REPORT

Myre Harbour

CLIENT

Primex International

SUBJECT

Environmental ground investigation

DATE: / REVISION: May 11th 2017 / 00

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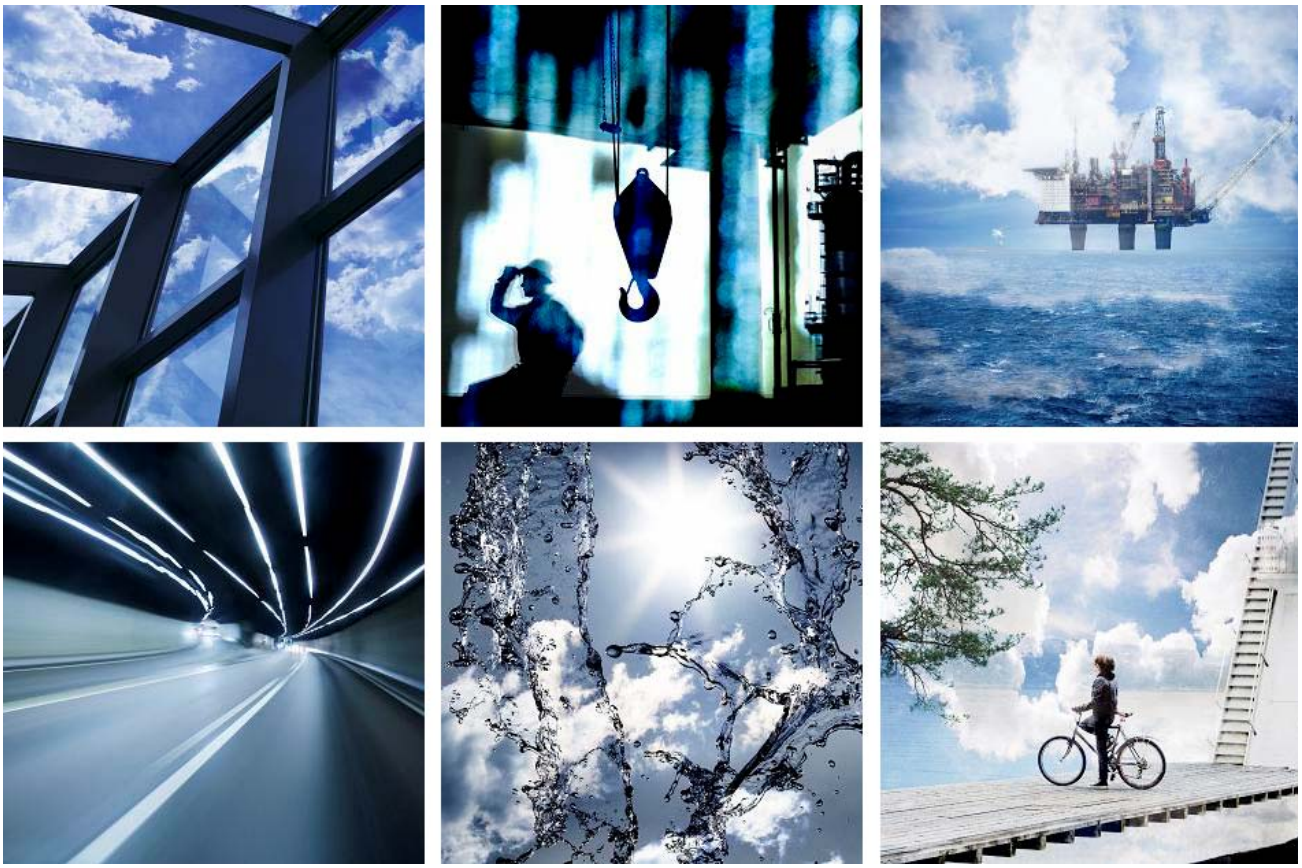

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REPORT

PROJECT	**Myre Harbour**	DOCUMENT CODE	713713-RIGm-RAP-001
SUBJECT	Environmental ground investigation	ACCESSIBILITY	Restricted
CLIENT	**Primex International**	PROJECT MANAGER	Iselin Johnsen
CONTACT	Guy Lebaron	PREPARED BY	Hanne Kildemo
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NORWEGIAN PROPERTY NO..	65 / 72 Øksnes		

SUMMARY

Multiconsult ASA is engaged by Primex International to perform an environmental ground investigation at Havnegata 1 in Myre in the municipality of Øksnes. This report contains a description of the field works and the analytical results from the environmental ground investigation.

Three test pits were excavated at the investigated property, MH1-MH3. From the test pits, six soil samples were analysed for heavy metals, PAH_{16} (polycyclic aromatic hydrocarbons), PCB_7 (polychlorinated biphenyls), BTEX (benzene, toluene, ethylbenzene and xylene), aliphatic hydrocarbons (C_8-C_{35}) and TOC (Total organic carbon). The analytical results shows contamination above SQC 1 in all three test pits. Chromium concentrations according to SQC 2 was identified in the top soil in MH1 and the deeper soil layer in MH2. In MH3, PCBs were detected in both the top and deeper soil layers as well as aliphatic hydrocarbons (C_{12}-C_{35}) according to SQC 2. All other parameters corresponded to SQC 1, which classifies the investigated soil as "very good".

