

**THE MINISTRY OF
NATURAL RESOURCES
AND ENVIRONMENT**

No. 17/2021/TT-BTNMT

THE SOCIALIST REPUBLIC OF VIETNAM
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Hanoi, October 14, 2021

CIRCULAR

SUPERVISION OF EXTRACTION AND USE OF WATER RESOURCES

Pursuant to the Law on Water Resources dated June 21, 2012;

Pursuant to the Government's Decree No. 201/2013/ND-CP dated November 27, 2013 elaborating some articles of the Law on Natural Resources;

Pursuant to the Government's Decree No. 36/2017/ND-CP dated April 04, 2017 defining the functions, tasks, powers and organizational structure of the Ministry of Natural Resources and Environment;

At the request of the Director General of Department of Water Resources Management and the Director General of the Department of Legal Affairs;

The Minister of Natural Resources and Environment hereby promulgates a Circular on supervision of extraction and use of water resources.

Chapter I

GENERAL PROVISIONS

Article 1. Scope

This Circular provides for supervision of extraction and use of water resources by organizations and individuals ("hereinafter referred to as "establishments") that have works for extraction/use of water resources (except for extraction/use of seawater) in one of the following cases where a license is required:

1. Surface water reservoirs serving electricity generation with an installed capacity of over 50kW and including hydropower-irrigation reservoirs;
2. Surface water reservoirs with a capacity of over 0.1 m³ per second in case of supply of water for agricultural production and aquaculture, and over 100 m³ per 24 hours in case of supply of water for other purposes.

3. Drains, pumping stations and other surface water extraction works specified in Clauses 1 and 2 of this Circular with a capacity of over 0.1 m³ per second in case of supply of water for agricultural production and aquaculture, and over 100 m³ per 24 hours in case of supply of water for other purposes.

4. Groundwater extraction works with a capacity of 10 m³ per 24 hours.

Article 2. Regulated entities

This Circular applies to regulatory bodies, organizations and individuals involved in extraction/use of water resources (except for extraction/use of seawater).

Article 3. Rules for supervision

1. Accuracy, truthfulness, objectiveness and convenience are ensured upon exploitation and use of information and data on extraction and use of water resources are ensured.
2. Information and data are systematically organized, promptly and continuously updated and adequate to serve supervision of extraction and use of water resources.
3. Uniformity in information and data is ensured in terms of space and time; between central government and local governments and in each river basin.
4. Uniformity between supervision requirements and monitoring activities carried out by the establishments issued with the license to extract/use water resources is ensured.
5. Supervision parameters are directly monitored and measured or indirectly calculated using other measuring parameters but the accuracy and truthfulness are ensured.

Article 4. Supervision methods

Supervision of extraction and use of water resources means the supervision of extraction and use of water resources that is carried out by a competent authority by monitoring the monitoring data obtained from the establishments using and extracting water resources. The supervision specified in Articles 10 through 13 of this Circular shall be carried out using the following methods:

1. Automatic and online supervision: monitor automatic and continuous measurement and monitoring data connected and transmitted directly to the system for supervision of extraction and use of water resources (below collectively referred to as “supervision system”).
2. Periodic supervision: monitor the measurement and monitoring data periodically updated to the supervision system.

3. Camera supervision: through the camera, monitor the images connected and transmitted directly and continuously to the supervision system.

Chapter II

SUPERVISION SYSTEM

Article 5. Supervision system

1. The supervision system is a uniform system that is designed to connect and share information and data of the establishments extracting and using water resources with regulatory authorities from central to local governments, including:

a) Network infrastructure and servers; software for managing licenses, monitoring the extraction and use of water resources at central and local levels (hereinafter referred to as “supervision software”);

b) Database of the supervision system, including: information on shared water resources licenses of central and local governments; measurement and monitoring information and data obtained from works for extraction and use of water resources and other information and data serving supervision (hereinafter referred to as “supervision database”) at central and local levels;

c) Equipment for measuring, connecting, directly transmitting and updating data from establishments having works for extraction/use of water resources to the supervision database through network infrastructure, servers and supervision software.

