

Form Number : A1 Reporting of Emissions to Air for the period from ...1st October 2016.....to....31st December 2016.....

Emissions to Air							Uncertainty [5]
Emission Point	Substance / Parameter	Emission Limit Value	Result [1]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	
A1	Lead and its compounds	0.5 mg/m ³	0.11mg/m ³	BS:EN:14385:2004	18/10/16 10:25 - 11:05	UKAS & mCerts 2	± 0.02mg/m ³
A2	Lead and its compounds	0.5 mg/m ³	0.06mg/m ³	BS:EN:14385:2004	18/10/16 11:30 - 12:10	UKAS & mCerts 2	± 0.01mg/m ³
A3	Lead and its compounds	0.5 mg/m ³	Not Operating				
A4	Lead and its compounds	0.5 mg/m ³	0.14mg/m ³	BS:EN:14385:2004	20/10/16 11:23 - 12:05	UKAS & mCerts 2	± 0.03mg/m ³
A5	Lead and its compounds	0.5 mg/m ³	Not Operating				
A6	Lead and its compounds	1.0 mg/m ³	0.36mg/m ³	BS:EN:14385:2004	17/10/16 13:55 - 14:43	UKAS & mCerts 2	± 0.07mg/m ³
A7	Lead and its compounds	2.0 mg/m ³	0.16mg/m ³	BS:EN:14385:2004	17/10/16 10:18 - 11:06	UKAS & mCerts 2	± 0.03mg/m ³
A9	Lead and its compounds	0.5 mg/m ³	0.12mg/m ³	BS:EN:14385:2004	19/10/16 11:35 - 12:11	UKAS & mCerts 2	± 0.02mg/m ³
A11	Lead and its compounds	0.5 mg/m ³	0.05mg/m ³	BS:EN:14385:2004	19/10/16 14:27 - 15:15	UKAS & mCerts 2	± 0.01mg/m ³
A12	Lead and its compounds	0.5 mg/m ³	0.07mg/m ³	BS:EN:14385:2004	21/10/16 10:15 - 10:57	UKAS & mCerts 2	± 0.01mg/m ³
A13	Lead and its compounds	2.0 mg/m ³	Not Operating				
A14	Lead and its compounds	2.0 mg/m ³	Not Operating				
A15	Lead and its compounds	0.5 mg/m ³	Not Operating				
A16	Lead and its compounds	0.5 mg/m ³	Not Operating				

A17	Lead and its compounds	0.5 mg/m ³	<i>Not Operating</i>				
A18	Lead and its compounds	1.0 mg/m ³	0.02mg/m ³	BS:EN:14385:2004	17/10/16 11:30 - 12:06	UKAS & mCerts 2	< 0.01mg/m ³
A19	Lead and its compounds	0.5 mg/m ³	0.04mg/m ³	BS:EN:14385:2004	20/10/16 14:16 - 15:04	UKAS & mCerts 2	± 0.01mg/m ³
A20	Lead and its compounds	0.5 mg/m ³	0.03mg/m ³	BS:EN:14385:2004	18/10/16 14:05 - 14:45	UKAS & mCerts 2	± 0.01mg/m ³
A22	Lead and its compounds	2.0 mg/m ³	<i>Not Operating</i>				
A23	Lead and its compounds	0.5 mg/m ³	0.06mg/m ³	BS:EN:14385:2004	19/10/16 10:17 - 10:53	UKAS & mCerts 2	± 0.01mg/m ³
A24	Lead and its compounds	0.5 mg/m ³	0.02mg/m ³	BS:EN:14385:2004	21/10/16 11:40 - 12:16	UKAS & mCerts 2	< 0.01mg/m ³
A25	Lead and its compounds	0.5 mg/m ³	<i>Not Operating</i>				
A26	Lead and its compounds	0.5 mg/m ³	0.07mg/m ³	BS:EN:14385:2004	20/10/16 10:09 - 10:57	UKAS & mCerts 2	± 0.01mg/m ³

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, corrected to reference conditions. Where the emission is expressed as a range, the result is given as the 'minimum - maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated. The following uncertainties are quoted on a different basis (basis as stated)

Signed Date..... 21/10/17

(authorised to sign as representative of the Operator)

Form Number : S1 Reporting of Emissions to Sewer for the period from1st October 2016....to....31st December 2016.....

