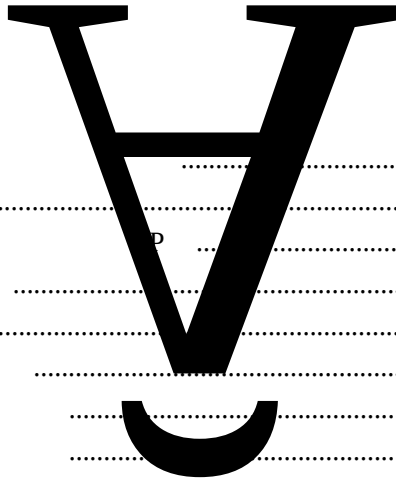


0	
0.1	
0.1.1	
0.1.2	
0.2	
0.3	
0.4	
0.4.1	
0.4.2	
0.4.3	
0.4.4	
0.4.5	
0.5	
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1.1.2	
1.1.3	
1.2	
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1.2.2	
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1.4	
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1.4.2	
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1.5.2	
1.6	
1.7	
1.7.1	
1.7.2	
1.8	
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2.1	
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2.1.2	
2.1.3	
2.1.4	
2.1.5	
2.2	

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2.2.2 .

4.2.3		
4.2.4		
4.2.5		
4.3		
4.3.1		
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4.3.3		
4.3.4		
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4.4.2		
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4.5.2		
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4.5.4		
4.6		
4.6.1		
4.6.2		
4.7		
4.7.1		
4.7.2		
4.7.3		
4.8		
4.8.1		
4.8.2		
5		
5.1		
5.1.1		2 ^{.....} Ö
5.1.2		
5.1.3		4 Š - Ÿ Q8VvP €
5.1.4		
5.1.6		Ÿ Q8R.P €



6.1.2	
6.2	
6.2.1	
6.2.2	
6.3	
6.3.1	
6.3.2	
6.3.3	
6.3.4	
6.3.5	
6.3.6	
6.3.7	
6.4	
6.4.1	
6.4.2	
6.4.3	
6.4.4	
6.4.5	
6.4.6	
6.4.7	
6.4.8	
6.5	
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7.1	
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7.1.2	
7.1.3	
7.1.4	
7.2	
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7.2.2	
7.2.3	

8	
8.1	
8.1.1	
8.1.2	
8.2	
8.2.1	
8.2.2	
8.2.3	
8.3	
9	
9.1	
9.1.1	
9.1.2	
9.1.3	
9.1.4	
9.1.5	
9.1.6	
9.1.7	
9.1.8	
9.2	
9.3	
9.4	
9.4.1	
9.4.2	
10	
10.1	
10.1.1	
10.1.2	
10.2	
10.2.1	
10.2.2	
10.2.3	
10.2.5	
10.2.6	
10.2.7	
10.2.8	
10.2.9	

10.5

.....

5

302487 m²

6

5

2018 8 21

[2018] 8

65981m²

2

93332m²

3

143174m²

3

2018

10 2020 2 29

2020

3 1 2020 4 30

2020 4

[2015] 52

<

>

[2020] 688

2020 11 16

5

5

2021 5 7

[2021] 8

2021 7

5

3

6

30%

[2015] 52

<

>

[2020] 688

2022 3

6

2022 4 2

<http://www.fjest.com/article-22597-153300.html>

1

[a] SO₂ NO₂

2

3

4

5

6

2019

2010

[2010]

122

[a]

3

GB12348-2008

3

4

2	SO ₂	7.792t/a
3	VOCs	2.807 t/a
4		

1			2015	1	1		
2				2018	12	29	
3				2018	10	26	
4				2022	6	5	
5				2018	1	1	
6						2020	4 29
7					2019	1	1
8				2011	3	1	
9				2019	8	26	
10				2019	4	23	
11							16
2021	1	1					
12				2017	10	1	
13				2019	1	1	
14				2019			
		29					
15					2019		
11							
16				2021	1	1	
17						2017	10 1
18						2018	8 1
19							
[2012]	98						
20							[2013]37

21	<	>
[2014]30		
22		[2015]17
23		[2016]31
24		
[2017]84		
25	2022	5 1
26		2014 1
27		
2015 26		
28		
	2016	45
29		
	[2018]25	2018 11 6
30		2019 10 13
1		HJ 2.1-2016
2		HJ 2.3-2018
3		HJ 2.2-2018
4		HJ 2.4-2021
5		HJ 19-2022
6		HJ 169-2018
7		HJ 610-2016
8		HJ 964-2018
9		
HJ 1119-2020		
10		HJ 819-2017
11		HJ 884-2018

1	6			2022	4
2			5		
	2018	6			
3				5	
			2018	8	
4			5		
		2021	3		
5				5	
				2021	5
6					

1		“	”		
				“	”
2					
3				“	”
4					
5					
6					

“ ”

1

2

3

1.3.1

		SO ₂	NO ₂	PM ₁₀	TSP	CO	O ₃	[a]					
		SO ₂				PM ₁₀	[a]						
		SO ₂											
		pH				BOD ₅		NH ₃ -N					
						COD		NH ₃ -N					
						COD		NH ₃ -N					
		L _{Aeq}											
		L _{Aeq}											
		K ⁺	Na ⁺	Ca ²⁺	Mg ²⁺	CO ₃ ²⁻	HCO ₃ ⁻	Cl ⁻	SO ₄ ²⁻	pH			
										Zn	Pb	Cd	As
						Ni	Hg	Cr ⁶					
		COD _{Cr}											
		pH											
		1,1-			1,2-		1,1			-1,2-			
		-1,2-			1,2-			1,1,1,2-					
		1,1,2,2-			1,1,1-			1,1,2-					
		1,2,3-						1,2-			1,4-		
		+											

		2-	[a]	[a]	[b]	[k]
			[a,h]		[1,2,3-cd]	
				[a]		

GB36600-2018

2018 8 1

GB15618-1995

GB36600-2018

pH	6~9		GB3838-2002
	4	6	
BOD ₅	3	4	
NH ₃ -N	0.5	1.0	
	0.05	0.05	

3

GB/T14848-2017

1.4.3

1	pH	6.5 8.5	10	≤	0.001
2	≤	3.0	11	≤	0.01
3	≤	250	12	Cr ⁶⁺ ≤	0.05
4	≤	250	13	≤	0.01
5	≤	20.0	14	≤	1.0
6	≤	1.0	15	≤	200
7	≤	0.5	16	≤	0.02
8	≤	450	17	≤	0.005
9	≤	1.0			

4

GB3096-2008

3

GB3096-2008 4a

		3		65 55	dB(A)
		4a		70 55	dB(A)

5

GB36600-2018

1.4.5

1		20	60	120	140
2		20	65	47	172

3	0	0	5	9
4				
5				
6				
7	K}			

44	[1,2,3-cd]	5.5	15	55	151
45		25	70	255	700

DB35/1782-2018

GB37822-2019

2021

1

2019 10

30

200 300 /

SO₂ NO_x

SO₂ 200mg/m³ NO_x

300 mg/m³ 30 mg/m³

DB35/1782-2018 1

80mg/m³

GB37822-2019

1.4.6

(mg/m ³)	m	kg/h	mg/m ³
120	24	3.5	12.74

(GB16297-1996)

$$\mathbb{N} \quad \quad \quad \frac{\infty}{0} \quad \quad \quad \mathbb{I}$$

(mg/m ³)	m	kg/h	mg/m ³
120	15	1.75	1.0

(GB16297-1996)

 $\preceq d(c)$ [illegible]

40

III

T



1

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

2

GB8978-1996

4

GB/T31962-2015 B



GB18580-2001

1

SO₂ [a] NMHC
HJ2.2-2018

— 100%
0
P_i— i %
C_i— i 1h μg/m³
C_{0i}— i μg/m³ GB3095 1

1.5.1

/	/	/
		40.2
		-1.9
		90
/km	/	
/°	/	

			$\mu\text{g}/\text{m}^3$	Cmax $\mu\text{g}/\text{m}^3$	Pmax %
		SO ₂	500	1.4779	0.30
1	5#		450	6.0822	1.35
		[a]	0.0075	0.000013	0.17
		NMHC	2000	0.5392	0.03
2	6#		450	23.6110	5.25
3	7#		450	0.0888	0.02
4	8#		450	0.1998	0.04
5	9#		450	29.9880	6.66
		SO ₂	500	6.71	1.34
			450	0.1454	0.03
6		[a]	0.0075	0.000063	0.84
		NMHC	2000	2.6591	0.13
		SO ₂	500	31.613	6.32
			450	0.6036	0.10
7					

Δ

▽

		Q/10 ³ /d	W/
		Q≥20000	W≥600000
A		Q 200	W 6000
B		—	

3

3

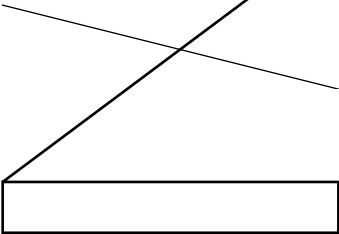
HJ2.4-2009

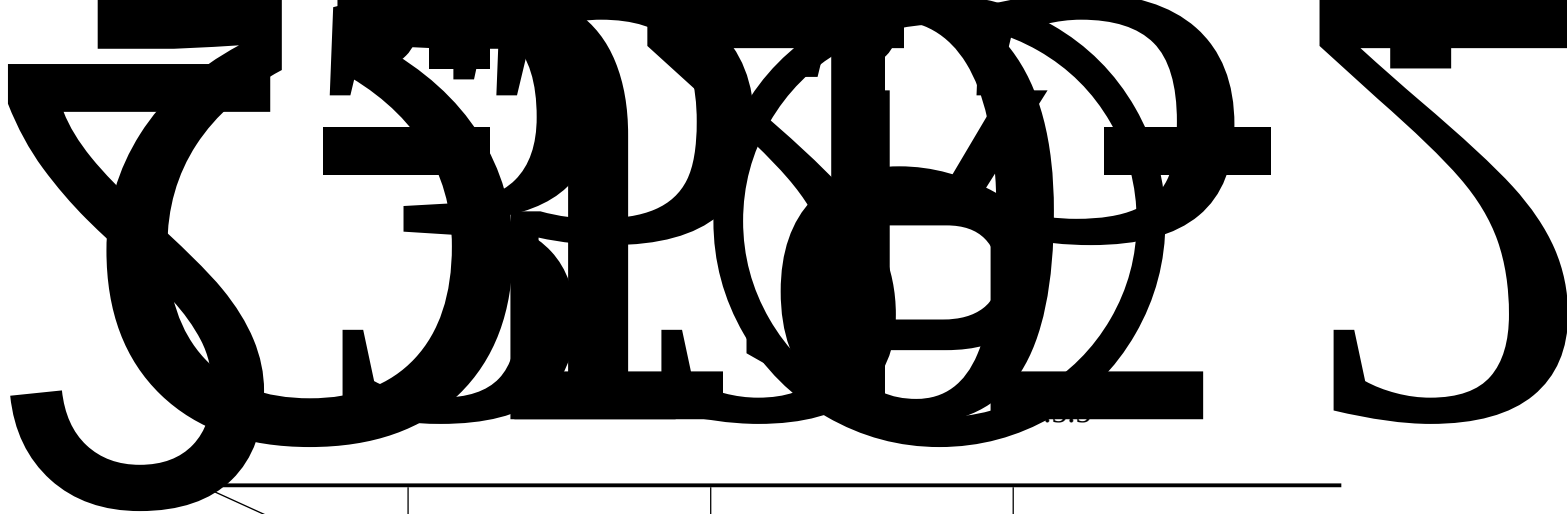
4

(HJ610-2016)

69

1.5.4





									—
								—	—
“ — ”									

