

Aan: Provincie Utrecht

[REDACTED]
Archimedeslaan 6
3508 TH UTRECHTBetreft: **briefrapport indicatief PFAS-bodemonderzoek**

Onderwerp: Elster Buitenwaard

Kenmerk: SUHA/193306.01/INAB

Projectnummer: 193306

[REDACTED]

IJmuiden, 13 september 2019

Geachte [REDACTED]

Hiermee ontvangt u de rapportage van het aanvullend bodemonderzoek dat door BK Ingenieurs B.V. (BK) is uitgevoerd op de locatie

Elster Buitenwaard.

1. Inleiding

Het doel van het onderzoek is een indicatie te verkrijgen van de huidige milieuhygiënische kwaliteit van de locatie met betrekking tot PFAS in verband met de geplande ontgravingen tot maximaal 1,0 m -mv. Het te onderzoeken gebied bestaat uit zes deellocaties.

In bijlage 1 zijn de topografische ligging, foto's en een overzichtstekening van de locatie opgenomen.

2. Vooronderzoek

Er is geen vooronderzoek uitgevoerd conform de Nederlandse Norm 5725 "Bodem - Landbodem - Strategie voor het uitvoeren van vooronderzoek bij verkennend en nader onderzoek" (NEN 5725 uit 2017).

3. Veldwerk

De veldwerkzaamheden zijn uitgevoerd op 28 en 29 augustus 2019. In bijlage 5 staan de namen van alle bij het project betrokken veldwerkers en/of boormeesters vermeld.

De boringen zijn gelijkmatig over de locatie verdeeld om zo een representatief beeld te krijgen van de locatie.

De locaties van de verrichte boringen zijn aangegeven op de overzichtstekening in bijlage 1.2. Het boor- en monsternemingsgereedschap waarvan bij het bodemonderzoek gebruikgemaakt is, staat per boring beschreven in de boorprofielen in bijlage 2.1

In tabel 1 zijn de uitgevoerde veldwerkzaamheden samengevat.

tabel 1: uitgevoerd onderzoeksprogramma

Deellocaties	Aantal boringen	Analyses grond
1 (geulen en tussen liggend vlak)	5 x tot 0,4 m -mv	2 x PFAS (30 verbindingen) bovengrond
2 (buitenkaadse geul)	5 x tot 1,0 m -mv	1 x PFAS (30 verbindingen) bovengrond 1 x PFAS (30 verbindingen) ondergrond
3 (drie kribvakken)	6 x tot 0,5 m -mv	2 x PFAS (30 verbindingen) bovengrond
4 (geul en zuidelijk terrein deel)	5 x tot 1,0 m -mv	1 x PFAS (30 verbindingen) bovengrond 2 x PFAS (30 verbindingen) ondergrond
5 (verondieping)	5 x tot 1,0 m -mv	1 x PFAS (30 verbindingen) bovengrond 1 x PFAS (30 verbindingen) ondergrond
6 (oostelijke geul)	5 x tot 0,9 m -mv	1 x PFAS (30 verbindingen) bovengrond 1 x PFAS (30 verbindingen) ondergrond

m -mv meters beneden maaiveld

In bijlage 2 is de bodemopbouw van de onderzoekslocatie per boring weergegeven. Hierin zijn ook de zintuiglijke waarnemingen vermeld.

4. Laboratoriumanalyses

Uitgevoerde analyses

De analyses zijn uitgevoerd door de RvA-geaccrediteerde laboratoria van SYNLAB te Rotterdam. Het analysecertificaat is opgenomen in bijlage 3. In tabel 3 staan de resultaten van de analyses samengevat.

Resultaten analyses

Op 8 juli 2019 is het '[tijdelijk handelingskader voor hergebruik van PFAS-houdende grond en baggerspecie](#)' gepubliceerd. De toepassingsnormen voor PFAS en GenX die in het tijdelijk handelingskader zijn opgenomen, zullen in de loop van 2019 via een wijziging van de Regeling bodemkwaliteit worden opgenomen. PFAS geldt daarna niet langer als niet-genormeerde stof. Dit betekent dat bij het toepassen van grond en baggerspecie de toepassingsnormen voor PFAS moeten worden gehanteerd. De parameters PFAS (Poly- en perfluoralkylstoffen) en GenX (HFPO-DA) zijn nog niet opgenomen in het Bbk en de BoToVa-service. In tabel 2 zijn de toepassingsnormen voor het toepassen van grond en baggerspecie op de landbodem bodem grondwatervniveau opgenomen. Uitgangspunt van het tijdelijk handelingskader is dat de kwaliteit van de bodem, het grondwater en het oppervlaktewater niet mag verslechteren door toepassen van PFAS houdende grond en baggerspecie (*stand still*). Voor toetsing is tot een organisch stof gehalte van 10% geen bodemtypecorrectie van toepassing, hierboven wel.

tabel 2: toepassingsnormen voor het toepassen van grond en baggerspecie (in µg/kg ds)

Bodemfunctieklass	PFOS	PFOA	GenX	Overige PFAS (per individuele stof)
toepassen van grond en baggerspecie op landbodem boven grondwatervniveau①				
Landbouw/natuur	0,1	0,1	0,1	0,1
Landbouw/natuur bij achtergrondwaarde groter dan 0,1	de gemeten achtergrondwaarde, ten hoogste 3,0	de gemeten achtergrondwaarde, ten hoogste 7,0	de gemeten achtergrondwaarde, ten hoogste 3,0	de gemeten achtergrondwaarde, ten hoogste 3,0
Wonen	3,0	7,0	3,0	3,0
Industrie	3,0	7,0	3,0	3,0
Toepassen van grond en baggerspecie grootschalig toepassen boven grondwatervniveau①				
N.v.t.	3,0	7,0	3,0	3,0
Toepassen grond en baggerspecie boven het grondwatervniveau① in grondwaterbeschermingsgebieden③				
N.v.t.	0,1	0,1	0,1	0,1
Toepassen grond en baggerspecie onder het grondwatervniveau②				
N.v.t.	0,1	0,1	0,1	0,1

Legenda tabel 2:

- ① Voor gebieden met een hoge grondwaterstand geldt in plaats van 'boven grondwaterniveau': tot ten hoogste 1 meter onder het maaiveld.
- ② Voor gebieden met een hoge grondwaterstand geldt in plaats van 'onder grondwaterniveau' op een diepte van 1 meter en meer onder het maaiveld.
- ③ Het bevoegd gezag kan voor het toepassen van gebiedseigen grond en baggerspecie uit het desbetreffende beheergebied een gebiedspecifieke afweging maken.

Legenda tabel 3:

Legenda	PFOA	Overige PFAS en GenX
Landbouw/natuur	<0,1	<0,1
Wonen	<7,0	<3,0
Niet toepasbaar	>7,0	>3,0

tabel 3: overschrijding van de normwaarde door gestandaardiseerd gehalte in grond

Monsteromschrijving	001klei	001zand	002bg	002og	003klei	003zand	004bg	004og-klei	004og-zand	005bg	005og	006bg	006og
Diepte [m -mv]	0,0-0,4	0,0-0,4	0,0-0,5	0,5-1,0	0,0-0,5	0,0-0,5	0,0-0,5	0,5-1,0	0,4-1,0	0,0-0,5	0,5-1,0	0,0-0,5	0,4-1,0
Droge stof [%]	78,1	88,9	81,4	79,2	73,7	89,4	70,3	83,8	90,2	79,5	81	83,2	81
Gemeten waarden [µg/kgds]													
Perfluorbutanoic acid, PFBA	0,17	<0.1	0,12	<0.1	0,29	0,22	<0.1	<0.1	<0.1	0,11	<0.1	0,19	<0.1
Perfluoropentanoic acid, PFPeA	<0.1	<0.1	0,12	<0.1	0,36	0,14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorhexanoic acid, PFHxA	<0.1	<0.1	0,12	<0.1	0,33	0,15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorheptanoic acid, PFHpA	<0.1	<0.1	<0.1	<0.1	0,31	0,11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFOA, lineair	0,78	0,76	1,4	0,15	2	1,1	0,24	<0.1	<0.1	1,1	0,97	1,2	<0.1
PFOA, vertakt	0,12	<0.1	0,14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0,12	<0.1
PFOA, totaal	0,9	0,76	1,5	0,15	2	1,1	0,24	<0.1	<0.1	1,1	0,97	1,3	<0.1
Perfluorononanoic acid, PFNA	<0.1	<0.1	<0.1	<0.1	0,34	0,11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluordecanoic acid, PFDA	<0.1	<0.1	<0.1	<0.1	0,44	0,1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorundec. acid, PFUnDA	<0.1	<0.1	<0.1	<0.1	0,27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluordodec. acid, PFDoDA	<0.1	<0.1	<0.1	<0.1	0,17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluortridec. acid, PFTrDA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluortetradecacid, PFTeDA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorhexadec. acid, PFHxDA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoroctadec. acid, PFODA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorbutanoic sulphon, PFBS	<0.1	<0.1	<0.1	<0.1	0,12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic sulphon, PFPeS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorhexanoic sulphon, PFHxS	<0.1	<0.1	<0.1	<0.1	0,14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorheptanoic sulphon, PFHpS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFOS, lineair	0,58	0,51	2,9	0,2	14	4,3	0,13	<0.1	<0.1	1,2	0,67	0,93	<0.1
PFOS, vertakt	0,17	0,13	0,59	<0.1	2,1	0,78	<0.1	<0.1	<0.1	0,33	0,2	0,26	<0.1
PFOS, totaal	0,75	0,64	3,5	0,2	16	5,1	0,13	<0.1	<0.1	1,5	0,87	1,2	<0.1
Perfluordecanoic sulphon, PFDS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluortelomersulfo. (4:2 FTS)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluortelomersulfo. (6:2 FTS)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluortelomersulfo. (8:2 FTS)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluortelomersulfo. (10:2 FTS)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
N-MeFOSAA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
N-EtFOSAA	<0.1	<0.1	<0.1	<0.1	0,22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorocta.sulph.amid, PFOSA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
N-MeFOSAA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8:2 diPAP	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

5. Conclusies

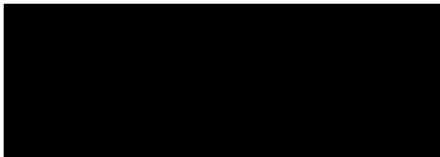
Met dit bodemonderzoek is een indicatie verkregen van de bodemkwaliteit met betrekking tot PFAS op de locatie.

