

# Appendix E. Contaminant Screening Tables

Table E1 - Human Health Screen

Sample Location	Strata	Sample Reference	Depth	S.O.M. % SO4-- (acid sol)		Boron (H2O Soluble)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Mercury (MS)	Nickel (MS)	Selenium (MS)	Zinc (MS)	pH Units	Cyanide (Free)	Cyanide (Total)	Asbestos Screen	
				(Calc)	% M/M															
Analyte: Units:				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Screening Criteria SSV				43.00	1.80	1110.00	26.00	230.00	120.00	3990.00	-	-	34.00	34.00						
<b>Undeveloped Land</b>																				
PBH5	CLAY	ES8	1.90	1.82	1350	4.4	13.5	<0.20	38.2	16.1	22	<0.5	33.3	0.5	90.6	7.9	<0.7	<0.7		
PBH6	CLAY	ES3	1.00	1.28	749	2.4	10	<0.20	16.3	8.7	11.5	<0.5	16.7	<0.5	56.1	8.9	<0.7	<0.7		
PBH7	CLAY	ES1	0.50	1.65	535	3.1	16.4	<0.20	38	15.3	22.1	<0.5	36.4	<0.5	88	8.4	<0.5	<0.5		
PBH21	Topsoil	ES2	0.20	2.83	784	2.1	14.2	<0.21	36.5	16.2	24	<0.5	34.8	<0.5	88.6	8.6	<0.7	<0.7	NAIS	
PBH22	CLAY	ES6	1.00	2.19	694	1.9	17	<0.20	42.6	19	26.8	<0.5	41.3	0.6	86.3	8.6	<0.5	<0.5	NAIS	
PBH23	Topsoil	ES1	0.30	1.31	772	2.5	12.3	<0.20	33.7	12.9	20	<0.5	32.5	<0.5	86.4	8.4	<0.7	<0.7	NAIS	
PBH24	Topsoil	ES1	0.30	1.49	597	2.8	13.5	<0.20	39.1	16.2	24.8	<0.5	39.5	<0.5	105.9	8.3	<0.7	<0.7	NAIS	
PTP03	CLAY	ES1	0.50	2.97	866	3.4	13.9	<0.20	36.3	16.1	24.3	<0.5	34.8	<0.5	86.2	8.1	<0.5	<0.5	NAIS	
PTP04	CLAY	ES4	0.80	1.54	507	6.4	15.2	<0.20	41.4	15.1	20.8	<0.5	37.7	<0.5	77.6	8.9	<0.7	<0.7		
PTP05	CLAY	ES4	1.00	1.64	480	4.7	12.7	<0.20	35.1	14.4	19.5	<0.5	34	<0.5	74.6	8.2	<0.5	<0.5		
PTP06	CLAY	ES4	1.00	1.77	1010	4	14.6	<0.20	34.3	13.7	18.4	<0.5	32	<0.5	68	8.5	<0.5	<0.5		
PTP13A	Topsoil	ES1	0.5	2.88	751	2.7	14.5	<0.21	39.7	16.2	28.4	<0.5	33.9	<0.5	81.2	7.6	<0.5	<0.5	NAIS	
PTP14	Topsoil	ES1	0.2	2.16	640	3	12.8	<0.20	29.6	12.2	18.6	<0.5	29.5	<0.5	62	6.8	<0.5	<0.5	NAIS	