6

93332m²

κ η 2011

Δ

Π

HJ19-2011 * 5%

δ h ž *

2

2

7

κ Δ Ď

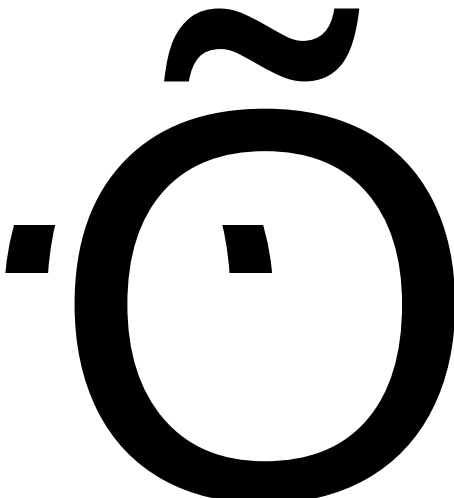
1.5.7

	B	/
		5km
		200m
		50m
		200m

HJ2.2-2018

غ

DZ



1.6.2

	E					/
						/m
	1		/		D2	/
	E					/

c



1

2

3

4

24956.14

6000

65981m²

2 ;6 ;1nĐ s

5

5

2021 5 7

[2021] 8

2021 7

⌘

		1 1080
		1 392m ² 50m ² 1 30m ³
		1 1080

2.1.2

				/
1		***	***	***
		***	***	***
		***	***	***
		***	***	***
		***	***	***
		***	***	***
		***	***	***
		***	***	***
		***	***	***
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		***	***	***
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		***	***	***
		***	***	***
		***	***	***
		***	***	***
		***	***	***
		***	***	***
		***	***	***
2		***	***	***
		***	***	***

1

G1

+

+15m

1#

G2



2

1 1018m³

15min

	3600m ³ /a	0	
	180m ³ /a	0	
	530m ³ / 7950m ³ /a	0	
	8.8m ³ /d	8.8m ³ /d	

3

2.1.5

				dB(A)	
			/		
	1	***	***	70-75	
	2	***	***	85-90	

	3	***	***	75-80	
	4	***	***	70-75	
	5	***	***	70-75	
	6	***	***	80-85	
	7	***	***	70-75	
	8	***	***	75-80	
	9	***	***	75-80	
	10	***	***	70-75	
	11	***	***	80-85	
	12	***	***	80-90	
	13	***	***	70-75	
	14	***	***	85-95	
	15	***	***	80-90	
	16	***	***	75-80	
	17	***	***	70-75	
	18	***	***	75-85	
	19	***	***	80-85	

2.1.6

	t/a		
S1	22	07	309-001-07
	7.65	HW49	900-041-49
S2	1065	46	309-001-46
S3	204	46	309-001-46
S4	220	46	309-001-46
S5	3.5	46	309-001-46
S6	2	99	900-999-99
S7	98		

pó%

GB18599-2020

1 50m²

1 30m³

18597-2001

5

2021 4 27

350922-2021-002-L

2021 5 30

2021 7

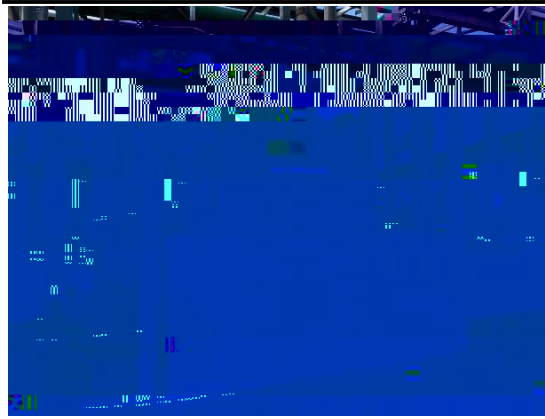
2021 7 20

15min

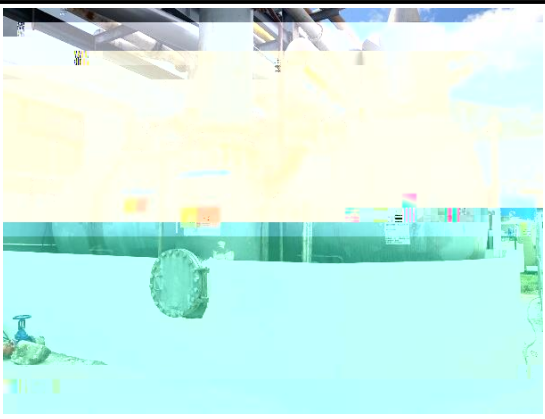
“

+ + ”

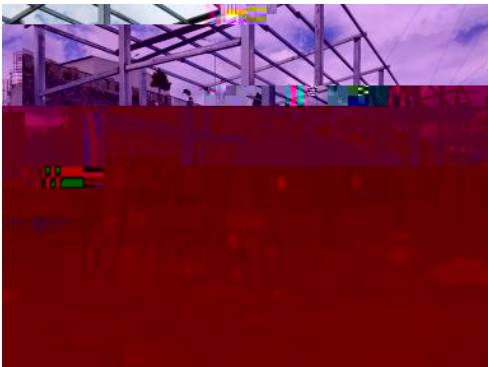
		m ³	m ³
1	1	30	52
2	2	4.5	41.6
3		30	52
4	1	30	78
5	2	4.5	
6	1	1.6	18.25
7	2	1.6	18.25
8	3	2	18.25
9	4	2	18.25
10	2	6	14.96
11	2	8	14.96



1



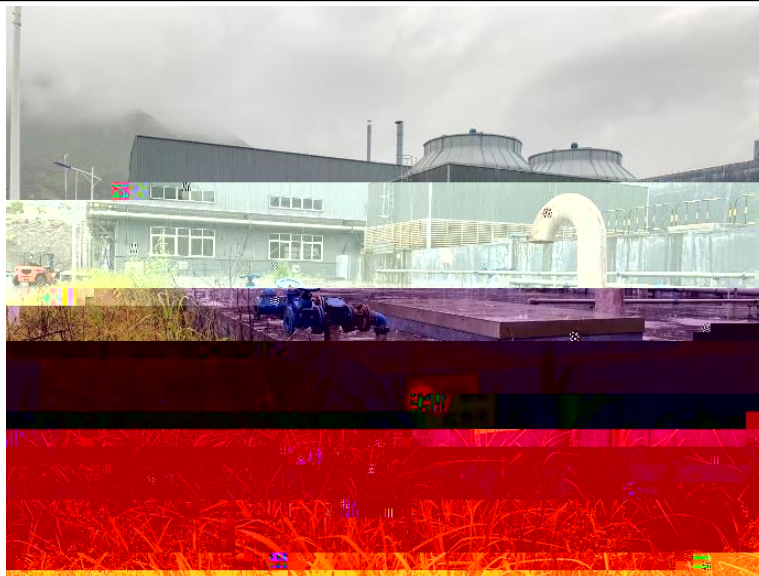
2





1018m³

1



20cm

30cm

20cm

	[a]	
0.093~0.235mg/m ³	0.004~0.019mg/m ³	
	(GB16297-1996)	
0.67~0.97mg/m ³		DB35/
1782-2018	1.33~1.65mg/m ³	
	GB37822-2019	
	DB35/ 1782-2018	
3		
		pH
		GB89784B

2016 10
5

2018

3

XRD

$1 \times 20\text{m}^3$
 $3 \times 20\text{m}^3$
1, m" 72

$1 \times 50\text{m}^3$
 $2 \times 50\text{m}^3$

5	23760		
1	8910		
1	1188		
1	4320		
1	4320		
1	2376	/	
1	1512		
1	216		
	544		
2	2952	1	35KV
	928		
	252		
1	50		
1			

1					
2					
3					
4					
5					
6					
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8					
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24					
25					

3.1-1

3.1-2



1 24m³/h

		(m³/d)							
				(mg/L)	(kg/d)	(mg/L)	(kg/d)		
W1		49	COD _{Cr}	350	17.15	350	17.15	/	
			BOD ₅	175	8.575	175	8.575		
			NH ₃ -N	25	1.225	25	1.225		
				25	1.225	25	1.225		
			SS	300	14.7	300	14.7		
W2		5	COD _{Cr}	1800	9	500	2.5		
			BOD ₅	900	4.5	300	1.5		
			NH ₃ -N	15	0.075	15	0.075		
				600	3	100	0.5		
			SS	500	2.5	300	1.5		
W3		15	COD _{Cr}	30	0.45	30	0.45		
			SS	25	0.38	25	0.38		
		54*							

*

				dB(A)		dB(A)
	N1			60		50
	N2			80		65
	N3			90		75
	N4			95		75-80
	N5			75		65
	N6			85		65
	N7			90		75
	N8			80		65

	N9			100		80
--	----	--	--	-----	--	----

4

3.1.8

		t/a	t/a
S1	/	45	0
S2	/	10	0
S3	/	460	0
S4		1200L	0
S5		900L	0
S6	HW49	1200L	0
S7	900-047-49	1800L	0
S8		180L	0
S9		4200L	0
S10		180L	0
	HW34		
	900-349-34		

[a]	0	0	0
SO ₂	0.005	0	0.005
N			

6

1

6

2

3

4

5

52636.09

1640

6

93332m²

140

7

300

8

300

12

9

15



3.2.1

. j

495m²

830m²

100m²

420m²

4155.39m²

14257.48m

1 15m 6# 6#

1 25m 9#

1

		t/a
1		6

			mA · h /g	%	g/cm ²	%	%	ppm	ppm	RoHS
NG			≥ 360.0	≥ 95.0	≥ 1.65	≥ 96	≥ 99.97	≤ 0.1	≤ 10	
AG	CMB		≥ 350.0	≥ 95.0	≥ 1.50	≥ 94	≥ 99.97	≤ 0.1	≤ 20	
	NAG		≥ 355.0	≥ 94.0	≥ 1.25	≥ 94	≥ 99.97	≤ 0.1	≤ 20	
	CPAG		≥ 350.0	≥ 95.0	≥ 1.40	≥ 94	≥ 99.97	≤ 0.1	≤ 20	
CG			≥ 350.0	≥ 94.0	≥ 1.60	≥ 94	≥ 99.97	≤ 0.1	≤ 20	

1

2 RoHS

3.2.5

				/	
				/	
				/	

3.2.6~ 3.2.7

					S	
--	--	--	--	--	---	--

	g/cm ³	%	%	/100g	ppm	ppm
	2.24	0.01	0.06	5		0.044

20

g/cm³

1.08(08)я і

%

%

%

mm/s

40

%

2				
3				

4

5

6

7

8

9				

3.2-1

3.2-2~ 3.2-3

3.2-4

D12

3.2-5

10 1

旋风布袋一体式分离器



φ

2 1 1

3.2-8



F

+ + + + RCO +

3.2-9

3.2-11

3.2-12

3.2.10

G1				+
				+
				+
G2	SO ₂	[a]		+
			RCO	+
G3				+
G4				+
GS1				
GS2				
GS3				
GS4	SO ₂	[a]		
W1	pH	COD	SS	
W2	pH	COD	SS	
W3	pH	COD	SS	
N		L _{Aeq}		
S1				
S2				
S3				
S4				
S5				

	S6				
	S7				
	S8				
	S9				
	S10				
	S11				
	S12				
	S12				

1

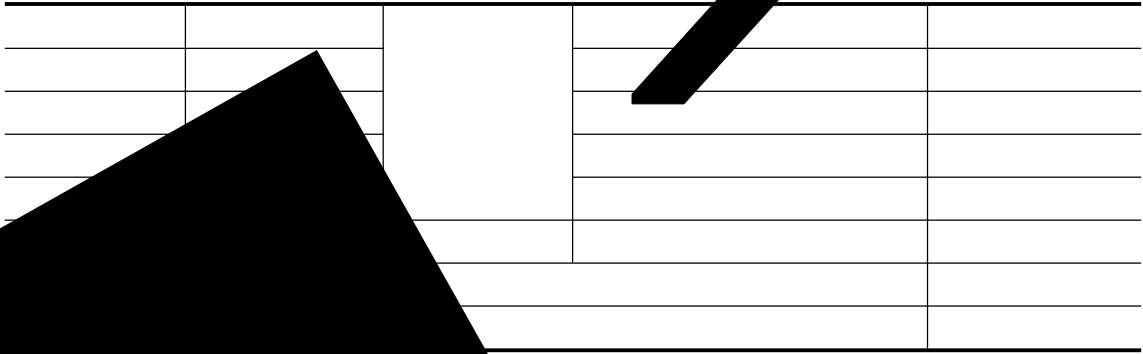
3.2.11

	(t/a)			(t/a)

2

3.2.12

	(t/a)			(t/a)



