山东朗格环保工程有限公司

Shandong Lange Environmental Protection Engineering Co., Ltd

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ˆ 1˜ ê Ţ ↰ ˜ ˝ غ يجـ Ḡ Ỉ 2015 1 1 ˜’

ˆ 2˜ ê Ţ ↰ ˜ ˝ غ يجـ ڈ ɛ Ỉ 2016 9 1 ˘ 2018 12 29 ќ ˜’

ˆ 3˜ ê Ţ ↰ ˜ ˝ غ يجـ Ỉ 2018 10 26 ˜’

ˆ 4˜ ê Ţ ↰ ˜ ˝ غ يجـ Ỉ 2017 6 27 ќ ˘ 2018 1 1 ˜’

ˆ 5˜ ê Ţ ↰ ˜ ˝ غ يجـ كل Ỉ 2022 6 5 ˜’

ˆ 6˜ ê Ţ ↰ ˜ ˝ غ يجـ نهr Ỉ 2020 4 29 ќ ˜’

ˆ 7˜ ê Ţ ↰ ˜ ˝ غ يجـ حى Ỉ 2019 1 1 ˜’

ˆ 8˜ ê Ţ ↰ ˜ ˝ غ يجـ حى Ḡ Ỉ 2011 3 1 ˜’

ˆ 9˜ ê Ţ ↰ ˜ ˝ غ يجـ ˚˚ Ḇ Ỉ 2012 7 1 ˜’

ˆ 10˜ ê Ţ ↰ ˜ ˝ غ يجـ Ḇ Ỉ 2018 10 26 ќ ˜’

ˆ 11˜ ê Ţ ↰ ˜ ˝ غ يجـ Ỉ 2018 10 26 ќ ˜’

ˆ 12˜ ê Ţ ↰ ˜ ˝ غ يجـ ضرحى Ỉ 2020 1 1 ˜’

ˆ 13˜ يجـ ŭ [2013]37˚ ê ˚ ɢ ↰ ŭ ˫ ⅞ Ỉ 2013 9 10 ˜’

ˆ 14˜ يجـ Ⱶ 645˚ Ɒ ê ↰ . ҷ ɳ ɒ Ỉ 2013 12 7 ќ ˜’

ˆ 15˜ Ḡ Ɒ 31˚ ê ο ʒ Ʊ ʒ ↰ β Ḥ ̀E W Ỉ 2015 1 1 ˜’

ˆ 16˜ ŭ [2015]4˚ ê ˚ ɢ ↰ ŭ < ο ʒ Ʊ ʒ ↰ β ŭ Ʊ Ð W ˆ ˜ > Ỉ 2015 1 8 ˜’

ˆ 17˜ يجـ ŭ [2015]17˚ ê يجـ Ⱶ ˚ ɢ ↰ ŭ ˫ ⅞ ˆỈ 2015 4 2 ˜’

ˆ 18˜ Ḡ Ɒ 34̊ ê ǖ ˜ Ɒ W Ỉ 2015 6 5 ˜’

ˆ 19˜ [2016]45̊ ê ˜ ɢ ǖ Ḡ ƀ Ḅ ʟ ʊ Ỉ 2016 4 15 ˜’

ˆ 20˜ ˜ ǖ [2016]31̊ ê ˜ ⊢ ˜ ɢ ˥ ǖ ح ˫ ⅞ Ỉ ˆ 2016 5 28 ˜’

ˆ 21˜ [2016]150̊ ê ˜ ɢ ɣ ˛ ч ѵ ǯ ᴇ Ỉ 2016 10 26 ˜’

ˆ 22˜ ˜ W ǖ [2016]81̊ ê ˜ ⊢ W Ę ˥ ˜ ɢ ˥ ǖ ʟ ˆ ʟ Ỉ 2016 11 10 ˜’

ˆ 23˜ Ḡ Ɒ 42̊ ê ح ض W Ỉ 2016 12 31 ˜’

ˆ 24˜ Ţ ” Ţ W Ę ˥ à ˜ ⊢ W Ę ˥ ê ˜ ɢ ⅞ H Ḡ Ỉ 2017 2 7 ˜’

ˆ 25˜ ˜ ⊢ Ɒ 682̊ ê Ḡ ᵖ Ỉ 2017 10 1 ˜’

ˆ 26˜ W [2017]84̊ ê ˜ ɢ Ạ ǯ ᴇ ʟ ь ˆ ˜ ƀ Ỉ 2017 11 14 ˜’

ˆ 27˜ [2018]11̊ ê ˜ ɢ . ǯ ᴇ Ʉ Ţ Ʉ U Ỉ 2018 1 25 ˜’

ˆ 28˜ W ح ₱ [2018]266̊ ê ˜ ɢ ط ⁼ ʟ ﻫ r ẹ ẁ ṕ ẅ ѵ ˥ ŋ Ỉ 2018 5 10 ˜’

ˆ 29˜ Ţ ǖ [2018]17̊ ê ˜ ɢ ŋ ѵ Ḡ ط ⁼ ط Ỉ 2018 6 16 ˜’

ˆ 30˜ Ɒ 4̊ ê Ḡ Ę ʌ ă ь W Ỉ 2019 1 1 ˜’

ˆ 31˜ à ˜ ˥ ã Ę ᵽ 2019 4̊ ê O ˆ 2018 ˜ Ỉ 2019 1 23 ˜’

ˆ 32˜ Ę ᵽ 2019 8̊ ê ˜ ɢ ǖ < ǯ ᴇ Ð ˆ 2019 ˜ > Ę ᵽ Ỉ 2019 2 27 ˜’

ˆ 33˜ W [2019]17̊ ê ˜ ɢ ˥ ǖ < ˤ ˆ ˜ >

T > Ì 2021 9 1 ˜’

ˆ 49˜ [2021]104˚ ê ˇ G Ù Ù <2021-2022 ¶

> Ì 2021 10 28 ˜’

ˆ 50˜ Ù [2021]1524˚ ê Ù ˇ G Ù <Ľ Ń ض Ł Ŀ

ŋ > ˆ 2021 10 29 ˜’

ˆ 51˜ W ₱[2021]495˚ ê ˇ G Ù < Ḡ O ˆ 2021 ˜ >

Ì 2021 11 2 ˜’

ˆ 52˜ ê Ţ ¨ Ţ H ˇ G ˜ Ì 2021

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ˆ 53˜ [2021]108˚ ê ˇ G W Ł № Ń

ˆ ˜ˆ 2021 11 19 ˜’

ˆ 54˜ H Đ 748˚ ê ض Ĭ Ì 2021 12 1 ˜’

ˆ 55˜ à È à Đ 23˚ ê W

Ì 2021 11 30 ˜’

ˆ 56˜ W [2021]26˚ ê ˇ G Ş r ˚ Ď

Ì 2021 12 21 ˜’

ˆ 57˜ ى [2021]120˚ ê ˇ G Ù Ľ Ń ض Ł ى à ض Ĭ ġ

Ḡ ⅞ Ì 2021 12 29 ˜’

ˆ 58˜ È Ə 2021 82˚ ê ˇ G Ù < W Ş r ˜

Ł Ńˆ ˜ > È Ə Ì 2021 12 30 ˜’

ˆ 59˜ r [2022]17˚ ê ˇ G W Ł Ì 2022

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ˆ 60˜ [2022]29˚ ê ð ġ Ȝ H Ù

≠ ˇ G Ù ˜ r Ì 2022 3

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ˆ 61˜ [2022]26˚ ê ˇ G Ù < Ľ Ń ض Ł Ŀ ǯ E Ь ˚

Ď > Ì 2022 4 1 ˜ Â

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ˆ 1˜ W Ù [2015]249˚ ê Ķ W È Ń ˇ G ˜ O Ş

ŋ h r K ’ F Ì 2015 12 10 ˜’

ˆ 2˜ W˙ǖ [2015]259˝ ê Ķ ¬ W˙Ė ˀ ˇ ɢ ˀ ǖ Ķ ˀ
. ҷ ο ʒ ŋ Ỉ 2015 12 18 ˜’

ˆ 3˜ ǖ [2015]31 ˝ ê Ķ ¬ ˇ ɢ ˀ ǖ Ķ è
˫ ⅞ Ê Ỉ 2015 12 31 ˜’

ˆ 4˜ ǖ [2017]176 ˝ ê Ķ Ḡ ˀ ˇ ɢ ˀ ǖ < Ķ Ḡ
⅞ˆ 2016-2020 ˜ Ỉ 2016 9 28 ˜’

ˆ 5˜ W˙₱ [2016]141˝ ê ˇ ɢ ₩ ₹ ﻫ r
Ỉ 2016 9 30 ˜’

ˆ 6˜ ê Ķ ɒ Ỉ 2016 11 1 ˜’

ˆ 7˜ W˙ǖ [2016]37 ˝ ê Ķ ¬ ˇ ɢ ˀ ǖ Ķ ﺣ
ƀ Ỉ 2016 12 31 ˜’

ˆ 8˜ ê Ķ ŋ ɒ Ỉ 2017 5 1 ˜’

ˆ 9˜ ₱ [2017]561˝ ê ˇ ɢ ₩ Ꮒ ˇ ο Ꮒ
Ỉ 2017 9 19 ˜’

ˆ 10˜ Ķ ¬ Ψ ̀Ė ɒ 67˝ ê Ķ è Ţ ˀ¬ ˜ ﻍ ﻳﺠ
ڏ ɛ ÊW˙ Ỉ 2018 1 23 ќ ˜’

ˆ 11˜ Ķ ¬ Ψ ̀Ė ɒ 47˝ ê ˇ ɢ ќ < Ķ
ɒ > ﺿ ﺿ Ð ﺿ ═ Ỉ 2018 1 23 ќ ˜’

ˆ 12˜ Ķ ¬ Ψ ̀Ė ɒ 105˝ ê Ķ è Ţ ˀ¬ ˜ ﻍ ﻳﺠ ﻫ
r ÊW˙ Ỉ 2018 1 23 ќ ˜’

ˆ 13˜ ê Ķ < Ţ ˀ¬ ˜ ﻍ ﻳﺠ ڏ ɛ >W˙ Ỉ 2018 1
23 Ķ Ⅵ Ʉ ¬ ϥ Ψ Ⱶ ϩ Ψ ̂ ̂ Ⅵ Л Ψ ќ ˜’

ˆ 14˜

^ 18~ Ъ [2018]90 ~ ê ņ Ţ ض Ḡ Ғ ¬ Ỉ 2018 4 24 ~’

^ 19~ [2018]166 ~ ê К ¬ ~ ɢ ч Ъ К ч ط Ъ ^ 2018-2020 ~ Ỉ 2018 8 2 ~’

^ 20~ Ъ [2018]190 ~ ê К Ḡ ч ~ ɢ ч Ъ < К Ḡ ч ̈ ɛ W > Ỉ 2018 8 6 ~’

^ 21~ Ъ [2018]5 ~ ê К ч ~ ɢ < ~ L ņ ط Ъ > Ỉ 2018 11 8 ~’

^ 22~ К ¬ Ψ Ё ϼ 99 ~ ê К Ḡ ɒ Ỉ 2018 11 30 К ¬ ҂ Ψ Ⱶ ϩ Ψ ≠ Ψ ќ ˘ 2019 1 1 ~’

^ 23~ W [2019]29 ~ ê К ¬ W Ё ч ~ ɢ ч Ъ К ч ... ط Ъ Ỉ 2019 2 8 ~’

^ 24~ W [2019]58 ~ ê К ¬ W Ё ч ~ ɢ ч Ъ К ч Ғ Ỉ 2019 3 24 ~’

^ 25~ Ъ [2019]112 ~ ê ~ ɢ ч Ъ К ... Ỉ ^ 2019 5 8 ~’

^ 26~ Ъ [2019]113 ~ ê К ч ~ ɢ ѵ ч ė Ỉ 2019 5 28 ~’

^ 27~ Ъ [2019]126 ~ ê ~ ɢ Ғ К ‰ Ỉ 2019 8 2 ~’

^ 28~ Ъ [2019]132 ~ К ч ~ ɢ ч Ъ ê К Ⱨ ҂ ĭ W Ỉ 2019 9 2 ~’

^ 29~ Ъ [2019]134 ~ К ч ~ ɢ ч Ъ ê К ч ~ ɢ ч Ъ К ч β O L ė ¬ Ỉ 2019 9 9 ~’

^ 30~ Ъ [2019]66 ~ ê ~ ɢ ₩ ѵ ч . ҁ ņ ° Ъ Ỉ 2019 9 20 ~’

^ 31~ ... [2019]26 ~ ê К ð ė ... З ч à К ч à К Ъ ė ϩ Ψ ~ ɢ ... ¬

Ỉ 2019 10 16 ˜’

ˆ 32˜ Ķ ¬ Ɋ Ψ Ⱶ Ƨ Ψ˙Ɛ ɒ 83˜ ê Ķ ى

ɒ Ỉ 2020 1 1 ˜’

ˆ 33˜ Ǔ [2020]5˜ ê Ķ ﻯ Ķ ﻯ ˜ ɢ ₩ ₰ ى ﻯ β ƀ Ỉ 2020 1 16 ˜’

ˆ 34˜ Ǔ [2020]6˜ ê Ķ ¬ ˜ ɢ ₰ ė Ⱨ Ʇ Ⱨ Ս Ỉ 2020 4 7 ˜’

ˆ 35˜ Ẇ [2020]50˜ ê Ķ ¬ Ẇ˙Ɛ ﻯ ˜ ɢ ﻯ Ǔ Ķ Ǔ Ⱨ ɒ Ỉ 2020 4 20 ˜’

ˆ 36˜ Ẇ [2020]83˜ ê Ķ ¬ Ẇ˙Ɛ ﻯ ˜ ɢ ﻯ Ǔ Ķ Ỉ 2020 6 19 ˜’

ˆ 37˜ Ǔ [2020]29˜ ê Ķ ﻯ ˜ ɢ ₩ ₰ ﻯ ƀ Ỉ 2020 6 22 ˜’

ˆ 38˜ Ǔ [2020]48˜ ê Ķ ﻯ ˜ ɢ ₩ . ľ Ⱡ Ỉ 2020 11 6 ˜’

ˆ 39˜ ê Ķ ° Ḇ ɒ Ỉ 2020 11 27 ḱ ˜’

ˆ 40˜ ê Ķ ɒ Ỉ Ķ ¬ Ɋ Ψ Ⱶ Ƨ Ψ Ⱨ Ⱶ ﺽ Ψ ˇ 2020 11 27 ḱ ˜’

ˆ 41˜ [2021]58˜ ê ˜ ɢ Ⱨ ƀ ﻁ ═ ľ Ÿ Ⱡ Ỉ 2021 3 4 ˜’

ˆ 42˜ [2021]81˜ ê Ķ ﻯ ˜ ɢ ₰ Ũ’ Ỉ 2021 4 4 ˜’

ˆ 43˜ Ǔ [2021]5˜ ê Ķ ¬ ˜ ɢ ﻯ Ǔ Ķ ﺟ ė Ψ Ǔ Ⱶ ﺽ ɷ Ɉ ⅞ ė 2035 Ỉ 2021 4 6 ˜’

ˆ 44˜ [2021]92˜ ê Ķ ﻯ ˜ ɢ < ˜ ɒ > ˆ ˜ Ỉ 2021 4 9 ˜’

ˆ 45˜ [2021]143˜ ê Ķ ¬ ˜ ɢ ﻯ Ǔ Ķ Ǔ ľ Ⱶ ﺽ Ɉ Ⱡ ⅞ Ỉ 2021 8 11 ˜’

ˆ 46˜ Ẇ[2021]30˜ ê Ķ Ƨ Ψ Ẇ˙Ɛ ˜ ɢ ﻯ Ǔ Ķ ˜ Ḡ ﻯ ¬ ⅞ 2021-2025 ˜ à Ķ ˜ Ḡ ﻯ

˩ ⅞ˆ 2021-2025 ˜ à Ķ ˜ ⌈ ى Ḡ ˥ ˩ ⅞ˆ 2021-2025 ˜ Ỉ 2021 8 22 ˜’

ˆ 47˜ Ṻ [2021]12 ˆ ê Ķ ˛ ˜ ɢ ˥ Ṻ Ķ Ỉ ˥ ضم ɲ Ŀ Ḡ ⅞ Ỉ 2021 8 22 ˜’

ˆ 48˜ [2021]3 ˆ ê Ķ Ƨ Ψ ˜ ɢ ˥ Ṻ < Ķ ₩ Ỉ ضم ⋮ ضم ĿˆˆΞ ˩ ˆ 2021-2023 ˜ > ˆ 2021 10 26 ˜’

ˆ 49˜ Ṻ [2021]8 ˆ ê Ķ ˦ ˜ ɢ ˥ Ṻ < Ķ Ỉ ˥ ضم ɲ Ŀ ˥ . ᵀ ƀ > Ỉ 2021 11 13 ˜’

ˆ 50˜ [2021]249 ˆ ê Ķ ˦ ˜ ɢ ₩ ˥ Ţ ƀ Ỉ 2021 11 19 ˜’

ˆ 51˜ Ṻ [2021]9 ˆ ê ˜ ɢ ˥ Ṻ Ķ 2021-2022 ↰ ˵ ط ˩ Ỉ 2021 11 25 ˜’

ˆ 52˜ [2022]1 ˆ ê ˜ ɢ ˥ Ṻ ê Ķ è Ţ ¨ Ţ à ي Ⱶ ˜ ɢ ~ ط Ê Ỉ ˆỈ 2022 4 3 ˜’

ˆ 53˜ ˛ Ψ ˋE ƿ 11 ˆ ê Ḡ ᴅ Ỉ ˆ 2018.1.2˜’

ˆ 54˜ ˛ Ψ ˋE ƿ 16 ˆ ê ᴅ Ỉ ˆ 2018.8.30˜’

ˆ 55˜ [2019]6 ˆ ê ˛ ˥ Ṻ < ˜ ɢ ∀ Ş Ṻ > Ỉ

ˆ 56˜ [2019]7 ˆ ê ˛ ˜ ɢ ˥ Ṻ < W ˥ ⅞№ > Ỉ

ˆ 57˜ W [2019]19 ˆ ê ˛ W`E ˜ ɢ ˥ Ṻ < Ḡ ط ƀ > Ỉ

ˆ 58˜ W Ṻ [2019]39 ˆ ê ˜ ɢ ˥ Ṻ < ˙ > Ỉ 2019 7 17 ˜’

ˆ 59˜ W [2020]3 ˆ ê ˛ W`E ˜ ɢ ƀ Ỉ 2020 01 17 ˜’

ˆ 60˜ [2020]8 ˆ ê ˛ ˜ ɢ ˥ Ṻ Ḡ ˥ 2020 ˩ ⅞ Ỉ 2020 4 10 ˜’

ˆ 61˜ ₱[2020]17 ˜ ê Ǔ ʒ ο ʒ № ʒ
ƀ Ỉ

ˆ 62˜ W˙ [2020]49 ˜ ê ˛ W˙Ē ˜ ɢ ㇔ Ǔ
ɣ Ỉ 2020 10 29 ˜’

ˆ 63˜ [2020]65 ˜ ê ˛ ˜ ɢ Ķ Ⅵ
‥ ‰ └ Ⅵ ж Ỉ

ˆ 64˜ Ǔ[2021]6˜ ê ˛ ˜ ɢ ㇔ Ǔ ⁞ ₩ ㇔ Ŀ
№ Ⅵ Ỉ 2021 05 21 ˜’

ˆ 65˜ Ǔ[2022]2˜ ê ˛ ˜ ɢ ㇔ Ǔ ⁞ Ⅵ ض Ɽ Ŀ
Ḡ ⅞ Ỉ 2022 01 21 ˜’

ˆ 66˜ W˙ [2018]62 ˜ ê ʧu ǎ˛ W˙Ē ˜ ɢ ㇔ Ǔ ʧu ǎ
Ỉ 2019.12.25˜’

ˆ 67˜ W˙ [2019]30 ˜ ê ˜ ɢ ㇔ Ǔ ʧu ǎ Ḡ
ط ƀ Ỉ 2019.10.18˜’

ˆ 68˜ W˙ [2019]29 ˜ ê ˜ ɢ ㇔ Ǔ ʧu ǎ Ⅵ ‥
ط ƀ Ỉ 2019.10.18˜’

ˆ 69˜ W˙ [2021]34˜ ê ʧu ǎ˛ W˙Ē ˜ ɢ ㇔ Ǔ ʧu ǎ
ɣ Ỉ 2020.11.11˜’

ˆ 70˜ W˙ [2021]3˜ ʧu ǎ˛ W˙Ē ˜ ɢ Ķ Ⅵ
‥ ‰ └ Ⅵ ж ƥ(2021.4.9) Â

1.1.3

ˆ 1˜ ê ǔ ᴇ ↕ Ỉˆ HJ2.1-2016˜ ’
ˆ 2˜ ê ǔ ᴇ ↕ Ỉˆ HJ2.2-2018˜ ’
ˆ 3˜ ê ǔ ᴇ ↕ ض Ỉˆ HJ2.3-2018˜ ’
ˆ 4˜ ê ǔ ᴇ ↕ ض Й Ỉˆ HJ610-2016˜ ’
ˆ 5˜ ê ǔ ᴇ ↕ Ỉˆ HJ2.4-2009˜ ’
ˆ 6˜ ê ǔ ᴇ ↕ ى ˆ ˜ Ỉˆ HJ964-2018˜ ’
ˆ 7˜ ê ᴇ ↕ Ỉˆ HJ169-2018˜ ’
ˆ 8˜ ê ǔ ᴇ ↕ ǔ Ỉˆ HJ19-2011˜ ’
ˆ 9˜ ê ↕ Ỉˆ HJ2000-2010˜ ’

ˆ 10˜ ê ↕ Ì ˆ HJ2015-2012˜ ’

ˆ 11˜ ê ↕ Ì ˆ HJ2035-2013˜ ’

ˆ 12˜ ê ↕ Ì ˆ HJ2034-2013˜ ’

ˆ 13˜ ê Ì ˆ HJ589-2010˜ ’

ˆ 14˜ ê ↕ Ì ˆ HJ2042-2014˜ ’

ˆ 15˜ ê ↕ Ì ˆ HJ 819-2017˜ ’

ˆ 16˜ ê . Ì HJ 1139-2020˜’

ˆ 17˜ ê ↕ Ì ˆ HJ942-2018˜ ’

ˆ 18˜ ê . Ì ˆ HJ 1102-2020˜ ’

ˆ 19˜ ê ’Ƴ Ì ’

ˆ 20˜ ê O Ì 2021 ˜’

ˆ 21˜ ê W ⁄8 Ì ˆ ˜ ˆ 2015.11˜ ’

ˆ 22˜ ê Ķ ⁄8 Ì ˆ 2016.9.26˜ ’

ˆ 23˜ ê Ķ ⁄8 Ì ’

ˆ 24˜ ê ⁄8 Ì ˆ 2018-2035 ˜ Â

1.1.4

ˆ 1˜ Ì ˆ 1˜’

ˆ 2˜ ˆ 2˜’

ˆ 3˜ ʒ ˆ 3˜’

ˆ 4˜ ˆ 4˜’

ˆ 5˜ Ķ ˜ К ̀Ẽ ̃ 4.5 U 6 / К ® ̃ [2007]21 ̃ ˜ˆ 5˜’

ˆ 6˜ Ķ ˜ К ̀Ẽ ̃ 45000t/a 6 / К ® Ì [2010]12 ̃ ˜ˆ 6˜’

ˆ 7˜ Ķ ˜ К ̀Ẽ ̃ 45000t/a 6 / К ® ̃ U Е Ì 7˜’

ˆ 8˜ Ķ ˜ К ̀Ẽ ̃ . ʒ ˜ ̃ [2014]49

˜ ˜ Đ 8˜’

ˆ 9˜ ŧfu ð Ḡ ê ˜ ɢ Ķ ˆ ˜ Ķ ˋ Ē . ˚

ģ ج ٧ . ٦ Ḡ Ỉ [2018]31

˜ ˜ Đ 9˜’

ˆ 10˜ ŧfu ð Ḡ ê ˜ ɢ Ķ ˆ ˜ Ķ ˋ Ē Đ

ڒ ɒ Ỉ ɒ [2018]96˜ ˜ Đ 10˜’

ˆ 11˜ ŧfu ð Ḡ ê ˜ ɢ Ķ ˆ ˜ Ķ ˋ Ē .

ڒ ɒ Ỉ ɒ [2018]207˜ ˜ Đ 11˜’

ˆ 12˜ ﷺ Ḡ ê ˜ ɢ Ķ ˆ ˜ Ķ ˋ Ē ģ

ڒ ɒ й Ỉ [2019]7˜ ˜ Đ 12˜’

ˆ 13˜ ﷺ Ḡ ê ˜ ɢ Ķ ˆ ˜ Ķ ˋ Ē ģ

ˆ ₩ ˜ ɒ Ḡ Ỉ Đ 13˜’

ˆ 14˜ ٧ ... □ˆ Đ 14˜’

ˆ 15˜ йˆ Đ 15˜’

ˆ 16˜ ˜ ˆ Đ 16˜’

ˆ 17˜ ŧfu ģ ج ٧ ˆ Đ 17˜ Â

1.2

1.2.1

٧ مخ ڪ غ ˘ ɛ ٧ ṗ

ץ ї ’ № ˘ № h ġ ’ ...

