

DAIRY PARTNERS, NEWCASTLE EMLYN

Analysis of Liquid Sludge

Report No: 72745
Sample No: 160672
Date: 09/01/2025

Application rate (t/ha) 27.0
Application rate (t/acre) 10.9
pH 5.95
Dry solids (%) 5.29

Organic Matter (%) 4.92

NUTRIENT CONTENT

	Result	Units	Total		Available	
			(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.24	%	2.4	65	0.5	13
Ammonium-N	110	mg/kg	0.1	3		
Phosphorus (P)	635	mg/kg	0.6	17		
Phosphate (P ₂ O ₅)			1.5	39	0.9	24
Potassium (K)	281	mg/kg	0.3	8		
Potash (K ₂ O)			0.3	9	0.3	7
Magnesium (Mg)	46.2	mg/kg	0.0	1		
Magnesium (MgO)			0.1	2	0.0	0
Sulphur (S)	155	mg/kg	0.2	4		
Sulphur (SO ₃)			0.4	10	0.1	2

POTENTIALLY TOXIC ELEMENTS

	Result	Units	Rate		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	1.80	mg/kg	1.80	0.05	15.00
Copper	0.49	mg/kg	0.49	0.01	7.50
Nickel	0.20	mg/kg	0.20	0.01	3.00
Lead	0.50	mg/kg	0.50	0.01	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.23	mg/kg	0.23	0.01	15.00
Mercury	0.05	mg/kg	0.05	0.00	0.10

All results expressed on sample as received. The nickel, lead, cadmium and mercury concentrations are less than the minimum level of detection, consequently, the calculated values will be less than those shown

DAIRY PARTNERS, NEWCASTLE EMLYN

Analysis of Liquid Sludge

Report No: 72745
Sample No: 160672
Date: 09/01/2025

Application rate (t/ha) 55.0
Application rate (t/acre) 22.3
pH 5.95
Dry solids (%) 5.29

Organic Matter (%) 4.92

NUTRIENT CONTENT

	Result	Units	Total		Available	
			(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.24	%	2.4	132	0.5	26
Ammonium-N	110	mg/kg	0.1	6		
Phosphorus (P)	635	mg/kg	0.6	35		
Phosphate (P ₂ O ₅)			1.5	80	0.9	48
Potassium (K)	281	mg/kg	0.3	15		
Potash (K ₂ O)			0.3	19	0.3	15
Magnesium (Mg)	46.2	mg/kg	0.0	3		
Magnesium (MgO)			0.1	4	0.0	0
Sulphur (S)	155	mg/kg	0.2	9		
Sulphur (SO ₃)			0.4	21	0.1	4

POTENTIALLY TOXIC ELEMENTS

	Result	Units	Rate		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	1.80	mg/kg	1.80	0.10	15.00
Copper	0.49	mg/kg	0.49	0.03	7.50
Nickel	0.20	mg/kg	0.20	0.01	3.00
Lead	0.50	mg/kg	0.50	0.03	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.23	mg/kg	0.23	0.01	15.00
Mercury	0.05	mg/kg	0.05	0.00	0.10

All results expressed on sample as received. The nickel, lead, cadmium and mercury concentrations are less than the minimum level of detection, consequently, the calculated values will be less than those shown

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DAIRY PARTNERS

DAIRY WASTE

DAIRY WASTE ANALYSIS RESULTS

Sample Reference :

DAIRY PARTNERS

Sample Matrix : DAIRY WASTE

Laboratory References

Report Number	72745
Sample Number	160672

Date Received	09-JAN-2025
Date Reported	24-FEB-2025

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Oven Dry Solids	5.29	%
E Coli [Fresh]	740	cfu/g
Conductivity 1:6	340	uS/cm
Total Kjeldahl Nitrogen	0.24	% w/w
Nitrate Nitrogen	<10	mg/kg
Ammonium Nitrogen	110	mg/kg
Total Phosphorus (P)	635	mg/kg
Total Potassium (K)	281	mg/kg
Total Magnesium (Mg)	46.2	mg/kg
Total Copper (Cu)	0.49	mg/kg

Released by *Gabrielle Parkes*

Date *24/02/25*

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DAIRY PARTNERS

DAIRY WASTE

DAIRY WASTE ANALYSIS RESULTS

Sample Reference :

DAIRY PARTNERS

Sample Matrix : DAIRY WASTE

Laboratory References

Report Number	72745
Sample Number	160672

Date Received	09-JAN-2025
Date Reported	24-FEB-2025

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Total Zinc (Zn)	1.80	mg/kg
Total Sulphur (S)	155	mg/kg
Total Calcium (Ca)	183	mg/kg
Total Lead (Pb)	<0.5	mg/kg
Total Cadmium (Cd)	<0.01	mg/kg
Total Mercury (Hg)	<0.05	mg/kg
Total Nickel (Ni)	<0.2	mg/kg
Total Chromium (Cr)	0.23	mg/kg
Total Sodium (Na)	206	mg/kg
pH 1:6 [Fresh]	5.95	

Released by *Gabrielle Parkes*

Date *24/02/25*

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DAIRY PARTNERS

DAIRY WASTE

DAIRY WASTE ANALYSIS RESULTS

Sample Reference :

DAIRY PARTNERS

Sample Matrix : DAIRY WASTE

Laboratory References

Report Number	72745
Sample Number	160672

Date Received	09-JAN-2025
Date Reported	24-FEB-2025

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Organic Matter LOI	4.92	% w/w
Coliforms [fresh]	380000	cfu/g
B.O.D. [fresh]	29550	mg/l
C.O.D. [fresh]	85530	mg/kg
Oils,Fats and Grease	17720	mg/kg
Salmonella spp [fresh]	Negative	in 25g
EC [Neat]	2138	uS/cm

Released by *Gabrielle Parkes*

Date 24/02/25

FIRST MILK, HAVERFORDWEST

Analysis of Liquid Sludge

Sample Name: Aqua Thin Sludge

Report No: 79190

Sample No: 162728

Date: 17/02/2025

Application rate (t/ha) 42.0
Application rate (t/acre) 17.0
pH 6.76
Dry solids (%) 2.41