3.2.13

	(t/a)

3.2.14

[illegible]



6

175

2565m³/a 8.55m³/d

5

$$Q=F \times q \times \Psi$$

Q

L/s

Ψ

0.9

F

4.1hm²

q

L/s · hm²

218.3L/s · hm²

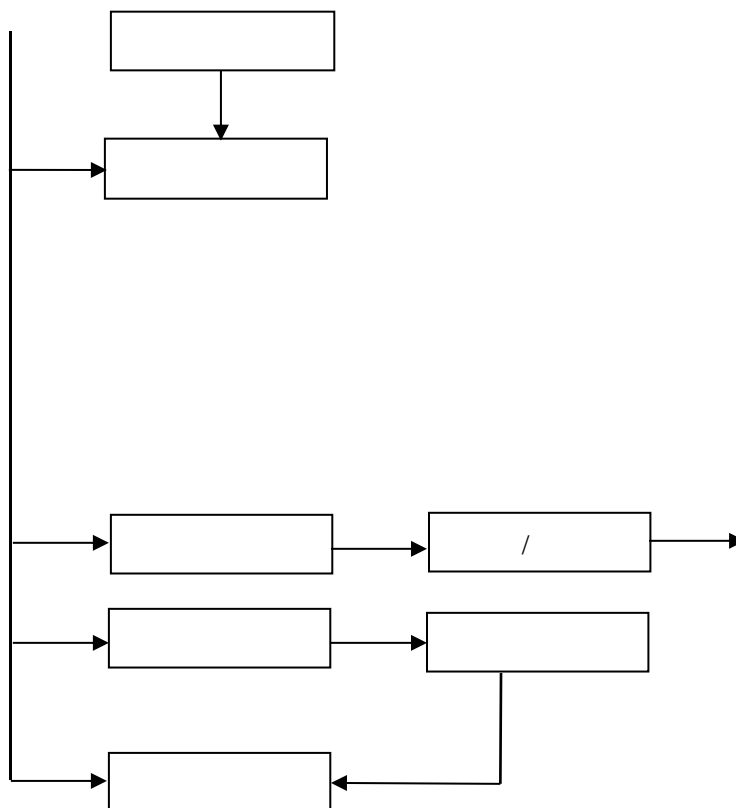
15min

725m³/

15 /

10875m³/a

SS



1012.35m³/d 96000m³/d 97012.35m³/d 1.8m³/d 99%

+

1

3.2.9.1

2

25t/a

12.5t/a

250t

+

15m

3

20000t/a

83.60t/a

+

15m

4

300

3×300 / =900

35g

3%

***	***		15063	31.482			0.346
	***		155.18	0.324			0.004
	***		14907	31.156			0.343
	***		1940	4.055			0.045
	***		13200.066	27.588			0.304
	***		/	94.605			1.041
***	***		53346	111.493			1.227
	***		550	1.150			0.013
	***		52795	110.342			1.214
	***		6829	14.273			0.157
	***		46800.234	97.812			1.076
	***		/	335.069			3.687
***	***		1100	2.299			0.023

3

GS3

0.005kg/t

3.3.2

			t/a	t/a		t/a
***	***		5896.8	0.590		0.590
***	***		6000	0.030		0.030
***	***		37346.437	3.735		3.735
***	***		38000	0.190		0.190
***	***		15530	1.553		1.553
***	***		13200	0.066		0.066
***	***		55000	5.500		5.500
***	***		46800	0.234		0.234
***	***		1100	0.110		0.110

4

GS4

99%

SO₂

[a]

		t/a					h
--	--	-----	--	--	--	--	---

				%	t/a	t/a	
***		16.571	+	99	0.166	0.166	7200
	SO ₂	0.704			0.007	0.007	
		100.441			1.004	1.004	
	[a]	3.04E-04			3.04E-06	3.04E-06	
		12.847			0.128	0.128	
***		104.950			1.049	1.049	7200
	SO ₂	4.460			0.045	0.045	
		636.125			6.361	6.361	
	[a]	0.002			1.92E-05	1.92E-05	
		81.365			0.814	0.814	

70~99%

70%

3.3.5

		Nm ³ /h	t/a		%	t/a	h	m
***	***		/	+	/	0.684		

30000

7200

			SO ₂		0.704		/	0.007		/	/
					100.441		/	1.004		/	/
			[a]		3.04E-04		/	3.04E-06		/	/
			NMHC		12.847		/	0.128		/	/
	***	***		/	7.856		70	2.357	7200	/	/
			SO ₂		4.460		/	0.045		/	/
					636.125		/	6.361		/	/
			[a]		0.002		/	1.92E-05		/	/
			NMHC		81.365		/	0.814		/	/
	***	***		/	2.660		70	0.798	7200	/	/
	***	***		/	9.421		70	2.826	7200	/	/
	***	***			0.133	/	/	0.133	600	/	/

RCO

1

30

1

1 2

2

30

1

1 2

[a]

3 RCO

RCO

30

1

1 2

[a]

60%

70%

80%

SO₂

Nm³/h

t/a

%

t/a

0.603

0

0.603

28.715

90

2.872

+

86.000

+

70+40

30000

+

+

RCO

+

			[a]	30000	3.01E-04		98	6.02E-06		
			NMHC		12.719		90+80	0.254		
	***	***	SO ₂		4.416		0	4.416		
					103.378		90	10.338		
					625.599		70+40	112.607		
			[a]		1.91E-03		98	3.82E-05		
			NMHC		80.551		90+80	1.611		
		SO ₂	30000	+	+	+	RCO	0	5.715	
								148.498	90	14.850
								811.035	70+40	145.986
		[a]						2.47E-03	98	4.94E-05
		NMHC						104.270	90+80	2.085

86t/a

[a]

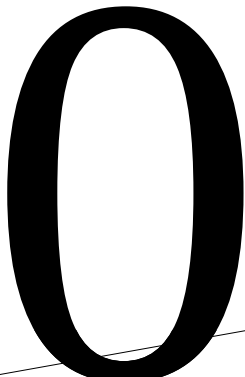
2.6E-04t/a

11t/a

SO₂

0.603t/a

28.715t/a



4000m ³ /h	GB/T50102-2014
1%	
960m ³ /d	
2	
	540m ³ /a
COD _{Cr}	SS
3	
300	
	0.15t/d
45.0t/d	13500t/a
	300
	0.8
	36.0t/d
	10800t/a
pH	6.5-9.5
COD	500mg/L
BOD ₅	250mg/L
SS	200mg/L
45mg/L	
	100mg/L
	+
	5
	pH
7.33~7.64	COD
203~213mg/L	BOD ₅
67.6~72.4mg/L	SS
55~63mg/L	
13.0~15.4mg/L	40mg/L
5	
725m ³ /	10875m ³ /a

	540m³/a	0	
	725m³/ 10875m³/a	0	
	36.0m³/d	36.0m³/d	

3.3.9

			COD	BOD ₅	SS	NH ₃ -N	
10800m ³ /a	mg/L		500	250	200	45	100
	t/a		5.400	2.700	2.160	0.486	1.08
		mg/L	213	72.4	63	15.4	40
		t/a	2.300	0.782	0.680	0.166	0.432
	mg/L		500	300	400	45	100
		mg/L	60	20	20	8	3
		t/a	0.648	0.216	0.216	0.086	0.032

3.3.10

COD_{Cr} mg/L t/d t/a

DW01

dB(A)

		/			
	1	***	***	70-75	65
	2	***	***	85-90	75
***	3	***	***	75-80	70
	4	***	***	70-75	65
	5	***	***	70-75	65
	6	***	***	80-85	70
	7	***	***	70-75	65
	8	***	***	85-90	75
***	9	***	***	75-80	70
		***	***	70-75	65
	11		***	70-75	65
	12	***	***	80-85	70
	13	***	***	70-75	65
	14	***	***	75-80	70
	15	***	***	75-80	70
	16	***	***	70-75	70
	17	***	***	80-85	75
		***	***	70-75	65
	19	***	***	75-80	70
***	20	***	***	75-80	70
	21	***	***	70-75	70
	22	***	***	80-85	75
		***	***	70-75	65
	24	***	***	80-85	75
***	25	***	***	85-90	75
	26	***	***	85-90	75
	27	***	***	75	

69-7-

	34	***	***	70-75	65	
	35	***	***	85-95	75	
	36	***	***	80-90	70	
	37	***	***	75-80	65	
***	38	***	***	70-75	65	
***	39	***	***	75-85	70	
	40	***	***	80-85	70	1

1

PVC

2kg

70900

141.80t/a

GB/T39198-2020

07

309-001-07

2

8769t/a

46

309-001-46

3 6 10 3

09-001-46

1 “ ”

6 6

1724.773t/a

309-001-46

5

14.711t/a

46

309-001-46

6

6t/a

99

900-999-99

7

500t/a

7.5

60%

200t

2021

HW11

T

309-001-11

8

2021	HW49	T/In	900-041-49
11			
	“	+	+
RCO	N		+

t/a

14.5

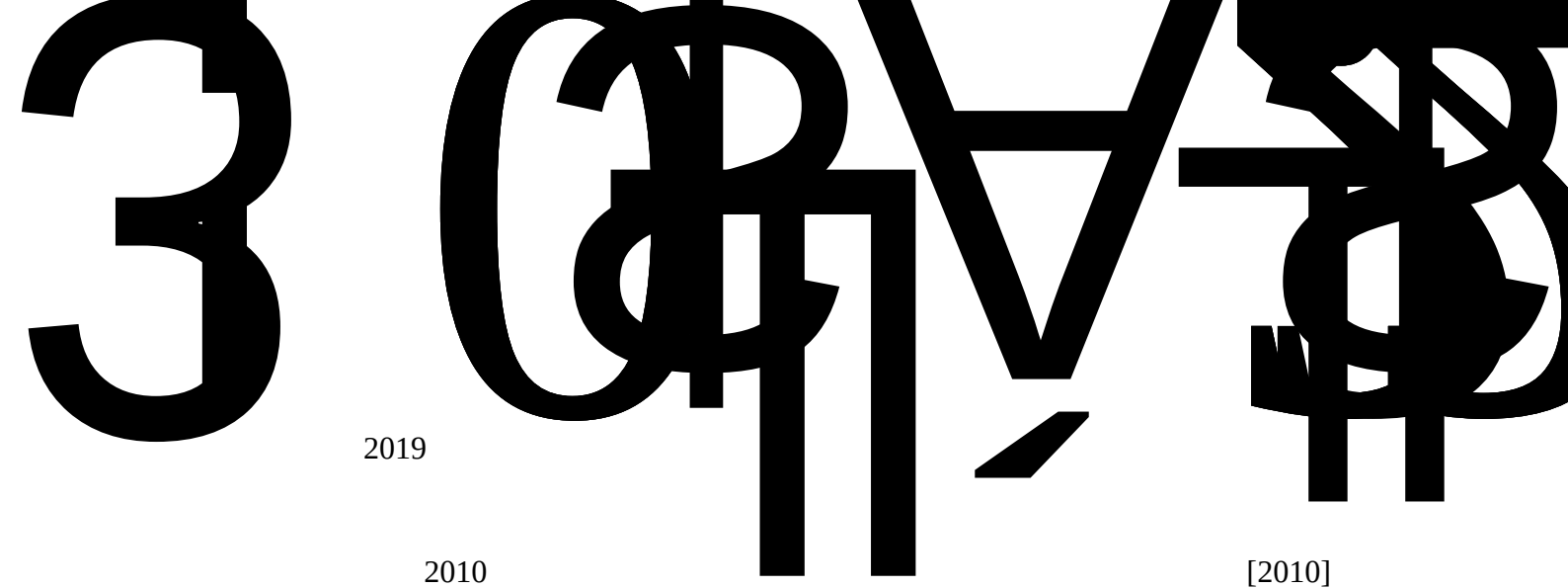
	(t/a)	(t/a)	(t/a)
	10800	0	10800
COD	105400	3.100	2.300
BOD ₅	2.700	1.918	0.782
SS	2.160	1.480	0.680
NH ₃ -N	0.486	0.320	0.166
	1.080	0.648	0.432