The investigated area is regulated for industrial purposes, and the investigated soil can remain and be re-used on the site according to the guideline TA-2553/2009. If the soil is to be removed from the site, it needs to be deposited at an approved waste management facility.

00	10.05.2017	Environmental ground investigation	Hanne Kildemo	Inger Marie Bjølseth	Iselin Johnsen
REV.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY

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Appendix A Analysis report from ALS

1 Introduction

Multiconsult ASA is engaged by Primex International to perform an environmental ground investigation at Havnegata 1 in Myre in the municipality of Øksnes, in the northern part of Norway. Primex International is planning to establish a fish landing station at the property.

This report contains a description of the field works and the analytical results from the environmental ground investigation.

2 Site location and history

Havnegata 1 is located in an industrial area at the harbour of Myre in Vesterålen. An overview map of Myre and the investigated area is shown in Figure 2-1.

Figure 2-1: Myre harbour, in the municipality of Øksnes, in Vesterålen. The investigated area is marked with a red circle. Source: www.norgeskart.no

Myre harbour is one of the most important bases for cod fishing in the Lofoten area. The harbour was recently upgraded, by improving the entrance to the harbour with new stone breakwaters in order to create a better wave climate within the harbour basin (source: www.aarsleff.com).

The investigated site is a former fishery, see Figure 2-2. All of the buildings at the site are removed, only the concrete foundation remains. The new fishing station will be established on the existing foundation, and partly on new concrete foundation which will be constructed at the northeastern corner.

Figure 2-2: Havnegata 1, Myre harbour. The investigated site, 65/72, marked with a red line. The buildings shown are removed, and only the concrete foundation remains. Area of new concrete foundation is marked in pink.

3 Scope of Works

3.1 Site works

Test pit excavation and soil sampling

The site work was carried out on the 14th of March 2017, in cloudy weather and temperature of about - 1° C. Excavation was performed by Andre Reinholdtsen. Three test pits (MH1-MH3) were excavated down to a maximum of 2 meters depth. The surface in the investigated area consisted of asphalt and snow.

The test pits MH1 and MH2 are located within the area where the new concrete foundation is planned, and MH3 is located within the existing foundation. See Figure 3-1. The test pit locations were measured by the use of GPS.