De toetsingswaarde voor kwaliteitsklasse 'Wonen' en 'Industrie' wordt overschreden door de verbinding PFOA in de bovengrond van deelgebied 2 en de klei- en zandgrond van deelgebied 3.

In de overige onderzochte grond zijn maximaal licht verhoogde gehalten PFAS aangetoond.

Wij vertrouwen erop u hiermee voldoende te hebben geïnformeerd. Indien u naar aanleiding van dit onderzoek vragen hebt, kunt u contact opnemen met ondergetekende van ons bureau te IJmuiden.

Met vriendelijke groet,
BK Ingenieurs B.V.



projectmanager

Bijlagen:

- 1 Tekeningen
 - 1.1 Topografische ligging
 - 1.2 Overzichtstekening
 - 1.3 Locatiefoto's
- 2 Boorprofielen
- 3 Analyserapport
- 4 Verklarende woordenlijst
- 5 Verklaring onafhankelijkheid conform eisen Bbk en BRL SIKB 2000

Bijlage

1 Tekeningen

Bijlage

1.1 Topografische ligging

Aantal pagina's: 1



LEGENDA



Ligging locatie

Bron: © Google Maps



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bouw fysica
certijn vastgoed-
beheer
projectmanagement
duurzaamheid
maritiem

PROJECTOMSCHRIJVING

PFAS onderzoek te Elster Buitenwaard

TEKENINGOMSCHRIJVING

Topografische ligging (deze kaart is noordgericht)

OPDRACHTGEVER

Provincie Utrecht

PROJECTNUMMER

193306

BIJLAGENUMMER

1.1

DATUM

11-9-2019

GETEKEND

GECONTROLEERD

FORMAAT

A4

STATUS

Definitief

SCHAAL

nvt

BLAD

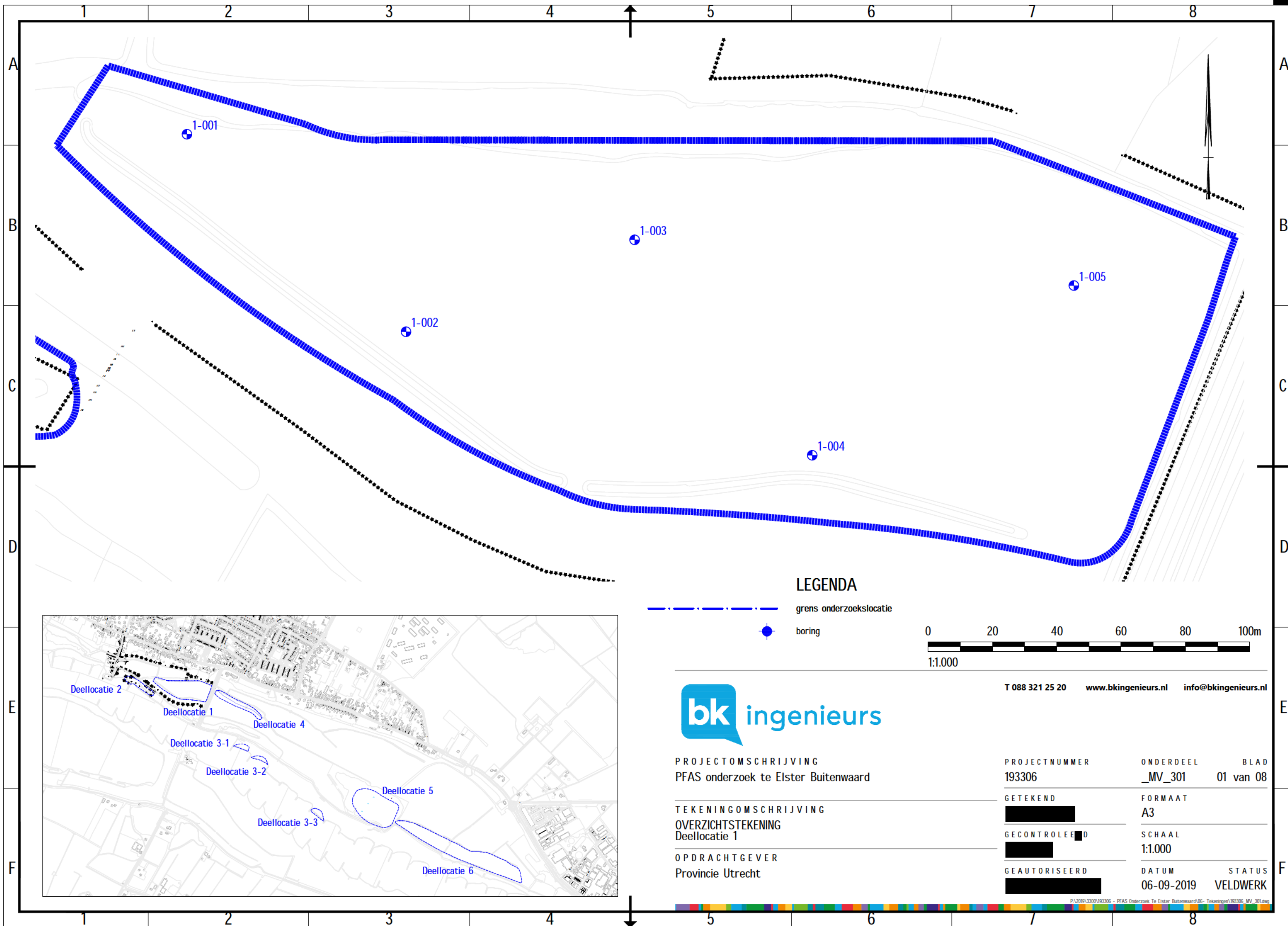
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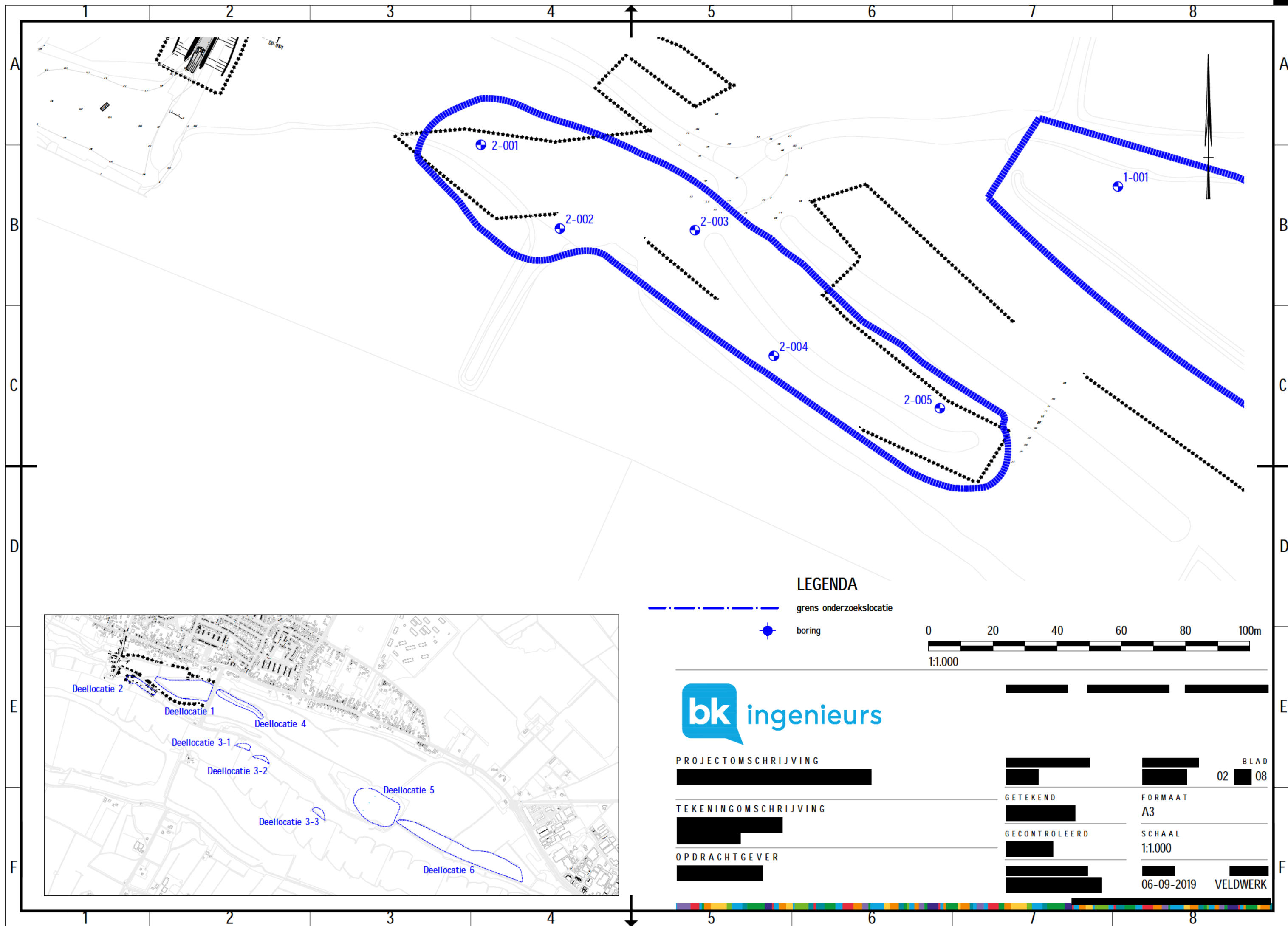
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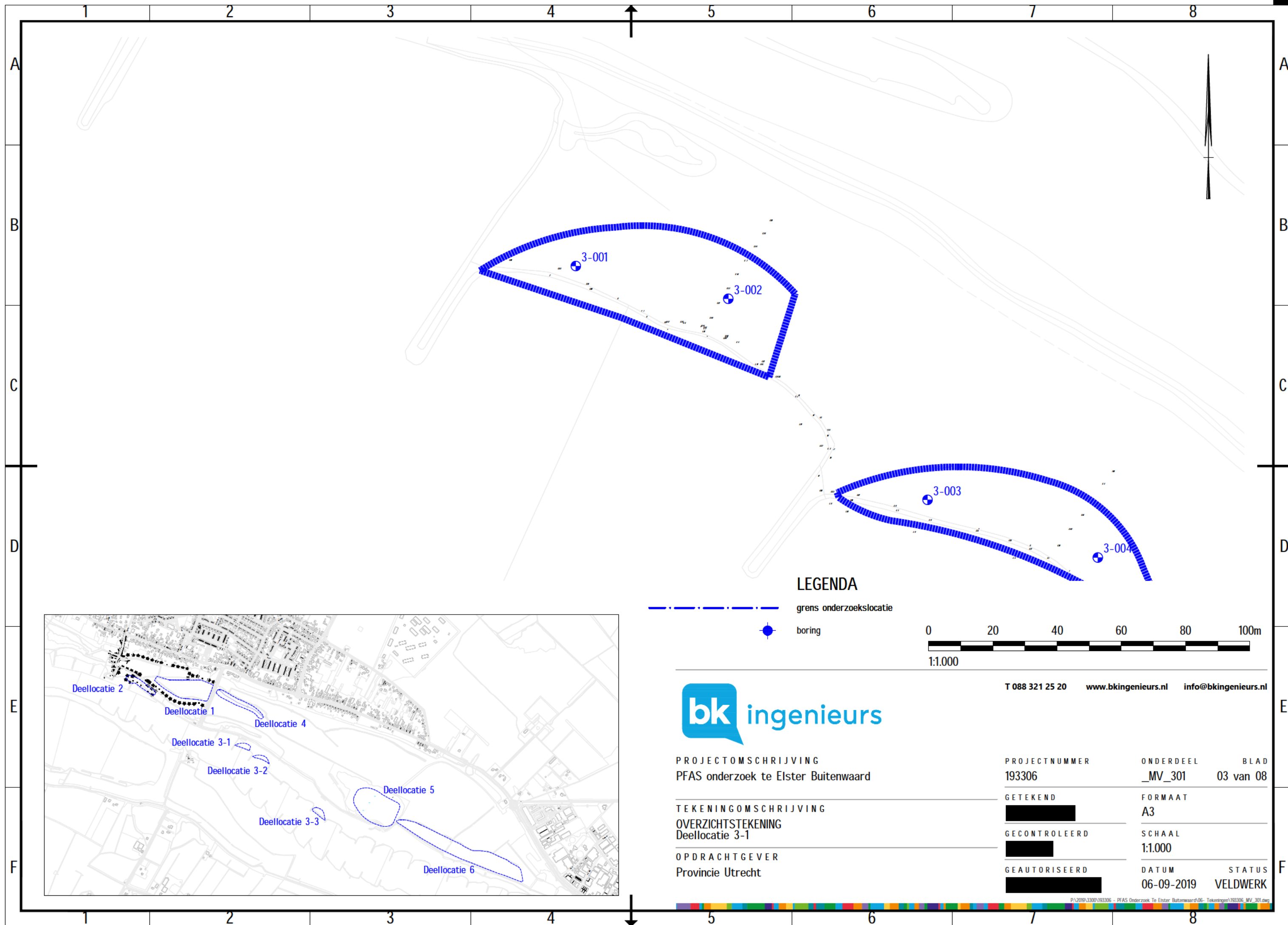
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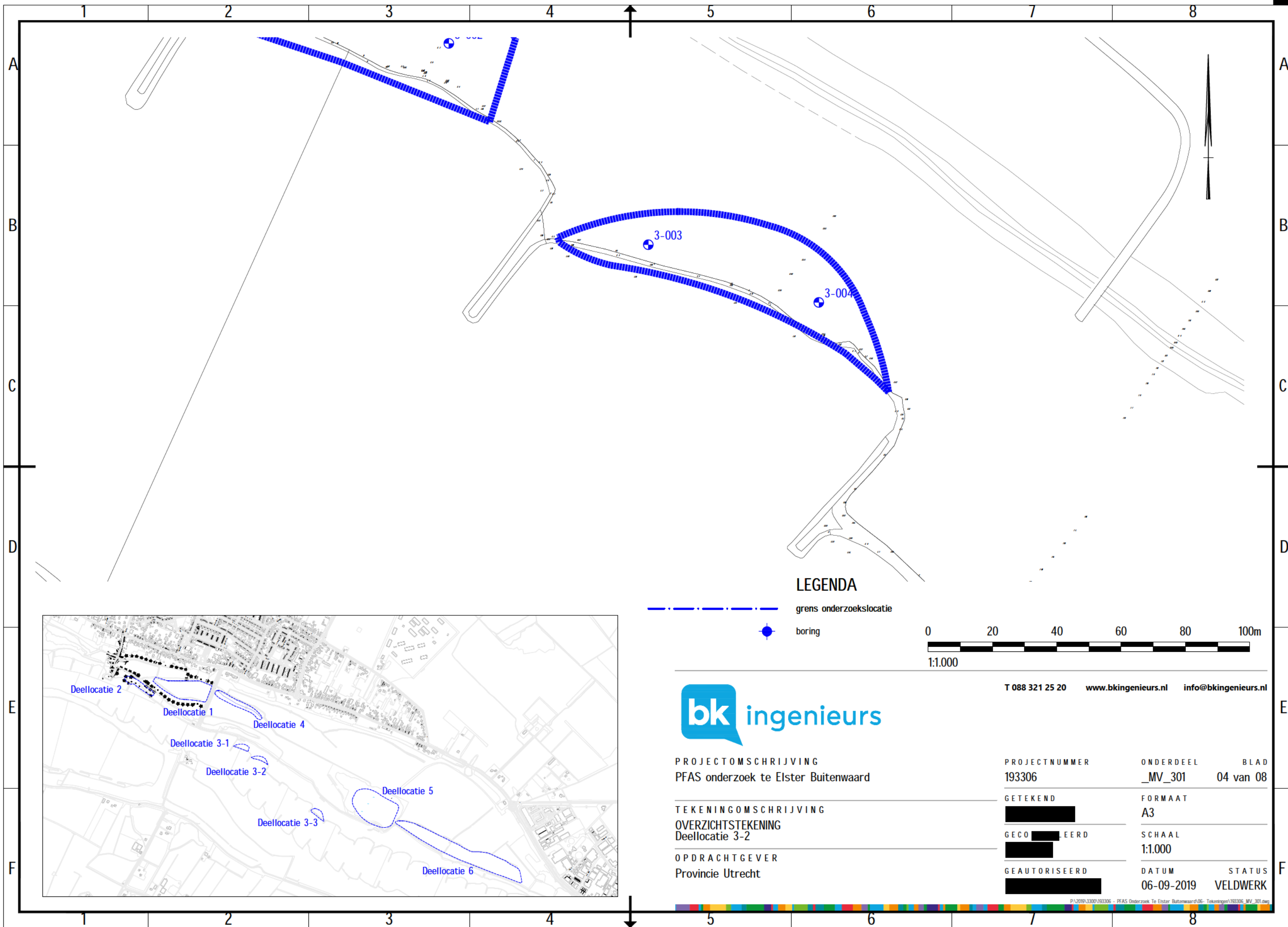
Schaal 1 : 1.000/2.000/2.500

