

梅州市塔牌集团蕉岭鑫达旋窑水泥有限公司

二〇一六年六月

1	.....	1
2	.....	2
2 1	.....	2
2 2	.....	2
3	.....	4
3 1	.....	4
3 2	.....	10
3 3	.....	13
3 4	.....	14
3 5	.....	19
3 6	.....	19
3 7	.....	21
4	.....	23
4 1	.....	23
4 2	.....	24
4 3	.....	26
4 4	.....	26
5	.....	40
5 1	.....	40
5 2	.....	40
5 3	.....	40

5.4	.....	40
6	.....	41
7	.....	42
7.1	Q	42
7.2	M	42
7.3	E	46
7.4	.....	48
8	.....	49
8.1	.....	50
8.2	.....	51
8.3	.....	53
8.4	.....	54
8.5	.....	56

2.1

2.1.1

2.1.2

2.1.3

2.2

2.2.1

12 45

13 [2010] 113

14 “ ” [2013]20

15 2015 3 19 2015

6 1

16

2.2.2

1 GB 18218-2009

2 GB50016-2014

3

3

3.1

3.1.1

2013

200

300t/h

28438

2331

6000

250

150

5000t/d

5000t/d

41450

4600

70000

7000

3-1

3-1

	<u>116°11 28"</u>		<u>24°45 17"</u>
	0753-7522316		0753-7522315
	70000		320

3.1.2

205



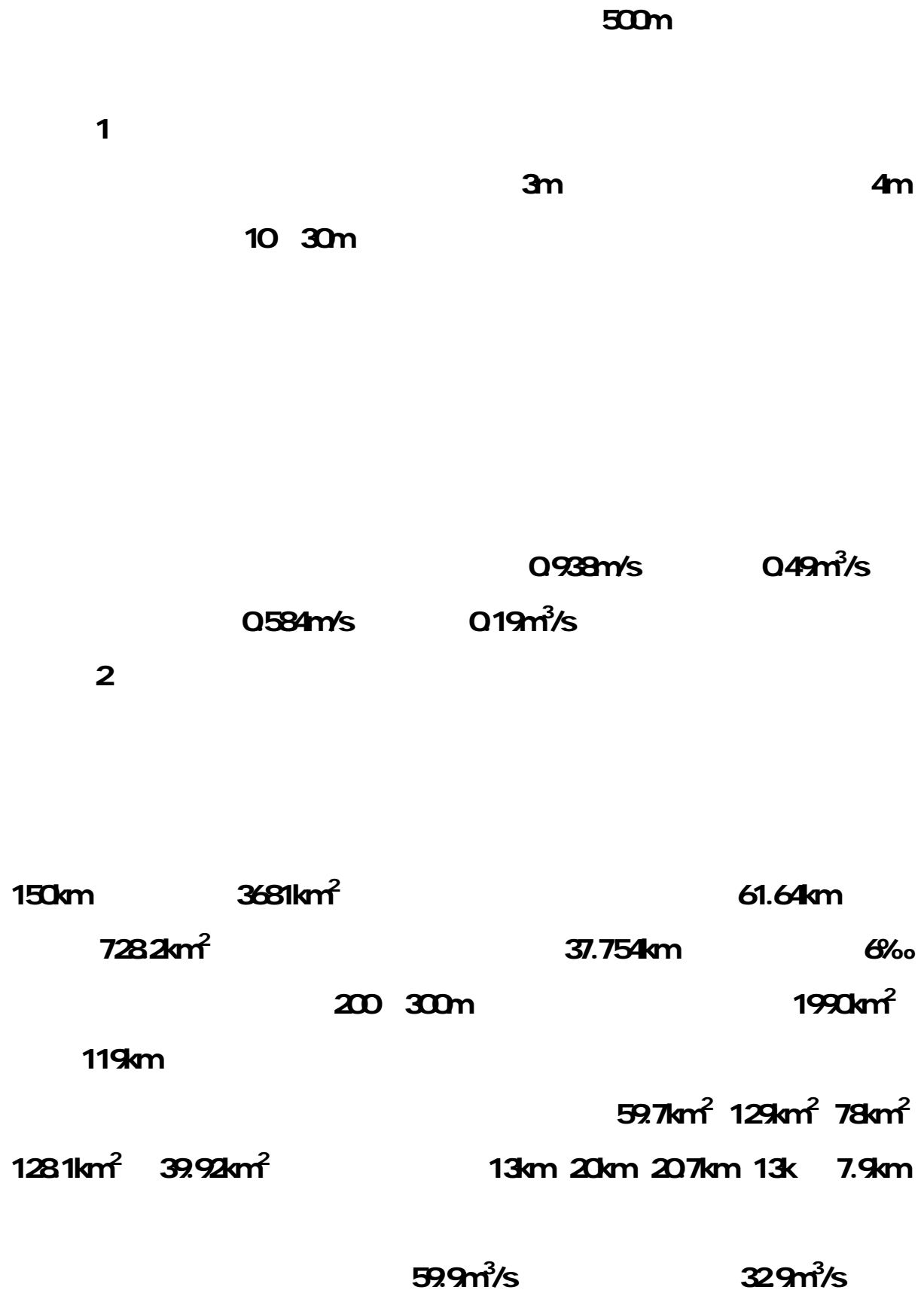
1150 1170 1164
6 1092 1057 1020

6

3.1.4

39.2
-29
21.0
1.3m/s
24m/s
16625mm
24886mm
137.1mm

3.1.5



300m³/s

1963 6 7

2650m³/s

1964 6 15

3-2

3-2

		km ²	m ³ /s	m	km	‰
		7455	5816	71.3	61.64	1.2
		597	1.74	47	13	36
		129	335	442	20	221
		78	1.92	3105	207	15
		1281	2509	17	13	1.3
		39.92	1.80	51.93	7.9	67

