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1	—	30
2	—	
3	—	
4	—	
5	—	
6	—	
7	—	
8	—	

1~2

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

	11			
	13862215856		58953911	215628
	11			
				[2015]483
				C2442
m ²	38700		m ² 2085	
	18800		54	% 0.29
	--			2017 12
()				
1.3 1.4 1.5				
/	2425.5		/	/
/	150		m ³ /	1.0
/	/		Nm ³ /a	/

1.88

11

(33)

N114

98 253

11

4

2

10

9

22

4

10

9

22

1

1.1

	2A	4F	60m 36m
	2B	4F	60m 48m
		1F	12200m ²
		1F	4950m ²
		120m	72m
			150

3

1.3

1			60
2			1
3		YQK27-800	1
4		YQK27-500	2
5		YQK27-1250	2
6		ACCURPRESS 637514	2
7		ABSOLUTE 506325	2
8		LU75-8GP	2

4

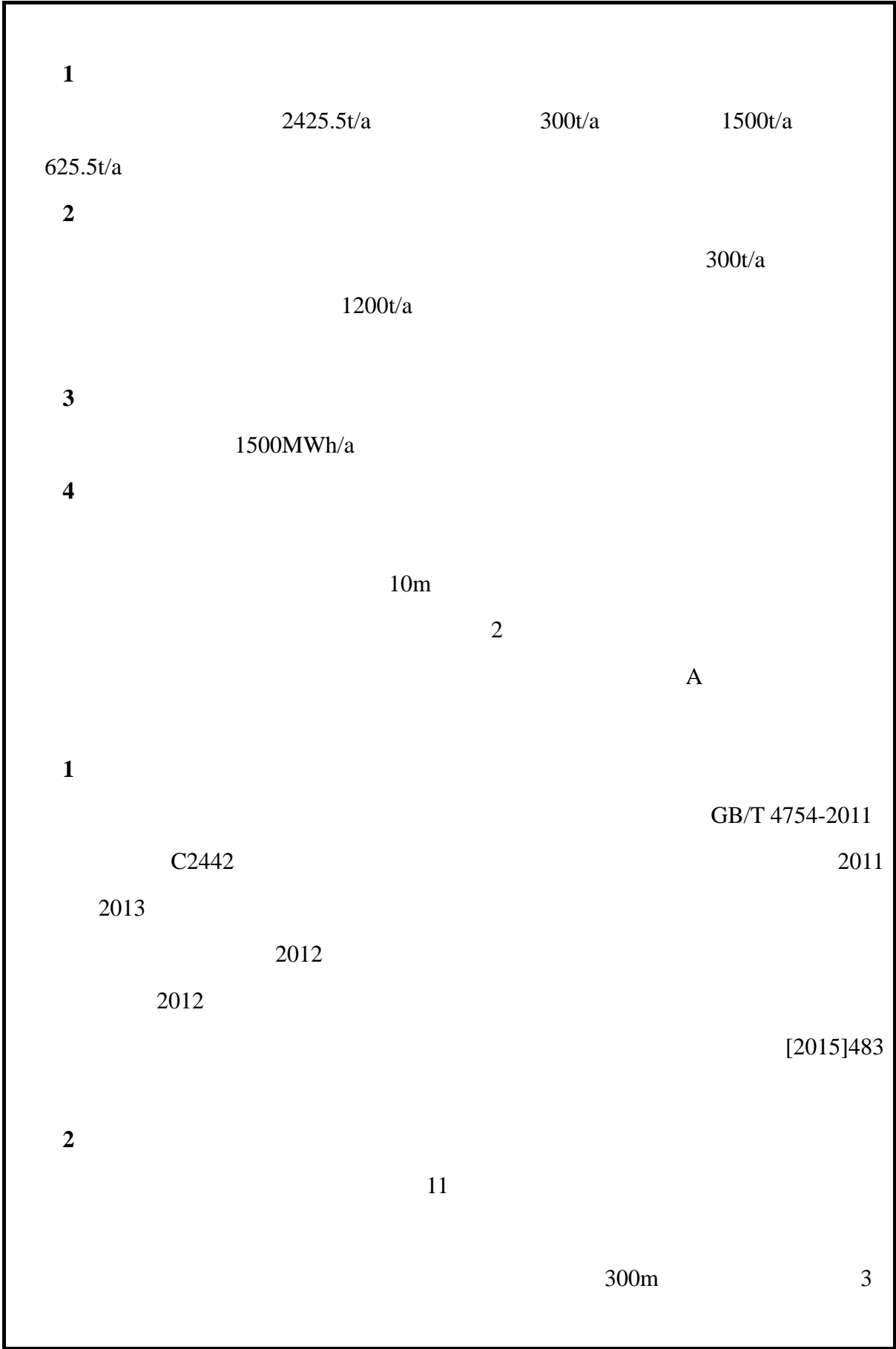
1.4

1				--	5000t	
2				--	120t	
3				--	650t	
4				--	250t	
5				--	620m ²	
6				--	40t	
7					5t	
8			20%	10%	15%	0.5t
			50%	5%		
9			35%	55%		0.6t
				10%		
10				--	50t	

5

1.5

1			0	100000	+100000
2			0	90000	+90000
3			7000	227000	+220000
4			5280	5280	0
5			350000	350000	0
6			3200	3200	0
7			100	100	0
8			200	200	0
9			60	60	0
10			300	300	0
11			800	800	0
12		m ²	8000	8000	0
13			10000	10000	0
14			200	200	0
15			1000	1000	0



3

1

2

2

100

8

300

2017 12

26

0.14%

1.7

	15m	34
	VOCs 15m 15m	
		10
		10
	为	54

1.8

t/a

			0.05	0.03325	0.01675	0	0.01675	+0.01675
	0.04	7.68	6.84288	0.83712	0	0.87712	+0.83712	
	0.12	1.2	1.14	0.06	0	0.18	+0.06	
	0.00432	0.1140	0	0.1140	0	0.11832	+0.0024	
SO ₂	0.000684	0.0036	0	0.0036	0	0.004284	+0.0036	
NO _x	0.01134	0.0599	0	0.0599	0	0.07124	+0.0599	
VOCs	0	0.36	0	0.36	0	0.36	+0.36	
COD	8.768	0.555	0.021	0.534	0	9.302	+0.534	
NH ₃ -N	0.86	0.036	0	0.036	0	0.896	+0.036	
TP	0.098	0.0072	0	0.0072	0	0.1052	+0.0072	
SS	0.096	0.24	0.222	0.018	0	0.114	+0.018	
	0.00192	0.0012	0.0006	0.0006	0	0.00252	+0.0006	
LAS	0.00096	0.0006	0.0003	0.0003	0	0.00126	+0.0003	
	0	557.84	557.84	0	0	0	0	
	0	30	30	0	0	0	0	

1

2

3

1.9

				95%	
				99%	
			15m		
				75%	
			1m		
2					
				5t/d	
3					
4					

			1985		
					25817m ²
	6000m ²	500m ²	2000m ²	260	
85200m ²		9600m ²	300m ²	1500m ²	580
				3.87	m ²
	10	9	22		

