

ATTACHMENT F1 – TREATMENT, ABATEMENT AND CONTROL SYSTEMS

Details of the management, treatment, abatement and control systems at the existing waste recovery facilities at Huntstown Quarry (and the planned replacement C&D recovery facility) necessary to prevent and/or reduce environmental emissions are outlined in detail in the Environmental Impact Statement which accompanies this waste licence review application.

The EIS chapters which identified measure and/or systems to reduce or eliminate emission impacts on specific environmental receptors are listed below.

**Table F1-1
Cross References for Proposed Environmental Control Measures**

Receptor	Proposed Treatment, Abatement and Control Measures
Flora and Fauna	Chapter 4
Soil / Geology	Chapter 5
Water	Chapter 6
Climate	Chapter 7
Air	Chapter 8
Human Beings (Noise Impact)	Chapter 9
Human Beings (Visual Impact)	Chapter 10
Human Beings (Cultural Impact)	Chapter 11
Human Beings (Economic Impact)	Chapter 12
Human Beings (Traffic Impact)	Chapter 13

ATTACHMENT F2 – AIR QUALITY MONITORING AND SAMPLING

Dust emissions associated with established site activities concrete production activities within Roadstone landholding at Huntstown are monitored on a monthly basis using Bergerhoff dust gauges at 6 No. locations (designated D1 to D5 and D7) shown on Drawing No. F2-1. These gauges are located close to emission sources or potentially sensitive receptors located beyond Roadstone's property boundary.

It is currently envisaged that the existing dust monitoring stations will remain in place and that one former monitoring station (designated D6) will be re-established along the boundary of the replacement facility in the north-eastern corner of the Roadstone landholding (subject to EPA review). The location of this monitoring point is also shown on Drawing F2-1.

These monitoring stations will be monitored for the duration of the soil / C&D waste recovery activities at Huntstown and will also continue for a short duration thereafter, as required by the facility closure and aftercare plan.

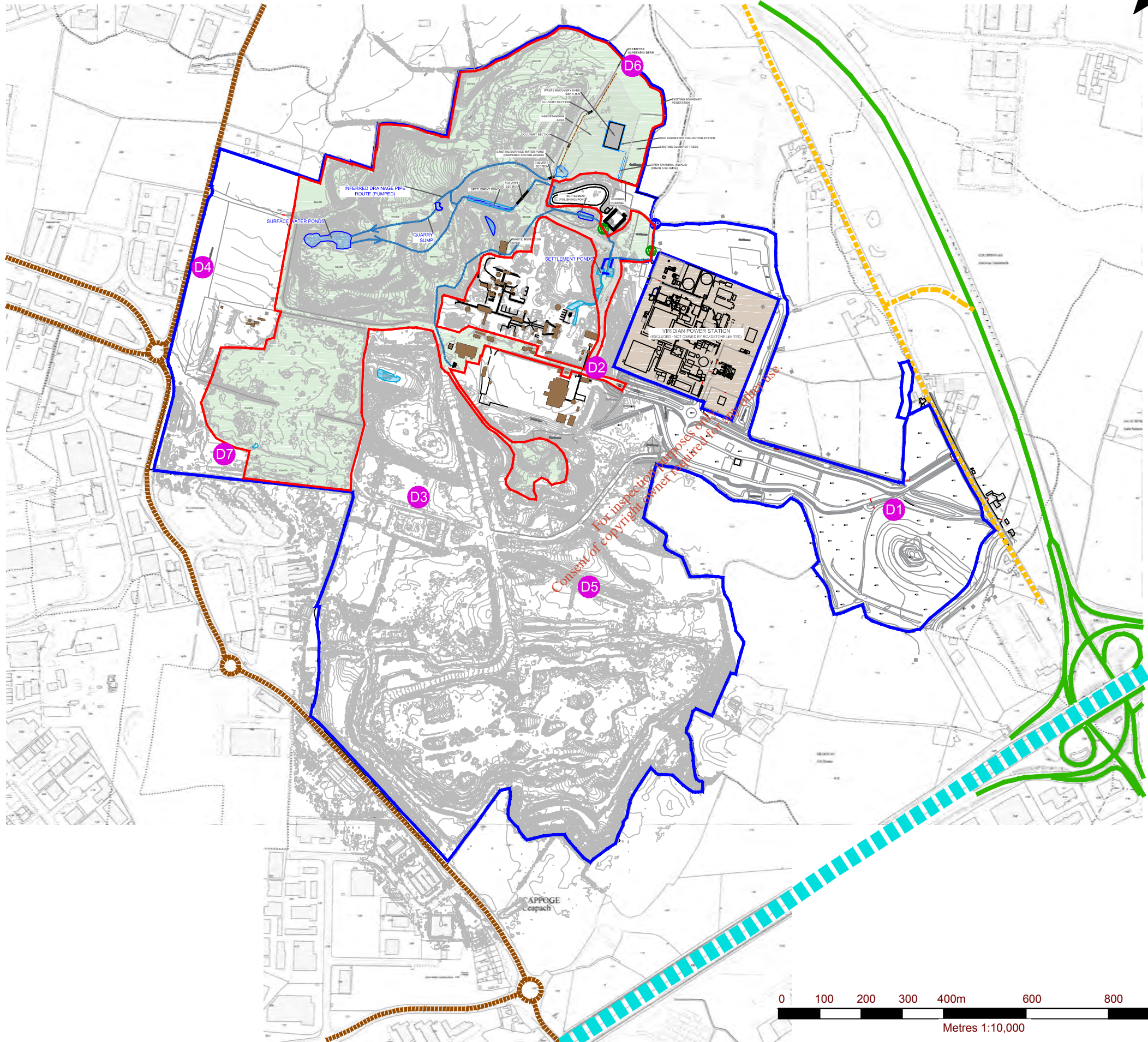
The existing and proposed air quality monitoring locations are identified in Table F2-1 below.

