Sample Analysis Report

Sampling Point No:	798001	**Location:**	Bala Sludge
Date Sampled:	28/04/2025	**Time Taken:**	20:49
Laboratory:	ALS	**Sample ID:**	8358319
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	1820	mg/kg		
288	Aluminium	181000	mg/kg		
357	Arsenic	12.5	mg/kg	<	
4620	pH	6.9	pH		
7774	Mercury	1.67	mg/kg	<	
8241	Volatile solids	50.8	%		
9233	Ammoniacal nitrogen	256	mg/kg	<	
9234	Sulphur	4670	mg/kg		
9271	Cadmium	0.51	mg/kg		
9272	Chromium	2.83	mg/kg	<	
9273	Copper	26	mg/kg		
9275	Nickel	3.58	mg/kg	<	
9276	Lead	5.41	mg/kg	<	
9277	Zinc	162	mg/kg		
9278	Iron	6200	mg/kg		
9281	% Dry solids	2.39	%		
9282	% Minerals	49.2	%		
9283	% K (dry weight)	0.0087	mg/kg	<	
9284	% P (dry weight)	0.0495	%		
9285	% N (dry weight)	1.17	%		

Comments:

Signed: _____

Approved by:

Position:

Dŵr Cymru Welsh Water

Sample Analysis Report

Sampling Point No:	23600	**Location:**	BRYN COWLYD WTW - SLUDGE Byproduct
Date Sampled:	28/04/2025	**Time Taken:**	20:51
Laboratory:	ALS	**Sample ID:**	8358325
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	369	mg/kg		
288	Aluminium	3720	mg/kg		
357	Arsenic	13.1	mg/kg		
4620	pH	5.9	pH		
7774	Mercury	1.72	mg/kg	<	
8241	Volatile solids	29.6	%		
9233	Ammoniacal nitrogen	262	mg/kg	<	
9234	Sulphur	4180	mg/kg		
9271	Cadmium	0.73	mg/kg		
9272	Chromium	2.92	mg/kg	<	
9273	Copper	4.98	mg/kg	<	
9275	Nickel	37.2	mg/kg		
9276	Lead	13	mg/kg		
9277	Zinc	168	mg/kg		
9278	Iron	460000	mg/kg		
9281	% Dry solids	2.33	%		
9282	% Minerals	70.4	%		
9283	% K (dry weight)	0.02	mg/kg	<	
9284	% P (dry weight)	0.0301	%		
9285	% N (dry weight)	0.664	%	<	

Comments:

Signed: _____

Approved by:

Position:

Dŵr Cymru Welsh Water

Sample Analysis Report

Sampling Point No:	622914	**Location:**	CEFNI WTW SLUDGE
Date Sampled:	28/04/2025	**Time Taken:**	20:53
Laboratory:	ALS	**Sample ID:**	8358329
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	930	mg/kg		
288	Aluminium	215000	mg/kg		
357	Arsenic	10.7	mg/kg		
4620	pH	6.7	pH		
7774	Mercury	1.21	mg/kg	<	
8241	Volatile solids	44.7	%		
9233	Ammoniacal nitrogen	182	mg/kg	<	
9234	Sulphur	12700	mg/kg		
9271	Cadmium	0.32	mg/kg		
9272	Chromium	2.05	mg/kg	<	
9273	Copper	27.1	mg/kg		
9275	Nickel	9	mg/kg		
9276	Lead	3.91	mg/kg	<	
9277	Zinc	85.7	mg/kg		
9278	Iron	3550	mg/kg		
9281	% Dry solids	3.33	%		
9282	% Minerals	55.3	%		
9283	% K (dry weight)	0.01	mg/kg	<	
9284	% P (dry weight)	0.357	%		
9285	% N (dry weight)	0.934	%		

Comments:

Signed: _____

Approved by:

Position:

