

Our Ref: JK/CD/JW/
EXT05-A-
F0185566

Your Ref: -

PE1563/D

04 September 2015

Ned Sharratt
Assistant Clerk
Public Petitions Committee
The Scottish Parliament
Edinburgh EH99 1SP

By email: petitions@scottish.parliament.uk

Dear Mr Sharratt

CONSIDERATION OF PETITION PE01563

Calling on the Scottish Parliament to urge the Scottish government to ban the use of sewage sludge on land and to look for alternative acceptable methods of disposal as adopted in other European countries

I refer to the written and oral evidence which SEPA provided to the Committee in June 2015 and now enclose further information which was requested by the Committee members.

As a public body committed to openness and transparency, SEPA feels it is appropriate that this response be placed on the public record. If you require further clarification on any aspect of this correspondence, please contact Chris Dailly, Waste and Landfill Tax Manager, SEPA Stirling Office, at the address shown below.

Yours sincerely

John Kenny
Head of National Operations

Enc



Chairman
David Sigsworth

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Public Petitions Committee – Petition PE01563 (Sewage Sludge)

Following to SEPA's appearance at the Public Petitions Committee on 23rd June 2015, further information was requested by Committee members. This is supplied below.

1) Complaints and actions

a) *The number of complaints received by SEPA regarding sewage sludge*

<i>Year</i>	<i>Number of Environmental Events Recorded¹</i>	<i>Number of Notifications Recorded²</i>
2005-06	66	73
2006-07	47	52
2007-08	32	34
2008-09	38	49
2009-10	47	59
2010-11	45	70
2011-12	54	82
2012-13	55	88
2013-14	90	137
2014-15	160	490 ³

b) *The number inspections of sewage sludge spreading/storage activities;*

<i>Year</i>	<i>Number of Inspections (including complaint response)</i>
2005-06	82
2006-07	47
2007-08	52
2008-09	33
2009-10	37
2010-11	23
2011-12	42
2012-13	70
2013-14	75
2014-15	97

The figures provided here include planned inspections as well as reactive inspections in relation to reports of an environmental event.

¹ Environmental Events are the incidents which are reported to SEPA. An environmental event may be recorded by SEPA as a result of single notification or by multiple notifications

² Notifications are the individual complaints which have been made and are associated with an environmental event.

³ Of this figure, approximately 350 of these notifications were recorded in relation to two sites over an intensive period.

c) The number of times SEPA has thereafter taken enforcement action

SEPA's published Enforcement Policy describes our approach to enforcement. Enforcement action is defined within the policy as any action taken to ensure compliance with the legislation that SEPA has a duty to enforce. This can include:

- holding discussions and promoting good practice with those subject to regulation;
- writing advisory / warning letters to confirm requirements;
- sending final warning letters;
- serving formal enforcement notices, for example prohibition notices
- ensuring compliance through environmental licences and permits (this includes granting, refusing, reviewing, varying, suspending or revoking such licences or permits);
- reporting breaches of environmental legislation to Procurators Fiscal, recommending prosecution;

The figures below do not include details of enforcement action SEPA has taken in relation to sewage sludge where that enforcement action has consisted of holding discussions and promoting good practice or writing advisory/ warning letters to confirm requirements. Other forms of enforcement action taken in relation to sewage sludge are detailed below.

	Final Warning Letters	Removal of authorisation (exemption)	Enforcement Notices	PF Report
2005-06	-	-	-	1
2006-07	-	-	-	-
2007-08	-	-	-	-
2008-09	1	-	1	1
2009-10	-	-	-	-
2010-11	1	1	-	-
2011-12	1	-	2	1
2012-13	2	4	2	-
2013-14	1	6	-	-
2014-15	6	11	2	-

d) Complaint response times

SEPA does not record response times for individual complaints. However, SEPA has an Annual Operating Plan Performance Measure to respond to a minimum percentage of environmental incidents and pollution reports within 24 hours.

In the period 2013-14 SEPA received 6,949 notifications relating to 5,783 environmental events and responded to 6,813 (98%) within 24 hours, against the target of 95%.

