

A Short Introduction To Chinese Standardization of Hot Spring and related Laws, Regulations and Norms

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1. Background

- China is one of the countries with the richest hot spring resources in the world due to its geologic features, size and various kinds of lands.
- There are more than 5000 hot spring sources being found and drilled in China according to our statistics.
- *The history of hot spring resource development and utilization can be traced back to 2,500 years ago.*



1. Background

- Over the past 70 years, central and local government governance and industry supervision for the development and utilization of hot spring resources and industrial self-discipline have been gradually established, especially in the last 30 years. Now, a framework and system have been initially formed, but it still needs to be continuously enriched and improved.





2. Historical Review of modern China's Hot Springs

2.1 The use of hot springs in modern China began with medical treatment

- European style Balneology and Balneotherapy were indirectly introduced into China in the early 20th century by a few people who used to study in Japan.
- In 1926, a famous Chinese geologist Pro. Zhang Hongzhao firstly made a relatively complete statistics on hot spring resources in the whole country, and published a book named “ **Chinese hot springs collection**”. According to the book, China had 972 hot spring sources all over the country then.
- In 1939, Dr. Chen Yanbing (M.D.) firstly proposed the definition of hot spring in his book named “ **Textual Research on Hot Springs in China**”, that is, “ A hot spring is formed when the temperature of the underground spring is higher than the average annual temperature of the place where the spring is poured out”. At the same time, the definition of “ cold spring” is put forward.



Pro. Zhang Hongzhao



Dr. Chen Yanbing (M.D.)

2.1 The use of hot springs in modern China began with medical treatment



- The People's Republic of China was founded in 1949. With the assistance of the experts from the former Soviet Union and some other Eastern European socialist countries, the Chinese government introduced the healthcare system of thermalism sanatorium.

2.1 The use of hot springs in modern China began with medical treatment

- In 1949, The first hot spring sanatorium in China was set up at Tanggangzi, Anshan city, Liaoning province . It is still the largest hot spring sanatorium in China, with 2,100 beds and plans to expand to 3,500 beds.



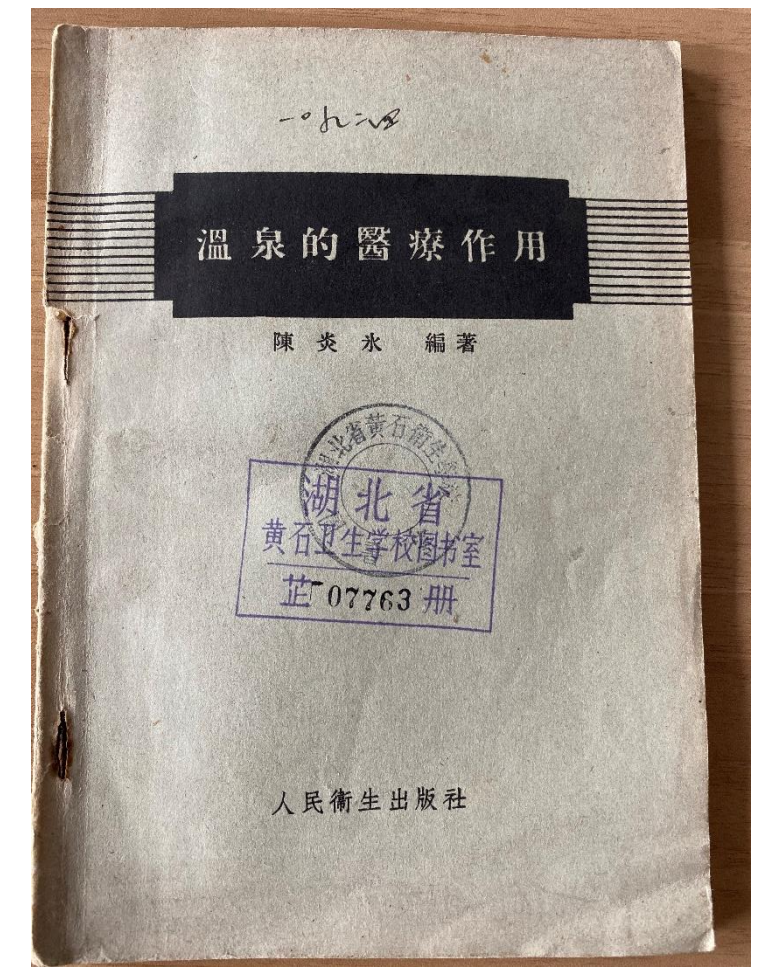
Tanggangzi Hot Spring recuperation hospital

Tanggangzi Hot Spring Sanatorium, Liaoning Province



2.1 The use of hot springs in modern China began with medical treatment

- In 1954, the Chinese Ministry of Health set up the sanatorium & recuperation department, so that to establish the status and role of the recuperation system in the national health care system.
- In 1956, the Ministry of Health commissioned Dr. Chen Yanbing to compile the book “*The Medical Function of Hot Springs*” which could be used as a reference for doctors and relating personnel of hot springs and mineral springs in China. This book provides a systematic and detailed introduction to the newest developments of hot spring medical and clinical practice in Europe and Japan. It has become first and one of the most authoritative works on hot spring medical treatment in China, from then on.