ضرض ٧ w ٧ ⅞ ˘ U h ڪ مخ ڒ

ầ ڒ مخ˘ ŭ Ḡ ˜ ь

... ˘ ɾ Ḡ ⁜ ₹ L ầ ⋮ ї ˘

ч ι ш ˘ ч ι ═ ш ˘ ą ⌠ ầ

ψ ė ₩ Â

1.2.2

˜ ɒ˘ ˘ ш ج ầ ģ ầ

ė Ķ Ḡ ˘ № Ỿ Ղ ˘

Ţ Ղ ↄ ˚ ˘ ŭ Ḡ ... ầ˜

Â ɛ Ţ l’ ˜ ˚˚ ʒ ɣ ⅞ Ŀàl’ Ŀàl’

˚˚ Ŀàl’ Ŀàl’ Ʉ ˆ̃ Ĭ Ŀ ∕ ↕ ˘ ˜Ḥ№ ≠ ˘ Ḡ

ɒ й ╠ Ӣ˘ ɛ Ŀ Â

1.2.3

ĭ Ŀ ∀ ˘ ɛ ϒ № ч ˘ ϒ

ǯ ɛ à ɾ ǯ ɛ ɣ ɛ ч ƀ ˘ □

Â

1.3

1.3.1

’ ɣ ∀ ’ ˘ ɛ № ч ɣ Â

1.3.1.1

h ɲ ч à à كل ĭ Â h ǯ

1.3-1 Â

1.3-1

	˚˚ ǯ h ˗ ṗ	h ɲ ǯ
	à ى à à à ą	
	˗ 2 à	SS à COD à BOD à
	ƀ ʒ à كل	كل
	ضر ى à ɲ ĭ ∖ ضر ى	ش à ى

1.3.1.2

h ɲ ч à à كل ɣ ɾ Â ɛ h

ǯ ɲ ≠ 1.3-2 Â

1.3-2

	ɲ ǯ			
			كل	ھ
	à VOCs ˆ ϒ ˜ à SO_2 à NOx à à à	COD_{Cr} à BOD_5 à à ą	L_{Aeq}	´ à ʒ à ʒ à ´ ɣ ĭ à ɒ à ɾ à ج ش
	ǯ	—	—	ǯ
ضر	—	ǯ	—	ǯ
ضر Ӣ	—	ǯ	—	ǯ
	—	—	ǯ	—
	ǯ	ǯ	ǯ	ǯ
ى	ǯ	ǯ	—	ǯ

			—	—

“—” Â

1.3.2

Ï W 7⁄8 Е 1.3-3 Â

1.3-3

	SO_2 à NO_2 à PM_{10} à $PM_{2.5}$ à CO à O_3 TSP à	--
	pH à à SS à COD_{Cr} à BOD_5 à Е	--
	pH à à à à Е	--
	K^++Na^+ à Ca^{2+} à Mg^{2+} à CO_3^{2-} à HCO_3^-	
	Leq	Leq
	pH à à à Е à 1,1-Н Ə à 1,2-Н Ə à 1,1-Н Ə à -1,2-Н Ə à -1,2-Н Ə à Н à1,2-Н ʒ à1,1,1,2- Ə à1,1,2,2- Ə à 1,1,1 Ə à 1,1,2 Ə à 1,2,3 ʒ à Ə à à à 1,2-Н à 1,4-Н à Ə à Ə à à Н + Н à Н à à à 2- à [a] à [a] à [b] à [k] à àН [a h] à [1,2,3-cd] à à	

1.4

1.4.1

Í 1.4-1~ 1.4-7 Â

1.4-1

	ê ‰ Î GB3095-2012~	Н
	ê Е ↕ Í Î ˆ HJ2.2-2018~	D Ì Ɍ

ضر	ê ضر	‰ Ì GB3838-2002˜	ɲ
	ê '	‰ Ì GB5084-2021˜	1 ضر ƀ
ضر Ѝ	ê ضر Ѝ	‰ Ì GB/T14848-2017˜	ƫ
كل	ê	‰ Ì GB3096-2008˜	2 à 3 à 4a

حى

			.	.			
‰ ų	Ů1000	Ů3.0	Ů1.0	Ů0.02	Ů0.002	Ů3.0	Ů100
							Ѓ Е
‰ ų	Ů0.005	Ů0.1	Ů0.3	Ů0.01	Ů0.01	Ů0.001	Ů0.05
	.						Ни
‰ ų	Ů0.05	Ů0.20	Ů1.00	Ů1.00	Ů0.01	Ů0.7	Ů0.5
	╕	Ca^{2+}	Mg^{2+}	CO_3^{2-}	HCO_3^-	K^+	
‰ ų	Ů0.3	--	--	--	--	--	Ů200

1.4-5 dB(A)

≠		
2 ‰ ų	60	50
3 ‰ ų	65	55
4a ‰	70	55

1.4-6 mg/kg

~		ų			
		pH Ů 5.5	5.5 ¸ pH Ů 6.5	6.5 ¸ pH Ů 7.5	pH ¸ 7.5
1	^ ~	0.3	0.3	0.3	0.6
2	^ ~	1.3	1.8	2.4	3.4
3	^ ~	40	40	30	25
4	^ ~	70	90	120	170
5	^ ~	150	150	200	250
6	^ ~	50	50	100	100
7		60	70	100	190
8		200	200	250	300

1.4-7 mg/kg

Е	ų Ни ри
ғ	
	60
	65
^ Ѓ Е ~	5.7
	18000
	800
	38
	900
Ů	
ро .	2.8
о	0.9
	37
1,1-Ни Ə	9
1,2-Ни Ə	5
1,1-Ни Ə	66
-1,2-Ни Ə	596
╖ -1,2-Ни Ə	54
Ни	616
1,2-Ни Ş	1

1,1,1,2-ضمه Ə	2.6
1,1,2,2-ضمه Ə	1.6
ضمه Ə	11
1,1,1ٜ Ə	840
1,1,2ٜ Ə	2.8
ٜ Ə	2.8
1,2,3ٜ Ş	0.5
Ə	0.43

	˜ G ↰ Ǖ ê ˙ Ъ Ì W Ǖ [2019]39 ˚	NO_x ‰
	ê ˜ Ǐ‍ ‰ Ì GB/T31962-2015˜ Ē ˜	GB/T31962-2015 1A ‰ ṿ
كل	ê كل ṿ Ì GB12523-2011˜	Í
	ê ʒ ο ʒ ↰ كل ‰ Ì GB12348-2008˜	3 à 4a
r	ê W ʒ r ‰ Ì ˆ GB18599-2020˜	Í
	ê ↰ ‰ Ì ˆ GB18597-2001˜ ǐ 2013 ǩ ↰	Í

1.4-9

˚

. ʒ Ĩ

˜

		U Â	
كل	ضي ٧ W ٧ ≠	3 W ٧	
	˜ ˛ ٥	╠ U E ˜ ṕ كل G 3dB(A)	
	╠ U ضي ٧ ˜	˜ ˛ ٥ ˜ ˜ Ь	
ضر Ѝ	ققم	G ň	
		Ь	
	٥ Ş ˜	٦	Ѕ
		٧	٧ˆ E1˜
	٥ Ş ˜	٦	Ѕ
		٧	٧ˆ E1˜
حى	˜ ققم ˜ ˜ ˜

5		N	116.196E	36.859N	765	403	115
6	ģ 2#	N	116.191E	36.859N	780	2800	1400
7		E	116.212E	36.845N	840	3385	967
8		E	116.212E	36.847N	880	567	162
9		NE	116.210E	36.855N	970	417	119
10		NE	116.214E	36.857N	1210	1722	492
11	Ķ	SSW	116.187E	36.835N	1220	637	182
12		E	116.215E	36.845N	1220	630	180
13	ģ	NNE	116.204E	36.860N	1230	560	160
14		N	116.200E	36.863N	1330	462	132
15		ENE	116.215E	36.855N	1340	3015	--
16		SSE	116.205E	36.830N	1390	1593	455
17		NNE	116.205E	36.862N	1390	1911	546
18		SW	116.181E	36.838N	1390	252	72
19		SSE	116.208E	36.832N	1400	830	237
20		SW	116.183E	36.836N	1420	347	99
21		ENE	116.219E	36.851N	1430	1365	390
22		E	116.218E	36.846N	1490	770	220
23	ģ 1#	NNW	116.191E	36.865N	1490	388	194
24		E	116.219E	36.848N	1520	743	212

	29		SSW	116.190E	36.830N	1690	492	140
	30	˛	NE	116.214E	36.862N	1700	2695	770
	31	˙	SSE	116.210E	36.830N	1710	710	200
	32	˚	NE	116.211E	36.863N	1730	98	28
	33	˛	NNE	116.204E	36.865N	1760	945	270
	34	˘ ˛ ˇ	SSE	116.208E	36.829N	1770	400	114
	35		N	116.199E	36.869N	1800	469	134
	36		WSW	116.172E	36.842N	1810	693	198
	37	Ɣ	NNE	116.210E	36.864N	1820	1050	300
	38	˫	ENE	116.222E	36.851N	1830	560	160
	39	˘ ˚ Ĥ	NE	116.212E	36.864N	1850	1670	--
	40	˘ ˚ Ţ	NNE	116.202E	36.867N	1860	350	--
	41	O ƃ	NE	116.219E	36.860N	1870	791	226
	42	˘ ˚ ʃ	NNE	116.205E	36.867N	1880	300	--
	43	ʃ	NNW	116.191E	36.867N	1890	116	33
	44	ƃ	NE	116.215E	36.865N	1980	2205	630
	45	ʓ˜ Ɣ	ENE	116.224E	36.850N	2000	994	284
	46		W	116.170E	36.849N	2040	787	225
	47	Ķ ʒ	NNW	116.186E	36.868N	2060	850	--
	48	˛	NE	116.217E	36.865N	2150	840	240
	49	˫ ɣ	NNE	116.208E	36.868N	2170	1610	460
	50	Ţ	ENE	116.226E	36.850N	2170	882	252
	51	Ķ	NNE	116.768E	36.229N	2250	462	132
	52		NE	116.216E	36.870N	2370	840	240
	53		NW	116.176E	36.869N	2390	539	154
	54	Ɣ ˋĒ˜	NE	116.221E	36.866N	2430	1820	520
	55	˘ ˚ ˋĤ ˛	ENE					

	57	ɢ	N	116.191E	36.878N	2550	1386	396	
	58	˛ ɣ ˙	NE	116.220E	36.868N	2580	350	100	
	59	˙	NE	116.219E	36.867N	2580	630	180	
	60	ɲ ˙	ENE	116.224E	36.859N	2590	578	165	
	61	ŋ Ţ	E	116.231E	36.846N	2600	400	--	
	62	˙	NE	116.222E	36.865N	2600	1190	340	
	63	Ɋ	S	116.191E	36.821N	2610	613	175	
	64	ʬ ǟ Ḡ ã̄	E	116.231E	36.850N	2620	600	--	
	65	ʬ ɯ̄ Ţ	NE	116.217E	36.869N	2630	1500	--	
	66	≠ ʒ ˙	E	116.231E	36.842N	2630	1554	444	
	67	Ķ ˙	ENE	116.229E	36.858N	2650	81	23	
	68	˙	NE	116.220E	36.868N	2650	420	120	
	69	≠ ˙ ʯ	ENE	116.231E	36.854N	2670	665	190	
	70	ʬ ǟ ˛ ʯ	SSE	116.262E	36.868N	2720	150	--	
	71	ʬ ǟ ˛ ʯ	NE	116.222E	36.867N	2730	200	--	
	72	Ķ	NW	116.172E	36.871N	2740	784	224	
	73	˙ ʯ	ENE	116.230E	36.855N	2750	1890	540	
	74	ʯ	E	116.231E	36.847N	2770	1260	360	
	75		S	116.193E	36.819N	2940	588	168	
	76	ʯ	NE	116.215E	36.873N	2970	5355	1530	
	77		ESE	116.233E	36.839N	2970	732	209	
	78		SSW	116.179E	36.822N	2970	221	63	
	79	˙ ʯ	NE	116.231E	36.860N	2980	2450	700	
	80	⇔ ʒ ʯ	NNE	116.208E	36.875N	3010	840	240	
	81		NNW	116.190E	36.877N	3020	455	130	
	82	ɳ ʯ	ENE	116.234E	36.852N	3020	315	90	
	83	ѽ ˙ ʯ	NE	116.226E	36.867N	3050	840	240	
	84	ɤ ˙	NE	116.228E	36.866N	3090	315	90	
	85	ɤ ɳ Ţ	NE	116.222E	36.871N	3130	875	250	

86	ġ	ENE	116.235E	36.853N	3130	385	110	
87		WNW	116.166E	36.862N	3170	1064	304	
88		NW	116.168E	36.869N	3170	539	154	
89		SE	116.230E	36.829N	3180	683	195	
90		NNE	116.208E	36.877N	3210	998	285	
91	ﺝ	NE	116.232E	36.863N	3210	210	60	
92		W	116.159E	36.855N	3220	546	156	
93	ﺓ	NE	116.230E	36.866N	3230	595	170	
94	٧	ENE	116.230E	36.855N	3260	420	120	
95	ﺝ	NE	116.225E	36.871N	3270	1260	360	
96	ʧu ă ʒ Ţ	E	116.237E	36.844N	3290	350	--	
97	ﺓ ٧ ٦	E	116.237E	36.843N	3320	840	240	
98	Ţ ı O	ENE	116.237E	36.857N	3350	630	180	
99	ˋĒ ð ٧	ENE	116.236E	36.860N	3370	87	25	
100	٦ ٦ ﺓ	NE	116.222E	36.874N	3380	1260	360	
101	ض ﺓ	NE	116.224E	36.873N	3380	560	160	

	115	˜	ENE	116.240E	36.855N	3620	1260	360	
	116		SSW	116.179E	36.815N	3620	546	156	
	117		ENE	116.238E	36.863N	3640	315	90	
	118	⇔ ʒ	NE	116.236E	36.865N	3670	2205	630	
	119		NE	116.232E	36.870N	3680	455	130	
	120		E	116.241E	36.844N	3680	840	240	
	121		ENE	116.242E	36.849N	3690	840	240	
	122		SW	116.167E	36.821N	3700	364	104	
	123	⇔	ENE	116.241E	36.858N	3710	560	160	
	124		SE	116.236E	36.829N	3710	455	130	
	125		ESE	116.238E	36.832N	3710	728	208	
	126		SW	116.163E	36.824N	3770	504	144	
	127	↔	NW	116.159E	36.868N	3800	462	132	
	128		NE	116.239E	36.864N	3840	3430	980	
	129		WSW	116.163E	36.824N	3850	798	228	
	130		NE	116.231E	36.874N	3900	2310	660	
	131	ʒ	ENE	116.243E	36.859N	3980	3850	1100	
	132	Ķ	NE	116.237E	36.870N	4030	123	35	
	133		NNW	116.188E	36.886N	4060	546	156	
	134		NE	116.234E	36.875N	4110	840	240	
	135		SSE	116.210E	36.809N	4130	637	182	
	136		NE	116.230E	36.878N	4140	991	283	
	137		ESE	116.244E	36.823N	4170	420	120	
	138	ʜ	SE	116.233E	36.819N	4170	886	253	
	139		NE	116.242E	36.866N	4190	1050	300	
	140		NE	116.240E	36.870N	4220	370	200	
	141		ENE	116.247E	36.857N	4250	100	--	
	142		S	116.189E	36.807N	4300	245	70	
	143		ENE	116.249E	36.851N	4310	700	200	
	144		E	116.248E	36.843N	4310	315	90	
	145		ENE	116.249E	36.855N	4350	300	--	
	146	θ	SSE	116.218E	36.809N	4350	126	36	

	147		ENE	116.249E	36.849N	4370	630	180	
	148		SE	116.234E	36.816N	4430	168	48	
	149		NE	116.246E	36.866N	4450	462	132	
	150		NE	116.244E	36.870N	4490	1260	360	
	151		NNE	116.206E	36.889N	4500	672	192	
	152		NE	116.246E	36.867N	4550	525	150	
	153		ESE	116.250E	36.836N	4550	616	176	
	154		SW	116.163E	36.824N	4580	210	60	
	155		NE	116.242E	36.874N	4610	3360	960	
	156		ESE	116.248E	36.829N	4610	455	130	
	157		ENE	116.252E	36.848N	4620	700	200	
	158		SE	116.226E	36.809N	4660	536	153	
	159		NW	116.145E	36.866N	4730	269	77	
	160		NNW	116.180E	36.891N	4760	578	165	
	161		E	116.253E	36.843N	4760	539	154	
	162		SSE	116.200E	36.802N	4760	357	102	
	163		SSW	116.173E	36.806N	4780	259	74	
	164		NNE	116.209E	36.892N	4870	809	231	
	165		ENE	116.256E	36.858N	4940	1015	290	
	166		W	116.139E	36.851N	4940	315	90	
	167		NE	116.254E	36.863N	4980	462	132	
	168		ENE	116.257E	36.847N	4990	182	52	
	169		S	116.188E	36.798N	5080	432	123	
	170		SW	116.212E	36.798N	5060	510	145	
	171		SW	116.144E	36.819N	5160	815	232	
	1		NE			6200	——	——	(GB3838-2002)
	2		W			400	——	——	(GB3838-2002)
	1								(GB/T14848-2017)
	1	——				200	——	——	(GB3096-2008) 2
	1	——				200	——	——	(GB36600-2018)

7	1-2	2849.26	1# 2#	——	[2015]16	2015.6	2016.7	[2016]6 2016 12		√
8		3288.39	2# 1 4 SNCR	——	[2016]46	2016.11	2016.7			√
9	3×130t/h	1300	FOSS	——	[2017]26 2017.5.26	2017.7	2017.7	2018 6		√
10	5×130t/h	2456.87	1# 2# 3# 4# 5×130t/h	2018-371526-44-03-044625	[2018]208 2018.12.21	2018.12	2018.12	2019 3		√
11		170	EPS 20	2019-371526-50-03-002920	[2019]24 2019.04.25	2019.4	2020.3	2020.4		——
8	45000 6 /	13420		[2005]95	2007.9.20 [2007]21	2006.2	2009.5	[2010]12 2010 5		√

9		634	15 15 6	——	[2017]377 2017 9 11	2017 10	2017.12	2018 6		√
10		36000	135	——	[2014]49 2014 9 27	2016.10	2017.12	2018 6		√
11		1150.87	2850	——	2011 7 6 [2022]18	2015.10	2017.12	2018 6		√
12		956	50		[2018]96 2018 7 20	2018.07 .21	2019.02.20	2019 3 16		√
13		650	80	2017-371526-30-03-0 72538	[2018]207 2018 12 21	2018.12	2018.12	2019 3 16		√
14		185	50	——	20173715260000 0255	-	2017.9			——
15		120	1500	——	20173715260000	——	2017.8	——		——

					0166					
16		116	450	——	20173715260000 0170	——	2017.7	——		——
			6							
17		100000	3.5	——						

										√
24	15 VOC	5000	VOC	——	[2019]56 2019.07.18	2019.08	2019.08	2019.08.27		√
25	10	65491.6	10 130	——	2012.6.27 [2012]10	2014.12	2016.2	2016.10.9 [2016]25		√
26	VOCs	3053.8	VOCs		[2018]209	2018.12	2019.01	2019.03.16		√
27	20 /	20000	20	2020-371526-41-03-001799	[2020]3					——
28	20	987	20	2020-371526-41-03-135626	[2020]212					——

2.2

2.2.1

2.1-1

45000t/a 6 /

2.1-1

91371526168212752800 5U

2.2.2

2.2-1

2.2-1

45000t/a 6 /	6	45000t	2
	6	20500t	90%
	6	35000t	2
	6	20000t	
		30	--
		62	--
		20	--
		1.8	--
		84	--
		100	--
		50	--
		80 m^2	--
		50	--
		1500	--
		450	--

2.2.3

2.2-2

2.2-2

	45000t/a 6 /	3 2
		1 1 1 1
		1
		1
		1
		1
		1 1
		2
		1
		1
		1
	1	1 1
	2	1 1
	3	1
	4	1
		1
		2 1 1
		8 1 2 1 170m^3 2 515m^3

