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ANNUAL ENVIRONMENTAL REPORT

RILTA ENVIRONMENTAL LTD.

SITE 14-A1 GREENOGUE BUSINESS PARK

LICENCE NO. W0185-01

JANUARY 2016 - DECEMBER 2016

Prepared For: -

Rilta Environmental Ltd, Greenogue Business Park, Rathcoole, County Dublin.

Prepared By: -

O' Callaghan Moran & Associates, Unit 15 Melbourne Business Park, Model Farm Road, Cork.

7 April 2017

Project	Annual Environmental Report 2016					
Client	Rilta Environmental Ltd W0185-01					
Report No	Date	Date Status Prepared By Reviewed By				
161950209	23/03/2017	Draft	Mr Neil Sandes PGeo EurGeol	Mr Jim O'Callaghan MSc		
	07/04/2107	Final				

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1. INTRODUCTION

This is the 2016 Annual Environmental Report (AER) for the Rilta Environmental Limited (Rilta) Materials Recovery Facility (MRF) located at Unit 14-A1 Greenogue Business Park, Rathcoole, County Dublin. The report covers the period from the 1st January 2016 to the 31st December 2016. The content of the AER is based on Schedule E of the Waste Licence (W0185-01).

2. SITE DESCRIPTION

2.1 Site Location and Layout

The facility is located within an industrial estate approximately 2km east of Newcastle village and approximately 2.5km west of Rathcoole village. Rilta have been operating at the facility since 2009.

2.2 Waste Management Activities

During the reporting period the licence allowed Rilta to accept and process up to 60,000 tonnes of waste per annum, as set out in Appendix A and summarised below:

2.2.1 Waste Types & Processes

During the reporting period, the facility was licensed to accept the following waste categories and maximum quantities, as specified in Schedule A of the Licence: -

- Household Waste (7,000 tonnes)
- Commercial & Industrial Waste (15,000 tonnes)
- Construction & Demolition Waste (1,000 tonnes)
- Sewage Sludge (2,000 tonnes)
- Industrial Sludge (2,000 tonnes)
- Hazardous Waste (as listed in Table E.2.2 entitled 'Hazardous waste Types and Quantities' of the application (33,000 tonnes)

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Act, 1996:

Class 7: Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination), which results in final compounds or mixtures, which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule (including evaporation, drying and calcination);

This activity relates to the shredding of waste materials, including, household hazardous waste containers and metals, plastics, card and paper. Physico-chemical treatment may be carried out on effluents to meet discharge criteria.

Class 11: Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule;

This activity relates to bulking-up of waste on-site prior to shipment of waste for disposal offsite.

Class 12: Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule;

This activity relates to the baling and repackaging of various waste types prior to disposal offsite.

Class 13: Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced;

This activity relates to the storage of hazardous and non-hazardous waste at the facility prior to disposal off-site.

Licensed Waste Disposal Activities, Fourth Schedule of the Waste Management Act, 1996.

Class 2: Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological transformation processes);

This activity relates to the recycling of various organic substances including, wood, paper/cardboard, textile materials and vegetable oils.

Class 3: Recycling or reclamation of metals and metal compounds;

This activity relates to the dismantling, shredding, baling and recycling of various metal wastes.

Class 4: Recycling or reclamation of other inorganic materials;

This activity is limited to the reclamation of refrigerator gasses.

Class 11: Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:

This activity is to make provision for the acceptance on-site for transfer to an appropriate facility of waste that has been obtained from any activity referred to previously in the Schedule.

Class 12: Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule;

This activity refers to the exchange of certain waste types and their packaging for further processing off-site

Class 13: Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced;

This activity is limited to the storage of waste at the facility prior to off-site recovery.

3. EMISSION MONITORING

Rilta implements the environmental monitoring programme specified in the licence to assess the significance of emissions from the site activities. The programme includes surface water, wastewater, groundwater, noise and dust monitoring. The monitoring locations are shown on the plan in Appendix A. The monitoring results are submitted to the Agency at quarterly intervals. An overview of the results is presented in this Section.

3.1 Surface Water Monitoring

Surface water monitoring was carried out quarterly at one location (SW1). There are no emission limit values (ELVs) or trigger levels set in the Licence. Following a request from the Agency, trigger levels were developed in September 2015 in accordance with the Agency's guidance on setting of trigger levels for storm water discharges to off-site surface waters at EPA licensed IPPC & Waste facilities based on data from Q-1 2009 to Q-3 2015.

Table 3.1 presents the surface water monitoring results in 2016. All parameters are below their respective warning levels.

Parameter	Units	Q1	Q2	Q3	Q4	Warning Level	Action Level
pН	pH units	7.51	6.83	7.5	6.47	8.78	9.34
Conductivity	mS/cm	344	134	125	283	573	715
COD	mg/l	24	25	17	19	57	76

Table 3.1Surface water Monitoring Results 2016: SW1

3.2 Groundwater Monitoring

There are two groundwater monitoring wells on site (GW-1 and GW-2). The locations are shown on the plan in Appendix 1. GW-1 is in the southern section of the site and is upgradient of GW-2, which is in the northern end of the site.

Monitoring is carried out quarterly. The parameters analysed quarterly are pH, electrical conductivity, temperature, dissolved oxygen, chloride, sulphate, Total Organic Carbon. Annual monitoring of List I/II Organic Substances and dissolved metals are carried out annually.

Tables 3.2 to Table 3.5 include the groundwater analytical results for GW-1 and GW-2 for each quarter. The tables included for comparison purposes the Interim Guideline Values (IGV) prepared by the Agency and the groundwater Threshold Values (TV) from the Groundwater Regulations 2010.

In Q1 there was a slight exceedance of the IGV for manganese in GW-1. There was exceedances of the IGV for chloride and electrical conductivity in GW-2 but the GTVs were not exceeded.

There were no further exceedances of the IGV or TVs throughout the year. There is no significant change in water quality between the upgradient and downgradient wells.

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Parameter	Unit	GW-1	GW-2	IGV	TV
Boron	μg/l	18	20	1,000	750
Cadmium	μg/l	< 0.5	< 0.5	5	3.75
Calcium	mg/l	124.9	181	200	-
Copper	μg/l	<7	<7	30	1,500
Iron	μg/l	<20	<20	200	-
Lead	μg/l	<5	<5	10	18.75
Magnesium	mg/l	8.9	14	50	-
Manganese	μg/l	511	40	50	-
Nickel	µg/l	3	<2	20	15
Potassium	mg/l	0.9	2.1	5	-
Zinc	μg/l	<3	<3	100	-
Sulphate	mg/l	96.81	185.52	200	187.5
Chloride	mg/l	17.5	48.4	30	187.5
Dissolved Oxygen	mg/l	6	7	NAC	-
Electrical Conductivity	µS/cm	673	1,118	1,000	875 –
Electrical Colluderivity	μο/em	075	1,110	1,000	1,875
pH	pН	7.10	7.16	6.5-9.5	
pn	units	/.10	/.10	0.3-9.5	
Total Organic Carbon	mg/l	<2	<2	NAC	-
VOC	µg/l	ND	ND	-	-
sVOC	μg/l	ND	ND	-	-
IAC no obnormal obongo					

Table 3.2Q1 Groundwater Monitoring Results (Annual Parameters)

NAC – no abnormal change

ND - None Detected

Table 3.3Q2 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pН	pH Units	7.59	7.54	6.5-9.5	-
EC	μS/cm	761	642	1,000	875 – 1,875
Dissolved Oxygen	mg/l	7	7	NAC	-
Chloride	mg/l	19.6	15.1	30	187.5
Sulphate	mg/l	106.69	67.69	200	187.5
Total Organic Carbon	mg/l	<2	<2	NAC	-

NAC – no abnormal change

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pH	pH Units	7.52	7.98	6.5-9.5	-
EC	μS/cm	626	401	1,000	875 – 1,875
Dissolved Oxygen	mg/l	7	5	NAC	-
Chloride	mg/l	18.5	19.7	30	187.5
Sulphate	mg/l	19.61	54.08	200	187.5
Total Organic Carbon	mg/l	<2	3	NAC	-

Table 3.4Q3 Groundwater Monitoring Results

NAC - no abnormal change

Table 3.5Q4 Groundwater Monitoring Results

Parameter	Unit	GW-1 Up Gradient	GW-2 Down Gradient	IGV	TV
pН	pH Units	7.46	7.46	6.5-9.5	-
EC	μS/cm	700	525	1,000	875 – 1,875
Dissolved Oxygen	mg/l	8	8	NAC	-
Chloride	mg/l	17.4	8.3	30	187.5
Sulphate	mg/l	87.7	52.7	200	187.5
Total Organic Carbon	mg/l	<2	2	NAC	-

NAC – no abnormal change

3.3 Wastewater Monitoring

The facility is designed to collect wastewater (foul) from floor wash downs in the warehouse building and discharge to it to the municipal sewer that serves the industrial estate. However, as putrescible wastes are not accepted at the facility and floor wash downs are not required, there is no wastewater discharge to sewer and no requirement for monitoring to be carried out.

3.4 Noise Survey

An annual noise survey is carried out. This was carried out in August 2016. Daytime noise monitoring was carried out at approved noise monitoring locations as shown on the site plan in Appendix 1 and the results are summarised in Table 3.6. Site operations were not audible at any of the stations and were therefore lower than the 55dB daytime limit as specified in the licence.

Station	N1	N2	N3
Period	Daytime	Daytime	Daytime
Ambient LAeq 30 min (dB)	62	64	54
Facility specific LAeq 30 min	<52	<51	<<49
(dB)			
Tone objectively detected	Х	Х	Х
Tone attributable to facility	Х	Х	Х
Facility audibly tonal	Х	Х	Х
Facility audibly impulsive	Х	Х	Х
Facility rated L _{Req 30 min} (dB)	<52	<51	<<49
Limit (dB)	55	55	55
Compliance	~	~	~

Table 3.6Day-time Noise Survey Results

3.5 Dust Monitoring

Dust monitoring was carried out in August, September and October and the results are in Table 3.7. There was one exceedance of the dust deposition limit ($350 \text{ mg/m}^2/\text{day}$) set in the Licence. In September 2016 the result for D-3 (1,591 mg/m²/day) exceeded the dust deposition limit, however, the inorganic particulate faction of the sample which is representative of site activities was 191 mg/m²/day which is below the limit. The sample was impacted greatly by the presence of vegetative growth (leaves, algae, etc.), which was not derived from site based activities. The exceedance was reported to the Agency.

Table 3.7	Dus	t Monitoring Resul	lts 2016	
		Anril / May	Inly / Anoust	

	April / May mg/m²/day	July / August mg/m²/day	September mg/m²/day	Deposition Limit mg/m²/day
D-1	20.81	7.24	113	350
D-2	15.29	10.77	123	350
D-3	33.27	4.99	1,591	350
D-4	42.41	3.03	108	350

4. SITE DEVELOPMENT WORKS

4.1 Engineering Works

There was no engineering works completed in 2016 and none are proposed for 2017.

4.2 Summary of Resource & Energy Consumption

Table 4.1 is a summary of the resource and energy consumption during the reporting period and a comparison with the consumption in 2015.

Table 4.1Resources Used On-Site in 2015 & 2016

Resources	Quantities 2014	Quantities 2016
Road Diesel	1,220 litres	1360 litres
Electricity	56,100 KwH	64,000 KwH
Water	480m ³	840m ³

5. WASTE RECEIVED AND CONSIGNED FROM THE FACILITY

Table 5.1 shows the total quantities of waste received and Table 5.2 shows the total quantities of waste consigned from the facility in 2016. Table 5.3 shows the quantities of waste received and consigned in previous years. A breakdown of the waste types is provided in accordance with the List of Waste. A more detailed description of the wastes consigned and the waste destinations are provided in the PRTR submission in Appendix 2.

The total amount received in 2016 was 1,332 tonnes. The total amount consigned was 1,403.5 tonnes. The difference in waste received into and consigned is 71.533 tonnes. This relates to waste that was on-site at the end of 2016 and which was consigned in 2017. All the wastes consigned from the site went to authorised recovery and disposal facilities.

EWC	Description	Waste In
16 02 11*	WEEE	380.06
16 02 13*	Transformers	1269.88
16 02 14	Redundant Equipment	23.2

Table 5.1	Waste Received 2016
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EWC	Description	Waste Out
13 03 07*	Mineral Based non-chlorinated insulating and heat transmission oils	212.14
13 05 07*	Oily Water from oil/water interceptors	15.02
16 02 11*	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	380.06
16 02 14	Discarded Equipment other than those mentioned in 16 02 09 to 16 02 13	23.2
19 12 02	Ferrous Metal	845.29
19 12 03	Non-ferrous Metal	83.5
16 07 08*	Wastes containing oil	71.7
	Total Received	1,673.14
	Total Consigned	1630.91
	Recovered	1544.19
	Disposed	86.72
	Recovery Rate (%)	94.68%

Table 5.2Waste Consigned 2016

	2015	2014	2013	2012	2011
Total Received	1,332	2615.18	2614.40	2714	2617.5
Total Consigned	1,403.541	2,546.67	2478.48	2788.20	2339.69
Total Recovered	1,375.901	2,528.81	2474.98	2753.30	2339.69
Total Disposed	27.64	17.86	3.5	34.9	0
Recovery Rate	98.03%	99.30%	99.86%	98.75%	100%

Table 5.3Waste Received & Consigned in Recent Years

6. ENVIRONMENTAL INCIDENTS AND COMPLAINTS

6.1 Incidents

There was 1 notifiable environmental incident in 2016.

1) 17th November 2016 – Non-compliance of ELV for dust at monitoring point D-3. The total volume exceeded the ELV as a result of contamination of the sample by organic matter and not site derived inorganic matter. Agency notified following incident.

6.2 **Register of Complaints**

Rilta maintains a register of complaints received in accordance with Condition 10.4 of the waste licence. There were no complaints during the reporting period.

7. ENVIRONMENTAL DEVELOPMENT

7.1 Environmental Management Programme Report

RILTA has implemented an Integrated Management System (IMS) in accordance with the requirements of Occupational Health and Safety Assessment Series (OHSAS) 18001:2007 and International Standard Organisation (ISO) 14001:2004 in order to manage the Health, Safety and Environmental performance of their business and to control health and safety risk and to minimise their environmental aspects and impacts.

The IMS has been developed for the achievement of continual improvement taking into account the requirements of the Waste Licence Conditions. RILTA has prepared and effectively implement documented procedures and instructions in accordance with the requirements of both the OHSAS 18001:2007 and ISO 14001:2004. The facility was recertified in February 2015.

The schedule of the EMS Objectives and Targets, including their status for 2017 is included in Appendix 3.

7.2 Site Management Structure

Details of the site management structure are provided in Appendix 5.

7.3 Environmental Management Programme

The objectives that were achieved during this reporting period are outlined in Appendix 4.

7.4 Communications Programme

Rilta maintains a 'Public File' which contains all correspondence between Rilta and the Agency, all waste data and monitoring data as required by the licence. Opening Times for Inspection of Records are from 10 am - 4 pm. Visits to the site should be arranged in advance by ringing the Facility Manager at 01 401 8000

7.5 Nuisance Controls

Rilta has contracted an external vermin control company to carry out nuisance control at the facility.

8. OTHER REPORTS

8.1 European Pollutant Release and Transfer Register

Under the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006 Rilta are required to submit information annually to the Agency. A copy of the information submitted to the Agency via the web-based data reporting system is in Appendix 2.

8.2 Bund Integrity Test Report

Bund integrity testing was completed in 2016. A copy of the report was submitted to the agency in 2016 and is included in Appendix 6.

APPENDIX 1

Site Plan showing Environmental Monitoring Locations



APPENDIX 2

European Pollutant Release and Transfer Register



PRTR# W0185 | Facility Name : Ritta Environmental | Filename : W0185_2016 xlsm | Return Year : 2016 |

Guidance to completing the PRTR workbook

PRTR Returns Workbook

REFERENCE YEAR 2016

1. FACILITY IDENTIFICATION	
Parent Company Name	Rilta Environmental Limited
Facility Name	Rilta Environmental
PRTR Identification Number	W0185
Licence Number	W0185-01

Classes of Activity No. class_name - Refer to PRTR class activities below

	Block 402, Grant Drive
Address 2	Greenogue Business Park
Address 3	Rathcoole
Address 4	
	Dublin
Country	
Coordinates of Location	-6.47708 53.2999
River Basin District	IEEA
NACE Code	3832
Main Economic Activity	Recovery of sorted materials
AER Returns Contact Name	Colm Hussey
AER Returns Contact Email Address	colm.hussey@rilta.ie
AER Returns Contact Position	Site Manager
AER Returns Contact Telephone Number	0879176264
AER Returns Contact Mobile Phone Number	0879176264
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	
Number of Employees	70
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

	Activity Name	
5(a) 5(c) 50.1	Installations for the recovery or disposal of hazardous waste	
5(c)	Installations for the disposal of non-hazardous waste	
50.1	General	
3. SOLVENTS REGULATIONS (S.I. No. 543 of 20	002)	
Is it applicable?	No	
Have you been granted an exemption ?		
If applicable which activity class applies (as per		
Schedule 2 of the regulations) ?		
Is the reduction scheme compliance route being		
used ?		

4. WASTE IMPORTED/ACCEPTED ONTO SITE	Guidance on waste imported/accepted onto site
Do you import/accept waste onto your site for on-	
site treatment (either recovery or disposal	
activities) ?	

S. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE I PRTR. W0165 [Secily Name: Rita Environmential | Filename: W0165_2016 alson | Reum Year: 2016 | Please enter all quantities on this sheet in Tonnes

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			Quantity (Tonnes per Year)			Me	Method Used		Destination Facility Name and LizencePermit No of LizencePermit No of LizencePermit No of Recovering the Content Percovering Recovering Cases	Haz Wittelle : Address of Next Destination Facility Non Haz Wastle Address of Recovering	Numne and Licenses / Permit No. and Address of Fass Recoverer / Dispose (HAZARDOUS WASTE Onitone (HAZARDOUS WASTE	Actua Accession First Destination i.e. Finak Recovery / Disposad Site
T	European Waste	a subsection of the		and Minator	Waste Treatment	Di Cont	in the second	Location of				
Within the Country 13 03 07	13 03 07	Yes	212.1	sulating	R9	X k	Weighed	, treentrent Rita Environ Offsite in Ireland Ltd.w0192-3	Ritta Ervironmental Ltd.w0192-3	402 Greenogue Business Park., Rathoode, Co. Dublin, Ireland	Ritta Erwicomental Lidi W192-3, 4/22 Greenogue Business Park, Dubin, Ineland Ritta Erwicomental Ritta Erwicomental	402 Greenogue Business Park., Rathcoole, Co. Dublin, tretand
Within the Country 13 05 07	13 05 07	Yes	15.02	SIG	ő	×	Weighed	Ritta Environ Offisite in Ireland Lid.w0192-3	Ritta Environmental Ltd.w0192-3	402 Greenogue Business Park., Rathcoole, Co. Dublin, Ireland	Ltd. W182-3, 402 Greenogue Business Park, ,Rathcoole,Co. Dublin, Ireland	402 Greenogue Business Park, Rathcoole, Co. Dubin, Iretand
To Other Countries 16 02 11 Within the Country 16 02 14	16 02 11 16 02 14	Yes No	380.1	alscarded equipment containing 380.1 chloroftuorceatrona: MCFC, HFC discarded equipment other than those 23.2 mentioned in 16 02 09 to 16 02 13	R4 R4	> > • •	Weighed Weighed	Abroad Offsite in Ireland	Tech Rec NI,. Hegary Motals, Permit No. WP 05/04	Dungannon, Co. Tyrone, ireland Dock Road Limerick ireland	Tech Rec NL., Dungarnon, Co. Tyrone, Ireland	Dungarnon,,Co. Tyrone, ireland
Within the Country 16 07 08	16 07 08	Ýes	7.17	71.7 wastes containing oil	2	S ₩	Weighed	Offsite in Ireland	Ritta Environmental Ltd.w0192-3	402 Greenogue Business Park, "Rathcoole, Co. Dublin, Ireland	Rita Environmental Ltd, W192-3, 402 Greenogue Business Park, Rathcoole, Co. Dublin, ireland	402 Greenogue Business Park, , Rathcoole, Co. Dublin, Iretand
		No	0.0	herwise specified	8	×	Weighed		Ritta Environmental Ltd,w0192-3 Hegarty Metals, Permit No.	ParkRathcode,Co. Dublin,Ireland Dock Road		
Within the Country 19 12 02 Within the Country 19 12 03	19 12 02 19 12 03	o oz	845.3 83.5	845.3 ferrous metal 83.5 non-ferrous metal	R4 R4	s s x x	Weighed Weighed	Offsite in Ireland Offsite in Ireland	WP 05/04 Hegarty Metals, Permit No. WP 05/04	LimerickIreland Dock Road LimerickIreland		

* Select a row by doubte-clicking the Description of Waste then click the delete button

APPENDIX 3

Schedule of 2016 Targets and Objectives

RILTA ENVIRONMENTAL Ltd.