Dŵr Cymru Welsh Water

Sample Analysis Report

Sampling Point No:	698007	**Location:**	CWELLYN WTW SLUDGE
Date Sampled:	28/04/2025	**Time Taken:**	20:55
Laboratory:	ALS	**Sample ID:**	8358333
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	970	mg/kg		
288	Aluminium	252000	mg/kg		
357	Arsenic	10.8	mg/kg		
4620	pH	6.6	pH		
7774	Mercury	1.35	mg/kg	<	
8241	Volatile solids	44.8	%		
9233	Ammoniacal nitrogen	203	mg/kg	<	
9234	Sulphur	12400	mg/kg		
9271	Cadmium	0.34	mg/kg		
9272	Chromium	2.28	mg/kg	<	
9273	Copper	27.9	mg/kg		
9275	Nickel	5.5	mg/kg		
9276	Lead	4.35	mg/kg	<	
9277	Zinc	138	mg/kg		
9278	Iron	3570	mg/kg		
9281	% Dry solids	3	%		
9282	% Minerals	55.2	%		
9283	% K (dry weight)	0.0087	mg/kg	<	
9284	% P (dry weight)	0.32	%		
9285	% N (dry weight)	0.951	%		

Comments:

Signed: _____

Approved by:

Position:

Dŵr Cymru Welsh Water

Sample Analysis Report

Sampling Point No:	359181	**Location:**	DOLBENMAEN WTW SLUDGE
Date Sampled:	28/04/2025	**Time Taken:**	20:44
Laboratory:	ALS	**Sample ID:**	8358305
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	187	mg/kg		
288	Aluminium	313000	mg/kg		
357	Arsenic	14.6	mg/kg		
4620	pH	6.8	pH		
7774	Mercury	1.54	mg/kg	<	
8241	Volatile solids	34.3	%		
9233	Ammoniacal nitrogen	276	mg/kg		
9234	Sulphur	16600	mg/kg		
9271	Cadmium	0.96	mg/kg		
9272	Chromium	2.61	mg/kg	<	
9273	Copper	22.1	mg/kg		
9275	Nickel	3.31	mg/kg	<	
9276	Lead	4.99	mg/kg	<	
9277	Zinc	349	mg/kg		
9278	Iron	4960	mg/kg		
9281	% Dry solids	2.58	%		
9282	% Minerals	65.7	%		
9283	% K (dry weight)	0.0087	mg/kg	<	
9284	% P (dry weight)	0.243	%		
9285	% N (dry weight)	0.718	%		

Comments:

Signed: _____

Approved by:

Position:

Dŵr Cymru Welsh Water

Sample Analysis Report

Sampling Point No:	698194	**Location:**	GWASTADGOED WTW SLUDGE
Date Sampled:	28/04/2025	**Time Taken:**	20:45
Laboratory:	ALS	**Sample ID:**	8358307
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	320	mg/kg		
288	Aluminium	3230	mg/kg		
357	Arsenic	15.2	mg/kg		
4620	pH	5.6	pH		
7774	Mercury	0.68	mg/kg	<	
8241	Volatile solids	16.3	%		
9233	Ammoniacal nitrogen	102	mg/kg	<	
9234	Sulphur	10800	mg/kg		
9271	Cadmium	0.3	mg/kg		
9272	Chromium	1.15	mg/kg	<	
9273	Copper	1.96	mg/kg	<	
9275	Nickel	61.5	mg/kg		
9276	Lead	26.1	mg/kg		
9277	Zinc	163	mg/kg		
9278	Iron	519000	mg/kg		
9281	% Dry solids	5.99	%		
9282	% Minerals	83.7	%		
9283	% K (dry weight)	0.01	mg/kg	<	
9284	% P (dry weight)	0.168	%		
9285	% N (dry weight)	0.317	%		

Comments:

Signed: _____

Approved by:

Position:

