
2021 3

	.....	1
1	.....	4
1.1	.....	4
1.2	.....	4
1.3	.....	7
1.4	.....	10
1.5	.....	16
1.6	.....	28
1.7	.....	30
2	.....	33
2.1	.....	33
2.2	.....	58
2.3	.....	95
3	.....	96
3.1	.....	96
3.2	.....	100
3.3	.....	107
3.4	.....	108
3.5 “ ”	.....	117
4	.....	118
4.1	.....	118
4.2	.....	121
4.3	.....	125
4.4	.....	125
4.5	.....	131
4.6	.....	138
5	.....	140
5.1	.....	140

5.2	.....	141
5.3	.....	143
5.4	.....	145
5.5	.....	148
5.6	.....	152
5.7	.....	153
5.8	.....	154
5.9	.....	158
6	.....	169
6.1	.....	169
6.2	.....	173
6.3	.....	176
6.4	.....	177
6.5	.....	177
6.6	.....	179
6.7	.....	180
7	.....	182
7.1	.....	182
7.2	.....	184
7.3	.....	184
7.4	.....	184
8	.....	185
8.1	.....	185
8.2	.....	186
8.3	.....	188
8.4	.....	189
9	.....	191
9.1	.....	191
9.2	.....	191
9.3	.....	192

9.4	.....	193
9.5	.....	194
9.6	.....	195
9.7	.....	195
9.8	.....	195
9.9	.....	195

1
2-1
2-2
2-3
2-4
2-5
2-6
3
4
5
6
7
8
9

1
2
3

2011 183

2011.8.19

4

2017 117

2017.9.30		
5		2014-2030
	2014	3
2014.9.17		
6		
7		
8		

PHO

2007

2011

“

” 2011 8 19

2011 183 3 2017 9 30

2017 117 4

2020 10 23

∫

2021

“

	“ ”
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1

2

3

4

5

”

“

“ ”

(3)

2012 103

(4)

“ ”

2017 4

(5)

2014 9

(6)

2015 131

(7)

2016 167

(8)

2017 12

(9)

2018-2020

2018 87

(10)

2018-2020

2018

84

(11)

2018-2020

2018

86

(12)

2019 179

(13)

2018 47

1.2.4

(1)

HJ2.1-2016

(2)

HJ2.2-2018

(3)

HJ2.3-2018

(4)

HJ610-2016

(5)

HJ2.4-2009

(6)

HJ19-2011

(7)

HJ169-2018

(8)

HJ964-2018

(9)

GB18218-2018

(10)

HJ884-2018

(11)	HJ2000-2010		
(12)	HJ2015-2012		
(13)		GB/T13201-1991	
(14)		HJ2026-2013	
(15)		2017	43

1.2.5

- (1)
- (2)
- (3)

			/	/	/	SS COD
--	--	--	---	---	---	--------

1.3-2

		○		○		○		○			○										
		○		○		○		○			○										
					○						○										
		○		○		○		○			○										
		○			○	○		○			○										
		○		○				○													
		○		○		○				○											
		○		○		○				○											
												○		○		○		○			○
												○		○		○		○			○
												○		○		○		○			○
												○			○	○		○			○

○—

—

●—

1.3.2

1.3-3

1.3-3

	SO ₂ NO ₂ CO O ₃ PM ₁₀ PM _{2.5} TVOC	PM ₁₀ PM _{2.5} VOCs
	pH DO COD BOD ₅ NH ₃ -N 23	/
	K ⁺ Na ⁺ Ca ²⁺ Mg ²⁺ CO ₃ ²⁻ HCO ₃ ⁻ Cl ⁻ SO ₄ ²⁻ pH () 30	COD NH ₃ -N
	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- 1,2,3- 1,4- + 2- [a] [a] [b] [k] [a,h] [1,2,3-cd] 47	
	A	A
	/	

1.4

1.4.1

1

2018 48

GB3095-2012

2

2014

GB3838-2002

3

2018 48

3 4a

4

1.4.2

1

GB3095-2012

TVOC

HJ2.2-2018 D

P244

1.4-1

1.4-1

 $\mu\text{g}/\text{m}^3$

		(GB3095-2012)		
		1	24	
1	SO ₂	500	150	60
2	NO ₂	200	80	40
3	TSP	-	300	200
4	PM ₁₀	-	150	70
5	PM _{2.5}	-	75	35
6	CO	10mg/m ³	4mg/m ³	-
7	O ₃	200	160 8	-
8		200	-	HJ2.2-2018 D
9		200	-	
10	TVOC	-	600 8	
11		-	10	
12		-	2.0 mg/m ³	P244

2

GB3838-2002

1.4-2

1.4-2

mg/L pH

1	pH	6~9	12	≤0.05
2		≥5	13	≤0.0001
3		≤6	14	≤0.005
4		≤		

4

GB3096-2008 3

GB3096-2008 4a

GB3096-2008 2

1.4-4	GB3096-2008	dB(A)
2	60	50
3	65	55
4a	70	55

5

GB36600-2018

1.4-5

1.4-5	mg/kg
1	60
2	65
3	5.7
4	18000
5	800
6	38
7	900
8	2.8
9	0.9
10	37
11	1,1-9
12	1,2-5
13	1,1-66
14	-1,2-596
15	-1,2-54
16	616
17	1,2-5
18	1,1,1,2-10
19	1,1,2,2-6.8
20	53
21	1,1,1-840
22	1,1,2-2.8
23	2.8

24	1,2,3-	0.5	5
25		0.43	4.3
26		4	40
27		270	1000
28	1,2-	560	560
29	1,4-	20	200
30		28	280
31		1290	1290
32		1200	1200
33	+	570	570
34		640	640
35		76	760
36		260	663
37	2-	2256	4500
38	[a]	15	151
39	[a]	1.5	15
40	[b]	15	151
41	[k]	151	1500
42		1293	12900
43	[a,h]	1.5	15
44	[1,2,3-cd]	15	151
45		70	700
A			3.6

1.4.3

1

VOCs

GB31572-2015

VOCs

GB37822-2019

GB16297-1996 2

1.4-6

1.4-6

	mg/m ³	kg/h		mg/m ³	
		m			
	120	7	0.8	1.0	GB16297-1996
		15	3.5		
		25	14.45		

	120	7	2	4.0	
		15	10		
		25	35		
	12	7	0.1	0.4	
		15	0.5		
		25	1.9		
	40	7	0.7	2.4	
		15	3.1		
		25	11.6		
	70	7	0.2	1.2	
		15	1.0		
		25	3.8		
	550	25	9.65	0.40	
	240	25	2.85	0.12	
	100	/	/	/	GB31572-2015

1.4-7 VOCs mg/m³

NMHC			
	10	1h	
	30		

2

GB8978-1996

1.4-8 GB8978-1996 mg/L

1	pH	6~9	8		1.0	-
2		-	9		-	-
3	SS	400	10		-	20
4	COD _{Cr}	500	11		-	0.5
5	BOD ₅	300	12		-	0.5
6		100	13		-	1.0
7		5.0				

3

(GB12348-2008) 3 4a 1.4-9

1.4-9 dB A

	65	55	3	
	70	55	4a	

4

GB18599-2001

GB18597-2001

1.5

1.5.1

1.5.1.1

1

HJ2.2-2018

A

AERSCREEN

HJ2.2-2018

 P_i

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

 $P_i = \frac{C_i}{C_{oi}} \times 100\%$
 C_i — i 1h $\mu\text{g}/\text{m}^3$
 C_{oi} — i $\mu\text{g}/\text{m}^3$ GB3095 1h

 $P_i(\quad i \quad) \quad i$

10%

 $D_{10\%}$

2 AERSCREEN

1.5-1

1.5-2

1.5-3

1.5-4 VOCs

TVOC

1.5.1

		$\mu\text{g}/\text{m}^3$	
PM ₁₀	1	450	GB3095-2012
PM _{2.5}	1	225	
	1	200	

TVOC	VOCs	1	1200	HJ2.2-2018	D
		1h	2000		P244
				8	2

1.5-2

/	/	
		390.47
/		39.2
/		-2.5
		79%
		■ □
	/m	90m
		□ ■
	/km	/
	/°	/

1.5-3

		X (m)	Y (m)	/m	(m)	(m)	(m/s)		h	(kg/h)				
										PM ₁₀	PM _{2.5}		TVOC	
G1#		-31	-15	102	15	0.25	12.35	25	2400	0.0138	0.0069	/	/	/
G2#		27	-10	104	15	0.7	11.82	25	2400	/	/	/	0.27	/

1.5-4

		X (m)	Y (m)	(m)	(m)	(m)	/°	m	h		kg/h				
											PM ₁₀	PM _{2.5}		TVOC	
1		-41	-10	102	61	53	90	10	2400		0.0523	0.0262	/	/	/
2		22	-10	104	70	53	90	10	2400		0.15	0.075	/	0.15	
3		-3	17	103	131	54	90	10	2400		0.0263	0.0132	0.1	0.6373	0.102

3 AERSCREEN

1.5-5~1.5-6

1.5-5 AERSCREEN

PM₁₀ PM_{2.5}

		PM ₁₀				PM _{2.5}							
		/μg/m ³	/m	/%	D10% m	/μg/m ³	/m	/%	D10% m	/μg/m ³	/m	/%	D10% m
	G1#	1.0537	93	0.23	0	0.52685	93	0.23	0	/	/	/	/
	G2#	/	/	/	/	/	/	/	/	/	/	/	/
		10.605	40	2.36	0	5.312637	40	2.36	0	/	/	/	/
		28.818	43	6.40	0	14.409	43	6.40	0	/	/	/	/
		3.9536	67	0.88	0	1.984316	67	0.88	0	15.0327	67	7.51	0
		28.818	/	6.40	/	14.409	/	6.40	/	15.0327	/	7.51	/

1.5-6 AERSCREEN

		TVOC							
		/μg/m³	/m	/%	D10 % m	/μg/m³	/m	/%	D10% m
	G1#	/	/	/	/	/	/	/	/
	G2#	20.618	93	1.72	0	/	/	/	/
		/	/	/	/	/	/	/	/
		28.818	43	2.4	0	/	/	/	/
		95.8034	67	7.98	0	15.33335	67	0.77	0
		95.8034	/	7.98	/	15.33335	/	0.77	/

AERSCREEN筛选计算与评价等级-改装车技术改造

筛选方案名称: 改装车技术改造

筛选方案定义 筛选结果

查看选项

筛选结果: 已考虑地形高程。未考虑建筑下洗。AERSCREEN运行了 5 次(耗时0:3:55)。按【刷新结果】重新计算!

1.5-1 1h

AERSCREEN筛选计算与评价等级-改装车技术改造

筛选方案名称: 改装车技术改造

筛选方案定义 筛选结果

1.5-2 1h

4

1.5-7

	$P_{\max} \geq 10\%$
	$1\% \leq P_{\max} < 10\%$
	$P_{\max} < 1\%$

1.5-5~1.5-6

 $P_{\max}$

7.98% TVOC

1.5.1.2

GB8978-1996

HJ2.3-2018

B

1.5-6

		$Q/ \text{ m}^3/\text{d}$ $W/$
		$Q \geq 20000$ $W \geq 600000$
A		$Q \geq 200$ $W \geq 6000$
B		

1.5.1.3

HJ610-2016

A

“ N

-116

-

”

II

1.5-7

1.5-8

1.5-7

a

									—
								—	—
“ ”									

1.5.1.6

1

P

HJ169-2018

HJ169-2018

B

Q

M

HJ169-2018

C

P

1

Q

HJ169-2018

C

Q

Q

$$Q = \frac{q_1}{1} + \frac{q_2}{Q_2} + \dots$$

 $q_1 \quad q_2 \quad \dots \quad q_n$

t

 $Q_1 \quad Q_2 \quad \dots \quad Q_n$

t

 $Q < 1$

I

 $Q \geq 1$

Q

1 $1 \leq Q < 10$

2

 $10 \leq Q < 100$

3

 $Q \geq 100$

Q

1.5-11

1.5-11

Q

					t	Q
			t/a	t		
1		20%	0.3t	0.06	10	0.0082
		20% 20%	0.06t	0.012		
		20%	0.05t	0.01		
2		1%	0.01t	0.0001	10	0.00001
3		0.5% 25%	0.01t 0.15t	0.03755	10	0.003755
4	2-	0.5%	0.01t	0.00005	7.5	0.000007
		B 43%	B 3t	1.29	0.5	2.67

5	MDI	105	0.15t	0.03		
		20%				
		103	0.15t	0.015		
		10%				
6	92#	/	/	0.05t	2500	0.00005
		/	/	/	/	

10≤Q≤100	P1	P2	P3	P4
1≤Q 10	P2	P3	P4	P4

2 E
1

E1 E2 E3
1.5-14

1.5-14		
E1	5km 5 1000 200m 200	5km 5 E1
E2	5km 1 5 500m 500 1000 200m 100 200	
E3	5km 1 500m 500 200m 100	

2
E1 E2 E3
1.5-15 1.5-16

1.5-15		
F1	II 24	F2
F2	III 24	
F3		

1.5-16		
S1	10km	S3

S2	10km	
S3	10km 1 2	

1.5-17

1.5-17

	F1	F2	F3
S1	E1	E1	E2
S2	E1	E2	E3
S3	E1	E2	E3

1.5-17

E2

3

E1

E2

E3

1.5-18 1.8-19

G

D

1.5-18

G1		G3
G2	a	
G3		
a “ ”		

1.5-19

D3	Mb≥1.0m K≤1.0×10 ⁻⁶ cm/s	D3
D2	0.5≤Mb≤1.0m K≤1.0×10 ⁻⁶ cm/s Mb≥1.0m 1.0×10 ⁻⁶ cm/s≤K≤1.0×10 ⁻⁴ cm/s	
D1	“D2” “D3”	
Mb K		

1.5-20

1.5-20

	G1	G2	G3
D1	E1	E1	E2
D2	E1	E2	E3
D3	E2	E3	E3

1.5-20

E3

E1

3

P P4

E1

1.5-21

III

1.5-21

E	P			
	P1	P2	P3	P4
E1	IV ⁺	IV	III	III
E2	IV	III	III	II
E3	III	III	II	I
IV ⁺				

4

III

1.5-22

1.5-22

	IV IV ⁺	III	II	I
				a
a A				

1.5.1.7

HJ19-2011

14017m²

0.014km²<2km²

1.5-23

	≥20km ² ≥100km	2~20km ² ≥50~100km	≤2km ² ≤50km

1.5-24

1.5-24

		HJ2.2-2018 1%≤P _{max} 10%	P _{max} =7.98% TVOC
	B	HJ 2.3-2018	
			II
		HJ2.4-2009 GB3096 3 4	3 4 3dB
		HJ964-2018	I
		HJ19-2011 2km ² 50km	0.014km ² <2km ²
		HJ169-2018	P P4 E1 III

1.5.2

1

P_{max}=7.98%

5.0km × 5.0km

3

2

200m

2000m

3

6km²

4

200m

5

100m

6

0.2km

7

5km

1.6

1.6-1

3

1.6-1

		/m							/m
		X	Y						
1		-989	128		234		GB3095-2 012		870
2		-1318	388		27				1270
3		-2512	1262		131				2710
4		-1149	993		23				1475
5		-1485	1505		144				2055
6		-691	1508		131				1605
7		-405	1824		32				1900
8		-741	2040		185				2315
9		63	614		3760				520
10		-157	2264		230				2405
11		254	2152		77				2315
12		610	1198		162				1245
13		898	1170		8750				1340

14		978	1843		522			2070
15		1846	582		6030			1850
16		1930	734		620			2005
17		589	177		7235			405
18		297	-928		720			930
19		913	-928		1080			1215
20		-96	-1990		585			2175
21		549	-2002		650			2125
22		112	-640		1200			430
23		-668	-600		95			1250
24		-796	-1653		190			1860
25		2057	-243		1393			1990
26		2039	-380		2286			1984
27		2039	-596		5050			2042
28		2191	-600		51			2215
29		1667	-696		525			1755
30		1350	-844		5787			1525
31		2051	-836		450			2150
32		2359	-1032		913			2545
33		2371	-1229		1878			2640
34		2223	-1437		1530			2618
35		2303	-1685		3764			2875
36		1719	-1982		8915			2530
37		2231	-2042		11250			2895
38		2091	-2202		1769			3105

1.7

1.7.1

2014-2030

1

2

20.24

19.95

1995.44

908.35

45.52%

(

)

374.74

18.78%

231.67

11.61%

(

)

143.07

7.29%

117.76

5.90%

589.24

29.53%

“

”

1. “

”

:

2. “ ”

3. “ ”

；

：

（

）

（

）

1.7.2

2014-2030

2014-2030

1.7-1

2

2.1

2.1.1

1

2

3

255120m²

4

126858

3340

2.63%

5

1223 /

6

2011 8

2011 183 2017 9 30

2017 117 2019 9

91450200794328218E001Q

7

2020 517

M M

2.1.1.1

2.1-1

2.1-1

/

1			66	
			88	
			70	
			35	
2			85	/
			26	
			60	
			82	
			16	
			10	
3			60	
			75	
			60	
4			115	/
			120	
			65	
			80	/
			110	
			1223	/

2.1.1.2

1468

2.1-2

2.1-2

			d/a	h/d
1		132	265	12
2		1216	265	16
3		120	265	12
4		1468	/	/

2.1.1.3

2.1-3

2.1-3

		224
	2	
	19	1810
		6100m ²
		70.8Mpa
		110kVA 10kV
		110m ³ /h13m ³ /h24h/d3m ³ /h“
	+	”11
		1
		1
		1
	1	RTO125mY1#