EHS MANAGEMENT SYSTEM



EHS MANAGEMENT PLAN

In accordance with ISO 14001 & OHSAS18001

RILTA ENVIRONMENTAL	Issue No. 012
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Jan 2016
Environmental Management Programme	Page 1 of 5

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE ACHIEVEMENT OF OBJECTIVES AND <u>TARGETS</u>

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
1	Increase environmental awareness among RILTA	Conduct site tours for all staff before end 2016	Collate staff into groups of no more than 5 persons per site tour	СН	Apr 16	
	staff.		Complete site walks on non month-end Fridays	СН	Oct 16	
		Complete Staff Environmental Training Package	Andy Wood and CH to develop training package	СН	Jan 16	Yes
			AW and CH to start delivering training package	СН	Feb 16	Yes
			Further training to be developed on foot of original Training findings.	СН	June 16	Yes

Issue No.	012	Compiled by: Name/Position	Colm Hussey Facility & Environmental Manager
Date:	Feb 2016	Reviewed by: Name/Position	Sean Cotter General manager

RILTA ENVIRONMENTAL	Issue No. 012
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2016
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2	Optimize	Install suitable waste tracking	Install system	CH/DM	Jan 16	Yes
	waste tracking from cradle to grave	system for all waste	Snag system	CH/DM	Feb 16	
	grave		Track asbestos	CH/DM	March 16	
			Switch Off Old System	CH/DM	Aug 16	
			Switch Off Old System	CH/DM	Aug 16	

Issue No.	012	Compiled by:	Colm Hussey
		Name/Position	Facility & Environmental Manager
Date:	Feb 2016	Reviewed by:	Sean Cotter
		Name/Position	General manager

RILTA ENVIRONMENTAL	Issue No. 012
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2016
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EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
3	Ensure quality drainage	No leaks	Re-coat the settlement tank (1)	СН	June 16	
	system		Re-coat the settlement tank (2)	СН	August 16	
			Re-coat the settlement tank (3)	СН	October 16	
4	Ensure only	No ELV breaches	Empty and clean attenuation tank	CH/SH	June 16	Y
	clean water					-
	released to the river		Skim storm water interceptor on a monthly basis	CH/SH	Ongoing	Y
			Replace/Repair damaged concrete on a rota basis to ensure no damaged areas by 2016	CH/SH	Dec 16	Y

Issue No.	012	Compiled by:	Colm Hussey
		Name/Position	Facility & Environmental Manager
Date:	Feb 2016	Reviewed by:	Sean Cotter
		Name/Position	General manager

RILTA ENVIRONMENTAL	Issue No. 012
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EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
5	Reduce use of hazardous raw materials used on site.	Implement the 'treat waste with waste' best practice method on an ongoing basis	Source suitable waste streams for treatment Laboratory approval for the usage of wastes for treatment	RS TMc	Ongoing Ongoing	Y Yes
6	Optimize the quality of trade effluent	No ELV breaches	Clean 'wet wells' twice a year Clean DAF system twice a year	ТМс ТМс	Dec 16 Dec 16	Y Y

Issue No.	012	Compiled by:	Colm Hussey
		Name/Position	Facility & Environmental Manager
Date:	Feb 2016	Reviewed by:	Sean Cotter
		Name/Position	General manager

RILTA ENVIRONMENTAL	Issue No. 012
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2016
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EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
7	To be a good and	No complaints	Complete noise monitoring.	СН	Ongoing	
	considerate neighbour.		Monitor adjoining river on a quarterly basis.	СН	Ongoing	
			Implement 'closed door' policy system when unloading liquid waste tankers where possible	CM/DG	Ongoing	
			Cold cutting at the cedar site to take place inside with doors close	DG	Ongoing	
			Inform neighbours when bulk soil/sludge are being moved off site	СН	Ongoing	
			Make contact with Fortunes and Bailey care on a quarterly basis	СН	Ongoing	

Issue No.	012	Compiled by:	Colm Hussey	
		Name/Position	Facility & Environmental Manager	
Date:	Feb 2016	Reviewed by:	Sean Cotter	
		Name/Position	General manager	

RILTA ENVIRONMENTAL	Issue No. 012
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2016
Environmental Management Plan	Page 6 of 8

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
8	To Be Energy Efficient	Reduce electricity usage by 5%	Complete targeted energy audit at both 402 and 14A1 sites.	СН	Aug 16	
			Assess findings of audit. Implement findings of audit if economically and practically feasible.	CH/SC CH/SC	Sept 16 Dec 16	

Issue No.	012	Compiled by:	Colm Hussey
		Name/Position	Facility & Environmental Manager
Date:	Feb 2016	Reviewed by:	Sean Cotter
		Name/Position	General manager

RILTA ENVIRONMENTAL	Issue No. 012
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2016
Environmental Management Plan	Page 7 of 8

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
9	Reduce Process Waste	Reduce filtercake volumes	Install and commission sludge drying plant	СН	May 16	
			Investigate alternative uses for the new dried waste	СН	Sept 16	
10	Reduce The Number of Lost Time Accidents	Aim for Zero Lost Time Accidents	Tailor Manual Handling Training to emphasize the need to cut out 'reaching and lifting'	СН	May 16	
			Aim for 100% Manual and Chemical handling	СН	Dec 16	
11						

Issue No.	012	Compiled by:	Colm Hussey
		Name/Position	Facility & Environmental Manager
Date:	Feb 2016	Reviewed by:	Sean Cotter
		Name/Position	General manager

APPENDIX 4

Schedule proposed Targets and Objectives 2017

RILTA ENVIRONMENTAL Ltd.

EHS MANAGEMENT SYSTEM



EHS MANAGEMENT PLAN

In accordance with ISO 14001 & OHSAS18001

RILTA ENVIRONMENTAL	Issue No. 013
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2017
Environmental Management Programme	Page 1 of 6

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE ACHIEVEMENT OF OBJECTIVES AND <u>TARGETS</u>

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
1	Increase environmental	Develop and produce EHS diary for 2018	Find suitable producer(s)	СН	Mar 17	
	awareness among RILTA		Develop content for approval	SL	Mar 17	
	staff.		Get quotes for production	SL	Mar 17	
			Print and distribute to relevant stakeholders	SL	Apr 17	
2	Optimize waste tracking from cradle to	Develop integrated system for managing all data	Sign off on suitable reports on electronic tracking system	СН	Apr 17	
	grave		Amend 'incoming waste records' to accommodate tracking reports	СН	May 17	
			Develop live mass balance monthly update	СН	Oct 17	

Issue No.	013	Compiled by: Name/Position	Colm Hussey Facility & Environmental Manager
Date:	Feb 2017	Reviewed by: Name/Position	Sean Cotter General manager

RILTA ENVIRONMENTAL	Issue No. 013
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2017
Environmental Management Plan	Page 2 of 6

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
3	Ensure quality drainage	No leaks	Re-coat the settlement tank (1)	СН	June 17	
	system		Re-coat the settlement tank (2)	СН	August 17	
			Re-coat the settlement tank (3)	СН	October 17	
4	Ensure only clean water	No ELV breaches	Empty and clean attenuation tank	СН	Mar 17	
	released to the river		Skim storm water interceptor on a monthly basis	СН	Ongoing	
			Replace/Repair damaged concrete on a rota basis to ensure no damaged areas by 2017	СН	Dec 17	

Issue No.	013	Compiled by:	Colm Hussey
		Name/Position	Facility & Environmental Manager
Date:	Feb 2017	Reviewed by:	Sean Cotter
		Name/Position	General manager

RILTA ENVIRONMENTAL	Issue No. 013
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2017
Environmental Management Plan	Page 3 of 6

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
5	Reduce use of hazardous raw materials used on site.	Employ solvent free paint	Source suitable paints Assess suitability of existing paint systems	СН	Mar 17 April 17	
6	Optimize the quality of trade effluent	No ELV breaches	Clean 'wet wells' twice a year Clean DAF system twice a year	ТМс ТМс	Ongoing Ongoing	

Issue No.	013	Compiled by:	Colm Hussey
		Name/Position	Facility & Environmental Manager
Date:	Feb 2017	Reviewed by:	Sean Cotter
		Name/Position	General manager

RILTA ENVIRONMENTAL	Issue No. 013
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2017
Environmental Management Plan	Page 4 of 6

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
7	To be a good and	No complaints	Complete noise monitoring.	СН	Ongoing	
	considerate neighbour.		Monitor adjoining river on a quarterly basis.	СН	Ongoing	
			Implement 'closed door' policy system when unloading liquid waste tankers where possible	CM/DG	Ongoing	
			Cold cutting at the cedar site to take place inside with doors close	DG	Ongoing	
			Make contact with immediate neighbours on a quarterly basis	СН	Ongoing	

Issue No.	013	Compiled by:	Colm Hussey	
		Name/Position	Facility & Environmental Manager	
Date:	Feb 2017	Reviewed by:	Sean Cotter	
		Name/Position	General manager	

RILTA ENVIRONMENTAL	Issue No. 013
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2017
Environmental Management Plan	Page 5 of 6

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
8	To Be Energy Efficient	Reduce electricity usage by 5%	Assess findings of 2016 audit.	CH/SC	Apr 17	
			Implement findings of audit if economically and practically feasible.	CH/SC	June 17	

Issue No.	013	Compiled by:	Colm Hussey
		Name/Position	Facility & Environmental Manager
Date:	Feb 2017	Reviewed by:	Sean Cotter
		Name/Position	General manager

RILTA ENVIRONMENTAL	Issue No. 013
ENVIRONMENTAL MANAGEMENT SYSTEM	Date: Feb 2017
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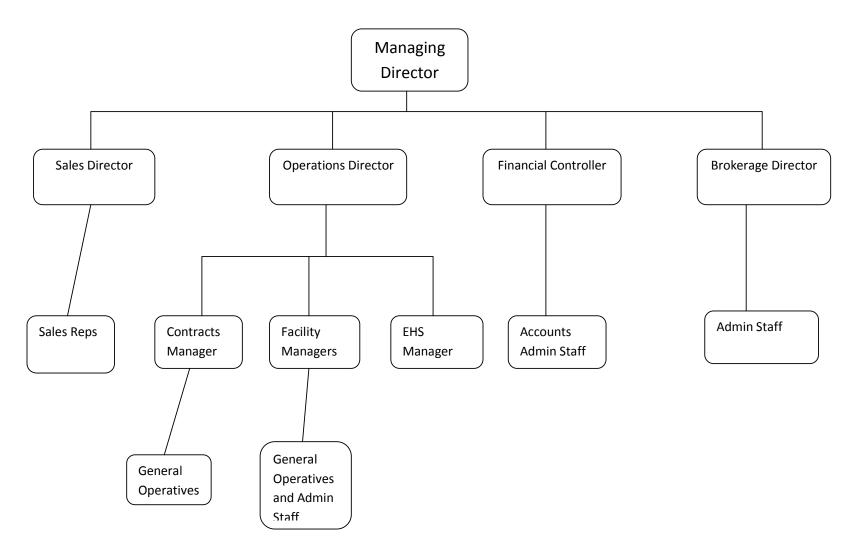
EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
9 Reduce Reduce filtercake volumes Process Waste		Optimize the volume of 'dig-out' waste that can be dried.	DG	June 17		
10	Reduce The Number of Lost Time Accidents	Aim for Zero Lost Time Accidents	Tailor Manual Handling Training to emphasize the need to cut out 'reaching and lifting'	SL	Ongoing	
			Aim for 100% Manual and Chemical handling	SL	Dec 17	
			Develop app for recording 'area of concern/near miss' data	SL	Apr 17	
			Aim for 75 near misses	SL	Dec 17	
11	Reduce Detergent use on Tank	Reduce Detergent use by 10%	Eliminate neat detergent/road bio use	EK	Dec 17	
	Cleaning Work		Do not exceed recommended usage	EK	Dec 17	

Issue No.	013	Compiled by:	Colm Hussey	
		Name/Position	Facility & Environmental Manager	
Date:	Feb 2017	Reviewed by:	Sean Cotter	
		Name/Position	General manager	

APPENDIX 5

Management Structure

<u>Rilta Environmental Management Structure</u>



APPENDIX 6

Bund Integrity Test Report



Rilta Environmental Ltd.

Bund Integrity Testing at Site 14A1, Greenogue Business Park, Rathcoole, Co. Dublin

November 2016 Revision: B

TOBIN CONSULTING ENGINEERS







REPORT

PROJECT:	Bund Integrity Testing
	Site 14A1, Greenogue Business Park Rathcoole, Co. Dublin
CLIENT:	Rilta Environmental Ltd RILTA Environmental Limited, Block 402, Greenogue Business Park, Rathcoole, Co. Dublin Tel: + 353 1 401 8000 Fax: + 353 1 401 8080 Email: info@rilta.ie
COMPANY:	TOBIN Consulting Engineers Block 10 - 4 Blanchardstown Corporate Park,

Block 10 - 4 Blanchardstown Corporate Park Blanchardstown, Dublin 15

www.tobin.ie



DOCUMENT AMENDMENT RECORD

Client: Rilta Environmental Ltd.

Project: 10063 – Bund Testing

Title: Bund Integrity Testing

PROJECT	PROJECT NUMBER: 10063				DOCUMENT REF:10063/Rev A			
А	Bund Integrity Testing	FH	090217	ST	190213	DG	190213	
Revision	Description & Rationale	Originated	Date	Checked	Date	Authorised	Date	
	TOBIN Consulting Engineers							





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Appendix A

Figure 1 – Bund / Tank Locations for testing (Site 14A1, Greenogue Business Park)

Appendix B

Site 14A1 (Ref. Cedar Yard) - CCTV Drainage Inspection Report





1 INTRODUCTION

Tobin Consulting Engineers (hereafter referred to as TOBIN) have been commissioned by Rilta Environmental Ltd. to carry out Bund Integrity Testing at their facility at 14A1, Greenogue Business Park, Rathcoole, Co. Dublin under the requirements of the site's EPA Waste Licence (No. W0185-01).

TOBIN proposed that over a period amenable to facility operations hydrostatic testing, CCTV survey and structural survey would be carried out on the specified bunds and areas.

A CCTV survey of the site drainage was carried out by Rilta staff on 15/11/16. A structural survey of the Buildings outlined for assessment was carried out by a TOBIN Engineer on Friday, 25th November 2016.

Hydrostatic testing of a number of bunded areas and underground settlement tanks commenced on Saturday, July 23rd 2016 and concluded Monday, July 25th 2016. A second visit for testing of the underground bund at Site 14A1, Greenogue Business Park commenced Tuesday, 14th November 2016 and concluded on Thursday 16th November 2016 in order to carry out Testing of four indoor portable bunds.

Areas / Bunds for testing identified within Site 14A1, Greenogue Business Park include:

- Area / Bund No. 12: Large Warehouse
- Area / Bund No. 13: Storage Bay Portable Bunds (2No)
- Area / Bund No. 14: Processing Bay Portable Bunds (2No)
- Area / Bund No. 15: Outdoor Concrete Bund
- Area / Bund No. 16: Underground Concrete Bund

TOBIN carried out preliminary inspections of the bunds and areas listed above and made assessments as to the necessity/suitability of each for hydrostatic testing or structural assessment. A detailed bund location map (Figure 1) is contained in Appendix A.

2 METHODOLOGY

It was proposed that over a period when the facility was non-operational, liquid levels within the over ground bunds and underground tanks would be monitored, following preparatory works, for a three day period (preferably over a weekend). Any subsequent fluctuation in levels over this period would indicate if the integrity of each bund is intact.



A methodology for the testing of individual bunds and tanks at Site 14A1 is detailed below. The locations of the areas tested at Site 14A1 is shown in Figure 1 in Appendix A.

2.1.1 Large Warehouse Building (Area / Bund No. 12)

A structural survey was carried out by a TOBIN Engineer on the Internal Warehouse Building on Friday, 25th November, located as shown in Figure 1 of Appendix A. This building is designated as an area for the storage, inspection and processing of incoming electrical transformers. This survey consisted of a visual assessment of all walls, floors and ramps within the building.

2.1.2 Storage Bay – Portable Bunds (2 No.) (Area / Bund No. 13)

There are Indoor Portable Bunds/Tanks (2 No.) in the Storage Bay Building at Site 14A1, located as shown in Figure 1 of Appendix A.

It was proposed that over a period when the facility was non-operational, liquid levels within the internal storage bunds would be monitored for a three day period.

The locations of the storage bunds during the testing period and location of the main outdoor storage area are shown in Figure 1 attached.

Please Note: During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.

2.1.3 Processing Area – Portable Bunds (2No.) (Area / Bund No. 14)

It was proposed to test the Indoor Portable Steel Bunds (2No.) in the Processing Bay Building at Site 14A1, located as shown in Figure 1 of Appendix A. The bunds were thoroughly cleaned out, with any debris and sludge removed from the bunds prior to testing.

Each bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of each bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was be allowed to sit for one day to allow the container/bund to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

TORI



Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as welding or repairing any cracks or faults to a satisfactory standard.

Please Note: During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.

2.1.4 Outdoor Concrete Bund / Loading Bay (Area / Bund No. 15)

It was proposed to test the Outdoor Concrete Bund / Loading Bay at Site14A1, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was allowed to sit for one day to allow the container/bund to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as protective coating applied or any cracks or faults repaired and sealed to a satisfactory standard.

Please Note: During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.

2.1.5 Underground Concrete Bund (Area / Bund No. 16)

Testing was carried out on the Underground Concrete Bund over a 3 day period in July 2016. It was proposed to test the Underground Concrete Bund at Site14A1, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.



When the bund was full to the required limit it was allowed to sit for one day to allow the container/bund to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured using a data logger to record any changes in water level.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as protective coating applied or any cracks or faults repaired and sealed to a satisfactory standard.

Please Note: During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.

3.0 CONTROL

Due to the potential for evaporation in the settlement tanks/bunded areas, a control was put in place (note: where tanks are internal there is no risk of precipitation influencing levels). A container was filled to a specific level with liquid from the Underground Tanks. This control was left beside the internal tanks throughout the testing period. This control provides an indication of the evaporation rate active on the tanks and the influence of any rainfall during the testing period.

Due to the potential for evaporation and precipitation in the Outdoor Concrete Bund, a control was put in place. A container was filled to a specific level with water. This control was left beside the Outdoor Concrete Bund.

These controls provide an indication of the evaporation and precipitation rate active on the bunds both indoors and outdoors.

3.1 FAILURE

Should the structure not satisfy the test, remedial works will be recommended and carried out and the same procedure will be repeated.

3.2 WATER DISPOSAL

Any water used in this procedure will be disposed of through the surface water drainage system on site.



3.3 PROGRAMME FOR TESTING (SITE 14A1)

With the exception of the tests carried out in November for the internal bunds, it was proposed that all testing would be carried out over the same 4-day period¹ in July 2016.

- Day 1: TOBIN staff attended Site 14A1 on Friday, July 22nd 2016, before the testing commenced in order to assess the Underground Concrete Bund and Outdoor Concrete Bund for testing and to review the location of the Bunds to be tested (with Rilta staff) and the preparation of test areas including the addition of water to the bund as required for hydrostatic testing (with Rilta staff). Levels were taken by TOBIN staff.
- Day 2-4: TOBIN staff attended Site 14A1 on Saturday, 23rd July, Sunday, 24th July and Monday, 25th July to take levels at the Underground and Outdoor Concrete Bunds. Levels were taken at the same time each day, weather conditions noted and controls checked

A second visit was required to carry out hydrostatic testing on the Over indoor portable bunds at Site 14A1 in November 2016.

- Day 1: TOBIN staff attended Site 14A1 on Monday, 14th of November 2016 before the testing commenced in order to assess all Areas / Bunds for testing and to review the locations of the Areas / Bunds to be tested (with Rilta staff). Preparation of test areas including the addition of water to containers/bunds where required for hydrostatic testing (with Rilta staff). Levels were taken by TOBIN staff.
- Days 2-4: TOBIN staff attended site on Tuesday, November 15th, Wednesday, 16th November and Thursday, 17th November to take levels at each test location. Levels were taken at the same time each day, weather conditions noted and controls checked.
- A TOBIN Structural Engineer visited site to carry out a structural assessment of the bunds and buildings on Friday, 25th November.

¹ Where this was not practical for Rilta, an alternative programme for testing was agreed (all results are included herein).



4 RESULTS

4.1 HYDROSTATIC SURVEY RESULTS

Hydrostatic testing was carried out on the Bunded areas & Underground Storage Tanks from Friday, July 22nd to Monday, July 25th 2016, and for additional Indoor Portable Storage Bunds from Tuesday, 15th November to Thursday, 17th November 2016.