Dŵr Cymru Welsh Water

Sample Analysis Report

Sampling Point No:	698086	**Location:**	LLYN CONWY SLUDGE
Date Sampled:	28/04/2025	**Time Taken:**	20:50
Laboratory:	ALS	**Sample ID:**	8358323
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	353	mg/kg		
288	Aluminium	3410	mg/kg		
357	Arsenic	25.6	mg/kg		
4620	pH	5.7	pH		
7774	Mercury	0.97	mg/kg	<	
8241	Volatile solids	32.6	%		
9233	Ammoniacal nitrogen	149	mg/kg	<	
9234	Sulphur	4260	mg/kg		
9271	Cadmium	1.16	mg/kg		
9272	Chromium	14.4	mg/kg		
9273	Copper	860	mg/kg		
9275	Nickel	32.3	mg/kg		
9276	Lead	56.6	mg/kg		
9277	Zinc	360	mg/kg		
9278	Iron	448000	mg/kg		
9281	% Dry solids	4.12	%		
9282	% Minerals	67.4	%		
9283	% K (dry weight)	0.01	mg/kg	<	
9284	% P (dry weight)	0.113	%		
9285	% N (dry weight)	0.594	%		

Comments:

Signed: _____

Approved by:

Position:

Sample Analysis Report

Sampling Point No:	698028	**Location:**	MYNYDD LLANDEGAI SLUDGE
Date Sampled:	28/04/2025	**Time Taken:**	20:54
Laboratory:	ALS	**Sample ID:**	8358331
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	992	mg/kg		
288	Aluminium	183000	mg/kg		
357	Arsenic	9.1	mg/kg		
4620	pH	6.8	pH		
7774	Mercury	1.17	mg/kg	<	
8241	Volatile solids	44.8	%		
9233	Ammoniacal nitrogen	178	mg/kg	<	
9234	Sulphur	11800	mg/kg		
9271	Cadmium	0.27	mg/kg	<	
9272	Chromium	1.99	mg/kg	<	
9273	Copper	27.2	mg/kg		
9275	Nickel	8.5	mg/kg		
9276	Lead	3.8	mg/kg	<	
9277	Zinc	105	mg/kg		
9278	Iron	3260	mg/kg		
9281	% Dry solids	3.43	%		
9282	% Minerals	55.2	%		
9283	% K (dry weight)	0.0087	mg/kg	<	
9284	% P (dry weight)	0.338	%		
9285	% N (dry weight)	0.902	%		

Comments:

Signed: _____

Approved by:

Position:

Dŵr Cymru Welsh Water

Sample Analysis Report

Sampling Point No:	698181	**Location:**	Penybont WTW SLUDGE
Date Sampled:	28/04/2025	**Time Taken:**	20:43
Laboratory:	ALS	**Sample ID:**	8358303
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	1070	mg/kg		
288	Aluminium	217000	mg/kg		
357	Arsenic	47.7	mg/kg		
4620	pH	6.8	pH		
7774	Mercury	1.49	mg/kg	<	
8241	Volatile solids	30.8	%		
9233	Ammoniacal nitrogen	227	mg/kg	<	
9234	Sulphur	13000	mg/kg		
9271	Cadmium	0.35	mg/kg	<	
9272	Chromium	4.56	mg/kg		
9273	Copper	34.7	mg/kg		
9275	Nickel	7.9	mg/kg		
9276	Lead	4.84	mg/kg	<	
9277	Zinc	99.7	mg/kg		
9278	Iron	9250	mg/kg		
9281	% Dry solids	2.68	%		
9282	% Minerals	69.2	%		
9283	% K (dry weight)	0.02	mg/kg	<	
9284	% P (dry weight)	0.546	%		
9285	% N (dry weight)	0.858	%		

Comments:

Signed: _____

Approved by:

Position:

Dŵr Cymru Welsh Water

Sample Analysis Report

Sampling Point No:	618214	**Location:**	RHIW GOCH WTW SLUDGE
Date Sampled:	28/04/2025	**Time Taken:**	20:41
Laboratory:	ALS	**Sample ID:**	8358297
No. of Results:	20		
Sampling Reason:	WTW Sludge - Investigation (SW_SI)		
Type:	WTW Sludge (SW)		

