage, or sludge.

II. The quality and quantity of wastewater or sewage on the day of testing and the monthly quantity of discharged wastewater or sewage.

III. The date and method of calibration and maintenance for the effluent measurement facilities or measurement method and the monthly readings or measurement values for the facilities.

IV. Those that have established wastewater or sewage treatment/pre-treatment facilities shall also report the content stated in Articles 73 through 75.

Article 82: An enterprise or sewage system that conducts soil treatment to treat wastewater or sewage shall report the content stated in Articles 73 through 75 and include the following items:

I. Monthly types of crops, livestock count per hectare, and the surface area of soil treatment.

II. The quality and quantity of wastewater or sewage on the day of testing and the monthly quantity of wastewater or sewage discharged into the soil.

III. Soil and groundwater monitoring data.

IV. The monthly operating frequency of solid-liquid separation facilities.

Article 83: The reporting of water quality and quantity and its testing, measurement, monitoring frequency and monitoring data produced by an enterprise or sewage system shall comply with the following rules:

I. The water quality of the original wastewater or sewage: shall be tested once every six months. However, community sewage systems exempt from employing dedicated wastewater or sewage treatment personnel shall test water quality once a year.

II. The effluent quality of wastewater or sewage discharged into a surface water body: for those required to establish a dedicated wastewater or sewage treatment unit or employ Class A dedicated wastewater or sewage treatment personnel, the effluent quality of wastewater or sewage discharged into a surface water body shall be tested once every three months. For those required to employ Class B dedicated wastewater or sewage treatment personnel or those exempt from employing dedicated personnel for the treatment for wastewater or sewage, effluent quality shall be tested once every six months. Community sewage systems that are exempt from employing dedicated personnel for wastewater or sewage treatment shall test effluent quality once every year.

III. The water quality of drainage from sewer-connected enterprises: shall be tested once every six months. However, should the sewage management agency require the increase of the test frequency, the requirement shall be observed.

IV. Soil treatment: the water quality of wastewater or sewage discharged into the soil shall be tested once every three months. The soil shall be tested once a year. The water quality of groundwater shall be tested once every six months.

V. The water quality and quantity of the treated sewage that inject into groundwater: shall be tested and measured once every two months

VI. Those that discharge wastewater or sewage into the sea via sea discharge pipe shall conduct testing for marine environment monitoring once every three months.

VII. The water quality of implementing other pollution control measures: shall be tested water quality once every six months.

The competent authority may order an enterprise or sewage system to increase the frequencies of investigation, measurement and monitoring of reporting for all or a portion of reported items based on actual need. If necessary, the competent authority may order an enterprise or sewage system to handle the test reporting of runoff wastewater or monitor the reporting receiving water body pursuant to the designated location, frequency and item.

Article 84: Monitoring and testing for the water quality test report of an enterprise or sewage system shall be performed according the required water quality items in Table 1. However, the competent authority may add other reporting items based on actual need. When the required water quality items in Table 1 are not used or generated in the production processes or wastewater or sewage treatment processes of an enterprise or sewage system, or the test results of the required water quality items in Table 1 are lower than the detection limits of the method used, the enterprise or sewage system may submit an application along with verification documents to the municipality, county or city competent authority for exemption from the said testing items.

For those industrial zone sewage systems or the wafer and semiconductor manufacturing industry, optoelectronic materials and components manufacturing industry, PCB manufacturing industry, petrochemical industry, chemical industry, or papermaking industry whose approved discharge volume of wastewater or sewage reached more than 20,000 m^3 per day shall handle the test reporting of the Biological Acute Toxicity for the water quality of their reporting discharge. However, this does not apply to conditions that the original water source is seawater, or the discharged wastewater contains high concentration of halogen ions and the ocean is the receiving water body.

The discharge volume of foregoing wastewater or sewage shall be calculated based on the discharge volume of operation wastewater and blowdown wastewater. For the combination of the domestic wastewater, workstation wastewater and blowdown wastewater, the discharge volume of domestic wastewater shall be calculated jointly.

Article 84-1: The enterprise or sewage system shall choose either of carp or Pseudorasboraparva, and either of water flea or Neocaridinaheteropoda var. yellow to conduct two types of biological test for the Biological Acute Toxicity of the discharge water quality according to the test method notified by the central competent authority. The competent authority shall adopt the same method to obtain the sample for further investigation.

Pursuant to these Regulations stated in foregoing article, paragraph III, the frequency of test reporting shall be once every three months, and the following shall be met:

Ⅰ. When the TUa value of these two foregoing organisms surpasses 1.43 in any test reporting or the sampling data conducted by the competent authority, the test reporting shall be conducted once every three months. For the accumulative data collected from over three consecutive times, and the TUa values of these two foregoing organisms are less than 1.43, then the test reporting can be conducted once every six months thereof.

Ⅱ. For the accumulative data collected from over six consecutive times, and the TUa values of these two foregoing organisms are less than 1.43 in any test reporting or the sampling data conducted by the competent authority, then the test reporting can be calibrated to conduct once every year.

Article 84-2: Among, In case that the accumulative TUa values of the two foregoing organisms surpass 1.43 for three accumulative samples in six consecutive data of the Biological Acute Toxicity in the discharge water reported by an enterprise or sewage system or sampled and audited by the competent authority, the water quality may be regarded as containing Biological Acute Toxicity. The municipality, county or city competent authority may order such an enterprise or sewage system to perform the toxicity verification and the toxicity reduction procedure, and submit the corresponding plans of toxicity verification as well as the toxicity reduction procedure for reference.

The toxicity verification and the toxicity reduction procedure shall be performed for two years pursuant to foregoing paragraph, and the test reporting of Biological Acute Toxicity stated in Article 84 can be exempted during this period. If the toxicity verification and the

stated in Article 84 can be exempted during this period. If the toxicity verification and the toxicity reduction procedure cannot be completed within the designated time, an extension may be granted by the municipality, county or city competent authority 30 days prior to the deadline. Only one extension may be granted, and the extension shall be longer than two years.

The enterprise or sewage system shall submit the result report to the municipality, county or city competent authority for approval within 15 days after the performing period of toxicity verification and the toxicity reduction procedure expired. Any submission that fails to meet the deadline or is determined as an incomplete improvement will be punished. For the incomplete report of the toxicity verification and the toxicity reduction procedure, the municipality, county or city competent authority shall require such an enterprise or sewage system to correct an incomplete report within a given deadline. Failure to do so will result in rejection of the result report and be regarded as incomplete improvement.

The foregoing result report shall include: basic information, performing period, wastewater or sewage discharge characteristics and the acute toxicity test result, toxicity verification and reduction assessment procedure, and the toxicity verification and reduction assessment efficiency.

Article 85: An enterprise or sewage system that conducts soil treatment shall perform soil and groundwater monitoring according to Table 1 and comply with the following rules:

Ⅰ. Those whose soil treatment covers a surface area totaling less than one hectare shall construct a monitoring well at the midpoint between upstream and downstream groundwater flow and a soil sample shall be taken at this location.

Ⅱ. Those whose soil treatment covers a surface area totaling more than one hectare and less than 25 hectares shall construct a monitoring well at both upstream and downstream points in groundwater flow and a soil sample shall be taken at both locations.

Ⅲ. Those whose soil treatment covers a surface area totaling more than 25 hectares and less than 100 hectares shall construct a monitoring well at upstream, midstream, and downstream points in groundwater flow and a soil sample shall be taken at each location.

Ⅳ. Those whose soil treatment covers a surface area totaling more than 100 hectares shall construct five or more monitoring wells and take five or more soil samples. Other monitoring wells shall be established and soil samples taken at upstream, midstream and downstream groundwater flow points and the surrounding area.

The soil samples in the foregoing paragraph shall be mixed shallow-layer samples.

The competent authority may order an enterprise or sewage system to increase the number of monitoring wells and soil samples based on actual requirements for groundwater hydrology and water quality conditions.

Article 86: An enterprise or sewage system shall submit a testing report once every six months. However, the report items and reporting frequency for the enterprises or sewage systems below are as follows:

Ⅰ. Community sewage systems that are exempt from employing dedicated wastewater or sewage treatment personnel shall submit a report once a year.

Ⅱ. Those enterprises or sewage systems required to establish a dedicated wastewater or sewage treatment units or employ Class A dedicated wastewater or sewage treatment personnel and the wastewater or sewage discharged into a surface water body that shall submit a report once every three months.

Ⅲ. Those conducting soil treatment shall submit a soil sample report once a year.

Ⅳ. Those that discharge wastewater or sewage via sea drainage pipe shall submit a report once every three months.

The competent authority may request the enterprise or sewage system to increase the

reporting frequency for all or part of reporting items as practically necessary.

Article 87: The report items, format and frequency of reports submitted by an enterprise or sewage system that is located in a total quantity control zone, is equipped with an automatic monitoring system, and whose automatic monitoring items are subject to the Internet connection standards of the central competent authority, shall be determined by the central competent authority.

Article 88: An enterprise or sewage system that implements two or more pollution control measures at the same time, shall submit a separate testing report for each water pollution control measure.

Enterprises or sewage systems that jointly establish and operate wastewater or sewage treatment/pre-treatment facilities shall submit a joint testing report.

Article 89: The water quality and water quantity reported by an enterprise or sewage system shall be sampled and measured on the same day. However, this regulation is not applicable to the quality and quantity of runoff wastewater.

