2022 09

48012.42m^2

313 113.264167

23.079972°

[2020]67

GB36600

2018 4-

1939 ~2009

2010~2019

2 1939~2009

C_{10}-C_{40}

2021 8 9 8 20

43 3-8m

219 pH 45

C_{10}-C_{40}

2,4- 6

8 10 2021 8 25 ~8

26 8 8m 8

pH

11 3 12

6 16

C_{10}-C_{40} S17 2022 3 16

5 2,4,5-

2,4,6- 2,4- 2,4- 2,4- 2,4-

2- 4- 4- S5 S24

2021 11 ~2021 12

20 4~8m 109

S24 2022 3 16

33

-1,2-

2- 2,4,5-

2,4,6- 2,4- 2,4- C_{10}~C_{40}

S5

S6

S8

1982-2009

S33

13.05

3.7m

2.3m

0.6

0~5m

4-

4580.22m^2 8168.57m^3 0~5m

4547.91m^3 1146.67m^3

2473.99m^3 25132.91 m^2

4-

IEUBK

HJ25.3-2019

[2020]67

[2020]67

4-

[2020]67

4-

10^{-6}

4-

5.7mg/kg

400mg/kg

4167m^2 6778m^3 0~5m

5088m^3 454m^3

1236m^3

313

48012

113.264167 23.079972

11

1939

1939

1968

1969

1976

1996 1982

1983

1994

1996

2007

2010 2010 ~2019

2012 140

2013

7

2014 66

2016 145 2017

2018 8

2022 3 11

2022 4 8

GB36600 2018

4-

1 2019 1 1

2 2012
140

3 2013 7

4
2014 66

5 2016 31

6 2016 42

7 2017 30

8 2009 61

9 2009 12

10 < 2011-2020 >
[2011]128

1 2021
2

2
2015 15

3
2014 128

4 2018
2018 181

5 2016 145

6

2014 12

7

2015 115

8 2016 26

9 2017 13

10

2017 185

11

2018 26

12 2018 11

29

13 2019

2019 4 2019 6 13

14

2020 3 5

1

GB36600-2018

2 GB/T14848-2017

3 HJ25.1-2019

4 HJ25.2-2019

5 HJ25.3-2019

6 1 DB4401/T

102.1-2020

7 3

DB4401/T 102.3-2020

8 4

DB4401/T 102.4-2020

9 HJ/T166-2004

10 HJ 164-2020

11 HJ1019-2019

12 GB50021-2001 2009

13 < > 4

2019 770

14 2014

11

15

2018 173

16 2017 72

17

18 GB50137-2011

19

2020 67

20

2020 62

21 <

> 2019 63

22 5

DB4401/T 102.5-2021

1

2

48012.42 m^2

HJ 25.3-2019

2020 67

