CERTIFICATION REPORT

Alliance for Water Stewardship (AWS)

Audit Number: AO-000874

WSAS WATER STEWARDSHIP ASSURANCE SERVICES

SITE DETAILS

Site: **Samsung Electronics - Xi'an**

Address: No.1999 Xiaohe North Road, High tech Zone, Xi'an City, Shaanxi Province, China, 710119, Xi'an, Shanxi, P.R. CHINA

Contact Person: Na Li

AWS Reference Number: AWS-000645

Site Structure: Single Site

CERTIFICATION DETAILS

Certification status: Certified Platinum

Date of certification decision: 2024-Mar-01

Validity of certificate: 2027-Feb-28

AUDIT DETAILS

Audited Service(s): AWS Standard v2.0 (2019)

Audit Type(s): Initial Audit

Audit Start Date: 2023-Oct-31

Lead Auditor: Ian Jiang (TUV Rheinland)

Audit team participants:

Lingyun Yu (TUV Rheinland)

Site Participants:

Li Na, Environmental Manager
Zhang Wei, Environmental engineer
Cao Rui Hua, Environmental engineer
Ren Ying Bo, Manager
Wang Yi Lin, Engineer
Wang Ming Ming, WWTP manager
Zhu Xing Yi, Engineer

ADDITIONAL INFO

Summary of Audit Findings: A total of five findings were raised during the certification audit, four minor non-conformities, one observation.

The Client is requested to perform a root cause analysis and define corrective actions for each of the non-conformities and to submit these to WSAS within 30 days of receipt of the audit report. The Client has already successfully submitted the corrective action plan.

Minor non-conformities must be closed out by the time of the next annual audit.

The audit team recommends certification of Samsung (China) Semiconductor Co. Ltd. at Platinum level pending approval of the corrective actions plan.

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Scope of Assessment: The scope of services covers the Initial certification audit for assessing conformity of Samsung (China) Semiconductor Co. Ltd. against the AWS International Water Stewardship Standard Version 2.

Samsung (China) Semiconductor Co. Ltd is located at No. 1999 Xiaohe North Road, High tech Zone, Xi'an City, Shaanxi Province, China covering the area of 1.07 million square meter, with over 5000 employees.
The site is a wafer fabrication and package plant, and their products cover a variety of chips, including DRAM, SSD, MCP, Automotive Memory, Consumer Storage, Processor and Image Sensor etc.
The wafer fabrication process mainly includes washing, etching, degumming, electroplating, polishing and grinding, photolithography and ion implantation.
The package process mainly includes water saw, die bond, wire bond, molding, marking, plating, trim and inspection.
The site only uses municipal water supplied by Qujiang Water Plant. The site also has two wastewater water treatment plants. The wastewater will be treated by onsite WWTP, and then discharged into municipal WWTP, and then flows to Xiaohe River.

Samsung (China) Semiconductor Co. Ltd is located at Xiao River basin which is a sub-basin of Fenghe River basin. The main water resource is Jinpan Reservoir which is located in Heihe River. Both the Fenghe River and Heihe River are sub-basins of the Weihe River basin, the largest tributary of the Yellow River.
Fenghe River, a tributary of the right bank of the Weihe River, is located in the southwest of Xi'an. The Fengyu River originates from the south Yanzigou on the north slope of the Qinling Mountains, flows through Weiziping, Gaoguan, Taiping, and Qie Rivers. It flows northward through Fenghui and Lingnuo to Gaoqiao
and enters Xianyang City. It flows in parallel with the Weihe River in the east, and enters the Weihe River in the west of Caotan Farm. The whole river is 78 kilometers long, with the watershed area of 1386 square kilometers, and an average runoff of 480 million cubic meters.
Heihe River, a tributary on the right bank of Weihe River, is located in Zhouzhi County. The source is Eryehai (3650 meters above sea level) on the south slope of the east of Taibai Mountain. It flows through Houganzi, the Neck of Camel to Yukou. The catchment area is about 1500 square kilometers, most of which are covered by forests. 675 square kilometers have been designated as the national nature reserve and an important water source in Xi'an. After Yukou, the river flows through Shagudui and Dongjiayuan, and then flows into the Weihe River in Shima Village.The whole river is 125.8 kilometers long, a runoff depth of 362 mm, and an average annual runoff of 817 million cubic meters.

The audit was conducted onsite on 2023.10.31 to 2023.11.03.
The onsite visit included the assessment of all facilities in the site, including production building, wastewater treatment plant, water purification system and canteen.

The following external stakeholders were interviewed during the audit: employees, suppliers, community representative, industrial zone management committee and WWTP.

SCORE

111.00

FINDINGS

Observation	1
Minor	4

FINDING DETAILS

Finding No:	TNR-008328
Checklist Item No:	1.5.6
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-03
Checklist item:	Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.
Findings:	The site has not identified the condition of infrastructure related to urban drainage and its ability to withstand extreme weather (such as rainstorm).
Corrective action:	Root cause analysis: Lack of identification for urban drainage capacity in the condition of urban drainage related infrastructure Corrective action: Supplement and identify relevant government plans, emergency plans, and other documents to increase the identification results of drainage capacity in Xi'an City.
Finding No:	TNR-008333
Checklist Item No:	1.6.3
Status:	Open
Finding level:	Observation
Checklist item:	Advanced Indicator Future water issues shall be identified, including anticipated impacts and trends
Findings:	The future water issues determined by the site are insufficient, without analysis of the development trend of industrial and agricultural water use and analysis of municipal water supply.
Corrective action:	The facility has provided extra material to including the analysis of the industrial and agricultural water demand, and water supply in the future.

Finding No:	TNR-008330
Checklist Item No:	1.7.2
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-03
Checklist item:	Water-related opportunities shall be identified, including how the site may participate, assessment and prioritization of potential savings, and business opportunities.
Findings:	The identification of the participation mode of the site in water related opportunities is insufficient.
Corrective action:	Root cause analysis: The participation methods in opportunity identification only provide a general description, lacking specific implementation approaches. Corrective action: Provide detailed identification of participation methods, such as wastewater reuse, increasing reuse, etc.

Finding No:	TNR-008331
Checklist Item No:	1.8.1
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-03
Checklist item:	Relevant catchment best practice for water governance shall be identified.
Findings:	The company has collected best practices for site governance, but has not included practices addressing for catchment issues. It is recommended to collect through multiple channels, including international/recommended/industry standards, good cases from other enterprises or brands, etc. Practice may involve data sharing, research collaboration, or the development of joint plans, public-private partnerships, etc.
Corrective action:	Root cause analysis: We have identified the best practices in the same industry and national water related guidelines, but there is a lack of best practices in governance measures/technologies. Corrective action: Supplementary identification of national/industry water treatment technologies, strengthened requirements from customers and our company, etc

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Audit Number: AO-000874

Finding No:	TNR-008212
Checklist Item No:	4.1.3
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-03
Checklist item:	The shared value benefits in the catchment shall be identified and where applicable, quantified.
Findings:	The site summarized the actions taken to collect water quality information and improve the water environment within the watershed, such as developing wastewater internal control standards and monitoring the water quality and ecological health status of the wastewater receiving water bodies. However, the site did not quantify the benefits of improving water quality within the catchment.
Corrective action:	The site will establish a process for the Sustainable Water Management team to evaluate and quantify the shared value benefits in the capture obtained from its WSP annually, including the water quality aspect.

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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)	28 February 2024

Surveillance

Proposed date for next audit
2024-Nov-06

Comment Proposed the first surveillance audit to be performed at 2024.11.06

Stakeholder Announcements

Date of publication	Location
09/08/2023	https://www.tuv.com/content-media-files/greater-china/about-us/downloads/terms-and-conditions-and-certification-regulations/aws-stakeholder-announcement-sumsang.pdf
09/08/2023	https://watersas.org/wp-content/uploads/2023/08/AWS-000645-Samsung-China.pdf
15/08/2023	https://green.samsung.com.cn/green/#/board?articleId=376

Catchment Information

catchment map.jpg

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and enters Xianyang City. It flows in parallel with the Weihe River in the east, and enters the Weihe River in the west of Caotan Farm. The whole river is 78 kilometers long, with the watershed area of 1386 square kilometers, and an average runoff of 480 million cubic meters.

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Client Description and Site Details

site boundary.jpg

Client/Site Background

Samsung (China) Semiconductor Co. Ltd is located at No. 1999 Xiaohe North Road, High tech Zone, Xi'an City, Shaanxi Province, China covering the area of 1.07 million square meter, with over 5000 employees.

The site is a wafer fabrication and package plant, and their products cover various chips, including DRAM, SSD , MCP, Automotive Memory, Consumer Storage, Processor and Image Sensor etc.

The wafer fabrication process mainly includes washing, etching, degumming, electroplating, polishing and grinding, photolithography and ion implantation.

The package process mainly includes water saw, die bond, wire bond, molding, marking, plating, trim and inspection.

The site only uses municipal water supplied by Qujiang Water Plant. The site uses two wastewater water treatment plants. The wastewater is first treated by an onsite WWTP, and then discharged into municipal WWTP, after which it flows to Xiaohe River.

	Summary of Shared Water Challenges

Summary of Shared Water Challenges
The site faced with four major shared water challenges as below:
1, Priority as high, Water scarcity.

The water catchment "Fenghe" where the site located belongs to the Yellow River and Weihe River basins, facing the challenge of water shortage;
The per capita water consumption in Xi'an is 157.2 cubic meters, far lower than the national per capita comprehensive water consumption of 425 meters in 2022, making it a severely water deficient area.