Aantal pagina's: 8









PROJECTOMSCHRIJVING
PFAS onderzoek te Elster Buitenwaard

TEKENINGOMSCHRIJVING
OVERZICHTSTEKENING
Deellocatie 3-2

OPDRACHTGEVER
Provincie Utrecht

T 088 321 25 20 www.bkingenieurs.nl info@bkingenieurs.nl

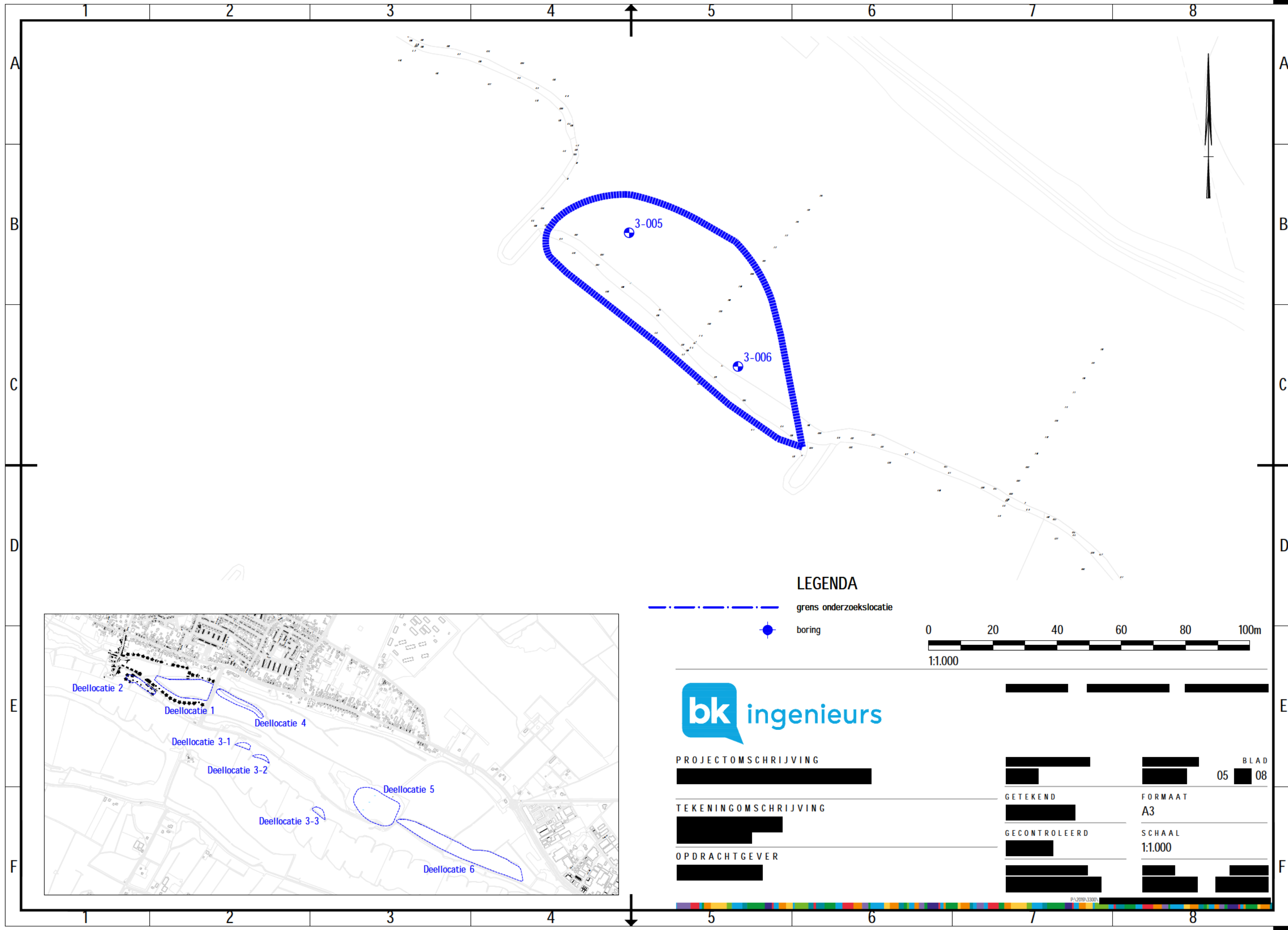
PROJECTNUMMER 193306 ONDERDEEL _MV_301 BLAD 04 van 08

