

Notice: Variation of Permit

This permit has been varied by the Scottish Environment Protection Agency (SEPA) in exercise of its powers under Regulation 46 of the Pollution Prevention and Control (Scotland) Regulations 2012 (“the Regulations”). The terms used in this notice, unless otherwise defined, have the same meaning as in the Regulations.

Permit Number:	PPC/A/1013141/CON01
Site address:	Petroineos Manufacturing Scotland Limited (PIMSL) PO Box 21, Bo’ness Road, Grangemouth, Stirlingshire, FK3 9XH
Operator:	Petroineos Manufacturing Scotland Limited (PIMSL) SC010612 PO Box 21, Bo’ness Road, Grangemouth, Stirlingshire, FK3 9XH
Variation Number:	VAR01
Effective Date of Variation:	24 July 2023
Details of Variation:	The permit is varied as specified in the Schedule attached.

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Schedule

The permit has been varied as follows:

1. Table 2.1 has been deleted and replaced as follows:

Table 2.1 – Reporting Requirements

Summary of Information to be Reported	Condition	Date/Within period/ Frequency to be Reported	Date First Report Due
Primary point of contact with SEPA	2.1.1 & 2.1.2	Without delay in the event of a different person being appointed	As required
Incident notification	2.4.4, 2.4.5, & 4.5.7	Without delay by telephone, confirmation in writing by the next working day	As required
Incident investigation report	2.4.6	Within 14 days of the date of the Incident unless otherwise agreed in writing with SEPA	As required
Resource Utilisation Report	2.5.2	Once every four years	31 March 2023
Raw materials, energy and fuel	2.5.5	Annually within three months of the end of the calendar year	Annually
Assessment of measures to protect soil and groundwater	2.6.4	At least once every four years	30 November 2022
Groundwater monitoring	2.6.5	Annually	31 October 2019
Soil monitoring	2.6.6	At least every 10 years	31 October 2029
Methodology for groundwater/soil monitoring	2.6.7	At least three months in advance of groundwater or soil monitoring required by 2.7.5 or 2.7.6	Not applicable
Changes to soil and groundwater monitoring methodology	2.6.9	No later than six months after each monitoring event	Not applicable
Intention to cease permitted activities, or part thereof	2.8.2	No later than two months prior to the date of cessation	As required

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Summary of Information to be Reported	Condition	Date/Within period/ Frequency to be Reported	Date First Report Due
Commissioning reports	3.8.2	Within one month from the end of the commissioning	As required
Noise and Vibration Assessment	4.2.1	At least every four years after first report	31 August 2022
VOC fugitive release inventory	4.4.1	Annually within two months of the end of the calendar year	Annually
Annual leak repair programme and review	4.4.3	Annually within two months of the end of the calendar year	Annually
Forecast of planned flaring events	4.5.1	Annually within one month of the end of the calendar year	Annually
Quarterly flaring review	4.5.2	Quarterly within one month of the end of the relevant period	Quarterly
Annual flaring review	4.5.3	Annually within two months of the end of the calendar year	Annually
Any planned flaring of hydrocarbons not declared in the forecast or of changes to the forecast	4.5.5	In advance	As required
Actual sulphur recovery of SRUs and TGU	4.7.3.1	Every two years	31 March 2020
Quarterly record of the monthly sulphur mass balance	4.7.4	Quarterly within one month of the end of the relevant period	Quarterly
Annual Sulphur/SO ₂ Emissions and Predicted sulphur dioxide annual mass emissions for the subsequent year	4.7.7	Annually within one month from the end of the calendar year	Annually
Air emission spot testing	5.2.5, 6.2.5.2, 7.2.5 & 8.2.5	Quarterly within one month from the end of the relevant quarter	Quarterly
Air emission continuous monitoring results	5.2.5, 6.2.5.2, 7.2.5 & 8.2.5	Quarterly within one month from the end of the relevant quarter	Quarterly
Mass emissions to air	5.2.6, 6.5.2, 7.2.6 & 8.2.6	Annually within two months from the end of the calendar year	Annually

