CERTIFICATION REPORT

Alliance for Water Stewardship (AWS)

Audit Number: AO-001509

WSAS WATER STEWARDSHIP ASSURANCE SERVICES

SITE DETAILS

Site: **TSMC Hsinchu Fab5 and Fab12A**
Address: NO.121, Park Ave. 3, Hsinchu Science Park, Hsinchu 300, Taiwan, Republic Of China
Contact Person: Minglien Lo
AWS Group Reference Number: AWS-G-000038
Site Structure: Group Site

CERTIFICATION DETAILS

Certification status: Certified Platinum
Date of certification decision: 2025-Sep-09
Validity of certificate: 2028-Sep-08

AUDIT DETAILS

Audited Service(s): AWS Std 2025 New Certfication Requirements
Audit Type(s): Re-Certification Audit
Audit Start Date: 2025-Mar-18
Audit End Date: 2025-Mar-21
Lead Auditor: Ian Jiang

Audit team participants:
Alex C. Wu
Yun-Ching Wang

Site Participants:
LAI,YI-FEN, Factory Engineer
YEN,HSIEN-JUI, Factory Engineer
LI,WEN-KAI, Factory Engineer
WU,CHENG-MIN, Factory Engineer
Wu Chung Chen, Factory Engineer
WANG,YI-CHUN, Factory Engineer
HOU,CHUANG-YAO, Factory Engineer
CHEN,KUAN-HUNG, Factory Engineer
TSENG,PO-YEN, Factory Engineer
LO,MING-LIEN, Factory EHS Manager

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ADDITIONAL INFO

Summary of Audit Findings: 4 findings were raised during the certification audit, zero major non-conformity, zero minor non-conformity, four observations.
No action is required for the site.
The audit team recommends re-certification of TSMC Hsinchu Fab5 and Fab 12A at Platinum level.

Scope of Assessment: The scope of services covers the recertification audit for assessing conformity of TSMC Hsinchu Fab5, Fab 12A against the AWS International Water Stewardship Standard Version 2.

Established in 1987 and headquartered in Hsinchu Science Park, Taiwan, TSMC pioneered the pure-play foundry business model with an exclusive focus on manufacturing customers' products. TSMC's foundry business model has enabled the rise of the global fabless industry, and since its inception TSMC has been the world's leading semiconductor foundry.
In 2024, TSMC served 522 customers and manufactured 11,878 products for various applications covering a variety of end markets including high performance computing, smartphones, the Internet of Things (IoT), automotive, and digital consumer electronics.
Annual capacity of the manufacturing facilities managed by TSMC and its subsidiaries exceeded 16 million 12-inch equivalent wafers in 2024.
TSMC operates four 12-inch wafer fabs, four 8-inch wafer fabs, and one 6-inch wafer fab, all in Taiwan.
AWS-000409 TSMC Hsinchu Fab5, 12A mainly manufactures 12-inch wafer and AWS-000410 TSMC Hsinchu Fab5 mainly manufactures 8-inch wafer.

The audit was conducted onsite on 18th~21st March 2025.
The onsite visit included the assessment of all facilities in the site, including wastewater treatment plant, water purification system, IWRAs, chemical warehouse, hazardous waste storage area and canteen.
The following external stakeholders were interviewed during the audit: employees, suppliers, community representative, industrial zone management committee and WWTP.

FINDINGS

NUMBER OF FINDINGS PER LEVEL

Observation	4

FINDING DETAILS

Finding No:	TNR-017315
Checklist Item No:	1.3.2
Status:	Open
Finding level:	Observation
Checklist item:	Site water balance, including inflows, losses, storage, and outflows shall be identified and mapped
Findings:	It is suggested to incorporated the water for firefighting, storage tank, other inflows into one single water balance map.
Finding No:	TNR-017524
Checklist Item No:	1.3.3
Status:	Open
Finding level:	Observation
Checklist item:	Site water balance, inflows, losses, storage, and outflows, including indication of annual variance in water usage rates, shall be quantified. Where there is a water-related challenge that would be a threat to good water balance for people or environment, an indication of annual high and low variances shall be quantified.
Findings:	It is suggested to perform the annual variance analysis of intermittent water consumption like rainwater, external reclaim water.
Finding No:	TNR-017525
Checklist Item No:	3.9.9
Status:	Open
Finding level:	Observation
Due date:	2025-Mar-17
Checklist item:	Voluntary Advanced Indicator: Achievement of identified best practices related to targets in terms of the site's maintenance of Important Water-Related Areas have been implemented.
Findings:	For future endeavors, it is advisable to focus more efforts on documenting achievements in important water areas upstream of the watershed. This would highlight the tangible results of water quality improvement efforts in that region.

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Finding No:	TNR-018826
Checklist Item No:	5.3.1
Status:	Open
Finding level:	Observation
Checklist item:	A summary of the site's water stewardship performance, including quantified performance against targets, shall be disclosed annually at a minimum.
Findings:	Currently, the site disclosed the AWS performance via ESG report. But the ESG disclosed the AWS performance of entire TSMC group. It is suggested to incorporate the sites' AWS performance into stakeholder questionaries to disclose.

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Alliance for Water Stewardship (AWS)

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WSAS WATER STEWARDSHIP ASSURANCE SERVICES

Report Details

Report	Value
Report prepared by	Ian Jiang
Report approved by	Neringa Pumputyte
Report approved on (Date)	05 August 2025

Surveillance

Proposed date for next audit
2026-Mar-21

Comment Proposed the first surveillance audit to be performed at 2026.03.21

Stakeholder Announcements

Date of publication	Location
10/01/2025	https://www.tuv.com/content-media-files/greater-china/about-us/downloads/terms-and-conditions-and-certification-regulations/aws-000409~411_tsmc-hsinchu_stakeholderannouncement_v3.0-billingual.pdf
10/01/2025	https://a4ws.org/wp-content/uploads/2025/01/AWS-000409411_TSMC-Hsinchu_StakeholderAnnouncement_V3.0-billingual.pdf
10/01/2025	Post onsite,see attachment

Stakeholder interviews

Name	Organisation/Role/Relationship
HUANG,WEN-PIN	TSMC Department Manager
HUANG,WEN-PIN	Section Chief of the Hsinchu Science Park Administration Bureau
CHEN,HSIU-YU	Section Chief of the Sewage Plant of the Hsinchu Science Park Administration Bureau
CHAO,LIEN	Megalink Water Treatment Supplier
HENG,CHENG	Wastewater Engineering Contractor.
FANG,WEI-PIN	Residents
CHEN,KUAN-WEI	Employees

Main Outcome of Stakeholder Interviews

Suppliers and contractors are focused on: Collaborating with TSMC to meet regulatory requirements for effluent water quality.

Residents are concerned about: Needing immediate communication and handling during water outages, an area where TSMC excels.

The Chief of the Wastewater Plant is focused on: Demanding higher standards for TSMC's recycled water than the rest of the industry and introducing experiences from the Tainan facility to make the Hsinchu plant more competitive.

The Section Chief of the Science Park Administration is concerned about: TSMC potentially facing water conservation bottlenecks in the future. The main spirit is to conserve water appropriately without causing secondary environmental harm, instead of blindly pursuing water recovery rates.

The TSMC Department Manager focuses on: ESG goals and achievement rates and the results of subsequent improvements and compliance. The baseline is compliance with regulations, but striving to exceed them, with the long-term vision of having effluent water quality close to background values (such as rivers).

Internal employees are concerned about: The future challenges of advanced production processes on water quality, suggesting the comparison of water quality across the entire plant to promote mutual growth and prepare for future larger water usage and more stringent regulatory standards.

Comment: The interviewees include government agencies in the watershed (Section Chief of the Sewage Plant of the Hsinchu Science Park Administration Bureau, Section Chief of the Hsinchu Science Park Administration Bureau), suppliers and contractors, residents, senior executives of the organization (department managers), and employees, totaling 7 people.

Catchment Information

Catchment Information

The main water source for TSMC Fab 5 and F12A is tap water. The tap water is supplied by from Baoshan Water Purification Plant and Hsinchu Water Purification Plant which also provide tap water to Hsinchu County and City. There two water sources of tap water, one is Baoshan Reservoir, and the other one is Toqianxi Longen Weir. Both of them are located in Touqian River basin. The Baoshan Reservoir is one of the main reservoirs in Hsinchu. The average daily water supply capacity of reservoir storage is about 42,000 cubic meters, and the total water supply capacity can reach 5.04 million cubic meters. It is mainly supplied to Hsinchu County and City for public use. Touqian River is 63.03 kilometers long, with a drainage area of 565.94 square kilometers and an annual runoff of 6.11 billion cubic meters.

The Hinschu City also established some water wells as emergency water source. In extreme drought condition, the site can obtain the water from this source. The water aquifer is located in the Hinschu plain, which is also in Touqian River Basin.

The wastewater is first treated by TSMC's internal WWTP, while confirmed it meet the Hsinchu Science Park's water intake standards, the wastewater is discharged into sewage treatment plant of the Hsinchu Science Park. After confirming that it meets the standard, the wastewater discharged into the Keya Creek. The Keya River is 25 kilometers long and has a drainage area of about 45.6 square kilometers. The final receiving water body is the Taiwan Strait.

Client Description and Site Details

Client/Site Background

Established in 1987 and headquartered in Hsinchu Science Park, Taiwan, TSMC pioneered the pure-play foundry business model with an exclusive focus on manufacturing customers' products. TSMC's foundry business model has enabled the rise of the global fabless industry, and since its inception TSMC has been the world's leading semiconductor foundry. In 2024, TSMC served 522 customers and manufactured 11,878 products for various applications covering a variety of end markets including high performance computing, smartphones, the Internet of Things (IoT), automotive, and digital consumer electronics. Annual capacity of the manufacturing facilities managed by TSMC and its subsidiaries exceeded 16 million 12-inch equivalent wafers in 2024.
TSMC operates four 12-inch wafer fabs, four 8-inch wafer fabs, and one 6-inch wafer fab, all in Taiwan.
The Fab 12A mainly manufactures 12-inch wafer and Fab 5 mainly manufactures 8-inch wafer. Both of them are located in Hinschu Science Park. The main water source for TSMC Fab 5 and F12A is tap water. The tap water is supplied by from Baoshan Water Purification Plant and Hsinchu Water Purification Plant which also provide tap water to Hsinchu County and City. There two water sources of tap water, one is Baoshan Reservoir, and the other one is Toqianxi Longen Weir.
The Hinschu City also established some water wells as emergency water source. In extreme drought condition, the site can obtain the water from this source.