No fluctuation in liquid levels was noted in the bunds or tanks during the first monitoring period Day 1 to Day 2 (November 15th to 16th November 2016) and levels remained constant for the second monitoring period Day 2 to Day 3 (16th November to 16th November 2016). Results from the controls showed no variation and were consistent with readings from all storage tanks.

As no fluctuation was noted in liquid levels during the measurement period and the control remained constant, it is determined that all tested bunds and tanks are in good structural condition. No ancillary works are required for these bunds.

4.2 TESTING AT SITE 14A1, GREENOGUE BUSINESS PARK

Testing commenced 'as per methodology' on Saturday 23rd July 2016 and concluded on Monday, 25th of July 2016. A second visit was required to test the Indoor Portable Bunds bund. This test commenced on Tuesday, 15th November 2016 and concluded on Thursday, 17th November 2016. Measurements were recorded over three consecutive days and the results were analysed by TOBIN staff. No fluctuation in liquid level was noted at any of the monitoring locations, during any of the daily monitoring events (see results below). The controls for these assessments showed no change, remaining consistent with the results from the daily monitoring. See section 4.2.2 below for test results.

4.2.1 Large Warehouse Building (Area / Bund No. 12)

As per methodology a structural survey was carried out by a TOBIN Engineer on the Warehouse on Friday, 25th November 2016, located as shown on Figure 1 of Appendix A.

This area is generally used to store relatively dry materials. The construction is typical industrial ground floor construction with 6m x 6m concrete bays. There is a concrete upstand approx 100mm high around the perimeter of the area with block walls above. There is ramped access to the entrances and exits to the bund.

The floor slab and up-stand was generally found to be in good structural condition with no obvious defects. The ramps approaching the external dock – leveller have been damaged by the impact of



the vehicular movements. These require repair with a suitable repair mortar. The make-up of the joint filler material between the 6m x 6m concrete bays is unknown and maybe unsuitable to store the material required. It is recommended that these joints be re-sealed with a suitable sealant that capable of performing with aggressive materials.

4.2.2 Storage Bay - Portable Bunds (2No.) (Area / Bund No.13)

Testing commenced 'as per methodology' on Monday, 14th November 2016. Measurements were recorded over three consecutive days and the results were analysed by TOBIN staff. No fluctuation in liquid level was noted at any of the indoor bund monitoring locations, during any of the daily monitoring events (see results below).

As no fluctuation was noted in tank liquid levels during the measurement period, the internal bunds are in good structural condition as detailed below.

Storage Bay Portable Bund No. 1:

As per methodology Bund No. 1 was filled with water to an appropriate level (110% tank volume) on Monday the 14th November 2016. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Tuesday 15th November 2016. Table 4-7 below represents recorded water levels within the bund over the test period. Two levels were taken for each bund as there was a slight slant in some of the storage tanks.

Measurement Location	Mon 14 th Nov	Tues 15 th Nov	Wed 16 th Nov	Thur 17 th Nov	Fluctuation	Pass / Fail	
Storage Bay Portable Bund No. 1							
A, Front Left 23.1 23.2 23.2 23.1 -0.1cm Pass							
B, Front Right	23.6	23.6	23.6	23.6	0.0cm	Pass	
C, Rear Left 23.7 23.7 23.7 23.7 0.0cm Pass							
D, Rear Right	23.4	23.4	23.4	23.3	-0.1cm	Pass	

Testing at this location was not impacted by facility operations

Storage Bay Portable Bund No. 2:

As per methodology Bund No. 2 was filled with water to an appropriate level (110% tank volume) on Monday the 14th November 2016. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Tuesday 15th November 2016. Table 4-8 below represents recorded water levels within the bund over the test



period. Two levels were taken for each bund as there was a slight slant in some of the storage tanks.

Measurement Location	Mon 14 th Nov	Tues 15 th Nov	Wed 16 th Nov	Thur 17 th Nov	Fluctuation	Pass / Fail		
Storage Bay Portable Bund No. 2								
A, Front Left	24.2	24.2	24.2	24.2	0.0cm	Pass		
B, Front Right	24.3	24.3	24.3	24.3	0.0cm	Pass		
C, Rear Left	24.2	24.3	24.3	24.3	-0.1cm	Pass		
D, Rear Right	24.1	24	24	24	-0.1cm	Pass		

Table 4-8Storage Bay Portable Bund No. 2 Test Result:

Testing at this location was not impacted by facility operations.

4.2.3 Processing Area - Portable Bunds (2No.) (Area / Bund No.14)

As per methodology Area / Bund No. 14 was filled with water to an appropriate level (110% tank volume) on Monday the 14th November 2016. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Tuesday 15th November 2016. Table 4-13 below represents recorded water levels within the bund and control over the test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds.

Measurement Location	Tues 15 th Nov	Wed 16 th Nov	Thur 17 th Nov	Fluctuation	Pass / Fail				
	Main Bund								
A, Front Left	29.4cm	29.4cm	29.3cm	-0.1cm	Pass				
B, Front Right	29.6cm	29.6cm	29.6cm	0.0cm	Pass				
C, Rear Right	28.6cm	28.6cm	28.5cm	-0.1cm	Pass				
D, Rear Left	28.5cm	28.4cm	28.4cm	-0.1cm	Pass				
Processing Bund									
E, Front Left	11.7cm	11.7cm	11.7cm	0.0cm	Pass				
F, Front Right	9.9cm	9.9cm	9.9cm	0.0cm	Pass				

Table 4-9Bund / Area No. 14 Test Result

Testing at this location was not impacted by facility operations.



4.2.4 Outdoor Concrete Bund (Area / Bund No.15)

As per methodology Area / Bund No. 15 was filled with water to an appropriate level (110% tank volume) on Friday 22nd July. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Saturday 23rd July. Table 4-14 below represents recorded water levels within the bund and control over the test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds.

Measurement Location	Sat 23 rd Jul (Top of bund to water level)	Sun 24 th Jul (Top of bund to water level)	Mon 25 nd Jul (Top of bund to water level)	Fluctuation	Pass / Fail
A, Front Right	90cm	90cm	90cm	0.0cm	Pass
B, Rear Right	93cm	93cm	93cm	0.0cm	Pass
C, Rear Centre	113cm	113cm	113cm	0.0cm	Pass
D, Rear Left 94cm		94cm	94cm	0.0cm	Pass
E, Front Left	95cm	95cm	95cm	0.0cm	Pass

Table 4-14 Bund / Area No. 15 Test Result

Testing at this location was not impacted by facility operations.

4.2.5 Underground Concrete Bund (Area / Bund No.16)

As per methodology Area / Bund No. 16 was filled with water to an appropriate level (110% tank volume) on Friday 22^{nd} July 2016. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated, a data logger was then placed in the underground concrete bund. The test commenced on Saturday 23^{rd} July. Table 4-15 below represents recorded change in water levels within the bund and control over the test period.



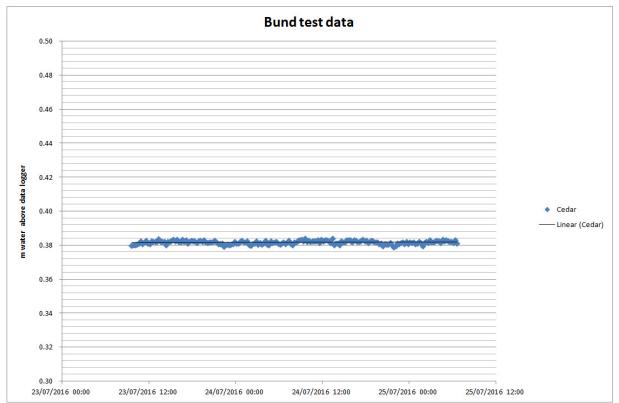


Table 4-15 Bund / Area No. 16 Test Result

Testing at this location was not impacted by facility operations.

No fluctuation in liquid levels was noted in the bunds or tanks during the first monitoring period Day 1 to Day 2 (November 15th to 16th November 2016) and levels remained constant for the second monitoring period Day 2 to Day 3 (16th November to 16th November 2016). Results from the controls showed no variation and were consistent with readings from all storage tanks.

As no fluctuation was noted in liquid levels during the measurement period and the control remained constant, it is determined that all tested bunds and tanks are in good structural condition. No ancillary works are required for these bunds

5 CCTV

5.1 CCTV SURVEY

A CCTV drainage inspection was carried out on 5th of December 2016 on behalf of Rilta Environmental Ltd. The Inspection Report is included in Appendix B attached.

It was apparent from the CCTV camera inspection that the drainage system is generally in good condition, with some area requiring attention. A summary of defects and recommended remedial works can be found on the final page of Appendix B.



6 CONCLUSION

The assessment of the bunds / areas after CCTV survey, structural and hydrostatic testing is as follows:

Areas / Bunds for testing identified within Site 14A1, Greenogue Business Park include:

Area / Bund No. 12: Large Warehouse	=	PASS
Area / Bund No. 13: Storage Bay Portable Bunds (2No)	=	PASS
Area / Bund No. 14: Processing Bay Portable Bunds (2No)	=	PASS
Area / Bund No. 15: Outdoor Concrete Bund	=	PASS
Area / Rund No. 16: Underground Constate Rund		DACC

- Area / Bund No. 16: Underground Concrete Bund = **PASS**
- •

CCTV Survey

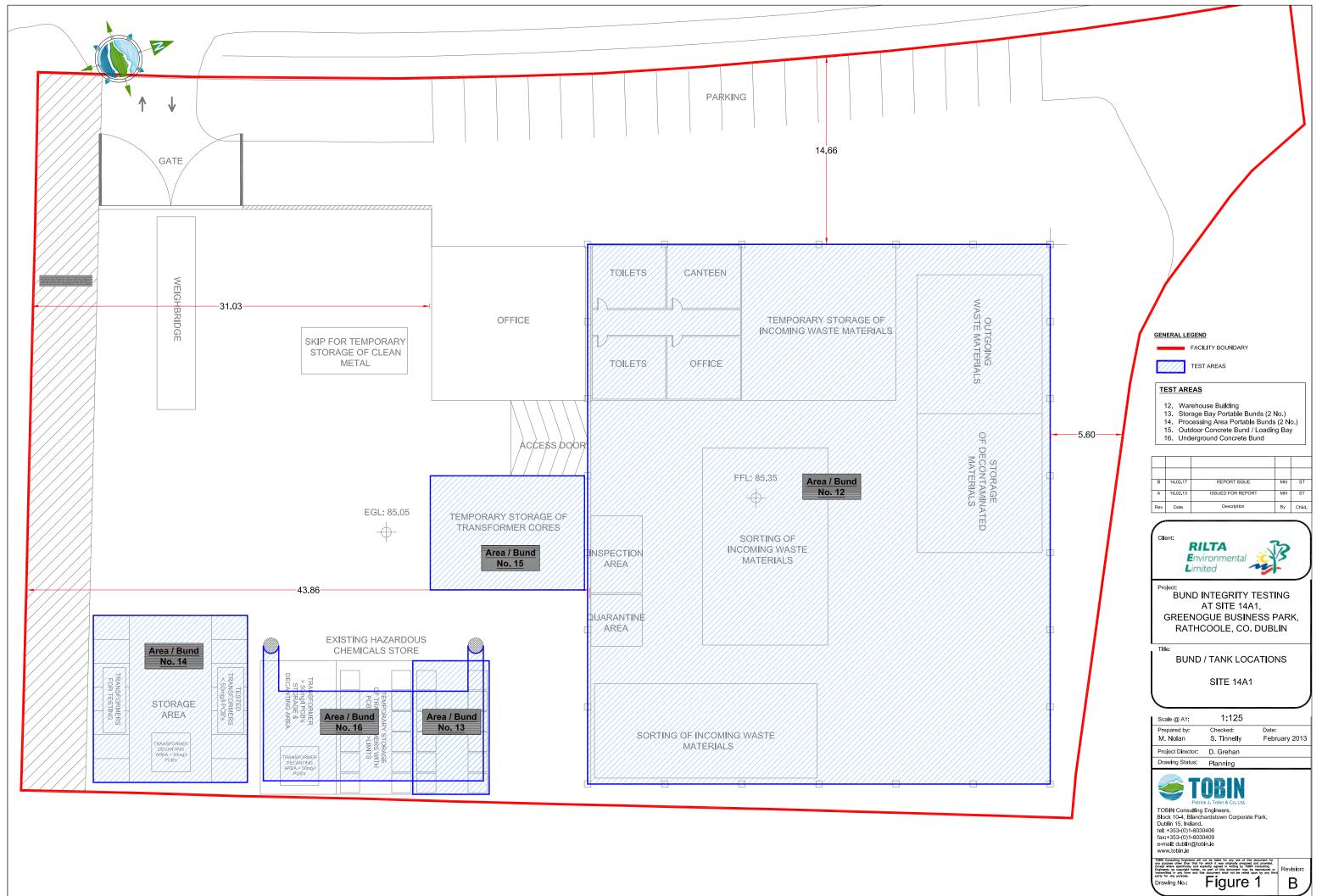
= Pass (Remedial works recommended)

APPENDIX A

Figure 1: Bund / Tank Locations for Testing (Site 14A1, Greenogue Business Park)

APPENDIX B

Site 14A1 (Ref. Cedar Yard) - CCTV Drainage Inspection Report









INTEGRATED HAZARDOUS WASTE MANAGEMENT SOLUTIONS

CCTV DRAINAGE INSPECTION REPORT

Block 14A1, Grants Road,

Greenogue Business Park,

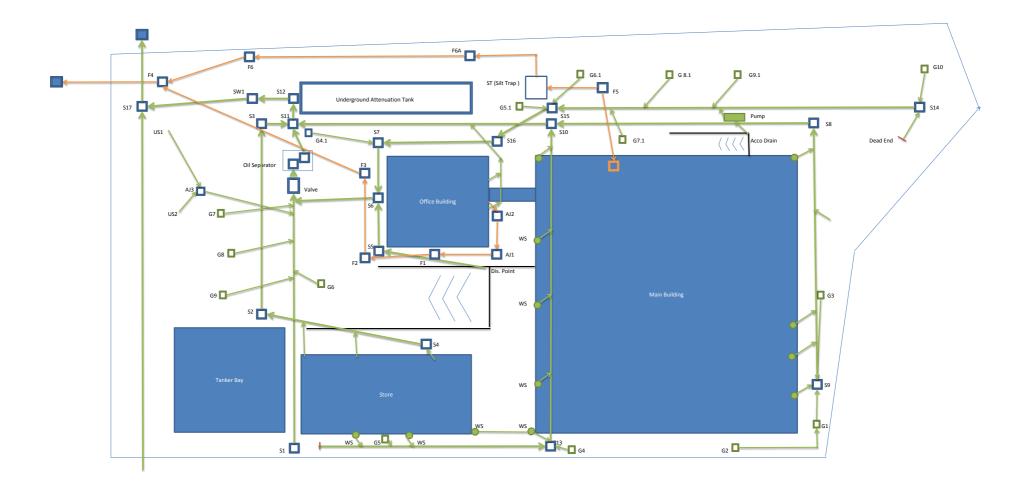
Rathcoole, Co. Dublin.



Block 402, Greenogue Business Park, Rathcoole, Co. Dublin Tel: +353 (0) 1 401 8000 Fax: +353 (0) 1 401 8080 Email: <u>info@rilta.ie</u> www.rilta.ie



EPA WASTE LICENCE NO. W0192-03





ENVIRONMENTAL LIMITED			Fax: Email: info@rilta.ie
	Project-informatio	n / Inspection: 1	
Project name : CEDAR	Project Number :	Contact :	Date : 05/12/2016
Client	CEDAR		
Responsible:	Colm Hussey	,	
Department:	-		
Street:	Greenoque Br	usiness Park	
City, St Zip:	Rathcoole		
Po Box:	Dublin		
Telephone:			
Fax:			
Mobile:			
e-mail:			
Proj mgr	CEDAR		
Responsible:	Colm Hussey	,	
Department:			
Street:	Greenoque Br	usiness Park	
City, St Zip:	Rathcoole		
Po Box:	Dublin		
Telephone:			
Fax:			
Mobile:			
e-mail:			
Contractor	Rilta Environr	nental Ltd	
Responsible:	Eoin Kirby, F	rantisek Navratil	
Department:	Contracts		
Street:	Greenogue Br	usiness Park	
City, St Zip:	Rathcoole		
Po Box:	Dublin		
Telephone:	01 4018000		
Fax:			
Mobile:	0877988574		
e-mail:	info@rilta.ie		



				specti	on repo	ort / Insp	ection:	1			
	Date : 05/12/2016		Job number :		/eather : iin or snow	Operato Frantis		Section number 1	r:	PLR	SUFFIX: X
nc	Weather rain or sn	ow	Vehicle : VEHICLE 1		amera : amera 1	Preset	::	Cleaned : yes			erator : ntisek
Place Road Locati	: on	•	e Busniss Park /ith buildings	Location Catchme Tape nur Pipe Len	ent: mber : 05 1	1216_1	U/\$ D/\$	S MH : S Depth : S MH : S Depth :	AJ1 F1		
		Foul Rout 7.71	tine inspection o	f condition		Pipe shape : Pipe size : Pipe material : Lining :	15	rcular 0.00 mm Iyvinyl chloride)		
	1:63	Position	Code	Observ	ation			M	PEG	Photo	Grade
	AJ1	0.00		AJ1		tion chamber, r vertical dimensi			:00:02		(Constr) ((Serv) 0
,))		<u>1.80</u> <u>2.20</u>		-		from 5 to 7 o'clo narks: 90deg.	ck		:00:18 :00:23		(Constr) ² (Serv) 0
	F1	7.70	MHF			vertical dimensi			:00:00 :00:00	1_6A	(Serv) 0 (Constr)
						Constructional	Features				
	ural Defects										
Servic	e Defects	STR peak	STR mean	STR total	STR grade	Miscellaneous I SER no def	Featuress SER peak	SER mean	SER	total	SER grade



Photo: 1_6A, MPEG #: 051216_1, 00:00:00

7.71m, Finish node type, manhole reference number: F1

+001 .6m



	Date :		Job number :		ather :	Operato		Section num	ber:	PLR	SUFFIX:
	05/12/2016 Weather		Vehicle :	Ca	n or snow mera :	Frantise Preset		2 Cleaned	:		X erator :
no	rain or sn	ow	VEHICLE 1	car	nera 1			yes		Fra	ntisek
Place Road :		Rathcoole Greenoqu	e Ie Busniss Park	Location d Catchmen				I/S MH : I/S Depth :	AJ2		
.ocationspec		Property AJ2 (D/S)	with buildings AJ1	Tape num Pipe Lengt		216_1		/S MH : /S Depth :	AJ1		
Jse:		Fou				Pipe shape :	c	ircular			
	se : ength :	Rou 4.5 ⁻	utine inspection of	condition		Pipe size : Pipe material : Lining :		50.00 mm olyvinyl chlor	ride		
Comm	ient :										
	1:50	Position	Code	Observa	tion				MPEG	Photo	Grade
	AJ2										
	\mathbf{H}	0.00	<u>)</u> IC	Start node AJ2	type, inspec	tion chamber, re	eference nur	nber :	00:00:01		(Constr) (
		0.0	<u>I</u> WL	Water leve	I, 0% of the v	vertical dimension	on		00:00:01		(Serv) 0
		1.60	<u>)</u> CN	Connectior 150mm	n other than j	unction, at 3 o'o	clock, diame	er	00:00:23		(Constr) (
	AJ1	4.50		Finish node		vertical dimension			00:01:02 00:01:02		(Serv) 0 (Constr)
	AJ1		_								(
uctu	ural Defects					Constructional I					
	e Defects	STR peak	STR mean	STR total	STR grade	Miscellaneous F SER no def	eaturess SER peak	SER mea		R total	SER grade
SIRI	no def	SIR peak	SIK mean	SIR total	STR grade	SER no def	SER neak	I SER mea	n I SEE	< total	SER grade



