

Environment and Social Compliance Audit Report

Project Number: 54401-001
Asset-Level Report - Yichuan
April 2021

People's Republic of China: Asia Cube Wastewater Treatment Upgrade Project

Prepared by Stantec Environmental Engineering (Shanghai) Co., Ltd. ("Stantec") for the China Cube Water Company (the "Client") and the Asian Development Bank.

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ASSET-LEVEL E&S AUDIT REPORT – YICHUAN

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CURRENCY EQUIVALENTS

(as of 20 April 2021)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1539
\$1.00	=	CNY6.4964

ABBREVIATIONS

AAOV	Average Annual Output Value
ACMs	Asbestos Containing Materials
ADB	Asian Development Bank
ADB's SPS	ADB Safeguard Policy Statement
AESR	Applicable E&S Requirements
AO	Anoxic Oxidation
BOD	Biochemical oxygen demand
BOLAR	Bureau of Land and Resources
BOT	Build-Operate-Transfer
CAI	Completion Acceptance Inspection
CAP	Corrective Action Plan
Capex	Capital Expenditure
CCW	China Cube Water
COD	Chemical oxygen demand
COVID-19	Coronavirus disease-19
ECAI	Environment Completion Acceptance Inspection
E&S	Environmental and Social
EEB	Ecology and Environment Bureau
EIA	Environmental Impact Assessment
EIF	Environmental Impact Form
EIR	Environmental Impact Registration
EMP	Environmental Management Plan
ERP	Emergency Response Plan
ESMS	Environmental and Social Management System
EHS	Environmental, Health and Safety
EHSS	Environmental, Health, Safety and Social
FCAI	Fire-fighting Completion Acceptance Inspection
FSR	Feasibility Study Report
GRM	Grievance Redress Mechanism
HR	Human Resource
HW	Hazardous wastes
IFC	International Finance Centre
IH	Industrial Hygiene
IR	Involuntary Resettlement
IP	Indigenous Peoples
ISQ	I Squared Capital
MEE	Ministry of Ecology and Environment



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MEP	Ministry of Environmental Protection
MSDS	Material Safety Data Sheet
NGO	Non-Governmental Organizations
ODH	Occupational Disease health
ODSs	Ozone Depleting Substances
Opex	Operating Expenses
PAHs	Project Affected Households
PCB	Polychlorinated Biphenyls
PDP	Pollutant Discharge Permit
PPE	Personal Protective Equipment
PRC	People's Republic of China
SEP	Stakeholder Engagement Plan
SOP	Standard Operating Procedure
SPS	Safeguard Policy Statement
SS	Suspended Solids
WWTP	Wastewater Treatment Plant

WEIGHTS AND MEASURES

m	meter	mg/m ³	milligram per cubic meter
km	kilometre	ha	hectare
km ²	square kilometre	t/a	tons per annum
m ²	square meter	h	hour
m ³	cubic meter	t	metric ton
mg/kg	milligram per kilogram	°C	degree centigrade
µg/m ³	microgram per cubic meter	dB	decibel



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Executive Summary

The Asian Development Bank (ADB) is considering provision of financing to the I Squared Capital (ISQ), an independent fund which 100% owns China Cube Water Limited (CCW or the Company). CCW focuses on wastewater treatment projects alongside major rivers in China, and operates nine wastewater treatment plants (WWTPs) with a total capacity of 222,500 tons/day, serving over 2 million population in Henan Province (6 WWTPs), Shaanxi Province (1 WWTP), Heilongjiang Province (1 WWTP) and Guangdong Province (1 WWTP), PRC.

ADB engaged Stantec Environmental Engineering (Shanghai) Co., Ltd. (“Stantec”) to conduct an Environmental and Social (E&S) audit at CCW in support of the proposed loan. On 28 January 2021, Stantec conducted the E&S audit at Yichuan Industrial Cluster WWTP (Yichuan WWTP or the Site). This E&S audit was conducted based on Yichuan WWTP’s current E&S management performance against the Applicable E&S Requirements (AESRs) detailed as Section 1.2.

The land acquisition and resettlement was conducted by the local government in 2011 and 2012. In 2012, CCW reached a Build-Operate-Transfer (BOT) agreement with the local government. In 2017, the Phase I development of the Site commenced the operation. At the time of the site visit, the Phase I development was in operation, while CCW has no plans to start Phase II development in recent years given the local wastewater treatment demand. The Site covers a total land area of 35,546 square meters (m²), including the reserved area for the Phase II development.

The Site is located in Shuizhai Town, Yichuan County, Luoyang City, Henan Province, PRC, covers a total land area of 35,546 m². The scope of the BOT agreement only covers operations of Yichuan WWTP for 30 years. No offsite auxiliary facilities such pipelines, valves or sludge treatment stations and disposal facilities are included in the BOT agreement. The pipelines and valves are part of the existing Yichuan town wastewater treatment network. The wastewater collection pipelines are managed by the local authority including the portions within the site boundaries connecting to the onsite wastewater collection tank. The wastewater collection tank and other wastewater pipelines within the site boundaries are operated and maintained by the site. The sludge treatment stations and/or designated disposal site for dewatered sludge are appointed by the local government as per the concession agreement. These auxiliary facilities are operated and maintained by Yichuan county and third parties. The Site receives both industrial wastewater (accounts for 70%) and domestic wastewater (accounts for 30%) from the area of about 14 square kilometres (km²). The designed wastewater treatment capacity of the Phase I development is 20,000 t/d, and the actual treatment scale is about 14,000 t/d.

During the audit, no Red Flag (as defined in **Table 2-3**) issues were identified at the Site, whilst lack of a formalized E&S Management System (ESMS) was identified as a High Risk issue. Overall, the Site has developed and implemented certain health and safety related management procedures, which is in consistent with CCW corporate EHS procedures. However, no dedicated EHS officer leading its implementation and a formal E&S Management System (ESMS) was not in place. During the Audit, the Site representatives and management expressed knowledge and experience for E&S management (mainly health and safety oriented), as well as willingness for improvement and positive attitude for the risks identified. For the gaps identified and the corresponding recommendations, please refer to Chapter 4.



1. INTRODUCTION

1.1 PROJECT BACKGROUND

The Asian Development Bank (ADB) is considering provision of financing to the I Squared Capital (ISQ), an independent fund focusing on infrastructure investment around the globe. In Asia, ISQ owns and manages infrastructure projects including co-generation of heat and power, renewable energy (solar and wind), telecom, data centre, highway, wastewater treatment via multiple platform companies.

Established in 2006, Jiangsu Jiaqing Water Development Co., Ltd. (Jiangsu Jiaqing) headquarters in Nanjing, Jiangsu province, focuses on municipal and industrial wastewater treatment. Jiangsu Jiaqing introduced ISQ as its strategic investor. By the end of 2018, ISQ acquired 100% share of Jiangsu Jiaqing, making Jiangsu Jiaqing its wholly owned flagship platform company in the field of environmental protection industry. In May 2019, Jiangsu Jiaqing changed the company name to China Cube Water Limited (CCW or the Company).

CCW focuses on wastewater treatment projects alongside major rivers in China, such as the Yellow River and Huai River. As of January 2021, CCW operates nine wastewater treatment plants (WWTPs) with a total capacity of 222,500 tons/day, serving over 2 million population in Henan Province (6 WWTPs), Shaanxi Province (1 WWTP), Heilongjiang Province (1 WWTP) and Guangdong Province (1 WWTP), PRC.

Yichuan Industrial Cluster WWTP (Yichuan WWTP or the Site) was established in 2013 and initially designed into two phases, with a total wastewater treatment capacity of 40,000 tons per day (t/d) (including 20,000 t/d for Phase I development and 20,000 t/d for Phase II development). CCW 100% owns Yichuan WWTP. At the time of the site visit, the Phase I development was in operation, while CCW has no plans to start Phase II development in recent years given the local wastewater treatment demand. The Site covers a total land area of 35,546 square meters (m²), including the reserved area for the Phase II development. **Given so, the following descriptions and E&S management discussions focuses on the operation of the Phase I development.**

ADB engaged Stantec Environmental Engineering (Shanghai) Co., Ltd. (“Stantec”) to conduct an Environmental and Social (E&S) audit at Yichuan WWTP in support of the proposed loan. On 28 January 2021, Stantec conducted the E&S audit at Yichuan WWTP. This report presents the findings of the E&S audit and provides a gap analysis of Yichuan WWTP current E&S management performance against the Applicable E&S Requirements (AESRs) detailed as Section 2.1.

1.2 SCOPE OF THE ASSET-LEVEL E&S AUDIT

The objective of the E&S audit was to (1) determine the Site’s E&S performance; (2) identify potential risks during the construction and operation of the Site, and (3) verify the compliance status of the Site with the following AESRs:

- ADB Safeguard Policy Statement (SPS) (including SPS SR1, SR2, SR3 & SR4), June 2009;
- ADB’s Social Protection Strategy, 2001;
- ADB Gender and Development Policy, May 1998;
- ADB Access to Information Policy, 2018;
- World Bank Group’s General Environmental, Health and Safety Guidelines, 2007;



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- World Bank Group's EHS Guidelines for Water and Sanitation, 2007; and
- Applicable national, provincial and local laws and regulations pertaining to E&S (including land acquisition and resettlement), health and safety and labour in the RPC.

In particular, the scope of the Asset-level E&S audit is to:

- Provide a description of the Site, including types of wastewater treated, water treatment technology; amount and quality of influent and effluent; methane generation and use, if relevant; electricity consumption, any resource conservation technology currently used and/or to be used in the future.
- Review past, current and potential environmental, involuntary resettlement (IR) and indigenous peoples (IP) impacts from construction and operation of the Site and confirm categorization based on ADB's SPS.
- Determine where the Site, including ancillary facilities such as sludge disposal site and pipelines, may cause or are causing environment, occupational and community health and safety (EHS) impacts and risks and opine on the suitability of the existing ESMS or EMP of the Site, including management of COVID-19 risks, monitoring and reporting and related organizational structure and capacity.
- Review any impacts from extreme weather events due to climate change such as floods, and recommended commensurate adaptation measures, as necessary.
- Review related documents, such as the domestic Environmental Impact Assessment (EIA) documents submitted to or approved by the local environmental authorities, Feasibility Study Reports (FSRs), conditions and requirements in the in the EIA approval documents, permits/clearances/certificates, external/internal monitoring results, and any associated reporting requirements to authorities, and opine on the Site's EHS and social aspects and determine if the Site is in compliance with the AESRs.
- Review the suitability and implementation status of any Corrective Action Plans (CAPs) prepared, if any.
- Review any prior land acquisitions done by the local government for the Site and determine if these were undertaken in compliance with PRC's national laws and ADB's requirements.
- Determine if the Site's operation has any impacts on ethnic minorities and assess whether these have been addressed in accordance with PRC's national laws and ADB's SPS.
- Review the Site's stakeholder engagement activities and information disclosure procedures.
- Review the Site's internal and external grievance redress mechanisms, identify past and ongoing complaints issues or feedbacks and review the current status or resolution.