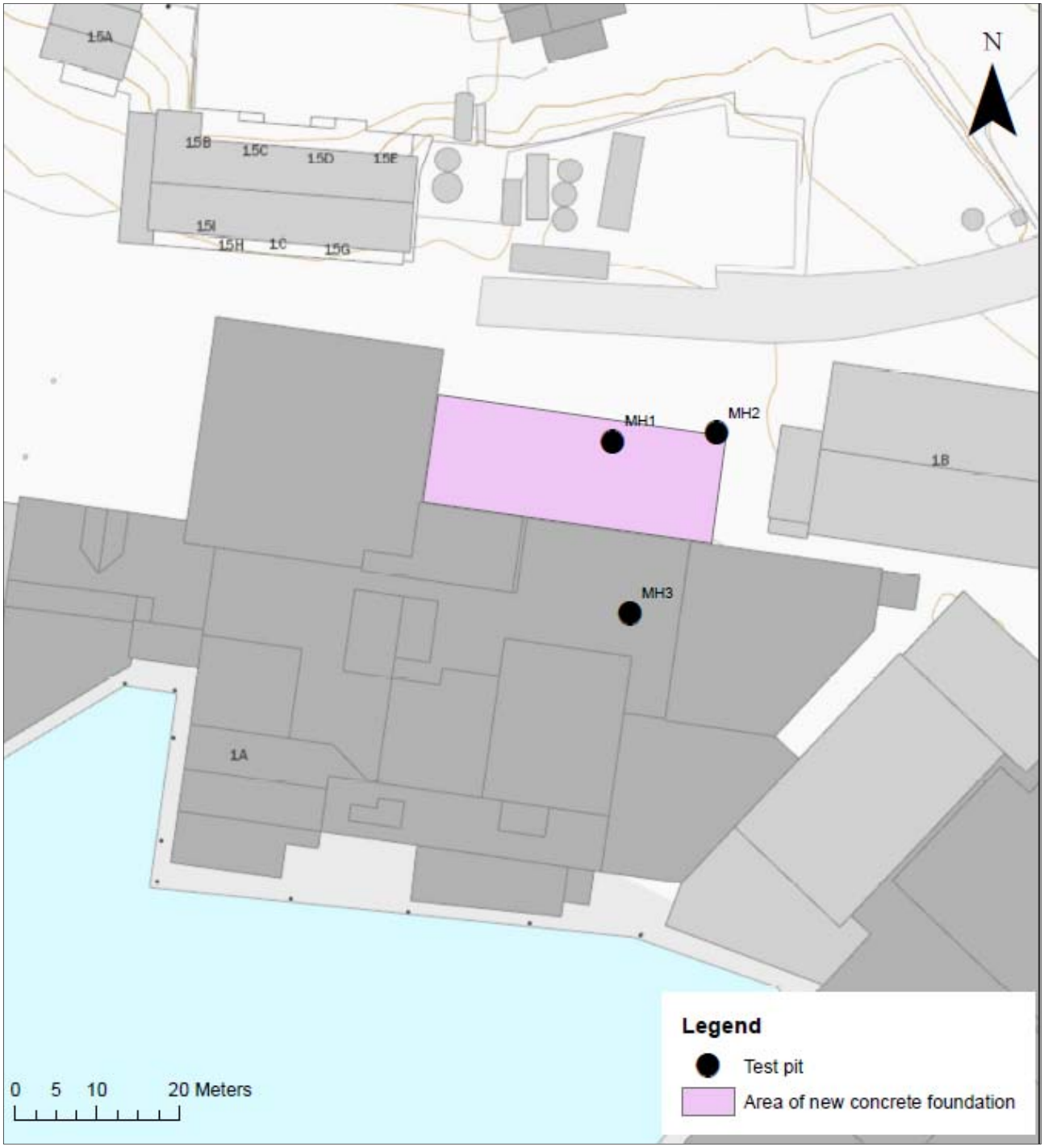

Figure 3-1: Test pit locations (MH1-MH3). The pink area is the where the new concrete foundation is planned.

The field work was performed according to the Norwegian Environmental agency guideline TA-2553/2009 "Classification of condition for contaminated sites, revised guideline 99:01 "Risk assessment of contaminated land" and 91:01 "Guideline for environmental ground investigation", NS-ISO 10381-5 " Soil quality – Sampling – Part 5: Guidance on the procedure for the investigation of urban and industrial sites with regard to soil contamination", 2006 and the Multiconsult's internal guideline.

3.2 Sample analysis

Six soil samples were analysed for heavy metals, PAH_{16} (polycyclic aromatic hydrocarbons), PCB_7 (polychlorinated biphenyls), BTEX (benzene, toluene, ethylbenzene and xylene), aliphatic

hydrocarbons (C_8-C_{35}) and TOC (Total organic carbon) by the accredited laboratory ALS Laboratory Group Norway AS.

4 Results

4.1 Site Observations

The investigated area consists of reclaimed land. All three test pits consisted of fill material; sand mixed with silt, gravel, clay and different sizes of stones. The test pits were excavated down to the planned depth of the new concrete foundation. For a more detailed description of the soil samples, see Table 4-1.

Table 4-1: Description of the soil samples in the test pits, MH1-MH3.

Test pit	Depth (m)	Description
MH1	0-1,0	The top layer (0-20 cm) consisted of asphalt over brown sand mixed with silt, gravel and clay. There were some pieces of woodwork and some humus. Part of a sewer was exposed at 1 m depth, smell of sewage.
	1,0-1,5	Sand mixed with silt, gravel and clay. Same material as above. Water intrusion at the bottom of the test pit.
MH2	0-1,0	Top layer of asphalt (0-20 cm) over brown sand mixed with silt, gravel and clay, same as in MH1.
	1,0-1,5	Same as 0-1,0 m.
MH3	0-1,0	The top layer consisted of 20 cm of concrete with steel wires over about 20 cm of leca-stone. Underlying masses consisted of sand with gravel, and some silt and clay. Larger-sized stones compared to test pit MH2 and MH3.
	1,0-2,0	Sand with gravel, some silt and clay. Large stones. Pieces of woodwork and burned wood and small pieces of tiles Water intrusion at 2 m depth.

4.2 Chemical Analysis

National soil quality class values (SQC) for the most common contaminants are given by the Norwegian environmental agency (NEA) guideline *Classification of condition for contaminated sites,* TA-2553/2009. The classification expresses the contents of hazardous substances in the soil. Table 4-2 presents the classification system for contaminated soil. Each soil class has its own colour code.

Table 4-2: Quality classes for contaminated land and description of the quality.

Soil quality classes (SQC)	1	2	3	4	5	
Description	Very good	Good	Moderate	Poor	Very poor	Hazardous waste
Upper limit criteria decided by	NEA screening value	Health based acceptance criteria	Health based acceptance critera	Health based acceptance critera	Hazardous waste	

Description as defined by TA-2553/2009 (translated by Multiconsult).

The analytical results of the soil samples are presented in table 4-3, and the colours correspond to the soil quality classes in table 4-2.

Full analysis report is presented in appendix A.

Table 4-3: Results from soil sample analysis, Soil samples analysed for heavy metals, PAH_{16} (polycyclic aromatic hydrocarbons), PCB_7 (polychlorinated biphenyls), BTEX (benzene, toluene, ethylbenzene and xylene) and aliphatic hydrocarbons (mg/kg).