2

1

+1

2

1

1

10KV

3

KD

110KV

2-2~2-6

2.1.2

2.1.2.1

70

154

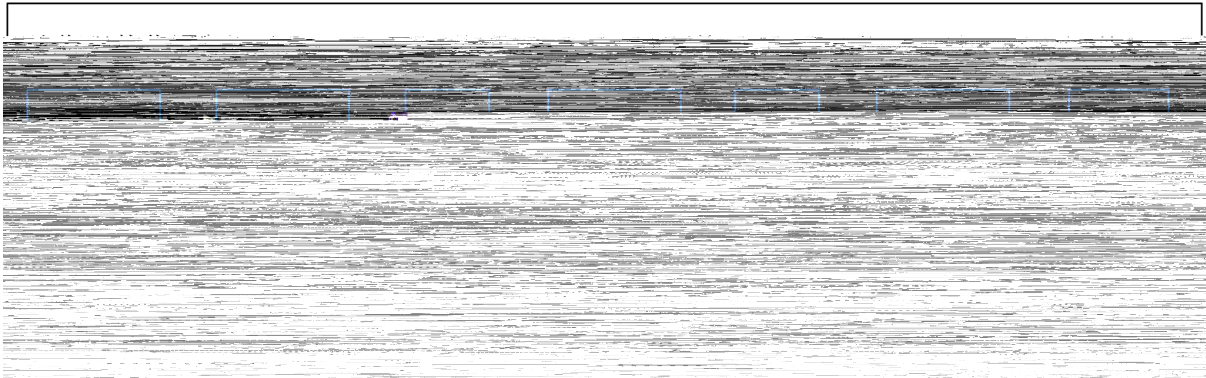
2

1

1

24h

2.1-1



2.1-1

2

	pH	COD		SS				
					VOCs			
pH	COD	SS						
				VOCs				
		RTO			1	25m		Y1#

1

VOCs

+

1

15m

Y2#

pH COD S Ψ

2.1.4.2

2.1.4.3

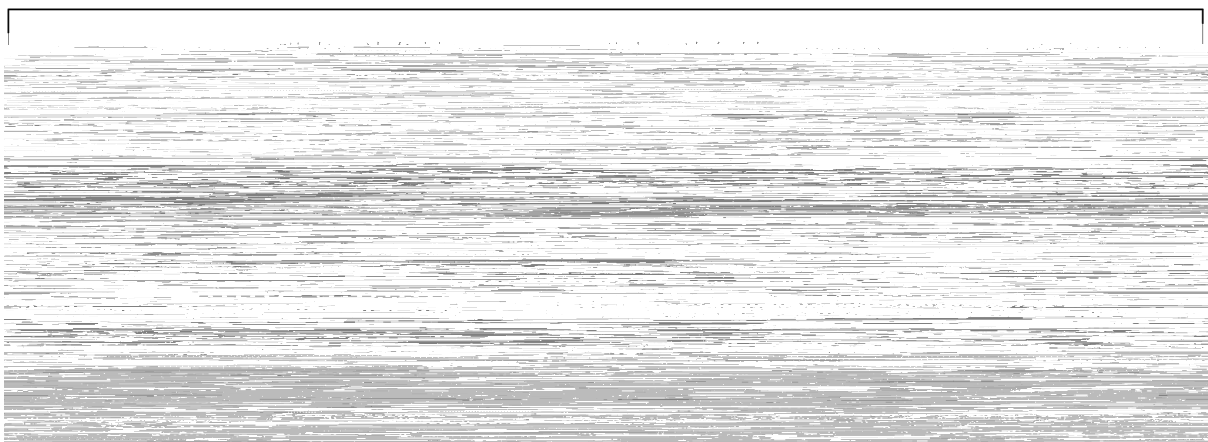
19

1

8

10

2.1-3



2.1-3

2.1.4.4

5

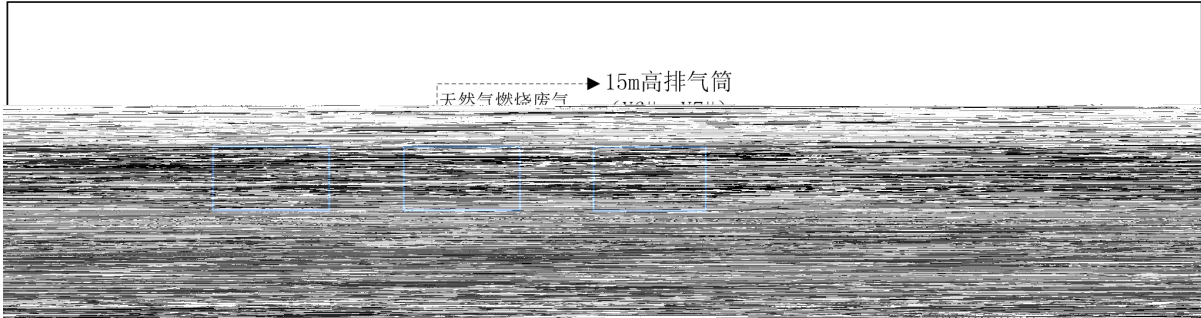
8

HF HCl

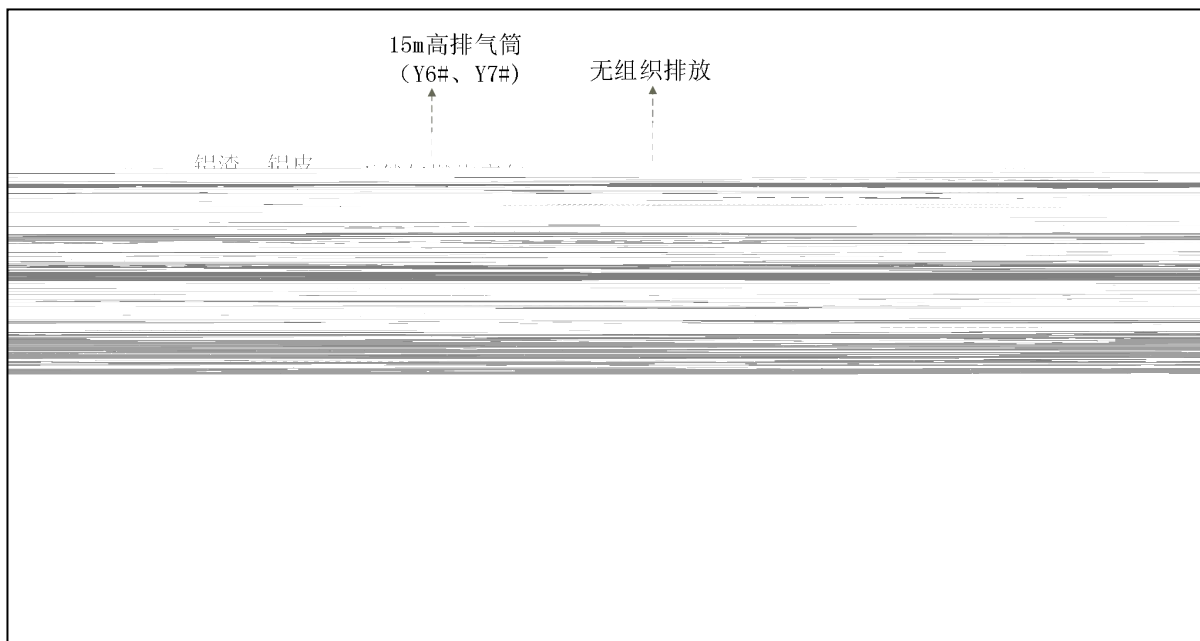
				2	
				2	
	SO ₂	NO _x			1 15m
Y6#	Y7#			500	
				180	

pH COD SS

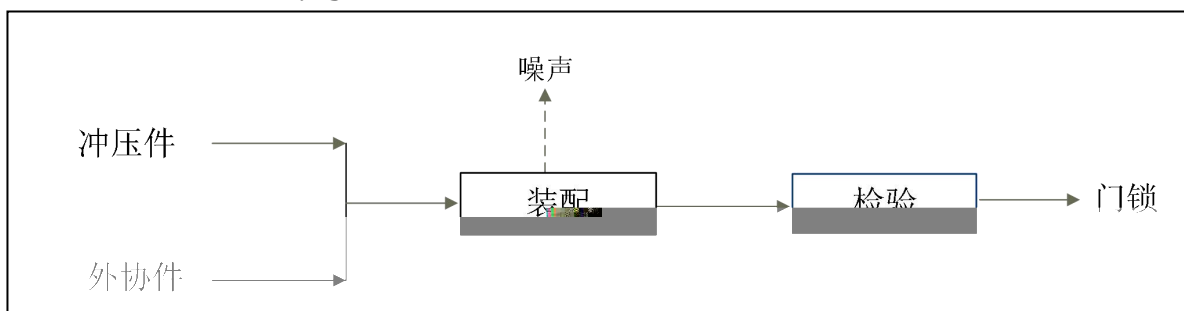
2.1-4~6



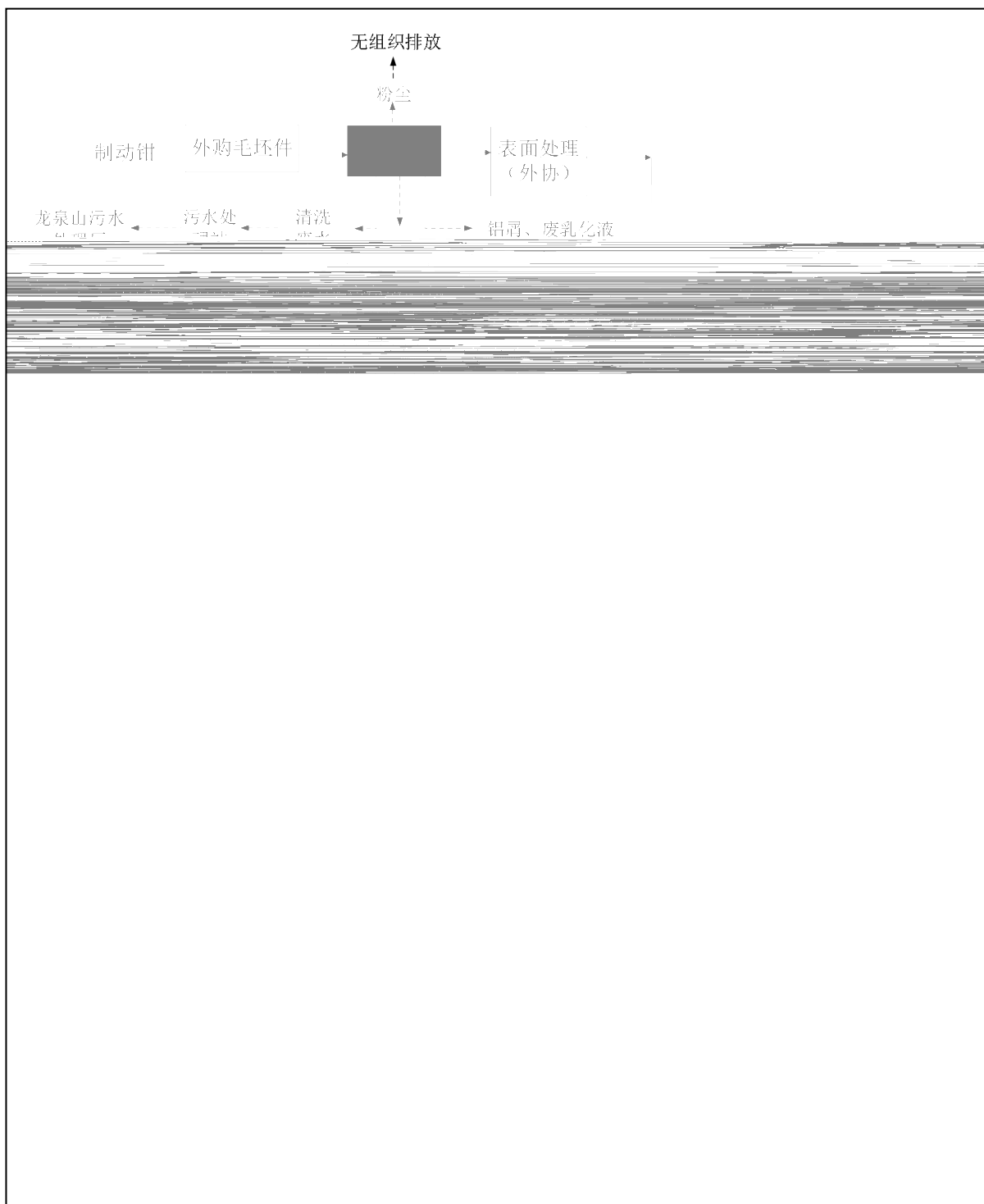
2.1-4



2.1-5



2.1-6



2.1-7

2.1.3

2.1-4

2.1-4

1

3			m³/a	63865	
			m³/a	23850	
			m³/a	15370	
			m³/a	23341.2	

2.1-5

2.1-5 VOCs

	0	0	0	0	53.1	53.1
	33.6	974.14	0	1007.74	2240.56	3248.3

2.1-8

t/a

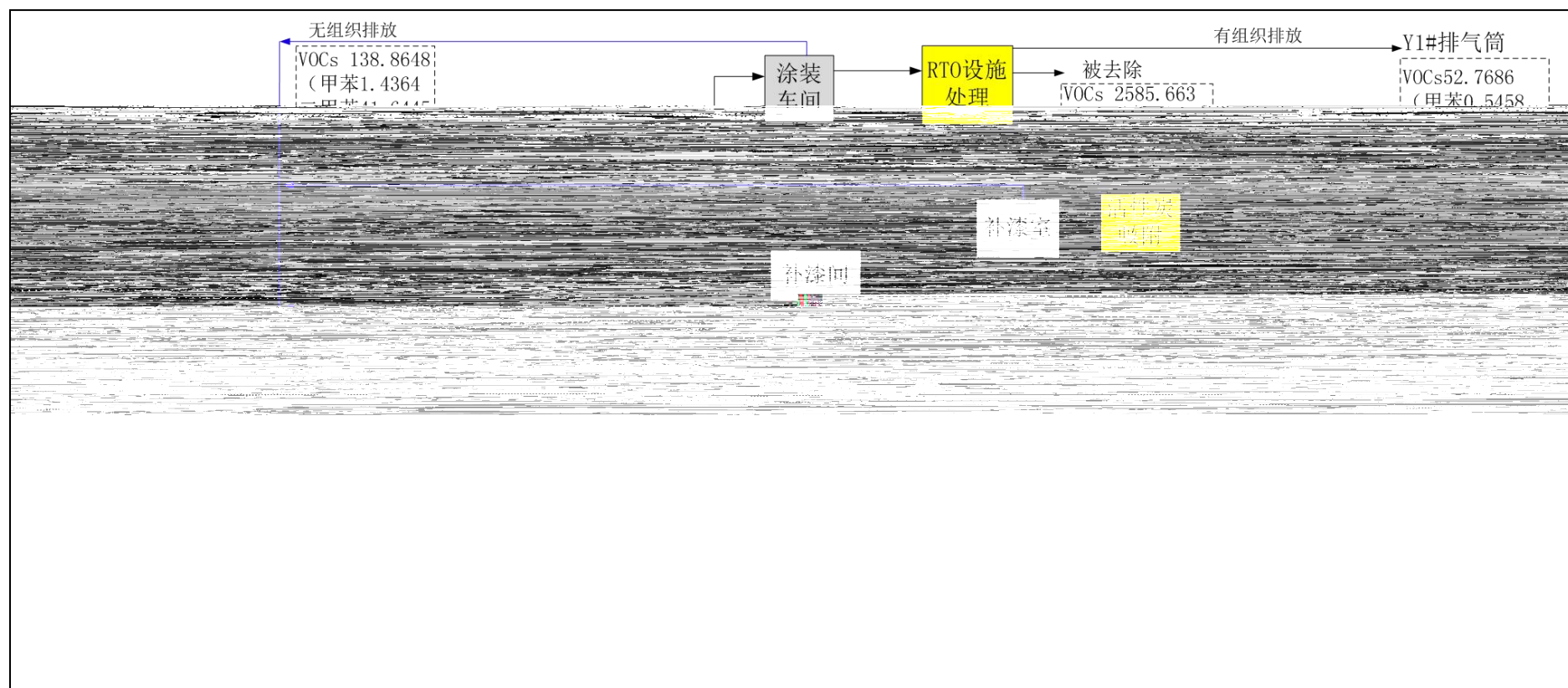
					VOCs
		3.86	34.74	38.6	64.66
		29.74	297.4	327.14	498.15
		0	32.2	32.2	193.2
		0	609.8	609.8	2439.2
		0	0	0	53.1
		33.6	974.14	1007.74	3248.3
	RTO Y1#	0.5458	15.8249	16.3707	52.7686
	Y2#)	0.7733	22.4186	23.1919	74.7556
	(Y3#)	0.4549	13.1874	13.6423	43.9739
	Y4#)	0.4788	13.8815	14.3603	46.2883
		2.2528	65.3124	67.5652	217.7863
		29.6672	860.1206	889.7878	2868.0987
		1.68	48.707	50.387	162.415
		33.6	974.14	1007.74	3248.3

5%

RTO

98%

70%



2.1-8

t/a

2.1.5

2.1.5.1

2.1-9

2.1-9

1	30T 1	NCF-30 SXF-30	30T	1
2	50T	50T	50/10T×22.5m	1
3	63	YWH35-63	63	1
4			/	1
5		P-200A	/	1
6		Triton308	/	4
7			T308	1
8		GBNL ₃ -250t/h	/	1
9		/	/	1
10		C-2.5	2.5m ³	1
11	TIG	YE-150TMHGE	150	1
12		GGD3-07C	1000A	5
13		GGJ-02A	160KVAK	1
14		GGJ-02A	160KVAK	3
15		GGD3-03C	2000A	2
16		3T	16.5m	3
17		CD1-0.5/6	0.5T×6m	1
18		GD50/10T*22.5	/	1
19		S11-M-1250/10	1250KVA	1
20		/	/	1
21		TL-1SM	/	1
22		SIC-20A	20HP	1
23		SM6-QM	160A	2
24		SM6-GBC-B	12KW 630A	1
25		SM6-IM	/	1
26		SIC-20A	/	8
27		MN	20° 60° 85°	1
28		/	/	1
29		BX1-300	/	1
30		/	/	2
31		2V-0.6/7-C	/	3
32		SMC-110	/	1
33		LG25	/	1
34		SGT-U500	/	1
35		LU160-8	28.2m ³	1
36		TT-10 0-10mm	/	1
37		MI130	/	1
38		CZ6132 320*750	/	1
39		PPC.FX-1	/	1
40		HAL-800G	/	1

41		SAL-3.5HP-P	/	2
42		/	/	1
43		M30	/	1
44		DPA-35T	760×1640	1
45		BX1S-2X160	/	1
46		LG-25	/	2
47		/	/	1
48		SGT-U800	/	2
49		SP-360	/	2
50		SL-1500	/	2
51		XS-ZY-500	/	2
52		/	/	1
53		X61W	/	1
54		Z32K	/	1
55		DF-LD800PLC	1000×700×200	1
56			70KN	1
57		/	/	1
58		3KW	/	1
59		/	/	3
60		AX-320	/	1
61		CJ80NC/150G	/	3
62		/	/	2
63		/	3300T	1
64		/	2800T	1
65		/	/	2
		/	/	100
1	30T 1	NCF-30 SXF-30	30T	1
2	50T	50T	50/10T×22.5m	1
3	63	YWH35-63	63	1
4			/	1
5		P-200A	/	1
6		Triton308	/	4
7			T308	1
8		GBNL ₃ -250t/h	/	1
9		/	/	1
10		C-2.5	2.5m ³	1
11	TIG	YE-150TMHGE	150	1
12		GGD3-07C	1000A	5
13		GGJ-02A	160KVAK	1
14		GGJ-02A	160KVAK	3
15		GGD3-03C	2000A	2
16		3T	16.5m	3
17		CD1-0.5/6	0.5T×6m	1
18		GD50/10T*22.5	/	1