The wastewater is first treated by TSMC's internal WWTP, while confirmed it meet the Hsinchu Science Park's water intake standards, the wastewater is discharged into sewage treatment plant of the Hsinchu Science Park. After confirming that it meets the standard, the wastewater discharged into the Keya Creek. The final receiving water body is the Taiwan Strait.

	Summary of Shared Water Challenges

Summary of Shared Water Challenges
Via the engagement of stakeholders and self-evaluation, TSMC identified five Shared Water Challenges, include internal and external challenges.
The shared water challenges are water shortage and flooding.
The specific water shortage challenges were prioritized as:
1.Climate change may result abnormal water supply
2.Regional water consumption is increasing year by year
3.Water leakage in the water pipeline
The flooding challenges were prioritized as:
1.Regional terrain
2.Abnormal instantaneous rainfall

0.1	General Requirements for Single Sites, Multi-Sites and Groups	
0.1.1	*Eligibility Criteria*	
0.1.1.1	*The site(s) occupy one catchment OR an exception has been granted.*	Yes
Comment	The site occupies one catchment.	
0.1.1.2	*The scope of the proposed certification shall be under the control of a single management system.*	Yes
Comment	The scope of the proposed certification is under the control of a single management system.	
0.1.1.3	*The scope of the proposed certification shall be homogeneous with respect to primary production system, water management, product or service range, and the main market structures.*	Yes
Comment	The scope of the proposed certification is homogeneous with respect to primary production system, water management, product or service range, and the main market structures.	
0.1.2		
0.1.2.1	*Have any water source locations and water-related discharge locations been visited during the audit, if so, which and where? If none were visited please provide justification.*	Yes
Comment	The discharge point of wastewater was visited. The location of one water source (Baoshan Water Reservoir) was visited during audit.	

0.3	Requirements for Groups	
0.3.1	*Group Management Requirements*	
0.3.1.1	*The management of the group shall be clearly defined.*	N/A
Comment	This is a multi-site, so the group requirements are not applicable.	
0.3.1.2	*The group shall identify the person with overall management responsibility for the group.*	N/A
0.3.1.3	*The group shall nominate an 'AWS Group Representative' who assumes overall responsibility for the group's implementation of and compliance with the AWS Standard and AWS certification requirements and serves as the primary contact for AWS communications.*	N/A
0.3.1.4	*The Group Management shall have clearly defined responsibilities.*	N/A
0.3.2	*Group Internal Control System*	
0.3.2.1	*The group shall operate an Internal Control System (ICS) which meets the requirements of the AWS Standard and AWS certification requirements.*	N/A
0.3.2.2	*The ICS shall include:* *a) a documented set of procedures covering group processes;* *b) a detailed description of how production units are structured;* *c) appropriate procedures for maintenance of records;* *d) records from internal audits of production units; and* *e) a description of the responsibilities of staff of production units and ICS.*	N/A
0.3.2.3	*The ICS shall identify the applicable AWS Standard and define procedures and sanctions for dealing with non- conformities resulting from internal audits.*	N/A
0.3.3	*Group Membership Agreement*	
0.3.3.1	*Each group member shall indicate their entry into an agreement with group management to coordinate AWS certification as a group (known as the 'Group Membership Agreement').*	N/A
0.3.3.2	*Group management shall make sure that each group member understands the implications of entering into the Group Membership Agreement.*	N/A

0.3.3.3	*The Group Membership Agreement shall contain at least the following:* *a) a commitment by the group member to fulfil the requirements of the AWS Standard* *and applicable AWS Certification Requirements;* *b) a commitment by the group member to provide the group management with required information in a timely manner;* *c) acceptance by the group member of internal and external audits;* *d) an obligation for the group member to report non-conformities; and* *e) the rights of group management to terminate the membership of any member if* *continued participation by that member threatens the credibility of the group.*	N/A
0.3.4	*Group Member Requirements*	
0.3.4.1	*All Group members shall have an adequate understanding of the AWS Standard and access to the specified requirements determined by the group (Standard and certification requirements).*	N/A
0.3.4.2	*Records covering the relationship between the group management and group members shall be maintained and kept up to date.*	N/A
0.3.4.3	*The AWS Group Manager shall keep the following information up to date:* *a) Copies of contracts between the group and individual group members;* *b) group member list;* *c) maps of sites and property areas;* *d) internal audit reports;* *e) non-conformities (both minor and major), sanctions and follow-up action arising from both internal audits and external audits; and* *f) complaints and appeals (to group management, the CAB, or AWS directly).*	N/A
0.3.4.4	*The internal audits shall be conducted with sufficient scope and detail to provide group management with a robust appraisal of whether or not each group member continues to maintain conformity with the AWS Standard and certification requirements*	N/A
0.3.4.5	*Each member of the group shall be internally audited on at least once per year.*	N/A
0.3.4.6	*New or proposed group members shall always be subject to an internal audit before they may be added to the list of group members.*	N/A
0.3.4.7	*The AWS Group Representative shall perform an annual review of the status of all members of the group and shall take a decision as to continuing membership of each member. This decision shall be based on internal audits and other information.*	N/A
0.3.4.8	*Safeguards shall be in place to ensure that internal auditors are not unduly influenced in their findings by group management or group members.*	N/A
0.3.4.9	*Group members shall have the right to appeal internal audit findings of non-conformity.*	N/A

0.3.4.10	*All group members shall be recorded on a list. The list of group members shall be updated annually or more often if necessary and shall include at least the following information for each member:* *a) name of the member or code assigned to the member;* *b) location* *c) the nature (product types) and volume of production (units);* *d) volume of water use (inputs and outputs) specify units;* *e) Group membership status (including any non-conformities and corrective action plans);* *f) date(s) of most recent internal audit;* *g) date(s) of most recent external audit; and* *h) any other group-specific information as may be needed.*	N/A

1	STEP 1: GATHER AND UNDERSTAND	
1.1	*Gather information to define the site's physical scope for water stewardship purposes, including: its operational boundaries; the water sources from which the site draws; the locations to which the site returns its discharges; and the catchment(s) that the site affect(s) and upon which it is reliant.*	
1.1.1	*The physical scope of the site shall be mapped, considering the regulatory landscape and zone of stakeholder interests, including:* *- Site boundaries;* *- Water-related infrastructure, including piping network, owned or managed by the site or its parent organization;* *- Any water sources providing water to the site that are owned or managed by the site or its parent organization;* *- Water service provider (if applicable) and its ultimate water source;* *- Discharge points and waste water service provider (if applicable) and ultimate receiving water body or bodies;* *- Catchment(s) that the site affect(s) and is reliant upon for water.*	Yes
Comment	The Fab 12A mainly manufactures 12-inch wafer and Fab 5 mainly manufactures 8-inch wafer. Both of them are located in Hinschu Science Park. The main water source for TSMC Fab 5 and F12A is tap water. The tap water is supplied by from Baoshan Water Purification Plant and Hsinchu Water Purification Plant which also provide tap water to Hsinchu County and City. There two water sources of tap water, one is Baoshan Reservoir, and the other one is Toqianxi Longen Weir. The Hinschu City also established some water wells as emergency water source. In extreme drought condition, the site can obtain the water from this source. The wastewater is first treated by TSMC's internal WWTP, while confirmed it meet the Hsinchu Science Park's water intake standards, the wastewater is discharged into sewage treatment plant of the Hsinchu Science Park. After confirming that it meets the standard, the wastewater discharged into the Keya Creek. The final receiving water body is the Taiwan Strait. The site draws the boundary maps, which identify the site boundary information and the layout within the site. The site also collects information on the destination of its wastewater discharge, the location of the final receiving water body, the location of water service providers, and their water sources. The maps contain the following content: • Map of site boundaries with the source of water supply and discharge points of wastewater and rainwater. • Map of water-related infrastructures at the site such as pipeline, and wastewater treatment plant. • Map of the water plant and its ultimate water source, municipal WWTP and its ultimate water receiving body. • Map of the catchment that the site affects and is reliant upon for water.	
1.2	*Understand relevant stakeholders, their water related challenges, and the site's ability to influence beyond its boundaries.*	

1.2.1	*Stakeholders and their water-related challenges shall be identified. The process used for stakeholder identification shall be identified. This process shall:* *- Inclusively cover all relevant stakeholder groups including vulnerable, women, minority, and Indigenous people;* *- Consider the physical scope identified, including stakeholders, representative of the site's ultimate water source and ultimate receiving water body or bodies;* *- Provide evidence of stakeholder consultation on water-related interests and challenges;* *- Note that the ability and/or willingness of stakeholders to participate may vary across the relevant stakeholder groups;* *- Identify the degree of stakeholder engagement based on their level of interest and influence.*	Yes
Comment	TSMC disclosed the stakeholder engagement process in the CSR report. TSMC defined the following six stakeholders as the major stakeholders for engagement: employees, shareholders/investors, customers, suppliers/vendors, and government & society (community, academic institutions, media, NGO/ NPO). For Fab 5 and Fab 12A, they also identify the specific stakeholder of each category, and established a stakeholder list. They also develope an analysis table of stakeholders and has established diversified communication channels with different stakeholders, such as phone calls, e-mails, meetings, questionnaires, visits, etc. In 2024, TSMC conducted AWS stakeholder questionnaire survey□ including water interest, shared water challenges, WSP plan and performance. The survey result showed that the level of stakeholders interested as following: the highest is "Good water quality". The lowest is "Healthy water environment.	
1.2.2	*Current and potential degree of influence between site and stakeholder shall be identified, within the catchment and considering the site's ultimate water source and ultimate receiving water body for wastewater.*	Yes
Comment	The site has developed an analysis table of stakeholders, and the degree of influence between the site and stakeholders has been identified for each stakeholder.	
1.3	*Gather water-related data for the site, including: water balance; water quality, Important Water-Related Areas, water governance, WASH; water-related costs, revenues, and shared value creation.*	
1.3.1	*Existing water-related incident response plans shall be identified.*	Yes
Comment	TSMC set the water related emergency response process documents. There are 5 documents related to water pollution and one document related to water shortage response, including: TSMC EMERGENCY RESPONSE PROCEDURE, TSMC EMERGENCY RESPONSE C.I. TSMC's raw water supply shortage crisis management internal control operation process etc. Those procedure cover the environmental protection incident notification time limit and process, the effluent t water quality OCAP handling process, countermeasures against water shortage. Covering the scenarios including chemical spill, rainwater abnormal, WWT malfunction, typhoon etc..	
1.3.2	*Site water balance, including inflows, losses, storage, and outflows shall be identified and mapped*	Obs.