500m

1969

11495 KWh 6 2292km² 35m
2002 3000KW
2004 4

400 3363km²
35m 6 3780KW
1160 KWh 480 5000
30

“ + + ”

GB3838-2002 II

3.2

3.2.1 10km

(GB3838-2002) II

3.2.2 500

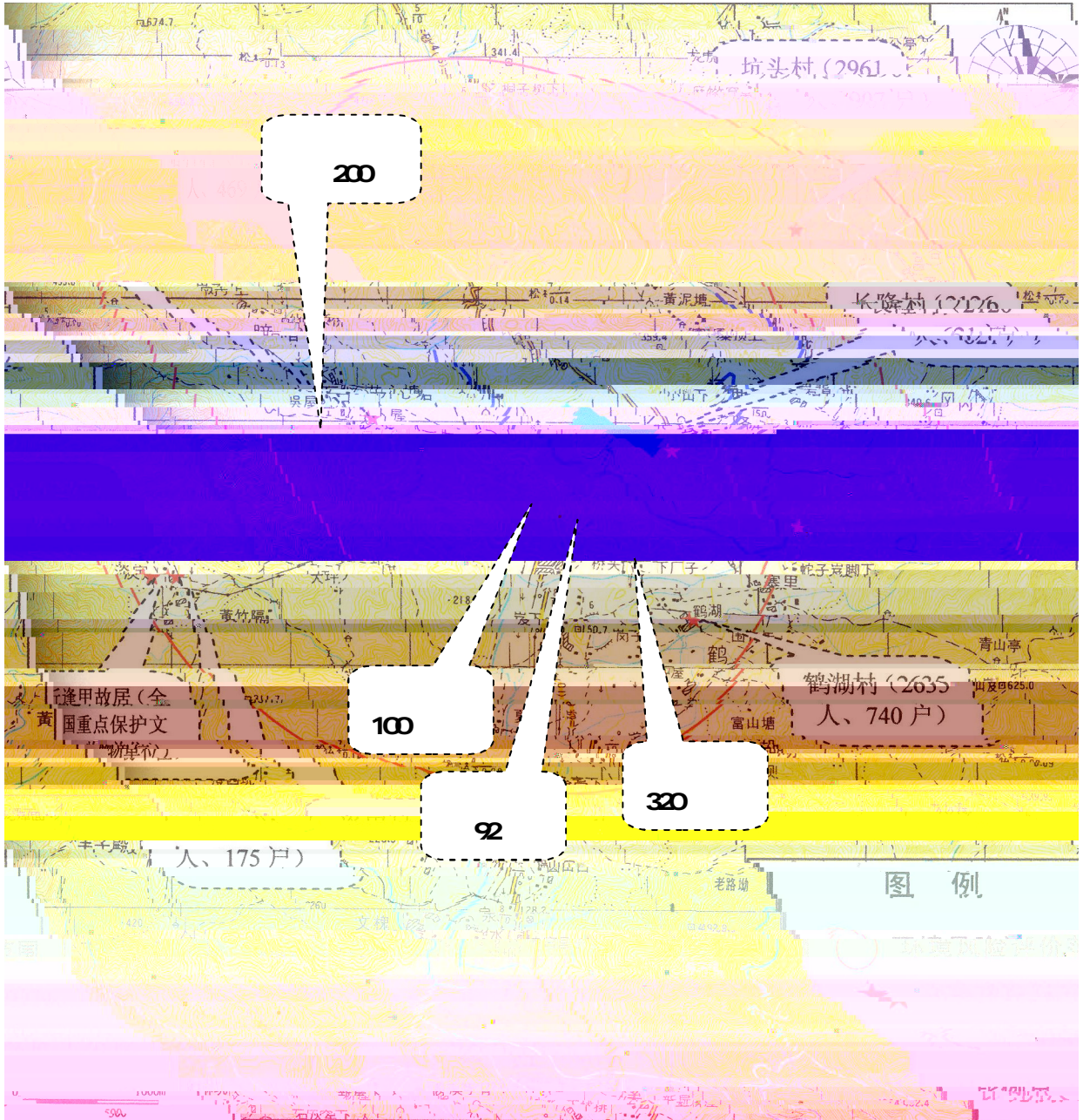
500m

3.2.3

5km

3-3

			m	
	2126 621		100	
	1509 469		500	
	2777 831		1000	
	2635 740		2000	
	2961 907		2000	
	610 175		2500	
	200 60		400	
	5585.7ha ² 3		5000	
			2700	
	320		2000	
	100		1000	
	92		1200	