1.10

1			2013	6	2015	6
2			2013	11	2015	6
3			2014	5	2015	7

1.11

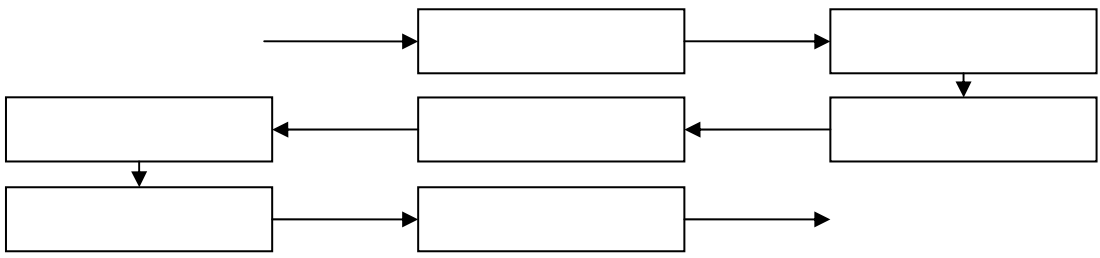
1		7000
2		5280
3		35
4		3200
5		100
6		200
7		60
8		300
9		800
10		8000m ²
11		1
12		200

1.12

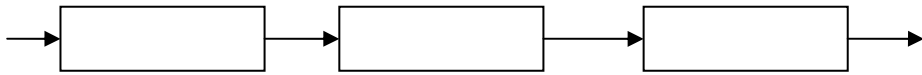
				3500
		—		1.2
		—	m ²	8000
		—		5000
		—	m	20
		—		0.5
		—		20
		—		305
		—		5600
		—		100
		—		80
	20%	10%		1.2
	15%	50%	5%	
	20%	15%		1.0
	30%	20%	15%	

1.13

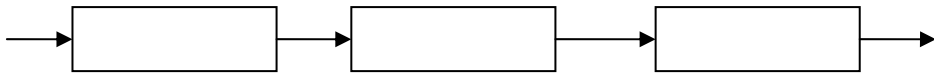
	—	30	
	—	2	
	—	5	
	—	3	
	—	5	
	—	6	
	—	1	
	—	1	
	—	2	
	—	4	
	—	1	
	—	1	
	—	4	
	—	2	
	—	10	
	—	10	
	—	10	
	—	5	
	—	1	
	—	1	
	—	4	
	—	8	
	—	4	
	—	4	
	—	6	
	—	2	
	—	3	
	—	3	
	—	3	



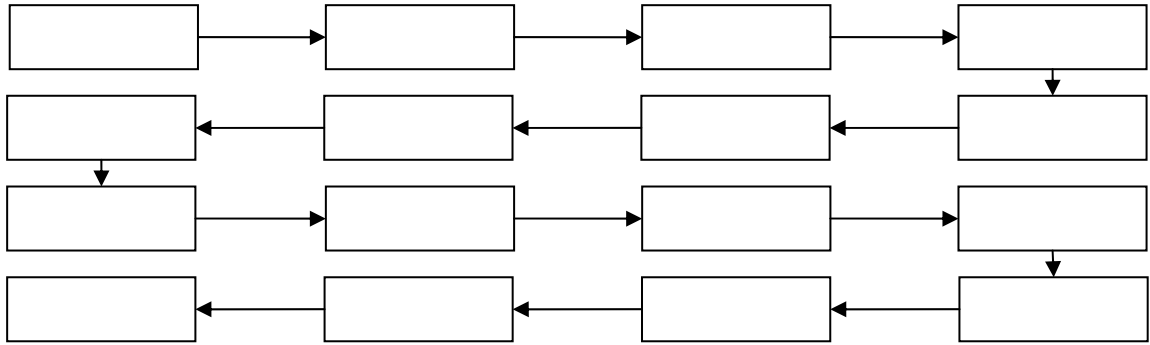
1.1



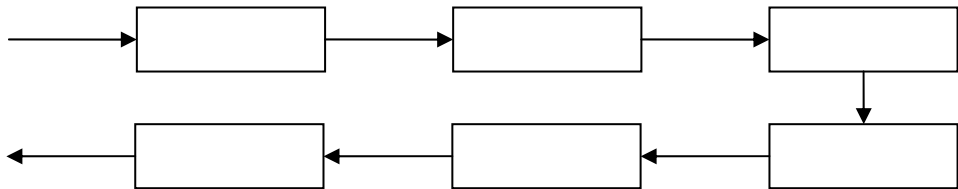
1.2



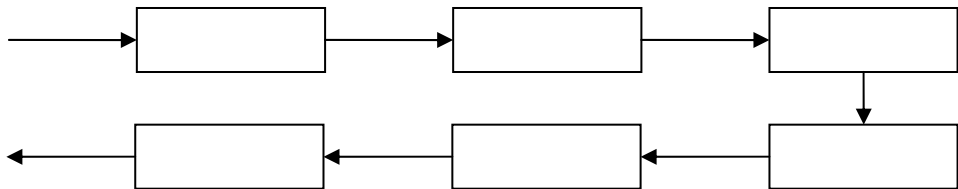
1.3



1.4



1.5



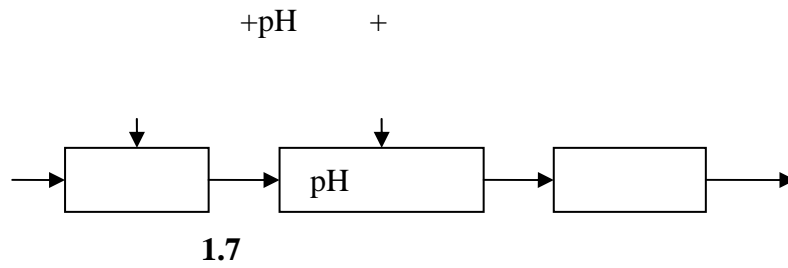
1.6

2
1

480t/a		pH	COD		SS	LAS
	COD 0.24t/a	SS 0.144t/a		0.00192t/a	LAS 0.00096t/a	
	COD 0.168t/a	SS 0.096t/a		0.00192t/a	LAS 0.00096t/a	
	COD 0.024t/a	SS 0.0048t/a		0.00048t/a	LAS 0.00024t/a	
580				24570t/a		
	COD 8.60 t/a	SS 6.14t/a		0.86t/a	TP 0.098t/a	
	COD 1.23 t/a	SS 0.25t/a		0.12t/a	TP 0.012t/a	