Organic Matter (%) 1.97

NUTRIENT CONTENT

	result	units	Total		Available	
			(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.19	%	1.9	80	0.4	16
Ammonium-N	53.4	mg/kg	0.1	2		
Phosphorus (P)	418	mg/kg	0.4	18		
Phosphate (P ₂ O ₅)			1.0	40	0.6	24
Potassium (K)	193	mg/kg	0.2	8		
Potash (K ₂ O)			0.2	10	0.2	8
Magnesium (Mg)	25.8	mg/kg	0.0	1		
Magnesium (MgO)			0.0	2	0.0	0
Sulphur (S)	118	mg/kg	0.1	5		
Sulphur (SO ₃)			0.3	12	0.1	2

POTENTIALLY TOXIC ELEMENTS

	result	units	Rate		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	1.40	mg/kg	1.40	0.06	15.00
Copper	0.20	mg/kg	0.20	0.01	7.50
Nickel	0.20	mg/kg	0.20	0.01	3.00
Lead	0.50	mg/kg	0.50	0.02	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.29	mg/kg	0.29	0.01	15.00
Mercury	0.05	mg/kg	0.05	0.00	0.10

All results expressed on sample as received. The copper, nickel, lead, cadmium and mercury concentrations are less than the minimum level of detection, consequently, the calculated values will be less than those shown

FIRST MILK, HAVERFORDWEST

Analysis of Liquid Sludge

Sample Name: Aqua Thin Sludge

Report No: 79190

Sample No: 162728

Date: 17/02/2025

Application rate (t/ha) 83.0
Application rate (t/acre) 33.6
pH 6.76
Dry solids (%) 2.41

Organic Matter (%) 1.97

NUTRIENT CONTENT

	result	units	Total		Available	
			(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.19	%	1.9	158	0.4	32
Ammonium-N	53.4	mg/kg	0.1	4		
Phosphorus (P)	418	mg/kg	0.4	35		
Phosphate (P ₂ O ₅)			1.0	79	0.6	48
Potassium (K)	193	mg/kg	0.2	16		
Potash (K ₂ O)			0.2	19	0.2	15
Magnesium (Mg)	25.8	mg/kg	0.0	2		
Magnesium (MgO)			0.0	4	0.0	0
Sulphur (S)	118	mg/kg	0.1	10		
Sulphur (SO ₃)			0.3	24	0.1	5

POTENTIALLY TOXIC ELEMENTS

	result	units	Rate		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	1.40	mg/kg	1.40	0.12	15.00
Copper	0.20	mg/kg	0.20	0.02	7.50
Nickel	0.20	mg/kg	0.20	0.02	3.00
Lead	0.50	mg/kg	0.50	0.04	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.29	mg/kg	0.29	0.02	15.00
Mercury	0.05	mg/kg	0.05	0.00	0.10

All results expressed on sample as received. The copper, nickel, lead, cadmium and mercury concentrations are less than the minimum level of detection, consequently, the calculated values will be less than those shown

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AQUA OPERATIONS
FIRST MILK

THIN SLUDGE

THIN SLUDGE ANALYSIS

Sample Reference :

AQUA THIN SLUDGE

Sample Matrix : THIN SLUDGE

Laboratory References

Report Number	79190
Sample Number	162728

Date Received	17-FEB-2025
Date Reported	27-FEB-2025

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Oven Dry Solids	2.41	%
E Coli [Fresh]	20	cfu/g
Conductivity 1:6	649	uS/cm
Total Kjeldahl Nitrogen	0.19	% w/w
Nitrate Nitrogen	<10	mg/kg
Ammonium Nitrogen	53.4	mg/kg
Total Phosphorus (P)	418	mg/kg
Total Potassium (K)	193	mg/kg
Total Magnesium (Mg)	25.8	mg/kg
Total Copper (Cu)	<0.2	mg/kg

Released by *Teresa Clyne*

Date *27/02/25*

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AQUA OPERATIONS
FIRST MILK

THIN SLUDGE

THIN SLUDGE ANALYSIS

Sample Reference :

AQUA THIN SLUDGE

Sample Matrix : THIN SLUDGE

Laboratory References

Report Number	79190
Sample Number	162728

Date Received	17-FEB-2025
Date Reported	27-FEB-2025

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Total Zinc (Zn)	1.40	mg/kg
Total Sulphur (S)	118	mg/kg
Total Calcium (Ca)	293	mg/kg
Total Lead (Pb)	<0.5	mg/kg
Total Cadmium (Cd)	<0.01	mg/kg
Total Mercury (Hg)	<0.05	mg/kg
Total Nickel (Ni)	<0.2	mg/kg
Total Chromium (Cr)	0.29	mg/kg
Total Sodium (Na)	387	mg/kg
pH 1:6 [Fresh]	6.76	

Released by *Teresa Clyne*

Date *27/02/25*

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AQUA OPERATIONS
FIRST MILK

THIN SLUDGE

THIN SLUDGE ANALYSIS

Sample Reference :

AQUA THIN SLUDGE

Sample Matrix : THIN SLUDGE

Laboratory References

Report Number	79190
Sample Number	162728

Date Received	17-FEB-2025
Date Reported	27-FEB-2025

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Organic Matter LOI	1.97	% w/w
Coliforms [fresh]	32000	cfu/g
B.O.D. [fresh]	12200	mg/l
C.O.D. [fresh]	26790	mg/kg
Oils,Fats and Grease	1820	mg/kg
Salmonella spp [fresh]	Negative	in 25g
EC [Neat]	2137	uS/cm

Released by *Teresa Clyne*

Date *27/02/25*

DWR CYMRU WELSH WATER - STRATA FLORIDA WTW

Analysis of liquid water clarification sludge

Sampling Point No: 100519

Sample ID: 8443899

Date: 10/07/2025

Application rate (t/ha)	150.0
Application rate (t/acre)	60.7
pH	6.3
Dry solids (%)	1.94

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	1.69	0.03	%	0.3	49	0.0	5
Ammonium N	316	6.13	mg/kg	0.0	1		
Phosphorus (P)	6000	116.40	mg/kg	0.1	17		
Phosphate (P ₂ O ₅)		0.00		0.3	40	0.1	8
Potassium (K)	893	17.32	mg/kg	0.0	3		
Potash (K ₂ O)		0.00		0.0	3	0.0	1
Magnesium (Mg)	390	7.57	mg/kg	0.0	1		
Magnesium (MgO)		0.00		0.0	2	0.0	0
Sulphur (S)	8000	155.20	mg/kg	0.2	23		
Sulphur (SO ₃)		0.00		0.4	58	0.0	6

