+

58

6100 18279.67 27.42 11126.11

1300

3000

2021 5 28

2105-450109-04-01-581249 2

682

2018 12 29

2021

13 18 135

10 1 15 1000

2021 6 21

1

108 49 42.87 22 37 33.01 108.82858,22.62584

+ +A/O

8 0.3

15

2

0.035%

2017

2017 10 1 HJ 2.1-2016

HJ 2.1-2016

2021 6 21

2021 7 1 7 7

1

2019

26

2

1

2020 42

3

7

3.8

2010 12 22

4

2019

< 16

>

5

1

2

3

4

5

I

1 1
1.1 1
1.2 5
1.3 7
1.4 13
1.5 21
2 23
2.1 23
2.2 31
3 59
3.1 59
3.2 64
3.3 83
4 84
4.1 84
4.2 90
5 113
5.1 113
5.2 117
5.3 130
6 132
6.1 132
6.2 132
6.3 133

6.4 133

6.5 134

7 135

7.1 135

7.2 139

7.3 141

7.4 146

7.5 148

8 149

8.1 149

8.2 149

8.3 150

8.4 152

8.5 155

8.6 155

8.7 ....

8.8 156

8.9 156

8.10 156

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· ·

1 2014 2015 1 1

2 2018 12 29 2018 12 29

3 2017 6 27 2018 1 1

4 2018 10 26 2018 10 26

5 2020 4 29 2020 9 1

6 2018 12 29 2018 12 29

7 2010 12 25 2011 3 1

8 2016 7

9

14 2021 5 1

15 2015 4 24

16 2012 12 28

17 2013 6 29

. . [redacted]

1 2017 2017 10 1

2 2021

16 2021 1 1

3 2019 1 1

4 2015 6 5

5 2012 98

6 2014 56

7 2011 35

8 2012

77

9 2021

15 2021 1 1

10

2016 150

11 2019.3.28

12

2017 84

13 2012

77

14 < > 2013 37

15 < > 2015 17

16 < > 2016 31

17 2005 39

18 2000 38 2000 11

26

19 2014 56

20

2016 150

21 < >

2016 81

22

9 2019 11 1

23

2005 139

24 2010 7

25

2019 42

26 2014 789

27 2017 25

28 2019 2020 1 1

. . [redacted]

1 2019 7 25

2 2020 5 1

3 2019 1 1

4 2008 8

5 2018 1

6 2011

52

7

2012 103

8 < >

2016 19

9 <

2019 > 2019 8

10 < 16

> 2016 944

11 <

> 2017 1652

12 <

> 2016 152

13

2017 5

14 2020

2020 20

15

2011 143

· · [redacted]

1 HJ2.1-2016

2 HJ2.2-2018

3 HJ 2.3-2018

4 HJ 610-2016

5 HJ2.4-2009

6 HJ964-2018

7 HJ19-2011

8 HJ169-2018

1.2 -1

. . [redacted]

1.2-2

	H 13	
	K $^{+}$ N $^{+}$ C $^{2+}$ M $^{2+}$ CO $_3{}^{2-}$ HCO$_3{}^{-}$ C $^{-}$ H 20	COD NH$_3$-N
	O$_3$ O$_2$ NO$_2$ PM$_{10}$ PM$_{2.5}$ CO P	NH$_3$ H$_2$ PM$_{10}$
	L$_A$	L$_A$

.

. .

. . .

2008 2-1

2-1-18

2010 2-1 2-1-11

. . .

GB3095-2012

GB3095-2012 2018 9 1

. . .

300

GB3838-2002

. . .

GB/ 14848-2017

. . .

GB3096-2008

2 3 4

GB3096-2008 3

4

2

1.3-1

1.3-1

1		2-1
2		GB3095-2012 2018 9 1
3		GB3838-2002
4		GB/ 14848-2017
5		GB3096-2008 3 4
6		
7		
8		
9		

. . [redacted]

1

GB 3095-2012 2018

NH_3 H_2 - HJ 2.2-2018

1.3-2

1	O_2		60 / ^{3}	GB 3095-2012 2018
		24	150 / ^{3}	
		1	500 / ^{3}	
2	NO_2		40 / ^{3}	
		24	80 / ^{3}	
		1	200 / ^{3}	
3	P		200 / ^{3}	
		24	300 / ^{3}	
4	PM_{10}		70 / ^{3}	
		24	150 / ^{3}	
5	$PM_{2.5}$		35 / ^{3}	
		24	75 / ^{3}	
6	O_3	8	160 / ^{3}	
		24	200 / ^{3}	
7	CO	24	4 / ^{3}	
		1	10 / ^{3}	
8	NH_3		0.2 / ^{3}	- HJ 2.2-2018 D
9	H_2		0.01 / ^{3}	

2

GB 3838-2002

1.3-3

1.3-3 /L

1		1 2
2	H	6 9
3		2
4		15
5	COD	40
6	BOD_5	10
7		2.0
8		0.4
9		0.1
10		1.0

11		1.0
12	/L	40000

3

GB/ 14848-2017

1.3-4

1.3-4 /L H

		/ - 0 [redacted]			/ - 0 [redacted]
1	H	6.5 H 8.5	11	HCO_3^-	/
2		450	12		0.005
3		3	13		1.0
4		0.50	14		/
5		250	15		200
6		20.0	16		/
7		1.00	17		/
8	C	0.05	18	F	0.3
9	C$^-$	250	19	M	1.0
10	CO_3^{2-}	/	20		3 MPN/100

4

GB 3096-2008 2 3 4

GB3096-2008 3

4

GB3096-2008 2 1.3-5

1.3-5 (GB 3096-2008) B A

2	60	50
3	65	55
4	70	60

. . [redacted]

1

GB16297-1996 2

1.3-6

1.3-6 2 / ^{3}

1			0.40
2			0.12
3			1.0

GB13271-2014 2 8

GB14554-93 1

2

GB18483-2001 2

1.3-7 2 / ^{3}

1		50	
2		200	
3		20	

1.3-8

1		15	4.9 /	1.5 / ^{3}
2			0.33 /	0.06 / ^{3}
3	( )		/	20

1.3-9 ( )

/ ^{3}	2.0		
%	60	75	85

2

GB13457-92 3

1.3-10

1.3-10

		-			
		/	/		
1		300	5.4	150	150
2	BOD$_5$	250	4.5	110	110
3	COD$_C$	500	9.0	250	250
4		50	0.9		50
5				30	30
6				35	35
7				3	3
8	H	6.0 8.8		/	
9	^{3}/	18.0			

3

GB 12523-2011

1.3-11

1.3-11 L B(A)

	70	55

GB 12348-2008 3

GB 12348-2008 4 13-12

1.3-12 B A

	65	55	3
	70	55	4

4

GB 18599-2020

GB 18597-2001

2013 36

• [redacted]

• • [redacted]

(HJ2.2-2018) 5.3

A

A [redacted]

1 P $D_{10\%}$

(HJ2.2-2018) P

$$P_i = \frac{C_i}{C_{0i}} \times 100\%$$

P_i %

C_i 1 /^{3}

C_{0i} /^{3} C_0

GB3095-2012 1

O_2 NO_2 GB3095-2012 1

PM_{10} GB3095-2012

NH_3 H_2 HJ2.2-2018 D

2

1.4-1

	P 10%
	1% P <10%

	P <1%

2

1.4-2

			(/)	
			500	GB 3095-2012
			200	GB 3095-2012
			150	GB 3095-2012
NH_3			200	GB 3095-2012
H_2			10	GB 3095-2012

3

1.4-3 1.4-4

1.4-3 ( )

	( )									
			( )	( )	( )	( )	/			
1#	108.49553470	22.62580644	96	8.0	0.3	76	3400	O_2	3.5 10^{-6}	/
								NO_2	0.078	/
									0.012	/
2#	108.49544914	22.62582651	96	15.0	0.8	25	6500	NH_3	0.00267	/
								H_2	0.00002	/
3#	108.49565236	22.62596704	96	15.0	0.4	25	1500	NH_3	0.0079	/
								H_2	0.0003	/

1.4-4 ( )

			/	/	/	/		
	108.49524590	22.62527989	96	56	12	7.8	NH_3	0.00198	/
							H_2	0.00002	/
	108.49556944	22.62542996	96	15	85	6.45	NH_3	0.0058	/
							H_2	0.0002	/

4

1.4-5

1.4-5

/	/	
	( )	/
		40.4 C
		-2.1 C
	( )	90
	/	/
	/	/

6

P D10%

1.4-6 P D10%

		(/)		(/)	(%)	0%( )
1#	O_2	500		0.0003	0.0001	/
	NO_2	200		6.6810	3.34	/
		450		1.0279	0.23	/
2#	NH_3	200		0.4471	0.22	/
	H_2	10		0.0033	0.03	/
3#	NH_3	200		1.4028	0.70	/
	H_2	10		0.0533	0.53	/
	NH_3	200		2.0664	1.03	/
	H_2	10		0.0209	0.21	/
	NH_3	200		.	.	/
	H_2	10		0.2953	2.95	/

P NH_3 P

4.28% C 8.5637 / ^{3} (HJ2.2-2018)

5

. .

HJ 2.3-2018

HJ 2.3-2018

B

1.4-7

	/(/) /( )		
	Q 20000 600000		
	Q 200 6000		A
			B

. .

HJ 610-2016

1.4-8

1.4-8

1.7-9

HJ 610-2016 A N 98 10

100

1.5-9

2

HJ 610-2016

1.5-10

1.5-10

	20	
	6-20	
	6	

6 ^{2}

4.5 ^{2}

7

. .

2

5 B

200

. .

HJ 964

2018 A

. .

18279.67 ^{2} 2 ^{2}

HJ19-2011

1.5-10

	2 ^{2} 50		
	18279.67 ^{2} 2 ^{2}		

200

. .