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Summary of Information to be Reported	Condition	Date/Within period/ Frequency to be Reported	Date First Report Due
Results of assessment of benzene and phenol levels in desalter brine from CDU1, CDU2 & CDU3	5.4.1	Annually within two months from the end of the calendar year	Annually
QAL 2 and AST Reports	6.2.5.2	Quarterly within one month from end of the relevant quarter	As required by Condition 6.2.1.5 and 6.2.1.6 respectively
Operating Hours and Energy Input per fuel	6.2.5.2.b	Quarterly and annually within one month of the end of the calendar quarter and calendar year respectively	Quarterly and Annually
Notification of change to SUSD periods for LCPs	6.3.3.1.a	As required	14 days prior to change being made
Notification of more than 10 validated daily average data sets being discarded due to malfunction or maintenance of CEMS	6.3.3.1.b	As required	Within five days or other such periods agreed in writing with SEPA
Emissions to water	8.3.5	Quarterly within one month from the end of the relevant quarter	Quarterly
Mass emissions to water	8.3.6	Annually within two months from the end of the calendar year	Annually

2. Condition 3.1.2 is deleted and replaced as follows:

3.1.2 Whenever any record in any register required by a Condition in this Schedule is amended or extended as a result of any Change In Operation of the Permitted Installation, the Operator shall record the date of, and include a summary of, any notification made under Regulation 45 of the Regulations or any application made under Regulation 46 of the Regulations in respect of the said Change In Operation, or a justification of why the Operator believes that neither was required in respect of the said Change In Operation.

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3. Condition 3.2.1.5 is deleted and replaced as follows:
 - 3.2.1.5 any plant operating instructions that are necessary to operate the Chemical Production Process in compliance with any Condition(s) of this Permit;
4. Conditions 4.5.3.5 and 4.5.3.6 are deleted and replaced as follows:
 - 4.5.3.5 Progress against any improvement plans, submitted in compliance with Condition 4.5.3.4, specified in previous reports.
 - 4.5.3.6 Any work undertaken in addition to that mentioned in Condition 4.5.3.5, during the previous 12 months to minimise the number and/or impact of flaring events,
5. Condition 4.5.9 is deleted and replaced as follows:
 - 4.5.9 Colour continuous closed television monitoring and recording of all elevated flares shall be provided and be available for viewing in the control room. The recording shall superimpose the date and time on the picture. Records made in compliance with this Condition shall be retained for at least one month from the date of its being made.

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6. Table 5.1 is deleted and replaced as follows:

Table 5.1 – Emissions to Air ELVs

Source of Emission	Emission point number	EP-CDU3-1	EP-CRU-1	EP-CRU-2
	Emission source	CDU3/DHT combined (BA-101 & BA-301)	CRU Main Heater & WHB common stack (S-110)	CRU 1 st Interheater Unit (B-109)
	Large Combustion Plant	Yes (124 MWth)	Yes (127 MWth)	Yes (63 MWth)
	Stack height/diameter (m)	79 / 3.7	95.7 / 2.7	67.5 / 2.4
	Location on Figure 5.1	1	2	5
	NGR	NS 9485 8183	NS 9487 8166	NS 9462 8182
Monitoring Details	Type of Monitoring	C, SS	C, SS	C, SS
	Sampling Location	Stack	Stack	Stack
Limits for Parameters from Emission Source	Carbon Monoxide	Refer to Table 6.1		
	Oxides of Nitrogen (as NO₂)			
	Sulphur Dioxide			
	Particulate			
	Smoke			
	Dioxin/Furans	-	As specified in Condition 5.4.3	-

Note: where “ - ” is used no emission limit has been set.

