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environmental management for business

Mr. Frank Clinton,
Programme Manager,
Office of Climate, Licensing and Resource Use,
Environmental Protection Agency,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford

6th March 2009

RE: Request for Technical Amendment to Conditions 5.4, 5.5, 5.8 and 5.10– Greenstar Tallaght Depot W0079-01

Dear Mr Clinton

We request, on behalf of Greenstar Ltd (Greenstar), Unit 41 Cookstown Industrial Estate, Tallaght, technical amendment of Conditions 5.4, 5.5, 5.8 and 5.10 of Waste Licence W0079-01, which was issued in January 2000.

Background

Greenstar ceased waste activities at the site in 2006 transferring operations to its other Dublin based licensed Materials Recovery Facilities. Prior to site closure, the facility accepted Commercial and Industrial (C&I) and Construction and Demolition (C&D) waste, including metals. The facility is permitted to accept up to 145,000 tonnes of waste per annum, broken down into 43,500 tonnes per annum of C&I waste (30%) and over 100,000 tonnes of C&D waste.

The activities previously carried out at the site included internal processing of the C&D waste and internal sorting and transfer of the C&I waste. The main business focus was on the commercial sector and wastes were delivered by Greenstar collection vehicles and other permitted waste collectors. Greenstar did not provide a civic amenity area or accept waste from the general public.

It had been Greenstar's intention to decommission the site, surrender the licence and sell the site. Working with the Agency, Greenstar implemented a decommissioning plan and made an application to surrender the licence. However, due to subsequent changes in market conditions, Greenstar decided to retain the facility.

In November 2008 Greenstar agreed to lease the facility to a metal recovery operator- Midland Scrap Metal Ltd (MSM)- and site activities recommenced in December 2008. Activity at the site is limited to metal recovery. The environmental monitoring programme, which had been suspended in 2007 with the Agency's agreement, has recommenced. Greenstar, as the licence holder, retains responsibility for compliance with the licence conditions.

Current Activities

The metals are sourced from construction and demolition sites, specialist industries that handle metal, existing waste recovery facilities and individual householders and commercial enterprises that generate once off metal wastes. Subject to Agency approval, End of life vehicles (ELV) will be accepted and treated in a dedicated de-pollution area that is currently being constructed. It is expected that up to 50,000 tonnes of material per annum will be accepted annually for processing.

All deliveries are inspected upon arrival to confirm that they are suitable. The operator pays for all of the unprocessed scrap metal he accepts and sells all of the processed metals. Therefore he has strict procedures in place to ensure that unsuitable materials, which have no commercial value, are not accepted.

It had been the intention that all of the metals accepted at the site would be off-loaded inside the transfer building for inspection and processing. However, for operational reasons it is not practical or safe to off-load and inspect all of the materials inside the building. Non-ferrous metals are inspected inside the building, but ferrous metals are currently inspected, off-loaded, processed and stored, in the open paved main working yard. External processing is required due to the size of the processing equipment.

The metals are inert, although some pieces can have traces of oil on their surfaces, which present a potential risk of contamination of surface water run-off. There is a need to upgrade the surface water drainage system to ensure that all run-off from the main working yard area passes through silt traps and a Class 1 Bypass Separator before discharge to the existing storm water drain. A schematic showing the proposed improvements is enclosed. In addition, a surface water management maintenance schedule will be put in place to ensure regular checking, clearing and cleaning of manholes, gullies and the Bypass Separator. Greenstar has informed the Agency's OEE Inspector of these proposed works and it is expected that they will be completed in March 2009.

Monitoring

A noise monitoring survey completed in December 2008, confirmed that noise levels from the facility are not a cause of nuisance at the nearest noise sensitive location. A copy of the survey is enclosed. Dust monitoring was carried out in January 2009 and levels exceeding the deposition limit were recorded at one of the three monitoring locations. The facility is in an industrial estate where there are a number of off-site dust sources and there is a history of exceedance of the deposition limits when the facility was not operational suggesting the likelihood of off-site sources. A copy of the dust survey report is enclosed.

Compliance Status

An inspection by the OEE in December 2008 identified that the activities were not in compliance with a number of the Licence Conditions and in particular with Conditions 5.4, 5.5, 5.8 and 5.10.

