

PLR SERVICES

12, Morawel, Winch Wen, Swansea, SA1 7LN.

TEL/FAX: 01792 775404, MOBILE: 07703 470326

E-MAIL: phil@plrservices.fsnet.co.uk



Ref: ea/ghh/lf/5/10/07
Your ref: EAWML30077

Environment Agency Wales,
Rivers House,
St. Mellons Business Park,
St. Mellons,
Cardiff,
CF3 0EY.
(Fao: K. Ashcroft, Regulatory Assistant)

Dear Sir,

Re: Monitoring conditions – Croescarneinon Farm, EAWML 30077

With reference to your letter of the 31st October 2006 regarding the submission of site monitoring reports please find attached the following documents:

- Surface water determinands report
- Groundwater determinands report
- Laboratory certificate of analysis
- Landfill gas determinands monitoring record

These are the analytical results for the third quarter of the 2007 monitoring period.
I trust the enclosed is satisfactory but please do not hesitate to contact me if the contrary.

Yours faithfully,

Philip Rees

P.L.Rees, CSci, C. Chem., MRSC, CMIOSH, RSP, CEnv, MCIWM, AIQA.
cc. Mr. R. Harry
enc: Monitoring conditions return



Water Analysis 2007 - Croescarneion Farm - WML30077 - Surface water

Units	Determinands	SW WQS	2.02.2007	22.5.07	24.08.07	MEAN
pH Units	pH		7.9	8.1		
uS/cm	Conductivity @ 20c	5.5-9 G			8.5	8.2
mg/l O	Oxygen (Dissolved) DO	1000 G	446	537	431	471.3
mg/l O	COD (Total)		8.4	2.1	3.2	4.6
mg/l N	Ammoniacal Nitrogen	30 G	<20	21	22	14.3
mg/l	Chloride	4	0.6	0.6	<0.3	0.4
Temperature	Degrees C	200 G	16	15	12	14.3
			10	12	15	12.3

MEAN Average result based on actual figures (not less than <).

S/W EQS Surface water quality standard - G-guidance value

Results in bold indicate result which exceeds at least one of the reference standards.

WQS EC Directive (75/440/EEC, G-guide)

() Sample points as sampling plan

Water Analysis 2007 - Croescaeimeion - WML30077 - Groundwater

Units	Sampling Date	GW	WQS	02.03.07	22.5.07	24.08.07	MEAN
Determinands							
pH Units		5.5 to 9.5		8.3	7.3	8.3	8.0
uS/cm		400		514	485	460	486.3
mg/l O				7.4	2	2.4	3.9
mg/l O							0.0
mg/l O				<20			0.0
mg/l CaCO3				167	167	178	170.7
mg/l N		0.05		1.1	1.4	<0.3	0.8
mg/l N					8.2	6.3	4.8
mg/l		25		33	27	20	26.7
mg/l		25		7	20	20	15.7
mg/l				3.1	2.8	2.3	2.7
mg/l		0.005		<0.0005	<0.0005	<0.0005	0.0
mg/l		0.05		<0.005	<0.005	<0.005	0.0
mg/l		0.05		0.009	0.007	0.25	0.0
mg/l		0.005		<0.005	0.009	0.006	0.0
mg/l		0.05		<0.005	<0.005	<0.005	0.0
mg/l		0.1		0.014	0.023	0.029	0.0
mg/l		0.05		0.11	0.06	0.41	0.2
mg/l		0.05		nr	0.021	0.098	0.0
mg/l		20		22	21	22	21.7
mg/l		10		10	9.5	12	10.5
mg/l		100		55	51	57	54.3
mg/l		30		18	16	19	17.7
Temperature				10	12	14	12.0
Metres				2	1.6	2.4	2.0
Metres				2.6	2.6	2.6	2.6

MEAN Average result based on actual figures (not less than <).

L/F Comp. Landfill Completion criteria (as WMP26A).

GW WQS Water Quality Standard based upon Water Supply Regulations

Results in bold indicate result which exceeds at least one of the reference standards.

WQS EC Directive (75/440/EEC, G-guide)

() Sample points as sampling plan

nr no result

Certificate of Analysis



1314
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STL

Sample **2** Laboratory Number : **10141464**
of **3** Report Number : **TH/451291/2007** Issue **1**

Sample Source : **PLR Services**
Sample Point Description : **PLR Services**
Sample Description : **SW Site 2**

Sample Date : **24 August 2007** Sample Received : **24 August 2007** Analysis Complete : **11 September 2007**

Test Description	Result	Units	Accreditation	Method
pH	8.5		C	WAS039
Conductivity- Electrical 20C	431	uS/cm	C	WAS039
Ammoniacal Nitrogen as N	<0.3	mg/l	C	WAS036
Chloride as Cl	12	mg/l	C	WAS036
D.O. concentration	3.2	mg/l	C	WAS052
COD (Total)	22	mg/l	C	WAS040

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Basingstoke, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted
For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. I/S = Insufficient sample