1.3 REPORT STURCTURE

The remainder sections of this report are structured as follows:

- Section 2: Application Standards and Methodology;
- Section 3: Site Assessment;
- Section 4: Corrective Action Plan.

This report is supported by the following annexures:

Annex A: List of Documents Reviewed

Annex B: Stakeholders Engaged during the E&S Audit

Annex C: Photo Log



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1.4 LIMITATIONS

The report was prepared in accordance with a scope of work agreed by ADB. The results of the Site are based on conditions at the time of site visit and documents provided by Yichuan WWTP. A change in any of these conditions may alter the findings, observations and report content presented herein by Stantec. A site walkthrough, by nature, is limited in its ability to fully assess potential Environmental, Health, Safety and Social (EHSS) liabilities or concerns associated with a property or operation. Further investigations would be required to identify the presence or absence of potential EHSS liabilities but are beyond detection by performance of the scope of this Site. Laws and regulations, if referenced in this report, are provided for information purposes only and should not be construed as legal opinion or recommendation.

The limitations encountered during the site visit include the following:

- 1) The site visit was conducted during winter, and limited odour from the WWTP was noticed during the site visit.
- 2) Due to time constraints, the document review (e.g. labour contracts, inspection records) was conducted by random sampling. The sampling process was not designed to be a comprehensive document review, but rather to verify the current status by sampling for risk screening purpose.
- 3) Only the payroll records in March 2020 were provided for review, whilst the attendance records and payroll records in other months were not provided for review.
- 4) The land acquisition was undertaken by the local government before 2012. CCW management is not aware of the detailed information about the history of the land and no interview was conducted with representatives from corresponding stakeholders such as affected person and the local authority.



2. APPLICATION STANDARDS AND METHODOLOGY

2.1 APPLICABLE STANDARDS

This E&S audit was undertaken in accordance with the following AESRs:

- ADB Safeguard Policy Statement (SPS) (including SPS SR1, SR2, SR3 & SR4), June 2009;
- ADB's Social Protection Strategy, 2001;
- ADB Gender and Development Policy, May 1998;
- ADB Access to Information Policy, 2018;
- World Bank Group's General Environmental, Health and Safety Guidelines, 2007;
- World Bank Group's EHS Guidelines for Water and Sanitation, 2007; and
- Applicable national, provincial and local laws and regulations pertaining to E&S (including land acquisition and resettlement), health and safety and labour in the RPC.

In the PRC, wastewater treatment projects are governed by the following key applicable Chinese E&S regulations listed in *Error! Not a valid bookmark self-reference..*

Table 2-1: Related E&S Laws and Regulations

Title	General Description
Environment	
<i>Law on Environment Protection (2015)</i>	The law is an umbrella under which relevant laws on air, noise and wastewater emissions, as well as waste management and disposal are integrated. The Law authorizes environmental authorities to establish two types of standards: environmental quality (ambient) standards and discharge/emission standards. Ambient standards are the maximum allowable concentrations of pollutants in water, air or soil. Discharge / emission standards are the maximum allowable concentrations of pollutants' emissions or discharges. The standards provide a basis for the inspection activities of the environmental authorities. The Law on Environmental Protection allocates responsibility for the implementation of environmental protection policies and environmental monitoring to relevant government organizations. Specific details, permits and procedures are stipulated under the relevant State laws for air, water, noise, waste management etc.
<i>Law on Environmental Impact Assessment (2018)</i>	<p>All construction projects are required to comply with a series of environmental protection procedures and policies, principally the following:</p> <ul style="list-style-type: none"> • Environmental Impact Assessment (EIA) Policy; • "Three Synchronies" Policy; and • Pollutant Discharge Permitting. <p>There are three categories of EIA in the PRC, including (a) Full EIA report for projects with significant environmental impacts, (b) Environmental Impact Form (EIF) for project with moderate environmental impacts, and (c) Environmental Impact Registration (EIR) for projects with limited environmental impacts.</p>
<i>Management Regulations for Environmental Protection for Construction Projects (2017)</i>	
<i>Catalogue for Management of Environmental Impact</i>	



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APPLICATION STANDARDS AND METHODOLOGY

Title	General Description
<i>Assessment of Construction Projects (2021)</i>	between 500 tons and 100,000 tons, and the EIR is applicable for the rest WWTP with the daily treatment capacity below 500 tons.
<i>Measures on Environmental Impact Post-Assessment of Construction Project (2016)</i>	The measure stipulates the legal requirements of Environmental Impact Post-Assessment for required construction projects, and the post-assessment registration requirement.
<i>Catalogue for management of Pollutant Discharge Permit (2019)</i>	According to the amount of pollutants generated and discharged by the enterprises, public institutions or other business operators and the degree of environmental hazards, three types of pollutant discharge permits (key regulatory, simplified regulatory and registration management) shall be implemented.
<i>Law on the Prevention and Control of Atmospheric Pollution (2018)</i>	The Law on the Prevention and Control of Atmospheric Pollution (2018) provides the basis for air quality protection in China. The Integrated Emission Standard of Air Pollutants (1996) specifies the discharge standards for air emissions.
<i>Integrated Emission Standard of Air Pollutants (1996)</i>	
<i>Law on the Prevention and Control of Water (2017)</i>	The Law on the Prevention and Control of Water (2017) is the key law for water pollution control. It applies to the pollution prevention and control of groundwater and all surface water bodies excluding the sea. It contains water pollution prevention and control standards; monitoring requirements and the management guidelines for water pollution prevention and control; measures for water pollution prevention and control; the pollution prevention and control measures for special water bodies including drinking water sources; the treatment of water pollution events; and legal liabilities. For industrial projects, a Water Pollutant Discharge Permit is required from the Ecology and Environment Bureau (EEB) prior to operational discharges to surface water.
<i>Discharge Standard of Pollutants for Municipal Wastewater Plant (2002)</i>	
<i>Environmental Quality Standards for Surface Water (2002)</i>	
<i>Integrated Wastewater Discharge Standard (1996)</i>	
<i>Law on the Prevention and Control of Environmental Noise Pollution (2018)</i>	Noise is regulated by the Law on the Prevention and Control of Environmental Noise Pollution (2018). This Law sets out the general requirements for noise control including noise from industrial sites, construction sites and transportation.
<i>Emission Standard of Environmental Noise for Boundary of Construction Site (2011)</i>	The Emission Standard of Environmental Noise for Boundary of Construction Site (2011) and the Emission Standard for Industrial Enterprises Noise at Boundary (2008) are applicable for construction and operational activities, respectively.
<i>Emission Standard for Industrial Enterprises Noise at Boundary (2008)</i>	
<i>Law on the Prevention and Control of Solid Waste Pollution (2020)</i>	Law on the Prevention and Control of Solid Waste Pollution (2020) stipulates the requirements for general industrial waste, domestic waste, and hazardous



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APPLICATION STANDARDS AND METHODOLOGY

Title	General Description
<i>Management Regulation for Hazardous Waste Transfer Manifests (1999)</i>	waste management including collection, storage, transportation, treatment, recycling and disposal.
<i>Standard for Pollution Control on Industrial Solid Waste Storage and Landfill (2020)</i>	The on-site storage and disposal of industrial solid waste is subject to the Standard for Pollution Control on Industrial Solid Waste Storage and Landfill (2020). The Management Regulation for Hazardous Waste Transfer Manifests (1999) stipulates the documentation and tracking procedures for hazardous waste generators, transporters and disposal operators.
<i>Law on Energy Conservation (2018)</i>	The Law on Energy Conservation (2018) and Law on Cleaner Production Promotion (2012) stipulates the legal requirements on energy saving during both construction and operation of a development project.
<i>Law on Cleaner Production Promotion (2012)</i>	
<i>Law on the Prevention and Control of Soil Pollution (2019)</i>	The Environmental Quality Standards for Construction Soil Pollution Risk Control (Trial) (2018), Environmental Quality Standards for Agriculture Soil Pollution Risk Control (Trial) (2018), Law on the Prevention and Control of Soil Pollution (2019) and the Quality Standard for Ground Water (2017) define the quality standards applicable for soil and groundwater depending on the different uses.
<i>Environmental Quality Standards for Construction Soil Pollution Risk Control (Trial) (2018)</i>	
<i>Environmental Quality Standards for Agriculture Soil Pollution Risk Control (Trial) (2018)</i>	
<i>Environmental Quality Standard for Ground Water (2017)</i>	
<i>Methods for Public Participation in Environmental Impact Assessment (2019)</i>	The Methods for Public Participation in Environmental Impact Assessment (2019) prescribes the requirements for public consultation during the process of EIA for a development project. And it requires that public consultation should be conducted while preparing full EIA Report, whilst there is no specific legal requirement regarding consultation with communities for EIF and EIR.
Health & Safety	
<i>Law on Work Safety (2014)</i>	These laws stipulate principles on work safety, occupational health and fire protection issues, including work safety and occupational hazards assessment, facility design and construction, completion acceptance inspection, training, monitoring and medical check-up, facility inspection and maintenance, etc.
<i>Law on Occupational Diseases Prevention (2018)</i>	
<i>Law on Fire Protection (2019)</i>	
Biodiversity	
<i>Law for Wildlife Protection (2018)</i>	Law for Wildlife Protection (2018) and Regulation on Wild Plant Protection (2017) stipulates the requirements for protecting and saving wildlife or wild



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APPLICATION STANDARDS AND METHODOLOGY