Sample Results

Dŵr Cymru Welsh Water

Sample Analysis Report

Code		Result	Units	Qualifier	Lower Limit
238	Magnesium	437	mg/kg		
288	Aluminium	5030	mg/kg		
357	Arsenic	11.5	mg/kg		
4620	pH	6.2	pH		
7774	Mercury	0.91	mg/kg	<	
8241	Volatile solids	30.9	%		
9233	Ammoniacal nitrogen	139	mg/kg	<	
9234	Sulphur	3100	mg/kg		
9271	Cadmium	0.87	mg/kg		
9272	Chromium	14.7	mg/kg		
9273	Copper	16.7	mg/kg		
9275	Nickel	15.9	mg/kg		
9276	Lead	27.7	mg/kg		
9277	Zinc	299	mg/kg		
9278	Iron	464000	mg/kg		
9281	% Dry solids	4.4	%		
9282	% Minerals	69.1	%		
9283	% K (dry weight)	0.01	mg/kg	<	
9284	% P (dry weight)	0.287	%		
9285	% N (dry weight)	0.616	%		

Comments:

Signed: _____

Approved by:

Position:

DCWW

Analysis of Bala sludge

Date: 28/04/2025 Sample no. 8358319

Application rate (t/ha)	**250**
Application rate (t/acre)	**100.0**
pH	**6.9**
Dry solids (%)	**2.4**
Organic matter (%)	**50.8**

*Alum sludge

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	1.17	%	0.28	69.9	0.01	1.5
Ammonium-N	256	mg/kg	0.01	1.5		
Phosphorus (P)	0.05	%	0.01	3.0		
Phosphate (P_2O_5)			0.03	6.7	0.0	3.4
Potassium (K)	0.01	%	0.00	0.5		
Potash (K_2O)			0.00	0.6	0.0	0.6
Magnesium (Mg)	1820	mg/kg	0.04	10.9		
Magnesium (MgO)			0.07	17.4	0.0	4.3
Sulphur (S)	4670	mg/kg	0.11	27.9		
Sulphur (SO_3)			0.28	69.8	0.0	7.0
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	162.0	mg/kg	3.9	0.97	15.00
Copper	26.0	mg/kg	0.62	0.16	7.50
Nickel	3.6	mg/kg	0.09	0.02	3.00
Lead	5.4	mg/kg	0.13	0.03	15.00
Cadmium	0.51	mg/kg	0.01	0.00	0.15
Chromium	2.8	mg/kg	0.07	0.02	15.00
Mercury	1.7	mg/kg	0.04	0.01	0.10
Arsenic	12.5	mg/kg	0.30	0.07	0.70
Aluminium	181000	mg/kg	4326	1081.5	
Iron	6200	mg/kg	148	37.0	

DCWW

Analysis of Cefni sludge

Date: 28/04/2025 Sample no.8358329 *Alum sludge

Application rate (t/ha)	**250**
Application rate (t/acre)	**100.0**
pH	**6.7**
Dry solids (%)	**3.3**
Organic matter (%)	**44.7**

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	0.93	%	0.31	77.8	0.01	1.5
Ammonium-N	182	mg/kg	0.01	1.5		
Phosphorus (P)	0.36	%	0.12	29.7		
Phosphate (P_2O_5)			0.27	67.8	0.1	33.9
Potassium (K)	0.01	%	0.00	0.8		
Potash (K_2O)			0.00	1.0	0.0	0.9
Magnesium (Mg)	930	mg/kg	0.03	7.7		
Magnesium (MgO)			0.05	12.4	0.0	3.1
Sulphur (S)	12700	mg/kg	0.42	105.7		
Sulphur (SO_3)			1.06	264.3	0.1	26.4
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	85.7	mg/kg	2.9	0.71	15.00
Copper	27.1	mg/kg	0.90	0.23	7.50
Nickel	9.0	mg/kg	0.30	0.07	3.00
Lead	3.9	mg/kg	0.13	0.03	15.00
Cadmium	0.32	mg/kg	0.01	0.00	0.15
Chromium	2.1	mg/kg	0.07	0.02	15.00
Mercury	1.2	mg/kg	0.04	0.01	0.10
Arsenic	10.7	mg/kg	0.36	0.09	0.70
Aluminium	215000	mg/kg	7160	1789.9	
Iron	3550	mg/kg	118	29.6	