Emissions to Sewer

Emission Point	Substance / Parameter	Emission Limit Value	Result ⁽¹⁾	Average Result ⁽⁶⁾	Test Method ⁽²⁾	Sample Date and Times ⁽³⁾	Accreditation/ Certification ⁽⁴⁾	Uncertainty ⁽⁵⁾
S1	Lead and its compounds	10.0 mg/l	4.63 mg/l	n/a	EV OI 077	15/12/16 at 08:30 hrs	EV OI 077	
S1	pH	Min 6 max 11	6.7 Min **11.5 Max	8.58	EV OI 075	11/11/16 at 08:30 hrs 12/12/16 at 09:00 hrs	EV OI 075	
S1	Flow	None	N/A	n/a	N/A	N/A	N/A	N/A
S1	Copper and its compounds	None	N/A *	n/a	N/A	N/A	N/A	N/A
S1	Zinc and its compounds	None	N/A *	n/a	N/A	N/A	N/A	N/A
S1	Chromium and its compounds	None	N/A *	n/a	N/A	N/A	N/A	N/A
S1	Nickel and its compounds	None	N/A *	n/a	N/A	N/A	N/A	N/A
S1	Chemical Demand	None	N/A *	n/a	N/A	N/A	N/A	N/A
S1	Sulphate	None	N/A *	n/a	N/A	N/A	N/A	N/A
S1	Total suspended solids	None	N/A *	n/a	N/A	N/A	N/A	N/A
S2	Lead and its compounds	5.0 mg/l	1.3 mg/l	n/a	EV OI 077	12/12/16 at 08:30 hrs	EV OI 077	
S2	pH	Min 6 max 11	8.9 Min **11.8 Max	10.03	EV OI 075	12/12/16 at 09:12 hrs 18/10/16 at 09:22 hrs	EV OI 075	
S2	Flow	None	N/A	n/a	N/A	N/A	N/A	N/A
S2	Copper and its compounds	None	N/A *	n/a	N/A	N/A	N/A	N/A
S2	Zinc and its compounds	None	N/A *	n/a	N/A	N/A	N/A	N/A
S2	Chromium and its compounds	None	N/A *	n/a	N/A	N/A	N/A	N/A
S2	Nickel and its compounds	None	N/A *	n/a	N/A	N/A	N/A	N/A

* Report due next quarter

** See comments below

Form Number : S1 Reporting of Emissions to Sewer for the period from1st October 2016.....to.....31st December 2016.....

Emissions to Sewer								
Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Average Result ^[6]	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
S2	Chemical Demand	None	N/A *	n/a	N/A	N/A	N/A	N/A
S2	Sulphate	None	N/A *	n/a	N/A	N/A	N/A	N/A
S2	Total suspended solids	None	N/A *	n/a	N/A	N/A	N/A	N/A

* Report due next quarter

** Dwr Cymru Samples are considered momentary and have been discussed with NRW and Dwr Cymru.

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum - maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. colorimetry.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements, or flow/time proportional samples, the percentage of the process operating time covered by the monitoring is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated. The following uncertainties are quoted on a different basis (basis as stated) - {The basis of any other uncertainty figure needs to be stated. Where no figure is available the Agency will need to agree an appropriate uncertainty value.}

[6] The result given is the average value of all results obtained during the reporting period.

Signed Date: 21/12/17
(authorised to sign as representative of the Operator)

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Annual mass ^[2]
S1 and S2	Mercury and its compounds	0.005 mg/l	<0.00010mg/l	
S1 and S2	Mercury and its compounds	0.9 g		0.0001417 g/m³
S1 and S2	Cadmium and its compounds	0.01 mg/l	<0.00006mg/l	
S1 and S2	Cadmium and its compounds	0.3 g		0.000873 g/m³

[1] The result is given as a mass balance calculation, definition as given in condition 6.1.1
[2] The Annual Mass is given as a mass balance calculation , definition as given in condition 6.1.1

SignedDate 22/1/17.....