Title	General Description
<i>Regulation on Wild Plant Protection (2017)</i>	plant, defines the wildlife or wild plant habitat, and establishes disciplinary measures.
Land Acquisition and Resettlement	
<i>Law on Land Administration (2020)</i>	The Land Administration Law stipulates that where land acquisition is necessary ¹ , compensation shall be made in accordance with the original usage of the acquired land, which shall include a land compensation fee, a resettlement subsidy (if applicable) and a compensation fee for land “attachments“ (e.g. various trees and houses) and standing crops. The land compensation fee for cultivated land is six to10 times the average annual output value (AAOV) of the land in the three years preceding the land acquisition. The relevant compensation standards for land “attachments” and standing crops are to be determined by the local government.
<i>Regulations on Implementation of Land Administration Law (2014)</i>	
Labour	
<i>Labour Law (2018)</i>	Labour law (2018) stipulates the rights and corresponding obligations of workers, states that “employees enjoy the rights of equal employment and choice of occupation, the right to receive labour remuneration, the right to rest and vacation, the right to obtain labour safety and health protection, the right to receive vocational skill training, the right to enjoy social insurance and welfare, the right to apply for settlement of labour disputes and other labour rights stipulated by law” and “laborers should complete their labour tasks, improve their professional skills, implement labour safety and health regulations, and abide by labour discipline and professional ethics”.
<i>Labour Contract Law (2012)</i>	
Cultural Heritage	
<i>Cultural Relics Protection Law (2017)</i>	It stipulates project proponents to undertake baseline archaeological surveys to determine the presence and condition of cultural relics where construction works have the potentiality to damage them.
<i>Implementation Regulations of the Law on Cultural Relics Protection (2017)</i>	
Public Consultation and Information Disclosure	
<i>Methods for Public Participation in Environmental Impact Assessment (2019)</i>	It stipulates that construction projects that may have significant effects on the environment should incorporate public comments into the EIA report. Either the Project proponent (or the EIA agency on behalf of the Project proponent) should provide project information to the public and to the local EEB during the process of environmental impact assessment. A summary EIA report shall be provided for public review in hard copy format at a designated location or in electronic format on a public website.
Gender	
<i>Law on the Protection of Women's Rights and Interests (2018)</i>	It stipulates women's rights in social and economic life, including political rights, cultural and educational rights and interests, labour and social security rights and interests, property rights, personal rights, marriage and family rights and interests.

¹ The Project Affected Households (PAHs) can reject the land acquisition as long as it is not for the public good projects. The land law applies to all land acquisition activities, as long as it is ‘land acquisition/ expropriation’.



Title	General Description
Ethnic Minorities	
<i>Law on Regional National Autonomy (2001)</i>	It stipulates that regional ethnic autonomy is a basic political system in China. Article 10 emphasizes that the organs of self-government in national autonomous areas shall guarantee the freedom of all ethnic groups in the region to use and develop their own languages and characters, and the freedom to maintain or reform their own customs and habits.

In addition, in regard to flood risk control, as per the Code of Design of Outdoor Wastewater Engineering (GB 50014-2006 amended in 2014), the site selection should not be impacted by flooding, and the flood control standard of the site should be as least meeting the local city flood control standard (as per the Standard for Flood Control (GB 50201-2014), mainly taking the population and economic of the city into consideration) with good drainage condition. In both the FSR and EIA documents, a simple description of the local meteorological condition is included, stating the status quo of temperature, precipitation, wind direction, etc. in the local area, however, it is not an extreme weather impact assessment covering historic and future situations, nor mentioning the historical events as only the historical max precipitation data is included.

Specially, Henan has just released the local wastewater discharge standard in the Yellow River Basin in January 2021, namely the Discharge Standard of Water Pollutants in the Yellow River Basin (DB 41/2087-2021). The discharge limits of COD, NH₃-N, TN and TP of Henan local standard Class I are 40 mg/L, 3 mg/L, 12 mg/L and 0.4 mg/L, respectively. The standard will be effective since 1 March 2021 for new WWTP projects. For existing WWTPs with a capacity ≥ 500 m³/day, the implementation date will be 1 September 2022. Existing WWTP < 500 m³/day can continue to implement local standard Class II, which is equivalent to national standard Class 1 level A. As per this standard, Yichuan WWTP with a capacity of 20,000 m³/day should be in line with the requirement and conduct the corresponding upgrade by 1 September 2022, whilst the detail plan for the upgrade was not yet available at the time of the audit. CCW reported that the upgrade involves a series of commercial negotiation including new concession agreement and the corresponding planning will be conducted as per the discussion and instruction with/from the local government.

2.2 E&S PERMITTING REQUIREMENTS

In general, for a wastewater treatment project, the following key topical assessments and applications are required (**Table 2-2**).

Table 2-2: E&S Permitting Requirements

E&S Permit	Applicable Standard Type	Description
Site selection application	National Standard	An approval issued by the local authorities on whether the project comply with local planning requirement.
Feasibility Study Report (FSR)	National Standard	A comprehensive analysing report based on economic, technological, production, supply and marketing, social, environmental and legal factors, to determine the feasibility of the project.
Land Use documents	National Standard	Land users are required to obtain Construction Land Use Certificate. The land certificate is issued by the local government. It is a written document certifying that the holder has the ownership or right to use a certain area of land.



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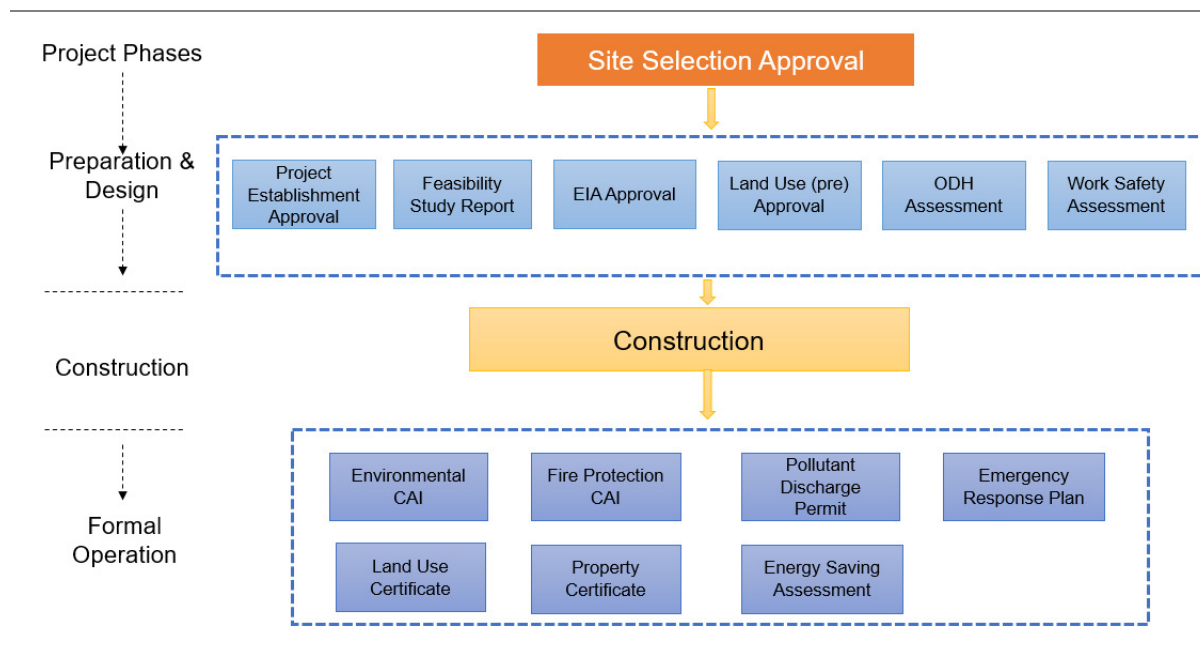
APPLICATION STANDARDS AND METHODOLOGY

Environmental Impact Assessment (EIA) documents	National Standard	<p>Based on Catalogue for Management of Environmental Impact Assessment of Construction Projects (2021), the EIF report is applicable for the Site as the WWTP with the daily treatment capacity between 500 tons and 100,000 tons. However, based on the local EEB requirement, the full EIA report was prepared by the Site.</p> <p>The EIA report is generally consisting of applicable standards, project description, pollution control analysis, ecological impacts, extreme weather analysis (including climate, flooding, earthquake, etc.) and public consultation.</p>
Environmental Completion Acceptance Inspection (ECAI)	National Standard	<p>Since November 2017, China government has been implementing self-conducting ECAI procedures (meaning the corresponding monitoring and acceptance are conducted by the project owner) for environmental protection by phases.</p> <p>In November 2017, the air emission self-conducting ECAI has been commenced;</p> <p>In January 2018, the wastewater discharge self-conducting ECAI has been commenced;</p> <p>In December 2018, the boundary noise self-conducting ECAI has been commenced;</p> <p>In September 2020, the solid waste self-conducting ECAI has been commenced.</p>
Pollutant Discharge Permit (PDP)	National Standard	<p>For wastewater and air emission discharge companies, the PDP was required from local EEB, which illustrate the pollutant discharge capacity, discharge points, and monitoring programme.</p>
Fire Protection CAI	National Standard	<p>An approval issued by the local authorities on whether the project comply with fire protection design and implementation requirement.</p>
Work Safety Assessment	National Standard	<p>The report identifies and analysis of project's production and business operation activities of potential danger and harmful factors, and safety standards, to predict the likelihood of accidents and its severity, and then puts forward feasible safety control measures.</p>
Occupational Disease Hazards (ODH) Assessment	National Standard	<p>The report identifies and analysis of potential occupation health hazards within the project's production processes and compare with local standards to predict the likelihood of occupational health hazard and its severity, and then puts forward feasible safety control measures.</p>
Emergency Response Plan (ERP)	National Standard	<p>The ERP includes sudden environment and safety ERPs.</p> <p>The sudden environment ERP consists of applicable standard, environmental risk analysis (including chemical storage and spills, water pollution, soil pollution, ecological conditions, etc.), and emergency response methods.</p> <p>The safety ERP consists of applicable standard, safety risk analysis (including fire, explosion, equipment hazards etc.), and emergency response methods.</p>
Energy Saving Assessment	National Standard	<p>The Energy Saving Assessment consists of applicable standard, energy supply and consumption conditions, and applicable energy saving measures.</p>



Error! Reference source not found. below presents the general permitting process that a project will need to maintain compliance over the full life cycle with applicable E&S regulations.

Figure 2-1: Indicative Project Permitting Flowchart by Project Phases



Please note that the above flowchart is indicative only under the current regulatory regime, which has been and continues to evolve rapidly. Meanwhile, local implementation of the national level laws and regulations often varies, which may lead to variations to the permitting flowchart presented in this report.

2.3 METHODOLOGY

2.3.1 Approach

An integrated approach with three steps was proposed by Stantec for subproject level E&S audit as stated below. This approach was subsequently agreed by the ADB.