Article 89-1: The information reported by an enterprise or sewage system shall meet:

Ⅰ. The format, content and frequency specified by the central competent authority without missing any required item;

Ⅱ. Articles 23 and 68 of this Act for water quality and quantity tests;

Ⅲ. The reported information and data shall be consistent with the receipts or invoices provided, test reports, records, photos and other document(s) of proof required by the competent authority.

Ⅳ. The reported information and data shall be consistent with the measurements, operating parameters and records of on-site manufacturing process facilities, production of service scale, power consumption, dosage of agents and water quantity;

Ⅴ. The items reported for water quality shall meet Article 84;

Ⅵ. The reported method for pollution control measures shall be consistent with the actual layout on site;

Ⅶ. The reported information and document(s) shall be made available on the website designated by the central competent authority as required; and

Ⅷ. Other situations recognized by the competent authority(s).

In case that the information reported by an enterprise or sewage system is considered not meeting any of the requirements mentioned above by the competent authority, the competent authority shall request the resubmission of such information within a given deadline. Failure to provide correct information by the given deadline or to meet the requirements even with resubmitted information is considered incomplete reporting. The competent authority shall punish such an action in pursuant to Article 56 and request a second resubmission within a new given deadline. Punishment will be imposed again for failure to provide correct information by the given deadline or to meet the requirements even with resubmitted information, and so on and so forth.

A retest is required for the foregoing resubmission within a given deadline if it involves in non-retrospective data of water quality. The data provided for the retest shall not be used for the reporting of current test.

The inconsistency of reported information with the requirements mentioned in Paragraph 1 is made due to fraud or other illegal methods, such as forgery of data or false certificates or receipts, is considered as false reporting.

Article 90: When the water quality or water quantity reported by an enterprise or sewage system meets one of the following conditions, the enterprise or sewage system shall be exempt from commissioning an environmental analysis laboratory:

Ⅰ. Water quality and quantity of the original wastewater or sewage, water quantity of

recycled water, runoff wastewater quality and quantity, or the water quantity of separately treated hot springs wastewater.

II. Water quantity of established independent cumulative water measurement facilities whose calibration and maintenance are performed pursuant to Article 65, Paragraph 1.

III. The water quality and quantity of sewer-connected enterprises shall be based on the testing and measurement data of the sewage management agency.

Article 91: The original wastewater or sewage water quality reported by an enterprise or sewage system shall be sampled at the equalization facilities. However, in case of discharging the mixture of over two wastewater or sewage and containing substances harmful to health as officially announced in this Act, for the items containing substances harmful to health, samples shall be taken at an appropriate locations respectively before each wastewater or sewage influx point of the equalization facilities, and the rest items shall be sampled at the equalization facilities.

Article 92: The following declaration documents and information are required at the time of declaring industrial or sewage sewerage system for approval:

I. Test report on water quality and capacity.

II. For draining of wastewater or sewage from salt water ducts into the sea, the record on the monitoring of maritime environment in the nearby sea.

III. Other requirements of the competent authority.

If there is a record on violation of this law with punishment by the competent authority in the period of 1 year in retrospect from the first day of the month of declaration for industrial or sewage sewerage system, present the required documents and information as specified in the previous paragraph and also the following information:

I. The photocopies of the bills or invoices for the cleanup of wastewater or sewage by the enterprise or a third party firm commissioned for such purpose.

II. The photocopies of the bills or invoices for the cleanup of sludge by the enterprise or a third party firm commissioned for such purpose.

III. The date of arrival and departure of the sampling staff to the plant, the time of sample, the date and time for the beginning and ending of sample, and personnel witnessing the sample, and the photographs of the sample with clear labeling of the locations of sampling with the date and time of photograph specified.

IV. The photocopies of the bills or invoices on the purchase of chemical agents.

V. The photocopies of the record and bills or invoices on the calibration and maintenance of the measurement facility for the measurement of water capacity on accumulative basis.

VI. The photographs showing the components of water treatment facility and the outfall with clear labeling of the name and the date of photography, excluding the water treatment facility components incorporated into the sewerage system for sewage exclusively used in the industrial zone.

The aforementioned information on the industrial or sewage sewerage system as specified in the previous paragraphs shall be kept for 5 years.

For those in violation of this law as specified in the previous 2 paragraphs with punishment of the competent authority, the day shall be the day on which the ruling of the competent authority was issued or referred

to the Prosecutors Office of the district court for investigation. For the institution of administrative remedy, it will be the day on which previous punishment was determined.

Article 92-1: When an enterprise or sewage system reports to the municipality, county or city competent authority with the reporting records and data documents mentioned in the foregoing article, the reported and resubmitted information and documents shall be made available at the website designated by the central compete authority with personal information and purchase price hidden.

The data and documents to be reported as required in Paragraph 8 of the foregoing article shall be uploaded by the end of every January for an enterprise or the sewage system other than that dedicated for an industrial park, and by the end of every February for management agency (organization) of the sewage system dedicated for an industrial park.

The personal information mentioned in Paragraph 1 includes name, personal identification number or passport number, personal photo, date of birth, telephone number, cell phone number, fax number, email address, household registration address or any other information that may directly or indirectly contributes to the positive identification of the person.

In case that business confidentiality is involved in the information and documents mentioned in Paragraph 1, such information may be hidden from being made public provided that an application for confidentiality is filed to and approved by the municipality, county or city competent authority with the documents of proof for the following elements:

Ⅰ. Those which are unknown to those who are not generally involved in such information;

Ⅱ. Those that have physical or potential economic values for the confidentiality; or

Ⅲ. Those for which reasonable confidentiality measure(s) has been taken by the owner.

An enterprise or sewage system shall publish the data and documents of the latest reporting at the website designated by the central competent authority in three months starting from the day designated by the central competent authority for online publishing.

Article 93: An enterprise or sewage system shall report the testing data for the months of July to December before the end of January of the following year. The testing data for the months of January to June shall be reported before the end of July of the same year. However, the report items and reporting times for the enterprises or sewage systems below are as follows:

Ⅰ. Each year the sewage management agency of an industrial zone sewage system in Article 71, Paragraph 2, and other than that stated in Article 86, Paragraph 1, Subparagraph 2, shall report the water quality data for the months of July to December before the end of February in the following year. The data for the months of January to June shall be reported before the end of August of the same year.

Ⅱ. For those sewage systems other than those used by the enterprises or in the industrial areas stated in Article 86, Paragraph I, Subparagraph II, the data of every quarter shall be reported at the end of January, April, July and October every year.

Ⅲ. For the management agency of the sewage system dedicated for industrial zone as stated in Article 86, Paragraph I, Subparagraph II, the data reports for the months from October to December, from January to March, from April to June and from July to September of the previous year shall be submitted by the end of February, May, August and November, respectively.

Ⅳ. Community sewage systems that are exempt from employing wastewater or sewage treatment dedicated personnel shall submit a report every year before the end of January for the data from January to December of the previous year.

For an enterprise or sewage system that has just recently submitted a pollution control plan or applied for a permit (document), the day to start to submit the said report is the day that the pollution control plan or permit (document) is approved by the issuing agency.

Article 94: Declaration of industrial or wastewater sewerage system shall be made online via the Internet or in hard copy at the consent of the competent authorities of the municipality or county (city).

Chapter 12 Effluent Collection Management in Industrial Areas

Article 95: As referred to in this chapter, the sewage systems indicate the industrial zone sewage system.

Article 96: A sewage systems shall contain dedicated ditches or pipelines to collect wastewater or sewage from within the area. However, this restriction shall not apply to wastewater or sewage from an enterprise that has obtained a wastewater or sewage surface water body discharge permit or simple discharge permit in accordance with Article 20.

A sewage system shall employ dedicated rainwater ditches or pipelines to collect rainwater from within the area and runoff wastewater other than that stated in Article 8. The foregoing ditches or pipelines shall not mixedly collect the wastewater or sewage in the foregoing paragraph.

Article 97: The sewage system ditches and pipelines in the foregoing article must be regularly inspected and repaired.

With regard to the regular inspection and repair in the foregoing paragraph, inspection and repair of all wastewater or sewage collection ditches and pipelines must be completed at least once every three years; inspection and repair of all rainwater collection ditches and pipelines must be completed at least once each year; inspection of all wastewater or sewage or rainwater drainage equipment of sewer-connected users must be completed at least once each month; and inspection of all drainage equipment of sewer-connected users producing only domestic sewage must be completed at least once each half-year. Records of inspection and repair results must be kept and preserved for three years for subsequent reference.

If the inspection results in Paragraph 1 show that the diverting and collection functions stated in Article 96 cannot be maintained, the competent authority shall be notified of inspection results and improvement measures within one week after the inspection. If it is necessary to take engineering improvement measures, such improvement shall be completed within one year. When necessary, an extension of one year may be granted by the competent authority for the improvement.

Article 98: Sewage systems shall audit whether sewer-connected users maintain a reasonable balance between water usage and the volume of wastewater or sewage. Audit results shall be compiled as reports, which shall be preserved for three years for subsequent reference.

With regard to the audit results in the foregoing paragraph, when the said user fails to maintain a reasonable balance between water usage and the volume of wastewater or sewage, the sewage system shall investigate and determine the reason, and adopt appropriate management measures.

