



() _____
5

1	.....	1
2	.....	17
3	.....	31
4	.....	40
5	.....	47
6	.....	54
7	.....	55
8	.....	68
9	.....	71
10	.....	75

- 1
- 2
- 3
- 4
- 5
- 6

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

- 1
- 2

1

	5			
	01		8	
	15257323863		/	314304
	01		8	
			2018-330424-26-03-008657-000	
			N7722	
()	936.55		()	936.55
()	1700	()	1700	(%) 100
()	/			2020 01

1.1

2007 9 C 01 8
 DOP DINP
 MAC
 2007 20

0.27

2014

[2014]57

2015 12

1 2000t 1200t/a

2016 1

[2016]18

2700

5

5

5

1-1

2018-330424-26-03-008657-000

1-1

		t/a	t/a	
	DOP	10	10	
	(DINP)	5	5	
	PA	5	5	
		0.27	0	
		20.27	20	

1.2

1.2.1

1	(2014.4.24	2015.1.1)
2	(2018.12.29)	
3	(2018.10.26)	
4	(2017)	
5	(2017.6.27	2018.1.1)
6	(2018.12.29)	
7	(2017.10.1)		
8	(2018)	
9			([2014]197
	2014.12.30)		
10			
	([2017]250)	
11		() (364	2018.3.1
)			
12		() (341	2015.12.28)
13		(
41	2017.7.1)		
14		2018.1.1	
15			
7	2017		
16			
(2014)26	2014.4.30		

17	() ([2012]10
2012.4.1)	
1.2.2	
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	GB18218-2009
9	GB34330-2017
10	2017.8.29
1.2.3	
1	(2011) (2016)
2	(2012) 2012 20
2012.12.28	
3	2017
4	2013-2017
	2013 4 16
5	(2012) (2012)
	2012 98 2012.5.23
6	2010 [2010]3
7	2013 2013.12.31
8	2016 [2016]30 2016
8 12	
1.2.4	
1	2015