19		S11-M-1250/10	1250KVA	1
20		/	/	1
21		TL-1SM	/	1
22		SIC-20A	20HP	1
23		SM6-QM	160A	2
24		SM6-GBC-B	12KW 630A	1
25		SM6-IM	/	1
26		SIC-20A	/	8
27		MN	20° 60° 85°	1
28		/	/	1
29		BX1-300	/	1
30		/	/	2
31		2V-0.6/7-C	/	3
32		SMC-110	/	1
33		LG25	/	1
34		SGT-U500	/	1
35		LU160-8	28.2m ³	1
36		TT-10 0-10mm	/	1
37		MI130	/	1
38		KP-500	/	1
39		CZ6132 320*750	/	1
40		PPC.FX-1	/	1
41		HAL-800G	/	1
42		SAL-3.5HP-P	/	2
43		/	/	1
44		M30	/	1
45		DPA-35T	760×1640	1
46		BX1S-2X160	/	1
47		LG-25	/	7
48		/	/	1
49		SGT-U800	/	1
50		SP-360	/	3
51		SL-1500	/	1
52		CJ-750M3BBC	2970 /104.9	3
53		XS-ZY-500	/	3
54		/	/	1
55		X61W	/	1
56		Z32K	/	1
57		DF-LD800PLC	1000×700×200	1
58			70KN	1
59		/	/	1
60		3KW	/	1
61		/	/	3
62		AX-320	/	1
63		CJ80NC/150G	/	3

64		/	/	2
65		/	3200T	1
66		/	2800T	1
67		/	2000T	2
68		/	1200T	2
69		/	/	2
		/	/	130

2.1.5.2

29		QD16/3.2	16T	2
30		RSN-2500	/	1
31		MM-601A-00-01	MA-522-00-01	1
32		SJL-1000KVA	1000KVA	2
33		CD-99	2~10mm	1
34		YD-355KEV	/	13
35		CD	0.5T/6m	11
36		/	1000A	2
37			/	2
38		GQ2563	φ400	1
39		G72	220	1
40	()	DN200 850KG	/	4
41		MM-315AC-00-02	1KA~49.9KA	1
42		Q11-6.3*2000	/	2
43		SJY-9	1 *9	1
44		WS-C2950G-24-EI	16MB SDRAM 8MB / / Mbps 10/100/1000	1
45		PGL1-030	2500A	1
46		BX1-200F-3	/	2
47		DYS—	4400×1200	5
48	CO ₂ /MAG	YD-200KR1VTA	367×675×747	55
49		MM-601-00-01	0.2kg~950kg	1
50		LUC-40 ×20	40L/min	1
51		JH(20)	/	1
52		DYS	/	5
53		4L-20/8	20	4
54		ELOTOP1702	φ3-20mm	1
55		XA5032	/	1
56		Z5125A	/	1
57		/	/	1
58		LU250-8.5	43m ³ /min	1
59		JLR-2600	2600J	2
60	25T	KPD25-1	25T	1
61		M7130G(300*1000)	/	1
62		CA6140	/	2
63			RRD57-11	2
64		QD 22.5M	10T	1
65		Y90L-2	/	1
66	3150KVA	S11M-3150/10	3150KVA	1
67			/	1
68			/	1
69		Z512-2	φ12.7	6
70		CWY-1000VA		1
71	PS	/	/	1

72		DN3-160KVA	/	13
73		DN3-160	/	2
74		/	/	3
75		DN3-160	/	152
76		/	/	1
77		Z3040 φ10×1600 (75114)	/	1
78		GBYF3.0 3T	/	1
79		HD-800	8000KN	4
80		DN3-200	200KVA	93
81		SJY0.5	16	3
82		S11	2000KVA	1
83		Z525	/	1
84		NFVN001	200KVA	1
85		Z512B 20	/	1
86	()	WDN-200	/	1
87		SA-754SP	75KVA	1
88		DN2-200	/	6
89		/	2000T-1600T-800T-800T	2
90		/	1600T-1000T-800T-630T	2
91		400	/	1
92			/	1
				520

2.1.5.4

2.1-11

2.1-11

1	A		1
2	A		1
3	B		1
4	A		1
5	B	/	1
6	A		1
7	B	/	1
8	A	/	1
9	B		1
10	B		1
11	B		1
12	C		1
13	D		1
14	E		1
15	C		1
16	A	/	1

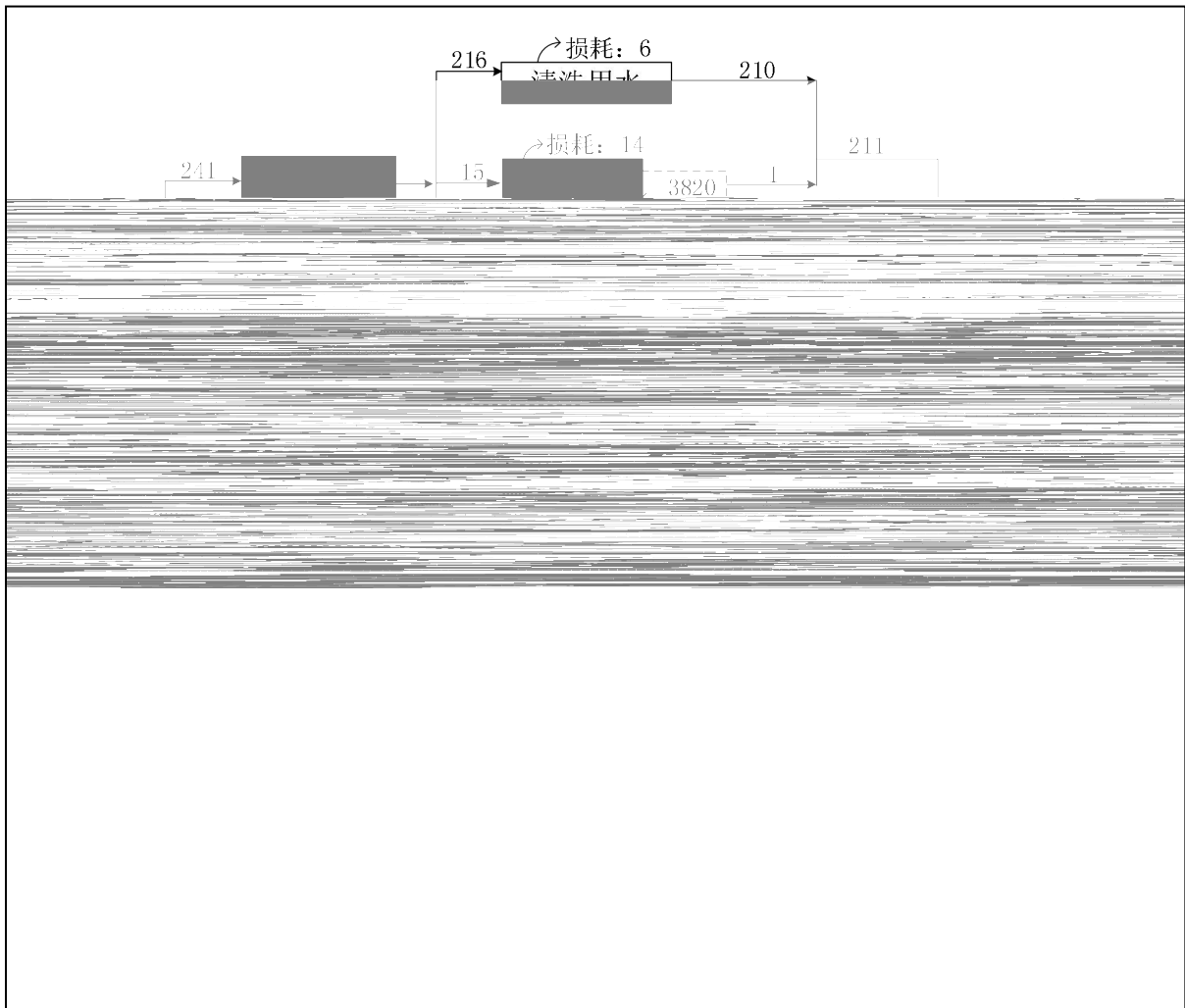
17	A		
		DL-20	8
		X62	14
		MV80	2
		VB610A	8
18	A		
		LG7120KT/2.3/2.1	1
		A2J-PK1057	1
		VM-32SA	2
19	B		
		LG7120KT/2.3/2.1	1
		A2J-PK1057G	1
		VM-32SA	2
20	C		
		LG7120KT/2.3/2.1	1
		A2J-PK1057G	1
		VM-32SA	2
21	A		
		A2J-PK664	1
		VM-40SA	2
			1
		A2J-PK652	1
		RFMV60	2
22	B		
		A2J-PK1057	1
		VM-40SA	2
		VM-40SA	2
		FTC-30	2
23	C		
		A2J-PK1057	1
		VM-40SA	2
		VM-40SA	2
		FTC-30	2
24	A		
		FTC-30	3
		FTC-30	3
		N-094	1
		VM-40SA	2
		BDI400	1
		LBJ08074	1
25	A		
		DL-20	1
			2
		a-T14iDe	1
		HS-H236	1
		CM-2SNC+2	1
	NC	CM-NC02	1
26	B		

	CNC	JCL-60SA	2
		DL-20	1
		α -T14iFe	1
		VM-40SA	3
		CM-2SNC+2	1
	NC	CM-NC02	1
	C		
		JCL-60SA	3
		α -T14iFe	1
		α -T14iFe	4
		CM-2SNC+2	1
	NC	CM-NC02	1
	A ()		
		HS-G84A	1
		H237A	1
		H237	1
		HS-H238	1
	B ()		
		VM-40SA	2
		H237A	1
		HS-H238A	1
	C ()		
		D2H-E1+2	1
		VM-40SA	2
		CM-2SNC+2	1
	D ()		
		D2H-E1+2	1
		VM-40SA	3
		CM-2SNC+2	1
	E ()		
		D2H-E1+2	1
		VM-40SA	2
		CM-2SNC+2	1
	F ()		
		D2H-E1+2	1
		VM-40SA	3
		CM-2SNC+2	1
	G ()		
		D2H-E1+2	1
		VM-40SA	3
		CM-2SNC+2	1
	H ()		
		D2H-E1+2	1
		VM-40SA	3
		CM-2SNC+2	1
		FTC-10	10
		QTN200M/500U	3

2.1-12

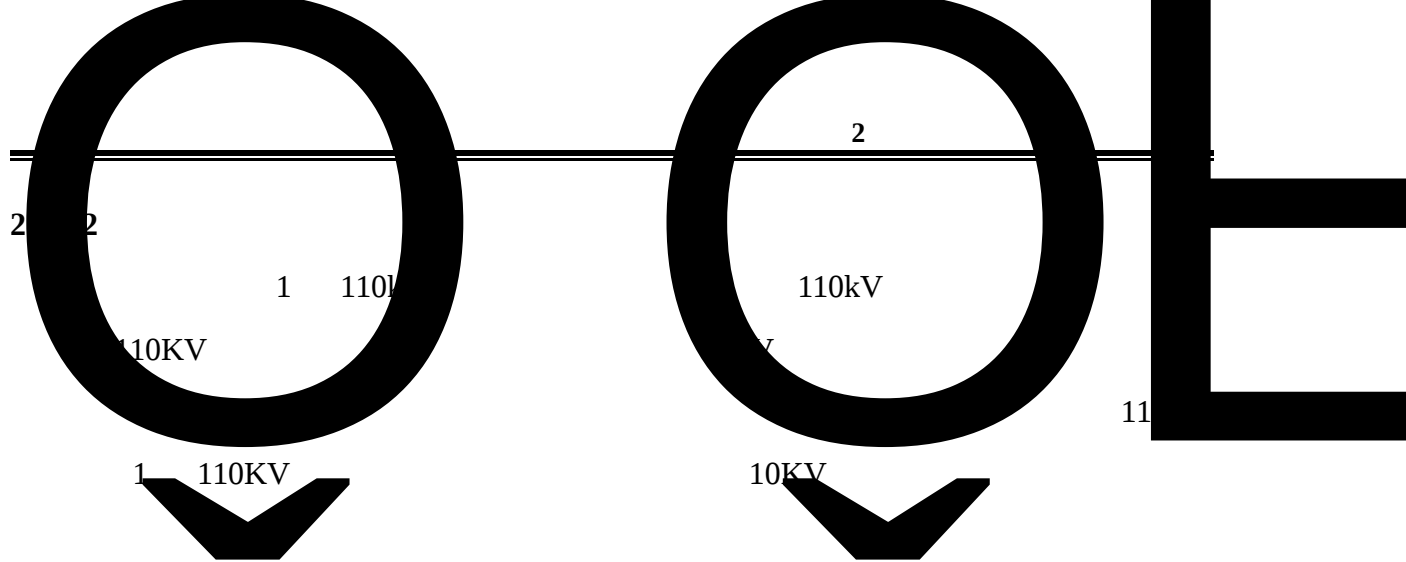
m³/d

1			216	216	0	6	210
			3835	15	3820	14	1
			1260	10	1250	5	5
2			2668	58	2610	55	3
			3407	32	3375	30	2
3			2050	50	2000	47	3
			8	8	0	1	7
4			88.08	88.08	0	17.62	70.46
			13532.08	477.08	13055	175.62	301.46



2.1-9

m³/d



2.1.6.3

4~6 /h

2									
VOC _s	1				+1				1
15m	Y2#								
3									
	1								
			VOC _s				1	7m	
Y3#									
4									
	1								
VOC _s					95%				
	1	15m		Y4#					
5									
				SO ₂	NO _x			1	15m
Y5#									
6									
7									
2									
3									
						HF	HCl		
								2	
			SO ₂	NO _x				1	15m
Y6#	Y7#								

2.2.1.2

1

2.2-1

2.2-1

pH COD SS

1

3

1

1

1

2.2.1.3

1

2.2-2

2.2-2

1				
2				
3				
4				
5				

2

2.2-3

2.2-3

1		HW49	900-041-49				T/In	
2		HW12	900-252-12				T I	
3		HW49	900-039-49				T	
4		HW12	900-214-08				T I C	
5		HW17	336-064-17				T/C	

6		HW08	900-218-08				T I	
7		HW09	900-006-09				T	
8		HW08	900-249-08				T I	

1

325m²

1

1

1

700m²

1

1

(GB18597-2001)

≤10⁻⁷cm/s

1 ~1

3

2.2.1.4

65~110dB A

2.2.2

2017 4

“

”

2017

9

2017 117

2.2.2.1

75.3%~80.1%

2.2.2.2

1

RTO

GB16297-1996

RTO

GB16297-1996

4

GB16297-1996

2.2-4

2.2-4

			m³/h										
				/ mg/m³	/ kg/h	/ mg/m³	/ kg/h	/ mg/m³	/ kg/h	/ mg/m³	/ kg/h	/ mg/m³	/ kg/h
1#	2017-2-15	1	4270	0.7	/	2.6 10 ⁻³	/	1.9	/	15	/	3	/
		2	4553	1.1	/	1.3 10 ⁻³	/	1.6	/	15	/	3	/
		3	4450	0.7	/	1.7 10 ⁻³	/	0.8	/	15	/	3	/
		4	4663	1.1	/	1.6 10 ⁻³	/	1.1	/	15	/	3	/
		5	5032	1.1	/	1.3 10 ⁻³	/	1.4	/	15	/	3	/
	2017-2-16	1	4321	1.4	/	2.1 10 ⁻³	/	1.7	/	15	/	3	/
		2	4403	1.4	/	1.1 10 ⁻³	/	0.9	/	15	/	3	/
		3	4338	1.0	/	1.9 10 ⁻³	/	1.4	/	15	/	3	/
		4	4362	0.7	/	1.0 10 ⁻³	/	1.3	/	15	/	3	/
		5	4519	0.7	/	1.8 10 ⁻³	/	1.5	/	15	/	3	/
		4491	1.0	0.004	1.6 10 ⁻³	7.2 10 ⁻⁶	1.4	0.006	15	15	3	0	
		/	120	14.45	70	3.8	120	35	550	9.65	240	2.85	
		/											

“ ”

2.2-4

			m³/h										
				/ mg/m³	/ kg/h	/ mg/m³	/ kg/h	/ mg/m³	/ kg/h	/ mg/m³	/ kg/h	/ mg/m³	/ kg/h
2#	2017-2-15	1	3722	0.8	/	2.4 10 ⁻³	/	1.0	/	15	/	3	/
		2	3958	1.1	/	2.5 10 ⁻³	/	1.2	/	15	/	3	/
		3	3605	1.7	/	2.6 10 ⁻³	/	0.7	/	15	/	3	/
		4	3628	1.2	/	2.2 10 ⁻³	/	1.6	/	15	/	3	/
		5	3612	0.8	/	1.7 10 ⁻³	/	1.4	/	15	/	3	/
	2017-2-16	1	3624	1.2	/	1.1 10 ⁻³	/	1.0	/	15	/	3	/
		2	3632	1.2	/	3.8 10 ⁻³	/	1.6	/	15	/	3	/
		3	4203	1.1	/	2.0 10 ⁻³	/	1.3	/	15	/	3	/
		4	3920	1.5	/	4.1 10 ⁻³	/	0.8	/	15	/	3	/
		5	3931	1.5	/	1.7 10 ⁻³	/	1.5	/	15	/	3	/
			3784	1.2	0.005	2.4 10 ⁻³	9.1 10 ⁻⁶	1.2	0.005	15	0	3	0
		/	120	3.5	70	1.0	120	10	550	2.60	240	0.77	
		/											

“ ”

2.2-4

			/ m³/h		
				/ mg/m³	/ kg/h
3# 1# 15m	2017-2-15	1	21103	1.2	/
		2	28686	1.7	/
		3	28686	1.9	/
		4	26127	2.1	/
		5	24127	1.7	/
	2017-2-16	1	29130	1.4	/
		2	22033	2.5	/
		3	25630	1.1	/
		4	28567	1.0	/
		5	26987	1.6	/
			26108	1.6	0.042
			/	120	3.5
			/		