2, Priority as medium, Fluctuations in water supply and drainage quality.
Starting from 2022, the Department of Ecology and Environment conducted monthly inspections and found that Class V and Class IV still occurred: Weihe River Class V: once, Class IV: twice; Fenghe River: Class IV: 5 times.
Fenghe River serves as the downstream Fenghui Canal for irrigation, and the fluctuation of drainage water quality directly affects farmland irrigation.

3, Priority as medium, Climate change leads to frequent extreme weather events.
In recent years, the global climate has gradually deteriorated, with frequent extreme weather, and the river basin where the site located is no exception. There is hotter weather in summer, and the distribution of precipitation is uneven.

4, Priority as medium, Insufficient WASH.
In 2021, the number of public toilets (seats) per 10000 people in Xi'an was 2.58, lower than the national average of 3.29.

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.	

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 site has developed a Background Investigation Report, and it contains the physical scope of the site. It contains: • 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, wastewater treatment plant, fire pool and emergency pool. • Map of water plant (Qujiang Water Plant) and its ultimate water source(Jinpan reservoir), and municipal WWTP (The Second Wastewater Treatment Plant of High tech Zone) and its ultimate receiving water body(Xiaohe River). • Map of 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	The site established AWS management manual(SCS-ESHEn-025), which included the stakeholder identification procedure. They also identified key stakeholders such as government, employees, clients, infrastructures, NGOs, surrounding factories and suppliers etc. All the stakeholders except for suppliers are list in a spreadsheet. The spreadsheet contains the information such as the key contacts of different stakeholders, the degree of influence, the communication way and etc. The site communicated with stakeholder via stakeholder meetings, seminars, trainings, emails, hotlines, etc.	

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 degree of influence between site and stakeholder has been identified of each stakeholder and list in the spreadsheet.	
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	The site has developed a series of water-related incident response plans that include multiple scenarios. The scenarios include emergency plans for chemical spills, emergency plans for waste pollution, water pollution incidents, soil pollution, Municipal Water Interruption and Natural disaster emergency plan (blizzard, rainstorm, earthquake, hail, typhoon).	
1.3.2	*Site water balance, including inflows, losses, storage, and outflows shall be identified and mapped*	Yes
Comment	The site drawn a water balance map that demonstrates detail water flow including inflows, losses, storage, and outflows. For example, the map shows the incoming water, discharge water, evaporate water, and water consumption of different workshop or production processes. The site categorized the water as following: water treatment water, spraying water for emission treatment system, water for boiler, water for air conditioning system, water for cooling tower water, water for WWTP, water from landscape, office and domestic water, water for canteen. The site installed various of intelligence sensor to collect the water volume data in real time, and summary the data at monthly basis.	
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.*	Yes
Comment	The site installed various of intelligence sensor to collect the water volume data in real time, and summary the data at monthly basis. Therefore, the annual variance could be identified as well. The site used the date to draw the water balance maps for 2022, which depict total water inputs, water inputs for each major process, predicted losses, reuse water and total discharge. The annual variance could be identified as well.	
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	Samsung monitored the water quality of rainwater, discharged water, underground water and deionized water. For discharged water, rainwater and deionized water, the site has installed online monitoring system which can monitor the water quality in real time. The site also entrusted qualified laboratory to testing the discharged water and rainwater and underground water. Based on interview, rainwater was tested semi-annually, wastewater was tested monthly, and groundwater was tested annually. According to the results of the test reports, all water quality meets the standards. As per the online discharged water monitoring system, the discharged water is far below the limit.	

1.3.5	*Potential sources of pollution shall be identified and if applicable, mapped, including chemicals used or stored on site.*	Yes
Comment	The site presents the inventory of all chemical materials found in the factory, the document has information on: where the product is, in which type of tank or container, the substance, storage capacity, as well as a graphical description. The site also draws a layout that illustrated the pollution sources, like chemical warehouse, chemical loading area and hazardous waste storage area etc..	
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	As per site tour, document review and interview, no IWRA is within the site.	
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	The water-related costs sheet was provided for review, including 1.Water supply invoice; 2.Steam 3.Water purification cost (including electricity of pumps) 4. Wastewater treatment cost (including chemicals, monitoring, equipment procurement and maintenance, discharge rights, sludge disposal, sludge testing etc..) 5. Environmental training, frugal project investment, industry university collaboration 6.Water quality testing, peripheral water testing, surrounding environment testing, direct drinking water testing, purchase of bottled water 7.AWS related expenses The water-related revenues included: Income from frugal projects	
1.3.8	*Levels of access and adequacy of WASH at the site shall be identified.*	Yes
Comment	As per the Evaluation Report on the Effectiveness of Occupational Disease Hazard Control (December 2020) The facilities such as changing rooms/showers, bathrooms, restaurants, etc. comply with the requirements of the Hygiene Standards for Industrial Enterprises (GBZ 1-2002). The site also performed testing of different drinking water, the test frequency were shown as below: End water (tap water) testing, once a month Direct drinking water (water dispenser) testing, quarterly Barrel water testing report, provided by suppliers. As per the testing report, the quality complied with the related standards.	
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 site has established a list of product suppliers within the site's catchment covering suppliers of main materials, suppliers of accessories, suppliers of packing materials, and analysed the intensity of water consumption and water pollution based on their water quantity and quality. Meanwhile, by using WWF's map of water risk filter, The site has also analysed the water related risk level in the catchment where its suppliers are located.

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	A list of outsourced services within the site's catchment has been established by the site. Meanwhile, the intensity of water consumption and water pollution has been analysed based on their water quantity and quality. Based on the investigation, the outsourced services mainly include the treatment and disposal of solid waste. Moreover, the site also has the cleaning and catering service providers which used the water within the sites. The transportation vendors did not have a car washing center, so the car washing is performed by driver randomly, making it unable to quantify.

1.4.3 *Advanced Indicator*
The embedded water use of primary inputs in catchment(s) of origin shall be quantified. — Yes

Comment	The site investigated the suppliers of primary inputs within and outside the site's catchment. The site has established a list of product suppliers covering suppliers of main materials, suppliers of accessories, suppliers of packing materials. Then they send the questionaries to suppliers to investigate the water-related information. Via the data of suppliers' total water consumption, the production volume and production volume proportion, the site could calculate the embedded water use of the main suppliers. The embedded water use of materials is about 7 million tons by calculation.
Score	7

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	Water governance initiatives was identified in Catchment Background Survey Report by the site. The initiatives included national, provincial and local level, including the catchment development plan, industrial development plan, environmental and ecological conservation plan etc..

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	The site presents a laws and regulations list that contains all legal actions. The document is used by the site to monitor the status of each of the site's legal obligations.

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	The Catchment Background Survey Report provides a detailed analysis of water balance for Xian City which covered the area of the catchments. The water balance in the catchment is analyzed based on the rainfall (mm), precipitation (m3), surface water resources (m3), groundwater resources(m3), water diversion (m3), total water supply (m3) and total water consumption(m3). All the data is collected from government website and publishing report. As per the study, the water resource utilization rate in Xian City was 33.76% at 2021, which is quite close to the 40% hurdle. Year 2021 was special because its rainfall was double of the previous years. So in the normal years, the water stress was tense.	
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 Catchment Background Survey Report provides a detailed analysis of water quality for the catchment. The site obtained the relate information from the government website. (Mainly from the Environmental and Ecological Bureau). The data includes the water quality of the water source, the final discharged water body, the water from municipal water plant. The data is published monthly, therefore, the annual variances could be identified.	
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 Catchment Background Survey Report lists the Important Water-Related Area of the catchment. After consultation with the government agencies and internal discussion, totally three IWRAs are identified, including Kunming Pool, Fenghui Canal and Xiaohe Ecological Park. The status of the IWRAs is collected from the manager authorities' website.	
1.5.6	*Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.*	No
Comment	The Catchment Background Survey Report lists the existing and planned water-related infrastructure including water supply and wastewater treatment, emergency response at provincial, catchment and city levels and water-related objectives. Based on the available information, the water-related infrastructure of water supply, wastewater treatment and drainage pipeline are sufficient. ***Finding No: TNR-008328***	
1.5.7	*The adequacy of available WASH services within the catchment shall be identified.*	Yes
Comment	The facility obtained the WASH status in Xi'an from Xi'an Statistical Yearbook for 2021, including the tap water penetration rate, wastewater treatment rate and other data. Overall, the WASH services is good in Xi'an City.	
1.5.8	*Advanced Indicator* *Efforts by the site to support and undertake catchment level water-related data collection shall be identified.*	Yes
Comment	The site has selected one of neighbor river, Xiaohe River. They sample monitoring points in upper stream, the premises and downstream stream, total five sample points. Then entrust a third party to perform the water quality testing quarterly. And share the testing result to local environmental bureau.	
Score	6	

1.5.9	*Advanced Indicator* *The adequacy of WASH provision within the catchments of origin of primary inputs shall be identified.*	Yes
Comment	The site investigated the supplier of primary inputs within and outside the site's catchment. The site has established a list of product suppliers covering suppliers of main materials, suppliers of accessories, suppliers of packing materials. Then they send the questionaries to suppliers to investigate the water-related information. As per the questionaries, the site searches the WASH information of the statistical yearbook. The site has identified adequacy of WASH provision within the catchments of origin of primary inputs including the coverage of safety drinking water supply, the coverage of wastewater treatment, the rate of security disposal of municipal solid waste, and public facilities and environmental sanitation in urban districts.	
Score	4	
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.*	Yes
Comment	The Catchment Background Report identifies the shared challenges within the catchment, including: 1, Priority as high, Water scarcity. 2, Priority as medium, Fluctuations in water supply and drainage quality. 3, Priority as medium, Climate change leads to frequent extreme weather events. 4, Priority as medium, Insufficient WASH. Meanwhile, based on the analysis of relevance/rationale for stakeholders and relevance/rational for the site, the site has prioritized the shared challenges. Reference to the of the catchment background survey report.	
1.6.2	*Initiatives to address shared water challenges shall be identified.*	Yes
Comment	In response to the aforementioned shared water challenges, the site has identified measures to address them, including the public initiatives and site's action plan.	
1.6.3	*Advanced Indicator* *Future water issues shall be identified, including anticipated impacts and trends*	Yes
Comment	Future water issues were identified in the catchment Background Survey Report, including anticipated impacts and trends. Overall speaking, the trends of extreme weather increased in the next 20" 30 years. With the adoption of the 'Hanjiang River to Weihe River Diversion Project' the water scarcity may mitigate, but still facing big challenges in the future with the increasing population and industrial development.	
Score	3	
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.*	N/A
Comment	The facility does not perform this indicator.	