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Table 5.1 (cont'd) – Emissions to Air ELVs

Source of Emission	Emission point number	EP-FLARE-1	EP-FLARE-2
	Emission source	No. 1 Flare	No. 2 Flare
	Large Combustion Plant	No	No
	Stack height/diameter (m)	91.5 / 1.075	91.5 / 1.075
	Location on Figure 5.1	3	4
	NGR	NS 9501 8172	NS 9494 8159
Monitoring Details	Type of Monitoring	C (flow only)	C, SS (flow only)
	Sampling Location	Not required	Not required
	Oxides of Nitrogen (as NO₂)	-	-
	Sulphur Dioxide	-	-
	Smoke	As specified in Condition 4.5.8	

Note: where “ - ” is used no emission limit has been set.

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Table 5.1 (cont'd) – Emissions to Air ELVs

Source of Emission	Emission point number	EP-CDU1-1	EP-CDU1-2	EP-CDU2-1
	Emission source	No. 1 CDU B1 Heater	No. 1 CDU B1A Heater	No.2 CDU / No.2 DHT (combined)
	Large Combustion Plant	No (29MW)	No (19MW)	Yes (87 MW)
	Stack height/diameter (m)	42.3 / 1.37	56.4 / 1.58	61 / 3.38
	Location on 5.2	1	2	3
	NGR	NS 9452 8196	NS 9454 8194	NS 9462 8182
	Fuel	Fuel gas	Fuel gas	Fuel gas
Monitoring Details	Type of Monitoring	SS	SS	C, SS
	Sampling Location	Stack	Stack	Stack
Limits for Parameters from Emission Source	Carbon Monoxide mg/m³	100	100	Refer to Table 6.1
	Oxides of Nitrogen (as NO₂) mg/m³	150 note 4	150 note 4	
	Sulphur Dioxide mg/m³	500 note 1	500 note 1	
		35 note 2,3	35 note 2,3	
	Particulates mg/m³	-	-	
	Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold		
Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972) other than short term excursions associated with soot blowing, load or fuel changes				

Note: where “ - ” is used no emission limit has been set.

Note 1: Until 31 March 2024

Note 2: From 01 April 2024

Note 3: During TAR periods, amine scrubber maintenance or scheduled CRU Regeneration events a higher monthly limit of 70mg/m³ applies. Each period must be agreed in writing in advance.Note 4: During periods when Hydrogen levels in the fuel gas main exceed 50% an ELV of 200 mg/m³ applies. All periods must be reported to SEPA on a quarterly basis as agreed in writing. (This does not apply to VDU-2 when pre-heat is in operation).

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Table 5.1 (cont'd) – Emissions to Air ELVs

Source of Emission	Emission point number	EP-HFU-1
	Emission source	Hydrofiner combined heater & stripper boilers
	Large Combustion Plant	No (18.3 + 12.3MW)
	Stack height/diameter(m)	80 / 1.35
	Location on Figure 5.2	4
	NGR	NS 9450 8179
	Fuel	Fuel Gas
Monitoring Details	Type of Monitoring	SS
	Sampling Location	Stack
Limits for Parameters from Emission Source	Carbon Monoxide mg/m³	100
	Oxides of Nitrogen (as NO₂) mg/m³	150 note 4
	Sulphur Dioxide mg/m³	500 note 1
		35 note 2, 3
	Particulates mg/m³	-
	Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold
Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972) other than short term excursions associated with soot blowing, load or fuel changes		

Note: where “ - ” is used no emission limit has been set.

Note 1: Until 31 March 2024

Note 2: From 01 April 2024

Note 3: During TAR periods, amine scrubber maintenance or scheduled CRU Regeneration events a higher monthly limit of 70mg/m³ applies. Each period must be agreed in writing in advance.

Note 4: During periods when Hydrogen levels in the fuel gas main exceed 50% an ELV of 200 mg/m³ applies. All periods must be reported to SEPA on a quarterly basis as agreed in writing. (This does not apply to VDU-2 when pre-heat is in operation).