3-1 5km

3.3

3-4

3-4

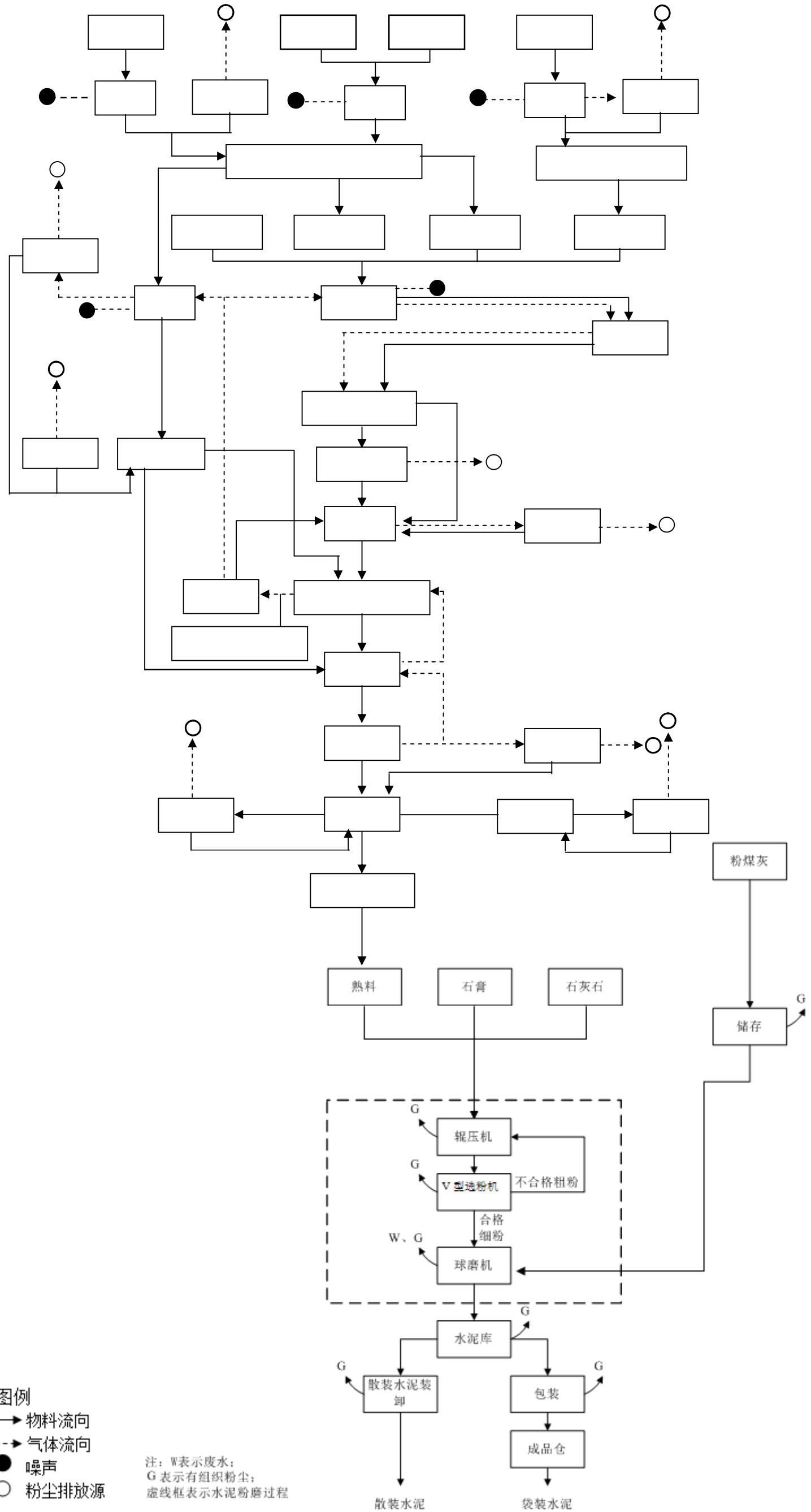
			/t		
1	20%	6000	83		
2		785	20		
3		1430	20		

4

3.4

1

200 /



2

1

2

300mm

30mm

200t/h

3

800t/h

400t/h

4

5

6

400t/d

7

TSD

AQC

320-370

90

SP

335-345

210

8

60m

18m×45m

13277

9

1000mm

25mm

400t/h

8m×28m

10

30

8m×28m

1 HVC-64

26880m³/h

99.9

1 PPW64-7

10000m³/h

99.9

11

V

42×13m

300t/h

2

100000m³/h

99.9

12

2

30×45m 2

18×48m 8

10×28m

109635

4

4×216=464 /

8

11%

18

7200 13000m³/h

99.9

13

6

180t/h

100t/h

6 PPW64-7

99.9%

3.5

1

2

3

4

5

6

3.6

3.6.1

1

2

294m³

3

4

5

"

+ + "

