

ARUP





Diffusion Tube and PM₁₀/PM_{2.5} Monitoring Locations (Ringaskiddy)

This graphic is for

to be taken.

diagrammatic purposes only. No measurement

Ringaskiddy Resource Recovery Centre

Figure 8.1a January 2016 238129-00



This graphic is for diagrammatic purposes only. No measurement to be taken.



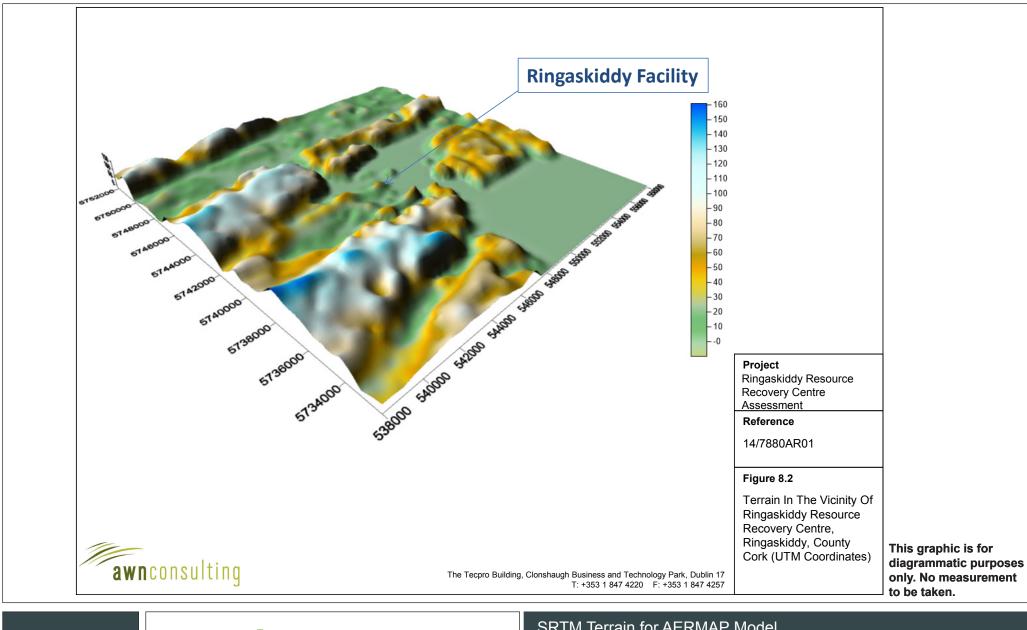




Diffusion Tube Monitoring Locations (Monkstown and Cobh)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016 Figure 8.1b



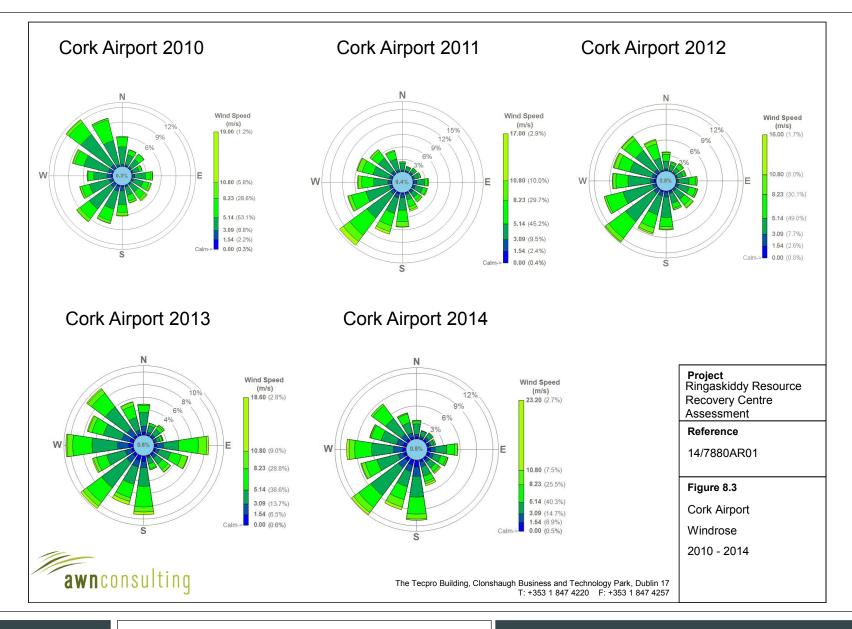




SRTM Terrain for AERMAP Model

Ringaskiddy Resource Recovery Centre

January 2016 238129-00



This graphic is for diagrammatic purposes only. No measurement to be taken.