1

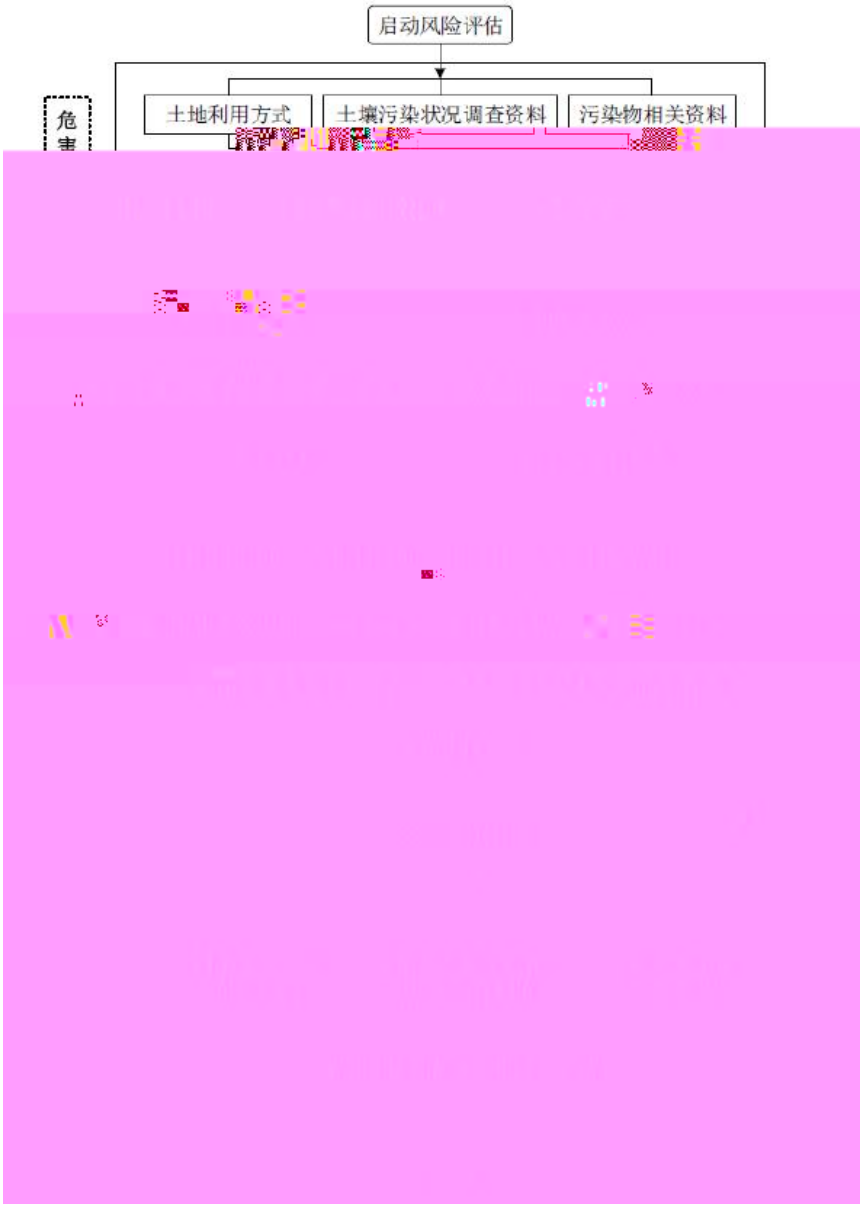
2

3

4

5

6



112 57 ~114 3 22 26 ~23 56

113 14 ~113 23

23 3 ~23 16

2/3

1/3

3

313

11 113.264167 E 23.079972 N

1~2 21.8 7 28.4

0 38.7 1700 6

4~6 7~9 78.5%

29.3% 1.9 / 1825

4570 / 800 1650

6 208

3

0.39

25

4~9m, 12~18m

2022 1

RTK D

G

2019 1935.12

7.6% 6.1% 6.2% 6.8%

1.54 10.7% 397.27

10.1% 1536.31 6.9%

0.1:20.5:79.4 GDP 53.2% 21.41 /

GDP 11.32

2020 2086.93 2.8%

2019 21.73%

1200 18

4866

1 4 2

4913

1840-1990

1

(Q) (K) (Z)

2/3

Z

40

--

(K)

(20~45)

( ) ( )

20 70

,¸ 0

G$@ÈP kF‟ % P

(Q) *8,@ b¸@ R@ #t

a.

1) 40 20

51.2

2) rçC ø$ P 08Ey@•Wp

b.

C14 1.43

ö ú 2° ¡ Ù H4û!» ” 1\ 4Ú4Ô

2

3 20~25

0

3

40 ~45 20

c.

54 300

d.

, 340 ~350

11

1300m

F-49-[12]

K2

56-451 / Cl-Na.Ca

2.99-13.38 /

:

N S

NW SE

NW E ES

(Q) (Q^{ml}) Q^{al}

J_1

1

0~4.60m 2.23m

2

0.60~8.00m 4.92m

3

0~460cm 600~800cm

S16-1 S16-2 S16-3 S33-1 S33-2 XS7 Y24-3 Y5-1 8 2.1-2 0~8m 8.84E-06~7.28E-05 cm/s 3.22E-06~9.18E-06

10^{-6} cm/s

8

0.46 ~ 3.37m

3.95 ~ 6.79m

pH 6.45~7.11

2009 19

1 D 4401/T

102.1-2020

G /T 14848-2017

2018

1939

1939

50

1968 11 -1969

1969

1976

1982

1

1983

1 1

1994 6

1996

2007

2010

2010 -2019

2019

11

1961 1961-1999

2000 -2015

2016

2015 -2018 2018

( )

1981 1981

1978 1978-1999

1999-2008

2008

1970 1970-2000

2000 2013

2014 11

( )

(GB36600-2018)

500m

1

1) C_{10}-C_{40}

2)

4

3)

C_{10}~C_{40}

4)

C_{10}~C_{40}

5)

C_{10}~C_{40}

6)

C_{10}~C_{40}

7)

C_{10}~C_{40}

8)

C_{10}~C_{40}

9)

C_{10}-C_{40}

10) C_{10}-C_{40}

11)

C_{10}-C_{40}

C_{10}-C_{40}

2

6

6

1)

C_{10}-C_{40}

50-100m

2)