2.1 The use of hot springs in modern China began with medical treatment

- **In the mid-1960s**, China's hot spring sanatoriums had grown to its heyday with more than 200, covering most provinces and regions across the country. The nature of those sanatoria is state-run, and the cost of the sanatorium is paid by the government.
- **In 1964**, the Chinese Medical Association classified hot springs for the first time, and divided the hot springs into **14 types**.
- **In 1981**, the Chinese Medical Association revised the above-said classification and classified the hot springs into **12 types**.
- **In 2017**, the Chinese Rehabilitation Medical Association Rehabilitation Professional Committee established the "China Medical Minerals Definition and Classification Revision Program Expert Group", which reached and announced the "Expert Consensus" jointly proposed by dozens of doctors, and divided the hot springs into **16 types**.



Expert consensus on the definition and classification of Chinese medical mineral springs

Table : Chinese hot springs based on medical & mineral classifications (1964)

No	Name	Salinity	Main ingredients		Special properties
			Anionic	Cationic	
1	Radon spring(氡泉)				Rn > 3nCi/L (74Bq/L)
2	Carbonated dioxide spring(碳酸泉)				CO ₂ > 0.5g/L
3	Hydrogen Sulphide Spring(硫化氢泉)				Total sulphur > 2mg/L
4	Dicarbonate spring(碳酸氢钠泉)	>1g/L	HCO ₃ ⁻	Na ⁺	
5	Calcium bicarbonate springs(碳酸氢钙泉)	>1g/L	HCO ₃ ⁻	Ca ²⁺	
6	Springs of sodium sulfate(硫酸钠泉)	>1g/L	SO ₄ ²⁻	Na ⁺	
7	Springs of magnesium sulfate(硫酸镁泉)	>1g/L	SO ₄ ²⁻	Mg ²⁺	
8	Calcium sulphate spring(硫酸钙泉)	>1g/L	SO ₄ ²⁻	Ca ²⁺	
9	Sodium chloride spring(氯化钠泉)	>1g/L	Cl ⁻	Na ⁺	
10	Chalybeate spring(铁泉)				Fe ²⁺ +Fe ³⁺ > 10 mg/L
11	Iodic Spring(碘泉)				I ⁻ > 5 mg/L
12	Bromic Spring(溴泉)				Br ⁻ > 25mg/L
13	Siliceous spring(硅酸泉)				H ₂ SiO ₃ > 50mg/L
14	Light spring(淡泉)	<1g/L			Temperature >34°C

4. Other national and industrial standards related to hot springs

4.1 Expert consensus on the definition and classification of Chinese medical mineral springs

Table : Chinese hot springs based on medical & mineral classifications (1981)

No	Name	Salinity	Main ingredients		Special properties
			Anionic	Cationic	
1	Radon spring(氡泉)				Rn > 3nCi /L
2	Carbonated dioxide spring(碳酸泉)				CO ₂ > 1g/L
3	Hydrogen Sulphide Spring(硫化氢泉)				Total sulphur > 2mg/L
4	Chalybeate spring(铁泉)				Fe ²⁺ +Fe ³⁺ > 10 mg/L
5	Iodic Spring(碘泉)				I ⁻ > 5 mg/L
6	Bromic Spring(溴泉)				Br ⁻ > 25mg/L
7	Arsenical spring(砷泉)				As ⁺ > 0.7mg/L
8	Siliceous spring(硅酸泉)				H ₂ SiO ₃ > 50mg/L
9	The spring of bicarbonate(重碳酸盐泉)	>1g/L	HCO ₃ ⁻	Na ⁺ 、 Ca ²⁺ 、 Mg ²⁺	
10	Bicarbonate spring(硫酸盐泉)	>1g/L	SO ₄ ²⁻	Na ⁺ 、 Ca ²⁺ 、 Mg ²⁺	
11	Chloride springs(氯化物泉)	>1g/L	Cl ⁻	Na ⁺ 、 Ca ²⁺ 、 Mg ²⁺	
12	Light spring(淡泉)	<1g/L			Temperature >34°C