Comment

Water balance maps for each site include the following components, clearly identifying inflows, losses, storage, and outflows on a monthly basis:
-Inflows: Municipal water, rainfall, condensate water, and external secondary reclaimed water. Only F12A (P3, P4/5) and F12A (P6, P7) collect and reuse rainwater.
-Losses: Evaporation, process losses, and consumption.
-Storage: Tanks for municipal water (domestic use, industrial use, and fire protection) and treated wastewater for reuse.
-Outflows: Domestic sewage and treated industrial wastewater.

1.3.3 *Site water balance, inflows, losses, storage, and outflows, including indication of annual variance in water usage rates, shall be quantified. Where there is a water-related challenge that would be a threat to good water balance for people or environment, an indication of annual high and low variances shall be quantified.*

Obs.

Comment

Bar charts display the annual inflow and outflow data from 2022 to 2024, illustrating the annual water usage and discharge. The annual fluctuations across all sites do not follow a consistent trend, primarily influenced by production requirements, R&D trials, and inter-plant production scheduling. During the March–June 2024 water scarcity warning, water use was reduced by over 6% through temporary production adjustments, resulting in the lowest recorded inflow in the past three years. Year-to-year variations also reflect the contribution of rainwater and externally sourced reclaimed water in addressing intermittent demand. These variations are quantified, providing insight into the annual high and low water usage fluctuations.

1.3.4 *Water quality of the site's water source(s), provided waters, effluent and receiving water bodies shall be quantified. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be quantified.*

Yes

Comment

All water quality parameters, including those of water sources, provided waters, effluent, and receiving water bodies, are regularly tested and quantified to ensure compliance with regulatory standards.
-Water Sources (Inflow): Municipal water quality is tested monthly by the government and continuously monitored on-site (pH, turbidity, POC) at 5s to 10min intervals, with automated alerts and manual verification for anomalies. Rainwater collected at sites is monitored for pH and conductivity, with results confirming compliance.
-Provided Waters: Drinking water is externally tested bi-monthly per government standards. All results meet or exceed safety requirements, with no significant fluctuations.
-Effluent: Effluent is semi-annually tested by a third party under industrial park regulations. Key indicators monitored include TMAH, ammonia nitrogen, copper ions, and COD. Trends from 2017–2024 show stable or improving water quality, with all parameters consistently below regulatory limits. Seasonal and annual variations are observed but do not impact compliance.
-Groundwater: Groundwater is tested every six months at designated points. Variations in 2023–2024 were identified as natural rather than site-related, with all levels within compliance.
-Receiving Water Bodies: Two rivers receive discharge from the sites, monitored by government agencies with historical data published online. No risks to water quality have been identified.

1.3.5 *Potential sources of pollution shall be identified and if applicable, mapped, including chemicals used or stored on site.*

Yes

Comment

All sites have identified and mapped potential pollution sources, including chemical usage areas (such as laboratories), storage areas, waste disposal sites, and discharge outlets on the site layout. This includes tank filling areas, sealed storage zones, and the design of spill collection and treatment pipelines within these areas.

1.3.6 *On-site Important Water-Related Areas shall be identified and mapped, including a description of their status including Indigenous cultural values.*

Yes

Comment	Based on official maps and Indigenous community data, the sites are not located within Indigenous, ecological, or water protection zones, and thus do not impact Indigenous communities. On-site water-related features, such as an ecological pond, green spaces, landscape ponds, and a green wall, are clearly marked on the site plan.	
1.3.7	*Annual water-related costs, revenues, and a description or quantification of the social, cultural, environmental, or economic water-related value generated by the site shall be identified and used to inform the evaluation of the plan in 4.1.2.*	Yes
Comment	Water-related costs for 2023-2024, including wastewater treatment, water reclamation, conservation, and water quality management, have been calculated. Savings from reduced water pollution fees have been quantified, demonstrating the economic value generated and cost-saving benefits.	
1.3.8	*Levels of access and adequacy of WASH at the site shall be identified.*	Yes
Comment	All sites provide restroom facilities that exceed national standards, including urinals, toilets, and accessible restrooms with sensor-activated faucets. Drinking water is filtered, with filters replaced monthly and tested bi-monthly, exceeding legal requirements. Hygiene supplies, including soap and paper towels, are available. Reclaimed water is not used for restroom facilities.	
1.4	*Gather data on the site's indirect water use, including: its primary inputs; the water use embedded in the production of those primary inputs the status of the waters at the origin of the inputs (where they can be identified); and water used in out-sourced water-related services.*	
1.4.1	*The embedded water use of primary inputs, including quantity, quality and level of water risk within the site's catchment, shall be identified.*	Yes
Comment	The main raw materials of TSMC's Fab 5 and F12A include packing, bulk gas, and wafer. The site has performed the water footprint verification, and the inventory covers direct supplier and other suppliers' data. The verification was implemented according to LCR database for the inventory and data. TSMC also assessed the location of the supplier in the AQUEDUCT database to determine its risk. The overall water risk level is low.	
1.4.2	*The embedded water use of outsourced services shall be identified, and where those services originate within the site's catchment, quantified.*	Yes
Comment	The identification of water used by outsourced manufacturers currently includes cleanroom cloth cleaning, parts cleaning and wafer reclaim. Currently, such manufacturers are not located in the same catchment as the TSMC sites. The transportation service outsourcing supplier's vehicle washing water data in the catchment has been collected during the verification.	
1.4.3	*Advanced Indicator* *The embedded water use of primary inputs in catchment(s) of origin shall be quantified.*	Yes
Comment	In the WFP report, TSMC developed the inventory results which covers direct supplier and other supplier's data. The raw data included the location of these supplier and hence the embedded water use of primary inputs in catchments of origin had been quantified.	
1.5	*Gather water-related data for the catchment, including water governance, water balance, water quality, Important Water-Related Areas, infrastructure, and WASH*	

1.5.1	*Water governance initiatives shall be identified, including catchment plan(s), water-related public policies, major publicly-led initiatives under way, and relevant goals to help inform site of possible opportunities for water stewardship collective action.*	Yes
Comment	TSMC has collected the water governance initiative including catchment plan, water-realted public policies, including water supply, effluent discharge and pipeline installation from Hsinchu government or Hsinchu Science Park. For example, the Department of Water Resources of the Ministry of Agriculture, has formulated the "Strategic Action Plan for Industrial Stabilization of Water Supply". The government also plan to construct a reclaim water factory to incease the non-drinking water supply.	
1.5.2	*Applicable water-related legal and regulatory requirements shall be identified, including legally-defined and/or stakeholder-verified customary water rights.*	Yes
Comment	A regulatory tracking system is in place, managed by a dedicated team within the management platform. Key water-related regulations include government-approved water usage plans, wastewater discharge permits, and water quality standards. Compliance is verified through valid water usage and discharge permits.	
1.5.3	*The catchment water-balance, and where applicable, scarcity, shall be quantified, including indication of annual, and where appropriate, seasonal, variance.*	Yes
Comment	TSMC has collected the water-related analysis report from authority, the information includes precipitation, storage and demand. In northern Taiwan, reservoir water levels are low due to the low rainfall from March to May each year. Therefore, the water supply risk is higher in March-May. For the rest period, the water recourse is abundant. The tap water supply and demand map in the Hsinchu area shows that water supply is tense, and it need support from neighbor city. With the development of industry and increasing population, the water supply will become more tense in future.	
1.5.4	*Water quality, including physical, chemical, and biological status, of the catchment shall be identified, and where possible, quantified. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be identified.*	Yes
Comment	The TSMC collects the water quality information of related water body within the catchment, including: The tap water source, Baoshan Reservoir: CTSI (Carlson Nutritional Status Index) is 56, CTSI higher than 50 is defined as light eutrophication; The tap water source, Shimen Reservoir CTSI (Carlson Nutritional Status Index) is between 40 and 50, which is defined as mesotrophic; Touqian River, another water source: The pollution index (RPI) of the Touqian River is less than 2, which means the river is not polluted. The Keya River at the wastewater discharge point of the WWTP in Hsinchu Science Park meets the 2024 regulatory requirements. The pollution index (RPI) of the Keya River is 2, which is moderately polluted, indicating that the water quality of the Keya River has not been seriously polluted. It meets the government's regulatory requirement. At present, the water reservoir facing the challenge of eutrophication issues, while other water body in the catchment does facing water quality challenges.	