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: The site identified its water risks and summarized in a spreadsheet. They categorized the water risk into physical risk, regulatory risk and reputation risk.
The spreadsheet that lists 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.

1.7.2 *Water-related opportunities shall be identified, including how the site may participate, assessment and prioritization of potential savings, and business opportunities.* ✗ No

Comment: The site has identified seven major business opportunities considering how the site may participate, cost assessment of potential saving, magnitude of potential financial impact, cost assessment of potential saving.

The site has tabulated Business opportunities along with the following:- "How the site may participate"- "Magnitude of potential financial impact"- "Cost assessment of potential saving"- "Prioritization of potential saving"

Finding No: TNR-008330

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.* ✗ No

Comment: The facility has established a best practices list to collect all best practice towards achieving AWS outcomes including water governance, water balance, water quality, IWRA and WASH. They collected the best practices from other brands, international or national recommendation standard.

Example collected like: Signed an MOU for the Biodiversity Research and Human Resources Development Project.

Finding No: TNR-008331

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: The facility has established a best practices list to collect all best practice towards achieving AWS outcomes including water governance, water balance, water quality, IWRA and WASH.
Example collected like: Set a Water Positive target, and expanding the undertaking of water ecosystem restoration.

1.8.3 *Relevant sector and/or catchment best practice for water quality shall be identified, including rationale for data source.* ✓ Yes

Comment: The facility has established a best practices list to collect all best practice towards achieving AWS outcomes including water governance, water balance, water quality, IWRA and WASH.
Example collected like:
Installing new water reclamation and reverse osmosis systems at multiple manufacturing sites.

1.8.4	*Relevant catchment best practice for site maintenance of Important Water-Related Areas shall be identified.*	Yes
Comment	The facility has established a best practices list to collect all best practice towards achieving AWS outcomes including water governance, water balance, water quality, IWRA and WASH. Example collected like: Signed an agreement with the Local governments, and environmental groups to participate in the Project to Save Endangered Species in the neighbor region.	
1.8.5	*Relevant sector and/or catchment best practice for site provision of equitable and adequate WASH services shall be identified.*	Yes
Comment	The facility has established a best practices list to collect all best practice towards achieving AWS outcomes including water governance, water balance, water quality, IWRA and WASH. Example collected like: Follow the standard of the Shaanxi Province Health Enterprise Evaluation. Using the WBCSD evaluation form to evaluate the WASH level of the plant.	

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	A water stewardship commitment to follow all the AWS core criteria has been signed by the top manager of SCS (Samsung (China) Semiconductor Co. Ltd). The commitment has been displayed on SCS group's website. https://green.samsung.com.cn/#/greenFactory	
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	A water stewardship commitment to follow all the AWS core criteria has been signed by the top manager of SCS. The commitment has been displayed on SCS group's website. https://green.samsung.com.cn/#/greenFactory	
Score	1	
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	An organization chart of the environment and water stewardship management team is included in the AWS management manual of SCS, document number SCS-ESHEn-025. Including the manager representative of the environment and water stewardship, the responsible department and person. By using a third-party service platform called Enhesa, SCS can identify applicable water related legal and regulatory requirements in a timely manner SCS has also established a procedure to ensure the operation of SCS meet the provisions of relevant laws, regulations and other requirements, SCS-ESHEn-015. SCS continuously tracks updates on relevant laws and regulations, as well as other compliance requirements, and prepares monthly identification reports on laws, regulations, and compliance requirements, which are pushed to various internal departments.	
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 SCS has developed a water stewardship strategy and announced it on its official website.
The strategy expounds SCS's long-term plan for water stewardship in terms of standardized management, corporate social responsibility and implementation of best practices, including:
Based on 2021, no increase in total water intake by 2030.
By 2040, the emission concentrations of characteristic pollutants in wastewater, such as chloride ions, sulfate ions, T-N, and negative ions, should reach the level of environmental water bodies.
SCS also develops a Water Stewardship Plan (Year 2023), which specifies targets, required actions, measurement, cost and benefit, accountable and responsible person, deadline, etc.

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 SCS has developed a Water Stewardship Plan (Year 2023), which specifies targets, required actions, measurement, status, effectiveness evaluation, accountable and deadline, etc.
The Water Stewardship Plan is associated with five main outcomes of AWS, including good water governance, sustainable water balance, good water quality status, IWRA and WASH, such as:
• Prepare and regularly update the sustainable water stewardship process to standardize the water management process Invite external experts to conduct sustainable water management training for their AWS promotion team. By the end of 2023, complete AWS certification and achieve AWS platinum level.
• Through continuous process improvement, the total water consumption in 2023 should decrease by 6% compared to 2022, the water reuse rate should be greater than 95%, and the wastewater reuse rate should reach 40%.
• Reduce the amount of chemical raw materials by 3068m3 annually to further reduce the impact of chemicals on the quality of raw wastewater.
• The quality of the discharged wastewater meets 100% of the internal control requirements of the site, and the wastewater internal control index of SCS is far lower than the wastewater discharge permit requirements. Specifically, TSS is 7% of the discharge permit, COD is 33% of the discharge permit, NH3-N is 33% of the discharge permit, TP is 50% of the discharge permit, BOD is 30% of the discharge permit, and T-N is 34% of the discharge permit.
• Quarterly commission third-party laboratories to monitor the water quality of the Xiaohe River (the final receiving water body for industrial wastewater of the site).
• Every year, the site entrusts a local university to investigate the ecological health status of the Xiaohe River and prepare a research report on the impact of industrial park drainage on the environment and aquatic ecology of the Xiaohe River.
• Set water-saving targets for suppliers with high water risk levels and promote their water-saving actions to improve indirect water use of the site.
• Continuously monitor Water Stewardship targets and best practices within the industry.

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. SCS and Xi'an Janssen (one of the enterprises in the same catchment) have developed a plan to carry out exchanges and cooperation in the field of AWS, including sharing water related information in the catchment, identifying IWRA, and jointly carrying out exchange, learning, and experience sharing of AWS standards. 2. SCS maintains long-term cooperative relationships with stakeholders (such as surrounding residents, surrounding enterprises, wastewater treatment service providers, and local governments), and conducts joint actions every year to pay attention to and protect the local water environment and IWRA. For example, in 2023, SCS collaborated with wastewater treatment service providers, surrounding residents, and surrounding enterprises to carry out activities with the theme of "practicing sustainable water management and nurturing green life", to pay attention to the health status of the Xiaohe River (one of the IWRA identified by the site)
Score	4

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	In October 2023, SCS organized a sharing seminar on sustainable water stewardship to share its experience in carrying out AWS with brother companies in another catchment and advocate to jointly carry out sustainable water management in the catchment. As a subsidiary of Samsung Group, SCS holds monthly sustainable business exchange meetings with other subsidiaries in the electronics industry, including communication and experience sharing in the field of water management. Water related improvement cases are shared and promoted. Involving regions such as Jiangsu Province, Tianjin City, and overseas.
Score	4

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	SCS has developed a Water Stewardship Plan (Year 2023), which specifies targets, required actions, measurement, status, effectiveness evaluation, accountable and deadline, etc. SCS communicated its Water Stewardship Plan with key stakeholders through stakeholder interviews, including water related infrastructure, surrounding residents, surrounding enterprises, surrounding schools, and local governments. SCS has communicated its Water Stewardship Plan with stakeholders and obtained their feedback to seek consensus on the Water Stewardship Plan for the site. For example: In interviews with surrounding schools, school representatives expressed concerns about the impact of site operation on the surrounding water environment. SCS introduced its current status of wastewater discharge, internal control indicators for wastewater discharge, and its performance in water quality control and water environment monitoring. The stakeholder appreciates SCS's annual water quality control plan. In an interview with the local environmental protection bureau, representatives of the bureau expressed their concern about the prevention of large-scale water pollution accidents in industrial areas. And recognize the establishment of a sustainable water management system, strict water quality goals, and the current status and goals of water reuse rates far above the industry average for SCS.
Score	7

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	SCS has identified its water risks covering water governance, sustainable water balance and water quality. Based on risk analysis, SCS has prioritized its water risks according to potential impact, likelihood within a given time and difficulty of detection. Meanwhile, corresponding response strategies to mitigate water risks are developed, such as: • The emergency plan for sudden environmental events has been formulated, including special emergency plans for chemical and hazardous waste leakage and its disposal of cleaning waste water, waste water pipeline leakage, etc., and has been registered with local ecological environment bureau, No.9XHB-2021-081-M • Developed an emergency response SOP for municipal water interruption, document number: XA_ 01040859, and signed a municipal water supply contract with the water supply infrastructure, which includes measures for responding to emergencies in water supply and pipeline networks. • In order to alleviate water supply risks, SCS communicated with the water supply infrastructure and park management committee. In February 2023, the water supply company responded to SCS's demand and planned to provide a secondary water supply pipeline for the site. • In order to meet the increasing demand for SCS drainage, the site communicated with the park management committee and offsite ETP to promote the implementation of the offsite ETP expansion plan.