Certificate of Analysis



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STL

Sample 3 Laboratory Number: 10141465
of 3 Report Number: TH/451291/2007 Issue 1

Cross

140C

2.4m

Sample Source: PLR Services

Sample Point Description: PLR Services

Sample Description: GW Quarterly

Sample Date: 24 August 2007 Sample Received: 24 August 2007 Analysis Complete: 11 September 2007

Test Description	Result	Units	Accreditation	Method
Cadmium, Total as Cd	<0.0005	mg/l	C	WAS049
Calcium, Total as Ca	57	mg/l	C	WAS049
Chromium, Total as Cr	<0.005	mg/l	C	WAS049
Copper, Total as Cu	0.006	mg/l	C	WAS049
Iron, Total as Fe	0.41	mg/l	C	WAS049
Lead, Total as Pb	0.25	mg/l	C	WAS049
Magnesium, Total as Mg	19	mg/l	C	WAS049
Manganese, Total as Mn	0.098	mg/l	C	WAS049
Nickel, Total as Ni	<0.005	mg/l	C	WAS049
Potassium, Total as K	12	mg/l	C	WAS049
Sodium, Total as Na	22	mg/l	C	WAS049
Zinc, Total as Zn	0.029	mg/l	C	WAS049
pH	8.3		C	WAS039
Conductivity- Electrical 20C	460	uS/cm	C	WAS039
Alkalinity as CaCO3	178	mg/l	C	WAS025
Ammoniacal Nitrogen as N	<0.3	mg/l	C	WAS036
Chloride as Cl	20	mg/l	C	WAS036
Nitrogen, Total Oxidised as N	6.3	mg/l	C	WAS036
Sulphate as SO4	20	mg/l	C	WAS036
D.O. concentration	2.4	mg/l	C	WAS052
TOC (Filtered)	2.3	mg/l	C	WAS005

Accreditation Codes: * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted
For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. I/S = Insufficient sample

Signed:

J. Fell

Name: J. Fell

Date: 24 September 2007

Title: Production Manager

PLR SERVICES

GAS WELL and/or BOREHOLE MONITORING RECORD

SITE: CROESCARNETON FARM

DATE: 24-8-07.

OPERATOR: PLR SERVICES

PERMIT No. 30077

AIR TEMP.: 24°C

BAROMETRIC PRESS.: 1018

WEATHER: SUNNY, HOT

INSTRUMENT REF.: GA075 IR GAS ANALYSER

Borehole or Gaswell	Methane %	Carbon Dioxide %	Oxygen %	Water level metres	Pressure mbar	Temp. Degrees	Sample y/n
1 (Pipe)	0	0	19.2	1.9	niz	20.3	N
2 (Conn)	0	0	19.2	3.5	—	20.3	N
* GW well	—	—	—	1.5 of 2.4 m depth	—	14°	Y
+ SW	—	—	—	—	—	15°	Y

NOTES

No gas pressure / flow on Grey pipe

* Water monitoring data.

ACTION REQUIRED

Emergency cut back to access monitoring BH

Access to stream via adjacent field.

SIGNED: P. Rees

DATE: 24-8-07.

APPROVED: N/A

DATE: _____

20/5/07

PLR SERVICES

12, Morawel, Winch Wen, Swansea, SA1 7LN.

TEL/FAX: 01792 775404, MOBILE: 07703 470326

E-MAIL: phil@plrservices.fsnet.co.uk

Ref: ea/ghh/lf/5/12/07

31/01/08

Your ref: EAWML30077

Environment Agency Wales,
Rivers House,
St. Mellons Business Park,
St. Mellons,
Cardiff,
CF3 0EY.
(Fao: K. Ashcroft, Regulatory Assistant)

Dear Sir,

Re: Monitoring conditions – Croescarneinon Farm, EAWML 30077

With reference to your letter of the 31st October 2006 regarding the submission of site monitoring reports please find attached the following documents:

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- Groundwater determinands report
- Laboratory certificate of analysis
- Landfill gas determinands monitoring record

These are the analytical results for the third quarter of the 2007/08 monitoring period.
I trust the enclosed is satisfactory but please do not hesitate to contact me of the contrary.

Yours faithfully,

Philip Rees

P.L.Rees, CSci, C. Chem., MRSC, CMIOSH, RSP, CEnv, MCIWM, ACQI.

cc. Mr. R. Harry

enc: Monitoring conditions return

Health, Safety, Environment & Quality Consultancy

Water Analysis 2007 - Croescarneion Farm - WML30077 - Surface water

Units	Determinands	S/W	WQS	2.02.2007	22.5.07	24.8.07	13.12.07	MEAN
pH Units	pH	5.5-9 G		7.9	8.1	8.5	7.8	8.1
uS/cm	Conductivity @ 20c	1000 G		446	537	431	410	456.0
mg/l O	Oxygen (Dissolved) DO			8.4	2.1	3.2	9.3	5.8
mg/l O	COD (Total)	30 G		<20	21	22	26	17.3
mg/l N	Ammoniacal Nitrogen	4		0.6	0.6	<0.3	<0.3	0.3
mg/l	Chloride	200 G		16	15	12	14	14.3
Temperature	Degrees C			10	12	7	7	9.0

MEAN Average result based on actual figures (not less than <).

