Annual FID Survey Report

Pwllfawatkin Landfill Site

January 2022

Enterprise Drive
Four Ashes
Wolverhampton
WV10 7DE
www.enitial.co.uk

Approval Sheet

Customer:	FCC Environment
Site:	Pwllfawatkin Landfill Site
Project title:	Annual FID Survey
Project Manager:	P Sanders
Project Staff:	A Meaden, C Keightley
Address:	enitial Enterprise Drive Four Ashes Wolverhampton WV10 7DE Tel: 01902 798798 Fax: 01902 798711

Issue	Status	Date	Prepared By	Signature	Date
1	Final	06/01/2022	C Keightley	C Keightley	06/01/2022
			Approved By	**Signature**	**Date**
			C Keightley	C Keightley	06/01/2022

Foreword

enitial has used its best endeavours, experience and expertise to provide a meaningful, accurate and relevant representation of the works carried out. The works were based on a defined programme and scope of works and terms and conditions agreed with the Client.

The findings discussed in this document relating to information provided by the Client relate only to those to which we have had access. No attempt has been made to validate any data or information provided. It is acknowledged that certain aspects may be superseded or rendered irrelevant by information in documentation to which we have not accessed.

enitial cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outside the agreed scope of works.

This report is issued solely to the Client. enitial does not accept any responsibility to any third parties to whom this report may be circulated, in part or in full, and any such parties rely on the contents at their own risk.

Contents

Appendix

1.0 Introduction

1.1 Brief

enitial were commissioned by FCC Environment (FCC) to undertake a Surface Emissions Phase 1 (Annual FID Walkover) Survey at their Pwllfawatkin Landfill Site in January 2022. Pwllfawatkin Landfill Site is situated off Rhyd-y-Fro, near the town of Pontardawe, in West Glamorgan at NGR SN698088. The site is currently operational and accepting waste inputs, some areas of the site have been permanently or temporarily capped.

1.2 Desk Study

A desktop study was undertaken prior to the Annual FID Survey by collecting information supplied by FCC in the form of drawings of capping areas and up to date topography. Five zones were identified as requiring Annual FID Surveying: Zones 1 and 2 comprising of permanent welded geomembrane capping and Zones 3, 4 and 5 comprising of temporary capping.

2.0 Survey Summary

2.1 Annual FID Survey

The Annual FID Survey was undertaken on 05 January 2022 and included the capped and restored areas of the landfill site as indicated on the plan contained in Appendix B. A Gas-Tec Flame Ionisation Detector device was used to undertake the survey which measures hydrocarbons in parts per million by volume (ppm) on a scale of 0 to 10,000.

The capped areas of the landfill site were surveyed on lines at 50m intervals for permanent capping and 25m intervals for temporary capping as detailed in the Environment Agency Guidance on Monitoring Landfill Gas Surface Emissions LFTGN 07 (EA Guidance) and at a distance of not exceeding 5cm from the surface where possible. In addition, all known infrastructure was surveyed which included all gas extraction and leachate wells and associated installations. Any distinctive features were also surveyed which generally include surface fissures, stressed vegetation, interfaces between caps, edges and side-slopes.

It was noted during the onsite survey that Zone 5 was now part of the operational area and was therefore removed from the survey.

3.0 Results Summary

3.1 Annual FID Survey Results

A full set of Annual FID Survey results are presented in Appendix A along with plans showing the location of all survey transects and infrastructure in Appendix B.

No elevated readings above 10ppm were detected during the survey of the 50m and 25m surface transects. In addition, no elevated readings above 50ppm were detected for the gas and leachate infrastructure.

4.0 Field Log

4.1 Weather Conditions and Meteorological Data

Meteorological data was recorded from on site observations and local weather station data. The table below details conditions and observations made during the survey.

Date / Time Period	Weather Conditions	Ground Conditions	Temperature (°C)	Atmospheric Pressure (mbar)	Wind Direction / Speed (mph)
05/01/2022 09:30	Overcast	Light frost	3	1016	NW / 7
05/01/2022 14:30	Rain	Wet	5	1018	NW / 8

4.2 Site Personnel and Equipment

The table below details the personnel on site during the survey and the equipment type used including serial number and calibration expiry details.

