Výsledky analýz stanovených ukazatelů v zeminách

Zakázka: Odval dolu Šverma, posouzení IG poměrů a kontaminace

Označení vzorku		JL-1 (0.0-2.0 m)	JL-1 (2.0-5.0 m)	JL-2 (0.0-4.2.0 m)	JL-2 (2.0-5.0 m)	SL-1 (0.5-2.0 m)	JL-4 (0.7-2.0 m)	JL-4 (2.0-5.0 m)	SL-3 (0.0-2.0 m)	SL-4 (2.0-2.5 m)	JL-7 (0.4-2.0 m)	JL-7 (2.0-5.0 m)	SL-2 (2.5-3.0 m)	JL-3 (2.4-5.0 m)	SL-9 (0.3-2.0 m)	SL-13 (0.1-2.0 m)	SL-14 (0.4-2.0 m)	JL-5 (0.2-2.0 m)	JL-5 (2.0-5.0 m)	VL-1 (0.1-2.0 m)	VL-1 (2.0-5.0 m)	VL-1 (5.0-8.0 m)	VL-1 (8.0-11.0 m)	SL-5 (2.1-2.9 m)	SL-6 (0.3-2.0 m)	SL-7 (0.5-2.0 m)	SL-8 (0.5-2.0 m)	SL-10 (0.2-2.0 m)	SL-11 (0.4-2.0 m)	SL-12 (0.4-2.0 m)	SL-15 (0.1-2.0 m)	JL-6 (0.3-2.0 m)	JL-6 (2.0-5.0 m)	VL-1 (21.0 - 23.0 m)	VL-1 (25.1 - 26.2 m)	VL-2 (3.3 - 5.0 m)	VL-2 (5.0 - 8.0 m)	VL-2 (8.0 - 11.0 m)	VL-2 (19.0 - 20.8 m)	VL-2 (22.9 - 23.3 m)
Číslo protokolu		PR1225733001	PR1225733002	PR1225733003	PR1225733004	PR1225733005	PR1225733006	PR1225733007	PR1225733008	PR1225733009	PR1225733010	PR1225733011	PR1225733012	PR1225733013	PR1226167001	PR1226167002	PR1226167003	PR1226167004	PR1226167005	PR1226167006	PR1226167007	PR1226167008	PR1226167009	PR1226187001	PR1226187002	PR1226187003	PR1226187004	PR1226187005	PR1226187006	PR1226187007	PR1226187008	PR1226187009	PR1226187010	PR1226356001	PR1226356002	PR1226356003	PR1226356004	PR1226356005	PR1226503001	PR1226503002
Datum vzorkování		18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	18.6.2012	21.6.2012	21.6.2012	21.6.2012	21.6.2012	21.6.2012	21.6.2012	21.6.2012	21.6.2012	21.6.2012	20.6.2012	20.6.2012	20.6.2012	20.6.2012	20.6.2012	20.6.2012	20.6.2012	20.6.2012	20.6.2012	20.6.2012	22.6.2012	22.6.2012	22.6.2012	22.6.2012	22.6.2012	25.6.2012	25.6.2012
Ukazatel	**Jednotky**																																							
extrahovatelné kovy / hlavní kationty																																								
As	mg/kg suš.	44.5	68.7	34.7	20.8	14.1	47.6	17.9	4.2	8.0	5.0	4.7	11.0	9.3	26.1	21.6	17.2	20.1	61.5	53.6	20.7	30.0	57.2	6.1	32.1	27.7	30.7	12.1	8.7	27.8	13.8	45.3	27.7	54.2	1.4	13.0	10.6	7.9	47.2	6.2
Cd	mg/kg suš.	<0.40	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	5.1	0.6	<0.40	<0.40	<0.40	0.6	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Cu	mg/kg suš.	53.0	51.5	44.1	43.6	44.4	43.6	40.1	18.0	32.4	35.2	40.4	29.3	29.9	48.6	43.6	25.2	48.2	47.8	36.1	45.5	53.6	52.1	31.8	45.1	50.9	53.6	54.4	46.4	37.0	37.8	40.0	55.2	48.0	14.4	30.3	28.0	19.9	50.2	30.4