			1 30m DA024 20m DA018 25m DA029
		45000t/a 6 /	
			/ /
			759m^3

2.2.4

2

2 1

4 3

2.2-1

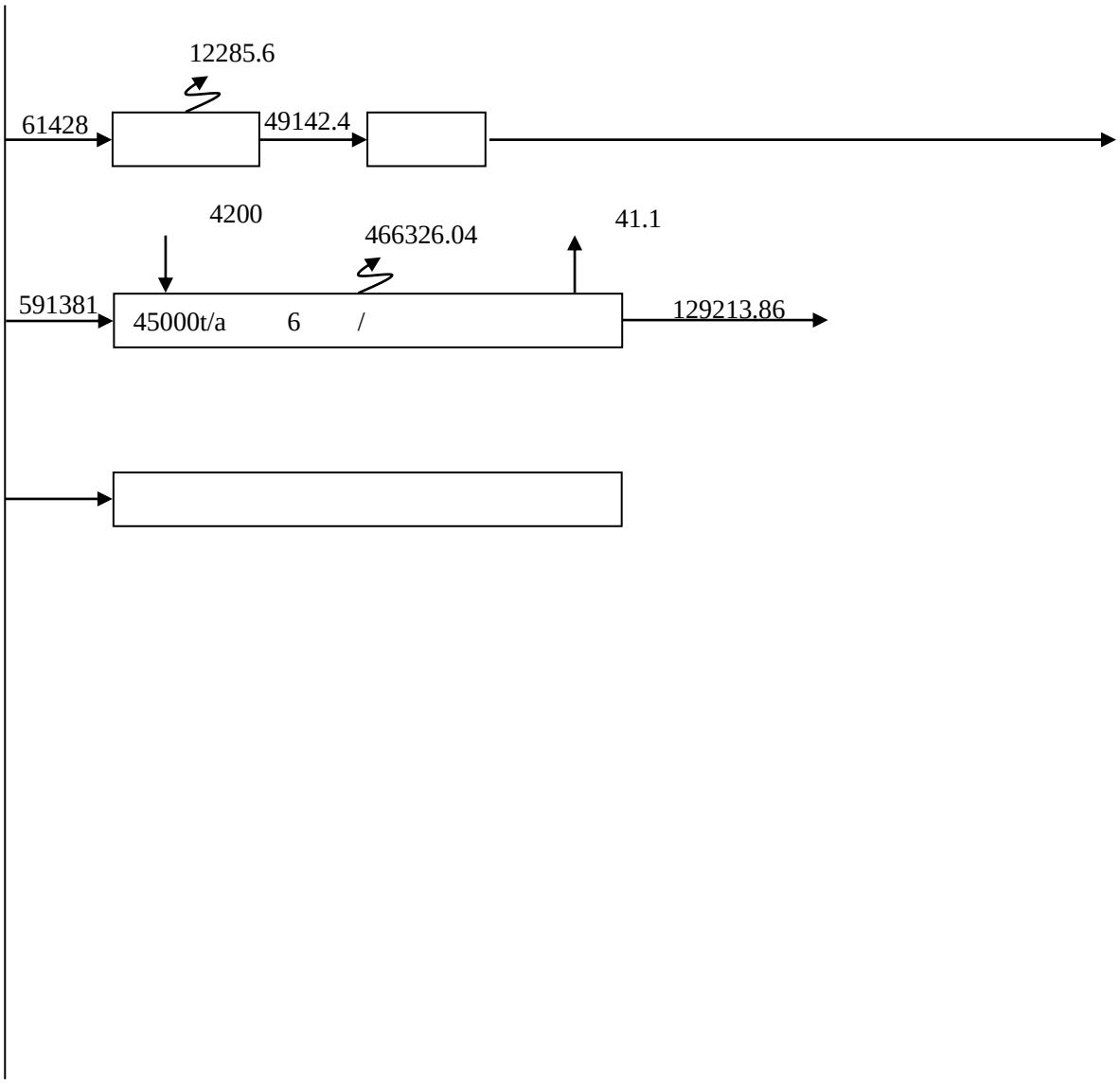
2.2.5

2.2.5.1

2.2-3

2.2-3

1	45000t/a	6	/


12285.6
61428
49142.4
4200
466326.04
41.1
591381
45000t/a 6 /
129213.86

2.2-2 m^3/a

G1-3 G1-4

S1-1

S1-2

G1-5

G1-5 1

40m DA012 DA017 DA022

S1-3

S1-4

3

10%

0.5%

10%

4

0.06%

2

5

70%

80~85%

G1-6

1 40m

DA012 DA017 DA022

S1-5

2.2.6.1.2

1

20Mpa

G1-7

2

2

G1-8

25m DA023 DA026

S1-6

3

190

G1-9

20~25

S1-7

15m DA027 DA028

4

S1-8 S1-12

2.2.6.1.3

S1-9

2.2.6.1.4

20~30

- 1.3~2.3

pH 25

G1-10 G1-11

G1-16

1

30m DA013 DA019

G1-12

30m DA013 DA019

G1-13

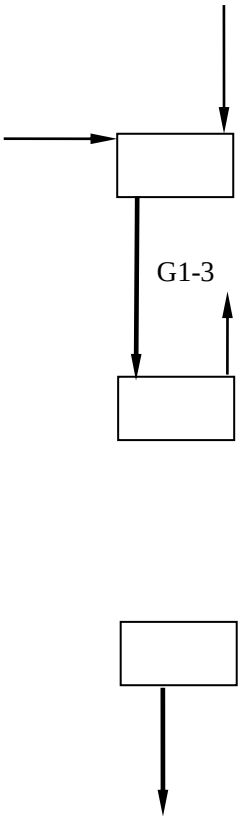
G1-14 G1-15 G1-13 G1-14 G1-15

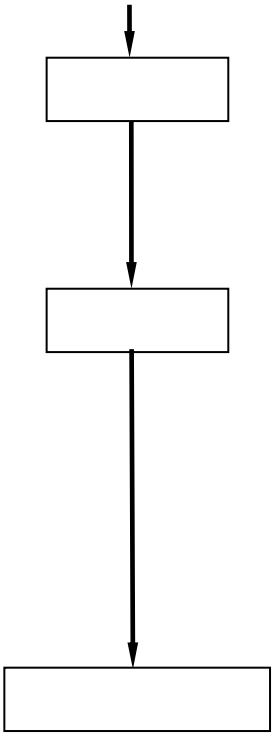
35m DA014 DA015 DA016

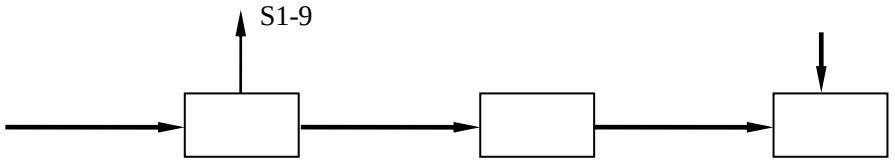
DA020 DA021 S1-10

S1-12

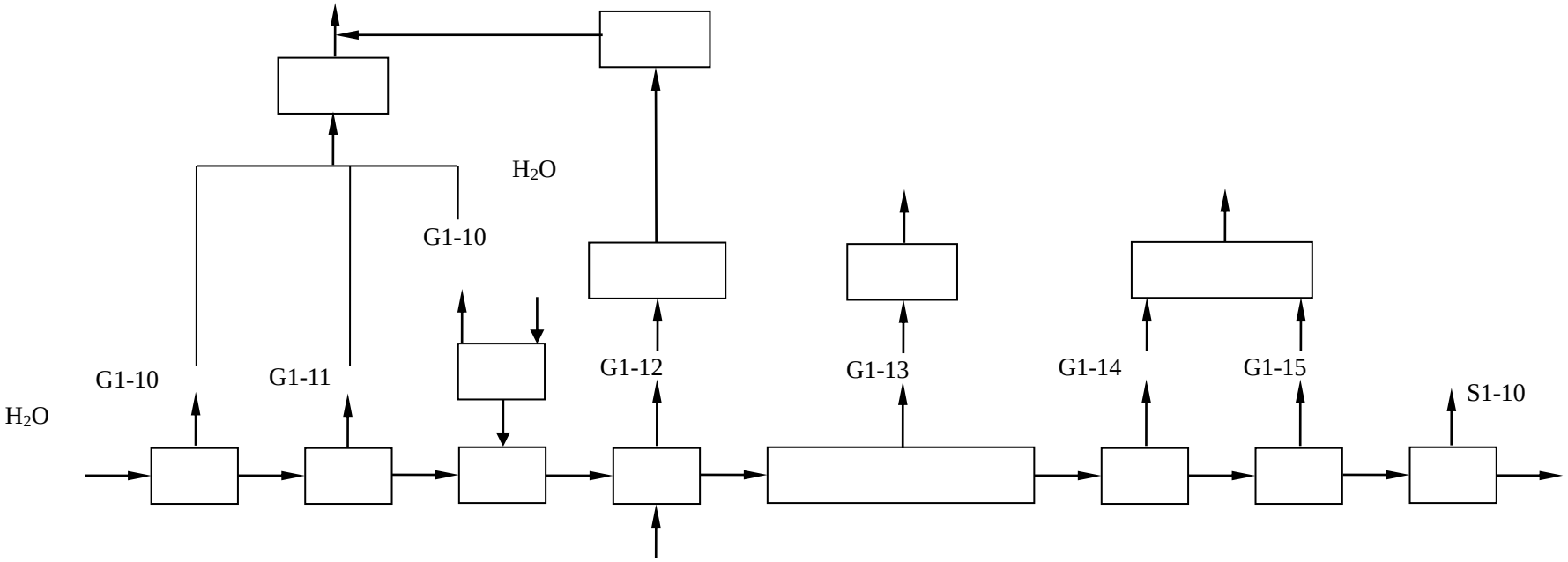
2.2-3


G1-3





2.2-3 3



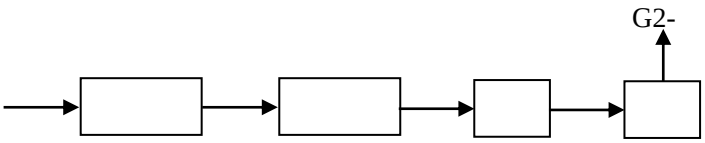
2.2-3 4

2.2.6.2

2.2.6.2.1

2.2-4~2.2-6

2.2-4



2.2-5

2.2-6

2.2.6.2.2

2.2-7

2.2.6.2.3

2.2.6.3

2.2.6.4

1

/ /

60~110

2

150 160

165 175 180 30

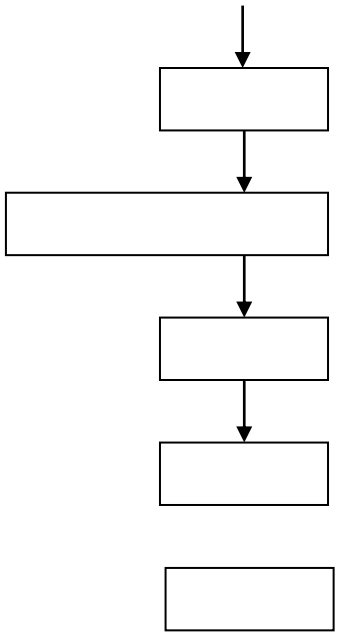
3

/ /

4

5

2.2-8



G4-1

2.2.6.5

1

2

3

4

$8m^3$

1

$8m^3$ SS

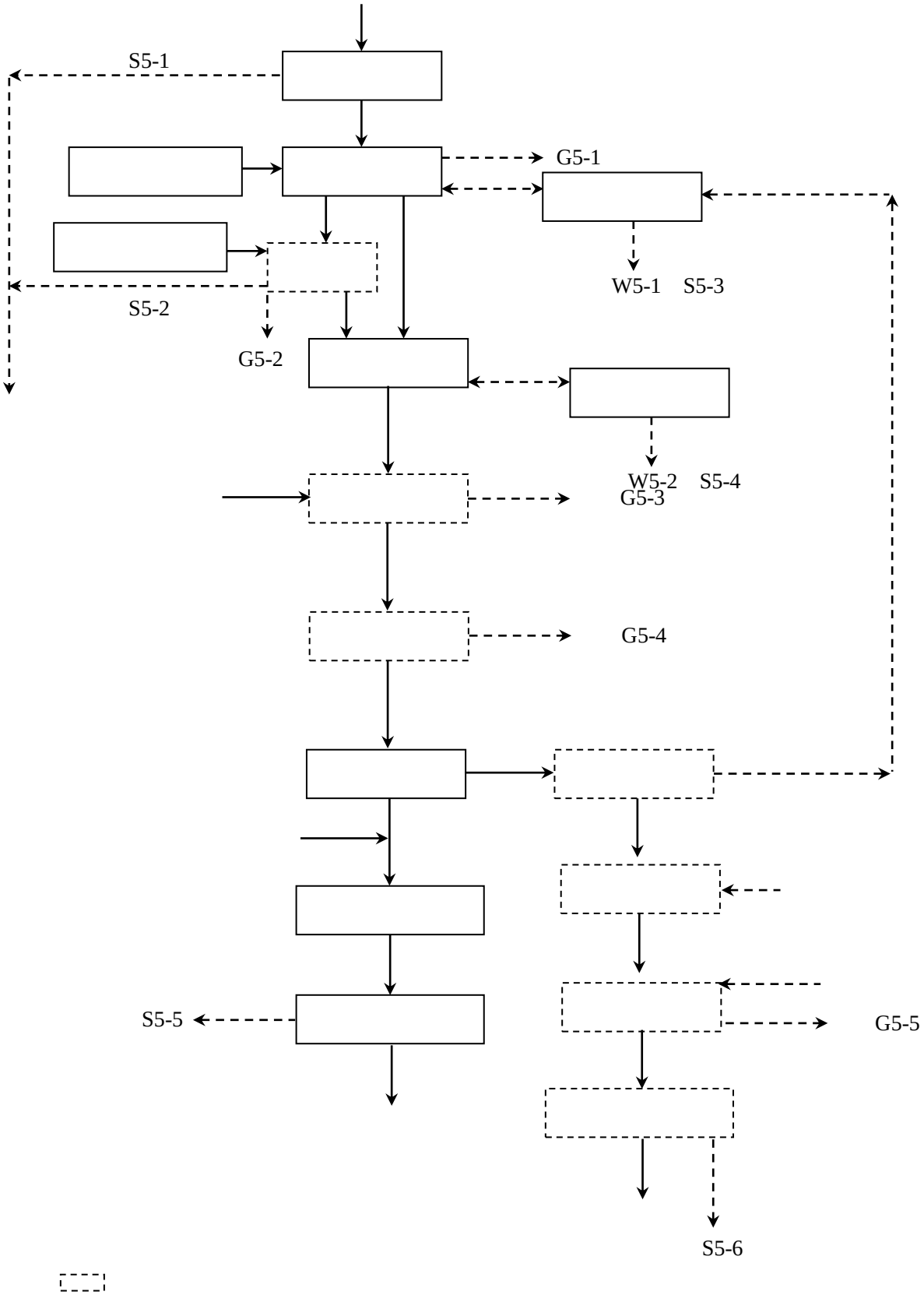
5

6 700

7

8

2.2-9



2.2-9

2.2.6.6

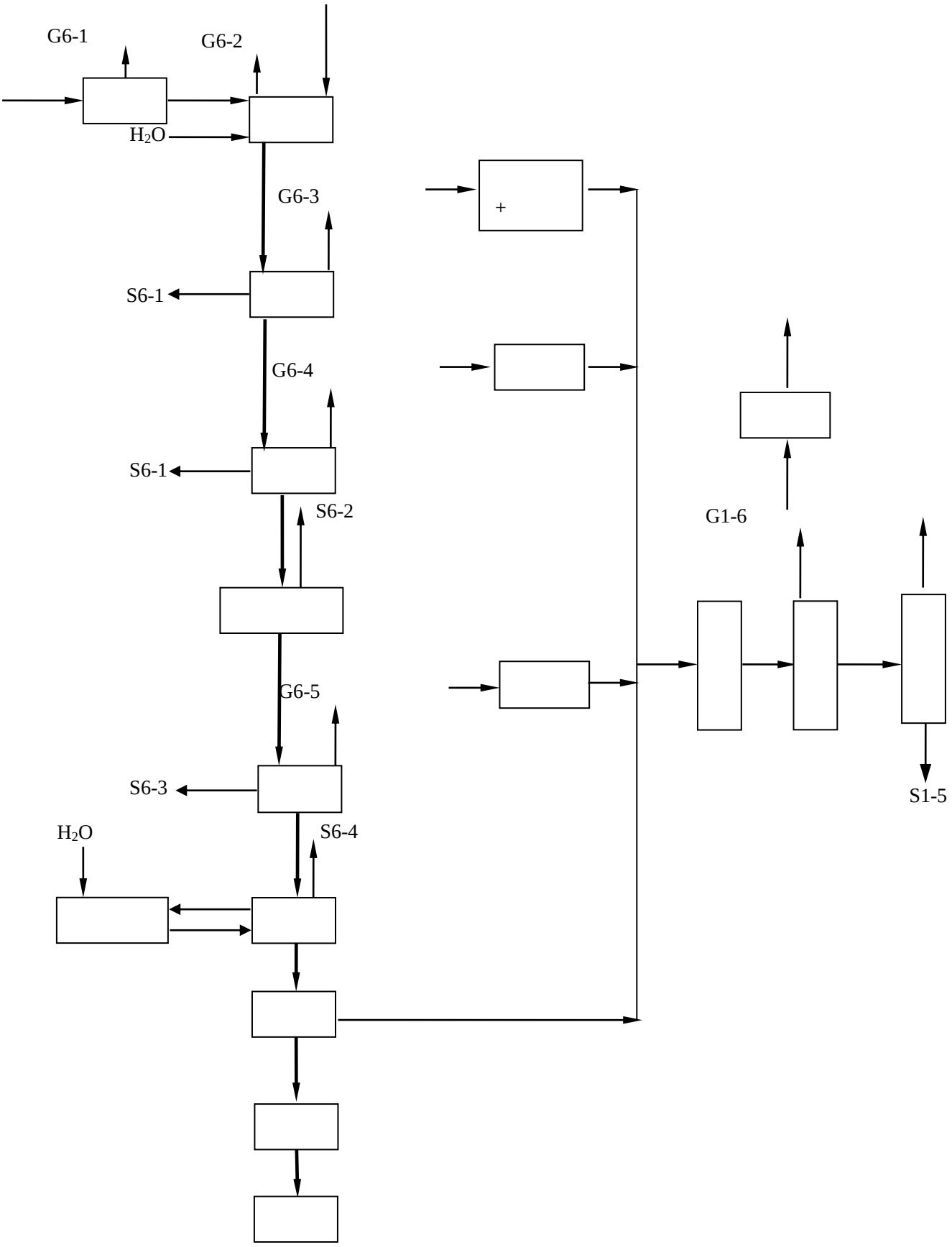
“ -

” “ ”

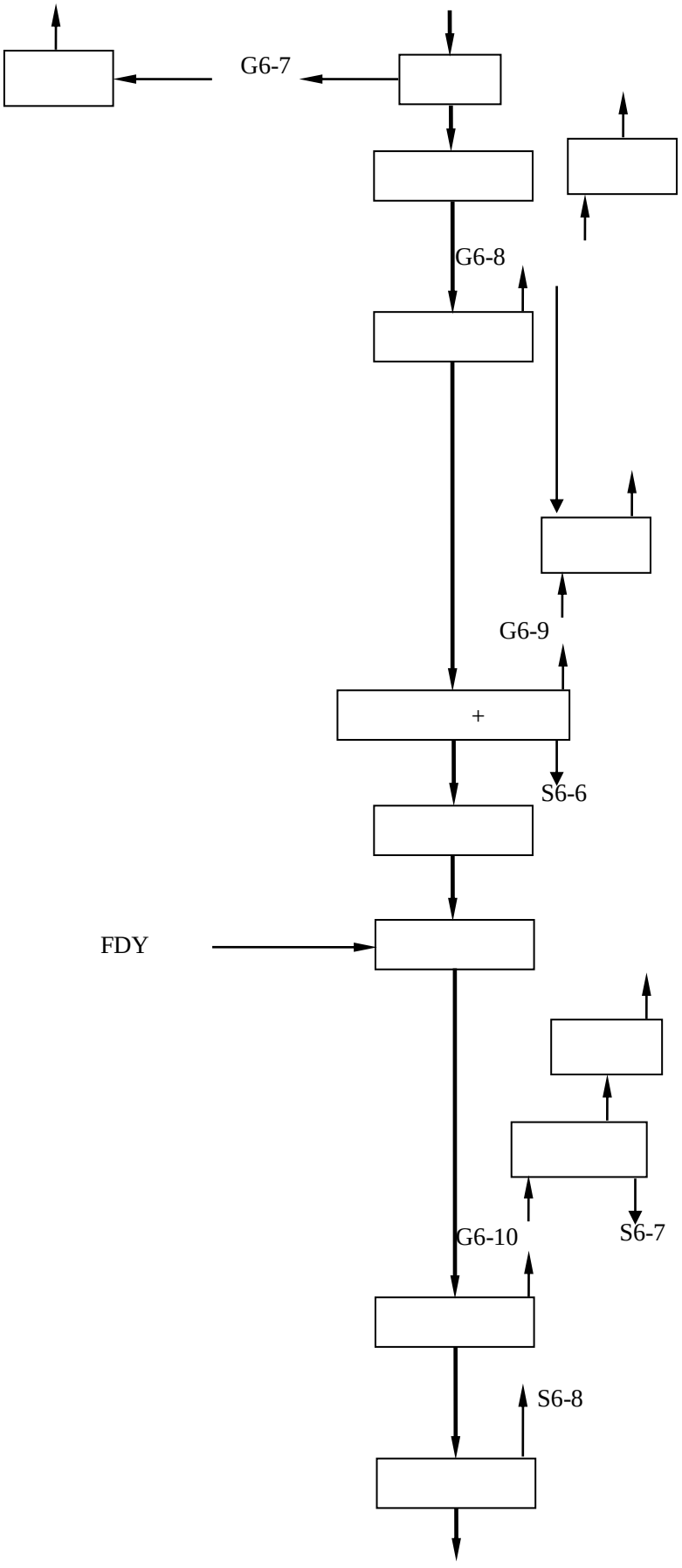
45000t/a 6 /

45000t/a 6 /

2.2.6.1.1 2.2-10



2.2-10 1



2.2-10 2

2.2.7 “ ”

2.2.7.1

2.2.7.1.1

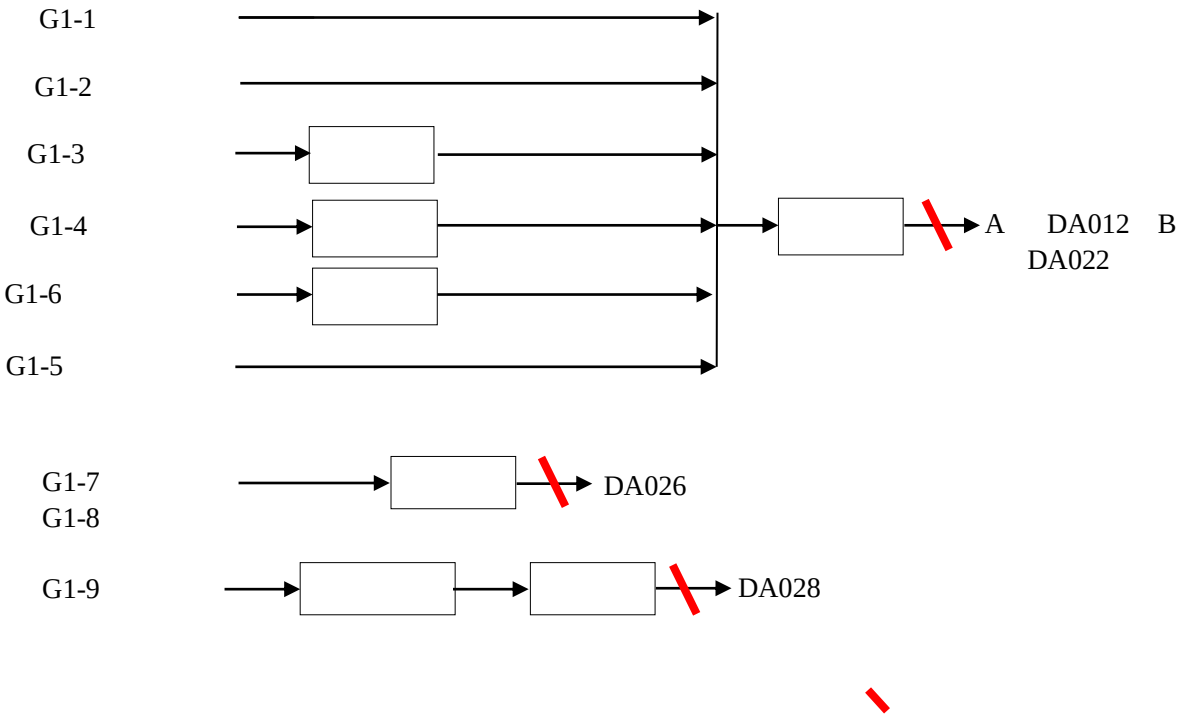
45000t/a 6 /

2.2-5

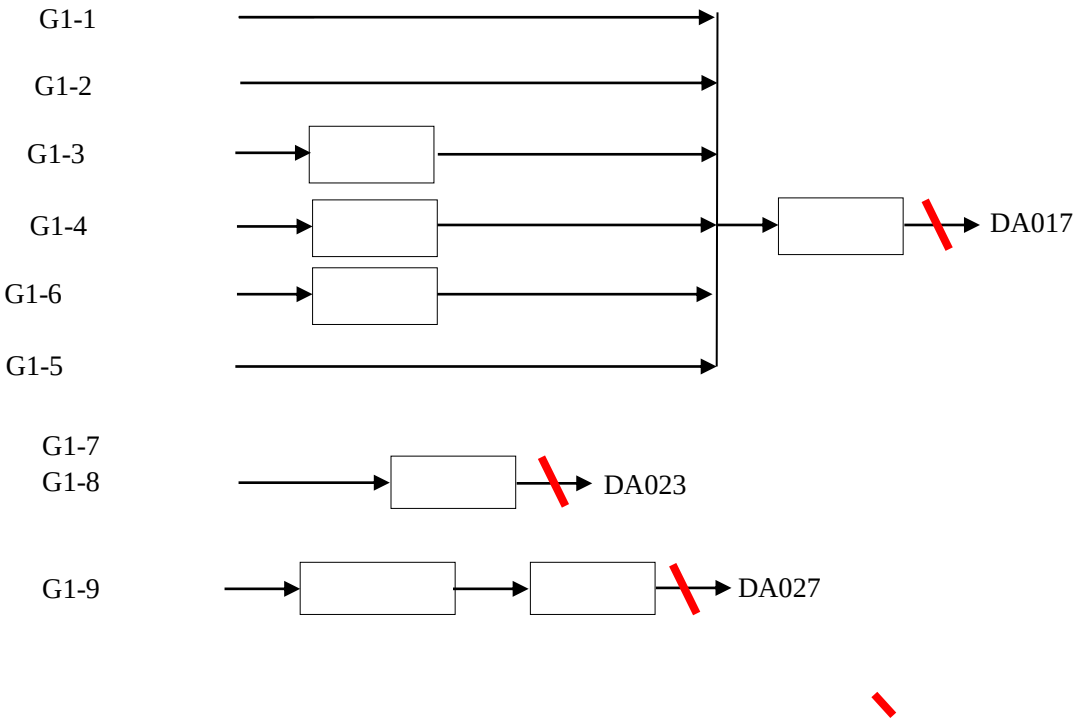
2.2-5

G1-1			1 40m DA012 DA017 DA022
G1-2			
G1-3			
G1-4			
G1-6			
G1-5			
G1-7			25m DA023 DA026
G1-8			
G1-9			15m DA027 DA028
G1-12			30m DA013 DA019
G1-10			
G1-11			
G1-16			
G1-13			35m DA014 35m DA015 35m DA020
G1-14			35m DA016 DA021
G1-15			

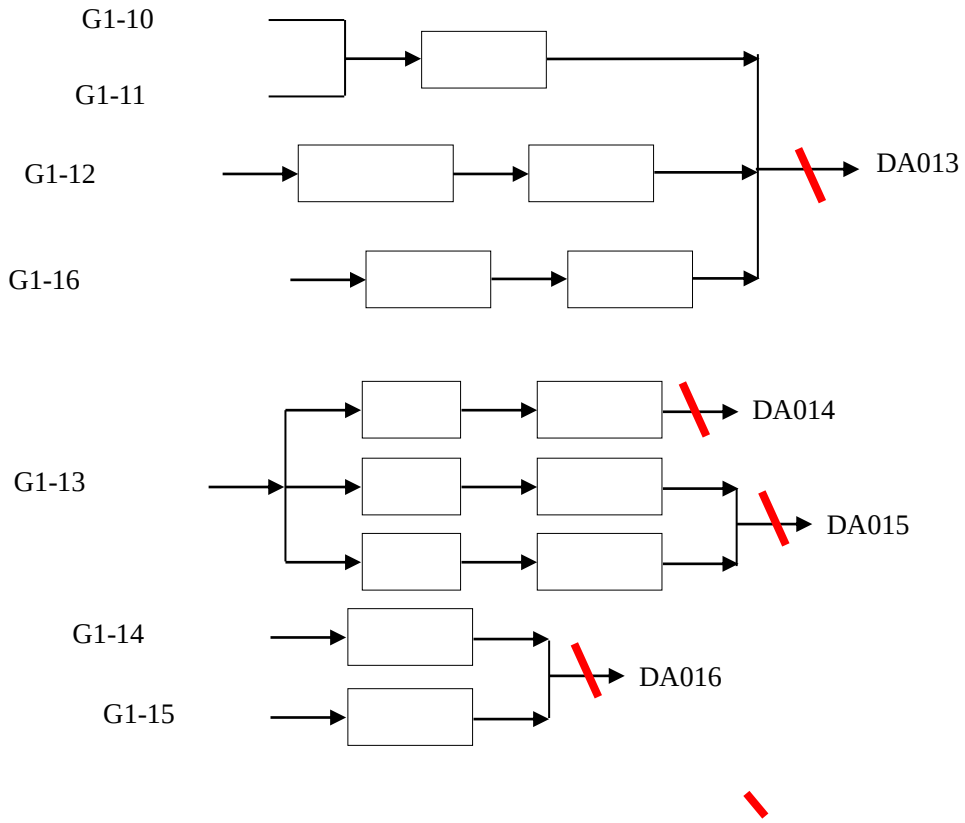
2.2-11~2.2-14


G1-1
G1-2
G1-3
G1-4
G1-6
G1-5
A
DA012
B
DA022
G1-7
G1-8
DA026
G1-9
DA028

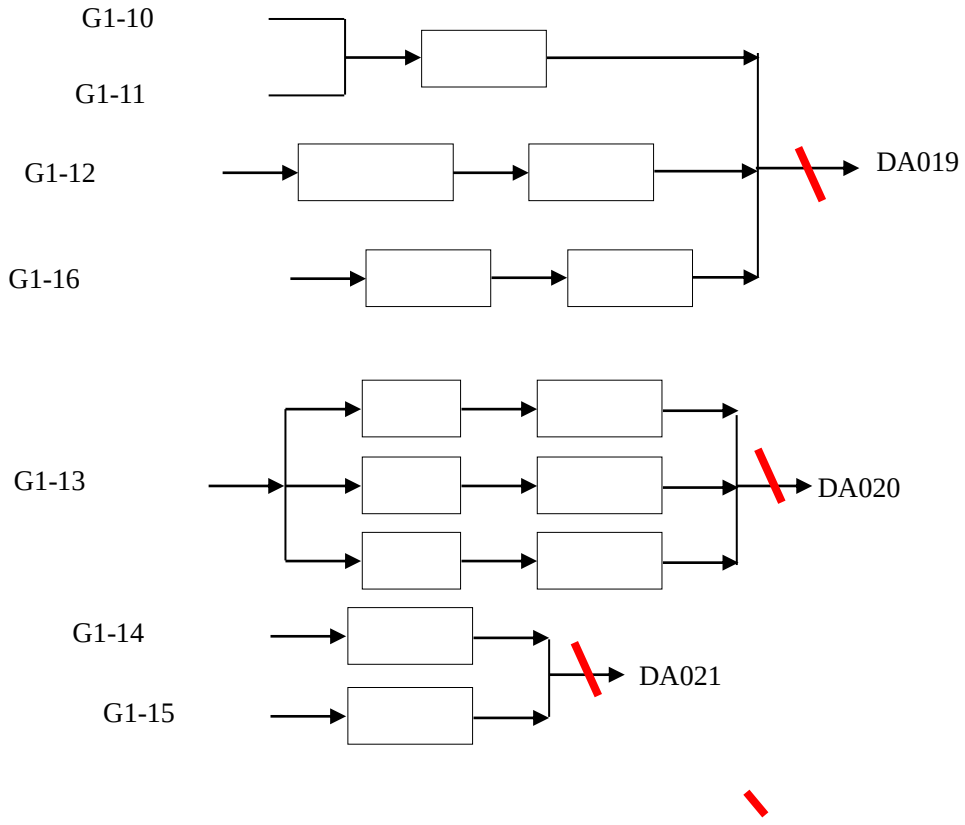
2.2-11


G1-1
G1-2
G1-3
G1-4
G1-6
G1-5
DA017
G1-7
G1-8
DA023
G1-9
DA027

2.2-12


G1-10
G1-11
G1-12
G1-16
DA013
G1-13
DA014
DA015
G1-14
G1-15
DA016

2.2-13


G1-10
G1-11
G1-12
G1-16
DA019
G1-13
DA020
G1-14
G1-15
DA021

2.2-14

2022 C220189 2022 1 19

2021 C210848-20

2021 12 11

2022 C220189-02 2022 3 10 -12

2022 C220189-03 2022 4 3

2.2-6

kg/h	m m			
		mg/m^3	kg/h	
0.00364	40/0.5	10	39	
0.00855		60	3.0	

			2	30896	8.87	0.274					
			3	31944	9.80	0.313					
	VOCs		1	7645	7.28	0.0557					
							0.0519		60	3.0	
DA028		2022.3.10						35/0.6			