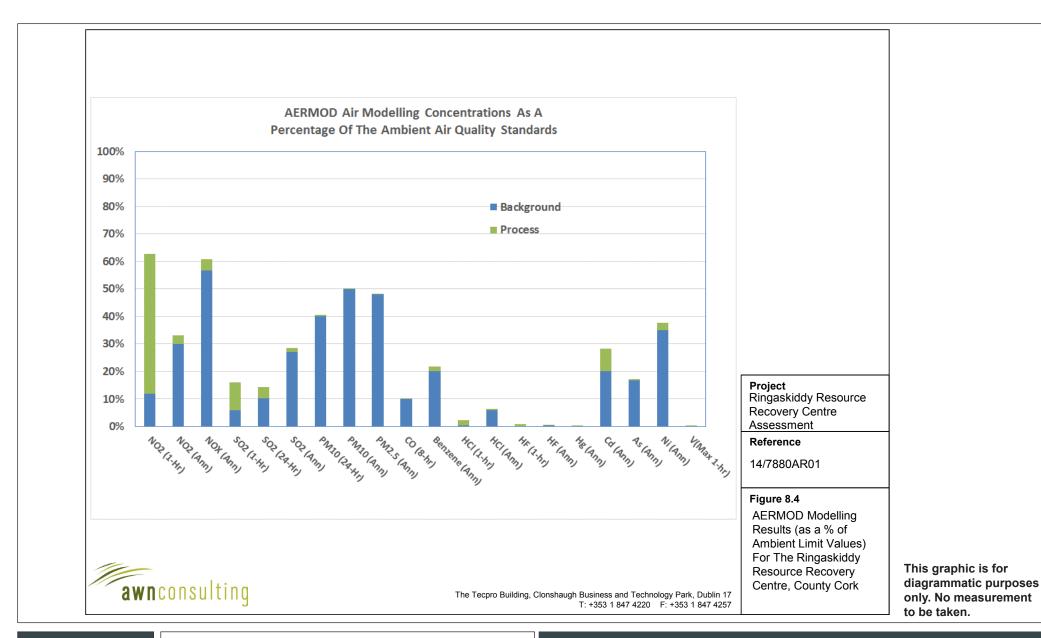




Cork Airport Windrose 2008-2012

Ringaskiddy Resource Recovery Centre

January 2016 238129-00





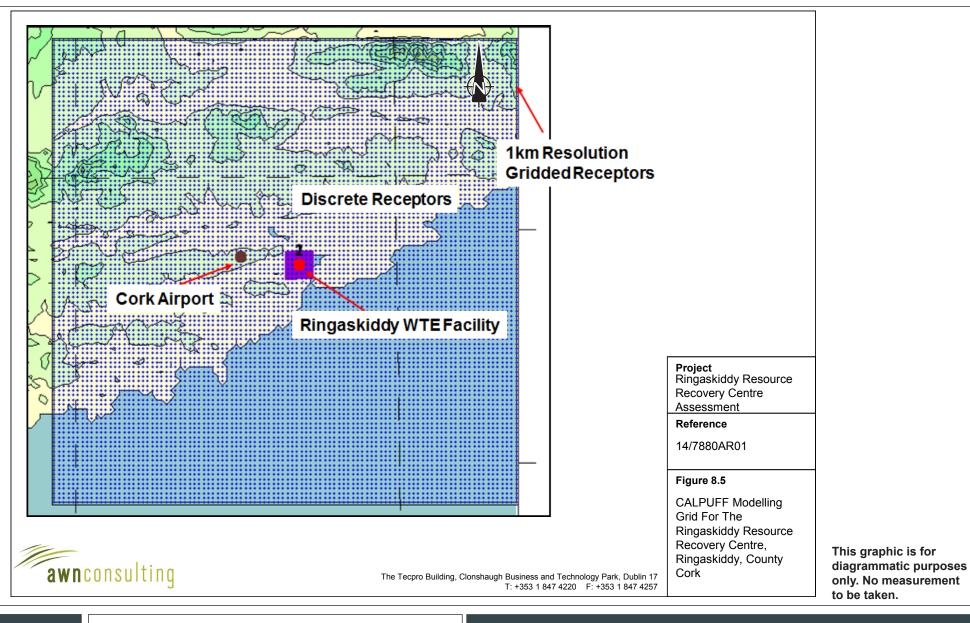




AERMOD Modelling Results (as a % of Ambient Limit Values)