Test pits/ parameters	**Analytical results** (mg/kg)					
	MH1 (0-1,0 m)	**MH1 (1,0-1,5 m)**	**MH2 (0-1,0 m)**	**MH2 (1,0-1,5 m)**	**MH3 (0-1,0 m)**	**MH3 (1,0-2,0m)**
Arsenic (As)	<0.5	<0.5	<0.5	<0.5	1,6	1
Cadmium (Cd)	<0.05	<0.05	<0.05	<0.05	0,2	<0.05
Crom (Cr)	52	44	42	55	40	44
Copper (Cu)	33	30	32	37	55	57
Mercury (Hg)	<0.01	<0.01	<0.01	<0.01	0,02	0,02
Nickel (Ni)	28	25	26	30	26	26
Lead (Pb)	2	2	2	2	22	11
Zinc (Zn)	26	26	24	25	100	71
Sum PCB_7	0,0086	n.d.	0,0088	n.d.	0,0248	0,0226
Benzo(a)pyrene	<0.010	<0.010	<0.010	<0.010	<0.010	0,013
Sum PAH_{16}	n.d.	0,024	n.d.	n.d.	0,097	0,122
Benzene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
C_8-C_{10}	<10	<10	<10	<10	<10	<10
C_{10}-C_{12}	<10	<10	<10	<10	<10	<10
C_{12}-C_{35}	19	n.d.	n.d.	12	56	110

n.d – not detected

Figure 4-1 presents the sample locations with the maximum contamination levels (SQL) for each test pit, MH1-MH3.

Figure 4-1: Sample locations showing maximum SQC in top soil (0-1 m) and deeper layer (>1 m).

5 Assessment of the Contamination Situation

The analytical results shows contamination above SQC 1 in all three test pits. Chromium concentrations according to SQC 2 was identified in the top soil in MH1 and the deeper soil layer in MH2. In MH3, PCBs were detected in both the top and deeper soil layers as well as aliphatic hydrocarbons (C_{12}-C_{35}) according to SQC 2. All other parameters corresponded to SQC 1, which classifies the investigated soil as “very good” (according to table 4-2).

6 Conclusion

The investigated area is regulated for industrial purposes. According to the guideline TA-2553/2009, soil quality according to SQC 3 is accepted in top soil for such land use. This means that the investigated soil can remain and be re-used on the site. If the soil is to be removed from the site, it needs to be deposited at an approved waste management facility.

Appendix A

Analysis report from ALS

Rapport

N1703851

2GSPOGFZASG

Mottatt dato **2017-03-16**
Utstedt **2017-03-22**

Multiconsult AS
Hanne Kildemo
Avd. Geo
Fiolveien 13,
N-9016 Tromsø
Norway

Prosjekt **Myre harbor**
Bestnr **713713**

Analyse av faststoff

Deres prøvenavn **MH1 (0-1 m)**
Jord

Labnummer N00489222

Analyse	Resultater	Usikkerhet (±)	Enhet	Metode	Utført	Sign
Tørrstoff (DK)	**86.2**	8.62	%	1	1	NADO
As (Arsen)	**<0.5**		mg/kg TS	1	1	NADO
Cd (Kadmium)	**<0.05**		mg/kg TS	1	1	NADO
Cr (Krom)	**52**	7.28	mg/kg TS	1	1	NADO
Cu (Kopper)	**33**	4.62	mg/kg TS	1	1	NADO
Hg (Kvikksølv)	**<0.01**		mg/kg TS	1	1	NADO
Ni (Nikkel)	**28**	3.92	mg/kg TS	1	1	NADO
Pb (Bly)	**2**	2	mg/kg TS	1	1	NADO
Zn (Sink)	**26**	2.6	mg/kg TS	1	1	NADO
PCB 28	**0.0031**	0.00062	mg/kg TS	1	1	NADO
PCB 52	**0.0038**	0.00076	mg/kg TS	1	1	NADO
PCB 101	**0.0017**	0.00044	mg/kg TS	1	1	NADO
PCB 118	**<0.0010**		mg/kg TS	1	1	NADO
PCB 138	**<0.0010**		mg/kg TS	1	1	NADO
PCB 153	**<0.0010**		mg/kg TS	1	1	NADO
PCB 180	**<0.0010**		mg/kg TS	1	1	NADO
Sum PCB-7*	**0.00860**		mg/kg TS	1	1	NADO
Naftalen	**<0.010**		mg/kg TS	1	1	NADO
Acenaftylen	**<0.010**		mg/kg TS	1	1	NADO
Acenaften	**<0.010**		mg/kg TS	1	1	NADO
Fluoren	**<0.010**		mg/kg TS	1	1	NADO
Fenantren	**<0.010**		mg/kg TS	1	1	NADO
Antracen	**<0.010**		mg/kg TS	1	1	NADO
Fluoranten	**<0.010**		mg/kg TS	1	1	NADO
Pyren	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Krysen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(b+j)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(k)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Dibenso(ah)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(ghi)perylen	**<0.010**		mg/kg TS	1	1	NADO
Indeno(123cd)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Sum PAH-16*	**n.d.**		mg/kg TS	1	1	NADO
Bensen	**<0.010**		mg/kg TS	1	1	NADO
Toluen	**<0.040**		mg/kg TS	1	1	NADO
Etylbensen	**<0.040**		mg/kg TS	1	1	NADO