DCWW

Analysis of Bryn Cowlyd sludge

Date: 28/04/2025 Sample no. 8358325

Application rate (t/ha)	**250**
Application rate (t/acre)	**100.0**
pH	**5.9**
Dry solids (%)	**2.3**
Organic matter (%)	**29.6**

*Ferric sludge

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	0.66	%	0.15	38.7	0.01	1.5
Ammonium-N	262	mg/kg	0.01	1.5		
Phosphorus (P)	0.03	%	0.01	1.8		
Phosphate (P2O5)			0.02	4.0	0.0	2.0
Potassium (K)	0.02	%	0.00	1.2		
Potash (K2O)			0.01	1.4	0.0	1.3
Magnesium (Mg)	369	mg/kg	0.01	2.1		
Magnesium (MgO)			0.01	3.4	0.0	0.9
Sulphur (S)	4180	mg/kg	0.10	24.3		
Sulphur (SO_3)			0.24	60.9	0.0	6.1
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	168.0	mg/kg	3.9	0.98	15.00
Copper	5.0	mg/kg	0.12	0.03	7.50
Nickel	37.2	mg/kg	0.87	0.22	3.00
Lead	13.0	mg/kg	0.30	0.08	15.00
Cadmium	0.73	mg/kg	0.02	0.00	0.15
Chromium	2.9	mg/kg	0.07	0.02	15.00
Mercury	1.7	mg/kg	0.04	0.01	0.10
Arsenic	13.1	mg/kg	0.31	0.08	0.70
Aluminium	3720	mg/kg	87	21.7	
Iron	460000	mg/kg	10718	2679.5	

DCWW

Analysis of Cwellyn sludge

Date: 28/04/2025 Sample no. 8358333

Application rate (t/ha)	**250**
Application rate (t/acre)	**100.0**
pH	**6.6**
Dry solids (%)	**3.0**
Organic matter (%)	**44.8**

*Alum sludge

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	0.95	%	0.29	71.3	0.01	1.5
Ammonium-N	203	mg/kg	0.01	1.5		
Phosphorus (P)	0.32	%	0.10	24.0		
Phosphate (P_2O_5)			0.22	54.7	0.1	27.4
Potassium (K)	0.01	%	0.00	0.7		
Potash (K_2O)			0.00	0.8	0.0	0.7
Magnesium (Mg)	970	mg/kg	0.03	7.3		
Magnesium (MgO)			0.05	11.6	0.0	2.9
Sulphur (S)	12400	mg/kg	0.37	93.0		
Sulphur (SO_3)			0.93	232.5	0.1	23.3
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	138.0	mg/kg	4.1	1.04	15.00
Copper	27.9	mg/kg	0.84	0.21	7.50
Nickel	5.5	mg/kg	0.17	0.04	3.00
Lead	4.4	mg/kg	0.13	0.03	15.00
Cadmium	0.34	mg/kg	0.01	0.00	0.15
Chromium	2.3	mg/kg	0.07	0.02	15.00
Mercury	1.4	mg/kg	0.04	0.01	0.10
Arsenic	10.8	mg/kg	0.32	0.08	0.70
Aluminium	252000	mg/kg	7560	1890.0	
Iron	3570	mg/kg	107	26.8	

DCWW

Analysis of Dolbenmaen sludge

Date: 28/04/2025 Sample no. 8358305 *Alum sludge

Application rate (t/ha)	**250**
Application rate (t/acre)	**100.0**
pH	**6.8**
Dry solids (%)	**2.6**
Organic matter (%)	**34.3**