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	126	2.44	mg/kg	2.44	0.37	15.00	2%
Copper	80.1	1.55	mg/kg	1.55	0.23	7.50	3%
Nickel	52.4	1.02	mg/kg	1.02	0.15	3.00	5%
Lead	63.7	1.24	mg/kg	1.24	0.19	15.00	1%
Cadmium	1.13	0.02	mg/kg	0.02	0.00	0.15	2%
Chromium	44.2	0.86	mg/kg	0.86	0.13	15.00	1%
Arsenic	39.4	0.76	mg/kg	0.76	0.11	0.70	16%
Mercury	1.03	0.02	mg/kg	0.02	0.00	0.10	3%
Other Elements							
Iron	24500	475.30	mg/kg	475.30	71		
Aluminium	138000	2677.20	mg/kg	2677.20	402		

DWR CYMRU WELSH WATER - STRATA FLORIDA WTW

Analysis of liquid water clarification sludge

Sampling Point No: 100519

Sample ID: 8443899

Date: 10/07/2025

Application rate (t/ha)	250.0
Application rate (t/acre)	101.2
pH	6.3
Dry solids (%)	1.94

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	1.69	0.03	%	0.3	82	0.0	8
Ammonium N	316	6.13	mg/kg	0.0	2		
Phosphorus (P)	6000	116.40	mg/kg	0.1	29		
Phosphate (P ₂ O ₅)		0.00		0.3	67	0.1	13
Potassium (K)	893	17.32	mg/kg	0.0	4		
Potash (K ₂ O)		0.00		0.0	5	0.0	1
Magnesium (Mg)	390	7.57	mg/kg	0.0	2		
Magnesium (MgO)		0.00		0.0	3	0.0	1
Sulphur (S)	8000	155.20	mg/kg	0.2	39		
Sulphur (SO ₃)		0.00		0.4	97	0.0	10

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	126	2.44	mg/kg	2.44	0.61	15.00	4%
Copper	80.1	1.55	mg/kg	1.55	0.39	7.50	5%
Nickel	52.4	1.02	mg/kg	1.02	0.25	3.00	8%
Lead	63.7	1.24	mg/kg	1.24	0.31	15.00	2%
Cadmium	1.13	0.02	mg/kg	0.02	0.01	0.15	4%
Chromium	44.2	0.86	mg/kg	0.86	0.21	15.00	1%
Arsenic	39.4	0.76	mg/kg	0.76	0.19	0.70	27%
Mercury	1.03	0.02	mg/kg	0.02	0.00	0.10	5%
Other Elements							
Iron	24500	475.30	mg/kg	475.30	119		
Aluminium	138000	2677.20	mg/kg	2677.20	669		

Sampling Point No:	100519	Location:	STRATA FLORIDA WTW SLUDGE TANKERING POINT
Date Sampled:	10/07/2025	Time Taken:	10:07
Laboratory:	ALS	Sample ID:	8443899
No. of Results:	20		
Sampling Reason:	WTW Sludge - Product Monitoring (SW_ME)		
Type:	WTW Sludge (SW)		

Sample Results



Code	Result	Units	Qualifier	Lower Limit
238 Magnesium	390	mg/kg	<	
288 Aluminium	138000	mg/kg		
357 Arsenic	39.4	mg/kg		
4620 pH	6.3	pH		
7774 Mercury	1.03	mg/kg	<	
8241 Volatile solids	56.8	%		
9233 Ammoniacal nitrogen	316	mg/kg	<	
9234 Sulphur	8000	mg/kg		
9271 Cadmium	1.13	mg/kg	<	
9272 Chromium	44.2	mg/kg	<	
9273 Copper	80.1	mg/kg	<	
9275 Nickel	52.4	mg/kg	<	
9276 Lead	63.7	mg/kg	<	
9277 Zinc	126	mg/kg	<	
9278 Iron	24500	mg/kg		
9281 % Dry solids	1.94	%		
9282 % Minerals	43.2	%		
9283 % K (dry weight)	0.0893	mg/kg	<	
9284 % P (dry weight)	0.600	%	<	
9285 % N (dry weight)	1.69	%		

Comments:

Signed:

Approved by:

Position:

Upper Limit

DWR CYMRU WELSH WATER - BONTGOCH WTW

Analysis of liquid water clarification sludge

Sampling Point No: 100521

Sample ID: 8443895

Date: 10/07/2025

Application rate (t/ha)	53.0
Application rate (t/acre)	21.4
pH	7.8
Dry solids (%)	4.14

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	1.21	0.05	%	0.5	27	0.1	3
Ammonium N	973	40.28	mg/kg	0.0	2		
Phosphorus (P)	8000	331.20	mg/kg	0.3	18		
Phosphate (P ₂ O ₅)		0.00		0.8	40	0.2	8
Potassium (K)	418	17.31	mg/kg	0.0	1		
Potash (K ₂ O)		0.00		0.0	1	0.0	0
Magnesium (Mg)	973	40.28	mg/kg	0.0	2		
Magnesium (MgO)		0.00		0.1	4	0.0	1
Sulphur (S)	3370	139.52	mg/kg	0.1	7		
Sulphur (SO ₃)		0.00		0.3	18	0.0	2

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	547	22.65	mg/kg	22.65	1.20	15.00	8%
Copper	37.4	1.55	mg/kg	1.55	0.08	7.50	1%
Nickel	26.3	1.09	mg/kg	1.09	0.06	3.00	2%
Lead	102	4.22	mg/kg	4.22	0.22	15.00	1%
Cadmium	1.06	0.04	mg/kg	0.04	0.00	0.15	2%
Chromium	20.6	0.85	mg/kg	0.85	0.05	15.00	0%
Arsenic	60.8	2.52	mg/kg	2.52	0.13	0.70	19%
Mercury	0.48	0.02	mg/kg	0.02	0.00	0.10	1%
Other Elements							
Iron	394000	16311.60	mg/kg	16311.60	865		
Aluminium	7990	330.79	mg/kg	330.79	18		