2.2-4

			/ m³/h		
				/ mg/m³	/ kg/h
4 # 2# 15m	2017-2-15	1	16591	1.3	/
		2	15285	2.7	/
		3	14980	2.7	/
		4	14291	2.0	/
		5	15180	2.0	/
	2017-2-16	1	14980	1.1	/
		2	16091	1.7	/
		3	14985	1.6	/
		4	15632	2.1	/
		5	14361	2.1	/
			15238	1.9	0.029
		/	120	3.5	
		/			

2.2-4

			/ m³/h		
				/ mg/m³	/ kg/h
5# 3# 15m	2017-2-15	1	14986	1.3	/
		2	15634	1.3	/
		3	15132	1.8	/
		4	16005	1.8	/
		5	15682	0.9	/
	2017-2-16	1	14155	1.3	/
		2	14855	1.7	/
		3	15106	1.3	/
		4	14235	0.9	/
		5	14325	1.3	/
			15012	1.4	0.021
			/	120	3.5
			/		

2.2-4

			/ m³/h		
				/ mg/m³	/ kg/h
6# 4# 15m	2017-2-15	1	27811	1.0	/
		2	27430	0.9	/
		3	25052	1.5	/
		4	22563	1.9	/
		5	24256	1.3	/
	2017-2-16	1	28443	1.4	/
		2	27331	1.5	/
		3	28621	1.0	/
		4	26503	2.0	/
		5	25631	1.0	/
			26364	1.4	
		/	120	3.5	
		/			

GB16297-1996 2

2.2-5~7

2.2-5

/

mg/m³

			1#	2#	3#	4#			
	2017-2-17	09	0.092	0.185	0.203	0.148	0.332	1.0	
		10	0.110	0.129	0.221	0.166			
		11	0.129	0.147	0.184	0.148			
		12	0.092	0.166	0.203	0.129			
	2017-2-18	10	0.147	0.240	0.184	0.185			
		12	0.110	0.332	0.147	0.203			
		14	0.129	0.258	0.166	0.166			
		16	0.129	0.276	0.185	0.185			
	2017-2-17	09	0.9	0.3	0.5	0.2	1.0	4.0	
		10	0.6	0.7	0.6	0.5			
		11	1.0	0.2	0.6	0.8			
		12	0.4	0.7	0.9	0.7			
	2017-2-18	10	0.2	0.8	0.3	0.7			
		12	0.8	0.2	0.5	0.4			
		14	0.7	0.2	0.4	0.2			
		16	0.5	0.5	0.5	0.3			
	2017-2-17	09	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.2	
		10	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		11	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		12	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
	2017-2-18	10	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		12	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		14	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		16	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			

“ ”

2.2-6		mg/m ³							
			1#	2#	3#	4#			
	2017-2-17	09	0.461	0.370	0.332	0.364	0.332	1.0	
		10	0.442	0.332	0.276	0.311			
		11	0.479	0.257	0.312	0.328			
		12	0.459	0.295	0.294	0.311			
	2017-2-18	10	0.479	0.333	0.777	0.313			
		12	0.443	0.352	0.276	0.294			
		14	0.440	0.297	0.296	0.312			
		16	0.460	0.314	0.314	0.277			
	2017-2-17	09	0.8	0.6	0.7	0.2	1.0	4.0	
		10	0.2	0.7	0.4	0.5			
		11	0.4	0.6	0.4	0.5			
		12	0.7	0.3	0.2	0.4			
	2017-2-18	10	0.3	0.7	0.6	0.5			
		12	0.2	0.9	0.5	0.7			
		14	0.5	0.7	0.3	0.4			
		16	0.5	0.3	0.3	0.2			
	2017-2-17	09	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.2	
		10	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		11	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		12	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
	2017-2-18	10	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		12	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		14	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			
		16	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³	1.0 10 ⁻³			

“ ”

2.2-7		mg/m ³							
			1#	2#	3#	4#			
	2017-2-17	09	0.296	0.274	0.380	0.184	0.332	1.0	
		10	0.294	0.256	0.302	0.221			
		11	0.258	0.221	0.339	0.222			
		12	0.276	0.239	0.320	0.240			
	2017-2-18	10	0.295	0.204	0.294	0.239			

		1#	2#	3#	4#		
	12	0.257	0.239	0.240	0.220		
	14	0.240	0.221	0.257	0.258		
	16	0.259	0.202	0.276	0.221		
	09	0.4	0.8	0.4	0.4		
2017-2-17	10	0.6	0.4	0.8	0.7		
	11	0.4	0.3	0.7	0.4		
	12	0.5	0.3	0.5	0.2		
	10	0.6	0.6	0.3	0.5	1.0	4.0
	12	0.5	0.4	0.6	0.4		
2017-2-18	14	0.3	0.8	0.7	0.5		
	16	0.5	0.4	0.5	0.8		
	09	1.0					
2017-2-17							

2.2-8

: mg/L pH

				pH		COD _{Cr}			
	1#	2017-2-15	10 00	8.32	0.86	62	/	0.031	0.14
			12 00	8.36	0.80	58	/	0.034	0.12
			14 00	8.34	0.85	70	/	0.033	0.12
			16 00	8.33	0.81	76	/	0.032	0.15
			18 00	8.35	0.83	68	/	0.032	0.13
		2017-2-16	9 30	8.46	0.74	83	/	0.05	0.14
			11 30	8.42	0.84	80	/	0.05	0.12
			13 30	8.38	0.76	92	/	0.05	0.13
			15 30	8.43	0.74	76	/	0.05	0.15
			17 30	8.44	0.72	96	/	0.05	0.13
				/	0.80	76	/	0.016	0.13
	2#pH 1	2017-2-15	10 15	/	/	/	/	/	1.20
			12 15	/	/	/	/	/	1.34
			14 15	/	/	/	/	/	1.22
			16 15	/	/	/	/	/	1.21
			18 15	/	/	/	/	/	1.36
		2017-2-16	9 35	/	/	/	/	/	1.21
			11 35	/	/	/	/	/	1.34
			13 35	/	/	/	/	/	1.22
			15 35	/	/	/	/	/	1.20
			17 35	/	/	/	/	/	1.35
				/	/	/	/	/	1.27
	3#	2017-2-15	9 30	7.37	/	2.44 10 ³	10.40	/	/
			11 30	7.29	/	2.04 10 ³	8.40	/	/
			13 30	7.33	/	2.12 10 ³	10.30	/	/
			15 30	7.31	/	2.02 10 ³	7.80	/	/
			17 30	7.35	/	1.88 10 ³	9.34	/	/
		2017-2-16	9 40	7.22	/	2.40 10 ³	7.42	/	/
			11 40	7.25	/	2.31 10 ³	6.51	/	/
			13 40	7.31	/	2.10 10 ³	6.79	/	/

			15 40	7.27	/	$1.99 \cdot 10^3$	7.83	/	/
			17 40	7.29	/	$1.82 \cdot 10^3$	7.47	/	/
				/	/	$1.91 \cdot 10^3$	8.32	/	/
	4#	2017-2-15	9 45	7.89	/	$2.09 \cdot 10^3$	0.21	/	/
			11 45	7.92	/	$1.98 \cdot 10^3$	0.22	/	/
			13 45	7.86	/	$2.02 \cdot 10^3$	0.23	/	/
			15 45	7.90	/	$1.91 \cdot 10^3$	0.26	/	/
			17 45	7.93	/	$1.78 \cdot 10^3$	0.28	/	/
		2017-2-16	9 45	7.82	/	$2.06 \cdot 10^3$	0.19	/	/
			11 45	7.78	/	$1.96 \cdot 10^3$	0.20	/	/
			13 45	7.85	/	$1.98 \cdot 10^3$	0.16	/	/
			15 45	7.81	/	$1.88 \cdot 10^3$	0.17	/	/
			17 45	7.83	/	$1.75 \cdot 10^3$	0.23	/	/
				/	/	$1.94 \cdot 10^3$	0.22	/	/
	5#	2017-2-15	9 15	10.26	/	$1.79 \cdot 10^3$	9.06	/	/
			11 15	10.22	/	$1.88 \cdot 10^3$	9.22	/	/
			13 15	10.24	/	$1.84 \cdot 10^3$	8.68	/	/
			15 15	10.25	/	$1.78 \cdot 10^3$	8.61	/	/
			17 15	10.27	/	$1.73 \cdot 10^3$	8.98	/	/
		2017-2-16	9 50	10.13	/	$1.71 \cdot 10^3$	10.10	/	/
			11 50	10.18	/	$1.78 \cdot 10^3$	7.20	/	/
			13 50	10.15	/	$1.80 \cdot 10^3$	8.81	/	/
			15 50	10.21	/	$1.73 \cdot 10^3$	9.46	/	/
			17 50	10.17	/	$1.67 \cdot 10^3$	9.51	/	/
				/	/	$1.77 \cdot 10^3$	8.96	/	/

“ ”

2.2-9															: mg/L pH	
6#	pH															m³/d
2017-2-15	09	00	6.98	24	15.1	502	65.5	0.86	0.31	0.036	0.24	0.05	0.05	0.05	187	
	11	00	7.01	24	19.1	423	73.2	0.54	0.28	0.041	0.25	0.05	0.05	0.05		
	13	00	6.92	28	17.3	490	74.5	0.81	0.26	0.040	0.26	0.05	0.05	0.05		
	15	00	7.04	30	16.8	506	77.7	0.77	0.26	0.040	0.26	0.05	0.05	0.05		
	17	00	7.00	26	17.6	496	62.2	0.97	0.25	0.036	0.24	0.05	0.05	0.05		
	10	00	7.05	29	14.0	478	66.3	1.05	0.29	0.05	0.24	0.05	0.05	0.05	184	
	12	00	7.01	20	13.7	499	74.4	1.11	0.28	0.05	0.26	0.05	0.05	0.05		
	14	00	7.04	23	13.5	468	62.5	1.40	0.28	0.05	0.26	0.05	0.05	0.05		
	16	00	7.02	29	14.9	506	76.3	0.96	0.28	0.05	0.26	0.05	0.05	0.05		
	18	00	7.03	24	14.5	491	70.0	1.35	0.28	0.05	0.25	0.05	0.05	0.05		
			6.92~7.0 5	26	15.7	486	70.3	0.98	0.28	0.019	0.25	0.05	0.05	0.05	186	
			6~9	400	/	500	300	20	/	5.0	1.0					

2

BOD₅

pH

COD_{Cr}

GB8978-1996

2.2-10

2.2-10

: mg/L pH

			pH				
7#	2017-2-15	10 05	7.36	10	17.7	92	34.5
		12 10	7.32	9	16.5	106	42.5
		14 08	7.35	11	17.0	82	32.0
	2017-2-16	09 10	7.31	8	15.8	105	32.8
		11 15	7.33	10	15.5	86	26.5
		13 20	7.29	13	17.7	118	34.6
			7.29~7.36	10	16.7	98	33.8
			6~9	400	/	500	300
					/		
8#	2017-2-15	10 05	8.52	8	20.4	113	37.4
		12 10	7.48	8	21.2	134	39.9
		14 08	7.53	10	20.9	138	35.9
	2017-2-16	09 10	7.55	13	19.8	90	31.0
		11 15	7.49	11	19.6	100	35.0
		13 20	7.53	10	20.6	132	38.6
			7.48~8.52	10	20.4	118	36.3
			6~9	400	/	500	300
					/		
9#	2017-2-15	10 05	7.24	9	21.6	177	62.2
		12 10	7.33	9	20.8	170	55.5
		14 08	7.28	12	19.5	125	46.7
	2017-2-16	09 10	7.36	9	22.3	184	59.8
		11 15	7.32	9	22.1	176	54.5
		13 20	7.35	9	22.6	152	41.5
			7.24~7.36	10	21.5	164	53.4
			6~9	400	/	500	300
					/		

		pH						
10#	2017-2-15	10	05	7.61	12	18.0	108	30.5
		12	10	7.56	8	17.5	96	29.1
		14	08	7.59	9	18.3	89	27.7
		09	10	7.56	12	19.2	104	27.8
	2017-2-16	11	15	7.58	13	19.6	89	25.1
		13	20	7.58	14	19.2	100	29.6
		7.56~7.61	11	18.6	98	28.3		
		6~9						

2		
	8085	7552

2.2.3.1

1



RTO

Y1#

25m

Y2#

15m

Y3#

7m

GB16297-1996

2

1.4-6

GB16297-1996

2.2-3

VOCs

GB37822-2019

1.4-6~7

2

2.2-12~

2.2-14

1

RTO

GB 16297-1996

2

2

GB

16297-1996

2

3

		2020 12 25				2020 12 26					
		1	2	3		1	2	3			
	(mg/m³)	<0.007	<0.007	<0.007	<0.007	0.089	<0.007	<0.007	0.032	/	/
	(kg/h)	<4×10 ⁻⁵	<4×10 ⁻⁵	<4×10 ⁻⁵	<4×10 ⁻⁵	5.4×10 ⁻⁴	<4×10 ⁻⁵	<4×10 ⁻⁵	2.0×10 ⁻⁵	/	/
	2- (mg/m³)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	/	/
	2- (kg/h)	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	/	/
	1- (mg/m³)	0.016	<0.008	<0.008	0.008	0.017	<0.008	<0.008	0.008	/	/
	1- (kg/h)	9.9×10 ⁻⁵	<5×10 ⁻⁵	<5×10 ⁻⁵	5×10 ⁻⁵	1.0×10 ⁻⁴	<5×10 ⁻⁵	<5×10 ⁻⁵	5×10 ⁻⁵	/	/

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2

2.2-13

		2020 12 25				2020 12 26					
		1	2	3		1	2	3			
— 15m 2 [#]	(m/s)	14.73	15.01	14.73	14.82	14.85	14.83	14.78	14.82	/	/
	()	39	39	39	39	39	39	39	39	/	/
	(m³/h)	21272	21630	21231	21378	21412	21403	21351	21389	/	/
	(mg/m³)	7.5	7.2	7.1	7.3	8.8	7.2	6.8	7.6	120	
	(kg/h)	0.16	0.16	0.15	0.16	0.19	0.15	0.15	0.16	3.5	
	(mg/m³)	1.64	1.38	1.03	1.35	5.24	1.64	1.01	2.63	120	
	(kg/h)	0.0349	0.0298	0.0219	0.0289	0.112	0.0351	0.0216	0.0562	10	
	(mg/m³)	0.03	0.07	0.07	0.06	0.09	0.2	0.17	0.15	/	/
	(kg/h)	6×10 ⁻⁴	2×10 ⁻³	1×10 ⁻³	1×10 ⁻³	2×10 ⁻³	4.3×10 ⁻³	3.6×10 ⁻³	3.3×10 ⁻³	/	/
	(mg/m³)	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	/	/
	(kg/h)	<4×10 ⁻⁵	<4×10 ⁻⁵	<4×10 ⁻⁵	<4×10 ⁻⁵	<4×10 ⁻⁵	4×10 ⁻⁵	<4×10 ⁻⁵	<4×10 ⁻⁵	/	/
	(mg/m³)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	/	/
	(kg/h)	<8×10 ⁻⁵	<9×10 ⁻⁵	<8×10 ⁻⁵	<8×10 ⁻⁵	<9×10 ⁻⁵	<9×10 ⁻⁵	<9×10 ⁻⁵	<9×10 ⁻⁵	/	/
	(mg/m³)	0.033	0.12	0.163	0.105	0.123	0.29	0.296	0.236	/	/

		2020 12 25				2020 12 26					
		1	2	3		1	2	3			
	(kg/h)	7.0×10 ⁻⁴	2.60×10 ⁻³	3.46×10 ⁻³	2.25×10 ⁻³	2.63×10 ⁻³	6.21×10 ⁻³	6.32×10 ⁻³	5.05×10 ⁻³	/	/
	(mg/m ³)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	/	/
	(kg/h)	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	/	/
	(mg/m ³)	0.012	0.014	0.014	0.013	0.02	0.027	0.019	0.022	12	
	(kg/h)	2.6×10 ⁻⁴	3.0×10 ⁻⁴	3.0×10 ⁻⁴	2.9×10 ⁻⁴	4.3×10 ⁻⁴	5.8×10 ⁻⁴	4.1×10 ⁻⁴	4.7×10 ⁻⁴	0.5	
	(mg/m ³)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	/	/
	(kg/h)	<9×10 ⁻⁵	<9×10 ⁻⁵	<8×10 ⁻⁵	<8×10 ⁻⁵	<9×10 ⁻⁵	<9×10 ⁻⁵	<9×10 ⁻⁵	<9×10 ⁻⁵	/	/
3-	(mg/m ³)	0.006	0.006	0.006	0.006	<0.002	0.015	0.006	0.007	/	/
3-	(kg/h)	1×10 ⁻⁴	1×10 ⁻⁴	1×10 ⁻⁴	1×10 ⁻⁴	<4×10 ⁻⁵	3.2×10 ⁻⁴	1×10 ⁻⁴	1×10 ⁻⁴	/	/
	(mg/m ³)	0.084	0.09	0.084	0.086	0.099	0.104	0.103	0.102	40	
	(kg/h)	1.8×10 ⁻³	1.9×10 ⁻³	1.8×10 ⁻³	1.8×10 ⁻³	2.1×10 ⁻³	2.23×10 ⁻³	2.20×10 ⁻³	2.18×10 ⁻³	3.1	
	(mg/m ³)	0.313	0.468	0.546	0.442	0.716					
				1.8							
		0									

		2020 12 25				2020 12 26					
		1	2	3		1	2	3			
	2- (mg/m³)	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	0.002	/	/
	2- (kg/h)	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	<2×10 ⁻⁵	9×10 ⁻⁵	<2×10 ⁻⁵	4×10 ⁻⁵	/	/
	(mg/m³)	<0.003	0.008	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	/	/
	(kg/h)	<6×10 ⁻⁵	2×10 ⁻⁴	<6×10 ⁻⁵	9×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	/	/
	1- (mg/m³)	<0.003	<0.003	<0.003	<0.003	<0.003	0.004	<0.003	<0.003	/	/
	1- (kg/h)	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	9×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	/	/
	(mg/m³)	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	/	/
	(kg/h)	<1×10 ⁻⁴	<2×10 ⁻⁴	<1×10 ⁻⁴	<1×10 ⁻⁴	<1×10 ⁻⁴	<1×10 ⁻⁴	<1×10 ⁻⁴	<1×10 ⁻⁴	/	/
	2- (mg/m³)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	/	/
	2- (kg/h)	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	<6×10 ⁻⁵	/	/
	1- (mg/m³)	<0.008	0.015	0.015	0.011	<0.008	0.021	<0.008	0.01	/	/
	1- (kg/h)	<2×10 ⁻⁴	3.2×10 ⁻⁴	3.2×10 ⁻⁴	2.5×10 ⁻⁴	<2×10 ⁻⁴	4.5×10 ⁻⁴	<2×10 ⁻⁴	2×10 ⁻⁴	/	/