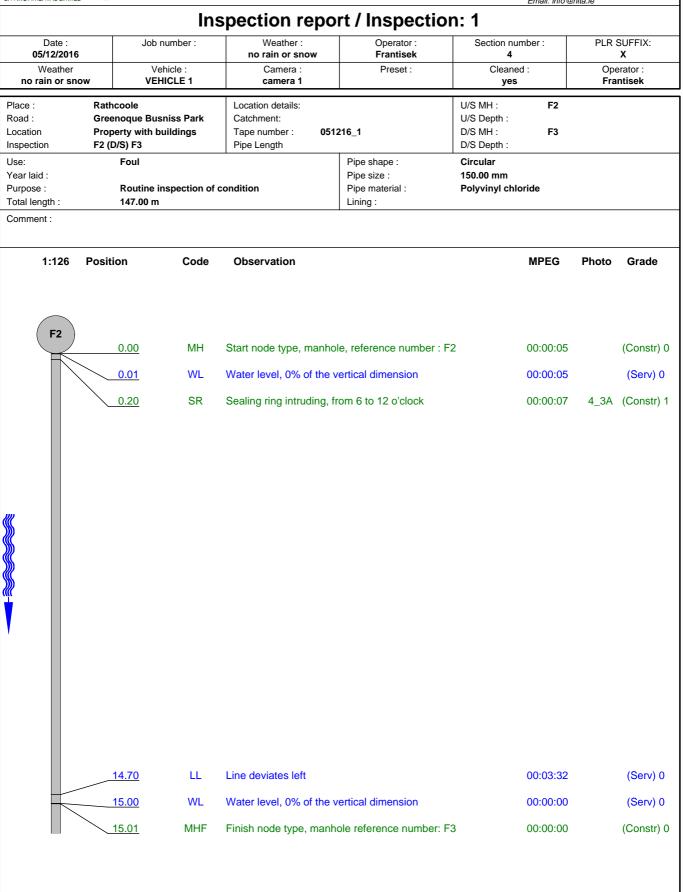
			IN	specti	on repo	rt / Inspe	ection:	1			
05	Date : 5/12/2016		Job number :		'eather : in or snow	Operato Frantise		Section number 3	:	PLR	SUFFIX: X
	Weather ain or sno	w	Vehicle : VEHICLE 1		amera : amera 1	Preset	:	Cleaned : yes			erator : ntisek
Place : Road : Location			Busniss Park ith buildings	Location Catchme Tape nur Pipe Len	nt: nber : 051	216_1		//S MH : //S Depth : //S MH : //S Depth :	F1 F2		
Jse: Year laic Purpose Fotal len Commer	e: ngth :	Foul Rout 11.11	ine inspection of m	condition		Pipe shape : Pipe size : Pipe material : Lining :	1	Sircular 50.00 mm Volyvinyl chloride			
	1:105	Position	Code	Observ	ation			MF	PEG	Photo	Grade
(F1	0.00 0.01 1.30	MH WL WL	Water lev	el, 0% of the v	ile, reference nu vertical dimensio vertical dimensio	n	00:	00:04 00:04 00:16		(Constr) 0 (Serv) 0 (Serv) 0
	ŀ	4.20	WL	Water lev	el, 0% of the v	vertical dimensio	on	00:	00:48		(Serv) 0
(F2	<u>11.10</u> <u>11.11</u>	WL MHF			vertical dimension			01:55 01:55		(Serv) 0 (Constr) 0
itructura Service D	al Defects					Constructional F Miscellaneous F					
		STR peak	STR mean	STR total	070			SER mean		total	SER grade
STR no					STR grade	SER no def	SER peak	SER mean	1 OFR	lolar	



Rilta Environmental Ltd Greenogue Business Park

Street : Rathcoole Tel: 01 4018000

Fax: Email: info@rilta.ie





Date :	Job number :	Weather :	Operator : Frantisek	Section number :	PLR :
05/12/2016 Weather	Vehicle :	no rain or snow Camera :	Preset :	4 Cleaned :	X Grade:
no rain or snow	VEHICLE 1	camera 1		yes	
	ion Code	Observation		MPEG	Photo Grade



Section number : 4	t / Inspectic Operator : Frantisek	Weather :	Job number :	Date : 05/12/2016
Cleaned :	Preset :	Camera :	Vehicle :	Weather
yes		camera 1	VEHICLE 1	to rain or snow
4		no rain or snow	Vehicle :	05/12/2016
Cleaned :		Camera :	VEHICLE 1	Weather



OS/12/2016 no rain or snow Frantisek 4 X Weather or ain or snow Vehicle : VEHICLE 1 Camera 1 Preset: Claned : yes Grade: 1:126 Position Code Observation MPEG Photo Grade
1:126 Position MPEG Photo Grade



Weather no rain or snow Vehicle : VEHICLE 1 Camera : camera 1 Preset : (Cleane yes) 1:126 Position Code Observation		Grade: Photo Gra
1:126 Position Code Observation	MPEG P	Photo Gra



Inspection	Report / Ins	spection: 1

Weither Camera : Preset: Othened: Grade: 1:126 Position Code Observation MPEG Photo Grade:	Date : 05/12/2016	Job number :	Weather : no rain or snow Camera : camera 1	Operator : Frantisek Preset :	Section number : 4 Cleaned : yes	PLR : X Grade:	
	Weather	Vehicle : VEHICLE 1					
	1:126 Posit					Photo Gra	ade



Rita Environmental Ltd Greenogue Business Park Rathcoole Tel: 01 4018000 Fax: Empii: into @cife is

ENVIRONN	MENTAL LIMITE						Ema	Fax: il: info@rilta.ie	
			In	spection Rep	ort / Insp	ection:	1		
0	Date : 05/12/2016	5	Job number :	Weather : no rain or snow	Operato Frantise	or: ek	Section number : 4		PLR : X
	Weather rain or sn	ow	Vehicle : VEHICLE 1	Camera : camera 1	Preset	:	Cleaned : yes	(Grade:
		Position	Vehicle : VEHICLE 1 Code	camera 1	Preset	:	yes	PEG Photo	
	F 3								
	ral Defects Defects o def	STR peak	STR mean	STR total STR grade	Constructional I Miscellaneous F SER no def		SER mean	SER total	SER grad



Photo: 4_3A, MPEG #: 051216_1, 00:00:07 0.2m, Sealing ring intruding, from 6 to 12 o'clock



Street : Rathcoole Tel: 01 4018000





INVIRON	IMENTAL LIMITED								mail: info@r	rilta.ie	
			In	spectior	n repoi	rt / Inspe	ection:	1			
	Date : 05/12/2016		Job number :	Weat rai		Operato Frantis		Section number	er :	PLR	SUFFIX:
	Weather rain		Vehicle : VEHICLE 1	Came	era :	Preset		Cleaned : yes			erator : ntisek
Place Road	:		Busniss Park ith buildings	Location det Catchment: Tape numbe		216_1	U/:	S MH : S Depth : S MH :	F3 F4		
nspeo		F4 (U/S) F3	}	Pipe Length			D/3	S Depth :			
		Foul Rout 22.51	ine inspection of	condition		Pipe shape : Pipe size : Pipe material : Lining :	15	rcular 0.00 mm oncrete			
	1:189	Position	Code	Observatio	on			N	IPEG	Photo	Grade
	F4	0.00	MH	Start node ty	rpe, manhol	e, reference nu	ımber : F4	0	0:00:00		(Constr) (
		0.01	WL	Water level,	0% of the v	ertical dimensi	n	0	0:00:00		(Serv) 0
		0.20	CN	Connection of 150mm Rem		unction, at 6 o'd	lock, diamete	er O	0:00:11		(Constr)
		0.70	WLC			the vertical dir	nension	0	0:00:24		(Serv) 0
		3.10	WL	Water level,	0% of the v	ertical dimensi	on	0	0:00:46		(Serv) C
		6.30	WL	Water level,	5% of the v	ertical dimensi	on	0	0:01:19		(Serv) 0
		6.80	WL	Water level,	10% of the	vertical dimens	ion	0	0:01:24		(Serv) 0
		7.40	WL			vertical dimens		0	0:01:32		(Serv) 0
)		8.50	WL			ertical dimensi			0:01:45		(Serv) 0
	+	17.60	WL	Water level,	5% of the v	ertical dimensio	วท	0	0:03:36		(Serv) 0
	F 3	<u>22.50</u> <u>22.51</u>	WL MHF			ertical dimension			0:04:09 0:04:09		(Serv) 0 (Constr)
	ural Defects e Defects					Constructional I Miscellaneous F					
	no def	STR peak	STR mean		STR grade	SER no def	SER peak	SER mean		R total	SER grade
	0	0	0	0	1 CEDAR //	0	0	0		0	1



STR no def

STR peak

STR mean

STR total

Rilta Environmental Ltd Greenogue Business Park Street : Rathcoole Tel: 01 4018000 Fax: Email: info@rilta.ie

11040 -	1-6			Operator :		mbori		SUFFIX:
Date : 06/12/201		number :	Weather : rain	Frantisek	Section nu 7	mber :	PLR	SUFFIX: X
Weather rain		ehicle : HICLE 1	Camera : camera 1	Preset :	Cleane yes			erator : ntisek
lace : load : ocation ispection	Rathcoole Greenoque Bus Property with b F4 (U/S) F6		Location details: Catchment: Tape number : 05 Pipe Length	51216_1	U/S MH : U/S Depth : D/S MH : D/S Depth :	F6 F4		
se: ear laid : urpose : otal length : omment :	Foul Routine i 14.81 m	nspection of	condition	Pipe shape : Pipe size : Pipe material : Lining :	Circular 150.00 mm Concrete			
1:126	Position	Code	Observation			MPEG	Photo	Grade
F 4	0.00	MH WL	Start node type, manh Water level, 15% of th	nole, reference number : ne vertical dimension	F4	00:00:00 00:00:00		(Constr) ((Serv) 0
	5.00	WLC	Clear water level, 5%	of the vertical dimension	1	00:00:49		(Serv) 0
+	6.80	WL	Water level, 0% of the	e vertical dimension		00:01:14		(Serv) 0
	<u>8.30</u>	СМ	Cracks, multiple, from	4 to 8 o'clock		00:01:22	7_5A	(Struct) 3
	14.30	DEC	Settled deposits, hard area loss Remarks: A Water level, 0% of the	or compacted, 10% cros lump of the concrete afte vertical dimension	ss-sectional er building.	00:02:24 00:02:33	7_6A	(Serv) 3 (Serv) 0
	<u>14.60</u> <u>14.80</u>	WL	Water level, 10% of th	e vertical dimension		00:02:33		(Serv) 0

CEDAR // Page: 16

STR grade

SER no def

SER peak

SER mean

SER total

SER grade



+008.3m

Photo: 7_5A, MPEG #: 051216_1, 00:01:22 8.3m, Cracks, multiple, from 4 to 8 o'clock

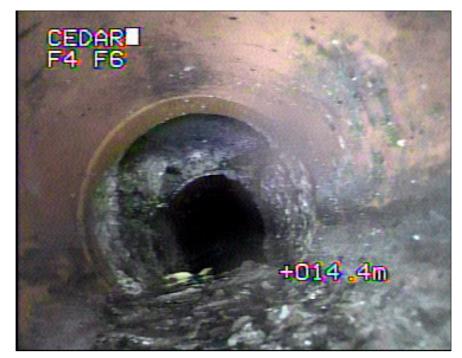


Photo: 7_6A, MPEG #: 051216_1, 00:02:24 14.3m, Settled deposits, hard or compacted, 10% cross-sectional area loss



Street : Rathcoole Tel: 01 4018000



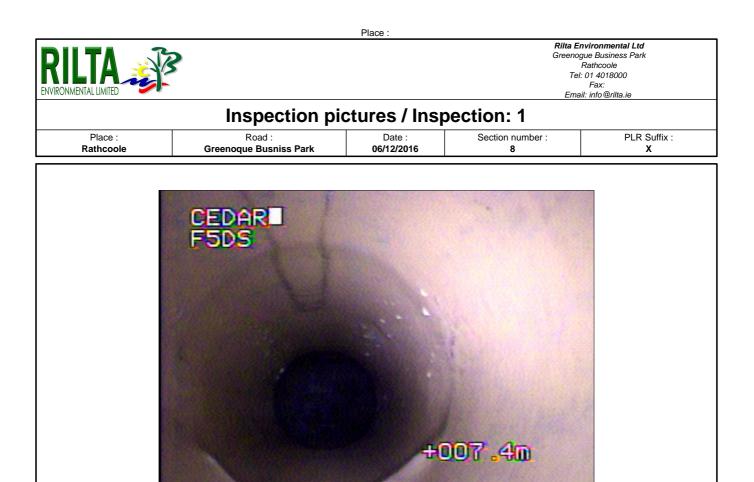


Photo: 8_3A, MPEG #: 051216_1, 00:01:02

7.4m, General remark



Rilta Environmental Ltd Greenogue Business Park Street : Rathcoole Tel: 01 4018000 Fax: Email: info@rilta.ie

06/12/2016 rain Frantisek Weather rain Vehicle : Camera : Preset : Clamera : Place : Rathcoole Location details: U/S MH : Road : Greenoque Busniss Park Catchment: U/S Deptt Location Property with buildings Tape number : 051216_1 D/S MH : Inspection F5 (U/S) US Pipe Length D/S Deptt D/S Deptt Use: Foul Pipe shape : Circular Year laid : Pipe size : 150.00 min Purpose : Routine inspection of condition Pipe size : 150.00 min Pipes ize : 9.51 m Lining : Comment : F5	F5 ז : m	Oŗ	t SUFFIX: X perator : antisek
Weather rain Vehicle : VEHICLE 1 Camera : camera 1 Preset : Clamera : Clamera 1 Place : Rathcoole Location details: U/S MH : U/S MH : U/S Deptt U/S MH : U/S Deptt Road : Greenoque Busniss Park Catchment: U/S MH : U/S Deptt D/S MH : U/S Deptt Inspection F5 (U/S) US Pipe Length D/S Deptt D/S Deptt Use: Foul Pipe shape : Circular Pipe size : 150.00 ml Purpose : Routine inspection of condition Pipe material : Polyvinyl Total length : 9.51 m Lining : Task 1:84 Position Code Observation	eaned : yes US n : F5 n : n : d chloride		perator :
Place : Rathcoole Location details: U/S MH : Road : Greenoque Busniss Park Catchment: U/S Depti Location Property with buildings Tape number : 051216_1 D/S MH : Inspection F5 (U/S) US Pipe Length D/S Depti D/S Depti Use: Foul Pipe shape : Circular Year laid : Pipe size : 150.00 ml Purpose : Routine inspection of condition Pipe material : Polyvinyl Total length : 9.51 m Lining : Polyvinyl Comment : 1:84 Position Code Observation	US n: F5 n: m I chloride	Fr	antisek
Road : Greenoque Busniss Park Location Catchment: Tape number : U/S Deptt 051216_1 U/S Deptt D/S MH : D/S Deptt Inspection F5 (U/S) US Pipe Length Pipe shape : Circular Pipe size : D/S 00 mi Pipe material : Vear laid : Purpose : Routine inspection of condition Pipe material : Polyvinyl Lining : Polyvinyl Total length : 9.51 m U/S Deptt D/S mither Polyvinyl 1:84 Position Code Observation F5	n : F5 n : m I chloride		
Year laid : Pipe size : 150.00 mm Purpose : Routine inspection of condition Pipe material : Polyvinyl Total length : 9.51 m Lining :	l chloride		
1:84 Position Code Observation	MPFG		
		Photo	Grade
0.00 MH Start node type, manhole, reference number : F5 0.01 WL Water level, 0% of the vertical dimension	00:00:01 00:00:01		(Constr) 0 (Serv) 0
3.60 WL Water level, 5% of the vertical dimension	00:00:40		(Serv) 0 (Serv) 0
8.20 REM General remark Remarks: Dents	00:01:55	5 9_5A	(Misc) 0
9.40 CN Connection other than junction, at 12 o'clock, diameter 40mm Remarks: Connection from cabin inside of the buildi	00:02:06	6	(Constr) 0
9.50 WL Water level, 0% of the vertical dimension	00:02:07	,	(Serv) 0
9.51 SA Survey abandoned Remarks: Survey could not be completed due to a wavin pipe in the way.	00:02:07	7	(Misc) 0
Structural Defects Constructional Features			
Service Defects Miscellaneous Featuress			
STR no def STR peak STR mean STR total STR grade SER no def SER peak SE		ER total	SER grade

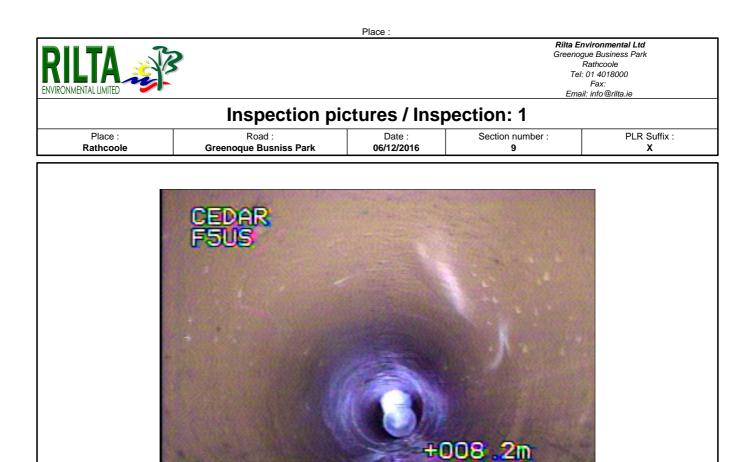


Photo: 9_5A, MPEG #: 051216_1, 00:01:55

8.2m, General remark



Rilta Environmental Ltd Greenogue Business Park Street : Rathcoole

Location Property Inspection ST (D/S) Use: For Year laid : Purpose : Ro Total length : 1.4 Comment : 1:50 Position	Job number : Vehicle : VEHICLE 1 le ue Busniss Park with buildings F6A ul putine inspection of 11 m	Weather : rain Camera : camera 1 Location details: catchment: Tape number : 09 Pipe Length 09	Operator : Frantisek Preset :	Section number : 10 Cleaned : yes U/S MH : ST U/S Depth : ST	GA	SUFFIX: x erator : antisek Grade
06/12/2016 Weather rain Vlace : Rathcool toad : Greenoq toad : Greenoq ocation Property hspection ST (D/S) Iss: For 'ear laid : Property 'urpose : Ro total length : 1.4 comment : ST	Vehicle : VEHICLE 1 le ue Busniss Park with buildings F6A ul butine inspection of 11 m	rain Camera : Camera 1 Location details: Catchment: Tape number : 09 Pipe Length condition	Frantisek Preset : 51216_1 Pipe shape : Pipe size : Pipe material :	10 Cleaned : yes U/S MH : ST U/S Depth : D/S D/S MH : F6 D/S Depth : Circular 150.00 mm Polyvinyl chloride	GA	X erator : antisek
rain Place : Rathcool toad : Greenoq ocation Property Ispection ST (D/S) Place : Ro fear laid : Purpose : Ro fotal length : 1.4 comment :	VEHICLE 1 le ue Busniss Park with buildings F6A ul butine inspection of 11 m Code	camera 1 Location details: Catchment: Tape number : 09 Pipe Length	51216_1 Pipe shape : Pipe size : Pipe material :	yes U/S MH : ST U/S Depth : D/S MH : F6 D/S Depth : Circular 150.00 mm Polyvinyl chloride	GA Fra	antisek
Road : Greenoq Property nspection Isse: For (ear laid : 'urpose : Ro fotal length : 1:50 Position	ue Busniss Park with buildings F6A ul butine inspection of 11 m Code	Catchment: Tape number : 09 Pipe Length condition	Pipe shape : Pipe size : Pipe material :	U/S Depth : D/S MH : F6 D/S Depth : Circular 150.00 mm Polyvinyl chloride	5A	Grade
Year laid : Ro Purpose : Ro Total length : 1.4 Comment : 1:50 Position	outine inspection of I1 m Code		Pipe size : Pipe material :	150.00 mm Polyvinyl chloride	6 Photo	Grade
1:50 Position		Observation		МРЕС	B Photo	Grade
0.0	10 CP					
		Start node type, catch	npit, reference number :	ST 00:00:	00	(Constr) 0
0.0	0 <u>1</u> WL	Water level, 0% of the	e vertical dimension	00:00:	00	(Serv) 0
0.4	<u>10</u> LL	Line deviates left Ren	narks: 90 deg.	00:00:	25	(Serv) 0
1.4	1 <u>0</u> WL	Water level, 0% of the	e vertical dimension	00:00:	00	(Serv) 0
1.4	1 <u>1</u> SA		emarks: Survey could no end on the pipe and bad		00	(Misc) 0

Structural Defects Constructional Features Service Defects Miscellaneous Featuress STR no def STR peak STR mean STR grade STR no def SER mean SER total SER grade 0 0 0 0 1 0 0 0 1										
STR no def STR peak STR mean STR total STR grade SER no def SER peak SER mean SER total SER grade	Structural Defec	ts				Constructional	Features			
	Service Defects	rice Defects					eaturess			
0 0 0 0 1 0 0 0 1	STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
	0	0	0	0	1	0	0	0	0	1