S/W EQS Surface water quality standard - G-guidance value

Results in bold indicate result which exceeds at least one of the reference standards.

WQS EC Directive (75/440/EEC, G-guide)

() Sample points as sampling plan

Water Analysis 2007 - Croescameinon - WML30077 - Groundwater

Units	Sampling Date	GW	WQS	02.03.07	22.5.07	24.8.07	13.12.07	MEAN
Determinands								
pH		5.5 to 9.5		8.3	7.3	8.3	7.2	7.8
Conductivity @ 20c		400		514	485	460	455	478.5
Oxygen (Dissolved) DO				7.4	2	2.4	<0.5	3.0
BOD total+ATU			n/a	n/a	n/a	n/a	n/a	0.0
COD (Total)			<20	nr	nr	nr	nr	0.0
Alkalinity total				167	167	178	187	175
Ammoniacal Nitrogen		0.05		1.1	1.4	<0.3	<0.3	0.63
Total Oxidised Nitrogen			nr		8.2	6.3	6.7	5.3
Chloride		25		33	27	20	19	25
Sulphate		25		7	20	20	20	17
Total Organic Carbon TOC				3.1	2.8	2.3	2.8	2.8
Cadmium		0.005	<0.0005	<0.0005	<0.0005	<0.0005	0.002	0.001
Chromium		0.05	<0.005	<0.005	<0.005	<0.005	<0.005	0.00
Lead		0.05	0.009	0.009	0.007	0.25	0.05	0.08
Copper		0.005	<0.005		0.009	0.006	0.012	0.007
Nickel		0.05	<0.005	<0.005	<0.005	<0.005	<0.005	0.00
Zinc		0.1	0.014	0.023	0.023	0.029	0.03	0.02
Iron		0.05	0.11	0.06	0.06	0.41	0.67	0.31
Manganese		0.05	nr	0.021	0.021	0.098	0.06	0.04
Sodium		20		22	21	22	27	23.0
Potassium		10		10	9.5	12	12	11
Calcium		100		55	51	57	58	55
Magnesium		30		18	16	19	18	18
Temperature				10	12	10	10	10.5
Depth				2	1.6	1.6	1.6	1.7
Metres				2.6	2.6	2.6	2.6	2.6
Total Depth								

MEAN Average result based on actual figures (not less than <).

L/F Comp. Landfill Completion criteria (as WMP26A).

GW WQS Water Quality Standard based upon Water Supply Regulations

Results in bold indicate result which exceeds at least one of the reference standards.

WQS EC Directive (75/440/EEC, G-guide)

() Sample points as sampling plan

nr no result

Certificate of Analysis



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Report Number: **COV/479484/2007**
Laboratory Number: **10328911**

Issue **1**
Sample **3** of **3**

Sample Source: **PLR Services**
Sample Point Description: **PLR Services**
Sample Description: **GW**

Sample Date: **13 December 2007** Sample Received **13 December 2007** Analysis Complete: **03 January 2008**

Test Description	Result	Units	Accreditation	Method
Cadmium , Total as Cd	0.0021	mg/l	Y Cov	WAS049
Calcium , Total as Ca	58	mg/l	Y Cov	WAS049
Chromium , Total as Cr	<0.005	mg/l	Y Cov	WAS049
Copper, Total as Cu	0.012	mg/l	Y Cov	WAS049
Iron , Total as Fe	0.67	mg/l	Y Cov	WAS049
Lead , Total as Pb	0.047	mg/l	Y Cov	WAS049
Magnesium, Total as Mg	18	mg/l	Y Cov	WAS049
Manganese , Total as Mn	0.060	mg/l	Y Cov	WAS049
Nickel , Total as Ni	<0.005	mg/l	Y Cov	WAS049
Potassium , Total as K	12	mg/l	Y Cov	WAS049
Sodium , Total as Na	27	mg/l	Y Cov	WAS049
Zinc, Total as Zn	0.027	mg/l	Y Cov	WAS049
pH	7.2		Y Cov	WAS039
Conductivity- Electrical 20C	455	uS/cm	Y Cov	WAS039
Alkalinity as CaCO3	187	mg/l	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.3	mg/l	Y Cov	WAS036
Chloride as Cl	19	mg/l	Y Cov	WAS036
Nitrogen, Total Oxidised as N	6.7	mg/l	Y Cov	WAS036
Sulphate as SO4	20	mg/l	Y Cov	WAS036
D.O. concentration	<0.5	mg/l	Y Cov	WAS052
TOC (Filtered)	2.6	mg/l	Y Cov	WAS005

Analyst Comments for 10328911:

No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

Signed:

Name: **J. Fell**

Date: **07 February 2008**

Title: **Production Manager**

Severn Trent Laboratories Ltd.