Ringaskiddy Resource Recovery Centre

January 2016 238129-00





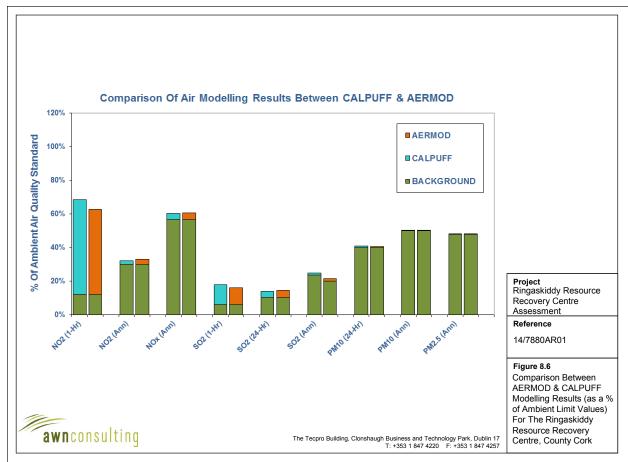


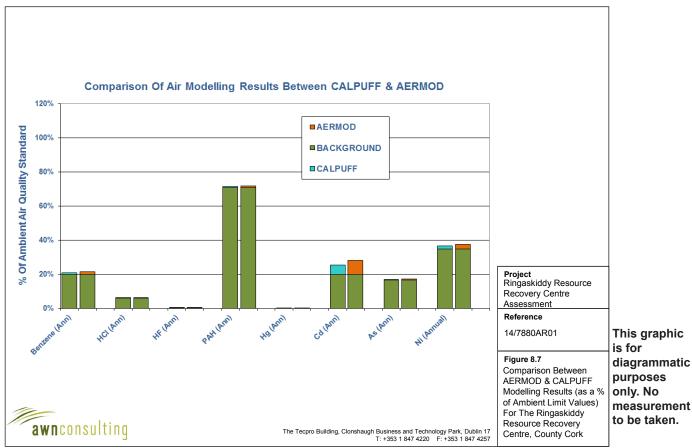


CALPUFF Modelling Grid

Ringaskiddy Resource Recovery Centre

238129-00 January 2016







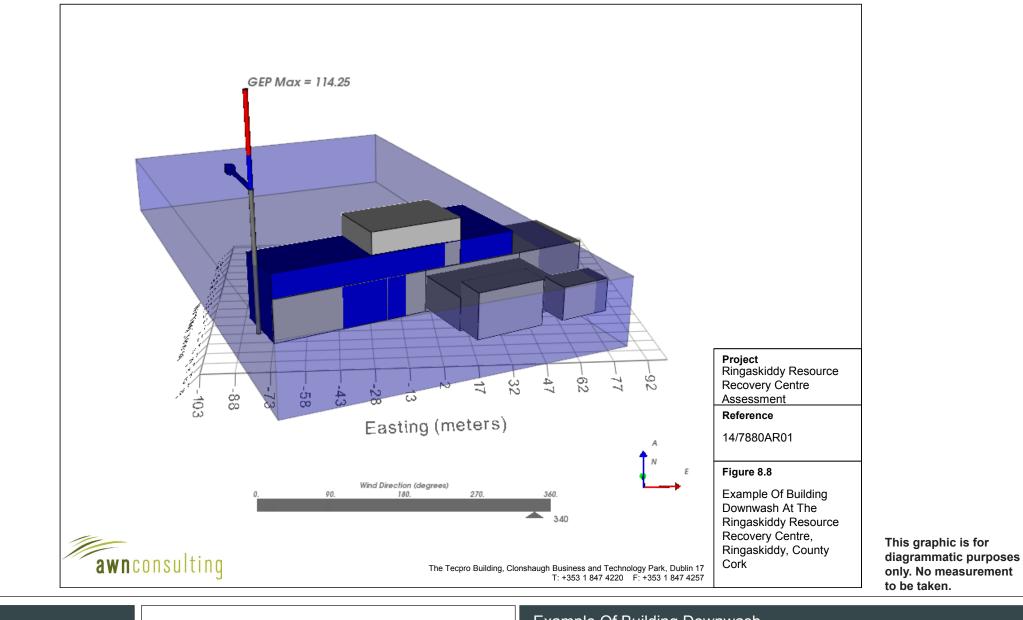


Comparison Between AERMOD & CALPUFF Modelling Results

Ringaskiddy Resource Recovery Centre

238129-00 January 2016

Figure 8.6 & 8.7



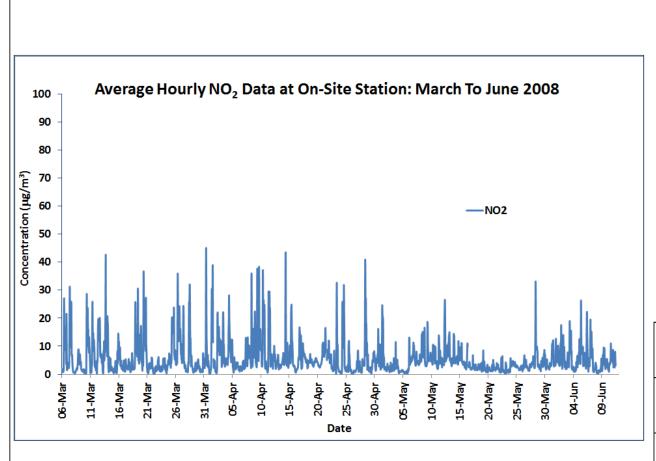




Example Of Building Downwash

Ringaskiddy Resource Recovery Centre

238129-00 January 2016



Project

Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.9

Average Hourly NO₂ Concentration (µg/m³) March – June 2008 At The Ringaskiddy Resource Recovery Centre, Ringaskiddy, County Cork

This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257

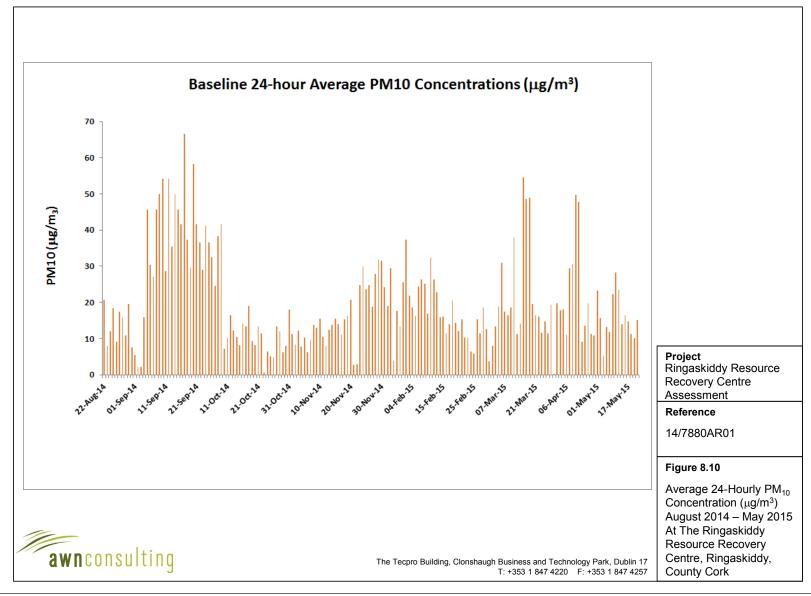




Average Hourly NO₂ Concentration (mg/m³) March – June 2008

Ringaskiddy Resource Recovery Centre

238129-00 January 2016



to be taken.