DWR CYMRU WELSH WATER - BONTGOCH WTW

Analysis of liquid water clarification sludge

Sampling Point No: 100521

Sample ID: 8443895

Date: 10/07/2025

Application rate (t/ha)	105.0
Application rate (t/acre)	42.5
pH	7.8
Dry solids (%)	4.14

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	1.21	0.05	%	0.5	53	0.1	5
Ammonium N	973	40.28	mg/kg	0.0	4		
Phosphorus (P)	8000	331.20	mg/kg	0.3	35		
Phosphate (P ₂ O ₅)		0.00		0.8	80	0.2	16
Potassium (K)	418	17.31	mg/kg	0.0	2		
Potash (K ₂ O)		0.00		0.0	2	0.0	0
Magnesium (Mg)	973	40.28	mg/kg	0.0	4		
Magnesium (MgO)		0.00		0.1	7	0.0	1
Sulphur (S)	3370	139.52	mg/kg	0.1	15		
Sulphur (SO ₃)		0.00		0.3	37	0.0	4

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	547	22.65	mg/kg	22.65	2.38	15.00	16%
Copper	37.4	1.55	mg/kg	1.55	0.16	7.50	2%
Nickel	26.3	1.09	mg/kg	1.09	0.11	3.00	4%
Lead	102	4.22	mg/kg	4.22	0.44	15.00	3%
Cadmium	1.06	0.04	mg/kg	0.04	0.00	0.15	3%
Chromium	20.6	0.85	mg/kg	0.85	0.09	15.00	1%
Arsenic	60.8	2.52	mg/kg	2.52	0.26	0.70	38%
Mercury	0.48	0.02	mg/kg	0.02	0.00	0.10	2%
<u>Other Elements</u>							
Iron	394000	16311.60	mg/kg	16311.60	1713		
Aluminium	7990	330.79	mg/kg	330.79	35		

Sampling Point No:	100521	Location:	BONTGOCH WTW SLUDGE TANKERING POINT
Date Sampled:	10/07/2025	Time Taken:	10:05
Laboratory:	ALS	Sample ID:	8443895
No. of Results:	20		
Sampling Reason:	WTW Sludge - Product Monitoring (SW_ME)		
Type:	WTW Sludge (SW)		

Sample Results



Code	Result	Units	Qualifier	Lower Limit
238 Magnesium	973	mg/kg		
288 Aluminium	7990	mg/kg		
357 Arsenic	60.8	mg/kg		
4620 pH	7.8	pH		
7774 Mercury	0.48	mg/kg	<	
8241 Volatile solids	31.8	%		
9233 Ammoniacal nitrogen	973	mg/kg		
9234 Sulphur	3370	mg/kg		
9271 Cadmium	1.06	mg/kg		
9272 Chromium	20.6	mg/kg	<	
9273 Copper	37.4	mg/kg	<	
9275 Nickel	26.3	mg/kg		
9276 Lead	102	mg/kg		
9277 Zinc	547	mg/kg		
9278 Iron	394000	mg/kg		
9281 % Dry solids	4.14	%		
9282 % Minerals	68.2	%		
9283 % K (dry weight)	0.0418	mg/kg	<	
9284 % P (dry weight)	0.800	%		
9285 % N (dry weight)	1.21	%		

Comments:

Signed:

Approved by:

Position:

Upper Limit

DWR CYMRU WELSH WATER - LLECHRYD WTW

Analysis of liquid water clarification sludge

Sampling Point No: 100504

Sample ID: 8511042

Date: 04/09/2025

Application rate (t/ha)	104.0
Application rate (t/acre)	42.1
pH	6.9
Dry solids (%)	3.06

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.976	0.03	%	0.3	31	0.0	3
Ammonium N	200	6.12	mg/kg	0.0	1		
Phosphorus (P)	5550	169.83	mg/kg	0.2	18		
Phosphate (P ₂ O ₅)		0.00		0.4	40	0.1	8
Potassium (K)	572	17.50	mg/kg	0.0	2		
Potash (K ₂ O)		0.00		0.0	2	0.0	0
Magnesium (Mg)	841	25.73	mg/kg	0.0	3		
Magnesium (MgO)		0.00		0.0	4	0.0	1
Sulphur (S)	3160	96.70	mg/kg	0.1	10		
Sulphur (SO ₃)		0.00		0.2	25	0.0	3

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	133	4.07	mg/kg	4.07	0.42	15.00	3%
Copper	51.3	1.57	mg/kg	1.57	0.16	7.50	2%
Nickel	33.5	1.03	mg/kg	1.03	0.11	3.00	4%
Lead	40.8	1.25	mg/kg	1.25	0.13	15.00	1%
Cadmium	0.72	0.02	mg/kg	0.02	0.00	0.15	2%
Chromium	28.3	0.87	mg/kg	0.87	0.09	15.00	1%
Arsenic	28.2	0.86	mg/kg	0.86	0.09	0.70	13%
Mercury	0.66	0.02	mg/kg	0.02	0.00	0.10	2%
Other Elements							
Iron	314000	9608.40	mg/kg	9608.40	999		
Aluminium	3080	94.25	mg/kg	94.25	10		

DWR CYMRU WELSH WATER - LLECHRYD WTW

Analysis of liquid water clarification sludge

Sampling Point No: 100504

Sample ID: 8511042

Date: 04/09/2025

Application rate (t/ha)	200.0
Application rate (t/acre)	80.9
pH	6.9
Dry solids (%)	3.06

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.976	0.03	%	0.3	60	0.0	6
Ammonium N	200	6.12	mg/kg	0.0	1		
Phosphorus (P)	5550	169.83	mg/kg	0.2	34		
Phosphate (P ₂ O ₅)		0.00		0.4	78	0.1	16
Potassium (K)	572	17.50	mg/kg	0.0	4		
Potash (K ₂ O)		0.00		0.0	4	0.0	1
Magnesium (Mg)	841	25.73	mg/kg	0.0	5		
Magnesium (MgO)		0.00		0.0	9	0.0	2
Sulphur (S)	3160	96.70	mg/kg	0.1	19		
Sulphur (SO ₃)		0.00		0.2	48	0.0	5