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	By searching literature on climate change prediction both inside and outside the catchment, the site identified the seasonal extreme weather floods may become the water risks associated with climate change. SCS collaborates with local government agencies such as the Xi'an Emergency Committee, Xi'an Work Safety Committee, and Xi'an Disaster Prevention, Reduction, and Relief Work Committee to develop plans to address related water risks via developing the drainage system. And jointly established a local emergency rescue team to cope with the potential extreme weather.	
Score	6	

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

1.SCS actively cooperates with the government supervision department to conduct supervisory inspections and visits.
2.SCS actively organized and participated in joint drills for sudden environmental incidents within the park. In June and October 2023, SCS organized emergency drills for chemical leakage accidents. The external organizations participating in these exercises include: surrounding enterprises, environmental protection bureaus, safety supervision bureaus, emergency management bureaus, park governments, etc.
3.SCS regularly monitors the water quality of the final receiving water body of its industrial wastewater - Xiaohe River, and selects the wastewater discharge point of off-site ETP and 500 meters upstream and downstream of the drainage points as water quality monitoring points, And trusts external agencies to test the water quality of the above areas every three months (test parameters include pH, fluoride ions, hexavalent chromium, BOD, heavy metals, TP, COD, and NH3-N, etc., a total of 18 parameters) according to the national standard: Surface Water Environmental Quality Standard GB 3838-2002.
4.SCS also monitors the water quality of the Feng River (the final receiving body of rainwater of the site). The site entrusts a third-party laboratory to conduct sampling and testing every three months at 500 meters upstream and 1500 meters downstream of the municipal rainwater outlet, in accordance with the national standard: Surface Water Environmental Quality Standard GB 3838-2002
5.The site also shares the water quality monitoring reports of the Xiaohe and Fenghe rivers with the High tech Branch of the Xi'an Ecological Environment Bureau.

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

The water rights are respected under legal and regulatory mechanisms, and there is no indigenous people in the catchment area.

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

Comment

1.The site has developed its own sustainable water stewardship operation procedure, SCS-ESHEn-025, to standardize its water management activities.
2.SCS has established an Environment and Water Stewardship Committee to coordinate its environmental and water management related affairs. An organization chart of the environment and water stewardship management team is included in the AWS management manual of SCS, document number SCS-ESHEn-025. Including the manager representative of the environment and water stewardship, the responsible department and person.
3.In July 2023, members of the Environment and Water Stewardship Committee of SCS participated in an AWS standard training course to help them understand and implement AWS standards.
4.On August 28, 2023, the site carried out internal AWS management training to improve the water management ability of managers and better implement the AWS system.
5.On August 2-3, 2023, the site invited a third party to carry out a two-day training on water management standards to help it implement and improve its water management system.

Score 2

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	1.In February 2023, SCS was awarded the honor of "Shanxi Provincial 2022 Water saving Enterprise" by the Shanxi Provincial Department of Water Resources and the Shanxi Provincial Department of Industry and Information Technology; 2.Since 2020, SCS has been awarded the honor of "National Green Factory and Green Supply Chain" by the Ministry of Industry and Information Technology.	
Score	2	
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	SCS has established a procedure to ensure the operation of SCS meet the provisions of relevant laws, regulations and other requirements. With the help of a third-party platform, SCS timely obtains updated information on laws and regulations, and conducts compliance evaluation on laws and regulations every year and keeps records.	
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	SCS has established a procedure to ensure the operation of SCS meet the provisions of relevant laws, regulations and other requirements. With the help of a third-party platform, SCS timely obtains updated information on laws and regulations, and conducts compliance evaluation on laws and regulations every year and keeps records. The site has developed a water quality monitoring plan, including rainwater, discharged wastewater, groundwater, soil to ensure that the drainage water quality and pollutant concentrations in groundwater and soil meet the requirements of laws and regulations. A brief summary of monitoring point information and monitoring frequency is as follows: • Discharged wastewater 1. SCS has established water quality pollution management regulations, which include outsourced monitoring requirements for discharged water quality, including parameters and frequency; 2. SCS has installed online monitoring facilities at the wastewater discharge outlet to monitor the parameters of the discharged wastewater in real time. • Rainwater discharge SCS has installed an online monitoring device at the rainwater outlet to monitor the conductivity, pH, oil, etc. of rainwater in real-time. •Environmental water quality. SCS has developed a "Surrounding Environment Monitoring and Management Procedure" 1. Groundwater monitoring: Downstream village monitoring points (3-4 kilometers away from the site) are monitored quarterly. Two monitoring points have been set up in the site area, which are monitored every two months; 2. Soil monitoring: Four monitoring wells are set up around the site boundary, and one monitoring well is set up downstream of the site for quarterly soil monitoring.	
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

The site has developed a Water Stewardship Plan (Year 2023) improvement action list, which specifies targets, required actions, measurement, status, effectiveness evaluation, accountable and deadline, etc.
1. SCS has set targets for water reuse rate to be>95% and wastewater reuse rate to be>40% in its WSP. The site tracks its water reuse rate quarterly and its wastewater reuse rate monthly.
2. From 2022 to 2023, SCS conducted a clean production audit, and according to the evaluation report, SCS reached the first level (most stringent) of the clean production evaluation index system for the electronic device (semiconductor chip) manufacturing industry. SCS has set an annual target of reducing water usage by 6% in its WSP and tracks the progress of its water usage target on a monthly basis.

SCS has developed a proposal for improving water balance in 2023, with a total of 81 improvement measures approved, involving topics such as optimizing production processes to save water consumption and improve wastewater utilization, such as:
1. Change the water source for supplementing the cooling tower from the original municipal water to treated recycled water;
2. Change the supplementary water source for specific waste gas treatment devices from the original treated recycled water to untreated process water. Thereby improving the utilization rate of water before and after treatment;
3. Optimize the process to reduce the use of fresh water.
Status of progress towards meeting water balance targets set in the water stewardship plan is also identified by the site. SCS tracks water reuse rate and wastewater reuse rate every quarter. As of the third quarter of 2023, the average water reuse rate of the site is 99%, and the average wastewater reuse rate is 47%

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	The site has developed a Water Stewardship Plan (Year 2023) improvement action list, which specifies targets, required actions, measurement, status, effectiveness evaluation, accountable and deadline, etc. 1. SCS has set targets for water reuse rate to be>95% and wastewater reuse rate to be>40% in its WSP. The site tracks its water reuse rate quarterly and its wastewater reuse rate monthly. 2. From 2022 to 2023, SCS conducted a clean production audit, and according to the evaluation report, SCS reached the first level (most stringent) of the clean production evaluation index system for the electronic device (semiconductor chip) manufacturing industry. SCS has set an annual target of reducing water usage by 6% in its WSP and tracks the progress of its water usage target on a monthly basis. SCS has developed a proposal for improving water balance in 2023, with a total of 81 improvement measures approved, involving topics such as optimizing production processes to save water consumption and improve wastewater utilization, such as: 1. Change the water source for supplementing the cooling tower from the original municipal water to treated recycled water; 2. Change the supplementary water source for specific waste gas treatment devices from the original treated recycled water to untreated process water. Thereby improving the utilization rate of water before and after treatment; 3. Optimize the process to reduce the use of fresh water. Status of progress towards meeting water balance targets set in the water stewardship plan is also identified by the site. SCS tracks water reuse rate and wastewater reuse rate every quarter. As of the third quarter of 2023, the average water reuse rate of the site is 99%, and the average wastewater reuse rate is 47% According to the data statistics and analysis records provided by the site, 1. SCS annual total water intake trend: 16.52 million tons in 2021; 16.34 million tons in 2022; Target for 2023 is 15.64 million tons; 2. Trend of SCS wastewater reuse rate: 42% in 2021; 44% in 2022; 2023 (as of Q3) 47%	
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	No legally-binding documentation is issued by local government authorities to the site for the re-allocation of water to social, cultural or environmental needs.	
3.3.4	*Advanced Indicator* *The total volume of water voluntarily re-allocated (from site water savings) for social, cultural and environmental needs shall be quantified.*	N/A
Comment	The site does not perform this indicator.	
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