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	0.72	%	0.19	46.3	0.01	1.8
Ammonium-N	278	mg/kg	0.01	1.8		
Phosphorus (P)	0.24	%	0.06	15.7		
Phosphate (P_2O_5)			0.14	35.7	0.1	17.9
Potassium (K)	0.01	%	0.00	0.6		
Potash (K_2O)			0.00	0.7	0.0	0.6
Magnesium (Mg)	187	mg/kg	0.00	1.2		
Magnesium (MgO)			0.01	1.9	0.0	0.5
Sulphur (S)	16600	mg/kg	0.43	107.1		
Sulphur (SO_3)			1.07	267.7	0.1	26.8
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	349.0	mg/kg	9.0	2.25	15.00
Copper	22.1	mg/kg	0.57	0.14	7.50
Nickel	3.3	mg/kg	0.09	0.02	3.00
Lead	5.0	mg/kg	0.13	0.03	15.00
Cadmium	0.96	mg/kg	0.02	0.01	0.15
Chromium	2.6	mg/kg	0.07	0.02	15.00
Mercury	1.5	mg/kg	0.04	0.01	0.10
Arsenic	14.6	mg/kg	0.38	0.09	0.70
Aluminium	313000	mg/kg	8075	2018.9	
Iron	4960	mg/kg	128	32.0	

DCWW

Analysis of Gwastadgoed sludge

Date: 28/04/2025 Sample no.8358307 *Ferric sludg

Application rate (t/ha)	250
Application rate (t/acre)	100.0
pH	5.6
Dry solids (%)	6.0
Organic matter (%)	16.3

NUTRIENT CONTENT

			Total		Available	
TOTALS	result	units	(kg/tonne)	(kg/ha)	(kg/tonne)	(kg/ha)
Nitrogen (N)	0.32	%	0.19	47.5	0.01	1.5
Ammonium-N	102	mg/kg	0.01	1.5		
Phosphorus (P)	0.17	%	0.10	25.2		
Phosphate (P2O5)			0.23	57.4	0.1	28.7
Potassium (K)	0.01	%	0.01	1.5		
Potash (K2O)			0.01	1.8	0.0	1.6
Magnesium (Mg)	320	mg/kg	0.02	4.8		
Magnesium (MgO)			0.03	7.7	0.0	1.9
Sulphur (S)	10800	mg/kg	0.65	161.7		
Sulphur (SO_3)			1.62	404.3	0.2	40.4
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	result	units	(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	163.0	mg/kg	9.8	2.44	15.00
Copper	2.0	mg/kg	0.12	0.03	7.50
Nickel	61.5	mg/kg	3.68	0.92	3.00
Lead	26.1	mg/kg	1.56	0.39	15.00
Cadmium	0.30	mg/kg	0.02	0.00	0.15
Chromium	1.2	mg/kg	0.07	0.02	15.00
Mercury	0.7	mg/kg	0.04	0.01	0.10
Arsenic	15.2	mg/kg	0.91	0.23	0.70
Aluminium	3230	mg/kg	193	48.4	
Iron	519000	mg/kg	31088	7772.0	

DCWW

Analysis of Llyn Conwy sludge

Date: 20/06/2025 Sample no. 8420725

Application rate (t/ha)	**211**
Application rate (t/acre)	**84.4**
pH	**5.7**
Dry solids (%)	**4.1**
Organic matter (%)	**35.9**