2 2015.9
3 2006-2020 2003.12

1.2.5

1
2 15 5
3 15 5 [2011]63
4
5

[2016]18 4565
6 2017.9
7 2017.9

1.3

1.3.1

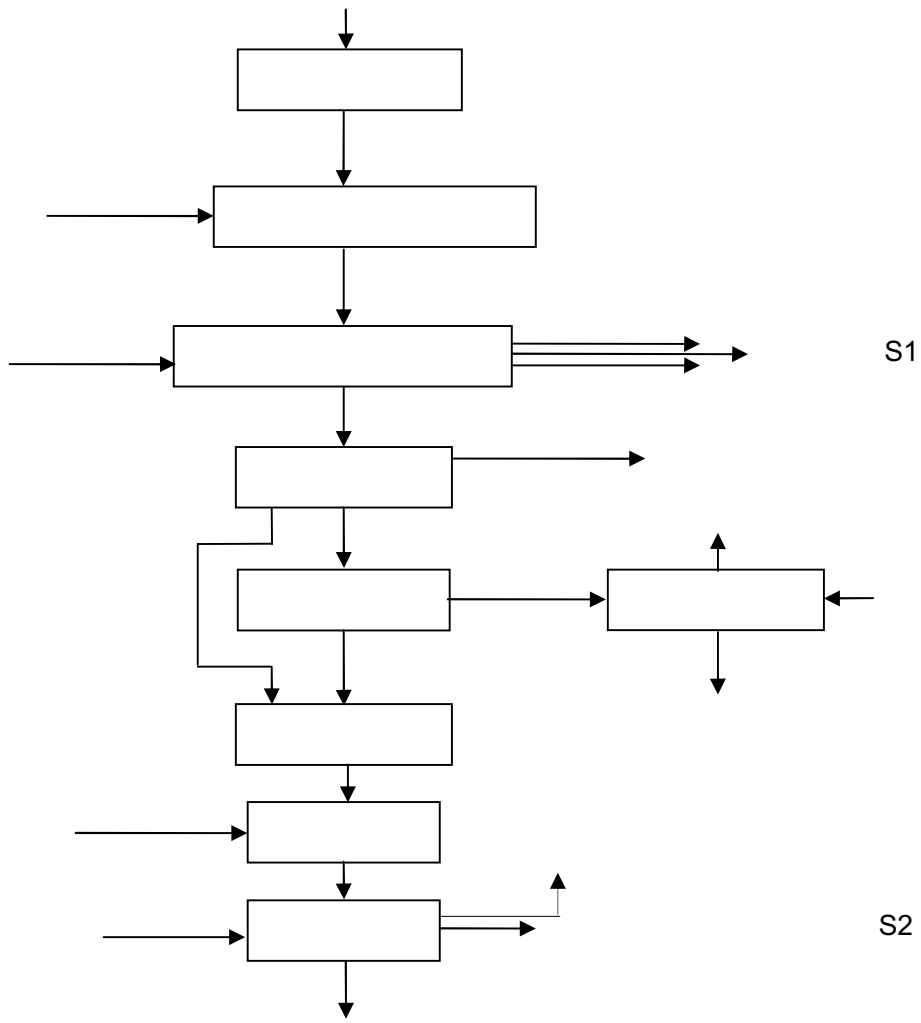
1700

1.3.2

2t

120 kWhh

1-2



1-3

1-4

1.4.3

1-4

1-5

1-4 1 DOP

1		99.8%	t/a	20921		DOP
2		99.5%	t/a	37008		
3			t/a	25		



2018

va

19050

DINP

99
8

11		1800×2400×10 V=7.8m ³	/	18	/		/
12		1000×1400×8 V=1.4m ³	/	3	/		/
13		1000×1400×8 V=1.25m ³	N=1.1kw	3	/		/
14		1200×1400×6 V=1.8m ³	N=1.1kw	3	/		/
15		300×1000×4 V=0.08m ³	/	9	/		/
16		Q=60m ³ /h H=30m	N=11kw	3	/		/
17		2800×3300×10 V=26.5m ³	N=18.5kw	3	/		F=70m ²
18		/	N=7.5kw	3	/		/
19		2400×3600×6 V=14m ³	/	3	/		/
20		2400×5000×12 V=26m ³	/	8	/		/
21		Q=13.5m ³ /h H=55m	N=7.5kw	5	1	/	/
22		1200×3250 V=2.65m ³	/	7	/	/	/
23		4600×6000×8 V=100m ³	/	7	/		/
24		Q=60m ³ /h H=30m	N=11kw	3	/	/	/
25		10000×13000×10 V=1020m ³	/	6	/		/
26		Q=60m ³ /h H=30m	N=11kw	1	/	/	/
27		Q=3m ³ /min	=18kw	2	/	/	/
28		Q=470m ³ /h	N=18.5kw	10	1		/
29		Q=470m ³ /h	N=18.5kw	3	/		/
30		8000×4000×2000 V=64m ³	/	2	/		/
31		Q=15m ³ /h H=20m	N=5.5kw	2	/	/	/
32		1400×1600×10 V=3.3m ³	/	2	/		/
33		5200×7700×1500 V=60m ³	/	1	/		/
34		Q=300m ³ /h	N=11kw	1	/		/
35		Q=300m ³ / H=42m	N=37kw	2	1	/	/
36		1000KVA	/	2	/	/	/
DOP DNP							

1-5 2 PA

				/
1		20000tubes		1
2				1
3				1
4			/	

2

1-7

1-7

t/a

		3165.50	3132.50	33.00	0.08	+ + 50m
		247.50	244.88	2.62		
		2206.48	0	2206.48		
		264.07	261.4	2.67		
		1.50	0	1.50		
		59.40	55.62	3.78			1.58	+ + 15m
		58244	0	58244	39105	
	COD	196.9	189.9107	6.9893	4.6926	
	NH ₃ -N	/	/	1.454	0.0587	
		30	30	0	0	
		11.17	11.17	0		
		405	405	0		
		120	120	0		
		10	10	0		
		422.5	422.5	0		
		29.7	29.7	0		
		918	918	0		

1.4.5

1-8

1-8

				+ +50m	GB16297-1996 2
				+ +15	
	pH COD BOD				GB8978-1996 4
	pH COD BOD				DB33/8 7-2013
					GB12348-2008 3

[2014]57

1.4.6

1

GB8978-96

CJ3082-1999

2014 8 21 8 22

pH

GB8978-1996

4

DB33/887-2013

2

GB12523-90

GB12348-2008

3

2014 11 5 11 6

GB12348-2008

3

3

1

360m²

1.4.7

1

DOP

LDAR

2

3

1.4.8

1.4.8.1

1

2

3

4

1.4.8.2

400m³

2

2.1

(

)

2.1.1

—

120°43'-121°02'

30°21'-30°38'

100

01

8

30

01

1

2

2.1.2

31

33

3~4

100

251.6

53.48

	70m							
				100	220			8 13
3.2			4.5					12
	20		40-161		6			
	-							
	7							
2.1.3								
					15.7			38.1 1957
7			-10.6	1977	1			
	24.8			225		253		199
			1170.9mm		1764.0mm			719.3mm
136						2052.8		
	109		/cm ²			82%		
					7-9		5	1967
	11		1967				3	8
			3-10		6-9			
2.1.4								
	1							

1860.7km 3.711km/km²

20-40m 100m

4.88m 1963 1.53m 1967

2.74m 2.03 m³

2

100

0 8 30 100

0.5-5.0m >1g/L

0.7

3							
21km		5000km ²		90km		100km	
100km				20km		90km	
		4.86 m ³		50%		30%	
				8~10m		65km	
10-3~0.2		10-3				0.1	
60km		10~15m		20~40m		4m	
		0.004~0.016mm				0.5~3.0kg/m ³	
				01		8	
				2015			
						2-1	
						2-1	
		2-1					
123		F120310 8703023		330424FM22 0243000350		250 ~	

2.1.5

4 13 42
66.77%

2.2

01 8
2015.9
0424- -0-1 2-2

2-2



14.41 1.