N1703851

2GSPOGFZASG

Deres prøvenavn	**MH1 (0-1 m)** **Jord**
Labnummer	N00489222

Analyse	Resultater	Usikkerhet (±)	Enhet	Metode	Utført	Sign
Xylener	**<0.040**		mg/kg TS	1	1	NADO
Sum BTEX*	**n.d.**		mg/kg TS	1	1	NADO
Fraksjon C5-C6	**<2.5**		mg/kg TS	1	1	NADO
Fraksjon >C6-C8	**<7.0**		mg/kg TS	1	1	NADO
Fraksjon >C8-C10	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C10-C12	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C12-C16	**<10**		mg/kg TS	1	1	NADO
Sum >C12-C35*	**19**		mg/kg TS	1	1	NADO
Fraksjon >C16-C35	**19**	5.7	mg/kg TS	1	1	NADO
TOC	**0.79**	0.1185	% TS	2	1	NADO

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Deres prøvenavn	**MH1 (1-1,5 m)** **Jord**
Labnummer	N00489223

Analyse	Resultater	Usikkerhet (±)	Enhet	Metode	Utført	Sign
Tørrstoff (DK)	**87.5**	8.75	%	1	1	NADO
As (Arsen)	**<0.5**		mg/kg TS	1	1	NADO
Cd (Kadmium)	**<0.05**		mg/kg TS	1	1	NADO
Cr (Krom)	**44**	6.16	mg/kg TS	1	1	NADO
Cu (Kopper)	**30**	4.2	mg/kg TS	1	1	NADO
Hg (Kvikksølv)	**<0.01**		mg/kg TS	1	1	NADO
Ni (Nikkel)	**25**	3.5	mg/kg TS	1	1	NADO
Pb (Bly)	**2**	2	mg/kg TS	1	1	NADO
Zn (Sink)	**26**	2.6	mg/kg TS	1	1	NADO
PCB 28	**<0.0010**		mg/kg TS	1	1	NADO
PCB 52	**<0.0010**		mg/kg TS	1	1	NADO
PCB 101	**<0.0010**		mg/kg TS	1	1	NADO
PCB 118	**<0.0010**		mg/kg TS	1	1	NADO
PCB 138	**<0.0010**		mg/kg TS	1	1	NADO
PCB 153	**<0.0010**		mg/kg TS	1	1	NADO
PCB 180	**<0.0010**		mg/kg TS	1	1	NADO
Sum PCB-7*	**n.d.**		mg/kg TS	1	1	NADO
Naftalen	**<0.010**		mg/kg TS	1	1	NADO
Acenaftylen	**<0.010**		mg/kg TS	1	1	NADO
Acenaften	**<0.010**		mg/kg TS	1	1	NADO
Fluoren	**<0.010**		mg/kg TS	1	1	NADO
Fenantren	**<0.010**		mg/kg TS	1	1	NADO
Antracen	**<0.010**		mg/kg TS	1	1	NADO
Fluoranten	**<0.010**		mg/kg TS	1	1	NADO
Pyren	**0.013**	0.0039	mg/kg TS	1	1	NADO
Benso(a)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Krysen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(b+j)fluoranten^	**0.011**	0.0033	mg/kg TS	1	1	NADO
Benso(k)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Dibenso(ah)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(ghi)perylen	**<0.010**		mg/kg TS	1	1	NADO
Indeno(123cd)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Sum PAH-16*	**0.0240**		mg/kg TS	1	1	NADO
Bensen	**<0.010**		mg/kg TS	1	1	NADO
Toluen	**<0.040**		mg/kg TS	1	1	NADO
Etylbensen	**<0.040**		mg/kg TS	1	1	NADO
Xylener	**<0.040**		mg/kg TS	1	1	NADO
Sum BTEX*	**n.d.**		mg/kg TS	1	1	NADO
Fraksjon C5-C6	**<2.5**		mg/kg TS	1	1	NADO
Fraksjon >C6-C8	**<7.0**		mg/kg TS	1	1	NADO
Fraksjon >C8-C10	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C10-C12	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C12-C16	**<10**		mg/kg TS	1	1	NADO
Sum >C12-C35*	**n.d.**		mg/kg TS	1	1	NADO
Fraksjon >C16-C35	**<10**		mg/kg TS	1	1	NADO

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Deres prøvenavn	**MH2 (0-1 m)** **Jord**
Labnummer	N00489224