2

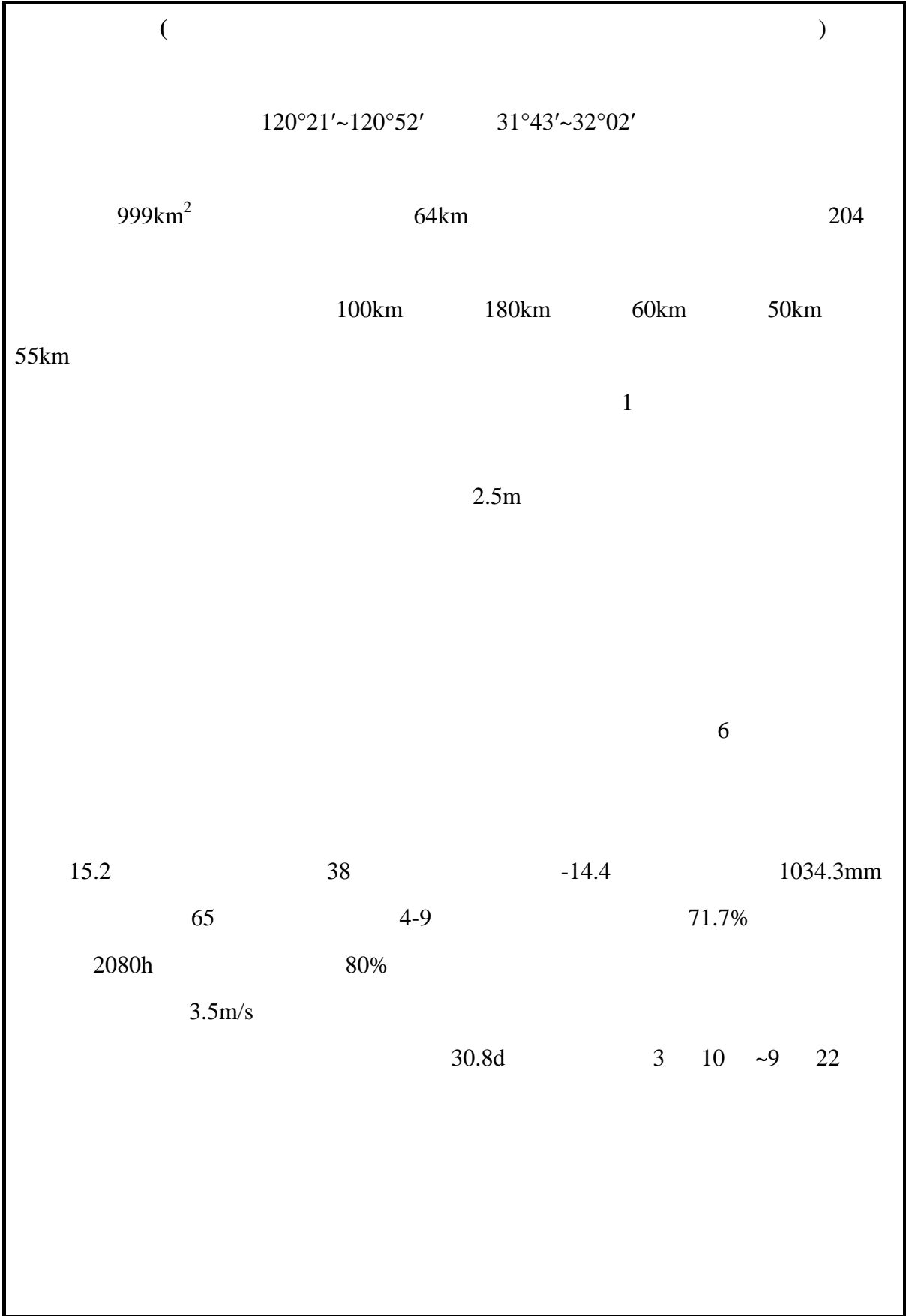
5t/d



pH

pH

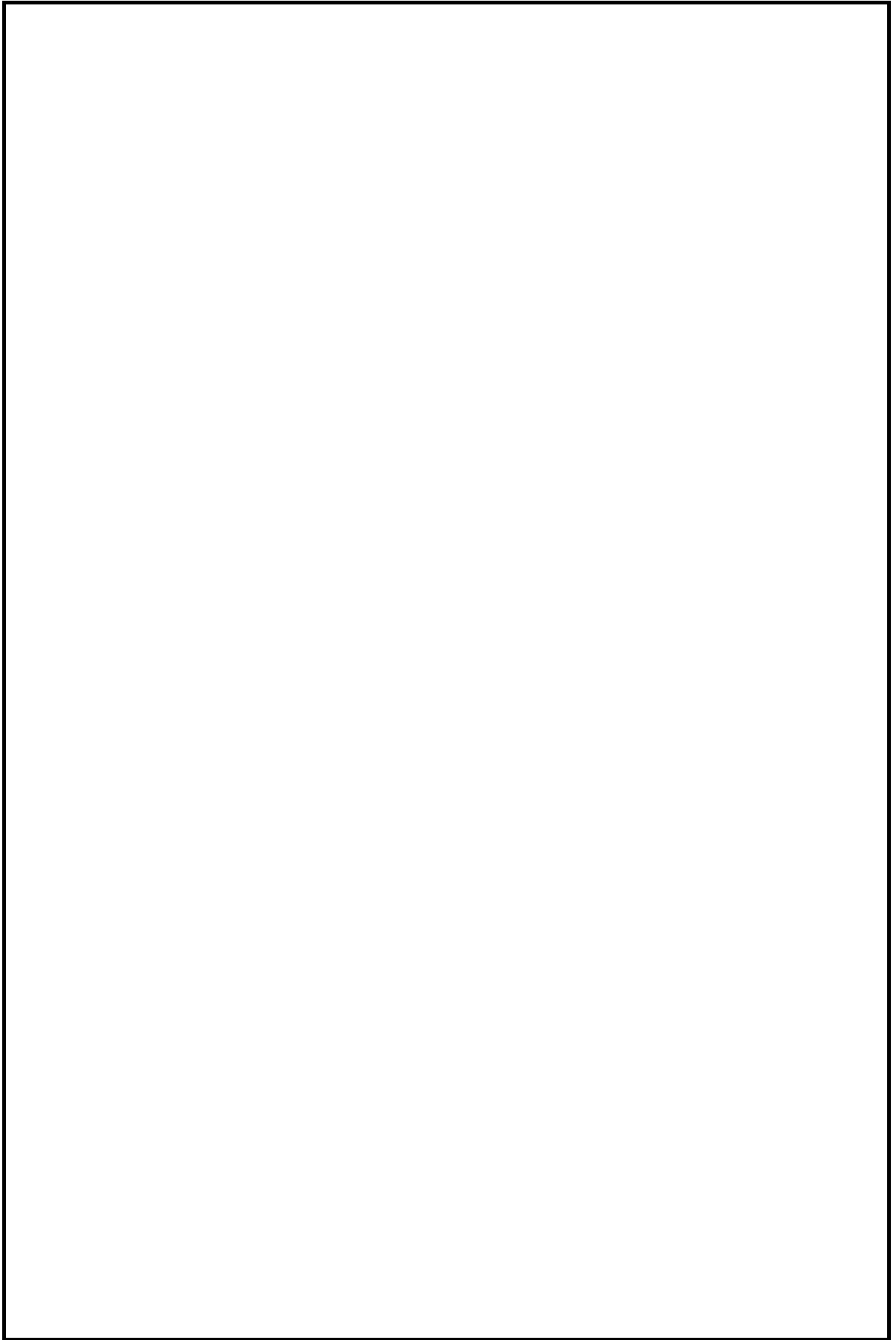
6.5~8



2.1

	15.2		3.5m/s
	1034.3mm		ESE
	80%		2080h
	1016.0mbar		30.8h

		5		19		
	8073		4074.3km		88.83km ²	
5.18km/km ²						
1				16.77		
					6.27	
0.92	7 16	2.2		36 50		50
2						
					7.36	
4.28	2.63	8	28	2		30
		1963	1969	1991		
3						
4						
	14.84				4.28	
6.27			2.63	0.92		
4		8	10			27
24	34		1.5	30		