GETEKEND [redacted] FORMAAT A3

GECO [redacted] EERD [redacted] SCHAAAL 1:1.000

GEAUTORISEERD [redacted] DATUM 06-09-2019 STATUS VELDWERK

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LEGENDA

- grens onderzoekslocatie
- boring

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1:1.000



PROJECTOMSCHRIJVING

TEKENINGOMSCHRIJVING

OPDRACHTGEVER

GETEKEND

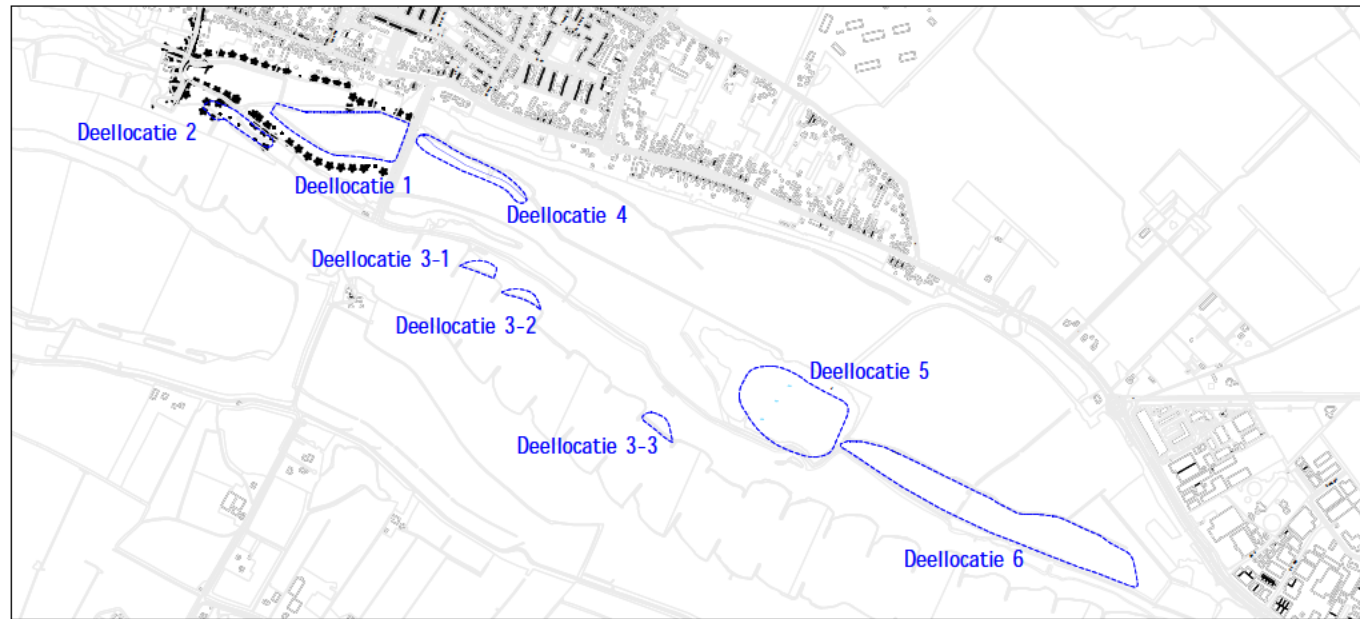
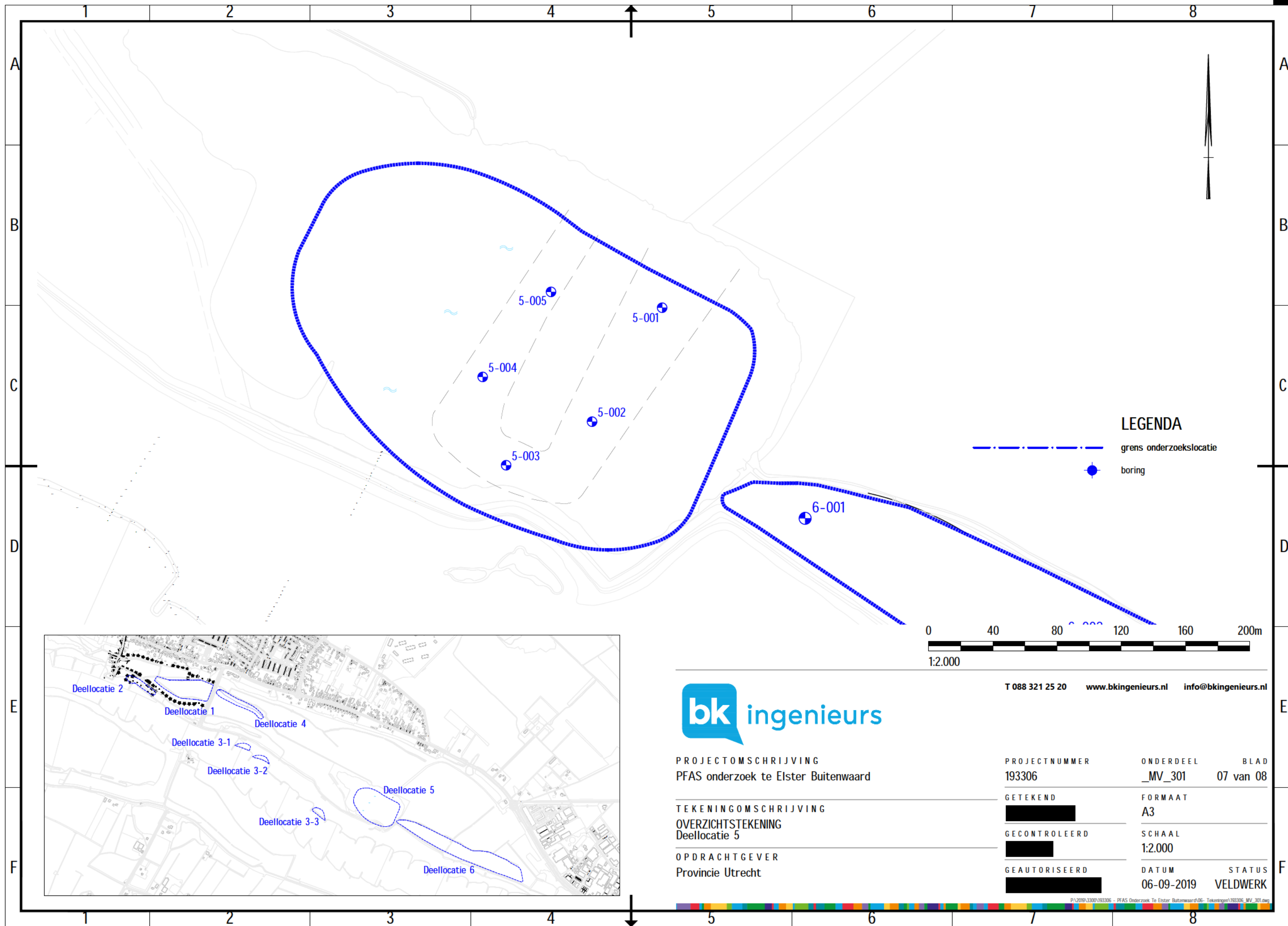
GECONTROLEERD