2. Building supervision systems:

a) The Ministry of Natural Resources and Environment shall build a central supervision system as prescribed in Points a and b Clause 1 of this Article;

b) People’s Committees of provinces and central-affiliated cities (hereinafter referred to as “provincial People’s Committees) shall build local supervision systems as prescribed in Points a and b Clause 1 of this Article.

3. Information and data obtained from the supervision system shall serve as one of the bases for carrying out inspections and handling of administrative violations during compliance with regulations specified in the licenses to extract/use water resources and other regulations of law on water resources.

Article 6. Requirements applicable to network infrastructure, servers and supervision software

1. Network infrastructure, servers and other ancillary equipment used for installing and running supervision shall satisfy the following requirements:

a) Network infrastructure shall ensure safety, confidentiality and stable operation; satisfy the requirements for connecting, transmitting and updating data from measurement and monitoring equipment of works for extraction/use of water resources to the supervision database; satisfy the professional requirements of managers and requirements for connection, exploitation and sharing of data between the central supervision system and the local supervision systems;

b) Servers must ensure its ability to process and store data according to the design of the supervision software; ensure adequate number of servers in case of emergency.

2. Supervision software must be designed to run on web, integrate with access devices (computers, tablets, smartphones); ensure its ability to connect and share information and data with other systems through webservice; comply with the Government's regulations on level information systems security and the requirements set out in the Appendix I hereof.

Article 7. Requirements applicable to supervision software

1. Supervision software must be organized and set up in a reasonable manner for access, use, management and regular update.

2. The database must include:

a) Information about shared water resources licenses central and local governments specified in the Appendix II hereof;

b) Regarding database of works for extraction/use of surface water: information and data on the minimum discharge flow, plant overflow rate, weir overflow rate, water level at reservoirs in case of extraction of surface water for electricity generation; capacity, minimum discharge flow, water level at reservoirs, quality of water during extraction (if any) in the case of extraction/use of surface water for agriculture, aquaculture and other purposes;

c) Regarding database of works for extraction/use of groundwater: water level in production wells; water level in extraction wells; capacity, quality of water during extraction (if any);

d) Camera data (if any).

Article 8. Requirements applicable to equipment for measuring, connecting and transmitting data of establishments having works

1. The measuring equipment used in works for extraction/use of water resources must satisfy the following main requirements:

a) The value to be measured must be within the measurement range;

- b) The measuring equipment must operate continuously, connect and transmit information and data to the data logger of the supervision database;
 - c) Regarding water level and discharge meters, the measurement range must not exceed 15 minutes at a time; regarding surveillance cameras, the shutter speed must be at least 01 frame per minute;
 - d) Before being put into use, the measuring equipment must ensure quality, comply with standards and technical regulations in accordance with prevailing regulations on quality, products and goods, and be kept under metrological control (inspection, calibration, testing) in accordance with prevailing regulations on measurement.
2. Upon carrying out measurement of water level, the absolute error must not exceed 01 cm; regarding the flow meter, the relative error must not exceed 5% of the actually measured value.
 3. The equipment for measuring, connecting and transmitting data must comply with connect data standard specified in the Appendix III hereof.

Article 9. Sharing and exploitation of water resources supervision data

1. Central and local water resources supervision systems must comply with the requirements for connecting and sharing data in accordance with regulations on management, connection and sharing of digital data of regulatory bodies.
2. The central supervision system must connect and share data with the national natural resources and environment monitoring database and other information systems and database according to the e-Government architecture in the natural resources and environment sector; share data with local supervision systems for the local works for extraction/use of water resources.
3. Local supervision systems must connect and share data with the central supervision system; share supervision data with other information systems and database according to the provincial e-government architecture.

Chapter III

SUPERVISION OF EXTRACTION AND USE OF WATER RESOURCES

Article 10. Supervision of extraction and use of water through reservoirs for electricity generation

The supervision of extraction and use of surface water through hydropower reservoirs or hydropower-irrigation reservoirs specified in Clause 1 Article 1 of this Circular shall be carried out as follows:

1. Supervision parameters:

- a) Reservoir water level;
- b) Minimum discharge flow (if any);
- c) Plant overflow rate;
- d) Weir overflow rate.