Date : 06/12/201		number :	Weather : rain	Operator : Frantisek	Section nu	mber :	PLR :	SUFFIX: X
Weather rain	Ve	hicle : IICLE 1	Camera : camera 1	Preset :	Cleane yes	d :		erator : ntisek
Place : Road : ocation hspection Jse: /ear laid : Purpose :	Rathcoole Greenoque Bus Property with b AJ3 (D/S) DS Surface w Routine in	niss Park uildings	Location details: Catchment: Tape number : 05 Pipe Length	51216_1 Pipe shape : Pipe size : Pipe material :	U/S MH : U/S Depth : D/S MH : D/S Depth : Circular 100.00 mm Polyvinyl chlo	AJ3 DS		
otal length : omment :	11.90 m			Lining :				
1:84	Position	Code	Observation			MPEG	Photo	Grade
AJ3	0.00	IC WL	Start node type, inspe AJ3 Water level, 5% of the	ction chamber, reference vertical dimension	e number :	00:00:02		(Constr) ((Serv) 0
	5.40		Weter level 100/ of the			00.02:17		
	5.40	WL WL	Water level, 10% of th			00:03:17 00:00:49		(Serv) 0
	<u>5.80</u> <u>6.60</u>	CUW	Water level, 30% of the Loss of vision, camera			00:00:57		(Serv) 0 (Misc) 0
	8.20	LR	Line deviates right Re	marks: 45 deg.		00:01:18		(Serv) (
	8.30	WL	Water level, 30% of th	e vertical dimension		00:01:20		(Serv) 0
	9.00	WL	Water level, 15% of th	e vertical dimension		00:01:35		(Serv) 0
	9.10	BRF		or connection without ma	nhala	00:01:34		(Constr)



Inspection Report / Inspection: 1

 Date :			Job number :	• v	Veather :	Operato	r:	Section number :		PLR :
06/12/201	6				rain	Frantis	ek	11		х
Weather rain	r		Vehicle : VEHICLE 1		Camera : : amera 1	Preset	:	Cleaned : ves		Grade:
1:84	Posit	tion	Code	Observ				<u>yes</u>	PEG Phote	o Grade
tural Defect	s					Constructional	Features			
ce Defects			075	075	0=5	Miscellaneous F		055	055	055
no def	STR pe	ak	STR mean 0	STR total	STR grade	SER no def 0	SER peak 0	SER mean 0	SER total 0	SER grade
J	U		U	U		v v	v	v	v	



			In	specti	on repo	rt / Inspe	ction:	1		
	Date : 06/12/2016		Job number :		/eather : ain or snow	Operator Frantise		Section number : 12		PLR SUFFIX: X
no	Weather rain or sn	ow	Vehicle : VEHICLE 1		Camera : amera 1	Preset :		Cleaned : yes		Operator : Frantisek
Place Road Locati	: on	-	Busniss Park ith buildings 2	Location Catchme Tape nu Pipe Ler	ent: mber : 051	216_1	U/ D/	S Depth :	G2 G1	
Use: Year la Purpo Total l Comm	se : ength :		ce water ine inspection of m	condition	-	Pipe shape : Pipe size : Pipe material : Lining :	Ci 15	rcular i0.00 mm olyvinyl chloride		
	1:105	Position	Code	Observ	ration			MP	EG Ph	oto Grade
	G1	0.00	GY	Start nod	le type, gully, r	eference numbe	r : G1	00:C	00:02	(Constr) (
		0.01	WL	Water lev	vel, 0% of the v	rertical dimensio	n	00:C	00:02	(Serv) 0
		4.50	LR	Line devi	ates right Rem	arks: 90 deg.		00:C	11:33	(Serv) 0
	G2	<u>11.90</u> <u>11.91</u>	WL GYF			rertical dimensio			9 3:46 93:46	(Serv) 0 (Constr) (
	ural Defects					Constructional Fe				
	no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
SIKI					STR grade		OLIV peak			



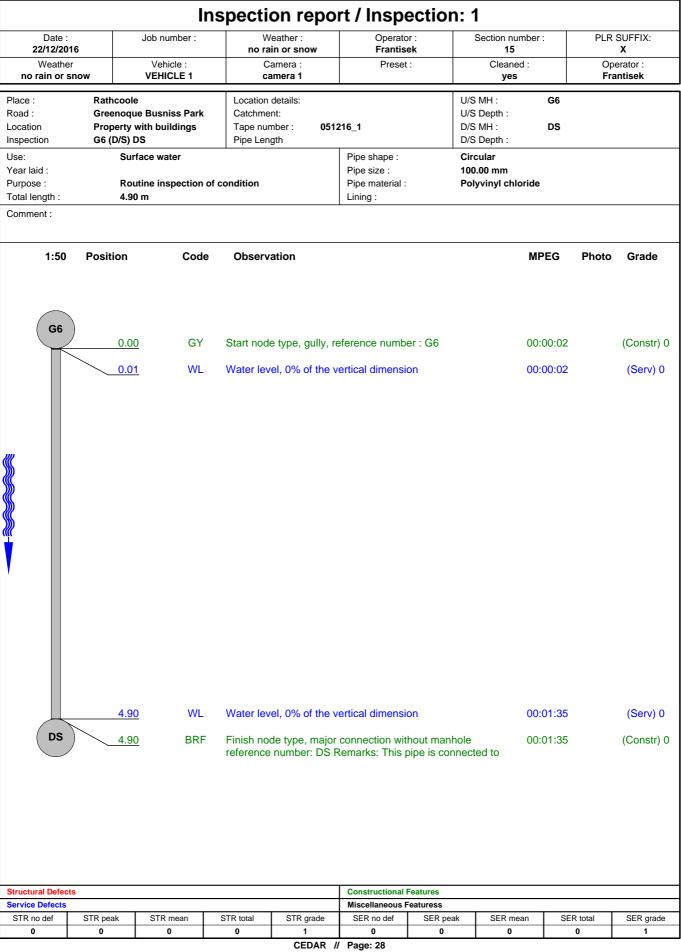
			Ir	nspecti	on repo	rt / Inspe	ection:	1			
	Date : 06/12/2016	;	Job number :		eather : in or snow	Operato Frantise		Section numb	er:	PLR	SUFFIX:
no	Weather rain or sn	ow	Vehicle : VEHICLE 1		amera : I mera 1	Preset	:	Cleaned : yes			erator : I ntisek
Place Road : Locatio	: on		ue Busniss Park with buildings	Location Catchme Tape nur Pipe Len	nt: nber : 051:	216_1	U/: D/:	S MH : S Depth : S MH : S Depth :	US1 AJ3		
Use: Year la Purpos Total la Comm	se : ength :	Ro	urface water outine inspection c 41 m	of condition		Pipe shape : Pipe size : Pipe material : Lining :	10	rcular 0.00 mm Iyvinyl chlorid	de		
	1:84	Position	Code	Observ	ation			I	MPEG	Photo	Grade
	AJ3	0.0		AJ3		ion chamber, re			00:00:02		(Constr) 0 (Serv) 0
		3.	<u>10</u> WL	Water lev	el, 5% of the v	ertical dimensio	on	C	00:00:46		(Serv) 0
		7.:		Line devia Water lev		ertical dimensio	on		00:01:14 00:01:24		(Serv) 0 (Serv) 0
		9.3	<u>30</u> LU	Line devia	ates up			C	0:01:39		(Serv) 0
	US1	9.4	<u>40</u> WL	Water lev	el, 0% of the v	ertical dimension	on	C	0:01:35		(Serv) 0
		9.4	<u>11</u> GYF		de type, gully r erneath the we	eference numb eightbridge.	er: US1 Rem	arks: C	00:01:35		(Constr) 0
	ural Defects					Constructional I					
	no def	STR peak	STR mean	STR total	STR grade	Miscellaneous F SER no def	SER peak	SER mean	SEF	R total	SER grade
	D	0	0	0	1	0	0	0	-	0	1



ENVIRONMEN	NTAL LIMITED								Fax: nail: info@r	ilta.ie	
				-		rt / Inspe					
	Date : / 12/2016		Job number :		Veather : ain or snow	Operator Frantise		Section numbe 14	r:	PLR \$	SUFFIX: X
	/eather in or snov	N	Vehicle : VEHICLE 1		Camera : amera 1	Preset :		Cleaned : yes			erator : ntisek
Place : Road : Location Inspectior	n	-	Busniss Park ith buildings	Location Catchme Tape nu Pipe Ler	details: ent: mber : 051 2	216_1	U/S D/S	S MH : S Depth : S MH : S Depth :	US2 AJ3		
Use: Year laid Purpose : Total leng Comment	: gth :		ace water ine inspection of m	condition		Pipe shape : Pipe size : Pipe material : Lining :	100	cular 0.00 mm lyvinyl chloride	9		
		Position	Code	Observ	ration			М	PEG	Photo	Grade
	AJ3	0.00	IC WLC	AJ3		tion chamber, re f the vertical dim):00:02):00:02		(Constr) 0 (Serv) 0
		<u>1.90</u> 2.20	LU WL	Line devi Water lev		vertical dimensio	n):00:18		(Serv) 0 (Serv) 0
	US2	2.21	GYF	Finish no Gully und	de type, gully r der the weightb	reference numbe ridge.	er: US2 Rema	arks: 00	0:00:20		(Constr) (
Structural						Constructional Fe Miscellaneous Fe					
Service De			070	STR total		SER no def		SER mean	SEE	total	
Service De STR no d 0	def S	STR peak	STR mean 0	0	STR grade		SER peak 0		_	0	SER grade 1



Street : Rathcoole Tel: 01 4018000





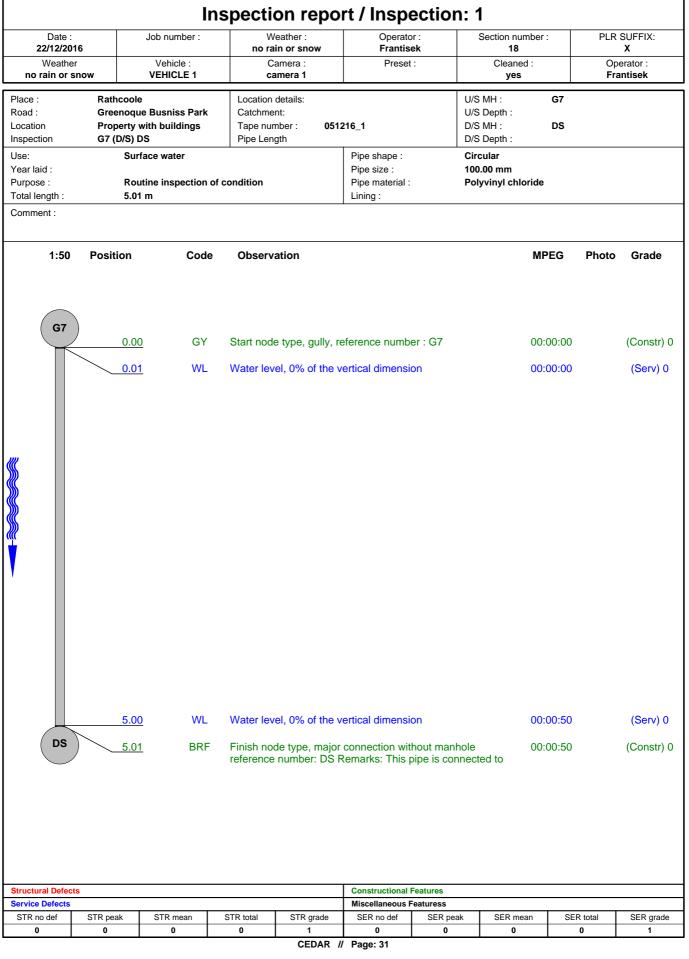
	Date :	10	b number :	Spection repo	Operator :		n number :	PI P	SUFFIX:
	2/12/2016 Weather	i	Vehicle :	Camera :	Preset :		16 aned :		x erator :
	ain or sn		EHICLE 1	camera 1	Flesel.		yes		intisek
Place : Road : Location		Rathcoole Greenoque B Property with G6.1 (D/S) MF	buildings	Location details: Catchment: Tape number : 05 Pipe Length	1216_1	U/S MH : U/S Depth D/S MH : D/S Depth	MH15	i	
Jse: /ear laic Purpose Fotal len Commer	e: ngth :	Surface Routine 3.40 m	e water e inspection of o	condition	Pipe shape : Pipe size : Pipe material : Lining :	Circular 150.00 mr Polyvinyl			
	1:50	Position	Code	Observation			MPEG	Photo	Grade
(G6.1	0.00 0.01 0.20	GY WL REM	Start node type, gully, Water level, 0% of the General remark Rema down.	vertical dimension		00:01:21 00:00:00 00:00:05		(Constr) ((Serv) 0 (Misc) 0
(MH15	<u>3.40</u> <u>3.40</u>	WL MHF	Water level, 0% of the Finish node type, man		ber: MH15	00:00:34 00:00:34		(Serv) 0 (Constr) (
	al Defects				Constructional Feat				
arvica F	Defects				Miscellaneous Featu	uress			
STR no	def	STR peak S	STR mean	STR total STR grade	SER no def	SER peak SEF	R mean SE	R total	SER grade



	Date :		Job number :	nspecti	eather :	Operato		- Section numb	ori		SUFFIX:
:	22/12/2016	;		no ra	in or snow	Frantis	ek	17			Х
no	Weather rain or sn	ow	Vehicle : VEHICLE 1	-	amera : amera 1	Preset	:	Cleaned : yes			erator : ntisek
Place : Road : Locationspect	on		ue Busniss Park with buildings	Location Catchme Tape nur Pipe Len	nt: nber : 051	216_1	U/ D/	S MH : S Depth : S MH : S Depth :	G7.1 DS		
Jse: /ear la Purpos Fotal le Comm	se : ength :	Ro	rface water outine inspection o 31 m	of condition		Pipe shape : Pipe size : Pipe material : Lining :	15	rcular 0.00 mm olyvinyl chlorid	de		
	1:84	Position	Code	Observ	ation				MPEG	Photo	Grade
	G7.1	0.0	0 <u>0</u> GY	Start nod	e type, gully, r	eference numb	er : G7.1	C)0:01:41		(Constr) 0
		0.(<u>)1</u> WL	water lev	ei, 0% or the v	vertical dimension	UN	U	0:00:00		(Serv) 0
\$	L	3.6	<u>30</u> WLC	Clear wat	er level, 5% o	f the vertical dir	nension	C	0:00:42		(Serv) 0
		4.4	10 WLC	Clear wat	er level, 0% o	f the vertical dir	nension	C	0:00:51		(Serv) 0
	DS	<u>3.9</u> 9.9		Finish no	de type, major	vertical dimensi connection wit Remarks: This p	hout manhole	e C)0:01:41)0:01:41		(Serv) 0 (Constr) (
	ral Defects					Constructional Miscellaneous F					
STR r		STR peak	STR mean	STR total	STR grade	Miscellaneous F SER no def	SER peak	SER mean	SER	total	SER grade
)	0	0	0	1	0	0	0		0	1



Street : Rathcoole Tel: 01 4018000





								nail: info@r	illa.ie	
			In	spection rep			1			
	Date : 22/12/2016	6	Job number :	Weather : no rain or snow	Operato Frantis		Section numbe 19	r:		SUFFIX: X
no	Weather rain or sn	ow	Vehicle : VEHICLE 1	Camera : camera 1	Preset	:	Cleaned : yes			erator : ntisek
Place Road :	: on	•	e Busniss Park with buildings	Location details: Catchment: Tape number : Pipe Length	051216_1	U/: D/:	S MH : S Depth : S MH : S Depth :	G8.1 DS		
nspec Jse: 'ear la	aid :	Sur	face water		Pipe shape : Pipe size :	Cir 10	rcular 0.00 mm			
Purpos Total le Comm	ength :	Rou 2.11	Itine inspection o	f condition	Pipe material : Lining :	Po	lyvinyl chloride	9		
	1:50	Position	Code	Observation			M	PEG	Photo	Grade
	G8.1	0.00	_	Start node type, gull Water level, 0% of th):00:00):00:00		(Constr) ((Serv) 0
		1.80	_	Line deviates right Water level, 0% of th	ne vertical dimensi	on):00:15):00:20		(Serv) 0 (Serv) 0
	DS	2.11	_	Finish node type, ma reference number: D	ajor connection wit	hout manhole	00):00:20		(Constr) 0
	ural Defects				Constructional					
ervice	ural Defects e Defects no def	STR peak	STR mean	STR total STR grad	Miscellaneous F		SER mean	SER	R total	SER grade



			In	spection	on repo	ort / Inspe	ection:		nail: info@rilt		
	ate : 2/2016		Job number :		eather : in or snow	Operato Frantise		Section number	r:		SUFFIX:
	ather or snow		Vehicle : VEHICLE 1	-	amera : a mera 1	Preset	:	Cleaned : yes			erator : ntisek
Place : Road : Location Inspection			e Busniss Park vith buildings	Location Catchme Tape nun Pipe Len	nt: nber : 05 1	1216_1	U, D,	/S MH : /S Depth : /S MH : /S Depth :	G8 DS		
Jse: Year laid : Purpose : Total length Comment :			ace water tine inspection of m	condition		Pipe shape : Pipe size : Pipe material : Lining :	10	ircular 00.00 mm olyvinyl chloride	;		
1:	:63 P	osition	Code	Observ	ation			М	PEG	Photo	Grade
	38	0.00	GY	Start node	e type, gully,	reference numbe	er : G8	00	0:00:00		(Constr) 0
		0.01	. WL	Water lev	el, 0% of the	vertical dimension	n	00	:00:00		(Serv) 0
	~	2.40	CN	Connectio 100mm	n other than	junction, at 9 o'c	lock, diamet	er OO	:00:35		(Constr) (
	DS \	<u>6.10</u> <u>6.10</u>	WL	Water lev	el, 0% of the	narks: 45 deg. vertical dimensio		00	:01:18 :01:21		(Serv) 0 (Serv) 0
		<u>6.40</u>	-			vertical dimension			:01:21		(Serv) 0
		6.41	BRF	Finish noo reference	le type, majo number: DS	r connection witl Remarks: This p	ipe is conne	∋ 00 cted to	::01:21		(Constr) (
Structural D Service Defe						Constructional F Miscellaneous F					
STR no def		R peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER t	otal	SER grade
0	1	0	0	0	1	0	0	0	0		1



			In	spection re	nort / Insne	oction: 1		Prilta.ie	
	Date :		Job number :	Weather :	Operato		tion number :	PI R	SUFFIX:
	23/12/2016	3		no rain or snov	v Frantise	k	21		Х
no	Weather o rain or sn	ow	Vehicle : VEHICLE 1	Camera : camera 1	Preset		Cleaned : yes		erator : Intisek
	: ion ction laid : ose : length :	Property v G9.1 (D/S) Surf	e Busniss Park with buildings DS face water tine inspection o	Location details: Catchment: Tape number : Pipe Length	051216_1 Pipe shape : Pipe size : Pipe material : Lining :	U/S MI U/S De D/S MI D/S De Circula 100.00 Polyvi	pth: I: DS pth: ar		
Comm	nent : 1:50	Position	Code	Observation			MPEG	Photo	Grade
	G9.1	0.00 0.01 0.20	WL		Illy, reference numbe the vertical dimensio Remarks: 45 deg.		00:00:00 00:00:00 00:00:01		(Constr) 0 (Serv) 0 (Serv) 0
		4.30	<u>)</u> LD	Line deviates dowr	1		00:00:42		(Serv) 0
						0			
	DS	4.80	<u>)</u> WL	Water level, 0% of	the vertical dimension		00:01:03		(Serv) 0
	DS		<u>)</u> WL	Water level, 0% of Finish node type, r		nout manhole	00:01:03		
Struct		4.80	<u>)</u> WL	Water level, 0% of Finish node type, r	the vertical dimension najor connection with DS Remarks: This p	nout manhole ipe is connected	00:01:03		(Serv) 0
Servic	Ural Defects no def	4.80	<u>)</u> WL	Water level, 0% of Finish node type, r	the vertical dimension najor connection with DS Remarks: This p DS Remarks: This p Constructional F	nout manhole ipe is connected eatures eatures	00:01:03 00:01:03 to	R total	(Serv) 0

CEDAR // Page: 34



			Ir	specti	on repo	rt / Inspe	ection:		Email: info@		
Date 23/12/2		Jo	b number :		eather : in or snow	Operato Frantise		Section numl	per :	PLR	SUFFIX: X
Weath no rain or			Vehicle : /EHICLE 1		amera : I mera 1	Preset	:	Cleaned yes			erator : ntisek
Place : Road : Location Inspection	Gree Prop		Busniss Park n buildings	Location Catchme Tape nur Pipe Len	nt: nber : 0512	216_1	U/ D/	S MH : S Depth : S MH : S Depth :	G9 DS		
Use: Year laid : Purpose : Total length : Comment :			e water e inspection o	f condition	-	Pipe shape : Pipe size : Pipe material : Lining :	15	rcular 60.00 mm blyvinyl chlori	de		
1:63	e Positi	ion	Code	Observ	ation				MPEG	Photo	Grade
G9		<u>0.00</u> 0.01	GY WL			eference numbo ertical dimensio			00:00:01		(Constr) 0 (Serv) 0
ł		0.90	SR	Sealing ri	ng intruding, fr	om 5 to 7 o'clo	ck		00:00:12	22_3A	(Constr) 1
		<u>6.30</u>	REM		emark Remark d against the s	s: Socket on th	nis pipe are		00:01:12		(Misc) 0
		7.40	WL	Water lev	el, 0% of the v	ertical dimensi	วท		00:01:25		(Serv) 0
DS		7.41	BRF	Finish no reference	de type, major number: DS F	connection wit Remarks: This p	hout manhole bipe is conne	e o	00:01:25		(Constr) 0
Structural Defe						Constructional I					
Service Defects			STR mean	STR total	STP grada	Miscellaneous F SER no def		SER mean		R total	SED grade
1	STR pea		0.67	5 R total	STR grade 1	0	SER peak 0	SER mean		0	SER grade 1
			I		CEDAR //	Dago: 25					