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Table 5.1 (cont'd) – Emissions to Air ELVs

Source of Emission	Emission point number	EP-HYDX-1		EP-HCU-2	EP-HYD-2
	Emission source	S – 601 No.2 VDU and HCU heaters (combined)		Mild Vacuum Column Reboiler (stack H-370)	Hydrogen Plant Reforming Furnace H201 (stack S-602)
	Stack height/diameter (m)	85 / 3.5		70 / 1.5	84 / 4.19
	Large Combustion Plant	Yes VDU2 Charge Heater H-101 (65MW) + H-301 (24 MW) + H-302 (80MW)		No (20MW)	No (118MW– steam reforming furnace)
	Location on Figure 5.3	1		5	7
	NGR	NS 9462 8182		NS 9477 8137	NS 9471 8154
	Fuel	Refer to Table 6.1		Fuel Gas	Fuel Gas
Monitoring Details	Monitoring Point Number	EP-VDU-1 (H101)	EP-HCU-1 (H301 & 302)	-	-
	Type of Monitoring	C, SS	C, SS	SS	C, SS
	Sampling Location	VDU2 duct to stack	HCU duct to stack	Duct to stack	Duct to stack
Limits for Parameters from Emission Source	Carbon Monoxide mg/m³	Refer to Table 6.1		100	100
	Oxides of Nitrogen (as NO₂) mg/m³			150 note 4	300
	Sulphur Dioxide mg/m³			500 note 1	500 note 1
				35 note 2, 3	35 note 2
	Particulate mg/m³			-	-
	Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold			
Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972) other than short term excursions associated with soot blowing, load or fuel changes					

Note: where “-” is used no emission limit has been set.

Note 1: Until 31 March 2024

Note 2: From 01 April 2024

Note 3: During TAR periods, amine scrubber maintenance or scheduled CRU Regeneration events a higher monthly limit of 70mg/m³ applies. Each period must be agreed in writing in advance.Note 4: During periods when Hydrogen levels in the fuel gas main exceed 50% an ELV of 200 mg/m³ applies. All periods must be reported to SEPA on a quarterly basis as agreed in writing. (This does not apply to VDU-2 when pre-heat is in operation).

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Table 5.1 (cont'd) - Emissions to Air ELVs

Source of Emission	Emission point number	EP-HYD-1	EP-SRU-2	EP-SRU-4	EP-FLARE-3
	Emission source	Catacarb Regenerator Atmospheric Vent (V-205)	SRU5 J-50701A/B Eductors vent	SRU6 J-60701A/B Eductors vent	No. 3 Flare
	Stack height/diameter (m)	84 / 4.2	16.5 / 0.08	16.5 / 0.08	91.5 / 1.075
	Large Combustion Plant	No	No	No	No
	Location on 5.3	6	Not shown	Not shown	2
	NGR	NS 9471 8154	NS 9479 8153	NS 9475 8161	NS 9485 8145
Monitoring Details	Type of Monitoring	C, SS	-	-	C (flow only)
	Sampling Location	Duct to stack	-	-	Not required
Limits for Parameters from Emission Source	Carbon Monoxide, mg/m³	-	-	-	-
	Oxides of Nitrogen (as NO₂), mg/m³	-	-	-	-
	Sulphur Dioxide mg/m³	-	-	-	-
	Particulates, mg/m³	-	-	-	-
	Smoke	-	-	-	As specified in Condition 4.5.8

Note: where "-" is used no emission limit has been set.

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Table 5.1 (cont'd) – Emissions to Air ELVs

Source of Emission	Emission point number	EP-SRU-1	EP-SRU-3
	Emission source	H – 50704 Sulphur Recovery Unit 5	H – 60704 Sulphur Recovery Unit 6
	Stack height/diameter (m)	70 / 0.91	70 / 0.91
	Large Combustion Plant	No	No
	Location on 5.3	3	4
	NGR	NS 9479 8153	NS 9475 8161
Monitoring Details	Type of Monitoring	C, SS	C, SS
	Sampling Location	Stack	Stack
Limits for Parameters from Emission Source	Carbon Monoxide, mg/m³	-	-
	Oxides of Nitrogen (as NO₂), mg/m³	-	-
	Sulphur Dioxide, mg/m³	1 tonne per day Note 1	
	Particulates, mg/m³	-	-
	Hydrogen Sulphide, mg/m³	-	-
	Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold	
	Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972)		

Note: where “-” is used no emission limit has been set.