2. Supervision methods:

- a) The reservoir with a total capacity of at least one (01) million m³: carry out automatic and online supervision of the parameters specified in Clause 1 of this Article and camera supervision of the parameters specified in Points b, c and d Clause 1 of this Article;
- b) The reservoir with a total capacity of less than (01) million m³: carry out automatic and online supervision of the parameters specified in Points a, b and c Clause 1 of this Article, periodic supervision of the parameter specified in Point d Clause 1 of this Article, and camera supervision of the parameters specified in Points b and d Clause 1 of this Article.

3. Supervision methods:

- a) Within 15 minutes at a time for the parameters under automatic and online supervision;
- b) At least 04 times/day at 01:00, 07:00, 13:00 and 19:00 in the flood season; at least every 12 hours at 07:00 and 19:00 in the dry season, and the data must be updated to the supervision system before 10:00 on the next day.

Article 11. Supervision of extraction of water through reservoirs for agricultural production, aquaculture and other purposes

The supervision of extraction and use of surface water through reservoirs for agricultural production, aquaculture and other purposes specified in Clause 2 Article 1 of this Circular shall be carried out as follows:

1. Supervision parameters:

- a) Reservoir water level;
- b) Minimum discharge flow (if any);
- c) Capacity;
- d) Weir overflow rate;

dd) Quality of water during extraction (if any).

2. Supervision methods:

a) Regarding a reservoir with a capacity of at least three (03) m³: carry out automatic and online supervision of the parameters specified Points a, b, c and d Clause 1 of this Article, carry out periodic supervision of the parameter specified in Point dd Clause 1 of this Article;

b) Regarding a reservoir with a capacity of from one (01) m³ to less than three (03) m³: carry out automatic and online supervision of the parameters specified Points a, b and c Clause 1 of this Article, carry out periodic supervision of the parameter specified in Point d and dd Clause 1 of this Article;

c) Regarding a reservoir with a capacity of less than (01) m³: carry out periodic supervision of the parameter specified Clause 1 of this Article.

3. Supervision frequency:

a) Regarding the parameters under automatic and online supervisions and under periodic supervision, Clause 3 Article 10 of this Circular shall be complied with;

b) For the water quality parameter during extraction specified in Point dd Clause 1 of this Article, data shall be updated to the supervision system within 05 working days from the date on which the analytical result is available.

Locations, parameters and frequency of monitoring of water quality shall comply with the regulations laid down in the license to extract/use surface water (if any).

Article 12. Supervision of extraction of water through drains, pumping stations and other surface water extraction works

The supervision of extraction and use of surface water through drains, pumping stations and other surface water extraction works specified in Clause 3 Article 1 of this Circular shall be carried out as follows:

1. Supervision parameters:

a) Capacity;

b) Quality of water during extraction (if any).

2. Supervision methods: carry out periodic supervision of the parameters specified in Clause 1 of this Article.

3. Supervision frequency:

a) For the parameter specified in Point a Clause 1 of this Article: at least every 12 hours at 07:00 and 19:00 for the capacity for agricultural production and aquaculture; within 24 hours at a time for the parameters for other purposes and data shall be updated to the supervision system before 10:00 on the next day. For the capacity for other purposes, it shall be considered as the total amount of water extracted and used by the work within one (01) day and expressed in $m^3/24$ hours;

b) For the water quality parameter during extraction specified in Point b Clause 1 of this Article, data shall be updated to the supervision system within 05 working days from the date on which the analytical result is available.

Locations, parameters and frequency of monitoring of water quality shall comply with the regulations laid down in the license to extract/use surface water (if any).

Article 13. Supervision of extraction of groundwater

The supervision of extraction and use of groundwater through the works Clause 3 Article 1 of this Circular shall be carried out as follows:

1. Supervision parameters:

a) Capacity of each drilled well, dug well, dug hole, corridor, roadway, vein and cave of the work;

b) Water level in the production wells, regarding drilled wells and dug wells;

c) Quality of water during extraction (if any);

d) Regarding a work with a capacity of at least $3,000 m^3$ per 24 hours, in addition to supervising the parameters specified in Points a, b and c of this Clause, water level in monitoring wells must be supervised.