Condition 5.4 requires an initial off-site characterisation of the waste. Condition 5.5 requires that all wastes are off-loaded inside the transfer building. Condition 5.8 stipulates that wastes other than metals, wood or other dry solids placed in skips/containers shall not be stored outside the transfer building, unless agreed in advance with the Agency. Condition 5.10 prohibits 'casual access'to the site.

Current licence conditions of W0079-01 are based on historic site activities (processing of up to 145,000 tonnes per annum of C&I and C&D waste) and are, to a certain extent , reflective of the understanding of the waste industry at the time the licence was issued (January 2000). It is possible to amend a small number of conditions to reflect current operations without presenting any increased risk of environmental pollution. The grounds for this assessment and the rationale for the amendment of the Conditions are set out below.

Proposed Amendments

Existing Condition

Condition 5.4 *states that waste shall only be accepted from known customers or from new customers subject to an initial off-site characterisation of the wastes.*

Reasoning

The intention of this Condition was to reduce the potential for the delivery of unsuitable wastes. Given the nature of the materials now accepted and the detailed inspection of all materials delivered, the risk of acceptance of unsuitable materials is negligible.

Proposed

Greenstar requests that this Condition be amended to remove the requirement for the initial off site characterisation of wastes from unknown customers.

Condition 5.5 *is linked to Condition 5.4 and stipulates that wastes accepted shall be off-loaded inside the transfer building for inspection and that only following inspection and assessment shall the waste be processed.*

Reasoning

The intention of this Condition is to ensure that only suitable wastes are accepted. As referred to above the inspection procedures applied minimises the risk of acceptance of the unsuitable materials. Furthermore given the inert nature of the materials, it is no longer necessary to inspect all of the deliveries inside the building.

Proposed

Greenstar requests that this Condition be amended to require the inspection of all arriving wastes in accordance with procedures agreed with the Agency

Condition 5.10 *is linked to Conditions 5.4 and 5.5 and stipulates that there shall be no casual access to the site and that scavenging shall not be permitted.*

Reasoning

The intention of this Condition was again to reduce the potential for delivery of unsuitable waste and to prevent members of the general public from accessing the site for the purpose of removing wastes. As referred to above the inspection procedures applied minimises the risk of acceptance of the unsuitable materials. Given that all the materials accepted have a commercial value, comprehensive security measures are in place to prevent unauthorised entry. However this Condition prevents individual householders and commercial enterprises, who produce scrap metal on once-off occasions, for example in building renovation, from delivering the materials directly to the site.

Proposed

Greenstar requests that this Condition be amended to allow individual householders and commercial enterprises to deliver wastes to the facility.

Condition 5.8 *stipulates that with the exception of metals, wood or other dry materials in trailers/skips/containers no other wastes shall be placed or allowed accumulate outside the transfer building, unless agreed in advance with the Agency.*

Reasoning

The intention of this Condition is primarily to minimise the potential for litter and the attraction to the site of birds and vermin and was based on the nature of waste accepted at the site in 2000. The metals stored and processed in the paved Main Yard are inert and are neither a source of litter nor attractive to birds and vermin. Some of the metals can have slight surface oil contamination, which present a potential risk of surface water contamination. The proposed improvements to the surface water drainage system will effectively mitigate the risk of surface water contamination.

Proposed

Greenstar request that this condition be amended to allow the external processing of metals in the paved open yards.

Greenstar is available to meet with the Agency to discuss the proposed amendments.

Yours sincerely,

Jim O' Callaghan

0904802/JOC/JC
Encl – Noise Monitoring Survey 2008, Dust Monitoring Report 2009, Surface Water Drainage Schematic
C.c. Mr. Malcolm Dowling, Greenstar Ltd.,
Mr. Niall Horgan - OEE Inspector.
Mr. Donal Howley - OEE Inspector.

DixonBrosnan
environmental consultants
dixonbrosnan.com

Project

Compliance noise survey at Greenstar Ltd., Cookstown Industrial Estate, Tallaght - EPA waste licence W0079-01

Client

O'Callaghan Moran & Associates

Project no	No pages	Client reference	©DixonBrosnan 2008
08160	13	W0079-01	v261108

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Report no	Date	Status	Prepared by	Chkd
08160.1.1	15.12.08	Initial release to client	Damian Brosnan	PC
08160.1.2	16.12.08	Updated details	Damian Brosnan	PC

Contents

1. Introduction

1.1 DixonBrosnan Environmental Consultants were commissioned by O'Callaghan Moran & Associates, on behalf of their client Greenstar Ltd., to carry out a noise survey at the latter's premises at Unit 41, Cookstown Industrial Estate, Tallaght, Dublin 24. Metal recycling is currently undertaken at the premises. The Environmental Protection Agency (EPA) has issued waste licence W0079-01 in respect of the site. The licence includes several conditions relating to noise as summarised in Appendix 2. This report describes a compliance noise survey undertaken at the site as required by the licence.