STL Business Centre, Torrington Avenue, Coventry, CV4 9GU Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575 Page 4 of 4

Certificate of Analysis



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Report Number: COV/479484/2007

Issue 1

Laboratory Number: 10328910

Sample 2 of 3

Sample Source: PLR Services

Sample Point Description: PLR Services

Sample Description: SW Site 2

Sample Date: 13 December 2007 Sample Received 13 December 2007 Analysis Complete: 03 January 2008

Test Description	Result	Units	Accreditation	Method
pH	7.8		Y Cov	WAS039
Conductivity- Electrical 20C	410	uS/cm	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.3	mg/l	Y Cov	WAS036
Chloride as Cl	14	mg/l	Y Cov	WAS036
D.O. concentration	9.3	mg/l	Y Cov	WAS052
COD (Total)	26	mg/l	Y Cov	WAS040

Analyst Comments for 10328910:

No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.

Analysed at: Bn = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Res = STL Reading, Run = STL Runcorn.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. US=Insufficient sample

Severn Trent Laboratories Ltd.

STL Business Centre, Torrington Avenue, Coventry, CV4 9GU Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575 Page 3 of 4

PLR SERVICES

12, Morawel, Winch Wen, Swansea, SA1 7LN.

TEL/FAX: 01792 775404, MOBILE: 07703 470326

E-MAIL: phil@plrservices.fsnet.co.uk

Ref: ea/ghh/lf/1/04/08

30/04/08

Your ref: EAWML30077

Environment Agency Wales,
Rivers House,
St. Mellons Business Park,
St. Mellons,
Cardiff,
CF3 0EY.
(Fao: K. Ashcroft, Regulatory Assistant)

Dear Sir,

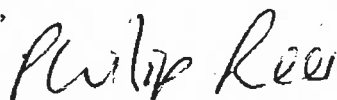
Re: Monitoring conditions – Croescarneinon Farm, EAWML 30077

With reference to your letter of the 31st October 2006 regarding the submission of site monitoring reports please find attached the following documents:

- Surface water determinands report
- Groundwater determinands report
- Laboratory certificate of analysis
- Landfill gas determinands monitoring record

These are the analytical results for the fourth quarter of the 2007/08 monitoring period.
I trust the enclosed is satisfactory but please do not hesitate to contact me if the contrary.

Yours faithfully,



P.L.Rees, CSci, C. Chem., MRSC, CMIOSH, RSP, CEnv, MCIWM, ACQI.

cc. Mr. R. Harry

enc: Monitoring conditions return

PLR SERVICES

GAS WELL and/or BOREHOLE MONITORING RECORD

SITE: CROESCARNEGION FARM

DATE: 20-3-08

OPERATOR: PLR SERVICES

PERMIT No. 30077

AIR TEMP.: 15°C

BAROMETRIC PRESS.: 994

WEATHER: SUNNY INTERMITTENT

INSTRUMENT REF.: GAC 15

Borehole or Gaswell	Methane %	Carbon Dioxide %	Oxygen %	Water level metres	Pressure mbar	Temp. Degrees	Sample y/n
1 (Pipe)	0	0	19	1.9	NIL	15	N
2 (Cur)	0	0	19.2	1.9 & 2.9	NIL	15	N
* Gw	—	—	—	1.5 & 2.8	NIL	11	Y
* SW	—	—	—	—	—	10	Y

NOTES

Overgrowth cut-back to access monitoring points
* Water monitoring data — low flow in stream

ACTION REQUIRED

SIGNED: P. Rivers

DATE: 20/3/08

APPROVED: _____

DATE: _____

20/5/07

Certificate of Analysis



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STL

Report Number: COV/503371/2008

Issue 1

Laboratory Number: 10488542

Sample 3 of 3

Sample Source: PLR Services

Sample Point Description: PLR Services

Sample Description: SITE 2 CROES GW

Sample Date: 26 March 2008 Sample Received: 26 March 2008 Analysis Complete: 11 April 2008

Test Description	Result	Units	Accreditation	Method
Cadmium , Total as Cd	<0.0005	mg/l	Y Cov	WAS049
Calcium , Total as Ca	55	mg/l	Y Cov	WAS049
Chromium , Total as Cr	<0.005	mg/l	Y Cov	WAS049
Copper, Total as Cu	0.010	mg/l	Y Cov	WAS049
Iron , Total as Fe	0.49	mg/l	Y Cov	WAS049
Lead , Total as Pb	<0.005	mg/l	Y Cov	WAS049
Magnesium, Total as Mg	19	mg/l	Y Cov	WAS049
Manganese , Total as Mn	0.024	mg/l	Y Cov	WAS049
Nickel , Total as Ni	<0.005	mg/l	Y Cov	WAS049
Potassium , Total as K	11	mg/l	Y Cov	WAS049
Sodium , Total as Na	35	mg/l	Y Cov	WAS049
Zinc, Total as Zn	0.008	mg/l	Y Cov	WAS049
pH	7.4	pH Units	Y Cov	WAS039
Conductivity- Electrical 20C	468	uS/cm	Y Cov	WAS039
Alkalinity as CaCO3	170	mg/l	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.3	mg/l	Y Cov	WAS036
Chloride as Cl	33	mg/l	Y Cov	WAS036
Nitrogen, Total Oxidised as N	4.7	mg/l	Y Cov	WAS036
Sulphate as SO4	17	mg/l	Y Cov	WAS036
D.O. concentration	Analyst Comment	mg/l	Y Cov	WAS052
TOC (Filtered)	3.0	mg/l	Y Cov	WAS005

Analyst Comments for 10488542:

Unable to analyse for fixed dissolved oxygen due to insufficient sample submitted.