		999km ²	89.8	8	
1			2000	24	
		204		10	20
		47.5	10	3	
4.8	2				
				2010	
	63.5		375.1		9.8
	3.8		500	79	
1					
				67.5 kW	28

KW

2×1000MVA 500kV

110kV

35kV

2

0.4MPa

204

De250mm

De200mm

969~1079 m³/a

781~870 m³/a

3

100%

4

GB3095-2012

GB3838-2002

GB3096-2008 2

2013 4 11 ~4 17

3.1

mg/Nm³

						%
SO ₂	G ₁	SE 2000m		0.021~0.058	0.041	0
NO ₂				0.034~0.067	0.048	0
PM ₁₀				0.086~0.095	0.091	0

3

SO₂ NO₂

GB3095-2012

2014 8 22

3.2

mg/L

	pH			
	7.22	3.3	0.160	0.086
GB3838-2002	6 9	10	10	0.3

GB3838-2002

2015 9 25

3.3

		dB(A)	
N1	1m	53.5	GB3096-2008 2
N2	1m	52.1	
N3	1m	52.3	
N4	1m	51.9	
N5	1m	52.6	
N6	1m	54.1	
(GB3096-2008)2			

1

GB3096-2008 2

300m

3.4

			m		
		--	--	--	(GB3095-2012)
		NE	176	2500	(GB3095-2012)
		NE	176	120 384	(GB3095-2012)
		E	1000	--	(GB 3838-2002)
		--	--	--	(GB 3096-2008)2
		NE	176	2500	(GB 3096-2008)2
		NE	176	120 384	(GB 3096-2008)2

(GB 3095-2012) VOCs
 (GB/T 18883-2002) 1 TVOC

4.1

		mg/Nm ³
SO ₂		0.06
		0.15
	1	0.50
NO ₂		0.04
		0.08
	1	0.20
PM ₁₀		0.70
		0.15
TVOC	8	0.60

VOCs

(2009-2030)
 (GB 3838-2002)

4.2

mg/L pH

	pH			
	6 9	10	1.5	0.3

[2005]78

(GB 3096-2008)

2

4.3

dB(A)

2	60	50

VOCs

SO₂ NO_x

(GB16297-1996) 2

VOCs

(DB12/524-2014) 5

GB9078-1996

(GB16297-1996)

(GB18483-2001)

4.4~4.6

4.4

	15m	120mg/m ³	2.6kg/h		1.0mg/m ³

4.5 VOCs

					(mg/m ³)
VOCs	80mg/m ³	2.0kg/h	15m		2.0

4.6

SO ₂	15m	550mg/m ³	2.6kg/h		0.40
NO _x	15m	240mg/m ³	0.77kg/h		5
	15m	200mg/m ³	--		0.12

4.7

				3~6	
		(mg/m ³)		2.0	
		(%)		75	

(CJ 343-2010)

1 B

DB32/1072-2007 2

(GB 18918-2002) A

4.8

pH

mg/L

	CJ 343-2010 1B	GB 18918-2002 A	DB32/1072-2007 2
pH	6.5~9.5	6-9	6-9
COD	500	/	50
SS	400	10	/
NH ₃ -N	45	/	5(8)*
TP	8	/	0.5
	20	1	/
LAS	10	0.5	/

(GB12523-2011)

4.9

dB(A)

70	55

12348-2008) 2

(GB

4.10

dB(A)

	dB	dB	
2	60	50	

GB 18599-2001

2013

36

GB18597-2001

([2010]97)

COD NH₃-N SO₂ NO_x

COD NH₃-N TP

1993

38

([2011]71)

COD NH₃-N TP

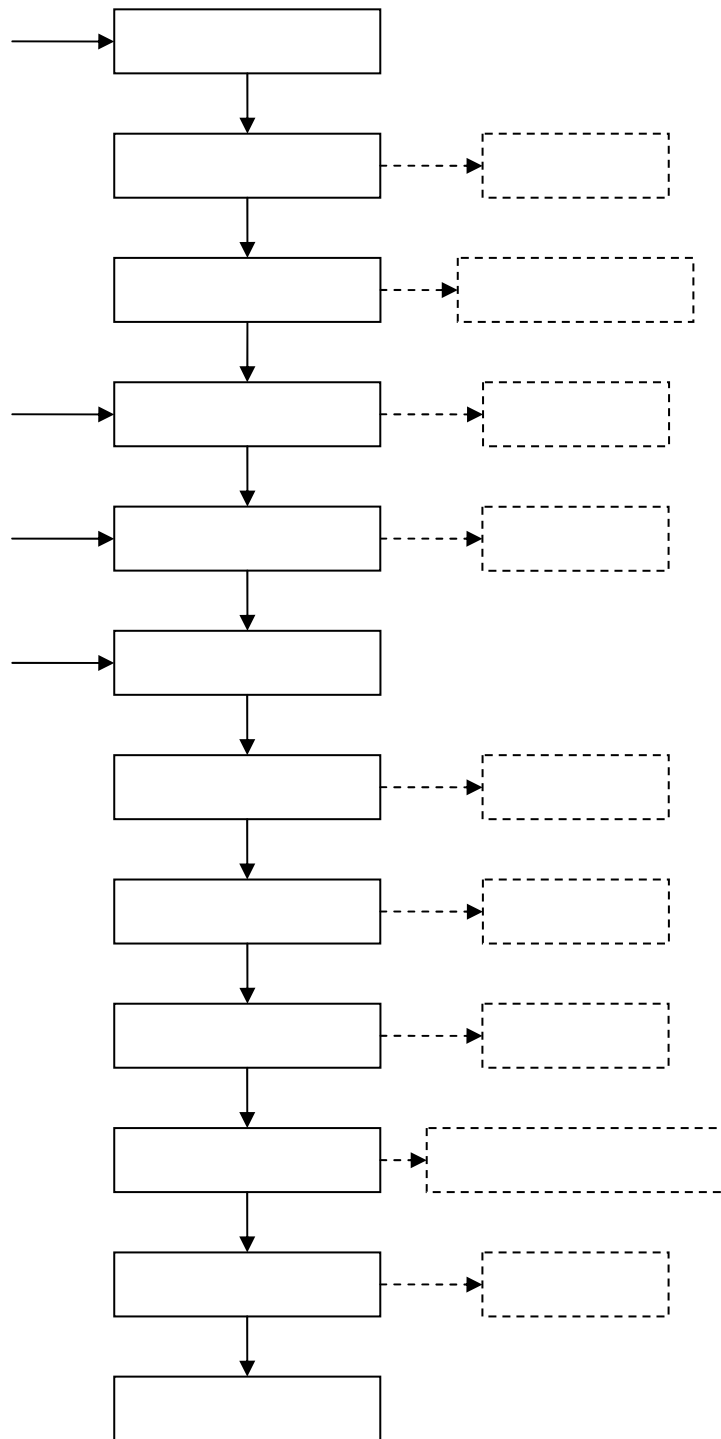
SO₂ NO_x VOCs

4.10

t/a

		0.16432	6.9348	6.84288	0.09192	0	0.25624	+0.09192
	SO ₂	0.000684	0.0036	0	0.0036	0	0.004284	+0.0036
	NO _x	0.01134	0.0599	0	0.0599	0	0.07124	+0.0599
	VOCs	0.24	0.12	0	0.12	0	0.36	+0.12
	COD	8.768	0.68	0.045	0.603	0	9.353	+0.603
	NH ₃ -N	0.86	0.036	0	0.036	0	0.896	+0.036
	TP	0.098	0.0072	0	0.0072	0	0.1052	+0.0072
		0	607.85	607.85	0	0	0	0
		0	30	30	0	0	0	0

1700t/a COD
 0.603t/a NH₃-N 0.036t/a TP 0.0072t/a
 1700t/a COD 0.085t/a NH₃-N
 0.0075t/a TP 0.00075t/a
 0.09192t/a SO₂
 0.0036t/a NO_x 0.0599t/a VOCs 0.36t/a



5.1

1

2

A B

3

4

1 19

5

6

1 19

7

8

120~140

9

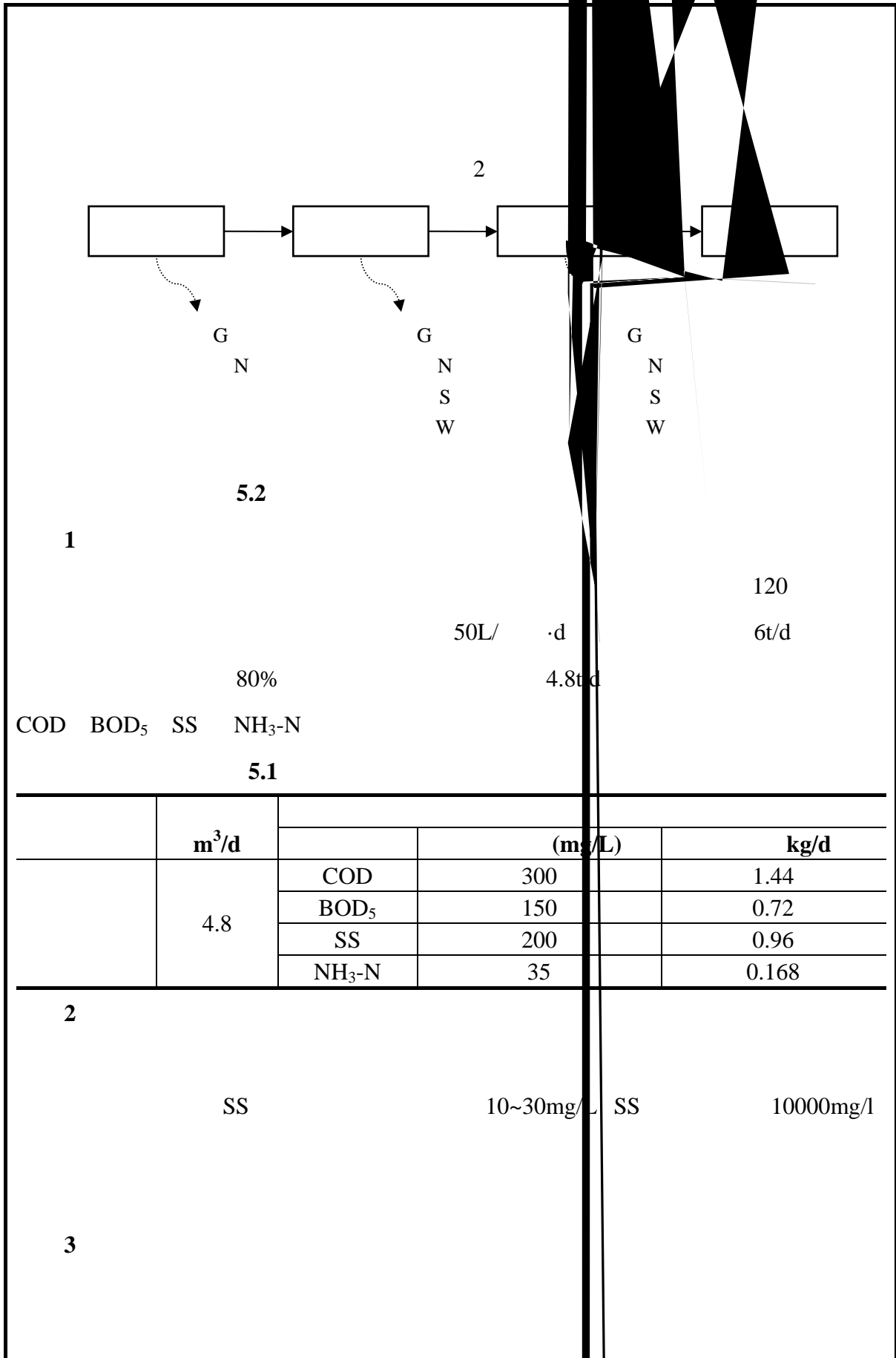
,

10

200

20

11



	m^3/d		(mg/L)	kg/d
	4.8	COD	300	1.44
		BOD ₅	150	0.72
		SS	200	0.96
		NH ₃ -N	35	0.168

2	SS	10~30mg/L	SS	10000mg/l
3				

1

10g/(m²·d)

28437m²

0.28 t/d

2

NO_x CO

4

5.2

Leq[dB(A)]

		75-85	75	55
		80-90	85	
		70-85	70	55
		80~85	65	55

5

1

120

0.5kg

	0.06t/d	27		
49.3t				
2				
			0.02t/m ²	
28437m ²			568.7t	
5.3				
			t	
1			568.7	
2			49.3	
			618	--
1				
				(VOCs)
		SO ₂ NO _x		
1				
		80% 90%		
			10g/kg	0.10
1.25μm			5.0t/a	
	50kg/a	0.021kg/h		
70%			95%	
			16.75kg/a	0.00698kg/h
2				

0.15%
7.68t/a
99%

15m

0.1~0.2%
5120t/a
5000m³/h
90%

0.06912t/a
3

0.0288kg/h

5.76mg/m³
0.768t/a
0.32kg/h

100~1000g/s

30%

70%

VOCs

30mg/m³ 0.36t/a

0.15kg/h

5

9.5 m³/a 47.5 m³/a

1 m³

1.36 10⁵Nm³

5.4

	(m³/a)	(Nm³/a)		(kg/ m³)	(t/a)	(mg/m³)	(kg/h)
--	--------------------------	---------------------------	--	----------------------------	--------------	---------------------------	---------------

2

6t

300t/a

1:19

30t/a

100

50L/(d)

300d

1500t/a

2085m²

1L/(m²)

625.5t/a

3

300t/a

5.6

		(mg/L)	(t/a)	(mg/L)	(t/a)
1		--	300	--	300
2	COD	250	0.075	180	0.054
3	SS	120	0.036	60	0.018
4		4	0.0012	2	0.0006
5	LAS	2	0.0006	1	0.0003

1500t/a

0.8

1200t/a

COD_{Cr} SS NH₃-N TP

5.8

		(mg/L)	(t/a)
1		--	1200
2	COD _{Cr}	400	0.48
3	SS	250	0.3
4	NH ₃ -N	30	0.036
5	TP	6	0.0072

90% 27.5t/a

3

5.9

	5m	dB(A)	(m)
		75-80	25
		77-85	20
		70-75	18

4

1

500t

6.84t/a

1t/a

50t/a

2

100

300

1kg

30t/a

3

HW08

900-210-08 /

1t/a

HW09 /

/

900-007-09

/ /

27.5t/a

LAS

HW08

900-210-08 /

SS

80%

0.09t/a

	A B			0.05t/a	0.01675t/a
				1.2t/a	0.06t/a
				0.768t/a	0.768t/a
			SO ₂	0.0181t/a	0.0181t/a
			NO _x	0.2993t/a	0.2993t/a
				0.0228t/a	0.0228t/a
			VOCs	30mg/m ³ 0.36t/a	30mg/m ³ 0.36t/a
				576mg/m ³ 6.912t/a	5.76mg/m ³ 0.06912t/a
			SO ₂	2.79mg/m ³ 0.0036t/a	2.79mg/m ³ 0.0036t/a
			NO _x	46.32mg/m ³ 0.0599t/a	46.32mg/m ³ 0.0599t/a
				17.65mg/m ³ 0.1140t/a	17.65mg/m ³ 0.1140t/a
				0.02625t/a	0.00656t/a
			COD	250mg/L 0.075t/a	180mg/L 0.054t/a
			SS	120mg/L 0.036t/a	60mg/L 0.018t/a
				4mg/L 0.0012t/a	2mg/L 0.0006t/a
			LAS	2mg/L 0.0006t/a	1mg/L 0.0003t/a
			COD	400mg/L 0.48t/a	400mg/L 0.48t/a
			SS	250mg/L 0.3t/a	250mg/L 0.3t/a
			NH ₃ -N	30mg/L 0.036t/a	30mg/L 0.036t/a
			TP	6mg/L 0.0072t/a	6mg/L 0.0072t/a
				500t/a	0
				6.84t/a	
				1t/a	
				50t/a	
				30t/a	
				28.59t/a	
	(GB 12348-2008) 2				

100m

1

1

2

3

4

5

2

COD BOD SS NH3-N

1

2

3

4

5

6

50

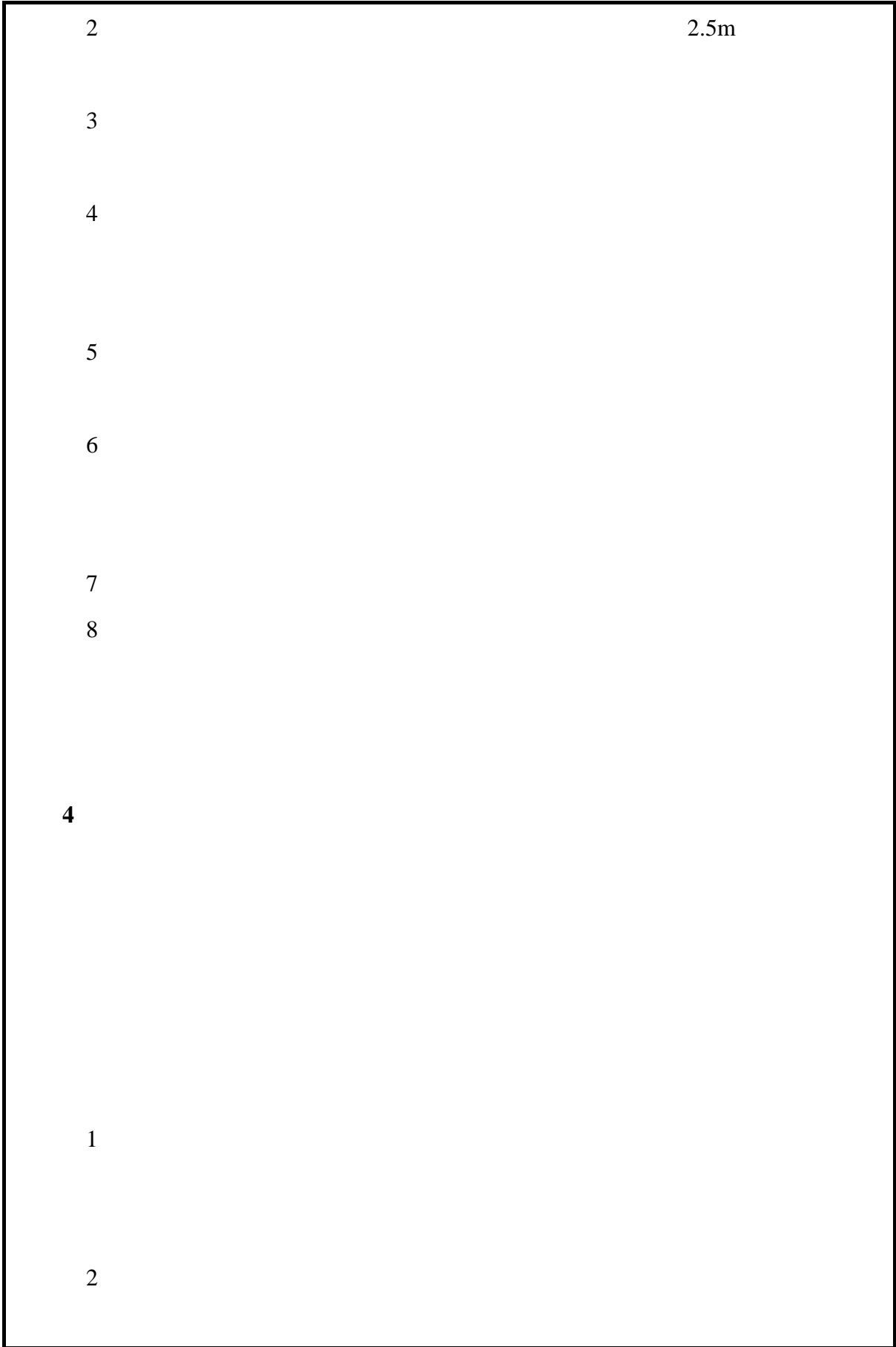
7

3

1

22:00~6:00

12:00~14:30



3

,

5

,

1

1

15m

15m

7.1

		(mg/m ³)	(t/a)	(mg/m ³)	(t/a)	(mg/m ³)	(t/a)	(kg/h)
		0.0017	0.04	5.76	0.06912	5.7617	0.10912	0.04547
	SO ₂	2.79	0.000684	2.79	0.0036	2.79	0.004284	0.001785
	NO _x	46.32	0.01134	46.32	0.0599	46.32	0.07124	0.02968
		17.65	0.00432	17.65	0.1140	17.65	0.11832	0.0493
	VOCs	--	--	30	0.36	30	0.36	0.15
		1.305	0.0783	0.365	0.00656	1.67	0.08486	0.03536

15m

(GB16297-1996) 2

15m

SO₂ NO_x

GB9078-1996

(GB16297-1996) 2 SO₂

VOCs

(DB12/524-2014) 5

75%

GB18483-2001

2.0mg/m³

2

A B

A B

350 0.021 1.85 0.84

7.3

		(m)	(m)
		0.089	50
		8.135	50
	SO ₂	2.285	50
	NO _x	12.437	50

SO₂ NO_x 50m 100m 50m 100m

2

3

1

7.4

		(mg/L)	(t/a)	(mg/L)	(t/a)
		--	300	--	300
	COD	250	0.075	180	0.054
	SS	120	0.036	60	0.018
		4	0.0012	2	0.0006
	LAS	2	0.0006	1	0.0003
		--	1200	--	1200
	COD	400	0.48	400	0.48
	SS	250	0.3	250	0.3
	NH ₃ -N	30	0.036	30	0.036
	TP	6	0.0072	6	0.0072

(CJ 343-2010) 1 B

DB32/1072-2007

(GB 18918-2002)

2

A

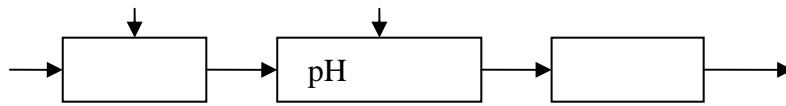
2

300d

1500t/a

5t/d

+pH +



7.1

pH

pH

6.5~8

1020t/a

500t/a

480t/a

3

28

11000m³/d

1500m³/d

+

+

4

70 90dB(A)

5.5

1

$$L_p(r) = L_p(r_0) - A_{div} - A_{bar}$$

A_{div} — dB(A)

A_{bar} — dB(A)

G(kg/m²)

f(Hz)

2

$$A_{div} = 20 \lg(r / r_0)$$

r — m

r₀ — m r₀=1.0m

20dB A

7.5

			dB(A)	dB(A)	(m)	dB(A)	dB(A)
		2	78	20	25	14.0	55.1
		1	85	20	20	12.0	
		6	72	20	18	11.1	

(GB12348-2008) 2

5

1

557.84t/a

2

100

30t/a

3

28.59t/a

		SS		
		COD _{Cr} NH ₃ -N TP		
	A B			
		VOCs SO ₂ NO _x	15m 15m	15m VOCs 15m
			75% 1m	
		COD _{Cr} SS NH ₃ -N TP LAS	5t/d	

1		1.88		4
2	C2442 2013 2012	10	9	22 GB/T 4754-2011 2011
3	2012	11	300m	[2015]483 3
4	(GB3095-2012)	2009-2030		/
			GB3838-2002	

(GB 3096-2008) 2

5

1993

38

(

[2011]71)

COD NH₃-N TP

SO₂ NO_x VOCs

COD 0.603t/a NH₃-N 0.036t/a

TP 0.0072t/a

0.09192t/a SO₂

0.0036t/a NO_x

0.0599t/a VOCs 0.36t/a

6

1

2

A B

15m

VOCs

15m

15m

COD SS NH₃-N LAS

COD SS NH₃-N TP

(CJ 343-2010) 1 B

56dB(A)

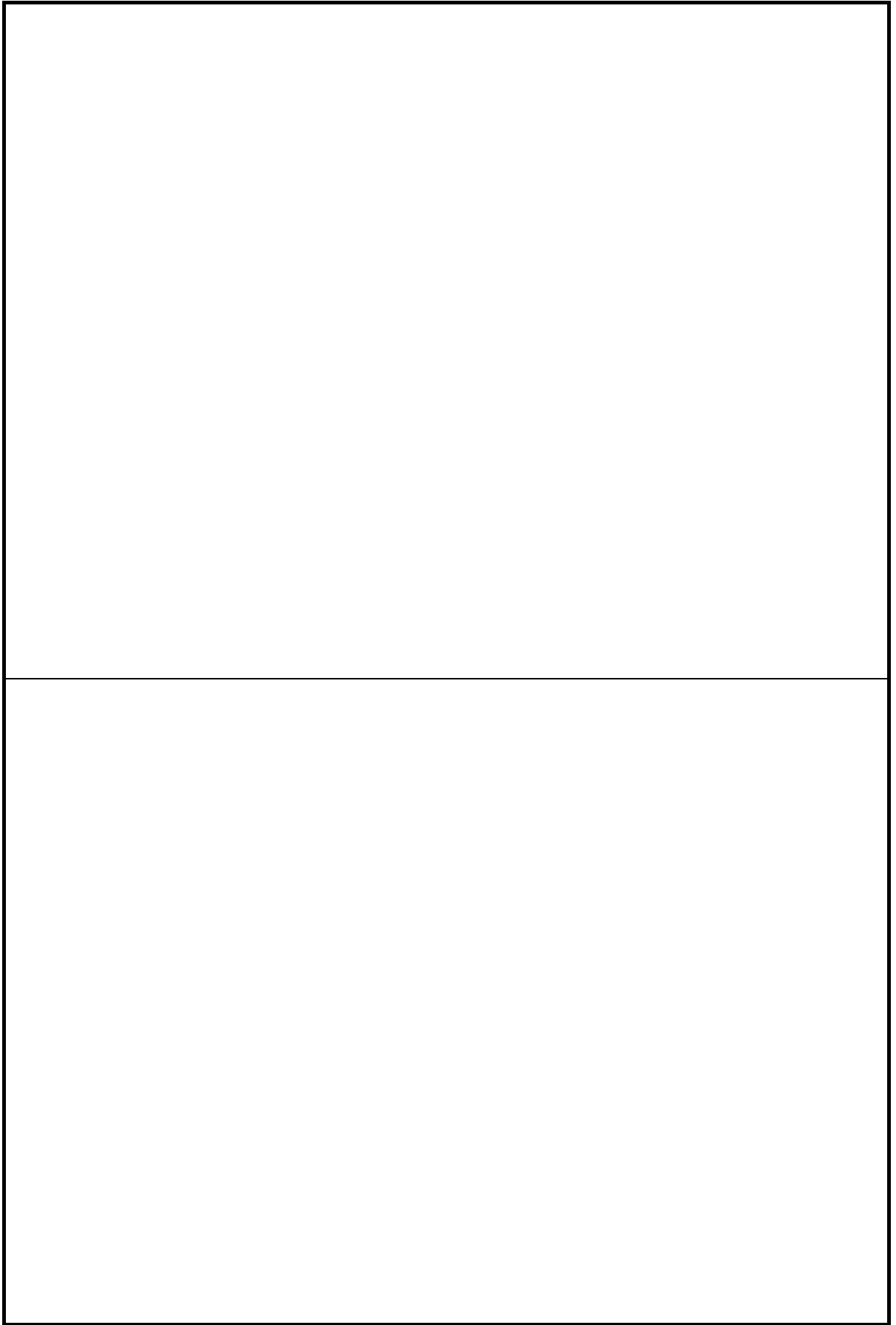
(GB 12348-2008) 2

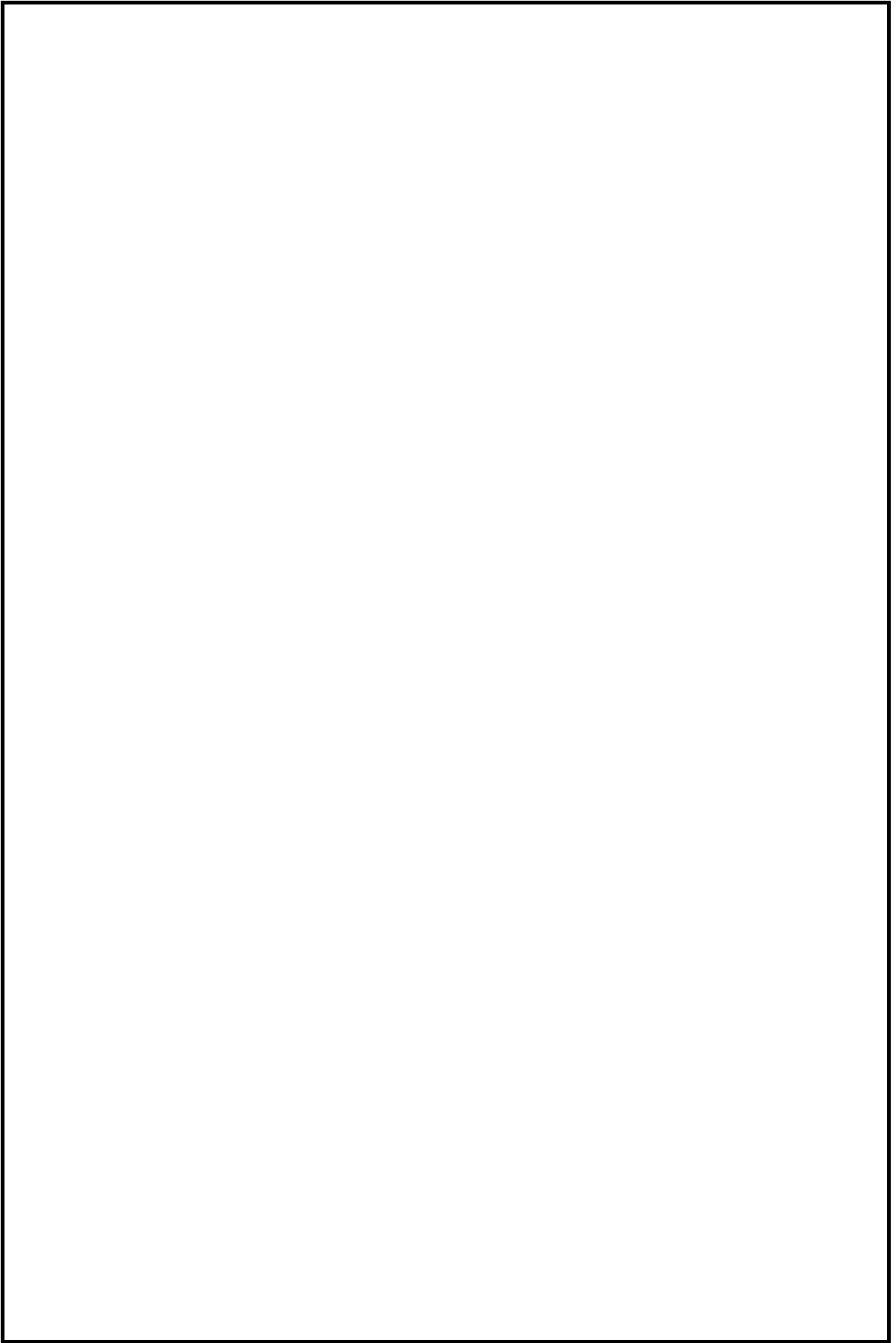
60dB(A)

7

1

2





()										11		120 39 0		31 53 16		
	4	2	38700m ²				10									
		9	22													
	C2442															
()	18800							()		54			(%)	0.29		
					215628									025-84587267		
	11									151				211106		
					13862215856					1977						
		2				/		2		/						
	(+)			()				(+ +)								
	1	2	3	4	5	6	7	8	9	10	“ ”	11	12	13	14	15
	--	--	25050		--	--	1500	0	1500		0		26550		+1500	
COD	350.02	500	8.768		356	500	0.555	0.021	0.534		0		9.302		+0.534	
	34.33	45	0.86		24	45	0.036	0	0.036		0		0.896		+0.036	
	3.91	8	0.098		4.8	8	0.0072	0	0.0072		0		0.1052		+0.0072	
	0.08	20	0.00192		0.4	20	0.0012	0.0006	0.0006		0		0.00252		+0.0006	
LAS	0.04	10	0.00096		0.2	10	0.0006	0.0003	0.0003		0		0.00126		+0.0003	
	--	--	32.3		--	--	129.2	0	129.2				161.5		+129.2	
	0.0017	120	0.04		5.76	120	6.912	6.84288	0.06912				0.10912		+0.06912	
SO ₂	2.79	850	0.000684		2.79	850	0.0036	0	0.0036				0.004284		+0.0036	
NO _x	46.32	240	0.01134		46.32	240	0.0599	0	0.0599				0.07124		+0.0599	
VOCs	0	0	0		30	80	0.36	0	0.36				0.36		+0.36	
	17.65	120	0.00432		17.65	120	0.1140	0	0.1140				0.11832		+0.1140	
	--	--	0		--	--	557.84	557.84	0		0		0		0	

1 + 2 -- / -- / -- / -- / " " -- / -- / -- / 3 12 " " 4 9 = 7 - 8 15 = 9 - 11 - 12 13 = 3 - 11 + 9 5 " "