In the period 2014-15 SEPA received 6,576 reports relating to 5,482 environmental incidents and responded to 6,439 (98%) within 24 hours, against the target of 96%.

Please note that these figures do not relate exclusively to complaint response times for environmental events relating to sewage sludge.

2) Sludge use in Scotland and across Europe

The purpose of this paper is to provide the following information to the Public Petitions Committee, following a request to SEPA:

- An indication of the outlets of Scotland's sewage sludge and how this compares to other EU countries;
- The amount of sludge produced, the proportion spread on agricultural/other land; and how much per hectare is permitted.
- An indication of whether there had been a change in how Scotland and other countries use sludge over the last 10 years.
- How much sludge can be applied per hectare.

a) Sludge use in Scotland

Information on sludge use in Scotland during the period 2005-2015 was provided by Scottish Water and is given in Table 1. In Scotland, about 9,000 hectares of farmland receives sewage sludge every year. This is equivalent to 0.5% of all agricultural land. Sludge use on Scottish farmland has more than doubled in the last 10 years. In Scotland during the period 2005 to 2015, the amount of sludge used on farmland has increased from 20,303 tonnes to 54,717 total dry tonnes (tds). These figures are equivalent to 17% and 52% of all the sludge produced in 2005 and 2015 respectively. The data showing sludge outlets in for 2005 and 2015 is also shown in Figure 1 and 2. This data confirms that sludge use on farmland has increased over the period 2005 to 2015. There was a large increase in 2006 and 2007 followed by similar amounts applied over the period 2008 to 2014, with a significant increase in sludge use on farmland in 2015.

Sewage sludge applied to agricultural land undergoes either 'Conventional' treatment (which destroys at least 99% of pathogens) or 'Enhanced' treatment (destroying 99.9999% of pathogens).

Table 1: Sludge outlets in Scotland 2005-2015 (data from Scottish Water)

Year	Total dry tonnes (tds) or % of total	Farmland (Conventional Treated sludge)	Farmland (Advanced Treated sludge)	Land					Total	Farmland Total (Conventional + Advanced Treated sludge)
				Landfill	Incineration	Composted	Reclamation	Other		
2005	tds	10880	9423	1097	48691	0	51464	1200	122755	20303
	% Total	9	8	1	40	0	42	1	100	17
2006	tds	13266	14599	14731	48002	1510	26951	0	119059	27865
	% Total	11	12	12	40	1	23	0	100	23
2007	tds	11929	40452	5969	45277	255	14417	5704	124004	52381
	% Total	10	33	5	37	0	12	5	100	42
2008	tds	9790	39085	7306	50987	200	10536	5338	123242	48875
	% Total	8	32	6	41	0	9	4	100	40
2009	tds	8726	39606	3538	52704	2430	10790	5114	122908	48333
	% Total	7	32	3	43	2	9	4	100	39
2010	tds	7145	30328	998	45420	1732	13113	620	99356	37473
	% Total	7	31	1	46	2	13	1	100	38
2011	tds	5051	35040	1102	50650	2828	12894	620	108184	40090
	% Total	5	32	1	47	3	12	1	100	37
2012	tds	7041	31552	1519	56367	395	16567	76	113516	38593
	% Total	6	28	1	50	0	15	0	100	34
2013	tds	4463	41113	1353	40253	0	17887	1381	106449	45576
	% Total	4	39	1	38	0	17	1	100	43
2014	tds	6268	36889	1215	40034	0	22294	101	106801	43157
	% Total	6	35	1	37	0	21	0	100	40
2015	tds	7555	47164	395	34619	0	14443	919	105095	54719
	% Total	7	45	0	33	0	14	1	100	52