This graphic is for

diagrammatic purposes

only. No measurement



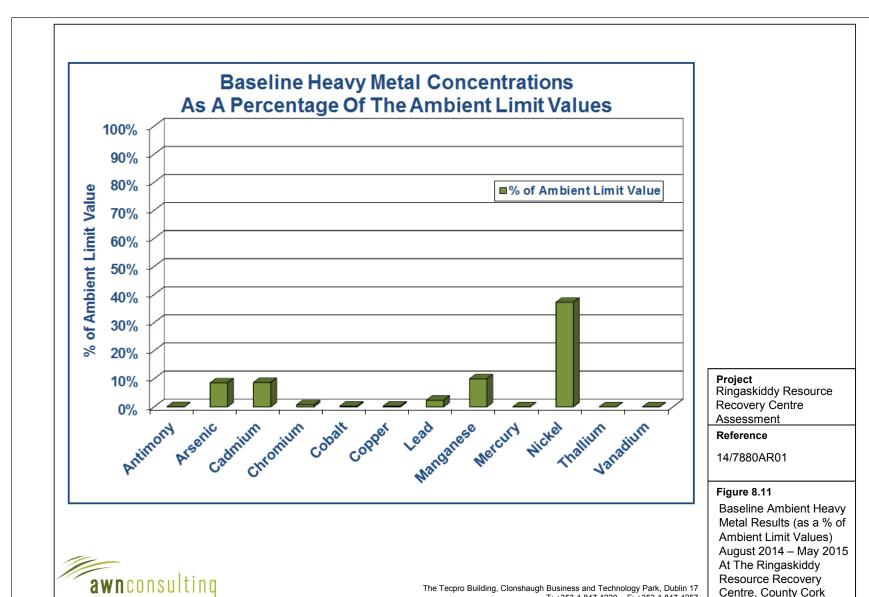




Average 24-Hourly PM10 Concentration (mg/m³) August 2014 – May 2015

Ringaskiddy Resource Recovery Centre

January 2016 238129-00



This graphic is for diagrammatic purposes only. No measurement to be taken.







Baseline Ambient Heavy Metal Results (as a % of Ambient Limit Values) August 2014 - May 2015

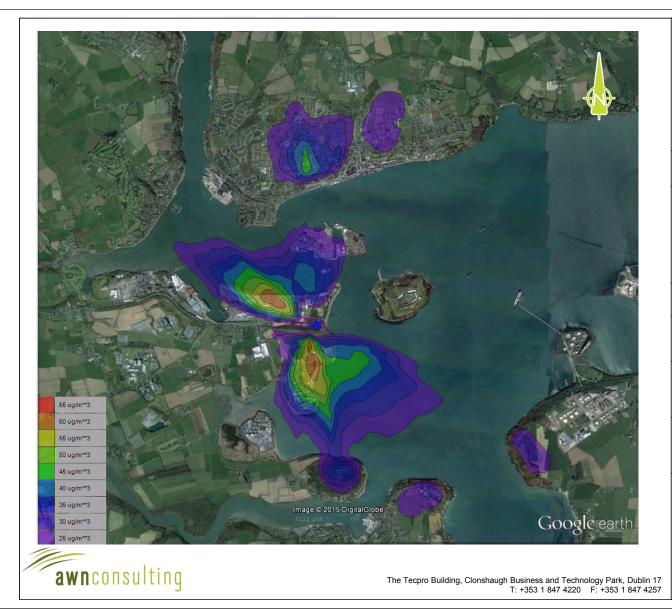
Centre, County Cork

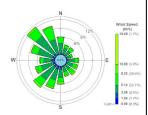
Ringaskiddy Resource Recovery Centre

238129-00

T: +353 1 847 4220 F: +353 1 847 4257

January 2016





99.8th%ile of 1-Hour Mean NO_X Concentrations (excluding background) Maximum Concentration = 72.1 µg/m³

Boundary Of Facility

Scale

1:45,000

1 N

Project
Ringaskiddy Resource
Recovery Centre
Assessment

Reference

14/7880AR01

Figure 8.12

99.8th%ile of 1-Hour NO_χ Concentrations (μg/m³) (Year 2010)

This graphic is for diagrammatic purposes only. No measurement to be taken.



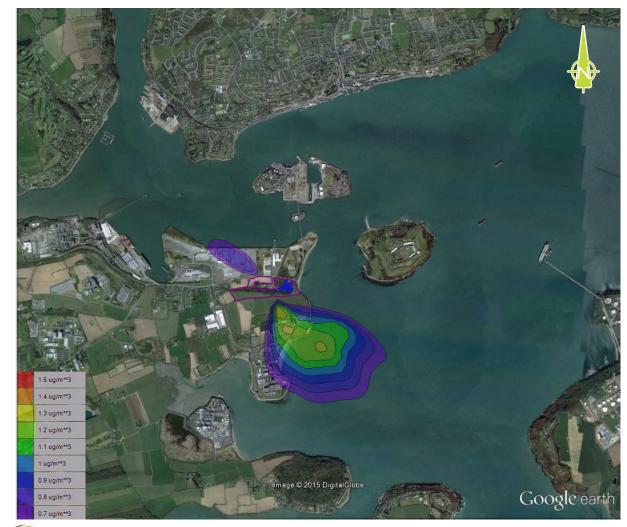


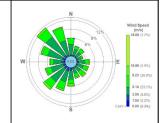


99.8th%ile of 1-Hour NO_x Concentrations (µg/m³) (Year 2010)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016





Annual Mean NO_X Concentrations (excluding background) Maximum Concentration = 1.7 μg/m³

Boundary Of Facility

Scale

1:35,000



Project Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.13

Annual Mean NO_χ Concentrations (μg/m³) (Year 2010)

This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257





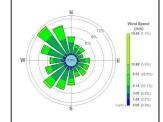


Annual Mean NO_χ Concentrations (μg/m³) (Year 2010)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016





99.7th%ile of 1-Hour Mean SO₂ Concentrations (excluding background) Maximum Concentration = 35.7 µg/m³