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2.2-14

		2020 12 25				2020 12 26					
		1	2	3		1	2	3			
— 7m 3#	(m/s)	4.94	5.12	4.79	4.95	4.8	4.98	5.11	4.96	/	/
	()	60	62	63	62	42	41	41	41	/	/
	(m³/h)	556	573	535	555	573	595	611	593	/	/
	(mg/m³)	6.6	6.2	5.4	6.1	4.8	5	6.6	5.5	120	
	(kg/h)	3.7×10 ⁻³	3.6×10 ⁻³	2.9×10 ⁻³	3.4×10 ⁻³	2.8×10 ⁻³	3.0×10 ⁻³	4.0×10 ⁻³	3.3×10 ⁻³	0.8	
	(mg/m³)	1.25	0.96	0.82	1.01	3.2	9.48	4.82	5.83	120	
	(kg/h)	6.95×10 ⁻⁴	5.5×10 ⁻⁴	4.4×10 ⁻⁴	5.6×10 ⁻⁴	1.83×10 ⁻³	5.64×10 ⁻³	2.95×10 ⁻³	3.47×10 ⁻³	2	
	(mg/m³)	0.14	0.17	0.15	0.15	0.08	0.12	0.11	0.1	/	/

		2020	12	25		2020	12	26		
	1	2	3		1	2	3			
(kg/h)	7.8×10^{-5}	9.7×10^{-5}	8.0×10^{-5}	8.5×10^{-5}	5×10^{-5}	7.1×10^{-5}	6.7×10^{-5}	6.3×10^{-5}	/	/
(mg/m ³)	0.003	0.004	0.003	0.003	<0.002	<0.002	<0.002	<0.002	/	/
(kg/h)	2×10^{-6}	2×10^{-6}	2×10^{-6}	2×10^{-6}	$<1 \times 10^{-6}$	$<1 \times 10^{-6}$	$<1 \times 10^{-6}$	$<1 \times 10^{-6}$	/	/
(mg/m ³)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	/	/
(kg/h)	$<2 \times 10^{-6}$	$<2 \times 10^{-6}$	$<2 \times 10^{-6}$	$<2 \times 10^{-6}$						

		2020 12 25				2020 12 26					
		1	2	3		1	2	3			
	(mg/m ³)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	/	/
	(kg/h)	<3×10 ⁻⁶	<3×10 ⁻⁶	<3×10 ⁻⁶	<3×10 ⁻⁶	<3×10 ⁻⁶	<3×10 ⁻⁶	<3×10 ⁻⁶	<3×10 ⁻⁶	/	/
	(mg/m ³)	0.579	0.552	0.575	0.569	2.27	2.07	2.27	2.2	70	
	(kg/h)	3.22×10 ⁻⁴	3.16×10 ⁻⁴	3.08×10 ⁻⁴	3.15×10 ⁻⁴	1.30×10 ⁻³	1.23×10 ⁻³	1.39×10 ⁻³	1.31×10 ⁻³	0.2	
	(mg/m ³)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	/	/
	(kg/h)	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	/	/
2-	(mg/m ³)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	/	/
2-	(kg/h)	<6×10 ⁻⁶	<6×10 ⁻⁶	<5×10 ⁻⁶	<5×10 ⁻⁶	<6×10 ⁻⁷	<6×10 ⁻⁷	<6×10 ⁻⁷	<6×10 ⁻⁷	/	/
	(mg/m ³)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	/	/
	(kg/h)	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	/	/
1-	(mg/m ³)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	/	/
1-	(kg/h)	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	/	/
	(mg/m ³)	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	/	/
	(kg/h)	<4×10 ⁻⁶	<4×10 ⁻⁶	<4×10 ⁻⁶	<4×10 ⁻⁶	<4×10 ⁻⁶	<4×10 ⁻⁶	<4×10 ⁻⁶	<4×10 ⁻⁶	/	/
2-	(mg/m ³)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	/	/
2-	(kg/h)	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	<2×10 ⁻⁶	/	/
1-	(mg/m ³)	<0.008	<0.008	<0.008	<0.008	0.016	<0.008	<0.008	0.008	/	/
1-	(kg/h)	<4×10 ⁻⁶	<5×10 ⁻⁶	<4×10 ⁻⁶	<4×10 ⁻⁶	9.2×10 ⁻⁶	<5×10 ⁻⁶	<5×10 ⁻⁶	5×10 ⁻⁶	/	/

1

“<+ ”

2

2.2-15

GB16297-1996 2

1m

GB37822-2019 A.1

2.2-15

mg/m³

		2020 12 25					2020 12 26						
		1	2	3	4		1	2	3	4			
5m 1 [#]	(mg/m ³)	0.033	0.050	0.017	0.05	0.05	0.033	0.017	0.017	0.033	0.033	1.0	
5m 2 [#]		0.117	0.100	0.183	0.067	0.183	0.1	0.083	0.15	0.133	0.15		
5m 3 [#]		0.133	0.117	0.067	0.117	0.133	0.083	0.1	0.183	0.15	0.183		
5m 4 [#]		0.133	0.067	0.083	0.083	0.133	0.067	0.083	0.1	0.083	0.100		
5m 1 [#]	(mg/m ³)	0.70	0.48	0.77	0.61	0.77	0.56	0.77	0.55	0.46	0.77	4	
5m 2 [#]		0.84	0.66	0.76	0.37	0.84	0.71	0.36	0.8	0.28	0.8		
5m 3 [#]		0.72	0.69	0.65	0.70	0.72	0.67	0.57	0.58	0.57	0.67		
5m 4 [#]		0.53	0.68	0.53	0.53	0.68	0.54	0.68	0.59	0.54	0.68		
1m 5 [#]			0.62	0.65	0.55	0.60	0.65	0.68	0.53	0.81	0.56	0.81	10
5m 1 [#]	(mg/m ³)	10.9×10 ⁻³	5.7×10 ⁻³	4.2×10 ⁻³	5.5×10 ⁻³	10.9×10 ⁻³	5.7×10 ⁻³	7.3×10 ⁻³	8.4×10 ⁻³	12.1×10 ⁻³	12.1×10 ⁻³	2.4	
		5.1×10 ⁻³	3.1×10 ⁻³	17.2×10 ⁻³	15.6×10 ⁻³	17.2×10 ⁻³	12.2×10 ⁻³	7.3×10 ⁻³	6.4×10 ⁻³	9.5×10 ⁻³	12.2×10 ⁻³		

5m



		2020	12	25
1	2	3	4	

		2020	12	26
1	2	3	4	

3

1

VOCs

2.2-16

1728.63t/a

45%

90%

95%

90.32t/a

47.54t/a

192.07t/a

30%

85%

95%

19.16t/a

6.72t/a

2.2-16

t/a

	Y1#	Y2#)	(Y3#)	Y4#)		
	0.5458	0.7733	0.4549	0.4788	2.2528	1.68
	15.8249	22.4186	13.1874	13.8815	65.3124	48.707
	16.3707	23.1919	13.6423	14.3603	67.5652	50.387
VOCs	52.7686	74.7556	43.9739	46.2883	217.7863	162.415
	90.32	19.16	/	/	109.48	54.26

RTO

NO_x SO₂

Y1# RTO

43.7 m³/a

2010

4430

2.2-17 4430

-

/					Nm ³ / m ³ -	136259.17
/				SO ₂	kg/ m ³ -	0.02S*
				NO _x	kg/ m ³ -	18.71

					kg/ m ³	1.4
* 20mg/m ³						

SO₂ NO_x 0.0175t/a 0.818t/a 0.062t/a

2

0.35kg/t

3210t

1.12t/a

3

CO₂

5~8g/kg

8g/kg

CO₂

64t/a

0.51t/a

4

5

0.045kg/t(

165t/a

0.132t/a

10%

0.0132t/a

5

0.0001kg/t

10348.08t/a

0.001t/a

2.2-18

2.2-18

t/a

	2.2528	1.68	3.9328
	65.3124	48.707	114.0194
	67.5652	51.507	119.0722
VOCs	217.7863	162.415	380.2013
	109.542	54.7842	164.3262

SO ₂	0.0175	/	0.0175
NO _x	0.818	/	0.818

2.2.3.2

1

GB8978-1996

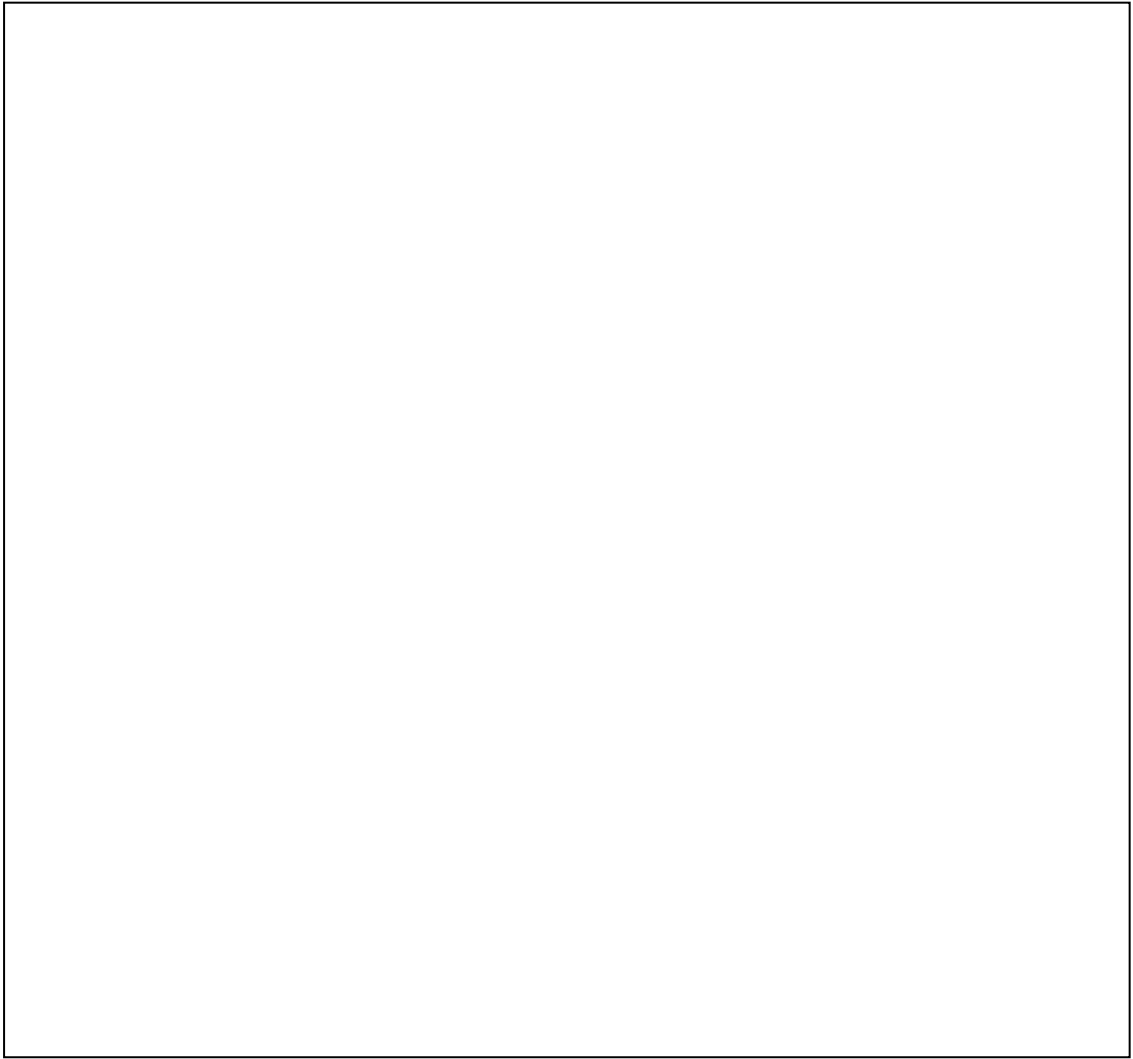
2

W1#

W2#

W3#

2.2-2



2.2-2

3

2.2-19

GB8978-1996

GB8978-1996

		2.2-19				mg/L						
		2020	12	25		2020	12	26				
		1	2	3	/	1	2	3	/			
W1 M 1#	pH	7.2	7.17	7.16	7.16~7.20	7.19	7.17	7.16	7.16~7.19	6~9		
	mg/L	20	20	22	21	19	22	22	21	400		
	mg/L	346	337	333	339	349	336	326	337	500		
	mg/L	141	145	149	145	147	143	146	145	300		
	mg/L	30.4	28.9	28.5	29.3	29.3	28.3	28.2	28.6	/	/	
	mg/L	0.45	0.45	0.44	0.45	0.45	0.46	0.44	0.45	/	/	
	mg/L	0.68	0.76	0.66	0.7	0.64	0.72	0.65	0.67	20		
	mg/L	0.012	0.01	0.01	0.011	0.012	0.01	0.01	0.011	5		
	mg/L	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	0.5	
	mg/L	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	0.5	
mg/L	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	2×10 ⁻³	1.0		
W2												
4#												

		2020 12 25				2020 12 26					
		1	2	3	/	1	2	3	/		
	mg/L	1.26	1.29	1.33	1.29	1.35	1.37	1.34	1.35	/	/
	mg/L	0.24	0.21	0.22	0.22	0.22	0.2	0.2	0.21	100	

“ ”

3

2.1-9 218m³/d

57770m³/a 70.46m³/d 18672m³/a

2.2-20

2.2-20

							t/a
	mg/L	m³/a	t/a	mg/L	m³/a	t/a	
COD	349	57770	20.162	184	18672	3.436	23.598
BOD ₅	149		8.608	62		1.158	9.766
SS	22		1.271	21		0.392	1.663
	30.4		1.756	23		0.429	2.185

2.2.3.3

893.79t/a

1

385t/a

2

314.28t/a

3

194.51t/a

2.2-21

2.2-21

		(t/a)		
		10		
		348		
		12		
		10		
		5		

		HW49 900-041-49	4.67		
		HW12 900-252-12	63.67		
		HW49 900-039-49	32.25		
		HW12 900-214-08	32.25		
		HW17 336-064-17	27.40		
		HW08 900-218-08	2.04		
		HW09 900-006-09	72		
		HW08 900-249-08	80		
			194.51		
		/	893.79	/	/

2.2.3.4

/

65 110dB A

65 75dB A

2.2-22

2.2-22

dB A

		(/			
		12	70~75		60~65
		6	75~80		60~65
		16	60~70		50~55
		16	65~70		55 60
		2	80~85		70~75
		15	80~90		70~75

		5	75~80		60~65
		3	65~70		55 60
		42	75~80		65 70
		7	90~95		80 85
		8	65~70		55 60
		2	75~80		60~65
		4	70~75		60~65
		40	85~90		75~80
		16	80~85		70~75
		1	65~75		55 60
		1	65~70		50 55

2.2.3.5

“ ”

2.2-22

2.2-22

“ ”

		t/a
		2.2528
		65.3124
		67.5652
	VOCs	217.7863
		109.542
	SO ₂	0.0175
	NO _x	0.818
		1.68
		48.707
		51.507
	VOCs	162.415
		54.7842
	m ³ /a	76442
	COD	23.598
	BOD ₅	9.766
	SS	1.663
		2.185
		385
		314.28

		194.51
--	--	--------

2.3

7m

GB16297-1996 “ 15 m ”

30m²1200m²220m²440m²

+1

+

15m

G1#

+1

UV

+

+1

15m

G2#

GB8978-1996



C

E

3.1.5

3.1-3

3.1-3

1		HAF-200-C5		1
2	PU	HAF-200-C5 YXJ-HPU-2-1000		2
3		WC67Y-100/3200		1
4		QC12K-4X2500		1
5		JJ-80		1
6		MJK1132F1		1
7		2.95		2
8		1		2
9		LA-03B-A		1
10		Z3732		1
11		G134028X		1
12		MODEL 2512B		1
13		Ehave CM350 OTC ODVE350 KR-350		14
14				1

3.1-4

1		A		45	
2		B		75	
3				300	
4				36	
5				36	
6				1.5	
7				10.5	
8				612	
9				3.6	
10				12	/
11				18600	
12				4.8	
13		103A		2.1	
14		103B		2.1	
15		105A		2.25	
16		105B		0.75	
17				0.25	
18				0.3	
19				0.24	
20				0.15	
21				0.15	
22				0.15	
23				0.45	
24				0.15	
25				0.32	
26				960	
27		92#		12	
28			18600		

3.1-5

1		A	5% 30% (2-) 55% 10%					
2		B	-4'4 43% VOCs 43% 52% 5%					
3			70% 5% 25% VOCs 30%					
4			20% VOCs 20% PMA 20% 60% VOCs 80%					
5			25% -B 8% 1% N N 0.5% 0.5% 0.5% 0.5% VOCs 3% 0.5% 60.5%					

			2.5%	GG0.5%	
6			20%	20% VOCs 80%	60%
7			20%	20% VOCs 80%	60%
8			20%	20% VOCs 80%	60%
9			20%	PMA 20% VOCs 80%	60%
10			45%	VOCs 45%	55%
11			25%	20%	30% 25%
13		105	105A B 1:1 16%	2.4% 0.4% MDI 20%	24% 37.2%
14		103	103A B 1:1 6% 8%	48%	7.5% 3%
			MDI 10% VOCS 10%		17.5%
15			60%		40%