6

7

8

3.6.2

“

+ +

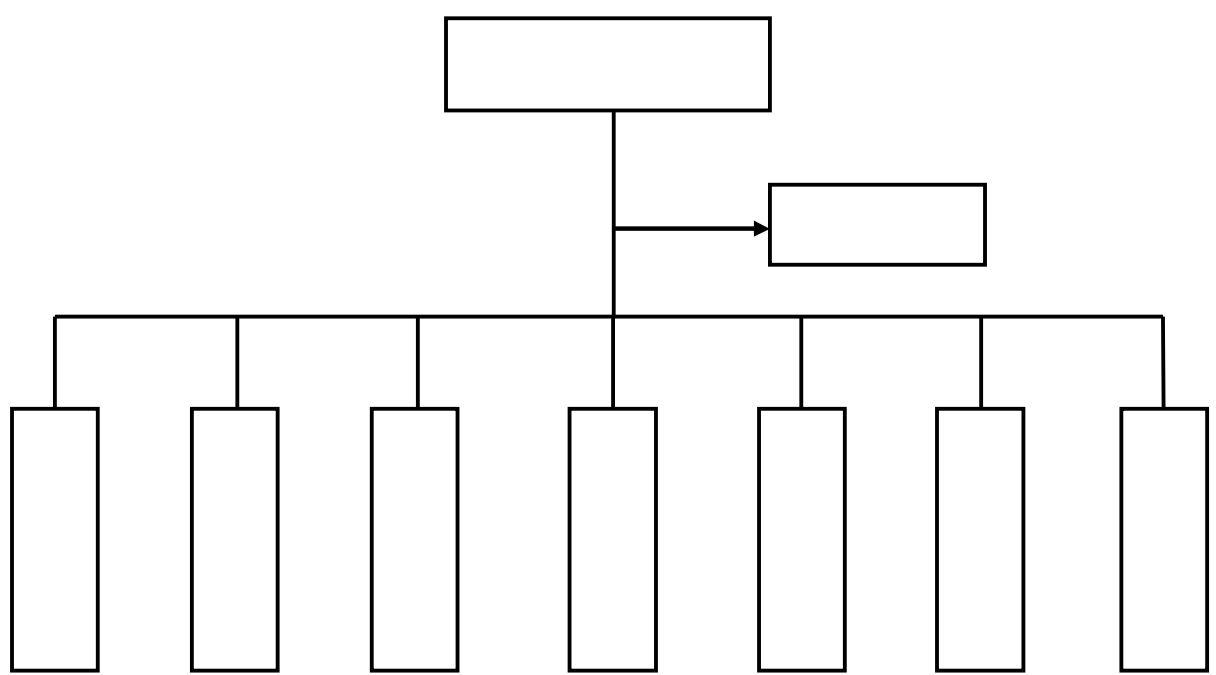
”

3.7

3.7.1

6

3-3



3-3

3.7.2

3-5

		2		
		140		
		8		
		3		
		8		
		28		
		2		
		8		
		28		
		20		
		8		
		275		
		23		
		23		
	CO ₂	1		
		1		
/		2		

4

4.1

4.1.1

1

2

3

4

" + + "

5

SO₂ NO₂

NH₃

4.2

4.2.1

3306.24t/d

11.16t/d

31248t/a

"

+

+

"

294m³

4.2.2

SO₂ NO₂

NH₃

760154m³/h

80t/a

SO₂ NO₂

NH₃

4.2.3

3t **20** **7kg** **014t**
294m³

4.2.4

3t **20** **7kg** **014t**
83

4.3

3.6 3.7

4.4

1

1

28

4-1

4-1

+		

4-2

		Nm ³ /h	kg/h			
			SO ₂		NO _x	
		344185	085	1.14	1.68	H113m/Ø42m

CE

4-3

m						
	SO ₂				NO _x	
	mg/m ³	%	mg/m ³	%	mg/m ³	%
100	619E-15	0	1.22E-14	0	831E-15	0
200	1.06E-05	0	2.10E-05	0.01	1.42E-05	0
300	0.000428	0.09	0.000846	0.35	0.000574	0.19
400	0.001537	0.31	0.003037	1.27	0.002061	0.69
500	0.002271	0.45	0.004488	1.87	0.003045	1.02
522	0.002299	0.46	0.004544	1.89	0.003083	1.03
600	0.002093	0.42	0.004137	1.72	0.002807	0.94
700	0.001707	0.34	0.003374	1.41	0.002289	0.76
800	0.00164	0.33	0.003241	1.35	0.002199	0.73
900	0.001728	0.35	0.003415	1.42	0.002317	0.77
1000	0.001715	0.34	0.003389	1.41	0.0023	0.77
1100	0.001644	0.33	0.003249	1.35	0.002205	0.74
1200	0.001545	0.31	0.003054	1.27	0.002073	0.69
1300	0.001438	0.29	0.002843	1.18	0.001929	0.64
1400	0.001382	0.28	0.002732	1.14	0.001854	0.62
1500	0.001419	0.28	0.002805	1.17	0.001903	0.63
1600	0.001432	0.29	0.002829	1.18	0.00192	0.64
1700	0.001425	0.29	0.002817	1.17	0.001912	0.64
1800	0.001405	0.28	0.002778	1.16	0.001885	0.63
1900	0.001376	0.28	0.002719	1.13	0.001845	0.62

m						
	SO ₂				NO _x	
	mg/m ³	%	mg/m ³	%	mg/m ³	%
2000	0001339	027	0002647	1.1	0001796	06
2100	0001299	026	0002567	1.07	0001700	1.0058