- 2.

50 -
-

20

0424- -
-0-1 50 -
01

2.3

2.3.1

	1992	7	1994	8	
	2002	9			
				2007	2
				2010	10
					58.02 km ²
	5.43 km ²	11		1	
7	41894		800	2015	
83	32		326.64		
296.14	12.5%		44.1%		
234	18.81%		79.02%		
97838	6.54%		42847		8.89%
	28641	9.1%			

2.3.2

	2001	2020		
1				
2	2010	20	2020	30
3	2020		31.2km ²	
4				
5				

01

01

8

2001 2020

2.3.3

[2011-2030]

1

5801.84

5684.42

117.42

2011

2010

B

2015

2020

2030

2000

2400

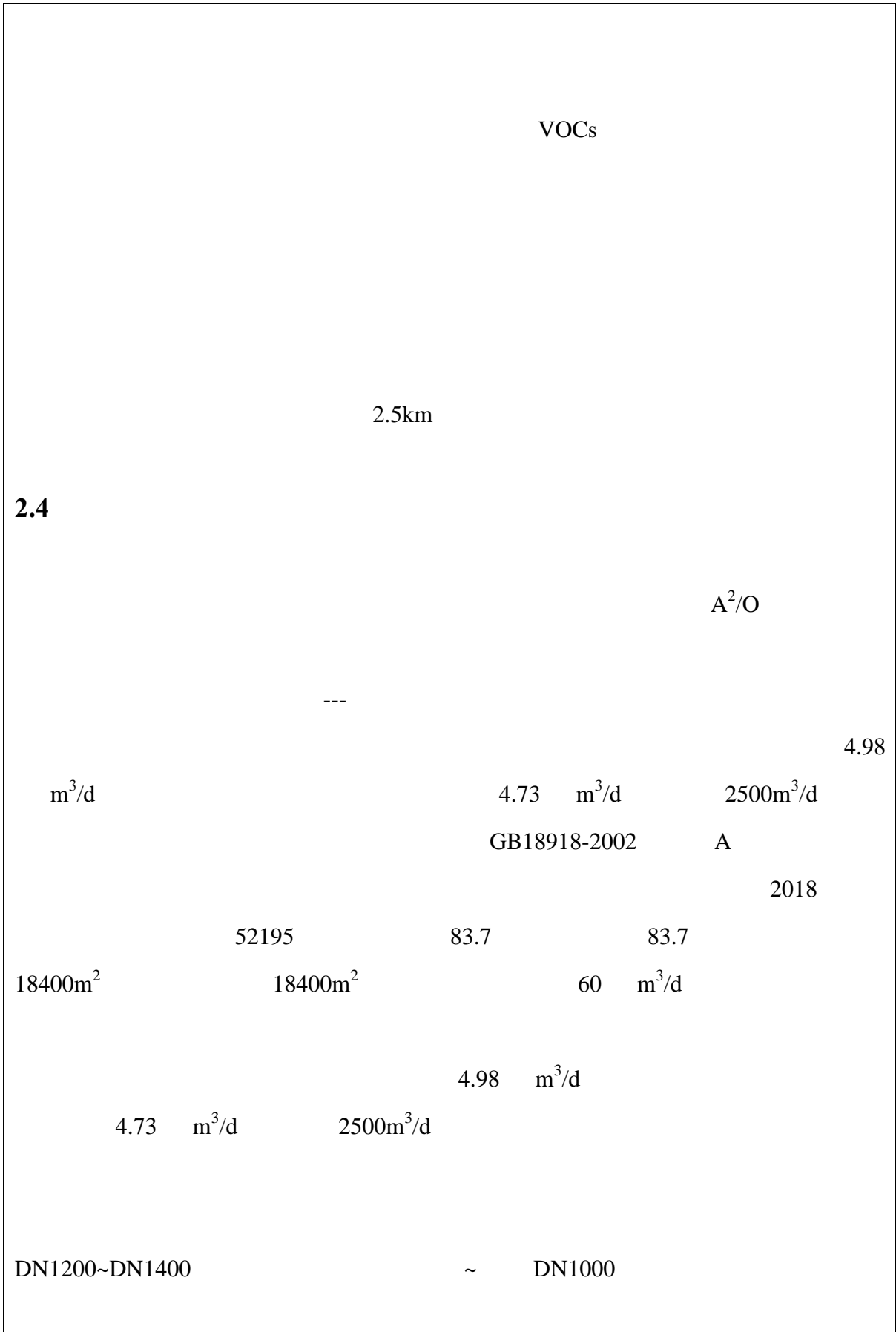
3000

2

01

01

8



3

3.1

3.1.1

1

2018 2 7

2017

2017

PM_{2.5}

32μg/m³

2016

15.8%

GB3095-2012

CO

SO₂

O₃

PM₁₀

NO₂

98%

84μg/m³

2

2017

2017H03114

SO₂ NO₂ PM₁₀

1#

1km 2#

1km 3#

1km 4#

1km

5#

2km

6#

2km

2

2017.3.6~2017.3.12

HJ663-20013

A

i

3-1

$Bi = (Ci - Si) / Si$

3-1

Bi—

i

Ci—

i

S_i — i

B

a i 3-2

$$D_i \% = A_i / B_i \times 100 \quad 3-2$$

D_i — i

A_i — i

B_i — i

b 3-2

0.036~0.030

HJ663-20013

3-1

3-1

		mg/m ³	mg/m ³	mg/m ³	
SO ₂	1#	0.027~0.030	0.030	0.5	0
	2#	0.027~0.030	0.030		0
	3#	0.026~0.030	0.030		0
	4#	0.026~0.030	0.030		

	2#	0.03	/		0
	3#	0.03	/		0
	4#	0.03	/		0
	5#	0.03	/		0
	6#	0.03	/		0

*

DO

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

$$S_{DO,j} = 10 - 9 \frac{DO_j}{DO_s} \quad DO_j < DO_s$$

$$DO_f = 468 / (31.6 + T)$$

$S_{i,j}$ — i j

$c_{i,j}$ — i j mg/L

c_{si} — i mg/L