<b>Existing Pipeline / Railway</b>																				
PBH7	CLAY	ES2	0.40	1.6	590	2	15.4	<0.20	33	15.3	26.2	<0.5	32.1	<0.5	93.6	7.7	<0.5	<0.5	NAIS	
PBH9	CLAY	ES4	0.60	1.39	632	1.3	12.9	<0.20	27.3	11.2	15.8	<0.5	25.1	<0.5	72	8.5	<0.5	<0.5	NAIS	
PBH11	CLAY	ES3	0.30	2.07	776	2.2	17.4	<0.20	37.6	16.7	25.8	<0.5	38.2	<0.5	100.2	8.5	<0.5	<0.5	NAIS	
PBH12	CLAY	ES6	1.00	1.23	599	2.9	15.6	<0.20	36.5	13.5	22.4	<0.5	35.8	<0.5	91.8	8.6	<0.7	<0.7		
PBH13	CLAY	ES1	0.50	1.48	637	4.3	18	<0.20	41	16.3	25.2	<0.5	41	<0.5	103.8	8.5	<0.7	<0.7		
PBH14	Topsoil	ES3	0.30	0.88	840	1.5	10.1	<0.20	19.3	9.6	12.6	<0.5	19	<0.5	71.2	8.5	<0.5	<0.5	NAIS	
PTP01	CLAY	ES1	0.50	3.02	737	3.7	13.9	<0.20	36.7	14.5	23.9	<0.5	33.7	<0.5	77.7	8.1	<0.5	<0.5		
PTP08	CLAY	ES1	0.50	2.38	688	4.3	14.8	<0.20	41	15.1	22.9	<0.5	38.6	<0.5	77.1	7.8	<0.5	<0.5		
PTP09	CLAY	ES4	1.00	1.47	741	6.7	14.3	<0.20	40	14.7	20.7	<0.5	37.9	0.6	77.2	7.8	<0.5	<0.5		
PTP10C	CLAY	ES1	0.10	3.11	830	4.8	14.2	<0.20	36.5	16.8	26.9	<0.5	36.4	<0.5	86.9	7.5	<0.5	<0.5	NAIS	
PTP11A	Topsoil	ES1	0.10	3.27	823	2.4	12.7	<0.20	36.3	18.4	27	<0.5	32	<0.5	84.9	7.7	<0.5	<0.5	NAIS	
PTP11A	CLAY	ES8	1.70	1.3	628	1.7	9.6	<0.20	22.1	10.5	12.5	<0.5	22	<0.5	56	8.3	<0.5	<0.5		
PTP11B	CLAY	ES1	0.5	2.73	1100	8.1	36.1	<0.20	42.7	17	24	<0.5	42	<0.5	86.8	8.3	<0.5	<0.5		
PTP11B	CLAY	ES4	1	1.5	999	6	16.4	<0.20	36.8	15.9	20.3	<0.5	33.6	<0.5	75.9	8.1	<0.7	<0.7		
<b>Terminal</b>																				
PBH26	CLAY	ES2	0.40	3.93	895	3.4	15.9	<0.21	39	16.2	30	<0.5	36.5	<0.5	92.9	8.1	<0.5	<0.5	NAIS	
PBH27	CLAY	ES2	0.40	3.26	721	2.4	16.4	<0.20	40.3	14.4	25.8	<0.5	34.1	0.8	77.4	8.1	<0.5	<0.5	NAIS	
PBH27	CLAY	ES5	1.00	1.74	651	3	16.7	<0.21	37.6	15	19.9	<0.5	31	0.6	71.9	8.4	<0.5	<0.5		
PTP15B	Topsoil	ES1	0.10	3.67	820	5.9	14.8	<0.21	39.4	15	26	<0.5	33	<0.5	78.7	6.7	<0.5	<0.5	NAIS	

