

Section F Control and Monitoring Attachment

Attachment F.1: Emissions and Abatement

As described in Attachment D the primary treatment option for the extracted leachate is to the willow plantation. Leachate is pumped to the willow plantation before discharged to surface water. If treated leachate levels are unacceptably elevated, the leachate is treated further by circulating via the Integrated Constructed Wetland Treatment (ICW's) before discharging to surface water.

Table F.1(i) has been completed.

Attachment F.2- F. 9 Monitoring and Sampling Points

Please refer to Drawing IBR1015/104 Churchtown Landfill Site Monitoring Locations

F.2 Air

Not applicable. Site is closed.

F.3 Surface water

Treated leachate from the SRC Willow and ICW discharges to surface water drains and then to the River Finn from the following monitoring points

SW8 Discharge to SW Channel from SRC Willow,

SW9 Discharge to SW Channel from ICW,

SW10 Discharge to SW Channel from SRC Willow,

SW11 Discharge to SW Channel from ICW.

Table F2 has been completed.

Attachment F 3 Surface Water

Monitoring is currently being undertaken for parameters as listed in Table F.4.4 Water and Leachate – parameters and frequency (Waste Licence W0062-01) however the monitoring frequency is now quarterly from monthly and annually.

Table F1 Monitoring Point Grid Co Ordinates

Station Purpose	Station Name	Description	Northing	Easting
Existing				
Surface Water	SW1	Upstream of the waste body in a field drain that subsequently runs adjacent to the landfill along its north eastern boundary.	230934.07	396164.09

Station Purpose	Station Name	Description	Northing	Easting
Surface Water	SW2	SW2 (stream) is located at the River Finn end of surface water stream that run along the eastern boundary of the site.	231177.01	395895.00
Surface Water	SW3	SW3 is midstream of the facility within the River Finn	231180.26	395840.10
Surface Water	SW4	SW4 (field drain) is located at the River Finn end drain that run along the western boundary of the site.	231026.01	395734.06
Surface Water	SW5	SW5 is also located at the end of field drain and therefore it is not representative of the river quality.	231038.03	395711.08
Surface Water	SW6	Upstream of the facility within the River Finn	230983.00	395705.11
Surface Water	SW7	Downstream of the facility within the River Finn	231248.04	395948.97
Proposed additional location				
Surface Water	SW8	Discharge to SW Channel from SRC Willow	230908.08	395942.73
Surface Water	SW9	SW9 Discharge to SW Channel from ICW	231076.62	231076.62
Surface Water	SW10	Discharge to SW Channel from SRC Willow	231069.70	395759.63
Surface Water	SW11	Discharge to SW Channel from ICW	231172.31	395897.03

Attachment F.4 Sewer Discharge

Not applicable. There are no discharges to sewer.

Attachment F 5 Groundwater

Monitoring is currently being undertaken for parameters as listed in Table F.4.4 Water and Leachate – parameters and frequency (Waste Licence W0062-01) however the frequency the monitoring frequency is now quarterly from monthly and triennial from annually.

A hydrogeological risk assessment was undertaken in 2015 and submitted to the EPA. The report found that groundwater quality data does not indicate any upwards trends over time. Both groundwater and surface water contaminant fluxes from the landfill have the potential to impact on the quality of the River Finn. However, available data suggests that groundwater contaminant fluxes to the river are having a negligible effect on the river downstream of the landfill. Groundwater quality is expected to improve after the ICW and willow treatment has been commissioned

Table F2 Monitoring Point Grid Co Ordinates (Existing)

Station Purpose	Station Name	Northing	Easting
Groundwater	BH1	231070.44	395751.22
Groundwater	BH3	230844.89	396131.65
Groundwater	BH4	230813.86	396039.56

Attachment F 6 Noise

Not applicable. Site is closed.

Attachment F 7 Meteorological Data

Not applicable. Site is closed.

Attachment F.8 Leachate

Monitoring is currently being undertaken for parameters as listed in Table F.4.4 Water and Leachate – parameters and frequency (Waste Licence W0062-01) however the frequency the monitoring frequency is now quarterly from monthly and triennial from annually.

Table F3 Monitoring Point Grid Co Ordinates (Existing)

Station_Purpose	Station_Name	Northing	Easting
Leachates	L1	231021.23	395898.10
Leachates	L2	231171.85	395875.41
Leachates	L3	230917.34	396109.31