(authorised to sign as representative of the Operator)

Form Number : R1 Reporting of Waste Disposal for the year2016.....

Waste Disposal & Recovery			
Waste Description	Disposal		Recovery
	Route	Tonnes	Tonnes
1) Hazardous Wastes			
Lead and lead oxide waste	H.J.Enthoven	1038.0	1038.0
Other hazardous waste	See below	78.079	17.954
Total hazardous waste		1116.079	1055.954
2) Non-Hazardous Wastes	See below	160.457	65.866
Total non-hazardous waste		160.457	65.866
TOTAL WASTE	-	1276.536	1121.82

Trends in Waste Disposal and Recovery				
Year	Parameter		Total Waste	
	Hazardous waste		Tonnes	per unit output ^[1]
2008	1417.76	0.1114617	1804.09	0.1418343
2009	1054.98	0.0727888	1362.11	0.0939794
2010	1344.89	0.0824059	1691.32	0.1036328
2011	1250.885	0.0719975	1542.276	0.0887692
2012	686.0394	0.0429621	923.3654	0.0578243
2013	1053.352	0.0542732	1264.863	0.0651712
2014	1054.71	0.0653937	1260.908	0.0781783
2015	1088.849	0.0649330	1249.611	0.0745200
2016	1116.079	0.0649365	1276.536	0.0742724

[1] Waste per unit output should be quoted in units of waste produced from battery process / tonnes of battery produced per year.

Operator's comments :

A review of waste has again been undertaken throughout 2016 to ensure improved accuracy of the figures reported. As discussed in the previous end-of-year report, it has increased due to some returnable packaging materials being included as the full list of wastes expanded to ensure compliance with WM3. It will continue to be monitored and improved as appropriate.

Due to the expansion and improved categorisation of wastes, the list is unable to be written here so is appended to this report.

Signed  Date 
(authorised to sign as representative of the Operator)