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	133	4.07	mg/kg	4.07	0.81	15.00	5%
Copper	51.3	1.57	mg/kg	1.57	0.31	7.50	4%
Nickel	33.5	1.03	mg/kg	1.03	0.21	3.00	7%
Lead	40.8	1.25	mg/kg	1.25	0.25	15.00	2%
Cadmium	0.72	0.02	mg/kg	0.02	0.00	0.15	3%
Chromium	28.3	0.87	mg/kg	0.87	0.17	15.00	1%
Arsenic	28.2	0.86	mg/kg	0.86	0.17	0.70	25%
Mercury	0.66	0.02	mg/kg	0.02	0.00	0.10	4%
<u>Other Elements</u>							
Iron	314000	9608.40	mg/kg	9608.40	1922		
Aluminium	3080	94.25	mg/kg	94.25	19		

Sampling Point No:	100504	Location:	LLECHRYD WTW SLUDGE TANKERING POINT
Date Sampled:	04/09/2025	Time Taken:	09:26
Laboratory:	ALS	Sample ID:	8511042
No. of Results:	20		
Sampling Reason:	WTW Sludge - Product Monitoring (SW_ME)		
Type:	WTW Sludge (SW)		

Sample Results



Code	Result	Units	Qualifier	Lower Limit
238 Magnesium	841	mg/kg		
288 Aluminium	3080	mg/kg		
357 Arsenic	28.2	mg/kg		
4620 pH	6.9	pH		
7774 Mercury	0.66	mg/kg	<	
8241 Volatile solids	42.6	%		
9233 Ammoniacal nitrogen	200	mg/kg	<	
9234 Sulphur	3160	mg/kg		
9271 Cadmium	0.72	mg/kg	<	
9272 Chromium	28.3	mg/kg	<	
9273 Copper	51.3	mg/kg	<	
9275 Nickel	33.5	mg/kg	<	
9276 Lead	40.8	mg/kg	<	
9277 Zinc	133	mg/kg		
9278 Iron	314000	mg/kg		
9281 % Dry solids	3.06	%		
9282 % Minerals	57.4	%		
9283 % K (dry weight)	0.0572	mg/kg	<	
9284 % P (dry weight)	0.555	%		
9285 % N (dry weight)	0.976	%		

Comments:

Signed:

Approved by:

Position:

Upper Limit

DWR CYMRU WELSH WATER - PRESELI WTW

Analysis of liquid water clarification sludge

Sampling Point No: 100506

Sample ID: 8443873

Date: 10/07/2025

Application rate (t/ha)	150.0
Application rate (t/acre)	60.7
pH	6.6
Dry solids (%)	2.50

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	1.11	0.03	%	0.3	42	0.0	4
Ammonium N	245	6.13	mg/kg	0.0	1		
Phosphorus (P)	4700	117.50	mg/kg	0.1	18		
Phosphate (P ₂ O ₅)		0.00		0.3	40	0.1	8
Potassium (K)	767	19.18	mg/kg	0.0	3		
Potash (K ₂ O)		0.00		0.0	3	0.0	1
Magnesium (Mg)	1040	26.00	mg/kg	0.0	4		
Magnesium (MgO)		0.00		0.0	6	0.0	1
Sulphur (S)	6590	164.75	mg/kg	0.2	25		
Sulphur (SO ₃)		0.00		0.4	62	0.0	6

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	119	2.98	mg/kg	2.98	0.45	15.00	3%
Copper	63.4	1.59	mg/kg	1.59	0.24	7.50	3%
Nickel	41	1.03	mg/kg	1.03	0.15	3.00	5%
Lead	49.9	1.25	mg/kg	1.25	0.19	15.00	1%
Cadmium	0.88	0.02	mg/kg	0.02	0.00	0.15	2%
Chromium	34.6	0.87	mg/kg	0.87	0.13	15.00	1%
Arsenic	34.5	0.86	mg/kg	0.86	0.13	0.70	18%
Mercury	0.8	0.02	mg/kg	0.02	0.00	0.10	3%
<u>Other Elements</u>							
Iron	15400	385.00	mg/kg	385.00	58		
Aluminium	158000	3950.00	mg/kg	3950.00	593		

DWR CYMRU WELSH WATER - PRESELI WTW

Analysis of liquid water clarification sludge

Sampling Point No: 100506

Sample ID: 8443873

Date: 10/07/2025

Application rate (t/ha)	250.0
Application rate (t/acre)	101.2
pH	6.6
Dry solids (%)	2.50

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	1.11	0.03	%	0.3	69	0.0	7
Ammonium N	245	6.13	mg/kg	0.0	2		
Phosphorus (P)	4700	117.50	mg/kg	0.1	29		
Phosphate (P ₂ O ₅)		0.00		0.3	67	0.1	13
Potassium (K)	767	19.18	mg/kg	0.0	5		
Potash (K ₂ O)		0.00		0.0	6	0.0	1
Magnesium (Mg)	1040	26.00	mg/kg	0.0	7		
Magnesium (MgO)		0.00		0.0	11	0.0	2
Sulphur (S)	6590	164.75	mg/kg	0.2	41		
Sulphur (SO ₃)		0.00		0.4	103	0.0	10

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	119	2.98	mg/kg	2.98	0.74	15.00	5%
Copper	63.4	1.59	mg/kg	1.59	0.40	7.50	5%
Nickel	41	1.03	mg/kg	1.03	0.26	3.00	9%
Lead	49.9	1.25	mg/kg	1.25	0.31	15.00	2%
Cadmium	0.88	0.02	mg/kg	0.02	0.01	0.15	4%
Chromium	34.6	0.87	mg/kg	0.87	0.22	15.00	1%
Arsenic	34.5	0.86	mg/kg	0.86	0.22	0.70	31%
Mercury	0.8	0.02	mg/kg	0.02	0.01	0.10	5%
<u>Other Elements</u>							
Iron	15400	385.00	mg/kg	385.00	96		
Aluminium	158000	3950.00	mg/kg	3950.00	988		