Step 1: Document Request and Desktop-based Review:

Stantec requested documents from Yichuan WWTP including (i) CCW and Yichuan WWTP ESMS or policies and official commitments related to environmental, health, safety and social safeguards, policies and procedures that would typically be covered by an ESMS; (ii) Information about the system for project planning to manage environmental and social risks; (iii) Information about Yichuan WWTP's training records for staff regarding environmental and social safeguards; (iv) Human Resource (HR) management and procurement policies and procedures, gender disaggregated information, labour contract, attendance sheet and salary records in Yichuan WWTP; (v) Information about Yichuan WWTP's main stakeholder groups, activities through which they are engaged and consulted, and any grievance redress system and its results log; and (vi) Information about the environmental, health, safety and social monitoring records, pollutant prevention and reporting system.



ASSET-LEVEL E&S AUDIT REPORT – YICHUAN

APPLICATION STANDARDS AND METHODOLOGY

Stantec conducted a review of documentation of Yichuan WWTP through intermediaries and onsite review. Annex A lists the key documents provided by Yichuan WWTP and reviewed by Stantec during this E&S audit.

Step 2: Site Visit

Stantec conducted an onsite visit at Yichuan WWTP on 28 January 2021. During the onsite visit, Stantec's E&S team:

- Reviewed documentation available at the Site (listed in Annex A);
- Conducted selected interviews with site representatives and representative from the local environmental authority (listed in Annex B);
- Conducted a limited visual observation of the Site (WWTP sections/areas observed with photos are in Annex C); and
- Reviewed the implementation and compliance status of the E&S mitigation and management measures.

Step 3: Gap Analysis and Reporting

Based on the information obtained during Steps 1 and 2, gaps against the AESRs were identified at the Site (refer to Section 3). A CAP setting out the steps that would be required to close the identified gap(s) is outlined in Section 4.

2.3.2 Risk Categorization

Risk levels were adopted in evaluating identified E&S risks and issues against the AESRs: “Red Flag”, “High”, “Medium”, “Low” and “Best Practice” risks as defined in **Table 2-3**.

Table 2-3: Definition for Risk Categorization

Risk Level	Definition
Red Flag	Trigger of ADB SPS Prohibited Activities or issue with potential severe consequences and limited opportunities of mitigating, leading to operation shut down (e.g. catastrophic or multiple-casualty accidents; large community or NGO protest(s); reputational damage/possibilities of significant reputational risks arising in the future; impacts to sensitive environmental and social receptors including critical habitats and Indigenous Peoples/Ethnic Minorities/Tribes and criminal proceedings).
High	Significant non-conformance with the AESRs, which may result in operation /construction interruption; and/or affect sensitive receptors, and/or induce community opposition that may damage Owner's/Investor's reputation.
Medium	Non-conformance with the AESRs, which may result in rectification cost or fine, and is unlikely to result in the short-term business discontinuity in current regulatory enforcement context.
Low	Minor regulatory or safeguard non-compliance, which may result in limited cost or only require management time to address the issue.
Best Practice	Best practice; approach is considered prudent but does not pose a compliance issue.



3. SITE ASSESSMENT

3.1 BASIC INFORMATION

The Site is located in Shuizhai Town, Yichuan County, Luoyang City, Henan Province, PRC. The location of the Site is shown in **Error! Reference source not found.** The Site history is mainly obtained through interview with CCW's senior management and onsite management, and is summarized as below:

- Prior to 2011: Farmland of Shongtianyuan Village;
- 2011-2012: Land acquisition and resettlement was conducted by the local government;
- 2012: CCW signed a Build-Operate-Transfer agreement with the Yichuan County Government;
- 2013: Construction was commenced;
- 2014: Construction was completed;
- Since April 2017: Even though the construction was completed in 2014, given the inconsistent wastewater flow and treatment demand, the operation was only started three years after construction.

The scope of the BOT agreement only covers operations of Yichuan WWTP for 30 years. No offsite auxiliary facilities such as pipelines, valves or sludge treatment stations are included in the BOT agreement. The wastewater collection pipelines are managed by the local authority including the portions within the site boundaries connecting to the onsite wastewater collection tank. The wastewater collection tank and other wastewater pipelines within the site boundaries are operated and maintained by the site. The Site receives both industrial wastewater (accounts for 90%) and domestic wastewater (accounts for 10%) from the area of about 14 square kilometres (km²). The designed wastewater treatment capacity of the Phase I development is 20,000 t/d, and the actual treatment scale is about 14,000 t/d. The Site runs in a two-shifts working system for 365 days a year, with 15 staff.

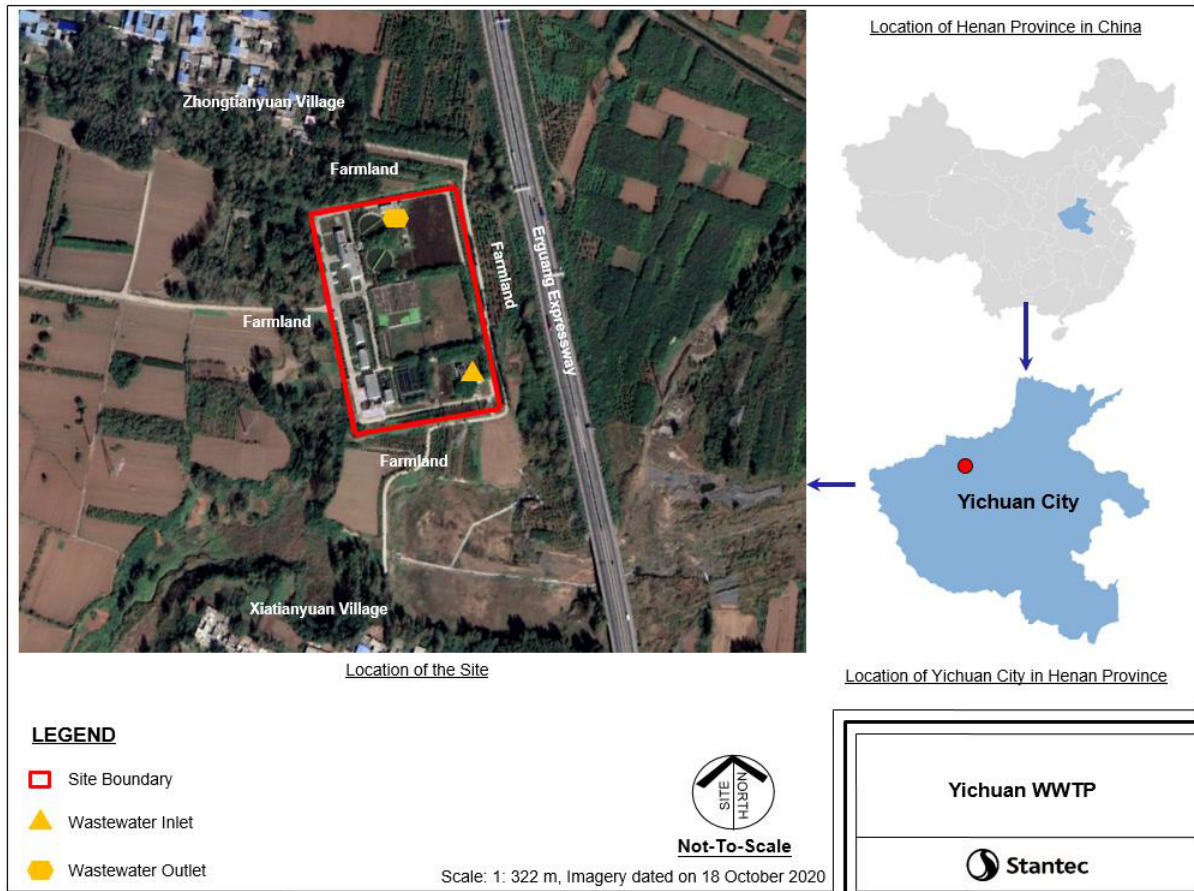
The Site covers a total land area of 35,546 m², including the reserved lands for Phase II development. According to the Site's EIA report dated 2015, the buffer zone area is determined as a 100 m radius of the production area. The Adjacent facilities and properties of the Site were identified as follows:

- West boundary: Farmland.
- East boundary: Farmland and Erguang Expressway.
- North boundary: Farmland of Zhongtianyuan Village. Further north is Zhongtianyuan Village (located about 80 m away from the Site). Shangtianyuan Village is located approximately 300 m to the northeast of the Site.
- South boundary: Farmland of Xiatianyuan Village. Further south is Xiatianyuan Village (located about 215 m away from the Site).

The Site is construction land and is not within area of the ecological red line (which in China refers to the strictly controlled boundary demarcated in accordance with law in key ecological function zones, sensitive and fragile areas of the ecological environment). There are no natural reserves, drinking water protection zone, scenic spot, national key protected animals and plants, seed fields, cultural relics and historic sites located in the 1 km area around the Site. The Site meets the requirements of the overall planning of Yichuan City. Based on onsite observation, the nearest Sensitive receptor of the Site is Zhongtianyuan Village which is located approximately 80 m to the north of the Site (more than 100 m away from the production area), Xiatianyuan Village which is located approximately 215 m to the south of the Site, and Shangtianyuan Village which is located approximately 300 m to the northeast of the Site, all are outside the mandated buffer zone.



Figure 3-1: Site Location



Source: Google Earth Pro

3.2 SITE DESCRIPTION

The main structures of the Site cover wastewater treatment facilities, environmental protection facilities, and office building. Pumps houses, switching room, and ventilation room were built, operated and maintained by the Site. The wastewater collection pipelines are managed by the local authority including the portions within the site boundaries connecting to the onsite wastewater collection tank. The wastewater collection tank and other wastewater pipelines within the site boundaries are operated and maintained by the site. In addition, the inlet and outlet monitoring rooms were built by the Site, operated and maintained by the local EEB. The layout of the Site is presented in **Figure 3-2**.



Figure 3-2: Site Layout



The wastewater treatment processes consist of three stages: pre-treatment, biological treatment (or secondary treatment), and tertiary treatment. The main treatment processes are Wastewater Feeding, Coarse Screen and Fine Screen, Primary Sedimentation Tank, Anaerobic Tank, Anoxic Tank, Oxic Tank, Secondary Sedimentation Tank, Filter Tank, Disinfection Tank and Final Discharge. Chemicals used for wastewater treatment include polymeric ferric sulphate, polyacrylamide, and carbon source. These chemicals are in bulk storage and the corresponding storage condition is described in Section 3.3.3.