Date	Personnel	Instrument Type	Instrument Serial Number	Calibration Due
05/01/2022	A Meaden	Gas-Tec FID	8218	09/02/2022

Appendix A

Annual FID Survey Results

Pwllfawatkin Landfill Site

Surface Emissions Survey - January 2022

FID Survey - Transects

Zone	Transect Ref	Date	Location			Concentration in ppm	Comments
			Start - End	Easting	Northing		
Z1	Transect 1	05/01/2022	North	269750	209121	0	
			South	269750	208954		
Z1	Transect 2	05/01/2022	North	269750	208885	0	
			South	269750	208877		
Z1	Transect 3	05/01/2022	North	269800	209267	0	
			South	269800	209095		
Z1	Transect 4	05/01/2022	North	269800	209070	0	
			South	269800	209020		
Z1	Transect 5	05/01/2022	North	269800	208917	0	
			South	269800	208873		
Z1	Transect 6	05/01/2022	North	269850	209264	0	
			South	269850	209105		
Z1	Transect 7	05/01/2022	North	269850	209069	0	
			South	269850	209019		
Z1	Transect 8	05/01/2022	North	269850	208930	0	
			South	269850	208875		
Z1	Transect 9	05/01/2022	North	269900	209262	0	
			South	269900	208879		
Z1	Transect 10	05/01/2022	North	269950	209220	0	
			South	269950	208905		
Z1	Cap Edge	05/01/2022	North	See Plan		0	
			South				
Z2	Transect 1	05/01/2022	North	269650	208703	0	
			South	269650	208341		
Z2	Transect 2	05/01/2022	North	269700	208728	0	
			South	269700	208340		
Z2	Transect 3	05/01/2022	North	269750	208727	0	
			South	269750	208373		
Z2	Transect 4	05/01/2022	North	269800	208717	0	
			South	269800	208398		
Z2	Transect 5	05/01/2022	North	269850	208707	0	
			South	269850	208409		
Z2	Transect 6	05/01/2022	North	269900	208700	0	
			South	269900	208609		
Z2	Cap Edge	05/01/2022	North	See Plan		0	
			South				
Z3	Transect 1	05/01/2022	West	269803	209100	0	
			East	269873	209100		
Z3	Transect 2	05/01/2022	West	269789	209075	0	
			East	269854	209075		
Z4	Transect 1	05/01/2022	North	269775	209001	10	Ambient levels - very strong sulphur odour
			South	269775	208928		
Z5	Transect 1	05/01/2022	North	269850	209019	-	Unable to access - operational area
			South	269850	208930		
Z5	Transect 2	05/01/2022	North	269875	209018	-	Unable to access - operational area
			South	269875	208946		

Pwllfawatkin Landfill Site

Surface Emissions Survey - January 2022

FID Survey - Infrastructure

Zone	Feature Ref	Date	Location		Concentration in ppm	Comments
			Easting	Northing		
Z1	H0003	05/02/2022	269780	209036	0	
Z1	H0004	05/02/2022	269774	209017	0	
Z1	L000A	05/02/2022	269957	209196	-	Well not found
Z1	L000B	05/02/2022	269958	209194	0	
Z1	L002B	05/02/2022	269860	209108	0	
Z1	L003A	05/02/2022	269889	209018	0	
Z1	L003B	05/02/2022	269830	209045	0	
Z1	L00B1	05/02/2022	269860	209174	0	
Z1	LCS	05/02/2022	269966	209106	0	
Z1	LCS	05/02/2022	269966	209106	0	
Z1	LR1	05/02/2022	269964	208989	0	
Z1	LR2	05/02/2022	269965	208990	0	
Z1	NOID5	05/02/2022	269960	209151	0	
Z1	P0016	05/02/2022	269941	209137	0	
Z1	PIN01	05/02/2022	269871	209105	0	
Z1	PIN02	05/02/2022	269870	209119	0	
Z1	PIN03	05/02/2022	269864	209111	0	
Z1	PIN04	05/02/2022	269861	209119	0	
Z1	PIN05	05/02/2022	269854	209114	0	
Z1	PIN06	05/02/2022	269842	209116	0	
Z1	PIN07	05/02/2022	269828	209110	0	
Z1	PIN08	05/02/2022	269832	209119	0	
Z1	PIN09	05/02/2022	269826	209120	0	
Z1	PIN10	05/02/2022	269823	209112	0	
Z1	PWLMW1A	05/02/2022	269907	209202	0	
Z1	PWLMW2A	05/02/2022	269900	209130	0	
Z1	PWLSW003	05/02/2022	269964	209038	0	
Z1	PWLW2101	05/02/2022	269901	209219	0	
Z1	PWLW2102	05/02/2022	269869	209225	0	
Z1	PWLW2103	05/02/2022	269834	209228	0	
Z1	PWLW2104	05/02/2022	269809	209223	0	
Z1	PWLW2205	05/02/2022	269924	209190	0	
Z1	PWLWS002	05/02/2022	269941	209107	0	
Z1	R2201	05/02/2022	269898	209178	0	
Z1	R2203	05/02/2022	269837	209187	0	
Z1	R2301	05/02/2022	269900	209162	0	
Z1	R2303	05/02/2022	269836	209162	0	
Z1	UNK	05/02/2022	269874	209078	0	
Z1	UNK	05/02/2022	269796	208907	0	
Z1	UNK	05/02/2022	269792	208881	0	
Z1	UNK	05/02/2022	269811	208888	0	
Z1	UNK	05/02/2022	269838	208890	0	
Z1	UNK	05/02/2022	269861	208893	0	
Z1	W1304	05/02/2022	269901	209063	0	