			3	1031	4.1	0.00423					
DA019		2022.1.20	1	1718	1.9	0.00326	0.00374	30/0.5	10	23	
			2	1997	2.3	0.00459					
			3	1536	2.2	0.00338					
	VOCs		1	1997	37.5	0.0749	0.0740		60	3.0	
			2	1997	36.6	0.0731					
			3	1997	37.1	0.0741					
			1	1997	4.63	0.00925	0.00846		—	20	
			2	1997	4.12	0.00823					
			3	1997	3.95	0.00789					
			1	1997	0.7	0.00140	0.00147		5	—	
			2	1997	0.9	0.00180					
			3	1997	0.6	0.00120					
		2022.3.27	1	1159	1.6	0.00185	0.00238		15	—	
			2	1119	2.8	0.00313					
			3	1023	2.1	0.00215					
DA014	VOCs	2022.1.20	1	1268	5.65	0.00716	0.00691	30/0.5	60	3.0	
			2	1268	5.43	0.00689					
			3	1246	5.36	0.00668					
			1	1003	2.5	0.00251	0.00293		10	23	
			2	1268	2.3	0.00292					
			3	1246							

		2022.3.27	1	2169	1.2	0.00260	0.00348		15	—	
			2	2609	1.6	0.00417					
			3	2041	1.8	0.00367					
DA015	VOCs	2022.1.20	1	12375	11.9	0.147	0.164	30/0.8	60	3.0	
			2	12375	13.7	0.170					
			3	12226	14.3	0.175					
			1	12375	0.8	0.00990	0.00905		5	—	
			2	12375	0.8	0.00990					
			3	12226	0.6	0.00734					
			1	12375	2.9	0.0124	0.00631		10	23	
			2	12226	2.4	0.00359					
			3	10883	2.7	0.00293					
			1	12375	2.62	0.0324	0.0365		—	20	
			2	12375	3.08	0.0381					
			3	12226	3.19	0.0390					

			2	2884	0.7	0.00202					
			3	2884	0.7	0.00202					
		2022.3.27	1	2733	1.2	0.00328	0.00367		15	—	
			2	2953	1.8	0.00523					
			3	2786	0.9	0.00251					
DA016	VOCs	2022.3.07	1	5606	3.63	0.0203	0.0213	30/0.8	60	3.0	
			2	6160	3.97	0.0245					
			3	5529	3.48	0.0192					
DA021	VOCs	2022.3.07	1	10657	3.02	0.0322	0.0320	30/0.8	60	3.0	
			2	10496	3.03	0.0318					
			3	10343	3.08	0.0319					

2.2-6

GB16297-1996 2

DB37/2376-2019

1 GB14554-93

2 VOCs

6 DB37/801.6-2018

1

6 DB37/801.6-2018 2

GB31572-2015 5

6

DB37/801.6-2018 2

132917m^3/h 111650.28 m^3/a

1.883t/a VOCs 7.661t/a

1.955t/a 0.213t/a 0.497t/a

1 15m DA031

2021 C210848-20

2021 12 13

2.2-7

2.2-7

				m^3/h	mg/m^3	kg/h	kg/h	m	mg/m^3	kg/h	
DA031		2021.12.13	1	8822	5.1	0.045	0.0402	15/0.35	10	3.5	
			2	8640	5.6	0.0484					
			3	6469	4.2	0.0272					

2.2-7

GB16297-1996 2

DB37/2376-2019

1

7977m^3/h 5743.44 m^3/a

0.29t/a

			1	5125.481		——	—		15	0.8	
			2	5125.734		——					
			3	5056.011		——					
			1	5125.481	4.6	0.0236	0.0254		10		
			2	5125.734	5.3	0.0272					
			3	5056.011	5.0	0.0253					
DA008		2020.12.22	1	4264.790	4.0	0.0171	0.0169	15	10	3.5	
			2	3814.772	4.3	0.0164					
			3	4540.407	3.8	0.0173					

DA007 VOCs

6 DB37/801.6-2018

1

GB16297-1996 2

DB37/2376-2019 1

DA005 VOCs

5 DB37/2801.5-2018 2

6

DB37/801.6-2018 1

15776m^3/h 3783.84 m^3/a VOCs

0.134t/a 0.27kg/a

0.102t/a

G5-3 G5-4

G5-5 2.2-10

2.2-10

G5-3		UV 1 15m DA007
G5-4		
G5-5		

2.2-9 DA007

VOCs 4

DB37/2801.4-2017 2

2.2-11

2.2-11

G6-1			
G6-3			
G6-4			1 44m DA025
G6-6			
G6-5			
G6-2			
G6-7			1 30m DA024
G6-8			
G6-9			
G6-8			20m DA018

25m

G6-10

2.2-12

			m^3/h	mg/m^3	kg/h	kg/h	m m	mg/m^3	kg/h	
		1	20265	24.4	0.494					
						0.449		——	——	——

DA018

30/1.2

		2	10925	2.6	0.0248					
		3	10108	2.9	0.0293					
	VOCs	1	10925	4.10	0.0448	0.0479		60	3.0	
		2	10925	5.09	0.0556					
		3	10925	3.95	0.0432					

GB16297-1996

2

DB37/2376-2019 1

VOCs

6 DB37/801.6-2018 1

38112m^3/h 27440.64 m^3/a VOCs

2.411t/a 1.397t/a

2.2-13

2.2-13

	t/a	VOCs t/a	t/a	t/a	t/a	kg/a
45000t/a 6 /	1.883	7.661	1.955	0.124	0.306	—
	0.29	—	—	—	—	—
	0.102	0.134	—	—	—	0.27
	1.397	2.411	—	—	—	—
	3.672	10.206	1.955	0.213	0.497	0.27

2.2.7.1.2

2.2-14

2.2-14

1	45000t/a 6 /	

2021 C210848-08

2021 9 30

2.2-15

2.2-16 2.2-15

2.2-15

2.2-15

2.2-16

2.2-15

HCl

GB16297-1996 2

GB14554-93 1

VOCs 4

DB37/2801.4-2017 3 5

DB37/2801.5-2018 3

6 DB37/801.6-2018 3

[2019]7

100m 100m

50m

2.2.7.2

2.2.7.2.1

2.2-17

2.2-17

1	45000t/a 6 /		
2			
3			
4			
5			

2.2.7.2.2

1000m^3/d “

+ + + ” 2.2-16

2022

7 2.2-18

2.2-18 2022 2

	m^3/d	COD_{Cr} mg/L	mg/L	mg/L
2022-07-01	2576	4.23	0.377	0.0555
2022-07-02	3459	5.29	0.529	0.0835

2022-07-11	1355	20.7	1.63	0.0963
2022-07-12	1633	18.3	2.3	0.517
2022-07-13	1203	14.9	1.84	0.0965
2022-07-14	1914	39.1	3.95	0.21
2022-07-15	1636	15.9	0.826	0.0676
2022-07-16	1462	14.8	0.899	0.0715
2022-07-17	1660	27.9	1.43	0.107
2022-07-18	1684	16.9	1.09	0.189
2022-07-19	1535	23.6	1.88	0.333
2022-07-20	1398	16.5	0.952	0.0821
2022-07-21	1413	20	0.89	0.095
2022-07-22	1455	20.9	0.668	0.098
2022-07-23	1269	23.8	1.14	0.082
2022-07-24	1770	22.3	2.68	0.181
2022-07-25	1515	17.1	2.11	0.212
2022-07-26	1494	20.5	2.91	0.227
2022-07-27	834	17.1	1.86	0.136
2022-07-28	1326	17.1	1.92	0.223
2022-07-29	928	15.7	1.16	0.102
2022-07-30	836	20	2.86	0.319
2022-07-31	2015	40.8	3.83	1.19
	1750	18.5	1.69	0.178
	834	3.8	0.301	0.0039
	4126	40.8	4.86	1.19
GB/T31962-2015 A	——	500	45	8
	——	300	20	8

GB/T31962-2015 1A

2.2.7.2.3

21.890186 m^3/a

COD_{Cr}

29.6mg/L 15.4mg/L 1.53mg/L

21.890186 m^3/a

COD_{Cr} 19.4mg/L 0.253mg/L

0.202mg/L 8.61mg/L 4.247t/a 0.055t/a 0.044t/a 1.885t/a

2.2.7.3

2021 C210848-08 2021

9 27

2.2-17 2.2-19

2.2-19

		2021 9 27	
		dB(A)	dB(A)
1#	1	57.3	48.6
2#	1	52.2	49.1
3#	1	55.4	48.8
4#	1	55.3	47.9
	——	65	55

2.2-17

52.2~57.3dB(A)

47.9~49.1dB(A)

GB12348-2008 3

GB12348-2008 4a

2.2.7.4

2.2-20~2.2-25

45000t/a 6 /

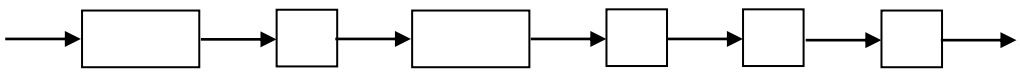
2.2-20

2.2-20

				t/a	
			--	0.35	
			--	8	
			--	40	
			--	20	
			--	128.53	
			--	185	
			--	265	
			HW08 900-249-08	0.12	
			--	70	
			--	82	
			--	12	
			--	150	
	--		HW49 900-041-49	12	
			HW08 900-249-08	26t/4a	
			--	0.4	

2000

10 20 “ ”



2.2-21

2.2-21

				t/a	
			--	10	
			HW08 900-249-08	1.0	
			HW08 900-249-08		
			HW09 900-006-09	1.2	
	--		HW09 900-006-09	2.0	
			--	0.03	
			--	60	

2.2-22

2.2-22

				t/a	
			--	2.0	
			--	6.0	
			HW12 900-252-12	6.2	
	--		HW49 900-041-49	0.4	
			HW49 900-041-49	0.1	
	UV		HW29 900-023-29	0.02	
			--	0.07	
	--		--	0.5	
			--	6.0	

2.2-23

2.2-23

				t/a	

2.2-25

2.2-25

		m^3/a	148618.2
		t/a	3.672
		VOCs t/a	10.206
		t/a	1.955
		t/a	0.213
		t/a	0.497
		kg/a	0.27
	m^3/a		218901.86
	COD_{Cr} t/a		4.247
	t/a		0.055
	t/a		0.044
	t/a		1.885
t/a			0

2.4

1 1.787t/a VOCs

14.248t/a

2 45000t/a 6 /

3 10000m^3

2019 134

1 2022 10

2 45000t/a 6 /

RTO

RCO VOCs 2022

11

3

		1 6 5592.66m^2
		1
		1t/h
		1 666m^2
	1	1 4032m^2 1
	2	1 4032m^2 1
	3	1 4368m^2
	4	1 1152m^2
		1 2000m^2
		1 7.5m^2
		1 800L
		1 3.9m^3
		1 3.9m^3
		3304.7 kWh 4872t

2.5.4

2.2-1

2.5.5

2.5.5.1

45000t/a 6

/

2.5.5.2

1

140-150

24-36h

18

90　左右

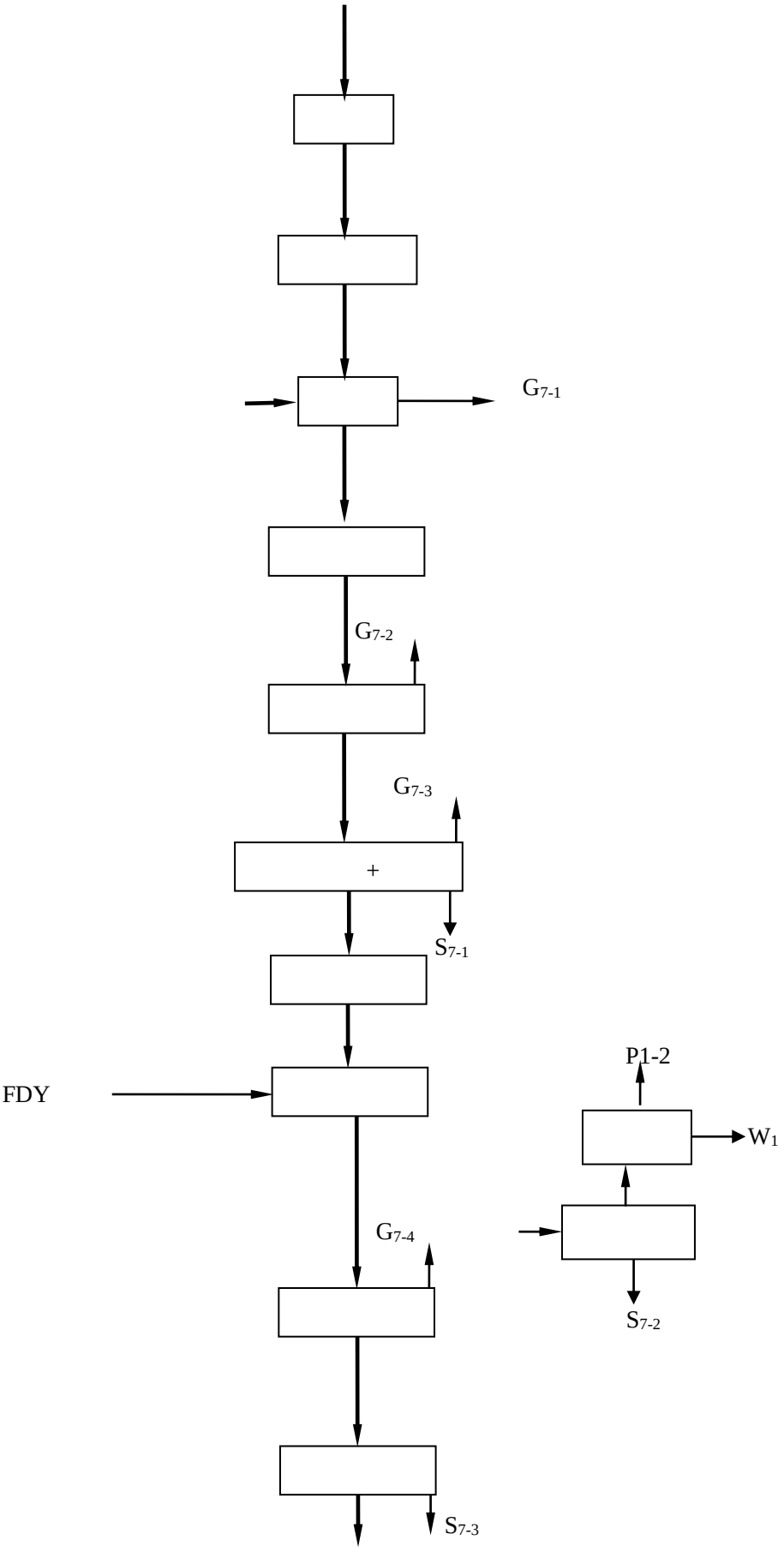
18

90　左右

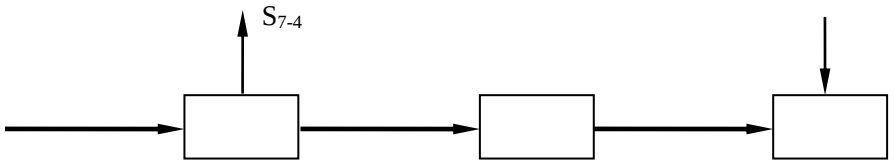
2

2

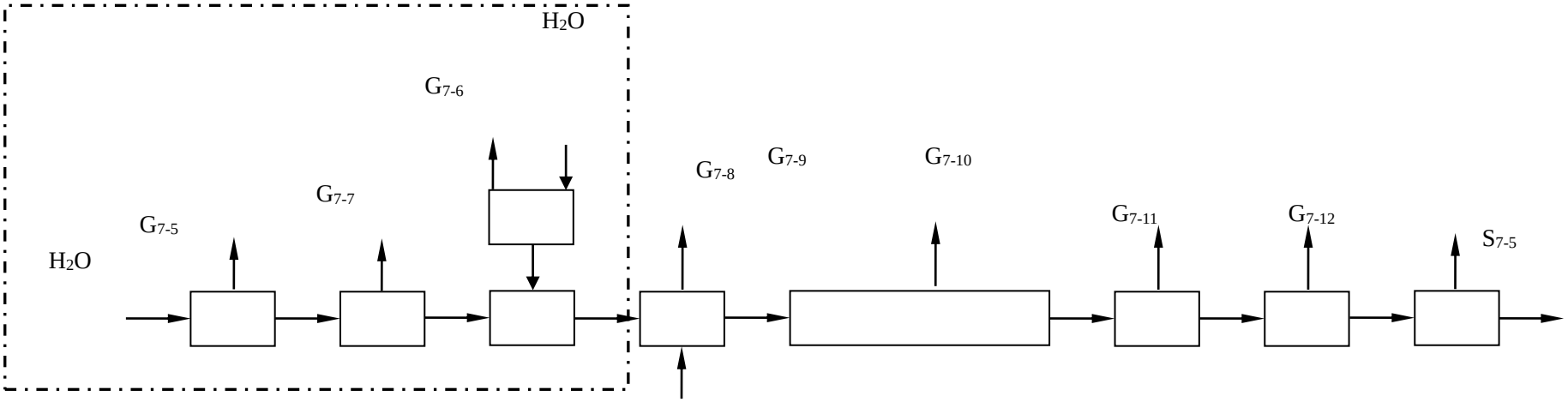
2.2.6.1.1　　2.5-1



2.5-1 1



3.2-6 2



2.5-2 3

2.5.6 “ ”

2.

P1-3 P1-4	SO_2	3.4	0.085	0.716	3.4	0.085	0.716	43/1.2 P1-3 P1-4 43/0.8
	NO_x	13.7	0.342	2.871	13.7	0.342	2.871	
	VOCs	17.8	0.446	3.75	0.4	0.0089	0.075	
		18.6	0.464	3.898	1.86	0.0464	0.3898	
		2.2	0.054	0.454	0.04	0.0011	0.0091	
		1.1	0.027	0.227	0.02	0.00054	0.00454	

2.5-4

GB16297-1996 2 45.3kg/h

DB37/2376-2019 1 10mg/m^3 50mg/m^3 100mg/m^3 < >

[2019]39 50mg/m^3

GB31572-2015

5 15mg/m^3 5mg/m^3

6 2 15mg/m^3 5mg/m^3 VOCs

6 DB37/801.6-2018 1 VOCs60mg/m^3 3.0kg/h

GB14554-93 2 41kg/h

2.5.6.1.2

1.151t/a VOCs 0.187t/a

0.097t/a VOCs

0.416t/a 0.433t/a 0.05t/a 0.025t/a

0.194t/a

VOCs 0.832t/a 0.866t/a 0.1t/a 0.05t/a

90%

90%

2.5.6.2

GB18918-2002 A

[2017]5 COD_{Cr}≤40mg/L NH_3-N≤2mg/L

10878m^3/a

COD_{Cr} 0.21t/a 0.003t/a 15599.5m^3/a

COD_{Cr} 0.30t/a 0.004t/a

26477.5m^3/a COD_{Cr} 0.51t/a 0.007t/a

2.5.6.3

—	RTO		12t/5a	24t/5a		282-999-99	
	—	—	2530.82 3.1	1290.3 3.5	—	—	—

2.5.6.4

20

25dB(A)

GB12348-2008 3

GB12348-2008 4a

2.5.7

2.5-7

2.5-7

		Nm³/a	113400
		t/a	3.684
		VOCs t/a	1.367
		SO_2 t/a	2.148
		NOx t/a	8.613
		t/a	1.1694
		t/a	0.0273
		t/a	0.01362
		t/a	1.442
		VOCs t/a	1.435
		t/a	1.299
		t/a	0.15
		t/a	0.075
	m³/a		26477.5
	COD_{Cr} t/a		0.51
	t/a		0.007

	t/a	0	

3

3.1

2019 1 28 [2019]7

3.5 6

2019 6 23

6 2 2022 1

“ ” 30

2020 17 “

30

”“ 30 ”

5 × 130t/h 1 5 1 2.4

3.1-1

3.1-1

1

1 15m

1 25m

35m

“

”

3.2-2

3.2-2 6 GBT9102-2016

		1t/h	
	1	1 4032m^2 1	
	2	1 4032m^2 1	
	3	1 4368m^2	
	4	1 1152m^2	
		1 2000m^2	
		1 7.5m^2	
		1 3.9m^3	
		1 3.9m^3	
		750 kWh	
		4872t	

3.2.4

3.2-4

3.2-4

1	6	t/a	20000
		d/a	350
			60
		m^2	1800
			40000
		/	152159
		/	143434
		/	8458
		/	2117.2
		/	6340.8
		%	21.1
		%	15.2
			2202
			7.1
		%	47.1

3.2.5

3.2.5.1

3.2-6

3.2-6 1

t/a t

3.2.7

3.2-8

3.2-8

1		152/168	33	
2		MNB190CM	14	
3		--	18	
4		--	1	
5		--	46	
6		--	57	
7		40Nm^3/min	1	

3.2.8

3.2.8.1

1

S_1

2

6

15 72

20~30

45 ~50

85 95

-

25 35

- 1.3~2.3

$C_6H_6O_2+HCHO+H_2O=(C_6H_6O_2\text{-}HCHO)_x+H_2O$

-

-

- PH

PH PH 10

2.0Cps 18%

15

G_1 G_2

G_3

3

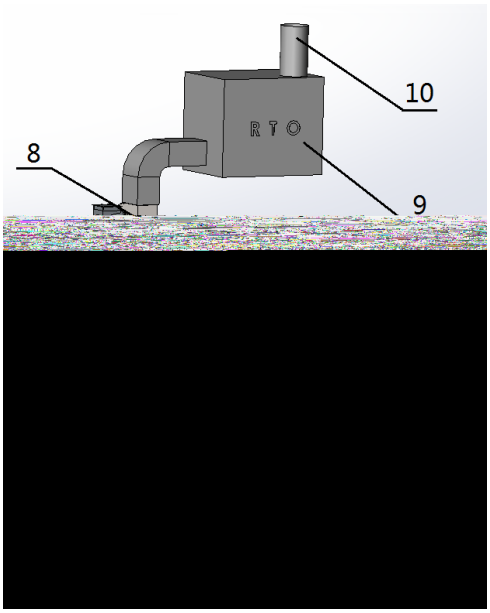
G_4

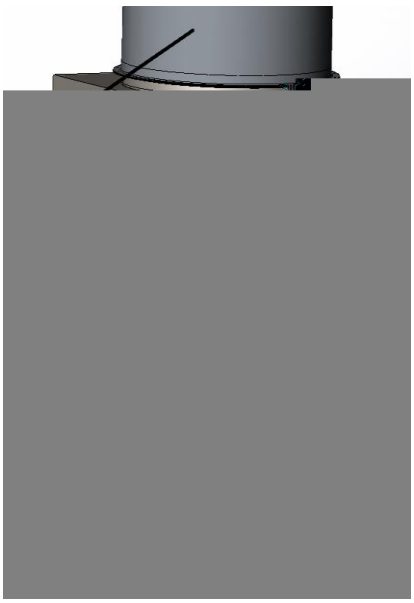
+RTO 43m

P1

110-140

110-140





1. 2. 3. 4. 5. 6. 7.
8. 9.RTO 10.

2 3

4 6 5

8

7 RTO 9

10 P1

200

200

G_5

G_6 G_7

G_8

RTO 43m P1

S_2

3.2-6

3.2.9

3.2.9.1

1

2

1

4m^3/d 1400m^3/a

2

9.6m^3/d 3360m^3/a

12.8m^3/d 4480m^3/a

3

35m^3/h 294000m^3/a 3%

1.05m^3/h 25.2m^3/d 8820m^3/a

4

6.6m^3/d 2310m^3/a

5

60 120L/ ·

7.2m^3/d 2520m^3/a

6

0.15t/h 1260t/a 0.02t/h 168t/a 0.13t/h 1092t/a

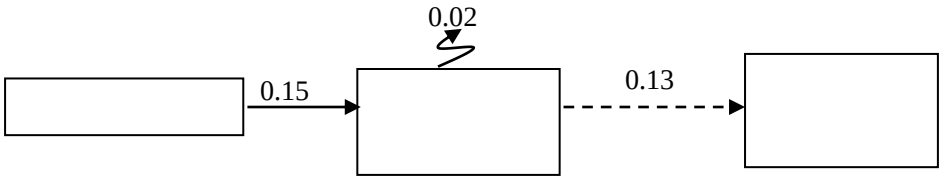
18480m^3/a 13608m^3/a

1092m^3/a

3.3.9.2

“ ”

3.2-9 3.2-12



3.2-12 t/h

3.2.9.3

750 kWh

3.2.9.4

520.7m^3/h 437.388 m^3/a

RTO 47.92m^3/h 40.2528 m^3/a

3.2.9.5

3.2-11

3.2-11

			m	m	m^3		t
	2		1.5	2.2	3.9	0.8	2.84
	2		1.5	2.2	3.9	0.8	2.54

3.2.9.6

1

EDI EDI Electrodeionization

EDI

EDI EDI

15MΩ.cm

EDI

EDI 3~5

EDI

3.2-13

2

R134a

3

1 40Nm^3/min

3.3 “ ”

3.3.1

Æ "