2

20%

100 m³

50

16m×13m×0.5m 104m³

294m³

10min

HJ/T169-2004

QL

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

Q—

kg/s

C_d—

0.6-0.64

0.62

A—

m²

—

920kg/m³

P—

Pa

P₀—

Pa 101325Pa

g—

9.8m/s²

h—

51m

100%

0.032m

18.3kg/s 10min

10.98t

30

30

Q_3

$$Q_3 = a \times p \times M / (R \times T_0) \times u^{(2-n)/(2+n)} \times r^{(4+n)/(2+n)}$$

- Q_3 — kg/s
- n — 32-1
- P — 1.59Kpa
- R — 8314J/mol·k
- M — 38kg/mol
- T_0 — 303k
- u — 1.1m/s
- r — 13m

4-4

kg/s

	A B	C D	E F
$u=1.1m/s$	0012	0014	0015

4-5

	n	
A B	02	3846×10^3
D	025	4685×10^3
E F	03	5285×10^3

$$C(x, y, z, t) = \frac{Q_0}{(2\pi t)^{3/2} \sigma_x \sigma_y \sigma_z} \exp\left[-\frac{(x-x_0)^2}{2\sigma_x^2}\right] \exp\left[-\frac{(y-y_0)^2}{2\sigma_y^2}\right] \exp\left[-\frac{(z-z_0)^2}{2\sigma_z^2}\right]$$

C x y o — x, y mgm³

x₀, y₀, z₀ —

Q-

x y z — X Y Z m x = y

$$C_w^i(x, y, z, t_w) = \frac{Q_w^i}{(2\pi t_w)^{3/2} \sigma_{x,eff} \sigma_{y,eff} \sigma_{z,eff}} \exp\left(-\frac{r_w^2}{2\sigma_{x,eff}^2}\right) \exp\left\{-\frac{(x-x_w^i)^2}{2\sigma_{x,eff}^2} - \frac{(y-y_w^i)^2}{2\sigma_{y,eff}^2}\right\}$$

Cⁱ (x, y, z) — i t_w w (xy)Q

Q- mg Q' = QΔt; mgs-1 t s

x_{eff} y_{eff} z_{eff} - w x y z m

$$\sigma_{j,eff}^2 = \sum_{k=1}^w \sigma_{j,k}^2 \quad (j=x, y, z)$$

$$\sigma_{j,k}^2 = \sigma_{j,k}^2(t_k) = \sigma_{j,k}^2(t_{k-1})$$

x_wⁱ y_wⁱ - w i x y

$$x_w^i = u_{x,w}(t - t_{w-1}) + \sum_{k=1}^{w-1} u_{x,k}(t_k - t_{k-1})$$

$$y_w^i = u_{v,w}(t - t_{w-1}) + \sum_{k=1}^{w-1} u_{v,w}(t_k - t_{k-1})$$

t

$$C(x, y, o, t) = \sum_{i=1}^n C_i(x, y, o, t)$$

n

$$C_{n+1}(x, y, o, \hat{t}) \leq \hat{f} \sum_{i=1}^n C_i(x, y, o, \hat{t})$$

f 1

3

C

4-6

4-6

C

mg/m³

m	1.1m/s C 5min	1.1m/s C 10min	1.1m/s C 15min	1.1m/s C 20min	1.1m/s C 25min	1.1m/s C 30min
0	101430	101444	00017	00004	00001	00001
100	03071	03114	00048	00006	00002	00001
200	00682	00769	00096	00011	00003	00001
300	00209	00329	00133	00016	00004	00002
400	00054	00171	00134	00022	00006	00002
500	00010	00094	00106	00027	00007	00003
600	00001	00052	00075	00030	00009	00003
700	0	00028	00051	00031	00010	00004
800	0	00014	00035	00029	00011	00004
900	0	00006	00023	00025	00012	00005
1000	0	00002	00015	00021	00012	00005
1100	0	00001	00010	00017	00012	00006
1200	0	0	00004	00013	00011	00006
1300	0	0	00004	00009	00010	00006
1400	0	0	00002	00007	00009	00006
1500	0	0	00001	00005	00007	00006
1600	0	0	00001	00003	00006	00005
1700	0	0	0	00002	00005	00005
1800	0	0	0	00002	00004	00004

m	1.1m/s C 5min	1.1m/s C 10min	1.1m/s C 15min	1.1m/s C 20min	1.1m/s C 25min	1.1m/s C 30min
1900	0	0	0	00001	00003	00004
2000	0	0	0	00001	00002	00003
2100	0	0	0	0	00002	00003
2200	0	0	0	0	00001	00002
2300	0	0	0	0	00001	00002
2400	0	0	0	0	00001	00001
2500	0	0	0	0	0	00001
2600	0	0	0	0	0	00001
2700	0	0	0	0	0	00001
2800	0	0	0	0	0	00001
2900	0	0	0	0	0	0
3000	0	0	0	0	0	0
3500	0	0	0	0	0	0
4000	0	0	0	0	0	0
4500	0	0	0	0	0	0
5000	0	0	0	0	0	0
Q _{max} ³ mg/m	27.06512	27.06656	00138	00031	00012	00006
L ₁ m	1	1	349	67293	985	1273