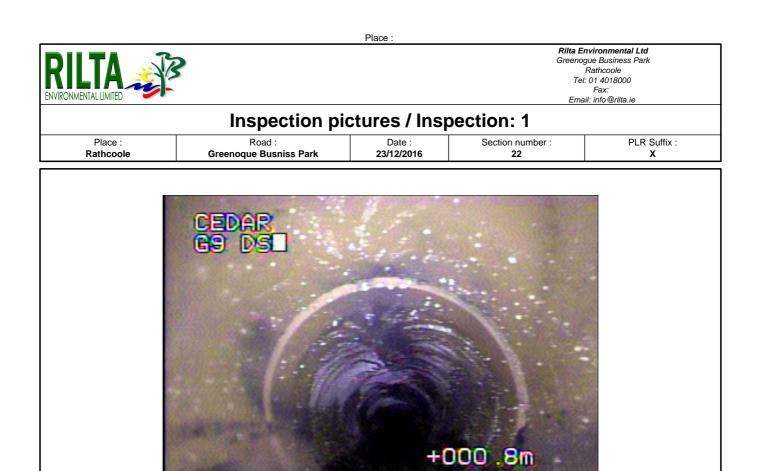


Photo: 22_3A, MPEG #: 051216_1, 00:00:12 0.9m, Sealing ring intruding, from 5 to 7 o'clock



Street : Rathcoole Tel: 01 4018000

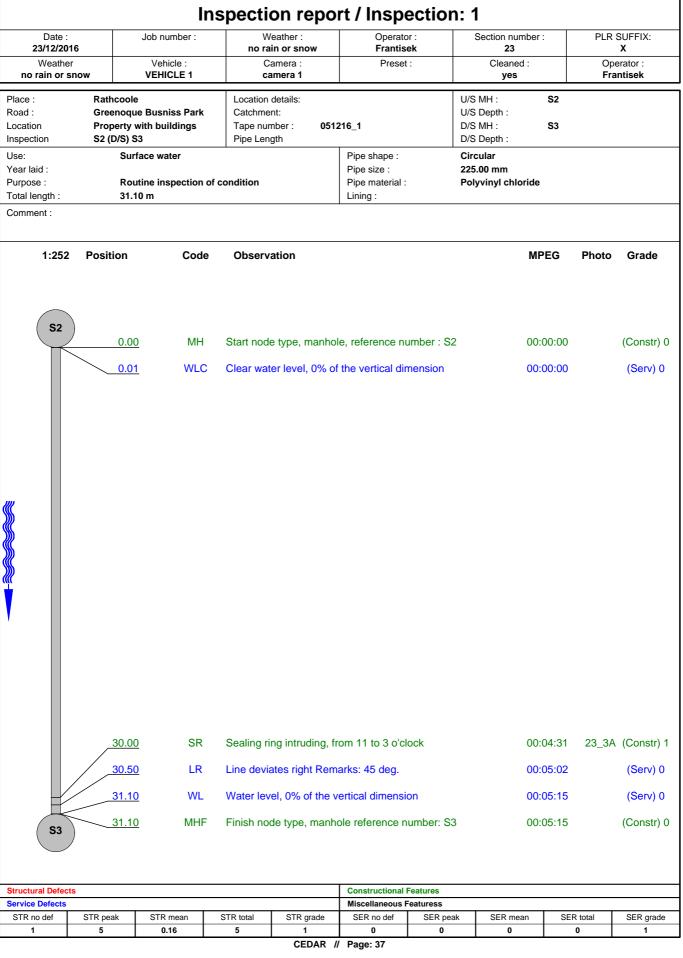




Photo: 23_3A, MPEG #: 051216_1, 00:04:31 30m, Sealing ring intruding, from 11 to 3 o'clock



STR no def

0

Rilta Environmental Ltd Greenogue Business Park Street : Rathcoole Tel: 01 4018000 Fax: Email: info@rilta.ie

Location Proper Inspection S2 (U/S Use: S Year laid : Purpose : F Total length : 1 Comment : 1:147 Position S2 0 0 0 3 4 4 4 4 9 10 11	oque Busniss Park rty with buildings S) S4 Surface water Routine inspection of 18.11 m n Code 0.00 MH 0.01 WLC 3.20 CN 3.20 VL	Pipe Length	f the vertical dimension unction, at 2 o'clock, di	I.	S4 S2	X Operator : Frantisek Photo Grade (Constr (Serv) (Constr
Place : Rathco Road : Greene location Proper hspection S2 (U/S Jse: S fear laid : Purpose : F Total length : 1 Comment : 1:147 Position S2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	oole oque Busniss Park rty with buildings S) S4 Surface water Routine inspection of 18.11 m on Code 0.00 MH 0.01 WLC 3.20 CN 3.20 VL	Location details: Catchment: Tape number : 051 Pipe Length f condition Observation Start node type, manhor Clear water level, 0% o Connection other than j	Pipe shape : Pipe size : Pipe material : Lining : le, reference number : f the vertical dimension unction, at 2 o'clock, di	yes U/S MH : U/S Depth : D/S MH : D/S Depth : Circular 225.00 mm Polyvinyl chlo	S4 S2 oride MPEG 00:00:00 00:00:00	Frantisek Photo Grade (Constr (Serv)
load : Green ocation Proper hspection S2 (U/S lse: S lear laid : urpose : F otal length : 1 comment : 1:147 Position S2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	oque Busniss Park rty with buildings S) S4 Surface water Routine inspection of 18.11 m n Code 0.00 MH 0.01 WLC 3.20 CN 3.20 VL	Catchment: Tape number : 051 Pipe Length f condition Observation Start node type, manhor Clear water level, 0% o Connection other than j	Pipe shape : Pipe size : Pipe material : Lining : le, reference number : f the vertical dimension unction, at 2 o'clock, di	U/S Depth : D/S MH : D/S Depth : Circular 225.00 mm Polyvinyl chlo	S2 oride MPEG 00:00:00 00:00:00	(Constr (Serv)
ear laid : urpose : F otal length : 1 formment : 1:147 Position S2 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Routine inspection of 18.11 m Image: spectrum of 18.11 m Imag	Observation Start node type, manho Clear water level, 0% o Connection other than j 100mm	Pipe size : Pipe material : Lining : le, reference number : f the vertical dimension unction, at 2 o'clock, di	225.00 mm Polyvinyl chle	MPEG 00:00:00 00:00:00	(Constr (Serv)
1:147 Position	0.00 MH 0.01 WLC 3.20 CN 3.20 WL	Start node type, manho Clear water level, 0% o Connection other than j 100mm	f the vertical dimension unction, at 2 o'clock, di	I.	00:00:00 00:00:00	(Constr (Serv)
	D.01 WLC 3.20 CN 3.20 WL	Clear water level, 0% o Connection other than j 100mm	f the vertical dimension unction, at 2 o'clock, di	I.	00:00:00	(Serv)
	<u>3.20</u> WL	100mm		ameter	00:00:27	(Constr
9 10 11			rentical dimension		00:00:29	(Serv)
	<u>4.70</u> WL	Water level, 0% of the	vertical dimension		00:00:43	(Serv)
10	4.71 LL	Line deviates left Rema	ırks: 45 deg.		00:00:43	(Serv)
11	9.00 WL	Water level, 5% of the	vertical dimension		00:01:23	(Serv)
	<u>).20</u> WL	Water level, 0% of the	vertical dimension		00:01:34	(Serv)
13	1.10 CN	Connection other than j 100mm	unction, at 3 o'clock, di	ameter	00:01:41	(Constr
	<u>3.00</u> SZ	Surface damage, other piece of wire damaged		marks: A	00:02:35	24_10A (Struct)
15	5.30 WL	Water level, 5% of the	vertical dimension		00:03:03	(Serv)
16	6.20 WL	Water level, 10% of the	vertical dimension		00:03:10	(Serv)
17	7.00 WL	Water level, 0% of the	vertical dimension		00:03:43	(Serv)
18	<u>3.10</u> WL	Water level, 0% of the	vertical dimension		00:03:53	(Serv)
S4 18	3.11 MHF	Finish node type, manh	ole reference number:	S4	00:03:53	(Constr

cts	-	-			Miscellaneous H	-eaturess			
	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
	0	0	0	1	0	0	0	0	1
				CEDAR //	Page: 39				



Photo: 24_10A, MPEG #: 051216_1, 00:02:35 13m, Surface damage, other, from 8 to 9 o'clock



Road : G Location Pi Inspection S: Use: Year laid : Purpose : Total length : Comment : Simple Si	VE Rathcoole Greenoque Bu Property with I S3 (D/S) S11 Surface	buildings	Pipe Length	Preset : 216_1 Pipe shape : Pipe size : Pipe material :	25 Cleaned yes U/S MH : U/S Depth : D/S MH : D/S Depth : Circular 225.00 mm	: S3 S11	Ope	X erator : ntisek
Road : G Location Prinspection S: Use: Year laid : Purpose : Total length : Comment : 1:50 Pos	Greenoque Bu Property with B S3 (D/S) S11 Surface Routine 4.31 m	ouildings water	Catchment: Tape number : 051 Pipe Length	Pipe shape : Pipe size :	U/S Depth : D/S MH : D/S Depth : Circular			
Year laid : Purpose : Total length : Comment : 1:50 Pos S3	Routine 4.31 m		condition	Pipe size :				
53	osition			Lining :	Polyvinyl chlor	ide		
		Code	Observation			MPEG	Photo	Grade
511	0.00	MH	Start node type, manho	ble, reference number	: S3	00:00:00		(Constr) (
511	0.01	WL	Water level, 0% of the	vertical dimension		00:00:00		(Serv) 0
S11	2.40	WLC	Clear water level, 5% o	f the vertical dimensic	n	00:00:25		(Serv) 0
S11	3.50	LL	Line deviates left Rema	arks: 45 deg.		00:00:33		(Serv) 0
	4.30	WL	Water level, 0% of the v			00:00:44 00:00:44		(Serv) 0 (Constr) (
ructural Defects				Constructional Features Miscellaneous Features				
STR no def STR					R peak SER mear		total	SER grade



		Ins	spection repo	rt / inspecti	on: 1			
Date : 23/12/201		number :	Weather : no rain or snow	Operator : Frantisek	Section nu 26	mber :	PLR	SUFFIX:
Weather no rain or si		/ehicle : EHICLE 1	Camera : camera 1	Preset :	Cleane yes			erator : ntisek
Place : Road : Location Inspection	Rathcoole Greenoque Bu Property with I S4 (U/S) US		Location details: Catchment: Tape number : 0512 Pipe Length	216_1	U/S MH : U/S Depth : D/S MH : D/S Depth :	US S4		
Use: Year laid : Purpose : Total length : Comment :	Surface Routine 4.10 m	water inspection of c	condition	Pipe shape : Pipe size : Pipe material : Lining :	Circular 100.00 mm Polyvinyl chl	oride		
1:50	Position	Code	Observation			MPEG	Photo	Grade
S4	0.00	MH WL	Start node type, manhol Water level, 0% of the v		: S4	00:00:02 00:00:02		(Constr) 0 (Serv) 0
	<u>3.00</u> <u>3.01</u>	WL BRF	Water level, 0% of the v Finish node type, major reference number: US F	connection without m	nanhole ank.	00:00:19 00:00:19		(Serv) 0 (Constr) 0
	<u>4.10</u>	LD	Line deviates down Ren	narks: 45 deg.		00:00:20		(Serv) 0
US	/							
US	у 							
	s			Constructional Feature	5			
Structural Defects Service Defects STR no def		TR mean	STR total STR grade	Constructional Features Miscellaneous Features SER no def SEF			R total	SER grade



				In	specti	on repo	ort / Insp	ection:	1			
	Date : 23/12/201	6	Job	number :		eather : in or snow	Operato Frantis		Section nu 27	mber :	PLF	SUFFIX:
no	Weather rain or sr			ehicle : HICLE 1	-	amera : I mera 1	Preset	:	Cleane yes			perator : antisek
Place : Road : Locatio	on		oque Bus rty with b	sniss Park puildings	Location Catchme Tape nur Pipe Len	nt: nber : 05	1216_1		J/S MH : J/S Depth : D/S MH : D/S Depth :	DF S5		
Use: Year la Purpos Total le Comm	se : ength :	I	Surface v Routine i 15.91 m	vater nspection of	f condition		Pipe shape : Pipe size : Pipe material : Lining :	1	Circular 50.00 mm Polyvinyl chl	oride		
	1:126	Positio	n	Code	Observ	ation				MPEG	Photo	Grade
	S5)() <u>.00</u>	MH	Start node	e type, manh	ole, reference nu	umber : S5		00:00:0	00	(Constr) 0
			<u>).01</u>	WL	Water lev	el, 0% of the	vertical dimensi	on		00:00:0	00	(Serv) 0
			<u>).40</u>	LL	Line devia	ates left Rem	arks: 45 deg.			00:00:0)3	(Serv) 0
			<u>1.10</u>	LL	Line devia	ates left Rem	arks: 15-30 deg.			00:00:0)7	(Serv) 0
		2	<u>1.40</u>	WLC	Clear wat	er level, 5% (of the vertical dir	nension		00:00:	32	(Serv) 0
			<u>1.90</u>	WL	Water lev	el, 10% of th	e vertical dimens	sion		00:00:	36	(Serv) 0
		6	<u> 3.30</u>	WL	Water lev	el, 5% of the	vertical dimension	on		00:00:4	45	(Serv) 0
			<u>3.50</u>	WL	Water lev	el, 0% of the	vertical dimensi	on		00:01:0)9	(Serv) 0
			I.10	OJM	fully.		emarks: Pipes ar		cted	00:01:4	_	A (Struct) 1
		11	<u>.60</u>	WL	Water lev	el, 5% of the	vertical dimension	on		00:01:4	47	(Serv) 0
		13	<u>3.70</u>	WL	Water lev	el, 0% of the	vertical dimension	on		00:02:0	05	(Serv) 0
			<u>5.40</u>	LR	Line devia	ates right Rei	marks: 90 deg.			00:02:2	23	(Serv) 0
		15	5. <u>90</u>	WL	Water lev	el, 0% of the	vertical dimensi	on		00:02:2	29	(Serv) 0
	DP	15	5.91	BRF			or connection wit Remarks: Disch			00:02:2	29	(Constr) 0
Structu	Iral Defects	;					Constructional	Features				
	Defects	OTD'		B mass I	OTD total	STR grade	Miscellaneous F SER no def	eaturess SER peak	SER me		SER total	SER grade
		STR peak	1 3	R mean	STR total							



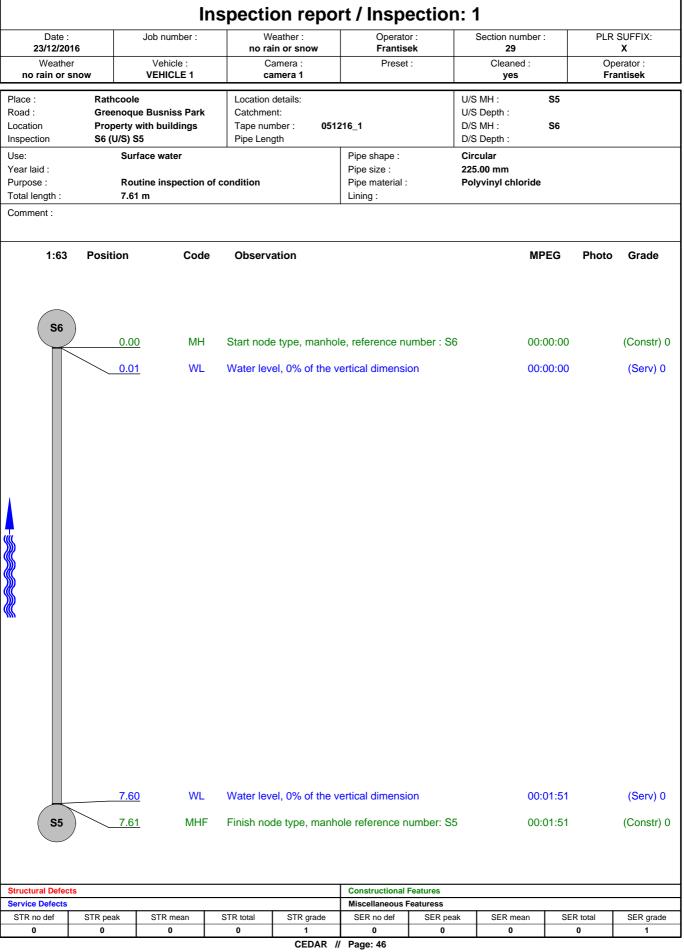
Photo: 27_9A, MPEG #: 051216_1, 00:01:44 11.1m, Open joint, medium



			Ins	spection	repoi	rt / Inspe	ection:	1			
	Date : 23/12/2016		ob number :	Weather no rain or s		Operato Frantise		Section number 28	:	PLR	SUFFIX: X
nc	Weather rain or sn	now \	Vehicle : /EHICLE 1	Camera camera		Preset	:	Cleaned : yes			erator : ntisek
Place Road Locati	: ion	Rathcoole Greenoque E Property with S6 (D/S) OS	Busniss Park h buildings	Location details Catchment: Tape number : Pipe Length	.: 0512	16_1		J/S MH : J/S Depth : J/S MH : D/S Depth :	S6 OS		
Jse: Year I Purpo Fotal	aid :	Surfac	e water			Pipe shape : Pipe size : Pipe material : Lining :	2	Circular 25.00 mm Polyvinyl chloride			
	1:84	Position	Code	Observation				MF	PEG	Photo	Grade
	56	0.00	MH WL	Start node type Water level, 0%					:00:00 :00:00		(Constr) 0 (Serv) 0
		<u>3.00</u> <u>3.70</u>	WL WL	Water level, 5% Water level, 10					:00:31 :00:37		(Serv) 0 (Serv) 0
	+	6.30	WL	Water level, 15	% of the v	vertical dimens	sion	00:	:00:59		(Serv) 0
		7.60	WL	Water level, 10	% of the	vertical dimens	sion	00:	:01:10		(Serv) 0
		9.00	WL	Water level, 10	% of the	vertical dimens	sion	00:	:01:22		(Serv) 0
	OS	9.01	BRF	Finish node typ reference numb	be, major ber: OS R	connection witl emarks: This p	hout manhol bipe is conne	e 00: ected to	:01:22		(Constr) (
	ural Defects	1				Constructional F					
	e Defects no def	STR peak	STR mean	STR total ST	R grade	Miscellaneous F SER no def	eaturess SER peak	SER mean	SER	total	SER grade
JIK	10 001	0	0	0 STR total ST	R grade	OFIX NO GEI		GLIX mean		ioiai	JEIN graue