1.5.5	*Important Water-Related Areas shall be identified, and where appropriate, mapped,and their status assessed including any threats to people or the natural environment, using scientific information and through stakeholder engagement.*	Yes
Comment	The identification of important water-related areas is currently carried out by TSMC and consultant with stakeholder, and the list of the IWRA is established. Including the Baoshan Water Reservoir, Touqian River, Keya River, Hsinchu Park and Smangus. The status information including threats are also identified.	
1.5.6	*Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.*	Yes
Comment	TSMC identifies the water-related infrastructures, such as water plant, wastewater treatment plant, drainage system and etc. Their condition and potential exposure to extreme events are also evaluated.	
1.5.7	*The adequacy of available WASH services within the catchment shall be identified.*	Yes
Comment	According to the tap water penetration rate data released by the Water Resources Department of the Ministry of Economic Affairs, in 2024, the tap water penetration rates in Hsinchu City, where TSMC's Fab 5 and F12A factories are located, are 99.18%, indicating that almost everyone in the area has clean water. In 2024, the total sewage treatment rates of Hsinchu City are 72.18%. The information shows that the WSAH services within the catchment is sufficient.	
1.5.8	*Advanced Indicator* *Efforts by the site to support and undertake catchment level water-related data collection shall be identified.*	Yes
Comment	TSMC set up underground water monitoring wells in the upstream and downstream respectively (autonomous, non-environmental assessment requirements), which is voluntary. In 2024, it was detected that the result meets the related standard. The testing result was shared with the Hsinchu Science Park.	
1.5.9	*Advanced Indicator* *The adequacy of WASH provision within the catchments of origin of primary inputs shall be identified.*	Yes
Comment	TSMC provided product water footprint verification report issued in 2021, and the inventory covers direct supplier and other suppliers' data. The verification was implemented in according to LCR database for the inventory and data. Through the WFP, the TSMC determined the location of raw material suppliers, after checking the EPI (environmental performance index) of the origin region, the WASH of all suppliers were sufficient. The current analysis is based on the average WASH adequacy of the country/area (Taiwan, Japan, South Korea, and the United States).	
1.6	*Understand current and future shared water challenges in the catchment, by linking the water challenges identified by stakeholders with the site's water challenges.*	
1.6.1	*Shared water challenges shall be identified and prioritized from the information gathered.* *SHARED WATER CHALLENGE* *A water-related issue, concern or threat shared by the site and one or more stakeholders within the catchment(s). Examples include physical water scarcity, deteriorating water quality and regulatory restrictions on water allocation.*	Yes

Comment	Via the engagement of stakeholders and self-evaluation, TSMC identified five Shared Water Challenges, include internal and external challenges. The shared water challenges are water shortage and flooding. The specific water shortage challenges were prioritized as: 1.Climate change may result abnormal water supply 2.Regional water consumption is increasing year by year 3.Water leakage in the water pipeline The flooding challenges were prioritized as: 1.Regional terrain 2.Abnormal instantaneous rainfall	
1.6.2	*Initiatives to address shared water challenges shall be identified.*	Yes
Comment	TSMC has identified the initiatives to address shared water challenges. They prepared a table which maps the challenges, the corresponding area of focus and the Initiatives which go with them.	
1.6.3	*Advanced Indicator* *Future water issues shall be identified, including anticipated impacts and trends*	Yes
Comment	Via the adoption of WWF water risk filter to predict the water stress, and combine the report of government's planning on water infrustrastrure, TSMC identified the future water risk issues: the trend of drought in the short-term; the shortage of water resources in the long-term. Risk assessment and analysis of the impact of drought, TSMC has established a complete water regime monitoring mechanism to deal with the identified risks.	
1.6.4	*Advanced Indicator* *Potential water-related social impacts from the site shall be identified, resulting in a social impact assessment with a particular focus on water.*	Yes
Comment	TSMC has provided a Research Report which done by Industrial Technology Research Institute in 2023. It describes the social impacts from the site.	
1.7	*Understand the site's water risks and opportunities: Assess and prioritize the water risks and opportunities affecting the site based upon the status of the site, existing risk management plans and/or the issues and future risk trends identified in 1.6.*	
1.7.1	*Water risks faced by the site shall be identified, and prioritized, including likelihood and severity of impact within a given timeframe, potential costs and business impact.*	Yes
Comment	TSMC identified the water risks faced by the site, and prioritized via the likelihood and severity of impact within a given timeframe. The site scored the frequency of the risk and severity of the impact, and then multiple two scores to evaluate the level of the risk. The potential costs, business impact and control measures are also included in the spreadsheet. TSMC identify 20 water related risks within their sites. Within conformity assessment sites, there are two risks identified as internal shared water challenges which is high-risk (≥6). 1.Drought caused insufficient water supply 2.Effluent water increases river polluted index (RPI) cause river water quality risk	
1.7.2	*Water-related opportunities shall be identified, including how the site may participate, assessment and prioritization of potential savings, and business opportunities.*	Yes

Comment	The site has identified two major business opportunities considering how the site may participate, cost assessment of potential saving, magnitude of potential financial impact, cost assessment of potential saving. To use the alternative water resource (reclaimed water) as the first priority, and the second is improving water efficiency.	
1.8	*Understand best practice towards achieving AWS outcomes: Determining sectoral best practices having a local/catchment, regional, or national relevance.*	
1.8.1	*Relevant catchment best practice for water governance shall be identified.*	Yes
Comment	TSMC collect and compare the water governance best practice standards of Micron, AUO, Winbond, Silicon, GLOBALFOUNDRIES, intel (same industry), including water resource risk management, expansion of diversified water resources, and industry water saving guidance, etc. Best practices for water governance identified include: (1) water risk management (2) Introduce ISO 46001 (3) real time monitoring water data and etc. For catchment governance, the practices included: Work with peer organizations and stakeholders to promote water stewardship Demonstrate the organization's support for good water governance and water stewardship with the appropriate authorities	
1.8.2	*Relevant sector and/or catchment best practice for water balance (either through water efficiency or less total water use) shall be identified.*	Yes
Comment	TSMC collect and compare the water balance best practice standards of Micron, AUO, Winbond, Silicon, GLOBALFOUNDRIES, intel (same industry), including water resource risk management, expansion of diversified water resources, and industry water saving guidance, etc. Best practices for water balance identified include: (1) Adopt the water consumption rate from Taiwan and Global Semiconductor Industrial Association (2) Recycle process water (3) Diverting wastewater recovery and etc.	
1.8.3	*Relevant sector and/or catchment best practice for water quality shall be identified, including rationale for data source.*	Yes
Comment	TSMC collect and compare the water qualtiy best practice standards of Micron, AUO, Winbond, Silicon, GLOBALFOUNDRIES, intel (same industry), including water resource risk management, expansion of diversified water resources, and industry water saving guidance, etc. Best practices for water qualtiy identified include: (1) Effectively strengthen source management and achieve diversification (2) Development of water pollution control technology (3) For the machine drainage containing different pollutants, it is specially managed and diverted at the machine end to achieve the best treatment effect and resource utilization (e.g. Ammonia nitrogen resource utilization/TMAH resource utilization/copper-containing waste liquid resource utilization (4) Replace the wastewater treatment chemical with environmental friendly chemicals	
1.8.4	*Relevant catchment best practice for site maintenance of Important Water-Related Areas shall be identified.*	Yes

Comment	TSMC collect and compare the IWRAs best practice standards of Micron, AUO, Winbond, Silicon, GLOBALFOUNDRIES, intel (same industry), including water resource risk management, expansion of diversified water resources, and industry water saving guidance, etc. Best practices for water IWRAs identified include: (1) Set up ecological flood Detention Pond to reduce the impact of heavy rain (2) Set up groundwater monitoring wells to collect groundwater quality and monitor the groundwater quality in the buffer zone (3) Establish Ecological landscape pool (4)Firefly re-habitation for suitable area (5) Established ecological features and determined survival around the plants, confirming no IWRA-damaged areas within the assessed site. (6) Manage water conservation promotion activities.

1.8.5	*Relevant sector and/or catchment best practice for site provision of equitable and adequate WASH services shall be identified.*	Yes

Comment	TSMC collect and compare the WASH best practice standards of Micron, AUO, Winbond, Silicon, GLOBALFOUNDRIES, intel (same industry), including water resource risk management, expansion of diversified water resources, and industry water saving guidance, etc. Best practices for WASH identified include: 1.Use the World Business Council for Sustainable Development (WBCSD) WASH Self-Assessment Tool to assess the level of WASH 2. Strengthen water purification treatment and the renewal of old pipelines. 3.Promoting campus health education may involve improving handwashing facilities and offering health education courses, especially at the primary school stage.

2	STEP 2: COMMIT & PLAN - Commit to be a responsible water steward and develop a Water Stewardship Plan	
2.1	*Commit to water stewardship by having the senior-most manager in charge of water at the site, or if necessary, a suitable individual within the organization head office, sign and publicly disclose a commitment to water stewardship, the implementation of the AWS Standard and achieving its five outcomes, and the allocation of required resources.*	
2.1.1	*A signed and publicly disclosed site statement OR organizational document shall be identified. The statement or document shall include the following commitments:* *- That the site will implement and disclose progress on water stewardship program(s) to achieve improvements in AWS water stewardship outcomes* *- That the site implementation will be aligned to and in support of existing catchment sustainability plans* *- That the site's stakeholders will be engaged in an open and transparent way* *- That the site will allocate resources to implement the Standard.*	Yes
Comment	1.Related AWS (Alliance for Water Stewardship) governance documents and contents are publicly disclosed on the company's ESG website and are signed by the Director of ESH, Fang Han-Wen. 2.The development of recycled water is also disclosed in the ESG report and signed by the Director of ESH, Fang Han-Wen. 3.Statements related to air, water, waste, and toxins sustainability are signed by the Chairman, Wei Zhe-Jia.	
2.1.2	*Advanced Indicator* *A statement that explicitly covers all requirements set out in Indicator 2.1.1 and is signed by the organization's senior-most executive or governance body and publicly disclosed shall be identified.*	Yes
Comment	The related signed reports, as referred to in 2.1.1, are presented during the Management Review Meetings where the management review materials are reported to the plant managers, including topics such as AWS water management aspects.	
2.2	*Develop and document a process to achieve and maintain legal and regulatory compliance.*	
2.2.1	*The system to maintain compliance obligations for water and wastewater management shall be identified, including:* *- Identification of responsible persons/positions within facility organizational structure* *- Process for submissions to regulatory agencies.*	Yes
Comment	Factory Services Water Treatment Section (FAC): Handles emergency response events, water quality treatment and related applications, water quality monitoring, and setting water-related goals. Industrial Safety, Environmental Protection Department (ISEP): External communication, emergency response assistance, Emergency Response Center (ERC), water management-related reporting, water management-related testing, and internal water management audits. The person with the highest responsibility: Plant Managers F25 Chen Yonghe, AP03 Huang Yufeng, and F12A Lai Junyu. Corp. ESH Fang Hanwen (regulatory identification and communication).	