With regard to the audit in the first paragraph, if it is discovered that a sewer-connected user is pumping groundwater without the approval of the competent authority in charge of the water supply, the local competent authority in charge of the water supply shall be notified of this violation.

Article 99: After taking into consideration sewer-connected users' wastewater or sewage characteristics and wastewater treatment facility's treatment capacity, sewage systems shall specify the quality of wastewater that may be discharged into the sewage system, perform regular sampling and testing of the quality of the sewer-connected user's wastewater, adopt appropriate management based on test results and make records therefor, and preserve records for five years for subsequent reference. However, the regulations of this paragraph concerning water quality do not apply when a sewer-connected user produces only domestic sewage.

The sampling and testing in the foregoing paragraph may be performed in a water quality laboratory established by the sewage system, and the testing shall be performed employing the methods announced by the central competent authority.

The regular sampling test stated in foregoing paragraph shall be performed based on the water quantity and water quality characteristics of the sewer-connected users. However, the competent authority may order the sewage systems to increase sampling items or frequencies for the sewer-connected users based on actual need.

The regulations of foregoing sub-item test are as follows:

Ⅰ. Sewage systems in science parks and in specific petrochemical areas: for water quality items that shall be regularly tested and reported, samples shall be taken and tested at least once per quarter.

Ⅱ. Industrial zone sewage system other than those stated in foregoing paragraph: samples shall be taken and tested at least once per quarter for hydrogen ion concentration index, water temperature, chemical oxygen and suspended solids, and at least once every six month for other water quality items that shall be regularly tested and reported.

For the water quality items of a user connected to a sewage system of which the results are lower than the applicable effluence standards for two consecutive tests, except for hydrogen ion concentration index, water temperature, chemical oxygen and suspended solids, the test for these items may be exempted.

The sewage systems shall regularly inspect the functioning and operation of wastewater or sewage pre-treatment facilities established by sewer-connected users, provide necessary guidance, adopt appropriate management measures in accordance with the inspection result, and keep records for five years for subsequent reference.

Article 100: Sewage systems shall perform regular sampling and testing of the water quality of wastewater or sewage at appropriate confluence points in wastewater or sewage collection ditches and pipelines, and shall keep records, which shall be preserved for five years for subsequent reference.

The water quality sampling and testing in the foregoing paragraph shall comply with the regulations of Paragraph 2 in the foregoing article.

With regard to the water quality testing results in the first paragraph, when the results for wastewater or sewage exceed the sewer-connected water quality regulations of Paragraph 1 in the foregoing article, the sewage system shall investigate the cause, require the relevant sewer-connected users for improvement, and adopt inflow water quality/water volume buffering and blending as a response measure to maintain the quality of inflow water within the wastewater treatment facility's normal treatment range.

Article 101: Sewage systems shall review and analyze changes in water volume and water quality on a monthly basis, and assess the sewage system's collection and treatment capacity. If the results of assessment and review indicate that collection and treatment capacity are insufficient, the sewage system shall notify the municipality, county or city competent authority in writing, and adopt response measures. If it is necessary to take engineering improvement measures, such improvement shall be completed within one year.

When necessary, an extension of one year may be granted by the municipality, county or city competent authority for the improvement.
The execution of the monthly review and analysis of water volume and water quality changes, assessment of the collection and treatment capacity and state of implementation of response measures in the foregoing paragraph shall be made into records and preserved for three years for subsequent reference.
Article 101-1: As of 2015, industrial zone sewage systems shall submit a self-assessment report of the previous year to the municipality, county or city competent authority by the end of June every year, and the report shall at least contain the following items:
Ⅰ. Sewage treatment plant inflow and outflow water quality, dosage, electricity consumption, sludge production and permit (document) registered items, as well as the comparing test results for latest three years.
Ⅱ. Number of enterprises, sewer-connected enterprises and self-discharge enterprises in this area.
Ⅲ. Allowable usage rate, designed usage rate and charge rate for the treatment water volume.
Ⅳ. The equipment availability, response measures of equipment damage, annual maintenance and construction improvement.
Ⅴ. The contents of received punishment and improvement action in the current year.
Ⅵ. Situation of these matters that performed according to these Regulations in this chapter.
Article 102: In order to save personnel or treatment facilities, sewage systems may perform discharges from emergency discharge points. Such emergency discharge points shall be limited to inlet well overflow outlets or other facilities with the same functions in the original design of the wastewater treatment facility, and may be used to discharge wastewater or sewage only with the approval of the approving agency.
The emergency discharge points in the foregoing paragraph shall be equipped with cumulative water volume measurement facilities and stop valves. Stop valves shall have lead seals installed by the competent authority, and the seals shall not be removed or destroyed. The stop valves' lead seals may only be removed when emergency discharges are required.
When a sewage system discharges wastewater or sewage through the emergency discharge points in the first paragraph, the competent authority shall be notified within one hour before the discharges, and the sewage system shall keep records, which shall be preserved for three years for subsequent reference.
If a sewage system's emergency discharge points are used two or more times within a six-month period, an abnormal inflow improvement plan shall be submitted in writing, and the competent authority's review and approval are requested; such a plan shall be implemented on the basis of the approved content.
Article 103: In any of the following situations, a sewage system shall submit a total pollution reduction management plan within the deadline specified by the competent authority.This plan shall be implemented on the basis of the approved content following review and approval by the central competent authority in consultation with the municipality, county or city competent authority for industries of central purpose:
Ⅰ. The discharged wastewater or sewage contains substances harmful to health, and discharge volume has been increased steadily for five consecutive years.
Ⅱ. The average actual wastewater or sewage discharge volume has exceeded 50,000m^3 per day during a six-month period, and the competent authority has determined that the water body receiving the effluent is severely polluted.
Ⅲ. The competent authority has discovered the basis for the environmental pollution

III. The competent authority believes, on the basis of other environmental pollution investigations on the water body receiving the effluent conducted by the competent authority, that wastewater or sewage discharged from the sewage system may cause severe pollution.

The content of the total pollution reduction management plan in the foregoing paragraph shall include the following items:

I. Characteristics of wastewater or sewage discharges.

II. Analysis of impact on receiving water body.

III. Analysis of effluent collection management measures.

IV. Assessment on wastewater treatment facility functions and state of operation.

V. Total pollution reduction management reduction goals and timetable.

VI. Specific total pollution reduction management implementation measures and their content.

VII. Total pollution reduction management effectiveness assessment and verification methods.

Chapter 13 Automatic Monitoring (Surveillance) Facilities Management

Article 104: (Deleted)

Article 105: If any of the following applies to industrial or wastewater sewerage system, the installation of automatic monitoring facility (hereinafter referred to as the "required for installing automatic monitoring facility") specified in This Chapter with keeping of normal functioning shall be connected to the competent authorities of the municipality or county (city) for online transmission:

I. The discharge of wastewater or sewage from the exclusive sewerage system of the industrial zone to the water body of ground surface with permission of discharge capacity of more than 1,500m3 daily.

II. The discharge of wastewater or sewage from industries other than power plants to the water body on ground surface with permission of discharge capacity of more than 1,500 m3 daily.

III. The discharge of wastewater or sewage from power plants to the water body on ground surface including the discharge of uncontacted cooling water or facility of air pollution control through seawater flue-gas desulfurization.

IV. The discharge of wastewater or sewage from sewerage to the water body on ground surface with permission of discharge capacity of more than 1,500m3 daily.

V. Any other requirements of the competent authority at the national level.

The discharge capacity specified in subparagraph (II) of the previous paragraph is the total of wastewater from operation and from release. Household sewage, uncontacted cooling water or runoff, and wastewater from operation and release combined for treatment shall be summed up as the totality for discharge. For those with installation of water capacity measurement facility, or measurement facility or method of measurements approved by the competent authorities of the municipality or county (city) may measure the water capacity from different sources for combined treatment and the discharge capacity of household sewage, uncontacted cooling water or runoff would be excluded in the calculation.

Article 106: For those who shall install automatic monitoring (surveillance) facilities, the

installation and completion deadline of automatic monitoring (surveillance) facilities thereof shall be subject to Table 3.

If, with regard to facilities in the foregoing paragraph, actual installation would pose difficulties or the effluent wastewater contains high-concentration halogen ions, an alternative measure may be implemented with the approval of the municipality, county or city competent authority, and shall be implemented accordingly as approved.

Article 106-1: Before the installation of the automatic monitoring (surveillance) facilities, electronic watt-hour meter and display board pursuant to this Act, the automatic monitoring (surveillance) facilities measures specification (hereinafter referred to as measures specification) shall be submitted to the municipality, county or city competent authority for approval, and after installation, relative accuracy test audit and 168 consecutive hours of transmission test shall be carried out, after test completion, a confirmation report shall be further submitted to municipality, county or city competent authority for review and confirmation through onsite inspection.

For those who are suspended for business (operation) by the competent authority or during improvement within given deadline due to a violation of this Act and are applying for restoration of business (operation) pursuant to Article 63 hereof, the improvement plan detailing water pollution control measures and sludge treatment and, for application for trial run, the specifications of the measures mentioned above shall be submitted to the municipality, county or city competent authority for approval. After the installation and before application for restoration of business (operation), 168 consecutive hours of transmission test shall be carried out, after test completion, a confirmation report shall be further submitted to municipality, county or city competent authority for review and confirmation through onsite inspection.

For the industrial zone sewage system stated in Article 105, Paragraph 1, Subparagraph I, for those who have completed the installation of automatic monitoring (surveillance) facilities before January 1, 2016, their measures specification may be submitted together with the confirmation report.

Measures specification and confirmation report shall be handled by means of network transmission as of the date designated by central competent authority.

Article 107: For the automatic monitoring (surveillance) facilities installed pursuant to these Regulations, when the brands or models of the host machine, data gathering and processing system in replacement are different from those installed originally, measures specification shall be submitted to the municipality, county or city competent authority for approval, and after the installation, relative accuracy test audit and 168 consecutive hours of transmission test shall be carried out, after test completion, a confirmation report shall be further submitted to municipality, county or city competent authority for review and confirmation through onsite inspection.

For the changes other than those mentioned in foregoing paragraph, confirmation report shall be submitted to municipality, county or city competent authority to handle the change within thirty days after the occurrence date.

Article 108: For the automatic monitoring (surveillance) facilities installed by an enterprise or sewage system pursuant to these Regulations, the transmission shall be conducted in the data type and format as specified, and the regulations as stipulated under Appendage I shall be followed. The processing guideline as stipulated under Appendage II shall be followed for the measurements and monitoring record values of the automatic monitoring facilities. The regulations as stipulated under Appendage III shall be followed for the installation, relative accuracy test audit of the automatic water quality monitoring facilities and video surveillance facilities.

surveillance facilities.
For those that meet the foregoing requirements, the transmitted water quality and quantity data may be used for the reporting as specified in this Act.
The municipality, county or city competent authority shall compile water quantity and quality data transmitted by an enterprise or sewage system into data that are easily accessible to the public and publish the compiled data at the website designated by the central competent authority
Article 109: (Deleted)

Chapter 14 Supplementary Provisions

Article 110: An enterprise or sewage system that uses containers, tank trucks or means other than pipelines or drainage ditches to transport wastewater or sewage compliant with effluent standards into an area outside of the range of operations shall inform the municipality, county or city competent authority by telephone or facsimile 24 hours before the scheduled transport of wastewater or sewage.
In order to improve the biological treatment efficiency of wastewater or sewage treatment/pre-treatment facilities, if an enterprise or sewage system uses containers, tank trucks or means other than pipelines or drainage ditches to transport planting sludge into an area outside of the range of operations, or receives planting sludge from other factories to put into the wastewater or sewage treatment/pre-treatment facilities, such enterprise or sewage system may be exempted from the registration and change of water pollution control plan and permit (document). Provided that such enterprise or sewage system may only do so after informing the municipality, county or city competent authority by telephone or facsimile twenty-four hours before transporting or receiving actions.
An enterprise or sewage system that uses containers, tank trucks or means other than pipelines or drainage ditches to clear the wastewater or sewage not complying with effluent standards into an area outside of the range of operations, shall perform clearance and follow-up disposal pursuant to the Waste Disposal Act.
An enterprise or sewage system that implements liquor and fiber digestate as fertilizer for farmlands as reviewed and approved by competent authority of agriculture, shall transport liquor and fiber digestate according to the matters specified in the plan for implementing liquor and fiber digestate as fertilizer for farmlands. For the enterprise or sewage system that uses containers, tank trucks or means other than pipelines or drainage ditches to transport liquor and fiber digestate, its clearance and follow-up disposal may be exempted from following relevant regulations on enterprises' waste recycling as stipulated in Waste Disposal Act.
Article 111: (Deleted)
Article 111-1: The days mentioned throughout these Regulations are calendar days.
Article 112: An enterprise or sewage system that allows other parties to use a portion of facilities or equipment, or commissions another party to operate water pollution control equipment, shall still be responsible for the management of water pollution control measures and testing reports.
Article 113: (Deleted)
Article 113-1: (Deleted)
Article 113-2: An enterprise or sewage system that has installed a sampling point sign as per Subparagraph III, Paragraph 2, Article 28 or a discharge point sign as per Subparagraph IV, Paragraph 1, Article 53 prior to the amendment and promulgation of these Regulations on shall confirm and add on the signs mentioned above the coordinates of the sampling or discharge point before March 31, 2016. For inconsistency of the confirmed coordinates with

the permit (document), the change of permit (document) shall be done within the given deadline.

Article 114: The Regulations shall come into force as of the date of promulgation

The Regulations were amended in part of the clauses on March 8 2013 and became effective on January 1 2015 except Article 49-1; Article 49-2, Subparagraph (IV), Article 75-1, became effective on July 1 2013. The remainders became effective as of the date of promulgation.

The Regulations were amended in part of the clauses on November 24 2015, which became effective as of the date of promulgation unless otherwise specified.

The Regulations were amended in some of the clauses on October 28 2016, which became effective as of the date of promulgation unless otherwise specified.

The Regulations were amended in some of the clauses on December 5 2017, which became effective as of the date of promulgation unless otherwise specified.

Table 1: Enterprise or Sewage System Test Report Items

I. Report items based on original wastewater or sewage and effluent water quality

The industry or system type of the enterprise or sewage system	Water quality items to be reported
(1) Sugar refining industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids
(2) Textile industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color
(3) Printing, dyeing and finishing industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, *ionic surfactants
(4) Leather making industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, *total chromium, *oils
(5) Paper pulp industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, true color
(6) Paper making industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color
(7) Photograph developing industry and plate-making industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(8) Chemical engineering industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand,

	suspended solids, true color, ammonia nitrogen,*oils, *nitrate nitrogen, *manganese, * iron, *phenols
(9) Pharmaceutical manufacturing industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color
(10) Pesticide and environmental agent manufacturing industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, *phenols, *total organophosphates (Parathion, Diazinon, Methamidophos, Monocrotophos, EPN, etc.), *total carbamates (Fenobucarb, Carbofuran, Methomyl, Undam, Isoprocarb), *herbicides (Butachlor, Paraquat, 2,4-D, Alachlor, Imazapyr, Glyphosate, etc.)
(11) Petrochemical industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, true color, ammonia nitrogen,*oils, *phenols, *nitrate nitrogen, *benzene, *ethylbenzene, *vinyl chloride, *1,2-dichloroethane, *chloroform, *methylene chloride

(12) Rubber manufacturing industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids
(13) Ceramic industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(14) Glass manufacturing industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(15) Cement industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(16) Primary metal industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, *oils
(17) Shipbreaking industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, *oils
(18) Metal surface treatment industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, *total chromium, *cadmium, *hexavalent chromium, *zinc, *nickel, *copper, *total mercury, *lead, *arsenic
(19) Electroplating industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, *cyanides, *total chromium, *cadmium, *hexavalent chromium, *zinc, *nickel, *copper, *total mercury, *lead, *arsenic
(20) Wafer and semiconductor manufacturing industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, ammonia nitrogen, *cyanides, *total chromium,*cadmium, *hexavalent chromium, *zinc, *nickel, *copper,*total mercury, *lead, *arsenic, *nitrate nitrogen, *anion surfactant, *boron, *villiaumite

	surfactant, *boron, *vinylidene
(21) PCB manufacturing industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, *hexavalent chromium, *nickel, *copper, *total mercury, *lead, *arsenic, *cadmium, *cyanides
(22) Shipbuilding and repairing industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(23) Tap water treatment facilities	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, total residual chlorine
(24) Environmental analysis and testing organizations	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, *total mercury
(25) Waste landfills	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(26) Waste incinerators and other waste treatment plants (facilities)	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids

(27) Wastewater treatment service industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, coliform group
(28) Nightsoil treatment plants (facilities)	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, coliform group
(29) Wool washing industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color
(30) Electrical power plants	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids (see footnote 2)
(31) Meat markets	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, *oils
(32) Fish markets	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids
(33) Car washes	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, *ionic surfactants
(34) Ship cleaning industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, *oils, *ionic surfactants
(35) Experimental, testing (chemical) and research laboratories	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, *zinc, *total mercury, *hexavalent

	chromium
(36) Zoos	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, coliform group
(37) Mining industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(38) Earth and gravel extraction industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(39) Earth and gravel processing industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(40) Earth and gravel storage (disposal) sites	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(41) Cargo container distributors	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(42) Food manufacturing industry (not including fermentation industry, milling industry, or sugar refining industry)	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, *oils
(43) Slaughtering industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, oils
(44) Milling industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids
(45) Fermentation industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color
(46) Vehicle repair plants	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids, *oils
(47) Amusement parks	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, coliform group, *oils
(48) Laundry industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(49) Other industries	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color
(50) Recyclable waste recycling and processing industry	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
(51) Livestock industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids
(52) Aquaculture industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids
(53) Hospitals and medical	Hydrogen ion concentration index, water temperature,

organizations		biological oxygen demand, chemical oxygen demand, suspended solids, coliform group
(54) Coal storage sites		Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color
(55) Dining industry and tourist hotels	1. Mixed wastewater	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, coliform group, *oils
	2. Pure hot springs wastewater collected and treated separately	Water temperature, suspended solids
(56) Optoelectronic materials and components manufacturing industry		Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, ammonia nitrogen, *cyanide, *total chromium, *cadmium, *hexavalent chromium, *zinc, *nickel, *copper, *total mercury, *lead, *arsenic, *nitrate nitrogen, *anion surfactant, * boron, * villiaumite, *gallium, *indium, *molybdenum
(57) Other industries designated by the central competent authority	1. Industries other than those in (1)–(55)	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, *lead, *cadmium, *total mercury, *methyl mercury, *arsenic,*hexavalent chromium, *copper, *cyanide, *total organophosphates (Parathion, Diazinon, Methamidophos, Monocrotophos, EPN, etc.), *phenols, *Endosulfan, *Endrin, *Lindane, *Heptachor and derivatives, *DDT and derivatives, *Aldrin and Dieldrin, *Pentrachlorophenol and its salts, *Toxaphene, *Pentachloronitrobenzene, *Folpet, *Captafol, *Captan
	2. Storage sites for specific substances	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, *villiaumite, *nitrate nitrogen, *cyanide, *cadmium, *lead, *total chromium, *hexavalent chromium, *total mercury, *methyl mercury *copper, *silver, *nickel, *selenium, *arsenic, *polychlorinated biphenyls, *total organophosphates (Parathion, Diazinon, Methamidophos, Monocrotophos, EPN, etc.), *total carbamates (Fenobucarb, Carbofuran, Methomyl, Undam,