1.2 The noise survey was undertaken on Wednesday 10.12.08 at six monitoring stations shown in Appendix 3. Five of these (N1-N5) were located at the site boundaries as specified by licence W0079-01. Schedule F.2 of the licence also specifies that monitoring is to be undertaken at an offsite noise sensitive location. As the nearest sensitive receptor consists of Tallaght Hospital, located on grounds to the west and southwest of the waste facility, the sixth monitoring station (NSL1) was located at the northeast gate to the hospital complex, 200 m from the facility. The nearest dwellings are situated 450 m north of the facility.

1.3 The waste facility was operating throughout the survey. Emissions arose chiefly from a grab and combination baler-shears machine located at the northeast corner of the site. When not operating, emissions were audible from sporadic vehicle movements onsite, and from occasional use of a forklift truck and telescopic loader. Offsite sources audible consisted of local and distant traffic as well as emissions from local commercial premises. Survey methodology, equipment specification and weather conditions are presented in Appendix 4.

2. Results & Analysis

2.1 Noise levels recorded are presented in Appendix 5. Frequency spectra are presented in Appendix 6. $L_{Aeq\ 30\ min}$ levels recorded at the onsite stations measured 59-69 dB. There are no noise sensitive receptors located immediately adjacent to the site boundary. While several commercial premises adjoin the northern, eastern and western boundaries of the site, these are screened by mass concrete walls erected around these boundaries. The facility's position within an industrial/commercial zone is clearly evident on page 9.

2.2 The $L_{Aeq\ 30\ min}$ level recorded at NSL1 was 58 dB. The noise environment at this station was influenced by a multitude of sources, including local and distant traffic and emissions from surrounding commercial premises. It was not possible for the survey operator to definitively determine if Greenstar emissions were audible here due to the variety of noise sources audible, including another waste management facility located 100 m to the east of NSL1. If Greenstar emissions were audible at this station, their contribution to the overall noise level was negligible due to the dominance of local sources. This contribution is likely to have been less than 50 dB.

2.3 The source of a tone in the 100 Hz band detected at NSL1 using frequency analysis was not identified. The tone may have been associated with several transformers at an electrical substation to the northwest of NSL1. The tone was not of audible significance. This tone is unlikely to have arisen from the Greenstar facility.

2.4 Waste licence W0079-01 does not specify maximum noise limits to be applied to site operations. With an issue date of 24.01.00, the licence is now considered relatively old. Waste licences currently issued by the EPA usually specify that waste operations at the licensed facility shall not give rise to levels above 55 dB during daytime hours when measured at any noise sensitive location in the vicinity, and 45 dB during night-time hours. From 2.2 above, it is highly unlikely that noise emissions from the Greenstar facility contributed significantly to the 58 dB $L_{Aeq\ 30\ min}$ level recorded at NSL1. The contribution is likely to have been less than 50 dB. It is therefore concluded that noise emissions from the Greenstar facility did not exceed the 55 dB daytime limit specified in the licence. The facility does not operate during night-time hours.