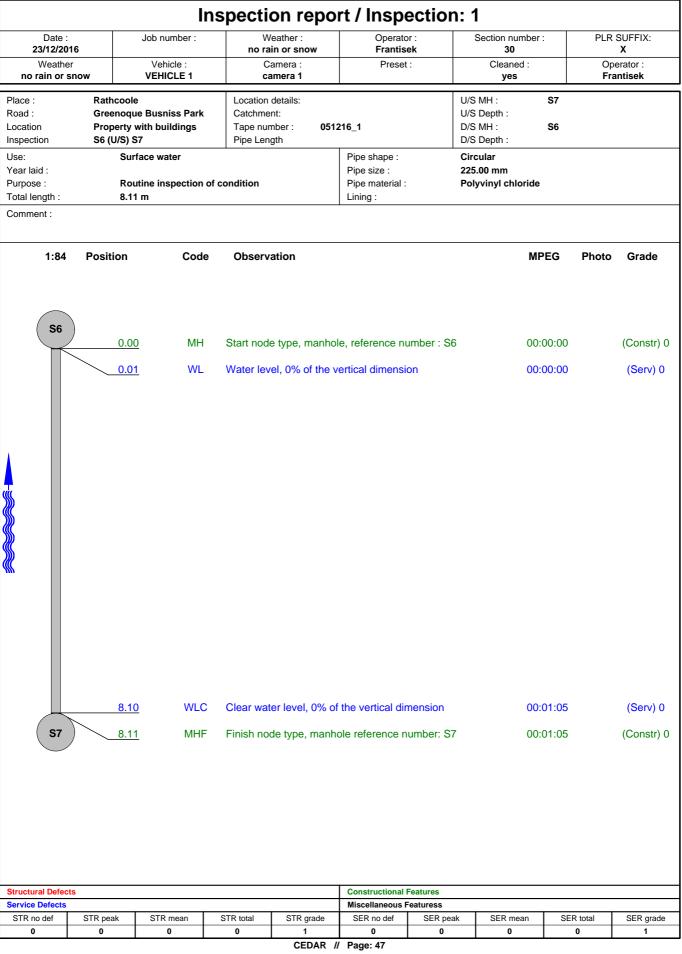


Street : Rathcoole Tel: 01 4018000





Street : Rathcoole Tel: 01 4018000





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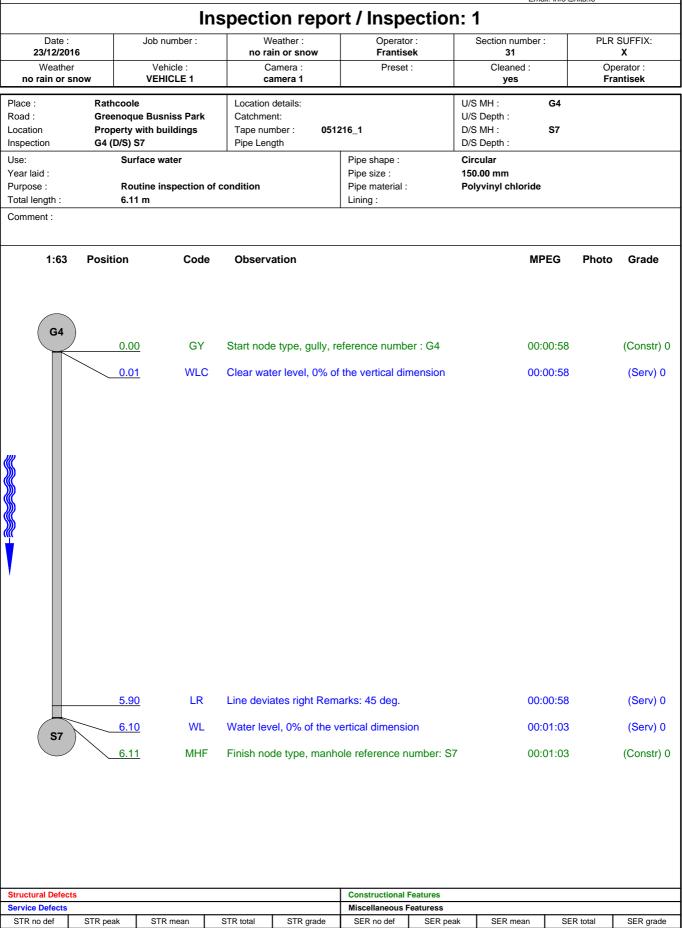
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Rilta Environmental Ltd Greenogue Business Park

Street : Rathcoole Tel: 01 4018000

Fax: Email: info@rilta.ie



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	Date :										
	23/12/20		Job number :		/eather : iin or snow	Operato Frantis		Section nun 32	nber :	PLR	SUFFIX:
	Weathe no rain or s		Vehicle : VEHICLE 1		amera : amera 1	Preset	:	Cleanec yes	l:		erator : Intisek
			ue Busniss Park with buildings	Location Catchme Tape nur Pipe Len	ent: mber : 0512	216_1	l I	J/S MH : J/S Depth : D/S MH : D/S Depth :	S9 S8		
Pur Tota	e: ar laid : pose : al length : nment :	Ro	Irface water outine inspection .71 m	of condition		Pipe shape : Pipe size : Pipe material : Lining :	2	Circular 25.00 mm Polyvinyl chlo	ride		
	1:315	o Position	Code	e Observ	ation				MPEG	Photo	Grade
	S8	0.0	<u>)0</u> MH	Start nod	e type, manhol	le, reference nu	umber : S8		00:00:03		(Constr) 0
		0.0				f the vertical dir			00:00:03		(Serv) 0
		2.9		100mm		unction, at 2 o'o		ter	00:00:32 00:00:49		(Constr) 0 (Serv) 0
		7.2				unction, at 10 c		eter	00:01:09		(Constr) 0
		16.3	<u>30</u> CN	Connectio 100mm	on other than ji	unction, at 2 o'ດ	clock, diame	ter	00:02:27		(Constr) 0
		25.5	_		·	rertical dimension		tor	00:03:57 00:03:55		(Serv) 0 (Constr) 0
			<u></u>	100mm							(const) c
		37.7	<u>70</u> WL	Water lev	vel, 0% of the v	vertical dimension	on		00:00:00		(Serv) 0
	S9	37.7	7 <u>1</u> MHF	Finish no	de type, manh	ole reference n	umber: S9		00:00:00		(Constr) 0
Stru	Ictural Defec	ts				Constructional	Features				
	vice Defects	05-	07-			Miscellaneous F			1		
ST	R no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mea	an SE	R total	SER grade
	0	0	0	0		0 / Page: 49	0	0		0	1



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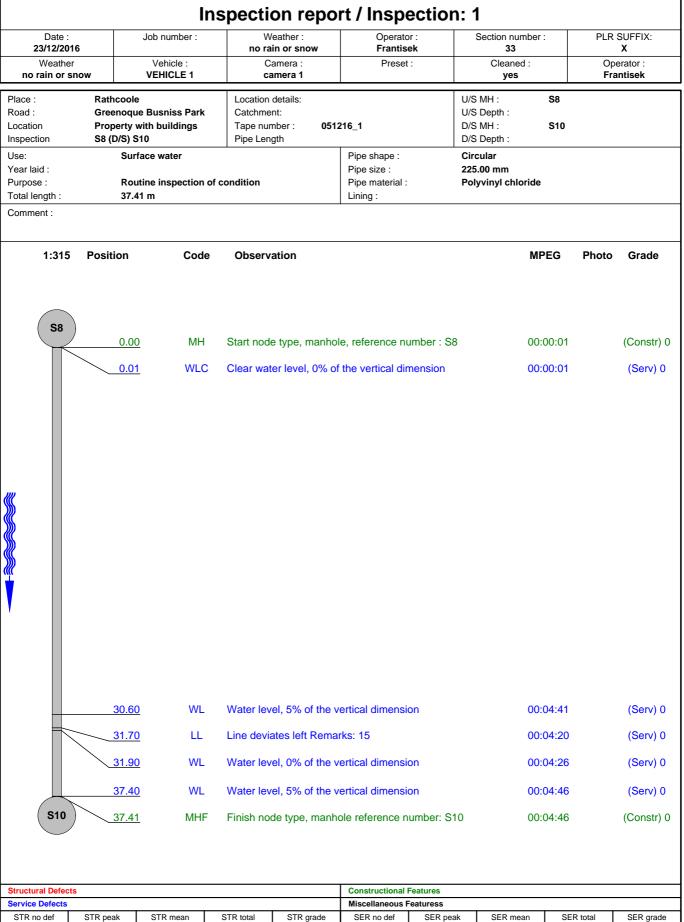
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Street : Rathcoole Tel: 01 4018000

Fax: Email: info@rilta.ie



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			Ins	spection repo	ort / Inspectio	n: 1			
	Date : /12/2016	J	ob number :	Weather : no rain or snow	Operator : Frantisek	Section number	er :	PLR	SUFFIX: X
	Veather i n or sno	w	Vehicle : VEHICLE 1	Camera : camera 1	Preset :	Cleaned : yes			erator : ntisek
Place : Road : .ocation nspectio		Rathcoole Greenoque I Property wit S9 (U/S) G1	Busniss Park h buildings	Location details: Catchment: Tape number : 05 Pipe Length	1216_1	U/S MH : U/S Depth : D/S MH : D/S Depth :	G1 S9		
Jse: Year laid Purpose Total leng	: : gth:	Surfac	ce water ne inspection of		Pipe shape : Pipe size : Pipe material : Lining :	Circular 150.00 mm Polyvinyl chlorid	le		
	1:63	Position	Code	Observation		N	IPEG	Photo	Grade
(S 9	0.00	MH WL	Start node type, manho Water level, 0% of the	ole, reference number : : vertical dimension		0:00:00 0:00:00		(Constr) ((Serv) 0
	G1	<u>5.60</u> <u>5.61</u>	WLC GYF	Clear water level, 0% o Finish node type, gully	of the vertical dimension reference number: G1		0:00: 57 0:00:57		(Serv) 0 (Constr)
ructural ervice D	I Defects efects				Constructional Features Miscellaneous Featuress				
STR no o		STR peak	STR mean	STR total STR grade	SER no def SER p	eak SER mean	SER t	otal	SER grade
STRING									



			IN	spection repo	rt / Inspectio	on: 1	
	Date : 23/12/2016		number :	Weather : no rain or snow	Operator : Frantisek	Section number : 35	PLR SUFFIX:
no	Weather rain or sn		ehicle : HICLE 1	Camera : camera 1	Preset :	Cleaned : no	Operator : Frantisek
Place Road Locati	: on	Rathcoole Greenoque Bus Property with b S9 (U/S) G3		Location details: Catchment: Tape number : 051 Pipe Length	216_1	U/S MH : G3 U/S Depth : D/S MH : S9 D/S Depth :	
Use: Year la Purpo: Total I Comr	se : ength :	Surface v Routine i 10.81 m	vater	condition	Pipe shape : Pipe size : Pipe material : Lining :	Circular 150.00 mm Polyvinyl chloride	
	1:105	Position	Code	Observation		MPEG	B Photo Grade
	S9	0.00	MH	Start node type, manho	le, reference number :	S9 00:00:0	01 (Constr) 0
		0.01	WL	Water level, 0% of the	vertical dimension	00:00:	01 (Serv) 0
		3.00	DES	Settled deposits, fine, 5	% cross-sectional area	loss 00:00::	27 (Serv) 2
		5.20	WL	Water level, 10% of the	vertical dimension	00:00:	38 (Serv) 0
m		8.50	WL	Water level, 0% of the v	vertical dimension	00:00:	58 (Serv) 0
		10.80	WL	Water level, 0% of the	vertical dimension	00:01:	12 (Serv) 0
	G3	10.81	GYF	Finish node type, gully	reference number: G3	00:01:	12 (Constr) 0
Struct	ural Defects				Constructional Features		
	e Defects				Miscellaneous Featuress	•	
	no def	STR peak ST	R mean	STR total STR grade	SER no def SER	peak SER mean	SER total SER grade



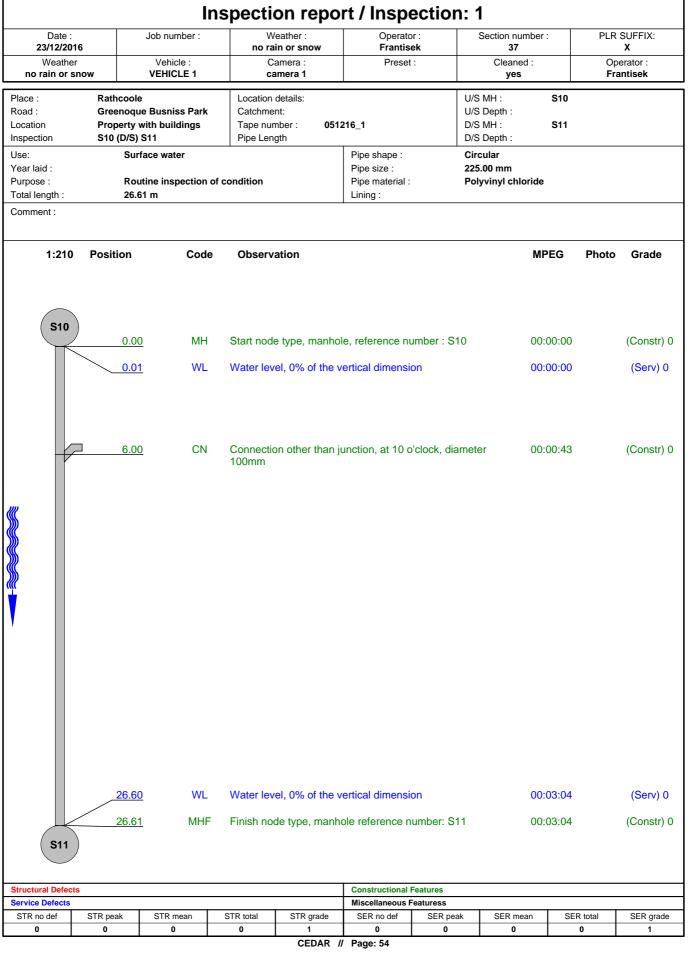
Date 23/12/2 Weati no rain o Place : Road : Location Inspection Use: Year laid : Purpose : Total length : Comment : 1:5	2016 her r snow Ratho Greer Prope S9 (U)	oque Busniss Pari rty with buildings (S) US2 Surface water Routine inspection 4.10 m	h of condition	ent: mber : 051: ngth vation	Operator : Frantisek Preset : 216_1 Pipe shape : Pipe size : Pipe material : Lining :	U/S MH U/S De D/S MH D/S De Circula 150.00 Polyvin	epth: H: epth: ar	0:02	Ope	Grade (Constr) 0 (Serv) 0
no rain o Place : Road : Location Use: Year laid : Purpose : Total length : Comment : 1:5 S9	r snow Ratho Greer Prope S9 (U	VEHICLE 1 oole oque Busniss Parl rty with buildings S) US2 Surface water Routine inspection 4.10 m on Coc	k Location Catchme Tape nu Pipe Ler	amera 1 details: ent: mber : 051: ngth vation	216_1 Pipe shape : Pipe size : Pipe material : Lining : le, reference num	U/S MH U/S De D/S MH D/S De Circula 150.00 Polyvin	no H: spth: H: spth: mm nyl chloride MPE	59 :G Pl	Frar	Grade (Constr) 0
Road : Location Inspection Use: Year laid : Purpose : Total length : Comment : 1:5	Greer Prope S9 (U	oque Busniss Parl rty with buildings S) US2 Surface water Routine inspection 4.10 m	k Catchme Tape nu Pipe Ler	ent: mber : 051: ngth vation	Pipe shape : Pipe size : Pipe material : Lining :	U/S De D/S MH D/S De Circula 150.00 Polyvia	epth : H :	59 :G Pl	hoto	(Constr) 0
Year laid : Purpose : Total length : Comment : 1:5	0 Positio	Routine inspection 4.10 m on Coc	ie Observ	le type, manho	Pipe size : Pipe material : Lining :	150.00 Polyvin	mm nyl chloride MPE	0:02	hoto	(Constr) (
S9		0.00 MF	H Start nod	le type, manho			00:04	0:02	hoto	(Constr) (
	\leftarrow									
		0 <u>.01</u> WI	_ Water le∖	vel, 0% of the v	ertical dimension		00:0	0:02		(Serv) 0
		<u>3.60</u> LL	J Line devi	ates up			00:0	0:30		(Serv) 0
		<u>4.10</u> WI	- Water lev	/el, 0% of the v	ertical dimension		00:00	D:41		(Serv) 0
		<u>4.10</u> SA			harks: Survey cou		00:04	D:41		(Misc) 0
Maria and Part	ooto				Construction of F					
Structural Defe Service Defect	ts	-	-		Constructional Fea Miscellaneous Fea	turess				
STR no def	STR peak	STR mean 0	STR total	STR grade	SER no def	SER peak	SER mean 0	SER tota	al	SER grade



Rilta Environmental Ltd Greenogue Business Park

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Fax: Email: info@rilta.ie





			Ir	nspectio	on repo	rt / Insp	ection:		Email: info@	nna.ie	
	Date : 23/12/201	6	Job number :	W	eather :	Operato Frantis	or :	Section numb	per:	PLR	SUFFIX:
n	Weather	r	Vehicle : VEHICLE 1	Ca	amera : mera 1	Preset		Cleaned : yes	:		erator :
Place Road Loca	e: d:	Rathcool Greenoqu	e ue Busniss Park with buildings	Location Catchmer Tape nun Pipe Leng	details: nt: nber : 051	216_1	U/: D/:	S MH : S Depth : S MH : S Depth :	S13 S10		
Use: Year Purp Tota		Sur	rface water utine inspection o 71 m			Pipe shape : Pipe size : Pipe material : Lining :	Ciı 22	rcular 5.00 mm Iyvinyl chlori	de		
	1:378	Position	Code	Observa	ation				MPEG	Photo	Grade
	S10	0.00 0.0 2.30	<u>1</u> WL	Water leve Connectio	el, 0% of the on other than	le, reference nu vertical dimensi unction, at 1 o'd ibly a water spo	on clock, diamete	(00:00:00 00:00:00 00:00:21		(Constr) 0 (Serv) 0 (Constr) 0
		14.30	<u>0</u> CN	Connectic 100mm R	on other than j emarks: A wa	unction, at 1 o'd ter spout.	clock, diamete	er (00:01:46		(Constr) (
		26.7(<u>0</u> CN		on other than j emarks: A wa	unction, at 2 o'd ter spout.	clock, diamete	:r (00:03:15		(Constr) (
		34.70	<u>0</u> WL	Water leve	el, 5% of the	vertical dimensi	on	(00:05:49		(Serv) 0
		37.10	_	Connectio		vertical dimensi unction, at 2 o'd			00:06:39 00:07:27		(Serv) 0 (Constr) 0
	S13	47.7	_	Water leve	el, 0% of the	vertical dimensi			00:00:00 00:00:00		(Serv) 0 (Constr) 0
	ctural Defect	S				Constructional					
						1					
Servi	ice Defects R no def	STR peak	STR mean	STR total	STR grade	Miscellaneous F SER no def	SER peak	SER mean	000	R total	SER grade



NVIRONMENTAL LIMITE		Ing	spection repo	ort / Inspe	ction 1		ail: info@ril	lta.ie	
Date :		ob number :	Weather :	Operator	: S	Section number	:	PLR :	SUFFIX:
23/12/2016 Weather		Vehicle :	Camera :	Frantisel Preset :		39 Cleaned :			X erator :
no rain or sn		/EHICLE 1	camera 1			yes		Fra	ntisek
Place : Road : .ocation	Rathcoole Greenoque E Property witl	Busniss Park h buildings	Location details: Catchment: Tape number : 05	i1216_1		MH : Depth : MH :	OS S11		
nspection	S11 (U/S) OS		Pipe Length			Depth :			
Jse: ⁄ear laid : Purpose : fotal length :		e water e inspection of	condition	Pipe shape : Pipe size : Pipe material : Lining :		ular 00 mm vvinyl chloride	!		
Comment :									
1:63	Position	Code	Observation			МІ	PEG	Photo	Grade
S11	0.00						00.00		
\sim	0.00	MH	Start node type, manh Clear water level, 5%			00:	:00:00		(Constr) ((Serv) 0
	5.30	WL	Water level, 0% of the	vertical dimension	n	00	:00:40		(Serv) 0
	6.20	WL	Water level, 0% of the	vertical dimensio	n	00:	:00:46		(Serv) 0
os	6.21	OSF	Finish node type, oil s Remarks: Oil Separate		e number: OS	00	:00:46		(Constr) (
Structural Defects Service Defects STR no def		STR mean	STR total STR grade	Constructional Fe Miscellaneous Fe SER no def		SER mean	SER	total	SER grade
STR 110 del	0		0 1	0	0	0	_		



			Ins	spection repo	ort / Inspe	ction: 1			
	Date : 23/12/2016	6	Job number :	Weather : no rain or snow	Operator : Frantisek		ection number : 40	PLF	R SUFFIX:
	Weather rain or sn		Vehicle : VEHICLE 1	Camera : camera 1	Preset :		Cleaned : yes		perator : :antisek
Place Road : .ocationspect	: on		e Busniss Park vith buildings	Location details: Catchment: Tape number : 05 Pipe Length	1216_1	D/S N	Depth :	33 311	
Jse: 'ear la Purpo: 'otal la Comm	se : ength :		ace water tine inspection of m	condition	Pipe shape : Pipe size : Pipe material : Lining :		ılar 0 mm ⁄inyl chloride		
	1:50	Position	Code	Observation			MPE	G Photo	Grade
	S11	0.00	<u>.</u> MH	Start node type, manh	ole, reference num	ıber : S11	00:00):01	(Constr) (
		0.01	WL	Water level, 0% of the	vertical dimension		00:00):01	(Serv) 0
		0.10	LR	Line deviates right Re	marks: 45 deg.		00:00):04	(Serv) 0
))))									
		3.80	WLC	Clear water level, 0%	of the vertical dime	ension	00:00):29	(Serv) 0
	S3	3.81	MHF	Finish node type, man	hole reference nur	nber: S3	00:00):29	(Constr) (
	ural Defects				Constructional Fea				
	no def	STR peak	STR mean	STR total STR grade	Miscellaneous Fea	SER peak	SER mean	SER total	SER grade
(D	0	0	0 1 CEDAR	0	0	0	0	1



Rilta Environmental Ltd Greenogue Business Park Street : Rathcoole Tel: 01 4018000