Key: Exceedance of GAC

SSV/SGV values selected: Allocations 6% SOM (1% SOM SSVs not available)

Note: VOC/SVOC results have not been screened as only 1,3- Dichlorobenzene, 1,4- Dichlorobenzene, 1,2- Dichlorobenzene, 1,2,4-Trichlorobenzene and 1,2,3- Trichlorobenzene were detected above detection limits. There are no relevant screening values for these substances, however as none of these substances were recorded above 4ug/kg they are not considered likely to pose an unacceptable risk to human health.













Table E2 - Leachate Screen

Landuse on / near Pipeline Route and Exploratory Hole refs	Strata	Sample Reference	Sample Depth (m)	pH		Total Sulphur as SO4 (Dissolved) mg/l	Nickel as Ni (Dissolved) mg/l	Chromium as Cr (Dissolved) mg/l	Cadmium as Cd (Dissolved) mg/l	Copper as Cu (Dissolved) mg/l	Lead as Pb (Dissolved) mg/l	Zinc as Zn (Dissolved) mg/l	Arsenic as As (Dissolved) mg/l	Boron as B (Dissolved) mg/l	Mercury as Hg (Dissolved) mg/l	Selenium as Se (Dissolved) mg/l	Chromium VI as Cr mg/l	Cyanide	
				Units:	mg/l													(Free) as CN mg/l	(Total) as CN mg/l
				6-9		400	0.02	0.05	0.00025	0.028	0.0072	0.125	0.05	2	0.00005		0.0034	0.001	0.05
				EQS															
				DWS															
				Screening Criteria															
				Sample Reference															
				Farm Land															
PBH5	CLAY	ES8	1.9	8.4	430	0.003	0.007	0.0001	0.012	0.034	0.19	0.001	0.002	<0.0001	0.002	<0.01	<0.02	<0.02	
PBH21	CLAY	ES6	1	7.9	21	0.008	0.006	<0.0001	0.023	0.003	0.164	0.002	0.002	<0.0001	<0.0001	<0.01	<0.02	<0.02	
PTP03	CLAY	ES1	0.5	7.7	36	0.005	0.003	<0.0001	0.013	0.002	0.065	0.001	0.001	<0.0001	<0.0001	<0.01	<0.02	0.09	
PTP06	CLAY	ES4	1	8	11	0.001	0.004	<0.0001	0.005	0.001	0.097	0.001	0.001	<0.0001	<0.0001	<0.01	<0.02	<0.02	
				Existing Pipeline / Railway															
PBH7	CLAY	ES2	0.4	7.8	23	0.002	0.004	<0.0001	0.008	<0.001	<0.001	0.114	<0.001	0.3	<0.0001	<0.01	<0.02	<0.02	
PBH11	CLAY	ES3	0.3	8.7	29	0.002	0.008	<0.0001	0.011	0.002	0.154	0.002	0.002	0.48	<0.0001	<0.01	<0.02	<0.02	
PBH11	CLAY	ES6	1	8.2	15	0.002	0.005	<0.0001	0.016	0.003	0.164	0.001	0.43	<0.0001	<0.01	<0.02	<0.02	<0.02	
PBH13	CLAY	ES1	0.50	8.1	47	0.001	0.005	<0.0001	0.007	0.002	0.095	<0.001	0.56	<0.0001	<0.001	<0.01	<0.02	<0.02	
PBH24	CLAY	ES1	0.3	8.8	55	0.01	0.008	<0.0001	0.024	0.012	0.197	0.004	1.51	<0.0001	0.002	<0.01	<0.02	<0.02	
PTP09	CLAY	ES4	1	7.8	93	0.002	0.004	<0.0001	0.007	0.002	0.074	0.001	0.97	<0.0001	0.001	<0.01	<0.02	0.06	
PTP10C	CLAY	ES1	0.1	8.1	7	0.005	0.004	<0.0001	0.015	0.004	0.14	0.001	0.46	<0.0001	<0.001	<0.01	<0.02	<0.02	
PTP11A	Topsoll	ES1	1.00	7.6	12	0.006	0.003	<0.0001	0.025	0.002	0.128	0.002	0.48	<0.0001	<0.001	<0.01	<0.02	<0.02	
PTP11B	CLAY	ES4	1.00	8.1	146	0.002	0.004	<0.0001	0.007	0.002	0.1	0.1	0.78	<0.0001	<0.001	<0.01	<0.02	<0.02	
PTP13A	Topsoll	ES1	0.50	7.5	365	0.005	0.003	<0.0001	0.013	<0.001	0.133	0.001	0.47	<0.0001	<0.001	<0.01	0.05	1.6	
				Gas Terminal															
PBH26	CLAY	ES2	0.4	7.9	45	0.003	0.004	0.0002	0.018	0.002	0.238	0.001	0.46	<0.0001	<0.001	<0.01	<0.02	<0.02	
PBH27	CLAY	ES5	1.00	8.6	6	0.003	0.004	0.0001	0.011	0.004	0.136	0.001	0.5	<0.0001	<0.001	<0.01	<0.02	<0.02	
PTP15B	Topsoll	ES1	0.10	7.4	350	0.004	0.004	<0.0001	0.022	0.002	0.067	0.002	0.38	<0.0001	0.002	<0.01	0.11	3.8	