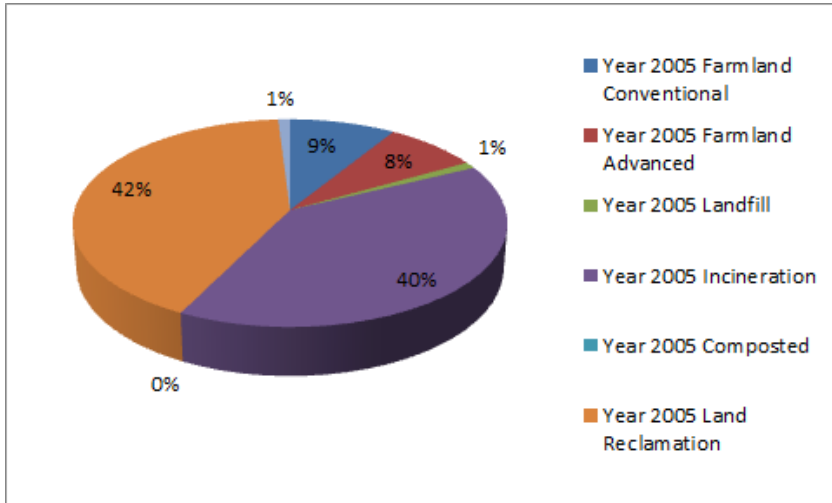


Figure 1: Sludge outlets in 2005 (data from Scottish Water)

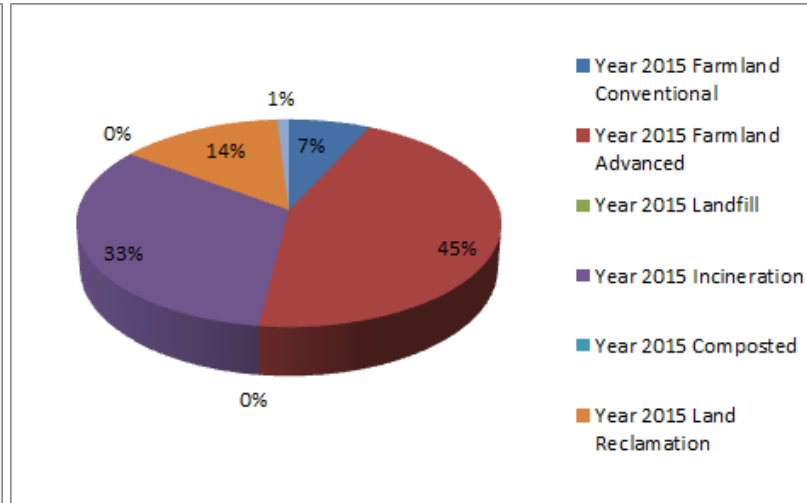


Figure 2: Sludge outlets in 2015 (data from Scottish Water)

b) Application rates of sludge

In Scotland, the average application rate of sludge applied to farmland is about 6 tonnes (expressed as 100% dry) /hectare. This is because existing regulations and guidance requires the application rate to be no higher than the nutrient requirements of the crop and/or the maximum acceptable application of Potentially Toxic Elements (whichever is lower). There are other mandatory requirements if the farm is in a Nitrate Vulnerable Zone (e.g. applications of organic materials including sludge must not exceed 250 kg/ha per year of total nitrogen). Across other European countries, SEPA would expect application rates of sewage sludge to farmland to be similar to the application rates used in Scotland. In situations where sludge is applied for the purposes of restoring a derelict site with very little or no topsoil, much higher rates can be used provided this can be justified to SEPA.

c) Sludge use and disposal across Europe

SEPA obtained information on sludge production, use and disposal across Europe from [Eurostat](#). Eurostat is the statistical office of the European Union and its primary function is to provide the European Union with statistics at European level that enable comparisons between countries and regions. The following tables have been collated for 31 countries over the period 2004 to 2013. This is currently the most up to date information available. However data was not available for all countries in all years and where this is the case no entry is given in the tables. The tables summarise sludge quantities in thousands of tonnes for each country as follows:

- Table 2: Sludge production
- Table 3: Sludge disposal
- Table 4: Sludge agricultural use
- Table 5: Sludge use as compost and other applications
- Table 6: Sludge disposal to landfill
- Table 7: Sludge disposal or use by incineration
- Table 8: Percentage of total sludge production used in agriculture

Table 2: Sludge production across Europe – total in thousand tonnes.