Boundary Of Facility

Scale

1:40,000



Project

Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.14

99.7th%ile of 1-Hour SO₂ Concentrations (µg/m³) (Year 2010)

This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257

ARUP



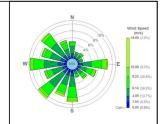


99.7th%ile of 1-Hour SO₂ Concentrations (µg/m³) (Year 2010)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016





99.2th%ile of 24-Hour Mean SO_2 Concentrations (excluding background) Maximum Concentration = $5.2 \mu g/m^3$

Boundary Of Facility

Scale

1:30,000



Project Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.15

99.2th%ile of 24-Hour SO₂ Concentrations (µg/m³) (Year 2013)

This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257



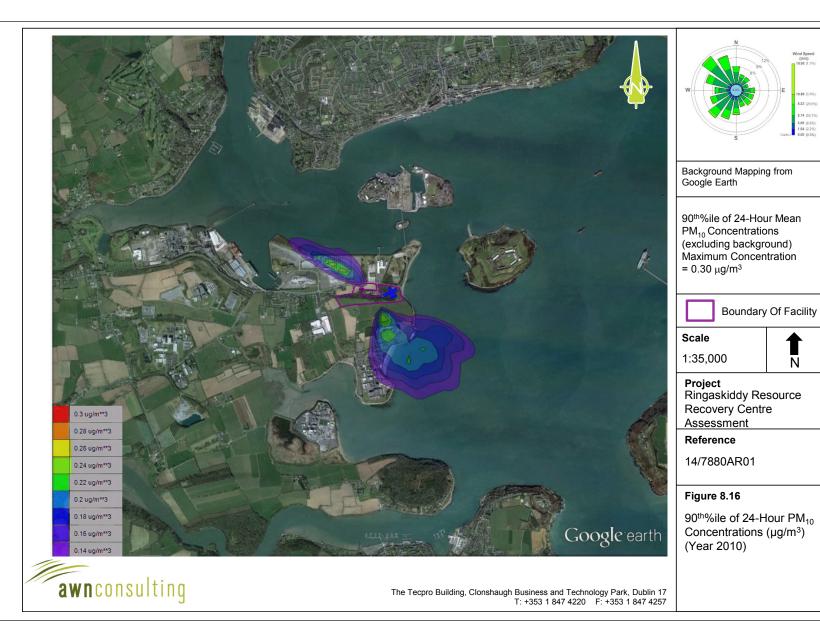




99.2th%ile of 24-Hour SO_2 Concentrations ($\mu g/m^3$) (Year 2013)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016



This graphic is for diagrammatic purposes only. No measurement to be taken.





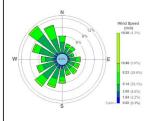


90th%ile of 24-Hour PM_{10} Concentrations ($\mu g/m^3$) (Year 2010)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016





Annual Mean PM₁₀ Concentrations (excluding background) Maximum Concentration $= 0.083 \mu g/m^3$

Boundary Of Facility

Scale

1:50,000



Project Ringaskiddy Resource

Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.17

Annual Mean PM₁₀ Concentrations (µg/m³) (Year 2010)

> This graphic is for diagrammatic purposes only. No measurement to be taken.





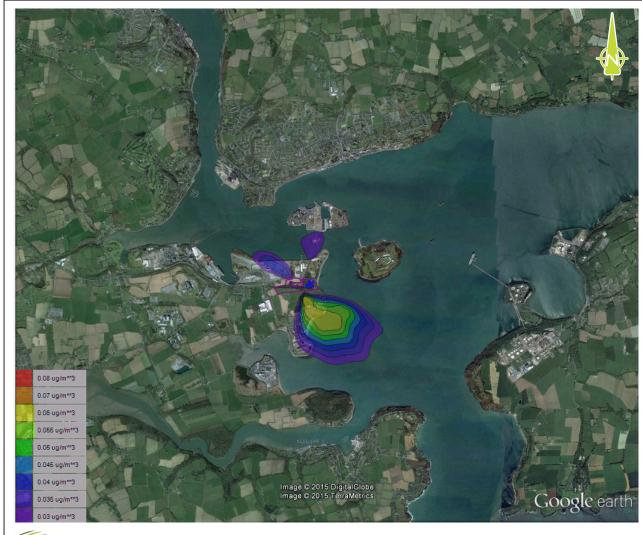


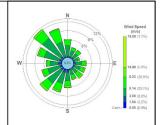
Annual Mean PM₁₀ Concentrations (µg/m³) (Year 2010)

Ringaskiddy Resource Recovery Centre

January 2016 238129-00

The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257





Annual Mean TOC (as benzene) Concentrations (excluding background) Maximum Concentration $= 0.083 \mu g/m^3$

Boundary Of Facility

Scale

1:50,000



Project Ringaskiddy Resource Recovery Centre

Assessment Reference

14/7880AR01

Figure 8.18

Annual Mean TOC (as benzene) Concentrations (µg/m³) (Year 2010)