		Isoprocarb), *herbicides (Butachlor, Paraquat, 2,4-D, Alachlor, Imazapyr, Glyphosate, etc.), *Endosulfan, *Endrin, *Lindane, *Heptachlor and derivatives, *DDT and derivatives, *Aldrin and Dieldrin, *Pentrachlorophenol and its salts, *Toxaphene, *Pentachloronitrobenzene, *Folpet, *Captafol, *Captan
	3. Oil storage sites	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
	4. Dredged material (water containing mud and sand) water quality purification sites	Hydrogen ion concentration index, water temperature, chemical oxygen demand, suspended solids
	5. Retail mass merchandise industry	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, *oils, *ionic surfactants
(58) Industrial zone sewage systems	1. Petrochemical industrial areas	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, *ammonia nitrogen,*cyanides, *total chromium, *cadmium, *hexavalent chromium, *zinc, *nickel, *copper, *total mercury, *lead, *arsenic, *oils, *phenols,*nitrate nitrogen, *benzene, *ethylbenzene, *vinyl chloride, *1,2-dichloroethane, *chloroform, *methylene chloride
	2. Science parks	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, *ammonia nitrogen, *cyanides, *total chromium, *cadmium, *hexavalent chromium, *zinc, *nickel, *copper, *total mercury, *lead, *arsenic, *oils, *phenols, *nitrate nitrogen, *anion surfactant, * boron, * villiaumite, *gallium, *indium, *molybdenum
	3. Other industrial areas other than petrochemical industrial areas and science parks	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, true color, *cyanides, *total chromium,*cadmium, *hexavalent chromium, *zinc, *nickel, *copper, *total mercuy, *lead,*arsenic, *oils, *phenols
(59) Public sewage systems		Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, coliform group, total nitrogen, total phosphorous
(60) Community sewage systems		Hydrogen ion concentration index, water temperature,

	biological oxygen demand, suspended solids, coliform group
(61) Special use sewage systems for designated zones or sites	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids

II. Report items for water quality of treated sewage after being injected into groundwater

The industry or system type of the enterprise or sewage system	Water quality report items
Sewage systems	Hydrogen ion concentration index, water temperature, biological oxygen demand, chemical oxygen demand, suspended solids, total dissolved solids, ammonia nitrogen, ionic surfactants, chlorides, sulfates, total organophosphates (Parathion, Diazinon, Methamidophos, Monocrotophos, EPN, etc.), coliform group

III. Water quality report items for water quality discharged into the soil

The industry or system type of the enterprise or sewage system	Water quality report items
Livestock enterprises, zoos, sugar refining industry, public sewage systems	Hydrogen ion concentration index, water temperature, biological oxygen demand, suspended solids, total nitrogen, sodium absorption ratio, copper (applicable to livestock enterprises), zinc (applicable to livestock enterprises)

IV. Report items for soil monitoring

The industry or system type of the enterprise or sewage system	Report items for monitoring
Livestock enterprises, zoos, sugar refining industry, public sewage systems	Hydrogen ion concentration index, copper, zinc, conductivity of extracted fluids from saturated soil, *arsenic, *cadmium,*chromium, *total mercury, *nickel, *lead, *total nitrogen

V. Test report items for water quality in groundwater monitoring

The industry or system type of the enterprise or sewage system	Report items for monitoring
Livestock enterprises, zoos, sugar refining industry, public sewage systems	Hydrogen ion concentration index, ammonia nitrogen, nitrate nitrogen, total phosphorous, conductivity, *arsenic, *cadmium,*chromium, *copper, *lead, *zinc, *iron, *manganese, *total hardness, *total dissolved solids, *sulfates, *total organic carbon

VI. Water quality test report items for discharging wastewater or sewage into the sea via pipeline

The industry or system type of the enterprise or sewage	Report items for monitoring

system	
Enterprises or sewage systems	Report shall be based on original wastewater or sewage effluent water quality report items

VII. Marine environment monitoring report items for discharging wastewater or sewage into the sea via pipeline

The industry or system type of the enterprise or sewage system	Report items for monitoring
Enterprises or sewage systems	1. Seawater: Report shall be based on original wastewater or sewage effluent water quality report items; dissolved oxygen, total oils, quantity of settled solids, heavy metals, phenols, total organic carbon, total phosphorous, and total nitrogen shall also be reported. 2. Sediment: Total organic carbon, heavy metals. 3. Mollusks: Accumulated heavy metals, hydrocarbons, pesticides. 4. Marine life and benthic organisms: Fish, large invertebrates, floating organisms (with basic reproductive abilities)

Notes 1: For water quality items with an "*" that are to be reported but neither used nor generated in the production processes or wastewater or sewage treatment processes of an enterprise or sewage system, or for which the test results are less than detection limits for the specific test method employed, the enterprise or sewage system may submit an application along with verification documents to the municipality, county or city competent authority for exemption from the said testing items.

Notes 2: For warm water discharge that is cooled with seawater, only the water temperature at the inlet and outlet shall be reported.

Notes 3: The test for ammonia nitrogen and orthophosphate shall be included for an enterprise or sewage system that is located within a water source quality and volume protection area. However, a new public sewage system for which the planning was completed before November 23 2001 but has not yet been contracted, or one for which the planning is not yet completed shall, in addition to the required testing items, be tested for total nitrogen and total phosphorous but exempt from reporting ammonium nitrogen and orthophosphate.

Table 2: Regulations on Installation of Automatic Monitoring (Surveillance) Facilities, Electronic Watt Hour Meter and Display Board by Those in Major Violation or Mandatory Installation

installation

Item		Installation regulations
Automatic water volume measurement monitoring facility	Installation location	1. All water sources within the range of operations 2. At effluent point point if discharging into surface water body 3. At discharge point if draining sewage into sewage systems 4. If storage permit is acquired and only storage facility is installed, at inlet point and outlet point of the storage facility.
	Stipulation	Independent cumulative water measurement facility
Automatic water quality monitoring facility	Installation location	1. If wastewater or sewage treatment facilities are installed, at inlet point and outlet point of each pollution control measures unit 2. At effluent point if discharging into surface water body 3. At discharge point if draining sewage into sewage systems 4. If storage permit is acquired and only storage facility is installed, at outlet point of the storage facility.
	Monitoring item	1. Water temperature 2. Hydrogen ion concentration index 3. Conductivity 4. Other water quality items designated by the competent authority
Video surveillance facility	Installation location	1. If wastewater or sewage treatment facilities are installed, at each pollution control measures unit 2. At effluent point if discharging into surface water body 3. If storage permit is acquired and only storage facility is installed, at the storage facility
	Stipulation	1. With time record function and image quality is clearly visible 2. Video recording for 24 consecutive hours
Online transmission facility		Monitoring (surveillance) data of automatic monitoring facility and video surveillance facility are transmitted online with municipality, county or city competent authority through the transmission module provided by municipality, county or city competent authority
Electronic watt-hour meter		1. Specifications shall meet relevant requirements of national standards 2. Measurable range of electric power consumption shall cover 1.2 times of the maximum of all electric power consumptions of wastewater or sewage treatment/pre-

Item		Installation regulations
		consumptions of wastewater or sewage treatment/pre-treatment facilities, and the electric power consumption of every fifteen minutes can be recorded consecutively and automatically 3. The electric power consumption thereof shall be available for review by competent authority and preserved for five years
Display board	Installation object	Those whose effluent point is installed within work environment and who is found by competent authority involving in rerouting discharge
	Stipulation	1. Should be installed at a prominent place at exterior wall of front door 2. The size shall be subject to the specification approved by competent authority 3. Display contents shall at least include control number, name of enterprise, date, time, effluent volume and water quality monitoring data, and dedicated line to report public hazard 4. Monitoring record values of all monitoring items shall be displayed at the same time, do not display by means of marquee 5. Texts shall be clearly visible and no other pictures or drawings added arbitrarily 6. It shall be installed steadily and not be removed easily.