Waste Disposed or Recovered														Hazardous Property Code										Actual weights to be reported										EA/NRW	Exp. Date
Waste Type		EWC Code	Waste Type	Disposed or Recovered	Hazardous Property Code					Q1	Q2	Q3	Q4	2016 Total	Unit	Classification	Carrier	Cert No.																	
Lead Oxide Incl. Paste and Slack Duet		06 03 18*	MH	R	HP4, 6, 7, 10, 14	80	109	107	135	431	Tonnes	Hazardous	Matlock/H J Enthoven	CBDU74463	13/11/2018																				
Lead Plates, Cells & Off cuts		08 04 08*	MH	R	HP4, 6, 10, 14	24	70	81	84	289	Tonnes	Hazardous	Matlock/H J Enthoven	CBDU74463	13/11/2018																				
Sump Sludge		06 06 02*	MH	R	HP4, 6, 10, 14	6	0	0	0	6	Tonnes	Hazardous	Matlock/H J Enthoven	CBDU74463	13/11/2018																				
Lead Dross		10 04 02*	AH	R	HP4, 6, 7, 10, 14	66	98	64	55	283	Tonnes	Hazardous	Matlock/H J Enthoven	CBDU74463	13/11/2018																				
Waste Oil		13 01 05*	AH	R	HP14	4.8	0	0	0	4.8	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Water Containing Oil Residue		13 08 02*	AH	R	HP14	0.205	0	0.84	0	1.045	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Waste Metal Resin Containers		15 01 10*	AH	D	HP3, 4, 5, 6, 7, 8, 10, 13, 14	0.22	0	1.8	0	2.02	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Waste Cellaphane Bags from Resin Catalyst		15 01 10*	AH	D	HP1, 3, 4, 13, 14	0	0	0	0	0	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Waste UV Ink Packaging		15 01 10*	AH	D	HP1, 3, 4, 13, 15	0	0	0	0	0	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Lead Contaminated Polythene Sheetling/Plastic Buckets		15 01 10*	AH	D	HP5, 6, 10, 14	1.105	0	0.4	0	1.505	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Returnable Empty 205 Litre Resin Drums		15 01 10*	AH	D	HP3, 4, 5, 10, 13	0	0	0.56	2.52	3.08	Tonnes	Hazardous	DLR Holding Ltd	CBDU95471	26/02/2019																				
Returnable Empty Hydrochloric Acid/ Caustic Soda Cont's.		15 01 10*	AH	R	HP4, 8	0.402	0.672	0.324	0.744	2.142	Tonnes	Hazardous	Univar Ltd	CBDU107937	20/05/2019																				
Ink Contaminated Packaging		15 01 10*	AH	D	HP14	0	0	0	0	0	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Oil Contaminated Wipings.		15 02 02*	AH	D	HP4, 5, 10, 13, 14	0	0	0	0	0	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Used Filters Containing Lead		15 02 02*	MH	D	HP4, 5, 7, 10, 14	0.25	0	0.25	0	0.5	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Waste Oil Absorbent Materials		15 02 02*	MH	D	HP14	0.36	0	0.72	0	1.08	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Acid Contaminated Spill Materials		15 02 02*	MH	D	HP4, 8	1.825	0	0.205	0	2.03	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Liquid Resins (Synermethy methacrylate)		16 03 05*	MH	R	HP3, 4, 5, 10, 13	1.485	0	4	0	5.485	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Lead Cell Test, Chloride and Iron Waste (Water Plant)		18 05 06*	MH	D	HP4, 6, 8, 12, 13, 14	0	0	0.07	0	0.07	Tonnes	Hazardous	Natural Solutions	CBFE5907TW	16/05/2017																				
Batteries		18 06 01*	AH	R	HP6, 7, 8, 14	14	26	0	21	60	Tonnes	Hazardous	Matlock/H J Enthoven	CBDU74463	13/11/2018																				
Water/Antifreeze		16 10 01*	MH	R	HP4, 5, 8, 10, 14	0	0	0	0	0	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Dilute Sulphuric Acid		20 01 14*	AH	D	HP4, 8, 14	0	27	27	0	54	Tonnes	Hazardous	Qualitech Env. Services	CBUE5701TV	13/05/2017																				
Fluorescent Tubes and Lamps		20 01 21*	AH	R	N/A	0	0.022	0	0	0.022	Tonnes	Hazardous	A N Supplies Ltd	CBDU4914	NRW																				
Refrigerators		20 01 23*	AH	R	N/A	0	0	0.3	0	0.3	Tonnes	Hazardous	Castle Waste Services	CBDU99056	08/04/2019																				
Total Weight of Reportable Hazardous Wastes														159.65	329.69	288.47	288.26	1116.07	Tonnes																

Non-hazardous Waste														
Waste Type	EWCC Code	Waste Type	Waste Disposed or Recovered	Hazardous Property Code	Q1	Q2	Q3	Q4	2016 Total	Unit	Classification	Carrier	EJ/NRW Cert No.	Exp. Date
Waste Cardboard/Paper	15 01 01	AN	R	N/A	5.99	7.14	1.54	4.83	19.5	Tonnes	Non Hazardous	Merthyr Borough Rec	CB0U5507	NRW
Waste Plastic	15 01 02	AN	R	N/A	1.66	1.49	5.16	4.33	12.64	Tonnes	Non Hazardous	Merthyr Borough Rec	CB0U5507	NRW
Waste Wooden Pallets	15 01 03	AN	R	N/A	5.87	2.96	2.66	10.326	21.816	Tonnes	Non Hazardous	Merthyr Borough Rec	CB0U5507	NRW
Waste Calcium Carbonate	15 02 03	MN	D	N/A	1.025	0	0	0	1.025	Tonnes	Non Hazardous	Castle Waste Services	CB0U590566	08/04/2019
Sharps (E)	18 01 01	AN	D	N/A	0.0025	0.0025	0.0025	0.0025	0.01	Tonnes	Non Hazardous	Cathedral Leasing	CB0U550333	28/07/2018
Used Swabs, Dressing etc. (E)	18 01 04	AN	D	N/A	0.002	0.002	0.002	0.002	0.008	Tonnes	Non Hazardous	Cathedral Leasing	CB0U550333	28/07/2018
Mixed Municipal Waste (General Waste)	20 03 01	AN	D	N/A	26.74	21.32	20.2	25.28	93.54	Tonnes	Non Hazardous	Veolia ES (UK) Ltd	CB/TE5190ST	21/12/2017
Sanitary Waste (E)	20 03 99	AN	D	N/A	0.002	0.002	0.002	0.002	0.008	Tonnes	Non Hazardous	Cathedral Leasing	CB0U550333	28/07/2018
Spent Fire Extinguishers	20 01 40	AN	R	N/A	0	0	0	0	0	Tonnes	Non Hazardous	Blackwood Fire	CB0U4684	NRW
Waste Metals	20 01 40	AN	R	N/A	0	2.76	0	7.85	10.61	Tonnes	Non Hazardous	Merthyr Borough Rec	CB0U5507	NRW
Discarded WEEE	20 01 36	AN	R	N/A	0	1.3	0	0	1.3	Tonnes	Non Hazardous	Merthyr Borough Rec	CB0U5507	NRW
Total Weight of Reportable Non-Hazardous Wastes Below the Reporting Threshold					41.2915	35.9765	29.5665	52.6225	160.457	Tonnes				
Performance Indicators														
											Quarter	Cum Battery Tonnage	Performance Indicator	
											Q1	4729.156	0.0508635	
											Qs 1 & 2 -	9280.719	0.0654705	
											Qs 1 to 3 -	13310.52	0.0695427	
											Qs 1 to 4 -	17187.217	0.0742724	
Total of All Waste														
Hazardous Waste Transferred for Disposal														
Hazardous Waste Transferred for Recovery														
Non-Hazardous Waste Transferred for Disposal														
Non-Hazardous Waste Transferred for Recovery														
Net Total Waste Produced														