Note 1: The limits apply except for:

- (i) periods of start-up and shutdown of either SRU and the TGTU;
- (ii) periods of planned preventative maintenance of TGTU notified in advance in writing to SEPA;
- (iii) in the case of Incidents solely involving the TGTU and its control and shutdown system (and without prejudice to Condition 2.4.1) where the cumulative duration of non-operation of TGTU does not exceed 7 days in a calendar year.

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7. Table 6.1 has been deleted and replaced as follows:

Table 6.1 – Emissions to Air ELVs

Source of Emission	Emission point number	EP-CDU3-1	EP-CRU-1	EP-CRU-2	EP-CDU2-1	EP-HYDX-1	
	Emission source	CDU3/DHT combined (BA-101 & BA-301)	CRU Main Heater & WHB common stack (S-110)	CRU 1st Interheater Unit (B-109)	No.2 CDU / No.2 DHT (combined)	S – 601 No.2 VDU and HCU heaters H-101, H-301 & H-302 (combined)	
	Large Combustion Plant & EIONET LCP Number	Yes (124 MWth) EIONET No. 3	Yes (127 MWth) EIONET No. 41	Yes (63 MWth) EIONET No. 40	Yes (87 MW) EIONET No. 1	Yes (169MW) EIONET No. 2	
	Stack height/diameter (m)	79 / 3.7	95.7 / 2.7	67.5 / 2.4	61 / 3.38	85 / 3.5	
	Location (Figure Number)	1 (Figure 5.1 in Schedule 5)	2 (Figure 5.1 in Schedule 5)	5 (Figure 5.1 in Schedule 5)	3 (Figure 6.1 in Schedule 6)	1 (Figure 7.1 in Schedule 7)	
	NGR	NS 9485 8183	NS 9487 8166	NS 9490 8175	NS 9463 8184	NS 9463 8137	
	Fuel	Fuel gas	Fuel gas	Fuel gas	Fuel gas	Fuel gas	
Monitoring Details	Monitoring Point Number					EP-VDU-1	EP-HCU-1
	Type of Monitoring	C, SS	C, SS	C, SS	C, SS	C, SS	C, SS
	Sampling Location	Duct to Stack	Duct to Stack	Stack	Ducts to Stack	VDU2 duct to stack	HCU duct to stack

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Limits for Parameters from Emission Source	Emission point number	EP-CDU3-1	EP-CRU-1	EP-CRU-2	EP-CDU2-1	EP-HYDX-1
	CO mg/m ³	100	100	100	100	100
	NOx mg/m ³ (Monthly Mean)	150	150 Note 4	150 Note 4	150 Note 4, 5	150–200 Note 4, 6
	SO ₂ mg/m ³	500 Note 1	500 Note 1	500 Note 1	500 Note 1	500 Note 1
		35 Note 2	35 Note 2, 3	35 Note 2, 3	35 Note 2, 3	35 Note 2, 3
	Particulate mg/m ³	5	5	5	5	5
Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold					
	Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972) other than short term excursions associated with soot blowing, load or fuel changes					

Note: where “ - ” is used no emission limit has been set.

Note 1: Until 31 March 2024

Note 2: From 01 April 2024

Note 3: During TAR periods, amine scrubber maintenance or scheduled CRU Regeneration events a higher monthly limit of 70mg/m³ applies. Each period must be agreed in writing in advance.

Note 4: During periods when Hydrogen levels in the fuel gas main exceed 50% an ELV of 200 mg/m³ applies. All periods must be reported to SEPA on a quarterly basis as agreed in writing. (This does not apply to VDU-2 when pre-heat is in operation).

Note 5: During periods when CDU2 is not operational DHT 2 Daily Limit is increased to 250mg/m³. The monthly ELV continues to apply.