VOCs

3.1.7

1

2

GB8978-1996

3

CO₂

3.2

3.2.1

3.2-1

3.2-1

1

1

CO₂

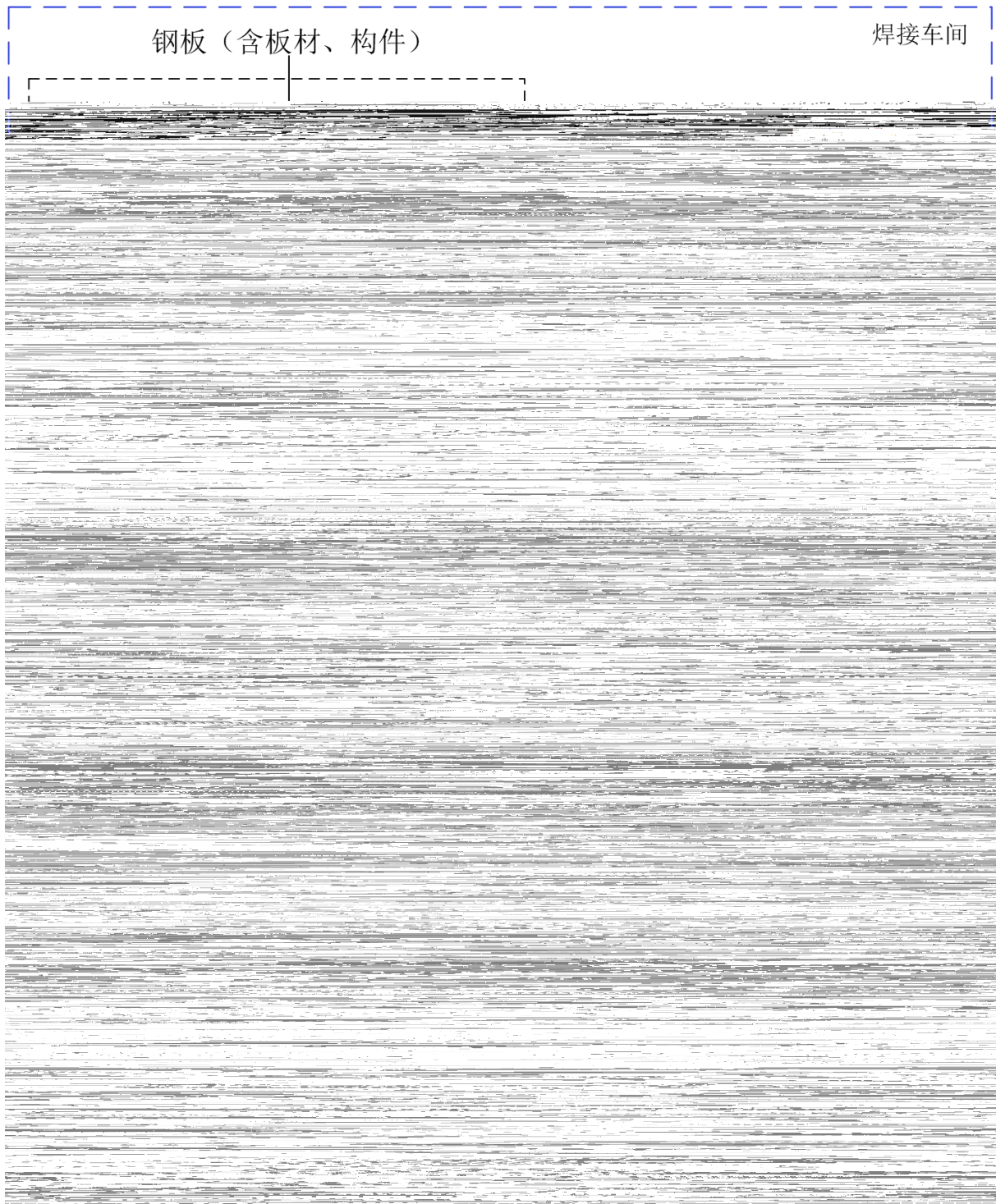
CO₂

2

/

A B

PU



3.2-1

2

3.2-1

3.2-1

					/	
	G1				1 +1 15m G1#	
	G2					
	G3					
	G4		VOCs		+1 UV +1 15m G2#	
	G5		VOCs			
	G6		VOCs			
	G7		VOCs			
	W1		SS COD			
	S1		/			
			/			
	S2		/			
	S3		/			
		AB	/			
	S4		/			
	S5		/			
	S6		/	/		
			/			
			/			
			/			/
		/				
	N1~ N6		/	/	/	

3.2.2

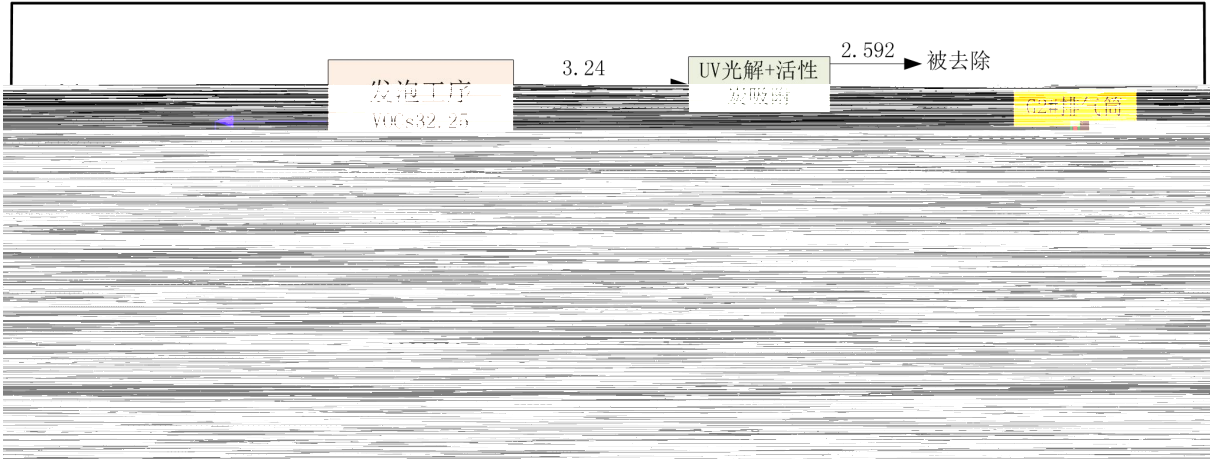
1

GB8978-1996

3				
		20	0.6m ³ /min	
288m ³ /d	2m ³		0.1%	Ø

		3				
2						
VOCs		70.91 Pa			101.3kPa	
50~260		250				
				(	C2~C8)	
					3.2-3	
3.2-4						
	3.2-3					
				%		
	t/a		NMHC			VOCs
B	75	-	-	-	43	43
	0.25	-	-	-	30	30
	0.3	20	-	-	60	80
	0.24	-	-	1.5	1.5	3

3						
	0.15	0.03	-	-	0.09	0.12
	0.45	0.09	-	-	0.27	0.36
	0.15	-	-	-	0.0675	0.0675
103	4.2	-	-	-	0.42	0.42



3.2-3 t/a

3.3

3.3.1

CO NOx

3.3.2

30 3

60L/ ·d 80% 1.44m³/d

129.6m³

GB8978-1996

3.3-1

3.3-1

		COD	BOD ₅	SS	
129.6m³	mg/L	250	150	100	25
	(t)	0.032	0.019	0.013	0.003
	mg/L	184	62	21	23
	(t)	0.024	0.008	0.003	0.003
	mg/L	500	300	400	-

3.3.3

1m

3.3-2

		1m A dB(A)	
1		90	
2		85	
3		90	
4		88	

3.3.4

30

0.5kg/ ·d

0.015t/d 1.35t

3.4

3.4.1

1

1

CO₂CO₂MnO₂SiO₂ Fe₂O₃CO NO_xCO₂

5~8g/kg

8g/kg

CO₂

3.6t/a

0.029t/a

0.1%

612t/a

0.612t/a

CO₂

1 15m

G1#

90%

50%

90%

2000m³/h

2400h/a

3.4-1

3.4-1

			Nm ³ /h						
				mg/m ³	kg/h	t/a	mg/m ³	kg/h	t/a
G1#			2000	69	0.138	0.332	6.9	0.0138	0.0332

2

90%

10%

50%

50%

60%

40%

3.4-2

3.4-2

		kg/h	t/a	kg/h	t/a
		0.0013	0.003	0.0013	0.003
		0.1275	0.306	0.051	0.122
		0.1288	0.309	0.0523	0.125

2

1

-201

0.245kg/m³-864m³

0.212t/a

0.1%

372t/a

0.372t/a

2

A

-OH

B

-NCO

VOCs

-292

-2924

VOCs

30kg/t-

3 × 10⁵m³/ -

VOCs

3.6t/a

15000m³/h

1 UV + 1 15m
90% 80% 2400h 3.4-3

3.4-3

			m ³ /h						
				mg/m ³	kg/h	t/a	mg/m ³	kg/h	t/a
G2#		VOCs	15000	90	1.35	3.24	18	0.27	0.648

3

60% 40%

3.4-4

3.4-4

		kg/h	t/a	kg/h	t/a
		0.088	0.212	0.088	0.212
		0.155	0.372	0.062	0.149
		0.243	0.584	0.15	0.361
	VOCs	0.15	0.36	0.15	0.36

3

1

3

A B

3

VOCs 10%

4.2t/a VOCs 0.42t/a

2

VOCs

30% 0.25t/a VOCs 0.075t/a

VOCs

80% 0.3t/a VOCs 0.24t/a

0.06t/a 0.06t/a

3

0.09t/a

30%

0.063t/a

VOCs 0.7947t/a

0.18t/a

0.1836t/a

4

3.4-5

3.4-5

		kg/h	t/a	kg/h	t/a
	VOCs	0.175	0.42	0.175	0.42
	VOCs	0.1313	0.315	0.1313	0.315
		0.025	0.06	0.025	0.06
		0.025	0.06	0.025	0.06
	VOCs	0.331	0.7947	0.331	0.7947
		0.075	0.18	0.075	0.18
		0.077	0.1836	0.077	0.1836
		0.0263	0.063	0.0263	0.063
	VOCs	0.6373	1.5297	0.6373	1.5297
		0.1	0.24	0.1	0.24
		0.102	0.2436	0.102	0.2436
		0.0263	0.063	0.0263	0.063

3.4-7

/

3.4.2

1

60~80dB(A)

3.4-10

3.4-10

dB(A)

1			90-95			75
2			85-90			75
3			90-95			75
4			80-85			70
5			80-85			70
6			85~90			75
7			85~90			75
8			80~85			70

3.4.4

AB

(GB18597-2001)

1 ~1

3.4-11

		(t/a)		
		0.03		/
		0.152		/
		1.9		/
		12		/
		9.6		/

	AB	HW49 900-041-49	0.3		0.5kg/ 600
		HW49 900-039-49	1.24		0.25kg /kg
		HW49 900-039-49	0.144		0.1kg/ 1440
		HW49 900-041-49	0.2		/
		HW49 900-041-49	0.5		
		HW12 900-252-12	0.27		/
		HW12 900-253-12	0.62		/
		HW08 900-214-08	0.5		/
			26.306	/	/

3.4.5

1

3.4-12

3.4-12

t/a	t/a	t/a
0.332	0.2988	0.0332

	60~95	/	60~80	/
--	-------	---	-------	---

2

3.4-13

3.4-13

		t/a
1		0.0332
2	VOCs	0.648

3.4.6

1

UV +

50%

1h

2

3.4-14

				mg/m ³	kg/h	/h	/	
G1#				34.5	0.069	1	2	
G2#		UV +	VOCs	45	0.675	1	2	

2

3.5 “ ”

3.5.1 “ ”

3.5-1 “ ”

1	15m GB16297-1996	15m
2		

3.5.2 “ ”

“ ” 3.5-2

3.5-2 “ ” t/a

		109.542	0.0332	0	109.5752	+0.0332
	VOCs	217.7863	0.648	0	218.4343	+0.648
		2.2528	0	0	2.2528	0
		65.3124	0	0	65.3124	0
		67.5652	0	0	67.5652	0
	SO ₂	0.0175	0	0	0.0175	0
	NO _x	0.818	0	0	0.818	0
	VOCs	162.415	1.8897	0	164.2422	+1.8897
		48.707	0.24	0	48.947	+0.24
		51.507	0.2436	0	51.7506	+0.2436
		54.7842	0.549	0	55.3332	+0.549
		1.68	0	0	1.68	0
	m ³ /a	76442	941	0	77383	+941
	COD	23.598	0.176	0	23.774	+0.176
	SS	1.663	0.0194	0	1.6824	+0.0194
		2.185	0.021	0	2.206	+0.021
*		385	23.652	0	408.652	+23.652
		314.28	2.654	0	316.934	+2.654
		194.51	9.6	0	204.11	+9.6

*

4

4.1

4.1.1

23°54' 26°03' 108°32' 110°

28'

18618km²

1

4.1.2

80 105 m

58.4%

5~10 80~100

“ ”

(D)

(C D)

(C D)

—

4.1.3

				20.5					
	24—27	7		28.8		35			
20			1953	39.2					
				5		1			
				1489.1		4~8			
	70	5		16.9	1				
2.7	1951		2013.7	1963	999	1			
		1634.9	9			56	3		
		16		6682.2		332			
				4~8				28.5	
	3		1.6/						

4.1.4

	1								75km
		58270km ²	92.43m	68.22m		1280m ³ /s	90%		
	95%		163 m ³ /s	142 m ³ /s		250~500m			
	62~66m	21.4		6~8	12	2			
			9						
60km									
		0.29	m ³						
				192	4800m ³ /s	77.5m			
	108km								
	2								
									22~

24

4.4-8.6m

4.1.5

186.86

7.89%

6.58

4

4.1.6

47

29

475

10

33

103

329

9

4.1.7

2009 62

4.1-1

4.1-1

				km	km ²		
		1km 0.3km		1.3	0.143	0.065	0.208
		110m	50m				
		1km 0.3km	-	1.3	0.143	0	0.143
		110m					
		1km 0.1km		1.1	0.121	0.006	0.127

		110m	0~25m					
		1km	0.1km	-	1.1	0.121	0	0.121
		110m						
					4.8	0.528	0.071	0.599
				km	km²			
	1km			17.2	8.072	1.221	9.293	
	300m		50m					
	2km		50m	2	0.07	0.2	0.27	
				19.2	8.142	1.421	9.563	
	1km		1000m	10	5	20	25	
			1000m	7	0.245	14	14.24 5	
	2km				17	5.245	34	39.24 5
50								

4.6km

3km

8

4.2

4.2.1

2019

2019

SO₂ NO₂ PM₁₀14μg/m³ 25μg/m³ 57μg/m³CO₂₄

95

1.6mg/m³ O₃

8

90

145μg/m³

GB3095-2012

PM_{2.5}38μg/m³

GB3095-2012

4.2-1

		μg/m ³	μg/m ³	%	
SO ₂		14	60	23.3	

NO₂

25

40

62.5

	HJ 644-2013	-	0.3~1.0μg/m ³
		HJ 604-2017	0.07mg/m ³
	HJ 657-2013		0.3mg/m ³

4.2.2.4

HJ2.2-2018 D TVOC
P244

$$C_{x,y} = A \left[\frac{1}{C_{j,t}} \right]$$

$C_{x,y}$ — (x,y) μg/m³

$C_{j,t}$ — j t 1h

8h μg/m³

n—

4.2.2.5

4.2-4~4.2-5

4.2-4

			m/s	kPa	
12	14		1.2~1.3	5.0~7.0	100.95
12	15		1.2~1.3	4.0~6.0	100.89
12	16		1.1~1.3	4.0~6.0	100.99
12	17		1.2	5.0~6.0	100.90
12	18		1.2~1.3	4.0~5.0	100.92
12	19		1.2~1.3	4.0~6.0	100.94
12	2	2t			

12	14	08:00	0.0067	0.0111	0.33		
		14:00	0.0082	0.0178	0.51		
		20:00	0.0066	0.0109	0.51		
		02:00	0.0081	0.0115	0.21		
2020		08:00	0.0383	0.0681	0.41	0.194	0.000109
12	15	14:00	0.0067	0.012	0.45		
		20:00	0.0341	0.0608	0.56		
		02:00	0.0182	0.0347	0.44		
2020		08:00	0.0061	0.0097	0.66	0.228	0.0000961
12	16	14:00	0.0149	0.0204	0.69		
		20:00	0.0155	0.0277	0.37		
		02:00	0.01	0.016	0.36		
2020		08:00	0.0203	0.0295	0.47	0.168	0.0000957
12	17	14:00	0.0144	0.0216	0.73		
		20:00	0.0115	0.0141	0.59		
		02:00	0.008	0.0028	0.42		
2020		08:00	0.0048	0.009	0.49	0.21	0.00011
12	18	14:00	0.0112	0.0145	0.47		
		20:00	0.0537	0.0923	0.52		
		02:00	0.004	0.0022	0.41		
2020		08:00	0.005	0.006	0.51	0.222	0.0000872
12	19	14:00	0.0061	0.0066	0.55		
		20:00	0.009	0.0079	0.47		
		02:00	0.0014	0.0043	0.56		
2020		08:00	0.0149	0.0154	0.53	0.262	0.000094
12	20	14:00	0.0145	0.0068	0.59		
		20:00	0.0082	0.0093	0.51		
			0.0014~0.0537	0.0022~0.0923	0.21~0.73	0.163~0.262	0.0000872~0.00011

3 y

5

4.4.2

K^+ Na^+ Ca^{2+} Mg^{2+} CO_3^{2-} HCO_3^- Cl^- SO_4^{2-} pH
 ()

30

4.4.3

3

4.4.4

HJ/T164-2004

GB/T14848-2017

4.4-2

4.4-2

			/
1	pH	2002 pH pH	0~14pH
2	K^+	HJ 812-2016 K^+ Ca^{2+} Mg^{2+} Li^+ Na^+ NH_4^+	0.02mg/L
3	Na^+		0.02mg/L
4	Ca^{2+}		0.03mg/L
5	Mg^{2+}		0.02mg/L
6	CO_3^{2-}	DZ/T 0064.49-1993	5mg/L
7	HCO_3^-		5mg/L
8	Cl^-	HJ/T 84-2016 F^- Cl^- NO_2^- Br^-	0.007mg/L
9	SO_4^{2-}	NO_3^- PO_4^{3-} SO_3^{2-} SO_4^{2-}	0.018mg/L
10		HJ 535-2009	0.025mg/L
11		HJ/T 346-2007	0.08mg/L
12		GB 7493-1987	0.003mg/L
13		HJ 503-2009 4- 1	0.0003mg/L
14		HJ 484-2009 3 -	0.001mg/L
15		GB 7467-1987	0.004mg/L
16		GB 7477-1987 EDTA	5.00mg/L
17		GB/T 5750.4-2006	—
18		GB/T 5750.7-2006 1.1	0.05mg/L
19		HJ 700-2014 65	0.05μg/L
20			0.09μg/L
21			0.08μg/L
22			0.67μg/L
23			0.06μg/L
24		GB 11911-1989	0.01mg/L