Pwllfawatkin Landfill Site

Surface Emissions Survey - January 2022

FID Survey - Infrastructure

Zone	Feature Ref	Date	Location		Concentration in ppm	Comments
			Easting	Northing		
Z1	W1306	05/02/2022	269904	209092	0	
Z1	W1307	05/02/2022	269807	209131	0	
Z1	W1308	05/02/2022	269795	209097	0	
Z1	W1311	05/02/2022	269841	209132	0	
Z1	W1312	05/02/2022	269873	209139	0	
Z1	W1313	05/02/2022	269856	209111	0	
Z1	W1314	05/02/2022	269883	209110	0	
Z1	W1315	05/02/2022	269778	209083	0	
Z1	W1406	05/02/2022	269933	208972	0	
Z1	W1407	05/02/2022	269936	208999	0	
Z1	W1601	05/02/2022	269870	209083	0	
Z1	W1602	05/02/2022	269876	209049	0	
Z1	W1701	05/02/2022	269847	209051	0	
Z1	W1705	05/02/2022	269790	209034	0	
Z1	W1706	05/02/2022	269818	209044	0	
Z1	W1807	05/02/2022	269936	208936	0	
Z1	W21A2	05/02/2022	269806	208893	0	
Z1	W21A3	05/02/2022	269837	208896	0	
Z1	W21A4	05/02/2022	269863	208913	0	
Z1	W21A5	05/02/2022	269890	208924	0	
Z1	W21A6	05/02/2022	269885	208941	0	
Z1	W21A7	05/02/2022	269813	208922	20	Base of well, labelled as W21A1
Z1	W2202	05/02/2022	269872	209196	0	
Z1	W2204	05/02/2022	269808	209188	0	
Z1	W2302	05/02/2022	269863	209162	0	
Z1	W2304	05/02/2022	269807	209164	0	
Z1	W2305	05/02/2022	269938	209164	0	
Z1	W2401	05/02/2022	269917	209127	0	
Z1	W2402	05/02/2022	269882	209132	0	
Z1	W2404	05/02/2022	269800	209138	0	
Z1	W2501	05/02/2022	269926	209104	0	
Z1	W2601	05/02/2022	269925	209078	0	
Z1	Z00A5	05/02/2022	269912	209257	0	
Z1	Z00B2	05/02/2022	269956	209118	0	
Z2	NP10	05/02/2022	269844	208422	0	
Z2	PWLW0041	05/02/2022	269875	208645	0	
Z2	PWLW0051	05/02/2022	269856	208610	0	
Z2	PWLW0074	05/02/2022	269833	208539	0	
Z2	PWLW0082	05/02/2022	269829	208487	0	
Z2	PWLW0091	05/02/2022	269804	208449	0	
Z2	PWLW0101	05/02/2022	269767	208436	0	
Z2	PWLW0141	05/02/2022	269622	208484	0	
Z2	PZC1C-1	05/02/2022	269836	208598	0	
Z2	PZC1C-2	05/02/2022	269862	208643	0	