Key: Exceedence of GAC

Table E2 - Leachate Screen

Landuse on / near Pipeline Route and Exploratory Hole refs	Strata	Sample Reference	Sample Depth (m)	Analyte:												
				Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzof[a]anthracene	Chrysene			
Screening Criteria				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Farm Land				WFDF	2.4	-	-	-	-	-	0.1	-	-	-	-	-
EQS				-	-	-	-	-	-	-	-	-	-	-	-	
DWS				-	-	-	-	-	-	-	-	-	-	-	-	
<b>Existing Pipeline / Railway</b>																
PBH7	CLAY	ES2	0.4	0.023	0.028	<0.010	<0.010	0.127	0.032	0.163	0.194	0.025	0.022	0.019	0.012	
PBH11	CLAY	ES3	0.3	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	0.016	0.019	0.012	0.019	0.01	
PBH11	CLAY	ES6	1	0.032	<0.010	<0.010	<0.010	0.046	0.014	0.049	0.042	0.019	0.01	0.019	0.01	
PBH13	CLAY	ES1	0.50	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	0.115	<0.010	<0.010	<0.010	<0.010	
PBH24	CLAY	ES1	0.3	<0.010	0.019	<0.010	<0.010	<0.010	0.016	0.182	0.134	0.064	0.049	0.064	0.049	
PTP09	CLAY	ES4	1	0.047	<0.010	<0.010	<0.010	0.019	<0.010	0.026	0.02	<0.010	<0.010	<0.010	<0.010	
PTP10C	CLAY	ES1	0.1	0.089	0.014	<0.010	0.017	0.068	0.022	0.071	0.071	<0.010	<0.010	<0.010	<0.010	
PTP11A	Topsoll	ES1	0.10	<0.010	0.017	<0.010	0.037	0.249	0.117	0.079	0.071	<0.010	<0.010	<0.010	<0.010	
PTP11B	CLAY	ES4	1.00	0.013	<0.010	<0.010	<0.010	0.02	<0.010	0.015	0.012	<0.010	<0.010	<0.010	<0.010	
PTP13A	Topsoll	ES1	0.50	<0.010	<0.010	<0.010	0.01	<0.010	<0.010	0.027	0.036	<0.010	<0.010	<0.010	<0.010	
<b>Gas Terminal</b>																
PBH26	CLAY	ES2	0.4	0.034	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	0.021	<0.010	<0.010	<0.010	<0.010	
PBH27	CLAY	ES5	1.00	0.096	0.018	<0.010	<0.010	0.025	0.026	0.285	0.238	0.056	0.044	0.056	0.044	
PTP15B	Topsoll	ES1	0.10	0.013	<0.010	<0.010	0.016	<0.010	0.012	0.018	0.023	<0.010	<0.010	<0.010	<0.010	

Key:

Exceedence of GAC





**Table E3 - Groundwater Screen**

Analyte:	pH	Total Sulphur as SO4 (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Boron as B (Dissolved)	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Naphthalene	Acenaphthylene
Units:	pH units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l
Screening Criteria			0.028	0.0072	0.125		0.00005		2.4	-
	6-9	400				2				-
DWS								0.01		-
Sample Reference										
Well Site A										
AWS01	7.1	1010	0.002				<0.0001	0.008	<0.010	<0.010
Well Site B										
BBH02	7.2	39			0.015	1.49	<0.0001			
BWS07	7.4	115			<0.002	0.29	<0.0001			
GSF										
GSFWS03				<0.001	0.005				<0.010	<0.010

Key:  Exceedence of GAC

**Table E3 - Groundwater Screen**

Analyte:	pH	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]anthracene	Chrysene
Units:	pH units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
WFD		-	-	-	0.1	0.1	-	-	-
EQS	6-9	-	-	-	-	-	-	-	-
DWS		-	-	-	-	-	-	-	-
Sample Reference									
Sample Location									
Well Site A									
AWS01	7.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Well Site B									
BBH02	7.2								
BWS07	7.4								
GSF									
GSFWS03		<0.010	<0.010	<0.010	<0.010	0.018	0.049	<0.010	<0.010

Key:

Exceedence of GAC



**Table E3 - Groundwater Screen**

Analyte:	pH	Benzo[b] fluoranthene	Benzo[k] fluoranthene	Benzo[b]fluoranthene + Benzo[k]fluoranthene	Benzo[a]p yrene	Indeno[1,2,3-cd]pyrene	Dibenzo[a,h] anthracene	Benzo[g,h,i] perylene
Units:	pH units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
WFD		0.03	0.03	0.03	0.05	0.002	-	0.002
EQS	6-9						-	
DWS							-	
Sample Reference								
Sample Location								
Well Site A								
AWS01	7.1	<0.010	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010
Well Site B								
BBH02	7.2							
BWS07	7.4							
GSF								
GSFWS03		<0.010	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010