2.3	*Create a water stewardship strategy and plan including addressing risks (to and from the site), shared catchment water challenges, and opportunities.*	
2.3.1	*A water stewardship strategy shall be identified that defines the overarching mission, vision, and goals of the organization towards good water stewardship in line with this AWS Standard.*	Yes
Comment	-Water stewardship strategy focuses on five key areas: Water Management, Water Environment (greenbelt and groundwater quality), Drinking Water and Sanitation, Water Balance, and Water Quality. -Goals: Company-wide: 56% reduction in discharge by 2023 (achieved 63.4%), and 60% reduction by 2030. Site-specific: Targets based on process characteristics, legal requirements, environmental impact assessments, and aligned with company-wide goals.	
2.3.2	*A water stewardship plan shall be identified, including for each target:* *- How it will be measured and monitored* *- Actions to achieve and maintain (or exceed) it* *- Planned timeframes to achieve it* *- Financial budgets allocated for actions* *- Positions of persons responsible for actions and achieving targets* *- Where available, note the link between each target and the achievement of best practice to help address shared water challenges and the AWS outcomes.*	Yes

Comment	- Measurement & Monitoring: An internal water balance platform is in place to monitor flow conditions from upstream sources, across onsite operations, through to final discharge, including rainwater. Upstream data collects from government data platforms to access real-time source water information. Onsite and discharge data are from another internal continuous monitoring system. This continuous onsite monitoring system covers city water inflow, process flow, discharge, and rainwater, supplemented by biannual third-party inspections. The system records water-related data every 15 seconds and is equipped with emergency thresholds and alarm mechanisms. In addition, conduct biannual groundwater sampling and testing through accredited third-party laboratories. -Planned Timeframes: Short-term goal for 2024, long-term goal for 2030. -Responsible Positions: The ISEP, FAC, and ESH departments collaborate to support AWS implementation. ISEP is responsible for water permit compliance, water quality testing, and internal inspections. FAC oversees the development and execution of onsite water stewardship goals and plans. ESH manages water-related matters concerning public stakeholders, supply chain partners, and clients. -Targets: (1) Water governance: Internal water balance platforms are established and maintained across all sites. Continuous onsite water monitoring systems are in place. Staffing levels of Water Management Specialists at each site exceed regulatory requirements. Water-related emergency facilities—including detention ponds, water tanks, and diversion channels—along with corresponding procedures addressing scenarios such as water contamination, scarcity, typhoons, and stormwater/flooding, are established and tested through drills conducted at least once annually. The purpose is to integrate onsite and catchment-level data for enhanced understanding and management of water-related issues, risks, and opportunities. (2) Water quality: Site-specific discharge targets are TMAH < 6 ppm, NH□-N < 25 ppm, COD < 200 ppm, Cu < 0.1 ppm. The purpose is to minimize the potential harmfulness of production activities to receiving water bodies. (3) Water balance: 2024 targets are Process Recovery Rate >85%; Overall Recovery Rate >77%. Major actions and budget allocations have been prioritized to minimize water consumption from production activities and to safeguard equitable access to water resources within the catchment. (4) IWRA: Green belts are established and maintained around each site. Groundwater testing is conducted at least once annually. The purpose is to ensure onsite activities do not negatively impact the catchment and may contribute positively to its ecological condition. Additionally, through TSMC's afforestation initiative, over 40,000 trees are planted annually since 2021 to 2023 across Hsinchu, Taoyuan, Taichung, and Tainan, with the 2024 program extending to the Taichung seashore. The purpose is to support cross-catchment ecosystem restoration and water quality improvement. (5) WASH: drinking water and restroom equipment are exceed legal compliance requirements and align with, or surpass, international standards. - Actions and Financial Budgets: A tabulated list outlines major actions plan for 2024, including the expansion of treatment systems, installation of chemical recovery and separation units, and deployment of biological treatment technologies, accompanied by corresponding financial budgets - All sites are located within the country's earliest-established industrial park, where multiple stakeholders—including the reservoir authority, water purification plant, industrial park management agency, co-located facilities, wastewater treatment plant, and municipal water agency—operate under a clearly defined framework of roles, interdepartmental communication, and collaboration mechanisms. Within this framework, continuous efforts are made to improve site-level water recovery rates, thereby reducing reliance on city water supplies. In addition, pollutant levels in discharged water are actively reduced beyond regulatory limits to help mitigate risks to the catchment's overall water balance and quality.	
2.3.3	*Advanced Indicator* *The site's partnership/water stewardship activities with other sites within the same catchment (which may or may not be under the same organisational ownership) shall be identified and described.*	✓ Yes

Comment	1.Water Truck Drill Exercise 2.Hsinchu Facilities Management Related Training Plan (Collaboration with Various Experts and the Same Organization) 3.Planning of water-saving event with a visiting route at Plant P8 for guests. TSMC's water truck activities involved agreements and communication with local watershed residents and relevant suppliers, fostering collaborative efforts under severe water quantity challenges. The timing and content of relevant training programs and external visitor tours are presented in Sections 4.1.1~4.1.3 of the uploaded document.	
2.3.4	*Advanced Indicator* *The site's partnership/water stewardship activities with other sites in another catchment(s) (either under same corporate structure or with another corporate site) shall be identified.*	Yes
Comment	1.The visitors for the exchange include government agencies, industry representatives, media, U.S. officials, and academic institutions to learn about semiconductor factory water-saving technologies, observe wastewater treatment, and understand important water quality emissions in ESG content such as sulfuric acid, waste sulfuric acid, and other significant disclosures.	
2.3.5	*Advanced Indicator* *Stakeholder consensus shall be sought on the site's water stewardship plan. Consensus should be achieved on at least one target. A list of targets that have consensus and in which stakeholders are involved shall be identified.*	Yes
Comment	1.Achieved consensus with Apple on passing AWS (Alliance for Water Stewardship) certification and related targets. 2.Science Park Administration: Consensus on the approved status of water usage in the park, overall planning of the park, water-saving measures, and self-regulating effluent water quality requirements. 3.Industry Association: Call for voluntary water-saving measures among the manufacturers in the area in response to water scarcity. To achieve a sustainable water management vision, it is essential to reach a consensus on shared goals with stakeholders, including the points mentioned above. The best specific practices can be found in the relevant sections, 4.1.4, of the uploaded document.	
2.4	*Demonstrate the site's responsiveness and resilience to respond to water risks*	
2.4.1	*A plan to mitigate or adapt to identified water risks developed in co-ordination with relevant public-sector and infrastructure agencies shall be identified.*	Yes
Comment	The facility has produced relevant emergency adaptation documents addressing water risk resilience, such as the Water Scarcity Risk Document (A-RMS-08-03-283).	
2.4.2	*Advanced Indicator* *A plan to mitigate or adapt to water risks associated with climate change projections developed in co-ordination with relevant public-sector and infrastructure agencies shall be identified.*	Yes
Comment	1.The Hsinchu Science Park Bureau is responding to the risk of future droughts by establishing reclaimed water plants and desalination plants to augment water supply. 2.The Water Resources Agency is addressing the risk of future water shortages by constructing a western water distribution network and backup pipeline projects to ensure a reliable supply. 3.The county and city governments are addressing the risks to the safety of downstream neighborhoods by constructing detention basins for flood control, as well as optimizing the use of pumps and establishing related ecological ponds.	

3	STEP 3: IMPLEMENT - Implement the site's stewardship plan and improve impacts

3.1 *Implement plan to participate positively in catchment governance.*

3.1.1 *Evidence that the site has supported good catchment governance shall be identified.*

Yes

Comment

- All sites are located within the country's earliest-established industrial park, where multiple stakeholders—including the reservoir authority, water purification plant, industrial park management agency, co-located facilities, wastewater treatment plant, and municipal water agency—operate under a clearly defined framework of roles, interdepartmental communication, and collaboration mechanisms.
Within this framework:
(1) Continuous efforts are being made to improve site-level water recovery rates, thereby reducing reliance on city water supplies.
(2) Efforts to reduce pollutant levels in discharged water are ongoing, and pollutant levels are actively reduced beyond regulatory limits to help mitigate risks to the catchment's overall water quality.
(3) A reclaimed water plant is being developed in collaboration with the local government. Domestic wastewater from the catchment area will be diverted to this plant for treatment, with purified water supplying all sites. This project aims to reduce wastewater impact on catchment water quality, decrease reliance on municipal water, and minimize competition for potable water with local communities.

3.1.2 *Measures identified to respect the water rights of others including Indigenous peoples, that are not part of 3.2 shall be implemented.*

Yes

Comment

Sites comply with government-approved water usage plans and discharge limits, ensuring no impact on the water rights of others, including Indigenous peoples. There are no Indigenous water rights involved in the sites' catchment area. Additionally, a reclaimed water plant is being developed in collaboration with the local government. Domestic wastewater from the catchment area will be treated at this plant, and the purified water will supply all sites. This project aims to reduce wastewater impact on water quality and decrease reliance on municipal water, minimizing competition for potable water with local communities.

3.1.3 *Advanced Indicator*
Evidence of improvements in water governance capacity from a site-selected baseline date shall be identified.

Yes

Comment

Evidence of Improvements in Water Governance Capacity:
(1)Internal water management training programs, such as biological treatment courses, have been introduced through the internal online platform.
(2)A multi-source water integration platform was launched in 2024. This system automatically connects with the site's continuous monitoring systems—covering city water inflow, process flow, discharge, and rainwater—and also integrates upstream data from government platforms to provide real-time source water information. These improvements support the integration of both site-level and catchment-level data, enhancing the understanding and management of water-related issues, risks, and opportunities. Simultaneously, they reduce labor demands and improve operational efficiency. Each site maintains Water Management Specialist staffing levels that exceed regulatory requirements, ensuring adequate governance capacity as responsibilities grow.
(3)Self-management targets for water governance—including discharge reduction, water pollution indicators, process recovery rates, overall recovery rates, total discharge volumes, and water consumption per wafer—exceed regulatory standards and are consistently achieved on an annual basis, with progress aligned to 2030 sustainability goals. As evidenced, implementation plans—such as the expansion of treatment systems, installation of chemical recovery and separation units, and deployment of biological treatment technologies—have increased water reuse and contributed to reducing water consumption in production activities. These initiatives also help safeguard equitable access to water resources within the catchment.