	(t/a)	(t/a)	(m)	(m)	()	
***	/	1.199				+
***	/	7.824				+
SO ₂	0.696	0.696				
	16.405	1.641				+
***	[432		30	0.95	100	+
						+
						RCO
						+

14.232

			[a]	1.91E-3	3.82E-5				
			NMHC	80.551	1.611				
		***		/	5.317	15	0.8	25	+
		***		/	18.829	25	1.1	25	+
		***		7.10	0.071	15	0.5	25	+
		***		1.97	0.020	15	0.8	25	+
		***		0.28	0.056	15	0.3	100	
		***	SO ₂	1.078	0.323	72m 90m 12.2m			
			0.704	0.007					
			100.441	1.004					
	[a]		3.04E-04	3.04E-06					
	NMHC		12.847	0.128					
	***	SO ₂	7.856	2.357	182m 90.4m 12.3m				
			4.460	0.045					
			636.125	6.361					
		[a]	0.002	1.92E-05					
		NMHC	81.365	0.814					
	***		2.66	0.798	72m 35.3m 12.2m				
	***		9.421	2.826	90.4m 63.3m 22.3m				
	***		0.133	0.133	10m 10m 15m /				
				(t/a)	(t/a)		(t/a)		

			141.8	141.8	0	
			8769	8769	0	
			1724.8	1724.8	0	
			2569.9	2569.9	0	
			14.7	14.7	0	
			6.0	6.0	0	
			200	200	0	
			2.0	2.0	0	
			1.05	1.05	0	
			10	10	0	
			8	8	0	
			0.5	0.5	0	
			45.0	45.0	0	



2019

2010

[2010]

122

“ ”

3.4.1

“ ”

“ ”

3.4.2

10ppb



5000 /

85%

1



85%

GB/T24533-2019

1200kWh/

3 m³/

400

/

0.1229kg /kWh

1.214kg /m³

148.45kg /

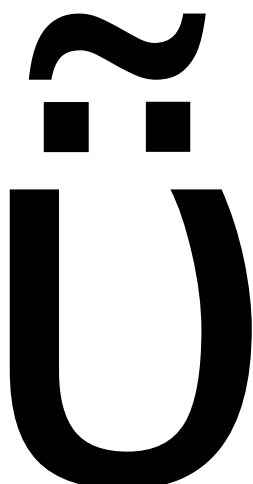
80%

99%

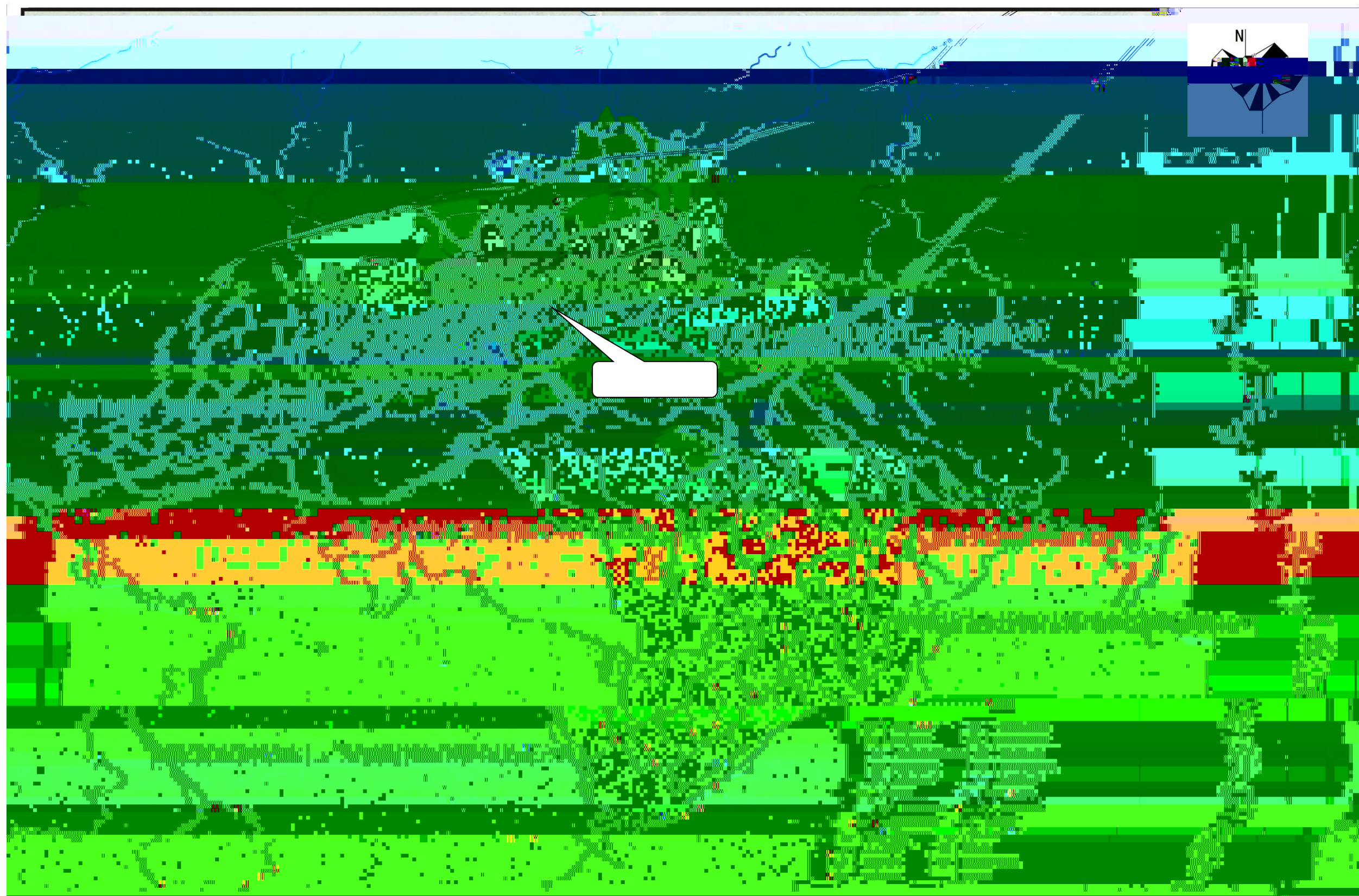
1

“ ”

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2017 12 [



1

2

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4



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ΤΑ 89 ΒΣ Β ΜΥΓΙΟ Ο

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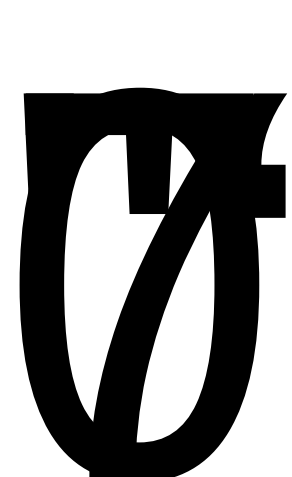
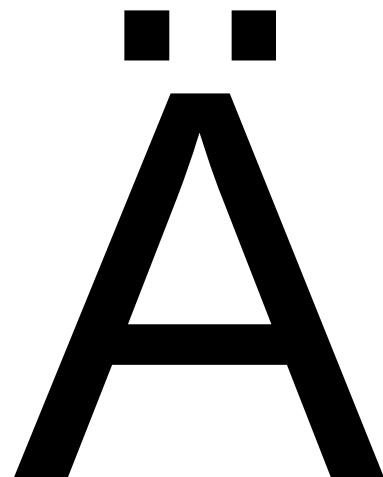
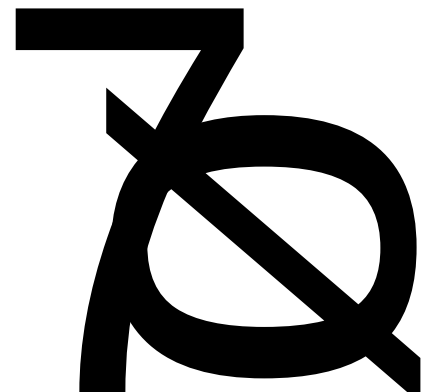
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\$

Å" " • iêÔd

VOCs

VOCs



100%

✕

✖

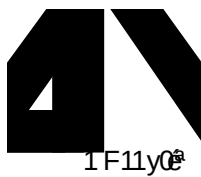
“ ”

“ ”

 $+$ $+$ $+$ $+$

R

$$+$$



1F11y03

1

1

2

3



1

2

100%

100%

3

[a]

GB16297-1996 2

3.5.2

		kg/t	0.86	26.5	0.35
	SO ₂	kg/t	0.08	0.002	0.125
	NO _x	kg/t	/	0.027	0.282
		kg/t	2.29	10.53	1.264
	[a]	kg/t	1.11E-06	1.58E-06	7.5E-06
		kg/t	0.046	5.26	2.1
		m ³ /t	0.18	0.75	0.52
	COD	kg/t	0.038	0.071	0.065
		kg/t	0.003	0.007	0.003

100%

1

2

“ ”

3

“ ”

“

" 70)NCE 4 * 8)B4Z@#EDW@ö0 Sx)† È

THE UNIVERSITY OF CHICAGO

M

é/4/ãv

1

2016

2017-2035

2025

2035

2

8.3924km²

3

2.28

1.23

“ ”

“ ”

“ ”

“ ”