4-6

C

5min



CO

CO₂

100

CO

SO₂ CO

110-2000mg/m³

300-400 mg/m³

4-7

4-7

7

4-8

		Nm ³ /h	kg/h	H30m/006m
			1.02	
		22124		

HJ2.2-2008

A

4-9

4-9

m		
	mg/m ³	%
100	00147	005
200	003128	010
300	003244	011
342	003346	011
400	003223	009
500	002757	009
600	002654	009
700	002627	009
800	002486	008
900	002302	008
1000	002110	007
1100	001928	006
1200	001766	006

m		
	mg/m ³	%
1300	001622	005
1400	001494	005
1500	001380	005
1600	001279	004
1700	001188	004
1800	001107	004
1900	001034	003
2000	000969	003
m	342	
mg/m ³	003346	
%	011	

4-9

GB3095-2012

4

3t

5

10m×7m×1m

10min

HJ/T169-2004

QL

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

Q _L —	kg/s		
C _d —		0.6-0.64	0.62
A—	m ²		
—		810kg/m ³	
P—	Pa		
P ₀ —	Pa	101325Pa	
g—	9.8m/s ²		
h—	51m		

100%

0.02m

1.39kg/s 10min

0.834t

5

4-10

4-10

1			
2			
3			

4-10

6

3306.24t/d

11.16t/d

31248t/a

"

+ + "

COD BOD

SS

294m³

5

5.1

1

2

5.2

1

2

5.3

294m³

5.4

1

2

3

6

6-1

			3

7

7.1

Q

Q

$$\frac{q_1}{Q_1} + \frac{q_2}{Q_2} \wedge \wedge + \frac{q_n}{Q_n} \geq 1$$

$$q_1, q_2 \wedge \wedge q_n \dots$$

t

$$Q_1, Q_2 \wedge \wedge Q_n \dots$$

t

Q < 1

Q

1 Q

Q

1 1 Q < 10

2 10 Q < 100

3 Q 100

Q1 Q2 Q3

7-1

		q	Q		
1	20%	16t	7.5	22133	B" " " — 1-C
2		014t	5	0028	
3		3	250t	00012	
4				22425	$q_1/Q_1 + q_2/Q_2 + \dots + q_n/Q_n > 1$

$$Q = 2.2425$$

1 Q < 10

Q1

7.2

M

M

7.2.1

10

10

7.2.2

GB18218-2009

0

7.2.3

1

0

2

294m³

294m³

0

3

0

4

1

0

5

"

+

+

"

0

6

0

7

0

8

0

0

7.2.4

7.2.5

7-2

		20	10
		2	0
		2	0
		2	0
		2	0
		8	0
		8	0
		8	0
		8	0
		8	0
		8	0
		4	0
		10	0
		10	0

M

$10+0+0+0+0+0=10$

$M < 25$

7-3

M	
M<25	M1
25 M<45	M2
45 M<60	M3
M 60	M4

7-2

M=10

M<25

7-3

M1

7.3

E

7-4

E1 1	<p>10</p> <p>24</p> <p>5</p> <p>5</p> <p>500</p> <p>1000</p> <p>5</p>
E2 2	<p>10</p> <p>5</p> <p>1</p> <p>5</p> <p>500</p> <p>1000</p> <p>500</p>
E3 3	<p>10</p> <p>5</p> <p>1</p> <p>500</p> <p>1</p> <p>2</p> <p>500</p>

10

5

1

5

7-4

2 E2

7.4

7.4.1

3

Q

M

7-5 2 E2 —

Q	M			
	M1	M2	M3	M4
1 Q<10				
10 Q<100				
100 Q				

7.4.2

Q

1≤Q<10

M1

2 7-5

" Q1M1E2 "