FORMAAT

SCHAAL

BLAD
05 08

A3
1:1.000



PROJECTOMSCHRIJVING
PFAS onderzoek te Elster Buitenwaard

TEKENINGOMSCHRIJVING
OVERZICHTSTEKENING
Deellocatie 5

OPDRACHTGEVER
Provincie Utrecht

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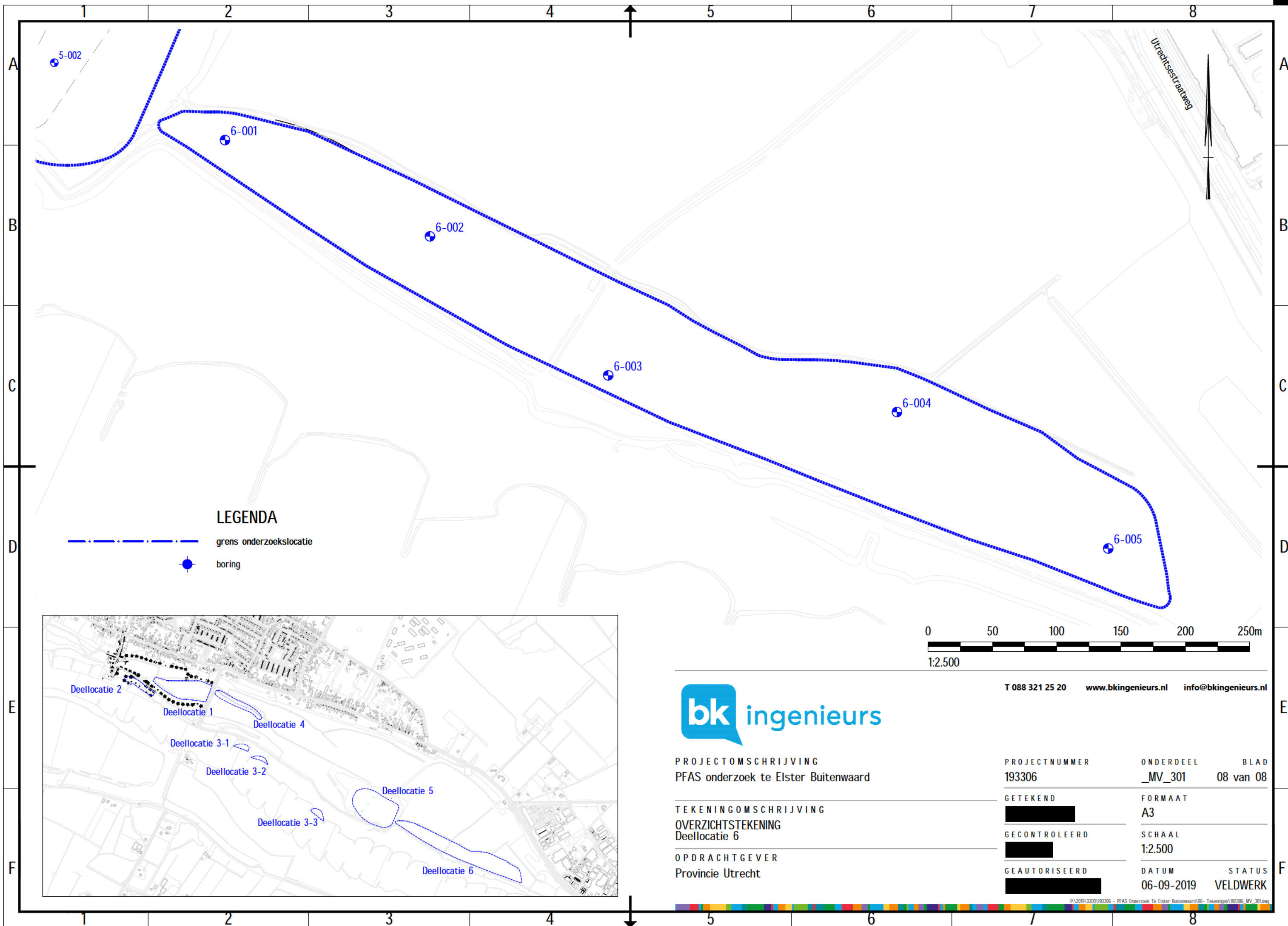
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GEAUTORISEERD	DATUM	STATUS
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Bijlage

1.3 Locatiefoto's

Aantal pagina's: 4

Foto 1



Foto 2



Foto 3



Foto 4



Foto's onderzoekslocatie

Omschrijving:	PFAS onderzoek te Elster Buitenwaard		
Type:	Verkennd onderzoek, VKB 2001	Project:	193306
Opdrachtgever:	Provincie Utrecht	Datum:	12-sep-2019
Projectleider:		Bijlage:	1.3

Foto 5



Foto 6



Foto 7



Foto 8



Foto's onderzoekslocatie

Omschrijving:	PFAS onderzoek te Elster Buitenwaard		
Type:	Verkennd onderzoek, VKB 2001	Project:	193306
Opdrachtgever:	Provincie Utrecht	Datum:	12-sep-2019
Projectleider:	[REDACTED]		1.3

Foto 9



Foto 10



Foto 11



Foto 12



Foto's onderzoekslocatie

Omschrijving:	PFAS onderzoek te Elster Buitenwaard		
Type:	Verkennd onderzoek, VKB 2001	Project:	193306
Opdrachtgever:	Provincie Utrecht	Datum:	12-sep-2019
Projectleider:	[REDACTED]		1.3

Foto 13



Foto 14



Foto 15



Foto 16



Foto's onderzoekslocatie

Omschrijving:	PFAS onderzoek te Elster Buitenwaard		
Type:	Verkennd onderzoek, VKB 2001	Project:	193306
Opdrachtgever:	Provincie Utrecht	Datum:	12-sep-2019
Projectleider:	[REDACTED]		1.3

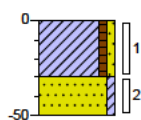
Bijlage

2 Boorprofielen

Aantal pagina's: 5 (inclusief legenda)

Meetpunt: 1-001
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

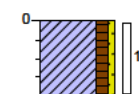
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0 braak
 Klei, zwak humeus, zwak zandig, zwak wortelhoudend, zwak roesthoudend, neutraal grijsbruin, Edelmanboor
 -30
 Zand, zeer grof, zwak kleiig, sporen roest, zwak grindhoudend, neutraal grijs, Edelmanboor
 -50

Meetpunt: 1-002
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

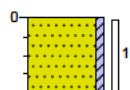
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0 weiland
 Klei, matig humeus, zwak zandig, matig roesthoudend, matig wortelhoudend, neutraal roodbruin, Edelmanboor
 -40

Meetpunt: 1-003
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

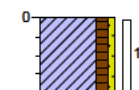
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0 weiland
 Zand, matig fijn, zwak kleiig, sporen wortels, sporen roest, neutraal beigebruin, Edelmanboor
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Meetpunt: 1-004
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

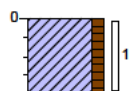
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0 weiland
 Klei, matig humeus, zwak zandig, zwak roesthoudend, sporen baksteen, sporen wortels, donkerbruin, Edelmanboor
 -40

Meetpunt: 1-005
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

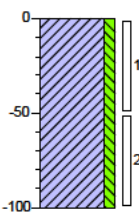
x-coördinaat: 162594,05
 y-coördinaat: 443838,08



0 weiland
 Klei, matig humeus, matig roesthoudend, zwak grindhoudend, donker roodbruin, Edelmanboor
 -40

Meetpunt: 2-001
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

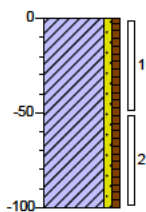
x-coördinaat: 162122,87
 y-coördinaat: 443901,77



0 weiland
 Klei, matig siltig, sporen wortels, Edelmanboor
 -50
 -100

Meetpunt: 2-002
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

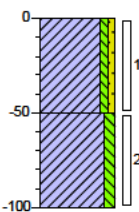
x-coördinaat: 162147,18
 y-coördinaat: 443874,89



0 weiland
 Klei, zwak zandig, zwak humeus, zwak wortelhoudend, neutraalbruin, Edelmanboor
 -50
 -100

Meetpunt: 2-003
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

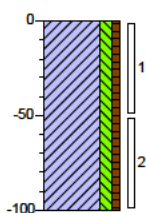
x-coördinaat: 162191,44
 y-coördinaat: 443875,66



0 braak
 Klei, zwak siltig, zwak zandig, zwak wortelhoudend, donkerbruin, Edelmanboor
 -50
 Klei, matig siltig, zwak baksteenhoudend, donkerbruin, Edelmanboor
 -100

Meetpunt: 2-004
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

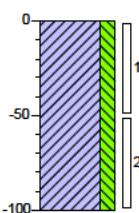
x-coördinaat: 162213,92
 y-coördinaat: 443832,99



0 weiland
 Klei, matig siltig, zwak humeus, zwak wortelhoudend, donkerbruin, Edelmanboor
 -50
 -100

Meetpunt: 2-005
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162263,40
 y-coördinaat: 443815,12



0 weiland
 Klei, sterk siltig, sporen wortels, sporen roest, neutraalbruin, Edelmanboor
 -50
 -100

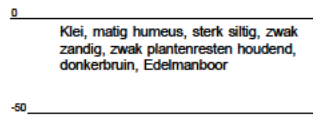
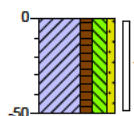


Project: Elster Buitenwaard
Projectnummer: 193306
Opdrachtgever: Provincie Utrecht

Schaal: 1:40
 getekend volgens NEN 5104

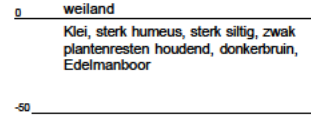
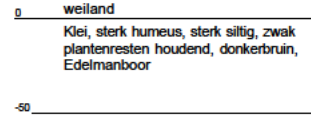
Meetpunt: 3-001
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162809,74
 y-coördinaat: 443482,66



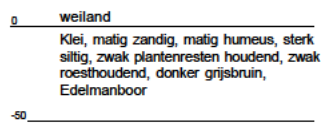
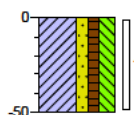
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 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162857,46
 y-coördinaat: 443470,38



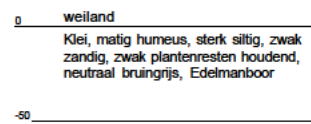
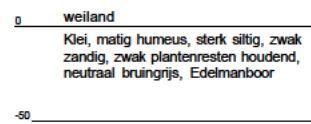
Meetpunt: 3-003
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162922,64
 y-coördinaat: 443413,75



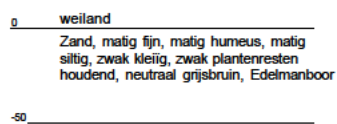
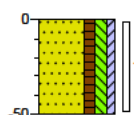
Meetpunt: 3-004
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162973,01
 y-coördinaat: 443389,52



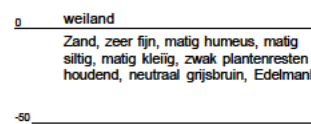
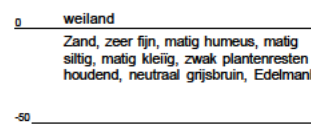
Meetpunt: 3-005
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 163289,07
 y-coördinaat: 443081,65



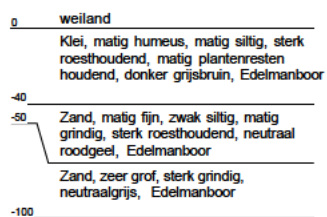
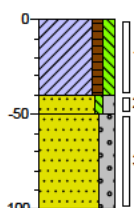
Meetpunt: 3-006
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 163323,23
 y-coördinaat: 443039,46



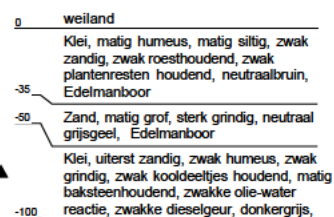
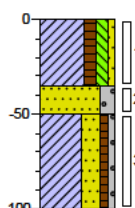
Meetpunt: 4-001
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162686,65
 y-coördinaat: 443813,45



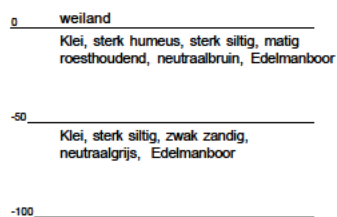
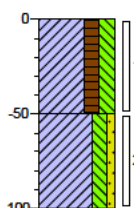
Meetpunt: 4-002
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162746,87
 y-coördinaat: 443763,77