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
Analysed at: Bn = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.
For Microbiological determinands 0 or ND=Not Detected. For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

Signed:

Name: J. Fell

Date: 29 April 2008

Title: Production Manager

Severn Trent Laboratories Ltd.

STL Business Centre, Torrington Avenue, Coventry. CV4 9GU Tel: +44 (0)24 7642 1213 Fax: +44 (0)24 7685 6575 Page 4 of 4

20/6

Certificate of Analysis



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SEVERN

STL

Report Number: **COV/503371/2008**

Issue **1**

Laboratory Number: **10488541**

Sample **2** of **3**

Sample Source: **PLR Services**

Sample Point Description: **PLR Services**

Sample Description: **SITE 2 CROES SW**

Sample Date: **26 March 2008**

Sample Received

26 March 2008

Analysis Complete:

11 April 2008

Test Description	Result	Units	Accreditation	Method
pH	8.1	pH Units	Y Cov	WAS039
Conductivity- Electrical 20C	411	uS/cm	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.3	mg/l	Y Cov	WAS036
Chloride as Cl	13	mg/l	Y Cov	WAS036
D.O. concentration	Analyst Comment	mg/l	Y Cov	WAS052
COD (Total)	40	mg/l	Y Cov	WAS040

Analyst Comments for 10488541:

Unable to analyse for fixed dissolved oxygen due to insufficient sample submitted.

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcom.
For Microbiological determinands D or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

Severn Trent Laboratories Ltd.

STL Business Centre, Torrington Avenue, Coventry, CV4 9GU Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575 **Page 3 of 4**

30/4/08

PLR SERVICES

12, Morawel, Winch Wen, Swansea, SA1 7LN.

TEL/FAX: 01792 775404, MOBILE: 07703 470326

E-MAIL: phil@plrservices.fsnet.co.uk

Ref: ea/ghh/lf/1/07/08

Your ref: EAWML30077

ENVIRONMENT AGENCY WALES

31/07/08

Environment Agency Wales,
Rivers House,
St. Mellons Business Park,
St. Mellons,
Cardiff,
CF3 0EY.

03 SEP 2008

**RECEIVED: RIVERS HOUSE
ST. MELLONS**

(Fao: K. Ashcroft, Regulatory Assistant)

Dear Sir,

Re: Monitoring conditions – Croescarneinon Farm, EAWML 30077

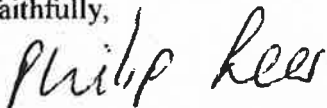
With reference to your letter of the 31st October 2006 regarding the submission of site monitoring reports please find attached the following documents:

- Surface water determinands report
- Groundwater determinands report
- Laboratory certificate of analysis
- Landfill gas determinands monitoring record

These are the analytical results for the first quarter of the 2008/09 monitoring period.

I trust the enclosed is satisfactory but please do not hesitate to contact me if the contrary.

Yours faithfully,



P.L.Rees, CSci, C. Chem., MRSC, CMIOSH, RSP, CEnv, MCIWM, ACQI.

cc. Mr. R. Harry

enc: Monitoring conditions return

Certificate of Analysis



STL

Report Number: **COV/531870/2008**

Issue **1**

Laboratory Number: **10676475**

Sample **3** of **3**

Sample Source: **PLR Services**

Sample Point Description: **PLR Services**

Sample Description: **SITE 2 CROES GW**

Sample Date: **16 July 2008**

Sample Received

17 July 2008

Analysis Complete:

31 July 2008

Test Description	Result	Units	Accreditation	Method
Cadmium , Total as Cd	<0.0005	mg/l	Y Cov	WAS049
Calcium , Total as Ca	57	mg/l	Y Cov	WAS049
Chromium , Total as Cr	<0.005	mg/l	Y Cov	WAS049
Copper, Total as Cu	<0.005	mg/l	Y Cov	WAS049
Iron , Total as Fe	<0.05	mg/l	Y Cov	WAS049
Lead , Total as Pb	<0.005	mg/l	Y Cov	WAS049
Magnesium, Total as Mg	18	mg/l	Y Cov	WAS049
Manganese , Total as Mn	0.042	mg/l	Y Cov	WAS049
Nickel , Total as Ni	<0.005	mg/l	Y Cov	WAS049
Potassium , Total as K	11	mg/l	Y Cov	WAS049
Sodium , Total as Na	19	mg/l	Y Cov	WAS049
Zinc, Total as Zn	0.007	mg/l	Y Cov	WAS049
pH	7.2	pH Units	Y Cov	WAS039
Conductivity- Electrical 20C	496	uS/cm	Y Cov	WAS039
Alkalinity as CaCO3	178	mg/l	Y Cov	WAS025
Ammoniacal Nitrogen as N	0.3	mg/l	Y Cov	WAS036
Chloride as Cl	30	mg/l	Y Cov	WAS036
Nitrogen, Total Oxidised as N	4.1	mg/l	Y Cov	WAS036
Sulphate as SO4	21	mg/l	Y Cov	WAS036
Dissolved Oxygen concentration	5.0	mg/l	Y Cov	WAS052
TOC (Filtered)	2.6	mg/l	Y Cov	WAS005

Analyst Comments for 10676475:

No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.

Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcom.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample

Signed:

J. Fell

Name: **J. Fell**

Date: **31 July 2008**

Title: **Production Manager**

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Certificate of Analysis



1314
0897
1229
1510



Report Number: **COV/531870/2008**

Laboratory Number: **10676474**

Issue **1**

Sample **2** of **3**

Sample Source: **PLR Services**

Sample Point Description: **PLR Services**

Sample Description: **SITE 2 CROES SW**

Sample Date: **16 July 2008**

Sample Received

17 July 2008

Analysis Complete:

31 July 2008

Test Description	Result	Units	Accreditation	Method
pH	8.1	pH Units	Y Cov	WAS039
Conductivity- Electrical 20C	462	uS/cm	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.3	mg/l	Y Cov	WAS036
Chloride as Cl	14	mg/l	Y Cov	WAS036
Dissolved Oxygen concentration	2.9	mg/l	Y Cov	WAS052
COD (Total)	<20	mg/l	Y Cov	WAS040

Analyst Comments for 10676474:

No Analyst Comment

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MCERTS, S = Sub-contracted.

Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcom.

For Microbiological determinands 0 or ND=Not Detected. For Legionella ND=Not Detected in volume of sample filtered. /S=(insufficient sample

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PLR SERVICES

GAS WELL and/or BOREHOLE MONITORING RECORD

SITE: CROESCAWTON FARM

DATE: 16-7-08

OPERATOR: GREEN CIRCLE

PERMIT No. 30077

AIR TEMP.: 19

BAROMETRIC PRESS.: 1016

WEATHER: SUNNY, WARM

INSTRUMENT REF.: GA075

Borehole or Gaswell	Methane %	Carbon Dioxide %	Oxygen %	Water level metres	Pressure mbar	Temp. Degrees	Sample y/n
1 (Pipe)	0	0	19.1	2.9	nil	19	N
2 (Corr)	0	0	19.1	2.9	nil	19	N

* GW	-	-	-	1.6 at 2.9	-	13	Y
SW	-	-	-	-	-	14	Y

NOTES

Much overgrowth cut back to gain access to monitoring point

* LOW FLOW IN STREAM AT SAMPLING POINT

ACTION REQUIRED

SIGNED: P Rees

DATE: 16/7/08

APPROVED: _____

DATE: _____

20/5/07

PLR SERVICES

12, Morawel, Winch Wen, Swansea, SA1 7LN.

TEL/FAX: 01792 775404, MOBILE: 07703 470326

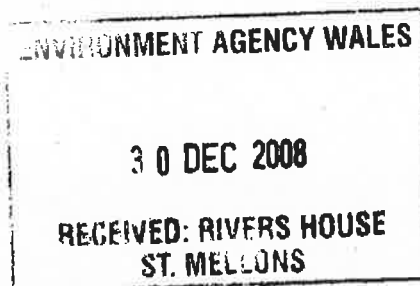
E-MAIL: phil@plrservices.fsnet.co.uk

Ref: ea/ghh/lf/1/12/08

Your ref: EAWML30077

29/12/08

Environment Agency Wales,
Rivers House,
St. Mellons Business Park,
St. Mellons,
Cardiff,
CF3 0EY.
(Fao: K. Ashcroft, Regulatory Assistant)



Dear Sir,

Re: Monitoring conditions – Croescarneinon Farm, EAWML 30077

With reference to your letter of the 31st October 2006 regarding the submission of site monitoring reports please find attached the following documents:

- Surface water determinands report
- Groundwater determinands report
- Laboratory certificate of analysis
- Landfill gas determinands monitoring record

These are the analytical results for the third quarter of the 2008/09 monitoring period.
I trust the enclosed is satisfactory but please do not hesitate to contact me if the contrary.

Yours faithfully,

A handwritten signature in cursive script that reads "Philip Rees".