		Ins	spection repo	ort / Inspectior	n: 1		
Date : 23/12/2016		number :	Weather : no rain or snow	Operator : Frantisek	Section number : 41	PLR	SUFFIX: X
Weather no rain or sno		ehicle : HICLE 1	Camera : camera 1	Preset :	Cleaned : yes		erator : ntisek
lace : oad : ocation Ispection se: ear laid : urpose : otal length :	Rathcoole Greenoque Bus Property with b S13 (U/S) G4 Surface w Routine ir 0.61 m	uildings	Pipe Length	I216_1 Pipe shape : Pipe size : Pipe material : Lining :	U/S MH : G4 U/S Depth : 513 D/S MH : S13 D/S Depth : 513 Circular 100.00 mm Polyvinyl chloride 513		
omment : 1:50	Position	Code	Observation		MPEG	Photo	Grade
S13	0.00	MH WL	Start node type, manho Water level, 0% of the	ole, reference number : S' vertical dimension	3 00:00:01 00:00:01		(Constr) ((Serv) 0
	0.60	WL	Water level, 0% of the		00:00:11		(Serv) 0
G4	0.61	GYF	Finish node type, gully	reference number: G4	00:00:11		(Constr) (

Structural Defec	ts				Constructional	Features			
Service Defects					Miscellaneous F	eaturess			
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	0	0	0	0	1



			In	spection repo	ort / Inspe	ection:	1			
	Date : 23/12/2016	3	Job number :	Weather : no rain or snow	Operato Frantis		Section number 42	:	PLR 3	SUFFIX: X
n	Weather o rain or sn	ow	Vehicle : VEHICLE 1	Camera : camera 1	Preset	:	Cleaned : yes			erator : ntisek
Place Road Loca	: t		ue Busniss Park with buildings	Location details: Catchment: Tape number : 05 Pipe Length	1216_1	U/: D/:	S MH : S Depth : S MH : S Depth :	US S13		
Purp Tota	laid : ose : I length : ment :	Rou	face water utine inspection of 51 m	f condition	Pipe shape : Pipe size : Pipe material : Lining :	10	rcular 0.00 mm Iyvinyl chloride			
	1:210	Position	Code	Observation			MF	PEG	Photo	Grade
	S13	0.00	<u>o</u> MH	Start node type, manh	ole, reference nu	ımber : S13	00:	:00:00		(Constr) 0
		0.0*	<u>1</u> WLC	Clear water level, 5%	of the vertical dir	nension	00:	:00:00		(Serv) 0
	ł	4.10	<u>0</u> WL	Water level, 0% of the	vertical dimension	on	00:	:00:40		(Serv) 0
		7.1(<u>0</u> CN	Connection other than 100mm Remarks: A w		clock, diamete	er 00:	:01:04		(Constr) 0
	0	14.20	_	Connection other than 100mm Remarks: A w Clear water level, 5%	ater spout.			:02:08		(Constr) 0 (Serv) 0
		15.00	<u>0</u> WL	Water level, 0% of the	vertical dimensi	on	00:	:02:16		(Serv) 0
	0	17.50	<u>0</u> CN	Connection other than 100mm Remarks: A w	i junction, at 12 c	'clock, diamet	ter 00:	:02:37		(Constr) 0
		19.80	<u>0</u> WL	Water level, 5% of the		on	00:	:02:54		(Serv) 0
	0	21.10	<u>0</u> CN	Connection other than 100mm Remarks: A w		'clock, diamet	ter 00:	:03:03		(Constr) 0
		22.7(<u>0</u> WL	Water level, 0% of the		on	00:	:03:16		(Serv) 0
	US	26.50 26.5	_	Water level, 0% of the Finish node type, majo reference number: US	or connection wit	hout manhole	00:	:03:43 :03:43		(Serv) 0 (Constr) 0
	tural Defects				Constructional	Features				
Struc										
Servi	ce Defects R no def	STR peak	STR mean	STR total STR grade	Miscellaneous F SER no def	eaturess SER peak	SER mean	SER	,	SER grade



			In	spection rep	oort / Inspe	ection: '	1		
	Date : 23/12/2016		Job number :	Weather : no rain or snow	Operato Frantis		Section number : 43	PLR	SUFFIX:
n	Weather o rain or sn	ow	Vehicle : VEHICLE 1	Camera : camera 1	Preset	t:	Cleaned : yes		erator : antisek
Place Road Locat	1:	Property w	Busniss Park ith buildings	Location details: Catchment: Tape number :	051216_1	U/S	3 Depth :	WS 513	
Use: Year Purpo	laid : ose :	Rout	ace water ine inspection of	Pipe Length	Pipe shape : Pipe size : Pipe material :	Cir 100	S Depth : cular 0.00 mm lyvinyl chloride		
	length : ment :	6.41	m		Lining :				
	1:63	Position	Code	Observation			MPE	G Photo	Grade
	S13	0.00	MH	Start node type, mar	nhole, reference nu	umber : S13	00:00):02	(Constr) 0
		0.01	WL	Water level, 0% of th	ne vertical dimensi	on	00:00):02	(Serv) 0
	0	1.70	LL	Line deviates left Re	emarks: 45 deg.		00:00):15	(Serv) 0
8		1.71	CN	Connection other tha 100mm Remarks: A		o'clock, diamet	er 00:00	0:15	(Constr) 0
		6.40	WL	Water level, 0% of th	ne vertical dimensi	ion	00:00):41	(Serv) 0
	ws	6.41	BRF	Finish node type, ma reference number: V	ajor connection wit VS Remarks: A wa	thout manhole ater spout.	00:00):41	(Constr) 0
Struc	tural Defects				Constructional	Features			
Servi	tural Defects ce Defects c no def	STR peak	STR mean	STR total STR grad	Constructional Miscellaneous F e SER no def		SER mean	SER total	SER grade



		INS	spection repo	ort / Inspect				
Date : 23/12/2016		Job number :	Weather : no rain or snow	Operator : Frantisek	Section num			SUFFIX: X
Weather no rain or sn	ow	Vehicle : VEHICLE 1	Camera : camera 1	Preset :	Cleaned yes	:		erator : ntisek
Place : Road : ocation hspection		Busniss Park ith buildings 510	Location details: Catchment: Tape number : 05 Pipe Length	1216_1	U/S MH : U/S Depth : D/S MH : D/S Depth :	G10 S14		
se: ear laid : urpose : otal length :		ace water ine inspection of o m	condition	Pipe shape : Pipe size : Pipe material : Lining :	Circular 100.00 mm Polyvinyl chlo	ride		
1:50	Position	Code	Observation			MPEG	Photo	Grade
S14	0.00	MH	Start node type, manh	ole, reference numbe	r : S14	00:00:01		(Constr) (
	0.01	WLC	Clear water level, 0%	of the vertical dimensi	on	00:00:01		(Serv) 0
G10	<u>4.60</u> <u>4.61</u>	WL GYF	Water level, 0% of the Finish node type, gully		10	00:00:00 00:00:00		(Serv) 0 (Constr)
ructural Defects				Constructional Feature Miscellaneous Feature				
STR no def	STR peak	STR mean	STR total STR grade		R peak SER mea	an SER to	otal	SER grade



Data	.	Job number :	spection repo	-	Section r	umbor :	PLR SUF	
Date : 23/12/20 Weathe	016	Job number : Vehicle :	Weather : no rain or snow Camera :	Operator : Frantisek Preset :	Section r 4: Clear	5	Operato	
no rain or		VEHICLE 1	camera 1	Preset :	ye		Frantise	
Place : Road : Location nspection		ue Busniss Park with buildings	Location details: Catchment: Tape number : 051 Pipe Length	216_1	U/S MH : U/S Depth : D/S MH : D/S Depth :	US S14		
Jse: /ear laid : Purpose : fotal length : Comment :	Ro	rface water utine inspection of 1 m	condition	Pipe shape : Pipe size : Pipe material : Lining :	Circular 100.00 mm Polyvinyl cł	hloride		
1:50	Position	Code	Observation			MPEG	Photo G	rade
S14	0.0	1 <u>0</u> MH	Start node type, manho	le, reference numbe	er : S14	00:00:00	(Co	onstr) (
	0.0	1 <u>1</u> WL	Water level, 5% of the v	vertical dimension		00:00:00	(S	erv) 0
	1.0	<u>io</u> WLC	Clear water level, 0% o	f the vertical dimens	ion	00:00:09	(S	erv) 0
US	3.6 3.6		Water level, 0% of the v Finish node type, major reference number: US I	· connection without	manhole	00:00:29 00:00:29		e rv) 0 onstr)
tructural Defecter				Constructional Featur Miscellaneous Featur				
STR no def	STR peak	STR mean	STR total STR grade		ER peak SER r	mean SEF	R total SE	R grade
STICTIO GET								



			Ins	spection rep	ort / Inspe	ction: 1			
	Date : 23/12/2016		number :	Weather : no rain or snow	Operator : Frantisek		Section number : 46	PLR	SUFFIX:
no	Weather o rain or sno		/ehicle : E HICLE 1	Camera : camera 1	Preset :		Cleaned : yes		perator : antisek
Place Road Locat Inspe	: ion	Rathcoole Greenoque Bu Property with S15 (U/S) G5		Location details: Catchment: Tape number : 0 Pipe Length	51216_1	U/S D/S	Depth :	95 915	
		Surface Routine 3.01 m	water inspection of c	condition	Pipe shape : Pipe size : Pipe material : Lining :	150.	cular .00 mm yvinyl chloride		
50111	1:50	Position	Code	Observation			MPE	G Photo	Grade
	S15	0.00	MH WL	Start node type, man Water level, 0% of the			00:00 00:00		(Constr) 0 (Serv) 0
	G5	<u>3.00</u> <u>3.01</u>	WL GYF	Water level, 0% of the Finish node type, gull			00:00 00:00		(Serv) 0 (Constr) (
truct	ural Defects				Constructional Fea				
	e Defects				Miscellaneous Fea	ituress			
	no def	STR peak S	TR mean	STR total STR grade	SER no def	SER peak	SER mean	SER total	SER grade



			li li	nspecti	on repo	ort / Insp	ection:	1			
Date 23/12/			Job number :		/eather : in or snow	Operato Frantis		Section num 47	nber :	PLR	SUFFIX:
Weat no rain c			Vehicle : VEHICLE 1		amera : amera 1	Preset	:	Cleaned yes	:		erator : I ntisek
Place : Road : Location Inspection	Gre Pro	operty w 5 (U/S) S		Location Catchme Tape nur Pipe Len	nt: nber : 05 1	1216_1	U/- D/- D/-	S MH : S Depth : S MH : S Depth :	S14 S15		
Jse: Year laid : Purpose : Fotal length : Comment :	:		ace water ine inspection I m	of condition		Pipe shape : Pipe size : Pipe material : Lining :	22	rcular 5.00 mm olyvinyl chlor	ride		
1:3	36 Posi	tion	Code	e Observ	ation				MPEG	Photo	Grade
S1	5	0.00	MH			ole, reference nu			00:00:00		(Constr) 0
2		<u>0.01</u> <u>6.70</u>	WL CN	Connectio	on other than	vertical dimensi junction, at 3 o'o nection from G7	clock, diamete	er	00:00:00		(Serv) 0 (Constr) 0
		<u>16.80</u> <u>19.40</u>	CN	100mm R Connectio	Remarks: Con	junction, at 10 c nection from G8 junction, at 9 o'c nection from G9	.1 clock, diamete		00:01:43 00:02:03		(Constr) 0 (Constr) 0
		24.30 25.20	SR CN	Connectio	on other than	from 10 to 6 o'cl junction, at 2 o'c ection from Purr	clock, diamete		00:02:39 00:02:48	_	(Constr) 1 (Constr) 0
S1	4	<u>42.50</u> <u>42.51</u>	WLC MHF			of the vertical dir nole reference n			00:06:44 00:06:44		(Serv) 0 (Constr) 0
Structural Def						Constructional					
Service Defector STR no def	ts STR pe	ook	STR mean	STR total	STR grade	Miscellaneous F SER no def	SER peak	SER mea			
										ER total	SER grade



Photo: 47_6A, MPEG #: 051216_1, 00:02:39 24.3m, Sealing ring intruding, from 10 to 6 o'clock



Rilta Environmental Ltd Greenogue Business Park

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			Ins	spection repo	ort / Inspe	ection: [•]	1			
	Date : 23/12/2016		Job number :	Weather :	Operato Frantise	r:	Section num 49	ber :	PLR	SUFFIX:
	Weather rain or sn		Vehicle : VEHICLE 1	Camera : camera 1	Preset		Cleaned yes	:		rator : ntisek
Place : Road : Locatio	: : on	Rathcoole Greenoqu	e Busniss Park vith buildings	Location details: Catchment:	51216_1	U/S D/S	S MH : S Depth : S MH : S Depth :	S16 S7		
Use: Year la Purpos	aid : se : ength :	Surf	ace water		Pipe shape : Pipe size : Pipe material : Lining :	Cir 225	cular 5.00 mm Iyvinyl chlor	ide		
	1:126	Position	Code	Observation				MPEG	Photo	Grade
	S16	0.00	-	Start node type, manh Water level, 0% of the				00:00:00		(Constr) 0 (Serv) 0
	S7	13.10 14.10 15.00 15.40 15.50 15.51	WLC LL JDL WL	Clear water level, 5% Clear water level, 10% Line deviates left Rem Joint displaced, large Water level, 5% of the Finish node type, man	6 of the vertical di narks: 90 deg. Remarks: Poor w e vertical dimensio	mension orkmanship. on		00:01:52 00:02:00 00:02:07 00:02:41 00:00:00 00:00:00	49_6A	(Serv) 0 (Serv) 0 (Serv) 0 (Struct) 1 (Serv) 0 (Constr) 0
Structu	S7	14.10 15.00 15.40 15.50 15.51	WLC LL JDL WL	Clear water level, 10% Line deviates left Rem Joint displaced, large Water level, 5% of the	6 of the vertical di narks: 90 deg. Remarks: Poor w e vertical dimensio	mension orkmanship. on umber: S7		00:02:00 00:02:07 00:02:41 00:00:00	49_6A	(Serv) 0 (Serv) 0 (Struct) 1
	Iral Defects	14.10 15.00 15.40 15.50 15.51	WLC LL JDL WL	Clear water level, 10% Line deviates left Rem Joint displaced, large Water level, 5% of the	6 of the vertical di narks: 90 deg. Remarks: Poor w e vertical dimension shole reference no	mension orkmanship. on umber: S7		00:02:00 00:02:07 00:02:41 00:00:00 00:00:00	49_6A	(Serv) 0 (Serv) 0 (Struct) 1 (Serv) 0



Photo: 49_6A, MPEG #: 051216_1, 00:02:41

15.4m, Joint displaced, large

+015.50



		ż	3					Rilta Environm Greenogue Busi Street : Rath Tel: 01 401 Fax: Email: info@	ness Park coole 8000	
				Ins	spection repo	rt / Inspectio	n: 1			
	Date : 23/12/2016	j	Job n	umber :	Weather : no rain or snow	Operator : Frantisek	Section no 50		PLR	SUFFIX: X
no	Weather rain or sn	ow		hicle : ICLE 1	Camera : camera 1	Preset :	Clean yes			erator : Intisek
Place Road Location Inspec	: ion	Prope	coole noque Busi erty with bu P (U/S) AD		Location details: Catchment: Tape number : 0512 Pipe Length	216_1	U/S MH : U/S Depth : D/S MH : D/S Depth :	AD SUMP	,	
	ose : length :		Surface w Routine in 0.62 m	ater spection of c	condition	Pipe shape : Pipe size : Pipe material : Lining :	Circular 100.00 mm Polyvinyl ch	loride		
Comm	nent :									
	1:50	Positio	on	Code	Observation			MPEG	Photo	Grade
	SUMP		<u>0.00</u>	СР	Start node type, catchpit	t, reference number : S	UMP	00:00:00		(Constr) 0
			<u>0.01</u>	WL	Water level, 0% of the v	ertical dimension		00:00:00		(Serv) 0
			<u>0.60</u>	RF	Roots, fine Remarks: Th the end of this pipe and		ap between	00:00:12	50_3A	(Serv) 2
	AD	\searrow	<u>0.61</u>	WL	Water level, 0% of the v			00:01:15		(Serv) 0
			0.62	BRF	Finish node type, major reference number: AD R		nhole	00:01:15		(Constr) 0

Structural Defects					Constructional Features						
Service Defects	Service Defects					Miscellaneous Featuress					
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade		
0	0	0	0	1	1	1	1.61	1	3		

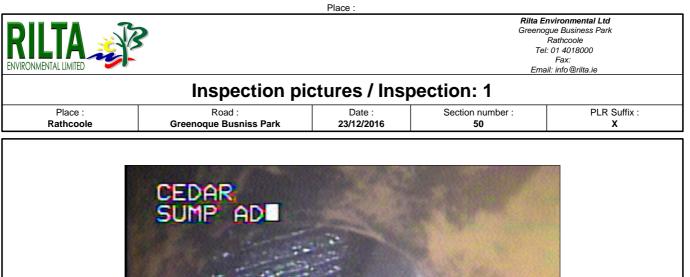




Photo: 50_3A, MPEG #: 051216_1, 00:00:12 0.6m, Roots, fine



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			-	-	ort / Inspe			<u>. </u>	D D	
Date 23/12/20	016	Job number :	no ra	eather : in or snow	Operato Frantise	ek	Section numbe 52	r:		SUFFIX: X
Weath no rain or		Vehicle : VEHICLE 1		amera : a mera 1	Preset	:	Cleaned : yes			erator : ntisek
lace : oad : ocation spection		ue Busniss Park with buildings	Location Catchme Tape nur Pipe Len	nt: nber : 05 1	216_1	U	//S MH : //S Depth : //S MH : //S Depth :	S1 OS		
se: ear laid : irpose : ital length :	Ro	face water utine inspection of 81 m	condition		Pipe shape : Pipe size : Pipe material : Lining :	2	Fircular 25.00 mm olyvinyl chloride	e		
omment :										
1:31	5 Position	Code	Observ	ation			Μ	IPEG	Photo	Grade
S1	0.0	_			ble, reference nu			0:00:00 0:00:00		(Constr) (Serv) 0
	14.0	<u>о</u> ОВІ			ing through wall onal area loss R):01:52	52_3A	(Serv) 5
	23.3	<u>0</u> CN			junction, at 10 o nection from G9	· · · · · · · · · · · · · · · · · · ·	eter 00):03:09		(Constr)
	27.2	<u>0</u> CN	Connectio	on other than	junction, at 2 o'c nection from G6	lock, diamet	ter 00):03:35		(Constr)
	31.7	<u>0</u> CN			junction, at 10 o nection from G8		eter 00):04:01		(Constr)
	36.1	_	Ŭ	0 0.	rom 11 to 1 o'cl):05:24		(Constr)
	36.1		100mm F	emarks: Coni	junction, at 10 o nection from G7):05:26	52_8A	(Constr)
	36.7	_	100mm F	emarks: Coni	junction, at 9 o'c nection from AJ junction, at 3 o'c	3.):05:38):05:58		(Constr)
	37.4	_	150mm R	emarks: Con	vertical dimension):06:05		(Serv) (
	37.8	_			e vertical dimens):06:05		(Serv) (
OS	37.8	<u>1</u> BRF			r connection witl Remarks: Surve):06:05		(Constr)
uctural Defe	rts				Constructional I	Peatures				
rvice Defects					Miscellaneous F					
vice Defects					Wiscellaneous	eaturess				



14m, Other obstacles protuding through wall, from 12 to 6 o'clock, 5% cross-sectional area loss

+013.80

4035 .Sm

Photo: 52_3A, MPEG #: 051216_1, 00:01:52

CEDAR US OS

Photo: 52_8A, MPEG #: 051216_1, 00:05:26 36.1m, Connection other than junction, at 10 o'clock, diameter 100mm



ONSITE DRAINAGE – SUMMARY OF DEFECTS

*PLEASE REFER TO THE SITE PLAN OVERLEAF

It was apparent from the CCTV camera inspection that the drainage system is generally in good condition, with some area requiring attention.

For any of the places where a seal ring was found to be intruding, a structural patch lining of all defective sections is recommended in order to reinstate the drainage lines to a watertight condition. Other drainage line defects have been itemised below.

Foul Line

Drainage line: F6 – F4

Location Defect

- 8.30m Multiple cracks in the line. Recommendation repair by installation of liner.
- 14.30m Settled deposits in the line. Assumed to be a lump of concrete from the building manufacture. Recommend robotic cutter to break up concrete and the line be flushed.

Surface Water Line

Drainage Line: AD – Sump

Location Defect

0.60m Roots located at the end of the pipe at the ACO Drain. Recommend root cutter to dislodge roots and liner to repair line.

Drainage Line: S1 – OS

Location Defect

14.00m A steel bar is protruding through the drain wall. Recommend that a robotic cutter cuts the steel bar and that the line is repaired by installation of a liner.

Drainage Line: S16 – S7

Location Defect

15.40m Joint displacement. A structural patch liner is required on this defective section in order to bring it to a watertight condition.