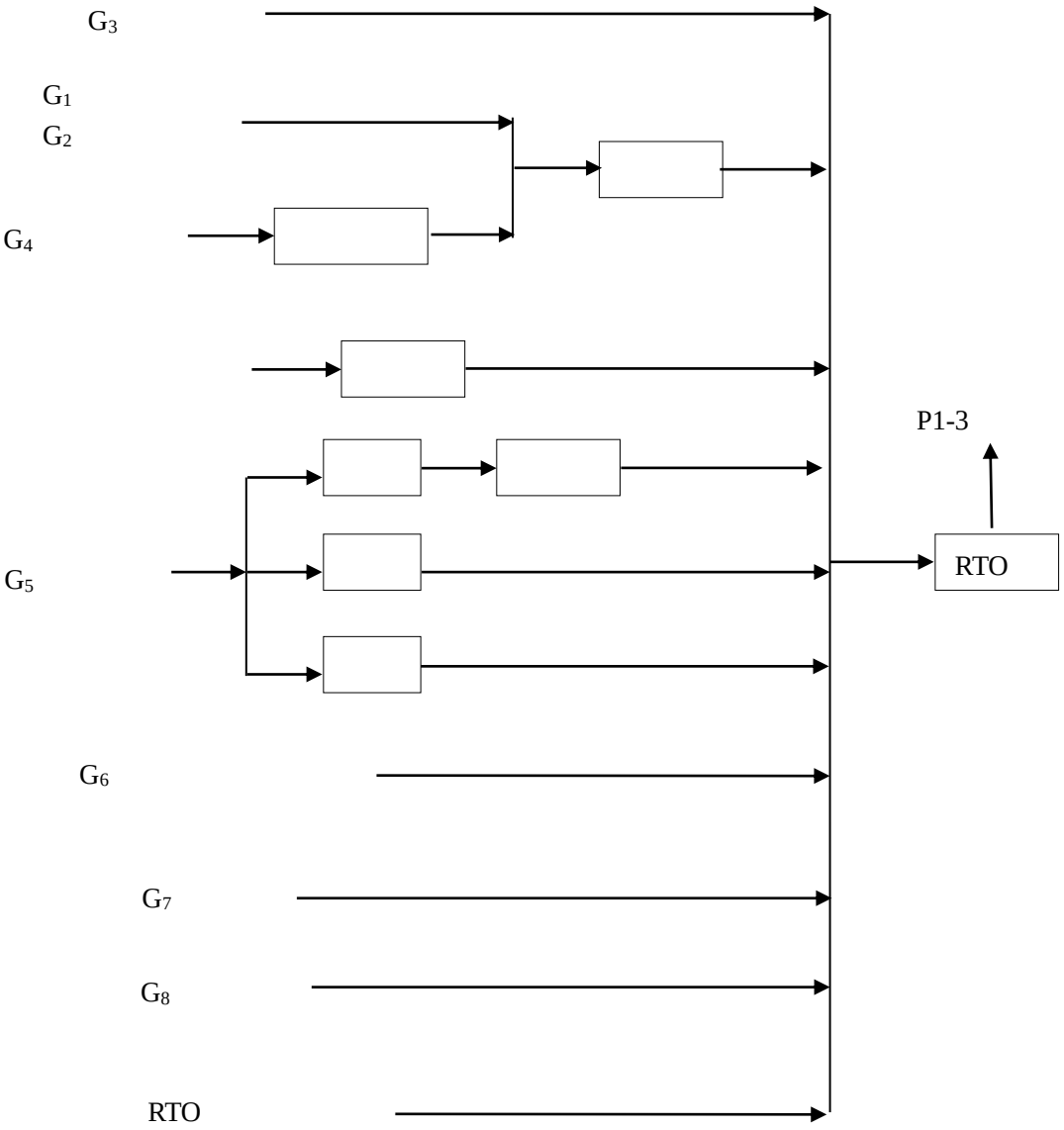
G_7 G_8

G_6 RTO

45000t/a 6 /

+RTO

3.3-1



3.3-1

3.3.1.1

3.3-1 3.3-1

3.3-1

G_1			RTO 43m
G_2	VOCs		
G_4	VOCs		
G_5	VOCs		
G_3		—	
	VOCs	—	
G_6			
RTO			
G_7	VOCs	—	
G_8	VOCs	—	

1

HJ991-2018 C

$1m^3$ C.3

$$V_0 = 0.0476[0.5\varphi(CO) + 0.5\varphi(H_2) + 1.5\varphi(H_2S) + \sum(m + \frac{n}{4})\varphi(C_mH_n) - \varphi(O_2)] \quad C.3$$

V_0— m^3/m^3 Ψ

$\varphi(CO)$ — %

$\varphi(H_2)$ — %

$\varphi(H_2S)$— %

$\varphi(C_mH_n)$— % m n

$\varphi(O_2)$ — %

3.3-2

	CH_4	C_2H_6	C_3H_8	C_4H_{10}	C_5H_{12}	C_{5+}	H_2	H_2S	CO_2	N_2
	96	2	0.5	0.2	0.05	0.05	—	—	0.6	1.5

C.3 V_0=9.732m^3/m^3

α 1 1kg

C.4

$$V_{Ro_2} = V_{co_2} + V_{SO_2} = 1.866 \times \frac{C_{ar} + 0.375S_{ar}}{100}$$ C.4

$$V_{RO_2} = 0.01[\varphi(CO_2) + \varphi(CO) + \varphi(H_2S) + \sum m\varphi(C_mH_n)]$$

$$V_{N_2} = 0.79V_0 + \frac{\varphi(N_2)}{100}$$

$$V_g = V_{RO_2} + V_{N_2} + (\alpha - 1)V_0$$

V_g— m^3/kg

V_{RO2}— m^3/m^3

$\varphi(CO_2)$— %

$\varphi(CO)$ — %

($_2S$) — %

$\varphi(C_mH_n)$— % m n

V_{N2}— m^3/m^3

V_0— m^3/m^3

$\varphi(N_2)$ — %

V_{H2O}— m^3/m^3

$\varphi(H_2)$ — %

α —— 1.75

V_{RO2}=1.034 V_{N2}=7.703

V_g=1.034+7.703+(1.75-1) × 9.732=16.036m^3/m^3

520.7m^3/h 437.388 m^3/a

7013.95 m^3/a

E_{SO2}=2R ×S_t ×(1-η_s/100) ×K ×10^{-5}

E_{SO2}—— t

R—— m^3

S_t—— mg/m^3

η_s—— %

K——

GB17820-2018 1

100mg/m^3

0 K 1 E_{SO2}=2 × 437.388 × 100 × 10^{-5}=0.875t/a

10mg/m^3 10mg/m^3

0.701t/a

NOx 50mg/m^3

50mg/m^3

3.507t/a

3.3-3

3.3-3

	Nm³/a			SO_2		NO_x	
		t/a	mg/Nm³	t/a	mg/Nm³	t/a	mg/Nm³
	7013.95	0.701	10	0.875	12.2	3.507	50
DB37/2376-2019 1		——	10	——	50	——	100
[2019]39		——	——	——	——	——	50

3.3-3

DB37/2376-2019 1

10mg/m³ 50mg/m³ 100mg/m³

< > [2019]39

50mg/m³ 1 43m

P1

2 RTO

RTO

RTO

3.5 Nm³/h ≥ 98%

RTO 3.3-4

3.3-4 RTO

	25000m³/h
	1000mg/m³
VOCS	≥ 98%
	≥ 0.75
	95%
	≤ 80
	≤ 5000Pa
	15 × 5m

RTO

VOCs

a.

$$热效率 = \frac{Tcom - Tout}{Tcom - Tin} * 100\%$$

T_{com}——

T_{out}——

T_{in}——

RTO 760 RTO 80 RTO

≥95% RTO 114

T=114 -80 =34

b.

RTO RTO

RTO

VOCs RTO

$$Q=CM_{\Delta}T$$

C— kJ/ kg·

M— kg/h

T—

RTO Q =1.005kJ/ kg· ×1.293kg/Nm^3×

40000Nm^3/h×34 =1767272.4kJ/h

V =1767272.4kJ/h ÷ 36440kJ/Nm^3=48.50Nm^3/h

c.

3.3-5

3.3-5 VOCs

	kJ/mol	g/mol	mg/m^3		kJ/h
	2847.8	110.111	0.9	98%	21295
	2345	30.026	1.8		
	2826.51	263.377	14.9		
	2826.51	105.137	14.9		

21295kJ/h ÷ 36440kJ/Nm^3=0.58Nm^3/h

48.50Nm^3/h-0.58Nm^3/h=47.92m^3/h

40.2528 m^3

RTO

HJ991-2018 C

1m^3 C.3

V_0— m^3/m^3 Ψ

— %

— %

— %

— % m n

— %

3.3-2

%

V_g— m^3/kg

V_{RO2}— m^3/m^3

— %

— %

— %

— % m n

V_{N2}— m^3/m^3

V_0— m^3/m^3

— %

V_{H2O}— m^3/m^3

— %

α —— 1.75

V_{RO2}=1.034 V_{N2}=7.703

V_g=1.034+7.703+(1.75-1) × 9.732=16.036m^3/m^3

RTO 47.92m^3/h

[2019]39 50mg/m^3

RTO 1 43m P1-3

3

RTO

43m

VOCs

HJ 1102-2020 D.1 “ 6

56.16g/ + 38.19g/ ”

VOCs 32%

85-89% 85%

RTO RTO

98% 80%

2.05

2

RTO

25000Nm^3/h ≥ 98%

3.3-7

3.3-7 P1

		(t/a)	kg/h	(mg/m^3)	(m^3/h)		(%)	(t/a)	(kg/h)	(mg/m^3)
P1		1.9252	0.229	9.2			51.2	0.94	0.112	4.5
	SO_2	0.955	0.114	4.6			0	0.955	0.114	4.6
	NOx	3.83	0.456	18.2			0	3.83	0.456	18.2
	VOCs	4.998	0.595	23.8	25000		98	0.10		

RTO

43m

	NOx	2.871	0.342	13.7		0	2.871	0.342	13.7
	VOCs	3.75	0.446	17.8		98	0.075	0.0089	0.4
		3.898	0.464	18.6		90	0.3898	0.0464	1.86
		0.454	0.054	2.2	RTO	98	0.0091	0.0011	0.04
		0.227	0.027	1.1	43m	98	0.00454	0.00054	0.02

3.3-7 3.3-8 4.5

P1 3.3-9

3.3-9 P1

		(t/a)	kg/h	(mg/m^3)	(m^3/h)		(%)	(t/a)	(kg/h)	(mg/m^3)
P1		3.3704	0.401	8.0	50000		51.2	1.65	0.197	3.9
	SO_2	1.671	0.199	4.0			0	1.671	0.199	4.0
	NOx	6.701	0.798	16.0			0	6.701	0.798	16.0
	VOCs	8.748	1.041	20.8			98	0.175	0.0209	0.4
		9.358	1.114	22.3			90	0.9358	0.1114	2.2
		1.059	0.126	2.5		RTO	98	0.0212	0.0025	0.05

3.3-10

														m		
		Nm^3/h	mg/m^3	kg/h	t/a			mg/m^3	kg/h	t/a	mg/m^3	kg/h			
G1			9.2	0.229	1.9252											
G2																
G3																
G4																
		25000														
G5																
G6	RTO															
G7																
G8																

3.3.1.2

90% 10%

0.129t/a VOCs

0.555t/a 0.607t/a 0.067t/a 0.033t/a

90%

3.3.2

3.3.2.1

3.3-9 3.3-10

3.3-9

		mg/L	
	m^3/a	COD_{Cr}	BOD_5

3.3-10

		m^3/a	mg/L	t/a
1	CODcr	12439	752	9.35
2	BOD_5		379	4.71
3			13	0.16
4			21	0.26
5			1220	15.18
6			2.1	0.03

3.3-10 12439m^3/a COD_{Cr}

9.35t/a 0.16t/a

3.3.2.2

“ 2.2.7.2.2 ”

2022 7

CODcr 18.5mg/L 1.69mg/L

GB/T31962-2015 1A

3.4.2.3

1

2004

8 4 m^3/d

2007 9

8 m^3/d 4 m^3/d

1 A

2009 5 8

16km

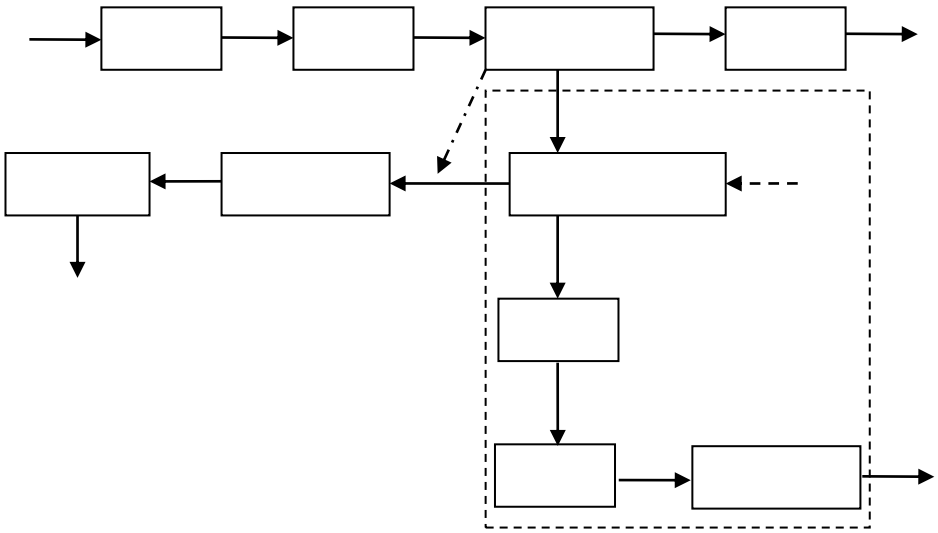
0.9mm

BIOLAK

Bl0lAK

BlOLAK

3.3-3



3.3-3

pH 6~9

COD_{Cr}≤300mg/L ≤20mg/L BOD_5 ≤150mg/L ≤15mg/L

(GB18918-2002) A

[2017]5

COD_{Cr}≤40mg/L NH_3-N≤2mg/L

2

2022 7

3.4-16

3.4-16 2021 7

		pH				
	(m^3)		(mg/L)			
2022-07-01	33432	7.53	18.8	0.273	0.13	8.43
2022-07-02	38560	7.59	22.7	0.259	0.146	6.79
2022-07-03	46168	7.48	21.3	0.22	0.153	6.88
2022-07-04	50168	7.48	20.9	0.225	0.166	5.95
2022-07-05	51248	7.51	22.9	0.197	0.153	4.73
2022-07-06	66896	7.42	22.9	0.679	0.179	5.28
2022-07-07	57160	7.47	12.3	0.925	0.169	5.09
2022-07-08	49792	7.61	6.97	0.912	0.206	5.98
2022-07-09	46328	7.61	6.52	0.92	0.264	7.87
2022-07-10	58800	7.4	14.5	0.929	0.299	11.3
2022-07-11	55080	7.33	15.7	0.934	0.248	11.4
2022-07-12	74280	7.1	15.8	0.929	0.198	10.7
2022-07-13	70640	7.06	15	0.719	0.198	6.19
2022-07-14	66784	7.07	13.9	0.216	0.187	5.72
2022-07-15	63840	7.05	17.9	0.208	0.18	5.84
2022-07-16	65168	7.35	20	0.253	0.181	4.37
2022-07-17	65952	7.5	20.7	0.272	0.197	4.45
2022-07-18	63536	7.47	20.6	0.338	0.197	4.56
2022-07-19	58784	7.46	21	0.342	0.226	6.45
2022-07-20	50503	7.41	21.3	0.945	0.243	6.98
2022-07-21	49904	7.21	18.6	1.26	0.147	9.17
2022-07-22	57064	7	15.7	1.23	0.134	10.1
2022-07-23	73064	7.28	14.1	1.21	0.153	5.64
2022-07-24	63024	7.43	11.5	1.2	0.141	3.04
2022-07-25	63088	7.39	11	1.14	0.136	3.84
2022-07-26	64584	7.12	9.45	0.964	0.136	9.58
2022-07-27	62232	6.9	12.4	0.694	0.139	10.8
2022-07-28	72944	6.81	14.1	0.465	0.15	8.23
2022-07-29	72624	6.71	10.1	0.298	0.152	7.03
2022-07-30	61992	6.69	8.2	0.422	0.158	7.92
2022-07-31	58184	6.82	14.9	0.654	0.205	7.59
	59091	7.27	15.9	0.653	0.180	7.03
	74280	7.61	22.9	1.26	0.299	11.4
	33432	6.69	6.52	0.208	0.13	3.04
	1831823	/	/	/	/	/
	——		40	2	4	45

3.4-16

GB18918-2002 A

[2017]5

COD_{Cr}≤40mg/L NH_3-N≤2mg/L

3

GB18918-2002 A

[2017]5 COD_{Cr}≤40mg/L NH_3-N≤2mg/L

3.4.2.4

3.4-17

3.4-17

		m^3/a	mg/L	t/a	m^3/a	mg/L	t/a
1	CODcr	12439	18.5	0.23	12439	15.9	0.20
2	BOD_5		9	0.11		8	0.10
3			1.69	0.021		0.653	0.008
4			3	0.04		1.2	0.02

3.4-19

						/m								
				/ / dB(A)/m		X	Y	Z	/m	/dB(A)		/ dB(A)	/dB(A)	
1			——	85/1		274	-507	32.57	5	71.0	24h	26	45.0	1
2			——	90/1		285	-508	30.11	2	84.0	24h	26	58.0	1
3			——	85/1		254	-488	31.36	5	71.0	24h	26	45.0	1
4			40Nm3/min	90/1		304	-494	30.13	2	84.0	24h	26	58.0	1

3.3.3.2

A

B

C

15 25dB A

GB12348-2008 3

GB12348-2008 4a

3.3.4

2021

“ HW08 900-249-08

”

FDY

“ HW49 900-041-49

”

2

FDY

3.4-20

3.4-20

			t/a			
S_1			209		282-999-99	
S_2			627.6		282-999-99	
—			0.15		282-999-99	
—			10.5	—	—	
—		--	2.3		HW49 (900-041-49)	
—	RTO		16t/5a		282-999-99	
	—	—	965.55 2.3	—	—	—

3.3.5

3.3-21

3.3-22

		Nm^3/a	21000	0	21000	P1
		t/a	1.9252	0.9852	0.94	
		VOCs t/a	4.998	4.898	0.10	
		SO_2 t/a	0.955	0	0.955	
		NOx t/a	3.83	0	3.83	

t/a

		t/a	0.294	0.28812	0.00588	
		t/a	0.129	0	0.129	
		VOCs t/a	0.555	0	0.555	
		t/a	0.607	0	0.607	
		t/a	0.067	0	0.067	
		t/a	0.033	0	0.033	
		m^3/a	12439			

3.3.7.2

3.3-24

3.3-24

		mg/m^3	kg/h	mg/m^3	kg/h	
P1		9.2	0.229	10	45.3	
	SO_2	4.6	0.114	50	—	
	NO_x	18.2	0.456	50	—	
	VOCs	23.8	0.595	60	3.0	
		26	0.65	—	41	
		2.9	0.072	5	—	
		1.4	0.035	15	—	

	VOCs t/a	10.206	1.217	0	0.1	11.523	+0.1
	SO_2 t/a	—	0.716	0	0.955	1.671	+0.955
	NOx t/a	—	2.871	0	3.83	6.701	+3.83
	t/a	1.955	0.3898	0	0.546	2.8908	+0.546
	t/a	0.213	0.0091	0	0.0121	0.2342	+0.0121
	t/a	0.497	0.00454	0	0.00588	0.50742	+0.00588
	kg/a	0.27	—	0	—	0.27	—

t/a

2

3.4.3

1

2

20%

3

3.4.4

3.5-1

3.5-1

	m^3/t	0.92	1.5
	kWh/t	375	500

	t/t	0.06	1.75
	m^3/t	238.8	—

3.5-1

3.4.5

3.4-2

3.4-2

6	t/t	0.98	0.92
	t/t	0.076	0.06
	t/t	0.02	0.02

3.5-1 6

3.4.6

3.4-3

3.4-3

	kg/t	0.05	0.12
VOCs	kg/t	0.005	0.03

VOCs

3.4.7

3.4.8

3.4-4

3.4-4

1		GB16297-1996 2 DB37/2376-2019 1 GB14554-93 1 2 6 DB37/801.6-2018 1 2 3 GB31572-2015 5 9 GB12348-2008 3 4a GB18599-2020 GB18597-2001
2		3
3		
4		
5		
6		

3.4-4

3.4.9

1

2

3

“ ”

4

4.1

ضر شمـ 116 ° 36 ′40 ضجـ

يجـ غ

ضي يجـ غ يجـ

ضي ضجـ غ

ضر

ضر

ضر ضجـ ضر

116°00′00" 116°30′00" 36°37′30" 37°02′30"

ضر غ

غ ضر ضر ضر ضر تمج تقمم

ط ضر 3m ضر ضر

17.65% ضر 56.25% ضر تمج

5.11% ضر 6.94% ضر 10.83% ضر

3.22% ضر

عج ضر ضر ثثا

حى ضمه

ضر ثثا شجج حى حى

شحم ضمه

7 ضر ثثا ضر غ ضر يجـ

4.2.2

4.2.2.1

ضر ضر ضر يجـ ضي ضر

V_4^8 ضر ضر يجـ

ضر V_4^{10} ضر V_4^{11} ثثا V_4^8 ضر

ذ ئ غ

ضر ضر ضر تجي -

ضمه ضر 2000-3500m

ثثا

ضر ضمه 250m

1 ضمه (Q)

حى

حى حى حى حى

حى

ط 240-300m

1 (Q4)

12-58m

حى حى حى حى 15m ضر

ضر ضي حى 0.5m

حى غ

ضي

1-2 2-3 l-5m حى

20-30m

2 (Q1—3)

90-206m حى حى

60-70m ضي

حى حى

ضي

3-6m l0m

ط 10-20m ضر ضي 50-70m l00-200m

فمي 150m فمي

ضي 200m 230m

2 (N)

ضي غ

حى حى

غ

نهـ تمـ

500-800m

مشجـ

ط 300-l000m

3 (E)

ضم غ

4.2.2.2

II

III

270km NEl0°-30° NW 40°-70°

6.3m

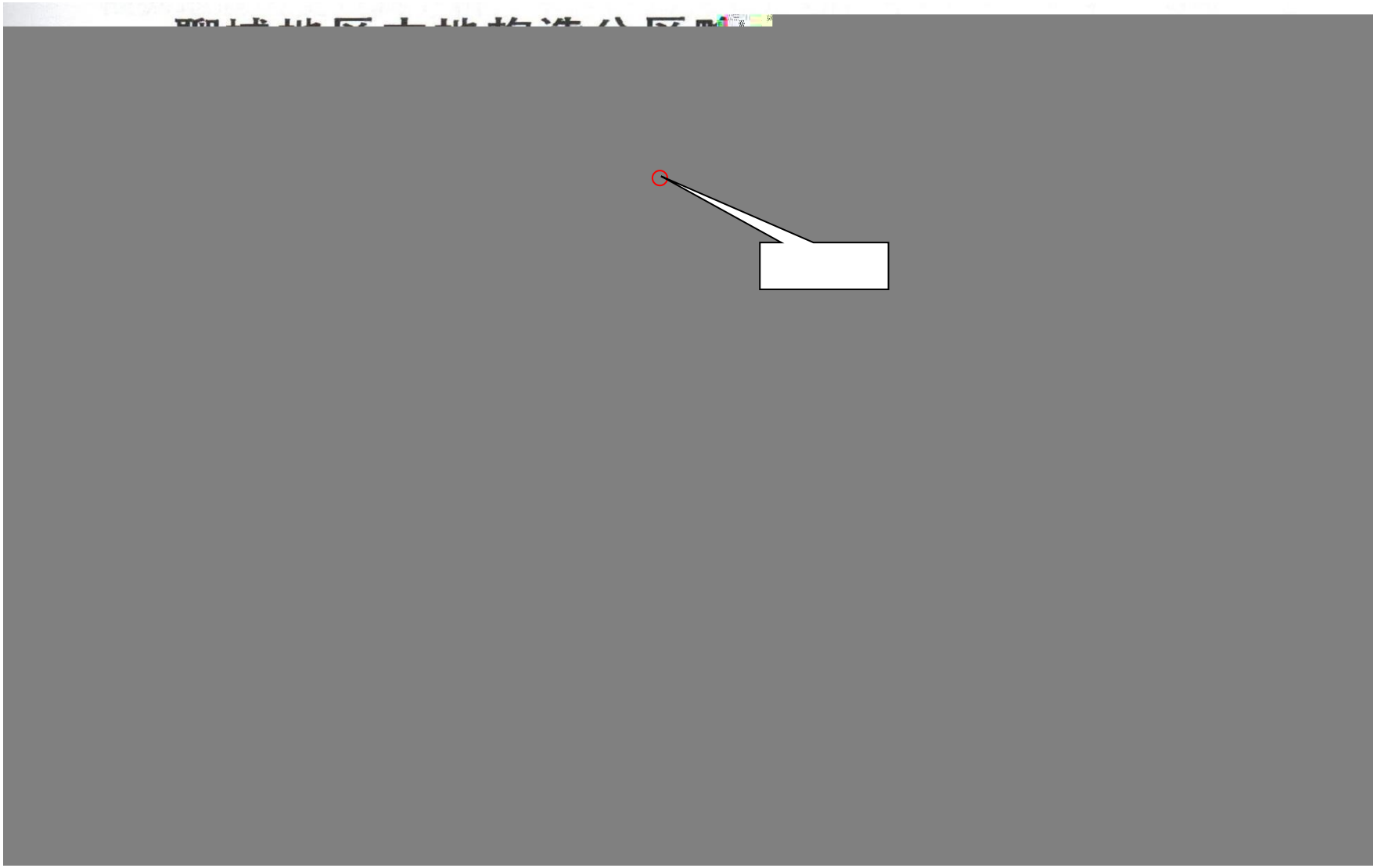
800-l000m 6500-7000m 5000-6500m 40°-45°

55km

145km

III IV V

4.2-1



4.2-1

4.2.3

4.2.3.1

ضر ضر

غ ضر

ضر ضر

ضر ت —— ضر ت

ضر

ضم غ ذ

ضر ضي ضر قمم غج

ضر ضر

ضر ضر ضرضي

مم غ

ضر غج

— ت ضر

غج ضر ضر

حى ضم

ضر حى حى

ضر -قمم ضر

-ت - ضر قمم

(50m) (2g/L) ضر

ت ت (50-120m)(2-5g/L) ت

ضي 120-140m (2g/L) غمي ضر

شخ

4.2.3.2

شخ

مم

ضر مخ غ ضي

غ

ևւ

1

ضر عمم

عمم عمم عجـ

غجـ

ضر ضر ٤ ضر حمي ضر

ضي

ضي ضي غ

ضر

- ٤ غ ضر

تمجـ حمي ضر

2

ضر ضر

عمم ضي ث غجـ

ضر لم

0.1‰ تمجـ ضر

حى ضي ث غ

4.2.3.3

ضر

” — — “ ٤ “ — — “

1-6 6 12.48m 6-9

9 ضر

15.07m ضر 2.59m

ضر

ضر ذ

ضر

ض ث

4.2.4

ضر 17

غ

شخ

ض تجد

غ

$4181.2km^2$

نه 26km $393.62km^2$

ضي 26km $393.6km^2$ 9

$100km^2$ $100km^2$

ضم

28km $432.3km^2$ 6 $100km^2$

$100km^2$

4.2-2 يد ضر

4.2.5

ضم غ ضر

" "

شخ 13.1 شخ 26.6

41.2 (ضي 1958 6 18) شخ -3.0 -20.8

(ضي 1981 1 26) 1 شخ -3.1 7 شخ

26.8 شخ 195 حى 43cm 31cm

شخ 3.7m/s شخ 4 ضي 4.7m/s

شخ 8 ضي 2.5m/s غ

شخ 508.8mm 7 8 9

73.2 975.9mm 1961 287.1mm 2002

3.4 شخ 1.2mm 121.6mm

56.1mm 150mm شخ 1644.9mm

قمم E601 1892.3mm ضي 1994

24m/s شخ 10 10m ضر 2007 ضي 1368.1mm

2.3m/s شخ 1.9m/s شخ 2.3m/s شخ

18% 4% 18% شخ 20 /

4.2.6

ضر ثلاثي GB18306-2015 يحـ ضر يجـ

0.15g ضر VII ضر ثلاثي شجـ

شحم ضمـ

7 ضر ثلاثي ضر غ ضر يجـ

4.2.7

119 ضر 142 ضر حى ضر حى

76.79% ضر 33.41 ضي 23.21% ضر

94.4 ضر حى 65.41% ضر 8.87 6.15%

7.5 ضر ضر ضي 1% 1.46 5.2% ضر

22.32 15.5% ضر 11.01 7.71%

غ ضر ضر $18.68\ m^3$

ضر حمي ضر $1.56\ m^3$ $2.7\ m^3$

ضر 60m ث

1.34 $15.9\ m^3$ ث $0.8\ m^3$ $16.7\ m^3$

m^3 ضر شخ $3.9974\ m^3$

ئ

يجـ

حى

4.2.8

ثلاثي 119 142 ضر حى حى

ضر حى غ حى حى حى حى

58% ضر 83 حى حى حى حى

حى 14% حى 19.9

ضي ثفu يجد

يجد 27% 40 حى

ضر 2—3m فمي

غ ضي

حى حى 15% ضر 20 حى

يجد ضي غ

4.2.9

ثفu ضر 58715.8 338500 8%

93 حى يجـ

4.3

4.4.1.1

1

1

54.6

308

0.6

2

“ ”

“ ”

“ ”

“ ”

“ ”

“ ”

6.7

ضر ـ ـجه 6.4 ضر

ـدي ـ ـشي

ضر 0.8 ضي " " ججه

ضر ججه لـا

ضر 0.6 ضي

ضر 0.4 ضي ججه

ثم

خي

غ

ضر **7**

ضر شخ 0.4% ضر نجه 15.6 ضر

0.4

3.4.1.4

ضر شخ 6.3% ضر نجه 263.2 ضر يد

7.5

4.4.1.5

ضر **1**

ضر شخ 28.9% ضر نجه 1206.1 ضر

34.5 نجه غ نجه ضي ضر

ضر ضرحى ضر ضر

ضر

1.0 ضي 36 2013

ضر **2**

1.9 ضر شخ 1.6% ضر نجه 65 ضر

نجه نجه 1

يجـ ج ج نجه ضر

خي نجه

4.4.1.6

غ قمم

ج

+ “

”

4.4.1.7

نجه ئ ضي لجـ غ لجـ ئ

ج

4

يجـ GB/T4754-2017

2011 2013 شي

[2013]12 لجـ

3.4-1

3.4-1

		ج
1 2 3 4 5 6 7 ضر يجـ لجـ شي 2016 442 قمم 2015-2020	1 2 ء 3 4 5 6 7 8 9 10 11 12	 1 2 " " ج 3 ج 4 ج ج 5 ج ذ

يجـ لجـ

يـ ںں ںں غجـ

4.4-2

4.5

4.5.1

4.5.1.1

فج

1 ضي

ثلاثة 2021 ثلاثة

4.5-1

4.5-1 $\mu g/m^3$

	SO_2	NO_2	PM_{10}	$PM_{2.5}$	CO	O_3
	شخ	شخ	شخ	شخ	24 شخ 95	8 شخ 90
ثلاثة	11	33	81	49	1.4mg/m^3	159
	60	40	70	35	4 mg/m^3	160

2021 ثلاثة SO_2 NO_2 شخ

CO 24 شخ 95 غ O_3 8 شخ 90

GB3095-2012 PM_{10} شخ $PM_{2.5}$

شخ GB3095-2012

$PM_{2.5}$ PM_{10}

2

ذ HJ2.2-2018

ضر يجـ ثجه

ضي

4.5-1 ثجه ثجه 2021

PM_{10} شخ $PM_{2.5}$

شخ GB3095-2012

ثلاثة غجـ

4.5.1.2

1

ضي S

فجـ 4.5

ذ HJ2.2-2018 ضي خي

يح 4.5-2 2

يح 4.5-1

4.5-2

			m		
1#		N لج	100	TSP	

2

TSP

9 ضي

3

شي 25 1~ 18 1 2022 جه

7

		GB/T 15516-1995	0.01mg/m^3

5

شي 4.5-4 4.5-5

4.5-6

4.5-4

			(m/s)	( )	(kPa)		/
2022.01.18-2022.01.19	13:48	S	1.6	7.3	100.34		10/7
	19:47	S	1.4	-3.2	102.27		/
	01:47	S	1.3	-3.7	102.35		/
	07:46	S	2.1	0.2	101.46		10/8
2022.01.19-2022.01.20	14:02	S	1.9	5.7	102.16		10/7
	20:25	S	2.3	-2.8	102.33		/
	02:17	S	1.7	-6.3	102.50		/
	07:56	S	2.0	-6.2	102.63		9/6
2022.01.20-2022.01.21	13:50	S	1.4	1.3	102.21		10/7
	19:50	S	1.2	-2.2	103.24		/
	01:50	S	1.1				

	2022.1.20-2022.1.21	0.004	0.004	0.004	0.004	0.132	12	14	13	14
	2022.1.21-2022.1.22					0.147	12	14	14	13
	2022.1.23-2022.1.24		0.004	0.004	0.004	0.168	11	14	14	13
	2022.1.24-2022.1.25					0.182	11	15	12	13
	2022.1.25-2022.1.26		0.004	0.004	0.004	0.126	12	14	13	14

=

4.5-6 mg/m ³

					شخ		
			مخ			مخ	
		جـ			جـ		
	TSP	——	——	——	7	0.126	0.182
		28			——	——	——
		28		0.03	——	——	——
		28	0.40	1.30	——	——	——
1#		28		0.004	——	——	——
		28			——	——	——
		28			——	——	——
		28			——	——	——
		28	11	15	——	——	——

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4.5.1.3

1 غجـ

TSP

غ

2

GB3095-2012

ذ (HJ2.2-2018) D 1.4-2

3

غجـ

$$P_i = \frac{C_i}{C_{0i}}$$

C_i— i mg/m^3

C_{0i}— i mg/m^3

P_i— i غجـ

4

4.5-7

4.5-7

			شخ

غجـ غجـ

مخ % مخ %

ج

,

ضر

( )

2 3.6

2021 12 ,

10 /

كج

جمي ٤هه +

نهـ

SCR ٤جه

(ضه) VOCs

ج VOCs 10

2021 12

VOCs ضمي

يجـ VOCs ڤ

ج

( )

قمم يجـ

كح غ كح غ

يجـ

ضر ـلا ـجه ضي

شي غ شي

" " غ

ڤ

ضر

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شخ ـجه ( )

. / 7

( )

ضر

غ

( )

ضي 12 2021

غ VOCs

VOCs 65%

ضي

قمم 2021

(" "

) 3 2022 (

شي

غ

4.5.2

4.5.2.1

1

لجـ

ضر ضر ضر

4.5 فج ضر

ضر

4.5-2 يد 4.5-8 2 ضر

4.5-8

	200m ضر	1#
	2000m ضر	2#

2

3 20~23 1 2022 ضر

3

ضر ضر

BOD_5 COD_{Cr} SS pH

32 شخ

4

GB3838-2002 ضر

4.5-9

4.5-9

				L
24			GB/T 11892-1989	0.5mg/L
25		4-	HJ 503-2009	0.0003mg /L
26			HJ 970-2018	0.01mg/L
27			GB/T 16489-1996	0.005mg/ L
28			HJ 601-2011	0.05mg/L
29		/ -	HJ 639-2012	0.4 μg/L
30				0.3μg/L
31				0.2μg/L
32	+			0.5μg/L
33		11.1 11.2	GB/T 5750.6-2006	2.5μg/L
34		غ	HJ 755-2015	20MPN/L

mg/L												
µg/L	33.8	34.0	34.4	32.0	35.8	35.4	33.7	32.3	34.7	31.6	35.4	31.3
mg/L	4.11	4.03	4.10	4.15	4.10	4.09	4.23	4.16	4.02	4.06	4.16	4.15
mg/L	0.113	0.117	0.113	0.115	0.113	0.117	0.180	0.180	0.176	0.170	0.174	0.172
mg/L	408	418	363	374	360	365	448	458	441	442	457	462
mg/L	1.19	1.16	1.41	1.28	1.28	1.12	1.32	1.28	1.16	1.22	1.22	1.32
mg/L												
mg/L	5.4	4.8	5.6	4.9	5.4	4.7	5.5	5.3	5.7	5.3	5.4	5.1
mg/L	220	218	220	22	230	232	218	212	202	202	217	192
mg/L	1620	1500	1760	1190	1600	1370	1630	1500	1850	1280	1770	1470
mg/L												
mg/L	0.02	0.03	0.03	0.02	0.03	0.03	0.02	0.02	0.03	0.03	0.02	0.03
mg/L												
mg/L												
µg/L												
µg/L												
µg/L												
MPN/L	2800	1600	2200	1400	1700	1300	5400	3500	1400	3500	2400	3500

=

4.5.2.2

1 غج

غج pH SS COD_{Cr} BOD_5

15

14

2

ضر GB3838-2002

ضر GB 3838-2002 2 ضر

ضر SS GB5084-2021 1 ضر

1.4-3

3

1 غج (غج غج)

$$S_{i,j} = \frac{C_{i,j}}{C_{s,i}}$$

$S_{i,j}$— $S_{i,j} \leq 1$ $S_{i,j}$ 1

$C_{i,j}$— غج i ضي j mg/l

$C_{s,i}$— غج i mg/l

2 غج --pH

$$S_{pH,j} = \frac{7.0 - pH_j}{7.0 - pH_{sd}} \qquad pH_j \leq 7.0$$

$$S_{pH,j} = \frac{pH_j - 7.0}{pH_{su} - 7.0} \qquad pH_j > 7.0$$

S_{pHj}—pH

pH_j—pH

pH_{sd}— pH

pH_{su}— pH

3

$$S_{DO_j} = | DO_f - DO_j | /(DO_f - DO_s) \qquad DO_j \geq DO_s$$

فج

$$S_{DO_j} = 10 - 9\frac{DO_j}{DO_S} \qquad DO_j < DO_s$$

S_{DO_j} ——DO

DO_f —— غ mg/L

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

DO_j —— mg/L

DO_s —— mg/L

4

ضي غج 4.5-11

4.5-11

غج	1#	2#
2022.1.20		

4.5.2.3

لج

2021 8~2022

4.2-2 يح 4.5-12 ضر 4

mg/L 4.5-12

		pH												
2021.08		6.89	7.09	29	0.360	0.52	**8.2**	5.60	0.30	1.44		0.0058	0.022	0.04
2021.09		6.81	7.11	29	0.284	0.52	**8.9**	0.80	0.07	**1.79**		0.0007		
2021.10		7.6	7.2	22	1.35	0.278	5.3	3.10	**0.33**	**1.79**				
2021.11		7.29	10.81	27	1.20	0.28	**9.4**	3.10	0.27	**1.54**				
2021.12		7.5	5.8	**31**	1.07	0.437	**7.6**	3.30	0.25	**1.68**		0.0008		0.03
2022.01		7.2	7.6	30	0.410	0.360	**7.2**	7.80	0.10	**7.82**		0.0007		0.03
2022.02		7.2	5.7	19	0.924	1.34	5.0	8.20	0.15	**1.94**				0.03
2022.03		6.9	6.8	16	0.447	0.62	4.8	7.20	0.11	1.49				0.02
2022.04		8.9	6.34	**33**	0.099	0.52	5.9	6.50	0.08	—				0.03
		6~9	3.0	30	1.5	1.5	6	10	0.3	1.5	0.2	0.01	0.5	0.5

2021 8~2022 4 pH

ضر غ

GB3838-2002 ضي شخ

غ غج

4.5.2.3

2021 ثلا غ ،

تمج جي عهه

غ غ

غ

ج

نجده ـ نجده نجده

نجده غ غ

نجده

غ

2019 ضمه

حى 5 2020

2020

A^2O

نجده 2

تحج

نجد ρ

ذ

نجد نجد

نجده

غ

لشي

غ

نجد

ضر غ

شخ

ضي

ضر

4.5.3

4.5.3.1

1

4.5 فج ضر

ضي ضر ضي

ضر ضر 8 ضي

4.5-1 يد غ 4.5-13

4.5-13

			m	
1#		SW لج	545	ضر
2#	لج	--	--	
3#		N لج	100	ضر
4#		SW لج	1420	
5#		لج		ضر

GB/T5760-2006

HJ610-2016 ضر ذّ غ

4.5-14

4.5-14

1	pH	pH	HJ 1147-2020	/
2			GB/T 13195-1991	/
3		غ	HJ 694-2014	0.3μg/L
4				0.04μg/L
5		GB/T 5750.4-2006 غ 7.1 ضم		1.0mg/L
6	نھ	غ 8.1	GB/T 5750.4-2006	/
7			HJ 535-2009	0.025mg/L
8			GB/T 11911-1989	0.03mg/L
9				0.01mg/L
10		4.1 4.2	GB/T 5750.6-2006	5μg/L
11		5.1	GB/T 5750.6-2006	0.05mg/L
12		9.1 9.2	GB/T 5750.6-2006	0.5μg/L
13		11.1 . ᵀ ʰ ǐ		

فج

20		1.1	GB/T 5750.7-2006	0.05mg/L
21			GB/T 7493-1987	0.003mg/L
22			HJ/T 346-2007	0.08mg/L
23		F^- Cl^- - Br^- NO_3^- PO_4^{3-} SO_3^{2-} SO_4^{2-}	HJ 84-2016	0.007mg/L
24				0.018mg/L
25		/ -	HJ 639-2012	0.4μg/L
26				0.4μg/L
27				0.2μg/L
28	+			0.5μg/L
29			HJ 601-2011	0.05mg/L
30	Na^+	22.1	GB/T 5750.6-2006	0.01mg/L
31	K^+	22.1	GB/T 5750.6-2006	0.05mg/L
32	Ca^+	غ	GB/T 11905-1989	0.02mg/L
33	Mg^+			0.002mg/L
34		10.1	GB/T 5750.6-2006	0.004mg/L

4.5-16

	2022.1.24	2022.1.18	
	1#	2#	3#
pH	7.1	7.1	7.0
mg/L	1588	1042	1692
نهـ mg/L	3.15×10^{3}	2.25×10^{3}	2.71×10^{3}
mg/L			
mg/L	1.42	1.64	1.34
mg/L			0.22
mg/L	0.04		0.07
μg/L	45		
mg/L	0.40		
mg/L			
mg/L	0.422		0.463
mg/L			
mg/L			
mg/L	0.53	1.40	0.17
mg/L	0.30	0.88	0.44
mg/L			
mg/L	822	700	732
mg/L	1079	650	707
mg/L			
μg/L			
μg/L			
μg/L	6.2	7.0	8.1
μg/L			
mg/L			
μg/L			
μg/L			
μg/L			
μg/L			
+ μg/L			
mg/L			
K^{+} mg/L	3.71	1.33	1.33
Na^{+} mg/L	690	164	171
Ca^{2+} mg/L	264	24.2	193
Mg^{2+}			

غج ضر 16

K^++Na^+ Ca^+ Mg^+ CO_3^{2-} HCO_3^- شخ

2

GB/T14848-2017 ضر ضر

1.5-4

3

غج

$$Pi=Ci/Si$$

Pi—

Ci— غج i mg/L

Si— غج i mg/L

pH

pH≤7 $Pi=(7.0-pH)/(7.0-pH_{sd})$

pH>7 $Pi= (pH -7.0)/(pH_{su}-7.0)$

Pi—pH

pH—pH

pH_{sd}— pH

pH_{su}— pH

4

4.5-17 ضر

4.5-17

	2022.1.24	2022.1.18	
	1#	2#	3#
pH	0.07	0.07	0.00
	3.53	**2.32**	**3.76**
نه	**3.15**	**2.25**	**2.71**
	0.47	0.55	0.45
	0.05	0.05	0.73

	0.40	0.05	0.70
	0.045	0.003	0.003
	0.400	0.025	0.025
	0.84	0.03	0.93
	0.03	0.07	0.01
	0.30	0.88	0.44
	3.29	**2.80**	**2.93**
	4.32	**2.60**	**2.83**
	0.62	0.70	0.81

غ نه 3 ضر

ضر شخ غج ضي

نه ضر مخ ـنا GB/T14848-2017

ضرضر غ

4.5.4

4.5.4.1

1

فج كل كل ضرضي

ـنا 4.5

كل 6 1m ضي كل مخ

4.5-3 يج 4.5-20

4.5-20

1#	لجـ		كل
2#			
3#			
4#			
5#			كل
6#			

2

L_{Aeq}

3 **غ**

2022 1 19 -1 20 2 غجه

غ ضي

GB3096-2008 غ كل GB12348-2008

4

كل 4.5-21

4.5-21 dB(A)

2022.1.19	لجـ	1#	57.4	47.1
		2#	58.6	47.7
		3#	57.7	47.1
		4#	58.9	47.8
2022.1.19	5#		49.9	40.5
2022.1.20	6#		53.4	43.2

4.5.4.2

1

لجـ كل كل

GB12348-2008 3 65dB(A) 55dB(A) 4a

70dB(A) 55dB(A) غ كل

GB3096-2008 2 60dB(A) 50dB(A)

2

غ A Leq(A)

كل

$P=Leq-L_b$

P— dB(A)

Leq— A dB(A)

L_b— dB(A)

3

كل 4.5-22

4.5-22 dB(A)

	LAeq	Lb	P	LAeq	Lb	P

لجـ	1#	57.4	70	-12.6	47.1	55	-7.9
	2#	58.6		-11.4	47.7		-7.3
	3#	57.7		-12.3	47.1		-7.9
	4#	58.9	65	-6.1	47.8		-7.2
5#		49.9	60	-10.1	40.5	-9.5	-9.5
6#		53.4		-6.6	43.2		-6.8

شخ كل لجـ ضي 4.5-22

كل 3 GB12348-2008 كل

GB12348-2008 4a كل شخ

GB3096-2008 2 شخ غ

مخـاخي

4.5.5

4.5.5.1

1

حى HJ964-2018 حى ذ

4.5 فجـ

مخـا ضي ضي ضر

4.5-23 حى حى 10

4.5-4 يجـ

4.5-23

					غجـ		ضرحى

1#

6#	لجـ	116.200E	36.845N	0~0.2m	غجـ	ضر	ضر

2

غجـ 1 GB15618-2018 1#

+ pH

13

غجـ 1 GB36600-2018 3#

1,2- 1,1- ضمـ

1,1,1,2- 1,2- -1,2- -1,2- 1,1-

1,2- 1,1,1- ضمـ ضمـ-1,1,2,2- ضمـ

1,2,3- 1,4- 1,2-

[a] [a] 2- +

46 [1,2,3-cd] [a h] [k] [b]

+ غجـ #6 #5 #4 #2

5

3

1 حى 9 2 2022 غجـ

4

4.5-24 حى

4.5-24

	غجـ			
1	pH	pH حى	HJ 962-2018	/
2		غ حى	HJ 680-2013	0.01mg/kg
3		/		0.002mg/kg
4		حى	GB/T 17141-1997	0.01mg/kg
5		غ حى -	HJ 1082-2019	0.5mg/kg
6		غ حى	HJ 491-2019	1mg/kg
7				10mg/kg
8		غ حى	HJ 491-2019	3mg/kg

9				1.0μg/kg
10				1.0μg/kg
11				1.5μg/kg
12	-1,2-			1.3μg/kg
13	[redacted]			1.4μg/kg
14	1,1-			1.2μg/kg
15				1.1μg/kg
16	1,1,1-			1.3μg/kg
17	ضم			1.3μg/kg
18		غ حى / -	HJ 605-2011	1.9μg/kg
19	1,2-			1.3μg/kg
20				1.2μg/kg
21	1,2-			1.1μg/kg
22	1,1-			1.0μg/kg

40				0.1mg/kg
41	[a]			0.1mg/kg
42	[b]			0.2mg/kg
43	[k]			0.1mg/kg
44	[a,h]			0.1mg/kg
45	[1,2,3-cd]			0.1mg/kg
46	[a]			0.1mg/kg

5

ذ حى HJ 964-2018 حى

4.5-25

4.5-25(1)

	2022.2.9
	1#
	0~0.2m
	116.19757 ° 36.84259 °
ضر	حى
	5%
pH	7.92
$cmol^{+}/kg$	2.8
mV	466
غ mm/min	0.491
حى g/cm^3	1.43

ضر	ى	ى	ى
	5%	5%	5%
pH	7.86	8.12	8.01
$cmol^+/kg$	3.0	3.1	3.4
mV	457	449	468
غ mm/min	0.497	0.475	0.485
ى g/cm^3	1.45	1.51	1.53
%	49.3	48.9	48.5

ى

1# ى 4.5-26 2# ى

4.5-27 4# 5# 6# ى 4.5-28 3# ى

4.5-29

4.5-26 1# mg/kg

	pH						
1#	7.92	0.42	0.150	8.85	37	53	23
			C_{10}-C_{40}			+	
1#	22	146	39				

4.5-27 2# mg/kg μg/kg

	2#	4#			5#			6#
		0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m	
C_{10}-C_{40}	21	18	20	26	46	23	29	45
+								

=

4.5-28 4# 5# 6# mg/kg μg/kg

	8#			9#			10#
	0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m	
C_{10}-C_{40}	16	19	14	23	20	24	15

[a] mg/kg			
[a] mg/kg			
[b] mg/kg			
[k] mg/kg			
mg/kg			
[a,h] mg/kg			
[1,2,3-cd] mg/kg			
mg/kg			
mg/kg	27	23	25

=

4.5.5.2

1 غجـ

1# 9

+ شخ

2# 4# 5# 6# 1 +

شخ

3# غ 7 ضم

1,1- 1,2- 1,1- -1,2-

-1,2- 1,2- ضم-1,1,1,2 ضم-1,1,2,2 ضم

1,1,1- 1,1,2- 1,2,3-

1,2- 1,4- +

2- [a] [a] [b] [k] [a

h] [1,2,3-cd] شخ غ

2

1# حى حى ضر حى

GB15618-2018 1 حى حى

GB36600-2018 1 2 حى ضر حى ضر

ضر 1.4-6 1.4-7

3

غجـ غجـ غجـ حى

غجـ

غجـ

$$P_i=C_i/S_i$$

P_i—حى i

C_i—i mg/kg

S_i—i mg/kg

4

4.5-230

4.5-30 1 1#

غجـ	0.70	0.04	0.35	0.22	0.31	0.23	0.12	0.49	0.0087

4.5-30 2 2# 4# 5# 6#

	2#	4#			5#			6#
		0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m	
	0.005	0.004	0.004	0.006	0.01	0.005	0.006	0.01
	—	8#			9#			10#
		0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m	
	—	0.004	0.004	0.003	0.004	0.004	0.005	0.003

4.5-30 3 3#

3#	0~0.5m	0.18	0.006	0.001	0.05	0.002	0.03	0.006
	0.5~1.5m	0.18	0.005	0.001	0.07	0.001	0.03	0.005
	1.5~3m	0.16	0.005	0.001	0.06	0.001	0.03	0.006

4.5-30 1# غجـ شخ حى حى ضر

GB15618-2018 1 حى حى

GB36600-2018 حى ضر حى يجـ شخ

ضر حى مخ ـنا

5

5.1

100m

130m 500m

600m

5.2

5.2.1

20 2001 2020

116°16′E 36°52′N

20 2001 2020

22.0m/s 2005 41.5

2013 -19.2 2001 802.9mm 2009 20

5.2-1 20 5.2-2 5.2-1

20

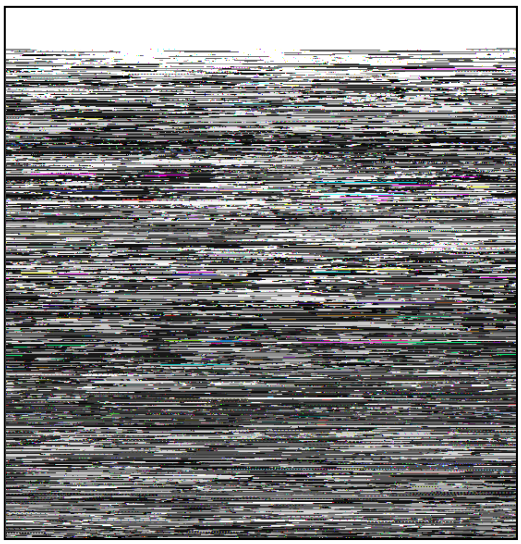
5.2-1 20 2001 2020

	1	2	3	4	5	6	7	8	9	10	11	12	
(m/s)	2.2	2.6	3.2	3.2	2.7	2.3	2.0	1.7	1.7	2.0	2.3	2.3	2.4
( )	-2.3	1.7	8.3	14.9	20.4	25.2	26.7	25.1	20.7	14.3	6.4	-0.3	13.4

(%)	65	60	55	60	72	64	79	83	78	73	68	68	69
(mm)	3.6	7.1	9.4	27.9	43.5	74.1	110.7	105.2	63.2	41.5	7.3	4.0	497.6
(h)	149.9	156.9	203.7	222.5	246.3	210.9	179.2	189.7	187.3	158.6	154.7	133.0	2192.8

5.2-2 20 2001 2020

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	C
	5.1	9.0	8.0	5.2	3.3	2.8	3.3	5.8	17.4	14.0	4.5	2.5	1.4	2.1	3.4	5.3	7.0



5.2-1 20 2001-2020

5.2.2

HJ2.2-2018 “ 5.3 ”

5.2.2.1

HJ2.2-2018

Pi Pi

$$P_i = \frac{C_i}{C_{0i}} \times 100\%$$

P_i—— i %

C_i—— i mg/m^3

C_{0i}—— i mg/m^3

5.2-3

5.2-4 5.2-7 5.2-2

5.2-3

/	/	
		50
/		41.5
/		-19.2
	/m	90m
	/km	/
	/ °	/

5.2-4

			/m	/m	/m	/ m/s	/	/h		/ kg/h
	X	Y								
P1	116.200E	36.846N	29	30	0.8	16.59	114	8400		0.112kg/h $SO_2$0.114kg/h NO_X0.456kg/h VOCs 0.012kg/h 0.065kg/h 0.0014kg/h 0.0007kg/h
P1	116.200E	36.846N	29	30	0.8	16.59	114	8400		0.197kg/h $SO_2$0.199kg/h NO_X0.798kg/h VOCs 0.0209kg/h 0.01114kg/h 0.0025kg/h 0.00124kg/h

5.2-5

										/ kg/h				
	X	Y	/m	/m	/m	/ °	/m	/h			VOCs			
	116.193E	36.843N	33	90	20	10	33	8400		0.0154	0.066	0.0723	0.008	0.004

5.2-6

/m /m /m / m/s / /h /

DA021	116.200E	36.849N	29	30	0.8	3.96	20	8400		VOCs 0.0320kg/h
DA031	116.196E	36.848N	29	15	0.35	25.33	20	7200		0.0402kg/h
DA005	116.197E	36.848N	29	26	0.4	11.06	20	2400		0.0254kg/h VOCs 0.00679kg/h
DA007	116.197E	36.848N	29	15	0.4	14.38	20	2400		VOCs 0.049kg/h
DA008	116.197E	36.848N	29	15	0.4	9.95	20			

										VOCs 0.0089kg/h 0.0464kg/h 0.0011kg/h 0.00054kg/h
P1-4	116.193E	36.843N	30	43	0.8	13.82	114	8400		0.085kg/h $SO_2$0.085kg/h NO_X0.342kg/h VOCs 0.0089kg/h 0.0464kg/h 0.0011kg/h 0.00054kg/h

DA012 A DA022 B DA017 DA026 DA023

DA028 DA027 DA013 DA019 DA014

DA015 DA020 DA016 DA021 DA031

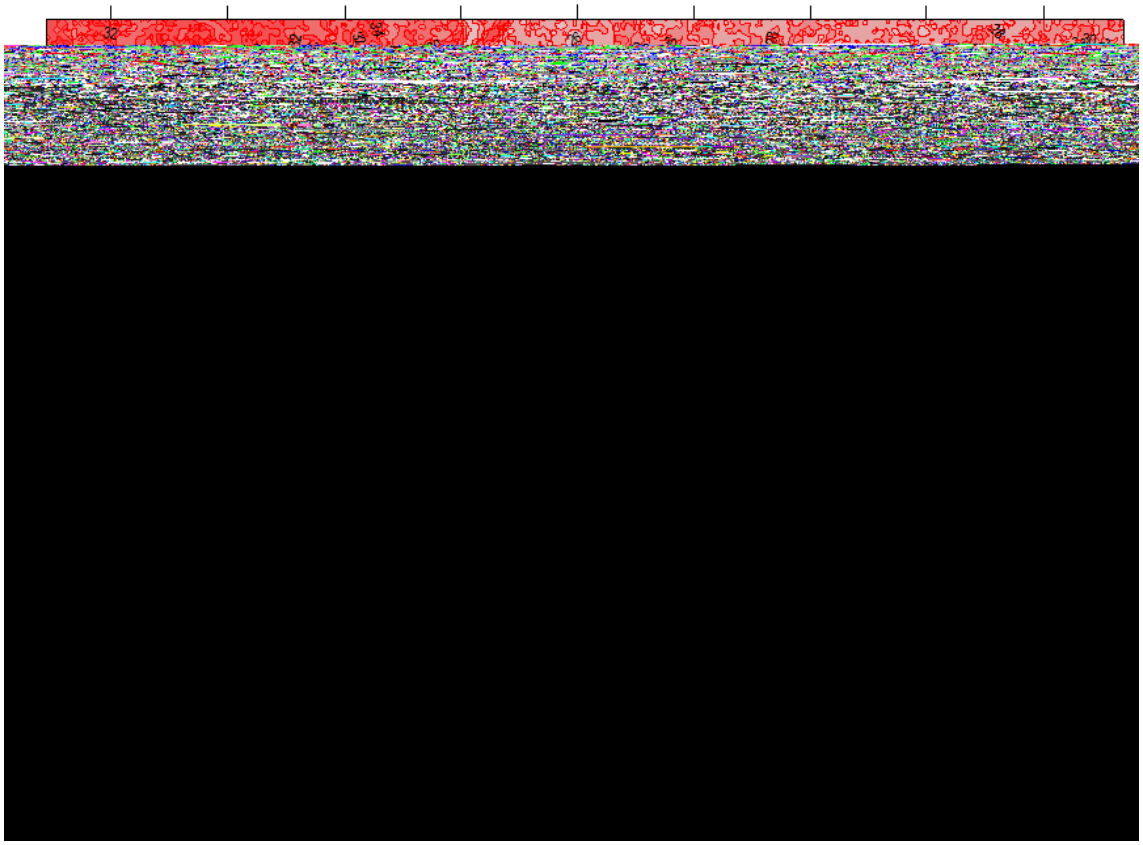
DA005 DA007 DA008 DA025 DA024

DA018 DA029 DA001 DA002 P1-1

P1-2 P1 P1-3 P1-4

5.2-7

										/ kg/h				
	X	Y	/m	/m	/m	/ °	/m	/h			VOCs			
	116.196E	36.846N	29	78	62	10	27	8400		0.137	0.0223	—	—	—
	116.199E	36.846N	29	90	25	10	33	8400		0.0116	0.0495	0.0515	0.006	0.003
	116.193E	36.843N	30	66	47	10								



5.2-2

5.2.2.2

5.2-8

		mg/m^3	m	$D_{10\%}$	mg/m^3	% P_{max}
P1		0.00048	197		0.45	0.11
	SO_2	0.000485	197		0.5	0.10
	NO_X	0.001946	197		0.20	0.78
	VOCs	0.000051	197		2	0.0026
		0.000027	197		0.2	0.01
		0.000006	197		0.05	0.01
		0.001983	46		0.9	0.22
	VOCs	0.008497	46		2	0.42
		0.009308	46		0.2	4.65
		0.00103	46		0.05	2.06

PM_{10} 3 TSP 3

Pmax 1%

Pmax=4.65% 10% HJ2.2-2018

5.2.2.3

—— HJ2.2-2018 “ 5.4.2

5km ”

5km 1.6-1 1.6-1

5.2.3

/

5.2-9

/m /m / m/s

/m

5.2.5

5.2-10

5.2-11 5.2-12

5.2-10

			mg/m^3	(kg/h)	(t/a)		
						mg/m^3	kg/h
1	P1		4.5	0.112	0.94	10	45.3
		SO_2	4.6	0.114	0.955	50	—
		NO_x	18.2	0.456	3.83	50	—
		VOCs	0.5	0.012	0.10	60	3.0
			2.6	0.065	0.546	—	41
			0.06	0.0014	0.0121	5	—
			0.03	0.0007	0.00588	15	—
		0.94t/a VOCs 0.1t/a SO_2 0.955t/a NOx 3.83t/a 0.546t/a 0.0121t/a 0.00588t/a					

5.2-11

						/ mg/m^3	t/a
1					GB16297-1996 2	1.0	0.129
						0.2	0.067
						0.08	0.033
					GB14554-1993 1	1.5	0.607
			VOCs		6 DB37/801.6-2018 3	2.0	0.555

	t/a	0.129
	t/a	0.067
	t/a	0.033

	t/a		0.607
	VOCs	t/a	0.555

5.2-12

		%	m^3/h	mg/m^3	kg/h	mg/m^3	kg/h		/h	/	
		0		9.2	0.229	10	45.3		1	1	
	SO_2	0		4.6	0.114	50	—		1	1	
	NO_x	0		18.2	0.456	50	—		1	1	
	VOCs										
P1		0	25000	23.8	0.595	60	3.0		1	1	

[2018]207

100m

[2019]7

100m 50m

4.5

100m 150m

5.2-3

5.2.6.2

GB/39499-2020 15m

$$Q_C / C_m = 1/A \times \left(B \times L^C + 0.25 \times r^2\right)^{0.50} \times L^D$$

Q_C—— kg/h

Cm— mg/m^3

L—— m

r—— m

A ő ﻓﻪ ţ

5.2-13

		m	m	m	(kg/h)	mg/m^3		m	
		90	20	33	0.0154	0.9	1.0	50	100
	VOCs				0.066	2	2.2	50	
					0.0723	0.2	22.9	50	
					0.008	0.05	8.9	50	

5.2-13 100m

100m 130m

500m 600m

5.2-4

5.2-5

5.2.6

100m

5.2.7

5.2-1

5.3

5.3.1

GB/T31962-2015 1A

5.3-1

5.3-2 5.3

5.3-1

					GB18918-2002 A COD_{Cr}≤40mg/L NH_3-N≤2mg/L					70
										5

5.3-3

				/ mg/L
1	DW001	COD_{Cr}	GB/T31962-2015 1A	500
		BOD_5		350
				45
				70
				5
		COD_{Cr}		300
				20
		BOD_5		150

5.3.2

(HJ2.3-2018) B

5.3.3

GB/T31962-2015 1A

(GB18918-2002) A

[2017]5

8 m^3/d 2021.7

5.9091 m^3/d 35.54m^3/d

0.17%

CODcr≤18.5mg/L BOD_5≤9mg/L ≤1.69mg/L

CODcr≤300mg/L

BOD_5≤150mg/L ≤20mg/L

5.3.5

12439m^3/a

COD_{Cr} 0.20t/a NH_3-N

0.008t/a COD 40mg/L

5.3.6

5.3-4

5.3-4

		√ □	
		□ □ □ □ □ □ □ √	
		□ √ □	□ □ □
		□ □ √ pH √ □ √ √	□ □ □ □ □
		□ □ A □ B √	□ □ □
		□ □ □ □ □	□ □ □ □ □ □ □
		□ □ √ □ □ □ □ □	□ √ □
		□ 40% □ 40% □	
		□ □ □ □ □ □ □ □	□ □ □

		□ □ √ □ □ □ □ □	pH SS COD_{Cr} BOD_5	2
		km km^2		
		pH SS COD_{Cr} BOD_5		
		□ □ □ √ □ □ □ □ □		
		□ □ √ □ □ □ □ √		
		[redacted]		□ √
		km km^2		

		□ □ □ □ □ □ □		
		□ □ □ □ □		
		□ □		
		□ □ √ □ √ □ □ √		
			/ t/a	/ mg/L
		CODcr	12439m³/a COD_{Cr} 0.23t/a 0.021t/a 1243*m³/a COD_{Cr} 0.20t/a 0.0087t/a	CODcr 18.5mg/L 1.69mg/L CODcr15.9mg/L 0.653mg/L

		√ □ □ □ □ □		
			□ □ □	√ √ □
				pH COD_{cr} TP TN BOD_5
		√		
		√ □		
“□” √ “ ” “ ”				

5.4

5.4.1

5.4.1.1

2 1 2

2 1 2

1 3 7

1 2 3

4 5 6 7

1

2 6

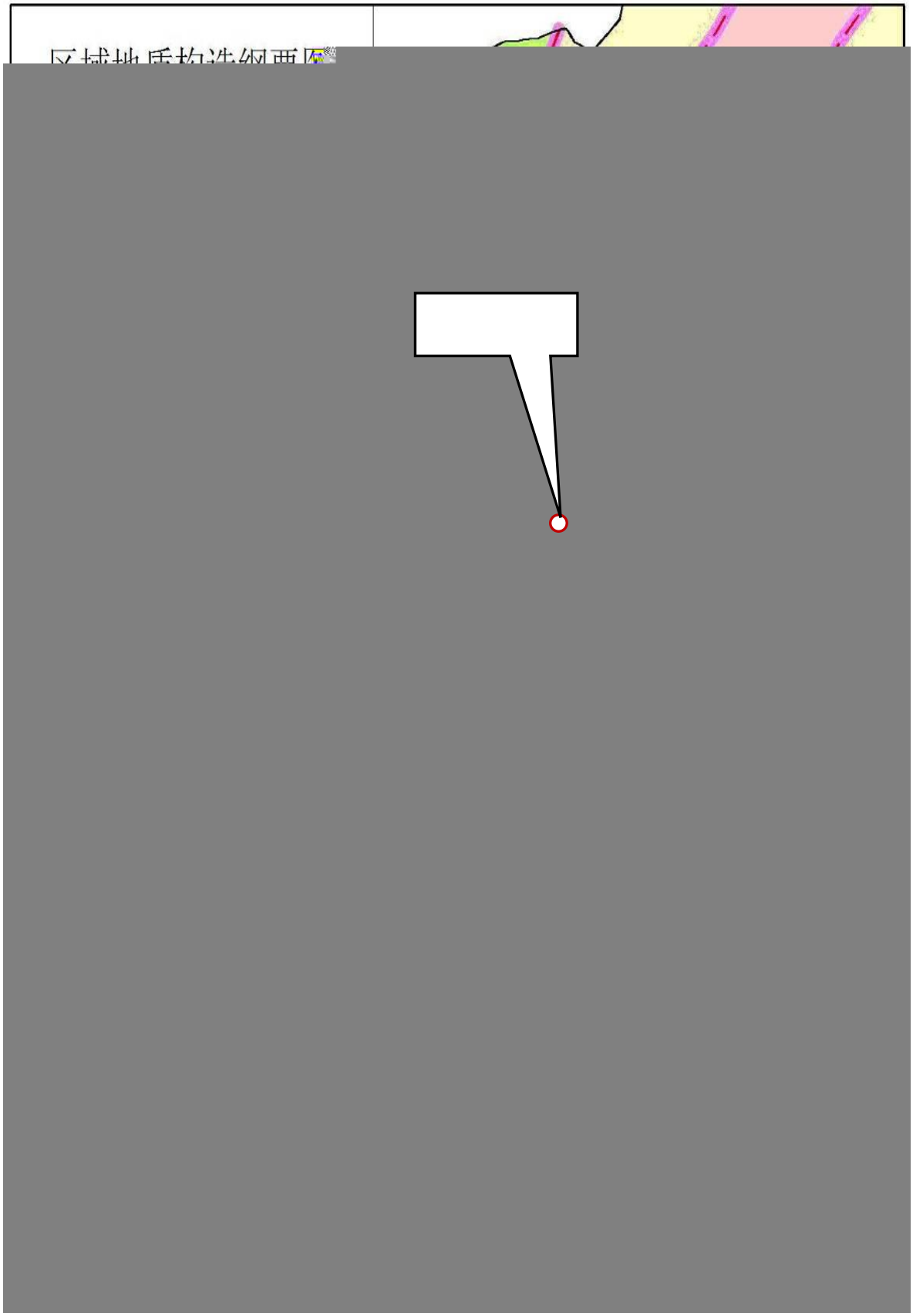
4—5

3

GB50011-2001

7 0.15g

5.4-1



5.4-1

5.4.1.2

6 -

1.30~2.50m 1.78m

-18.80~-18.20m -18.44m 18.30~18.90m 18.54m

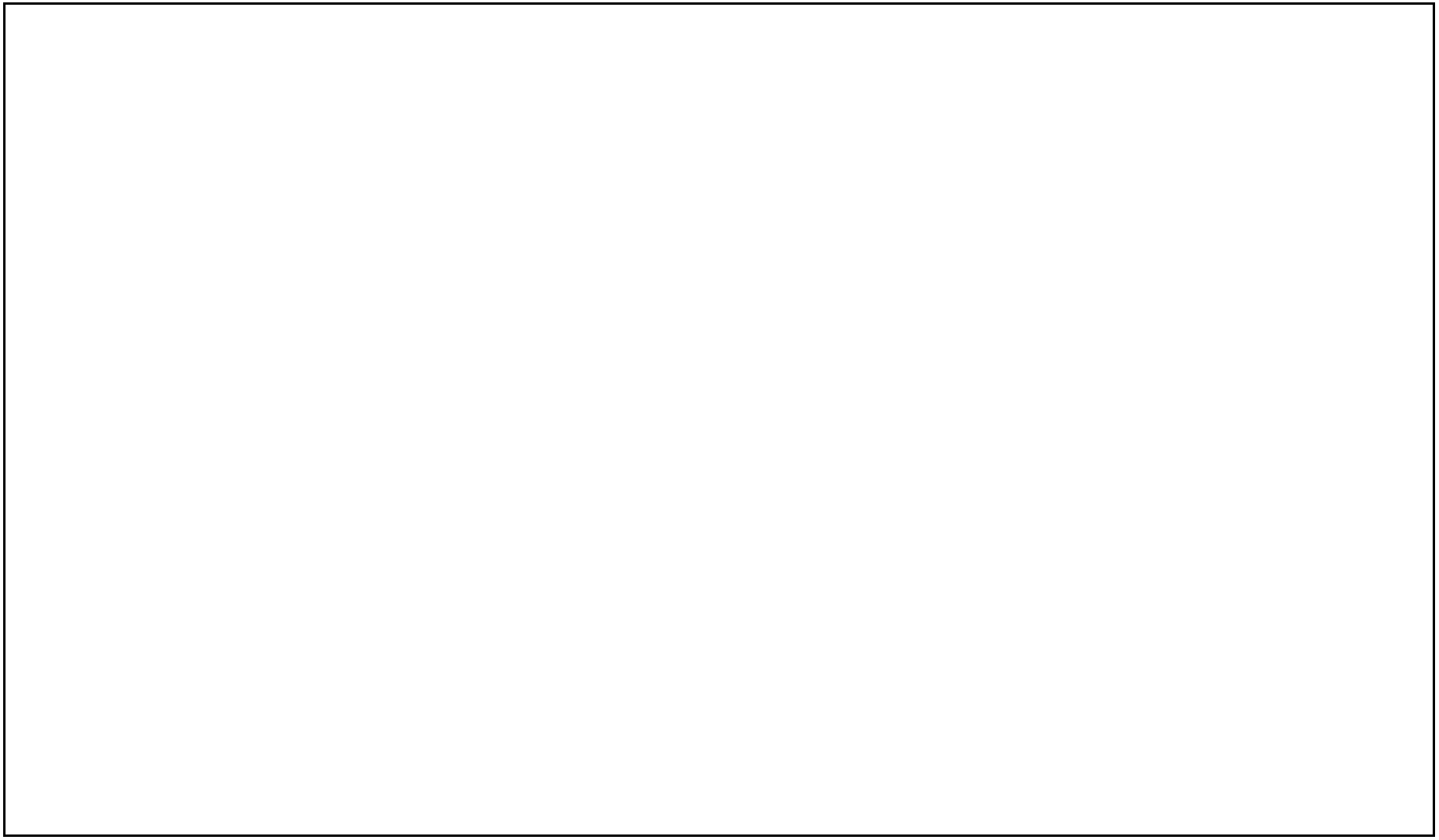
7

6.10~7.10m 6.68m -25.40~-24.70m

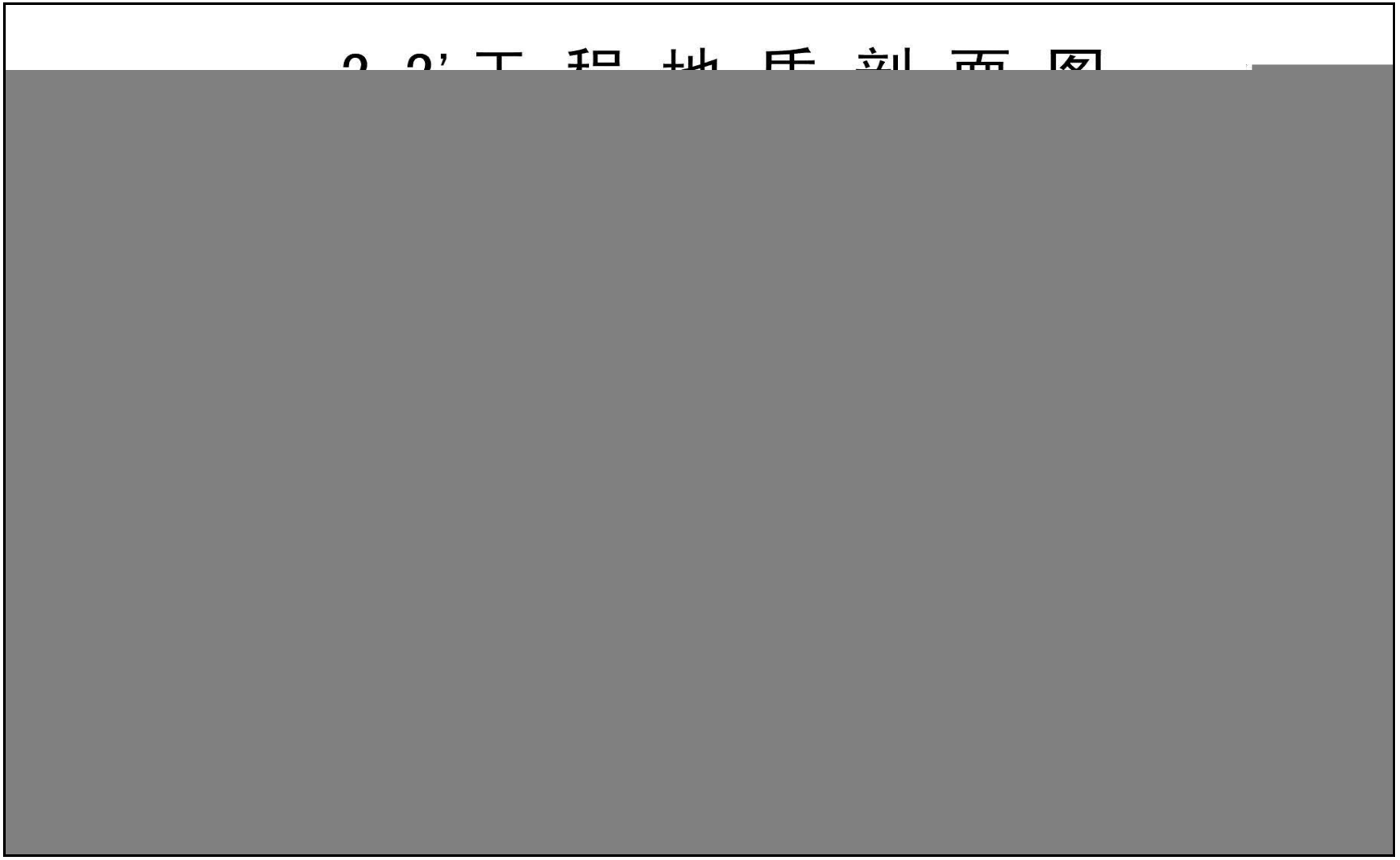
-25.08m 24.80~25.50m 25.18m

8

5.4-2~5.4-5



5.4-2



5.4-3

5.4-4

5.4-5

5.4.3

5.4.3.1

1

HJ610-2016

5.4-2

4.4.3.2

— HJ610-2016

≤6km^2

5.4-3

	km^2	
	≥20	
	6-20	
	≤6	

1000m 1000m

2000m 6km^2

5.4.4

5.4.4.1

5.4.4.2

1

GB/T31962-2015 1A

2

5.4.4.3

100km^2

5.4-6

2km

5.4.4.4

“

”

1

“ ”

“ ”

2

3

4

6m 1.0×10^{-7}cm/s

1.5m

1.0×10^{-7}cm/s

5.4-4 **5.4-7**

5.4-4

		600 3:7 300 C30	6.0m 1.0×10^{-7}cm/s
		100 C10 20 ±0.00 C35	1.5m 1.0×10^{-7}cm/s
		3:7 300	--

C30 P8

250mm 150mm

1.0mm

2mm

100m

2

1m

$\leq10^{-7}$cm/s 2mm 2mm

$\leq10^{-10}$cm/s

1.5m 1×10^{-7}cm/s

C25 P6

100mm

P6

1.0mm 0.3%

HDPE

5.4.4.5

1

5.4-5

5.4-5

		300mm 400mmC30	P8	6.0m 1.0×10^{-7}cm/s	
		300mm3:7 200mmC30	P6		
		2500mm 350mmC30	P8		
		100 C10 20 ±0.00 C35	—	1.5m 1.0×10^{-7}cm/s	
		3:7 300	—	--	

2

5.4-5

2

5.4.4.6

1

5.4-7

5.4-6

5.4-6

“ ”

5.4.5

5.5

80~90dB(A)

5.5.1

5.5-1

5.5-2

5.5-1 dB(A)

						/m								
				/ / dB(A)/m		X	Y	Z	/m	/dB(A)		/ dB(A)	/dB(A)	
1			——	85/1		274	-507	32.57	5	71.0	24h	26	45.0	1
2			——	90/1		285	-508	30.11	2	84.0	24h			

5.5-2

i A L_{Ai} T

t_i j A $L_{A,j}$ T

t_j

N M

L_{eqg}

5.5-3

/m

dB(A)

(3)

5.5.4

5.5-5

5.5-5

		□ □ √
		200m √ 200m□ 200m□
		A √ A □ □
		√ □ □
		0 □ 1 □ 2 □3 √ 4a √ 4b □

5.6

5.6.1

( )

5.6.1.1

1

(

) HJ964-2018 A “

” ‘ ’

VOCs

HJ964-2018 B 5.6-1

5.6-1

	√							

5.6-1

2

1800m^2

HJ964-2018 6.2.2.1

≤5hm^2

3

( ) HJ964-2018

5.6-2

5.6-2

4

5

$$\Delta S=n\quad Is\text{-}Ls\text{-}Rs\quad /\quad pb\times A\times D$$

ΔS—— g/kg

Is—— g

5880g/a 940000g/a

Ls—— g 0

Rs—— g 0

pb—— kg/m^3 14800kg/m^3

A—— m^2 200m 474800m^2

D—— 0.2m

n—— a

E

S=Sb+ΔS

Sb—— g/kg

S—— g/kg

6

n

5.6-4

5.6-4

	ΔS mg/kg	S mg/kg	ΔS mg/kg	S mg/kg
10	0.000041838	—	0.006688	—
20	0.000083677	—	0.013377	—
30	0.000125515	—	0.020065	—
40	0.000167354	—	0.026754	—
50	0.000209192	—	0.033442	—

g/kg	—

5~50

5.6.1.3

1

2

5.6.1.4

5.6-5

5.6-5

			GB15618-2018 1	

5.6.1.5

5.6-6

5.6-6

		√ □ □
		√ √ □
		N 100m
		√ □ □ □
		VOCs SO_2 NO_X TSP

<table>
<tr><td colspan="2"></td><td colspan="4"></td></tr>
<tr><td colspan="2"></td><td colspan="4">□ √ □ □</td></tr>
<tr><td colspan="2"></td><td colspan="4">√ □ □</td></tr>
<tr><td colspan="2"></td><td colspan="4">□ √ □</td></tr>
<tr><td rowspan="4"></td><td></td><td colspan="4">a √ b √ c □ d □</td></tr>
<tr><td></td><td colspan="4">4.5-23</td></tr>
<tr><td rowspan="3"></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>1</td><td>2</td><td>0~0.2m</td></tr>
<tr><td></td><td>3</td><td>0</td><td>0~0.5m
0.5~1.5m
1.5~3m</td></tr>
<tr><td></td><td colspan="4">pH
1,1- 1,2- 1,1-
-1,2- -1,2- 1,2-
1,1,1,2- 1,1,2,2- 1,1,1-
1,1,2- 1,2,3-
1,2- 1,4- +
2- [a] [a]
[b] [k] [a h] [1,2,3-cd]</td></tr>
<tr><td rowspan="3"></td><td rowspan="2"></td><td colspan="4">1,1- 1,2- 1,1-
-1,2- -1,2- 1,2- 1,1,1,2-
1,1,2,2- 1,1,1- 1,1,2-
1,2,3- 1,2-
1,4- +
2- [a] [a]
[b] [k] [a h] [1,2,3-cd]</td></tr>
<tr><td colspan="4">GB 15618√ GB3660√ D.1□ D.2□</td></tr>
<tr><td></td><td colspan="4"></td></tr>
<tr><td rowspan="4"></td><td></td><td colspan="4"></td></tr>
<tr><td></td><td colspan="4">E√ F□</td></tr>
<tr><td></td><td colspan="4">200m</td></tr>
<tr><td></td><td colspan="4">a √ b □ c □
a □ b □</td></tr>
<tr><td rowspan="3"></td><td></td><td colspan="4">√ √ √</td></tr>
<tr><td rowspan="2"></td><td></td><td colspan="2"></td><td></td></tr>
<tr><td>2</td><td colspan="2"></td><td></td></tr>
<tr><td></td><td colspan="4"></td></tr>
<tr><td colspan="2"></td><td colspan="4"></td></tr>
</table>

5.6.2

5.6-7

5.6-7

			t/a								
S_1			209								

5.6.3

5.6.3.1

1

2

GB18597-2001 2013

a.

b.

c.

d.

