



Project **601113 - Sweepings**
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 Registered **2011-11-07**
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AF Decom Offshore - Sweepings

Project **601113**
 Postboks **6272 Etterstad**
 N-**0603 Oslo**
 Norge

This report replaces any previous report with the same number.

Analysis of material

Your ID	Sweepings 01. Avvannet finfraksjon kostebil					
LabID	N00174277					
Analysis	Results	Uncertainty (±)	Unit	Method	Perf	Sign
TOC	5.15		% TS	1	1	JVHH
Tørrstoff (E)	69.6	6.96	%	2	1	JVHH
As	25.8	5.16	mg/kg TS	2	1	JVHH
Cd	5.32	1.06	mg/kg TS	2	1	JVHH
Cr	133	26.6	mg/kg TS	2	1	JVHH
Cu	351	70.3	mg/kg TS	2	1	JVHH
Pb	310	62.1	mg/kg TS	2	1	JVHH
Zn	23100	4630	mg/kg TS	2	1	JVHH
Hg	14.8	2.97	mg/kg TS	2	1	JVHH
Ni	99.0	19.8	mg/kg TS	2	1	JVHH
Fe	144000	28800	mg/kg TS	2	1	IEA
Fraksjon C5-C6	<7.0		mg/kg TS	3	1	JVHH
Fraksjon >C6-C8	<7.0		mg/kg TS	3	1	JVHH
Fraksjon >C8-C10	<10		mg/kg TS	3	1	JVHH
Fraksjon >C10-C12	87	26	mg/kg TS	3	1	JVHH
Fraksjon >C12-C16	229	69	mg/kg TS	3	1	JVHH
Fraksjon >C16-C35	5050	1520	mg/kg TS	3	1	JVHH
Fraksjon >C12-C35	5280		mg/kg TS	3	1	JVHH
Sum C5-C35*	5400		mg/kg TS	3	1	JVHH
Naftalen	0.183	0.055	mg/kg TS	4	1	JVHH
Acenaftylen	0.014	0.004	mg/kg TS	4	1	JVHH
Acenaften	0.592	0.178	mg/kg TS	4	1	JVHH
Fluoren	0.692	0.207	mg/kg TS	4	1	JVHH
Fenantren	6.53	1.96	mg/kg TS	4	1	JVHH
Antracen	1.95	0.585	mg/kg TS	4	1	JVHH
Fluoranten	12.8	3.86	mg/kg TS	4	1	JVHH
Pyren	11.5	3.44	mg/kg TS	4	1	JVHH
Benso(a)antracen^	4.13	1.24	mg/kg TS	4	1	JVHH
Krysen^	3.31	0.994	mg/kg TS	4	1	JVHH
Benso(b)fluoranten^	2.91	0.873	mg/kg TS	4	1	JVHH
Benso(k)fluoranten^	1.49	0.446	mg/kg TS	4	1	JVHH
Benso(a)pyren^	2.20	0.661	mg/kg TS	4	1	JVHH
Dibenso(ah)antracen^	0.176	0.053	mg/kg TS	4	1	JVHH
Benso(ghi)perylene	0.853	0.256	mg/kg TS	4	1	JVHH
Indeno(123cd)pyren^	1.07	0.320	mg/kg TS	4	1	JVHH
Sum PAH-16*	50		mg/kg TS	4	1	JVHH
Sum PAH carcinogene^*	15		mg/kg TS	4	1	JVHH



Your ID		Sweepings 01. Avvannet finfraksjon kostebil				
LabID		N00174277				
Analysis	Results	Uncertainty (\pm)	Unit	Method	Perf	Sign
PCB 28	0.0063	0.0025	mg/kg TS	5	1	JVHH
PCB 52	0.0100	0.0040	mg/kg TS	5	1	JVHH
PCB 101	0.0271	0.0109	mg/kg TS	5	1	JVHH
PCB 118	0.0090	0.0036	mg/kg TS	5	1	JVHH
PCB 138	0.0489	0.0195	mg/kg TS	5	1	JVHH
PCB 153	0.0362	0.0145	mg/kg TS	5	1	JVHH
PCB 180	0.0353	0.0141	mg/kg TS	5	1	JVHH
Sum PCB-7*	0.17		mg/kg TS	5	1	JVHH
Bensen	0.168	0.067	mg/kg TS	6	1	JVHH
Toluen	0.415	0.166	mg/kg TS	6	1	JVHH
Etylbensen	3.04	1.22	mg/kg TS	6	1	JVHH
o-Xylen	6.25	2.50	mg/kg TS	6	1	JVHH
m/p-Xylener	9.21	3.68	mg/kg TS	6	1	JVHH
Xylener	15.5		mg/kg TS	6	1	JVHH
Sum BTEX*	19		mg/kg TS	6	1	JVHH