> This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257





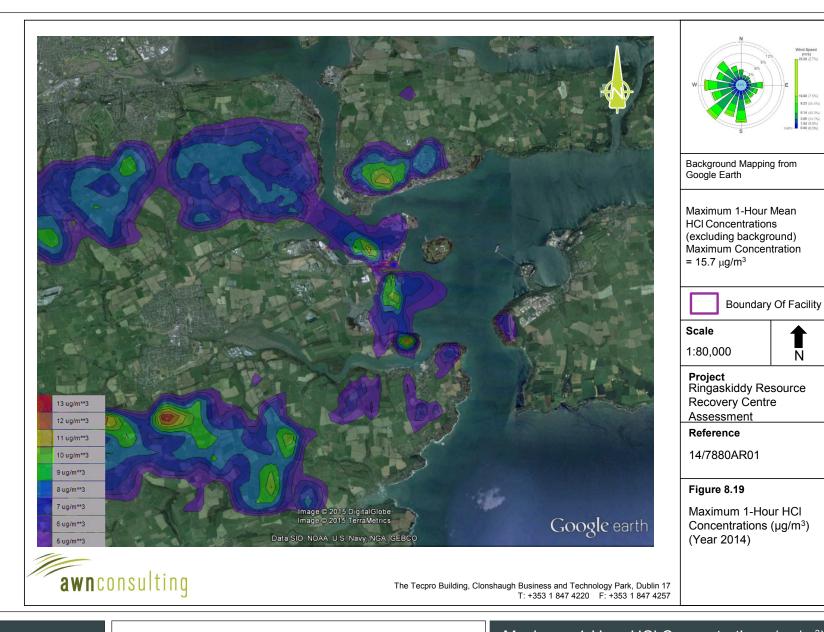


Annual Mean TOC (as benzene) Concentrations (µg/m³) (Year 2010)

Ringaskiddy Resource Recovery Centre

238129-00

January 2016



only. No measurement to be taken.

This graphic is for

diagrammatic purposes



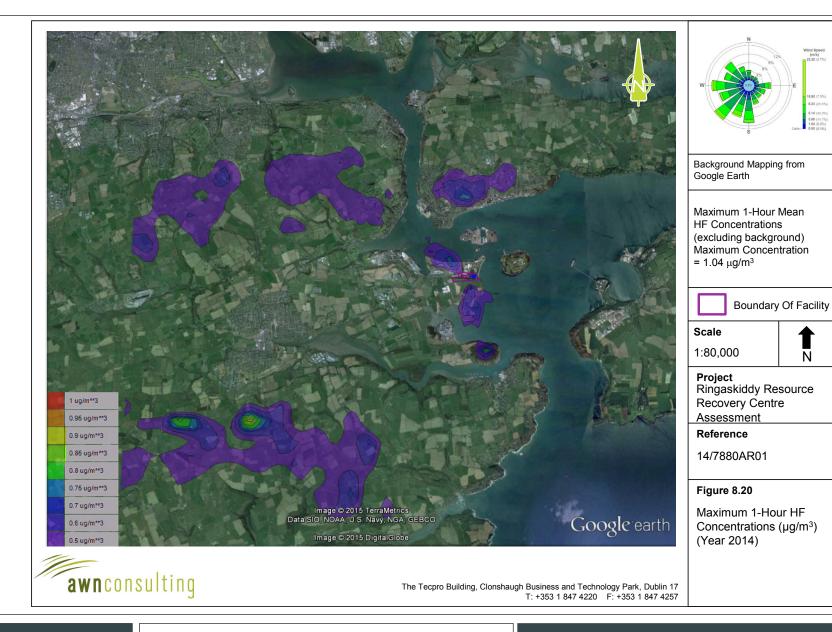




Maximum 1-Hour HCl Concentrations (μg/m³) (Year 2014)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016



This graphic is for diagrammatic purposes only. No measurement to be taken.



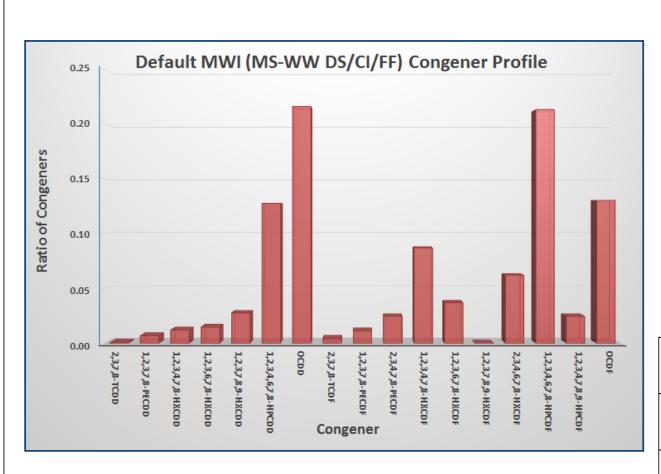




Maximum 1-Hour HF Concentrations (µg/m³) (Year 2014)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016



Project Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.21

Default Municipal Waste Incinerator Congener Profile

> This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257



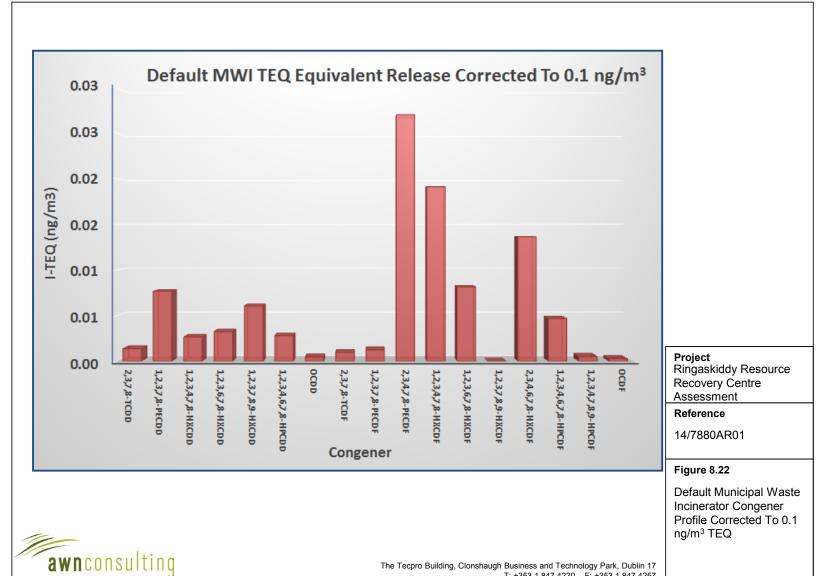




Default Municipal Waste Incinerator Congener Profile

Ringaskiddy Resource Recovery Centre

January 2016 238129-00



only. No measurement to be taken.

This graphic is for

diagrammatic purposes





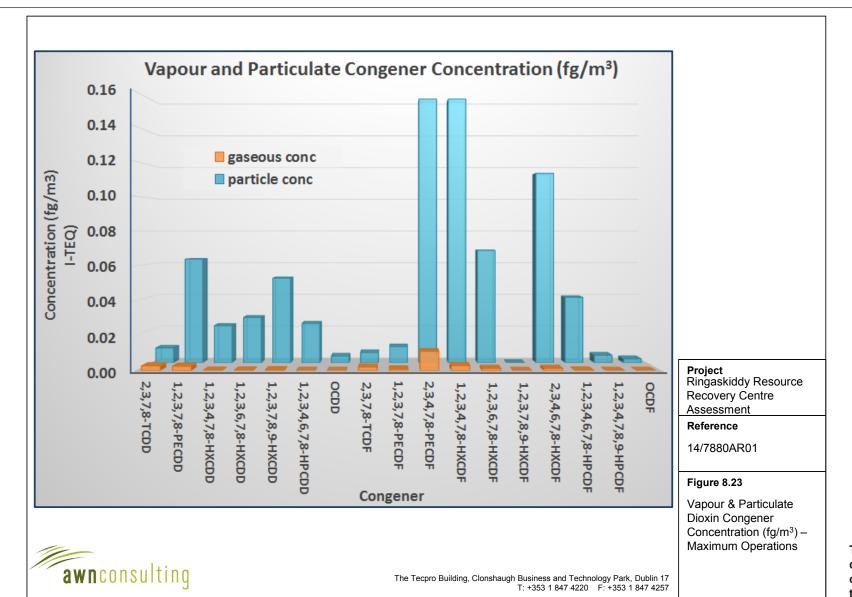


Default Municipal Waste Incinerator Congener Profile Corrected To 0.1 ng/m³ TEQ

Ringaskiddy Resource Recovery Centre

January 2016 238129-00

T: +353 1 847 4220 F: +353 1 847 4257



This graphic is for diagrammatic purposes only. No measurement to be taken.



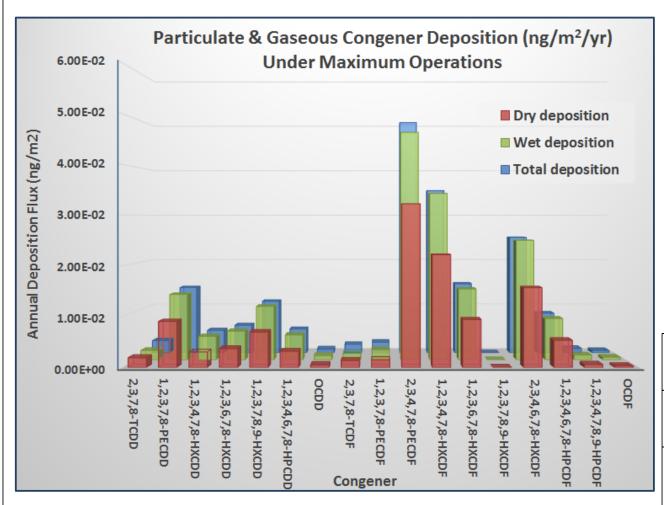




Vapour & Particulate Dioxin Congener Concentration (fg/m³) – Max. Operations

Ringaskiddy Resource Recovery Centre

238129-00 January 2016



Project Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.24

Vapour & Particulate Dioxin Congener Deposition Rate (ng/m²/year) – Maximum Operations

This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257





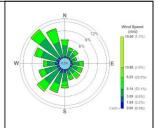


Vapour & Particulate Dioxin Congener Deposition Rate (ng/m²/year) – Max. Operations

Ringaskiddy Resource Recovery Centre

238129-00 January 2016





Annual Mean Dioxin Concentrations (excluding background) Maximum Concentration $= 0.85 \text{ fg/m}^3$

Boundary Of Facility

Scale

1:40,000

Project

Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.25

Annual Mean Dioxin Concentrations (fg/m³) (Year 2010)

> This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257







Annual Mean Particulate Dioxin Concentrations (fg/m³) (Year 2010)

January 2016

Ringaskiddy Resource Recovery Centre

238129-00



Wind Speed (m/s) 12 60 (2 m) 2 6 14 (3 m) 2 6 (4 m) 2 6

Background Mapping from Google Earth

Annual Mean Dioxin Particulate Deposition (excluding background) Maximum Concentration = 0.18 ng/m²/yr



Boundary Of Facility

Scale

1:20,000



Project

Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.26

Annual Mean Particulate Dioxin Deposition (ng/m²/yr) (Year 2013)

This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257





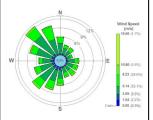


Annual Mean Particulate Dioxin Deposition (ng/m²/yr) (Year 2013)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016





Annual Mean Hg Concentrations (excluding background) Maximum Concentration = 0.42 ng/m³



Boundary Of Facility

Scale

1:40,000



Project

Ringaskiddy Resource Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.27

Annual Mean Hg Concentrations (ng/m³) (Year 2010)

This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257







Annual Mean Hg²⁺ (Mercury) Concentrations (ng/m³) (Year 2010)

January 2016

Ringaskiddy Resource Recovery Centre

238129-00



This graphic is for diagrammatic purposes only. No measurement to be taken.