1/5

e.

f.

100mm

3

4

5 “ ”

GB18597-2001 2013

23

1

2

3

4

5.6.5

5.7

[2012]77

[2012]98 HJ169-2018

5.7.1

5.7.1.1

45000 6 /

FDY

5.7.1.2

1

5.7-1

5.7-1

1		1 760m^3 2
2		1 2
3		1 2 3 4 5

2

5.7-2

		11
		170
		388
		30
		9
		5

3

5.7-3

5.7-3

			/
1	pH	PHS-3C	1
2	COD	JH-12	1
3	COD	--	1
4		722N	1
5	BOD_5	--	1
6		--	1
7		--	1
8		--	

16cm

1.5km 30m^3 24kg

5.7-4

5.7-4

			t/a	t/a		
			93	7		
		37%	105	2.54 0.94	3.9m^3 1	
		20-25%	75	2.84	3.9m^3 1	
			1.5	0.1		
			1520	87		
			400	23		
			477.6408 m^3	0.024		
			—	0.00588	—	
		VOCs	—	0.1	—	

5.7.2.2

5.7.2.3

MSDS 5.7-5~ 5.7-10

5.7-5 MSDS

					m-Dihydroxybenzene		
	$C_6H_4(OH)_2$		110.11		608		127
	110.7		276.8		—		
	=1	1.28		(kJ/mol)	2847.8		
	=1	3.79					
(vol%)	—						
	6.1						
	LD_{50}301mg/kg( ) 3360mg/kg( ) 29mg/kg						
				UN	2876	CAS NO.	108-46-3
	61725				O53		—
					( )		

5.7-6 MSDS

					formaldehyde		
	CH_2O		30.03		430		50 (37%)
	-92		-19.4		13.33kPa(-57.3)( )		
	=1	0.82		(kJ/mol)	2345		
	=1	1.07			137.2		
(vol%)	7.0 7.3						
	8.3						
	LD50 800mg/kg( ) 270mg/kg( ) LC50 590mg/m^3( )						
				UN	1198	CAS NO.	50-00-0
	83012				O53		8
	15						

5.7-7 MSDS

					Ammonium hydroxide Ammonia water		
	NH4OH		35.05				—
					1.59kPa(20)		
	=1	0.91		(kJ/mol)			
	=1				--		
(vol%)							
	8.2						
	—						
			UN	2672	CAS NO.	1336-21-6	
	82503					20	

5.7-8 MSDS

					Sodiun hydroxide Caustic soda		
	NaOH		40.01		-		-
	318.4		1390		0.13kPa(739)		
	=1	2.12		(kJ/mol)	-		
	=1	-			-		
(vol%)	-						
	-	MAC	2				
	8.2						
	LD50 LC50						
				UN	1823	CAS NO.	1310-73-2
	82001						-
	, ,						
	15 15						
	( )						

5.7-9

				Natural gas dehydration			
	CH_4		16.05		537		-218
	-182.6		-160		53.32kPa(-168.8)		
	=1	0.45( )			890.8kJ/mol		
	=1	0.6			-82.25		
	5 15(vol%)						
	2.1						
	-						
				UN	1971	CAS NO.	74-82-8
	21007						
	( ) ( ) ( )						

5.7-10 MSDS

		α- -5- butadiene vinyl-pyridine rubber latex
1		50

-

Q

Q

C.1 Q

$Q=q_1/Q_1+ q_2/Q_2+…q_n/Q_n$ C.1

q_1 q_2 … q_n—— t

Q_1 Q_2 … Q_n—— t

Q 1

Q≥1 Q 1≤Q 10 10≤Q 100 Q≥100

(HJ 169-2018) B

5.7-11

5.7-11

		CAS	t	t	q_1/Q_1	Q
		108-46-3	7	5	1.4	1≤Q=3.5664 10
	37%	50-00-0	2.54 0.94	0.5	1.88	
	20-25%	1336-21-6	2.84	10	0.284	
		74-82-8	0.024	10	0.0024	

2 M

(HJ 169-2018)C.1

M M 20 10 M≤20 5 M≤10 M=5

M1 M2 M3 M4 M 5.7-12

5.7-12 M

				/	M
1				1	5
M ∑				1	5

M=5 M4

3 P

Q M 5.7-13

5.7-15

	F1	F2	**F3**
S1	E1	E1	E2
S2	E1	E2	E3
S3	E1	E2	**E3**

5.7-16

F1

E3

3

E1

E2 E3 5.7-18

4.16

3.47×10^{-5}cm/s D2

D2 G3

5.7-18 E3

3

5.7-21

5.7-21

				(m)		
	5km 1.6-1					
	500m					2223
	5km					144072
	E					E1
						24h /km
	1					6.72
	2					—
	3					—
	E					E3 F3 S3
	1				10^{-6} 10^{-4}cm/s	

5.7-22

E	P			
	P1	P2	P3	P4
E1	+			
E2				
E3				
+				

P4

E1 E3

5.7.3.2

HJ 169-2018 1

5.7-23

	+			

P4 E1

E3

5.7.3.3

(HJ 169

2018) 5km

5km

6km^2

1.6-1 1.6-1 1.6-2

5.7.4

HJ 169-2018

/

5.7.4.1

37% 20-25%

VOCs

5.7-5~ 5.7-10

5.7.4.2

5.7-24

5.7-24

	/			
	VOCs			

5.7.4.3

37% 20-25%

VOCs

/

5.7.4.4

5.7-1

5.7-25

5.7-25

1							—
2			VOCs				—
3			SO_2 NO_X VOCs				—

5.7.5

5.7.5.1

110.7

5.7.5.2

(HJ 169-2018) E 10

5.7-26

5.7-26

/ / /	10mm 10min	1.00×10^{-4}/a 5.00×10^{-6}/a 5.00×10^{-6}/a
	10mm 10min	1.00×10^{-4}/a 5.00×10^{-6}/a 5.00×10^{-6}/a
	10mm 10min	1.00×10^{-4}/a 1.25×10^{-8}/a 1.25×10^{-8}/a
≤75mm	10%	1.00×10^{-8}/a

	10% 50mm	5.00×10^{-4}/a 1.00×10^{-4}/a
	10% 50mm	3.00×10^{-7}/h 3.00×10^{-8}/h
	10% 50mm	4.00×10^{-5}/h 4.00×10^{-6}/h

5.7-33

10% 4.0×10^{-5}/h

5.7.6

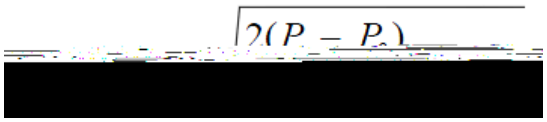
5.7.6.1

1

10% 50mm

$3.9m^3$ 0.02m

QL



Q_L—— kg/s

P—— Pa

P_0—— Pa

ρ—— kg/m^3

g—— $9.81m/s^2$

h —— m

C_d—— 0.65

A—— m^2

30min 5.7-27

5.7-27

	P Pa	P_0 Pa	ρ kg/m ^{3}	h m	A m^2	Q_L kg/s
	101325	101325	815	2	0.00000314	0.0104

AFTOX

5

F 1.5m/s 25 50%

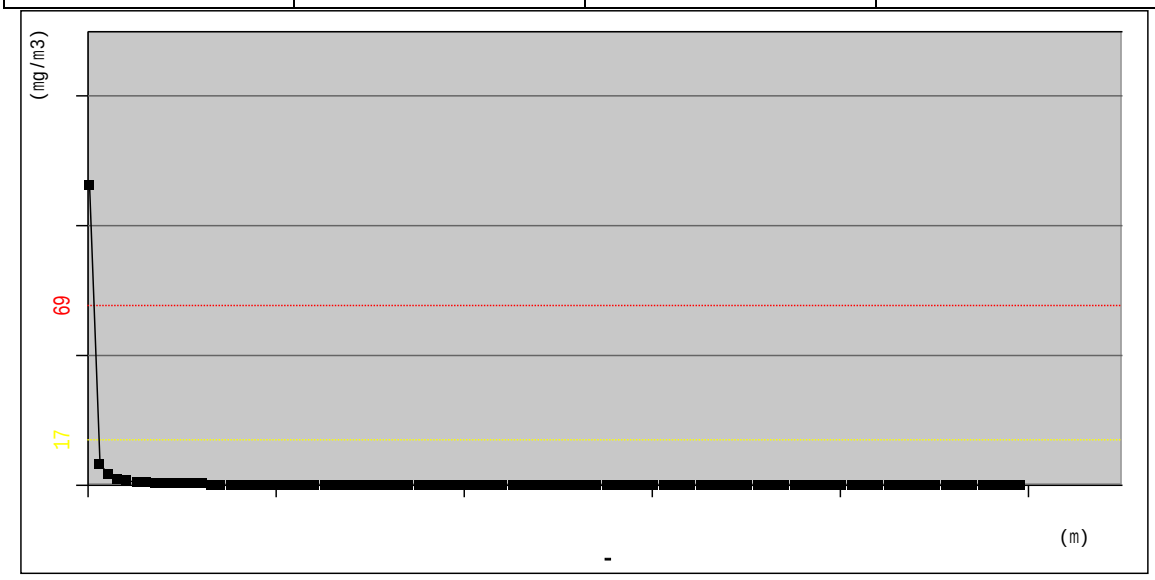
5.7-30 — 5.7-5

5.7-6 5.7-7

5.7-30

	(m)	min	(mg/m^3)
1	10	0.11	115.44
2	60	0.67	8.29
3	110	1.22	3.95
4	160	1.78	2.43
5	210	2.33	1.66
6	260	2.89	1.21
7	310	3.44	0.93
8	360	4.00	0.74
9	410	4.56	0.60
10	460	5.11	0.50
11	510	5.67	0.42
12	560	6.22	0.36
13	610	6.78	0.32
14	660	7.33	0.28
15	710	7.89	0.25
16	760	8.44	0.22
17	810	9.00	0.20
18	860	9.56	0.18
19	910	10.11	0.16
20	960	10.67	0.15
21	1010	11.22	0.14
22	1060	11.78	0.13
23	1110	12.33	0.12
24	1160	12.89	0.11
25	1210	13.44	0.10
26	1260	14.00	0.10
27	1310	14.56	0.09
28	1360	15.11	0.08
29	1410	15.67	0.08
30	1460	16.22	0.08
31	1510	16.78	0.07

74	3660	45.67	0.02
78	3710	46.22	0.02
76	3760	46.78	0.02
77	3810	47.33	0.02
78	3860	47.89	0.02
79	3910	48.44	0.02
80	3960	49.00	0.02
81	4010	49.56	0.02
82	4060	50.11	0.02
83	4110	50.67	0.02
84	4160	51.22	0.02
85	4210	51.78	0.02
86	4260	52.33	0.02
87	4310	52.89	0.02
88	4360	53.44	0.02
89	4410	54.00	0.02
90	4460	54.56	0.02
91	4510	55.11	0.02
92	4560	55.67	0.02
93	4610	56.22	0.02
94	4660	57.78	0.02
95	4710	58.33	0.02
96	4760	58.89	0.02
97	4810	59.45	0.02
98	4860	60.00	0.02
99	4910	60.56	0.02
100	4960	61.11	0.01



5.7-5 ——

5.7-31

5.7-31

	10%				
	10%				
		/	25	/Mpa	0.101325
		/kg	2540	/mm	2
/ kg/s	0.00032	/min	30	/kg	18.72
/m	2	/kg	0.576		4.0×10^{-5}/h
			/ mg/m^3	/m	/min
		-1	17	40	0
		-2	69	10	0
			/min	/min	/ mg/m^3
			0	0.35	115.44

2

GB/T31962-2015 1A

pH COD SS

3

“ ”

5.7.7

5.7.7.1

1

1

2 RTO

3

2

1

2

3

4

5

5.7.7.2

1

1

2

3

2

V =10qF

q— mm q=qa/n qa

508.8mm n 60

8.48mm

F——

2.2152hm^2

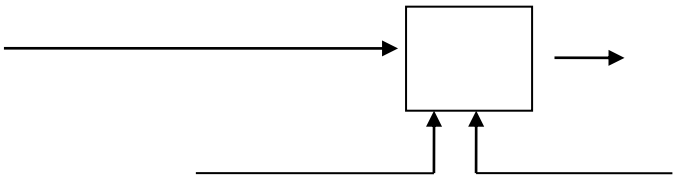
V_5

187.85m^3

V =3.9+180-88.2+187.85=283.55m^3

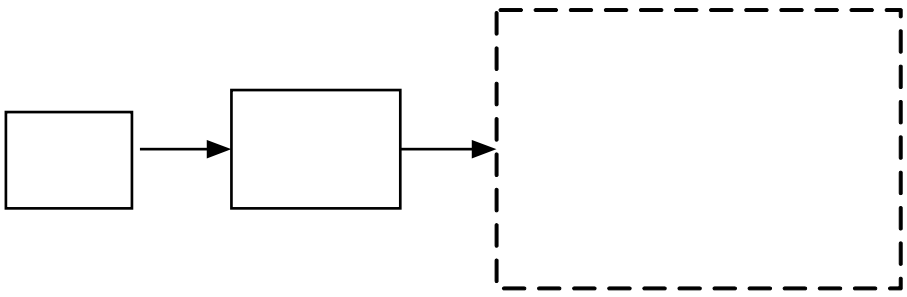
760m^3

5.7-8



5.78

5.7-9



5.7-9

5.7.7.3

VOCs

1

2

( )

3

4

5.7.7.4

1 “ ” “ ”

2 “ ”

3

4

5

6

7

8

5.7.7.5

1

2

3

5.7.7.6

1

2

3

4 —— ——

——

5

5.7-31

5.7-31

		1
1		2

		3 4 5 **5.7-10**
2		1 GB50160-2008 “ ” 2 760m^3
3		
4		
5		
6		
7		760m^3 /

5.7.8

4.7.8.1

2020 12 30

371526-2020-001-H

4.7.8.2

1

2

1

5.7-42

5.7-42

	200m 500m 1000m 1500m 2000m	
	2	SO_2 NO_X VOCs

pH BOD_5

COD SS

2 5.7-43

5.7-43

	pH BOD_5 COD SS

2

3

3

(1)

( )

(2) 24

(3)

(4)

5.7-44

5.7-44

				37%	20-25%	
		/t	7	2.54	2.84	0.024
			500m 2223			5km 144072
			200m			
				F1 □	F2□	F3 √
				S1 □	S2 □	S3 √
				G1 □	G2 □	G3 √
				D1 □	D2√	D3 □
		Q	Q 1 □	1≤Q 10√	10≤Q 100 □	Q 100□
		M	M1 □	M2 □	M3√	M4 □
		P	P1 □	P2 □	P3 □	P4√
			E1 √	E2□	E3 □	
			E1 □	E2□	E3 √	
			E1 □	E2 □	E3√	
		+ □	□	√	□	□
		□	√	□	□	

5.8

2008 2008 264

1

2

20 30m

3

5.8-1

6

“ ”

6.1

6.1.1

12439t/a COD_{Cr}

9.35t/a 0.16t/a

6.1.2

6.1.2.1

1000m^3/d “ + + + ”

2.2-16

10423m^3/a 29.78m^3/d

600m^3/d 1000m^3/d 400m^3/d

29.78m^3/d

GB/T31962-2015 1A

GB18918-2002 A

12439m^3/a COD_{Cr}

0.20t/a 0.008t/a

6.1.3

20 40000

0.05%

6.2

6.2.1

RTO 43 P1

6.2.2

RTO

VOCs RTO

98%

RTO VOCs

5-10

95%

VOCs RTO

VOCs

RTO

GB16297-1996 2

DB37/2376-2019 1 <

> [2019]39

GB31572-2015

5 6

2 VOCs

6 DB37/801.6-2018 1

GB14554-93 2

RTO

HJ1093-2020 6.1-1

6.1-1 RTO HJ1093

	HJ1093			
6.1		105%	105%	
		95% 98%	RTO ≥ 98% 98%	
		90%	RTO ≥ 95%	
		GB50051	43m	
6.2			RTO	

6.3			DN200 RTO	
		760	RTO 760 750 850	
6.4				
6.5		25%	RTO	

6.2.3

225 40000

0.56%

6.3

6.3.1

80 95dB(A)

A

B

C

6.3.2

GB12348-2008 3

GB12348-2008 4a

GB3096-2008 2

20 40000 0.05%

6.4

6.4.1

6.4.2

6.4.2.1

6.4.2.2

2021 FDY

“ HW49 900-041-49

”

6.4.3

			GB16297-1996 2 GB14554-93 1 VOCs 6 DB37/801.6-2018 3 GB14554-1993 1	
			GB/T31962-2015 1A	GB/T31962-2015 1A
			GB12348-2008 3 GB12348-2008 4a	3 1mL$_{Aeq}$(A) ≤ 65dB(A) ≤ 55dB(A) 4a 1mL$_{Aeq}$(A) ≤ 70dB(A) ≤ 55dB(A)

6.6

7

7.1

7.1-1

7.1-1

			40000
		/	152159
		/	143434
		/	8458
		/	2117.2
		/	6340.8
		%	21.1
		%	15.2
			2202
			7.1
		%	47.1

15.2%

7.1 9.0 47.1%

7.2

7.2.1

272 40000 0.68%

7.2-1

7.2-1

1

		RTO	1	150		
			1	10		
3			—	20		
4			—	2		
5			—	15		
		—	—	272	—	—

7.2.2

7.3

60

8

8.1

8.1.1

1

24

2

1

2

a

b

c

d

a

b

c

d

8.2

8.2-1

8.2-1

								t/a		

SO_2

NOx VOCs

+RTO

RTO

1

43

						DB37/801.6-2018 3				
	NMHC	--	--	--	--	GB37822-2019	VOCs 0.555t/a		--	VOCs

pH COD_{Cr}
NH_3-N

				--		0	--		
				--	GB18597-2001	0	--		
		L_{eq}		--	GB12348-2008 3 4a	--	--	--	
			Mb≥6.0m k≤1×10^{-7}cm/s GB18598						
			Mb≥1.5m k≤1×10^{-7}cm/s GB18598						

8.3

8.3.1

HJ 1102-2020

HJ 1139-2020

( )

8.3-1

8.3-1

	P1	VOCs SO_2 NOx		
		VOCs		
		NMHC		
		pH COD_{Cr}		
		BOD_5 SS		
		A		
		pH		

8.3-2

8.3-2

		pH	

8.3.2

8.3-2

8.3-2

1		JDC-109	1
2		GC-14C	1
3		GC-2010	1
4		AA7002	1
5	COD	JH-12	1
6		PHS-3C	1
7	COD	--	2
8		HS5660A	1
9		2020	1
10		DIS30	1
11		--	1
12		--	1
13		--	

8.4

8.4.1

1

2

3

8.4.2

1

[1996]470

2

DB37/T 2463-2014

3

DB37/T3535-2019

0.5m

≥ 1.2m

100mm × 2mm

≥ 100mm ≤ 10mm

4

8.4.3

1 600mm 300mm

2m

2

GB15562.1

[2003]95

3 **

**

4

8.5

8.5.1

8.5.1.1

“ ”

“ ”

8.5.1.2

“ ” “ ”

SO_2 NO_X

COD NH_3-N

8.5.2

1

12439m^3/a COD_{Cr} 0.20t/a

0.008t/a COD_{Cr}

COD_{Cr}

2

VOCs 0.10t/a

0.0121t/a 0.00588t/a SO_2 0.955t/a NOx 3.83t/a 0.94t/a

VOCs 0.11798t/a

VOCs0.11798t/a SO_2 0.955t/a NOx 3.83t/a 0.94t/a

VOCs 0.555t/a 0.067t/a 0.033t/a 0.129t/a

VOCs 0.655t/a

VOCs 0.77298t/a SO_2 0.955t/a NOx 3.83t/a 1.069t/a

[2019]132

2

9

9.1

9.1.1

2019

29

9.1.2 “ ”

2021 5 19 [2021]6

“ ”

9.1-1

“ ”

9.1-1

9.1-1 “ ”

	“ ”	
	85.08km^2 0.99% 165.68km^2 1.92%	**9.1-2**

	40% 28% 90% 14% $PM_{2.5}$ 48ug/m^3 70% 2020 92%	GB3095-2012 RTO GB3838-2002 GB3096-2008 2 GB12348-2008 3 4a
	14 146 19 191 193	

20

202 203

22

		5	

2

VOCs

“ ” VOCs

4

VOCs

VOCs

6 VOCs

10

11

		+ 2 3 4 5 6	
		1 2. 2022 2025 2025 50% 2030 3 GB/T 36575-2018 4 5	

9.1.3 “ ”

2021 58

“ ”

9.1-2

9.1-2 “ ”

	2019	2019	
	“ ” “ ”		
	“ ” “ ” “ ”	“ ” VOCs SO_2 NO_X	
	“ ” “ ”		

“ ”

9.1.4

9.1-3

	“ ”	

9.1-3

9.1.5 “ ”

“ ” 2021—2023

“ ” 9.1-4

9.1-4 “ ”

	“ ”	
	2023 39600 4400 6% 5	
	2023 10% 150 150 2021 150 2023 90%	

“ ” 2021

—2023

9.1.6

VOCs 0.3m/s VOCs

9.1-6 2021—2025

[2021]30

	2021—2025	
	8 “ ”	
VOCs	VOCs VOCs VOCs 2025 30 20 15 20% 2021 VOCs VOCs VOCs 2025 2022 VOC 2025 80% RTO LDAR LDAR LDAR O_3 LDAR 2023 LDAR	

2023

NOx

9.2

9.2.1

2003-2020

9.2.2

2003-2020

9.2.3

100m

100m 130m

500m 600m

9.2.4

9.2.5

9.2.6

1

2

3

2

4

9.3

“ ”

10 ﻝ ﻓ

10.1 ﻡ

10.1.1

غ

GB16297-1996 2

DB37/2376-2019

1

GB14554-93 2 VOCs

ضر 6

DB37/801.6-2018 1

GB31572-2015 5

GB16297-1996 2

GB16297-1996

2

GB14554-93 1 VOCs

ضر 6

DB37/801.6-2018 3

10.1.4.2

U ثش

لج

ثش U ثش

ضي لج

GB/T31962-2015 1A ثجه

غ ثش

10.1.4.3 يم φ

نه غ شخ ،

10.1.4.4 لخ

لج U غ ϸ

كل GB12348-2008 3 شخ كل

GB12348-2008 كل

4a كل

10.1.5 ا قد ل F " 10.1.5.1

غ

غ قمم

1

U سمم U

غ خ

U U

قمم RTO U 43 P1

GB16297-1996 2

DB37/2376-2019 1 <

[2019]39 > ، عجه

GB31572-2015 5 غ

6 2 VOCs

غ 6

DB37/801.6-2018 1

GB14554-93 2

2

غ لجـ U U

GB14554-93 1 لجـ

GB16297-1996 2 VOCs

6 ضر

DB37/801.6-2018 3

3

100m

500m 600m

10.1.5.2

$12439m^3/a$

COD_{Cr} 15.9mg/L 0.653mg/L

0.20t/a 0.008t/a

10.1.5.3

10.1.5.4

10.1.6

10.1.6.1

PM_{10} SO_2 NO_2 CO

O_3 GB3095-2012

PM_{10} $PM_{2.5}$ GB3095-2012

$PM_{2.5}$ PM_{10}

شخ غ ضي

D TSP (HJ2.2-2018) ذ

شخ GB3095-2012

p244

ـلاخي

10.1.6.2 غي

ضر شخ غجـ غ 2# غ 1#

GB3838-2002

GB3838-2002 ضر

غجـ غجـ

ضر A GB18918-2002

GB3838-2002

ضر h

10.1.6.3 ۴ غي

نهـ 5 ضر

ضر شخ غجـ ضي غ

ضر مخ ـلا GB/T14848-2017

ضرضر غ نهـ

10.1.6.4

لجـ ضي

كل شخ كل

شخ كل كل 3(GB12348-2008)

كل GB12348-2008 4a

شخ كل غ GB3096-2008 2

10.1.7 ر Ü M

10.1.7.1

ذ ذ

ذ ﻟﻲ ضي

10.1.7.2 غي

غجد U U

ئfu خ

ضر لجـ

ئfu U ئfu

ئfu

ضر U

12439m^3/a COD_{Cr} غ 15.9mg/L غ 0.653mg/L

ﻟﻲ 0.20t/a غ 0.008t/a

شخ غجـ ذ

10.1.7.3 ۲ غي

ﻟﻲ شخ ﻟﻲ ذ ضر

غ

غجـ ضر ضر غجـ

ذ ضر

10.1.7.4 لخ

شخ غ كل لجـ U

كل GB12348-2008 3 كل

GB12348-2008 كل شخ غ

4a ... شخ كل

ضر غجـ GB3096-2008 2

ذ

10.1.7.5 يمـ φ

غجـ ضي ، شخ نهـ

ذ نهـ

10.1.8 ـﻫ

غ

10.1.9 ـﻫ ┼

VOCs0.11798t/a SO_2 0.955t/a NOx

3.83t/a 0.94t/a

[2019]132

2

10.1.10

10.1.11

2022 7 8 2022 7 18

2022 9 1 9 13

2022 9 5 7

10.1.12

10.1.13

10.2 ғ

10.2.1 ӣ Ӈ

10.2-1

10.2-1 ӣ Ӈ '

	غ ققم	U سسم U خ غ U RTO U ڀ ڀ 1 43 P1 1	GB16297-1996 2 DB37/2376-2019 1 < بجب [2019]39 > GB31572-2015 5 غ 6 2 VOCs غ 6 DB37/801.6-2018 1 GB14554-93 2
		ڏ	GB16297-1996 2 GB14554-93 1 VOCs ضر 6 DB37/801.6-2018 3
	خ ضر غ	ضر خ لجـ ثلث U ثلث U بجب ثلث	ثلث بجب GB/T31962-2015 1A
كل			لجـ غ لجـ كل غ GB12348-2008 3 كل GB12348-2008 4a
نهـ	نهـ جي سسم	سسم U	ڏ نهـ

			U	

10.2.2

1 شي

2 U غ

غج غج

غ

3 ضي ﻳ ﻳ

4

ﻳ

5

ﻫ