3

2

5

3

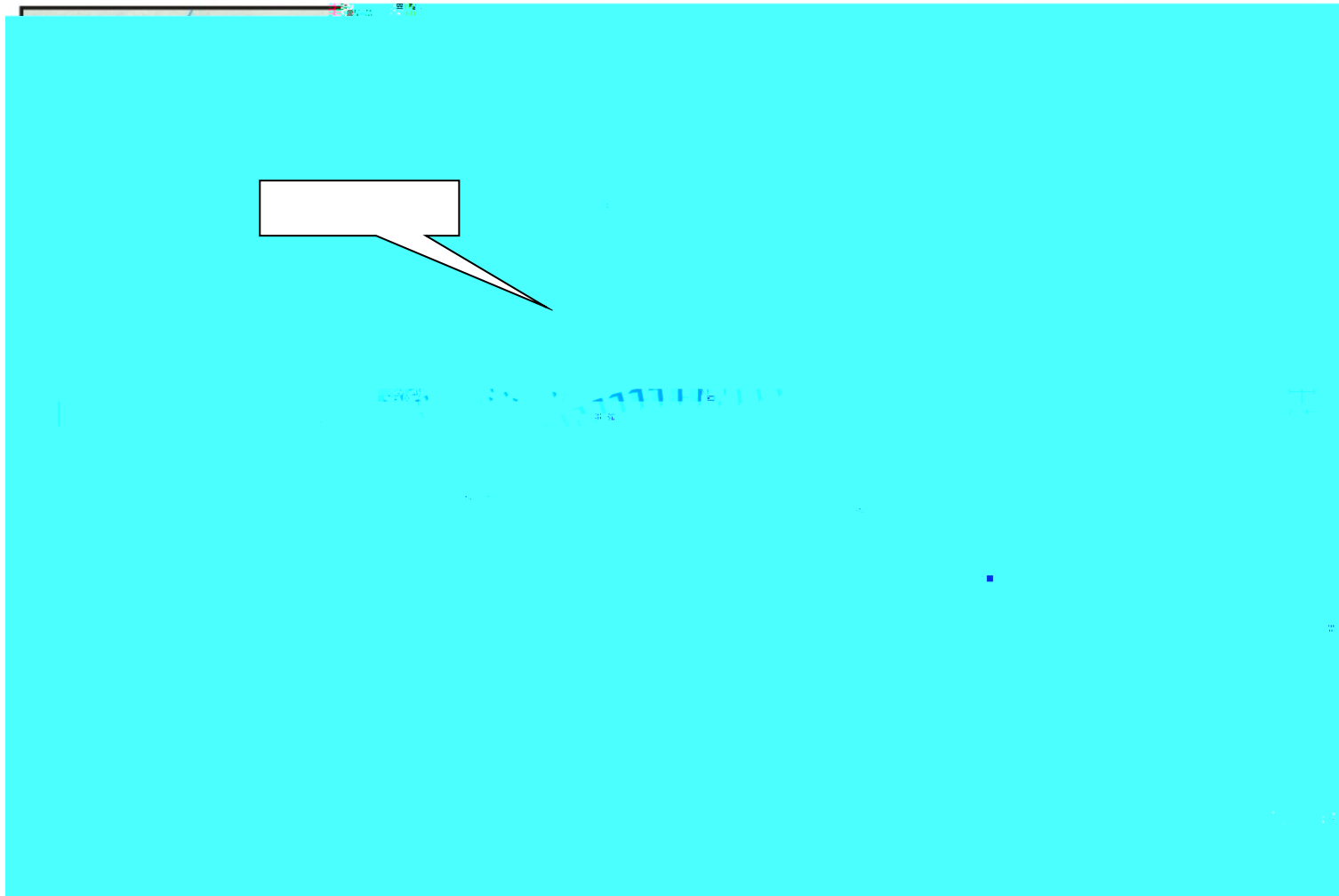
4.3- 1

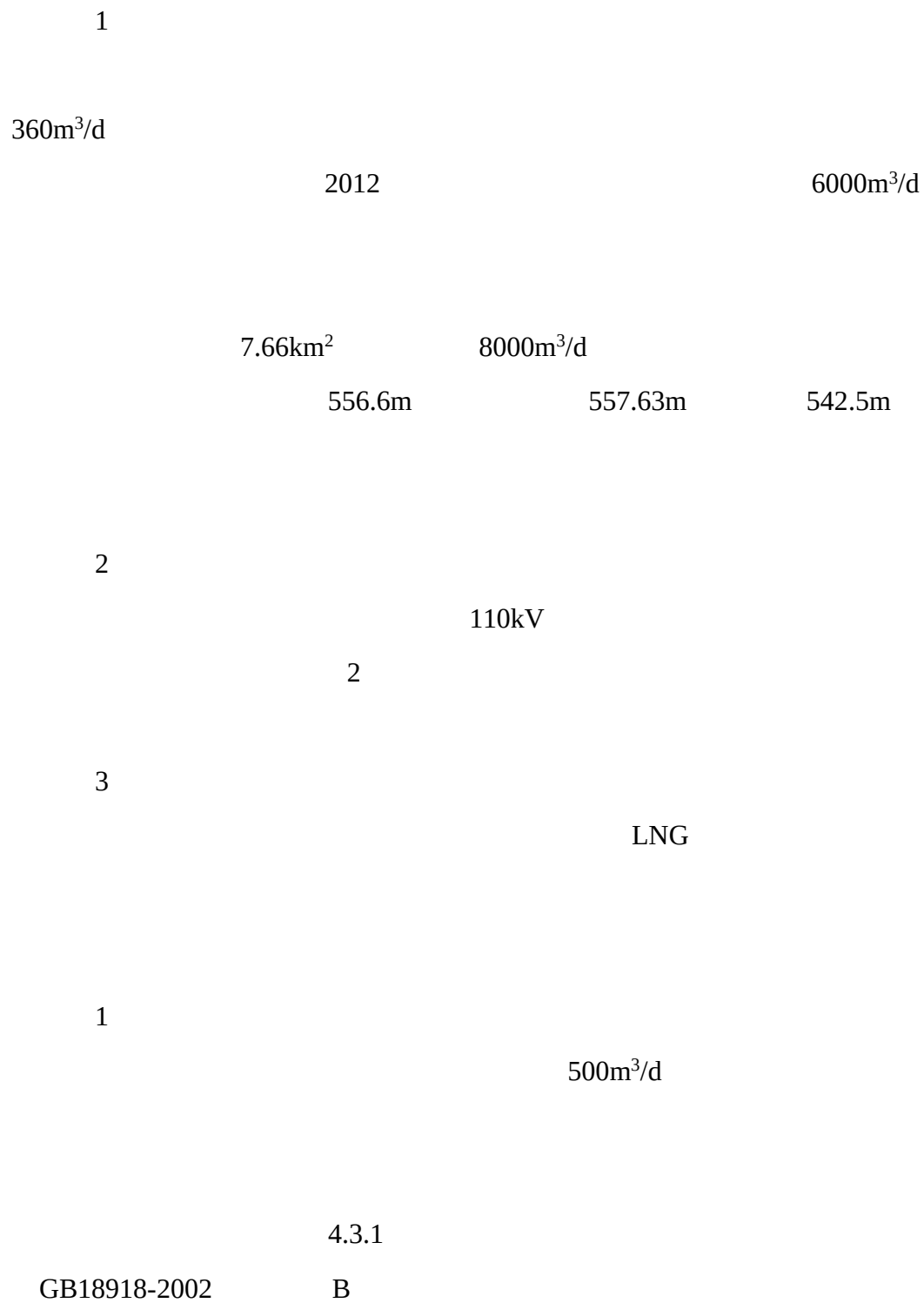
8.3924

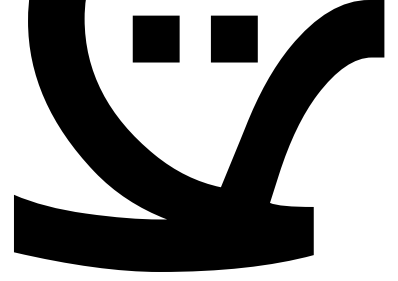
3.9743

47.36%

3.5- 1







2016 3

500t/d

+MBR+

GB18918-2002

B

t/d

500

100

B

300

20

B

10 00

4

05

00

23

5	1366	0.15	0.023	0.0031
6	942	0.057	0.008	0.001
7	504	0.05	0.0075	0.001
8	428.4	0.043	0.0064	0.0009
9	1436.4	0.144	0.021	0.0029
10	1921	0.19	0.025	0.0032
11	840	0.084	0.013	0.0017
12	3600	1.08	0.126	0.0036
13	2207.4	0.132	0.018	0.002
14	144	0.009	0.001	0.0001
15				

10		2.798	/	/	
11		0.225	1.802	13.38	
12		0.102	/	/	
13		0.195	/	/	
14		0.044	/	/	
15		0.003	/	/	
16		0.15	/	/	
17		25.189	3.2	22.328	
18		0.164			
19		0.098			
20		0.3265			
21		4.414	/	/	
22		1.913	/	0.172	
23		0.268	/	/	
24		0.3	0.34	1.02	
25		2.07	/	/	
		95.9315	27.764	58.364	

2021

	$\mu\text{g}/\text{m}^3$				CO mg/m^3	O ₃ 8 $\mu\text{g}/\text{m}^3$
	SO ₂	NO ₂	PM ₁₀	PM _{2.5}		
	***	***	***	***	***	***
GB3095-2012	***	***	***	***	***	***
GB3095-2012	***	***	***	***	***	***

2021

2021

			COD	SS	
					COD BOD ₅
SS	NH ₃ -N	20			0.8t/d

5.1.2

GB12523-2011

70m

70 dB A

55 dB A

GB12523-2011

620m

1

2

3

4

2020 C SE
ESE SSE 53.4 SE 12.4
D

1

5.2.8

			t/a	kg/h			
					m	m	
1	5#	SO ₂	5.112	0.710	30	0.95	100
			21.038	2.922			
			130.505	18.126			
		[a]	4.422E-05	6.142E-06			
		NMHC	1.865	0.259			
2	6#		5.317	0.738	15	0.8	25
3	7#		18.829	2.615	15	1.1	25
4	8#		0.071	0.006	15	0.5	25

5	9#		0.020	0.003	25	0.8	25
			t/a	kg/h			m
1		SO ₂	0.323	0.045	72m 90m		12.2
			0.007	0.001			
			1.004	0.139			
		[a]	3.04E-06	4.222E-07			
		NMHC	0.128	0.018			
2		SO ₂	2.357	0.327	182m 90.4m		12.3
			0.045	0.006			
			6.361	0.883			
		[a]	1.92E-05	2.667E-06			
		NMHC	0.814	0.113			
3			0.798	0.111	72m 24m		12.2
4			2.826	0.393	90.4m 63.3m		22.3
5			0.133	0.222	10m 10m		15

2

1.5.1

Ci mg/m³

Pi %

7.93%

-

HJ2.2-2018

1

2.5km

3

-

HJ 2.2-2018

SO₂

[a]

5.2.9

(t/a)

(t/a)

(m)

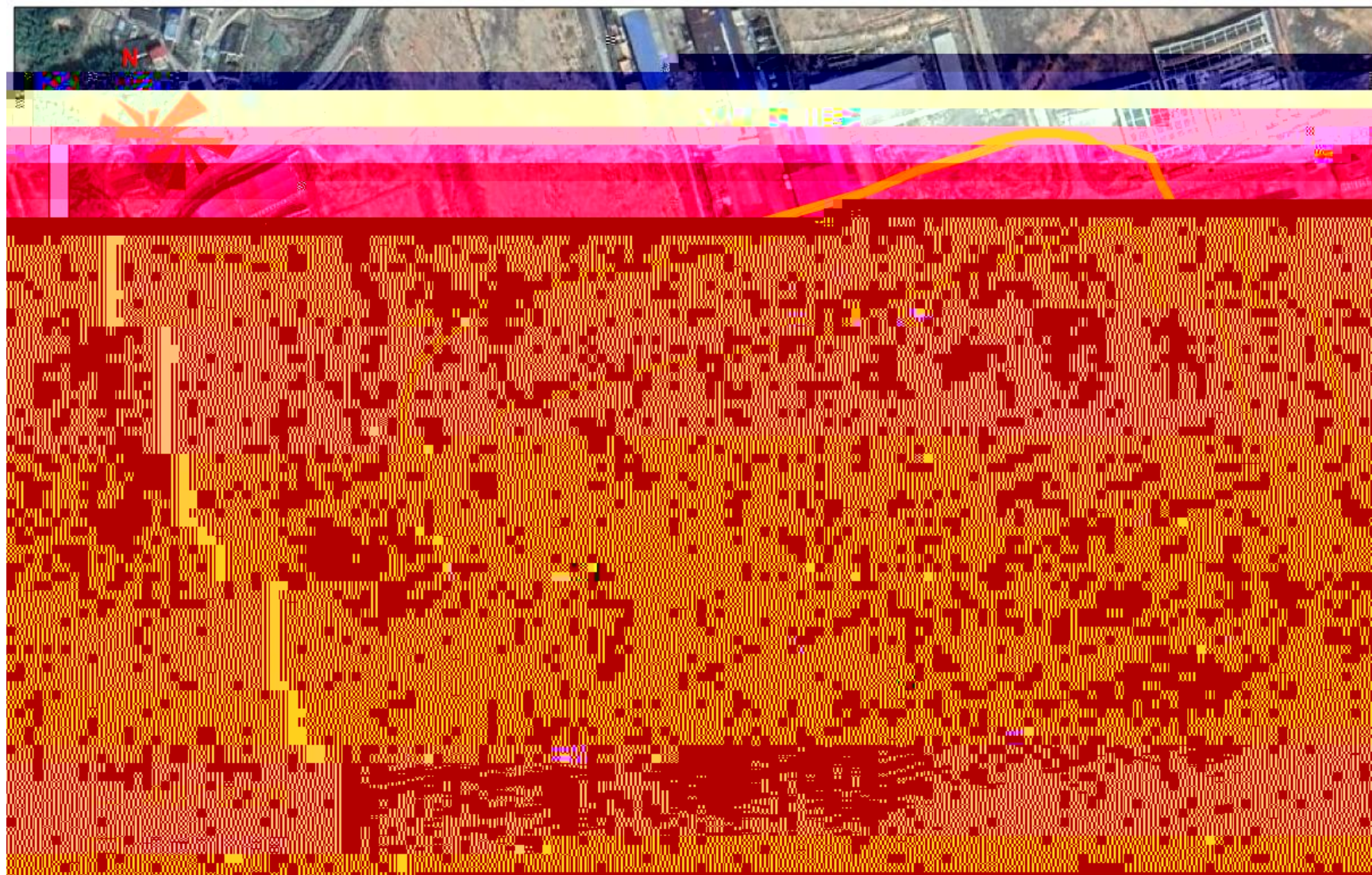
Be

	0.704	0.007	12.2m	
	100.441	1.004		
[a]	3.04E-04	3.04E-06		
NMHC	12.847	0.128		
SO ₂	3.856	2.357		
	4.460	0.045		
	636.125	6.361	182m	90.4m
[a]	0.002	1.92E-05	12.3m	
NMHC	81.5			

		100	0.222	80	100
--	--	-----	-------	----	-----

100m

5.2-16



1

960m³/d

36.25m³/d 10875m³/a < 960m³/d

2

D 36.00m³/d

GB8978-1996

3

725m³/

SS

5.2.11

潜水 潜水 潜水

1

↓

潜水 潜水 潜水

540m³/a

0

2.