C_{10}~C_{40}

3)

C_{10}-C_{40}

4)

C_{10}~C_{40}

C_{10}~C_{40}

5)

C_{10}~C_{40}

C_{10}-C_{40}

2017 8 9

333 (20171708)

333

C_{10}-C_{40}

C_{10}-C_{40}

( ) (GB36600-2018)

C_{10}-C_{40}

GB 36600-2018

GB36600 2018 A.1

HJ 25.3-2019

2

43 2 219

2

4 6 3.2-4~ 3.2-5

3.2-4

ND~33mg/kg 6.27mg/kg S5 0-0.5m

33 mg/kg 20mg/kg

ND~869mg/kg 56.35mg/kg S5 0-0.5m

5620 mg/kg S6 0-0.5m 869 mg/kg S7

3.3-3.7m 842 mg/kg S8 0.2-0.4m 1.0-1.5m 2.7-2.9m

1020 597 470mg/kg S16 0-0.4m 1.0-1.4m

818 680 mg/kg S33 1.9-2.3m

643mg/kg 400mg/kg

ND~182mg/kg 0.90mg/kg S5 0-0.5m

S8 1.0-1.5m S33 1.9-2.3m 182 3.20 3.90mg/kg

3.0mg/kg

0.08~18.8mg/kg 0.771mg/kg S24

1.8m 18.8 mg/kg 15.9 mg/kg

2,4,5- 2,4,6- 2,4-
2,4- 2,4- 2,4- 2- 4-
4-

1
8 8
2 pH 12
11
1,2- 1-4-
2 4- C_{10}-C_{40} 6
16 12
3

pH 6.45~7.11

4- 4
3.2-7 3.2-4
4- (mg/L) ND~0.0336mg/L, 0.0117mg/L
W2 4- 0.032 mg/L W3 4-
0.0336 mg/L W2 W3 4- 0.03 mg/L
0.07 0.12
(mg/L) 0.00126~1.22mg/L, 0.17715625mg/L W8
1.22 mg/L 0.1 mg/L
11.2
(mg/L) 0.234~2.6mg/L, 1.118625mg/L W2

2.6 mg/L W8 1.8 mg/L W2 W8
1.5 mg/L 0.73 0.2
(mg/L) ND~1.59mg/L, 0.49125mg/L W3
1.59 mg/L 0.9 mg/L
0.77

S5 0~0.5 m 33 mg/kg
20 mg/kg S24 1.5-1.8m 18.8
mg/kg 15.9 mg/kg
1 DB4401
6 6.6.4.1 S5 0~0.5 m S24
a b c d
a 40 S5 S4 S6
S9 S24 S12 S23 S25 S31

b 3 5%
41 S5 S24
3
c S5 33
mg/kg S4 S6 S9 S24
18.8 mg/kg S12 S23 S25 S31 0.13-6.77
mg/kg
d