Pwllfawatkin Landfill Site

Surface Emissions Survey - January 2022

FID Survey - Infrastructure

Zone	Feature Ref	Date	Location		Concentration in ppm	Comments
			Easting	Northing		
Z2	PZC2A-1	05/02/2022	269829	208500	0	
Z2	PZC2A-2	05/02/2022	269828	208528	0	
Z2	PZC3A-1	05/02/2022	269744	208437	0	
Z2	PZC3A-2	05/02/2022	269792	208460	0	
Z2	R0085	05/02/2022	269689	208553	0	
Z2	R0162	05/02/2022	269663	208574	0	
Z2	W0002	05/02/2022	269658	208659	0	
Z2	W0003	05/02/2022	269730	208690	0	
Z2	W0005	05/02/2022	269770	208676	0	
Z2	W0007	05/02/2022	269850	208663	0	
Z2	W0030	05/02/2022	269821	208444	0	
Z2	W0031	05/02/2022	269718	208639	0	
Z2	W0032	05/02/2022	269747	208622	0	
Z2	W0036	05/02/2022	269708	208517	0	
Z2	W0052	05/02/2022	269835	208583	0	
Z2	W0053	05/02/2022	269790	208613	0	
Z2	W0061	05/02/2022	269784	208572	0	
Z2	W0075	05/02/2022	269781	208539	0	
Z2	W0076	05/02/2022	269765	208551	0	
Z2	W0077	05/02/2022	269719	208571	0	
Z2	W0083	05/02/2022	269777	208508	0	
Z2	W0084	05/02/2022	269718	208545	0	
Z2	W0085	05/02/2022	269685	208553	0	
Z2	W0092	05/02/2022	269782	208469	0	
Z2	W0093	05/02/2022	269738	208493	0	
Z2	W0102	05/02/2022	269737	208457	0	
Z2	W0103	05/02/2022	269734	208428	0	
Z2	W0111	05/02/2022	269699	208398	0	
Z2	W0112	05/02/2022	269701	208445	0	
Z2	W0113	05/02/2022	269703	208479	0	
Z2	W0114	05/02/2022	269667	208523	0	
Z2	W0121	05/02/2022	269675	208367	0	
Z2	W0122	05/02/2022	269667	208434	0	
Z2	W0124	05/02/2022	269650	208403	0	
Z2	W0131	05/02/2022	269636	208444	0	
Z2	W0151	05/02/2022	269616	208521	0	
Z2	W0161	05/02/2022	269622	208559	0	
Z2	W0162	05/02/2022	269660	208575	0	
Z2	W0163	05/02/2022	269623	208596	0	
Z2	W0171	05/02/2022	269642	208645	0	
Z2	W0172	05/02/2022	269650	208625	0	
Z2	W1107	05/02/2022	269680	208605	0	
Z2	W1134	05/02/2022	269722	208592	0	
Z2	W1194	05/02/2022	269719	208530	0	

