

EA Annual
Submissions



Lara Cubley
Natural Resources Wales
Chester Road
Buckley
CH7 3AJ
Flintshire

Your Ref: LP 3738GG (BX4666IZ)

Date: 16th February 2015

Subject: 2014 Annual Submissions

Dear Lara Cubley,

Please find attached our annual submissions report for the Optical Shops manufacturing of Infra red Products Permit LP3738GG (BX4666IZ).

As you will see from the below report and also the already supplied Emissions Report the Total Particulate Matter and VOC emissions have not exceeded the permitted limit. Calculations that led to these conclusions have been carried out in accordance with Note 2, Schedule 2 – Reporting of monitoring Data.

Due to Thallium & Gallium not being machined during the time that ESG Ltd conducted the Emissions monitoring estimation for the g/annum has been carried out.

Thallium & Gallium make up around 10% of the materials; therefore, it is reasonable to expect that the annual quantity would not exceed that of the Selenium.

If there is any additional information required please do not hesitate to contact me.

Yours Sincerely,

Debbie Roberts
Environmental & COSHH Engineer

MONITORING RETURNS N. WALES

	INITIALS	DATE
CHECKED Vs AUTHORISATION	L.C.	6.3.15
TRACKING	JB	17.2.15
OK FOR PUBLIC REGISTER	L.C.	6.3.15
TTED TO EYPL'S RESPONSIBILITY		

EA Annual Submissions

Please refer to ESG Limited Report to reinforce the Data used and contained below.

Permit Number: BX4666IZ

Operator: Qioptiq LTD, St Asaph

Facility:

St Asaph, Infra Red Optics

Form Number: A1 – Air

ANNUAL: Reporting of emissions to air for the period from 01/01/2014 to 31/12/2014

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ⁽¹⁾	Test Method ⁽²⁾	Sample Date and Times ⁽³⁾	Uncertainty ⁽⁴⁾
A2	Particulate Matter	1 mg/m ³	60 Minutes (1118 LTR)	Total Annual: 1272.6g Total: 0.28g/hr	BS EN 13284-1	17.11.14 09:45-10:45	-
A5	Particulate Matter	1 mg/m ³	60 Minutes (1396 LTR)	Total Annual: 909g Total: 0.20g/hr	BS EN 13284-1	18.11.14 07:50-08:50	-
A7	Particulate Matter	1 mg/m ³	60 Minutes (1193 LTR)	Total Annual: 1136.3g Total: 0.25g/hr	BS EN 13284-1	17.11.14 12:30-13:30	-
A10	Particulate Matter	1 mg/m ³	60 Minutes (1323 LTR)	Total Annual: 636.3g Total: 0.14g/hr	BS EN 13284-1	17.11.14 11:05-12:05	-
A2,A5,A7,A10 COMBINED	Particulate Matter (g/annum) (See Note 1)	-	NA	3954.2g/annum	BS EN 13284-1	-	-
A2	White Spirit, expressed as C (mg/m ³)	-	30 Minutes (1.5 LTR)	Annual: 559.03kg Total: 123g/hr	BS EN 13649	17.11.14 10:15-10:45	-
A10	White Spirit, expressed as C (mg/m ³)	-	30 Minutes (1.5 LTR)	Annual: 681.75kg Total: 150g/hr	BS EN 13649	17.11.14 10:59-11:29	-
A2	Specified Metals (mg/m ³)	-	60 Minutes (1161 LTR)	Total Annual: 0.46g (As) Total: 0.0001g/hr	BS EN 14385	17.11.14 09:45-10:45	-
A5	Specified Metals (mg/m ³)	-	60 Minutes (1312 LTR)	Total Annual: 0.46g (As) Total: 0.0001g/hr	BS EN 14385	18.11.14 07:50-08:50	-
A7	Specified Metals (mg/m ³)	-	60 Minutes (1296 LTR)	Total Annual: 0.95g (As) Total: 0.0002g/hr	BS EN 14385	17.11.14 12:30-13:30	-
A10	Specified Metals (mg/m ³)	-	60 Minutes (1270 LTR)	Total Annual: 0.46g (Se) Total: 0.0001g/hr	BS EN 14385	17.11.14 11:05-12:05	-