TS=DW

Your ID		Sweepings 02. Grovraksjon				
LabID		N00174278				
Analysis	Results	Uncertainty (\pm)	Unit	Method	Perf	Sign
TOC	4.73		% TS	1	1	JVHH
Tørrstoff (E)	86.5	8.65	%	2	1	JVHH
As	29.5	5.89	mg/kg TS	2	1	JVHH
Cd	5.15	1.03	mg/kg TS	2	1	JVHH
Cr	164	32.9	mg/kg TS	2	1	JVHH
Cu	339	67.8	mg/kg TS	2	1	JVHH
Pb	323	64.6	mg/kg TS	2	1	JVHH
Zn	35600	7120	mg/kg TS	2	1	JVHH
Hg	5.59	1.12	mg/kg TS	2	1	JVHH
Ni	125	25.0	mg/kg TS	2	1	JVHH
Fe	230000	45900	mg/kg TS	2	1	IEA

Your ID		Sweepings 03. Oppsop kostebil (binge)				
LabID		N00174279				
Analysis	Results	Uncertainty (\pm)	Unit	Method	Perf	Sign
TOC	5.45		% TS	1	1	JVHH
Tørrstoff (E)	73.2	7.32	%	2	1	JVHH
As	28.1	5.61	mg/kg TS	2	1	JVHH
Cd	9.40	1.88	mg/kg TS	2	1	JVHH
Cr	154	30.7	mg/kg TS	2	1	JVHH
Cu	602	120	mg/kg TS	2	1	JVHH
Pb	416	83.3	mg/kg TS	2	1	JVHH
Zn	32700	6530	mg/kg TS	2	1	JVHH
Hg	8.05	1.61	mg/kg TS	2	1	JVHH
Ni	120	24.1	mg/kg TS	2	1	JVHH
Fe	176000	35300	mg/kg TS	2	1	IEA



* indicates unaccredited analysis.

Method	
1	<p>Determination of TOC by coulometric method (Ceska Lipa)</p> <p>Method: ISO 10694, EN 13137/A Detection and quantification: Coulometric Limit of quantification: 0,01 % DW / 100 mg/kg</p> <p>Note: Coulometric determination is based on electrolysis where compounds are oxidized to a known composite. The amount of electrons needed for this electrolysis are measured.</p>
2	<p>Analysis of heavy metals (M-1C)</p> <p>Method: EPA methods 200.7, ISO 11885 Pre treatment: Sieving 2 mm. Digestion soil samples: HNO₃ and 0,5 ml H₂O₂ in micro wave oven. Digestions sludge- and sediment samples: HNO₃/water (1:1) in micro wave oven.</p>
3	<p>Determination of oil C5-C35, THC-screening.</p> <p>Method: C5-C10: SPIMFAB >C10-C35: EN 14039 Extraction: Acetone/hexane Detection and quantification: GC-FID LOQ: C5-C10: 20 mg/lg DW >C10-C12: 10 mg/kg DW >C12-C16: 20 mg/kg DW >C16-C35: 30 mg/kg DW</p>
4	<p>Determination of PAH-16.</p> <p>Method: CSN EN ISO 6468 Extraction: Hexane Detection and quantification: GC-MS LOQ: 0,01-0,1 mg/kg DW</p>
5	<p>Determination of PCB-7</p> <p>Method: EPA 8082, DIN 38407-part 2 Extraction: Acetone/hexane Cleaning: Florisile Detection and quantification: GC-ECD with two columns with different polarity LOQ: 0,002 mg/kg DW</p>
6	<p>Determination of BTEX.</p> <p>Method: EPA 624 Detection and quantification: GC-MS in headspace LOQ: 0,02-0,1 mg/kg DW</p>

Approver	
IEA	Inger Eikebu Alfsen
JVHH	Janken Hald



	Perf ¹
1	<p>Responsible laboratory: ALS Laboratory Group, ALS Czech Republic s.r.o, Na Harfě 9/336, Prague, Czeck Republic</p> <p>Location of other ALS laboratories:</p> <p>Ceska Lipa Bendlova 1687/7, 470 03 Ceska Lipa Pardubice V Raji 906, 530 02 Pardubice</p> <p>Accreditation: Czech Accreditation Institute, lab no. 1163.</p> <p>Contact ALS Laboratory Group Norway, for further information.</p>

The uncertainty is given as extended uncertainty (according to the definition in "Guide to the Expression of Uncertainty in Measurement", ISO, Geneva, Switzerland 1993) calculated with a coverage factor of 2, which gives a confidence level of approximately 95%.

The uncertainty from subcontractors is often given as extended uncertainty calculated with a coverage factor of 2. Contact the laboratory for further information.

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¹ Performing technical unit (within ALS Laboratory Group) or external laboratory (subcontractor).