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	0.59	%	0.24	51.6	0.01	1.3
Ammonium-N	149	mg/kg	0.01	1.3		
Phosphorus (P)	0.11	%	0.05	9.8		
Phosphate (P_2O_5)			0.11	22.4	0.1	11.2
Potassium (K)	0.01	%	0.00	0.8		
Potash (K_2O)			0.00	0.9	0.0	0.8
Magnesium (Mg)	353	mg/kg	0.01	3.1		
Magnesium (MgO)			0.02	4.9	0.0	1.2
Sulphur (S)	4260	mg/kg	0.18	37.0		
Sulphur (SO_3)			0.44	92.6	0.0	9.3
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	360.0	mg/kg	14.8	3.13	15.00
Copper	860.0	mg/kg	35.43	7.48	7.50
Nickel	32.3	mg/kg	1.33	0.28	3.00
Lead	56.6	mg/kg	2.33	0.49	15.00
Cadmium	1.16	mg/kg	0.05	0.01	0.15
Chromium	14.4	mg/kg	0.59	0.13	15.00
Mercury	1.0	mg/kg	0.04	0.01	0.10
Arsenic	25.6	mg/kg	1.05	0.22	0.70
Aluminium	3410	mg/kg	140	29.6	
Iron	448000	mg/kg	18458	3894.6	

*Ferric sludge

DCWW

Analysis of Mynydd Llandegai sludge

Date: 28/04/2025 Sample no. 8358331

Application rate (t/ha)	**250**
Application rate (t/acre)	**100.0**
pH	**6.8**
Dry solids (%)	**3.4**
Organic matter (%)	**44.8**

*Alum sludge

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	0.90	%	0.31	77.3	0.01	1.5
Ammonium-N	178	mg/kg	0.01	1.5		
Phosphorus (P)	0.34	%	0.12	29.0		
Phosphate (P_2O_5)			0.26	66.1	0.1	33.0
Potassium (K)	0.01	%	0.00	0.7		
Potash (K_2O)			0.00	0.9	0.0	0.8
Magnesium (Mg)	992	mg/kg	0.03	8.5		
Magnesium (MgO)			0.05	13.6	0.0	3.4
Sulphur (S)	11800	mg/kg	0.40	101.2		
Sulphur (SO_3)			1.01	253.0	0.1	25.3
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	105.0	mg/kg	3.6	0.90	15.00
Copper	27.2	mg/kg	0.93	0.23	7.50
Nickel	8.5	mg/kg	0.29	0.07	3.00
Lead	3.8	mg/kg	0.13	0.03	15.00
Cadmium	0.27	mg/kg	0.01	0.00	0.15
Chromium	2.0	mg/kg	0.07	0.02	15.00
Mercury	1.2	mg/kg	0.04	0.01	0.10
Arsenic	9.1	mg/kg	0.31	0.08	0.70
Aluminium	183000	mg/kg	6277	1569.2	
Iron	3260	mg/kg	112	28.0	

DCWW

Analysis of Penybont sludge

Date: 28/04/2025 Sample no. 8358303

Application rate (t/ha)	**250**
Application rate (t/acre)	**100.0**
pH	**6.8**
Dry solids (%)	**2.7**
Organic matter (%)	**30.8**

*Alum sludge

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	0.86	%	0.23	57.5	0.01	1.5
Ammonium-N	227	mg/kg	0.01	1.5		
Phosphorus (P)	0.55	%	0.15	36.6		
Phosphate (P_2O_5)			0.33	83.4	0.2	41.7
Potassium (K)	0.02	%	0.01	1.3		
Potash (K_2O)			0.01	1.6	0.0	1.4
Magnesium (Mg)	1070	mg/kg	0.03	7.2		
Magnesium (MgO)			0.05	11.5	0.0	2.9
Sulphur (S)	13000	mg/kg	0.35	87.1		
Sulphur (SO_3)			0.87	217.8	0.1	21.8
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	99.7	mg/kg	2.7	0.67	15.00
Copper	34.7	mg/kg	0.93	0.23	7.50
Nickel	7.9	mg/kg	0.21	0.05	3.00
Lead	4.8	mg/kg	0.13	0.03	15.00
Cadmium	0.35	mg/kg	0.01	0.00	0.15
Chromium	4.6	mg/kg	0.12	0.03	15.00
Mercury	1.5	mg/kg	0.04	0.01	0.10
Arsenic	47.7	mg/kg	1.28	0.32	0.70
Aluminium	217000	mg/kg	5816	1453.9	
Iron	9250	mg/kg	248	62.0	