+

36.00m³/d

COD

SS

ǎ

ψ

40%

40%

p ¥

6

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Σ



COD_{Mn}
 COD_{Mn} 213mg/L

HJ610-2016



x — m
 t — d
 C — t x mg/L
 C₀ — mg/L
 D_L — m²/d
 U — m/d
 erfc —
 U DL

a.

0.75m/d

0.02

Gelhar 1992

aL 10.0m

DL

$$DL=aL \times u=10 \times 0.0375=0.375m^2/d$$

$$U=K \times I/n$$

U— m/d

K— m/d

I—

n—

$$U=0.75 \times 0.02/0.4=0.0375m/d$$

COD_{Mn}

100 365 1000 3650 4

5.2.14

III

m

m

COD_{Mn} 3.0m

COD 213mg/L 100d 16m
 1000d 62m 3650d 10a 150m

5.2.15

			/	dB(A)		
	1			70-75	65	
	2			85-90	75	
	3			75-80	70	
	4			70-75	65	
	5			70-75	65	
	6			80-85	70	
	7			70-75	65	
	8			85-90	75	
	9			75-80	70	
	10			70-75	65	
	11			70-75	65	
	12			80-85	70	
	13			70-75	65	
	14			75-80	70	
	15			75-80	70	
	16			70-75	70	
	17			80-85	75	
	18			70-75	65	
	19			75-80	70	

	20			65-80	70	
	21			70-75	70	
	22			80-85	75	
	23			70-75	65	
	24			80-85	75	
	25			85-90	75	
	26			85-90	75	
	27			75-80	70	
	28			85-90	75	
	29			75-80	70	
	30			80-85	75	
	31			70-75	65	
	32			85-90	75	
	33			80-90	70	
	34			70-75	65	
	35			85-95	75	
	36			80-90	70	
	37			75-80	65	
	38			70-75	65	
	39			75-85	70	
	40			80-85	70	

HJ2.4-2009

—
—
—
—
0 —

0

2

A

$$10 \lg \frac{A_2}{A_1} = 6$$

$$10 \lg \frac{A_2}{A_1} = 4$$

—
e —
—
1 —
2 —
—
—
—
—

3

500HZ

dB

2()

A—

B—

d—

λ —

4

Aatm

$$A_{atm} = \frac{a(r - r_0)}{1000}$$

a

a dB/ km

%

N1

32.1

62.3

62.3

32.1

53.2

53.2

65

55

-2

S8			HW49	900-047-49		2.8t	180d
S9			HW08	900-249-08		2.8t	180d
S10			HW49	900-041-49		2.8t	180d
S11			HW49	900-039-49		2.8t	180d
			HW49	900-041-49		2.8t	180d

180

20d

100m²

2

1

GB18597-2001

2013

-

GB15562.2-1995



, m "

[2005] 9 JT617 JT618

4

“ ” ,

5 m " Ů

3 j Xn

	t/a		
S1	141.8		
S2	8769		
S3	1724.8	342m ²	60d
S4	2569.9		
S5	14.7		
S6	6.0		
S7	200	50m ³	60d
S8	2.0		
S9	1.05		
S10	10	100m ²	180d
S11	8		
S12	0.5		
S13	45.0	/	

1

2

3

4

1

2

“

”

	√	/	√	/
	/	/	/	/

	/				
			SO ₂ [a]	[a]	
			pH COD	/	

a

Rs— g

ρ_b — kg/m³

A— m² 50m 713000m²

D— 0.2m

n— a 20a

$S=S_b+\Delta S$

S_b — g/kg

S— g/kg

5.2.22

	Is g	Ls g	Rs g	ρ_b kg/m ³	A m ²	n
[a]	7.65	0	0	1800	713000	20

5.2.23

	ΔS mg/kg	S_b mg/kg	S mg/kg	mg/kg		
[a]	0.0006	0.1	0.1006	0.55		

[a]

GB36600-2018

9.0 hm" m"

		2-	[a]	[a]
[b]	[k]		[a h]	[1 2]
		3-cd]		
GB 15618	GB 36600	D.1	D.2	
		GB36600-2018		
		/		
	E	F		
	a	b	c	a b

.

3

GB/T50934-2013

A.

B.

C.

D.

5

HJ/T164-2004

3

1

2

pH

[a]

6

HJ/T166-2004

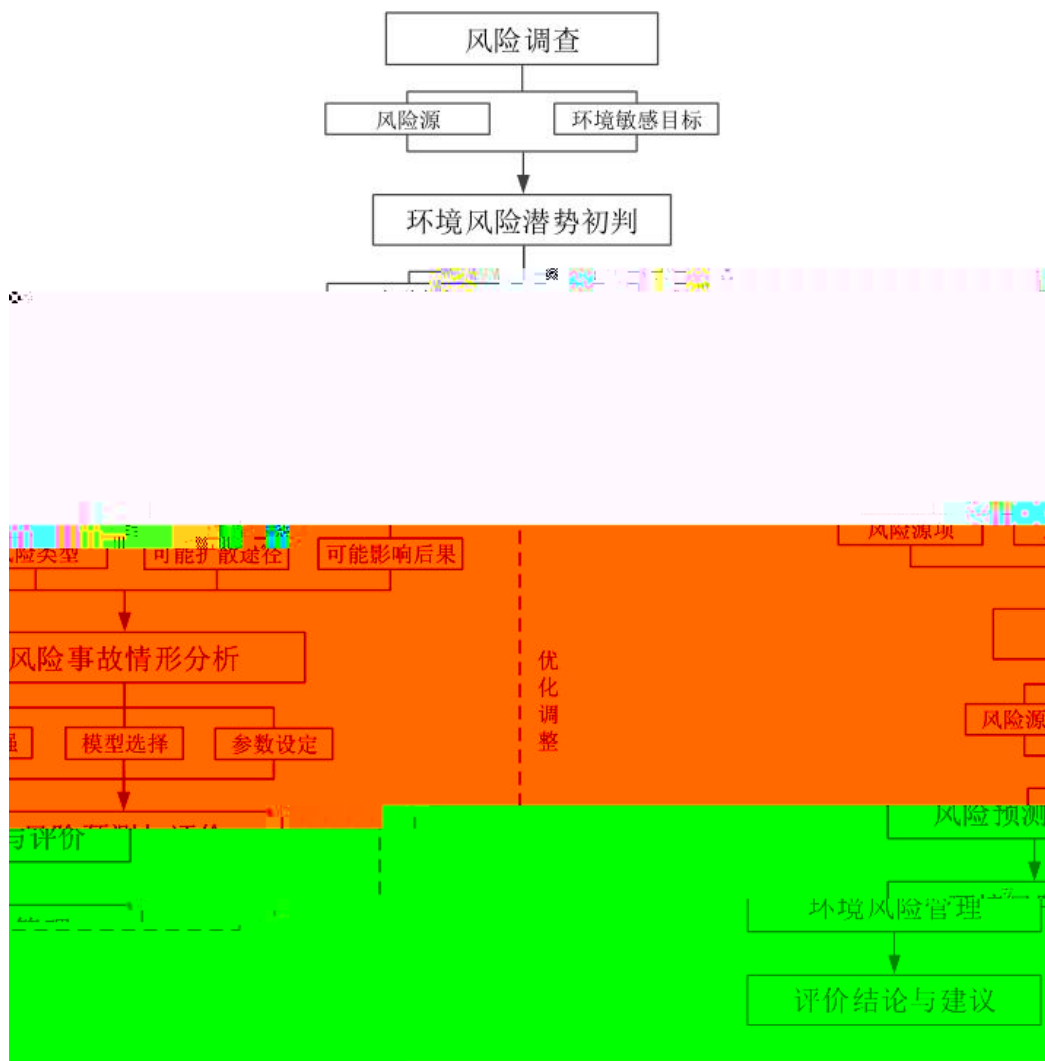
3

pH

[a]

7

6.1-1





HJ169-2018

“ ” /

1

2

3

/

/

CO₂ H₂O
CO

4

6.1.3

1						
2						
3			SO ₂ NO ₂ [a]			
4			NMHC			
5			COD SS			
6						

P

HJ

169-2018

1

Q

B

B

Q

Q

Q

q1 q2 ... qn—

t

Q1 Q2 ... Qn——

t

m

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1.6.3

CO₂ CO CO

1200m³

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RCO

+

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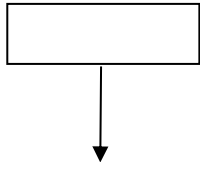
[a]

E

, m "

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E



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12

13

14

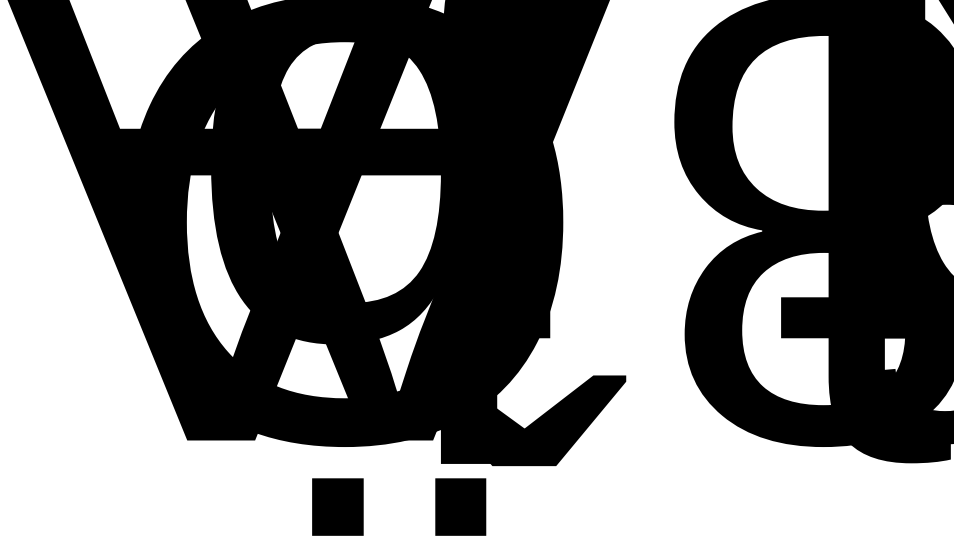
1

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15

16



1

2

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3

: x+o1FV1\$32W/Kg[\$ \$—!
: x+o1FV1\$32W/Kg[\$ \$—!
: x+o1FV1\$32W/Kg[\$ \$—!