2
GB36600-2018
20 mg/kg S5 33 mg/kg
15.9 mg/kg S24 18.8 mg/kg

2

S5 S24

400

75

e 20 m×20 m

400

f 0.5 5 m 5

5 m

50 m^2 1.5 m 75

1

1 S5 S24 20 m×20 m

2 S5 S24 0.5 5 m

5

S5 44 S24

65 109

S24 S24

S24 Y24-1~Y24-13 0.5m

2022 3 16

S5 7 Y5-1~Y5-7 44

S5

a 40 S5 S4 S6

S9

b 3 5%

41 S 3

S5

mg/kg S4 S6 S9 3-12mg/kg

d

2 GB36600

20 mg/kg S5 33 mg/kg

2

e S5 20 m×20 m Y5-5~Y5-7

X5-1 X5-5

f S5 0.5 5 4

5

48.5m^2 1m 48.5 m^3

75

S5

DB4401/T 102.1-2020

S5

S24 13 Y24-1~Y24-13 65

S24 S24

mg/kg S12 S23 S25 S31 0.13-6.77 mg/kg

d

2

15.9 mg/kg S24

18.8 mg/kg 2

e S24 20 20 Y24-1~Y24-8

f S24 0.5 5 5

5

50m^2 1m 50m^3

75

S24

DB4401/T 102.1-2020

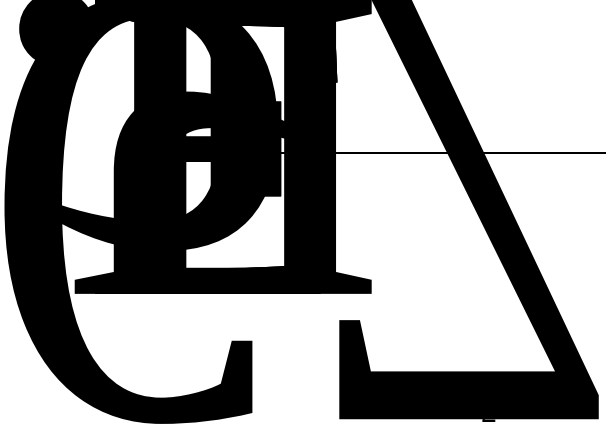
S24

5

S5

S24

DB4401/T 102.1-2020



43 2 219

8 8

GB36600-2018

GB/T 14848-2017 IV

GB 5749-2006

2

4- 4

1

2021 11 ~2021 12

400 m^2 20 m×20 m 1

100 m^2 10 m×10 m 1

0-1.0m 0.5m 1.0-6.0m 1.0m

6m 2.0m

46 3~8m

267

4-

6400 m^2 1

80x80 XW1 XW2 XW3 pH

1

2021 12 17~18

100 m^2 10 m×10 m 1

0-1.0m 0.5m 1.0-6.0m

1.0m 6m 2.0m

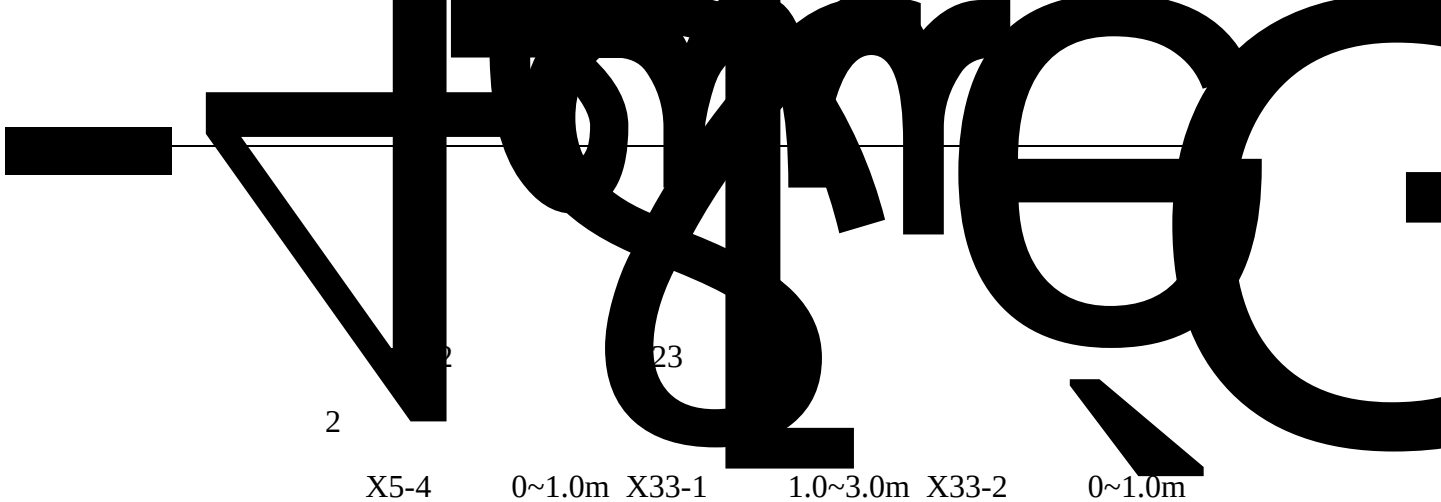
12 60

2

2

12 13~183 mg/kg 54 mg/kg

60



2 23

2

X5-4 0~1.0m X33-1 1.0~3.0m X33-2 0~1.0m X33-4 2.0~3.0m X33-6 1.0~2.0m X33-9 1.0~2.0m 3.0~5.0m Y5-1 0~1.0m 2.0~4.0m Y5-1 0~2.0m 3.0-4.0m Y5-2 0~1.0m Y5-3 0~1.0m X5-1 2.0~3.0m X5-4 0~1.0m X8-2 0~2.0m X33-1 1.0~3.0m X33-3 2.0~3.0m X33-9 2.0~3.0m 4.0~5.0m