Note 6: ELV calculated from ratio of fuel gas usage between VDU-2 and HCU, VDU-2 has an ELV of 200mg/m³, provided that air pre-heat greater than 200°C is in use (if air pre-heat greater than 200°C is not in use an ELV of 150 mg/m³ applies) and HCU has an ELV of 150mg/m³. See lookup Table 6.7.

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8. Annex I has been deleted and replaced as follows:

ANNEX I – SULPHUR DIOXIDE DEROGATION

1 The Regulation

Regulation 25(6) of the Regulations provides that SEPA must include emission limit values that ensure that emissions do not exceed the levels associated with the best available techniques (BAT-AEL) laid down in the BAT Conclusions.

Regulation 25(12) of the Regulations states:

“SEPA may set a less strict emission limit value... for an installation if –

- (i) an assessment shows that achievement of the emission levels associated with the best available techniques as described in any BAT Conclusions would lead to disproportionately higher costs compared to environmental benefits due to the –
- (ii) the geographical location or local environmental conditions of the installation, or
- (iii) technical characteristics of the installation, ...”

Regulation 25(2)(c) provides that where a less strict value is set ("derogation"); it is a requirement that "the permit specifies the reasons for setting the value, including the result of the assessment and the justification for the conditions imposed". The purpose of this Appendix is to satisfy those requirements.

2 The Derogation Used

SEPA has decided to set ELVs that derogate from the BAT-AEL range in the BAT Conclusions in respect of Sulphur Dioxide.

Parameter	BAT-AEL¹ in the BATc	Derogated ELV	Applicability
Sulphur Dioxide – fuel gas firing	35mg/Nm ³	500mg/Nm ³	All gas fired units until 31 March 2024

¹ BAT-AELs as specified in Tables 6, 13 and 14 of the Refining of mineral oil and gas BREF.

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3 Basis for the Derogation

SEPA has set this emission limit value on the grounds that achievement of emissions within the BAT-AEL range would lead to disproportionately higher costs compared to environmental benefits due to the technical characteristics of the installation:

The technical characteristics of the installation mean that achievement of Sulphur Dioxide emissions within the BAT-AEL range would lead to disproportionately higher costs due to the need to:

- (i) Configuration of the plant within the site results in practical difficulties and increased time and costs for the construction of additional plant.
- (ii) The history of recent investment in techniques designed to reduce emissions.
- (iii) The remaining operational life of the plant.

A Cost Benefit Analysis carried out by SEPA gave the result that achievement of emissions for in the case of Sulphur Dioxide within the BAT-AEL range would lead to disproportionately higher cost for the reasons given above.

4 Justification for the Conditions Imposed

SEPA has included an ELV of 500mg/Nm³ for Sulphur Dioxide on the grounds that SEPA considers it:

- represents BAT for the installation;
- ensures no significant pollution of the environment will be caused and that a high level of protection of the environment as a whole will be achieved;
- does not exceed any emission limit value set out in the Annex V to the Industrial Emissions Directive; and,

is time limited for planned upgrades to 31 March 2024 (500mg/Nm³ for gas firing).

9. Annex II has been deleted.

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10. In the Explanatory Notes Point 5 is deleted and replaced as follows:

5. ADDRESS AND TELEPHONE NUMBERS

The contact address and telephone number for all information to be reported in terms of the permit, is as follows:

Type of communication	Address	Telephone/ Fax	Email
Initial notification of Pollution incident	N/A	0800 80 70 60 24 hour pollution hotline	N/A
Application for New Permit/Variation/ Transfer or Surrender	Registry Scottish Environment Protection Agency Angus Smith Building, 6 Parklands Avenue, Eurocentral, Holytown, North Lanarkshire ML1 4WQ	Tel: 01698 839000 Fax: 01698 738155	registry.angussmith@sepa.org.uk
For all other communications including change notifications, data returns, incident reports and general enquiries	N/A	N/A	As agreed in writing with SEPA