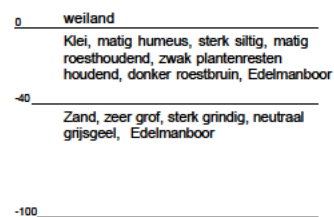
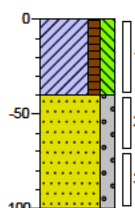
Meetpunt: 4-003
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162805,69
 y-coördinaat: 443754,10



Meetpunt: 4-004
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 162861,20
 y-coördinaat: 443706,57

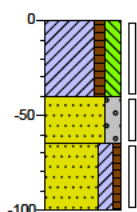


Project: Elster Buitenwaard
Projectnummer: 193306
Opdrachtgever: Provincie Utrecht

Schaal: 1:40
 getekend volgens NEN 5104

Meetpunt: 4-005
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

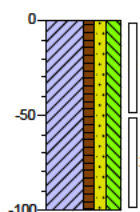
x-coördinaat: 162937,41
 y-coördinaat: 443665,19



0 weiland
 Klei, matig humeus, sterk siltig, sterk roesthoudend, neutraal roestbruin, Edelmanboor
 -40
 Zand, zeer grof, sterk grindig, licht grijsgeel, Edelmanboor
 -65
 Zand, matig fijn, sterk kleiig, zwak humeus, zwak baksteenhoudend, zwak kooldeeltjes houdend, neutraalgrijs, Edelmanboor
 -100

Meetpunt: 5-001
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

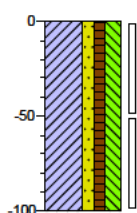
x-coördinaat: 163796,18
 y-coördinaat: 443122,24



0
 Klei, matig humeus, matig zandig, sterk siltig, zwak roesthoudend, donker bruingrijs, Edelmanboor
 -100

Meetpunt: 5-002
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

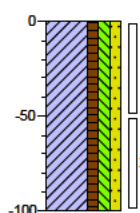
x-coördinaat: 163754,63
 y-coördinaat: 443046,81



0 braak
 Klei, matig zandig, matig humeus, sterk siltig, matig plantenresten houdend, zwak grindhoudend, donker geelgrijs, Edelmanboor
 -100

Meetpunt: 5-003
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

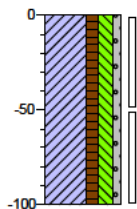
x-coördinaat: 163702,48
 y-coördinaat: 443005,65



0 braak
 Klei, matig humeus, matig siltig, matig zandig, zwak roesthoudend, neutraal grijsbruin, Edelmanboor
 -100

Meetpunt: 5-004
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

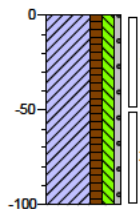
x-coördinaat: 163689,22
 y-coördinaat: 443054,60



0 braak
 Klei, matig humeus, sterk siltig, zwak grindig, zwak plantenresten houdend, donker bruingrijs, Edelmanboor
 -100

Meetpunt: 5-005
 datum: 29-8-2019
 veldwerker: Jeroen Obbink

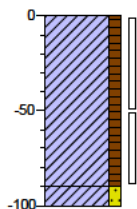
x-coördinaat: 163713,28
 y-coördinaat: 443115,08



0 braak
 Klei, matig humeus, matig siltig, zwak grindig, sporen plantenresten, donker grijsbruin, Edelmanboor
 -100

Meetpunt: 6-001
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

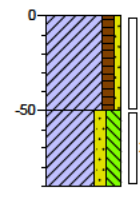
x-coördinaat: 163837,45
 y-coördinaat: 442994,21



0 weiland
 Klei, matig humeus, zwak roesthoudend, sporen wortels, donkerbruin, Edelmanboor
 -90
 Klei, matig zandig, lichtgrijs, Edelmanboor
 -100

Meetpunt: 6-002
 datum: 28-8-2019
 veldwerker: Jeroen Obbink

x-coördinaat: 164003,39
 y-coördinaat: 442920,22



0 weiland
 Klei, matig humeus, zwak zandig, neutraalbruin, Edelmanboor
 -50
 Klei, matig zandig, sterk siltig, neutraal bruinbeige, Edelmanboor
 -90



Project: Elster Buitenwaard
Projectnummer: 193306
Opdrachtgever: Provincie Utrecht

Schaal: 1:40
 getekend volgens NEN 5104

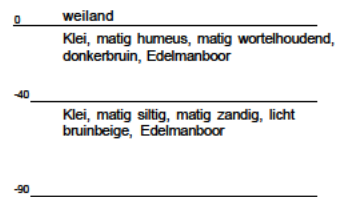
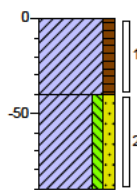
Meetpunt: 6-003

datum: 28-8-2019

veldwerker: Jeroen Obbink

x-coördinaat: 164140,31

y-coördinaat: 442814,13

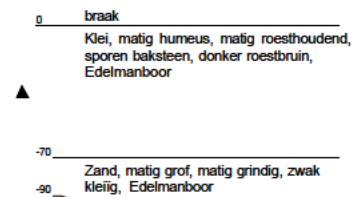
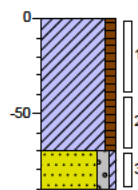
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datum: 28-8-2019

veldwerker: Jeroen Obbink

x-coördinaat: 164374,54

y-coördinaat: 442780,18

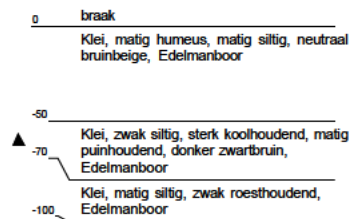
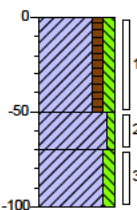
**Meetpunt: 6-005**

datum: 28-8-2019

veldwerker: Jeroen Obbink

x-coördinaat: 164520,06

y-coördinaat: 442674,93



Project: Elster Buitenwaard
Projectnummer: 193306
Opdrachtgever: Provincie Utrecht

Schaal: 1:40
getekend volgens NEN 5104

Legenda (conform NEN 5104)

grind

	Grind, siltig
	Grind, zwak zandig
	Grind, matig zandig
	Grind, sterk zandig
	Grind, uiterst zandig

zand

	Zand, kleilig
	Zand, zwak siltig
	Zand, matig siltig
	Zand, sterk siltig
	Zand, uiterst siltig

veen

	Veen, mineraalarm
	Veen, zwak kleilig
	Veen, sterk kleilig
	Veen, zwak zandig
	Veen, sterk zandig

klei

	Klei, zwak siltig
	Klei, matig siltig
	Klei, sterk siltig
	Klei, uiterst siltig
	Klei, zwak zandig
	Klei, matig zandig
	Klei, sterk zandig

leem

	Leem, zwak zandig
	Leem, sterk zandig

overige toevoegingen

	zwak humeus
	matig humeus
	sterk humeus
	zwak grindig
	matig grindig
	sterk grindig

geur

	geen geur
	zwakke geur
	matige geur
	sterke geur
	uiterste geur

olie

	geen olie-water reactie
	zwakke olie-water reactie
	matige olie-water reactie
	sterke olie-water reactie
	uiterste olie-water reactie

p.i.d.-waarde

	> 0
	> 1
	> 10
	> 100
	> 1000
	> 10000

monsters

	geroerd monster
	ongeroerd monster
	volumering

overig

	bijzonder bestanddeel
	Gemiddeld hoogste grondwaterstand
	grondwaterstand
	Gemiddeld laagste grondwaterstand

	slib
	water

Bijlage

3 Analyserapport

Laboratorium : SYNLAB
Certificaatnr. : 13094928
Aantal pagina's : 32

BK Ingenieurs

Postbus 264

1970 AG IJMUIDEN

Blad 1 van 32

Uw projectnaam : Elster Buitenwaard
Uw projectnummer : 193306
SYNLAB rapportnummer : 13094928, versienummer: 1

Rotterdam, 06-09-2019

Geachte heer/mevrouw,

Hierbij ontvangt u de analyse resultaten van het laboratoriumonderzoek ten behoeve van uw project 193306. Het onderzoek werd uitgevoerd conform uw opdracht. De gerapporteerde resultaten hebben uitsluitend betrekking op de geteste monsters. De door u aangegeven omschrijvingen voor de monsters en het project zijn overgenomen in dit analyserapport.

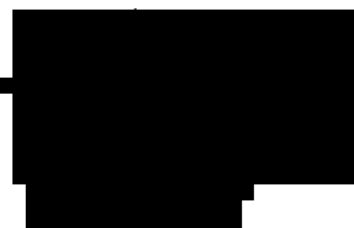
Het onderzoek is uitgevoerd door SYNLAB Analytics & Services B.V., gevestigd aan de Steenhouwerstraat 15 in Rotterdam (NL). Indien het onderzoek is uitgevoerd door derden of het SYNLAB laboratorium in Frankrijk (99-101 Avenue Louis Roche, Gennevilliers) is dit in het rapport aangegeven.

Dit analyserapport bestaat inclusief bijlagen uit 32 pagina's. In geval van een versienummer van '2' of hoger vervallen de voorgaande versies. Alle bijlagen maken onlosmakelijk onderdeel uit van het rapport. Alleen vermenigvuldiging van het hele rapport is toegestaan.

Mocht u vragen en/of opmerkingen hebben naar aanleiding van dit rapport, bijvoorbeeld als u nadere informatie nodig heeft over de meetonzekerheid van de analyseresultaten in dit rapport, dan verzoeken wij u vriendelijk contact op te nemen met de afdeling Customer Support.

Wij vertrouwen er op u met deze informatie van dienst te zijn.