HJ169-2018

1

HJ169-2018

B Q

Q

Q

Q= /Q

Q

Q 1

Q 1 Q 1 Q 10 10 Q 100 Q 100

(HJ 169 2018) B

1.125 0.4

5 2500

Q=1.125/5+0.4/2500=0.225 Q<1 I

2

HJ169-2018

1.5-11

1.5-11

	+			

. . [redacted]

1.5-12

1.5-12

	HJ2.2-2018 1% P 10%	NH_3 P 4.28% 1% 10%	
	HJ 2.3-2018 B		B
	HJ 610-2016 A	N 98 10 100	
	HJ2.4-2009 GB 3096 2 3 4	2 5 B	
	HJ 964-2018 A	HJ 964-2018 A	
	HJ19-2011 2 ^{2} 50	18279.67 ^{2} <2 ^{2}	
	HJ 169-2018	Q 1	

• [redacted]

1.5-1

1.5-1

		22.625107	108.494278			84				29
		22.624897	108.494845			29900				35
		22.625045	108.491647			410				200
		22.637177	108.492182			410				1.1
		22.635599	108.496396			128				1.0
		22.635140	108.504268			228				1.2
		22.632050	108.510503			47				1.9
		22.626299	108.508261			43				1.7
		22.612481	108.504667			20				2.1
		22.611279	108.494474			422				1.8
		22.608919	108.489561			52				2.2
		22.624883	108.479475			400				1.2
		22.622244	108.471322			280				2.0
		22.625107	108.494278			84				29

22.624897 108.494845 29900 35

/ / / /

• [redacted]

• • [redacted]

1

2

3

4

108 49 42.87 22 37 33.01 0.5

1

5 1300

3000

6 18279.67 27.42

11126.11

2020 42

7

10 7 85 513 300

3

8 6100

9 2021 10 2022 10

12

10 175 360

8 30

. . [redacted]

2.1-1

2.1-1

		/	
1		3000	
2		16000	
3		220	
4		330	
5		110	
6		42	
7		130	
8		260	
9		40	
10		65	
11		65	
12		1300	

. . [redacted]

18279.67 27.42 11126.11

2.1-2

. -

			1573.20 ^{2} 7	1 /2
			2055.37 ^{2} 8	2
			1	
			1325.31 ^{2}	2
			420.00 ^{2}	1
			1274.75 ^{2} 6.45	
			40.00 ^{2}	
			140.00	/
			15.17 2	/
			7.8	
			H=8 DN=300	/
			1 H=15 DN=800 1 H=15 DN=400	/
				/
			900 ^{3}/ + +A/O	
				/
			700 /	/
				/
				/
				/

			/
			/
		900 ^{3}/	/
			/
			/

. . [redacted]

2.1-3

. -

/			00		
	A01		120		
			2		
			2		
			1		
			12		
			2		30
			100		
			1		
		B	2		
	A02		1		
	A03		1		L=9 /18
	A04		1		

	A05		1		
	A06		1		,38 4
	A07		2		
	A08		1		
	A09		1		
	A10		1		
	A11		2		
	A12		1		
	A13		1		
+	B01		115		
			2		2.2K
			2		
			2		3.7K
			12		
			2		30
		B	2		
	B02		1		
	B03		2		
	B04		1		
	B10		1		
	B11		1		80
	B12		3		L=6.5
	C01		0		10
	C02		1		

· · [redacted]

2.1-4

. - [redacted]

	/	/	[redacted]	
	20000	/	1300	
	1.125	N C O		
	120	C O		
PAC	72			
PAM	12			
	0.5	[redacted]		
	50			
	28 ^{3}/	/		/
	1000 /	/		/
	10.08 ^{3}/	CH4		
	200 ^{3}/	/		0.4
	40.8			
	0.17			3 4 250

. - [redacted]

	/		[redacted]	
	N C O	CA 7681-5		
PAC	A 2(OH) C 6-	CA 1327-41-9		/
PAM	(C_3H_5NO)	CA 9003-05-8		/

		H 3 9	
	CHC F_2	CA 75-45-6 200	5000 /
	CH_4	CA 74-82-8 25 30%	/
	/	70 70 100 8% 10%	/
	/	10 22	/

. .

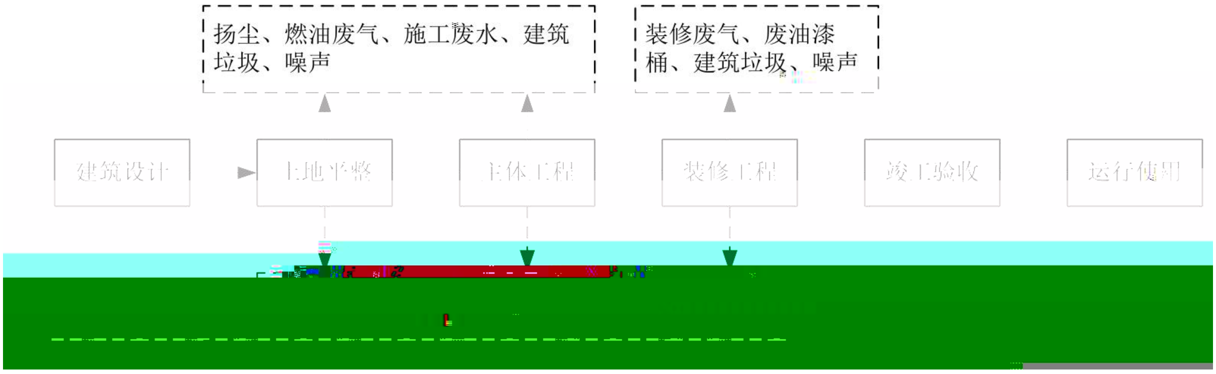
2

.

. .

. . .

2.2-1


扬尘、燃油废气、施工废水、建筑垃圾、噪声
装修废气、废油漆桶、建筑垃圾、噪声
建筑设计
土地平整
主体工程
装修工程
竣工验收
运行使用

2.2-1

2.2-2

1

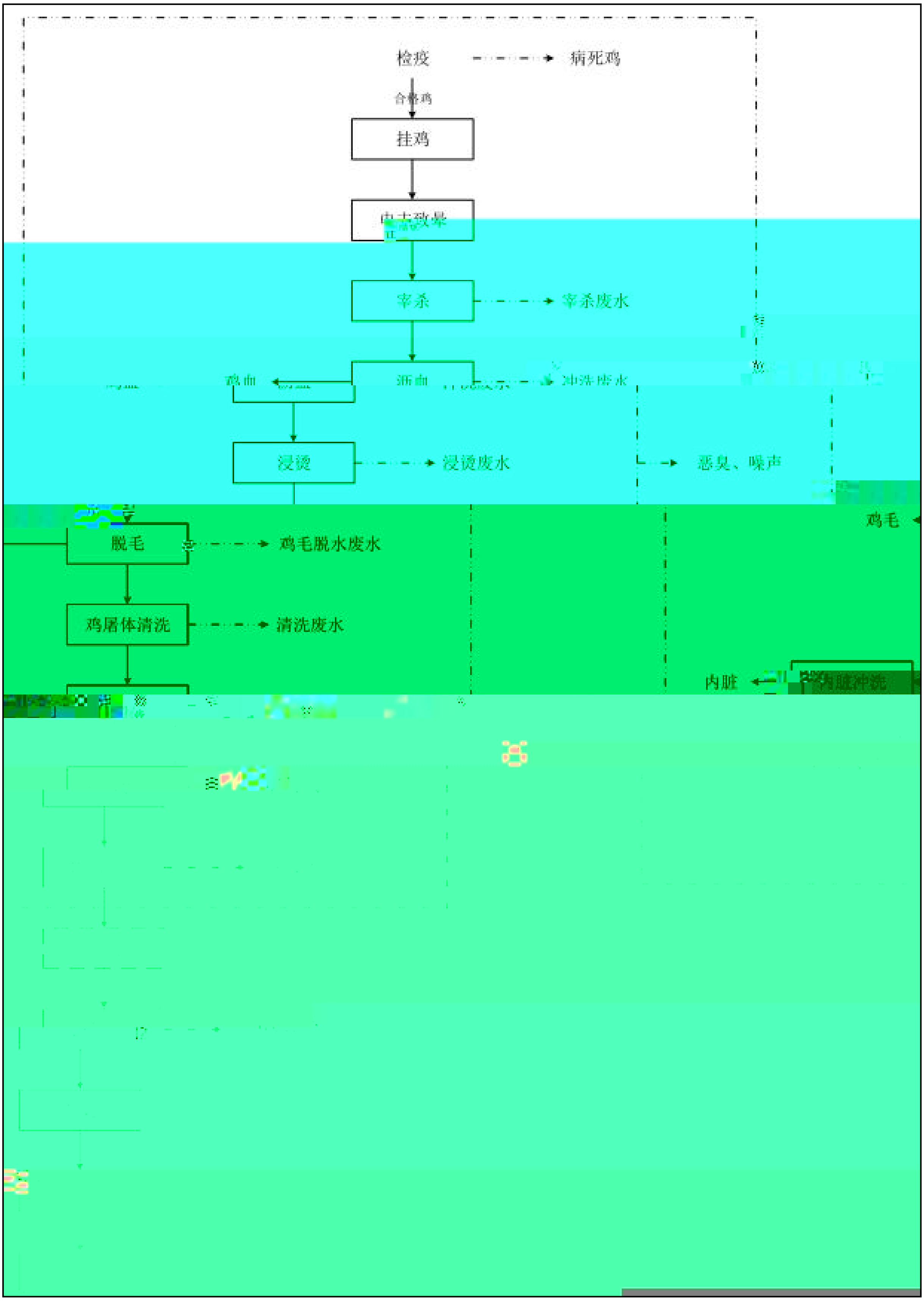
1

2 3

36 70

2.5 3

59-61 40-90


检疫
病死鸡
合格鸡
挂鸡
电击致晕
宰杀
宰杀废水
鸡血
沥血
冲洗废水
恶臭、噪声
浸烫
浸烫废水
鸡毛
脱毛
鸡毛脱水废水
鸡屠体清洗
清洗废水
内脏
内脏冲洗