Analyse	Resultater	Usikkerhet (±)	Enhet	Metode	Utført	Sign
Tørrstoff (DK)	**88.5**	8.85	%	1	1	NADO
As (Arsen)	**<0.5**		mg/kg TS	1	1	NADO
Cd (Kadmium)	**<0.05**		mg/kg TS	1	1	NADO
Cr (Krom)	**42**	5.88	mg/kg TS	1	1	NADO
Cu (Kopper)	**32**	4.48	mg/kg TS	1	1	NADO
Hg (Kvikksølv)	**<0.01**		mg/kg TS	1	1	NADO
Ni (Nikkel)	**26**	3.64	mg/kg TS	1	1	NADO
Pb (Bly)	**2**	2	mg/kg TS	1	1	NADO
Zn (Sink)	**24**	2.4	mg/kg TS	1	1	NADO
PCB 28	**0.0016**	0.00044	mg/kg TS	1	1	NADO
PCB 52	**0.0045**	0.0009	mg/kg TS	1	1	NADO
PCB 101	**0.0017**	0.00044	mg/kg TS	1	1	NADO
PCB 118	**0.0010**	0.00044	mg/kg TS	1	1	NADO
PCB 138	**<0.0010**		mg/kg TS	1	1	NADO
PCB 153	**<0.0010**		mg/kg TS	1	1	NADO
PCB 180	**<0.0010**		mg/kg TS	1	1	NADO
Sum PCB-7*	**0.00880**		mg/kg TS	1	1	NADO
Naftalen	**<0.010**		mg/kg TS	1	1	NADO
Acenaftylen	**<0.010**		mg/kg TS	1	1	NADO
Acenaften	**<0.010**		mg/kg TS	1	1	NADO
Fluoren	**<0.010**		mg/kg TS	1	1	NADO
Fenantren	**<0.010**		mg/kg TS	1	1	NADO
Antracen	**<0.010**		mg/kg TS	1	1	NADO
Fluoranten	**<0.010**		mg/kg TS	1	1	NADO
Pyren	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Krysen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(b+j)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(k)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Dibenso(ah)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(ghi)perylen	**<0.010**		mg/kg TS	1	1	NADO
Indeno(123cd)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Sum PAH-16*	**n.d.**		mg/kg TS	1	1	NADO
Bensen	**<0.010**		mg/kg TS	1	1	NADO
Toluen	**<0.040**		mg/kg TS	1	1	NADO
Etylbensen	**<0.040**		mg/kg TS	1	1	NADO
Xylener	**<0.040**		mg/kg TS	1	1	NADO
Sum BTEX*	**n.d.**		mg/kg TS	1	1	NADO
Fraksjon C5-C6	**<2.5**		mg/kg TS	1	1	NADO
Fraksjon >C6-C8	**<7.0**		mg/kg TS	1	1	NADO
Fraksjon >C8-C10	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C10-C12	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C12-C16	**<10**		mg/kg TS	1	1	NADO
Sum >C12-C35*	**n.d.**		mg/kg TS	1	1	NADO
Fraksjon >C16-C35	**<10**		mg/kg TS	1	1	NADO

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Deres prøvenavn	**MH2 (1-1,5 m)** **Jord**
Labnummer	N00489225

Analyse	Resultater	Usikkerhet (±)	Enhet	Metode	Utført	Sign
Tørrstoff (DK)	**87.2**	8.72	%	1	1	NADO
As (Arsen)	**<0.5**		mg/kg TS	1	1	NADO
Cd (Kadmium)	**<0.05**		mg/kg TS	1	1	NADO
Cr (Krom)	**55**	7.7	mg/kg TS	1	1	NADO
Cu (Kopper)	**37**	5.18	mg/kg TS	1	1	NADO
Hg (Kvikksølv)	**<0.01**		mg/kg TS	1	1	NADO
Ni (Nikkel)	**30**	4.2	mg/kg TS	1	1	NADO
Pb (Bly)	**2**	2	mg/kg TS	1	1	NADO
Zn (Sink)	**25**	2.5	mg/kg TS	1	1	NADO
PCB 28	**<0.0010**		mg/kg TS	1	1	NADO
PCB 52	**<0.0010**		mg/kg TS	1	1	NADO
PCB 101	**<0.0010**		mg/kg TS	1	1	NADO
PCB 118	**<0.0010**		mg/kg TS	1	1	NADO
PCB 138	**<0.0010**		mg/kg TS	1	1	NADO
PCB 153	**<0.0010**		mg/kg TS	1	1	NADO
PCB 180	**<0.0010**		mg/kg TS	1	1	NADO
Sum PCB-7*	**n.d.**		mg/kg TS	1	1	NADO
Naftalen	**<0.010**		mg/kg TS	1	1	NADO
Acenaftylen	**<0.010**		mg/kg TS	1	1	NADO
Acenaften	**<0.010**		mg/kg TS	1	1	NADO
Fluoren	**<0.010**		mg/kg TS	1	1	NADO
Fenantren	**<0.010**		mg/kg TS	1	1	NADO
Antracen	**<0.010**		mg/kg TS	1	1	NADO
Fluoranten	**<0.010**		mg/kg TS	1	1	NADO
Pyren	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Krysen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(b+j)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(k)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Dibenso(ah)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(ghi)perylen	**<0.010**		mg/kg TS	1	1	NADO
Indeno(123cd)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Sum PAH-16*	**n.d.**		mg/kg TS	1	1	NADO
Bensen	**<0.010**		mg/kg TS	1	1	NADO
Toluen	**<0.040**		mg/kg TS	1	1	NADO
Etylbensen	**<0.040**		mg/kg TS	1	1	NADO
Xylener	**<0.040**		mg/kg TS	1	1	NADO
Sum BTEX*	**n.d.**		mg/kg TS	1	1	NADO
Fraksjon C5-C6	**<2.5**		mg/kg TS	1	1	NADO
Fraksjon >C6-C8	**<7.0**		mg/kg TS	1	1	NADO
Fraksjon >C8-C10	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C10-C12	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C12-C16	**<10**		mg/kg TS	1	1	NADO
Sum >C12-C35*	**12**		mg/kg TS	1	1	NADO
Fraksjon >C16-C35	**12**	3.6	mg/kg TS	1	1	NADO