Table F2-1
Air Quality (Dust) Monitoring Points

Monitoring Reference No.	Parameter	Monitoring Frequency	Location (Grid Co-ordinates)	Accessibility of Sampling Points
D1	mg/m ² /day	Quarterly	711784E 7411143N	Easy –open ground
D2	mg/m ² /day	Quarterly	711061E 7411488N	Easy –open ground
D3	mg/m ² /day	Quarterly	710629E 7411174N	Easy –open ground
D4	mg/m ² /day	Quarterly	710109E 741729N	Easy –open ground
D5	mg/m ² /day	Quarterly	711045E 7410954N	Easy –open ground
D6	mg/m ² /day	Quarterly	711149E 742220N	Easy –open ground
D7	mg/m ² /day	Quarterly	710162E 741278N	Easy –open ground

Note 1 : ITM Co-ordinates

0180.00166.0.FIG_F2-1.Dust Monitoring Locations.dwg



NOTES
 1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B.
 2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000717 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

	ROADSTONE LIMITED LAND INTEREST (c. 200.3 ha)
	APPLICATION AREA (c. 55.0 ha)
	N2 DUAL CARRIAGEWAY
	NORTH ROAD (R135)
	LOCAL ROAD
	M50 MOTORWAY
	DUST MONITORING LOCATION

LOCATION	EASTING	NORTHING
D1	711784	741143
D2	711061	741488
D3	710629	471174
D4	710109	741729
D5	711045	740954
D6	711149	742220
D7	710162	741278

SLR global environmental solutions
 SLR CONSULTING IRELAND
 7 DUNDRUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

ROADSTONE LIMITED
 WASTE LICENCE REVIEW APPLICATION
HUNTSTOWN C&D WASTE RECOVERY FACILITY
 NORTH ROAD, FINGLAS, DUBLIN 11
DUST MONITORING LOCATIONS

DRAWING F2-1
 Scale 1:10,000 @ A3
 Date JUNE 2017

ATTACHMENT F3 – SURFACE WATER MONITORING AND SAMPLING

As is required by the existing waste licence (Ref W0277), surface water sampling at the existing waste recovery facility at Huntstown is currently undertaken on a weekly basis at monitoring location W4, immediately downstream of the dedicated settlement ponds which treat waters emanating from waste recovery activities at the North Quarry and West Quarry.