S5

S6

1980 -2000

S7

S5

0-0.5 m S6 6 0-0.5 m S7 3.3-3.7 m

XW3 X5-1 X5-4 Y5-2 Y5-3 S5 S6 S7

S8

1978 -2009 S8

0.2-0.4m 1.0-1.5 m 2.7-2.9 m 1.0-1.5 m

X8-2

S8

S16

S33

S33 1.9-2.3 m

1.9-2.3 m X33-1

X33-2 X33-3 X33-4 X33-6 X33-9

S33

S33

W2

1980 -2000 4-

W3 1976-1996

1992-2009 4- W8

1976-1996 1992-2009

20x20m

80x80m

W2

W3

W8

S16-1 S16-2 S16-3 S33-1 S33-2 XS7

Y24-3 Y5-1 8 S16-1 S16-2

S16-3 S33-1 S33-2 Y5-1

15.0~34.5% 2.70~2.72 kg/dm

1.87~2.08 g/cm^3 1.39~1.81g/cm^3 0.49~0.96

3.22E-0.6 ~9.18E-0.6cm/s 0.27~0.83%

S5 S6 S7

S8 S24 S33

S5 S24

DB4401/T 102.1-2020

9 17

5.2% 23.58 5m X33-1-3

7 13 5.15%

792.33 5m X33-1-3

4580.22m^2

8168.57m^3 4547.91m^3

1146.67m^3 2473.99m^3 3.6-2

1

80x80 3

pH 4-

2

W2 4-

W3 4- W8

25132.91 m^2

3

1

W2 W3 W8 W2 W3

W8 5m 3.6m 6.6m 5.06m

0.60~8.00m 4.92m

2

10^{-6} cm/s

3 20x20

4-

0.46 ~ 6.0m

2.62 m 2.62~4.92m

3.77m

4-

HJ25.3-2019

[2020]67

1

4

5

HJ

25.3-2019

IEUBK

GB36600-2018

[2020]67

4-

15 23.58 5m

X33-1-3 10 792.33

5m X33-1-3

3

W2 W3 W8 4-

3.6-2 3.6-3

HJ25.3-2019

4-

HJ25.3-2019

[2020]67

X33-1 9830mg/kg

2380 mg/kg

( ) (GB36600-2018) 800 mg/kg

30 mg/kg

4-

10 g/dL 5%

1

4.4-1

$$OSIER_{ca} = \frac{\left(\frac{OSIR_c \times ED_c \times EF_c}{BW_c} + \frac{OSIR_a \times ED_a \times EF_a}{BW_a}\right) \times ABS_o}{AT_{ca}} \times 10^{-6}$$

OISERca kg kg^{-1} d^{-1}

OSIRc mg d^{-1}

OSIRa mg d^{-1}

EDc a

EDa a

EFc d a^{-1}

EFa d a^{-1}

BWc kg

BWa kg

ABSo

ATca d

4.4-2

$$OISER_{nc} = \frac{OSIR_c \times ED_c \times EF_c \times ABS_o}{BW_c \times AT_{nc}} \times 10^{-6}$$

4.4-2

OISERnc kg ·kg^{-1} ·d^{-1}

ATnc d

2

4.4-3

$$DCSER_{ca} = \frac{SAE_c \times SSAR_c \times EF_c \times ED_c \times E_v \times ABS_d}{BW_c \times AT_{ca}}$$

4.4-3

DCSERca ( ) kg ·kg^{-1} ·d^{-1}

SAEc cm^2

SAEa cm^2

SSARc cm cm^{-2}

SSARa cm cm^{-2}

ABSd

Ev d^{-1}

4.4-4

$$DCSER_{nc} = \frac{SAE_c \times SSAR_c \times EF_c \times ED_c \times E_v \times ABS_d}{BW_c \times AT_{ca}} \times 10^{-6}$$

4.4-4

DCSERca ( ) kg ·kg-1 ·d-1

3

4.4-5

$$PISER_{ca} = \frac{PM_{10} \times DAIR_c \times ED_c \times PIAF \times (fspo \times EFO_c \times fspi \times EFI_c)}{BW_c \times AT_{ca}} \times 10^{-6} + \frac{PM_{10} \times DAIR_a \times ED_a \times PIAF \times (fspo \times EFO_a \times fspi \times EFI_a)}{BW_a \times AT_{ca}} \times 10^{-6}$$

4.4-5

PISERca ( ) kg ·kg-1 ·d-1

PM10 mg m-3

DAIRa m3 d-1

DAIRc m3 d-1

PIAF

fspi

fspo

EFIa d a-1

EFIc d a-1

EFOa d a-1

EFOc d a-1

4.4-6

$$ISER_{nc} = \frac{PM_{10} \times DAIR_c \times ED_c \times PIAF \times (fspo \times EFO_c \times fspi \times EFI_c)}{BW_c \times AT_{ca}} \times 10^{-6} + \frac{PM_{10} \times DAIR_a \times ED_a \times PIAF \times (fspo \times EFO_a \times fspi \times EFI_a)}{BW_a \times AT_{ca}} \times 10^{-6}$$