P.L.Rees, CSci, C. Chem., MRSC, CMIOSH, RSP, CEnv, MCIWM, ACQI.

cc. Mr. R. Harry

enc: Monitoring conditions return

Water Analysis 2007 - Croescaeion Farm - WML30077 - Surface water

Units	Determinands	S/W	WQS	2.02.2007	22.5.07	24.8.07	13.12.07	26.03.08	16.07.08	30.10.08	MEAN
pH Units	pH	5.5-9 G		7.9	8.1	8.5	7.8	8.1	8.1	7	7.9
uS/cm	Conductivity @ 20c	1000 G		446	537	431	410	411	462	490	455.3
mg/l O	Oxygen (Dissolved) DO			8.4	2.1	3.2	9.3	nr	2.9	nr	5.2
mg/l O	COD (Total)	30 G		<20	21	22	26	40	<20	<20	15.6
mg/l N	Ammoniacal Nitrogen		4	0.6	0.6	<0.3	<0.3	<0.3	<0.3	<0.3	0.2
mg/l	Chloride	200 G		16	15	12	14	13	14	32	16.6
Temperature	Degrees C			10	12	7	7	10	14	10	10.0

MEAN Average result based on actual figures (not less than <).

S/W EQS Surface water quality standard - G-guidance value

Results in bold indicate result which exceeds at least one of the reference standards.

WQS EC Directive (75/440/EEC, G-guide)

() Sample points as sampling plan

Water Analysis 2007 - Croescameinon - WML30077 - Groundwater

Units	Sampling Date	GW	WQS	02.03.07	22.5.07	24.8.07	13.12.07	26.03.08	16.07.08	30.10.08	MEAN
Determinands											
pH		5.5 to 9.5		8.3	7.3	8.3	7.2	7.4	7.2	7.3	7.6
uS/cm		400		514	485	460	455	468	496	384	468.0
mg/l O				7.4	2	2.4	<0.5	nr	5	nr	3.4
mg/l O				n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0
mg/l O				<20	nr	nr	nr	nr	nr	nr	0.0
mg/l CaCO ₃				167	167	178	187	170	178	150	171.0
mg/l N				1.1	1.4	<0.3	<0.3	<0.3	0.3	0.7	0.5
mg/l N				nr	8.2	6.3	6.7	4.7	4.1	5.5	5.1
mg/l N				33	27	20	19	33	30	12	24.9
mg/l				25	7	20	20	17	21	21	18.0
mg/l				3.1	2.8	2.3	2.8	3	2.6	<4	2.4
mg/l				0.005	<0.0005	<0.0005	0.002	<0.0005	<0.0005	<0.0003	0.0003
mg/l				0.05	<0.005	<0.005	<0.005	<0.005	<0.005	0.001	0.0001
mg/l				0.05	0.009	0.007	0.05	<0.005	<0.005	0.01	0.05
mg/l				0.005	<0.005	0.009	0.012	0.01	<0.005	0.008	0.006
mg/l				0.05	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	0.00
mg/l				0.1	0.014	0.023	0.03	0.01	<0.005	0.04	0.02
mg/l				0.05	0.11	0.06	0.67	0.49	<0.05	0.76	0.36
mg/l				0.05	nr	0.021	0.06	0.024	0.042	0.078	0.05
mg/l				20	22	21	27	35	19	8.46	22
mg/l				10	10	9.5	12	11	11	7.23	10
mg/l				100	55	51	58	55	57	56	56
mg/l				30	18	16	18	19	18	20	18
mg/l				10	10	12	10	11	13	12	11.1
Temperature				2	1.6	1.6	1.6	1.5	1.6	0.8	1.5
Metres				2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Metres				2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6

MEAN Average result based on actual figures (not less than <).

L/F Comp. Landfill Completion criteria (as WMP26A).

GW WQS Water Quality Standard based upon Water Supply Regulations

Results in bold indicate result which exceeds at least one of the reference standards.

WQS EC Directive (75/440/EEC, G-guide)

() Sample points as sampling plan

nr no result

Certificate of Analysis



1314
0897
1228
1510

slw

Report Number: **COV/558466/2008**

Issue **1**

Laboratory Number: **10887727**

Sample **2** of **3**

Sample Source: **PLR Services**

Sample Point Description: **PLR Services**

Sample Description: **Site 2 CROES**

Sample Date: **30 October 2008** Sample Received **30 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
pH	7.0	pH units	Y Cov	WAS039
Conductivity- Electrical 20C	490	uS/cm	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.3	mg/l	Y Cov	WAS036
Chloride as Cl	32	mg/l	Y Cov	WAS036
Dissolved Oxygen concentration	Analyst Comment	mg/l	Y Cov	WAS052
COD (Total)	<20	mg/l	Y Cov	WAS040

Analyst Comments for 10887727: Insufficient sample for Dissolved Oxygen analysis.