Testing of key chemical parameters is undertaken on collected samples on a weekly basis, while testing of other chemical parameters is undertaken on either a bi-annual or annual basis (depending on the parameter). Further detail on surface water quality and testing is presented in Section 6 of the Environmental Impact Statement which accompanies this waste licence review application.

As is required by the existing effluent discharge licence issued by Fingal County Council (Ref. WPW/F/075), surface water sampling and testing is also undertaken at monitoring location W1, immediately downstream and east of the settlement lagoons which serve the central infrastructure area and upstream of the off-site discharge to the Ballystrahan Stream, a tributary stream of the Ward River.

It is envisaged that surface water discharge from the Central Quarry will be sampled and monitored at location W2, immediately upstream of its confluence / discharge into the settlement lagoons which serve the central infrastructure area. In this way, the environmental performance at the C&D waste recovery facility can be monitored independently of other site based activities at the quarry complex.

Occasional sampling and testing is / will also be undertaken on samples taken from any temporary surface water features or ponds which may either be created or form naturally at low points within the Central Quarry or at the replacement recovery facility (W5 and W6 respectively). These and other established surface water monitoring locations at the Huntstown facility are shown on Drawing D3-1.

The principal objective of surface water monitoring is to assess water quality and to confirm there is no contamination associated with waste recovery activities on-site. Surface waters will be monitored for the duration of the soil / C&D waste recovery activities and will also continue for a short duration thereafter, as may be required by the facility closure and aftercare plan.

The existing / proposed surface water monitoring locations are identified in Table F3-1 below.

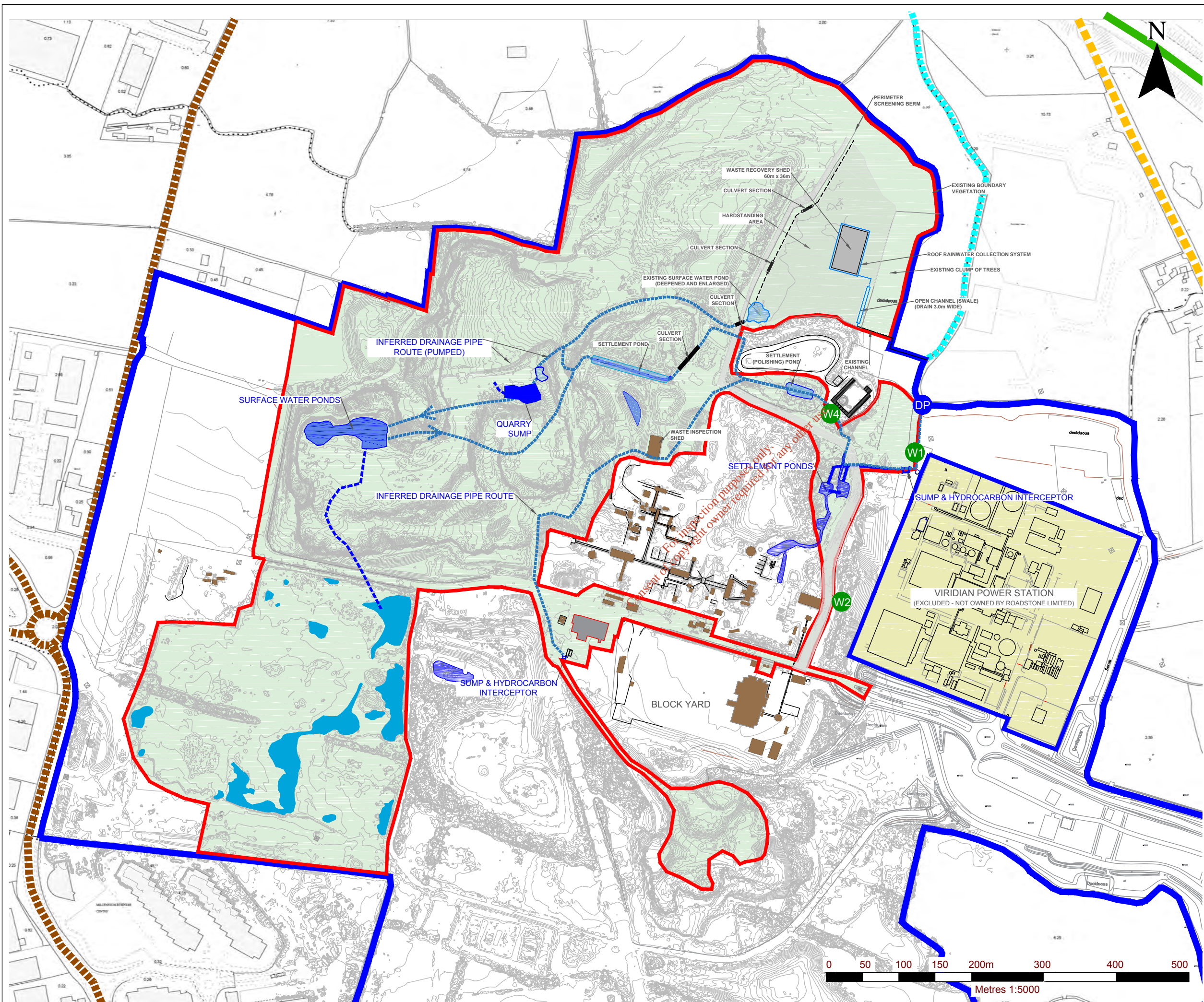
Table F3-1
Surface Water Monitoring Points