Analyserapport

Projectnaam Elster Buitenwaard
 Projectnummer 193306
 Rapportnummer 13094928 - 1

Orderdatum 29-08-2019
 Startdatum 29-08-2019
 Rapportagedatum 06-09-2019

Nummer	Monstersoort	Monsterspecificatie					
001	Grond	001klei 001klei 1-001 (0-30) 1-002 (0-40) 1-004 (0-40) 1-005 (0-40)					
002	Grond	001zand 001zand 1-001 (30-50) 1-003 (0-40)					
003	Grond	002bg 002bg 2-001 (0-50) 2-002 (0-50) 2-003 (0-50) 2-004 (0-50) 2-005 (0-50)					
004	Grond	002og 002og 2-001 (50-100) 2-002 (50-100) 2-003 (50-100) 2-004 (50-100) 2-005 (50-100)					
005	Grond	003klei 003klei 3-001 (0-50) 3-002 (0-50) 3-003 (0-50) 3-004 (0-50)					
Analyse	Eenheid	Q	001	002	003	004	005
<i>ANALYSES UITGEVOERD DOOR DERDEN</i>							
Adviespakket PFAS 30 componenten			zie bijlage	zie bijlage	zie bijlage	zie bijlage	zie bijlage

Paraaf :



Projectnaam
Projectnummer
Rapportnummer - 1

Orderdatum 29-08-2019
Startdatum
Rapportagedatum 06-09-2019

Nummer	Monstersoort	Monsterspecificatie					
006	Grond	003zand 003zand 3-005 (0-50) 3-006 (0-50)					
007	Grond	004bg 004bg 4-001 (0-40) 4-002 (0-35) 4-003 (0-50) 4-004 (0-40) 4-005 (0-40)					
008	Grond	004ogklei 004ogklei 4-002 (50-100) 4-003 (50-100)					
009	Grond	004ogzand 004ogzand 4-001 (40-50) 4-001 (50-100) 4-002 (35-50) 4-004 (40-70) 4-004 (70-100) 4-005 (40-65) 4-005 (65-100)					
010	Grond	005bg 005bg 5-001 (0-50) 5-002 (0-50) 5-003 (0-50) 5-004 (0-50) 5-005 (0-50)					
Analyse	Eenheid	Q	006	007	008	009	010

ANALYSES UITGEVOERD DOOR DERDEN

Adviespakket PFAS 30 componenten zie bijlage zie bijlage zie bijlage zie bijlage zie bijlage

Paraaf :



Projectnaam E
 Projectnummer
 Rapportnummer - 1

Orderdatum 29-08-2019
 Startdatum
 Rapportagedatum 06-09-2019

Nummer	Monstersoort	Monsterspecificatie
011	Grond	005og 005og 5-001 (50-100) 5-002 (50-100) 5-003 (50-100) 5-004 (50-100) 5-005 (50-100)
012	Grond	006bg 006bg 6-001 (0-50) 6-002 (0-50) 6-003 (0-40) 6-004 (0-40) 6-005 (0-50)
013	Grond	006og 006og 6-001 (50-90) 6-002 (50-90) 6-003 (40-90) 6-004 (40-70) 6-005 (50-70) 6-005 (70-100)

Analyse	Eenheid	Q	011	012	013
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ANALYSES UITGEVOERD DOOR DERDEN

Adviespakket PFAS 30 componenten zie bijlage zie bijlage zie bijlage

Paraaf :



Analyserapport

Projectnaam Elster Buitenwaard
Projectnummer 193306
Rapportnummer 13094928 - 1

Orderdatum 29-08-2019
Startdatum 29-08-2019
Rapportagedatum 06-09-2019

Analyse		Monstersoort	Relatie tot norm	
Adviespakket PFAS 30 componenten		Grond	Analyse uitbesteed	
Monster	Barcode	Aanlevering	Monstername	Verpakking
001	U9029926	28-08-2019	28-08-2019	ALC382
001	U9045198	28-08-2019	28-08-2019	ALC382
001	U9029924	28-08-2019	28-08-2019	ALC382
001	U9029937	28-08-2019	28-08-2019	ALC382
002	U9029928	28-08-2019	28-08-2019	ALC382
002	U9029943	28-08-2019	28-08-2019	ALC382
003	U9045143	28-08-2019	28-08-2019	ALC382
003	U9045144	28-08-2019	28-08-2019	ALC382
003	U9045210	28-08-2019	28-08-2019	ALC382
003	U9029941	28-08-2019	28-08-2019	ALC382
003	U9045148	28-08-2019	28-08-2019	ALC382
004	U9029927	28-08-2019	28-08-2019	ALC382
004	U9029935	28-08-2019	28-08-2019	ALC382
004	U9029431	28-08-2019	28-08-2019	ALC382
004	U9045475	28-08-2019	28-08-2019	ALC382
004	U9029931	28-08-2019	28-08-2019	ALC382
005	U9029147	29-08-2019	29-08-2019	ALC382
005	U9045172	29-08-2019	29-08-2019	ALC382
005	U9029954	29-08-2019	29-08-2019	ALC382
005	U9029936	29-08-2019	29-08-2019	ALC382
006	U9044997	29-08-2019	29-08-2019	ALC382
006	U9045176	29-08-2019	29-08-2019	ALC382
007	U9029962	29-08-2019	29-08-2019	ALC382
007	U9029957	29-08-2019	29-08-2019	ALC382
007	U9029950	29-08-2019	29-08-2019	ALC382
007	U9029145	29-08-2019	29-08-2019	ALC382
007	U9029371	29-08-2019	29-08-2019	ALC382
008	U9029960	29-08-2019	29-08-2019	ALC382
008	U9029956	29-08-2019	29-08-2019	ALC382
009	U9029944	29-08-2019	29-08-2019	ALC382
009	U9029372	29-08-2019	29-08-2019	ALC382
009	U9029143	29-08-2019	29-08-2019	ALC382
009	U9029946	29-08-2019	29-08-2019	ALC382
009	U9029150	29-08-2019	29-08-2019	ALC382
009	U9029961	29-08-2019	29-08-2019	ALC382
009	U9029154	29-08-2019	29-08-2019	ALC382
010	U9029949	29-08-2019	29-08-2019	ALC382
010	U9029947	29-08-2019	29-08-2019	ALC382
010	U9029953	29-08-2019	29-08-2019	ALC382
010	U9029149	29-08-2019	29-08-2019	ALC382
010	U9029951	29-08-2019	29-08-2019	ALC382

Paraaf :



Projectnaam Elster Buitenwaard
 Projectnummer 193306
 Rapportnummer 13094928 - 1

Orderdatum 29-08-2019
 Startdatum 29-08-2019
 Rapportagedatum 06-09-2019

Monster	Barcode	Aanlevering	Monstername	Verpakking
011	U9029144	29-08-2019	29-08-2019	ALC382
011	U9029146	29-08-2019	29-08-2019	ALC382
011	U9029148	29-08-2019	29-08-2019	ALC382
011	U9029151	29-08-2019	29-08-2019	ALC382
011	U9029945	29-08-2019	29-08-2019	ALC382
012	U9045168	28-08-2019	28-08-2019	ALC382
012	U9045170	28-08-2019	28-08-2019	ALC382
012	U9044993	28-08-2019	28-08-2019	ALC382
012	U9045175	28-08-2019	28-08-2019	ALC382
012	U9044989	28-08-2019	28-08-2019	ALC382
013	U9044981	28-08-2019	28-08-2019	ALC382
013	U9045167	28-08-2019	28-08-2019	ALC382
013	U9045171	28-08-2019	28-08-2019	ALC382
013	U9044980	28-08-2019	28-08-2019	ALC382
013	U9044988	28-08-2019	28-08-2019	ALC382
013	U9044985	28-08-2019	28-08-2019	ALC382

Paraaf :





SYNLAB Analytics & Services Sweden AB

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Registered 556152-0916 Registered office: Linköping, Sweden


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Page 1 (2)

Report No. 19360189

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-001) 001klei 001klei 1-001 (0-30) 1-002 (0-40) 1
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384378

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	78.1	± 7.81	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	0.17	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	0.78	± 0.23	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	0.12	± 0.10	ug/kg TS
Calculated	PFOA, total	0.90	± 0.27	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	0.58	± 0.17	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	0.17	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.


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REPORT

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Page 2 (2)

Report No. 19360189
Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to
Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-001) 001klei 001klei 1-001 (0-30) 1-002 (0-40) 1
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384378

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	0.75	± 0.23	ug/kg TS
DIN 38414-14 mod.	Perfluorodecanoic sulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluoroocta. sulp. amid, PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) : Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-05

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 1016 8508 6638 9884

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.



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Page 1 (2)

Report No. 19360190

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-002) 001zand 001zand 1-001 (30-50) 1-003 (0-40)
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384363

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	88.9	± 8.89	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	0.76	± 0.23	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	0.76	± 0.23	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTrDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	0.51	± 0.15	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	0.13	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.



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Page 2 (2)

Report No. 19360190

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-002) 001zand 001zand 1-001 (30-50) 1-003 (0-40)
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384363

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	0.64	± 0.19	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoicsulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorocta.sulp.amid,PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) :Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-05

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0169 8108 6930 9286

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.



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Page 1 (2)

Report No. 19360191

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-003) 002bg 002bg 2-001 (0-50) 2-002 (0-50) 2-003
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384491

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	81.4	± 8.14	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	0.12	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	0.12	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	0.12	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	1.4	± 0.42	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	0.14	± 0.10	ug/kg TS
Calculated	PFOA, total	1.5	± 0.45	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	2.9	± 0.87	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	0.59	± 0.18	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.



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Report No. 19360191

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-003) 002bg 002bg 2-001 (0-50) 2-002 (0-50) 2-003
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384491

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	3.5	± 1.1	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoicsulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorocta.sulp.amid,PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) :Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0168 8901 6931 9288

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.



SYNLAB Analytics & Services Sweden AB

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Report No. 19360192

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-004) 002og 002og 2-001 (50-100) 2-002 (50-100) 2
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384389

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	79.2	± 7.92	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	0.15	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	0.15	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTrDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	0.20	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	< 0.1	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

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SYNLAB Analytics & Services Sweden AB

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REPORT

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Page 2 (2)

Report No. 19360192
Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to
Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-004) 002og 002og 2-001 (50-100) 2-002 (50-100) 2
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384389

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	0.20	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorodecanoic sulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluoroocta. sulp. amid, PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) : Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0167 8109 6930 9085

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Report No. 19360193

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-005) 003klei 003klei 3-001 (0-50) 3-002 (0-50) 3
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384473

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	73.7	± 7.37	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	0.29	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	0.36	± 0.11	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	0.33	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	0.31	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	2.0	± 0.60	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	2.0	± 0.60	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	0.34	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	0.44	± 0.13	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	0.27	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	0.17	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	0.12	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	0.14	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	14	± 4.2	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	2.1	± 0.63	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

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Report No. 19360193

Assigner

SYNLAB Analytics & Services BV
Rotterdam

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Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-005) 003klei 003klei 3-001 (0-50) 3-002 (0-50) 3
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384473

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	16	± 4.8	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoicsulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	0.22		ug/kg TS
DIN 38414-14 mod.	Perfluorocta.sulp.amid,PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) :Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0166 8603 6737 9586

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Report No. 19360194

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-006) 003zand 003zand 3-005 (0-50) 3-006 (0-50)
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384497

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	89.4	± 8.94	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	0.22	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	0.14	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	0.15	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	0.11	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	1.1	± 0.33	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	1.1	± 0.33	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	0.11	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	0.10	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	4.3	± 1.3	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	0.78	± 0.23	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.