A series of water stewardship plans are implemented to achieve the site's water quality targets.
According to the water quality monitoring plan, the site entrusts a third-party laboratory to test its various water quality. According to the test report and analysis record provided by the site, the water quality is 100% in line with its internal control standard.
1. SCS has developed a water quality monitoring plan and commissioned third-party laboratories to test the water quality of various sources, including drinking water, secondary water supply systems, discharged water, groundwater, soil, and upstream and downstream water quality of wastewater receiving bodies.
2. SCS has installed a series of online water quality detection systems to monitor inflow and outflow in real-time, such as monitoring CL (residual chlorine), CI (conductivity), TOC, PH, and TU (turbidity) at the tap water inlet, to ensure that the incoming water meets the water quality requirements of the SCS pure water preparation system; Monitor SS, NH3-N, Cu, T-P, COD, F, pH, TN at the total wastewater discharge outlet; Monitor CI, oil, and pH at the rainwater outlet.
3. From 2022 to 2023, SCS conducted a clean production audit, and according to the evaluation report, SCS reached the first level (most stringent) of the clean production evaluation index system for the electronic device (semiconductor chip) manufacturing industry.
4.The site has formulated the operation standards of industrial wastewater treatment facilities to standardize the wastewater treatment process, and has kept the daily operation and maintenance records for tracking the operation status of wastewater treatment facilities.
5. SCS has developed a management procedure for pollutant concentration in wastewater discharge and established internal control indicators that are stricter than the discharge permit. The specific details are as follows:
Internal control index of discharged wastewater: SS 10mg/L; NH3-N 5mg/L; Cu 0.1mg/L; Animal and vegetable oil 4.5mg/L; BOD 9mg/L; COD 50mg/L; TP 0.5mg/L; F 7mg/L; PH 6.5-8.0; TN 35mg/L (Permit requirements: GB 8978-1996 intermediate discharge level 2 standard: SS 150mg/L; NH3-N 25mg/L; Cu 0.5mg/L; animal and vegetable oil 15mg/L; BOD 30mg/L; COD 150mg/L; TP 1mg/L; F 10mg/L; pH 6.0-9.0; TN 70mg/L)
6. SCS has also set an annual target of less than 448 tons of total nitrogen emissions from wastewater to address the shared water challenges within the catchment. SCS monitors the total nitrogen emissions in its wastewater every month and has developed a series of implementation plans. Including: optimizing the ETP treatment process and reducing the use of nitrogen-containing chemicals in the production process.
The site tracks the progress of its Water Stewardship targets regularly.

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

According to the water quality monitoring plan, the site entrusts a third-party laboratory to test its various water quality. According to the test report and analysis record provided by the site, the water quality is 100% in line with its internal control standard.
SCS has developed a management procedure for pollutant concentration in wastewater discharge and established internal control indicators that are stricter than the discharge permit. The specific details are as follows:
Internal control index of discharged wastewater: SS 10mg/L; NH3-N 5mg/L; Cu 0.1mg/L; Animal and vegetable oil 4.5mg/L; BOD 9mg/L; COD 50mg/L; TP 0.5mg/L; F 7mg/L; PH 6.5-8.0; TN 35mg/L (Permit requirements: GB 8978-1996 intermediate discharge level 2 standard: SS 150mg/L; NH3-N 25mg/L; Cu 0.5mg/L; animal and vegetable oil 15mg/L; BOD 30mg/L; COD 150mg/L; TP 1mg/L; F 10mg/L; pH 6.0-9.0; TN 70mg/L)
SCS has also set an annual target of less than 448 tons of total nitrogen emissions from wastewater to address the shared water challenges within the catchment. SCS monitors the total nitrogen emissions in its wastewater every month and has developed a series of implementation plans. Including: optimizing the ETP treatment process and reducing the use of nitrogen-containing chemicals in the production process.
The site tracks the progress of its Water Stewardship targets regularly.

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. SCS regularly monitors the water quality of the final receiving water body of its industrial wastewater - Xiaohe River, and selects the wastewater discharge point of off-site ETP and 500 meters upstream and downstream of the drainage points as water quality monitoring points, And trusts external agencies to test the water quality of the above areas every three months (test parameters include pH, fluoride ions, hexavalent chromium, BOD, heavy metals, TP, COD, and NH3-N, etc., a total of 18 parameters) according to the national standard: Surface Water Environmental Quality Standard GB 3838-2002. 2. SCS also monitors the water quality of the Feng River (the final receiving body of rainwater of the site). The site entrusts a third-party laboratory to conduct sampling and testing every three months at 500 meters upstream and 1500 meters downstream of the municipal rainwater outlet, in accordance with the national standard: Surface Water Environmental Quality Standard GB 3838-20023. 3. Since 2015, SCS has commissioned a local university (Xi'an Jiaotong University) every year to conduct a research project on the impact of Samsung Industrial Park drainage on the water environment and aquatic ecology of the Xiaohe River. The research focuses on the impact of industrial park drainage on the water quality and aquatic ecology of the Xiaohe River, including the following areas: 1) Water environment quality 2) Environmental quality of river sediment 3) Water ecological environment quality 4) The effect of river water irrigation on the growth status of winter wheat 5) Biological toxicity and ecological enrichment of heavy metals 6) Analysis of the impact of park drainage on the target river channel 7) Analysis of pollutant sources 4. SCS and another enterprise within the same catchment (Xi'an Janssen) jointly carry out watershed protection actions, including river water quality inspections, river cleaning, etc.	
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.*	N/A
Comment	The site does not perform this indicator.	
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.*	N/A
Comment	The site does not perform this indicator.	
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	1.The site has formulated the water dispenser management procedure, SCS-ESHEn-WI-H004, which includes requirements for water quality monitoring, regular maintenance, daily cleaning and disinfection, and relevant records are retained for tracking. 2.The WASH installations fully comply with the national “Hygienic Standards for the Design of Industrial Enterprises” (GBZ 1-2010). 3.The site also conducts WBCSD self-assessment to evaluate the level of onsite WASH. The result is satisfied. In addition, Lanto has also set up a variety of channels to collect employees' opinions and suggestions on their WASH and follow up these feedback in a timely manner, such as: • The site conducts an employee satisfaction survey through questionnaires every year, summarizes and analyzes the survey results, and develops an action plan based on employee feedback. • The site conducts satisfaction survey for the employee restaurant regularly, and the employees can feedback their opinions on the restaurant hygiene, food safety and other aspects at any time. • The site has set up a internal channel for employees on it‘s website named "VOC", and employees can feedback their opinions on WASH.	
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	No evidence is showed that the site is impinging on the human right to safe water and sanitation of communities through their operations according to the interviews with the site’s employees, local community and local government authorities.	
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	1. Drinking water points and toilets have been set up at the four entrances of the site for external personnel, including suppliers, sanitation personnel, couriers, and visitors. 2. In 2020, SCS supported the renovation of student dormitories and toilets, as well as the construction of new bathrooms, in a school (High tech Sixth Senior High School) within the catchment. 3. In October 2023, SCS confirmed an aid contract for a village in the catchment and signed an aid project contract with the village government. A detailed action plan is defined. SCS plans to install a water purification system for the village to improve the drinking water quality of local villagers. The project is expected to benefit 1000 local villagers.	
Score	5	
3.6.4	*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.*	N/A
Comment	The site does not perform this indicator.	
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	Indirect water use targets have been set in the water stewardship plan. 1. SCS conducted a questionnaire survey on its existing suppliers (a total of 108) and analyzed their indirect water use based on the survey questionnaire. Based on the water risk assessment results of the suppliers, three key suppliers (2 within the catchment and 1 outside the catchmen) were selected, and the suppliers were promoted to set annual water management improvement goals and carry out water management implementation actions. All suppliers provided feedback on their water management improvement projects and achievements carried out in 2023. 2. SCS has screened suppliers /service providers' IPE violation records, and promoted them to provide feedback to the IPE platform (a well-known environmental information disclosure platform in China) and remove the violation records. 3. In addition, the site also promotes suppliers/service providers to disclose their PRTR information on the IPE platform. In 2023, SCS plans to focus on the PRTR reporting progress of 14 suppliers and service providers. As of now, a total of 6 suppliers/service providers have completed the reporting process.	
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	Indirect water use targets have been set in the water stewardship plan. 1. SCS conducted a questionnaire survey on its existing suppliers (a total of 108) and analyzed their indirect water use based on the survey questionnaire. Based on the water risk assessment results of the suppliers, three key suppliers (2 within the catchment and 1 outside the catchmen) were selected, and the suppliers were promoted to set annual water management improvement goals and carry out water management implementation actions. All suppliers provided feedback on their water management improvement projects and achievements carried out in 2023. 2. SCS has screened suppliers /service providers' IPE violation records, and promoted them to provide feedback to the IPE platform (a well-known environmental information disclosure platform in China) and remove the violation records. 3. In addition, the site also promotes suppliers/service providers to disclose their PRTR information on the IPE platform. In 2023, SCS plans to focus on the PRTR reporting progress of 14 suppliers and service providers. As of now, a total of 6 suppliers/service providers have completed the reporting process. 4.The site conducts on-site audits of its suppliers/service providers every year, covering topics related to environmental management. In 2023, the site conducted on-site audit on 39 suppliers/service providers. For the findings found during the audit, the site will promote the suppliers to follow up and rectify them.	
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	Indirect water use targets have been set in the water stewardship plan. 1. SCS conducted a questionnaire survey on its existing suppliers (a total of 108) and analyzed their indirect water use based on the survey questionnaire. Based on the water risk assessment results of the suppliers, three key suppliers (2 within the catchment and 1 outside the catchment) were selected, and the suppliers were promoted to set annual water management improvement goals and carry out water management implementation actions. All three suppliers provided feedback on their water management improvement projects and achievements carried out in 2023. 2. SCS has screened suppliers /service providers' IPE violation records, and promoted them to provide feedback to the IPE platform (a well-known environmental information disclosure platform in China) and remove the violation records. 3. In addition, the site also promotes suppliers/service providers to disclose their PRTR information on the IPE platform. In 2023, SCS plans to focus on the PRTR reporting progress of 14 suppliers and service providers. As of now, a total of 6 suppliers/service providers have completed the reporting process. 4.The site conducts on-site audits of its suppliers/service providers every year, covering topics related to environmental management. In 2023, the site conducted on-site audit on 39 suppliers/service providers. For the findings found during the audit, the site will promote the suppliers to follow up and rectify them.
Score	6

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	The site actively cooperates with the government supervision department to conduct supervisory inspections and visits. The site keeps close contact with local water-related infrastructure owners through many ways such as Wechat, e-mail or phone call. For example, to ensure the stability of the incoming water traffic of the site, SCS has maintained close communication and cooperation with the water related infrastructure since 2021. SCS and water related infrastructure jointly inspect and maintain the water supply network and valves.