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = AICERTS, S = Sub-contracted
Analysed at: Bri = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered, I/S=insufficient sample

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Certificate of Analysis



G/W

Report Number: **COV/558466/2008**
Laboratory Number: **10887728**

Issue **1**
Sample **3** of **3**

Sample Source: **PLR Services**
Sample Point Description: **PLR Services**
Sample Description: **Site 2 Croes**

Sample Date: **30 October 2008** Sample Received **30 October 2008** Analysis Complete: **13 November 2008**

Test Description	Result	Units	Accreditation	Method
Cadmium, Total as Cd	<0.0003	mg/l	Y Cov	WAS049
Calcium, Total as Ca	56	mg/l	Y Cov	WAS049
Chromium, Total as Cr	0.001	mg/l	Y Cov	WAS049
Copper, Total as Cu	0.008	mg/l	Y Cov	WAS049
Iron, Total as Fe	0.76	mg/l	Y Cov	WAS049
Lead, Total as Pb	0.006	mg/l	Y Cov	WAS049
Magnesium, Total as Mg	20	mg/l	Y Cov	WAS049
Manganese, Total as Mn	0.078	mg/l	Y Cov	WAS049
Nickel, Total as Ni	0.0020	mg/l	Y Cov	WAS049
Potassium, Total as K	7.23	mg/l	Y Cov	WAS049
Sodium, Total as Na	8.46	mg/l	Y Cov	WAS049
Zinc, Total as Zn	0.035	mg/l	Y Cov	WAS049
pH	7.3	pH units	Y Cov	WAS039
Conductivity- Electrical 20C	384	uS/cm	Y Cov	WAS039
Alkalinity as CaCO3	150	mg/l	Y Cov	WAS025
Ammoniacal Nitrogen as N	0.7	mg/l	Y Cov	WAS036
Chloride as Cl	12	mg/l	Y Cov	WAS036
Nitrogen, Total Oxidised as N	5.5	mg/l	Y Cov	WAS036
Sulphate as SO4	21	mg/l	Y Cov	WAS036
Dissolved Oxygen concentration	Analyst Comment	mg/l	Y Cov	WAS052
NVM, light petroleum extract	<4	mg/l	Y Cov	WAS026

Analyst Comments for 10887728:

Insufficient sample for Dissolved Oxygen analysis.

Accreditation Codes: Y = UKAS Accredited, N = Not UKAS Accredited, M = MERTS, S = Sub-contracted.
Analysed at: Br = STL Bridgend, Cov = STL Coventry, Mid = STL Midlands, Rea = STL Reading, Run = STL Runcorn.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. S=insufficient sample.

Signed:

L. Ellis

Name: **L. Ellis**

Date: **13 November 2008**

Title: **Team Leader**

Severn Trent Laboratories Ltd.

STL Business Centre, Torrington Avenue, Coventry, CV4 9GU Tel: +44 (0)24 7642 1213 Fax: +44 (0)24 7685 6575 **Page 4 of 4**

PLR SERVICES

GAS WELL and/or BOREHOLE MONITORING RECORD

SITE: CROESCARNEWION FARM

DATE: 30-10-08

OPERATOR: GREEN CIRCLE

PERMIT No. 30077

AIR TEMP.: 19°C.

BAROMETRIC PRESS.: 990

WEATHER: OVERCAST

INSTRUMENT REF.: GAG15

Borehole or Gaswell	Methane %	Carbon Dioxide %	Oxygen %	Water level metres	Pressure mbar	Temp. Degrees	Sample y/n
<u>1 (Pipe)</u>	<u>0</u>	<u>0</u>	<u>19.5</u>	<u>0.8</u>	<u>NIL</u>	<u>19</u>	<u>N</u>
<u>2 (Cover Pipe)</u>	<u>0</u>	<u>0</u>	<u>19.5</u>	<u>0.8</u>	<u>NIL</u>	<u>19</u>	<u>N</u>

NOTES

MUCH OVERGROWTH - DIFFICULT TO ACCESS

LOW FLOW IN NEARBY STREAM

ACTION REQUIRED

SIGNED: P. Rees

DATE: 30/10/08

APPROVED: _____

DATE: _____

20/5/07

PLR SERVICES

TEL/FAX: 01792 775404, MOBILE: 07703 470326

E-MAIL: phil@plrservices.fsnet.co.uk

SITE INSPECTION REPORT SIGNIFICANT EFFECTS

Site: CROESCAWELION FARM WML number: 30077
Date: 30-10-08 Temperature: 19°C
Barom. Press: 990 Weather: OVERCAST

Monitoring of:

Remarks:

Gates/Fences/Security	:	Satisfactory/ un-satisfactory
Cap erosion	:	Satisfactory/ un-satisfactory
Evidence of differential settlement e.g. ponding	:	Satisfactory/ un-satisfactory
Odour Level	:	Strong /Weak//None
Leachate	:	Tested /Not Tested
Gas Levels	:	Tested/ Not Tested
Water Monitoring	:	Tested/ Not Tested
Vegetation Die-back	:	Satisfactory/ un-satisfactory
Condition of monitoring points e.g. damage/access	:	Satisfactory/ un-satisfactory
Review of monitoring results	:	Satisfactory/ un-satisfactory
Surface water observations - discharge, flow etc	:	LOW FLOW.
Leachate observations - break-out, staining etc	:	EVIDENT AT B/H.
Landfill gas - emissions, odour etc	:	NONE DETECTED

Other Observations/Action required:

Note any CAR/PAR Issued

'DIFFICULT ACCESS TO MONITORING/SAMPLING
POINTS DUE TO XS OVER/UNDER GROWTH

Signed:
Inspector:

P. Lees

Approved:
Consultant: