

Schedule 2

Annual Environmental Report - DPS

Important note

By this submission, you confirm that you give your explicit consent for the entire contents of this Annual Environment Report to be made available on the Authority's public website.

S2.1 Introduction

IPPC Permit Number	IP 0002/07/C
Reporting Year	2012
Name and location of Site	Delimara Power Station
Brief description of activities at the site	Combustion Installation > 50MW

S2.2 Environment Management System & Reporting

Please attach a supporting document with the following:

1. Environmental Policy containing the installation's environmental objectives and targets;
2. Environmental Management Programme report (for the reporting year);
3. Environmental Management Programme proposal (for the following year);
4. European Pollutant Release and Transfer Register Report (as per Condition)¹. [MEPA approved extension up to end June 2013]

Tick (✓)

✓
✓
✓
NA ²

S2.3 Process Data

S2.3.1 Annual Summary

	Units	Previous reporting year ³	Current reporting year
Quantity of energy produced	MWh	1,152,633	1,279,221
Total Annual Energy Consumption (from electricity and other sources)	MWh	58,552	56,212
Energy consumption per unit product	MWh consumed/ MWh produced	0.0508	0.0439
Annual water consumption	m ³	257,515	254,781
Water consumption per unit product	m ³ /MWh	0.22	0.20
Annual quantity of waste produced	tonnes	232.11	901.25 ⁴
Waste produced per unit product	tonne waste/ MWh	0.00020	0.070

S2.3.2 Fuel consumption

	Units	Sulphur Content ⁵	Consumption	
			Previous Year	Current Year
Heavy Fuel Oil	m ³	0.694%	218,998	265,380
Gas Oil	m ³	0.052%	71,707	69,645

¹ The format used for reporting shall be that published in the Government Gazette (<http://www.doi.gov.mt/EN/gazetteonline/2007/07/gazts/GG%2013.7.pdf>)

² Not Applicable

³ In this Annual Environmental Report, "previous reporting year" is not applicable for the first reporting year (2012) for the diesel engines (DPS6) only

⁴ The high value is the result of 757.62 tonnes of flyash from the phase 3 plant, i.e., 84% of total.

⁵ Specify units (e.g. as percentage, or mg/kg)

S2.4 Monitoring Data of Emissions to Air

S2.4.1 Summary of emissions to air (concentrations)⁶

S2.4.1.1 Emissions of Dust (TSP), Nitrogen Oxides (NO_x) and Sulphur Dioxide (SO₂)

Parameter	Emission point reference	Standard methodology used	Annual average pollutant concentration ⁷	Mean Monthly Limit Value	Total annual number of exceedances of monthly mean value after validation		48 hourly Mean Limit Value (% compliance)	Percentage of exceedances of 48 hourly mean limit value after validation	
			mg.Nm ⁻³	mg.Nm ⁻³	Previous year	Present year	mg.Nm ⁻³	Previous year	Present year
Total Suspended Particulates	DPS1 ⁸	EN 13284-2	36.389	50	0	0	55 (97%)	0.56	0.86
Oxides of Nitrogen	DPS1	ISO 7395	421.554	450	1	0	495 (95%)	0.56	0.00
Sulphur Dioxide	DPS1	ISO 10849	1185.098	1490	1	0	1639 (97%)	2.79	0.00
Total Suspended Particulates	DPS2	ISO 1142-2	No CEMS	-	No CEMS	No CEMS	-	No CEMS	No CEMS
Oxides of Nitrogen	DPS2	ISO 1142-2	No CEMS	450	No CEMS	No CEMS	495 (95%)	No CEMS	No CEMS
Sulphur Dioxide	DPS2	ISO 1142-2	No CEMS	-	No CEMS	No CEMS	-	No CEMS	No CEMS
Total Suspended Particulates	DPS3	ISO 1142-2	No CEMS	-	No CEMS	No CEMS	-	No CEMS	No CEMS
Oxides of Nitrogen	DPS3	ISO 1142-2	No CEMS	450	No CEMS	No CEMS	495 (95%)	No CEMS	No CEMS
Sulphur Dioxide	DPS3	ISO 1142-2	No CEMS	-	No CEMS	No CEMS	-	No CEMS	No CEMS
Total Suspended Particulates	DPS4	ISO 1142-2	1.15	-	-	-	-	-	-
Oxides of Nitrogen	DPS4	ISO 1142-2	243.38	450	0	0	495 (95%)	0	0
Sulphur Dioxide	DPS4	ISO 1142-2	13.17	-	-	-	-	-	-
Total Suspended Particulates	DPS5	ISO 1142-2	5.62	-	-	-	-	-	-
Oxides of Nitrogen	DPS5	ISO 1142-2	277.79	450	0	0	495 (95%)	0	0
Sulphur Dioxide	DPS5	ISO 1142-2	15.65	-	-	-	-	-	-
Total Suspended Particulates	DPS6 ⁹	EN 15267-3/ 14181	7.4	50	CEMS not in place	0	55 (97%)	CEMS not in place	0
Oxides of Nitrogen ¹⁰	DPS6	EN 15267-3/ 14181	178.9	160	CEMS not in place	1	176 (95%)	CEMS not in place	7
Sulphur Dioxide	DPS6	EN 15267-3/ 14181	80.9	120	CEMS not in place	0	132 (97%)	CEMS not in place	0

⁶ No CEMS have been installed on the DPS2 & DPS3 [Open Cycle gas turbine plants] stacks at DPS due to technical reasons.

⁷ Arithmetic average of monthly concentrations.

⁸ For annual averages & total number of exceedances, these are based on DPS total. For 48hr exceedances, the values are based on the total of the individual boilers.

⁹ Measurements for DPS6 are only the average for December 2012 given that the Plants were commissioned in December. However discussions are still ongoing with the Original Equipment Manufacturer (OEM) to verify how the software is setup.

Additional documentation to be submitted:

Accreditation certificate(s) of laboratory Tick (✓)
✓

S2.4.1.2 Emissions of Carbon monoxide (CO)

Emission point reference	Standard methodology used	Annual average pollutant concentration	Monthly Limit Value	Total annual number of exceedances of monthly mean value after validation	
		mg.Nm ⁻³	mg.Nm ⁻³	Previous year	Present year
DPS1	EN 10558	4.956	100	0	0
DPS2	ISO 1142	No CEMS	50	No CEMS	No CEMS
DPS3	ISO 1142	No CEMS	50	No CEMS	No CEMS
DPS4 ¹¹	ISO 1142	3.88 / 3.34	50	0	0
DPS5 ⁸	ISO 1142-2	6.61 / 4.63	50	0	0
DPS6	EN 14181/ EN 15267-3/ EN ISO 14956	119.37	240	CEMS not in place	0

¹⁰ Percentage of total readings from 4 stacks

¹¹ Bypass / HRSG stacks

S2.4.1.3 Emissions of Dioxins and Furans (PCDDs and PCDFs) ¹²

Sampling last carried out in (year)	May 2012
Sampling due in (year)	Note: 2 nd tests not required

If monitoring was due in current reporting year, the following information shall be submitted:

Emission point reference	Standard methodology used	Mean Annual Limit Value	PCDD & PCDF concentration	Annual average Pollutant Concentration ¹³	
		ng.Nm ⁻³	ng.Nm ⁻³	Present year ng.Nm ⁻³	Previous report ng.Nm ⁻³
DPS1	EN 1948	0.1	ND <0.01	ND <0.01	ND <0.01

Additional documentation to be submitted:

Accreditation certificate(s) of laboratory Tick (✓)
✓

¹² Tests for PCDDs & PCDFs is required by MEPA every 2 years. Hence, for year 2012 measurements were carried out only once.

¹³ All exceedances in this Annual Environmental Report are to be clearly highlighted in red.

S2.4.1.4 Emissions of Metals¹⁴

Dates on which sampling was carried out:

	DPS1	DPS6 (when applicable)
1 st six months:	May 2012	data not available
2 nd six months:	December 2012	data not available

Emission point reference	Metals	Standard methodology used	Mean Annual Limit Value	Concentration 1 st six months	Concentration 2 nd six months	Annual average Pollutant Concentration	
			mg.Nm ⁻³	mg.Nm ⁻³	mg.Nm ⁻³	Present year mg.Nm ⁻³	Previous year mg.Nm ⁻³
DPS1A/B	Cadmium and thallium together	EN 14385	0.05	ND <0.001	ND <0.001	ND <0.001	ND <0.001
DPS1A/B	Arsenic, chromium cobalt, copper, manganese, nickel, lead, antimony and vanadium together	EN 14385	0.5	1.6 / 1.7 ¹⁵	1.88 / 1.82	1.605 ¹⁶	0.2115
DPS6	Cadmium and thallium together	EN 14385	0.02	data not available	data not available	data not available	data not available
DPS6	Chromium cobalt, copper, manganese, lead and antimony together	EN 14385	0.2	data not available	data not available	data not available	data not available
DPS6	Arsenic	EN 14385	0.005	data not available	data not available	data not available	data not available
DPS6	Nickel	EN 14385	0.345	data not available	data not available	data not available	data not available
DPS6	Vanadium	EN 14385	3.1	data not available	data not available	data not available	data not available

Additional documentation to be submitted:

Accreditation certificate(s) of laboratory Tick (✓)
✓

¹⁴ DPS6 was commissioned and handed over from BWSC in mid December 2012. Hence, data is limited.

¹⁵ DPS1A / DPS1B. values were high for nickel & vanadium

¹⁶ The problem with high values of trace metals is arising mainly from nickel and vanadium. It is being investigated by Enemalta and MEPA will be informed accordingly.

S2.4.1.5 Emissions of PAH's

	Date on which sampling was carried out
DPS1	October 12
DPS6 (when applicable)	Not applicable

Emission point reference	Standard methodology used	Naphthalene	Anthracene	Phenantrene	Fluoranthene	Benzo(a)anthracene	Chrysene	Benzo(a)pyrene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene
		ng.kg ⁻¹ dust	ng.kg ⁻¹ dust	ng.kg ⁻¹ dust	ng.kg ⁻¹ dust	ng.kg ⁻¹ dust	ng.kg ⁻¹ dust	ng.kg ⁻¹ dust	ng.kg ⁻¹ dust	ng.kg ⁻¹ dust	ng.kg ⁻¹ dust
DPS1/A	ISO 12884:2000	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01
DPS1/B	ISO 12884:2000	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01	ND <0.01
DPS6	ISO 11338-1:2003	data not available	data not available	data not available	data not available	data not available	data not available	data not available	data not available	data not available	data not available

Emission point reference	Emission limit value mg/Nm ³	PAH (sum 10) measurements ng.kg ⁻¹ dust	
		Present year	Previous year
DPS1/A	---	ND <0.01	7851
DPS1/B	---	ND <0.01	7435
DPS6	0.009	data not available	plant not operational

Additional documentation to be submitted:

Tick (✓)

Accreditation certificate(s) of laboratory

☒

S2.4.1.6 Emissions of Ammonia

Emission point reference	Standard methodology used	Mean Annual Limit Value	Annual average Pollutant Concentration (mg.Nm ⁻³)	
		mg.Nm ⁻³	Present year	Previous year
DPS6	EN 14181, EN 15267-3, EN ISO 14956	2.6	data not available	Not applicable

S2.4.2 Monthly Loads of Particulates, SO₂ and NO_x*ONE PAGE PER PLANT TO BE SUBMITTED*

Operator: Enemalta Corporation Ltd.	Plant no. DPS 1/A
Location: Delimara.	Heat Value of Fuel fired: 40.770 GJ.Mg ⁻¹
Reporting year: 2012	

Month	Fuel Burn During this period Mg. month ⁻¹	Monthly SO ₂ Load ¹⁷ Mg	Monthly NO _x Load Mg	Monthly Dust Load Mg
January	10529.65	137.194	74.762	8.575
February	8355.93	108.872	55.139	5.148
March	10225.50	137.500	68.655	6.447
April	10103.55	138.665	72.243	5.875
May	10829.76	149.494	74.463	6.070
June	7848.00	106.397	48.966	4.263
July	11986.55	179.153	63.226	8.148
August	11176.50	169.235	77.743	7.498
September	9509.45	137.035	65.389	5.503
October	8940.82	127.615	60.004	4.874
November	8208.21	111.314	54.995	4.475
December	9966.42	136.291	69.297	5.348
TOTAL	117680.34	1638.765	784.882	72.224

Pollutant Load (Mg) = Pollutant concentration (µg.Nm⁻³) × 1×10⁻⁹ × WGF (m³.month⁻¹)
(WGF = waste gas flow rate).

¹⁷ The values of SO₂ are the calculated values as agreed with MEPA for all stacks.

Operator: Enemalta Corporation Ltd.	Plant no. DPS 1/B
Location: Delimara.	Heat Value of Fuel fired: 40.770 GJ.Mg ⁻¹
Reporting year: 2012	

Month	Fuel Burn During this period Mg. month ⁻¹	Monthly SO ₂ Load Mg	Monthly NO _x Load Mg	Monthly Dust Load Mg
January	4679.34	60.968	21.840	2.528
February	9632.07	125.499	52.718	4.989
March	10263.62	138.013	54.844	5.280
April	8795.83	120.718	43.407	4.092
May	10683.52	147.475	50.306	4.615
June	10434.00	141.456	46.650	4.294
July	11853.51	177.164	55.333	3.771
August	11012.96	166.758	52.849	3.409
September	3146.32	45.340	14.705	1.077
October	9855.80	140.675	45.275	3.063
November	5529.67	74.990	25.436	1.719
December	9988.92	136.598	45.151	3.375
TOTAL	105875.56	1475.654	508.514	42.212

Pollutant Load (Mg) = Pollutant concentration (µg.Nm⁻³) × 1×10⁻⁹ × WGF (m³.month⁻¹)
(WGF = waste gas flow rate).

Operator: Enemalta Corporation Ltd.	Plant no. DPS 2¹⁸
Location: Delimara.	Heat Value of Fuel fired: 42.759 GJ.Mg⁻¹
Reporting year: 2012	

Month	Fuel Burn During this period Mg. month ⁻¹	Monthly SO ₂ Load Mg	Monthly NO _x Load Mg	Monthly Dust Load Mg
January	180.66	0.361	4.600	0.000
February	58.08	0.116	1.493	0.000
March	684.72	1.369	16.834	0.001
April	1054.98	2.110	24.869	0.000
May	1762.78	3.526	41.716	0.000
June	2553.00	5.106	53.554	0.000
July	2452.05	4.904	54.243	0.000
August	3072.58	6.145	75.760	0.000
September	82.21	0.164	2.116	0.001
October	321.97	0.644	8.397	0.005
November	409.93	0.820	10.721	0.008
December	99.64	0.199	2.585	0.002
TOTAL	12732.60	25.465	296.891	0.018

Pollutant Load (Mg) = Pollutant concentration ($\mu\text{g}.\text{Nm}^{-3}$) $\times 1 \times 10^{-9} \times \text{WGF (m}^3.\text{month}^{-1}\text{)}$
(WGF = waste gas flow rate).

¹⁸ In the absence of CEMS on this plant, the above emissions are based on the fuel burnt for each month and for NO_x & dust plant emission factor based on the MPS OCGT CEMS values/ fuel burnt. SO₂ values are calculated and based on weighted average EF (weighted average of %S in fuel used in that month $\times 2/100$, then multiplied by fuel consumption for that month).

Operator: Enemalta Corporation Ltd.	Plant no. DPS 3¹⁹
Location: Delimara.	Heat Value of Fuel fired: 42.759 GJ.Mg ⁻¹
Reporting year: 2012	

Month	Fuel Burn During this period Mg. month ⁻¹	Monthly SO ₂ Load Mg	Monthly NO _x Load Mg	Monthly Dust Load Mg
January	105.00	0.210	2.674	0.000
February	122.69	0.245	3.154	0.000
March	1095.27	2.191	26.928	0.001
April	848.69	1.697	20.006	0.000
May	1157.87	2.316	27.401	0.000
June	1355.00	2.710	28.424	0.000
July	2824.31	5.649	62.478	0.000
August	1160.40	2.321	28.612	0.000
September	13.36	0.027	0.344	0.000
October	802.82	1.606	20.938	0.014
November	599.85	1.200	15.688	0.012
December	33.49	0.067	0.869	0.001
TOTAL	10118.75	20.238	237.516	0.028

Pollutant Load (Mg) = Pollutant concentration (µg.Nm⁻³) × 1×10⁻⁹ × WGF (m³.month⁻¹)
(WGF = waste gas flow rate).

¹⁹ In the absence of CEMS on this plant, the above emissions are based on the fuel burnt for each month and for NO_x & dust plant emission factor based on the MPS OCGT CEMS values/ fuel burnt. SO₂ values are calculated and based on weighted average EF (weighted average of %S in fuel used in that month x 2/100, then multiplied by fuel consumption for that month).

Operator: Enemalta Corporation Ltd.	Plant no. DPS 4
Location: Delimara.	Heat Value of Fuel fired: 42.759 GJ.Mg ⁻¹
Reporting year: 2012	

Month	Fuel Burn During this period Mg. month ⁻¹	Monthly SO ₂ Load Mg	Monthly NO _x Load Mg	Monthly Dust Load Mg
January	2875.58	5.751	17.865	0.088
February	2571.10	5.142	16.567	0.073
March	169.09	0.338	0.000	0.000
April	364.12	0.728	3.180	0.000
May	173.10	0.346	1.325	0.000
June	1407.00	2.814	14.079	0.000
July	3349.95	6.700	41.803	0.000
August	4551.58	9.111	11.632	0.068
September	605.30	1.211	3.025	0.000
October	2569.34	5.139	16.838	0.008
November	2779.44	5.559	17.328	0.002
December	575.42	1.151	3.230	0.000
TOTAL	21991.02	43.990	146.872	0.239

Pollutant Load (Mg) = Pollutant concentration (µg.Nm⁻³) × 1×10⁻⁹ × WGF (m³.month⁻¹)
(WGF = waste gas flow rate).

Operator: Enemalta Corporation Ltd.	Plant no. DPS 5
Location: Delimara.	Heat Value of Fuel fired: 42.759 GJ.Mg ⁻¹
Reporting year: 2012	

Month	Fuel Burn During this period Mg. month ⁻¹	Monthly SO ₂ Load Mg	Monthly NO _x Load Mg	Monthly Dust Load Mg
January	4235.92	8.472	18.259	0.027
February	3765.13	7.530	18.568	0.023
March	181.12	0.362	1.152	0.000
April	50.95	0.102	0.445	0.000
May	955.35	1.911	7.312	0.000
June	1898.00	3.792	18.992	0.000
July	2395.86	4.792	29.897	0.000
August	2667.60	5.341	20.861	0.036
September	562.26	1.125	4.234	0.000
October	3940.68	7.881	34.859	0.000
November	1467.93	2.936	8.025	0.000
December	15.41	0.031	0.00	0.000
TOTAL	22136.21	44.279	162.604	0.086

Pollutant Load (Mg) = Pollutant concentration (µg.Nm⁻³) × 1×10⁻⁹ × WGF (m³.month⁻¹)
(WGF = waste gas flow rate).

Operator: Enemalta Corporation Ltd.	Plant no. DPS 6²⁰
Location: Delimara.	Heat Value of Fuel fired: 40.770 / 42.759 GJ.Mg ⁻¹
Reporting year: 2012	

Month	Fuel Burn During this period Mg. month ⁻¹ (HFO/Gasoil)	Monthly SO ₂ Load Mg	Monthly NO _x Load Mg	Monthly Dust Load Mg
January	150.41 / 106.94	2.052	16.374	0.508
February	0.00 / 20.28	0.004	1.422	0.016
March	356.26 / 225.57	0.859	23.426	0.142
April	797.92 / 161.81	2.690	16.699	0.000
May	2482.12 / 89.69	7.664	55.974	0.874
June	4567 / 30.00	14.977	28.669	0.774
July	5061.00 / 2.36	18.371	20.853	0.668
August	3747.00 / ---	13.215	16.778	0.247
September	12723.55 / 1263.51	44.140	61.672	1.526
October	4033.83 / 415.86	14.431	20.363	0.861
November	1107.28 / 71.54	2.842	5.436	0.254
December	6799.00 / 278.41	20.930	28.948	1.530
TOTAL	41825.38 / 2665.96	142.174	296.568	7.399

Pollutant Load (Mg) = Pollutant concentration ($\mu\text{g.Nm}^{-3}$) $\times 1 \times 10^{-9} \times \text{WGF (m}^3\text{.month}^{-1}\text{)}$
(WGF = waste gas flow rate).

²⁰ DPS 6 is the new Block 4 diesel engines plant which is was commissioned by mid December. Hence values given in this table are based partly on estimates and partly on calculations based on preliminary data from CEMS information.

S2.4.3 Annual Data

S2.4.3.1 Annual Load of Particulates, SO₂ and NO_x

Units	Rated Thermal Input	Type	Fuel	Fuel Burn	Heat Value	Annual Emissions [*] SO ₂	Annual Emissions [*] NO _x	Annual Emissions [*] dust
	MW _{TH}					Mg.yr ⁻¹	Mg.yr ⁻¹	Mg.yr ⁻¹
Delimara 1	332	Steam Boiler	HFO	223555.90	40.770	3114.419	1293.396	114.436
Delimara 2	121	Gas Turbine	Gasoil	12732.60	40.770	25.465	296.891	0.018
Delimara 3	121	Gas Turbine	Gasoil	10118.75	42.759	20.236	237.516	0.028
Delimara 4	121	Gas Turbine	Gasoil	21991.02	42.759	43.990	146.872	0.239
Delimara 5	121	Gas Turbine	Gasoil	22136.21	42.759	44.279	162.604	0.086
Delimara 6	308	Diesel engines	HFO/Gasoil	41825.38 / 2665.96	40.770 / 42.759	142.174	296.568	26.952
Total						3390.565	2433.847	122.205

* Sum of the total emissions during normal operations + total emissions during start-up/shut down periods.

S2.4.3.2 Annual Load of Ni and V**ONE PAGE PER PLANT (DPS1, DPS6ⁱ) TO BE SUBMITTED**

Operator: Enemalta Corporation Ltd. Location: Delimara. Reporting year: 2012	Plant no. DPS 1 & 6 Heat Value of Fuel fired 40.770 GJ.Mg ⁻¹
---	--

Method 1: Metal content of fuel x fuel burn

Year	Fuel Burn (Mg . year ⁻¹)	Average Ni content (mg Ni.Mg ⁻¹)	Average V content (mg V.Mg ⁻¹)	Annual Ni Load (Mg)	Annual V Load (Mg)
Previous	218,998.26	21490	26019	4.706	5.698
Current (Boilers) ⁱⁱ	223,554	25139	21359	5.620	4.775
Current (Diesel)	41,826	25139	21359	1.051	0.893

Metal Load (Mg) = metal content (mg metal .Mg⁻¹) × 1×10⁻⁹ × FB (Mg.year⁻¹)

FB = Fuel Burn.

Metal = nickel or vanadium.

Method 2: Metal concentration in flue gas x flue gas volume

Year	Flue gas volume (Nm ³)	Average Ni content (mg/Nm ³)	Average V content (mg/Nm ³)	Annual Ni Load (kg)	Annual V Load (kg)
Previous:					
D1/A	1,448,868,314	0.049	0.055	70.99	79.69
D1/B	1,600,615,766	0.049	0.062	78.43	99.24
Totals:				149.42	178.93
Current:					
D1/A	1,677,325,522	0.828	0.739	1389	1240
D1/B	1,329,932,326	0.7745	0.8105	1030	1078
D6 ⁱⁱⁱ		data not available	data not available	===	===
Totals:				2419	2318

Additional documentation to be submitted:

Accreditation certificate(s) of laboratory Tick (✓)
✓

ⁱ When applicable.

ⁱⁱ Separate values for the boilers from the diesel engines are being presented to be able to compare the figures with method 2 values.

ⁱⁱⁱ Given that the phase 3 plants were fully commissioned in mid-December 2012 no heavy metals emissions discharge were then available.

S2.4.3.3 Annual Load of Ammonia*ONE PAGE TO BE SUBMITTED FOR DPS 6*Operator: Enemalta Corporation Ltd.
Location: Delimara.Plant no. DPS 6
Heat Value of Fuel fired 40.770 (HFO) /
42.759 (Gasoil) GJ.Mg⁻¹

Reporting year: 2012

Year	Annual Ammonia Load (Mg)
Previous	Not applicable
Current	2.192

Additional documentation to be submitted:

Tick (✓)

Accreditation certificate(s) of laboratory

☒

S2.4: Certificates of Analysis for physical and chemical parameters of fuels

Documentation to be submitted:

Certificates of analysis for physical and chemical parameters of fuels for reporting year (indicate number of certificates submitted)

Accreditation certificate(s) of laboratory

Tick (✓)

✓
✓

S2.5: Wind Rose

Documentation to be submitted:

Wind rose for the reporting year showing wind speed and direction at the site

Tick (✓)

✓

S2.6: Ambient Air Quality Monitoringⁱ

Sampling location	Marsaxlokk	B'Bugia
Number of PM ₁₀ daily samples taken during reporting year	221	237
Number of PM _{2.5} daily samples taken during reporting year	234	220
Number of samples analysed for arsenic, cadmium, nickel, lead and vanadium during reporting year	83	76

	PM ₁₀ (ug/m ³)	PM _{2.5} (ug/m ³)
Annual limit value (in accordance with LN 478 of 2010)	40	25
Annual average measurement ⁱⁱ	35.03 / 30.27	16.18 / 13.30
Highest recorded measurement during reporting year	87.65 / 47.26	48.19 / 15.01
Daily limit value (in accordance with LN 478 of 2010)	50	n/a
Number of exceedances of daily limit value	20 / 9	n/a

Sampling dates ⁱⁱⁱ	Monitoring result (specify units)				
	Arsenic (ng/m ³)	Cadmium (ng/m ³)	Nickel (ng/m ³)	Lead (ng/m ³)	Vanadium (ng/m ³)
No. of exceedances	0 / 0	0 / 0	29 / 23	0 / 0	Limit value not specified
Average ^{iv}	0.22 / 0.59	0.12 / 0.50	18.54 / 19.90	9.64 / 9.45	11.06 / 11.07

Note: In the table above, underline values which exceed the target/limit values specified in LN 478 of 2010.

Name of laboratory carrying out sampling and measurement	Ambiente
--	----------

Additional documentation to be submitted:

Accreditation certificate(s) of laboratory

Tick (✓)

✓

ⁱ The data is based on the Ambiente reports that cover the period from 5th April 2012 to 3rd January 2013.

ⁱⁱ Marsaxlokk / B'Bugia

ⁱⁱⁱ Please refer to separate report annexed to this report, which gives the full details of dates and values.

^{iv} To work out the averages, where the data was <value, half the value was adopted (Marsaxlokk/B'Bugia).

S2.7 Emissions to Marine Water

S2.7.1 Emissions to Marine Water: Physical and Chemical Monitoring

ONE REPORT PER OUTLET TO BE SUBMITTED

Name of outlet and reference number: **MAIN OUTFALL (POINT 5)**

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
1	Flow (seawater)	---		-	-	-	m ³	241,608,000	155,246,760 ³
2	pH	6 - 10	pH meter	n/a	8.11	8.02	--	n/a	n/a
3	Temperature	8°C above marine water	digital thermometer	n/a	No data	No data	--	---	---
4	Biological oxygen demand (BOD5)	25 mg/l	Method 521B, AWWA/ APHA	mg/l	below inlet	<2 (LOD)	kg	0	0
5	Total Nitrogen	10 mg/l	SO/TR 11905-2: 1997	mg/l	<1	<1 (LOD)	kg	0	0
6	Phosphorous compounds as total phosphorous, as per EN ISO 15681	1 mg/l	see footnote ⁴	mg/l	0.0011	0.00010	kg	271.81	15.52
8	Chlorine dioxide and oxidants (given as chlorine) ⁵	0.3 mg/l	MEWAM Chlorine demand HMSO 1988	mg/l	0	0	kg	0	0
9	Arsenic	5 µg/l	Method 3125B, AWWA/ APHA	µg/l	<0.12	1.75	kg	0	271.68

¹ According to the revised permit. Other values were applicable for 2011 and before.

² Exceedances are to be clearly highlighted in red.

³ The reduction in seawater discharge flow was the result of the shutdown/ overhaul of the steam turbine of the combined cycle plant for almost the whole year. Moreover, the 2012 flow includes the discharge from the new diesel engine block.

⁴ Standard methods for the examination of waters and waste waters 16th ed. ALPHA

⁵ Chlorine dioxide measurements are taken BEFORE seawater entry into condensers and it's difficult to measure at outfall due to the nature of the pollutant, given its instability. ClO₂ concentration at the main outlet will be well below any equipment resolution level and annual concentration and quantity discharge values are therefore considered as nil.

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
10	Cadmium	0.2 µg/l	Method 3125B, AWWA/ APHA	µg/l	0.04	1.49 ¹	kg	8.58	231.40
11	Chromium (Total)	0.5 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.00235	0.001	kg	566.57	153.31
12	Copper	0.5 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.00813	0.0024	kg	1964.27	372.59
13	Lead	7.2 µg/l	Method 3125B, AWWA/ APHA	mg/l	0.00079	below inlet	kg	189.72	below inlet
14	Mercury	0.05 µg/l	BS EN 23506:2002	mg/l	0	<0.01 (LOD)	kg	0	0
15	Nickel	20 µg/l	Method 3125B, AWWA/ APHA	mg/l	0.00215	below inlet	kg	519.46	below inlet
16	Tin	1.0 mg/l	Method 3125B, AWWA/ APHA	mg/l	below inlet	below inlet	kg	0	below inlet
17	Vanadium	4 mg/l	Method 3125B, AWWA/ APHA	mg/l	below inlet	below inlet	kg	0	below inlet
18	Zinc	4 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.0362	0.01372	kg	8735.94	2129.21
19	Total petroleum hydrocarbons	5 mg/l	Analysis of PH's in Environmental Media – Total PH criteria	mg/l	below inlet	0	kg	0	0
20	Tributyl tin compounds (tributyltin cation; CAS number 36643-28-4)	0.0002 µg/l	subcontracted test	µg/l	0.0003	0.63 ²	kg	66.44	97.39
21	Total Suspended Solids	35 mg/l	Method 2540D, AWWA/ APHA	mg/l	below inlet	10.125	kg	0	1571873
22	Benzene (CAS number 71-43-2)	8 µg/l	By GC-FID	mg/l	0	<1 (LOD)	kg	0	0

¹ The exceedance was in all probability the result of freak high values in the December 2012 sampling test report, since the previous 3 measurements were 100 times less. To make matters worse, the change in ELV from 50 µg/l to 0.2 µg/l has automatically set the resulting value above the ELV, when the LOD of the test method is <0.1 µg/l and in accordance with the current sample testing contract. Hence, Enemalta shall monitor future results for any repetition to evaluate the matter.

² In all probability, the high result arose from a freak result in the June tests. However, the revised ELV from 0.5 to 0.0002 automatically made it much worse. According to established international testing labs, the revised ELV of 0.0002 µg/l is unachievable, especially when one considers the required LOD of the method, which must be lower than the ELV. In addition, the IPPC specified method EN ISO 17353 has a working range of 10 ng/l to 1000 ng/l. Therefore, its capability conflicts with the ELV specified in the same permit. It is very difficult for Enemalta to foresee ways of how it can improve on its measurement of TBT.

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
23	PAHs as follows:		Analysis of PH's in Environmental Media – Total PH criteria	mg/l	<0.010	===	kg	0	===
	Benzo(a)pyrene	0.05 µg/l	EPA 82700D	µg/l	---	<1 (LOD)	kg	---	0
	Benzo(b)fluor-anthene, Benzo(k)fluor-anthene	0.03 µg/l	EPA 82700D	µg/l	---	<1 (LOD)	kg	---	0
	Benzo(g,h,i)-perylene, Indeno(1,2,3-cd)-pyrene	0.002 µg/l	EPA 82700D	µg/l	---	<1 (LOD)	kg	---	0
24	C10-C13 chloroalkanes (CAS number 85535-84-8)	0.4 µg/l	not carried out	µg/l	not required	no data	kg	not required	no data
25	Polychlorinated biphenyls (CAS number 1336-36-3)	3 µg/l	Modified: US EPA Method 8082. EA Method 174 & 5109631	µg/l	---	<0.105 (LOD)	kg	---	0

Name of outlet and reference number: OIL **INTERCEPTOR (POINT 2 – near laboratory)**

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
1	Flow (seawater) ³	---		-	-	-	m ³	30047	30047
2	pH	6 - 10	pH meter	n/a	7.99	7.86	--	n/a	n/a
3	Temperature	8°C above marine water	digital thermometer	n/a	No data	No data	--	n/a	n/a
4	Biological oxygen demand (BOD5)	25 mg/l	Method 521B, AWWA/ APHA	mg/l	0.91	<2 (LOD)	kg	0.03	30.05
5	Total Nitrogen	10 mg/l	SO/TR 11905-2: 1997	mg/l	0.50	1.145	kg	0.02	34.40
6	Phosphorous compounds as total phosphorous, as per EN ISO 15681	1 mg/l	see footnote ⁴	mg/l	0.02	0.04	kg	0.56	1.27
8	Chlorine dioxide and oxidants (given as chlorine) ⁵	0.3 mg/l	MEWAM Chlorine demand HMSO 1988	mg/l	0	<0.01 (LOD)	kg	0	0.15
9	Arsenic	5 µg/l	Method 3125B, AWWA/ APHA	µg/l	0	2.355	kg	0	0.07
10	Cadmium	0.2 µg/l	Method 3125B, AWWA/ APHA	µg/l	0.02	1.491 ⁶	kg	0.49	0.04
11	Chromium (Total)	0.5 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.01	0.01	kg	0.26	0.16
12	Copper	0.5 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.01	0.00	kg	0.18	0.14
13	Lead	7.2 µg/l	Method 3125B, AWWA/ APHA	mg/l	0.02	1.016	kg	0.59	0.03
14	Mercury	0.05 µg/l	BS EN 23506:2002	mg/l	0	0.005	kg	0	0.00

¹ According to the revised permit. Other values were applicable for 2011 and before.

² Exceedances are to be clearly highlighted in red.

³ Seawater flows are estimates only.

⁴ Standard methods for the examination of waters and waste waters 16th ed. ALPHA

⁵ Chlorine dioxide measurements are taken BEFORE seawater entry into condensers and it's difficult to measure at outfall due to the nature of the pollutant, given its instability. ClO₂ concentration at the main outlet will be well below any equipment resolution level and annual concentration and quantity discharge values are therefore considered as nil.

⁶ The exceedance was in all probability the result of freak high values in the September 2012 sampling test report, since the other 3 measurements were much less. To make matters worse, the change in ELV from 50 µg/l to 0.2 µg/l has automatically set the resulting value above the ELV, when the LOD of the test method is <0.1 µg/l and in accordance with the current sample testing contract. Hence, Enemalta shall monitor future results for any repetition to evaluate the matter

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
15	Nickel	20 µg/l	Method 3125B, AWWA/ APHA	mg/l	0	6.02	kg	0	0.18
16	Tin	1.0 mg/l	Method 3125B, AWWA/ APHA	mg/l	0	0.585	kg	0	0.02
17	Vanadium	4 mg/l	Method 3125B, AWWA/ APHA	mg/l	0	0.00429	kg	0.14	0.13
18	Zinc	4 mg/l	Method 3125B, AWWA/ APHA	mg/l	2.33	0.05	kg	2.33	1.36
19	Total petroleum hydrocarbons	5 mg/l	Analysis of PH's in Environmental Media – Total PH criteria	mg/l	0.02	<0.010 (LOD)	kg	0.51	0.15
20	Tributyl tin compounds (tributyltin cation; CAS number 36643-28-4)	0.0002 µg/l	subcontracted test	µg/l	0	0.00051 ²	kg	0	0
21	Total Suspended Solids	35 mg/l	Method 2540D, AWWA/ APHA	mg/l	40.48	18.675	kg	1.22	561.13
22	Benzene (CAS number 71-43-2)	8 µg/l	By GC-FID	mg/l	<0.014	<1 (LOD)	kg	0.42	0.02
23	PAHs as follows:		Analysis of PH's in Environmental Media – Total PH criteria	mg/l	<0.010	===	kg	0.15	===
	Benzo(a)pyrene	0.05 µg/l	EPA 82700D	µg/l	---	<1 (LOD)	kg	---	0.02
	Benzo(b)fluor-anthene, Benzo(k)fluor-anthene	0.03 µg/l	EPA 82700D	µg/l	---	<1 (LOD)	kg	---	0.02
	Benzo(g,h,i)-perylene, Indeno(1,2,3-cd)-pyrene	0.002 µg/l	EPA 82700D	µg/l	---	<1 (LOD)	kg	---	0.02

² The various test results of 2012 were all <0.001µg/l. However, the revised ELV from 0.5 to 0.0002 automatically made it an exceedance. According to established international testing labs, the revised ELV of 0.0002 µg/l is unachievable, especially when one considers the required LOD of the method, which must be lower than the ELV. In addition, the IPPC specified method EN ISO 17353 has a working range of 10 ng/l to 1000 ng/l. Therefore, its capability conflicts with the ELV specified in the same permit. It is very difficult for Enemalta to foresee ways of how it can improve on its measurement of TBT.

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
24	C10-C13 chloroalkanes (CAS number 85535-84-8)	0.4 µg/l	not carried out	µg/l	---	no data	kg	not required	no data
25	Polychlorinated biphenyls (CAS number 1336-36-3)	3 µg/l	Modified: US EPA Method 8082. EA Method 174 & 5109631	µg/l	---	<0.105 (LOD)	kg	---	0

Name of outlet and reference number: OIL **INTERCEPTOR (POINT 4 – Tank Farm)**

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
1	Flow (seawater) ³	---		-	-	-	m ³	24353	24353
2	pH	6 - 10	pH meter	n/a	7.75	7.46		n/a	n/a
3	Temperature	8°C above marine water	digital thermometer	n/a	No data	No data		n/a	n/a
4	Biological oxygen demand (BOD5)	25 mg/l	Method 521B, AWWA/ APHA	mg/l	0.833	25.328	kg	20.29	616.80
5	Total Nitrogen	10 mg/l	SO/TR 11905-2: 1997	mg/l	0.917	13.373	kg	22.32	325.66
6	Phosphorous compounds as total phosphorous, as per EN ISO 15681	1 mg/l	see footnote ⁴	mg/l	0.014	0.037	kg	0.33	0.9114
8	Chlorine dioxide and oxidants (given as chlorine) ⁵	0.3 mg/l	MEWAM Chlorine demand HMSO 1988	mg/l	0	0.005	kg	0	0.1218
9	Arsenic	5 µg/l	Method 3125B, AWWA/ APHA	µg/l	0	4.696	kg	0.0096	0.1144
10	Cadmium	0.2 µg/l	Method 3125B, AWWA/ APHA	µg/l	0.001	0.858	kg	0.0254	0.0209
11	Chromium (Total)	0.5 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.001	0.926	kg	0.0176	0.0225
12	Copper	0.5 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.004	0.004	kg	0.0938	0.0950
13	Lead	7.2 µg/l	Method 3125B, AWWA/ APHA	mg/l	0.001	1.201	kg	0.0244	0.0292

¹ According to the revised permit. Other values were applicable for 2011 and before.

² Exceedances are to be clearly highlighted in red.

³ Seawater flows are estimates only.

⁴ Standard methods for the examination of waters and waste waters 16th ed. ALPHA

⁵ Chlorine dioxide measurements are taken BEFORE seawater entry into condensers and it's difficult to measure at outfall due to the nature of the pollutant, given its instability. ClO2 concentration at the main outlet will be well below any equipment resolution level and annual concentration and quantity discharge values are therefore considered as nil.

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
14	Mercury	0.05 µg/l	BS EN 23506:2002	mg/l	0	0.005	kg	0.0001	0.0001
15	Nickel	20 µg/l	Method 3125B, AWWA/ APHA	mg/l	0.001	3.568	kg	0.0172	0.0869
16	Tin	1.0 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.001	0.002	kg	0.0142	0.0382
17	Vanadium	4 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.002	0.005	kg	0.0528	0.1243
18	Zinc	4 mg/l	Method 3125B, AWWA/ APHA	mg/l	0.027	0.069	kg	0.6624	1.6785
19	Total petroleum hydrocarbons	5 mg/l	Analysis of PH's in Environmental Media – Total PH criteria	mg/l	0.091	0.352	kg	2.2161	8.5804
20	Tributyl tin compounds (tributyltin cation; CAS number 36643-28-4)	0.0002 µg/l	subcontracted test	µg/l	0	0.010	kg	0.0001	0.0003
21	Total Suspended Solids	35 mg/l	Method 2540D, AWWA/ APHA	mg/l	2	14.373	kg	48.706	350.03
22	Benzene (CAS number 71-43-2)	8 µg/l	By GC-FID	mg/l	0.014	1.570	kg	0.3409	0.0382
23	PAHs as follows:		Analysis of PH's in Environmental Media – Total PH criteria	mg/l			kg		
	Benzo(a)pyrene	0.05 µg/l	EPA 82700D	µg/l	----	0.500	kg	----	0.0122
	Benzo(b)fluor-anthene, Benzo(k)fluor-anthene	0.03 µg/l	EPA 82700D	µg/l	----	0.500	kg	----	0.0122
	Benzo(g,h,i)-perylene, Indeno(1,2,3-cd)-pyrene	0.002 µg/l	EPA 82700D	µg/l	----	0.500	kg	----	0.0122
24	C10-C13 chloroalkanes (CAS number 85535-84-8)	0.4 µg/l	not carried out	µg/l	----	No data	kg	Not required	No data

No.	Parameter	Limit (annual average) ¹	Standard methodology used	Concentration (annual average) ²			Total annual mass emissions		
				Units	Previous year (2011)	Present year	Units	Previous year	Present year
25	Polychlorinated biphenyls (CAS number 1336-36-3)	3 µg/l	Modified: US EPA Method 8082. EA Method 174 & 5109631	µg/l	0.000	0.000	kg	0.00	0.0013

Name of laboratory where tests in this section have been carried out	Alcontrol
Is this laboratory accredited (certified) for the above tests?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Additional documentation to be submitted:

Accreditation certificate(s) of laboratory Tick (✓)
☒

Were there any exceedances in the present reporting year?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

If yes, one of the following is also to be submitted:

Action programme aimed at achieving emission limits

Document designating a mixing zone following the procedures specified in Regulation 8(b) (Mixing Zones) of Legal Notice 24 of 2011

Tick (✓)
☒
 see footnote¹

¹ Refer to footnote comments against respective exceedance.

S2.7.2 Emissions to Marine Water: Ecological Monitoring

Date on which survey was carried out:	October 2012
Did the survey reveal a decline in the conservation status of any of the habitat types and species in the area, especially those listed in the Schedules LN 311/06? ¹	Yes <input type="checkbox"/> No <input type="checkbox"/>

Additional documentation to be submitted:

Ecological survey for reporting year

Proposals for mitigation measures (only required if the survey revealed a decline in the conservation status)

Tick (✓)

✓

¹ Please refer to the survey report.

S2.8 Noise monitoring^{i & ii}

Monitoring point ⁱⁱⁱ	Date sampled	Time sampled	Operating conditions	Noise measurement	Units	Other comments (if any)

Additional documentation to be submitted:

Map showing monitoring points	Tick (✓)
Detailed noise report ^{iv}	✓

ⁱ Noise monitoring shall be carried out according to BS 4142:1997.

ⁱⁱ [Please refer to attached report for 2012.](#)

ⁱⁱⁱ Monitoring points should be labelled using a unique code, and should be suitably sited. A corresponding labelled map showing the location of each monitoring points shall be submitted.

^{iv} The detailed noise report should include information about the various monitoring points chosen, an analysis of the results and suggestions for improvement (if applicable).

S2.9 Off-site transfers of waste

Date of transfer	EWC Code ⁱ	Description of waste	Quantity of waste (in kg)	Treatment applied before transfer	Mode of transport	Names of agent & transporter of waste	Ultimate destination (address) of waste	Consignment note number ⁱⁱ	Name of person responsible for ultimate disposal/recovery	Disposal/ Recovery	Details of Recovery (if applicable)
Over 1 year 2012	15 01 01	Paper and Cardboard	7,840	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	Not available	Mary Gaerty	Recovery	R3
Over 1 year 2012	15 02 03	Plastic	6,510	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	Not available	Mary Gaerty	Recovery	R3
Over 1 year 2012	15 01 03	Wood	790	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	Not available	Mary Gaerty	Recovery	R3
Over 1 year 2012	20 03 01	Mixed Waste	14,530	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	Not available	Mary Gaerty	Disposal	D5
Over 1 year 2012	17 04 07	Scrap Metal	6,300	nil	skips	DDE Attard Co. Ltd (Disma Attard)	Scrap Lane, Valletta Road, Luqa	Not available	Disma Attard	Recovery	R4
Over 1 year 2012	15 01 07	Glass	210	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	Not available	Ms Mary Gaerty	Recovery	R5
Over 1 year 2012	10 01 26	Waste from Sea Water Filtration	7,580	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	Not available	Ms Mary Gaerty	Disposal	D5
Over 1 year 2012	13 073*	Waste Oil	40500	nil	Road tanker	Waste Oils Co. Ltd.	42, Spencer Hill, Marsa MRS 1955	Not available	Mr Oliver Debono/ Mr David Falzon	Recovery	R9
Over 1 year 2012	13 03 07*	Waste transformer Oil	2700	Nil	Road tanker	Waste Oils Co. Ltd.	42, Spencer Hill, Marsa MRS 1955	various	Mr Oliver Debono/ Mr David Falzon	Recovery	R9

ⁱ European Waste Catalogue Code (Reference: Decision 2000/532/EC)ⁱⁱ For hazardous waste only. If waste is not hazardous, please write "n/a".

Over 1 year 2012	13 05 07*	oily water	30600	Nil	Road tanker	Waste Oils Co. Ltd.	42, Spencer Hill, Marsa MRS 1955	Not available	Mr Oliver Debono/ Mr David Falzon	Recovery	R9
Over 1 year 2012	15 02 02*	Oily Rags	480	Nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	various	Ms Mary Gaerty	Disposal	N/A
Over 1 year 2012	16 07 09*	Boiler cleaning waste	20500	Nil	Used IBCs	PT Matic	12 Via LC Raggianti, 5612 PISA, Italy	TGHU7610759	TESECO SpA	Disposal	N/A
Over 1 year 2012	10 01 18*	flyash (new plant)	757620	Nil	Used IBCs	PT Matic	12 Via LC Raggianti, 5612 PISA, Italy	various	TESECO SpA	Disposal	N/A
Over 1 year 2012	17 09 03*	contaminated gravel	2220	Nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	various	Ms Mary Gaerty	Disposal	N/A
Over 1 year 2012	15 01 10*	Contaminated packaging	915	Nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	various	Ms Mary Gaerty	Disposal	N/A
Over 1 year 2012	16 05 08*	ion exchange resin	1600	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	CN33395	Ms Mary Gaerty	Disposal	N/A
Over 1 year 2012	20 01 21*	Spent Tubes	75	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	CN 32687, CN33678	Ms Mary Gaerty	Disposal	N/A
Over 1 year 2012	20 01 21*	WEEE	280	nil	skips	Green Skip Ltd	Ta' I-Imriekeb, Ramla Road, Maghtab, Naxxar NXR 08	CN33688	Ms Mary Gaerty	Recovery	R4

S2.10 Testing of bunds, pipes, pumps, valves, flanges, over-ground pipes and tanks

Number of bunds on site for tanks/containers $\leq 25 \text{ m}^3$ requiring testing in accordance with condition	5
Number of oil interceptors on site	4
Number of tanks on site	Approx 100 ⁵⁶
Date of last test for bunds for tanks/containers $\leq 25 \text{ m}^3$	-
Testing for bunds for tanks/containers $< 25 \text{ m}^3$ due on (date)	2013
Number of existing fuel tanks on site	7
Date of last ultrasonic testing of shell thickness for above tanks	December 2012
Ultrasonic testing of shell thickness for above tanks due on (date)	December 2014
Number of fuel tanks on site for DPS6	5
Date of last ultrasonic testing of shell thickness (DPS6)	2016
Ultrasonic testing of shell thickness (DPS6) due on (date)	-
Date of last test for pipes, pumps, valves and flanges for fuel delivery from delivery ship to tank farm	2012
Testing of pipes, pumps, valves and flanges for fuel delivery from delivery ship to tank farm due on (date)	2013
Date of last test for other flanges, valves and over-ground pipes on site	Visual Inspection carried out on a weekly basis in 2012
Testing of other flanges, valves and over-ground pipes on site due on (date)	Visual Inspection carried out on a weekly basis.
Date of last test for oil interceptors	monitoring carried out at regular intervals
Testing for oil interceptors due on (date)	cleaning & inspection carried out twice annually

Additional documentation to be submitted if test was carried out during previous reporting year:

Tick (✓)

Inspection report and certification by approved auditor for bunds for tanks/containers $\leq 25 \text{ m}^3$ on site

in house inspection

Inspection report and certification by approved auditor for pipes, pumps, valves and flanges for fuel delivery from delivery ship to tank farm

2012

Inspection report and certification by approved auditor for other flanges, valves and over-ground pipes on site

2012

Inspection report and certification by approved auditor for oil interceptors

in house inspection

Ultrasonic test report of tank shell thickness

2012

Bunds for tanks/containers $> 25 \text{ m}^3$:

Number of bunds on site for tanks $> 25 \text{ m}^3$	5
Number of visual inspections carried out during reporting year on each bund	52
Total number of faults identified during reporting year	2 (shallow surface cracks)
Total number of faults rectified during reporting year	as above

Additional documentation to be submitted for bunds for tanks/containers $> 25 \text{ m}^3$:

Tick (✓)

Bund certification by warranted civil engineer

✓

Summary report by warranted engineer on the visual inspections undertaken during the reporting year (including reports on faults and remedial actions taken)

✓

⁵⁶ Small drums or IBC's. Quantity subject to change according to stock position.

S2.11 Incidents and Complaints

S2.11.1 Non-Compliance Incidents during Reporting Year

Date of incident	Brief description of Incident	Cause	Corrective action
9 October	overflow of the boiler wash water containing rust and this ended up in oil separator drain outlet, and hence into the surrounding sea	our contractor, BWSC, was in the process of treating boiler wash water which resulted in an overflow of boiler wash water	process stopped immediately

Total number of non-compliance incidents for previous year:

Total number of non-compliance incidents for current reporting year:

S2.11.2 Complaints made by the public

Date of complaint	Description of complaint	Actions taken
---	NIL	---

Total number of complaints for previous year:

Nil

Total number of complaints for current reporting year:

Nil

S2.12 Transport

Name of ADR certified carrier used during reporting year	Material(s) transported
PT Matic	Boiler Cleaning Waste
PT Matic	Flyash

Name of registered waste carrier used during reporting year	Waste type(s) transported
Waste Oils Co. Ltd.	waste oils or oily water
DDE Attard Co. Ltd	waste scrap metals
Green Skip Services Ltd	Various as per Table S2.9

S2.13 Land monitoring⁵⁷

Land monitoring carried out in (year):

nil

Land monitoring due in (year)

2015

If land monitoring was due in current reporting year:

Sampling date/s	n/a
-----------------	-----

Additional documentation to be submitted:

	Tick (✓)	
Land monitoring programme	<table border="1"><tr><td>n/a</td></tr></table>	n/a
n/a		
Land monitoring results	<table border="1"><tr><td>n/a</td></tr></table>	n/a
n/a		
Accreditation certificates of laboratory	<table border="1"><tr><td>n/a</td></tr></table>	n/a
n/a		

⁵⁷ Land surveys were carried out as part of the Outline Decommissioning Plan carried out in 2011, which Enemalta is obliged to review every 4 years. Enemalta also submitted to MEPA the land and groundwater monitoring proposal for approval as per IPPC obligation in Table 1.5.1 (12).