Country/Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Belgium	116.12	113.10	127.50	129.05	139.80		176.32		157.17	
Bulgaria	58.40	41.72	37.99	39.92	42.85	39.37	49.76	51.39	59.26	60.30
Czech Republic	178.75	171.89	203.41	216.26	219.99	207.21	196.29	217.89	263.28	260.13
Denmark					108.00	108.00	141.00		141.00	
Germany	2260.8	2169.5	2099.9	2039.9	2052.5	1949.8	1911.4	1956.5	1848.94	1815.51
Estonia		29.79	27.55	28.79	22.20	21.77	18.83	18.28	21.71	18.79
Ireland		59.83	77.65	86.41	103.33	106.78	89.99	85.65	72.43	64.55
Greece	83.40	116.81	125.98	133.95	136.11	151.51		146.95	118.61	
Spain	1091.9	1120.6	1064.9	1152.5	1156.1	1205.1	1205.1		2756.55	
France	1059.8				1086.7		966.38		987.18	886.51
Croatia						29.61	30.34	31.04	42.13	32.09
Italy		1056.4					1102.6			
Cyprus	8.75	8.28		7.82	7.50	9.16	8.12	6.82	6.53	
Latvia	36.16	28.88	23.94	23.26	19.26	22.34	21.39	19.73	20.13	22.82
Lithuania									45.09	
Luxembourg	13.66	13.37	15.19	16.16	12.76		9.74		7.65	
Hungary	160.86	260.95	237.62	205.03	172.23	149.30	170.34	168.33	161.74	166.51
Malta					0.08	0.82	1.24	6.06	10.41	9.59
Netherlands	353.66	359.11	372.72	353.24	353.22	350.12	350.95	350.77	346.37	
Austria	304.57		254.60		253.53		262.81		266.31	
Poland	476.05	486.14	501.34	533.37	567.30	563.30	526.70	519.20	533.30	540.30
Portugal				189.13		344.25			338.78	
Romania		67.84	225.64	99.55	79.21	120.48	82.07	114.10	85.38	172.76
Slovenia	9.59	13.58	19.46	21.21	20.10	27.26	30.11	26.83	26.11	27.26
Slovakia	53.11	56.36	54.78	55.30	57.82	58.58	54.76	58.72	58.71	57.43
Finland	149.90	147.70	148.80	147.00	144.20	149.00	142.70	140.90	141.21	
Sweden	209.99	21	207.14	217.08	213.79	212.44	203.52	200.11	207.46	
United Kingdom	1721.3	1770.6	1808.9	1825.0	1813.7	1760.5	1419.0		1136.68	
Iceland										
Norway										
Switzerland	205.00		21		21	21				194.50

Table 3: Sludge disposal across Europe – total in thousand tonnes.