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Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ⁽¹⁾	Test Method ⁽²⁾	Sample Date and Times ⁽³⁾	Uncertainty ⁽⁴⁾
A2, A5, A7, A10 COMBINED	Thallium and its compounds (g/annum)	-	Not machined N/A	Total Annual: Total Annual: <1g/annum	N/A	N/A	Estimate
A2, A5, A7, A10 COMBINED	Gallium and its compounds (g/annum)	-	N/A	Total Annual: 0.46g/annum	N/A	N/A	Estimate
A2, A5, A7, A10 COMBINED	Selenium and its compounds (g/annum)	-	N/A	Total Annual: 1.87g/annum	N/A	N/A	-
A2, A5, A7, A10 COMBINED	Arsenic and its compounds (g/annum)	-	N/A	Annual: 1251.51kg/annum	N/A	N/A	-
Installation A2 as C (A2, A10, A11)	Volatile Organic Compounds Kg/Annum	-	N/A	Annual: 7.73kg Total: 1.7g/hr	BS EN 13649	19.11.14 08:50-09:20 17.11.14 09:45-10:45 18.11.14 07:50-08:50	-
A11	VOC	75 mg/m3	30 Minutes (14.45 Litres) N/A	3.11	N/A	17.11.14 12:30-13:30	-
A2	Extraction Rate (m ³ s ⁻¹)		N/A	3.59	N/A	17.11.14 11:05-12:05	-
A5	Extraction Rate (m ³ s ⁻¹)		N/A	4.73	N/A	19.11.14 08:50-09:20	-
A7	Extraction Rate (m ³ s ⁻¹)		N/A	4.87	N/A		-
A10	Extraction Rate (m ³ s ⁻¹)		N/A	3.04	N/A		-
A11	Extraction Rate (m ³ s ⁻¹)		N/A				-

Operator's comments:

Final annual total figures are based on 4545 operating hours calculated against ESG g/hour result. These operating hours are an averaged annual figure based on a department operating 2 shifts a day at 7 ½ hours each over 303 days (Sundays x 52, and 10 day Christmas shut down has not been included).

(g/hour x 4545) = Annual Total in g/annum

Signed *Debbie I. Roberts*
(Debbie Roberts, Environmental & COSHH Engineer)

Date 16/02/15

EA Annual Submissions

ANNUAL: Reporting of emissions to sewer for the period from 01/01/14 to 31/12/14 Form Number: S1 –Sewer

Emission Point	Substance / Parameter	Limit Value (mg/l)	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]
S1	Chemicals Oxygen Demand	3000	50	Severn Trent Labs PLC UKAS 1223	31/01/14 09:25
S1	Chemicals Oxygen Demand	3000	189	Severn Trent Labs PLC UKAS 1223	11/02/14 14:00
S1	Chemicals Oxygen Demand	3000	50	Severn Trent Labs PLC UKAS 1223	18/03/14 14:30
S1	Chemicals Oxygen Demand	3000	50	Severn Trent Labs PLC UKAS 1223	24/04/14 14:15
S1	Chemicals Oxygen Demand	3000	76	Severn Trent Labs PLC UKAS 1223	23/05/14 10:10
S1	Chemicals Oxygen Demand	3000	190	Severn Trent Labs PLC UKAS 1223	06/06/14 08:45
S1	Chemicals Oxygen Demand	3000	50	Severn Trent Labs PLC UKAS 1223	25/07/14 09:35
S1	Chemicals Oxygen Demand	3000	50	Severn Trent Labs PLC UKAS 1223	15/08/14 10:20
S1	Chemicals Oxygen Demand	3000	138	Severn Trent Labs PLC UKAS 1223	19/09/14 09:52
S1	Chemicals Oxygen Demand	3000	50	Severn Trent Labs PLC UKAS 1223	21/10/14 14:35
S1	Chemicals Oxygen Demand	3000	-	Severn Trent Labs PLC UKAS 1223	Not Received
S1	Chemicals Oxygen Demand	3000	-	Severn Trent Labs PLC UKAS 1223	Not Received

Signed  (Debbie Roberts, Environmental & COSHH Engineer)

Date: 16/02/2015

EA Annual Submissions

Facility: St Asaph, Infra Red Optics Form Number: WU 1 – Water Usage

Annual: Reporting of Water Usage for the year 2014

Water Source	Usage (m ³ /year)	Specific Usage (m ³ /unit output)
Mains water	442	0.084
TOTAL WATER USAGE	442	

Operator's comments :

Using the water meter readings which are strategically placed in all key areas of the optical shop an accurate estimate of the consumption of water per unit is as follows:
5242 lenses as defined in the permit have been processed throughout 2014; this is 7% of the 84899 lens grand total which were processed on site at St Asaph. By dividing the defined permitted lens against the Optical Shop meter readings has generated this specific usage figure.