8

8.1

8.2

8.3

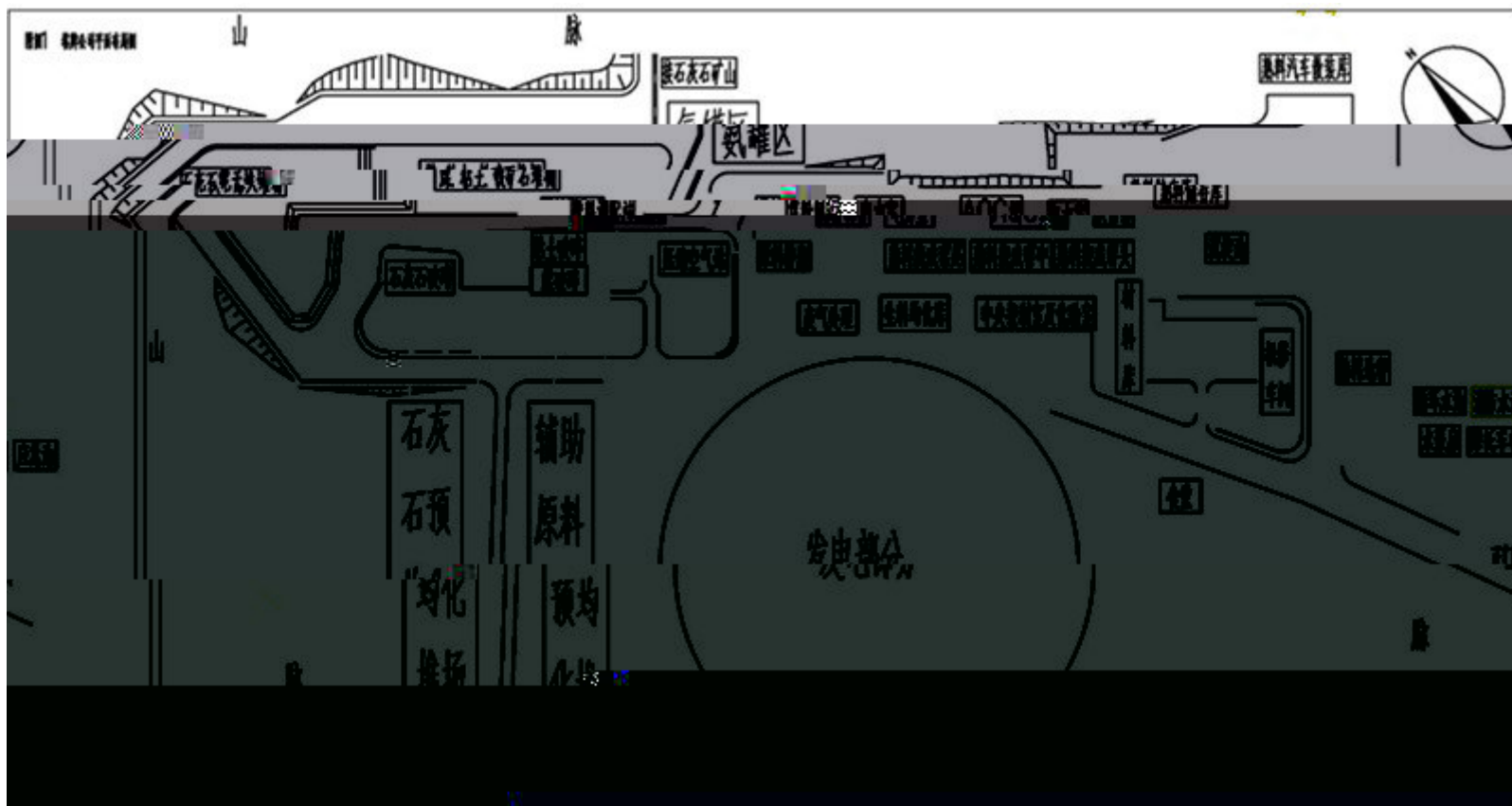
8.4

8.5

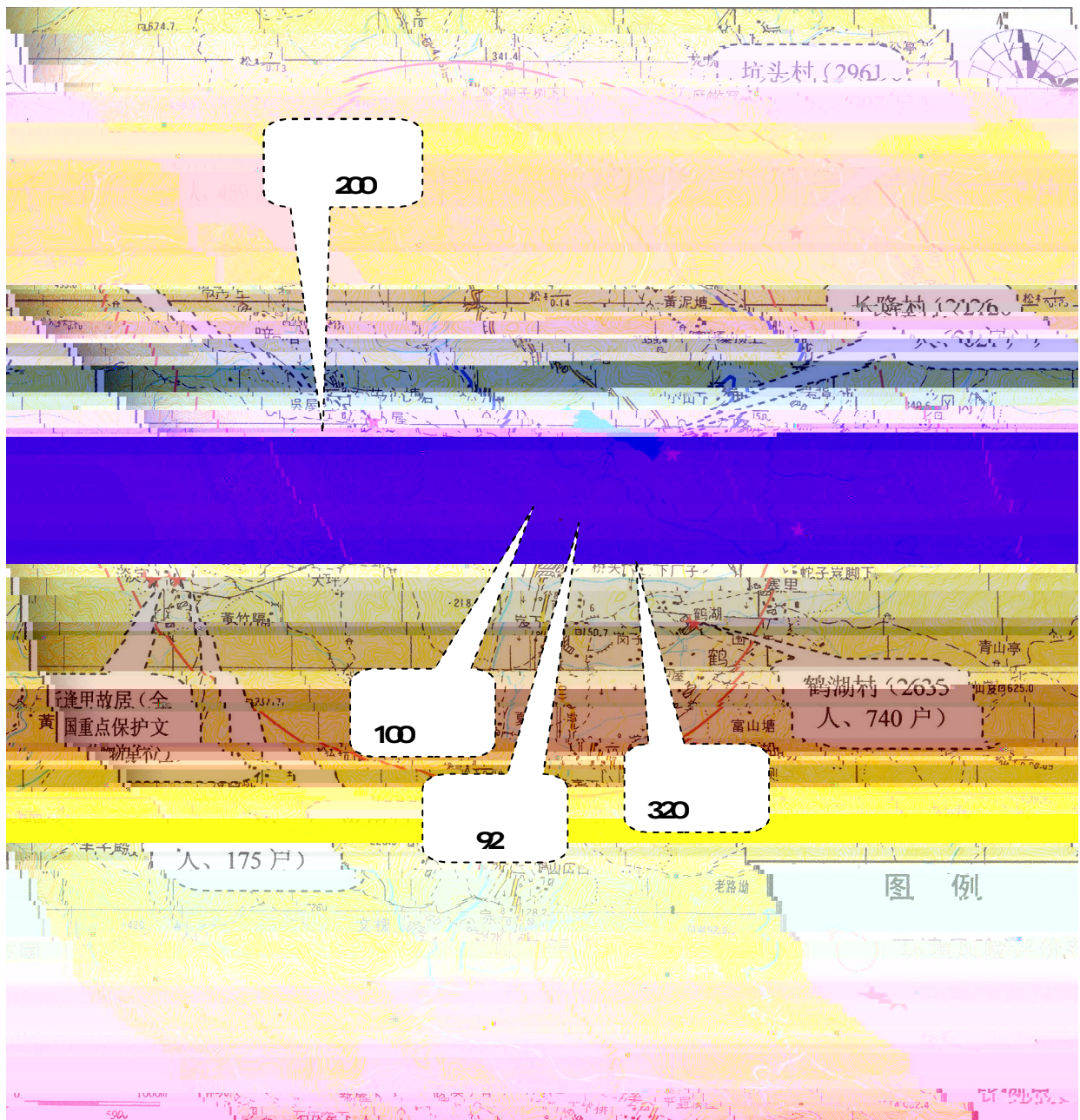