4.4-6

PISERnc ( ) kg kg-1 d-1

4

4.4-7

$$IOVER_{ca1} = VF_{suroa} \times (\frac{DAIR_c \times EFO_c \times ED_c}{BW_c \times AT_{ca}} + \frac{DAIR_a \times EFO_a \times ED_a}{BW_a \times AT_{ca}})$$

4.4-7

IOVERca1

kg kg^{-1} d^{-1}

VFsuroa kg cm^{-3}

4.4-8

$$IOVER_{nc1} = VF_{suroa} \times \frac{DAIR_c \times EFO_c \times ED_c}{BW_c \times AT_{nc}}$$

4.4-8

IOVERnc1

kg kg^{-1} d^{-1}

5

4.4-9

$$IOVER_{ca2} = VF_{suboa} \times (\frac{DAIR_c \times EFO_c \times ED_c}{BW_c \times AT_{ca}} + \frac{DAIR_a \times EFO_a \times ED_a}{BW_a \times AT_{ca}})$$

4.4-9

IOVERca2

kg kg^{-1} d^{-1}

VFsuboa kg cm^{-3}

4.4-10

IOVERnc2

kg kg^{-1} d^{-1}

6

4.4-11

$$IOVER_{ca3} = VF_{gwoa} \times (\frac{DAIR_c \times EFO_c \times ED_c}{BW_c \times AT_{ca}} + \frac{DAIR_a \times EFO_a \times ED_a}{BW_a \times AT_{ca}})$$

4.4-11

IOVERca3

L kg^{-1} d^{-1}

VFgwoa L cm^{-3}

4.4-12

$$IOVER_{nc3} = VF_{gwoa} \times \frac{DAIR_c \times EFO_c \times ED_c}{BW_c \times AT_{nc}}$$

4.4-12

IOVERnc3

L kg^{-1} d^{-1}

7

4.4-13

$$IIVER_{ca1} = VF_{subia} \times (\frac{DAIR_c \times EFO_c \times ED_c}{BW_c \times AT_{ca}} + \frac{DAIR_a \times EFO_a \times ED_a}{BW_a \times AT_{ca}})$$

4.4-12

IIVERca1

kg kg^{-1} d^{-1}

VFsubia kg cm^{-3}

4.4-14

$$IIVER_{nc1} = VF_{subia} \times \frac{DAIR_c \times EFI_c \times ED_c}{BW_c \times AT_c}$$ 4.4-14

IIVERnc1

kg kg^{-1} d^{-1}

8

4.4-15

$$DAI$$

4.4-15

IIVERca2

L kg^{-1} d^{-1}

VFgwia L cm^{-3}

4.4-16

$$IIVER_{nc2} = VF_{gwia} \times \frac{DAIR_c \times EFI_c \times ED_c}{BW_c \times AT_c}$$ 4.4-16

IIVERnc2

L kg^{-1} d^{-1}

USEPA IEUBK

IEUBK 0-7

4 ƨo

ɵ [

10 g/dL

IEUBK

ub+flos

IEUBK

ɕ

IEUBK IN

$IN_{soil,\ outdoor} = C_{soil} \times WF_{soil} \times IR_{soil+dust}$ 1

$IN_{dust}t = C_{dust,\ resid}$ 1-WF_{soil} × $IR_{soil+dust}$ 2

$IN_{air} = C_{air}$ VR 3

$IN_{water} = C_{water} \times IR_{water}$ 4

$IN_{soil,outdoor}$ IND_{dust} IN_{air} IN_{water}

g/d C_{Soil} $C_{dust\ resid}$ C_{air} C_{wa}

IEUBK

30% 40%~50% 60% 20%~45%

$UP_{poten} = ABS_{diet} \times IN_{diet} + ABS_{dust} \times IN_{dust} + ABS_{soil} \times IN_{soil} + ABS_{air} \times IN_{air} + ABS_{other} \times IN_{other}$ 5

UP_{poten}

ABS_{diet} ABS_{dust} ABS_{soil} ABS_{air} ABS_{other}

IN_{diet} IN_{other}

$UP_{passive} = PAF \times UP_{poten}$ 6

$UP_{active} =$ 1 - PAF UP_{poten}/ 1+ UP_{poten} / SAT_{uptake} 7

PAF

SAT_{uptake} UP_{poten}

3

IEUBK

IEUBK

-

4

IEUBK GSD

1

3-3 HJ25.3-2019

2

IEUBK

EPA

4-

HJ25.3-2019 HJ25.3

(CR) (HQ)