Key:

 Exceedence of GAC

**Table E3 - Groundwater Screen**

Analyte:	pH	Benzol[g,h,i]perylene + Indeno[1,2,3- cd]pyrene	Total (USEPA16) PAHs
Units:	pH units	ug/l	ug/l
WFD		0.002	
EQS	6-9		
DWS			
Sample Reference			
Screening Criteria			
Sample Location			
Well Site A			
AWS01	7.1	<0.020	<0.160
Well Site B			
BBH02	7.2		
BWS07	7.4		
GSF			
GSFWS03		<0.020	<0.207

Key:  Exceedence of GAC

Table E4 - Leachate Screen (groundwater abstraction)

Sample Location	Strata	Sample Reference	Sample Depth (m)	Analyte:		Total Sulphur as SO4 (Dissolved)	Nickel as Ni (Dissolved)	Chromium as Cr (Dissolved)	Cadmium as Cd (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Zinc as Zn (Dissolved)	Arsenic as As (Dissolved)	Boron as B (Dissolved)	
				Units:	pH units										
		Screening Criteria		WFD											
				EQS	6-9										
				DWS		250	0.02	0.05	0.005	2	0.01	0.500*	0.01	1	
PBH11	CLAY	ES3	0.3		8.7	29	0.002	0.008	<0.0001	0.011	0.002	0.154	0.002	0.48	
PBH11	CLAY	ES6	1		8.2	15	0.002	0.005	<0.0001	0.016	0.003	0.164	0.001	0.43	

Key:

Exceedence of GAC

\*Value for zinc is from EU Standard "Protection of Surface Waters Intended for the Abstraction of Drinking Water". The guidance producing this standard was repealed in 2007, however no new value has been established.



Table E4 - Leachate Screen (groundwater abstraction)

Sample Location	Strata	Sample Reference	Sample Depth (m)	Analyte:	Units:	Mercury as Hg (Dissolved)	Selenium as Se (Dissolved)	Chromium VI as Cr	Cyanide (Free) as CN	Cyanide (Total) as CN	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene
		Screening Criteria			WFD				0.001		2.4	-	-	-
					EQS									
					DWS	0.001	0.01	0.05		0.05				
PBH11	CLAY	ES3	0.3			<0.0001	<0.001	<0.01	<0.02	<0.02	0.015	<0.010	<0.010	<0.010
PBH11	CLAY	ES6	1			<0.00001	<0.001	<0.01	<0.02	<0.02	0.032	<0.010	<0.010	<0.010

Key:

Exceedence of GAC

Table E4 - Leachate Screen (groundwater abstraction)

Sample Location	Strata	Sample Reference	Sample Depth (m)	Analyte:									
				Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]anthracene	Chrysene	Benzo[b]fluoranthene	Benzo[k]fluoranthene		
				Units:									
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Screening Criteria				-	0.1	0.1	-	-	-	-	0.03	0.03	
				WFD									
				EQS									
				DWS									
PBH11	CLAY	ES3	0.3	<0.010	<0.010	0.016	0.016	0.019	0.012	<0.010	<0.010		
PBH11	CLAY	ES6	1	0.046	0.014	0.049	0.042	0.019	0.01	<0.010	<0.010		

Key:

Exceedence of GAC

Table E4 - Leachate Screen (groundwater abstraction)

Analyte:	Units:	Benzo[b]fluoranthene + Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno[1,2,3-cd]pyrene	Dibenzo[a,h]anthracene	Benzo[g,h,i]perylene	Benzo[g,h,i]perylene + Indeno[1,2,3-cd]pyrene	Total (USEPA16) PAHs	
	WFD	0.03		0.002	-	0.002	0.002		
	EQS				-				
	DWS		0.01		-				
Sample Location	Strata	Sample Reference	Sample Depth (m)						
PBH11	CLAY	ES3	0.3	<0.010	<0.010	<0.010	<0.020	<0.188	
PBH11	CLAY	ES6	1	<0.010	<0.010	<0.010	<0.020	<0.302	

Key:

Exceedence of GAC