$S_{pH,j}$ — pH j

pH_j — pH j

pH_{sd} — pH

pH_{su} — pH

$S_{DO,j}$ — DO j mg/L

DO_j — DO j mg/L

DO_f — mg/L

DO_s — mg/L

T

>1

3

pH NH₃-N DO COD

GB3838-2002

3.1.2.2

1

2017 3 12

1 1 1

1

1 1

A K^+ Na^+ Ca^{2+} Mg^{2+} CO_3^{2-} HCO_3^- Cl^- SO_4^{2-}
B pH

DOP

5 1# 2#~5# 1km
10 1# 2#~5# 1km
6# 7#~10# 2km

1

3-4~3-6

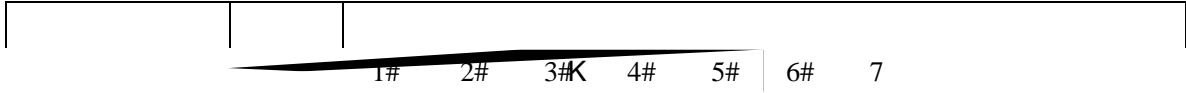
3-4

1#		2#		3#		
C	C	C	C	C	C	
mg/L	meq/L	mg/L	meq/L			

	K^+	0.0274	0.0274	0.02641	0.02641		
	Na^+	0.913	0.913	0.904	0.904		
	Ca^{2+}	0.425	0.85	0.412	0.824		
	Mg^{2+}	0.550	1.1	0.579	1.158		
		/	2.8904	/	2.9124		
	CO_3^{2-}	0.0833	0.1666	0.0833	0.1666		
	HCO_3^-	0.464	0.464	0.459	0.459		
	Cl^-	1.25	1.25	1.28	1.28		
	SO_4^{2-}	0.574	1.148	0.572	1.144		
						T	0

	/L	3	3	3	3	3	3
	/mL	22	50	32	35	45	100
	mg/L	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	/
DOP	mg/L	2.0×10^{-4}	2.0×10^{-4}	2.0×10^{-4}	2.0×10^{-4}	2.0×10^{-4}	/
	/						/

3-6



3.2

			01	8
200m				
1		2.5km		3-9
2		-		

4

4.1

GB3095-2012

2.0mg/m³

3 01 4

GB3096-2008 4a 4-4

4-4

3	65	55
4a	70	55

4.6

4	COD	COD	mg/L	500 60
5			mg/L	200
6		BOD ₅	mg/L	300
7		TSS	mg/L	120
8			mL/L 15min	10
9		N	mg/L	35
10		N	mg/L	70
11		P	mg/L	8
12			mg/L	2000
13		Cl ⁻	mg/L	800
14		SO ₄ ²⁻	mg/L	600
15		F	mg/L	20

16

4.10

1 > < [2012]10 4
COD NH₃-N

2

3

4 1 1 1.

1:1.2 2. 1:1.5 3. 1:1.2 4.