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Report No. 19360194
Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to
Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-006) 003zand 003zand 3-005 (0-50) 3-006 (0-50)
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384497

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	5.1	± 1.5	ug/kg TS
DIN 38414-14 mod.	Perfluorodecanoic sulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluoroocta. sulph. amid, PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) : Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0165 8701 6836 9889

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Page 1 (2)

Report No. 19360195

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-007) 004bg 004bg 4-001 (0-40) 4-002 (0-35) 4-003
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384512

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	70.3	± 7.03	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	0.24	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	0.24	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTrDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	0.13	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	< 0.1	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.


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Report No. 19360195
Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to
Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-007) 004bg 004bg 4-001 (0-40) 4-002 (0-35) 4-003
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384512

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	0.13	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorodecanoic sulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluoroocta. sulph. amid, PFOA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) : Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0164 8104 6137 9584

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Report No. 19360196

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-008) 004ogklei 004ogklei 4-002 (50-100) 4-003 (5)
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384646

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	83.8	± 8.38	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTrDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	< 0.1	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

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SYNLAB Analytics & Services Sweden AB

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REPORT

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Page 2 (2)

Report No. 19360196
Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to
Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-008) 004ogklei 004ogklei 4-002 (50-100) 4-003 (5)
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384646

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoicsulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorocta.sulp.amid,PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) :Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0163 8507 6539 9288

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Page 1 (2)

Report No. 19360197

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-009) 004ogzand 004ogzand 4-001 (40-50) 4-001 (50)
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384469

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	90.2	± 9.02	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	< 0.1	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.



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Page 2 (2)

Report No. 19360197

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-009) 004ogzand 004ogzand 4-001 (40-50) 4-001 (50)
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384469

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorodecanoic sulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorocta. sulp. amid, PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) : Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

The analysis is performed according to standard, ie on the fraction of the submitted sample that is < 2 mm.

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0162 8107 6733 9688

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Page 1 (2)

Report No. 19360198

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-010) 005bg 005bg 5-001 (0-50) 5-002 (0-50) 5-003
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384356

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	79.6	± 7.96	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	0.11	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	1.1	± 0.33	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	1.1	± 0.33	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	1.2	± 0.36	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	0.33	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.



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Page 2 (2)

Report No. 19360198

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-010) 005bg 005bg 5-001 (0-50) 5-002 (0-50) 5-003
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384356

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	1.5	± 0.45	ug/kg TS
DIN 38414-14 mod.	Perfluorodecanoic sulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluoroocta. sulp. amid, PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) : Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0161 8204 6630 9383

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Page 1 (2)

Report No. 19360199

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-011) 005og 005og 5-001 (50-100) 5-002 (50-100) 5
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384351

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	81.0	± 8.10	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	0.97	± 0.29	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	0.97	± 0.29	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTrDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	0.67	± 0.20	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	0.20	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.


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Page 2 (2)

Report No. 19360199
Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to
Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-011) 005og 005og 5-001 (50-100) 5-002 (50-100) 5
Sampling date : 2019-08-29
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384351

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	0.87	± 0.26	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoicsulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorocta.sulp.amid,PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) :Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-04

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 0160 8701 6638 9888

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Page 1 (2)

Report No. 19360200

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-012) 006bg 006bg 6-001 (0-50) 6-002 (0-50) 6-003
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384449

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	83.2	± 8.32	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	0.19	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	1.2	± 0.36	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	0.12	± 0.10	ug/kg TS
Calculated	PFOA, total	1.3	± 0.39	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTrDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	0.93	± 0.28	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	0.26	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.


SYNLAB Analytics & Services Sweden AB

Box 1083, 581 10 Linköping, Sweden
Tel: + 46 13 254 900 · Fax: + 46 13 121 728
Registered 556152-0916 Registered office: Linköping, Sweden



Akred. nr 1006
Provning
ISO/IEC 17025



REPORT

issued by an Accredited Laboratory

Page 2 (2)

Report No. 19360200
Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to
Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-012) 006bg 006bg 6-001 (0-50) 6-002 (0-50) 6-003
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384449

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	1.2	± 0.36	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoicsulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorocta.sulp.amid,PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) :Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-05

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 9989 0860 3616 9271

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Page 1 (2)

Report No. 19360201

Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to

Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-013) 006og 006og 6-001 (50-90) 6-002 (50-90) 6-0
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384396

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
SS-ISO 11465	Dry substance	81.0	± 8.10	%
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, linear	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOA, branched	< 0.1	± 0.10	ug/kg TS
Calculated	PFOA, total	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorononanoic acid, PFNA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordecanoic acid, PFDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorundec. acid, PFUnDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluordodec. acid, PFDoDA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Perfluortridec. acid, PFTeDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluortetradec. acid, PFTrDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluorhexadec. acid, PFHxDA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	Perfluoroctadec. acid, PFODA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluorbutanoic acid, PFBS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorpentanoic acid, PFPeS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorhexanoic acid, PFHxS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorheptanoic acid, PFHpS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, linear	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	PFOS, branched	< 0.1	± 0.10	ug/kg TS

(*) : Method not accredited by Swedac

PFOA = Perfluorooctane acid PFOS = Perfluorooctane sulfonate

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

(continued)

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Page 2 (2)

Report No. 19360201
Assigner

SYNLAB Analytics & Services BV
Rotterdam

Steenhouwerstraat 15
3194AG ROTTERDAM, NL

Applies to
Soil

Level 1 : Rotterdam Nautilus Order

Information about sample and sampling

Date of Arrival : 2019-09-02
Time of Arrival : 1150
Temperature at arrival :

Sample name : (13094928-013) 006og 006og 6-001 (50-90) 6-002 (50-90) 6-0
Sampling date : 2019-08-28
Sampler : -
Depth of sampling : -
Invoice reference : P85357
Label-id @mis : 86384396

Results

Test method	Analysis / Investigation of	Result	Uncertainty	Unit
Calculated	PFOS, total	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Perfluorodecanoic sulpho. PFDS	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (4:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (6:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod.	Fluortelomersulfo. (8:2 FTS)	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	Fluortelomersulf. (10:2 FTS)	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	N-EtFOSAA	< 0.1		ug/kg TS
DIN 38414-14 mod.	Perfluoroocta. sulp. amid, PFOSA	< 0.1	± 0.10	ug/kg TS
DIN 38414-14 mod. (*)	N-MeFOSA	< 0.1		ug/kg TS
DIN 38414-14 mod. (*)	8:2 diPAP	< 0.1		ug/kg TS

(*) : Method not accredited by Swedac

The stated uncertainty of measurement is calculated using a coverage $k = 2$. Measurement uncertainty for accredited microbiological analyses are available from the laboratory upon request.

Comment

All results for PFAS, except for PFOS and PFOA, refer to linear isomers.

Linköping 2019-09-06

The report has been reviewed and approved by

Patric Eklundh
Responsible reviewer

Control numbers 9882 0767 3316 9474

Results refer only to the submitted sample. Unless the laboratory has written otherwise, the report may only be reproduced in its entirety.

Bijlage

4 Verklarende woordenlijst

Aantal pagina's: 1

Bijlage 4: Verklarende woordenlijst

Besluit bodemkwaliteit (Bbk): op 1 juli 2008 is het Besluit bodemkwaliteit in werking getreden. Er kan sprake zijn van een generiek beleid of een gebiedspecifiek beleid. Volgens dit besluit kan per gemeente een beleid worden gevoerd, waarin rekening gehouden is met locatiespecifieke omstandigheden in de bodem. In voorliggende rapportage zijn de resultaten van de uitgevoerde analyses getoetst aan het generieke beleid.

Bodemverontreiniging: situatie waarbij stoffen zich op een zodanige wijze in de bodem bevinden, dat deze stoffen zich met de bodem kunnen vermengen, met de bodem kunnen reageren, zich in de bodem kunnen verspreiden en/of ongecontroleerd kunnen verplaatsen én één of meer van de functionele eigenschappen, die de bodem voor mens, plant of dier heeft, verminderen of bedreigen.

Geval van ernstige verontreiniging: er is sprake van een geval van ernstige bodemverontreiniging indien voor ten minste één stof de gemiddelde gemeten concentratie van minimaal 25 m³ bodemvolume in het geval van een grondverontreiniging of van minimaal 100 m³ grondwater in het geval van een grondwaterverontreiniging, hoger is dan de interventiewaarde. Asbest is uitgezonderd van dit volumecriterium.

mg/kg ds: milligram per kilogram droge stof

m -mv: meter minus maaiveld

NEN 5725: Norm voor het uitvoeren van vooronderzoek. Het vooronderzoek wordt uitgevoerd voorafgaande aan een bodemonderzoek. De bij het vooronderzoek verzamelde gegevens dienen als basis voor het opstellen van een juiste onderzoeksstrategie.

Verdachte locatie: locatie waarvoor op grond van het vooronderzoek concrete aanwijzingen zijn dat die locatie, of een deel ervan is verontreinigd met een of meerdere stoffen.

Wet bodembescherming (Wbb): de Wet bodembescherming stelt regels om de bodem (grond en grondwater) te beschermen. Daarnaast worden de saneringen van verontreinigde grond en grondwater door middel van de Wbb geregeld.

Bijlage

**5 Verklaring onafhankelijkheid conform eisen Bbk en BRL
SIKB 2000**

Bijlage 5: Verklaring onafhankelijkheid conform eisen Bbk en BRL SIKB 2000

Projectnummer: 193306
Locatie: Elster Buitenwaard
Opdrachtgever: Provincie Utrecht

De veldwerker, waarvan de naam hieronder wordt vermeld, verklaart hierbij dat alle kritische functies onafhankelijk van de opdrachtgever zijn uitgevoerd conform de eisen van de BRL SIKB 2000 en de daarbij horende protocollen.

Naam veldwerker	Datum veldwerk	Handtekening
	28 en 29 augustus 2019	