8.1



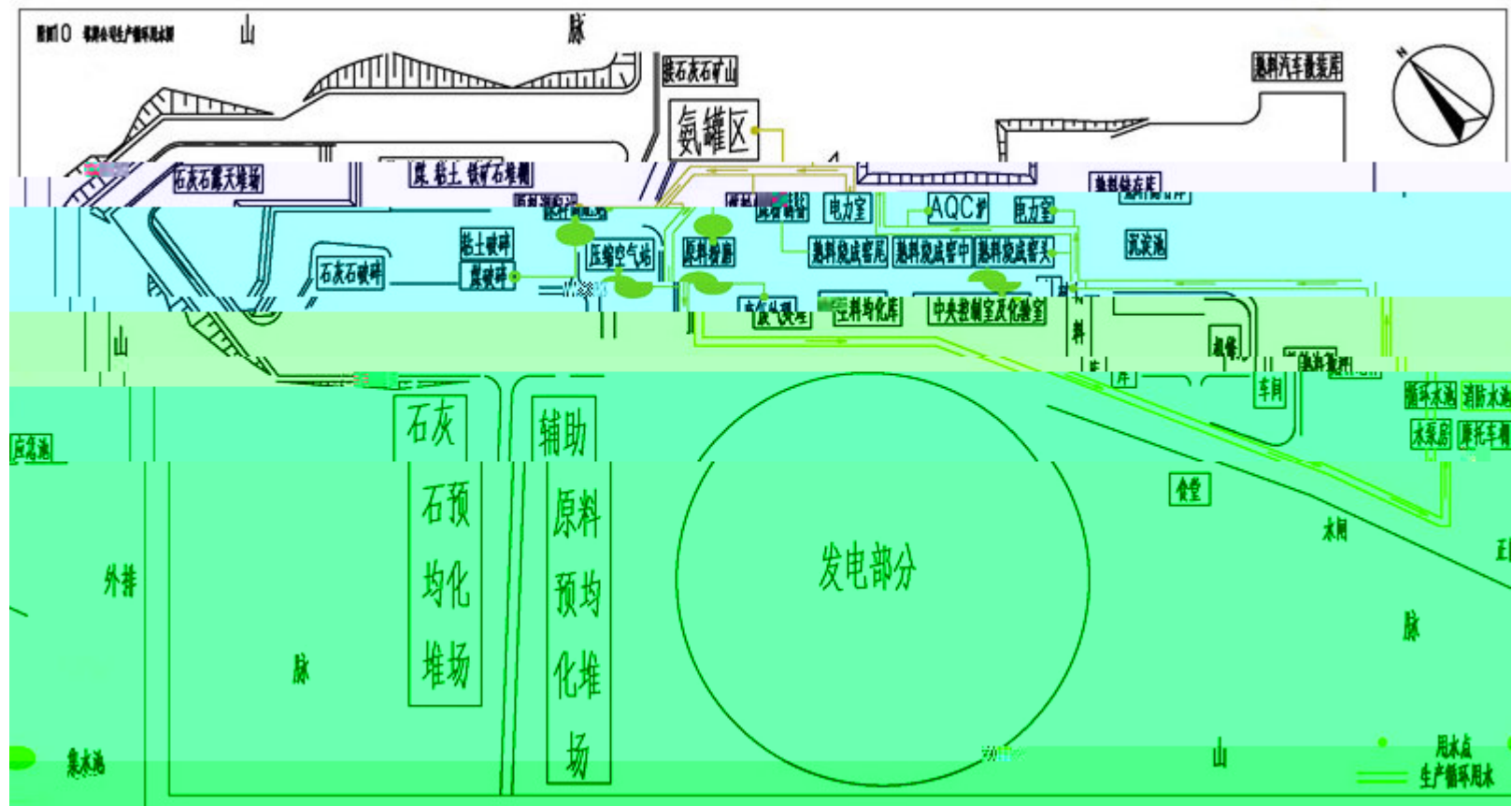
8.2



8.3



8.4



8.5