4. Other national and industrial standards related to hot springs

4.1 Expert consensus on the definition and classification of Chinese medical mineral springs

Table : Chinese hot springs based on medical & mineral classifications (2017)

No	Name	Salinity	Main ingredients		Special properties
			Anionic	Cationic	
1	Radon spring(氡泉)				Rn > 111Bq/L
2	Carbonated dioxide spring(碳酸泉)				CO ₂ > 1g/L
3	Hydrogen Sulphide Spring(硫化氢泉)				Total sulphur > 2mg/L
4	Chalybeate spring(铁泉)				Fe ²⁺ +Fe ³⁺ > 10mg/L
5	Fluorine spring (氟泉)				F ⁻ > 2mg/L
6	Iodic Spring(碘泉)				I ⁻ > 5mg/L
7	Bromic Spring(溴泉)				Br ⁻ > 25mg/L
8	Arsenic spring (砷泉)				As ⁺ > 0.7mg/L
9	Lithium spring (锂泉)				Li ⁺ > 1mg/L
10	Strontium spring (锶泉)				Si ⁺ > 10mg/L
11	Boric acid spring (硼酸泉)				H ₃ BO ₃ > 35mg/L
12	Siliceous spring(硅酸泉)				H ₂ SiO ₃ > 50mg/L
13	Bicarbonate spring (重碳酸盐泉)	> 1g/L	HCO ₃ ⁻	Na ⁺ 、Ca ²⁺ 、Mg ²⁺	
14	Sulphate spring (硫酸盐泉)	> 1g/L	SO ₄ ²⁻	Na ⁺ 、Ca ²⁺ 、Mg ²⁺	
15	Chloride spring (氯化物泉)	> 1g/L	Cl ₋	Na ⁺ 、Ca ²⁺ 、Mg ²⁺	

2.1 The use of hot springs in modern China began with medical treatment

In general, since the early 1950s, hot spring medical treatment has been a special existence in the national health care system, but mainly regarded as a physical therapy method, which is included in the scope of national medical insurance reimbursement, but considering the existed numbers of hot spring sanatoria or rehabilitation centers (less than 40), beneficiaries of social medical insurance are only a few.



2.2 The rise of China's hot spring tourism era

2.2.1 the calling for Industry Standards

- in the middle of 1990, a new business type of hot spring emerged here in Guangdong province,
I.E.: **Hot Spring Tourism.**



2.2 The emerging of China's hot spring tourism era

2.2.1 the calling for Industry Standards

- Since then, especially from the beginning of 21century, hot spring tourism was followed and copied rapidly accross the whole country and became the main hot spring business model in China. It has become a new force in the booming Chinese tourism industry and has been included in scope of national tourism industry management.



2.2 The emerging of China's hot spring tourism era

2.2.1 the calling for Industry Standards

- With the development of the hot spring industry, the demand for industry standards and norms has become increasingly urgent.
- In January 2007, the Hot Spring Tourism Branch of Guangdong Tourism Association (now renamed Guangdong Hot Spring Industry Association) became the first hot spring tourism industry organization in China.
- At the same time, Guangdong province issued the first hot spring industry service standard, I.E.: DB44/T 297-2006, which is also the first local hot spring standard in China.

ICS 97.220.10
Y 55
国家质量技术监督检验检疫总局备案号:

DB44

广东省地方标准

DB44/T 297—2006

温泉旅游服务规范

Hot Spring Tourism Service Criteria

2006-03 - 16 发布

2006 -07 -01 实施

广东省质量技术监督局 发布

2.2 The emerging of China's hot spring tourism era

2.2.1 the calling for Industry Standards

- After that, provincial hot spring industry associations have been established one after another throughout China. So far, 17 provinces, autonomous regions and municipalities have established hot spring industry associations among the 34 first-level administrative regions in China.
- In 2009, the hot spring tourism branch of China Tourism Association (i.e. **China Hot Spring Tourism Association, CHSTA**) was formally established in Beijing, opening a new era of self-discipline, standardization and normalization of China's hot spring tourism industry.



2.2 The emerging of China's hot spring tourism era

2.2.1 the calling for Industry Standards

- In 2010, under the leadership of the CHSTA, **executed by** Yunnan Hot Spring and Spa Tourism Association, collaborated with several other provincial-level hot spring tourism associations, began to drafted the first national industrial service standard, i.e. : ***”Classification and Accreditation for Service—rated Hot Spring Enterprises, serious No.: LB/T 016-2011”*** .
- In 2011, the industry standard was approved by the National Tourism Administration (now reorganized as the Ministry of Culture and Tourism) and approved by the National Standardization Technical Committee, and promulgated and implemented.

The standard was revised again in 2018-2019. This is the first and most important standard so far drafted by CHSTA since its establishment 10 years ago. Although it is a service standard, it covers main important aspects of hot spring management.

At the same time, it also defines hot spring and hot spring tourism.

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LB

中华人民共和国旅游行业标准

LB /T 016—2011

温泉企业服务质量等级划分与评定

Classification & accreditation for service-rated hot spring enterprise

2011 - 02 - 01 发布

2011 - 06 - 01 实施

中华人民共和国国家旅游局发布

2.2 The emerging of China's hot spring tourism era

2.2.1 the making of China's Hot Spring Industry Standards

- Thereafter, China Hot Spring Tourism Association (CHSTA) also led the organization and implementation of drafting four other standards and those standards have been passed the national review respectively , they are:
 - a. Classification of Hot Spring Resorts
 - b. Characteristics and classification for tourist hot spring water quality
 - c. Classification and grading of hot spring health and wellness tourism project
 - d. Hygienic standard for tourist hot spring water quality

These industry standards are not national standard, they are not mandatory , they are only recommended standard, but they have played a major role in leading, regulating and encouraging healthy development and competition of Chinese hot spring industry.

2.2 The emerging of China's hot spring tourism era

2.2.2 Drafting basis and process for industry standards

Drafting basis:

- The professional management and guidance organization of China 's industry standard is the **“National Standardization Technical Committee”**, under which **there are** many professional **sub-committees**, for example, **“National Service Standardization Technical Committee”** .
- At present, **“Directives for Standardization - part one: structure and drafting of standards, GB/T 1.1-2009 ”**, is the drafting standard for various industry organizations. It is also a standardized guidance document developed in accordance with ISO/IEO Directives—part 2: 2004, Rules for the structures and drafting of international standards.

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中华人民共和国国家标准

GB/T 1.1—2009
代替 GB/T 1.1—2000, GB/T 1.2—2002

标准化工作导则 第 1 部分：标准的结构和编写

Directives for standardization—
Part 1: Structure and drafting of standards

(ISO/IEC Directives—Part 2:2004,
Rules for the structure and drafting of International Standards, NEQ)

2009-06-17 发布

2010-01-01 实施



中华人民共和国国家质量监督检验检疫总局 发布
中国国家标准化管理委员会

2.2 The emerging of China's hot spring tourism era

2.2.2 Drafting basis and process for industry standards

Process:

Step 1. CHSTA provide project proposal to the national departments in charge of standard.

Step 3. CHSTA set up a drafting panel consist of different experts and mangers, organize representative enterprises to participate in drafting and raising needed funds also.

Step 5. to form the draft ducuments of the standard and to be reviewed and approved by the national expert committee organized by standard authority.

Step 7. publicity

Step 2. National Tourism Authority and National Standardization Administration approved the project proposal by CHSTA.

Step 4. To seek the opinions of all the members of CHSTA on the draft.

Step 6. being Approved.

Step 8.
formally promulgated and implemented





3. The Levels of China's hot spring tourism industry standards

3. The level of China's hot spring tourism industry standards

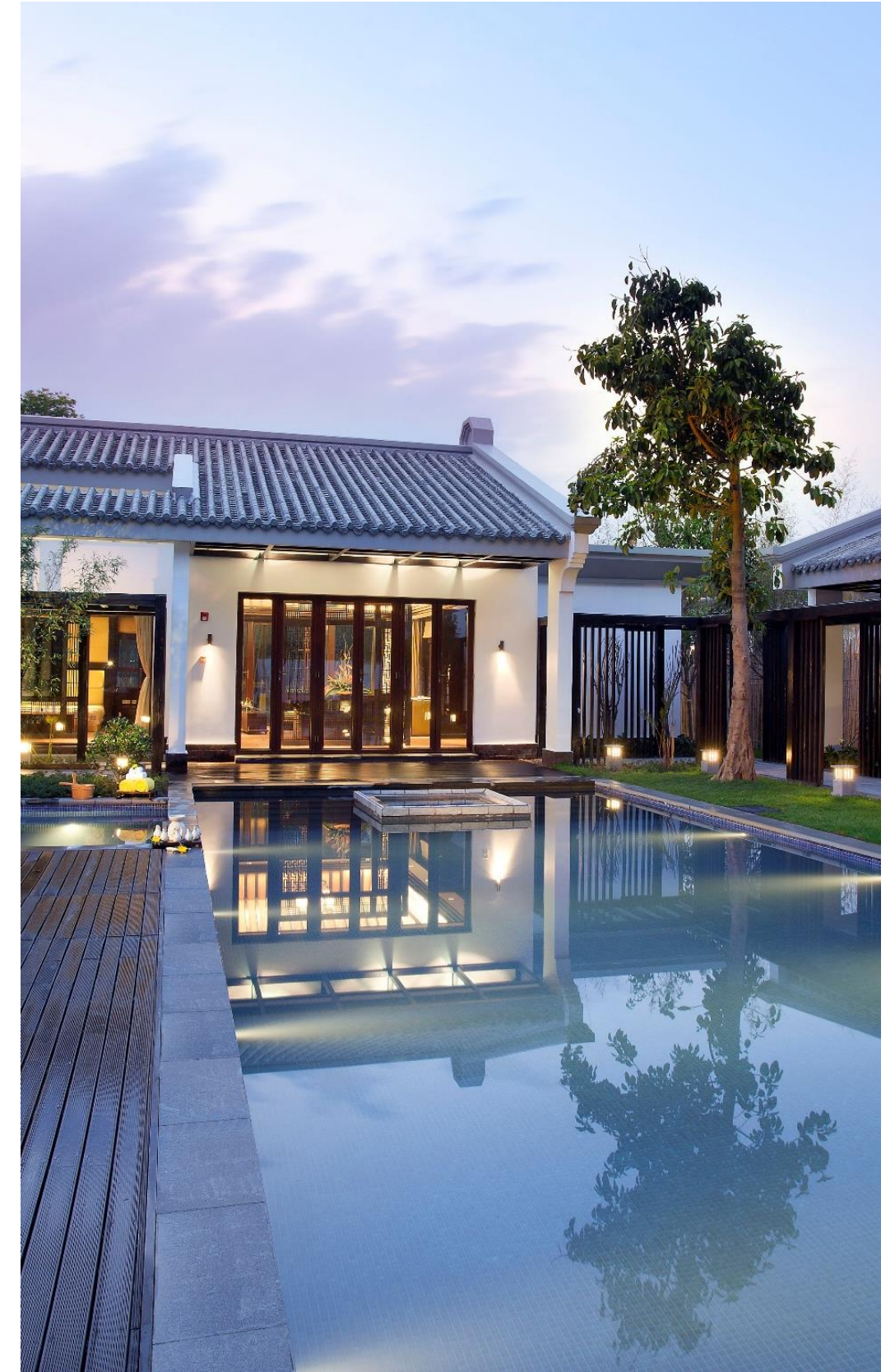


 **National standards (mandatory and recommended)**

 **National industry standards
(mandatory recommended)**

 **Local standards**

 **corporate standards**



3. The level of China's hot spring tourism industry standards

level	standard	Standard number
3.1 National standards	Hot spring service——Basic terminology	GB T 33533-2017
	Basic specification for hot spring service	GB T 35555-2017
3.2 National industry standards	Management and Technical Specifications of hot spring service industry	SB T 10470-2008
	Classification & accreditation for service-rated hot spring enterprise	LB T 016-2011
	The renowned national hot spring tourism town	LBT 042- 2015
	Specifications for hot spring tourism service quality	LB T 046-2015
	Classification and accreditation for star-rated hot spring tourism enterprise	LBT 016—2017
	Characteristics and classification for tourist hot spring quality	LB / T 070-2017
	Classification of hot spring resort	LB/T 042-2019
	Classification and grading of hot spring health and wellness tourism project	

3.3 Local industry standards

province	release time	standard
Guangdong	2006	Hot Spring Tourism Service Criteria
Yunnan	2008	Classification and Evaluation of Hot Spring Tourism Service Places
Yunnan	2008	Hot Spring Tourism Service Criteria
Yunnan	2008	Tourism Hot Spring Logo Use Specification
Chongqing	2012	Standard of Hot Spring Tourism Service Quality in Chongqing
Guangxi	2008	Hygienic and Safety Requirements of Geothermal Hot Springs in Guangxi
Guangxi	2008	Service Quality Specification of hot spring tourism holiday resort
Guizhou	2010	Hot Spring Tourism Facilities and Services in Guizhou Province
Hubei	2009	Water standards of hot spring for bathing in Xianning City
Shandong	2011	Hot Spring Tourism Service Criteria
Chongqing	2012	The Health Standard of Chongqing Hot Spring Operating Place
Shanxi	2015	Hot spring tourism service specification
Hainan	2015	Specification for Hot Spring Tourism
Hainan	2015	Tourism Hot Spring Logo Use Specification
Jiangxi	2015	Service quality specification of Xingzi Lushan Mountain hot spring tourism
Liaoning	2015	Evaluation Norms for Hot Spring Tourism Town
Beijing	2015	Lodging industry service specification——hot spring hotel
.....		



4. Other national and industrial standards related to hot springs

4. Other national and industrial standards related to hot springs

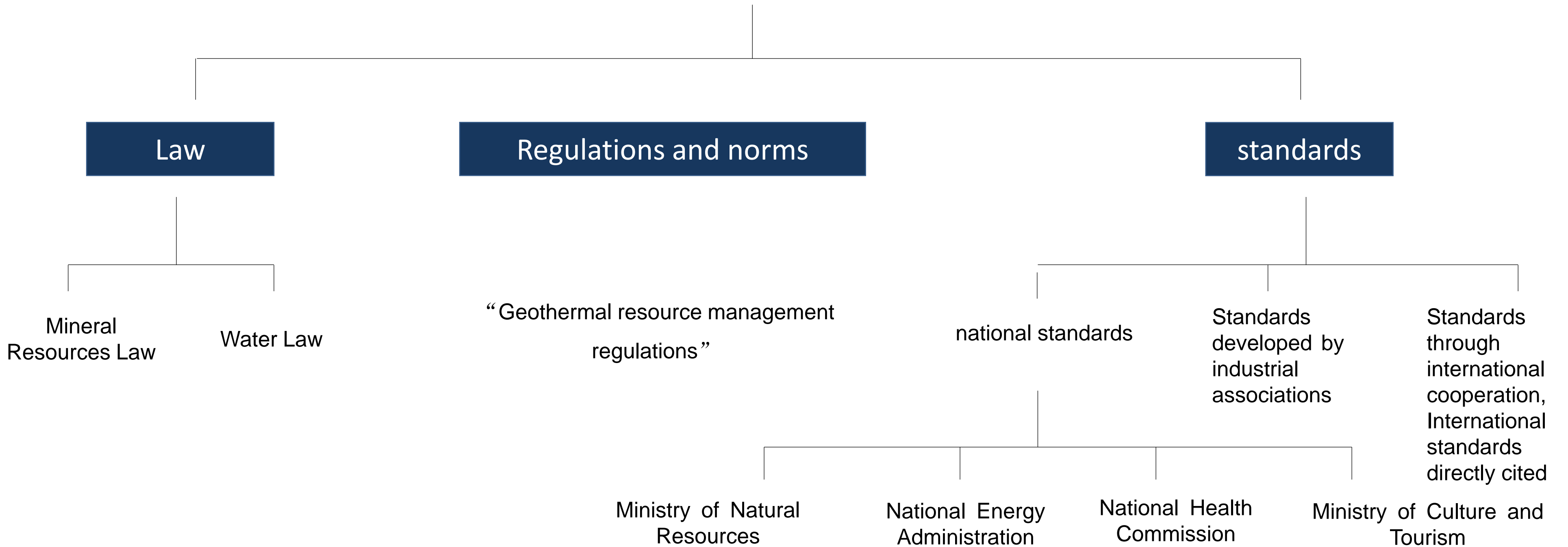
category	standard	Standard number
national standards	National Food Safety Standards — Drinking Natural Mineral Water	GB 8537 - 2018
	Geologic exploration standard of geothermal resources	GB/T 11615—2010
	Code of geologic exploration of natural mineral water resources	GB/T 13727—2016
	Standard for groundwater quality	GBT 14848-2017
	Terminology of geothermal energy	NB T 10097-2018
industrial standards	Expert consensus on the definition and classification of Chinese medical mineral springs (Chinese Rehabilitation Medicine Association)	



**5. China's hot springs laws, regulations, standards and norms :
a three dimensions analysis**

5. China's hot springs laws, regulations, management and standards

Three dimensions analysis



5. China's hot springs laws, regulations, standards and norms: a three dimensions analysis

5.1 Law : National level

Mineral Resources Law (Law Enforcement Department: Ministry of Natural Resources)

- It is stipulated that hot spring and mineral water are both a mineral resource and a water resource. As a kind of mineral resource, it is necessary to obtain exploration and mining rights in order to have the legality of use.

Water Law (Law Enforcement Department: Ministry of Water Resources)

- Focus on the management of surface freshwater resources and groundwater resources. The Water Law stipulates that a “water use permit” must be obtained and a “water resource tax” must be paid in order to legally exploit and utilize water resources.

5.2 Regulations: Ministrial & Local level

Municipalities and provinces such as Beijing, Tianjin, Chongqing, Yunnan, Inner Mongolia Autonomous Region have successively promulgated “**Regulations and Measurements on Geothermal Resources Management**” that are subject to local regulations and law.



6. Some standards introduction

6.1 national standards

6.1.1 Hot Spring Service-Basic Terminology :

- This is the first national standard for hot springs in the service category.
- The national standard for hot springs in the service category, “Water quality requirements for hot spring service” is being drafted.