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Deres prøvenavn	**MH3 (0-1 m)** **Jord**
Labnummer	N00489226

Analyse	Resultater	Usikkerhet (±)	Enhet	Metode	Utført	Sign
Tørrstoff (DK)	**89.5**	8.95	%	1	1	NADO
As (Arsen)	**1.6**	1	mg/kg TS	1	1	NADO
Cd (Kadmium)	**0.20**	0.04	mg/kg TS	1	1	NADO
Cr (Krom)	**40**	5.6	mg/kg TS	1	1	NADO
Cu (Kopper)	**55**	7.7	mg/kg TS	1	1	NADO
Hg (Kvikksølv)	**0.02**	0.02	mg/kg TS	1	1	NADO
Ni (Nikkel)	**26**	3.64	mg/kg TS	1	1	NADO
Pb (Bly)	**22**	3.08	mg/kg TS	1	1	NADO
Zn (Sink)	**100**	10	mg/kg TS	1	1	NADO
PCB 28	**0.0074**	0.00148	mg/kg TS	1	1	NADO
PCB 52	**0.0081**	0.00162	mg/kg TS	1	1	NADO
PCB 101	**0.0043**	0.00086	mg/kg TS	1	1	NADO
PCB 118	**<0.0010**		mg/kg TS	1	1	NADO
PCB 138	**0.0019**	0.00044	mg/kg TS	1	1	NADO
PCB 153	**0.0015**	0.00044	mg/kg TS	1	1	NADO
PCB 180	**0.0016**	0.00044	mg/kg TS	1	1	NADO
Sum PCB-7*	**0.0248**		mg/kg TS	1	1	NADO
Naftalen	**<0.010**		mg/kg TS	1	1	NADO
Acenaftylen	**<0.010**		mg/kg TS	1	1	NADO
Acenaften	**<0.010**		mg/kg TS	1	1	NADO
Fluoren	**<0.010**		mg/kg TS	1	1	NADO
Fenantren	**0.010**	0.003	mg/kg TS	1	1	NADO
Antracen	**<0.010**		mg/kg TS	1	1	NADO
Fluoranten	**0.025**	0.0075	mg/kg TS	1	1	NADO
Pyren	**0.026**	0.0078	mg/kg TS	1	1	NADO
Benso(a)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Krysen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(b+j)fluoranten^	**0.014**	0.0042	mg/kg TS	1	1	NADO
Benso(k)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)pyren^	**<0.010**		mg/kg TS	1	1	NADO
Dibenso(ah)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(ghi)perylen	**0.012**	0.0036	mg/kg TS	1	1	NADO
Indeno(123cd)pyren^	**0.010**	0.003	mg/kg TS	1	1	NADO
Sum PAH-16*	**0.0970**		mg/kg TS	1	1	NADO
Bensen	**<0.010**		mg/kg TS	1	1	NADO
Toluen	**<0.040**		mg/kg TS	1	1	NADO
Etylbensen	**<0.040**		mg/kg TS	1	1	NADO
Xylener	**<0.040**		mg/kg TS	1	1	NADO
Sum BTEX*	**n.d.**		mg/kg TS	1	1	NADO
Fraksjon C5-C6	**<2.5**		mg/kg TS	1	1	NADO
Fraksjon >C6-C8	**<7.0**		mg/kg TS	1	1	NADO
Fraksjon >C8-C10	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C10-C12	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C12-C16	**<10**		mg/kg TS	1	1	NADO
Sum >C12-C35*	**56**		mg/kg TS	1	1	NADO
Fraksjon >C16-C35	**56**	16.8	mg/kg TS	1	1	NADO

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Deres prøvenavn	**MH3 (1-2 m)** **Jord**
Labnummer	N00489227