Table 3: Installation Rules and Deadline for installation of Automatic Monitoring (Surveillance) Facility

Those who shall install monitoring (surveillance) facility Item	Industrial zone sewage system	Enterprises other than electrical power plant		Electrical power plant	
		Those with approved permit of discharging wastewater or sewage over	Those with approved permit of discharging wastewater or sewage over	Discharge non-contact cooling water	Seawater exhaust desulphurization air pollution control facility

Those who shall install monitoring (surveillance) facility		Industrial zone sewage system	Enterprises other than electrical power plant		Electrical power plant	
			Those with $5,000m^3$	Those with $1,500m^3$ but less than $5,000m^3$	Discharge non-contact cooling water	Seawater exhaust desulphurization air pollution control facility
Automatic water volume measurement monitoring facility	Installation location	1. Inlet part 2. Discharge point	Discharge point of approved permit of discharging wastewater or sewage over $5,000m^3$	Discharge point of approved permit of discharging wastewater or sewage over $1,500m^3$ but less than $5,000m^3$	Discharge point	Discharge point
	Stipulation	Independent cumulative water measurement facility				
Automatic water quality monitoring facility	Installation location	Discharge point	Discharge point	Discharge point	Discharge point	Discharge point
	Monitoring item	1. Water temperature 2. Hydrogen ion concentration index 3. Conductivity 4. Chemical oxygen demand 5. Suspended	1. Water temperature 2. Hydrogen ion concentration index 3. Conductivity 4. Chemical oxygen demand 5. Suspended	1. Water temperature 2. Hydrogen ion concentration index 3. Conductivity	Water temperature	Hydrogen ion concentration index

Those who shall install monitoring (surveillance) facility Item		Industrial zone 6. Other items designated by the competent authority	Enterprises other than electrical power plant 6. Other Those items with designated approved permit of discharging wastewater or sewage over 5,000m^3	Enterprises other than electrical power plant Those with approved permit of discharging wastewater or sewage over 1,500m^3 but less than 5,000m^3	Electrical power plant Discharge non-contact cooling water	Electrical power plant Seawater exhaust desulphurization air pollution control facility
Video surveillance facility	Installation location	1. Effluent point 2. Rainwater effluent point designated by the competent authority	Discharge point	-----	-----	Discharge point
	Stipulation	1. With time record function and image quality is clearly visible 2. Video recording for 24 consecutive hours				
Online transmission facility		Monitoring (surveillance) data of water volume and quality automatic monitoring facility and video surveillance facility are transmitted online with municipality, county or city competent authority through the transmission module provided by				

Those who shall	municipality, county or city competent authority	Enterprises other than electrical power plant		Electrical power plant	
Installation (completion) deadline	Before December 31, 2016	Before December 31, 2016	Before September 30, 2017	Before December 31, 2014	Before December 31, 2014
Item Name of enterprise or sewage system: Control number: Number of sampling or discharge point: Coordinates[Note]: (e.g. 25.038, 121.508) Maximum daily discharge (CMD):	Sewage system	Those with approved permit of discharging wastewater or sewage over 5,000m^3	Those with approved permit of discharging wastewater or sewage over 1,500m^3 but less than 5,000m^3	Discharge non-contact cooling water	Seawater exhaust desulphurization air pollution control facility
	Greater than 32 centimeters				

Attached Fig. 1: Format of Warning Signs to be Used at Sampling and Discharge Points

Note: The coordinates are preferably provided in the format of Google positioning system (WGS84 longitude and latitude). It is recommended to use a cell phone with GPS positioning function. Select “Options” in the camera program page, activate “Geotagging” and take a photo of the sampling or discharge point. Select the “Details” of the photo taken and the

latitude and longitude of the coordinates where the photo is taken will be shown.

Appendage I. Automatic Monitoring (Surveillance) Facilities Operation Regulations

I. Terms used in these Regulations are defined as follows:

(I) Automatic monitoring facility: A facility that can continuously and automatically sample, analyze, record the concentration and flow ratio of wastewater or sewage treatment facility's intake (discharge), including the data accumulation and handling system (DAHS).

(II) Online facilities: Referring to the computer, programming and telecommunication line that are linked to the competent authority and is capable of generating and transmitting record files generated from the monitoring data of the automatic monitoring facility.

(III) Full scale: Referring to the minimum and maximum range of data detectable by an automatic monitoring facility.

(IV) Span: Referring to the maximum value measurable within the programmable range of the standardized product according to the status of the actual discharge situation based on the concentration and flow ratio of the intake (discharged) water of the wastewater or sewage treatment facility.

(V) Zero point: Referring to the minimum value measurable by the standardized product of zero value according to the status of the actual discharge situation based on the concentration and flow ratio of the intake (discharged) water of the wastewater or sewage treatment facility.

(VI) Standardized product: Referring to the standard liquid or equipment used for calibrating the automatic monitoring facility.

(VII) Relative Accuracy Test Audit (RATA): Referring to the steps adopted to conduct the test audit as specified in Appendage III.

(VIII) Daily: Referring to the time span from zero hour zero minute to twenty-three hour and fifty-nine minute of each calendar day.

(IX) Monitoring data: Referring to the values measured by the automatic monitoring facility.

(X) Monitoring record value: Referring to the monitoring data derived from the automatic monitoring facility that has been calibrated to a standard state, and is calculated using an arithmetic average.

(XI) Data accumulation and handling system (DAHS): Referring to the software and hardware of the back-end of the automatic monitoring facility capable of digital signal transmission, documentation and calculation, including all programmable controllers or remote controllers for signal transmission.

(XII) Automatic monitoring facility with normal functionalities: Referring to an automatic monitoring facility that has been put through routine calibration per par (IV) and par (V) and its relative accuracy results of relative accuracy test audit are also within the range specified in Appendage III.

(XIII) Normal online transmission: Referring to the percentage of effective monitoring record values of the automatic monitoring facility or the percentage of the normal video recording time of a video surveillance facility meets the stipulations set forth under par VII.

II. All monitoring record values of water quantity, temperature, hydrogen ion concentration index, and conductivity of an enterprise or sewage system that has had an automatic monitoring facility installed shall transmit once every 5 minutes to the competent authority. The monitoring record values of suspended solids, chemical oxygen demand, ammonia nitrogen and other water quality items as stipulated by the competent authority shall at least be transmitted once every hour. The time shall start on the hours for the monitoring record values transmitted as mentioned above.

III. In the event of the transmission module or network malfunctioning resulting in a portion

or the entire monitoring record values of the previous day has not been uploaded, and still cannot be repaired and be uploaded before 17:00pm of the current day, the enterprise or sewage system shall submit the monitoring record values to the competent authority via email, CD-ROM or other electronic storage medium on/before the 17:00pm of the current day.

IV. An enterprise or sewage shall, according to the manufacturer brand's specification or the equipment manufacturer's specified cycle and method, routinely calibrate the automatic water quality monitoring facility. However, the calibration cycle for the hydrogen ion concentration index and automatic conductivity monitoring facility may not exceed the maximum of one month. The calibration cycle for the automatic monitoring facility of suspended solids, chemical oxygen demand, ammonia nitrogen may not exceed the maximum of three months. Relevant calibration and maintenance records shall be retained for five years pending reference and validation. The calibration results shall be reported via Internet in accordance with the items specified by the competent authority in 7 workdays upon the end of calibration.

An enterprise and sewage system shall ensure that the average calibration error for the automatic monitoring facility for chemical oxygen demand, suspended solids, and ammonia nitrogen is to be kept less than twenty percent.

V. The related regulations governing the specification, installation, calibration, maintenance, records of calibration and maintenance period and preservation of the automatic water quantity monitoring facility shall be implemented in accordance with stipulations governing the cumulative water quantity measurement facility as specified under Article 65 and Paragraph 1 of Article 66. Relevant calibration and maintenance records shall be retained for five years pending references and validation.

VI. The suspended solids, chemical oxygen demand, and ammonia nitrogen automatic monitoring facility shall undergo relative accuracy test audit at least once per quarter. However, those that operate on non-optical theories may execute relative accuracy test audit more than once every six months. An enterprise and sewage system shall report the test audit findings to the competent authority within a twenty-day period from the date the test audit has concluded. The interval of execution mentioned above shall start from the time that the first relative accuracy test audit is completed after the installation.

Competent authorities of all levels may demand, according to the monitoring data audit findings, the enterprise or sewage system to increase the frequency of the relative accuracy test audit, provided that it may not exceed the maximum of once every month.

The enterprise and sewage system shall, in five to ten days prior to executing the relative accuracy test audit, report to competent authority about the scheduled execution period and the name of the inspection and testing institution in writing or via the Internet. In case that the audit cannot not be performed in the month that the relative accuracy test audit is scheduled to be performed due to an irresistible factor such as weathers, the audit may be postponed and completed by the 10th day of the next month. When unable to complete the testing within the scheduled execution period, a report shall be made to municipality, county or city competent authority in writing, by phone, or via the Internet with a modified scheduled execution period. The execution of the relative accuracy test audit shall be conducted within the competent authority's office hours, except under the approval of competent authority.

VII. An enterprise or sewage system shall maintain the percentage of effective monitoring record values of monthly water temperature, hydrogen ion concentration index, conductivity and water quantity automatic monitoring facility and the percentage of normal video recording time of the video surveillance facility above ninety percent. The percentage of

effective monitoring record values of other automatic monitoring facilities shall reach eighty percent or higher in every quarter. The calculation equations for the percentage of the monitoring record values and the percentage of normal video recording time are as follows (the units for time is minute):

P: The percentage of monitoring record values, or the percentage of normal video recording time.