Signed
(Debbie Roberts, Environmental & COSHH Engineer)

Date 16/02/15

EA Annual Submissions

Facility: St Asaph, Infra Red Optics

Form Number:

E1 – Energy

Annual: Reporting of Energy Usage for the year 2014

Energy Source	Energy Usage Quantity	Primary Energy (MWh)	CO2 Produced (Tonnes)
Electricity *	1568	3763	853
Natural Gas	555	555	102
TOTAL	2123	4318	955

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments:

Electricity Total: 11,202 MWh with 14% installation estimate = 1568 MWh.
Gas Total: 2920 with 19% of installation estimate = 555 MWh

Signed 
(Debbie Roberts, Environmental & COSHH Engineer)

Date: 16/02/15

EA Annual Submissions

Facility: St Asaph, Infra Red Optics Form Number: R1 – Waste Disposal

Annual: Reporting of Waste disposal and recovery for the year 2014

Waste Description	Disposal Route	Tonnes	Recovery Tonnes
Hazardous Waste Total	Segregation and recycling facility, landfill.	42.55	5.63
Non-hazardous Waste (40% of Site Total)	Segregation and recycling facility, landfill.	39.01	27.3
TOTAL:			

Trends in Waste Disposal and Recovery Year	Parameter	TOTAL/N/H Waste (Tonnes)
2005	Total Hazardous Waste (Tonnes)	46
2006		40.7
2007		38.9
2008		45.2
2009		44.2
2010		41.4
2011		44
2012		35.48
2013		39.00
2014		39.01

Operator Comments:

ASH Waste Services released their recycling figures which had a mean average of 69.25% recovery rate for general waste, for the purpose of this report 70% has been used to calculate the recycling figures. Cardboard and Paper have been recycled at a 100% recovery rate. Wood has been recycled at 99% recovery rate.

The Optical Shop accounts for an estimated 40% of Qioptiq's total hazardous waste (106.38).

Signed
(Debbie Roberts, Environmental & COSHH Engineer)

Date 16/02/15

Facility: St Asaph, Infra Red Optics Form Number: P/1 Performance

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Annual: Reporting of other performance indicators for the period 01/01/2014 to 31/12/2014

Parameter	Units
Water Usage	442
Energy Consumption	4318

Trends in Performance	Environmental	
Year	Water Consumption Per Infra Red Optic	Energy Consumption Per Infra Red Optic
2005	1.30 m3 / lens	0.23 MWh / IR Lens
2006	0.0303 m3 / lens	0.28 MWh / IR Lens
2007	0.0167 m3 /lens	0.213 MWh / IR Lens
2008	0.0240 m3 / lens	0.512 MWh / IR Lens
2009	0.0404 m3 / lens	0.553 MWh / IR Lens
2010	0.124 m3 / lens	0.765 MWh / IR Lens
2011	0.077 m3 / lens	0.677 MWh / IR Lens
2012	0.011 m3 / lens	0.369 MWh / IR Lens
2013	0.012 m3 /lens	0.471 MWh/ IR Lens
2014	0.084 m3/lens	0.824 MWh/IR Lens

Operator's comments :

Total 5242: Typically Gallium Arsenide Lens: 36.2g from a 70g blank. Viewed as the typical lens and produced in volume.
 5242 lenses as defined in the permit have been processed throughout 2014; this is 7% of the lens grand total which were processed on site at St Asaph. By dividing the defined permitted lens against the Optical Shop meter readings and MWh this has generated this specific usage figure.

Signed*Debbie Roberts*.....
 (Debbie Roberts, Environmental & COSHH Engineer)

Date 16/02/2015