2.2-2

2

3

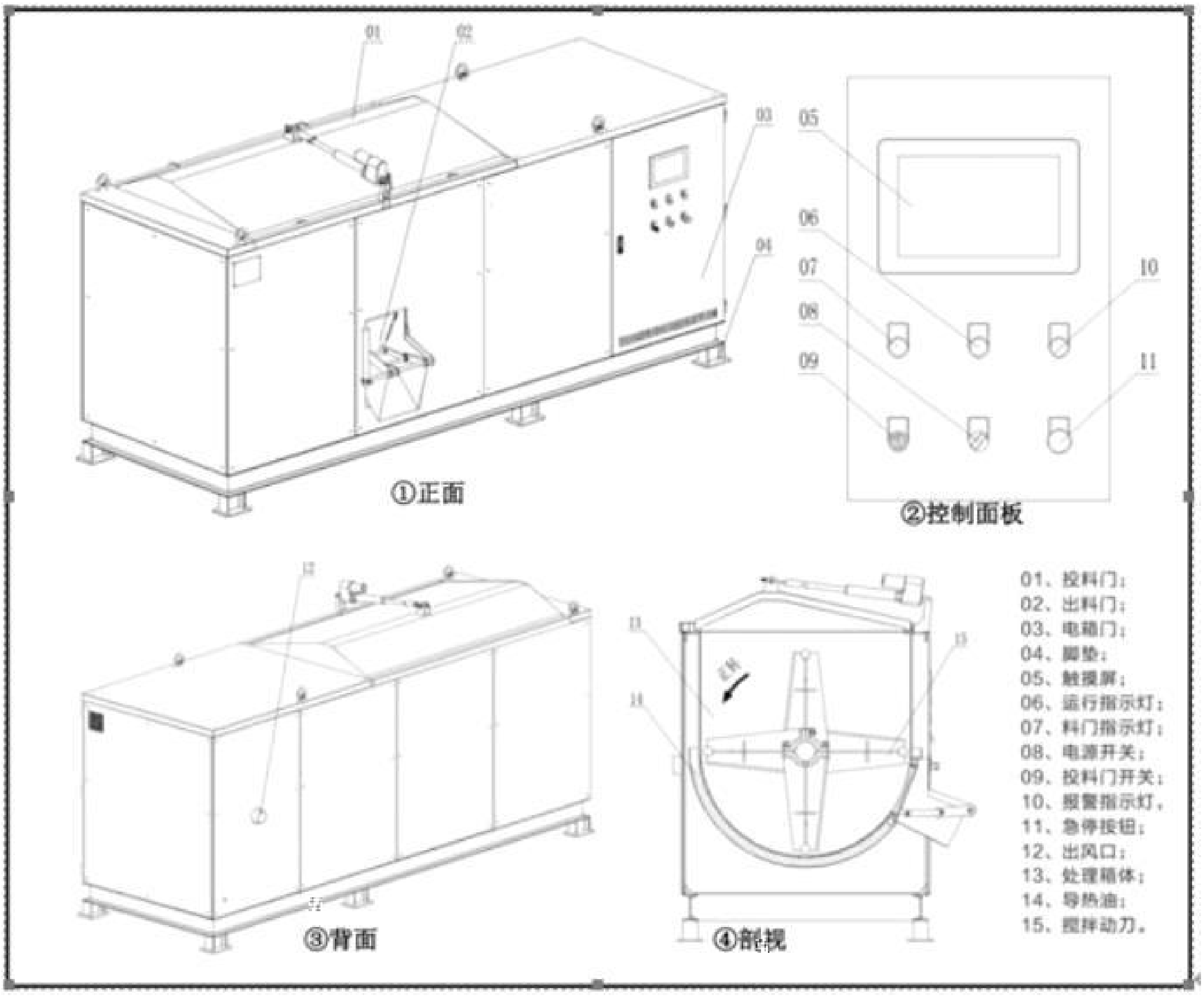
40 60

6

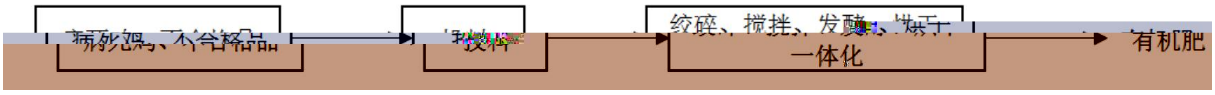
10 2 3

4

2.2-3 2.2-4


01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
①正面
②控制面板
③背面
④剖视
01、投料门；
02、出料门；
03、电箱门；
04、脚垫；
05、触摸屏；
06、运行指示灯；
07、料门指示灯；
08、电源开关；
09、投料门开关；
10、报警指示灯；
11、急停按钮；
12、出风口；
13、处理箱体；
14、导热油；
15、搅拌动力。

2.2-3


病死鸡、不合格品
投料
绞碎、搅拌、发酵、烘干一体化
有机肥

2.2-4

1

2 150 10 20

3

75 95

40% 50%

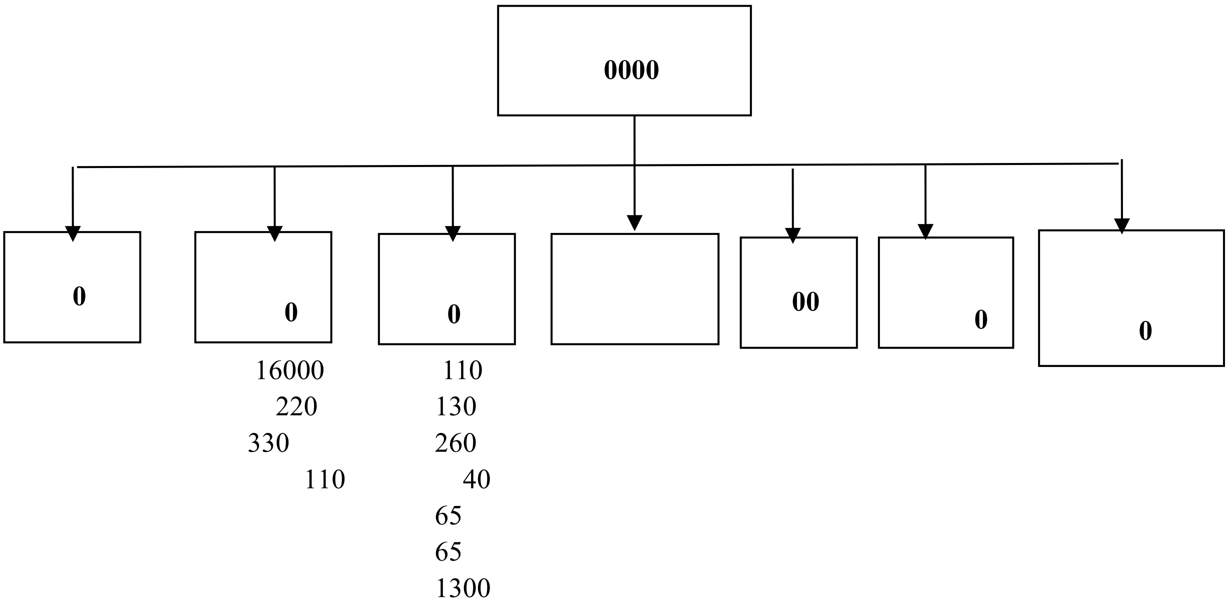
4

. . .

2.2-1 2.2-5

2.2-1

		/			/
1		20000			20
2					16000
3					220
4					330
5					110
6					42
7					130
8					260
9					40
10					65
11					65
12					1300
13					18
14					700
15					20
16					680
	/	20000 /	/		20000 /


0000
0
0
0
00
0
0
16000
220
330
110
110
130
260
40
65
65
1300

. - /

15.5 ^{3}/ 5580 ^{3}/

4 ^{3}/ 1440 ^{3}/

2 ^{3}/ 720 ^{3} /

175 30 145

360 8 GB50015-2010

50L/ 200L/

13.25 ^{3}/ 4770 ^{3}/

2.2-2 2.2-6

. -

			/	/		/	/
			35	12600		6.494	2337.84
						0.006	2.16
						2.5	900
						/	/
			547.77	197197.2	26	57.38	20656.8
						516.39	185900.4
			183	65880		146.40	52704
						36.60	13176
			2	720		2	720
			15.5	5580		13.5	4860
						2	720
			4	1440		3.6	1296
						0.4	144
			133.33	47998.8		133.33	47998.8
			2	720		2	720
			13.25	4770		10.6	3816
						2.65	954
			.	**0**		**.**	**0**

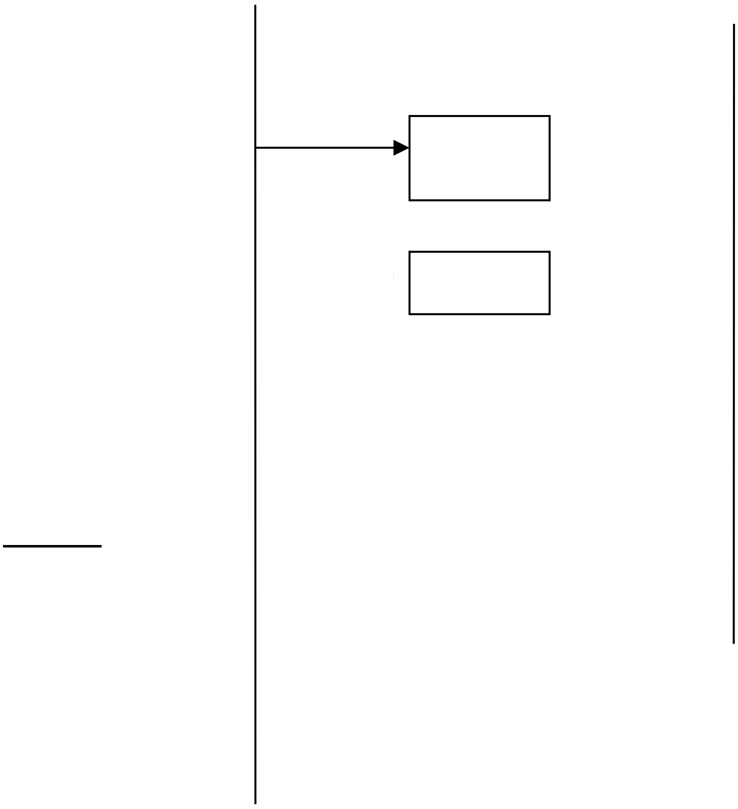
935.85 ^{3}/ 336906 ^{3}/

922.60 ^{3}/ 787.27 ^{3}/ 135.33 ^{3}/ 0 ^{3}/

13.25 ^{3}/ 4770 ^{3}/ 690.496 ^{3}/ 248578.56 ^{3}/

+A/O

GB18918-2002 A



. - /

. .

18279.67 11126.11

1

1

0.05 0.1 ^{3}

0.07 ^{3}/ ^{2} 11126.11 ^{2}

778.83 ^{3}

2

12 20

50L/

1 ^{3}/ 80% 0.8 ^{3}/

2.2-3

2.2-3

									-
	/	/	/	/	/	/	/	/	/
	0.8	350	0.280	200	0.160	250	0.200	30	0.024
	0.8	220	0.176	110	0.088	120	0.096	27	0.022

2

1

. - ( )

		103 B A	
		105 B A	
		107 B A	
		95 B A	
		105 B A	
		105 B A	
		105 B A	
		80 B A	
		80 B A	
		100 B A	

2

85 B(A) 95 B(A)

4

1

2

100 2

0.15 100 2 0.1

11126.11 2 27.82

3

12 20

0.5 / 10 /

5

1

2

. .

. . .

2.2.1.4

690.496 ^{3}/ 248578.56 ^{3}/

1

400 /L 100 /L COD$_C$ 300 /L BOD$_5$250 /L

NH$_3$-N30 /L

5

2.2.1.4

10.6 ^{3}/ 3816 / COD$_C$ BOD$_5$

NH$_3$-N

2007

2.2-6

. -

	^{3}/	COD$_C$		BOD$_5$				NH$_3$-N	
	3816	/L	/	/L	/	/L	/	/L	/
		350	1.336	250	0.954	250	0.954	35	0.134
	3816	220	0.840	190	0.725	120	0.458	30	0.114

6

+A/O+

HJ 2007-2010 HJ

2047-2015 - - HJ 576-2010

2.2-7

. -

^{3}/		COD$_C$	BOD$_5$		NH$_3$-N		
248578.56	/L	1569.814	809.967	844.414	119.742	173.249	260000 /100 L
	/	390.222	201.340	209.903	29.765	43.066	/
	/L	250	110	150	30	20	2559 /100 L
	/	62.145	27.344	37.287	7.457	4.972	/
		250	110	150	30	50	/

GB18918-2002 A

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1

0.5 /

8 / 360 / 2880 12 ^{3}

HJ991-2018

HJ953-2018

$$V_{gy}=0.285Qnet+0.343$$

N ^{3}/ ^{3} N ^{3}/

Q MJ/ ^{3}

35.5MJ/N ^{3}

10.461N ^{3}/ ^{3} 125.526

N ^{3}/

HJ991-2018

$$E_{SO_2} = 2R \times S_t \times (1 - \frac{\eta_s}{100}) \times K \times 10^{-5}$$

E $_{O2}$

[redacted] ^{3}

/ ^{3}

0.042 / ^{3}

% 0%

K K=1

$$E_{NO_x} = \rho_{NOx} \times Q \times \left(1 - \frac{\eta_{NO_x}}{100}\right) \times 10^{-9}$$

E_{NO}

$_{NO}$ / ^{3} HJ 991

180 / ^{3}

Q ^{3}

$_{NO}$ % 0%

$$E_j = R \times \beta_j \times (1 - \frac{\eta}{100}) \times 10^{-3}$$

E

[redacted] ^{3}

/ / ^{3} HJ 953 2.86 / ^{3}

% 0%

125.526 N ^{3}/ O_2

0.0000101 / 0.0000035 / NO 0.226 / 0.078 /

0.0343 / 0.012 / 3400 ^{3}/ O_2 NO

0.00103 / ^{3} 23.075 / ^{3} 3.505 / ^{3} 8

0.3 O_2 NO

GB13271-2014 2

2

NH_3 H_2 NH_3 H_2

500

2020 7

2.2-8 2.2-9

2.2-8

500	500 / 1.38 /	
	1300 / 3.6 /	

2.2-9

			/	/
500	1.3 /	NH_3	4.73 10^{-3} 8.02 10^{-3}	6.05 10^{-3}
		H_2	4.47 10^{-5} 1.08 10^{-4}	5.63 10^{-5}

90% 1

85% 1 15 0.8

6500 ^{3}/

10%

2.2-10 NH_3 H_2

GB14554-93 2 15

. - 0

			(^{3}/)	(/ ^{3})	/		%	(/)	(/ ^{3})	/
	NH_3		6500	2.7376	0.15374		85	0.00267	0.41063	0.02306
	H_2			0.0255	0.00143			0.00002	0.00382	0.00021
	NH_3		/	/	0.01708		0	0.00198	/	0.01708
	H_2			/	0.00016			0.00002	/	0.00016

3

NH_3 H_2 NH_3 H_2

15000

10

95

1 15 0.4

15 ^{3}/

-12 NH_3 H

GB14554-93 2 15

. -

			(^{3}/)	(/ ^{3})	/		%	(/)	(/ ^{3})	/
	NH_3		1500	35.043	0.4542		85	0.0079	5.257	0.0681
	H_2			1.357	0.0176			0.0003	0.203	0.0026
	NH_3		/	/	0.0505		0	0.0058	/	0.0505
	H_2			/	0.0020			0.0002	/	0.0020

4

5

2 500 +300

0.035% 0# 0.84 10^3 / ^{3}

O_2 NO CO HC

96

. - [redacted]

		[redacted]	NO		CO	HC
/L	12 ^{3}/	[redacted]	2.56	0.714	1.52	1.49
/	489600 ^{3}/	[redacted]	0.124	0.035	0.074	0.072
/	5100 ^{3}/	[redacted]	1.295	0.361	0.769	0.754
/ ^{3}	/	[redacted]	169.312	47.222	100.529	98.545
/ ^{3}	/	[redacted]	240	120		

6

3 4 /

175 360 2.0 /100

3.50 / 1.26 / 3%

0.105 / 0.0378 /

2000 ^{3}/

75% 4.375 / ^{3}

1.094 / ^{3}

GB18483-2001 2 2.0 / ^{3}

0.026 / 0.009 /

7

4

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60 95 B A

2.2-14

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		/ ( )		/ ( )	/ ( )
		60 75		10 15	50 65
		70 80		10 20	60 70
		60 70		10 15	50 60
		70 80		10 15	60 70
		60 70		10 15	50 60
		70 80		10 15	60 70
		60 70		10 15	50 60
		60 70		10 15	50 60
		70 80		10 15	60 70
		80 90		10 20	65 75
		85 95		10 15	65 75
		65 75		10 20	55 65
		70 80		10 20	60 70
		65 75		10 20	55 65
		80 90		10 20	65 75
		60 75		10 20	55 65

2

60 75 B A 60 70 B A 75 80 B A

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8

BOD$_5$162.8 /

98% 226 / 81.4 /

80% 22.6 / 8.14 /

7

3 4

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					/
					700
					680
					20
					18
					28.14
					0.17
					1
					31.5

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1

50% 2.2-16

. -

$^3/$		COD_C	BOD_5		NH_3-N	/100 L
	I/L	390.222	201.340	209.903	2- 90	

248578.56

2

50% 2.2-17

. -

			($^3/$)	(/ ^{3})	/		%	(/)	(/ ^{3})	/
	NH_3		6500	2.7376	0.15374		50	0.0089	1.369	0.0769
	H_2			0.0255	0.00143			0.0001	0.013	0.0007
	NH_3		1500	35.043	0.4542		50	0.0263	17.523	0.2271
	H_2			1.357	0.0176			0.0003	0.204	0.0026

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			/		
			0.8 ^{3}/		0.8 ^{3}/
		COD_C	0.280 /		0.176 /
		BOD_5	0.160 /		0.088 /
			0.200 /		0.096 /
		NH_3-N	0.024 /		0.022 /
					0
			27.82		0
			10 /		0

2.2-19

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		/					
	O_2	0.0000101					0.0000101
	NO	0.226		+8			0.226
		0.0343					0.0343
	NH_3	0.15374	0.8		1	15	0.02306
	H_2	0.00143					0.00021
	NH_3	0.01708					0.01708
	H_2	0.00016					0.00016
	NH_3	0.4542	0.4		1	15	0.0681
	H_2	0.0176					0.0026
	NH_3	0.0505					0.0505
	H_2	0.0020					0.0020
	O_2	0.194					0.194
	NO	0.124					0.124

· [redacted]

· · [redacted]

107 19 109 38

22 12 24 2

32

108 29 42.87

22 37 33.01 1

· · [redacted]

· · · [redacted]

5 57.78%

4.6%

300 600 25 40

2.61%

300 400 120 160 200 250

80 100 15.59%

120

10

1004.1 P 79% 21.6 1

12.8 -2.1 7 28.2

40.4

12%

7% 1.9 / 15.7 /

39

12.2 28

· · ·

764.5 ^{2}

116.4 38

73728 ^{2} 418 ^{3} 1290 ^{3}/ 20600 ^{3}/

95.6 ^{3}/ 0.24 / ^{3} 95.6 / ^{2}

485 21 307 8 9

9 9

6

3

3 1

0.32 ^{3}/

2 3

2 3

10 30 1.5 3

796.8 2 5 10

1 3 10.8 3/ 55.55 1.11 2 165.9

600

18 300

3.8 7

3.1-1 1.5-1

. - [redacted]

	[redacted]			
	[redacted]		3.8	

· · [redacted]

400 ^{3}/ 4000 ^{3}/ 2021 6

GB18918-2002 A

6

· · [redacted]

3.8

·

· · [redacted]

· · · [redacted]

· · · [redacted]

· · · [redacted]

HJ2.2-2018 20

5 1 2

7

NH_3 H_2 P 7

2

3.2-2 5

. -

H_2 NH_3 P

2021 7 1 7 7 7 NH_3 H_2 4 1 4 P 24 H_2 NH_3 4 45

GB3095-2012

3.2-3

. -

	HJ 533-2009	0.01 / ^{3}
	2003	0.001 / ^{3}
P	GB/ 15432-1995	1 / ^{3}
	GB/ 14675-1993	10

HJ 2.2 2018 D

$$P \quad C/C_O$$

P

C / ^{3}

C_O / ^{3}

P >1

3.2-4 3.2-5

3.2-6 7

. -

				%		/
2021.07.01		29.1	99.59	78		0.3
		34.1	99.10	67		0.7
		30.7	99.40	78		0.5
		28.8	99.61	79		0.1
2021.07.02		30.6	99.30	73		0.8
		33.8	99.13	68		0.9
		31.0	99.37	75		2.1
		29.3	99.62	76		0.4
2021.07.03		29.7	99.30	74		0.3
		35.0	99.03	69		0.8
		30.4	99.38	70		0.4
		28.7	99.69	75		0.1
2021.07.04		29.0	99.32	70		1.0
		33.8	99.06	69		0.6
		30.0	99.29	75		0.9
		28.8	99.70	75		0.5
2021.07.05		28.6	99.40	76		1.3
		34.1	99.00	70		0.9
		30.0	99.33	68		0.4
		28.8	99.35	76		2.1
2021.07.06		29.4	99.32	77		1.4
		35.0	99.00	75		2.4
		30.2	99.34	69		0.7
		29.2	99.34	70		0.2
2021.07.07		29.4	99.31	78		0.6
		34.2	99.02	74		1.4
		30.4	99.31	75		0.2
		28.8	99.40	72		0.3

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. - /

A2	2021.07.01		0.073	ND	ND	10
				ND	ND	
				ND	ND	
				ND	ND	
	2021.07.02		0.072	ND	ND	10
				ND	ND	
				ND	ND	
				ND	ND	
	2021.07.03		0.071	ND	ND	10
				ND	ND	
				ND	ND	
				ND	ND	
	2021.07.04		0.073	ND	ND	10
				ND	ND	
				ND	ND	
				ND	ND	
	2021.07.05		0.072	ND	ND	10
				ND	ND	
				ND	ND	
				ND	ND	
	2021.07.06		0.072	ND	ND	10
				ND	ND	
				ND	ND	
				ND	ND	
	2021.07.07		0.069	ND	ND	10
				ND	ND	
				ND	ND	
				ND	ND	

. - /

				/ % / %

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3.2-8

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H	H HJ 1147-2020	--
	GB 13195-1991	--
	HJ 506-2009	0.2 /L
	GB 11892-1989	0.5 /L
	HJ 828-2017	4 /L
	BOD5 HJ 505-2009	
	GB 11893-1989	0.025 /L
	GB 11893-1989	0.01 /L
	4-	

$$_{,}\ =\ _{,}\ /$$

C /L

C /L

○ H

$$_{,} = (7.0 - \quad)/(7.0 - \quad) \qquad H\ 7.0$$

$$_{,} = (\quad - 7.0)/(\quad - 7.0) \qquad H\ \ 7.0$$

H, H

H H

H H

H H

○ DO

$$S_{DO,j} = DO_s/DO_j \qquad DO_j \le DO_f$$

$$S_{DO,j} = \frac{|DO_f - DO_j|}{DO_f - DO_s} \qquad DO_j > DO_f$$

DO

DO /L

DO /L

DO /L

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3.2-9 3.2-10

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3.2-9 3.2-10

GB3838-2002

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			# - 00	# - 00	# - 00

. - 0

					/	/

. .

. . . [redacted]

7 3.2-11

. - [redacted]

D1		H HCO_3^-	
D2			
D3			

. . .

H

CO_3^{2-} HCO_3^-

20

. . .

GB/ 5750-2006

. - [redacted]

		[redacted]	
	H	H [redacted] GB [redacted] 1986	0.01 ( )
		ED A GB 7 [redacted] 1987	5.0 /L
		1.1 GB/ 5750 [redacted] 7-2006	0.05 /L
		HJ 535-2009	0.025 /L
		GB 7493-1987	0.001 /L
		GB 7480-1987	0.02 /L
		( ) HJ/ 342-2007	1 /L
		GB 7467-1987	0.004 /L
		HJ/ 343-2007	2.5 /L
	CO_3^{2-}	D / 0064.49-2021	/
	HCO_3^-		/
		GB 7475-1987	0.001 /L
			0.05 /L
		GB 11911-1989	0.03 /L
			0.01 /L
		GB 11904-1989	0.05 /L
			0.01 /L
		GB 11905-1989	0.02 /L
			0.002 /L
		HJ 1001-2018	10 MPN/L

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2021 7 1 7 3 3

3 1

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GB/ 14848-2017

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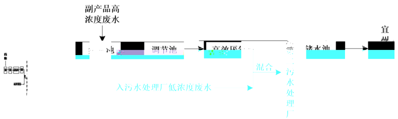
=C /C

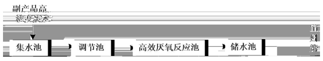
C /L

C /L

2 H


副产品高
浓度废水
调节池
高效厌氧
储水池
宜
混合
入污水处理厂低浓度废水
污水处理厂

H 7


副产品高
集水池
调节池
高效厌氧反应池
储水池

H>7)

P H H

H H

H H

H H

1

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3.2-13 3.2-14 5

3.2-13 3.2-14

GB/ 14848-2017

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			/		/	/

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. . . [redacted]

HJ2.4-2009

6 3.2-15

. - [redacted]

N1			1
N2			1
N3			1
N4			1
N5			
N6			

. . .

A

. . .

GB 3096-2008

. . .

2021 7 1 7 2 2

. . .

3.2-16 7

. - [redacted]

3.2-16

GB3096-2008 3

GB3096-2008 4

• [redacted]

• • [redacted]

1

1

3 / ^{3} 20 1.303 / ^{3} 50 0.722 / ^{3} 100 0.402 / ^{3}

100

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29

2

CO NO_2 HC

CO NO_2 HC

3

GB/ 18883-2002

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1

2

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85 B A

2.2-7

$$L_A(r) = L_A(r_0) - A$$

$$A = A_{div} + A_{atm} + A_{bar} + A_{gr} + A_{misc}$$

LA( ) B

LA(0) B

0

A B

A A =20 / 0 B

A A = - 0 /1000 B

A B

A B

A B 0.025 B/

$$L_{eqs} = 10\lg\left(\sum_{i=1}^{n} 10^{0.1Leqi}\right)$$

L B(A)

L B(A)

4.1-1

4.1-1 B(A)

			10	30	55	100	150	200	350		
		103	83.0	77.0	73.5	64.9	63.0	59.5	57.0	70	55
		105	85.0	79.0	75.5	66.9	65.0	61.5	59.0		
		107	87.0	81.0	77.5	68.9	67.0	63.5	61.0		
		105	85.0	79.0	75.5	66.9	65.0	61.5	59.0		
		95	75.0	69.0	65.5	56.9	55.0	51.5	49.0		
		105	85.0	79.0	75.5	66.9	65.0	61.5	59.0		
		105	85.0	79.0	75.5	66.9	65.0	61.5	59.0		
		105	85.0	79.0	75.5	66.9	65.0	61.5	59.0		
		105	85.0	79.0	75.5	66.9	65.0	61.5	59.0		
		100	80.0	70.5	65.2	65.2	56.5	54.0	49.1		

4.1-1

30 55

200 350

29 35

3 35

5 13 B A

GB12523-2011

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2

11126.11 ^{2} 27.82

3

12 20

0.5 / 10 /

. .

1

2

[redacted] 0.3 O_2

NO GB13271-2014 2

1.4-6

O_2 NO GB3096-2012

1 15 0.8

6500 ^{3}/

1 15 0.4

1500 ^{3}/ 1.4-6 NH_3 H_2

GB3096-2012

500

300 O_2 NO P

0.035%

GB18483-2001

2.0 / ^{3}

75% 0.0378 /

4.375 / ^{3} 75%

1.094 / ^{3}

GB18483-2001 2 2.0 / ^{3}

		/ /
1	O_2	0.0084672
2	NO_2	188.5968
3	NH_3	0.11504
4	H_2	0.00323

3

690.496 ^{3}/

H COD BOD

GB18918-2002 A

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1

2

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1

2

3

HJ610-2016

100 1000

4

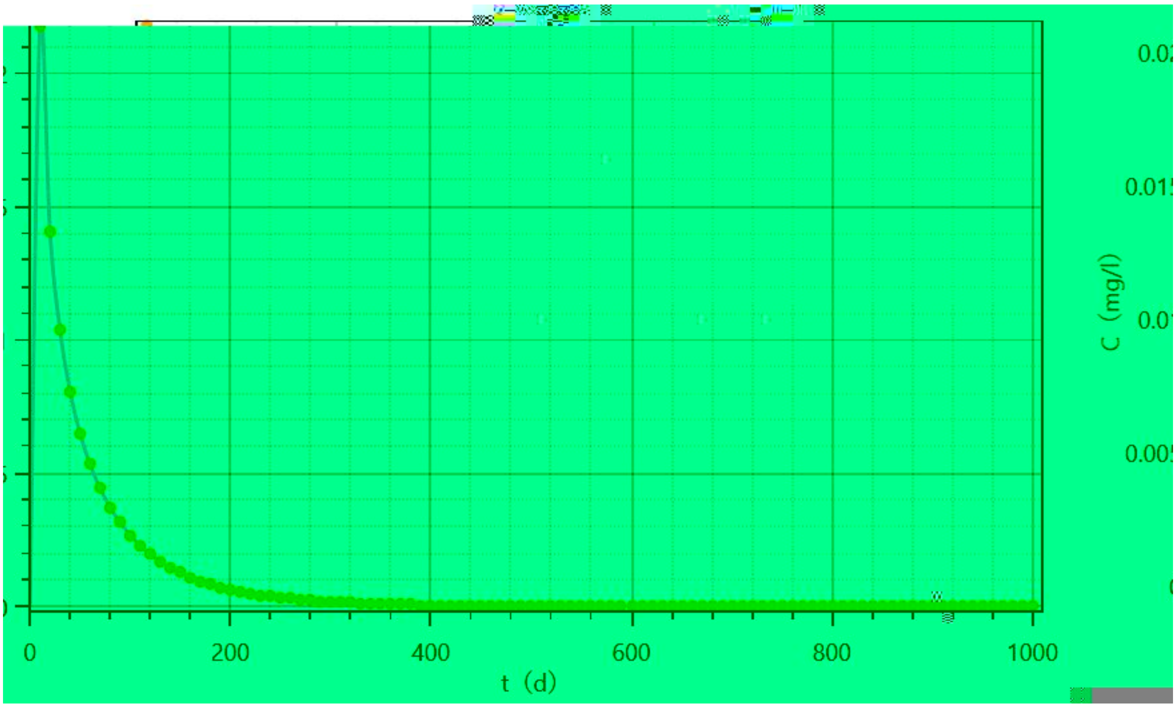
COD NH_3-N

300 ^{3}

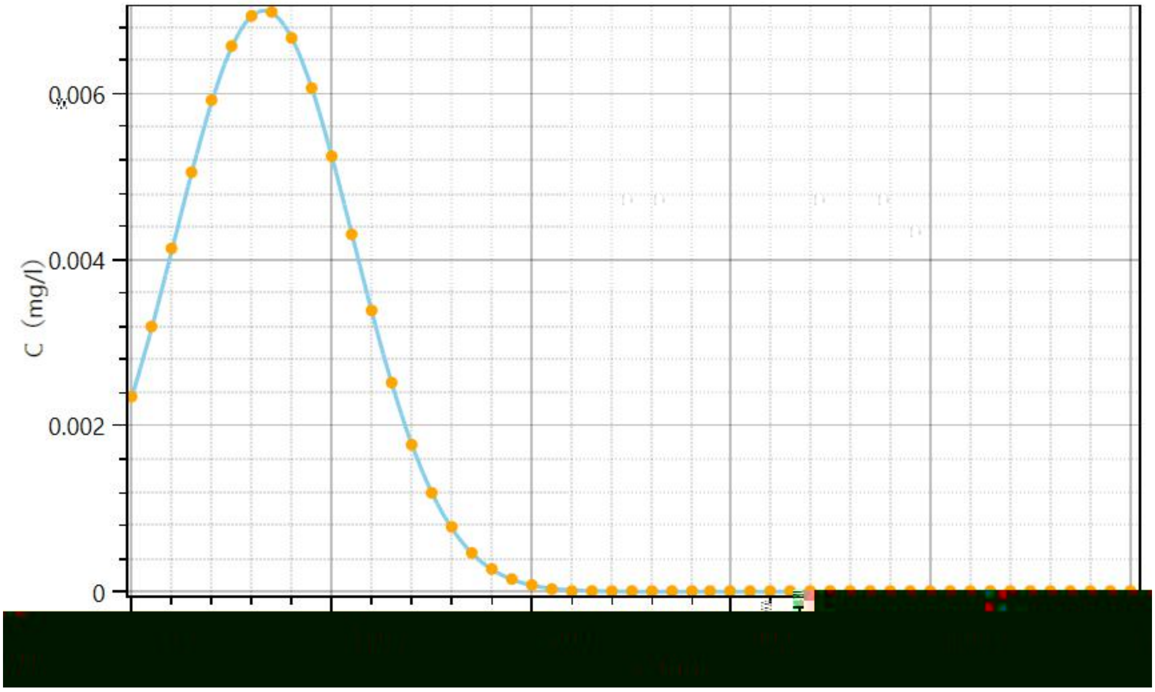
5%

4.2-3

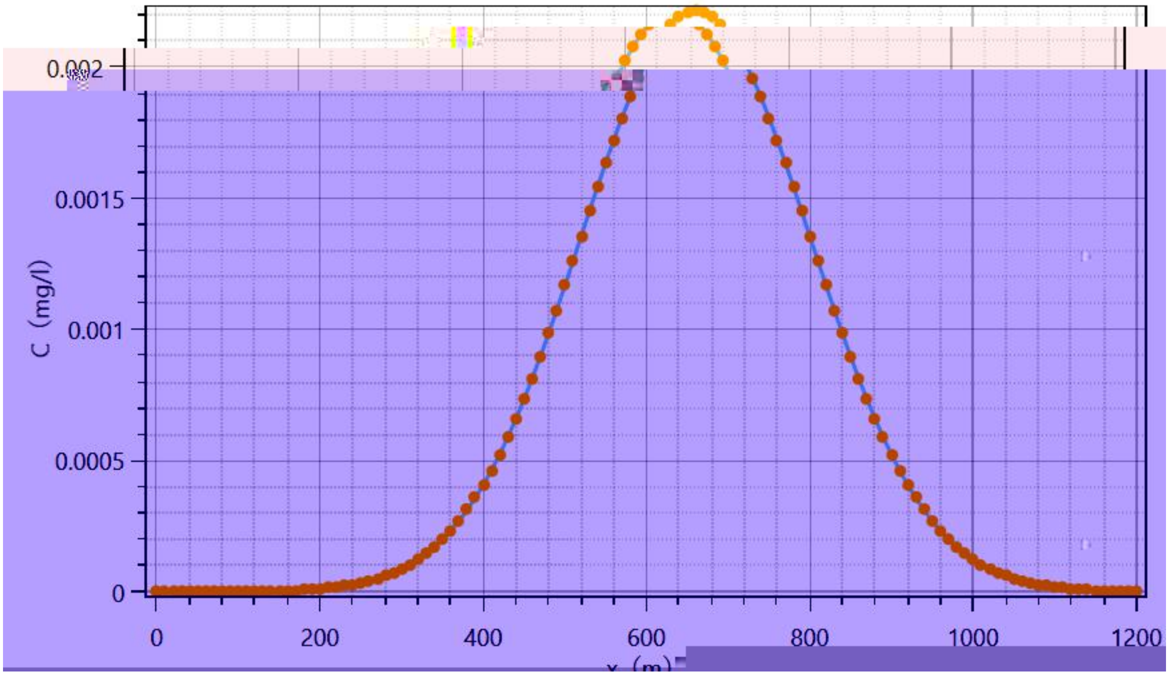
4.2-3 5%



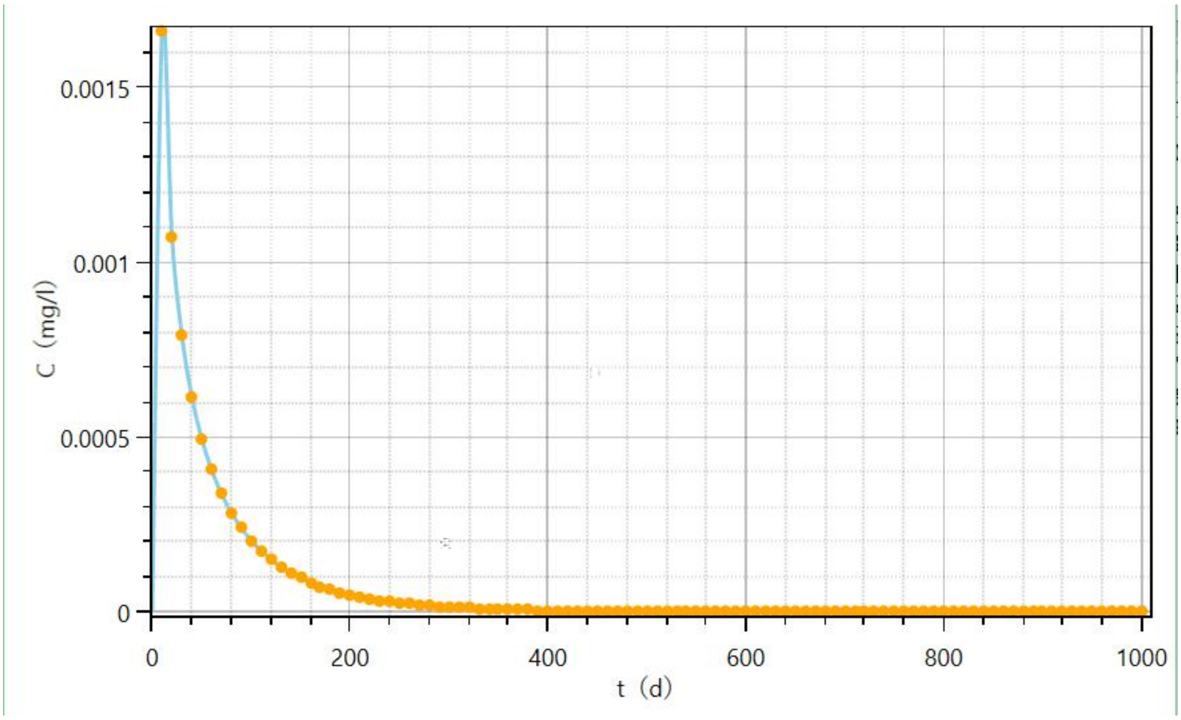
4.2-1 5% 4 COD



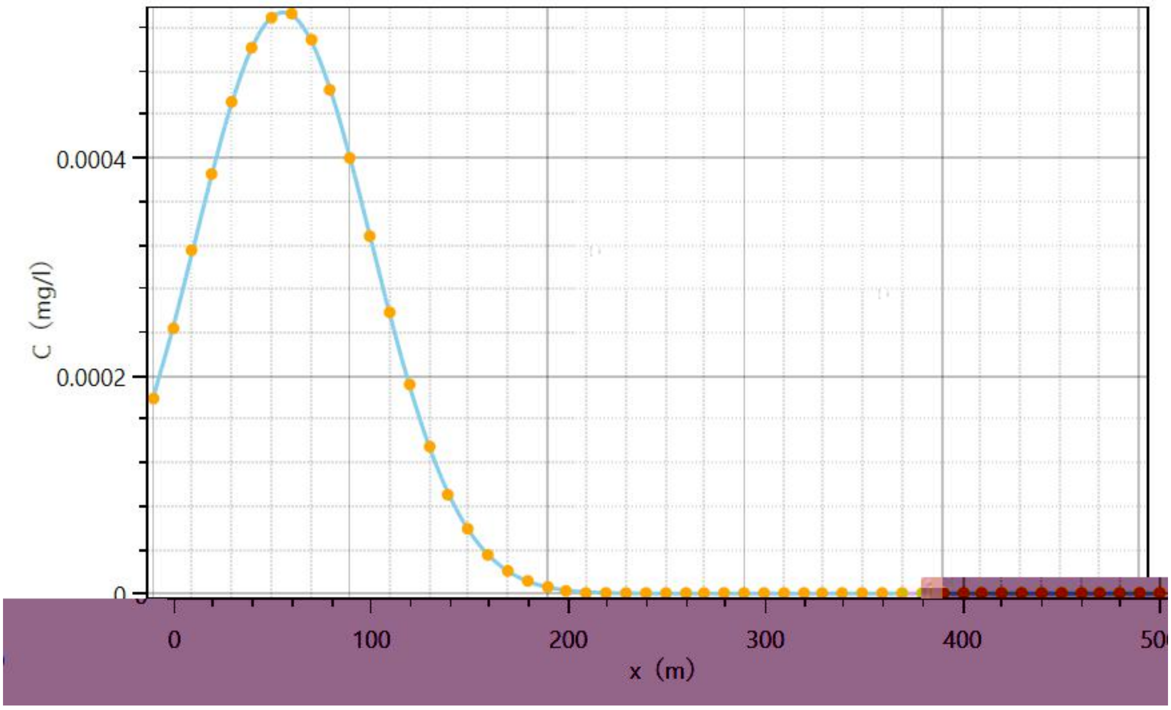
4.2-2 5% 100 COD



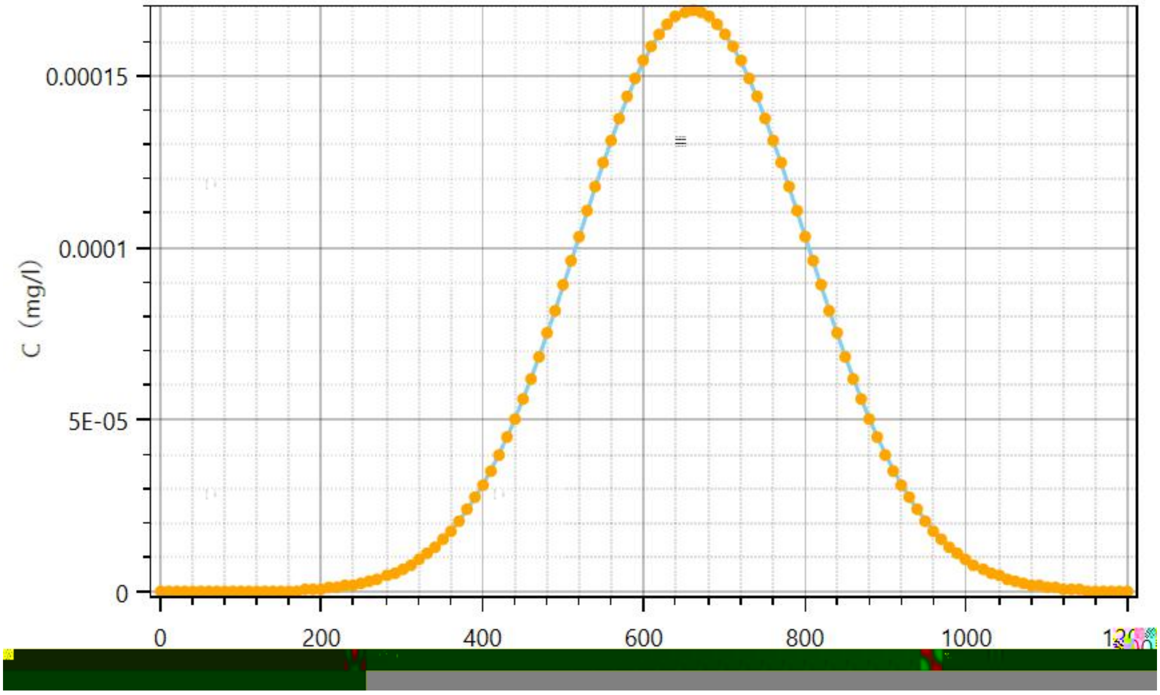
4.2-3 5% 1000 COD



4.2-4 5% 4 NH_3-N



4.2-5 5% 100 NH_3-N



4.2-6 5% 1000 NH_3-N

5%

1

0.074 /L 1 COD

NH_3-N GB/ 14848-2017 100

1000 COD NH_3-N

GB/ 14848-2017

100

66 COD NH3-N

0.907 /L 0.0725 /L 1000 660

COD NH_3-N 0.902 /L 0.0722 /L

GB/ 14848-2017

2

300

5% 300 COD

NH_3-N 0.003 /L 0.0002 /L

K 1 10^{-7} /

. .

65 95 B(A)

2.2-14

200

75 B(A)

L = L 20L 8 L

L B(A)

L B(A)

L B(A) 0

$$= 10 \left(\sum_{=1} 10^{0.1} \right)$$

L_1 L_2 $_1$ $_2$ B(A)

$_1$ $_2$

Δ B(A)

L B(A)

L B(A)

4.2-4 4.2-1

. - ( )

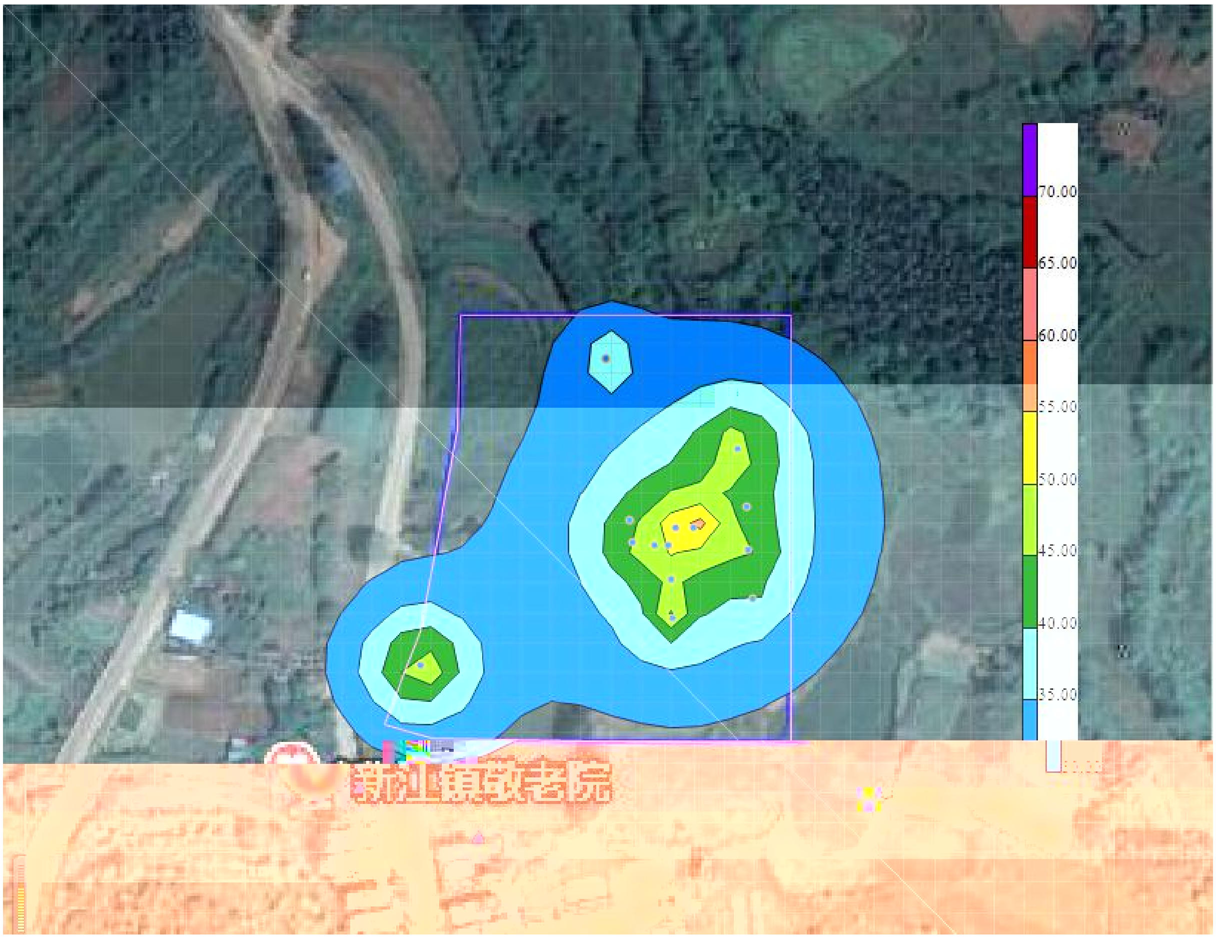
1#	26.11	51.4	51.41	0
2#	25.62	50.6	50.61	0
GB3096 2008 2		60 B(A)		
1	37.33	49.3	/	0
1	32.67	50.5	/	0
1	46.04	51.8	/	0
1	32.47	49.9	/	0
GB12348 2008 3 4		3 65 B(A) 55 B(A) 4 70 B(A) 55 B(A)		

4.2-4

GB3096 2008 2

GB 12348-2008 3

GB 12348-2008 4


70.00
65.00
60.00
55.00
50.00
45.00
40.00
35.00
新江镇敬老院

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8

2

700 /

3

680 /

4

20 /

5

18 /

6

246 /

7

0.17 /

8

1 /

GB18599-2001 2013

9

87.5 / 31.5 /

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. . . [redacted]

. . . . [redacted]

4.2-5

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			/	/	
			1.125	5	/
			0.4	2500	
	/		/	2500	
	/		/	10	

HJ

HJ169-2018

B Q

Q

Q

Q= /Q

Q

Q 1

Q 1 Q 1 Q 10 10 Q 100 Q 100

HJ 169-2018 B

1.125 0.4

5 2500

Q=1.125/5+0.4/2500=0.225 Q 1

3

1.5-1 5

· · ·

· · · ·

HJ 169-2018 B

1

74.44 (=1)1.1

-6 102.2 P /

2

16.04 (=1)0.55

-182.5 -161.5 -188 -82.6 538

4.59MP

3

GB/ 4016-83

70

70

100 8% 10%

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20 /^{3}

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50 10 50

GB/ 13869-1992

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4.2-7

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108 49 42.87 22 37 33.01

- [redacted]