Appendix 1: Glossary

Ambient	The total noise environment at a location, including all sounds present.
Amplitude	The parameter which indicates the loudness of a noise measured in decibels.
A-weighting	The weighting or adjustment applied to sound level recordings to approximate the non-linear frequency response of the human ear. The A-weighting is denoted by the suffix A in the parameters listed below such as L_{Aeq}, L_{A10}, etc.
Background noise	The A-weighted sound pressure level of the residual noise in decibels exceeded for 90% of a given time interval. The L_{A90}.
Decibel (dB)	The units of the noise measurement scale. Based on logarithmic scale so cannot be simply added or subtracted. A 3 dB difference is the smallest change perceptible to the human ear. A 10 dB difference is perceived as a doubling or halving of the sound level. Throughout this report noise levels are presented as decibels relative to 20 µPa. Examples of decibel levels are as follows: 20 Very quiet room; 35 Rural environment at night; 65 Conversation; 80 Busy pub; 100 Nightclub; 120 Jet take-off; 140 Threshold of pain
Free-field	Noise environment away from all surfaces other than the ground. Noise levels recorded near walls will be artificially increased due to reflections. Where there is more than one wall, noise levels will be further increased. Levels recorded within such 'near-field' conditions will be increased by up to 3 dB, and up to 6 dB near a corner. In practice, free-field conditions will be achieved by maintaining a separation distance of at least 3.5 m from walls.
Frequency	The number of cycles per second of a sound or vibration wave. An example of a low frequency noise is a hum, while a whine represents a higher frequency. The range of human hearing approaches 20-20,000 Hz.
Hertz (Hz)	The unit of frequency measurement.
Impulse	A noise which is of short duration, typically less than one second, the sound pressure level of which is significantly higher than the background.
Interval	The time period t over which noise monitoring is conducted. May be 5-60 minutes, depending on the standard applied. The interval is usually denoted by t as in $L_{Aeq\,t}$, $L_{A90\,t}$, etc.
L_{AE}	The sound exposure level is a measure of the noise level of an event, standardised to an interval of one second, and containing the same acoustical energy as the actual event.

$L_{Aeq\ t}$	The equivalent continuous sound level during a measurement interval, effectively representing the average A-weighted noise level.
L_{AF}	The A-weighted sound pressure level measured using a fast time weighting and averaged over one second. The L_{AF} value therefore changes each second.
L_{Aleq}	The A-weighted sound pressure level at a particular instant, measured using an impulse time weighting on the sound level meter. May be used in the assessment of impulse noise.
$L_{An\ t}$	The A-weighted sound level which is exceeded for n% of the measurement interval.
L_{Cpeak}	The peak C-weighted sound pressure level recorded during the measurement interval. The highest peak on the sound pressure wave before any time constant is applied. The C-weighting is used rather than the A-weighting as the latter screens out low frequency sources.
$L_{Req\ t}$	The rating noise level, derived from the $L_{Aeq\ t}$ plus specified adjustments for tonal and impulsive characteristics.
$L_{AF10\ t}$	The A-weighted sound level measured using a fast time weighting which is exceeded for 10% of the measurement interval, usually used to quantify traffic noise.
$L_{AF90\ t}$	The A-weighted sound level measured using a fast time weighting which is exceeded for 90% of the measurement interval, usually used to quantify background noise. May also be used to describe the noise level from a continuous steady or almost-steady source, particularly where the local noise environment fluctuates.
Near-field	Area where free field conditions do not apply.
Noise sensitive location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
1/3 octave band analysis	Frequency analysis of sound such that the frequency spectrum is subdivided into bands of one third of an octave each. An octave is taken to be a frequency interval, the upper limit of which is twice the lower limit in Hertz.
Residual noise	The noise level remaining at a given position in a given situation when the specific noise source is absent or does not contribute to the noise level.
Specific noise	The noise source under investigation for assessing the likelihood of complaints.
Tone	A character of the noise caused by the dominance of one or more frequencies which may result in increased noise nuisance.
Z-weighting	Standard weighting applied by sound level meters to represent linear scale.

Condition 7.1

No specified emission from the facility shall exceed the emission limit values set out in schedule G of this licence. There shall be no other emissions of environmental significance.

Condition 7.3

There shall be no clearly audible tonal component or impulsive component in the noise emissions from the activity at the facility boundary.

Condition 9.1

Subject to condition 9.6 [relating to dust], the licensee shall carry out such monitoring at such locations and frequencies as set out in schedule F: Monitoring and in the conditions of this licence.

Condition 9.5

Noise monitoring is to be undertaken at the site within three months of the date of grant of the licence. Subsequently, unless otherwise agreed with the Agency, the licensee shall carry out a noise survey of the site operations biannually. A survey programme (including the timing, nature and extent of the survey) shall be submitted to the Agency in writing at least two months before the survey is to be carried out. A record of the survey results shall be available for inspection by any authorised persons of the Agency, at all reasonable times.

Schedule F.2: Noise

Table F.2.1 Noise monitoring locations

Station	Easting	Northing
N1	308329E	228235N
N2	308371E	228265N
N3	308313E	228291N
N4	308375E	228317N
N5 (SL1)	308249E	228183N
Other Note 1		

Note 1: Any other noise sensitive location which the Agency deems appropriate.