1:1.5

1:1

5

6 < [2014]197 >:

2

7

8

VOCs

VOCs

1: 2

VOCs

1: 1.5

VOCs

5.37

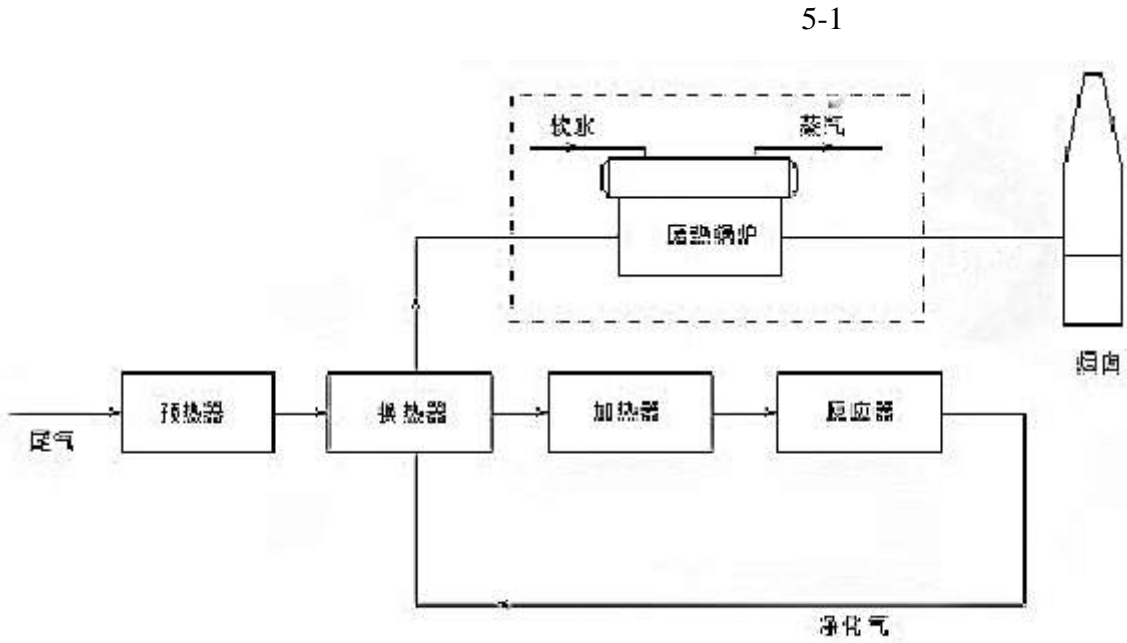
VOCs

V

5

5.1

5.1.1



5-1

5.1.2

120
300
400-450
220
300
65g/Nm³ ,

5.1.3

(150×150×150)

3

4*15m

5.1.4

300-450

CO



98%

5.1.5

5.2

5.2.1

1 VOCs

	2016				2011
		15		5	
		4.45t/a			
	0.47t/a			15	5
			4.6-1		
\$ 11 56143000	0.67t/a			3.31t/a	
3					
			0.03t/a	0.14t/a	
5.2.2					
1	2011			15	
5		4.5.1-7			5000t/a
		13t	4290t/a		2t/d

4917.2t/a

5.2.3

1

2t

3

3

0.67t/a

2

GB34330-2017

5-3

5-3

1						4.1	d)

3

5-4

5-4

1				HW50/772-007-50

4

5-5

5-5

				/							*
--	--	--	--	---	--	--	--	--	--	--	---

1

HW50/
772-007-50

0.67

3

T

A

200t/a

735t/a

B

15

5

29.7t/a

918t/a

29.7t/a

918t/a

1882.7t/a

5.2.4

5-6

5-6

		dB A	
1		90	1m
2		85	1m

5-7

5-7

t/a

6

			()	()	
	VOCs		4.214 mg/m ³ 2.67 t/a	2.338 mg/m ³ 1.481 t/a	
			52.083 mg/m ³ 33.00 t/a	35.075 mg/m ³ 22.220 t/a	
		CO	/	177.683 mg/m ³ 112.580 t/a	
	/		58805.2	53888	
		COD _{Cr}		500mg/L(29.403t/a)	500mg/L(26.944t/a)
				50mg/L(2.940t/a)	50mg/L(2.694t/a)
		NH ₃ -N		35mg/L(2.058t/a)	35mg/L(1.886t/a)
				5mg/L(0.294t/a)	5mg/L(0.269t/a)
		*		35mg/L(2.058t/a)	35mg/L(1.886t/a)
				5mg/L(0.294t/a)	5mg/L(0.269t/a)
				2650.33	0
		30	0		
		85~90dB(A)			
		/			
*					

7

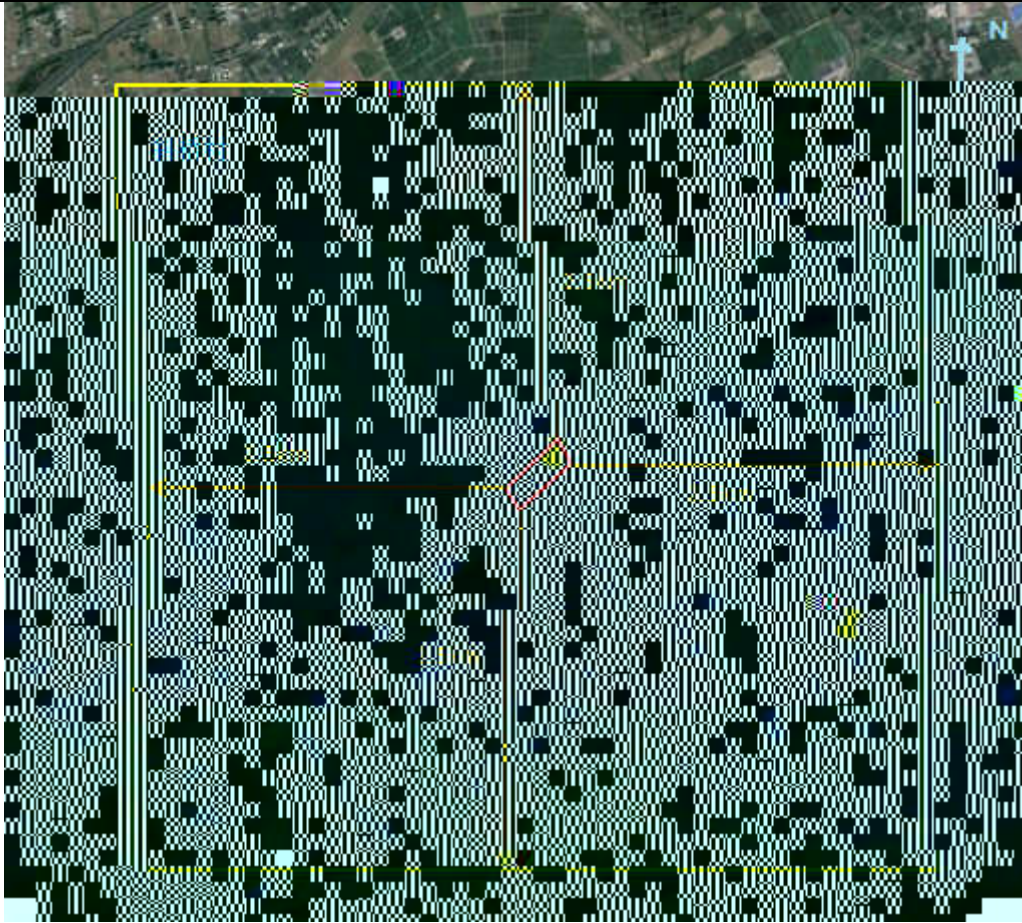
7.1

7.1.1

1

CO

AERSCREEN



7-1

6

5-1

CO

CO

98%

1.481t/a

22.220t/a

0.341t/a

8.888t/a

CO 112.580t/a

7

7-5

7-5

		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		=50km <input type="checkbox"/>	5~50km <input checked="" type="checkbox"/>	=5km <input type="checkbox"/>

	SO ₂ +NO _x	2000t/a <input type="checkbox"/>	500~2000t/a <input type="checkbox"/>	500t/a <input checked="" type="checkbox"/>
		SO ₂ NO ₂ PM ₁₀ PM _{2.5} CO O ₃ TVOC		PM _{2.5} <input type="checkbox"/> PM _{2.5} <input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	D <input checked="" type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		2017		
			<input checked="" type="checkbox"/>	