Pwllfawatkin Landfill Site

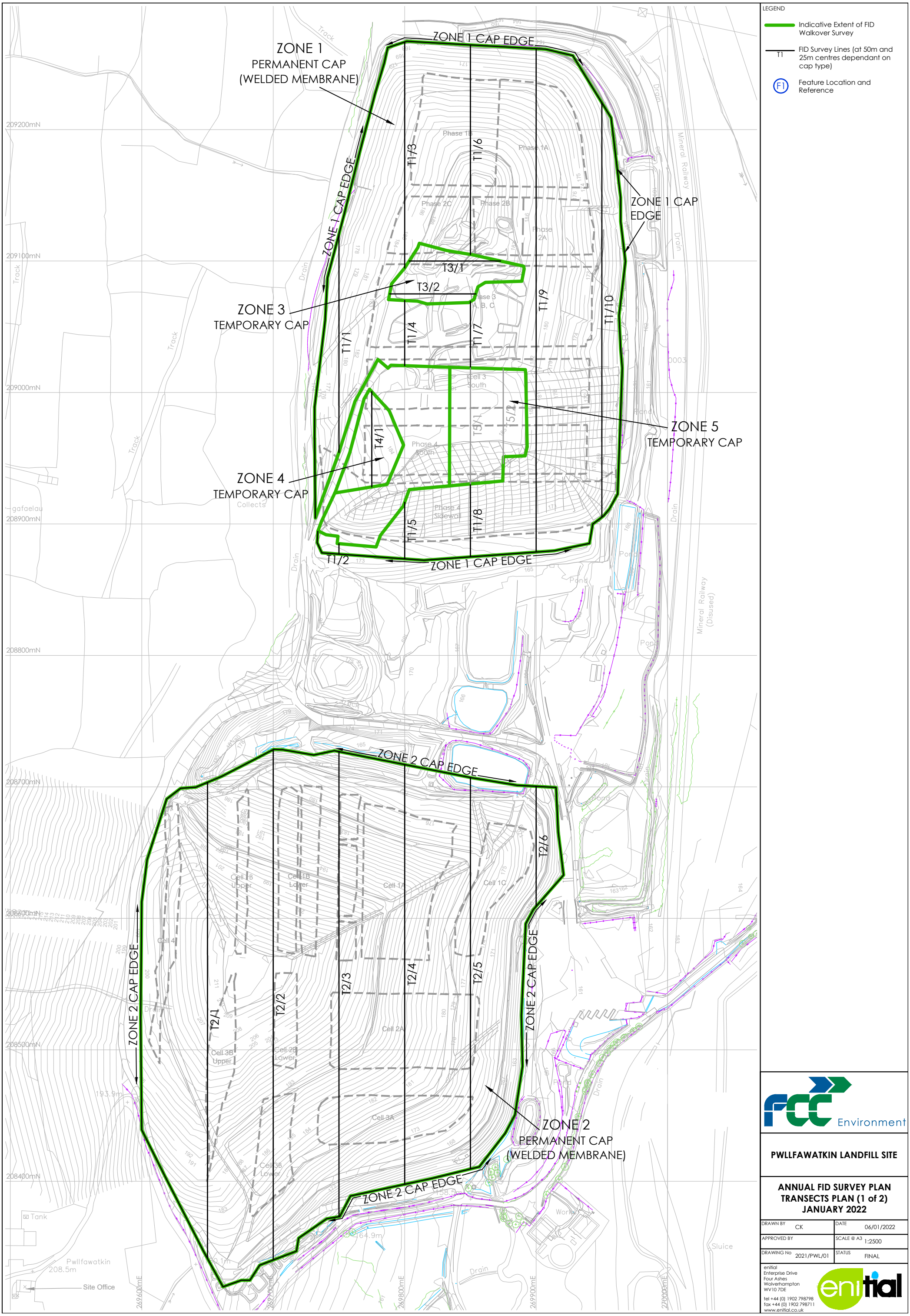
Surface Emissions Survey - January 2022

FID Survey - Infrastructure

Zone	Feature Ref	Date	Location		Concentration in ppm	Comments
			Easting	Northing		
Z3	W1310	05/02/2022	269825	209108	0	
Z3	W1604	05/02/2022	269840	209080	0	
Z3	W1605	05/02/2022	269811	209070	0	
Z4	W1802	05/02/2022	269762	208905	50	Base of well
Z5	L003B	05/02/2022	269841	208996	-	Unable to access - operational area
Z5	L004A	05/02/2022	269861	208961	-	Unable to access - operational area
Z5	L004B	05/02/2022	269836	208947	-	Unable to access - operational area
Z5	W1603	05/02/2022	269870	209009	-	Unable to access - operational area
Z5	W1901	05/02/2022	269887	208988	-	Unable to access - operational area
Z5	W1902	05/02/2022	269886	208961	-	Unable to access - operational area
Z5	W1903	05/02/2022	269857	208960	-	Unable to access - operational area
Z5	W1904	05/02/2022	269852	208990	-	Unable to access - operational area

Appendix B

Annual FID Survey Plans



LEGEND

- Indicative Extent of FID Walkover Survey
- T1 — FID Survey Lines (at 50m and 25m centres dependant on cap type)
- F1 — Feature Location and Reference

PWLLFAWATKIN LANDFILL SITE

ANNUAL FID SURVEY PLAN
TRANSECTS PLAN (1 of 2)
JANUARY 2022

DRAWN BY CK	DATE 06/01/2022
APPROVED BY	SCALE @ A3 1:2500
DRAWING No 2021/PWL/01	STATUS FINAL

enitial
Enterprise Drive
Four Ashes
Wolverhampton
WV10 7DE
tel +44 (0) 1902 798798
fax +44 (0) 1902 798711
www.enitial.co.uk

ZONE 1
PERMANENT CAP
(WELDED MEMBRANE)

ZONE 3
TEMPORARY CAP

ZONE 4
TEMPORARY CAP

ZONE 5
TEMPORARY CAP

ZONE 2
PERMANENT CAP
(WELDED MEMBRANE)

LEGEND

- Indicative Extent of FID Walkover Survey
- Leachate Installations
- Gas Extraction Installations

FCC Environment

PWLLFAWATKIN LANDFILL SITE

ANNUAL FID SURVEY PLAN
INFRASTRUCTURE PLAN (2 of 2)
JANUARY 2022

DRAWN BY CK	DATE 06/01/2022
APPROVED BY	SCALE @ A3 1:2500
DRAWING No 2021/PWL/02	STATUS FINAL

enitial
Enterprise Drive
Four Ashes
Wolverhampton
WV10 7DE
tel +44 (0) 1902 798798
fax +44 (0) 1902 798711
www.enitial.co.uk