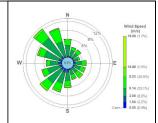


Annual Mean Cadmium Concentrations (ng/m³) (Year 2010)

Ringaskiddy Resource Recovery Centre

238129-00 January 2016





Annual Mean Nickel Concentrations (excluding background) Maximum Concentration = 0.53 ng/m³



Boundary Of Facility

Scale

1:30,000



Project Ringaskiddy Resource

Recovery Centre Assessment

Reference

14/7880AR01

Figure 8.29

Annual Mean Nickel Concentrations (ng/m³) (Year 2010)

This graphic is for diagrammatic purposes only. No measurement to be taken.



The Tecpro Building, Clonshaugh Business and Technology Park, Dublin 17 T: +353 1 847 4220 F: +353 1 847 4257





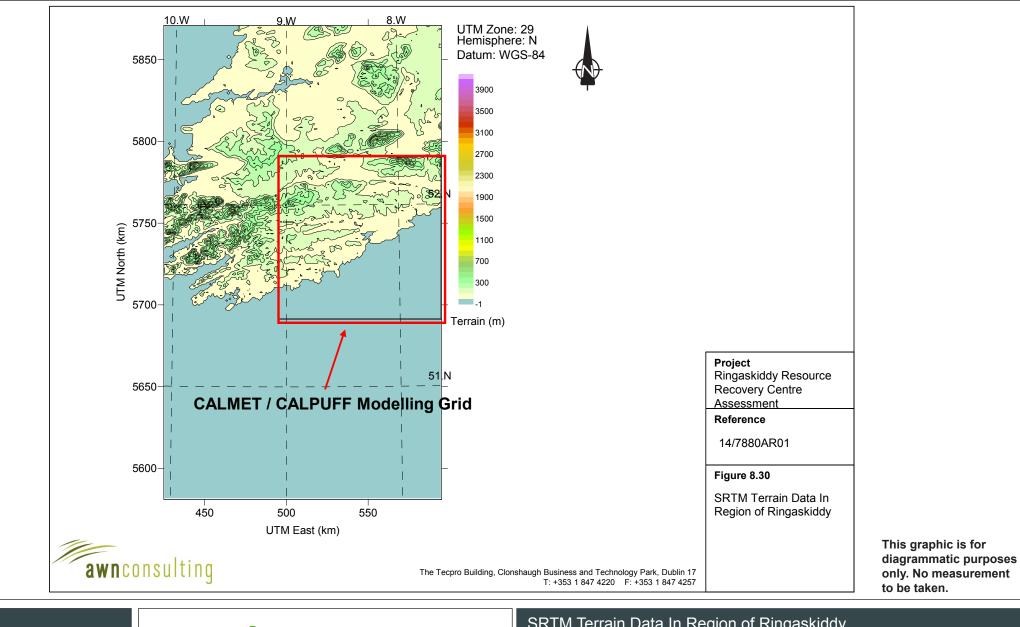


Annual Mean Nickle Concentrations (ng/m3) (Year 2010)

Ringaskiddy Resource Recovery Centre

238129-00

January 2016





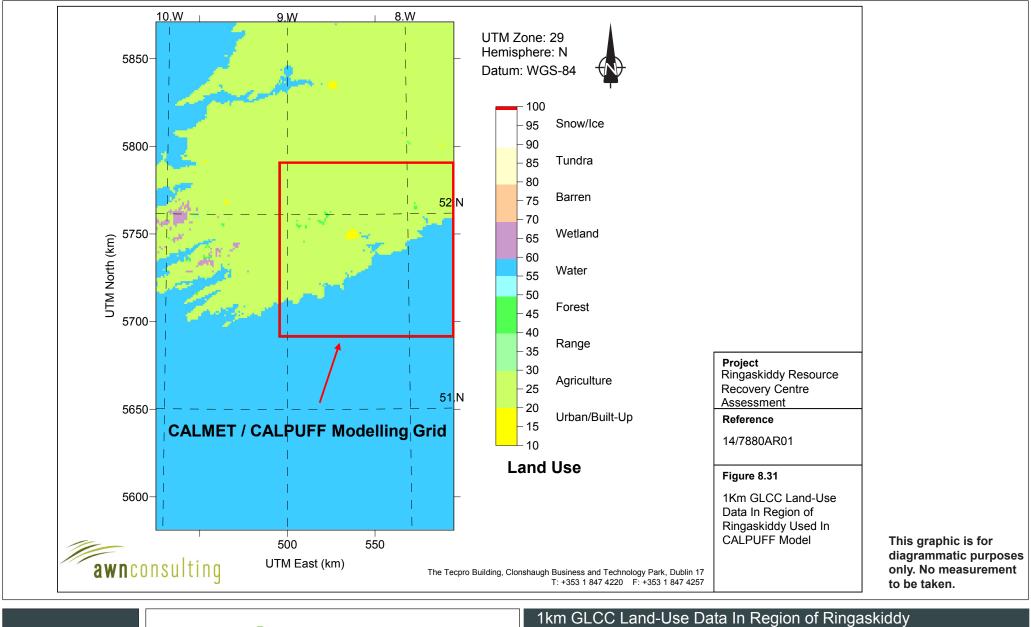




SRTM Terrain Data In Region of Ringaskiddy

Ringaskiddy Resource Recovery Centre

January 2016 238129-00







1km GLCC Land-Use Data In Region of Ringaskiddy Used In CALPUFF Model

Ringaskiddy Resource Recovery Centre

238129-00 January 2016 Figure 8.31