CO

50m

CO

98%

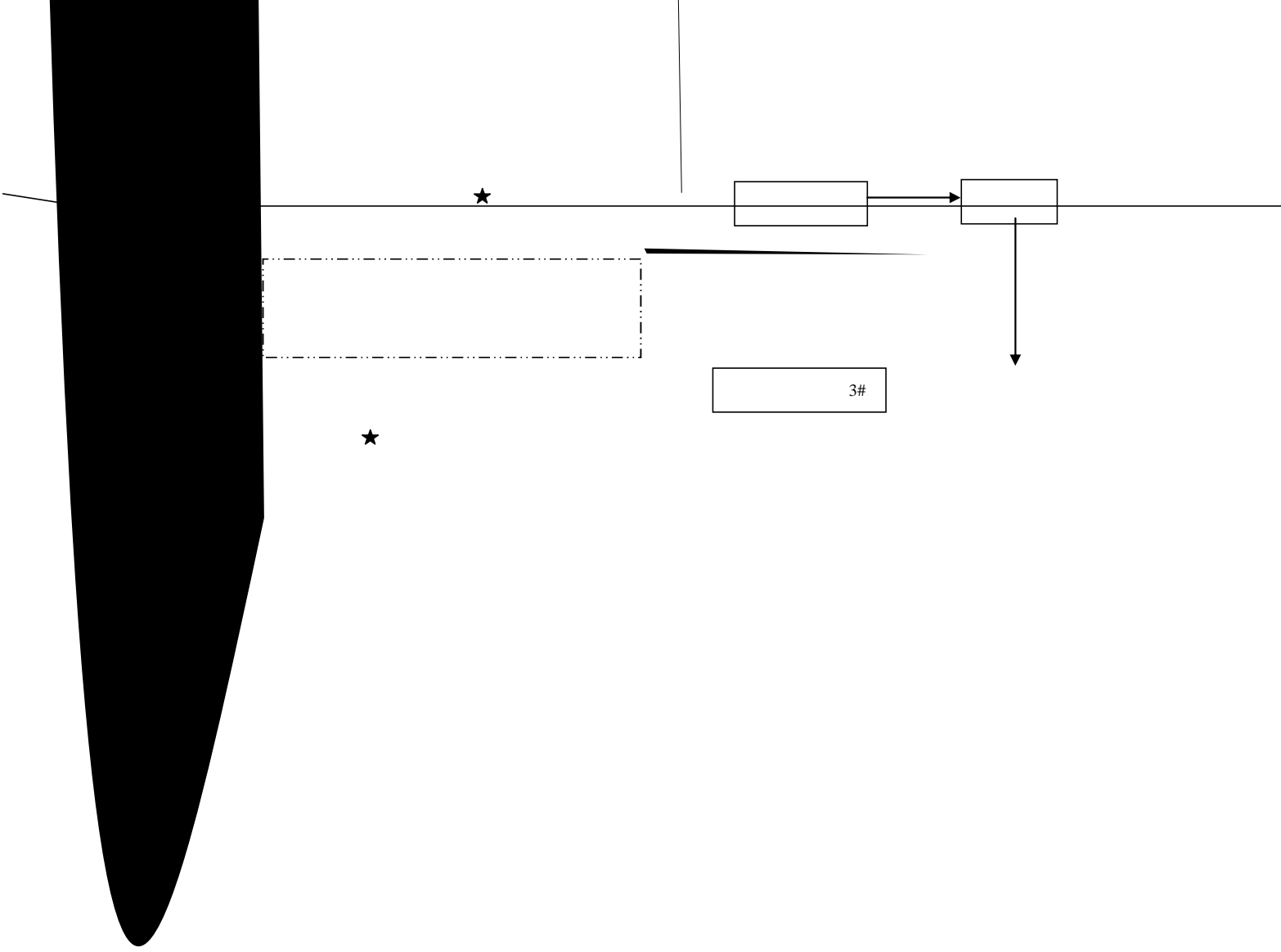
GB31571-2015

5 6

7.1.2

1

GB31571-2015



7-6

1							

7.1.3.2

1

GB18597

2

3

7-7

7-7

1				776-007-50		18m×7.69m		5t	3

7.1.3.3

7.1.3.4

7.1.4

85~90dB(A)

1

(stüeber)

r

A

B

D

C

7-3

stüeber

L_{wi} L_{Ri}

12dB(A)

$$L = 10 \lg \left(10^{0.1L_0} + \sum_{i=1}^n 10^{0.1L_{Pi}} \right)$$

L — dB(A)

L₀ — dB(A)

L_{pi} — dB(A)

n —

2

3-5dB(A)

6-10dB(A)

10-12dB(A)

3dB(A)

20dB(A)

7-8

7-8

		dB A		
1		90	1m	
2		85	1m	

3

7-9 7-10

7-9

	m ²	dB	Lw dB
	936.55	80	105

7-10

m	285	95	265	90

4

8

7-11

7-11 L

2

HJ 169-2018

D

E3

500m

500

E2

F2

S2

E3

G3

D2

E2

HJ 169-2018

B

HJ 169-2018

C

Q 1

M=10

10/

M3

P4

7-19

Q

		CAS	q_n/t	Q_n/t	Q
1	-	-	-	-	-
Q					1

7-20

M

			/	M
1			1	10
M				10

3

COD

7-21

7-21

			/		
		121 02 10.52 E		30 36	44.69

--	--

8-2

--	--	--	--	--

GB16297-1996

TVOC

1

3

2

GB31571

9

9.1

5

01

8

936.55m²

0424-

-0-1

0424- -0-1

(GB3095-2012)