Monitoring Reference No.	Parameter	Monitoring Frequency	Location (Grid Co-ordinates) ¹	Accessibility of Sampling Points
W1	Note 2	Monthly	711193E 741771N	Easy – at side of haul road
W2	Note 2	Monthly	711089E 741563N	Easy – at side of haul road
W4	Note 3	Daily (<i>Flow, Visual</i>) Weekly (<i>Temp, pH, BOD, SS, NH₃, OrthoP</i>) Quarterly (<i>Metals, TDS</i>) Biannually (<i>DRO, PRO</i>)	711077E 741825N	Easy – at top of quarry void

Note 1 : ITM Co-ordinates

Note 2 : Surface water test parameters include Temperature, pH, Dissolved Oxygen, Chemical Oxygen Demand, Suspended Solids, Mineral Oil, Detergents, Ammonia (as N) Ammonium (as N), Phosphate (as P) and Sulphates (as SO₄)

Note 3 : Surface water test parameters include Temperature, pH, Dissolved Oxygen, Suspended Solids, Ammonia (as N), Orthophosphate (as P), Dissolved Metals (Cd, Cu, Fe, Pb, Mg, Mn, Ni and Zn), Total Dissolved Solids, Total Petroleum Hydrocarbons, Diesel Range Organics and Petrol Range Organics



NOTES
 1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B.
 2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000717 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

- ROADSTONE LIMITED LAND INTEREST (c. 200.3 ha)
- APPLICATION AREA (c. 55.0 ha)
- N2 DUAL CARRIAGEWAY
- NORTH ROAD (R135)
- LOCAL ROAD
- BALLYSTRAHAN STREAM
- SURFACE WATER MONITORING LOCATIONS
- DISCHARGE POINT
- EPHEMERAL PONDS IN WEST QUARRY

EMISSION	EASTING	NORTHING
DP	711204	741838
W1	711193	741771
W2	711089	741563
W4	711077	741825

SLR global environmental solutions
 SLR CONSULTING IRELAND
 7 DUNDUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

ROADSTONE LIMITED
 WASTE LICENCE REVIEW APPLICATION
 HUNTSTOWN C&D WASTE RECOVERY FACILITY
 NORTH ROAD, FINGLAS, DUBLIN 11
 SURFACE WATER EMISSION LOCATIONS

DRAWING F3-1
 Scale 1:5,000 @ A3
 Date JUNE 2017