Sampling Point No:	100506	Location:	PRESELI WTW SLUDGE Tankering Point (New Works)
Date Sampled:	10/07/2025	Time Taken:	09:57
Laboratory:	ALS	Sample ID:	8443873
No. of Results:	20		
Sampling Reason:	WTW Sludge - Product Monitoring (SW_ME)		
Type:	WTW Sludge (SW)		

Sample Results



Code	Result	Units	Qualifier	Lower Limit
238 Magnesium	1040	mg/kg		
288 Aluminium	158000	mg/kg		
357 Arsenic	34.5	mg/kg		
4620 pH	6.6	pH		
7774 Mercury	0.80	mg/kg	<	
8241 Volatile solids	47.6	%		
9233 Ammoniacal nitrogen	245	mg/kg	<	
9234 Sulphur	6590	mg/kg		
9271 Cadmium	0.88	mg/kg	<	
9272 Chromium	34.6	mg/kg	<	
9273 Copper	63.4	mg/kg		
9275 Nickel	41.0	mg/kg	<	
9276 Lead	49.9	mg/kg	<	
9277 Zinc	119	mg/kg		
9278 Iron	15400	mg/kg		
9281 % Dry solids	2.50	%		
9282 % Minerals	52.4	%		
9283 % K (dry weight)	0.0767	mg/kg		
9284 % P (dry weight)	0.470	%	<	
9285 % N (dry weight)	1.11	%		

Comments:

Signed:

Approved by:

Position:

Upper Limit

DWR CYMRU WELSH WATER - BOLTON HILL WTW

Analysis of liquid water clarification sludge

Sampling Point No: 120038

Sample ID: 8443907

Date: 10/07/2025

Application rate (t/ha)	150.0
Application rate (t/acre)	60.7
pH	6.6
Dry solids (%)	3.34

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	1.21	0.04	%	0.4	61	0.0	6
Ammonium N	183	6.11	mg/kg	0.0	1		
Phosphorus (P)	3470	115.90	mg/kg	0.1	17		
Phosphate (P ₂ O ₅)		0.00		0.3	40	0.1	8
Potassium (K)	865	28.89	mg/kg	0.0	4		
Potash (K ₂ O)		0.00		0.0	5	0.0	1
Magnesium (Mg)	1490	49.77	mg/kg	0.0	7		
Magnesium (MgO)		0.00		0.1	12	0.0	2
Sulphur (S)	6120	204.41	mg/kg	0.2	31		
Sulphur (SO ₃)		0.00		0.5	77	0.1	8

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	108	3.61	mg/kg	3.61	0.54	15.00	4%
Copper	60.8	2.03	mg/kg	2.03	0.30	7.50	4%
Nickel	30.3	1.01	mg/kg	1.01	0.15	3.00	5%
Lead	36.8	1.23	mg/kg	1.23	0.18	15.00	1%
Cadmium	0.65	0.02	mg/kg	0.02	0.00	0.15	2%
Chromium	25.5	0.85	mg/kg	0.85	0.13	15.00	1%
Arsenic	16.4	0.55	mg/kg	0.55	0.08	0.70	12%
Mercury	0.59	0.02	mg/kg	0.02	0.00	0.10	3%
Other Elements							
Iron	24000	801.60	mg/kg	801.60	120		
Aluminium	140000	4676.00	mg/kg	4676.00	701		

DWR CYMRU WELSH WATER - BOLTON HILL WTW

Analysis of liquid water clarification sludge

Sampling Point No: 120038

Sample ID: 8443907

Date: 10/07/2025

Application rate (t/ha)	200.0
Application rate (t/acre)	80.9
pH	6.6
Dry solids (%)	3.34

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	1.21	0.04	%	0.4	81	0.0	8
Ammonium N	183	6.11	mg/kg	0.0	1		
Phosphorus (P)	3470	115.90	mg/kg	0.1	23		
Phosphate (P ₂ O ₅)		0.00		0.3	53	0.1	11
Potassium (K)	865	28.89	mg/kg	0.0	6		
Potash (K ₂ O)		0.00		0.0	7	0.0	1
Magnesium (Mg)	1490	49.77	mg/kg	0.0	10		
Magnesium (MgO)		0.00		0.1	17	0.0	3
Sulphur (S)	6120	204.41	mg/kg	0.2	41		
Sulphur (SO ₃)		0.00		0.5	102	0.1	10

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	108	3.61	mg/kg	3.61	0.72	15.00	5%
Copper	60.8	2.03	mg/kg	2.03	0.41	7.50	5%
Nickel	30.3	1.01	mg/kg	1.01	0.20	3.00	7%
Lead	36.8	1.23	mg/kg	1.23	0.25	15.00	2%
Cadmium	0.65	0.02	mg/kg	0.02	0.00	0.15	3%
Chromium	25.5	0.85	mg/kg	0.85	0.17	15.00	1%
Arsenic	16.4	0.55	mg/kg	0.55	0.11	0.70	16%
Mercury	0.59	0.02	mg/kg	0.02	0.00	0.10	4%
Other Elements							
Iron	24000	801.60	mg/kg	801.60	160		
Aluminium	140000	4676.00	mg/kg	4676.00	935		

Sampling Point No:	120038	Location:	BOLTON HILL Sludge Tankering Point
Date Sampled:	10/07/2025	Time Taken:	10:10
Laboratory:	ALS	Sample ID:	8443907
No. of Results:	20		
Sampling Reason:	WTW Sludge - Product Monitoring (SW_ME)		
Type:	WTW Sludge (SW)		

Sample Results



Code	Result	Units	Qualifier	Lower Limit
238 Magnesium	1490	mg/kg		
288 Aluminium	140000	mg/kg		
357 Arsenic	16.4	mg/kg		
4620 pH	6.6	pH		
7774 Mercury	0.59	mg/kg	<	
8241 Volatile solids	40.7	%		
9233 Ammoniacal nitrogen	183	mg/kg	<	
9234 Sulphur	6120	mg/kg		
9271 Cadmium	0.65	mg/kg	<	
9272 Chromium	25.5	mg/kg	<	
9273 Copper	60.8	mg/kg		
9275 Nickel	30.3	mg/kg	<	
9276 Lead	36.8	mg/kg	<	
9277 Zinc	108	mg/kg		
9278 Iron	24000	mg/kg		
9281 % Dry solids	3.34	%		
9282 % Minerals	59.3	%		
9283 % K (dry weight)	0.0865	mg/kg		
9284 % P (dry weight)	0.347	%	<	
9285 % N (dry weight)	1.21	%		