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	1. The site has developed its own sustainable water stewardship operation procedure, SCS-ESHEn-025, to standardize its water management activities. 2. In July 2023, members of the Environment and Water Stewardship Committee of SCS participated in an AWS standard training course to help them understand and implement AWS standards. 3. On August 28, 2023, the site carried out internal AWS management training to improve the water management ability of managers and better implement the AWS system. 4. On August 2-3, 2023, the site invited a third party to carry out a two-day training on water management standards to help it implement and improve its water management system. 5. SCS has established an Environment and Water Stewardship Committee to coordinate its environmental and water management related affairs. An organization chart of the environment and water stewardship management team is included in the AWS management manual of SCS, document number SCS-ESHEn-025. Including the manager representative of the environment and water stewardship, the responsible department and person.

3.9.2 *Actions towards achieving best practice, related to targets in terms of water balance shall be implemented.* ✓ Yes

Comment

1. SCS has set targets for water reuse rate to be>95% and wastewater reuse rate to be>40% in its WSP. The site tracks its water reuse rate quarterly and its wastewater reuse rate monthly.
2. From 2022 to 2023, SCS conducted a clean production audit, and according to the evaluation report, SCS reached the first level (most stringent) of the clean production evaluation index system for the electronic device (semiconductor chip) manufacturing industry. SCS has set an annual target of reducing water usage by 6% in its WSP and tracks the progress of its water usage target on a monthly basis.

SCS has developed a proposal for improving water balance in 2023, with a total of 81 improvement measures approved, involving topics such as optimizing production processes to save water consumption and improve wastewater utilization, such as:
1. Change the water source for supplementing the cooling tower from the original municipal water to treated recycled water;
2. Change the supplementary water source for specific waste gas treatment devices from the original treated recycled water to untreated process water. Thereby improving the utilization rate of water before and after treatment;
3. Optimize the process to reduce the use of fresh water.

3.9.3 *Actions towards achieving best practice, related to targets in terms of water quality shall be implemented.*

Yes

Comment

According to the water quality monitoring plan, the site entrusts a third-party laboratory to test its various water quality. According to the test report and analysis record provided by the site, the water quality is 100% in line with its internal control standard.
1. SCS has developed a water quality monitoring plan and commissioned third-party laboratories to test the water quality of various sources, including drinking water, secondary water supply systems, discharged water, groundwater, soil, and upstream and downstream water quality of wastewater receiving bodies.
2. SCS has installed a series of online water quality detection systems to monitor inflow and outflow in real-time, such as monitoring CL (residual chlorine), CI (conductivity), TOC, PH, and TU (turbidity) at the tap water inlet, to ensure that the incoming water meets the water quality requirements of the SCS pure water preparation system; Monitor SS, NH3-N, Cu, T-P, COD, F, pH, TN at the total wastewater discharge outlet; Monitor CI, oil, and pH at the rainwater outlet.
3. From 2022 to 2023, SCS conducted a clean production audit, and according to the evaluation report, SCS reached the first level (most stringent) of the clean production evaluation index system for the electronic device (semiconductor chip) manufacturing industry.
4.The site has formulated the operation standards of industrial wastewater treatment facilities to standardize the wastewater treatment process, and has kept the daily operation and maintenance records for tracking the operation status of wastewater treatment facilities.
5. SCS has developed a management procedure for pollutant concentration in wastewater discharge and established internal control indicators that are stricter than the discharge permit. The specific details are as follows:
Internal control index of discharged wastewater: SS 10mg/L; NH3-N 5mg/L; Cu 0.1mg/L; Animal and vegetable oil 4.5mg/L; BOD 9mg/L; COD 50mg/L; TP 0.5mg/L; F 7mg/L; PH 6.5-8.0; TN 35mg/L (Permit requirements: GB 8978-1996 intermediate discharge level 2 standard: SS 150mg/L; NH3-N 25mg/L; Cu 0.5mg/L; animal and vegetable oil 15mg/L; BOD 30mg/L; COD 150mg/L; TP 1mg/L; F 10mg/L; pH 6.0-9.0; TN 70mg/L)
6. SCS has also set an annual target of less than 448 tons of total nitrogen emissions from wastewater to address the shared water challenges within the catchment. SCS monitors the total nitrogen emissions in its wastewater every month and has developed a series of implementation plans. Including: optimizing the ETP treatment process and reducing the use of nitrogen-containing chemicals in the production process.
The site tracks the progress of its Water Stewardship targets regularly.

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. SCS regularly monitors the water quality of the final receiving water body of its industrial wastewater - Xiaohe River, and selects the wastewater discharge point of off-site ETP and 500 meters upstream and downstream of the drainage points as water quality monitoring points, And trusts external agencies to test the water quality of the above areas every three months (test parameters include pH, fluoride ions, hexavalent chromium, BOD, heavy metals, TP, COD, and NH3-N, etc., a total of 18 parameters) according to the national standard: Surface Water Environmental Quality Standard GB 3838-2002.
2. SCS also monitors the water quality of the Feng River (the final receiving body of rainwater of the site). The site entrusts a third-party laboratory to conduct sampling and testing every three months at 500 meters upstream and 1500 meters downstream of the municipal rainwater outlet, in accordance with the national standard: Surface Water Environmental Quality Standard GB 3838-20023.
3. Since 2015, SCS has commissioned a local university (Xi'an Jiaotong University) every year to conduct a research project on the impact of Samsung Industrial Park drainage on the water environment and aquatic ecology of the Xiaohe River. The research focuses on the impact of industrial park drainage on the water quality and aquatic ecology of the Xiaohe River, including the following areas:
1) Water environment quality
2) Environmental quality of river sediment
3) Water ecological environment quality
4) The effect of river water irrigation on the growth status of winter wheat
5) Biological toxicity and ecological enrichment of heavy metals
6) Analysis of the impact of park drainage on the target river channel
7) Analysis of pollutant sources
4. SCS and another enterprise within the same catchment (Xi'an Janssen) jointly carry out watershed protection actions, including river water quality inspections, river cleaning, etc.

3.9.5 *Actions towards achieving best practice related to targets in terms of WASH shall be implemented.*

Yes

Comment

1.The site has formulated the water dispenser management procedure, SCS-ESHEn-WI-H004, which includes requirements for water quality monitoring, regular maintenance, daily cleaning and disinfection, and relevant records are retained for tracking.
2.The WASH installations fully comply with the national “Hygienic Standards for the Design of Industrial Enterprises” (GBZ 1-2010).
3.The site also conducts WBCSD self-assessment to evaluate the level of onsite WASH. The result is satisfied.
In addition, Lanto has also set up a variety of channels to collect employees' opinions and suggestions on their WASH and follow up these feedback in a timely manner, such as:
• The site conducts an employee satisfaction survey through questionnaires every year, summarizes and analyzes the survey results, and develops an action plan based on employee feedback.
• The site conducts satisfaction survey for the employee restaurant regularly, and the employees can feedback their opinions on the restaurant hygiene, food safety and other aspects at any time.
• The site has set up a internal channel for employees on it‘s website named "VOC", and employees can feedback their opinions on WASH.

3.9.6 *Advanced Indicator*
Achievement of identified best practice related to targets in terms of good water governance shall be quantified.

Yes

Comment	The site has quantified the performance of the targets set in the Water stewardship plan which includes Best Practice such as 1. The site has developed its own sustainable water stewardship operation procedure, SCS-ESHEn-025, to standardize its water management activities. 2. In July 2023, members of the Environment and Water Stewardship Committee of SCS participated in an AWS standard training course to help them understand and implement AWS standards. 3. On August 28, 2023, the site carried out internal AWS management training to improve the water management ability of managers and better implement the AWS system. 4. On August 2-3, 2023, the site invited a third party to carry out a two-day training on water management standards to help it implement and improve its water management system. 5. SCS has established an Environment and Water Stewardship Committee to coordinate its environmental and water management related affairs. An organization chart of the environment and water stewardship management team is included in the AWS management manual of SCS, document number SCS-ESHEn-025. Including the manager representative of the environment and water stewardship, the responsible department and person.
Score	8

3.9.7 *Advanced Indicator*
Achievement of identified best practice related to targets in terms of sustainable water balance shall be quantified.

Yes

Comment	The site has quantified the performance of the targets set in the Water stewardship plan which includes Best Practice such as SCS has developed a proposal for improving water balance in 2023, with a total of 81 improvement measures approved, involving topics such as optimizing production processes to save water consumption and improve wastewater utilization, includes: 1. Change the water source for supplementing the cooling tower from the original municipal water to treated recycled water; 2. Change the supplementary water source for specific waste gas treatment devices from the original treated recycled water to untreated process water. Thereby improving the utilization rate of water before and after treatment; 3. Optimize the process to reduce the use of fresh water. • In 2021, SCS commissioned a third-party organization to conduct water balance testing, and the water reuse rate was 98.92%; The reuse rate of wastewater is 52.42%. SCS tracks its water reuse rate quarterly and its wastewater reuse rate monthly. As of the third quarter of 2023, the average water reuse rate of the site is 99%, and the average wastewater reuse rate is 47% • From 2022 to 2023, SCS conducted a clean production audit, and according to the evaluation report, SCS reached the first level (most stringent) of the clean production evaluation index system for the electronic device (semiconductor chip) manufacturing industry. SCS has set an annual target of reducing water usage by 6% in its WSP and tracks the progress of its water usage target on a monthly basis.
Score	8

3.9.8 *Advanced Indicator*
Achievement of identified best practices related to targets in terms of water quality shall be quantified

Yes

Comment	The site has quantified the performance of the targets set in the Water stewardship plan which includes Best Practice such as 1. SCS has developed a water quality monitoring plan and commissioned third-party laboratories to test the water quality of various sources, including drinking water, secondary water supply systems, discharged water, groundwater, soil, and upstream and downstream water quality of wastewater receiving bodies. 2. SCS has installed a series of online water quality detection systems to monitor inflow and outflow in real-time, such as monitoring CL (residual chlorine), CI (conductivity), TOC, PH, and TU (turbidity) at the tap water inlet, to ensure that the incoming water meets the water quality requirements of the SCS pure water preparation system; Monitor SS, NH3-N, Cu, T-P, COD, F, pH, TN at the total wastewater discharge outlet; Monitor CI, oil, and pH at the rainwater outlet. 3. From 2022 to 2023, SCS conducted a clean production audit, and according to the evaluation report, SCS reached the first level (most stringent) of the clean production evaluation index system for the electronic device (semiconductor chip) manufacturing industry. 4.The site has formulated the operation standards of industrial wastewater treatment facilities to standardize the wastewater treatment process, and has kept the daily operation and maintenance records for tracking the operation status of wastewater treatment facilities. 5. SCS has developed a management procedure for pollutant concentration in wastewater discharge and established internal control indicators that are stricter than the discharge permit. The specific details are as follows: Internal control index of discharged wastewater: SS 10mg/L; NH3-N 5mg/L; Cu 0.1mg/L; Animal and vegetable oil 4.5mg/L; BOD 9mg/L; COD 50mg/L; TP 0.5mg/L; F 7mg/L; PH 6.5-8.0; TN 35mg/L (Permit requirements: GB 8978-1996 intermediate discharge level 2 standard: SS 150mg/L; NH3-N 25mg/L; Cu 0.5mg/L; animal and vegetable oil 15mg/L; BOD 30mg/L; COD 150mg/L; TP 1mg/L; F 10mg/L; pH 6.0-9.0; TN 70mg/L) 6. SCS has also set an annual target of less than 448 tons of total nitrogen emissions from wastewater to address the shared water challenges within the catchment. SCS monitors the total nitrogen emissions in its wastewater every month and has developed a series of implementation plans. Including: optimizing the ETP treatment process and reducing the use of nitrogen-containing chemicals in the production process. The site tracks the progress of its Water Stewardship targets regularly. 7.According to the water quality monitoring plan, the site entrusts a third-party laboratory to test its various water quality. According to the test report and analysis record provided by the site, the water quality is 100% in line with its internal control standard.	
Score	8	
3.9.9	*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.*	N/A
Comment	The site does not perform this indicator.	
3.9.10	*Advanced Indicator* *Achievement of identified best practice related to targets in terms of WASH shall be quantified.*	Yes

Comment

According to the water quality monitoring plan, the site entrusts a third-party laboratory to test its various water quality. According to the test report and analysis record provided by the site, the water quality is 100% in line with its internal control standard.

1.The site has formulated the water dispenser management procedure, SCS-ESHEn-WI-H004, which includes requirements for water quality monitoring, regular maintenance, daily cleaning and disinfection, and relevant records are retained for tracking.
2.The WASH installations fully comply with the national “Hygienic Standards for the Design of Industrial Enterprises” (GBZ 1-2010).
3.The site also conducts WBCSD self-assessment to evaluate the level of onsite WASH. The result is satisfied.
In addition, Lanto has also set up a variety of channels to collect employees' opinions and suggestions on their WASH and follow up these feedback in a timely manner, such as:
• The site conducts an employee satisfaction survey through questionnaires every year, summarizes and analyzes the survey results, and develops an action plan based on employee feedback.
• The site conducts satisfaction survey for the employee restaurant regularly, and the employees can feedback their opinions on the restaurant hygiene, food safety and other aspects at any time.
• The site has set up an internal channel for employees on it‘s website named "VOC", and employees can feedback their opinions on WASH.

Score 4

3.9.11 *Advanced Indicator*
A list of efforts to spread best practices shall be identified.

Yes

Comment

1. In October 2022, the Shanxi Provincial Department of Water Resources visited SCS for research. SCS shared its best practices in water use, water-saving facilities, water treatment facilities, and water management with visitors. Government departments participating in the event also included the Shanxi Provincial Department of Industry and Information Technology, the Shanxi Provincial Department of Housing and Urban Rural Development, the Xi'an Municipal Water Bureau, the Xi'an Municipal Bureau of Industry and Information Technology, the Xi'an Municipal Water Conservation Center, and the High tech Zone Agricultural and Water Bureau.
2. SCS shares best practices in water management with the public through its official WeChat account (a popular social media app in China), which involves topics such as water balance, water quality, IWRA, etc., and initiates the implementation of best practice initiatives to advocate joint action in the catchment.
3. In August 2022, SCS was rated as a pilot enterprise for using recycled water, and its wastewater reuse rate (about 47%) is much higher than the local average level (about 22%). Under the policy background of advocating efficient utilization of water resources and promoting the utilization of sewage resources, SCS's leading practice in wastewater reuse is highly praised by the local government.

Score 3

3.9.12 *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.

Yes

Comment

1. SCS maintains long-term cooperative relationships with stakeholders (such as surrounding residents, surrounding enterprises, wastewater treatment service providers, and local governments), and conducts joint actions every year to pay attention to and protect the local water environment and IWRA. For example, in 2023, SCS collaborated with wastewater treatment service providers, surrounding residents, and surrounding enterprises to carry out activities with the theme of "practicing sustainable water management and nurturing green life", to pay attention to the health status of the Xiaohe River (one of the IWRA identified by the site)
2. The site, as a member of the emergency rescue team of the Xi'an Emergency Management Department and a member of the emergency response team and emergency material support unit of the Xi'an High tech Zone Environmental Protection Bureau, actively cooperates with local government departments to carry out emergency rescue and material support. On April 28, 2023, the site assisted the Environmental Law Enforcement Brigade of the High tech Zone in managing a water pollution incident in the Fenghe River Basin. The site provided emergency supplies such as absorbent cotton and manpower support.
3. SCS actively organized and participated in joint drills for sudden environmental incidents within the park. In June and October 2023, SCS organized emergency drills for chemical leakage accidents. The external organizations participating in these exercises include: surrounding enterprises, environmental protection bureau, safety supervision bureau, emergency management bureau, park governments, etc.
4. In July 2022, SCS signed a tripartite strategic cooperation agreement with Shanxi Provincial Forestry Bureau and Shanxi Provincial Youth Development Foundation to jointly build the Shanxi "Green Core" project. This cooperation involves three collective actions:
• To jointly build the "Green Core" of Shanxi, the three parties actively cooperate and participate in the ecological space governance of Shanxi Province, jointly invest and cooperate effectively in the forestry biodiversity protection, Qinling and Yellow River wetland ecological protection, and national land greening in Shanxi Province.
• Carry out cultural exchanges. And carry out youth exchanges, cultural creations, and art exhibitions on the protection of endangered species in Shanxi Province.
• Strengthen science popularization and publicity, and increase efforts to promote the protection of the ecosystem in Shanxi Province, especially the protection of endangered species. Expand the influence of ecosystem protection in Shanxi Province through media promotion, film and television dissemination, science popularization lectures, and external exchanges.
According to the tripartite agreement, SCS invests 3 million RMB annually for activities such as protecting biodiversity in Shanxi Province and strengthening ecological space governance. SCS has provided the investment agreement for the 2023 Shanxi "Green Core" project, and the list of annual collective action projects has been confirmed and implemented. The action includes planting 11 acres of ecological forests in Yang County, a county town within the catchment, to protect the habitat of Crested Ibis. The county seat is also an important water source and a key water source conservation area within the catchment.

Score 14

3.9.13 *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 The site does not perform this indicator.

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: SCS's Water Stewardship Plan specifies the requirements of evaluating site performance and and its contribution to achieving water stewardship results based on the objectives of the water stewardship plan. The 2023 water stewardship plan has 13 objectives.
The water management plan states that each objective can be associated with several main outcomes of the standard. Each objective has defined good practices, actions, targets, cost/benefit, desired outcomes, responsible party, partners, start date, end date, status and priority. This design makes it possible to identify the progress of each objective, and as it is updated every year, it is possible to identify its contribution and compare it with the established deadlines.

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

Comment: The site analysed its value creation resulting from the implementation of water stewardship plan, especially the implementation of water-saving projects.
For example,
• SCS implemented a total of 81 water-saving projects in 2023, including increasing the proportion of recycled water in cooling towers and reducing the use of ultra pure water in production processes. As of August 2023, SCS has reduced water consumption by 846278 tons and reduced water costs by 23.53 million yuan RMB.
• SCS has implemented 57 projects to reduce chemical usage in 2023, resulting in a total reduction of 3357.5m3 in chemical usage.

4.1.3 *The shared value benefits in the catchment shall be identified and where applicable, quantified.* ✗ No

Comment: The site analysed its value creation resulting from the implementation of water stewardship plan, especially the implementation of water-saving projects.
For example,
• SCS implemented a total of 81 water-saving projects in 2023, including increasing the proportion of recycled water in cooling towers and reducing the use of ultra pure water in production processes, etc. As of August 2023, SCS has reduced water consumption by 846278 tons and reduced water costs by 23.53 million yuan. SCS annual total water intake trend: 16.52 million tons in 2021; 16.34 million tons in 2022; The target for 2023 is 15.64 million tons.

Minor□
The site summarized the actions taken to collect water quality information and improve the water environment within the watershed, such as developing wastewater internal control standards and monitoring the water quality and ecological health status of the wastewater receiving water bodies. However, the site did not quantify the benefits of improving water quality within the catchment.

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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 SCS Sustainable Water Management Group 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 SCS in sustainable water management and requests internal support from the site for SCS to carry out sustainable water management work in order to achieve greater social shared value. The meeting minutes are kept.
Score	3

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	The site presents its emergency response procedure and plan identifying proposed preventive and corrective actions, as well as measures to mitigate future incidents. No water-related emergencies and extreme events occurred at the site in recent years.

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	SCS communicates its sustainable water management performance with various stakeholders through symposiums, interviews, and questionnaires, including wastewater treatment service providers, local ecological environment bureaus, high-tech zone agricultural and water bureaus, surrounding schools, residents, and enterprises. For example, on October 13, 2023, SCS organized a stakeholder communication meeting to share its sustainable water stewardship plan for 2023 and the annual sustainable water stewardship performance achieved by the site with stakeholders.

4.3.2 *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.

Yes

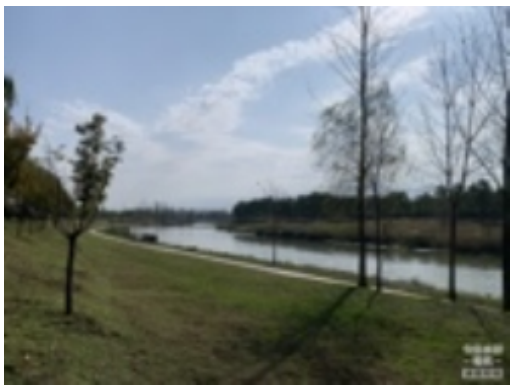
Comment	SCS communicates its sustainable water management performance with various stakeholders through symposiums, interviews, and questionnaires, including wastewater treatment service providers, local ecological environment bureaus, high-tech zone agricultural and water bureaus, surrounding schools, residents, and enterprises. For example, on October 13, 2023, SCS organized a stakeholder communication meeting to share its sustainable water stewardship plan for 2023 and the annual sustainable water stewardship performance achieved by the site with stakeholders. Stakeholders have evaluated the efforts and performance of the site in addressing the shared water challenges, and proposed suggestions for continuous improvement. For example, a nearby company provided feedback via email on their participation in the symposium. It highly appreciates SCS's efforts and achievements in addressing shared water challenges, and these best practices are worth learning from and promoting. It is also recommended that SCS establish closer communication channels with stakeholders and provide more technical support to surrounding enterprises to achieve larger scale and influential collective actions.
Score	6

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	SCS has developed a 'AWS Management Manual', which specifies that its water stewardship plan shall be modified and adapted to incorporate any relevant information and lessons learned from the evaluations annual.	

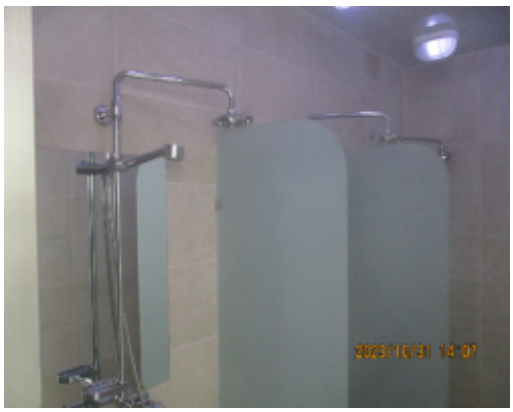
5	STEP 5: COMMUNICATE & DISCLOSE - Communicate about water stewardship and disclose the site's stewardship efforts	
5.1	*Disclose water-related internal governance of the site's management, including the positions of those accountable for legal compliance with water-related local laws and regulations.*	
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 site discloses the AWS Sustainable Water Management Report on the corporate website, which includes the responsible person and department for sustainable water management. https://green.samsung.com.cn/gs/rest/v1/download/Fd04519784701435a82e25e7f1355854c	
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 discloses the AWS Sustainable Water Management Report on the official website. The site also communicate the water stewardship plan during stakeholder visit or meeting. https://green.samsung.com.cn/gs/rest/v1/download/Fd04519784701435a82e25e7f1355854c	
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.*	Yes
Comment	The site discloses the AWS Sustainable Water Management Report on the official website, which including quantified performance against targets. https://green.samsung.com.cn/gs/rest/v1/download/Fd04519784701435a82e25e7f1355854c	
5.3.2	*Advanced Indicator* *The site's efforts to implement the AWS Standard shall be disclosed in the organization's annual report.*	N/A
Comment	The facility does not perform this indicator in this audit.	
5.3.3	*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 facility does not perform this indicator in this audit.	
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	The site disclosed the AWS Sustainable Water Management Report on its official website, which includes common water challenges and responses. https://green.samsung.com.cn/gs/rest/v1/download/Fd04519784701435a82e25e7f1355854c	

5.4.2	*Efforts made by the site to engage stakeholders and coordinate and support public-sector agencies shall be identified.*	Yes
Comment	The site disclosed the AWS Sustainable Water Management Report on the official website. https://green.samsung.com.cn/gs/rest/v1/download/Fd04519784701435a82e25e7f1355854c They also share the related information during visiting of the stakeholder like industrial zone management committee, industrial zone WWTP and government agencies.	
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	No water-related violations since 2022. A procedure to manage non-conformance and related corrective action is developed.	
5.5.2	*Necessary corrective actions taken by the site to prevent future occurrences shall be disclosed if applicable.*	Yes
Comment	No water-related violations since 2022. A procedure to manage non-conformance and related corrective action is developed.	
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	No water-related violations since 2022. A procedure to manage non-conformance and related corrective action is developed.	

Photographic Evidence from Audit



Xiaohe Neighbor river.JPG



changing room.png

WWTP.png

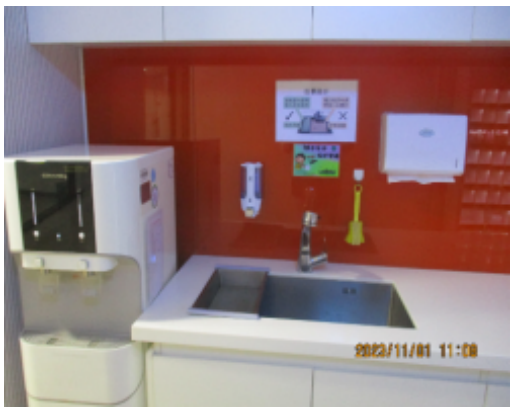
RO system.png

toilet.png

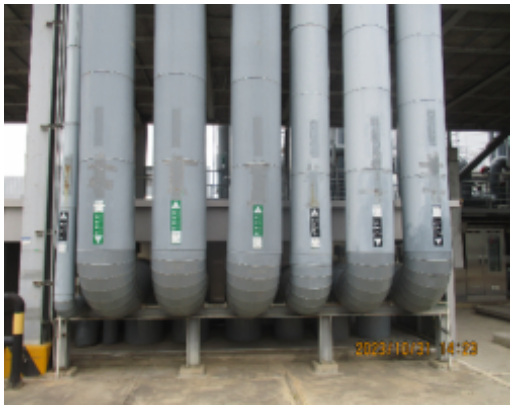
discharge point.png

cooling tower.png

chemical warehouse.png

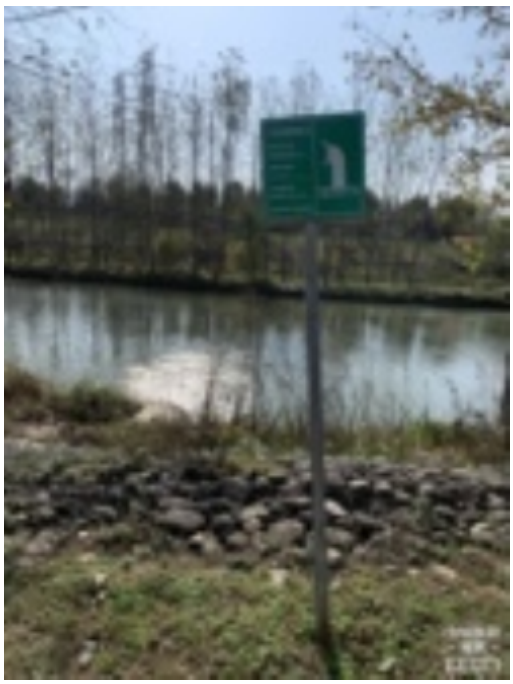


drinking water.png



pipeline system.png

chemical loading area.png



industrial zone WWTP discharge point.JPG

Yes