3.1.4 *Advanced Indicator*
Evidence from a representative range of stakeholders showing consensus that the site is seen as positively contributing to the good water governance of the catchment shall be identified.

Yes

Comment

-TSMC actively promotes water resource management through an annual collaboration forum with its sites and supply chains. The 2023 forum, co-hosted by F12A (P3), included site visits that demonstrated supply chain collaboration and highlighted TSMC’s contributions to water governance, earning recognition from both government and industry stakeholders.

-F12A and F5 have received official certifications, including the 2024 Green Factory Label for F12A, along with awards for waste reduction and circular economy excellence.
-Furthermore, site teams supported TSMC headquarters in auditing waste treatment facilities within the Hsinchu watershed for environmental compliance, with official confirmation of personnel participation through emails.

3.2 *Implement system to comply with water-related legal and regulatory requirements and respect water rights.*

3.2.1 *A process to verify full legal and regulatory compliance shall be implemented.*

Yes

Comment

-A process for verifying full legal and regulatory compliance is implemented through external audits by government agencies such as the EPA and local Environmental Protection Bureau. Compliance documentation for the years 2022-2024, including external audit records for each site and environmental system platform compliance, is available.
-Internal audits include supplier audits, quarterly environmental self-audits at the sites, quarterly audits conducted by headquarters, and cross-site environmental audits. Audit findings from these internal audits are available as evidence of compliance.

3.2.2 *Where water rights are part of legal and regulatory requirements, measures identified to respect the water rights of others including Indigenous peoples, shall be implemented.*

Yes

Comment

Compliance with approved water usage and discharge plans ensures no impact on the water rights of others. F12A (P6/7) also adheres to the water usage and discharge limits approved through environmental impact assessments. Additionally, based on the catchment and water supply coverage maps, indigenous communities are not within the sites' catchment area, so the water sources and discharge do not affect them, and indigenous water rights are not involved.

3.3 *Implement plan to achieve site water balance targets.*

3.3.1 *Status of progress towards meeting water balance targets set in the water stewardship plan shall be identified.* ✓ Yes

Comment: In 2024, water balance targets included a process water recycling rate of 70–85%, a plant-wide recycling rate of 77%, a discharge rate of 70%, and a water usage target of 12.13 L/cm² per wafer, aligned with international benchmarks. Actual water usage per wafer decreased by 2.7%, with all non-R&D sites meeting the benchmark. Additional measures, such as rainwater harvesting and reclaimed water facilities, further support long-term water sustainability. Overall, progress toward water balance targets remains on track.

3.3.2 *Where water scarcity is a shared water challenge, annual targets to improve the site's water use efficiency, or if practical and applicable, reduce volumetric total use shall be implemented.* ✓ Yes

Comment: All sites set annual water efficiency targets based on usage rates. In 2024, wastewater treatment systems were optimized, expanded, or newly installed, achieving 70%-85% wastewater recycling in alignment with TSMC's 2030 goal. During the March–June 2024 water scarcity warning, sites voluntarily reduced water consumption by over 6% through temporary production adjustments, exceeding regulatory requirements.

As total water consumption is influenced by production volume changes and environmental regulations, no total consumption target is set. Instead, water management focuses on increasing recycling rates, reducing waste, and dynamically adjusting production to address water scarcity challenges.

3.3.3 *Legally-binding documentation, if applicable, for the re-allocation of water to social, cultural or environmental needs shall be identified.* ✓ Yes

Comment: In 2017, F12A adjusted its water usage plan according to the Industrial Park Administration's requirement to reallocate water rights within the park, with a legally-binding permit confirming approval and implementation. Other sites have not been subject to regulatory water reallocation in recent years, and no further reallocation requirements have been issued by authorities.

To support regional water sustainability, TSMC is voluntarily investing in a reclaimed water plant, with construction planned to begin in 2025 and completion expected in 2028. The facility will process 10,000 m³ of domestic wastewater daily, improving watershed sanitation, increasing the availability of safe water resources, and reducing TSMC's reliance on municipal water.

Additionally, TSMC has a regulatory tracking platform and dedicated personnel who continuously monitor regulatory requirements for potential future reallocation needs.

3.3.4 *Voluntary Advanced Indicator*
The total volume of water voluntarily re-allocated (from site water savings) for social, cultural and environmental needs shall be quantified. ✓ Yes

Comment

In 2017, F12A reallocated water rights within the park under the Industrial Park Administration's directive, with a legally-binding permit confirming approval and implementation. Other sites have not been subject to regulatory reallocation in recent years, and no further requirements have been issued by authorities.

As part of its voluntary water reallocation efforts, TSMC is investing in a reclaimed water plant, scheduled for completion in 2028. Once operational, the facility will process 10,000 m³ of domestic wastewater daily, improving watershed sanitation, increasing safe water availability, and reducing reliance on municipal water. This initiative directly contributes to the reallocation of treated water for environmental and social benefits.

Additionally, TSMC continues to improve water efficiency across its sites, reducing competition for shared water resources. In 2024, wastewater recycling rates reached 70% -85%, and water usage per product decreased by 2.7%, indirectly increasing the availability of water for non-industrial purposes.

3.4 *Implement plan to achieve site water quality targets*

3.4.1 *Status of progress towards meeting water quality targets set in the water stewardship plan shall be identified.*

Yes

Comment

From 2017 to 2024, water quality improvement actions, including process system upgrades and treatment system enhancements, have been implemented at all sites. Effluent parameters (TMAH, COD, ammonia nitrogen, copper ion) have consistently decreased over this period. By 2024, all effluent parameters fully comply with the water quality targets set in the water stewardship plan.

3.4.2 *Where water quality is a shared water challenge, continual improvement to achieve best practice for the site's effluent shall be identified and where applicable, quantified.*

Yes

Comment

All sites discharge effluent into the Industrial Park Administration's centralized treatment plant for further processing. Since 2017, stricter government regulations have been enforced. Each site has implemented annual water quality improvements, including process modifications and treatment system upgrades. Effluent quality has consistently improved from 2017 to 2024, with decreasing levels of TMAH, COD, ammonia nitrogen, and copper ion, reflecting progress beyond simple compliance with regulatory requirements.

3.5 *Implement plan to maintain or improve the site's and/or catchment's Important Water-Related Areas.*

3.5.1 *Practices set in the water stewardship plan to maintain and/or enhance the site's Important Water-Related Areas shall be implemented.*

Yes

Comment

1.Buffer greens are established around the plant area.
2.Regular drills for the separate handling of rainwater and chemical products within the plant.
3.Firefly restoration activities at the upstream Touqian River.

The firefly restoration project is located in the upstream area of the watershed's critical water-related regions. TSMC's main maintenance and improvement efforts focus on local soil and water conservation, as well as the preservation and cultivation of related species' ecology. These efforts include tree planting and engaging experts for long-term ecological research.(

3.5.2 *Advanced Indicator*
Evidence of completed restoration of non-functioning or severely degraded Important Water-Related Areas including where appropriate cultural values from a site-selected baseline date shall be identified. Restored areas may be outside of the site, but within the catchment.

Yes

Comment	Tree Planting Program and Firefly Restoration. Original Purpose of Tree Planting: The initial motivation for the tree planting initiative arose from the "Clean Water Action Alliance" pointing out the pollution of the Touqian River by the Science Park. This spurred efforts to restore local watershed ecological species, which led to the firefly restoration project. Additionally, another driving force behind the tree planting plan was Hsinchu's strong winds, prompting the establishment of windbreaks along the coast. These efforts collectively form a comprehensive improvement plan for critical water-related risk areas.	
3.5.3	*Advanced Indicator* *Evidence from a representative range of stakeholders showing consensus that the site is seen as positively contributing to the healthy status of Important Water-Related Areas in the catchment shall be identified.*	Yes
Comment	Through TSMC's ESG Sustainability Survey on Water Management, we surveyed 10 stakeholder groups to assess key water management issues, which included making active contributions to the region's health.	
3.6	*Implement plan to provide access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers at all premises under the site's control.*	
3.6.1	*Evidence of the site's provision of adequate access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers onsite shall be identified and where applicable, quantified.*	Yes
Comment	All sites provide drinking water stations, with one station for every 61 square meters. Drinking water quality is tested bi-monthly, with one-sixth of the stations sampled, and testing reports are available, exceeding national regulatory requirements. Restroom facilities, including urinals, toilets, and accessible restrooms, are all listed and quantified in a table, exceeding national standards. Sensor-activated faucets and hygiene supplies (soap and paper towels) are provided in all restrooms, with on-site checks confirming availability.	
3.6.2	*Evidence that the site is not impinging on the human right to safe water and sanitation of communities through their operations, and that traditional access rights for indigenous and local communities are being respected, and that remedial actions are in place where this is not the case, and that these are effective.*	Yes
Comment	All sites operate within government-approved water usage plans and discharge limits. As of 2024, wastewater quality at all sites is monitored by authorities and meets all regulatory standards, with no violations recorded on public platforms. Additionally, municipal water access in the entire catchment area has increased from 2023 to 2024. Therefore, all sites do not impact Indigenous water rights or local communities' access to safe water and sanitation, and no remedial actions are necessary.	
3.6.3	*Advanced Indicator* *A list of actions taken to support the provision to stakeholders in the catchment of access to safe drinking water, adequate sanitation and hygiene awareness shall be identified.*	Yes
Comment	A comprehensive list of WASH actions demonstrates support for stakeholders in the catchment. All sites are planning a reclaimed water plant (1,000 m³/day capacity) targeted for completion in 2028. This facility will assist the public sector in treating wastewater from the Hsinchu region, improving hygiene, and supplying reclaimed water to all sites, reducing reliance on municipal sources. This initiative supports catchment-wide sanitation and helps return water rights to the community. Additionally, dengue fever awareness campaigns have been conducted to promote hygiene and sanitation among employees, contractors, and external stakeholders.	