Comments:

Signed:

Approved by:

Position:

Upper Limit

DWR CYMRU WELSH WATER - BRYNGWYN WTW

Analysis of liquid water clarification sludge

Sampling Point No: 79131

Sample ID: 8268999

Date: 05/02/2025

Application rate (t/ha)	200.0
Application rate (t/acre)	80.9
pH	6.5
Dry solids (%)	2.92

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.564	0.02	%	0.2	33	0.0	3
Ammonium N	209	6.10	mg/kg	0.0	1		
Phosphorus (P)	1260	36.79	mg/kg	0.0	7		
Phosphate (P ₂ O ₅)		0.00		0.1	17	0.0	3
Potassium (K)	509	14.86	mg/kg	0.0	3		
Potash (K ₂ O)		0.00		0.0	4	0.0	1
Magnesium (Mg)	1460	42.63	mg/kg	0.0	9		
Magnesium (MgO)		0.00		0.1	14	0.0	3
Sulphur (S)	3010	87.89	mg/kg	0.1	18		
Sulphur (SO ₃)		0.00		0.2	44	0.0	4

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	200	5.84	mg/kg	5.84	1.17	15.00	8%
Copper	12.6	0.37	mg/kg	0.37	0.07	7.50	1%
Nickel	17.7	0.52	mg/kg	0.52	0.10	3.00	3%
Lead	38	1.11	mg/kg	1.11	0.22	15.00	1%
Cadmium	0.32	0.01	mg/kg	0.01	0.00	0.15	1%
Chromium	12.5	0.37	mg/kg	0.37	0.07	15.00	0%
Arsenic	19.4	0.57	mg/kg	0.57	0.11	0.70	16%
Mercury	1.38	0.04	mg/kg	0.04	0.01	0.10	8%
Other Elements							
Iron	367000	10716.40	mg/kg	10716.40	2143		
Aluminium	6150	179.58	mg/kg	179.58	36		

Sampling Point No:	79131	Location:	BRYNGWYN WTW SLUDGE TANKERING POINT
Date Sampled:	05/02/2025	Time Taken:	10:12
Laboratory:	ALS	Sample ID:	8268999
No. of Results:	20		
Sampling Reason:	WTW Sludge - Product Monitoring (SW_ME)		
Type:	WTW Sludge (SW)		

Sample Results



Code	Result	Units	Qualifier	Lower Limit
238 Magnesium	1460	mg/kg		
288 Aluminium	6150	mg/kg		
357 Arsenic	19.4	mg/kg		
4620 pH	6.5	pH		
7774 Mercury	1.38	mg/kg	<	
8241 Volatile solids	26.8	%		
9233 Ammoniacal nitrogen	209	mg/kg	<	
9234 Sulphur	3010	mg/kg		
9271 Cadmium	0.32	mg/kg	<	
9272 Chromium	12.5	mg/kg		
9273 Copper	12.6	mg/kg		
9275 Nickel	17.7	mg/kg		
9276 Lead	38	mg/kg		
9277 Zinc	200	mg/kg		
9278 Iron	367000	mg/kg		
9281 % Dry solids	2.92	%		
9282 % Minerals	73.2	%		
9283 % K (dry weight)	0.0509	mg/kg		
9284 % P (dry weight)	0.126	%		
9285 % N (dry weight)	0.564	%		

Comments:

Signed:

Approved by:

Position:

Upper Limit

DWR CYMRU WELSH WATER - CAPEL DEWI WTW

Analysis of liquid water clarification sludge

Sampling Point No: 122055

Sample ID: 8443877

Date: 10/07/2025

Application rate (t/ha)	150.0
Application rate (t/acre)	60.7
pH	6.2
Dry solids (%)	4.66

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.553	0.03	%	0.3	39	0.0	4
Ammonium N	131	6.10	mg/kg	0.0	1		
Phosphorus (P)	2500	116.50	mg/kg	0.1	17		
Phosphate (P ₂ O ₅)		0.00		0.3	40	0.1	8
Potassium (K)	397	18.50	mg/kg	0.0	3		
Potash (K ₂ O)		0.00		0.0	3	0.0	1
Magnesium (Mg)	1160	54.06	mg/kg	0.1	8		
Magnesium (MgO)		0.00		0.1	13	0.0	3
Sulphur (S)	2330	108.58	mg/kg	0.1	16		
Sulphur (SO ₃)		0.00		0.3	41	0.0	4

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	196	9.13	mg/kg	9.13	1.37	15.00	9%
Copper	39.7	1.85	mg/kg	1.85	0.28	7.50	4%
Nickel	21.8	1.02	mg/kg	1.02	0.15	3.00	5%
Lead	55	2.56	mg/kg	2.56	0.38	15.00	3%
Cadmium	0.47	0.02	mg/kg	0.02	0.00	0.15	2%
Chromium	38.3	1.78	mg/kg	1.78	0.27	15.00	2%
Arsenic	23.8	1.11	mg/kg	1.11	0.17	0.70	24%
Mercury	0.43	0.02	mg/kg	0.02	0.00	0.10	3%
Other Elements							
Iron	450000	20970.00	mg/kg	20970.00	3146		
Aluminium	4740	220.88	mg/kg	220.88	33		

DWR CYMRU WELSH WATER - CAPEL DEWI WTW

Analysis of liquid water clarification sludge

Sampling Point No: 122055

Sample ID: 8443877

Date: 10/07/2025

Application rate (t/ha)	190.0
Application rate (t/acre)	76.9
pH	6.2
Dry solids (%)	4.66

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.553	0.03	%	0.3	49	0.0	5
Ammonium N	131	6.10	mg/kg	0.0	1		
Phosphorus (P)	2500	116.50	mg/kg	0.1	22		
Phosphate (P ₂ O ₅)		0.00		0.3	51	0.1	10
Potassium (K)	397	18.50	mg/kg	0.0	4		
Potash (K ₂ O)		0.00		0.0	4	0.0	1
Magnesium (Mg)	1160	54.06	mg/kg	0.1	10		
Magnesium (MgO)		0.00		0.1	17	0.0	3
Sulphur (S)	2330	108.58	mg/kg	0.1	21		
Sulphur (SO ₃)		0.00		0.3	52	0.0	5