(GB3096-2008) 3

4a

9.5

0

		5000ppm	VOCs		
			VOCs		
	95%				
		1000ppm	5000ppm	VOCs	

		3		
--	--	---	--	--

9-1

VOCs

9.7

9-2

9-2

		0424- -0-1	/
			/

1 SO₂ NO₂ PM₁₀
GB3095-2012

10

10.1

10.1.1

2700

25%

01

8

936.55 m²

1

10.1.2

1

pH

NH₃-N DO COD

GB3838-2002

2

SO₂ NO₂

PM₁₀

GB3095-2012

3

GB3096-2008

3

4a

10.1.3

CO

8.87E+01μg/m³

0.89%

385m TVOC

2.59E+01μg/m³

2.16%

385m

1.75E+01μg/m³

8.75%

385m

10.1.4

10-1

t/a

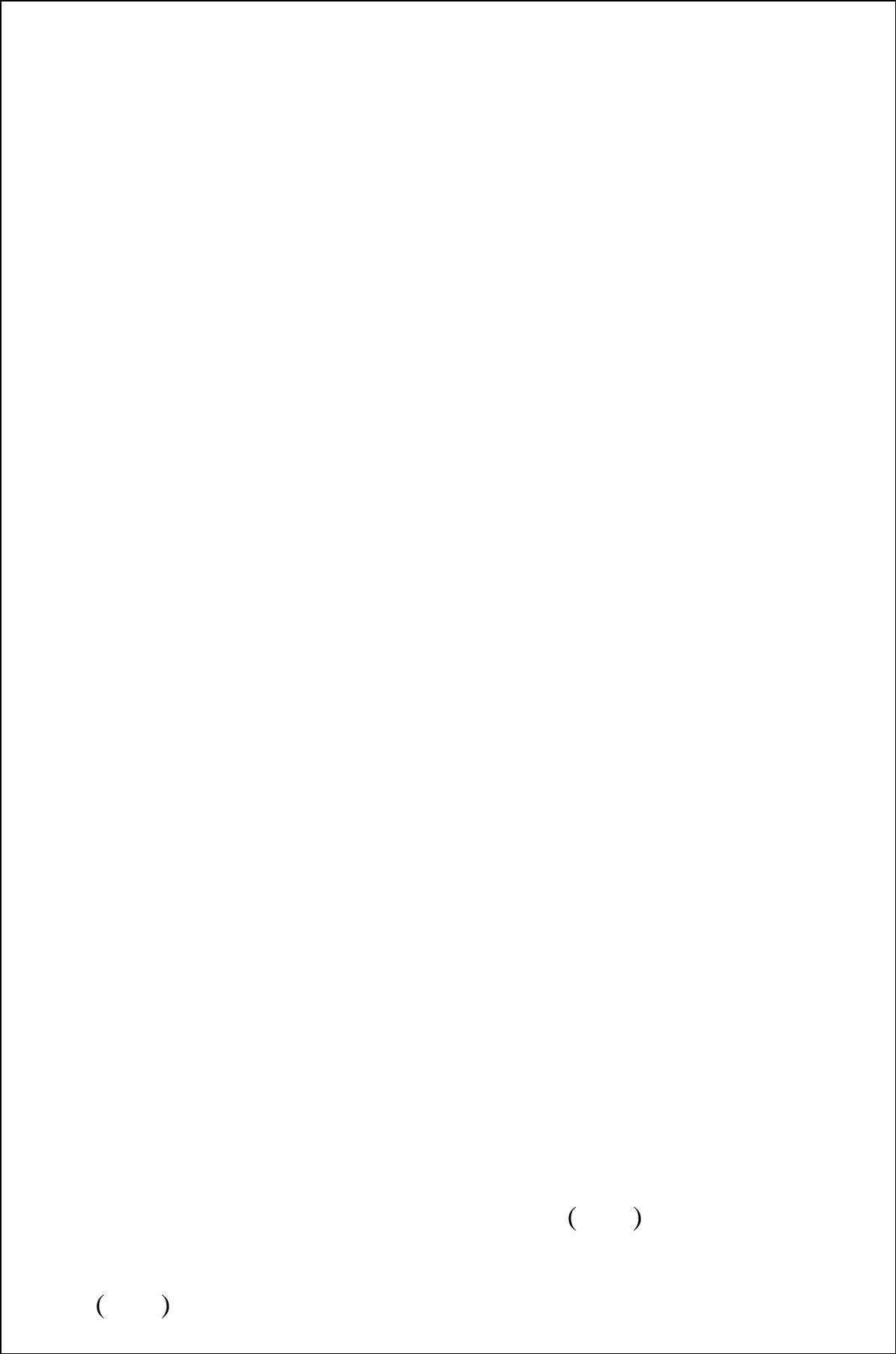
		0	0	0	+50m
		0	0	0	
		0	0	0	
		0	0	0	
		0	0	0	
		0	0	0	
		0	0	0	
		17.035	16.694	0.341	
	444.396	435.508			

()

()

()

()



()

()