6.1 national standards

6.1.2 Geologic Exploration Standard of Geothermal Resources:

Table : Physiotherapy hot mineral water quality standard

ingredient	Medical value concentration	Mineral water concentration	Named Mineral water concentration	Mineral water name
CO ₂	250	250	1 000	Carbonated water
H ₂ S	1	1	2	Hydrogen sulfide water
F	1	2	2	Fluorine water
Br	5	5	25	Bromine water
I	1	1	5	Iodine water
Sr	10	10	10	strontium water
Fe	10	10	10	Ferrum water
Li	1	1	5	Lithium water
Ba	5	5	5	barium water
metaborate	1.2	5	50	Boron water
HSIO	25	25	50	Silicon water
(Rn) Bq / L	37	47.14	129.5	radon water
temperature (°C)	· 34			warm water
Mineralization	< 1 000			freshwater

- This is the first industry standard for hot spring exploration and spring quality analysis.
- the most important part of which is “Appendix E: Physiotherapy hot mineral water quality standard”, which clearly defines the water chemical composition indicators and parameters of hot springs with therapeutic value.

6.1 national standards

6.1.3 National Food Safety Standards — Drinking Natural Mineral Water:

- This standard is jointly issued by the National Health Commission and the State Administration for Market Regulation , **It is a mandatory standard.**
- When it comes to the use of hot springs or cold springs for **drinking therapy**, the first thing to do is to comply with the regulations of the law.

6.1 national standards

6.1.4 Code of Geologic Exploration of Natural Mineral Water Resources :

- This standard is promulgated by the National Quality Supervision, Inspection and Quarantine Bureau and the National Standardization Administration Committee and is a recommended standard.

6.1.5 Terminology of Geothermal Energy :

- This standard is published by the National Energy Administration;
- In this paper, hot spring is classified as a "hydrothermal resources" ,from the perspective of energy use.

6.2 . Five industry standards developed by CHSTA

Since its establishment in 2019, China Hot Spring Tourism Association (CHSTA) has drafted and formulated the following five standards, and all them have been approved:

- a) "Classification and accreditation for star-rated hot spring tourism enterprise",
- b) "Classification of hot spring resort",
- c) "Characteristics and classification for tourist hot spring water quality",
- d) "Classification and grading of hot spring health and wellness tourism project",
- e) "Hygienic standard for tourist hot spring water quality",

The above five hot spring tourism industry standards have form a initial structure to effectively guide and standardize the development of the hot spring industry, and promote the transformation and upgrading of Chinese hot spring industry.



6.2.1 Classification and accreditation for star-rated hot spring tourism enterprise:

- **Definition of hot spring :**

Mineral water obtained from underground natural or artificial drilling and having a water temperature of $\geq 25^{\circ}\text{C}$ and containing trace elements that beneficial to human health.



6.2.1 Classification and accreditation for star-rated hot spring tourism enterprise:

- **Definition of hot spring tourism:**

Hot spring tourism is a tourism type which focuses on bathing, soaking and health-related activities based on hot spring resources (including geothermal steam, mineral mud and cold spring and etc.), and provide products and services with clients that can encourage guests to participate and experience hot spring wellness culture for relaxing, leisure and wellness vocational purposes.



Hot spring enterprise can be rated into five levels, The minimum is one-star and the highest is five-stars. The higher the star rating, the higher the grade of the hot spring enterprise.

6.2.2 Classification of hot spring resort :

- **Classification of hot spring resort :**

The hot spring resort is divided into 2 levels, from high to low, ***national hot spring resort*** and ***provincial hot spring resort***.



6.2.3 Characteristics and classification for tourist hot spring water quality :

This standard stipulates the technical conditions for the classification of hot spring water quality of hot spring tourism enterprises, and clarifies the use specifications of the spring quality mark.

Table : Characteristics and classification for tourist hot spring quality

ingredient	Medical value concentration/mg	Mineral water concentration/mg	Named Mineral water concentration/mg	Mineral water name
CO ₂	250	250	1000	Carbonated water
H ₂ S	1	1	2	Hydrogen sulfide water
F	1	2	2	Fluorine water
Br	5	5	25	Bromine water
I	1	1	5	Iodine water
Sr	10	10	10	strontium water
Fe	10	10	10	Ferrum water
Li	1	1	5	Lithium water
Ba	5	5	5	barium water
metaborate	1.2	5	50	Boron water
HSIO	25	25	50	Silicon water
(Rn) Bq/L	37	47.14	129.5	radon water

6.2.4 Classification and grading of hot spring health and wellness tourism project:

- **Definition of balneotherapy:**

A natural treatment for the purpose of preventive health care, rehabilitation, treatment of diseases, etc. by utilizing the physical and chemical interactions of hot springs (including geothermal steam, mineral mud or cold springs) and the climate around the hot spring.