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	196	9.13	mg/kg	9.13	1.74	15.00	12%
Copper	39.7	1.85	mg/kg	1.85	0.35	7.50	5%
Nickel	21.8	1.02	mg/kg	1.02	0.19	3.00	6%
Lead	55	2.56	mg/kg	2.56	0.49	15.00	3%
Cadmium	0.47	0.02	mg/kg	0.02	0.00	0.15	3%
Chromium	38.3	1.78	mg/kg	1.78	0.34	15.00	2%
Arsenic	23.8	1.11	mg/kg	1.11	0.21	0.70	30%
Mercury	0.43	0.02	mg/kg	0.02	0.00	0.10	4%
Other Elements							
Iron	450000	20970.00	mg/kg	20970.00	3984		
Aluminium	4740	220.88	mg/kg	220.88	42		

Sampling Point No:	122055	Location:	Capel Dewi WTW Sludge Tankering Point
Date Sampled:	10/07/2025	Time Taken:	09:59
Laboratory:	ALS	Sample ID:	8443877
No. of Results:	20		
Sampling Reason:	WTW Sludge - Product Monitoring (SW_ME)		
Type:	WTW Sludge (SW)		

Sample Results



Code	Result	Units	Qualifier	Lower Limit
238 Magnesium	1160	mg/kg		
288 Aluminium	4740	mg/kg		
357 Arsenic	23.8	mg/kg		
4620 pH	6.2	pH		
7774 Mercury	0.43	mg/kg	<	
8241 Volatile solids	24.6	%		
9233 Ammoniacal nitrogen	131	mg/kg	<	
9234 Sulphur	2330	mg/kg		
9271 Cadmium	0.47	mg/kg	<	
9272 Chromium	38.3	mg/kg		
9273 Copper	39.7	mg/kg		
9275 Nickel	21.8	mg/kg	<	
9276 Lead	55.0	mg/kg		
9277 Zinc	196	mg/kg		
9278 Iron	450000	mg/kg		
9281 % Dry solids	4.66	%		
9282 % Minerals	75.4	%		
9283 % K (dry weight)	0.0397	mg/kg		
9284 % P (dry weight)	0.250	%	<	
9285 % N (dry weight)	0.553	%		

Comments:

Signed:

Approved by:

Position:

Upper Limit

DWR CYMRU WELSH WATER - CRAY WTW

Analysis of liquid water clarification sludge

Sampling Point No: 79114

Sample ID: 8269009

Date: 05/02/2025

Application rate (t/ha)	250.0
Application rate (t/acre)	101.2
pH	6.1
Dry solids (%)	2.27

NUTRIENT CONTENT

	Dry Wt result	Wet Wt result	Units	Total		Available	
				(kg/t)	(kg/ha)	(kg/t)	(kg/ha)
Nitrogen (N)	0.68	0.02	%	0.2	39	0.0	4
Ammonium N	269	6.11	mg/kg	0.0	2		
Phosphorus (P)	523	11.87	mg/kg	0.0	3		
Phosphate (P ₂ O ₅)		0.00		0.0	7	0.0	1
Potassium (K)	126	2.86	mg/kg	0.0	1		
Potash (K ₂ O)		0.00		0.0	1	0.0	0
Magnesium (Mg)	399	9.06	mg/kg	0.0	2		
Magnesium (MgO)		0.00		0.0	4	0.0	1
Sulphur (S)	9690	219.96	mg/kg	0.2	55		
Sulphur (SO ₃)		0.00		0.5	137	0.1	14

POTENTIALLY TOXIC ELEMENTS

	Dry Wt result	Wet Wt result	Units	Rate		Limit	% of Annual Addition Limit
				(g/tonne)	(kg/ha)	(kg/ha/yr)	
Zinc	160	3.63	mg/kg	3.63	0.91	15.00	6%
Copper	14.7	0.33	mg/kg	0.33	0.08	7.50	1%
Nickel	17.2	0.39	mg/kg	0.39	0.10	3.00	3%
Lead	23.5	0.53	mg/kg	0.53	0.13	15.00	1%
Cadmium	0.41	0.01	mg/kg	0.01	0.00	0.15	2%
Chromium	10.9	0.25	mg/kg	0.25	0.06	15.00	0%
Arsenic	51.8	1.18	mg/kg	1.18	0.29	0.70	42%
Mercury	1.76	0.04	mg/kg	0.04	0.01	0.10	10%
Other Elements							
Iron	427000	9692.90	mg/kg	9692.90	2423		
Aluminium	2500	56.75	mg/kg	56.75	14		

Sampling Point No:	79114	Location:	CRAY WTW SLUDGE TANKERING POINT
Date Sampled:	05/02/2025	Time Taken:	10:18
Laboratory:	ALS	Sample ID:	8269009
No. of Results:	20		
Sampling Reason:	WTW Sludge - Product Monitoring (SW_ME)		
Type:	WTW Sludge (SW)		

Sample Results



Code	Result	Units	Qualifier	Lower Limit
238 Magnesium	399	mg/kg		
288 Aluminium	2500	mg/kg		
357 Arsenic	51.8	mg/kg		
4620 pH	6.1	pH		
7774 Mercury	1.76	mg/kg	<	
8241 Volatile solids	33.6	%		
9233 Ammoniacal nitrogen	269	mg/kg	<	
9234 Sulphur	9690	mg/kg		
9271 Cadmium	0.41	mg/kg	<	
9272 Chromium	10.9	mg/kg		
9273 Copper	14.7	mg/kg		
9275 Nickel	17.2	mg/kg		
9276 Lead	23.5	mg/kg		
9277 Zinc	160	mg/kg		
9278 Iron	427000	mg/kg		
9281 % Dry solids	2.27	%		
9282 % Minerals	66.4	%		
9283 % K (dry weight)	0.0126	mg/kg		
9284 % P (dry weight)	0.0523	%		
9285 % N (dry weight)	0.68	%	<	

Comments:

Signed:

Approved by:

Position:

Upper Limit