Country/Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Belgium	112.19	109.18	121.90	124.70	135.20	128.26	131.19		107.31	
Bulgaria	56.26	24.43	28.28	27.25	29.04	25.34	39.69	31.06	41.76	30.18
Czech Republic	178.75	171.89	203.41	216.27	22	207.21	196.30	217.90	263.29	260.13
Denmark				14	80.42	80.42	114.89		114.89	
Germany	1965.9	2170.0	2048.5	2045.6	2046.8	1937.6	1896.1	1948.7	1844.35	1794.73
Estonia		29.07	26.85	28.08	22.40	21.77	16.68	18.12	21.70	18.79
Ireland		59.83	77.65	86.41	103.33	106.78	89.99	85.65	72.43	64.55
Greece	83.40	116.80	125.98	133.95	136.11	151.51		146.95	118.61	
Spain	1091.9	1120.6	1064.9	864.16	926.92	995.06	1205.1		2577.21	
France	1059.2				1086.7		949.99		932.33	869.74
Croatia										
Italy		1052.6					953.7			
Cyprus	6.48	6.39		7.82	7.50	9.16	8.12	6.82	6.53	
Latvia	34.35	26.73	21.28	18.99	19.40	21.11	21.38	20.93	18.05	20.74
Lithuania									18.18	
Luxembourg	7.50	8.19	8.30	8.33	9.05		6.65		4.71	
Hungary	67.99	117.86	100.58	128.28	120.66	120.72	102.27	158.59	157.72	132.07
Malta						0.82	1.24	6.06	10.41	9.59
Netherlands	341.65	347.56	359.42	339.11	336.06	336.61	332.60	331.34	324.60	
Austria	304.57		254.27		253.53		262.81		266.31	
Poland	476.05	486.14	501.35	533.37	567.30	563.10	526.60	519.10	533.30	540.30
Portugal				189.13		249.38			113.12	
Romania		67.84	156.40	55.63	39.62	74.02	45.47	57.44	48.37	172.39
Slovenia	9.59	13.58	19.46	21.22	20.11	27.26	30.12	26.47	25.71	26.96
Slovakia	53.11	56.36	54.78	55.30	57.82	58.58	54.76	58.72	58.71	57.43
Finland	142.20	147.70	148.80	147.03	144.26	149.00	142.70	140.90	141.21	
Sweden			122.14		180.04		186.09		195.91	
United Kingdom	1721.3	1770.6					1389.4		1078.43	
Iceland										
Norway	100.32	102.60	103.80	100.80	110.80	116.40	105.70	113.20	122.00	131.20
Switzerland	205.00		21		21	21				194.50

Table 4: Sludge use across Europe- agricultural use – total in thousand tonnes.

Country/Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Belgium	21.11	17.69	10.16	10.93	18.74	15.51	17.27		18.54	
Bulgaria		0.01	11.86	6.45	11.20	14.20	13.64	17.56	21.24	16.68
Czech Republic	29.12	34.47	82.13	71.98	103.05	98.98	100.57	108.23	72.35	81.07
Denmark				82.60	42.90	42.90	74.00		74.00	
Germany	627.99	911.03	611.60	582.33	580.58	570.38	575.07	565.76	542.02	491.33
Estonia		2.84	2.60	2.74	2.48	0.42	2.65	0.80	0.47	0.29
Ireland		45.54	60.11	60.23	83.73	66.19	82.67	57.70	68.33	52.00
Greece	0.03	0.03	0.06					5.96	14.20	
Spain	710.89	726.25	687.04	864.16	926.92	995.06	995.06			
France	465.30				511.69		726.98		683.94	368.58
Croatia										
Italy		236.36					315.61			
Cyprus	6.37	5.45		3.62	5.68	7.90	6.67	3.91	2.76	
Latvia	7.68	6.55	8.94	8.13	5.25	6.69	9.31	8.76	7.47	7.48
Lithuania									6.26	
Luxembourg	3.12	3.78	4.27	4.42	4.82		5.16		3.57	
Hungary	33.23	56.00	53.01	50.38	61.84	63.35	56.77	77.91	15.11	11.00
Malta										
Netherlands										
Austria	37.57		39.48		40.39		44.36		39.94	
Poland	66.94	65.98	80.58	98.16	112.00	123.10	109.30	116.20	115.00	105.40
Portugal				164.36		226.24			101.61	
Romania		0.72	0.38	0.74	0.49	0.11	1.93	1.84	2.24	8.01
Slovenia	0.13	0.07	0.03	0.02	0.01	0.01	0.46			
Slovakia	13.73	10.21			0.01	0.01	0.92	0.36	1.25	0.52
Finland	11.60	4.20	4.60	4.60	7.80	8.40	7.50	3.80	7.14	
Sweden	19.84	25.00	31.47	31.45	55.64	49.56	50.46	40.35	48.34	
United Kingdom	1118.1	1221.0					1118.1		844.44	
Iceland										
Norway	49.67	52.60	50.80	64.50	68.10	65.60	57.20	63.90	70.10	82.60
Switzerland	25.00		21.00		6.30	0.60				

General trends

Over the period 2004-2013, the following countries showed an increase in the amount of sludge applied to farmland: Bulgaria, Czech Republic, Poland and Romania. In contrast, the following countries showed a decrease in the amount of sludge applied to farmland: Germany, Estonia, Hungary and Slovakia. The trends were less clear with the other countries. Compared to other countries, Scotland showed a larger increase in the amount of sludge applied to farmland.