The Site adopts Coagulant Sedimentation, Anaerobic-Anoxic-Oxic and Filtration Technologies which are commonly adopted for WWTPs for industrial and domestic wastewater treatment in PRC. Based on review of the available document and interview with site management, no violation with regard to wastewater discharge has been taken place at the Site.

Sludge is dehydrated onsite to around 80% and is transferred by the sludge truck owned and operated by the subproject company, and then transported to governmental appointed landfill plant as per the BOT agreement.

The treated wastewater shall comply with the Class I Level A Discharge Standard of Pollutants for Municipal Wastewater Plant (2002) and then discharged to the Xiatianyuan River.

3.3 EHS ASSESSMENT

3.3.1 EHS Management Overview

The EHS issues arising from the Site are under the jurisdiction of Yichuan EEB, Yichuan Health Bureau, Yichuan Emergency Management Bureau and Fire Brigade of Yichuan Public Security Department. Mr. Jia Zhanyou (Deputy General Manager of the Site) and Mr. Guo Xiangqian (Manager of the Production Department) are responsible for the general on-site environmental and safety management. The day-to-day EHS status are reported to the Production Technology Department of CCW corporate directly via weekly, monthly, quarterly and annual reports.



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The EHS policies and procedures of CCW corporate is not fully implemented by the Site. The subproject itself has not developed and implemented a formal EHS and social management system, instead it developed its own safety and health oriented manual covering equipment operational procedure, environmental protection management, equipment operational procedure, work safety management (e.g. fire, electricity and confined space), safety inspection procedure. Environmental related procedures such as chemical management, environmental monitoring management, solid waste management, etc. were not in place.

According to the management interview, at subproject level, all subprojects safety inspections were conducted as follows:

- Subsidiary-level safety overall inspection conducted by the manager of the Tier 2 subsidiaries on a yearly basis. The inspection reports and corresponding mitigation measures are submitted for the corporate for review.
- Subproject-level daily safety and operational inspection is conducted by the representative of Operation Department.

Based on the management interview and document review, the E&S related capital expenditure (Capex) and operating expenses (Opex) application for the subproject is prepared by the subproject manager in October every year, and then submitted for General Manager Office of CCW corporate for review and approval. The Capex (including items such as safety correction, COVID-19 prevention material, etc.) and Opex (including items such as environmental monitoring, sludge monitoring, equipment maintenance, laboratory material, routine check-ups, PPE, etc.) for Yichuan WWTP in 2021 was provided for review, with a total value of RMB 576,804.

Key EHS related findings and issues were summarized as follow:

- A formal environmental and social management system has not been developed and implemented by Yichuan WWTP. Environmental related procedures such as chemical management, environmental monitoring management, solid waste management, etc. were not in place.

3.3.2 EHS Permit

The permit compliance status of the Site is summarized as follows in the **Table 3-1**:

Table 3-1: Permit Compliance Status

Permit	Review
Site Selection Application	Site Selection Application approval approved by Yichuan Development and Reform Commission on 14 October 2013
FSR and its approval	FSR approval for the Phase I and Phase II developments issued by Yichuan Development and Reform Commission on 19 December 2013
Land Permit	Opinions on land use of Yichuan WWTP issued by Yichuan County People's Government on 25 November 2015
EIA and its approval	<ul style="list-style-type: none">• EIA approval for the Phase I and Phase II developments issued by the Yichuan EEB on 8 July 2015• ECAI for the Phase I development prepared by the Site in December 2020
PDP	PDP issued by Luoyang City EEB valid from 27 June 2019 to 26 June 2022
Water Abstraction Permit	Not available
Fire Protection CAI	Not available
Work Safety CAI	Not available



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Permit	Review
Occupational Disease Hazards Assessment	Not available
Sudden Environmental Emergency Response Plan (ERP) and its registration record	The Sudden Environmental Emergency plan prepared in January 2021
Safety Production ERP and its registration record	Not available
Energy Saving Assessment	The document is not required at the time of the Site establishment given the requirement of the local authorities

The EIA prepared for this project during the permitting phase identified air emission, odour and solid waste/sludge as the key environmental impacts during construction and operation and the project was required implementing corresponding dust control measures such as sprinkler for construction vehicles, proper treatment of construction waste, etc. during construction, and regular boundary odour monitoring and ensuring sludge is treated by the third party appointed by the local government during operation. The content of the EIA report is generally in line with an environmental assessment required by ADB's SPS.

During construction, there are typical EHS requirements in PRC, including the dust control, solid waste management, Personal Protective Equipment (PPE), regular monitoring, etc. No findings were identified.

The project started its operation in 2014 and obtained the ECAI in 2020 which confirmed that the WWTP complied with the standards of boundary odour, wastewater discharge, boundary noise and solid waste treatment.

Key EHS related findings and issues were summarized as follows:

- The Site uses one onsite groundwater abstraction well for sanitary purpose. However, the Water Abstraction Permit has not been obtained as required.
- Fire-fighting design registration or fire-fighting CAI approval have not been obtained as required.
- Work Safety Assessment has not been conducted as required.
- Occupation disease hazard assessment has not been conducted as required.
- The Sudden Environmental Emergency Plan was prepared in January 2021 and the corresponding approval has not been obtained as required at the time of audit.
- Safety Production ERP and the corresponding registration records have not been prepared/obtained as required.

Absence of land use permit is discussed in detail in Section 3.4.1.

3.3.3 EHS Performance

Water Supply, Domestic and Storm Wastewater

According to the management interview, municipal tap water mains have not been connected to the Site. Water used for sanitary purpose is groundwater abstracted from one onsite groundwater abstraction well (with a depth of 30 m); water for drinking purpose is purchased bottled water; water for production purposes (wastewater treatment) is the treated wastewater from the onsite facility. Separate wastewater and stormwater drainage systems were established for the Site. The domestic wastewater generated onsite is collected and discharged to the onsite facility for further treatment Stormwater



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generated onsite is collected and discharged via the same treated wastewater outlet, which is ultimately discharged to the Xiatianyuan River.

Wastewater and Sludge from the Wastewater Treatment Process

Treated wastewater is discharged to the Xiatianyuan River. According to the Site's EIA documents, the Xiatianyuan River is a Type III water body as defined in the Environmental Quality Standards for Surface Water (2002), which refers to surface water mainly used for domestic and drinking water, shrimp wintering and migration channels, aquaculture area, and swimming area. The Site management reported that the treated wastewater discharge from Yichuan WWTP is strictly monitored as the following:

- Yichuan EEB installed the real-time influent and effluent wastewater online monitoring system at the wastewater discharge point to conduct pollutants tests on a two-hour basis. This is confirmed with local EEB representative.
- Yichuan EEB conducts treated wastewater sampling test on a monthly basis;
- Yichuan WWTP engages a licensed third party to conduct wastewater test on a monthly basis;
- The laboratory of Yichuan WWTP conducts influent and effluent wastewater test once a day.

The five pollutants including chemical oxygen demand (COD), suspend solids (SS), total nitrogen, total phosphorus and ammonia nitrogen are monitored by both onsite laboratory and online monitoring system every day, thus, they are not covered in the third-party monitoring reports. Based on internal monitoring data (in average of 2020) and the latest sampled monitoring report conducted by a licensed third party dated December 2020 (refer to **Table 3-2**), the results met the Class I level A of Discharge Standard of Pollutants for Municipal Wastewater Plant (2002). As there is no ADB or IFC standards for the wastewater discharge, the national regulatory standard is the applicable standard.

Table 3-2: Wastewater Monitoring Results

Monitoring Type	Pollutant	Unit	Monitoring Results	Local Standards	Compliance Statue
Internal Monitoring (in average of 2020)	COD	mg/L	18.69	40	Meet the standards
	SS	mg/L	/	10	Meet the standards
	Total nitrogen	mg/L	9.21	15	Meet the standards
	Total phosphorus	mg/L	0.15	0.5	Meet the standards
	Ammonia nitrogen	mg/L	0.99	5	Meet the standards
Third Party Monitoring (dated December 2020)	Oil and grease	mg/L	ND	1	Meet the standards
	Copper	mg/L	0.002	0.5	Meet the standards
	Zinc	Times	ND	1.0	Meet the standards
	Total cadmium	mg/L	ND	0.1	Meet the standards
	Chromium	mg/L	0.03	0.01	Meet the standards
	Arsenic	mg/L	ND	0.1	Meet the standards
	Nickel	mg/L	ND	0.05	Meet the standards



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Monitoring Type	Pollutant	Unit	Monitoring Results	Local Standards	Compliance Statue
	Mercury	mg/L	3.35×10^{-4}	0.001	Meet the standards
	Hexavalent chromium	mg/L	0.005	0.05	Meet the standards
	Fluoride	mg/L	0.61	5.0	Meet the standards

*Note:

1. The monitoring is conducted by Nanjing Kangpeng Testing Technology Co., Ltd.
2. Local Standard refers to Class I Level A Discharge Standard of Pollutants for Municipal Wastewater Plant (2002)
3. ND means Not Detected

In China, the annual pollutant mass loading quotas are allocated to WWTP projects during the EIA stage based on (1) designed wastewater treatment capacity; (2) pollutant removal efficiency and discharge limits; (3) local environmental capacity. The pollutant mass loading quotas control requirement from the local EEB and the local environmental capacity, the annual pollutant discharge quotas for wastewater pollutants COD, ammonia nitrogen, total nitrogen and total phosphorus are 365 t, 36.5 t, 109.5 t and 3.65 t respectively. Given the current actual wastewater treatment is below the designed wastewater treatment capacity (14,000 t/d versus 20,000 t/d), and the treated wastewater meet the local standards, Yichuan WWTP is well below the allocated pollutant mass loading quotas.

Air Emission

The main sources of air emission in this Site is fugitive odour emission from the uncovered wastewater treatment tanks. Yichuan WWTP engage a licensed third party to conduct fugitive air emission monitoring in October 2020. The results (**Table 3-3**) met the Discharge Standard of Pollutants for Municipal Wastewater Plant (2002). As there is no ADB or IFC standards for the fugitive air emission pollutants, the national regulatory standard is the applicable standard. However, based on the PDP requirement, the fugitive odour air emission shall be monitored on a half year basis. Only one fugitive air emission monitoring was conducted by the Site in recent years.

Table 3-3: Fugitive Air Emission Monitoring Results

Monitoring date	Location	Pollutant	Unit	Monitoring Results	Local Standard	Compliance Statue
16 October 2020 (09:00-10:00)	Boundary	NH ₃	mg/m ³	0.121	1.5	Meet the standards
		H ₂ S	mg/m ³	0.010	0.06	Meet the standards
		Odour	—	15	20	Meet the standards
	The Site area	CH ₄	%	0.00052	1%	Meet the standards
16 October 2020 (11:00-12:00)	Boundary	NH ₃	mg/m ³	0.095	1.5	Meet the standards
		H ₂ S	mg/m ³	0.015	0.06	Meet the standards
		Odour	—	16	20	Meet the standards
	The Site area	CH ₄	%	0.00048	1%	Meet the standards
16 October 2020	Boundary	NH ₃	mg/m ³	0.112	1.5	Meet the standards



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Monitoring date	Location	Pollutant	Unit	Monitoring Results	Local Standard	Compliance Statue
(15:00-16:00)		H ₂ S	mg/m ³	0.009	0.06	Meet the standards
		Odour	—	16	20	Meet the standards
	The Site area	CH ₄	%	0.00056	1%	Meet the standards
16 October 2020 (17:00-18:00)	Boundary	NH ₃	mg/m ³	0.124	1.5	Meet the standards
		H ₂ S	mg/m ³	0.018	0.06	Meet the standards
		Odour	—	13	20	Meet the standards
	The Site area	CH ₄	%	0.00048	1%	Meet the standards

*Note:

1. The monitoring is conducted by Nanjing Kangpeng Testing Technology Co., Ltd.

2. Local Standard refers to Discharge Standard of Pollutants for Municipal Wastewater Plant (2002)

3. ND means Not Detected

Noise Emission

The Site boundary noise is subject to Class II of Emission standard for industrial enterprises noise at boundary (2008), which requires the maximum 60 dB(A) during the daytime (6:00 AM – 10:00 PM) and 50 dB(A) at night (10:00 PM – 6:00 AM). Yichuan WWTP engaged a licensed third party to conduct boundary noise emission monitoring in October 2020. The results (**Table 3-4**) indicated that the Site met the local standards and the IFC standards.

Table 3-4: Boundary Noise Monitoring Results

Location	Monitoring Date	Daytime (Leq[dB(A)])				Night-time (Leq[dB(A)])			
		Results	Local Standard	IFC Standard (Residential)	Compliance Statue	Results	Local Standard	IFC Standard (Residential)	Compliance Statue
East boundary	16 October 2020	53	65	70	Meet the standards	41	55	70	Meet the standards
South boundary		52	65	70	Meet the standards	42	55	70	Meet the standards
West boundary		50	65	70	Meet the standards	43	55	70	Meet the standards
North boundary		51	65	70	Meet the standards	42	55	70	Meet the standards
Zhongtian yuan Village		52	55	70	Meet the standards	41	45	70	Meet the standards
East boundary	17 October 2020	52	65	70	Meet the standards	40	55	70	Meet the standards
South boundary		50	65	70	Meet the standards	40	55	70	Meet the standards
West boundary		53	65	70	Meet the standards	42	55	70	Meet the standards



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Location	Monitoring Date	Daytime (Leq[dB(A)])				Night-time (Leq[dB(A)])			
		Results	Local Standard	IFC Standard (Residential)	Compliance Status	Results	Local Standard	IFC Standard (Residential)	Compliance Status
North boundary		52	65	70	Meet the standards	41	55	70	Meet the standards
Zhongtian yuan Village		50	55	70	Meet the standards	42	45	70	Meet the standards

*Note:

1. The monitoring is conducted by Nanjing Kangpeng Testing Technology Co., Ltd.
2. The IFC standard refers to Environmental, Health, and Safety (EHS) Guidelines: General EHS Guidelines (2007)
3. Local Standard refers to Class II of Emission standard for industrial enterprises noise at boundary (2008)

Chemical Management and Solid Wastes

Chemicals consumed by the Site are summarised below:

- Polymeric ferric sulphate is used in secondary sedimentation tank to remove total phosphorus and guarantee the effluent total phosphorus is within the discharge limit. The polymeric ferric sulphate is stored in one aboveground storage tank.
- Polyacrylamide is used in sludge dewatering equipment to improve the sludge dewatering efficiency. The polymeric ferric sulphate is stored in 20kg bags in sludge treatment room.
- Carbon source is used in biological system to optimize Carbon/Nitrogen ratio in the wastewater and improve total nitrogen removal efficiency. The carbon source was temporary stored in one aboveground storage tank (AST) in the open yard without secondary containment, and it will store in a designated carbon source aboveground storage tank after March 2021.
- Sodium hypochlorite is used for disinfection and is stored in one AST.
- Limited amount of municipal wastewater was collected from the surrounding villages and then transported to the Site by local sanitation station, as a kind of carbon source.
- Limited amount lubricant/machine oil that are used for maintenance purposed, are in 200 litre drums and only purchased upon demand. The waste oil was reused for equipment lubrication, the empty oil containers were recycled by the oil supplier.
- Limited amount of rapid detection reagents are used in the laboratory for routine internal water testing purpose. The empty reagent containers were recycled by the reagent supplier.

All chemicals are stored in onsite aboveground storage tanks and one chemical storage room (with an area of about 50 m²) with SOP, MSDS and safety guidelines posted in the area, however, secondary containment is not available. In addition, no secondary containment was equipped for temporary carbon source storage area.

Domestic Solid Waste Management

The solid wastes disposal methods are summarized below:

- Domestic wastes including domestic waste generated onsite and the solid waste from the coarse and fine screens, and waste packaging materials are collected and transported by the local sanitation station to local municipal domestic waste treatment facilities for landfill or incineration twice times per week.
- Based on the EIA documents, sludge is not categorized as hazardous waste as per Chinese regulation. Sludge is dehydrated onsite to around 80% and is transferred by the sludge truck owned and operated by the subproject company, and then transported to governmental appointed landfill plant as per the BOT. The corresponding contract and sludge transfer manifests were provided for review. SOP and safety guidelines were posted in the area.



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Emergency Preparedness and Training

The Sudden Environmental Emergency Plan dated January 2021 was prepared by the Site, however its corresponding registration record, as well as safety Production ERP and the corresponding registration record were not provided for review. The Current Sudden Environmental Emergency Plan covers chemical spills, incidental discharge, ecological impact analysis. The safety and flooding ERP are not in place and no corresponding drills have been conducted.

Based on the management interview and document review, it was confirmed that the EHS training and inspection records covering confined space drill, leakage drill, daily onsite equipment safety inspection records, and equipment maintenance records were provided for review. In addition, the 2021 annual training plan covering wastewater discharge standard, operational manual, equipment management, equipment repair and maintenance, safety production, and safety operation in extreme weather was provided for review.

Firefighting equipment installed at the Site include fire hydrants, firefighting distinguishers fire water tank and pumps, emergency lights and evacuation signs. However, no regular inspection has been conducted for all onsite fire-fighting equipment and no fire drill for all onsite employees has been conducted in recent years.

Occupational Health and Safety

Based on document review and onsite observations, key occupational disease hazards identified at the Site include chemical exposure and noise. Noticeable noise was identified in the power generator room and ventilator room. The patrol inspection is carried out every two hours (lasts about 30 minutes per inspection). Proper PPE (including helmets, gloves, safety shoes, and masks), hazard warning signs, machine guards, insulation tools and production area monitoring cameras were provided at the Site. However, it was observed that only a few staffs wore PPE at the time of onsite visit. Routine medical check-ups were provided to all employees every year, while no occupational disease hazard assessment was conducted and no occupational health check-ups were provided to staff who are exposed to occupational disease hazards.

Specially, the COVID-19 prevention methods and procedure were established according to CCW corporate and local authorities' requirements. The COVID-19 prevention equipment, including masks, clinic thermometer, hand washing liquid and disinfection agent are provided onsite. In addition, management measures such as travel restriction, quarantine requirements, access registration, body temperature measuring as per the local authorities are also implemented by the Site.

Site management reported that no incidents/accidents have taken place to the onsite staff. According to the Site representatives and document review, the one operator involved in live-line work and a total of three sets of special equipment (cranes) were used during the time of visit. However, no special equipment registration certificates, inspection reports or special work operator certificates were provided for review.

Community Occupational Health and Safety

Given no construction activities were conducted onsite, no population influx was caused at the time of the audit. The health and safety risks exposed to surrounding communities mainly includes noise and odour during operation period, emergency accidents, traffic congestion and accident, and surface or underground water contamination. Mitigation measures were adopted as follows:

- The noise and odour hazards are monitored regularly to ensure the compliance status.
- The wastewater treatment and anti-seepage measures are strictly complied with national regulations.



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- Vehicle speed is controlled, and the truck used for sludge transportation is equipped with cover to prevent leakage of the sludge along the transportation route.

Electricity Supply

Based on the electricity fee provided by the Site, the 2020 electricity consumption (from January to November, as the data for December 2020 was not ready at the time of preparation of this report) for Yichuan WWTP is 2,216,440 kwh. The total electricity fee is RMB 1,309,241. There are no energy efficiency measures planned or in place.

Restricted Substances

No onsite sources of Asbestos Containing Materials (ACMs), Polychlorinated Biphenyls (PCB), Ozone Depleting Substances (ODSs) or radioactive materials were reported by Site management and none was observed at the Site by Stantec during the visit.

Notices of Violation

Based on desktop research and interview with the Site management, five notices of violation (NOV) were identified:

- 4 September 2018, a NOV was issued by the EEB for discrepancies in the operation of the online monitoring system. The fine was paid and corrective actions were implemented, however, the NOV is under appeal.
- 4 September 2018, a NOV was posed by the local EEB for exceeding total nitrogen discharge. RMB 200,000 was fined. The fine was paid and corrective actions were implemented. This NOV had been resolved.
- 16 May 2019 and 11 June 2019, NOVs were posed by the local EEB for exceeding total nitrogen discharge. RMB 200,000 was fined, respectively. The fine was paid and corrective actions were implemented. This NOV had been resolved.
- 19 July 2019, a NOV was posed by the local EEB for exceeding total phosphorus. RMB 200,000 was fined. The fine was paid and corrective actions were implemented. This NOV had been resolved.

Ecosystem

Due to the treated wastewater met the Class I level A of Discharge Standard of Pollutants for Municipal Wastewater Plant (2002), the treated wastewater discharge will not impact the aquatic ecosystem of the Xiatianyuan River. The design and construction of the WWTP has taken soil and groundwater impact into consideration. Concrete with impermeable layers have been applied to the construction of the WWTP.

The site area was a modified habitat prior to the construction of the Site, hence, biodiversity impact of the Site is considered limited. No protected fauna and flora were identified in the local area. Given the type of operation of the Site, the potential impact is considered limited.

Staff Capacity and Training

The Site provides two-level training to its new employees, namely plant-level and position-level, covering the SOPs, general plant rules and EHS aspects such as chemical handling (if needed), PPE, etc. In addition, EHS training and inspection records covering confined space drill, leakage drill, daily onsite equipment safety inspection records, and equipment maintenance records were provided for



SITE ASSESSMENT

review. In addition, the 2021 annual training plan covering wastewater discharge standard, operational manual, equipment management, equipment repair and maintenance, safety production, and safety operation in extreme weather was provided for review.

Key EHS related findings and issues (apart from which mentioned in Section 3.3.2 and 3.3.3) were summarized as follow:

- Based on the PDP requirement, the fugitive odour air emission shall be monitored on a half year basis. However, only one fugitive air emission monitoring was conducted by the Site in recent years.
- For the temporary carbon source storage area, sodium hypochlorite AST and chemical warehouse, no secondary containments were equipped.
- Occupational disease hazard assessment and industrial hygiene monitoring have not been conducted, and occupational health check-ups have not been provided to staff who are exposed to occupational disease hazards.
- No regular inspection was conducted for all onsite fire-fighting equipment and no fire drill for all onsite employees in recent years.
- One operator involved in live-line work and a total of three sets of special equipment (cranes) were used during the time of visit. However, no special equipment registration certificates, inspection reports or special work operator certificates were provided for review.
- Safety and flooding ERP are not in place and no corresponding drills have been conducted.

3.4 SOCIAL ASSESSMENT

3.4.1 Land Acquisition and Resettlement

In 2012, CCW reached the BOT agreement with the local government. Prior to that, the land acquisition and resettlement was conducted by the local government in 2011 and 2012 and the consulted site management was not aware of the history. The Site locates at Shuizhai Town of Yichuan County, occupying a total land area of about 53 mu². According to the opinions on land use of Yichuan WWTP issued by Yichuan County People's Government on 25 November 2015, the impacted land (53 mu) of the WWTP was collectively owned by Shangtianyuan Village of Shuizhai Town and the land was classified as agricultural land (including 45 mu cultivated land) and unused land prior to project development. There was no physical displacement (i.e. relocation and loss of shelter) during the development of Yichuan WWTP.

As for the compensation for land acquisition, according to the opinions on land use of Yichuan WWTP, the land compensation standard was 40,000 RMB/mu and resettlement subsidy standard was 4,620 RMB/mu. 68 agricultural populations have been affected for the purpose of project development. The standing crops compensation standard for dry land was 1,000 RMB/mu. A total of 2.13 million RMB of land compensation was paid in full to the affected rural collective organizations, and the rural collective organizations would redistribute the compensation in accordance with the law. Through onsite randomly interviewed affected villagers in Shangtianyuan Village, it is learned that the affected people receive different amounts of compensation each year. Stantec tried to interview the village committees of the affected village to further understand the distribution of compensation, no corresponding interview with the village committee was arranged due to time and conditions constraints.

CCW reported that the land use certificate has of Yichuan WWTP had not been obtained due to some historical reasons and is currently in the process of processing it. CCW also added land acquisition was conducted by the local government and the documents related to land acquisition and compensation also were kept by the local government. There is no detail impact data such as land acquisition impact rosters, compensation agreement, compensation payment voucher, etc. for review.

² Mu is the Chinese land area unit, and one mu is approximately equal to 666 square meters.



Key Findings and Issues on Resettlement:

- Neither Land Use Pre-approval nor the Construction Land Use Certificate have been obtained for Yichuan WWTP, which is a non-compliance against PRC regulations.
- No corresponding interview with the affected village committee was arranged and the Yichuan WWTP had not obtained the land use certificate, it was unable to verify whether the compensation for land acquisition was paid in place.
- No documents (such as asset inventory, compensation agreement, etc.) regarding project land use for the Site are held by Yichuan WWTP. There is no in-place procedure to document land acquisition activities, as well as monitor and evaluate the payment status, which is a non-conformance against ADB SR2.
- No land acquisition and compensation audit was conducted by CCW or the Site, which is non-conformance against ADB SPS2.

3.4.2 Indigenous People

The Site is located in industrial cluster area of Yichuan City. The ethnic Han is predominant in PRC as well as in the local area, and there are no ethnic minority residential areas identified or affected. Therefore, ADB SR3 is not triggered for the Site.

3.4.3 Stakeholder Engagement and Consultation

It is identified no stakeholder analysis conducted for Yichuan WWTP and no document records regarding stakeholder engagement were available for review.

According to interview with CCW's corporate, Stantec's onsite consultation, as well as similar project experience, three major stakeholder groups are identified for this type of project, including (a) government authorities, such as Yichuan County EEB, Emergency Management Bureau, as well as Industrial Cluster Management Committee, (b) local community/village (wastewater discharge unit / individual), including Shangtianyuan Village, Zhongtianyuan Village and Xiatianyuan Village, etc., (c) local residents affected by land acquisition, i.e. Shangtianyuan Village. Yichuan WWTP is responsible for liaison with local government, i.e. Industrial Cluster District Management Committee.

The Site is following PRC's laws and regulations. In China, consultation with the local communities is a regulatory requirement during the process of EIA as well as land acquisition and resettlement. A certain number of local residents were consulted through questionnaire survey while preparing the EIA Report. Among the interviewees, most expressed support to the Site, while small part of people expressed not concerned. No interviewees expressed objection. The land acquisition and resettlement were conducted by the local government, the site management reported that Yichuan WWTP does not communicate directly with the local community, as well as the residents affected by land acquisition.

Key Findings and Issues on Stakeholder Engagement:

- There is no formalized stakeholder engagement procedure established for Yichuan WWTP to manage stakeholder identification, analysis, engagement especially for dealing with those concerns related with land acquisition and resettlement, and other community affairs.



3.4.4 Grievance Redress

It was identified there are no grievance procedures or designated personnel for managing the grievances of employees and local communities and other stakeholders. No records of grievances are available for review.

For the workers' grievances, the site management reported that the workers usually may file a grievance to their line manager, if the line manager can't address the grievance, it will report to Yichuan WWTP general manager. Usually, employees' complaints can be properly resolved at the line manager level, and according to Ms. Sun from HR department of the Site, there are no grievances reported to date.

For the community grievances, the management reported that they have not received any grievances directly so far, for grievances (if any) raised by the local communities would normally be received by the local government. The project company would be informed by the local government in case grievances received. The representative from the Environmental Inspection Team of local EEB also stated that no complaints from the local community have been received since the operation of Yichuan WWTP. No grievance has been received to date reportedly.

Key Findings and Issues on Grievance Redress:

- There is no system in place to record and track the complaints raised by the local community, employees and construction workers during construction and operation phases, which is a non-conformance against ADB safeguards.

3.4.5 Labour and Social Protection

At the time of onsite visit, there were 15 employees directly hired by Yichuan WWTP, including one general manager, one deputy general manager, two technical managers, six operational staff, one maintenance staff, two laboratory staff, one financial staff and one chef. All the 15 employees are formal contract workers and no temporary, dispatch and outsourcing workers were identified at the Site. All the 15 employees are Han Chinese, 4 out of 15 are female and the rest 11 employees were male.

Reportedly, the workers except for the operating workers are typically working five days with 40 hours in one shift (9:00~17:00) between Monday and Sunday. The six operating workers were divided into three groups with two shifts (9:00~21:00 and 21:00~9:00 respectively). Each shift had two responsible staff. The Site adopts the comprehensive working hour system for operating workers, however, no approval from the Labour Bureau was provided for review. Wages are paid on the next 10th of each month. The Site provided the payroll records in March 2020 for all 15 employees for review. The payroll record includes working hours and overtime, normal wage, overtime wage and social insurance. The normal wages for workers were above the minimum wage requirement.

No underage or juvenile workers were identified onsite. No sexual harassment or discrimination was identified during onsite interview.

Key Findings and Issues on Labour and Social Protection:

- The WWTP adopts the comprehensive working hour system for operating workers, however, no approval from the labour bureau was provided for review. This is a non-compliance against PRC regulations.

3.4.6 Gender and Development

Although there is no specific procedure regarding gender and development identified in any of the Company's existing policies and procedures, no indication of gender inequality or discrimination is identified from document review and interview.



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To date, 4 out of the 15 workers at the project companies are female, including two laboratory staff, one financial staff and one chef. The males are skilled workers primarily focusing on engineering, whilst most females on non-engineering positions such as administration and logistics. The consulted female employees are treated equally in payment, training and promotion. All the female employees at the project are entitled to the same specific benefits (98 days of maternity leave, women's toilets, and small gifts on Women's Day) as other females in the Company. Stantec's interview with randomly selected operators did not identify any concern over gender composition of the positions.

No noncompliance regarding gender and development is identified against either the PRC regulations or ADB SPS for the project. In addition, according to consultation with both site management and the randomly selected workers, no disproportionate impacts were caused by the project on women.



4. CORRECTIVE ACTION PLAN

Table 4-1 summarises the E&S issues identified at Yichuan WWTP. As implementing the actions described below might signify economic costs to different degrees, estimations were not made.

Table 4-1: Yichuan WWTP - Findings and Recommended CAP

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
1	ADB SPS 1	EHS Management	At the time of the site visit, a formal Environmental and Social Management System (ESMS) was not developed. Environmental procedures such as chemical management, environmental monitoring management, solid waste management, etc. were not in place.	Upon completion of development of the corporate ESMS, the Site should seek for assistance from the CCW corporate and developed its own subproject level ESMS covering EHS, HR and Social aspects. The subproject level ESMS should be implemented by qualified and trained onsite personnel.	High	1 month after adoption of corporate level ESMS [6 months after ESMS adoption]	Development and adoption of Subsidiary level ESMS ESMS implementation and training record Updates in the annual E&S performance report to ADB on the effectiveness of ESMS implementation
2	ADB SPS 1	EHS Permit	The Site uses one onsite groundwater abstraction well (with a depth of 30 m) for sanitary purpose. However, the Water Abstraction Permit has not been obtained	The Site should consult with the local Water Resource Bureau in this regard and take action accordingly.	Medium	Prior to disbursement	Communication records of consultation with Water Resources Bureau on next steps



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CORRECTIVE ACTION PLAN

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
						3 months after disbursement	Water Abstraction Permit
3	ADB SPS 1	EHS Permit	Fire-fighting design registration or fire-fighting CAI approval has not been obtained.	The Site should consult with the local housing and construction authority in this regard and take action accordingly.	Medium	Prior to disbursement 6 months after disbursement	Communication records of consultation with the local housing and construction authority on next steps Fire-fighting design registration and fire-fighting CAI approvals
4	ADB SPS 1	EHS Permit	A Work Safety Assessment has not been conducted.	The Site should consult with the local Emergency Management Bureau in this regard and take action accordingly.	Low	Prior to disbursement 3 months after disbursement	Communication records of consultation with the Emergency management Bureau on next steps. Work Safety Assessment
5	ADB SPS 1	Emergency Response	The Sudden Environmental Emergency Plan dated January 2021 was prepared by the Site, however its corresponding registration record, and Safety ERP and the corresponding registration record were not provided for review at the time of audit. In addition, flooding ERP	The Site should consult with the local EEB and Emergency Management Bureau in this regard and take action accordingly. As a minimum, supplementary ERP covering flooding should be prepared and corresponding drills should be conducted.	Medium	Prior to disbursement	Communication records of consultation with the EEB and Emergency management Bureau on next steps



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No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
			are not in place and no corresponding drills have been conducted.			<p>[same time as ESMS]</p> <p>6 months after disbursement</p>	<p>ERP and the Supplementary ERP included in the Subsidiary level ESMS</p> <p>ERP registration record and drill records</p>
6	ADB SPS 1	Health and Safety	Occupational disease hazard assessment or industrial hygiene monitoring has not been conducted, and occupational health check-ups have not been provided to staffs who are exposed to occupational disease hazards.	The Site should engage licensed third parties to prepare occupational disease hazard assessment and provide occupational health check-ups to staffs who exposed to occupational hazards.	Medium	<p>Prior to disbursement</p> <p>[same time as ESMS]</p> <p>3 months after disbursement</p>	<p>Contract/agreement with a licensed third party</p> <p>Occupational disease hazard assessment or industrial hygiene monitoring procedure included in the Subsidiary level ESMS</p> <p>Occupational disease hazard assessment, industrial hygiene monitoring and occupational health check-up reports</p>



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CORRECTIVE ACTION PLAN

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
7	ADB SPS 1	Pollution Prevention and Abatement	Based on the PDP requirement, the fugitive odour air emission shall be monitored on a half year basis. However, only one fugitive air emission monitoring was conducted by the Site in recent years.	The Site should engage licensed third parties to prepare fugitive air emission monitoring reports every half year.	Medium	Prior to disbursement [same time as ESMS] 3 months after disbursement	Contract/agreement with licensed third party Environmental Monitoring procedures as part of the Subsidiary level ESMS Fugitive air emission monitoring reports
8	ADB SPS 1	Chemical Management	No secondary containments were equipped for the temporary carbon source storage area, sodium hypochlorite AST and chemical warehouse.	The Site should establish secondary containments for the chemical tanks and chemical warehouse.	Medium	Prior to disbursement	Onsite photos and corresponding records
9	ADB SPS 1	Health and Safety	No regular inspection was conducted for all onsite fire-fighting equipment and no fire drill for all onsite employees in recent years.	The Site should strengthen fire-fighting equipment inspection in regular basis and provide fire drill for all onsite employees every year.	Low	[same time as ESMS] 3 months after disbursement	Procedure and schedule of inspection and drill as part of the subsidiary level ESMS Inspection and drill records
10	ADB SPS 1	Health and Safety	One operator involved in live-line work and a total of three sets of special equipment (cranes) were used during	The Site should engage licensed third parties to prepare special equipment registration certificates,	Low	3 months after disbursement	Special equipment registration certificates,



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No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
			the time of visit. However, no special equipment registration certificates, inspection reports or special work operator certificates were provided for review.	inspection reports and special work operator certificates			inspection reports and special work operator certificates
11	ADB SPS 2	Involuntary Resettlement	Neither Land Use Pre-approval nor the Construction Land Use Certificate has been obtained for Yichuan WWTP.	The Site should follow with the local government to obtain Land Use Pre-approval and Construction Land Use Certificate for the land permanently acquired.	Medium	9 months after disbursement	Land Use Pre-approval and the Construction Land Use Certificate obtained
12	ADB SPS 2	Involuntary Resettlement	No documents (such as asset inventory, compensation agreement, etc.) regarding Yichuan WWTP land use for the Site were provided for review.	Upon development and implementation of the corporate ESMS, the Site should follow the corporate Resettlement Policy Framework to document the compensation payment and evaluate its status.	Medium	9 months after disbursement	Relevant documents
13	ADB SPS 2	Involuntary Resettlement	No land acquisition and compensation audit through an external expert was conducted by CCW or the Site.	CCW and the Site should conduct, through an external expert, a land acquisition and compensation audit against SPS 2 requirements. If deficiencies are identified, a CAP should be developed in line with SPS 2 (including full replacement cost and restoration of livelihood).	Medium	6 months after disbursement	A Land Acquisition audit report prepared by qualified E&S consultant in line with requirement set in SPS 2
14	ADB SPS	Stakeholder Engagement	There is no system/ procedure in place to guide the company to identify stakeholders, make analysis, and conduct engagement.	Upon development and implementation of the corporate ESMS, the Site should develop a procedure as part of E&S for the purpose of managing stakeholder engagement process.	Low	[same time as ESMS]	A stakeholder engagement plan (SEP)



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CORRECTIVE ACTION PLAN

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
15	ADB SPS	Grievance Redress	There is no system in place to record and track the complaints raised by the local community, employees and construction workers during construction and operation phases. Thus, no record of previous grievances was available for review.	Upon development and implementation of the corporate ESMS, the Site should develop a site-specific grievance redress procedure to collect and document any complaints and grievances raised by the employees and the broader local community.	Low	[same time as ESMS]	Site specific grievance mechanism (including the employees and the local community) and grievance records
16	Social Protection	Labour and Social Protection	The WWTP adopts the comprehensive working hour system for operating workers, however, no approval from the Labour Bureau were provided for review.	The Site should consult with the local Labour Bureau and apply for the approval of Comprehensive Working Hour as appropriate.	Low	6 months after disbursement	Communication records and/or approval of Comprehensive Working Hour



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Annex A: LIST OF DOCUMENT REVIEWED

Annex A: LIST OF DOCUMENT REVIEWED

No.	Name
1	Site Selection Application approval was approved by Yichuan Development and Reform Commission on 14 October 2013
2	FSR approval for the initial Phase I and Phase II Development issued by Yichuan Development and Reform Commission on 19 December 2013
3	EIA approval for the initial Phase I and Phase II Development issued by the Yichuan EEB on 8 July 2015;
4	ECAI for the initial Phase I Development prepared by the Site on December 2020
5	PDP issued by Luoyang City EEB valid from 27 June 2019 to 26 June 2022
6	Sampled environmental monitoring reports (regarding treated wastewater, fugitive air and boundary noise) dated 2020
7	Sampled sludge Transfer Manifests dated 2020.
8	Waste oil recycling usage contract signed with Luoyang Dezheng Resource Reuse Co., Ltd. dated 2019
9	The valid special equipment registration certificates, inspection reports and special equipment operator certificates were provided
10	The Sudden Environmental Emergency plan was prepared on January 2021
11	Sampled routine check-up report for staffs
12	Geological hazard risk assessment for construction site issued by Henan Boao Geological Exploration Co., Ltd. dated June 2015.
13	EHS management procedures and training records.
14	Opinions on land use of Yichuan WWTP issued by Yichuan County People's Government on 25 November 2015
15	Attendance management procedures developed on 24 December 2018.
16	Two labour contract samples signed on 30 June 2020 and 1 August 2020 respectively.
17	Payroll records in March 2020

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Annex B: STAKEHOLDERS ENGAGED DURING THE E&S AUDIT

Annex B: STAKEHOLDERS ENGAGED DURING THE E&S Audit

Name	Category	Department	Title
Mr. Guo Xiangqian	Internal	Production Department	Specialist
Mr. Bu Feihu	External	Environmental Inspection Team of local EEB	Director
Mr. Zhang	External	Shangtianyuan Village	Villager
Mr. Liu	External	Shangtianyuan Village	Villager
Mr. Guo	External	Shangtianyuan Village	Villager

ASSET-LEVEL E&S AUDIT REPORT – YICHUAN

Annex C PHOTO LOG

Annex C: PHOTO LOG

Photo Log – Yichuan WWTP



Photo 1 Entrance of the Site



Photo 2 Wastewater Inlet of the Site



Photo 3 Biological Tank for Phase I development



Photo 4 Secondary Sedimentation Tank for Phase I development



Photo 5 Sludge Treatment Room



Photo 6 Sludge Storage Area

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Annex C PHOTO LOG

Photo Log – Yichuan WWTP



Photo 7 Chemical Warehouse for Phase I development



Photo 8 Chemical Warehouse for Phase I development



Photo 9 Laboratory for phase I Development



Photo 10 Online Treated Wastewater Monitoring Device

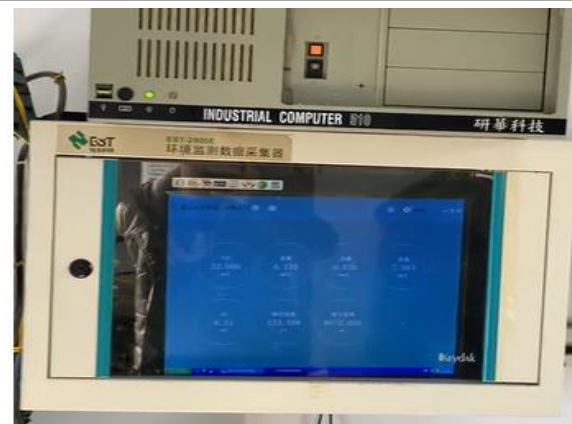


Photo 11 Online Treated Wastewater Monitoring Room



Photo 12: PPE warning sign

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Annex C PHOTO LOG

Photo Log – Yichuan WWTP



Photo 13 East side of factory boundary: Erguang Expressway



Photo 14 South side of factory boundary: farmland



Photo 15 West side of factory boundary: farmland



Photo 16 North side of factory boundary: Zhongtianyaun Village