Analyse	Resultater	Usikkerhet (±)	Enhet	Metode	Utført	Sign
Tørrstoff (DK)	**85.2**	8.52	%	1	1	NADO
As (Arsen)	**1.0**	1	mg/kg TS	1	1	NADO
Cd (Kadmium)	**<0.05**		mg/kg TS	1	1	NADO
Cr (Krom)	**44**	6.16	mg/kg TS	1	1	NADO
Cu (Kopper)	**57**	7.98	mg/kg TS	1	1	NADO
Hg (Kvikksølv)	**0.02**	0.02	mg/kg TS	1	1	NADO
Ni (Nikkel)	**26**	3.64	mg/kg TS	1	1	NADO
Pb (Bly)	**11**	2	mg/kg TS	1	1	NADO
Zn (Sink)	**71**	7.1	mg/kg TS	1	1	NADO
PCB 28	**0.0041**	0.00082	mg/kg TS	1	1	NADO
PCB 52	**0.0078**	0.00156	mg/kg TS	1	1	NADO
PCB 101	**0.0028**	0.00056	mg/kg TS	1	1	NADO
PCB 118	**0.0012**	0.00044	mg/kg TS	1	1	NADO
PCB 138	**0.0033**	0.00066	mg/kg TS	1	1	NADO
PCB 153	**0.0021**	0.00044	mg/kg TS	1	1	NADO
PCB 180	**0.0013**	0.00044	mg/kg TS	1	1	NADO
Sum PCB-7*	**0.0226**		mg/kg TS	1	1	NADO
Naftalen	**<0.010**		mg/kg TS	1	1	NADO
Acenaftylen	**<0.010**		mg/kg TS	1	1	NADO
Acenaften	**<0.010**		mg/kg TS	1	1	NADO
Fluoren	**<0.010**		mg/kg TS	1	1	NADO
Fenantren	**<0.010**		mg/kg TS	1	1	NADO
Antracen	**<0.010**		mg/kg TS	1	1	NADO
Fluoranten	**0.023**	0.0069	mg/kg TS	1	1	NADO
Pyren	**0.022**	0.0066	mg/kg TS	1	1	NADO
Benso(a)antracen^	**0.013**	0.0039	mg/kg TS	1	1	NADO
Krysen^	**0.013**	0.0039	mg/kg TS	1	1	NADO
Benso(b+j)fluoranten^	**0.016**	0.0048	mg/kg TS	1	1	NADO
Benso(k)fluoranten^	**<0.010**		mg/kg TS	1	1	NADO
Benso(a)pyren^	**0.013**	0.0039	mg/kg TS	1	1	NADO
Dibenso(ah)antracen^	**<0.010**		mg/kg TS	1	1	NADO
Benso(ghi)perylen	**0.011**	0.0033	mg/kg TS	1	1	NADO
Indeno(123cd)pyren^	**0.011**	0.0033	mg/kg TS	1	1	NADO
Sum PAH-16*	**0.122**		mg/kg TS	1	1	NADO
Bensen	**<0.010**		mg/kg TS	1	1	NADO
Toluen	**<0.040**		mg/kg TS	1	1	NADO
Etylbensen	**<0.040**		mg/kg TS	1	1	NADO
Xylener	**<0.040**		mg/kg TS	1	1	NADO
Sum BTEX*	**n.d.**		mg/kg TS	1	1	NADO
Fraksjon C5-C6	**<2.5**		mg/kg TS	1	1	NADO
Fraksjon >C6-C8	**<7.0**		mg/kg TS	1	1	NADO
Fraksjon >C8-C10	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C10-C12	**<10**		mg/kg TS	1	1	NADO
Fraksjon >C12-C16	**<10**		mg/kg TS	1	1	NADO
Sum >C12-C35*	**110**		mg/kg TS	1	1	NADO
Fraksjon >C16-C35	**110**	33	mg/kg TS	1	1	NADO

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n.d. betyr ikke påvist.
n/a betyr ikke analyserbart.
< betyr mindre enn.
> betyr større enn.

	Metodespesifikasjon		
1	**Bestemmelse av Normpakke (liten) for jord.**		
	Metode:	Metaller:	DS259
		Tørrstoff:	DS 204
		PCB-7:	EN ISO 15308, EPA 3550C
		PAH:	REFLAB 4:2008
		BTEX:	REFLAB 1: 2010
		Hydrokarboner:	
		>C5-C6	Intern metode
		>C6-C35	REFLAB 1: 2010
	Måleprinsipp:	Metaller:	ICP
		PCB-7:	GC/MS/SIM
		PAH:	GC/MS/SIM
		BTEX:	GC/MS/pentan
		Hydrokarboner:	
		>C5-C6	GC/MS/SIM
		>C6-C35	GC/FID
	Rapporteringsgrenser:	Metaller:	LOD 0,01-5 mg/kg TS
		Tørrstoff:	LOD 0,1 %
		PCB-7:	LOD 0,001 mg/kg TS
		PAH:	LOD 0,01-0,04 mg/kg TS
	Måleusikkerhet:	Metaller:	relativ usikkerhet 14 %
		Tørrstoff:	relativ usikkerhet 10 %
		PCB-7:	relativ usikkerhet 20 %
		PAH:	relativ usikkerhet 40 %
2	**Bestemmelse av TOC i jord**		
	Metode:	EN 13137:2001	
	Måleprinsipp:	IR	
	Rapporteringsgrenser:	0,1 % TS	
	Måleusikkerhet:	Relativ usikkerhet: 15%	

	Godkjenner
NADO	Nadide Dönmez

	Utf[1]	
1	Ansvarlig laboratorium:	ALS Denmark A/S, Bakkegårdsvej 406A, 3050 Humlebæk, Danmark
	Akkreditering:	DANAK, registreringsnr. 361

[1] Utførende teknisk enhet (innen ALS Laboratory Group) eller eksternt laboratorium (underleverandør).

Måleusikkerheten angis som en utvidet måleusikkerhet (etter definisjon i "Evaluation of measurement data – Guide to the expression of uncertainty in measurement", JCGM 100:2008 Corrected version 2010) beregnet med en dekningsfaktor på 2 noe som gir et konfidensinterval på om lag 95%.

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