3.6.4	*Voluntary Advanced Indicator:* *In catchments where WASH has been identified as a shared water challenge, evidence of efforts taken with relevant public-sector agencies to share information and to advocate for change to address access to safe drinking water and sanitation shall be identified.*	Yes
Comment	WASH has not been identified as a shared water challenge. However, all sites are collaborating with the local government to develop a reclaimed water plant (1,000 m³/day capacity), targeted for completion in 2028. Under this partnership, the government connects domestic wastewater to the system, while TSMC constructs the reclaimed water plant, establishing a cooperative water supply model. This initiative supports wastewater treatment in the Hsinchu region, improves hygiene, and provides reclaimed water to all sites, reducing reliance on municipal sources. It enhances catchment-wide sanitation and may improve access to safe drinking water. Additionally, water quality data is shared with the Industrial Park Administration via an online platform.	
3.7	*Implement plan to maintain or improve indirect water use within the catchment:*	
3.7.1	*Evidence that indirect water use targets set in the water stewardship plan, as applicable, have been met shall be quantified.*	Yes
Comment	1.Suppliers are expected to achieve a water-saving target of 50 million cubic meters by 2024. In 2023, suppliers saved approximately 42.58 million cubic meters of water, and have consistently met annual water-saving goals. By 2030, it is anticipated to guide suppliers to accumulate water savings of up to 150 million cubic meters. 2.Every three years, the water footprint of products from each plant area is audited and certified by DNV GL.	
3.7.2	*Evidence of engagement with suppliers and service providers, as well as, when applicable, actions they have taken in the catchment as a result of the site's engagement related to indirect water use, shall be identified.*	Yes
Comment	1.ESH conducts audits and guidance on various items for suppliers within the watershed and responds with corrective actions to supplier issues. 2.Outstanding Supplier Experience Sharing - In 2023, the TSMC Sustainable Supply Chain ESH (Environmental Safety and Health) Forum was held to commend excellent suppliers. 3.TSMC's website announces supplier water-saving rates and their promotion.	
3.7.3	*Advanced Indicator* *Actions taken to address water related risks and challenges related to indirect water use outside the catchment shall be documented and evaluated.*	Yes
Comment	1.Together with suppliers within the Science Park, we participated in government-led guidance sessions called "Industry Water Conservation Guidance." 2.The COP ESH (Corporate Occupational Safety and Health) continues to conduct supplier audits, with a focus on "Water Pollution Prevention and Control." Through a tiered management system, we assess indicators and goal management to encourage suppliers to implement water-saving practices. 3.On December 14, 2023, the "TSMC Sustainable Supply Chain - Environmental, Safety, and Health Forum" took place, which was a platform for sharing experiences in energy saving, carbon reduction, and water conservation. A total of 77 suppliers participated, including those associated with environmental protection and safety related to air, water, waste, and toxic substances.	
3.8	*Implement plan to engage with and notify the owners of any shared water-related infrastructure of any concerns the site may have.*	
3.8.1	*Evidence of engagement, and the key messages relayed with confirmation of receipt, shall be identified.*	Yes

Comment	1.The facility's ISEP (Industrial Safety, Environmental Protection Department) has correspondence documenting interactions with the regulatory authorities concerning rainwater management. 2.There exists a record of water use permits and declarations with the regulatory authorities, as well as a log of correspondence related to discussions.	
3.9	*Implement actions to achieve best practice towards AWS outcomes: continually improve towards achieving sectoral best practice having a local/catchment, regional, or national relevance.*	
3.9.1	*Actions towards achieving best practice, related to water governance, as applicable, shall be implemented.*	Yes
Comment	TSMC builds a water map platform, which could monitor:(1) Water balance platform (2)Hydrology platform (3)Release water value management and control platform. 4) Reclaim water supply TSMC built a platform to monitor the water quality of cooling tower, and determine the maintenance schedule of the equipment. the FAM platform to control maintenance schedules for equipment and instruments.	
3.9.2	*Actions towards achieving best practice, related to targets in terms of water balance shall be implemented.*	Yes
Comment	A list of water balance initiatives highlights the actions taken at each site, including the establishment, expansion, and improvement of various process water recycling and reuse systems, the addition of biological treatment systems, and the installation of water-saving devices in washing areas. Charts indicate that all sites have met the legally committed targets for process water recovery rate (70–85%) and overall plant water recovery rate (77%), in accordance with environmental impact assessment commitments. Additionally, charts also show that the water consumption per unit product is lower than the global benchmark.	
3.9.3	*Actions towards achieving best practice, related to targets in terms of water quality shall be implemented.*	Yes
Comment	From 2017 to 2024, all sites have implemented water quality improvement actions, including equipment modifications and upgrades to treatment systems. These measures have led to a measurable reduction in effluent pollutant levels, going beyond mere compliance with regulatory requirements.	
3.9.4	*Actions towards achieving best practice, related to targets in terms of the site's maintenance of Important Water-Related Areas shall be implemented.*	Yes
Comment	1.Within the plant site: Measures are established to prevent chemical leaks, including maintenance procedures for containment drums and tanks; the groundwater quality is monitored on a regular basis. 2.Within and beyond the watershed: Trees are planted and the quality of discharge water is improved to reduce the impact on the watershed's water quality.	
3.9.5	*Actions towards achieving best practice related to targets in terms of WASH shall be implemented.*	Yes
Comment	All sites continuously enhance WASH conditions, exceeding legal requirements. Drinking water stations are voluntarily provided at a ratio of one per 61 square meters. Water quality is tested bi-monthly, with one-sixth of stations sampled each cycle, surpassing national standards. Restroom facilities, including urinals, toilets, and accessible restrooms, exceed regulatory requirements. Sensor-activated faucets and hygiene supplies (soap and paper towels) are provided in all restrooms. Additionally, all sites are collaborating with the local government to build a reclaimed water plant (1,000 m³/day capacity, targeted for completion in 2028), a pioneering initiative among companies in Taiwan.	

3.9.6	*Voluntary Advanced Indicator* *: Achievement of identified best practice related to targets in terms of good water governance shall be quantified.*	Yes
Comment	Promote various water-saving and environmental protection measures to achieve good water resources management results. Maintain good water efficiency: (1) Water consumption per unit product decreases year by year (2) Process recovery rate remains above 85% Invite government agencies, industries (including park manufacturers), upstream and downstream supply chains, academic groups, and non-governmental environmental groups to visit the factory and exchange water-saving experience. In 2024, the TSMC Hsinchu won the following rewards related water: 2024 Hsinchu Science Part Administration - Business Waste Reduction and Circular Economy Performance Outstanding Enterprise Award 2024 Hsinchu Environmental Protection Bureau - Green Procurement Excellent Evaluation - Annual Green Procurement Excellent Manufacturer 2023 Ministry of Economy - Green Factory Review - Good Green Building Award	
3.9.7	*Voluntary Advanced Indicator:* *Achievement of identified best practice related to targets in terms of sustainable water balance shall be quantified.*	N/A
Comment	A list of water balance initiatives demonstrates each site's actions, including the establishment, expansion, and improvement of various process water recycling and reuse systems, the addition of biological treatment systems, and the installation of water-saving devices in washing areas. Charts, which include quantified data, indicate that all sites have achieved the legally committed targets for process water recovery rate (70–85%) and overall plant water recovery rate (77%), as per environmental impact assessment commitments. Additionally, the water consumption per unit product, as shown in the charts, is better than the global benchmark.	
3.9.8	*Voluntary Advanced Indicator:* *Achievement of identified best practices related to targets in terms of water quality shall be quantified*	N/A
Comment	From 2017 to 2024, effluent quality (TMAH, COD, ammonia nitrogen, and copper ion) has consistently improved. By 2024, all parameters not only meet the site's self-set targets but also exceed regulatory compliance. These quantitative improvements highlight the effectiveness of the implemented best practices.	
3.9.9	*Voluntary Advanced Indicator:* *Achievement of identified best practices related to targets in terms of the site's maintenance of Important Water-Related Areas have been implemented.*	Obs.
Comment	1.Prevent chemical leakage and utilize manual valve leak control within the facility to prevent external leaks. (F12P4 HCL chemical T-Box) 2.Establish training for the separation of rainwater and chemicals. 3.Water quality at all plants meets effluent standards. 4.Groundwater quality analysis in the region all comply with standards.	
3.9.10	*Voluntary Advanced Indicator:* *Achievement of identified best practice related to targets in terms of WASH shall be quantified.*	N/A

Comment	-Restroom facilities at all sites exceed national standards in both quantity and accessibility. For example, the number of urinals, toilets, and accessible restrooms surpasses regulatory requirements. Additionally, sensor-activated faucets and hygiene supplies (soap and paper towels) are voluntarily provided in every restroom. -Drinking water stations are voluntarily installed at a ratio of one per 61 square meters. Water quality is tested bi-monthly, with one-sixth of stations sampled per cycle, exceeding national regulatory standards. -A reclaimed water plant (1,000 m³/day capacity) is under development, targeted for completion in 2028. This pioneering initiative, the first of its kind among companies in Taiwan, aims to improve catchment-wide sanitation and reduce potable water consumption.	
3.9.11	*Voluntary Advanced Indicator* *: A list of efforts to spread best practices shall be identified.*	Yes
Comment	In 2024, there were 9 visit for TSMC Hinschu Site, the audiences including domestic and foreign media, TSMC group's, government officials, academic institutions. During the visit, TSMC communicated wastewater systems, water-saving technologies and other AWS actions with them. TSMC has provided a list to record date, the content, number of people and other related information.	
3.9.12	*Voluntary Advanced Indicator* *A list of collective action efforts, including the organizations involved, positions of responsible persons of other entities involved, and a description of the role played by the site shall be identified.*	N/A
Comment	N/A	
3.9.13	*Voluntary Advanced Indicator:* *Evidence of the quantified improvement that has resulted from the collective action relative to a site-selected baseline date shall be identified and evidence from an appropriate range of stakeholders linked to the collective action (including both those implementing the action and those affected by the action) that the site is materially and positively contributing to the achievement of the collective action shall be identified.*	N/A
Comment	N/A	

4	STEP 4: EVALUATE - Evaluate the site's performance.

4.1 *Evaluate the site's performance in light of its actions and targets from its water stewardship plan and demonstrate its contribution to achieving water stewardship outcomes.*

4.1.1 *Performance against targets in the site's water stewardship plan and the contribution to achieving water stewardship outcomes shall be evaluated.* ✓ Yes

Comment

The recovery rate of wastewater from the Hsinchu factory area needs to be >85%.
F5: Process recovery: 74.64%, F12: Process recovery: 87.47%

The concentration of COD in discharged water is lower than the management standard of the Bureau of
Science and Technology (< 500 ppm), actually lower than 200 ppm
The concentration of ammonia nitrogen discharge water is lower than the management standard
of the Bureau of Science and Technology (< 30 ppm). actually lower than 20 ppm
The concentration of TMAH discharge water is far lower than the management standard of the Bureau of Science and Technology (< 30 ppm). All factories have been able to control < 1ppm stably.
The concentration of Cu discharge water is far lower than the management standard of the Science and Technology Administration Bureau (< 1 ppm). All factories have stably controlled < 0.2ppm.