Keys

Lead Waste

Waste Type

Absolute Hazardous

Mittor Hazardous Entries

Absolute Non-Hazardous

REPI - Resource Efficiency Physical Index

EWC Code - European Waste Catalogue Code

D & R Code - Disposal and Recovery Code

E - Estimate based on 2007 figures (carrier does not weigh waste)

NB: Waste Transfer and Consignment Notes must show the appropriate codes and hazardous waste registration number as highlighted above

Permit Reference Number : BV5386IX Operator : Yuasa Battery (UK) Ltd Installation : Yuasa Battery (UK)

Form Number : WU1 Reporting of Water Usage for the year ...2016.....

Water Usage		
Water Source	Annual Usage (m ³)	Water per unit output [1] (m ³ /t)
Abstraction Borehole	65097.0m ³	
Mains water	2565.0m ³	
Recycled Effluent	19106.0m ³	
TOTAL WATER USAGE	86768.0m ³	5.0484031

[1] Water per unit output should be quoted in units of total water use / tonnes of battery produced per year.

Trends in Water Usage		
Year	Parameter	Water per unit output [1]
2011	Total Water usage	7.2332829
2012	125671.0m ³	5.9856768
2013	95582.0m ³	3.9280113
2014	76236.0m ³	3.7313187
2015	60181.0m ³	4.3422321
2016	72814.0m ³	5.0484031
	86768.0m ³	

Operator's comments :

Abstracted water:-

Borehole A = 49895m³, Borehole B = 15202m³, Total = 65097m³

Total water consumption has increased in 2016, however, the amount recycled has also increased by 8,890 m³.
Total water has been listed for improvement in 2017.

Signed Date.....
(authorised to sign as representative of the Operator)

2016 Water Usage

	Q1	Q2	Q3	Q4	2016 Total	Unit
Abstracted from Borehole A	16209.00	15452.00	8260.00	9974.00	49895.00	m ³
Abstracted from Borehole B	4233.00	4340.00	3239.00	3390.00	15202.00	m ³
Total used each quarter	20442.00	19792.00	11499.00	13364.00	65097.00	m ³
Mains Water	855.00	190.00	754.00	766.00	2565.00	m ³
% recycled to date	26.06%	25.60%	33.93%	30.30%	28.24% for year	
Recycled Water	5550.00	5117.00	4158.00	4281.00	19106.00	m ³
Total Water Usage	26847.00	25099.00	16411.00	18411.00	86768.00	m ³
Battery Tonnages Produced	4729.156	4551.563	4029.801	3876.697	17187.217	Tonnes

Water Performance Indicator 5.6769114 5.5974411 5.1357189 5.0484031

Gross Water Used	(REPI A)	67662.00 m ³
Net Water Used De-ionised water used in product (Insert figure from spread sheet)	(REPI B)	1761.8953 m ³
Mains Water	(REPI C)	2565.00 m ³
Direct Abstraction	(REPI D)	65097.00 m ³

REPI - Resource Efficiency Physical Index

Permit Reference Number : BV5386IX

Operator : Yuasa Battery (UK) Ltd

Installation : Yuasa Battery (UK)

Form Number : E1 Reporting of Energy Usage for the year ...2016.....