DCWW

Analysis of Penybont sludge

Date: 28/04/2025 Sample no. 8358303

Application rate (t/ha)	**224**
Application rate (t/acre)	**89.6**
pH	**6.8**
Dry solids (%)	**2.7**
Organic matter (%)	**30.8**

NUTRIENT CONTENT

			Total		Available	
TOTALS	**result**	**units**	**(kg/tonne)**	**(kg/ha)**	**(kg/tonne)**	**(kg/ha)**
Nitrogen (N)	0.86	%	0.23	51.5	0.01	1.4
Ammonium-N	227	mg/kg	0.01	1.4		
Phosphorus (P)	0.55	%	0.15	32.8		
Phosphate (P_2O_5)			0.33	74.7	0.2	37.4
Potassium (K)	0.02	%	0.01	1.2		
Potash (K_2O)			0.01	1.4	0.0	1.3
Magnesium (Mg)	1070	mg/kg	0.03	6.4		
Magnesium (MgO)			0.05	10.3	0.0	2.6
Sulphur (S)	13000	mg/kg	0.35	78.0		
Sulphur (SO_3)			0.87	195.1	0.1	19.5
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	99.7	mg/kg	2.7	0.60	15.00
Copper	34.7	mg/kg	0.93	0.21	7.50
Nickel	7.9	mg/kg	0.21	0.05	3.00
Lead	4.8	mg/kg	0.13	0.03	15.00
Cadmium	0.35	mg/kg	0.01	0.00	0.15
Chromium	4.6	mg/kg	0.12	0.03	15.00
Mercury	1.5	mg/kg	0.04	0.01	0.10
Arsenic	47.7	mg/kg	1.28	0.29	0.70
Aluminium	217000	mg/kg	5816	1302.7	
Iron	9250	mg/kg	248	55.5	

*Alum sludge

DCWW

Analysis of Rhiwgoch sludge

Date: 28/04/2025 Sample no. 8358297

Application rate (t/ha)	**250**
Application rate (t/acre)	**100.0**
pH	**6.2**
Dry solids (%)	**4.4**
Organic matter (%)	**30.9**

*Ferric sludge

NUTRIENT CONTENT

			Total		Available	
TOTALS	result	units	(kg/tonne)	(kg/ha)	(kg/tonne)	(kg/ha)
Nitrogen (N)	0.62	%	0.27	67.8	0.01	1.5
Ammonium-N	139	mg/kg	0.01	1.5		
Phosphorus (P)	0.29	%	0.13	31.6		
Phosphate (P_2O_5)			0.29	72.0	0.1	36.0
Potassium (K)	0.01	%	0.00	1.1		
Potash (K_2O)			0.01	1.3	0.0	1.2
Magnesium (Mg)	437	mg/kg	0.02	4.8		
Magnesium (MgO)			0.03	7.7	0.0	1.9
Sulphur (S)	3100	mg/kg	0.14	34.1		
Sulphur (SO_3)			0.34	85.3	0.0	8.5
Calcium (Ca)		mg/kg	0.0	0.0		

POTENTIALLY TOXIC ELEMENTS

			Amount		Limit
TOTALS	result	units	(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	299.0	mg/kg	13.2	3.29	15.00
Copper	16.7	mg/kg	0.73	0.18	7.50
Nickel	15.9	mg/kg	0.70	0.17	3.00
Lead	27.7	mg/kg	1.22	0.30	15.00
Cadmium	0.87	mg/kg	0.04	0.01	0.15
Chromium	14.7	mg/kg	0.65	0.16	15.00
Mercury	0.9	mg/kg	0.04	0.01	0.10
Arsenic	11.5	mg/kg	0.51	0.13	0.70
Aluminium	5030	mg/kg	221	55.3	
Iron	464000	mg/kg	20416	5104.0	