Attachment F.9 Landfill Gas

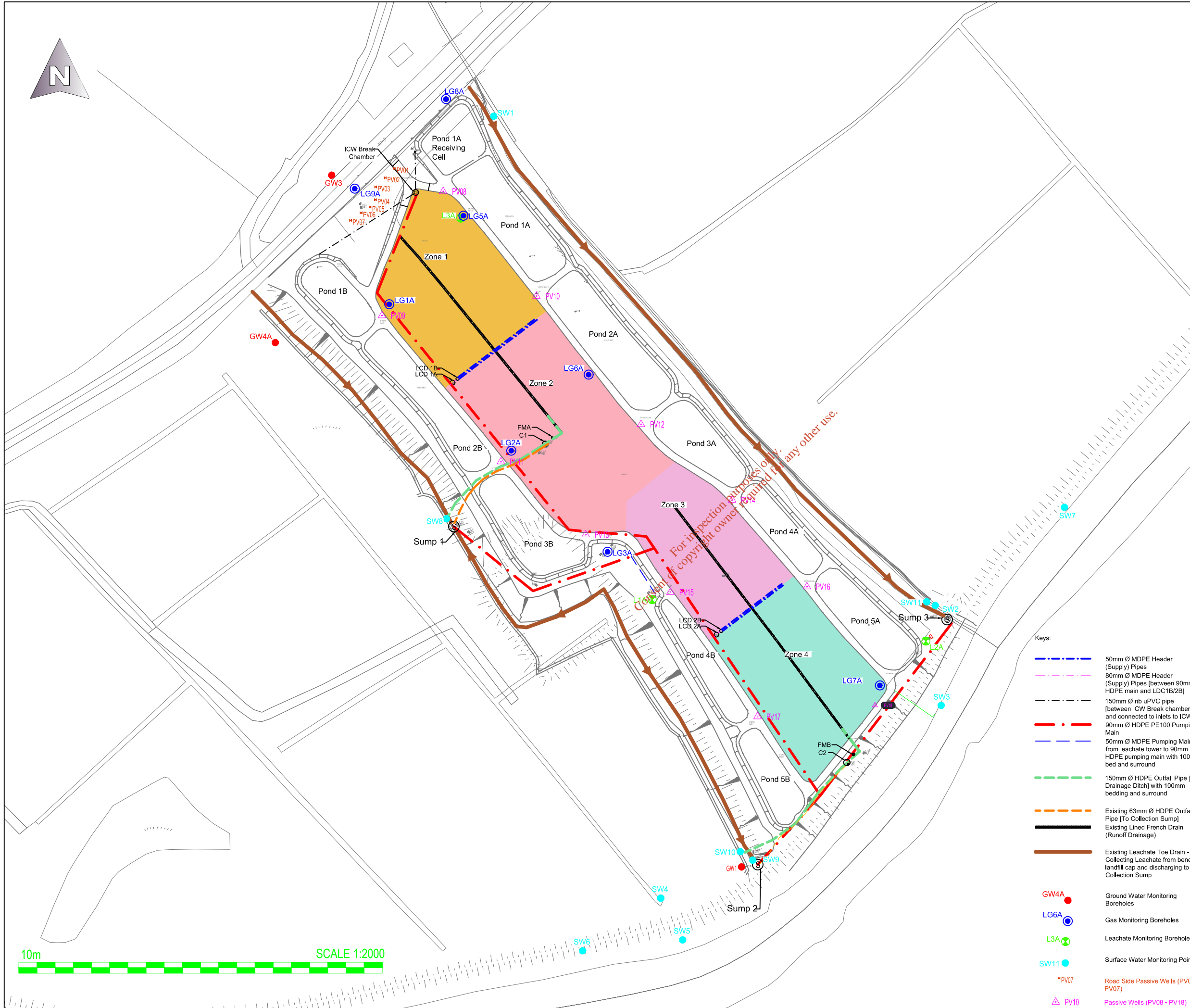
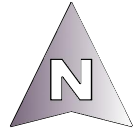
Monitoring is currently being undertaken for parameters as listed in Table F.1.2 Landfill Gas Monitoring Frequency and Technique (Waste Licence W0062-01) however the frequency the monitoring frequency is now quarterly from monthly.

Table F4 Monitoring Point Grid Co Ordinates

Station_Purpose	Station_Name	Northing	Easting
Air Quality	LG1	230876.55	396060.64
Air Quality	LG2	230943.69	395980.15
Air Quality	LG3	230996.65	395924.46
Air Quality	LG5	230917.34	396109.31
Air Quality	LG6	230986.23	396021.92
Air Quality	LG7	231146.50	395851.00
Air Quality	LG8	230907.73	396173.45
Air Quality	LG9	230857.55	396124.17

Appendix F Drawings

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- NOTES**
- Verifying Dimensions.
The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
 - Existing Services.
Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
 - Issue of Drawings.
Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipient's own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipient's drawing production, or setting out on site.

4. Keys:

- Keys:**
- 50mm Ø MDPE Header (Supply) Pipes
 - 80mm Ø MDPE Header (Supply) Pipes [between 90mm HDPE main and LDC1B/2B]
 - 150mm Ø nb uPVC pipe [between ICW Break chamber and connected to inlets to ICWs]
 - 90mm Ø HDPE PE100 Pumping Main
 - 50mm Ø MDPE Pumping Main from leachate tower to 90mm HDPE pumping main with 100mm bed and surround
 - 150mm Ø HDPE Outfall Pipe [To Drainage Ditch] with 100mm bedding and surround
 - Existing 63mm Ø HDPE Outfall Pipe [To Collection Sump]
 - Existing Lined French Drain (Runoff Drainage)
 - Existing Leachate Toe Drain - Collecting Leachate from beneath landfill cap and discharging to Collection Sump
- GW4A Ground Water Monitoring Boreholes
 - LG6A Gas Monitoring Boreholes
 - L3A Leachate Monitoring Boreholes
 - SW11 Surface Water Monitoring Points
 - PV07 Road Side Passive Wells (PV01 - PV07)
 - PV10 Passive Wells (PV08 - PV18)

rev	amendments	drawn	date

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Project
Churchtown License Review

Title
Monitoring Locations

Drawing Status	Sheet Size	Drawing Scale
Preliminary	A3	1:2000

Drawing Number	Rev
IBR1015 /104	-

Project Leader	Drawn By	Date	Initial Review
DD	AMB	May - 2017	AMcG

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