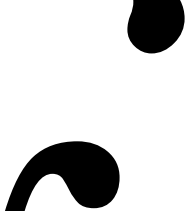
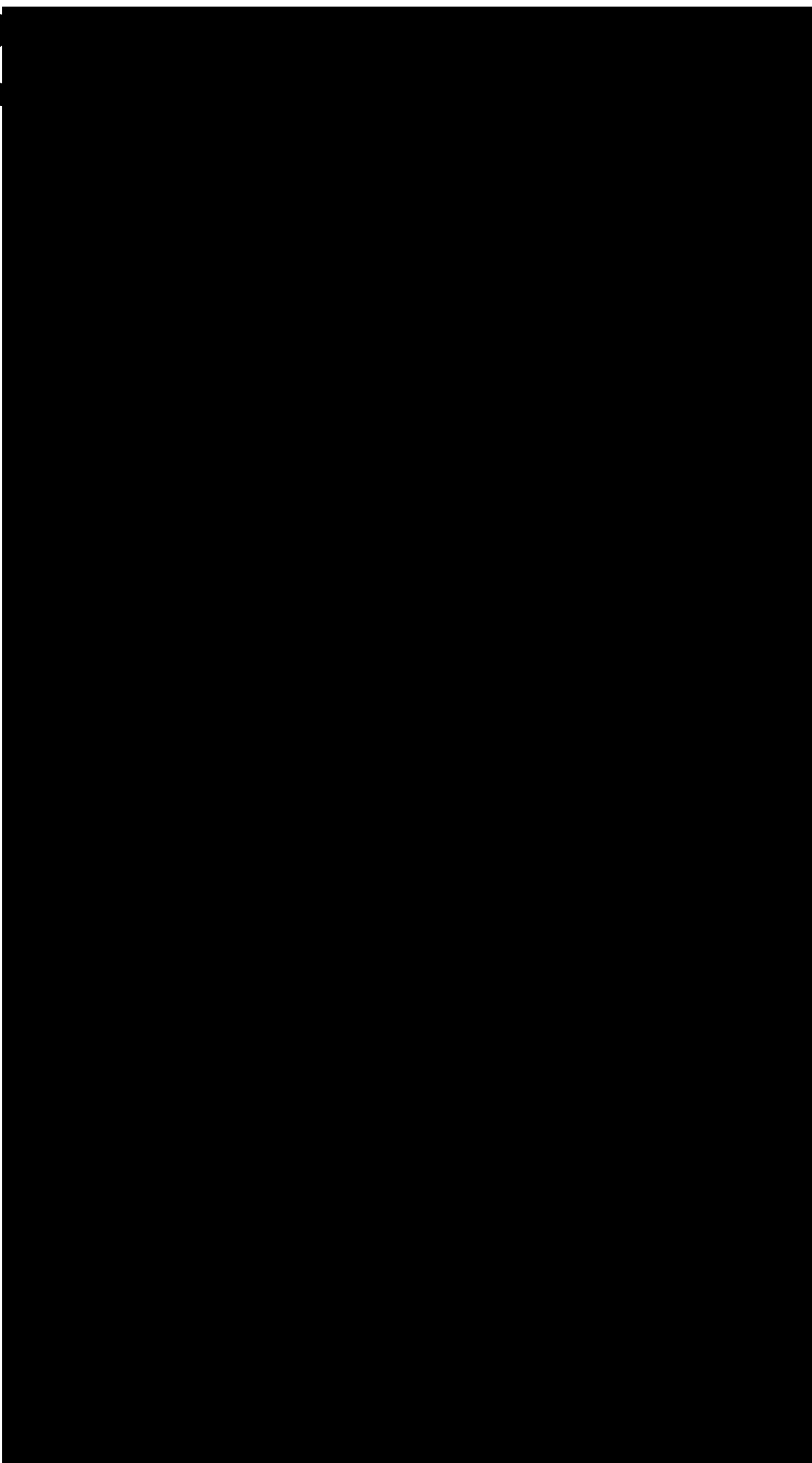
0×q|I :
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Lk!' pÂ 7 —+K× × f

\$À11hD7ä5Y %i+O

κ × f



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Q

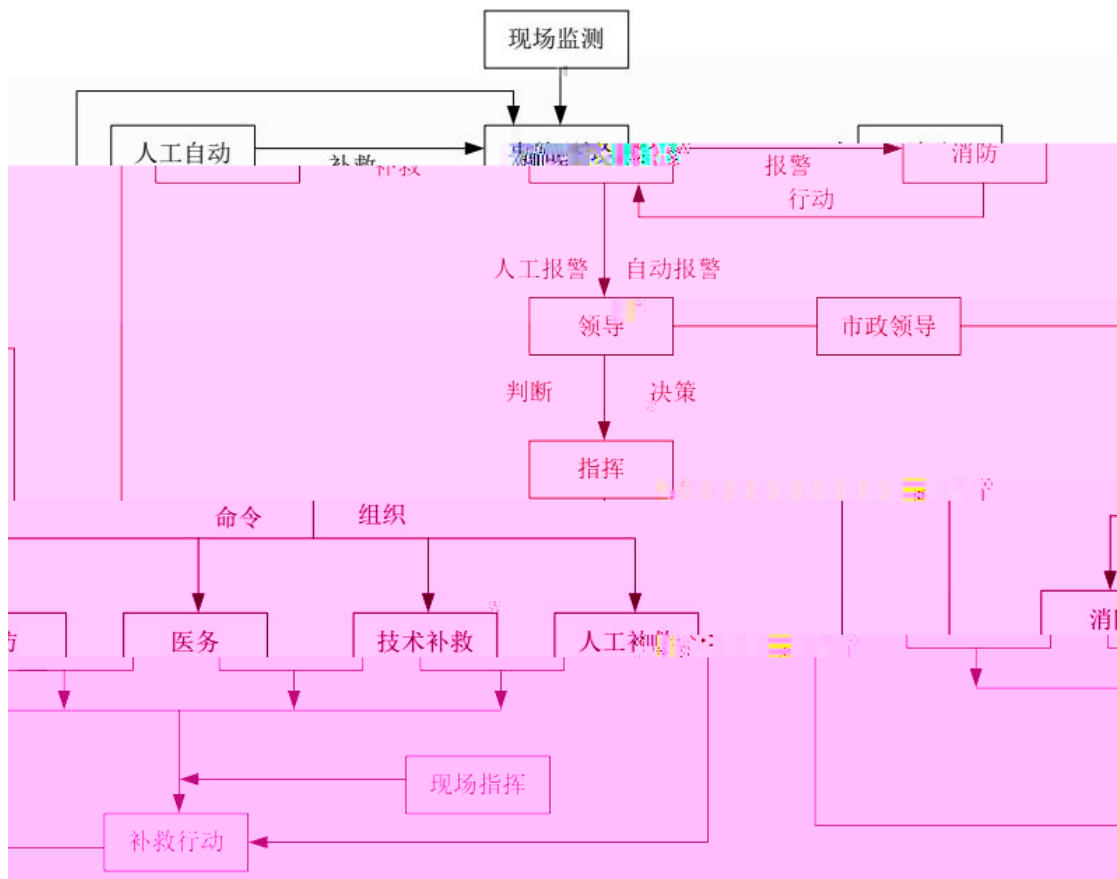
λ I † J € F V ¯ P 0 5 C V

5

[2018]8

6.4.1

1		
2		
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7		
8		
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10		
11		

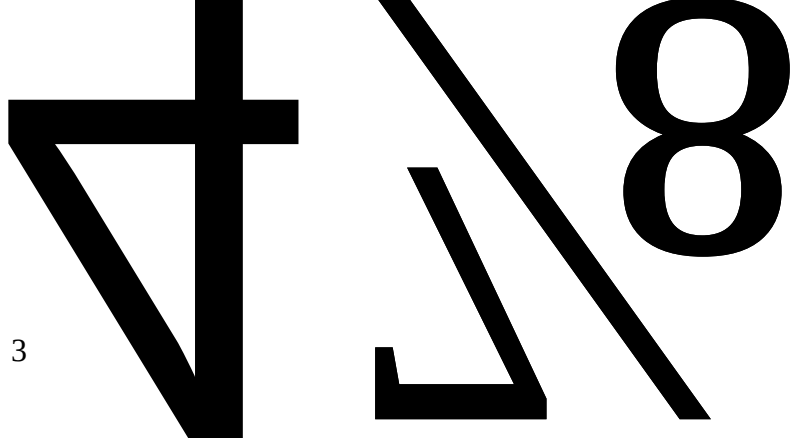


2

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3

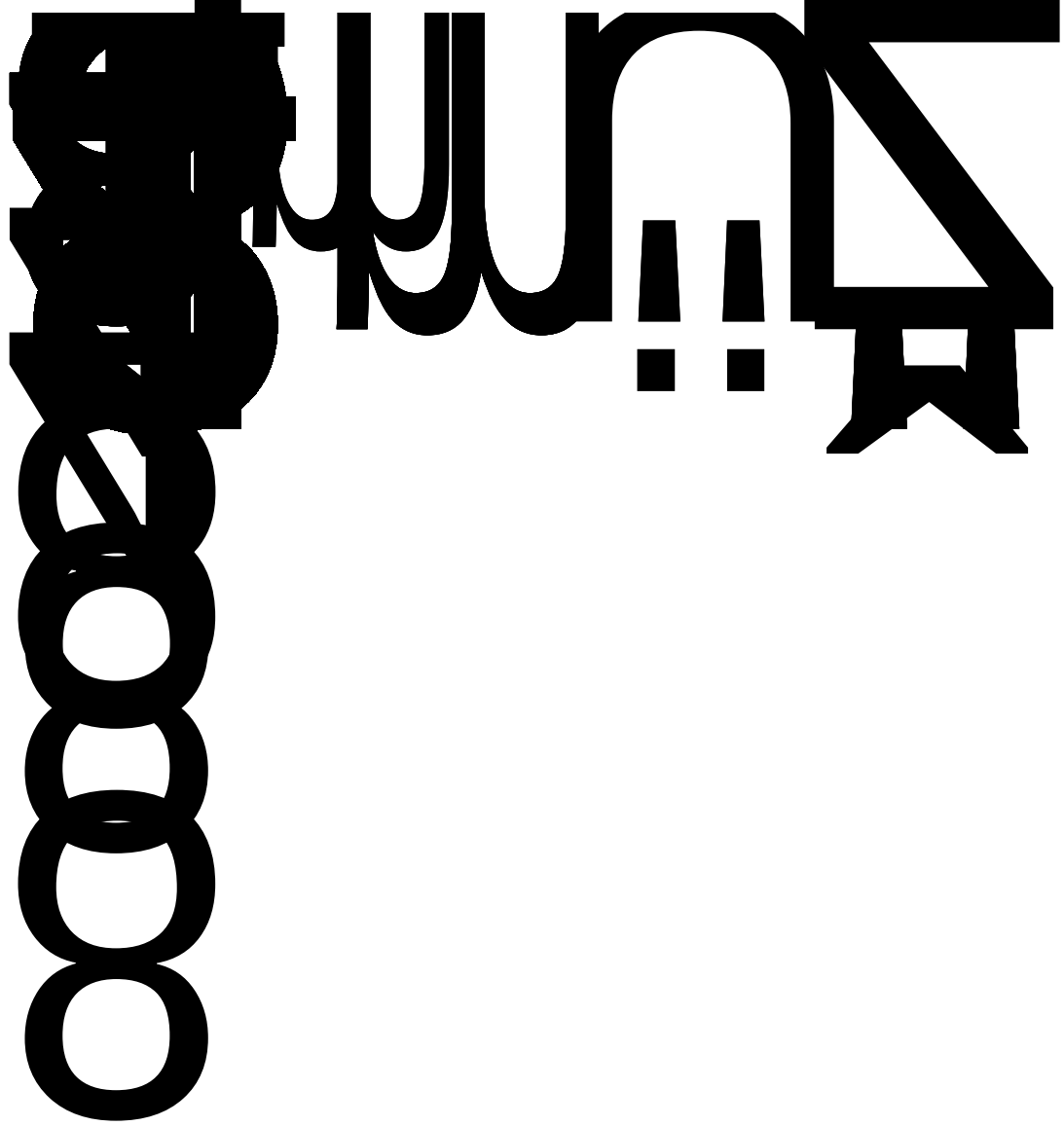


3

[a]

24

h



/t	100.06			
	500m	<u>0</u>	5km	<u>11259</u>
		200m		
		F1	F2	F3
		S1	S2	S3
		G1	G2	G3
		D1	D2	D3
	Q	Q 1	1≤Q 10	10≤Q 100
	M	M1	M2	M3
	P	P1	P2	P3
IV ⁺		E1	E2	E3
		E1	E2	E3
		E1	E2	E3
	IV	III	II	I
	Γ (,			

HJ/T 393-2007

4

1

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2

3

4

a)

b)

c)

d)

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a)

b)

c)

d)

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- a) b) c) d) e)

9

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- a) b) c) d) e) f)

11

2000 /100

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14

15

20

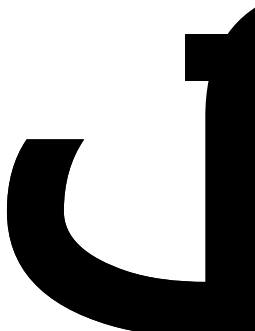
27 “

”