T: The total daily (monthly, quarterly) time.

t: The time that the automatic monitoring (surveillance) facility is being replaced, modified or sent for repair, and that the backup automatic monitoring (surveillance) facility has not been used.

c: The calibration and maintenance time (the upper threshold that can be deducted from each calibration or maintenance time is 24 hours) of the (backup) automatic monitoring facility.

w: The time of facility malfunction caused by natural disaster or other force majeure factors

Du: The invalid data or abnormal recording time of the (backup) automatic monitoring (surveillance) facility.

Dm: the missing data or missing recording time of the (backup) automatic monitoring (surveillance) facility.

VIII. The monitoring data transmission process of automatic monitoring facility shall not go through any equipment that may affect the raw data. Those using the analogue signal and wire control encoding interface for transmission shall safeguard the onsite environment from power surges and magnetic interference, where the error of the raw data may not exceed two percent. In case that digital communication interface (for example, RS-232, RS-485, USB or LPT etc.) is used on the instruments and equipment of the monitoring facilities, the hardware connection method, connecting parameters and all the function documents referring such interface shall be provided, and signal verification shall be performed by cooperating with the competent authority.

IX. In any of the following circumstances, an enterprise or sewage system shall promptly report it to municipality, county, or city competent authority in writing, by phone, by fax, or via the Internet, within twenty-four hours from the time that an incident occurs by recording down the time, the report spokesperson, the name and job title of call receiver and the reason for the manual sampling and testing, and conduct a manual sampling and testing. For facility malfunctions due to a natural disaster or other force majeure factors, the manual sampling may be exempted:

(I) The automatic monitoring facility for hydrogen ion concentration index or conductivity cannot be calibrated or maintained within two hours.

(II) The automatic monitoring facility for suspended solids, chemical oxygen demand, or ammonia nitrogen cannot be calibrated or maintained within twelve hours.

(III) Should the percentage of the monitoring record values of water temperature, hydrogen ion index or automatic conductivity in the automatic monitoring facility from the previous day fail to reach ninety-five percent.

(IV) Should the percentage of the monitoring record values of the suspended solids, chemical oxygen demands or ammonia nitrogen automatic monitoring facility from the previous day fail to reach fifty percent. But those of relative accuracy who fail to pass the relative accuracy test audit shall not be exempted from the manual testing requirement as stipulated in this paragraph due to natural disaster or force majeure factors.

(V) During the replacement, modification or outside repair service period of the automatic monitoring (surveillance) facility, but excluding the replacement, modification or outside repair service of the automatic water quantity monitoring facility or video surveillance

repair service of the automatic water quantity monitoring facility or video surveillance facility.

The replacement, modification or outside repair service period of the automatic water quantity monitoring facility as specified in the exception section of paragraph V shall have the water quantity recorded by a method approved by the municipality, county or city competent authority. The replacement, modification or outside repair service period of the video surveillance facility shall have daily inspection and be photographed as records at the initial location where the video surveillance facility is installed, and the records are to be retained for five years pending future reference and validation.

In the wake of any circumstances as stipulated under subparagraph V, paragraph I, prior to restarting the monitoring (surveillance), a report is to be made in writing, by phone, by fax, or via the Internet to the municipality, county or city competent authority.

X. Those who execute the manual sampling testing in accordance with the regulations stipulated in the preceding paragraph shall complete the testing within the sample storage period, where the sampling frequency and time are specified as follows:

(I) Of those that fall under subparagraph I, subparagraph II of the preceding section, manual sampling shall be executed once every 24 hours after the calibration begins.

(II) Of those that fall under subparagraph III and subparagraph IV of the preceding section, manual sampling shall be executed once on the current day.

(III) Of those that fall under subparagraph V, manual sampling shall be executed once daily until the day the automatic monitoring facility is back online.

The items and location of a manual sampling testing for water quality in preceding paragraph is limited to those not compliant with the regulations stipulated in these Regulations.

An enterprise or sewage system, when unable to complete the manual sampling within the time specified in paragraph I, may postpone implementing it, provided that the work is to be completed within seven working days at the latest from the following day the specified sampling time concludes.

XI. An enterprise or sewage system, upon completing the manual sampling testing as stipulated in the preceding two paragraphs, shall submit the test results online within ten working days from the sampling date. Each manual sampling testing result may only be used in one submission.

For the manual sampling testing for water temperature, hydrogen ion concentration index or conductivity by an enterprise or sewage system in the Penghu, Kinmen and Matsu areas, it is permissible for the enterprise or sewage system to conduct the test on its own using he standard testing methods, and to submit the testing results online within twenty-four hours after the testing has concluded.

In the event where the last day of the online submission described in the preceding two paragraphs should fall on a public holiday, the deadline is automatically postponed to following day.

XII. The monitoring data and record values of the automatic monitoring facility shall be retained for five years or longer, and the surveillance video of the video surveillance facility shall be retained for ninety days or longer. An enterprise or sewage may not resort to any means to alter the monitoring data, record values and the surveillance video.

Any discrepancy in the data accumulation and handling system proposed by competent authority shall be improved within the period specified by competent authority, and a report is to be made to the competent authority for review and approval.

XIII. During the replacement, modification or outside repair service period of the automatic monitoring (surveillance) facility, an enterprise or sewage system, upon reporting to

municipality, county or city competent authority, may operate on the backup automatic monitoring (surveillance) facility, and is also exempted from conducting the manual sampling testing or inspection and photography records. An enterprise or sewage system operating on backup automatic monitoring (surveillance) facility shall submit all data as stipulated in Appendage I.

Those operating on the backup automatic monitoring facility for suspended solids, chemical oxygen demands, or ammonia nitrogen shall, within three days after reporting to the municipality, county or city competent authority, voluntarily submit the relative accuracy test audit compliance report of the most recent three months to the municipality, county or city competent authority.

The aforesaid enclosed relative accuracy test audit compliance report can be exempted from subparagraph III, paragraph VI when executing.

For those operating on the backup automate monitoring facility for hydrogen ion concentration index, conductivity, suspended solids, chemical oxygen demands, or ammonia nitrogen, the calibration cycle during the operating period may not exceed seven days.

Appendage II. The Measurement and Monitoring Record Values Processing Regulations of the Automatic Monitoring Facility

I. The measurement frequency of the automatic monitoring facility is specified as follows:

(I) The sampling and analysis of water temperature, hydrogen ion concentration index and conductivity in the automatic monitoring facility shall have one cycle completed within a 1-minute span.

(II) The sampling and analysis of suspended solids, chemical oxygen demand and ammonia nitrogen in the automatic monitoring facility shall have one cycle completed within a 180-minute span.

(III) The sampling and analysis of an automatic water quantity monitoring facility shall have one cycle completed within a 1-minute span.

(IV) The measurement frequency during a routine calibration testing and maintenance period may be free from the restrictions of the aforesaid provisions.

(V) The measurement frequency of other monitoring items is to be defined by central competent authority separately.

II. The calculation for the monitoring record values of the automatic monitoring facility is specified as follows:

(I) It shall be calibrated to the standard condition of 25 degrees Celsius (with positive/negative error range set to 1 degree).

(II) The monitoring data of water temperature, hydrogen ion concentration index, and conductivity in the automatic monitoring facility shall have a five-minute mean taken as the monitoring record value. The aforesaid five-minute mean pertains to the arithmetic mean derived from the monitoring data of five or more of equal timing intervals. If the said five minutes include routine calibration and maintenance time, one or more effective monitoring data may be used to calculate the five-minute mean.

(III) The monitoring data of suspended solids, chemical oxygen demand and ammonia nitrogen in the automatic monitoring facility shall have a 60-minute mean taken as the monitoring recorded value. The aforesaid 60-minute mean pertains to the arithmetic mean derived from one or more monitoring data of an equal time intervals. If the said 60-minute includes routine calibration or maintenance time, one or more effective monitoring data may be used to calculate the 60-minute mean.

(IV) When the automatic monitoring facility for suspended solids, chemical oxygen demand, and ammonia nitrogens is unable to complete the sampling and analysis within sixty

minutes, the monitoring record values thereof may be substituted with the latest record within the previous 180-minute span.

(V) The water quantity monitoring record values shall be the variation value conducted on a cumulative-type of water quantity measurement facility over the span of five minutes.

III. The automatic water quality monitoring facility shall be set to an appropriate measurement range, enabling it to be greater than or equal to the entire span. The full span setting is specified as follows:

(I) It shall encompass the standard range of the discharged water.

(II) The daily average value of the effective monitoring data of an automatic monitoring facility in the most recent ninety days shall encompass within ten percent to ninety percent of the full span, but excluding the automatic monitoring facility for water quantity, water temperature and hydrogen ion concentration index.

(III) If the full span should fail to conform to the aforesaid stipulation, an enterprise or sewage system shall adopt calibration and correction within seventy-two hours from the time the incident occurs to enable the full span to conform to the aforesaid stipulation. However this does not apply to those for which the daily average of effective monitoring data for the recent ninety days is lower than 10 percent of the effluence standards and is confirmed by the municipality, county or city competent authority. The circumstance of the correction shall be documented.

(IV) An enterprise or sewage system, when experiencing significant fluctuations in its monitoring data within a short time, shall report to the municipality, county or city competent authority for approval to adopt the full-span setting method.