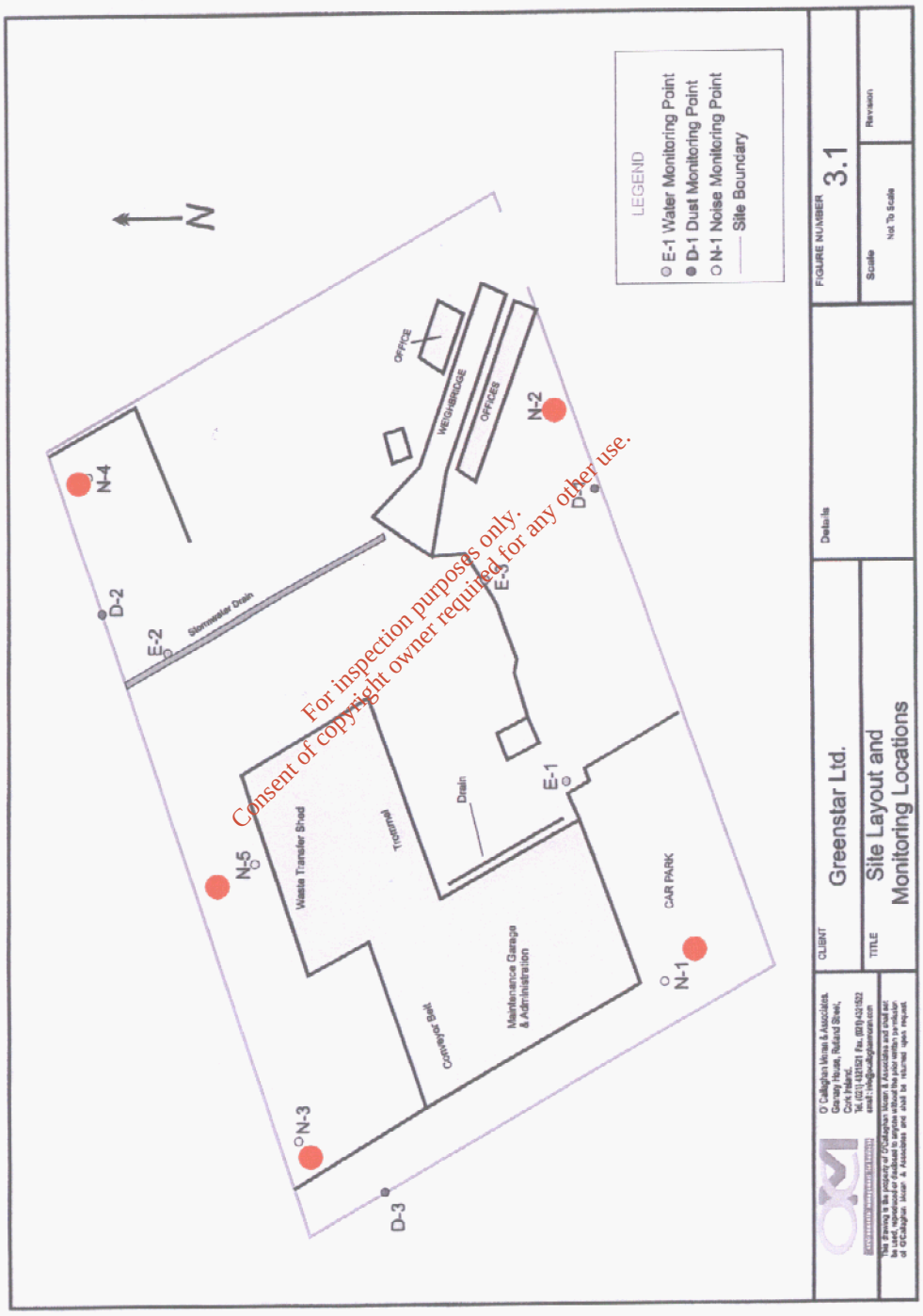
Table F.2.2 Noise monitoring

Parameter	Monitoring frequency	Analysis method/technique
$L_{Aeq\ 30\ min}$	Biannually	Standard Note 1
$L_{AF10\ 30\ min}$	Biannually	Standard Note 1
$L_{AF90\ 30\ min}$	Biannually	Standard Note 1
Frequency analysis (1/3 octave band analysis)	Biannually	Standard Note 1

Note 1: *International Standards Organisation ISO1996 Acoustics: Description and measurement of environmental noise Parts 1, 2 and 3.*