Energy Source	Energy Usage	
	Quantity	Primary Energy (MWh)
Electricity *	19392.150 MWh	46541.160
Natural Gas	5901.014 MWh	5901.014
TOTAL	25293.164 MWh	52442.174
		9744.643

Trends in Energy Usage			
Year	Parameter	CO ₂ produced	CO ₂ per unit output [1]
2012	51875.1766	8762.885	0.5487623
2013	58041.912	9798.341	0.5048532
2014	50154.654	8482.294	0.5259158
2015	51490.111	8699.995	0.5188205
2016	52442.174	9744.643	0.5669703

* Conversion factor for delivered electricity to primary energy = 2.4

[1] CO₂ per unit output should be quoted in units of total CO₂ produced / tonnes of battery produced per year.

Operator's comments :

I would add that CO₂ emissions are calculated using the DECC CO₂ emission factors, including transmission and distribution emissions. These are the figures we will be applying in the PIRs that we prepare this year as H2 is now unavailable. Primary energy has continued to be calculated using the 2.4 conversion factor above.

I would add that energy efficiency continues to be an objective and target for continued improvement.

Signed Date
(authorised to sign as representative of the Operator)

Form Number : P11 Reporting of Performance Indicators for the year ...2016.....

Annual Production/Treatment	
Production of batteries produced per year	17187.217 tonnes

Environmental Performance Indicators

Performance Indicators			Trends in Environmental Performance		
Parameter (1)	Annual Mass	Units	Year	Parameter (1)	
COD	0.0687224	kg/tonne	2009	0.0449475	0.003942
Mass of lead released from A1 – A7 and A9 - A26	0.0028735	kg/tonne	2010	0.0719370	0.0031003
			2011	0.0878032	0.0040374
Mass of lead released to sewer	0.0041387	kg/tonne	2012	0.1057535	0.0037291
			2013	0.0610321	0.0043773
			2014	0.1252405	0.0048269
			2015	0.1387867	0.0051848
			2016	0.0687224	0.0028735

[1] Performance indicators should be quoted in units of parameter / tonnes of battery produced per year

Operator's comments:

COD mass to sewer = 1181.14771 kg/year / 17187.217 tonnes of battery produced = 0.0687224 kg/tonne.

Lead mass from stacks = 49.388 kg/year / 17187.217 tonnes of battery produced = 0.0028735 kg/tonne.

Lead mass to sewer = 71.13372 kg/year / 17187.217 tonnes of battery produced = 0.0041387 kg/tonne.

COD:- I would add that the annual COD release has been calculated from the average of the maximum monthly figures recorded from both Dwr Cymru and Yuasa quarterly samples. Samples were taken in each month of January to December inclusive for factory No. 2 (S1) and January, February, April, June, July, August, September, October, November and December for factory No.4 (S2).

Stacks:- In 2016, there has been a decrease in the Lead mass from stacks against 2015, which is mainly due to a general decrease in the quarterly results obtained throughout the year. Stack operational hours have increased due to production requirements, however, the Lead recycling plant in factory No.2 did not operate in quarters 3 and 4.

As in previous years, all LEV systems continue to be shut-down at break times.

Sewer:- The annual Lead release for S1 has been calculated from the average of the maximum monthly figures recorded for each month of 2016, and for S2, has been calculated from the maximum monthly figures recorded in February, March, April, June and July 2016.

Total Lead to sewer has decreased in 2016 which is mainly due to a reduction in the total volume of trade effluent discharged.

COD and Lead in trade effluent will continue to be monitored in 2017.

Signed Date 21.2.17

(authorised to sign as representative of the Operator)