The discharge rate of the whole plant is maintained below 70%.

Provide adequate and qualified tap water for employee use.
The water company regularly tests the water quality every quarter to ensure that there is no doubt that the water supply for people's livelihood in the
factory area.
Drinking water quality control - The water dispenser in the factory is maintained and replaced every month, and the E. coli is checked once every two months. Each inspection is 1/6 of the total number of units, which is better than Taiwan regulations

There are seven disabled bathroom on site, much more than required by law(one).

In 2024.6.5, TSMC organized an activity to plant trees and cleaned the beach in Nanliao, with planted 750 trees, and removed 1,514 kilograms of Marine garbage.

4.1.2 *Value creation resulting from the water stewardship plan shall be evaluated.* ✓ Yes

Comment

The financial and environmental benefits of water-related projects have been quantified. Improvements in wastewater treatment have increased water reuse and reduced disposal costs. Wastewater byproducts, such as recovered copper, cobalt, and ammonium sulfate crystals, have contributed to higher revenues in 2024 compared to 2023. The water management plan has added value by enhancing wastewater recovery rates, implementing rainwater harvesting, and supporting the construction of reclaimed water plants. These initiatives reduce reliance on municipal water and improve resilience to water shortages. Additionally, valuable materials, including copper, cobalt, and ammonium sulfate, are extracted and sold, generating additional revenue.

4.1.3 *The shared value benefits in the catchment shall be identified and where applicable, quantified.* ✓ Yes

Comment	F12A (P6 and P7) has reduced wastewater discharge, contributing to the improvement of the catchment environment. Additionally, in collaboration with the government, the promotion of the reclaimed water plant construction ensures better environmental sanitation for local communities and enhances catchment water quality. This initiative also helps alleviate the public sector's burden in treating domestic wastewater.	
4.1.4	*Advanced Indicator* *A governance or executive-level review, including discussion of shared water challenges, water risks, and opportunities, and any water-related cost savings or benefits realized, and any relevant incidents shall be identified.*	Yes
Comment	The AWS teams held management review meeting and reported to the top management on shared water challenges, water risks and opportunities, and the performance created by implementing sustainable water management. The top management recognizes the achievements of AWS performance and requested to keep continuous maintain the AWS system. So additional requirements or demand.	
4.2	*Evaluate the impacts of water-related emergency incidents (including extreme events), if any occurred, and determine the effectiveness of corrective and preventative measures.*	
4.2.1	*A written annual review and (where appropriate) root-cause analysis of the year's emergency incident(s) shall be prepared and the site's response to the incident(s) shall be evaluated and proposed preventative and corrective actions and mitigations against future incidents shall be identified.*	Yes
Comment	In 2024, the Hsinchu Science Park Bureau conducted sampling at the outfall and discovered that the levels of fluoride exceeded the standard. Following internal discussions, adjustments were made to the air duct sprinkler heads and the emergency collection tanks, and after confirming the water quality met the required standards through measurement, the improved water was discharged. The necessary enhancements have been successfully implemented.	
4.3	*Evaluate stakeholders' consultation feedback regarding the site's water stewardship performance, including the effectiveness of the site's engagement process.*	
4.3.1	*Consultation efforts with stakeholders on the site's water stewardship performance shall be identified.*	Yes
Comment	Based on a stakeholder survey, the response rate was 53.19%. The most concerning issues identified were water pollution prevention, good water quality, and safe water usage. Statistics from various factories have maintained excellent water consumption levels for wafer production, all below the 2023 World Semiconductor Council (WSC) standard of 12.13 liters per cubic centimeter (l/cm^3).	
4.3.2	*Voluntary Advanced Indicator* *: The site's efforts to address shared water challenges shall be evaluated by stakeholders. This shall include stakeholder reviewing of the site's efforts across all five outcome areas, and their suggestions for continual improvement.*	N/A
Comment	N/A	
4.4	*Evaluate and update the site's water stewardship plan, incorporating the information obtained from the evaluation process in the context of continual improvement.*	
4.4.1	*The site's water stewardship plan shall be modified and adapted to incorporate any relevant information and lessons learned from the evaluations in this step and these changes shall be identified.*	Yes

Comment	TSMC consolidated water management plan (include objectives, regulations... etc.) are communicated in AWS group meeting and management review meeting of senior executives to confirm whether adjustments are needed. The water related targets are updated in CSR Report annually. The water related regulations are reviewed periodically.

5	**STEP 5: COMMUNICATE & DISCLOSE - Communicate about water stewardship and disclose the site's stewardship efforts**
5.1	*Disclose water-related internal governance of the site's management, including the positions of those accountable for legal compliance with water-related local laws and regulations.*
5.1.1	*The site's water-related internal governance, including positions of those accountable for compliance with water-related laws and regulations shall be disclosed.* — Yes
Comment	The water-related internal governance is announced in TSMC website. The AWS Report also can be download from the webpage. The AWS Report released the water management organization, responsible person and unit and accountability to water management. TSMC ESG weblink: https://esg.tsmc.com/csr/ch/resources/documents.html
5.2	*Communicate the water stewardship plan with relevant stakeholders.*
5.2.1	*The water stewardship plan, including how the water stewardship plan contributes to AWS Standard outcomes, shall be communicated to relevant stakeholders.* — Yes
Comment	The site disclosed the site's water stewardship plan, including the outcome in following ways: 1. AWS questionaries 2. Stakeholder consultation The site also collective the feedback from the site.
5.3	*Disclose annual site water stewardship summary, including: the relevant information about the site's annual water stewardship performance and results against the site's targets.*
5.3.1	*A summary of the site's water stewardship performance, including quantified performance against targets, shall be disclosed annually at a minimum.* — Obs.
Comment	TSMC discloses the AWS performance of each site via the AWS questionaries and stakeholder consultantation. TSMC also publishes target results every year and tracks suppliers' water-saving effects. All information is published annually in the Corporate Social Responsibility Report.
5.3.2	*Advanced Indicator* *The site's efforts to implement the AWS Standard shall be disclosed in the organization's annual report.* — Yes
Comment	TSMC disclosed the efforts to implement the AWS standard in ESG Report. In the ESG Report indicated below effort: The volunteers are dedicated to promoting water conservation knowledge. Wastewater diversion, recycling system, wastewater treatment, recycling and reuse (silicon products, copper rods).
5.3.3	*Voluntary Advanced Indicator* *; Benefits to the site and stakeholders from implementation of the AWS Standard shall be quantified in the organization's annual report.* — N/A
Comment	The site could not meet this indicator.
5.4	*Disclose efforts to collectively address shared water challenges, including: associated efforts to address the challenges;engagement with stakeholders; and co-ordination with public-sector agencies.*

5.4.1	*The site's shared water-related challenges and efforts made to address these challenges shall be disclosed.*	Yes
Comment	TSMC discloses the actions to address stakeholder-related water challenges via ESG report and AWS questionaries. For water shortage, following actions are disclosed: (1) Promote water saving and water recycling; (2) Cooperate with stakeholders to carry out water saving activities; (3) Strengthen the preparation of backup water sources and water trucks.(4) Utilization and development of reclaimed water and etc. For flooding, following actions are disclosed: (1)Review the flooding risk of external water-related infrastructure and main suppliers, and work together to improve; (2) Opimiazated the emergency drilling for flooding; (3) Prepared the emergency kits like water-blocking gate or pump.	
5.4.2	*Efforts made by the site to engage stakeholders and coordinate and support public-sector agencies shall be identified.*	Yes
Comment	TSMC organized the suppliers conference to share the share experience on sustainability, water stewardship was covered, which both increased the awareness on water and shared the water stewardship practices with the suppliers. The site also consulted with Hsinchu Science Park about the progress of reclaim water plant and wastewater discharge issue.	
5.5	*Communicate transparency in water-related compliance: make any site water-related compliance violations available upon request as well as any corrective actions the site has taken to prevent future occurrences.*	
5.5.1	*Any site water-related compliance violations and associated corrections shall be disclosed.*	Yes
Comment	The site did not have violations of water-related laws and regulations. TSMC already set the water related emergency response procedure. There are 5 documents related to water pollution. Those procedure cover the environmental-related incident notification and disclosure requirement.	
5.5.2	*Necessary corrective actions taken by the site to prevent future occurrences shall be disclosed if applicable.*	Yes
Comment	The site did not have violations of water-related laws and regulations. TSMC already set the water related emergency response procedure. There are 5 documents related to water pollution. Those procedure cover the environmental-related incident notification and corrective actions disclosure requirement.	
5.5.3	*Any site water-related violation that may pose significant risk and threat to human or ecosystem health shall be immediately communicated to relevant public agencies and disclosed.*	Yes
Comment	The site did not have violations of water-related laws and regulations. TSMC already set the water related emergency response procedure. There are 5 documents related to water pollution. Those procedure cover the environmental-related incident notification and disclosure requirement.	

Previous Findings		
	All non-conformities raised in the previous audit have been satisfactorily closed.	Yes
Comment	Nil Finding was issued in the last audit.	