Pb	mg/kg suš.	39.4	35.2	50.6	35.1	33.8	35.3	30.0	15.2	19.3	16.8	21.4	25.1	26.4	37.7	29.4	25.8	36.2	36.9	30.6	52.9	57.6	33.8	20.5	46.2	44.5	61.6	36.0	25.6	28.4	34.4	34.2	39.6	35.1	22.0	26.0	26.4	23.8	34.1	27.3
Hg	mg/kg suš.	<0.20	0.2	<0.20	<0.20	<0.20	0.3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.2	<0.20	<0.20	0.6	<0.20	<0.20	<0.20	0.3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1.1	<0.20
Zn	mg/kg suš.	78.9	140.0	75.5	146.0	72.9	71.2	80.4	45.8	58.1	56.4	49.1	95.7	73.0	76.0	72.5	53.8	79.1	91.6	66.8	763.0	186.0	91.1	65.7	102.0	211.0	127.0	75.4	60.0	68.2	76.8	93.8	85.4	73.3	98.4	76.6	63.3	60.9	86.5	120.0
ropné uhlovodíky																																								
>C10 - C12 frakce	mg/kg suš.	<2	-	<2	-	-	2.0	-	-	-	<2	-	-	-	-	-	-	<2	-	<2	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	14.0	-	-	-	-	-
>C10 - C40 frakce	mg/kg suš.	77	-	39	-	-	29	-	-	-	22	-	-	-	-	-	-	31	-	32	-	-	-	-	-	-	-	-	-	-	26	-	-	-	49	-	-	-	-	<20
>C12 - C16 frakce	mg/kg suš.	7.0	-	4.0	-	-	6.0	-	-	-	<3	-	-	-	-	-	-	5.0	-	6.0	-	-	-	-	-	-	-	-	-	-	5.0	-	-	-	10.0	-	-	-	-	-
>C16 - C35 frakce	mg/kg suš.	60	-	29	-	-	19	-	-	-	16	-	-	-	-	-	-	22	-	23	-	-	-	-	-	-	-	-	-	-	19	-	-	-	20	-	-	-	-	-
>C35 - C40 frakce	mg/kg suš.	8.0	-	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-	<5	-	<5	-	-	-	-	-	-	-	-	-	-	<5	-	-	-	<5	-	-	-	-	-
ropné uhlovodíky - FTIR																																								
nepolární extrahovatelné látky	mg/kg suš.	165.0	59.0	58.0	64.0	22.0	24.0	41.0	74.0	125.0	35.0	46.0	170.0	45.0	27.0	<21	22.0	56.0	<21	28.0	36.0	26.0	31.0	113.0	32.0	22.0	64.0	45.0	22.0	41.0	30.0	23.0	22.0	22.0	40.0	78.0	53.0	29.0	154.0	42.0
fyzikální parametry																																								
sušina při 105 °C	%	91.0	94.0	91.6	91.6	93.0	93.3	92.4	79.0	74.8	85.0	94.5	88.2	93.0	88.8	82.7	87.6	89.3	88.9	96.6	90.5	90.6	90.4	84.7	93.5	94.7	90.7	93.6	93.2	92.8	93.7	94.5	89.4	95.0	83.2	96.4	92.5	95.8	96.8	80.5
polycyklické aromatické uhlovodíky (PAU)																																								
anthracen	mg/kg suš.	0.012	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.111	0.017	<0.010	2.600	0.010	0.048	0.018	<0.010	<0.010	<0.010	0.026	0.015	0.020	<0.010	0.057	0.015	0.021	<0.010	0.016	<0.010	0.013	0.063	<0.010	0.036	<0.010	0.030	0.012	0.016	<0.010	0.069	<0.010
benzo(a)anthracen	mg/kg suš.	0.049	0.043	0.025	0.050	0.052	0.053	0.020	0.035	2.980	0.060	0.021	10.600	0.028	0.197	0.064	0.019	0.012	0.016	0.024	0.088	0.072	0.029	0.156	0.071	0.091	0.095	0.050	0.055	0.051	0.222	0.044	0.096	0.097	0.037	0.134	0.114	0.081	0.023	<0.010
benzo(a)pyren	mg/kg suš.	0.034	0.025	0.011	0.011	0.018	<0.010	0.013	0.027	4.050	0.065	0.026	8.080	0.022	0.148	0.066	0.027	0.011	0.011	0.027	0.046	0.048	0.039	0.151	0.023	0.023	0.018	0.027	0.021	0.020	0.176	0.015	0.035	0.020	0.036	0.033	0.031	0.022	0.063	<0.010
benzo(b)fluoranthen	mg/kg suš.	0.090	0.078	0.049	0.068	0.060	0.048	0.088	0.044	4.910	0.164	0.201	13.100	0.076	0.314	0.107	0.074	0.047	0.069	0.120	0.167	0.181	0.114	0.265	0.091	0.051	0.087	0.055	0.040	0.050	0.184	0.051	0.101	0.070	0.073	0.166	0.187	0.103	0.171	0.017
benzo(g,h,i)perylen	mg/kg suš.	0.031	0.024	0.014	0.018	0.014	0.011	0.019	0.022	2.280	0.060	0.063	2.910	0.022	0.119	0.015	0.022	0.014	0.020	0.040	0.063	0.056	0.032	0.150	0.030	0.017	0.027	0.018	0.021	0.020	0.080	0.017	0.034	0.031	0.025	0.056	0.064	0.044	0.068	<0.010
benzo(k)fluoranthen	mg/kg suš.	0.016	0.012	<0.010	<0.010	<0.010	<0.010	0.016	0.020	2.410	0.034	0.041	4.220	0.010	0.107	0.030	0.017	<0.010	0.011	0.017	0.025	0.032	0.014	0.093	0.015	0.013	0.023	0.011	0.010	0.014	0.101	0.018	0.029	0.029	0.024	0.033	0.036	0.027	0.038	<0.010
chrysen	mg/kg suš.	0.142	0.115	0.074	0.133	0.125	0.127	0.123	0.040	3.190	0.204	0.343	11.400	0.140	0.309	0.117	0.103	0.015	0.126	0.092	0.084	0.268	0.248	0.193	0.162	0.149	0.181	0.200	0.168	0.162	0.334	0.129	0.270	0.158	0.056	0.298	0.191	0.199	0.079	0.016
fluoranthen	mg/kg suš.	0.068	0.069	0.054	0.040	0.043	0.034	0.032	0.096	6.190	0.111	0.035	20.000	0.069	0.326	0.174	0.055	0.023	0.026	0.050	0.086	0.105	0.043	0.167	0.065	0.072	0.065	0.104	0.044	0.065	0.399	0.050	0.170	0.033	0.205	0.064	0.080	0.050	0.074	0.037
indeno(1.2.3-cd)pyren	mg/kg suš.	0.017	0.015	<0.010	<0.010	0.010	<0.010	<0.010	0.018	2.170	0.051	0.043	3.360	0.013	0.111	0.018	0.017	<0.010	<0.010	0.028	0.027	0.027	0.017	0.162	0.018	<0.010	0.012	0.016	<0.010	0.012	0.090	0.011	0.021	0.016	0.024	0.039	0.035	0.025	0.035	<0.010
naftalen	mg/kg suš.	0.266	0.238	0.171	0.158	0.107	0.108	0.189	0.013	0.150	0.168	0.259	0.335	0.134	0.266	0.193	0.108	0.143	0.224	0.255	0.136	0.169	0.194	0.032	0.146	0.200	0.301	0.218	0.223	0.344	0.227	0.241	0.269	0.214	0.031	0.289	0.261	0.205	0.599	0.038
fenanthren	mg/kg suš.	0.489	0.821	0.681	0.744	0.508	0.582	0.595	0.053	0.484	0.367	0.422	13.200	0.453	0.608	0.225	0.251	0.356	0.489	0.520	0.586	0.672	0.658	0.223	0.786	0.746	0.845	0.496	0.461	0.594	0.631	0.454	1.200	0.596	0.163	0.734	0.746	0.529	1.550	0.058
pyren	mg/kg suš.	0.067	0.077	0.069	0.047	0.044	0.046	0.043	0.076	6.200	0.080	0.040	15.400	0.070	0.227	0.121	0.046	0.031	0.041	0.056	0.102	0.112	0.059	0.122	0.081	0.076	0.079	0.081	0.056	0.070	0.316	0.052	0.168	0.046	0.123	0.077	0.087	0.056	0.132	0.026
suma PAU (MŽP)	mg/kg suš.	0.913	1.200	0.928	1.040	0.814	0.853	0.861	0.387	30.000	1.030	1.030	89.200	0.827	2.150	0.830	0.557	0.462	0.740	0.854	1.110	1.390	1.140	1.420	1.250	1.190	1.340	1.000	0.836	1.010	2.350	0.790	2.020	1.030	0.693	1.470	1.380	1.030	2.060	0.137

Výsledky analýz stanovených ukazatelů v podzemní vodě

Zakázka: Odval dolu Šverma, posouzení IG poměrů a kontaminace

Označení vzorku		**VL-1**	**VL-2**
Číslo protokolu		PR1226355001	PR1226505001
Datum vzorkování		22.6.2012	22.6.2012
Ukazatel	**Jednotky**		
souhrnné parametry			
fenoly těkající s v.p.	mg/l	84.10	0.02
BTEX			
benzen	µg/l	40.00	<0.20
ethylbenzen	µg/l	1.96	0.44
suma BTEX	µg/l	82.40	2.17
suma TEX	µg/l	42.40	2.17
suma xylenů	µg/l	15.60	1.73
toluen	µg/l	24.90	<1.00
meta- & para-xylen	µg/l	12.10	1.60
orto-xylen	µg/l	3.48	0.13
rozpuštěné kovy/ hlavní kationty			
As	mg/l	0.0262	<0.0050
Cd	mg/l	0.0005	<0.00040
Cu	mg/l	<0.0020	<0.0020
Pb	mg/l	0.0067	0.0175
Hg	µg/l	<0.010	<0.010
Zn	mg/l	<0.0020	0.0077
halogenované těkavé organické sloučeniny			
1,1-dichlorethan	µg/l	<0.10	<0.10
1,1-dichlorethylen	µg/l	<0.10	<0.10
1,1-dichlorpropylen	µg/l	<1.0	<1.0
1,1,1-trichlorethan	µg/l	<0.10	<0.10
1,1,1,2-tetrachlorethan	µg/l	<0.10	<0.10
1,1,2-trichlorethan	µg/l	<0.20	<0.20
1,1,2,2-tetrachlorethan	µg/l	<1.0	<1.0
1,2-dibrom-3-chlorpropan	µg/l	<1.0	<1.0
1,2-dibromethan (EDB)	µg/l	<1.0	<1.0
1,2-dichlorbenzen	µg/l	<0.10	<0.10
1,2-dichlorethan	µg/l	1.80	<1.00
1,2-dichlorpropan	µg/l	<1.0	<1.0
1,2,3-trichlorbenzen	µg/l	<0.10	<0.10
1,2,3-trichlorpropan	µg/l	<1.0	<1.0
1,2,4-trichlorbenzen	µg/l	<0.10	<0.10
1,3-dichlorbenzen	µg/l	<0.10	<0.10
1,3-dichlorpropan	µg/l	<1.0	<1.0
1,3,5-trichlorbenzen	µg/l	<0.20	<0.20
1,4-dichlorbenzen	µg/l	<0.10	<0.10
2-chlortoluen	µg/l	<1.0	<1.0
2,2-dichlorpropan	µg/l	<1.0	<1.0
4-chlortoluen	µg/l	<1.0	<1.0
brombenzen	µg/l	<1.0	<1.0
bromchlormethan	µg/l	<2.0	<2.0
bromdichlormethan	µg/l	<0.10	<0.10
bromoform	µg/l	<0.20	<0.20
brommethan	µg/l	<1.0	<1.0
chlorbenzen	µg/l	<0.10	<0.10
chlorethan	µg/l	<1.0	<1.0
chloroform	µg/l	<0.30	<0.30
chlormethan	µg/l	<10	<10
dibromchlormethan	µg/l	<0.10	<0.10
dibrommethan	µg/l	<1.0	<1.0
dichlordifluormethan	µg/l	<1.0	<1.0
dichlormethan	µg/l	<6.0	<6.0
hexachlorbutadien	µg/l	<1.0	<1.0
suma 3 dichlorobenzenů	µg/l	<0.30	<0.30
suma 3 trichlorobenzenů	µg/l	<0.40	<0.40
suma 4 trihalomethanů	µg/l	<0.70	<0.70
tetrachlorethen	µg/l	<0.20	<0.20
tetrachlormethan	µg/l	<0.10	<0.10
trichlorethen	µg/l	<0.10	<0.10
trichlorfluormethan	µg/l	<1.0	<1.0
vinylchlorid	µg/l	<1.00	<1.00
cis-1,2-dichlorethen	µg/l	<0.10	<0.10
cis-1,3-dichlorpropylen	µg/l	<1.0	<1.0
trans-1,2-dichlorethen	µg/l	<0.10	<0.10
trans-1,3-dichlorpropen	µg/l	<1.0	<1.0
nehalogenované těkavé organické sloučeniny			
1,2,4-trimethylbenzen	µg/l	<1.0	<1.0
1,3,5-trimethylbenzen	µg/l	<1.0	<1.0
isopropylbenzen	µg/l	<1.0	<1.0
methyl terc-butylether (MTBE)	µg/l	1.22	<0.20
styren	µg/l	0.52	<0.20
suma BTEXS	µg/l	83.00	2.17
n-butylbenzen	µg/l	<1.0	<1.0
n-propylbenzen	µg/l	<1.0	<1.0
p-isopropyltoluen	µg/l	<1.0	<1.0
sec-butylbenzen	µg/l	<1.0	<1.0
terc-butylalkohol	µg/l	<5.0	<5.0
terc-butylbenzen	µg/l	<1.0	<1.0
ropné uhlovodíky - FTIR			
nepolární extrahovatelné látky	mg/l	0.253	0.132
polycyklické aromatické uhlovodíky (PAU)			
acenaften	µg/l	0.021	0.072
anthracen	µg/l	<0.010	0.015
benzo(a)anthracen	µg/l	<0.010	<0.010
benzo(a)pyren	µg/l	<0.010	<0.010
benzo(b)fluoranthen	µg/l	<0.010	<0.010
benzo(k)fluoranthen	µg/l	<0.010	<0.010
chrysen	µg/l	<0.010	<0.010
dibenzo(a,h)anthracen	µg/l	<0.010	<0.010
fluoranthen	µg/l	0.015	0.061
fluoren	µg/l	0.018	0.031
indeno(1,2,3-cd)pyren	µg/l	<0.010	<0.010
naftalen	µg/l	0.933	<0.030
pyren	µg/l	<0.010	0.038

Výsledky analýz stanovených ukazatelů ve vodném výluhu

Zakázka: Odval dolu Šverma, posouzení IG poměrů a kontaminace

Označení vzorku		**VL-1 (0.1 - 2.0 m)**	**VL-2 (3.3 - 5.0 m)**
Číslo protokolu		PR1226196001	PR1226362001
Datum vzorkování		21.6.2012	21.6.2012
Ukazatel	**Jednotky**		
ropné uhlovodíky - FTIR			
nepolární extrahovatelné látky	mg/l	0.172	<0.050
fyzikální parametry			
pH	-	7.780	8.010
polycyklické aromatické uhlovodíky (PAU)			
acenaften	µg/l	-	-
anthracen	µg/l	0.030	0.017
benzo(a)anthracen	µg/l	<0.010	0.022
benzo(a)pyren	µg/l	<0.020	<0.020
benzo(b)fluoranthen	µg/l	<0.010	<0.010
benzo(g,h,i)perylen	µg/l	<0.010	<0.010
benzo(k)fluoranthen	µg/l	<0.010	<0.010
chrysen	µg/l	<0.010	0.035
fluoranthen	µg/l	0.054	0.204
indeno(1,2,3-cd)pyren	µg/l	<0.010	<0.010
naftalen	µg/l	<0.100	<0.100
fenanthren	µg/l	0.237	0.064
pyren	µg/l	<0.060	0.147
suma PAU	µg/l	0.290	0.470
celkové kovy / hlavní kationty			
As	mg/l	0.0067	<0.0050
Cd	mg/l	0.0020	<0.00040
Cu	mg/l	<0.0020	<0.0020
Pb	mg/l	<0.0050	<0.0050
Hg	µg/l	0.060	0.051
Zn	mg/l	0.063	0.022