25		HJ 694-2014	0.04μg/L
26		HJ 1067-2019 /	2μg/L
27			2μg/L
28			2μg/L

4.4.5

GB/T14848-2017

HJ610-2016

1

$$i=C_i/C_{si}$$

i — i

C_i — i mg/L

C_{si} — i mg/L

2

pH

$$H \frac{7.0 - H}{7.0 - H} \quad \text{pH} \leq 7$$

$$P_{pH} \frac{H - 7.0}{H - 7.0} \quad (\text{pH} > 7)$$

P_{pH} —pH

pH—pH

pH_{su} —pH

pH_{sd} —pH

1

4.4.6

4.4-3

4.4-4

4.4-3

		m	m
D1		-4	-8
D2		-5	-11
D3		0	-5
D4		-6	-10
D5		-5	-12

D6		-5	-10
----	--	----	-----

4.4-4

GB/T14848-2017

		4.4-4				mg/L										
III			pH ()													
			6.5~8.5	≤450	≤1000	≤3.0	≤0.5	≤250	≤250	≤20	≤1.0	≤0.002	≤0.05	≤1.0	≤1.0	≤0.2
	11	13	7.53	305	188	2.09	0.258	25.1	85.8	0.65	0.007	0.0007	0.001L	0.00046	0.00067L	0.00009L
	11	14	7.5	300	178	2.02	0.264	24.7	87.8	0.83	0.007	0.0006	0.001L	0.00045	0.00067L	0.00009L
	11	15	7.42	308	182	2.11	0.256	24.8	87.4	0.95	0.007	0.0007	0.001L	0.00048	0.00067L	0.00009L
Sij		0.21~0.26	0.67~0.6	0.178~0.18	0.67~0.70	0.512~0.5	0.099~0.	0.34~0.3	0.033~0.	0.007	0.3~0.35	0.1	0.00045~0			
		5	8	8		28	1	5	048				.00048	0.000335	0.000225	
%		0														

D1

										K⁺	Na⁺	Ca²⁺	Mg²⁺	CO₃²⁻	HCO₃⁻
	III	≤0.005	≤0.02	≤0.001	≤0.1	≤0.05	≤0.01	≤0.7	≤0.5	/	/	/	/	/	/
	11 13	0.00005L	0.011	0.00008	0.01L	0.004L	0.002L	0.002L	0.002L	1.7	0.02L	118	26.8	5L	186
	11 14	0.00005L	0.0119	0.00009	0.01L	0.004L	0.002L	0.002L	0.002L	1.84	0.02L	117	25.8	5L	189
	11 15	0.00005L	0.0113	0.00009	0.01L	0.004L	0.002L	0.002L	0.002L	2.08	0.02L	116	26.6	5L	190
	S _{ij}	0.005	0.55~0.595	0.08~0.09	0.05	0.04	0.1	0.0014	0.002	/	/	/	/	/	/
	%	0	0	0	0	0	0	0	0	/	/	/	/	/	/
D3		0	0	0	0	0	0	0	0	/	/	/	/	/	/
		pH ()													
	III	6.5~8.5	≤450	≤1000	≤3.0	≤0.5	≤250	≤250	≤20	≤1.0	≤0.002	≤0.05	≤1.0	≤1.0	≤0.2
	11 13	6.84	84	166	1.11	0.118	12	2.34	3.09	0.004	0.0003L	0.001L	0.00008L	0.00964	0.00009L
	11 14	6.9	91	176	1.08	0.121	11.7	2.21	3.37	0.004	0.0003L	0.001L	0.00008L	0.0106	0.00009L
	11 15	6.84	86	175	1.14	0.121	11.8	2.38	3.34	0.004	0.0003L	0.001L	0.00008L	0.00963	0.00009L
	S _{ij}	0.1~0.16	0.187~0.202	0.166~0.176	0.36~0.38	0.236~0.242	0.0472~0.048	0.00884~0.00952	0.1545~0.1685	0.004	0.075	0.01	0.00004	0.00963~0.0106	0.000225
	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0
										K⁺	Na⁺	Ca²⁺	Mg²⁺	CO₃²⁻	HCO₃⁻
	III	≤0.005	≤0.02	≤0.001	≤0.1	≤0.05	≤0.01	≤0.7	≤0.5	/	/	/	/	/	/
	11 13	0.00005L	0.00416	0.00007	0.09	0.004L	0.002L	0.002L	0.002L	0.97	0.02L	19.3	4.64	5L	28
	11 14	0.00005L	0.00423	0.00008	0.09	0.004L	0.002L	0.002L	0.002L	0.98	0.02L	19.0	4.54	5L	28
	11 15	0.00005L	0.0032	0.00008	0.08	0.004L	0.002L	0.002L	0.002L	1.0	0.02L	20.1	4.84	5L	28
	S _{ij}	0.005	0.16~0.21	0.07~0.08	0.8~0.9	0.04	0.1	0.0014	0.002	/	/	/	/	/	/
	%	0	0	0	0	0	0	0	0	/	/	/	/	/	/
		0	0	0	0	0	0	0	0	/	/	/	/	/	/

4.5

2020 11 11 ~25

4.5.1

6

4.5-1

4

4.5-1

S1		-			+
S2		-			
S3		-			
S4		-			
S5		60m			
S6		175m			+
0~0.2m 0~0.5m 0.5~1.5m 1.5~3.0m					

4.5.2

S1

GB36600-2018

1

45

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]

46

0~0.5m

pH

/ cm/s

/ kg/m³

S2~S5

pH

+

S6

pH

GB36600-2018

1

45

+

4.5.3

1 1

4.5.4

4.5-2

4.5-2

mg/kg

1	pH	PH HJ 962-2018	2~12
2		HJ 680-2013	0.01
3		/	0.002
4		GB/T 17141-1997	0.01
5		HJ 491-2019	0
6			10
7			3
8		HJ 1082-2019 -	0.5
9		HJ 745-2015	0.01
10		HJ 736-2015 / -	0.003
11	1,2-	HJ 642-2013 / -	0.0013
12			0.0015
13	-1,2-		0.0009
14			0.0026
15	1,1-		0.0008
16	-1,2-		0.0009
17	1,1-		0.0016
18			0.0015
19	1,1,1-		0.0011
20			0.0021
21		HJ 642-2013 / -	0.0016
22			0.0009
23	1,2-		0.0019
24			0.002
25	1,1,2-		0.0014
26			0.0008
27			0.0011
28	1,1,1,2-		0.001
29			0.0012
30	, -		0.0036
31			0.0013
32			0.0016
33	1,1,2,2-		0.001

34	1,2,3-		0.001
35	1,4-		0.0012
36	1,2-		0.001
37		HJ 834-2017	0.003
38	2-		0.06
39			0.09
40			0.09
41	a		0.1
42			0.1
43	b		0.2
44	k		0.1
45	a		0.1
46	1,2,3-cd		0.1
47	a h		0.1

4.5.5

GB36600-2018

 C / C

—

 C — mg/kg C — mg/kg

>1

 ≤ 1

4.5.6

1

S1 S6

4.5-3~4.5-4

4.5-3

	S1		2020 11 25		S6		2020 11 17
	E109.345846° N24.332754 °				E109.343724° N24.337603 °		
	0-0.2m				0-0.2m		

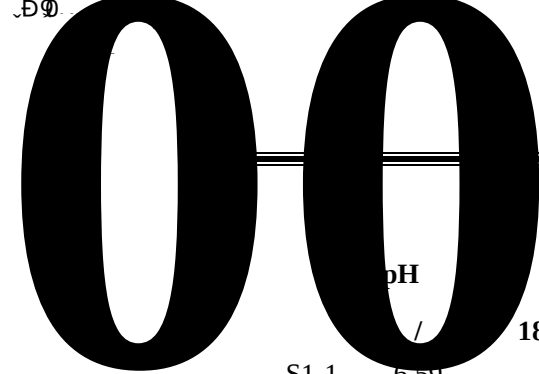
		<20%	<20%
	pH	6.59	7.50
	cmol(+)/kg	10.1	9.0
	mv	521	423
	/ cm/s	7.84×10^{-6}	7.07×10^{-6}
	/ g/cm ³	1.51	1.37
	%	49	50

2

4.5-4

4.5-4

GB36600-2018



		4.5-4				mg/kg				pH		
		1,2-				1,2-				1,2-		
		pH				pH				pH		
		/				/				/		
		18000				800				65		
		900				38				60		
		5.7				135				37		
		5				0.43						
S1-1	6.59	35	20	0.04	23	0.534	18.5	<0.5	0.02	<0.003	<0.0013	<0.0015
S1-2	6.65	24	19	0.05	22	0.256	11.8	<0.5	<0.01	<0.003	<0.0013	<0.0015
S1-3	6.83	24	14	0.03	20	0.235	11.2	<0.5	<0.01	<0.003	<0.0013	<0.0015
Pi	/	0.0013~0.0019	0.0175~0.025	0.00046~0.00077	0.022~0.025	0.0062~0.014	0.187~0.31	<0.088	<0.000074~0.00015	<0.000081	<0.00026	<0.00349
		0	0	0	0	0	0	0	0	0	0	0
		1,1-	-1,2-	1,1-	-1,2-	1,1,1-				1,2-		
		616	66	54	9	596	0.9	840	2.8	4	2.8	5
S1-1	<0.0026	<0.0008	<0.0009	<0.0016	<0.0009	<0.0015	<0.00					

S1

S1-2	<0.06	<0.09	<0.09	<0.1
------	-------	-------	-------	------

		/	0	0	0	0	0	0	0	0			
		pH										1,2-	
		/	18000	800	65	900	38	60	5.7	135	37	5	0.43
		7.5	20	19	0.11	6	0.106	14.2	<0.5	<0.01	<0.003	<0.0013	<0.0015
	Pi	/	0.0011	0.024	0.0017	0.0067	0.0028	0.024	<0.088	<0.000074	<0.000081	<0.00026	<0.0035
		/	0	0	0	0	0	0	0	0	0	0	0
			1,1-	-1,2-	1,1-	-1,2-		1,1,1-				1,2-	
		616	66	54	9	596	0.9	840	2.8	4	2.8	5	1200
		<0.0026	<0.0008	<0.0009	<0.0016	<0.0009	<0.0015	<0.0011	<0.0021	<0.0016	<0.0009	<0.0019	<0.002
	Pi	<0.0000042	<0.000012	<0.000017	<0.00018	<0.0000015	<0.0017	<0.0000013	<0.00075	<0.0004	<0.00032	<0.00038	<0.0000017
		0	0	0	0	0	0	0	0	0	0	0	0
		1,1,2-			1,1,1,2-		, -			1,1,2,2-	1,2,3-	1,4-	1,2-
		2.8	53	270	10	28	570	640	1290	6.8	0.5	20	560
		<0.0014	<0.0008	<0.0011	<0.001	<0.0012	<0.0382	<0.0013	<0.0016	<0.001	<0.001	<0.0012	<0.001
	Pi	<0.0005	<0.000015	<0.000004	<0.0001	<0.000043	<0.000067	<0.000002	<0.0000012	<0.00015	<0.002	<0.00006	<0.0000018
		0	0	0	0	0	0	0	0	0	0	0	0
		2-			[a]		(b)	[k]	(a)	(1,2,3-cd)	[a h]		
		2256	76	70	15	1293	15	151	1.5	15	1.5	260	
		<0.06	<0.09	<0.09	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	0.062	
	Pi	<0.000027	<0.0012	<0.0013	<0.0067	<0.000077	<0.0133	<0.00066	<0.067	<0.0067	<0.067	0.00024	
		0	0	0	0	0	0	0	0	0	0	0	

“ < ”

4.6

2020 12 25 ~26

4.6.1

5

4.6-1

4

4.6-1

1		1m	
2		1m	
3		1m	
4		1m	
5		1m	

4.6.2

A LeqA

4.6.3

2 1 06 00-22 00 22 00-
06 00 10min Leq(A)

4.6.4

GB3096-2008

5.0m/s

4.6.5

GB3096-2008 3

GB3096-2008 4a

4.6.6

4.6-2

4.6-2

dB(A)

		Leq		Leq		
2020.12.25	1#	58	51	65	55	
	2#	60	50			
	3#	59	48			
	4#	59	49			
	5#	59	49	70	55	

2020.12.26	1#	60	50	65	55	
	2#	60	50			
	3#	59	49			
	4#	60	50			
	5#	58	50	70	55	

4.6-2

GB3096-2008 4a

GB3096-2008 3

5

5.1

5.1.1

CO

NO_x

5.1.2

COD BOD₅ SS

5.1.3

85-90dB(A)

5.1-1

5.1-1

		dB		
		90	1m	
		85	1m	
		90	1m	
		88	1m	

$$L_2 = L_1 - 20 \lg(r_2/r_1)$$

L_1 L_2 r_1 r_2 dB(A)
 r_1 r_2 (m)

$$\Delta L = L_1 - L_2 = 20 \lg(r_2 / r_1)$$

5.1-2

5.1-2

dB(A)

			m									
			10m	20m	30m	40m	50m	60m	80m	100m	150m	200m
	75	55	70.0	64.0	60.5	58.0	56.0	54.4	51.9	50.0	46.5	44.0
	75	55	65.0	59.0	55.5	53.0	51.0	49.4	46.9	45.0	41.5	39.0
	75	55	70.0	64.0	60.5	58.0	56.0	54.4	51.9	50.0	46.5	44.0
	75	55	68.0	62.0	58.5	56.0	54.0	52.4	49.9	48.0	44.5	42.0

60m

GB12523-2011

20m

1

2

5.1.4

5.2

1

HJ2.2-2018 AERSCREEN

1.5.1.1

5.2-1~5.2-4

5.2-1

			mg/m^3 /	kg/h /	t/a /
G1#	D01		6.9	0.0138	0.0332
G2#	D02	VOCs	18	0.27	0.648
					0.0332
		VOCs			0.648

5.2-2

					/t/a
				mg/m³	
		/	GB16297-1996	1.0	0.125
		/			0.361
	VOCs	/		10	0.36
	VOCs	/			1.5297
		/	GB16297-1996	1.2	0.24
		/		4.0	0.2436
		/		1.0	0.063
		VOCs		1.8897	
				0.24	
				0.2436	
				0.549	

5.2-3

		t/a /
1	VOCs	2.5377
2		0.24
3		0.2436
5		0.5822

5.2-4

				mg/m ³	kg/h	/h	/	
G1#				34.5	0.069	1	2	
G2#		UV +	VOCs	45	0.675	1	2	

2

AERSCREEN

5.2-5

5.2-5

m			TVOC				PM ₁₀		PM _{2.5}	
	/μg/m ³	%	/μg/m ³	%	/μg/m ³	%	/μg/m ³	%	/μg/m ³	%
67	15.0327	7.51	95.8034	7.98	15.33335	0.77	/	/	/	/
43	/	/	/	/	/	/	28.818	6.4	14.409	6.40

5.2-5

15.0327μg/m³

67m

7.51% PM₁₀ PM_{2.5}28.818μg/m³ 14.409μg/m³

43m

6.4%

GB3095-2012

TVOC

95.8034μg/m³

67m

7.98%

HJ2.2-2018

D

15.33335μg/m³

67m

0.77%

P244

5.3

HJ2.3-2018

B

5.3.120m³/a10m³/d3.07m³/d921m³/a**5.3.2**

GB8978-1996

5.3.3

1

GB8978-1996

2020

COD

11.93mg/m³ 0.24mg/m³

GB18918-2002

B

2020 10

19

GB 3838-2002

GB 3838-2002

2020 9

GB 3838-2002

GB 3838-2002

GB

3838-2002

GB 3838-2002

III

2

5.4

5.4.1

1

 (Q^{ml}) (C^{ld})

3

 $(Q^{ml}) :$

~

3~5

0.50~15.50m

 $(C^{ld}) :$

0.50~15.50m

0.70~7.10m

 $(C^{ld}) :$

0~19.40m

5.8~13.20m

2

105~120m

30-40m

5.4.2

5.4.2.1

 10^{-7}cm/s

5.4.2.2

(HJ610-2016

1

COD_{Cr}NH₃-N

2

HJ610-2016

1

$$\frac{C}{C_0} = \frac{1}{2} \operatorname{erfc}\left(\frac{x}{2\sqrt{Dt}}\right) = \frac{1}{2} \operatorname{erfc}\left(\frac{x}{2\sqrt{D}}\right)$$

x— m

t— d

C x t —t x mg/L

C₀— mg/L

u — m/d

D_L — m^2/d

$erfc$ —

100

630m

5.4-1

	m	m/d	m/d		D_L (m^2/d)
	20	0.031	2.6	0.36	0.92

3

3

1d 100d 1000d

4

COD NH_3-N

COD

3.0mg/L NH_3-N 0.5mg/L

5

5.4-2~5.4-3

5.4-2

COD

mg/L

1d		100d		1000d	
m	mg/L	m	mg/L	m	mg/L
0	250	150	2.664535E-12	2239	2.775558E-14
1	237.0123	180	7.687284E-06	2240	2.775558E-14
2	192.5079	210	0.169586	2400	0.0005110737
3	117.9844	223	2.807511	2515	2.993658
4	49.34888	256	56.98038	2594	18.09548
5	13.22754	280	12.86564	2678	2.981589
6	2.191292	290	2.791093	2800	0.0002376147
10	6.124006E-06	350	4.047609E-09	2900	2.464418E-10
13	2.359224E-12	370	6.938894E-14	2950	2.775558E-14
14	0	380	0	2960	0

5.4-3		NH ₃ -N		mg/L	
1d		100d		1000d	
m	mg/L	m	mg/L	m	mg/L
0	25	150	2.664535E-13	2239	
1	23.70123	180	7.687284E-07	2240	2.775558E-15
2	19.25079	210	0.0169586	2400	5.110737E-05
3	11.79844	231	1.000229	2550	1.009089
4	4.934888	257	5.695711	2596	1.812402
5	1.322754	281	1.131063	2643	1.006644
6	0.2191292	300	0.03554301	2800	2.376147E-05
10	6.124006E-07	350	4.047609E-10	2900	2.464418E-11
13	2.359224E-13	370	6.938894E-15	2950	2.775558E-15
14	0	380	0	2960	0

3

1 COD
 250mg/L 13m 6m COD
 100 256m 56.98038mg/L
 224m~289m COD 1000 2594m
 18.09548mg/L 2515m~2678m COD NH₃-N
 25mg/L 13m 5m
 NH₃-N 100 257m 231~281m
 NH₃-N 1000 2596m
 2550~2643m NH₃-N

5.5

5.5.1

80~95dB A

10~25dB A

5.5-1

5.5-1		dB(A)	
1		90-95	75

2			85-90			75
3			90-95			75
4			80-85			70
5			80-85			70
6			85~90			75
7			85~90			75
8			80~85			70

5.5.2

(HJ2.4-2009)