1 4.6-1

$$CRois = OISERca \times Csur \times SFo \quad (4.6\text{-}1)$$

CR

C mg kg^{-1}

SF (mg kg^{-1} d^{-1})$^{-1}$

2 4.6-2

$$CR_{dcs} = DCSER_{ca} \times C_{sur} \times SF_{d} \quad (4.6\text{-}2)$$

CR

SF (mg kg^{-1} d^{-1})$^{-1}$

3 4.6-3

$$CRpis = PISERca \times Csur \times SFi \quad (4.6\text{-}3)$$

CR

SF (mg kg^{-1} d^{-1})$^{-1}$

4 4.6-4

$$CRn = CRois + CRdcs + CRpis \quad (4.6\text{-}4)$$

CR (n)

1 4.6-5

$$HQ_{ois} = \frac{OISER_{nc} \times C_{sur}}{RfD_O \times SAF} \quad (4.6\text{-}5)$$

HQ

SAF

R D mg kg^{-1} d^{-1}

2 4.6-6

$$HQ_{dcs} = \frac{DCSER_{nc} \times C_{sur}}{RfD_d \times SAF}$$ 4.6-6

HQ

3 4.6-7

$$HQ_{pis} = \frac{PISER_{nc} \times C_{sur}}{RfD_i \times SAF}$$ 4.6-7

HQ

RfDi mg kg^{-1} d^{-1}

4 4.6-8

$$HIn = HQois + HQdcs + HQpis$$ 4.6-8

HI (n)

1

4.6-15

$$CRiov3 = IOVERca3 \times Cgw \times SFi$$ 4.6-15

CR 3

C mg L^{-1}

2

4.6-16

$$CRiiv2 = IIVERca2 \times Cgw \times SFi$$ 4.6-16

CR 2

3 4.6-17

$$CRn = CRiov3 + CRiiv2$$ 4.6-17

CR (n)

1

4.6-18

4.6-18

HQ 3

AF

2

4.6-19

$$HQ_{iiv2} = \frac{IIVER_{nc2} \times C_{gw}}{RfD_i \times WAF}$$ 4.6-19

HQ 2

3 4.6-20

$$HIn = HQiov3 + HQiiv2$$ 4.6-20

HI (n)

IEUBK

10 g/dL IEUBK 4.4.3

4.6-1 4.6-2

3.19E-04

10^{-6}

IEUBK 10 g/dL 5%

289.42mg/kg 9830mg/kg

4-

1.59mg/L 0.0336mg/L

4.6-3 HJ25.3-2019

4-

4-

1 2

3

4

(variability) (uncertainty)

1

IEUBK

2

Intergrated RiskInformation System

4

[2020]67

HJ25.3-2019

5

6

HJ25.3-2019

20%

4.7-1 20%

20%

4.7-2

HJ25.3-2019 D D.3

SR P1 P2

P1 P2 P1 1.1 X1

X2 4.7-4 4.7-5

P D.3

$$SR = \frac{\frac{X_2 - X_1}{X_1}}{\frac{P_2 - P_1}{P_1}} \times 100\%$$

D.3

D.3

SR

P1 P P1

P2 P P1 1.1

X1 P1,

'

X2 P2

4.7-3 '$ 5

1

2 4-

4-

1 5.1-1

$$RCVS_{ois} = \frac{ACR}{OISER_{ca} \times SF_O} \quad 5.1\text{-}1$$

2 5.1-2

$$RCVS_{dcs} = \frac{ACR}{DCSER_{ca} \times SF_d} \quad 5.1\text{-}2$$

3 5.1-3

$$RCVS_{pis} = \frac{ACR}{PISER_{ca} \times SF_i} \quad 5.1\text{-}3$$

4 3

5.1-4

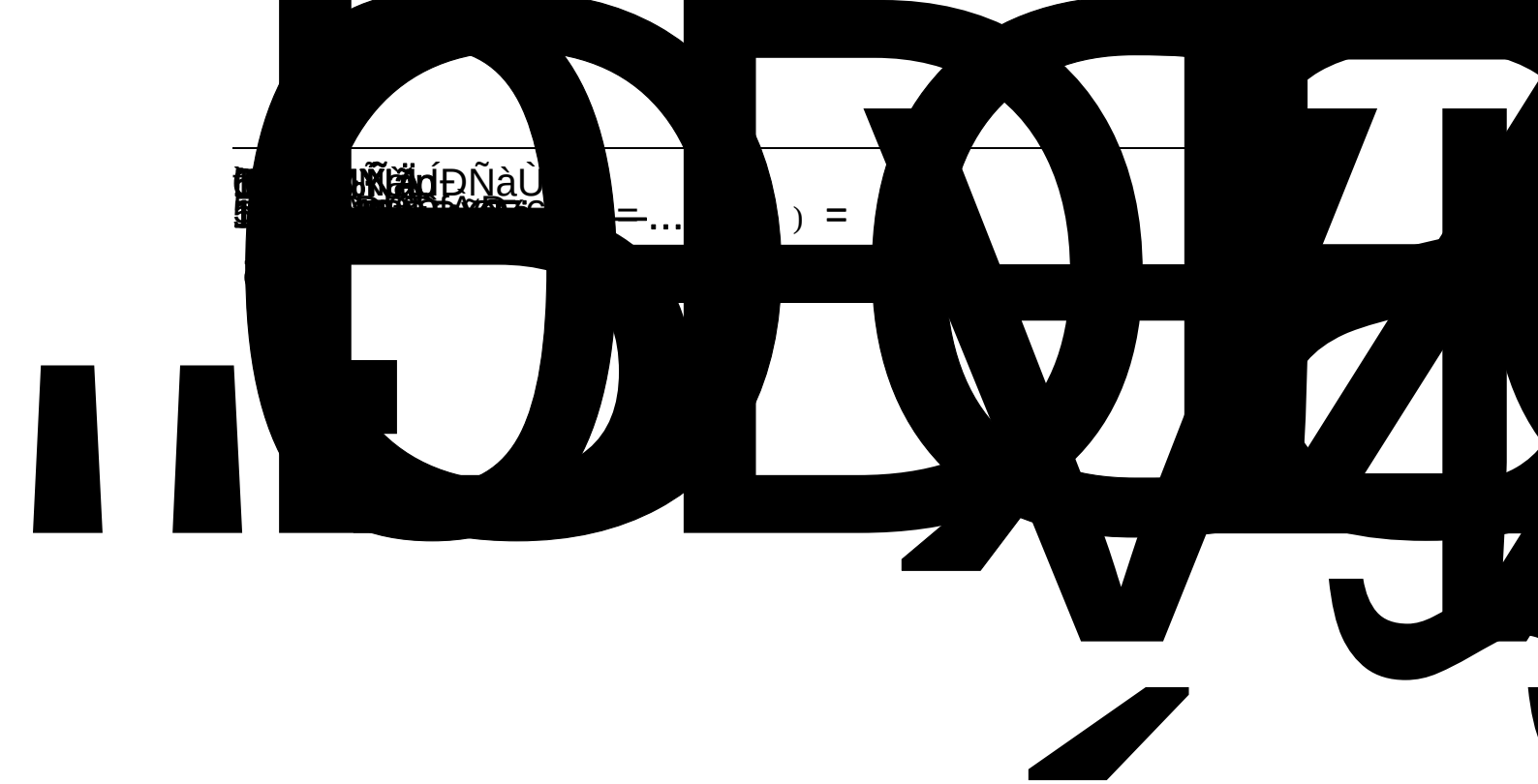
$$RCVS_n = \frac{ACR}{OISER_{ca} \times SF_o + \ldots} \quad 5.1\text{-}4$$

1 5.1-5

$$HCVS_{ois} = \frac{RfD_o \times SAF \times AHQ}{OISER_{nc}} \quad 5.1\text{-}5$$

2 5.1-5

$$HCVS_{dcs} = \frac{RfD_d \times SAF \times AHQ}{DCSER_{nc}} \quad 5.1\text{-}5$$



454m^3 1236m^3

0-1.0m 2978m^2

2978m^3 2517m^2 2517m^3

461m^2 461m^3

1.0-2.0m 1692m^2

1692m^3 1244m^2 1244m^3

192m^2 192m^3

256m^2 256m^3

2.0-3.0m 1200m^2

1200m^3 894m^2 894m^3

49m^2 49m^3

257m^2 257m^3

3.0-4.0m 695m^2

695m^3 433m^2 433m^3

213m^2 213m^3

49m^2 49m^3

4.0-5.0m 213m^2

213m^3 213m^2 213m^3

RTK

D G

[2020]67

GB 36600

5.7mg/kg

GB36600 3.0mg/kg

1931m^3 -

1690m^3

IEUBK

HJ25.3-2019

[2020]67

[2020]67

4-

[2020]67

4-

10^{-6}

/

1

2 5.7mg/kg GB36600
3.0mg/kg

3 4-

4

2022 1