ء

27



			“	+	+	+
+	RCO	+	”			
[a]		+	+	+	+	RCO
+						

	1				>90%		+	7#
	2				>90%			8#
	3				>90%			1 2 3#
					>95%	SO ₂ NO _x [a]	+ + RCO +	5#
	4				>90%		+	
					>95%	SO ₂ NO _x [a]	+ + RCO +	
	5				>90%		+	
					>95%	SO ₂ NO _x [a]	+ + RCO +	
	6				>90%		+	4 6#
	7				>90%			9#
	1			/	/		+	/
	2			/	/	SO ₂		/
				/	/			
				/	/			
				/	/	[a]		
				/	/	NMHC		

15m 1 2 3 4 6 7 8# 25m

9#

K. .F.A.

99%

0.2μm

0.2μm

99%

38.7~57.7mg/m³

0.0673~0.681 kg/h

GB16297-1996

$$+$$

99.99%~99.994%

99.99%

[a] SO₂

“

 $+$ $+$
$$+$$
 $+$

RCO

 $+$

"

30m

7.2-2

1

<70

380

100

500

100

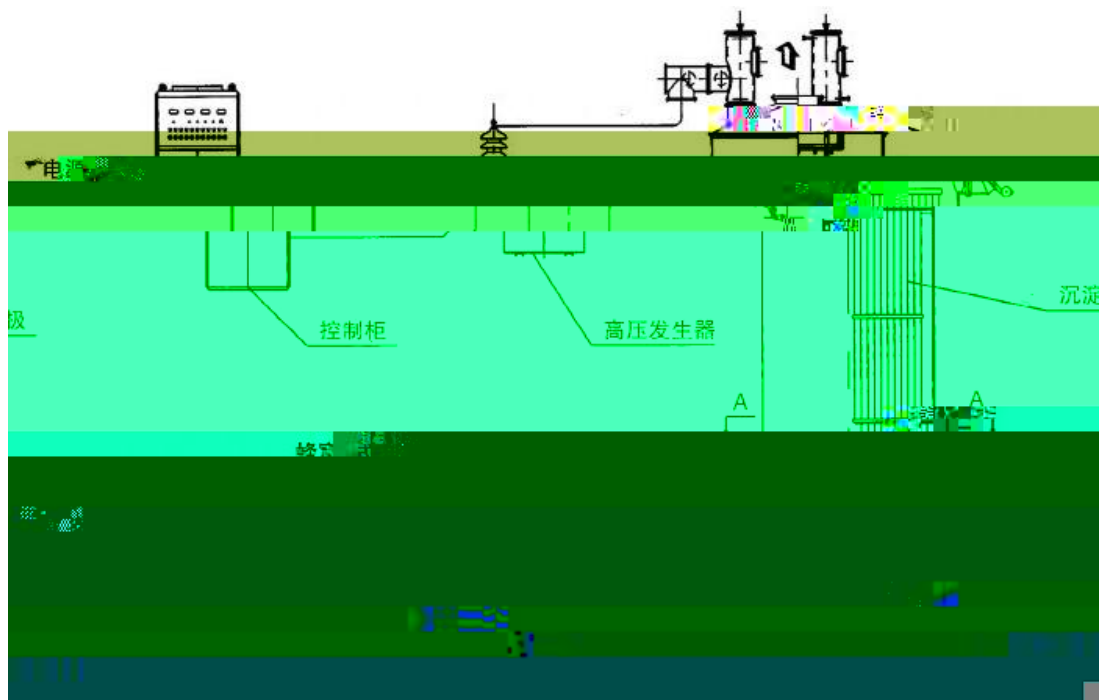
40%

40%

30%

80~90%

>8 μ m



10

7%~10%

100

F9

2~4

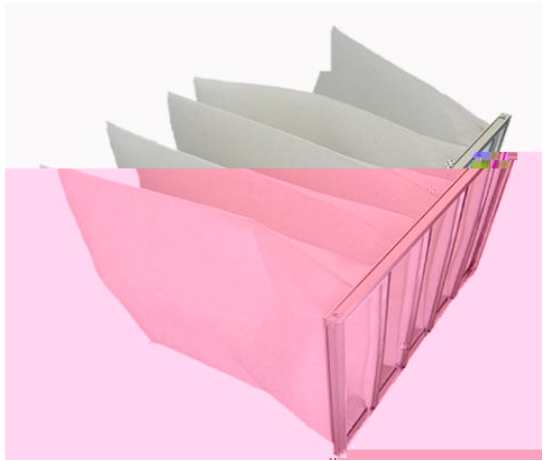
G4-F7-F9

PLC

PLC

	3000CMH/	3000CMH/	3000CMH/	3000CMH/
	G4	F7	F9	F9

	≤ 40	≤ 40	≤ 40	≤ 40
	80-450Pa	80-450Pa	160-450Pa	160-450Pa
	592*592*46	592*592*500	592*592*500	592*592*500



RCO

VOCs

VOCs

200

5~20

RCO

RCO

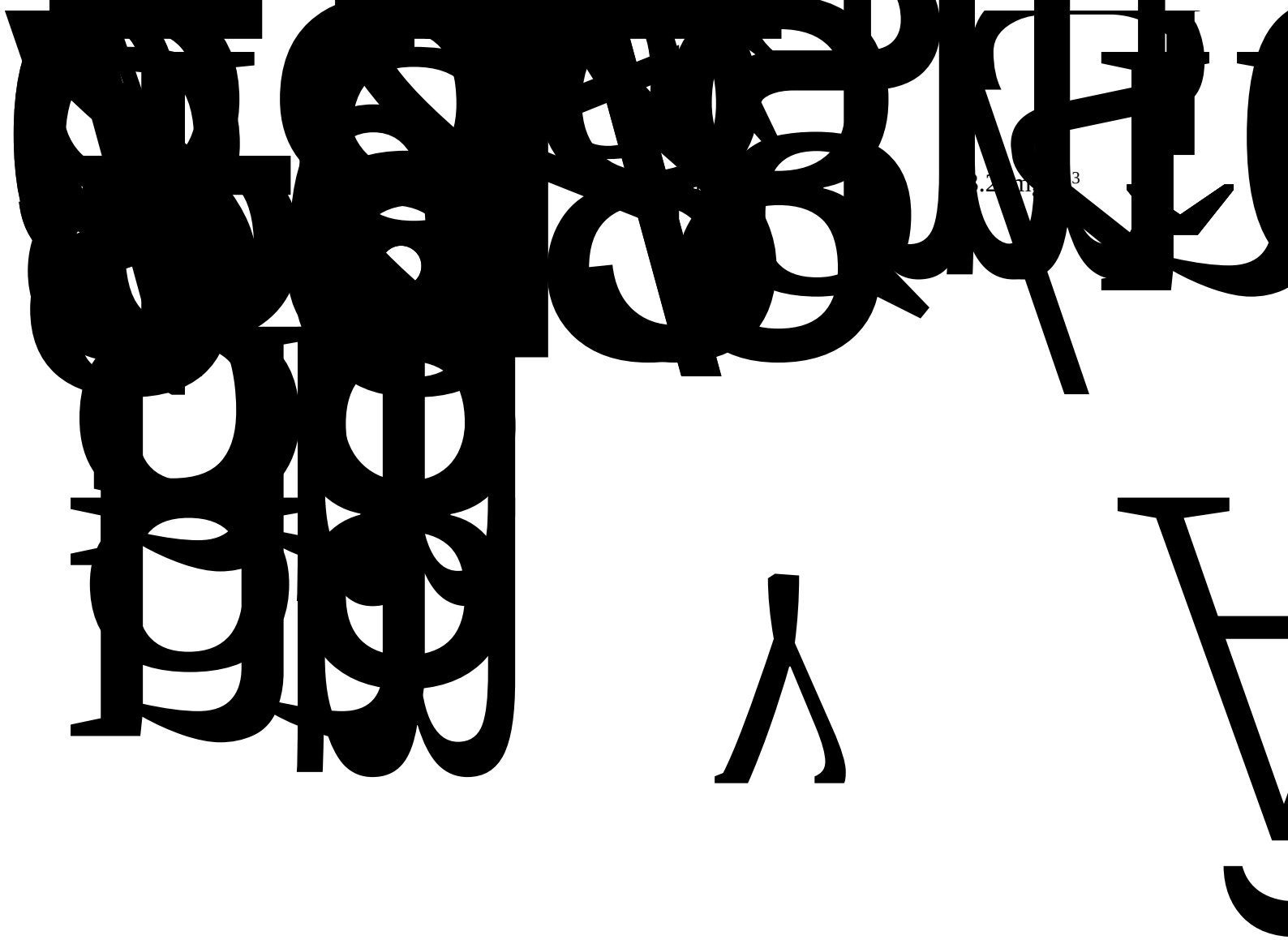
RCO

50

VOCs

RCO





[a]

	18	6	-12		-0.3072
[a]	1.2×10^{-4}	2×10^{-6}	-1.18×10^{-4}		-3.0208×10^{-6}
	6.3	4.73	-1.57		-0.040192

$8000h/a$

2 1 1

,

2

8

[a] SO₂

(GB16297-1996)

1		COD Ⅱ BOD _{5Ⅱ} Ⅱ SS Ⅱ			FS001	+	/	DW001		

||||

SS≤30mg/L

HJ1119-2020 A

960m³/d

36.25m³/d

10875m³/a < 960m³/d

， “ ”

2592m³/a

COD BOD₅ SS

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— SPEC 2+ 1#

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GB12348-2008 4a

GB12348-2008 3

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2018 11

2017 78

В

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6			10
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10	1	+		0
	4		+	500 /
2	1			300 /
3				150 /
		3		
	1		100m ² 2	
4		690m ² .		50 /
5				200 /
6		1200m ³		

1

2

72

6

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1

“ ”

2

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1

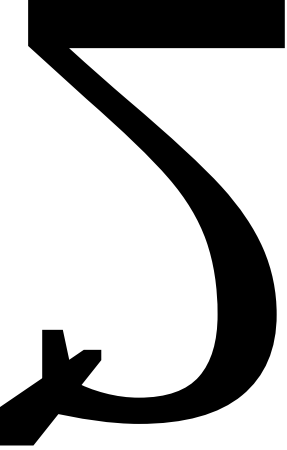
“ ”

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“ ”

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“ ”



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9.1.1

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[2014]24

[2016]54

2017 1 1

2017 9 13

“ ”

[2017] 121

VOCs

VOCs

2

B

COD $=2592\text{t/a} \times 60\text{mg/L} \times 10^{-6} = 0.156\text{t/a}$

NH₃-N $=2592\text{t/a} \times 8\text{mg/L} \times 10^{-6} = 0.021\text{t/a}$

9.3.1

1 [1999]
24
2 [1999] 24
3 “ ”
[1999] 3
4 “ ”
[1999] 8
5 “ ”
[1999] 9

1

2

3

4

3

2

4

2

65981m² 29476.41m²

3 15m

1 15m

“ + +

+ + +24m ”

24956.14 6000 24.04%

2022 4

6 93332m²

140

52636.09 1640 3.12%

15m 6# 8 “ ”

1 “ ”

“

+ + + + RCO +

+30m 5# ”

4 4000m³/h

2

1

36.00t/d

36.00t/d 10800t/a

2

3

221.55t/a

✚

6551

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

		[a]	VOCs
2022	5	20	-26

HJ2.2-2018 .1

15m 1 2 3# 4 5 6 7 8# 25m
 Ä1, Ä n 1+ Ä 9#
 $\Pi \leq 2$
 [a] SO₂

2

960m³/d

36.25m³/d 10875m³/a < 960m³/d

36.00m³/d

GB8978-1996

725m³/

SS

+

500m³/d

145m³/d

36.00m³/d

2022-01-01

È

GB/T 14848-2017

1

8-2

“

”

1

2

1.0mm

1.5mm

1% 2%

200m

2022 5 20

GB3096-2008 3

GB3096-2008 4a

1

620m

2

75 90dB

62.3dB A <65 dB A

53.2dB A <55dB A

63.4dB A <70 dB A

53.9dB A <55dB A 200m

620m

1

2

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E- $\pi^+b\bar{b}\Xi$

© 2003

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0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

8 D A<X1 00 Jλ , ΓV μ 12 >0 2 E! V 0 L #0 ©

100%

2019

2010

[2010] 122

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6

5

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