2. Supervision methods:

a) Regarding a work with a capacity of at least $3,000 m^3$ per 24 hours: carry out automatic and online supervision of the parameters specified in Points a, b and d Clause 1 of this Article, and periodic supervision of the parameter specified in Point c Clause 1 of this Article;

b) Regarding a work with a capacity of from $1,000 m^3$ to less than $3,000 m^3$ per 24 hours: carry out automatic and online supervision of the parameters specified in Points a and b Clause 1 of this Article, and periodic supervision of the parameters specified in Point c Clause 1 of this Article;

c) Regarding a work with a capacity of from $200 m^3$ to less than $1,000 m^3$ per 24 hours: carry out automatic and online supervision of the parameters specified in Point a Clause 1

of this Article, and periodic supervision of the parameters specified in Points b and c Clause 1 of this Article;

d) Regarding a work with a capacity of more than 10 m³ to less than 200 m³ per 24 hours: carry out periodic supervision of the parameters specified in Points a, b and c Clause 1 of this Article.

3. Supervision frequency:

a) Within 01 hour at a time for the parameters under automatic and online supervision;

b) For the parameters under periodic supervision: within 24 hours at a time, and data shall be updated to the supervision system before 10:00 on the next day, for the flow and water level parameters; for the water quality parameter during extraction, data shall be updated to the supervision system within 05 working days from the date on which the analytical result is available;

Locations, parameters and frequency of monitoring of water quality shall comply with the regulations laid down in the license to extract/use underground water (if any).

Chapter IV

RESPONSIBILITIES OF REGULATORY BODIES, ORGANIZATIONS AND INDIVIDUALS FOR SUPERVISION OF EXTRACTION AND USE OF WATER RESOURCES

Article 14. Responsibilities of central agencies

1. The Department of Water Resources Management shall:

a) Preside over and cooperate with relevant units in building systems of network infrastructure, servers and supervision software in accordance with this Circular;

b) Preside over and cooperate with relevant units in building database of information on shared water resources licenses of central and local governments; database of measurement and monitoring information and data obtained from works for extraction and use of water resources licensed by the Ministry of Natural Resources and Environment;

c) Update information on effective water resources licenses issued by the Ministry of Natural Resources and Environment to the database of information on shared water resources licenses of central and local governments;

d) Manage, operate, maintain and upgrade supervision system at central level, advise and assist the Minister of Natural Resources and Environment to direct the building, management and operation of supervision systems nationwide;

- dd) Organize the management and supervision of water resources extraction and use in cases subject to licensing by the Ministry of Natural Resources and Environment;
- e) Provide guidance on connecting and transmitting data to the central supervision system for establishments extracting and using water resources which are licensed by the Ministry of Natural Resources and Environment;
- g) Preside over and cooperate with relevant units in carrying out inspections or handling within its competence or request a competent authority to handle the violations of this Circular committed by establishments extracting and using water resources.

2. The Department of Information Technology and Data for Natural Resources and Environment shall:

- a) Preside over providing guidance on building and operating local supervision systems to facilitate connection and sharing of data with central supervision systems; cooperate in providing guidance on connecting and transmitting data to the central supervision system for establishments extracting and using water resources which are licensed by the Ministry of Natural Resources and Environment;
- b) Cooperate with the Department of Water Resources Management in maintaining and upgrading the central water resources supervision system.