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100%

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8 0.3

O_2 NO

GB13271-2014 2

O_2 NO

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NH_3 H_2

2 1

1 1

15 2

CO_2 H_2O

HJ 2004-2010

2012 5 2020 6

2 15

GB14554-93 2 15

100% 91%

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GB18483-2001

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0.035%

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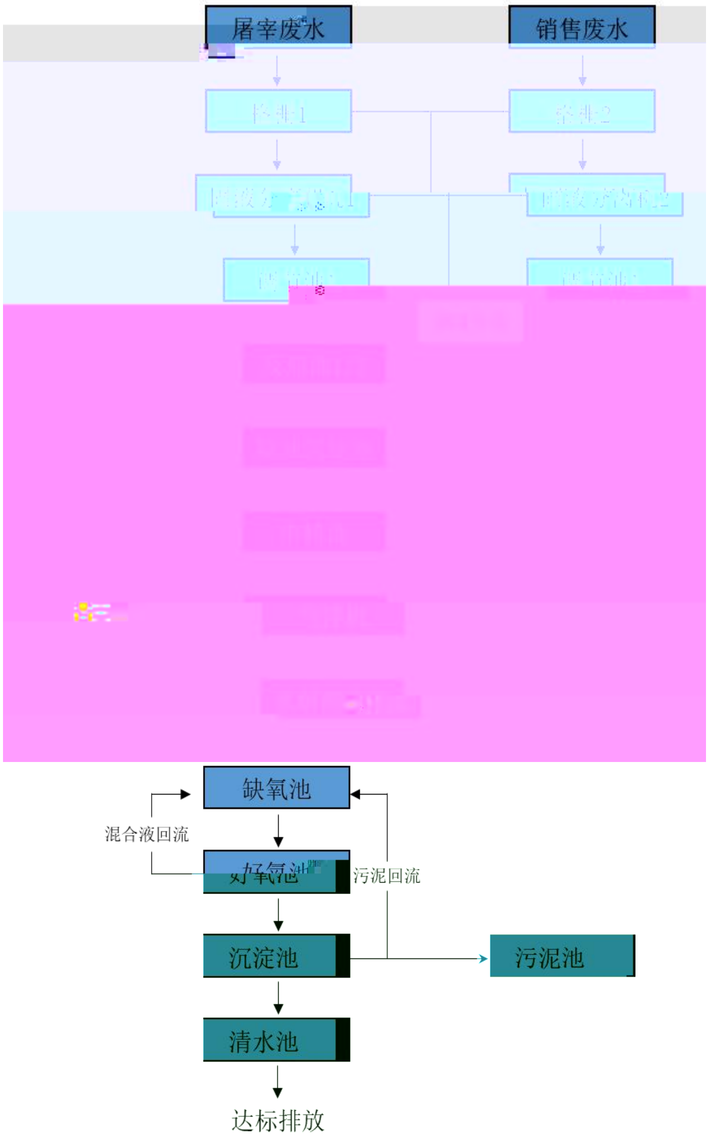
[redacted]

1 900 ^{3}/

+A/O+

1 5.2-1


居宰废水
销售废水
缺氧池
混合液回流
好氧池
污泥回流
沉淀池
污泥池
清水池
达标排放

5.2-1

+ +A/O

A/O

PAM PAC

HJ 860.3 2018

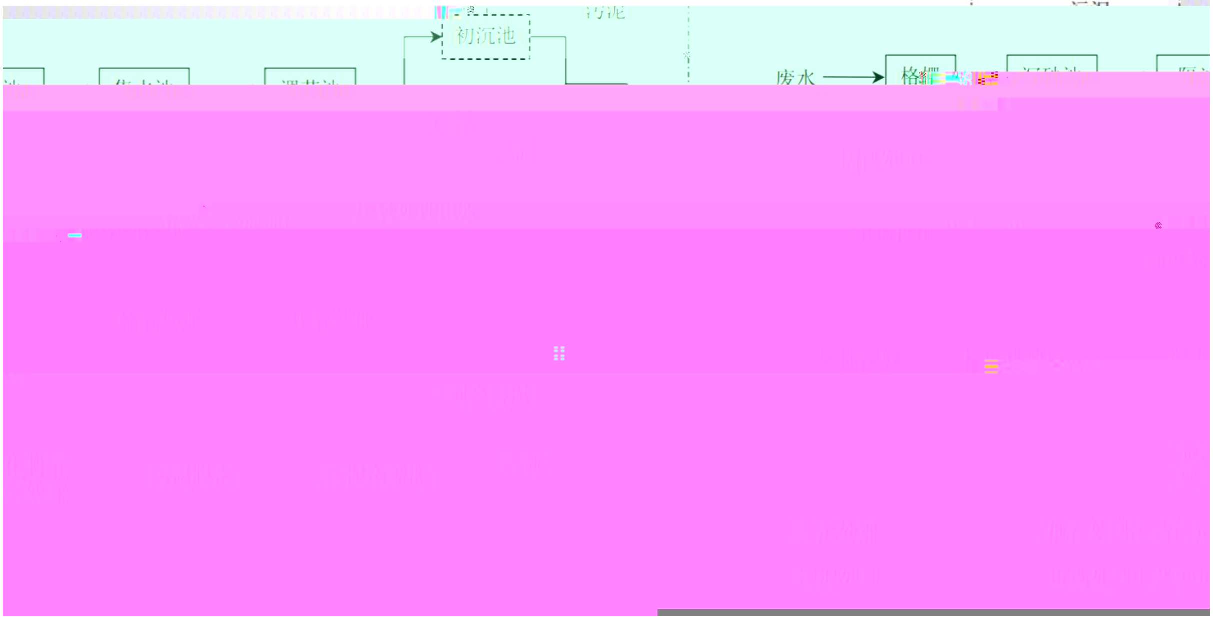
7

-

A/O PAM PAC

HJ 2004-2010

HJ 2004-2010



5.2-2 HJ 2004-2010

4320

2019 12

2300 ^{3}/ + + + +A/O + +

8

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				0
1		150	150	62
2	BOD$_5$	110	110	28
3	COD$_C$	250	250	96
4		/	50	0.15
5		30	30	4.90
6		35	35	/
7		3	3	/
8	H	/	/	7.52

2000

2020 5

1200 ^{3}/ + + + +A/O + +

690.496 ^{3}/ 248578.56 ^{3}/

900 ^{3}/

5

400 4000

400 100

HJ610-2016

HJ610-2016 5

HJ610-2016 6

5.2-2 8

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M 6.0 K 1

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GB18597-2001

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1.0 10-12 /

HDPE

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HJ610-2016

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GB12348 2008 3

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3300

24

75 90

N P K 7% 75% 30%

N 525-2011 5% 45% 30%

5.2-3

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	%	%	%		/
	5	45	30		1200 1500
	8	60	30		1200 1500

	7	75	30		800
	7	75	30		2000

N 525-2011

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900-214-08

GB18597-2001

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6100 650 10.66 %

5.3-1

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				8
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				50
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				300
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				25
				70
				10
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6100 650 10.66 %

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650 20 32.50

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2

2 /

3

2% 7.81

5.85 / 6.3-1

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2		2
3		13
		47.5

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2

15 2 8

+A/O+

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7.1-1

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7.1-1 7.1-2

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1 2 3 4		
1 2 3 4 5 6 7 8 9 10 11 12		

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				[redacted]	
		O_2	0.0000		0.0000101
		NO	0.226	+8	0.226
			0.0343		0.0343
		NH_3	0.15374	0.8 1 15	0.02306
		H_2	0.00143		0.00021
		NH_3	0.01708		0.01708
		H_2	0.00016		0.00016
		NH_3	0.4542	0.4 1 15	0.0681
		H_2	0.0176		0.0026
		NH_3	0.0505		0.0505
		H_2	0.0020		0.0020
		O_2	0.194		0.194
		NO	0.124		0.124
			0.035		0.035
		CO	0.074		0.074
		HC	0.072		0.072
			0.0378		0.009 /
			248578.56 3/		248578.56 3/
		COD_C	390.222		62.145
		BOD_5	201.340		27.344
			209.903		37.287
		NH_3-N	29.765		7.457
			43.066		4.972
			700		700
			680		680
			20		20
			18		18
			28.14		28.14
			0.17		0.17
			1		1
			31.5		31.5

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2010 97 COD

NH$_3$ O$_2$ NO

2

COD

NH$_3$-N O$_2$ NO COD

NH$_3$-N

O$_2$ NO

0.194 / 0.350 / O$_2$ 0.194 / NO

0.350 /

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HJ819-2017

HJ942 2018

2		CO_3^{2-} HCO_3^-		

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HJ 2.2-2018

HJ 860.3-2018

7.3-3

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HJ942 2018

HJ 860.3 2018 HJ 820-2017

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2014 56

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682 2017 10 1

2017 4

2017 10 1

2018 9

7.4-1

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7.5-1

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	1 2 3 4

• [redacted]

6100 18279.67 27.42

11126.11

1300 3000

2021 5 28

2105-450109-04-01-581249

6100 650 10.66 %

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· · [redacted]

2020

O_2 NO_2 PM_{10} $PM_{2.5}$ CO O_3

GB3095-2012

2 P

NH_3 H_2

J2.2-2018 D

P 24 (GB3095-2012)

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GB3838-2002

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GB3096-2008 3

GB3096-2008 4

GB3096-2008

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1# 2# 3#

GB/ 14848-2017 III

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(GB 12523-2011

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O_2 NO GB3096-2012

NH_3 H_2

15

15

NH_3 H_2

NH_3 H_2

- HJ 2.2-2018 D

2

+A/O+

3

GB12348-2008 3

4

GB3096-2008 2

4

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3

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35

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1

8 0.3

O_2 NO

GB13271-2014 2

O_2 NO

2

2 1

1 15

2

3

GB18483-2001

4

0.035%

5

+A/O+

GB18918-2002

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2019

2005

40

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6100 650 10.66 %

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