General trends

Over the period 2004-2013, the following countries showed an increase in the amount of sludge used for compost and other applications: Bulgaria, Czech Republic, Estonia, Hungary and Norway. In contrast, Romania showed a decrease in the amount of sludge used for compost and other applications. The trends were less clear with the other countries.

General trends

Over the period 2004-2013 most of the countries showed a decrease in the amount of sludge disposal to landfill. This trend was clear for the UK, France, Bulgaria, Slovenia, Poland, Austria, Greece, Sweden and Czech Republic. No countries showed a clear trend of an increase in landfill.

General trends

Over the period 2004-2013, Belgium, Czech Republic, Germany, Hungary, Poland, Netherlands, Finland and Slovenia showed an increase in disposal by incineration. The trends were less clear with the other countries.

Table 8: Percentage of total sludge production used in agriculture

Country/Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Belgium	18.18	15.64	7.97	8.47	13.40		9.79		11.80	
Bulgaria		0.02	31.22	16.16	26.14	36.08	27.42	34.17	35.84	27.66
Czech Republic	16.29	20.05	40.38	33.28	46.84	47.77	51.24	49.67	27.48	31.17
Denmark				59.00	39.72	39.72	52.48		52.48	
Germany	27.78	41.99	29.12	28.55	28.29	29.25	30.09	28.92	29.32	27.06
Estonia		9.53	9.44	9.52	11.17	1.93	14.07	4.38	2.16	1.54
Ireland		76.12	77.41	69.70	81.03	61.99	91.86	67.37	94.34	80.56
Greece	0.04	0.03	0.05					4.06	11.97	
Spain	65.10	64.81	64.51	74.98	80.17	82.57	82.57		69.71	
France	43.90				47.09		75.23		69.28	41.58
Croatia										
Italy		22.37					28.62			
Cyprus	72.80	65.82		46.37	75.69	86.25	82.08	57.40	42.27	
Latvia	21.24	22.68	37.34	34.95	27.26	29.95	43.53	44.40	37.11	32.78
Lithuania									13.88	
Luxembourg	22.84	28.27	28.11	27.35	37.77		52.98		46.67	
Hungary	20.66	21.46	22.31	24.57	35.91	42.43	33.33	46.28	9.34	6.61
Malta										
Netherlands										
Austria	12.34		15.51		15.93		16.88		15.00	
Poland	14.06	13.57	16.07	18.40	19.74	21.85	20.75	22.38	21.56	19.51
Portugal				86.90		65.72			29.99	
Romania		1.06	0.17	0.74	0.62	0.09	2.35	1.61	2.62	4.64
Slovenia	1.36	0.52	0.15	0.09	0.05	0.04	1.53			
Slovakia	25.85	18.12			0.02	0.02	1.68	0.61	2.13	0.91
Finland	7.74	2.84	3.09	3.13	5.41	5.64	5.26	2.70	5.06	
Sweden	9.45	11.90	15.19	14.49	26.03	23.33	24.79	20.16	23.30	
United Kingdom	64.96	68.96					78.80		74.29	
Iceland										
Norway										
Switzerland	12.20		1		3.00	0.29				

In Scotland, the percentage of sludge used on farmland of all the sludge produced in 2005 and 2014 has increased from 23% to 52%. Ireland, Denmark, Spain, France, Cyprus, Luxembourg and the UK (as a whole) have a similar or higher percentage of sludge used on farmland. Other countries are generally lower. This is particularly the case for Estonia, Hungary, Romania, Slovenia, Slovakia, Finland and Switzerland where less than 10% of the sludge produced is used on farmland.