- **Definition of hot spring health and wellness tourism:**

A kind of health and wellness tourism based on hot spring resources and hot spring facilities with functions of health care, rehabilitation and recuperation.



6.2.4 Classification and grading of hot spring health and wellness tourism project:

- **Classification:**

Hot spring health and wellness tourism project is divided into the following two types in this standard :

- a. Hot spring health and wellness tourism **type A project**: refers to hot spring tourism project with hot spring health and wellness tourism function and hot spring sightseeing and leisure function.
- b. Hot spring health and wellness tourism **type B project** : refers to the project that uses hot springs as a main function or uses hot spring resources to develop health medical tourism.



6.2.5 Hygienic standard for tourist hot spring water quality:

The standard stipulates the water quality sanitation requirements, testing requirements and methods of hot spring tourism enterprises, and clarifies the water quality sanitation management regulations.

Table 1 : routine inspection items, limits and frequency of hot spring water quality

items	Indicator limit	Frequency of inspection
°C (Temperature)	≤48	at least once a day
pH value	6.8~8.5	at least once a day
Urea	≤3.5	at least once a day
Total number of colonies (36°C±1°C, 48h) (CFU/mL)	≤100	at least once a day
Total coli (36°C±1°C, 24h) (MPN/100mL or CFU/100mL)	Not checked out	at least once a day
Free residual chlorine a /(mg/L)	0.3~1.0	at least once a day
Compound residual chlorine b /(mg/L)	< 0.1	at least once a day
Turbidity NTU	≤1 the raw water and processing conditions are limited ≤5	at least once a day
Note 1 : a and b are the test items and limits determined by the disinfectant used.		
Note 2 : The frequency of inspection is routine inspection. In case of peak passenger flow, the frequency of inspection should be increased.		

6.2.5 Hygienic standard for tourist hot spring water quality:

Table 2 : Unconventional inspection items and limits of hot spring water quality

Indicators	limits
Pseudomonas aeruginosa (MPN/100mL or CFU/100) /mL)	Not checked out
Legionella pneumophila /(CFU/200mL)	Not checked out
Giardia / (/10L)	Not checked out
Cryptosporidium /(10L)	Not checked out
Heterotrophic bacteria /(CFU/mL)	≤200
C 3 H 3 N 3 O 3 (Determination when disinfecting with chlorine compounds containing cyanuric acid) (mg/L)	< 30 (indoor) < 100 (Outdoor pools and UV disinfection)
O ₃ a (Determined when disinfecting with ozone) (mg/m ³)	< 0.2 (20cm above the water) < 0.05mg/L (in the water)
ROHS b (Determined when using bromine disinfection) (mg/L)	1.0~3.0
Oxidation reduction potential c /mV	≥700 (When disinfecting with chlorine and ozone) 200~300 (When using hydrogen peroxide for disinfection)
Note : a, b, and c are the test items and limits determined by the disinfectant used.	



7. Standards developed by international cooperation

7. Standards developed by international cooperation

- In 2018, China Hot Spring Tourism Association (CHSTA) cooperated with the FEMTEC to compile the "Guidelines for the World Thermalism Town". The secretariat is located in China and aims to spread environmentally friendly, sustainable development , lifting up happiness and health index of local community and tourists through pomoting the World Thermaism Town.





8. International standards cited

8. International standards cited

- In view of the fact that there is no experience and standard for thalassotherapy in China, the design and construction of the first thalassotherapy in Dalian, located in the northeastern part of China, directly introduces and references the standards of thalassotherapy developed by ISO, namely: Tourism and Related Services—Thalassotherapy—Service Requirements, BS ISO 17680:2015



9. Conclusion:

In summary, the standardization work of China's hot spring industry is gradually formulated along with the country's social and economic development and the rapid development of the industry. It is still in its infancy, and the existing standards are still far from enough. Further revision and improvement on existing standards is a must and continuous drafting of new standards is to be made. Compared with countries such as Japan and South Korea that have introduced and implemented the Hot Spring Law, we still have a long way to go. In the national health care system, hot spring therapy has not yet achieved its due status, and spa medical care has not been fully integrated into basic medical insurance. In the coming period, the dominant direction of China's hot spring tourism development is not medical care, but Kangyang, a Chinese concept of wellness and elderly care service. I hope to learn from GWI and its Hot Spring Initiative peers in this field and establish a regular communication mechanism.

THANK YOU

for your attention

