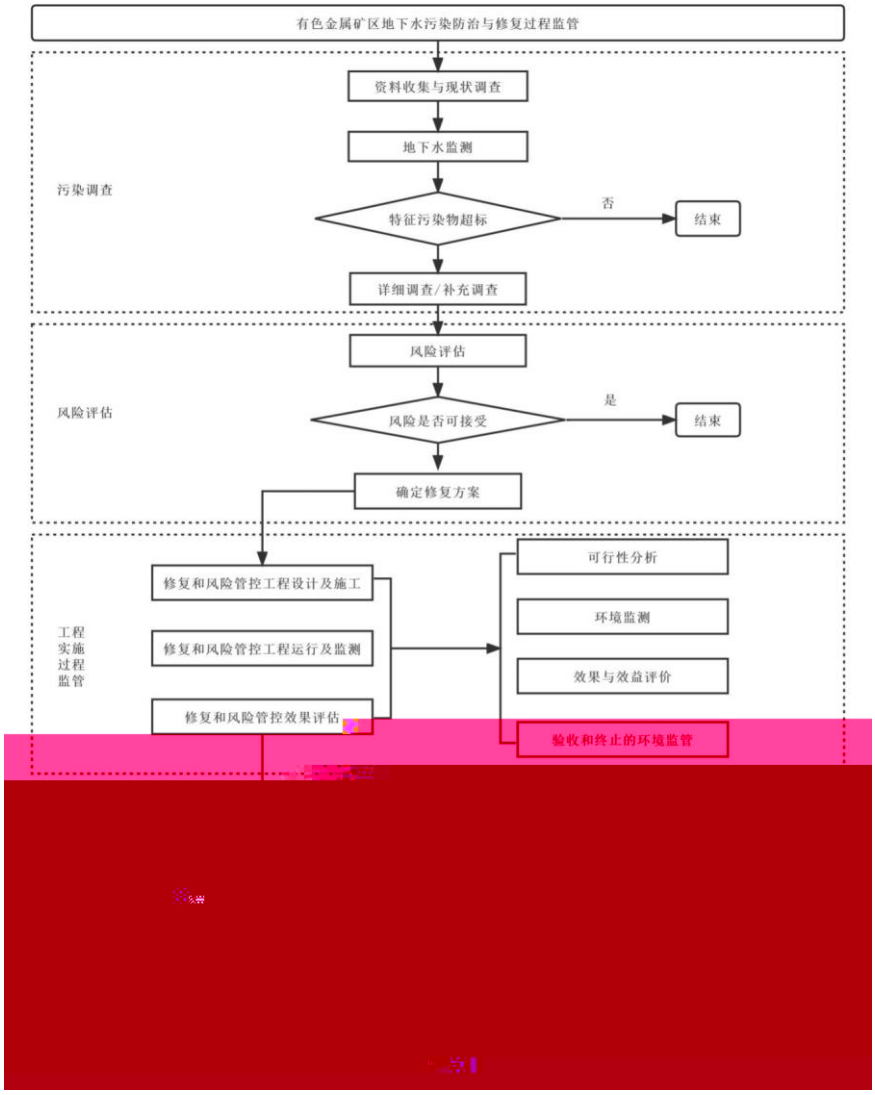
T/GDAEPI 21 2023

Technical specification for supervision of groundwater pollution prevention and remediation process in nonferrous metal mining areas

groundwater vulnerability


有色金属矿区地下水污染防治与修复过程监管
污染调查
资料收集与现状调查
地下水监测
特征污染物超标
否
结束
详细调查/补充调查
风险评估
风险评估
风险是否可接受
是
结束
确定修复方案
工程实施过程监管
修复和风险管控工程设计及施工
修复和风险管控工程运行及监测
修复和风险管控效果评估
可行性分析
环境监测
效果与效益评价
验收和终止的环境监管

1

4.3

GB 8537

HJ 25.3

HJ 164 2020

GB/T 14848

HJ/T 91.2

HJ/T 166

HJ/T 20 HJ/T 91.2

HJ 164 2020

1 3 2

HJ 164 2020

T/GDAEPI 20 2023

[A1]:

1

HJ 164 2020

T/GDAEPI 17 2023

[A2]:

6.3.1

5

HJ/T 91.2

1

3

1

30 m 50 m 1

30 m 50 m 2 3

1

1

HJ 164 2020

DZ/T 0270

A

2

1 m 15 min

a) HJ 164 2020 C

/

b)

c) HJ/T 91.2 HJ/T 166

VOCs SVOCs

HJ 1019 HJ 164 2020 C

HJ 164 2020 HJ/T 91.2 HJ/T 166

B

pH

HJ 164 2020

GB 3838

GB 36600

HJ 168

RB/T 214

HJ 630

HJ 164 2020

-

T L

1

$$P_i = T_i \times L_i \times Q_i \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \quad 1$$

P_i i

T_i i

L_i i

Q_i

2

T_i 3 1 km

Li 1

1

	Li
	0.1
	0.5
	0.7
	0.5
	1

2

2

	Qi
	3
	6

	Qi
	9

2004 208

$$P_I = \sum W_i \times P_i \cdots\cdots 2$$

P_I

W_i i

P_i i

P_I

6 W_i 5

PI 5

3

P_I					

D

HJ 164 2020

HJ 164 2020

pH

GB/T 14848

HJ 164 2020 E

2

1 ~2

A.1

B.1

$CaCO_3$

COD_{Mn}

O_2 N

C

EPA DRASTIC

DRASTIC D R
A S T I C
C.1

DRASTIC

DRASTIC

5,4,3,2,1,5,3

DRASTIC

$$\mathrm{DRASTIC} = 5 \times D + 4 \times R + 3 \times A + 2 \times S + 1 \times T + 5 \times I + 3 \times C \cdots\cdots\cdots\cdots\cdots\cdots\cdots$$

DRASTIC

23 226 DRASTIC 50

200 100 10

DRASTIC 5 C.2

DRASTIC

$$R_C = \sum[1 - exp(-D_i Qi)/W] \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots$$

R_C

D_i i mg kg d $^{-1}$;

Q_i i kg (d mg)$^{-1}$

W kg

$$R_n = (D_i/R_{FDi}) \times 10^{-6}/W \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots$$

[1] GB 3838
[2] GB 8537
[3] GB/T 14848
[4] GB 36600
[5] DZ/T 0270
[6] DZ/T 0282 2015 1:50000
[7] HJ 2.1
[8] HJ 19
[9] HJ/T 20
[10] HJ 25.2
[11] HJ 25.3
[12] HJ/T 91.2
[13] HJ 164 2020
[14] HJ/T 166
[16] HJ 610
[17] HJ 964 ( )
[18] HJ 1019
[19] GWI-D3 1112
[20] T/GDAEPI 17 2023
[21] T/GDAEPI 20 2023
[22] 2014 99
[23] 2019 770
[24] 2019 770
[25] 2004 208