1

A.1

L_{p1} L_{p2}

A.6



TL—

dB



A.7



$$\begin{aligned}
 & Q = \frac{R}{R + \frac{S}{m^2 \alpha}} \\
 & R = \frac{S}{1 - a} \\
 & r = \frac{m}{i} \\
 & A.8
 \end{aligned}$$

$$L_{P1i}(T) = 10 \lg \left(\sum_{j=1}^N 10^{0.1 L_{P1ij}} \right) \quad (A.8)$$

$$\begin{aligned}
 & L_{p1i} = T - N_i \text{ dB} \\
 & L_{p1ij} = j - i \text{ dB} \\
 & N = \frac{A.9}{\text{dB}}
 \end{aligned}$$

$$L_{P2i}(T) = L_{P1i}(T) - (TL_i + 6) \quad (A.9)$$

$$\begin{aligned}
 & L_{P2i} = T - N_i \text{ dB} \\
 & TL_i = i \text{ dB} \\
 & A.10
 \end{aligned}$$

$$L_W = L_{P2i}(T) + 10 \lg s \quad (A.10)$$

A

2

$$A(\omega) = A_0 + 20 \lg \frac{\omega}{\omega_0}$$

$$\begin{aligned}
 & L_A = r - A \text{ dB} \\
 & r_0 = r - m \\
 & L_A = \text{dB}
 \end{aligned}$$

3

$$L_0 = 10 \lg \left(\sum_{i=1}^n 10^{L_i/10} \right)$$

L_0 — dB(A)

n —

L_i — dB(A)

4

2

$$L_{eqg} = 10 \lg \left(\frac{1}{T} \sum_i t_i 10^{0.1 L_{Ai}} \right)$$

L_{eqg} — dB(A)

L_{Ai} — i A dB(A)

T — s 60s

t_i — i T s

5.5.3

5.5-2

5.5-2

dB A

	60	36.5	60.02		51	36.5	51.15	
	60	35.6	60.02		50	35.6	50.16	
	59	30.0	59.01		49	30.0	49.05	
	60	44.8	60.13		50	44.8	51.15	
	59	44.7	59.16		50	44.7	51.12	

5.5-2

GB12348-2008 3

GB12348-2008 4a

5.6

1

5.6-1

5.6-1

			(t/a)		
			0.03		/
			0.152		/
			1.9		/
			12		/
			9.6		/
	AB	HW49 900-041-49	0.3		0.5kg/ 600
		HW49 900-039-49	1.24		0.25kg /kg
		HW49 900-039-49	0.144		0.1kg/ 1440
		HW49 900-041-49	0.2		/
		HW49 900-041-49	0.5		
		HW12 900-252-12	0.27		/
		HW12 900-253-12	0.62		/
		HW08 900-214-08	0.5		/
			26.306	/	/

2

1

1

$\leq 10^{-10}$ cm/s

GB18597-2001

2

5.7

5.8

5.8.1

5.8-1

5.8-2

5.8-1

	√	/	/
	√	√	√

5.8-2

	/				
			VOCs	VOCs	
			VOCs	VOCs	
/	/		COD		

5.8.2

HJ964-2018 “ 5 ”

0.2km

0.99km²

5.8-1

5.8-1

5.8.3

1

đ

3

1

$$\Delta S = n(I_s - L_s - R_s)/(\rho_b \times A \times D)$$

g/kg

g

g

g

 ρ_b _____kg/m³ A _____m² D _____

0.2m

a

E

$$\Delta S = nI_s/(\rho_b \times A \times D)$$

2

$$S = S_b + \Delta S$$

g/kg

g/kg

VOCs

6.98g

11.13g

4

0.99km²

5% 20% 50% 100%

5

10

30

5.8-3

5.8-4

5.8-3

n ()	(kg/m ³)	<i>A</i> (km ²)	<i>D</i> (m)	(mg)	*(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
5	1510	0.495	0.2	6980	0.0079	0.00001	0.00791	570
		0.198				0.00003	0.00793	
		0.495				0.00001	0.00791	
		0.99				0.00001	0.00791	
		0.495				0.00002	0.00792	
10	1510	0.198	0.2	6980	0.0079	0.00005	0.00795	
		0.495				0.00002	0.00792	
		0.99				0.00001	0.00791	
		0.495				0.00007	0.00797	
30	1510	0.198	0.2	6980	0.0079	0.00016	0.00806	
		0.495				0.00007		

GB36600-2018

VOCs

5.8.4

1		20% 20% 20%	0.06t	0.012	
		20%	0.05t	0.01	
2		1%	0.01t	0.0001	10
3		0.5% 25%	0.01t 0.15t	0.03755	10
4	2-	0.5%	0.01t	0.00005	7.5
5	MDI	B 43%	B 3t	1.29	0.5
		105 20%	0.15t	0.03	
		103 10%	0.15t	0.015	
6	92#	/	/	0.05	2500

5.9.2

1.6-1

3

5.9.3

1

“ ”

2- B MDI

5.9-2~5.9-6

5.9-2

32198

33645 33646

-18~23

≥ 23

3.2

3.3

5.9-3

				1,2-xylene			
		C ₈ H ₁₀	CAS	95-47-6	UN	1037	
		-25.5	144.4	=1	0.88	=1	3.66
			30	[% (V/V)]		0.9%~6.7%	
	37						

5.9-4

				Cyclohexanone:ketoexamethylene			
		C ₆ H ₁₀ O	CAS	108-94-1	UN	33590	
		-45	115.6		0.95		3.38

5.9-6

				gasoline petrol
		C ₅ H ₁₂ -C ₁₂ H ₂₆	CASNO.	8006-61-9
		72-170	UN	1203
		<-60		25 220
	(=1)	0.70 0.79	kPa	40.5~91.2 37.8
		LD ₅₀ 67000mg/kg() LC ₅₀ 103000mg/m ³ 2 ()		
				15
		7()		-58~10
		41.8~46MJ/kg		
		1.3%~7.6%		

--	--	--

2

1

AB

2

B

B

MDI

3

5.9-7

5.9-7

1						
			MDI			
		AB	MDI			
2			MDI			

5.9.4

1

HJ169-2018

E

5.9-8

5.9-8

/	10mm	$1.00 \times 10^{-4}/a$
	10min	$5.00 \times 10^{-6}/a$
		$5.00 \times 10^{-6}/a$

2

5.9-9

5.9-9

1		MDI		1.00×10 ⁻⁴ /a		
2		MDI		1.00×10 ⁻⁶ /a		

5.9.5

5.9.5.1

1

2

5

F F.1

$$Q_L = C_d A \rho \sqrt{\frac{2(P - P_0)}{\rho} + 2gh}$$

——

0.5kg/s

——

110000Pa

o——

101300Pa

——

0.8kg/m³

——

9.81m/s²

——

0.5m

C  ——

0.5

A——

0.02m²

=1.18kg/s

5

0.354t

3

20%

70.8kg

		(kg)	82	(m)	0.02
(kg/s)	0.5	(min)	5	(kg)	70.8
(m)	0.5	(/)	-	(kg)	693
: 90 1.5m/s 25°C 50% F					
	(mg/m ³)		(m)	(min)	
-1	11000		30	0.25	
-1	4000		80	0.67	
	-1-	-1-	-2-	-2-	-
	(min)	(min)	(min)	(min)	(mg/m ³)
	-	-	-	-	-

-1

30m

0.25min

—— 0.5kg/s

—— 110000Pa

$\varnothing$ —— 101300Pa

—— 1.19kg/m³

—— 9.81m/s²

—— 0.5m

C  0.5

A —— 0.02m²

=1.44kg/s 5 0.432t

3 B MDI

B MDI 35% MDI 15.12kg

4

MDI

5.9.5.3

CO₂ CO

1

CO VOCs

2

COD

§ 6.6

6

6.1

6.1.1

1

CO NO_x MnO₂ SiO₂ Fe₂O₃

1 15m G1#

2

CO₂

≥ 99.9%

+ +15m

6.1-1 94.7%

90%

GB16297-1996

6.1-1

		kg/h	kg/h	mg/m ³		
		0.281	0.015	4.6		94.7%

6.1.2

1

VOCs
1 UV

+ 1 15m G2#

2

6.1-2

				70%~ 90%		70-90%
		700	RTO		98%	
		CO ₂ H ₂ O	RCO		95%	
		250 ~500				
				70%		

				70%		
	VOCs	UV-		60%~ 80%		
				65%		
				95%		
				98%		

1 “ +UV + ”
6.1-2 80.3%
GB3157-2015

6.1-2

		kg/h	kg/h	mg/m ³		
		0.953	0.188	14.4		80.3%

A

B

+1 UV

+1

+1 15m

80%

-292

- 2924

-

“

+ ”

80%

80%

6.1.3

6.1.4

15m

GB16297-1996

“

15 m ”

15m

GB31572-2015 “

15m ”

6.2

6.2.1

6.2.2

1

GB8978-1996

2

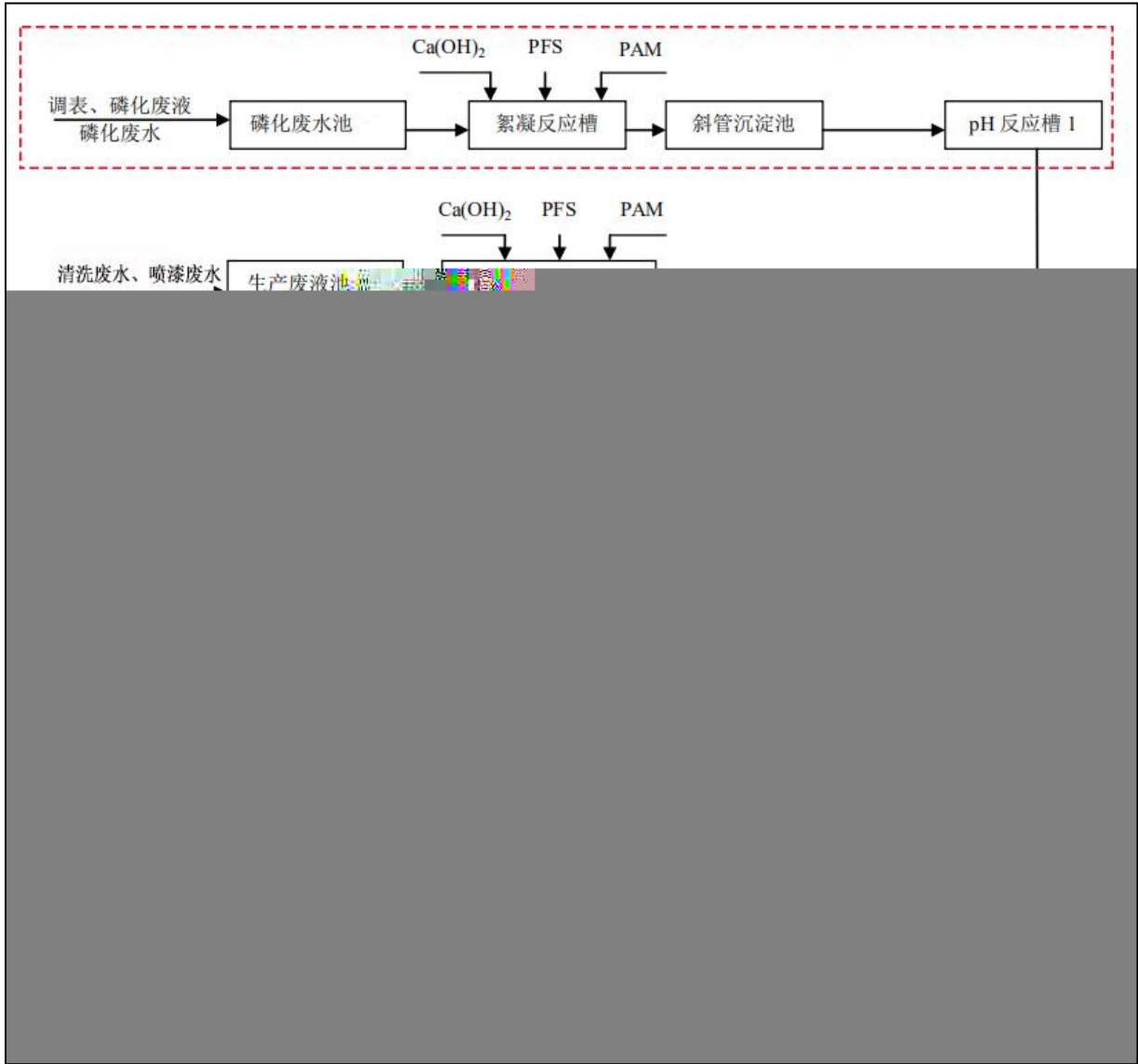
1

3m³/h 72m³/d

10m³/h 240m³/d

13m³/h 312m³/d “ + ”

6.2-1



6.2-1

2.2.2.3

GB8978-1996

2020 12 25 ~26

2.2.3.2

GB8978-1996

312m³/d

218m³/d

94m³/d

10m³/d

10.64%

SS COD

91450200794328218E001Q

6.2.3

1

2

2.2.2.3

GB8978-1996

2020 12 25 ~26

2.2.3.2

GB8978-1996

6.2.4

35 m³/d

190183m² A2/0

GB18918-2002 B

10 m³/d 15 m³/d 10 m³/d 2009
[2009]94

2008 2013

[2013]337 2018 2019

2019 9

91450200768942839U005Q

33.2 m³/d 1.8 m³/d

GB8978-1996		13.07m³/d
	0.07%	COD SS
	2020	
		COD
11.93mg/m³	0.24mg/m³	GB18918-2002
B		

6.3

“ ”

6.3.1

6.3.2

HJ610-2016

6.3-1 9

6.3-1

		Mb ≥ 6.0m K ≤ 1 × 10 ⁻⁷ cm/s GB18598	
		Mb ≥ 1.5m K ≤ 1 × 10 ⁻⁷ cm/s GB18598	

6.4

1

2

3

GB12348-2008 3 4a

6.5

6.5.1

GB18599-2001

1

2

3 GB15562.2

6.5.2

(GB18597-2001)

1 ~1

6.5-1

6.5-1

6.6

6.6.1

1

2

3

4

6.6.2

1

2

2 165m³ 65m³

3

4

GB18597-2001

6.6.3

			GB12348-2008 3 4

7

7.1

7.1.1

175

35

20%

7.1-1

7.1-1

	1	+1 15m	10
	1 +UV	+ +1 15m	10
			3
			0
			5
			5
			0
			2
			35

7.1.2

1

10

5%

 $C_1 = \alpha \frac{1-\beta}{n}$
 α — 35

 β — 5%

 n — 10

3.325 /

2

/

5%

1.75

3

2% 0.7

5.775 /

7.1.3

1

1.2

1.4

7.1-2

7.1-2

		t/a	kg	/	/
		0.2988	4	1.2	89.64
	COD	0.064	1	1.4	89.6
	BOD ₅	0.081	0.5		226.8
	SS	0.0766	4		26.81
		26.306	/	25 /	657.65
					1090.5

1090.5 ≈ 0.11

7.1-3

		(/)	
1		0.11	7.1-2
2		16.08	$3.216 \times 10^5 \text{m}^3$ 0.5 /m ³
		16.19	/

2

7.2

175

70

40.0%

7.3

7.4

7.4.1

$$Hz = (E_0 / E_R) \times 100\%$$

E₀ —E_R —

35

175

20%

7.4.2

J_x

$$J_x = E_i / E_z$$

E_i —E_z —

16.19

5.775

2.80



8

8.1

8.1

7

8.1.3

8.1-1

8

8.2-1

				mg/m³	t/a			mg/m³	t/a		
							%			mg/m³	
		G1#		69	0.332	+	90	6.9	0.0332	120	GB16297-1996
				/	0.309	/	/	/	0.125	1.0	
		G2#	VOCs	90	3.24	+UV	80	18	0.648	100	GB31572-2015
				/	0.584	/	/	/	0.361	1.0	GB16297-1996
			VOCs	/	0.36	/	/	/	0.36	10	(B37822-2019)
			VOCs	/	1.5297	/	/	/	1.5297		
			/	0.2436	/	/	/	0.2436	4.0	GB16297-1996	
			/	0.24	/	/	/	0.24	1.2	GB16297-1996	
			/	0.063	/	/	/	0.063	1.0		
					COD	250	0.23			184	0.169	500	GB8978-1996
BOD ₅	150				0.138	62	0.057			300	
SS	100				0.092	21	0.019			400	
	25				0.023	23	0.021			-	
			COD	500	0.01			339	0.007	500	
			SS	200	0.004			21	0.0004	400	
					/			/	26.306	/	/

8.2.2

8.2-2

8.2-2

		0.0332
	VOCs	0.648

8.2.3

—

“

”

8.3

8.3.1

8.3.2

HJ2.2-2018

8.3-1

8.3-1

		TSP	1 / 7		
		TVOC	/		

		pH	1 / 3 /		
	G1#		1 / 3 /		
	G2#	VOCs			
		VOCs			
		pH SS COD BOD ₅	1 / 3 /		
		pH SS COD BOD ₅			
		A	1		

8.4

8.4-1

“ ”

		/			
	+ +	1 1 15m	GB16297-1996		
	+UV +	1 1 15m	GB31572-2015	VOCs	
		1	GB8978-1996	COD _{cr} BOD ₅ SS	
		/	GB12348-2008 3 4	A	
		2	GB18597-2001	/	

9

9.1

2

3600

15000

175

35

20%

2020-450200-36-03-026064

9.2

9.2.1

2019

2019

SO₂NO₂PM₁₀CO₂₄

95

O₃

8

90

GB3095-2012

PM_{2.5}

GB3095-2012

HJ2.2-2018

D

TVOC

2.0mg/m³

9.2.2

2020

10

19

GB 3838-2002

GB 3838-2002

GB 3838-2002

9.2.3

3

GB/T14848-2017

9.2.4

GB3096-2008

4a

GB3096-2008 3

9.2.5

GB36600-2018

9.3**9.3.1**

1

VOCs

VOCs

6.9mg/m³

GB16297-1996

VOCS

18mg/m³

GB31572-2015

&3.4 3.4-12

2

10m³/d3.07m³/d

GB8978-1996

&3.4 3.4-12

3

GB12348-2008 3 4a

4

AB

26.306t/a

9.4.1.1

9.4.1.2

9.4.1.3

9.4.1.4

9.4.1.5

9.4.1.6

9.4.1.7

9.5

9.5.1

1 15m

G1#

90%

GB16297-1996

+1 UV

$M_b \geq 6.0m$ $\leq 1 \times 10^{-7} \text{cm/s}$ $M_b \geq 1.5m$ $\leq 1 \times 10^{-7} \text{cm/s}$

9.5.4

9.5.5

9.6

9.7

175

35

20%

9.8

9.9

“ ”