IV. In the event where an automatic monitoring facility should encounter any of the following circumstances, the record values are deemed as invalid figures, but excluding when an automatic monitoring facility and backup automatic monitoring facility are unable to conduct normal monitoring due to incident of force majeure, and the enterprise or sewage system has also submitted relevant data to competent authority for approval, where:

(I) The monitoring figures do not conform to the stipulations set forth under paragraph I to paragraph III. However, when the full span has been corrected within a 72 hour period as stipulated under subparagraph 3, paragraph III, the pre-amended values exceeding the original full span data shall still be deemed as valid figures.

(II) When the automatic monitoring facility has not undergone calibration as stipulated under paragraph IV, paragraph V of Appendage I, it pertains to the record values effective from 0:00 hour of the following day to the calibration test compliance period.

(III) If the results of relative accuracy test audit is not conforming to the relative accuracy standards as stipulated in Appendage III, starting from 0:00 on the following day of receiving water quality test data report or notice of competent authority, until 0:00 on the following day when the relative accuracy test audit compliance report has been submitted to competent authority for approval for reference.

V. In the event where an automatic monitoring facility should encounter any of the following circumstances, the record values are deemed as missing figures; however, it excludes missing figures from the automatic monitoring facility and backup automatic monitoring facility due to an incident of force majeure, and the enterprise or sewage system has also submitted relevant data to competent authority for approval, where:

(I) During the processing unit operation period, the automatic monitoring facility is not active.

(II) During the processing unit operation period, the automatic monitoring facility is in normal operation. However, the monitoring data have not been documented and retained, or

the monitoring data have been documented but the figures cannot be retrieved.

VI. In the event where the monitoring record values should be deemed invalid or as missing data, the values shall be substituted using the following method by choosing the higher values, provided that after the substitution, the values shall still be deemed as invalid or missing data:

(Ⅰ) Using the median monitoring values as the substitution data:

1. When the percentage of the previous month's effective monitoring record value is greater than or equals to eighty-five percent, the hourly mean measurement values of the previous month's effective monitoring record values are to be taken as the substitution data.

2. When the percentage of the previous month's effective monitoring record value falls below eighty-five percent, or is greater than or equals to sixty-five percent, the values are to be substituted by the first six largest median measurement values in a sequential ranking from the maximum hourly values of daily effective monitoring record values in the previous month, and in the absence of six largest measurement values, the values are to be substituted with the five largest measurement values, and so on and so forth.

3. When the percentage of the previous month's effective monitoring record value falls below sixty-five percent, the values are to be substituted with the first three largest median measurement values in a sequential ranking from the maximum hourly values of daily effective monitoring record values. In the absence of the three largest measurement values, the figures are to be substituted with the first two largest median measurement values, and so on and so forth. If the previous month has no effective monitoring record values, the values are to be substituted with the first three largest median values in a sequential ranking from the hourly effective monitoring values retroactively counting back a quarter from the last day of the previous month. If an automatic monitoring facility has been installed less than a quarter, the values may be substituted with the first three largest median values in a sequential ranking from all hourly effective monitoring values when the automatic monitoring facility has undergone verification.

4. In the event where the hourly effective monitoring values are identical for each day of the previous month as described in the preceding two paragraphs at sequential ranking, the same identical measurement values shall account for one sequence respectively.

(Ⅱ) During the invalid or missing data monitoring period, the testing values shall be sampled by competent authority.

VII. For the invalid or missing data as stipulated in Article IV or Article V, the substitution value shall be sent along with sending the last monitoring data on the occurrence day. Those not as stipulated in preceding paragraph shall be completed of confirmation at the end of every month, and the substitution value shall be sent along with sending the last monitoring record value within two days at the beginning of next month.

Appendage III: Regulations on Installation of Water Quality Automatic Monitoring Facility and Video Surveillance Facility, and Relative Accuracy Test Audit

Ⅰ. Tank body may be set at the installation location of water quality automatic monitoring facility according to the onsite environmental needs to contain wastewater or sewage to maintain the monitoring equipment.

Ⅱ. Regulations on installation of automatic water quality monitoring facility

(Ⅰ) Water temperature

1. Use Celsius temperature scale, the measurement range is from zero Celsius degree to one hundred Celsius degree (or appropriate range), and the scale shall be correct to 0.1 degree.

2. Collect sufficient water samples or insert (place) the thermometer into water body at

the scene, make the sensor unit of thermometer be submerged below liquid level and make thermometer be balanced.

3. When using reversing thermometer, install the thermometer in the sampling instrument, upon sampling, thermometer must be kept submerged in water body for enough time to make the temperature be balanced.

4. If using other automatic monitoring facilities applicable for temperature measurement, installation and operation shall be carried out according to the operating manual of such facilities.

5. It shall be equipped with protective device to avoid damage caused by corrosion or impact.

(II) Hydrogen ion concentration index, it shall be attached with temperature compensating device, and water temperature shall be recorded at the same time upon measurement.

(III) Conductivity

1. Water sample can be placed under room temperature or in water bath to maintain a constant temperature, at this moment the temperature shall be at 25 Celsius degree (with positive/negative error range set to 0.5 degree), otherwise the temperature deviation shall be calibrated.

2. The electrode of monitoring facility shall be inserted (placed) into water body, making the electrode at least be submerged below liquid level.

3. Electrode shall be equipped with protective device to avoid damage caused by corrosion or impact.

(IV) Chemical oxygen demand, suspended solids and ammonia nitrogen automatic monitoring facility: to be installed according to the methods designated by equipment manufacturer.

III. Steps of relative accuracy test audit

(I) Introduction: under the same condition (such as temperature), the automatic monitoring facility and the qualified environmental analysis and testing organization after water quality inspection and certification (hereinafter referred to as testing organization) will carry out measurement (testing) of onsite water samples at the same time, and conduct correlation analysis on these two measurement (testing) data.

(II) Times of measurement (testing): at least three batches of measurements (testings) and four batches at most shall be inspected for every test. Every batch shall include three set of data, and each set of data includes two parts, namely the automatic monitoring facility measurement result and testing organization testing result respectively.

(III) Measurement (testing) regulations:

1. Every batch of measurement (testing) shall be completed within the triple measurement cycling time of the automatic monitoring facility for such water quality items.

2. All measurements (testings) needed for inspection in every test shall be completed within five days.

3. If the relative accuracy test audit involves in the part to be tested by testing organization, after sampling at the same time with automatic monitoring facility, testing may be executed within the storage life of water sample, and the restriction on the time of measurement (testing) mentioned above shall not apply.

(IV) Calculation: take the difference value of each group of "automatic monitoring facility measurement" and "testing organization testing" to calculate the difference value arithmetic mean (equation 1), difference value standard deviation (equation 2), confidence coefficient (equation 3) and relative accuracy in relative accuracy test audit (equation 4). Besides, when the test mean of some water quality items is relatively low, the relative accuracy test audit will change to take average difference value (equation 5) to identify the standard.

1. Difference value arithmetic mean

(Equation 1)

: Difference value arithmetic mean of "testing organization testing" and "automatic monitoring facility measurement" data

d_i: Difference value of "testing organization testing" and "automatic monitoring facility measurement" data

2. Difference value standard deviation

3. Confidence coefficient: one tailed 2.5% error confidence coefficient

(Equation 3)

Confidence Coefficient: (CC)

$t_{0.975}$: t calibration value (as shown in following table)

n	$t_{0.975}$
3	4.303
6	2.571
9	2.306
12	2.201

4. Relative accuracy of relative accuracy test audit

(Equation 4)

: Confidence coefficient

5. Average difference value

(Equation 5)

Ⅳ. Relative accuracy standard of relative accuracy test audit

(I) Chemical oxygen demand

Testing organization Test mean	Applicable as of January 1, 2015	Applicable as of January 1, 2018
30mg/L≤mean<60 mg/L	—	40%
60 mg/L≤mean<100 mg/L	40%	35%
Mean≥100 mg/L	30%	25%

(II) Suspended solids

Testing organization Test mean	Applicable as of January 1, 2015	Applicable as of January 1, 2018
Test mean <15 mg/L	—	Average difference value 6 mg/L
15 mg/L≤mean<30 mg/L	45%	40%
30 mg/L≤mean<60 mg/L	35%	30%
Test mean ≥60 mg/L	25%	20%

(III) Ammonia nitrogen

Testing organization Test mean	Applicable as of January 1, 2015	Applicable as of January 1, 2018
Mean<15 mg/L	—	Average difference value 8 mg/L
15 mg/L≤mean<30 mg/L		45%
30 mg/L≤mean<60 mg/L	45%	40%
60 mg/L≤mean<100 mg/L	40%	35%
Mean≥100 mg/L	35%	30%

Ⅴ. Regulations on installation of video surveillance facility

(I) Specification:

1. The resolution shall be greater than fifteen 640 X 480 frames per second, and it shall be saved in open video file format such as MPEG, H.264 or AVI etc.

2. It shall have night vision function (infrared ray or other light sources may be used for assistance).

(II) The location of installing video surveillance facility shall be able to clearly shoot the water quality automatic monitoring facility, inlet part, discharge point or rainwater discharge point, and it shall be connected to video equipment via cable or digital network.

(III) HTTP image browse servo is available. It is suggested to take 80, 86 and 8080 for TCP port.