Article 15. Responsibilities of local agencies

1. Provincial People's Committees shall direct Departments of Natural Resources and Environment and relevant authorities and units in building stems of network infrastructure, servers and supervision software in accordance with this Circular; building database of measurement and monitoring information and data obtained from works for extraction and use of water resources licensed by provincial People's Committees;

2. Departments of Natural Resources and Environment shall:

- a) Update information on effective water resources licenses issued by provincial People's Committees to the database of information on shared water resources licenses of central and local governments;
- b) Manage, operate, maintain and upgrade local supervision systems; report results of extraction and use of water resources within provinces to provincial People's Committees;
- c) Organize the management and supervision of water resources extraction and use in cases subject to licensing by provincial People's Committees and cooperate with the Department of Water Resources Management in carrying out supervision in cases subject to licensing by the Ministry of Natural Resources and Environment;

d) Provide guidance on connecting and transmitting data to local supervision systems for establishments extracting and using water resources which are licensed by provincial People's Committees;

dd) Carry out inspections of compliance with regulations on supervision or handle within their competence or request a competent authority to handle the violations of this Circular committed by establishments within their provinces.

Article 16. Responsibilities of establishments extracting and using water resources

1. Invest in, install, manage, operate and maintain operation of measuring and monitoring equipment in works for extraction/use of water resources as prescribed in Point c Clause 1 Article 5 hereof.

2. Complete the connection, transmission and regular, continuous and periodic updating of data to supervision systems in accordance with regulations of this Circular before carrying out operation in works.

3. Store and provide their information and data on supervision of extraction and use of water resources to facilitate inspections or at the request of competent authorities.

Chapter V

IMPLEMENTATION CLAUSE

Article 17. Transitional clauses

1. For a province or central-affiliated city which has yet to build a supervision system or has built one but failed to fully satisfy the requirements set out in this Circular shall finish building the system or review and upgrade the supervision system to satisfy the requirements set out in this Circular before September 30, 2023.

2. The Department of Water Resources Management and Departments of Natural Resources and Environment of provinces and central-affiliated cities shall update information on the water resources licenses to the database of information on shared water resources licenses of central and local governments before June 30, 2022 (for the licenses issued before the effective date of this Circular) and at least 05 working days after the date of signing the licenses for promulgation (for the licenses issued from the effective date of this Circular).

3. Any establishment having a work for extraction/use of water resources which has yet to carry out or has carried out supervision of extraction and use of water resources but failed to satisfy the requirements for supervision of extraction and use of water resources shall finish installing equipment, connecting, transmitting and updating data to the supervision system as prescribed in this Circular before December 31, 2023 for the works

licensed by the provincial People's Committee and before December 31, 2022 for the works licensed by the Ministry of Natural Resources and Environment.

For the reservoirs specified in Points a and b Clause 2 Article 11, it is required to formulate a plan for and complete the installation of equipment, connection and transmission of data for the purpose of automatic and online supervision of the parameters as prescribed in this Circular before December 31, 2015 and to update periodic supervision data for the parameters specified in Clause 1 of Article 11 until the completion of installation of equipment, connection and transmission of data on automatic and online supervision.

4. Any establishment having a groundwater extraction work with a production well constructed before the effective date of this Circular without installing an automatic water level meter or without manually measuring water level in the well, the owner of such work shall, according to current conditions, drill a monitoring well into the same extraction aquifer at a distance of no more than 10m from such production well to monitor the water level for supervision purpose.

The well drilling shall comply with regulations of law on protection of underground water during drilling, digging, exploration and extraction of underground water and shall be reported to the Department of Water Resources Management (if licensed by the Ministry of Natural Resources and Environment) or the Department of Natural Resources and Environment of the province where the work is located (if licensed by the provincial People's Committee) upon connecting and transmitting data to the supervision system.

5. Any establishment having a work for extraction/use of water resources which has installed equipment, connected, transmitted and updated data to the supervision system as prescribed in the Circular No. 47/2017/TT-BTNMT dated November 07, 2017 of the Ministry of Natural Resources and Environment shall continue to carry out supervision or make adjustments according to regulations of this Circular to continue to carry out supervision as prescribed.

Article 18. Effect

1. This Circular comes into force from November 30, 2021 and supersedes the Circular No. 47/2017/TT-BTNMT dated November 07, 2017 of the Minister of Natural Resources and Environment.

2. Difficulties that arise during the implementation of this Circular should be promptly reported to the Ministry of Natural Resources and Environment for instructions./.

**PP. THE MINISTER
THE DEPUTY MINISTER**

Le Cong Thanh

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