Appendix 3: Monitoring Locations

Stations N1-N5



Station NSL1

Appendix 4: Methodology

Survey	Project ref.	08160
	Purpose	Greenstar Tallaght compliance survey
	Locations	N1 N2 N3 N4 N5 NSL1
	Comment	Facility operating
Event	Date	10.12.08
	Day	Wednesday
	Time	1100-1600
Operator	On behalf of DixonBrosnan	Damian Brosnan
Conditions	Cloud cover	70%
	Precipitation	0 mm
	Temperature	7 ^{0}C
Wind	Speed	0-1 m/s
	Direction	W
	Measurement	Anemo anemometer 2 m above ground level
Sound level meter	Instrument	Bruel & Kjaer Type 2250-L
	Instrument serial no.	2566901
	Microphone serial no.	2571655
	Application	BZ7130 Version 2.0
	Bandwidth	Broadband
	Max input level	142.66 dB
	Broadband weightings	Time: Fast Frequency: AC
	Peak weighting	Frequency: C
	Windscreen correction	UA-0237
	Sound Field correction	Free-field
	UKAS calibration	30.09.08
	UKAS calibration certificate	Available on request
Onsite calibration	Time	12/10/2008 11:06:25
	Calibration type	External
	Sensitivity	40.67 mV/Pa
	Post measurement check	93.9 dB
Onsite calibrator	Instrument	Bruel & Kjaer Type 4231
	Instrument serial no.	2342544
	UKAS calibration	04.03.08
	UKAS calibration certificate	Available on request
Monitoring methodology	International Standard ISO 1996	*Acoustics: Description and measurement of environmental noise Part 1 (2003) & Part 2 (2007)*
	Exceptions	Station N4: located in corner for safety considerations
	Intervals	30 min

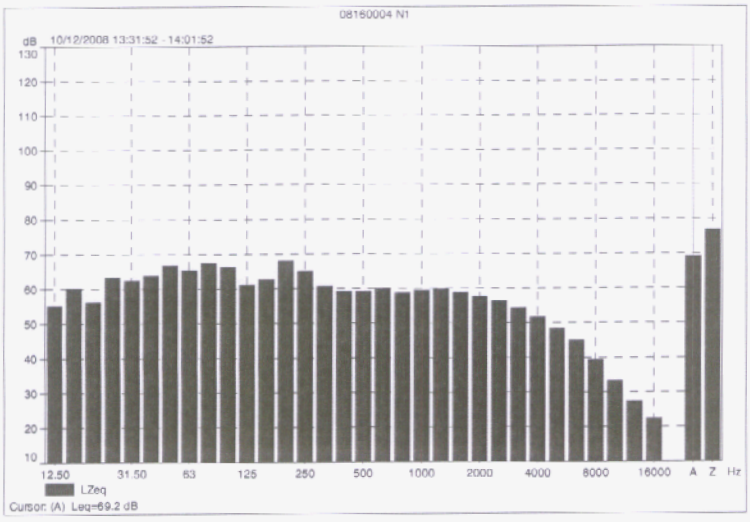
Appendix 5: Noise Data

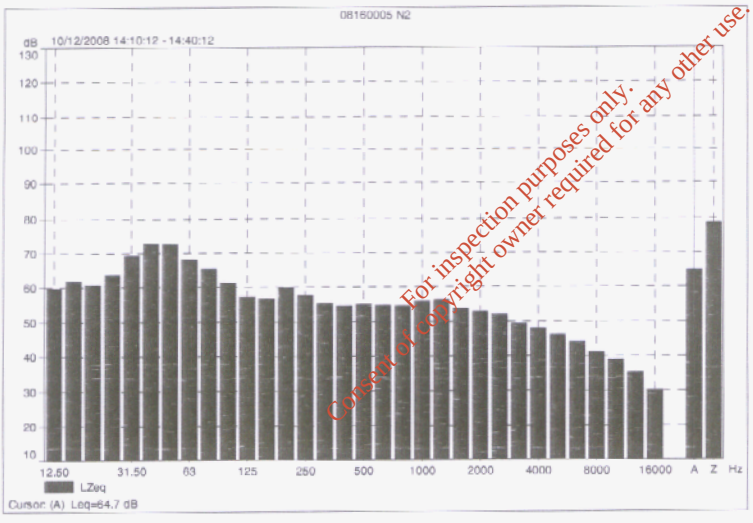
Recorded 10.12.08

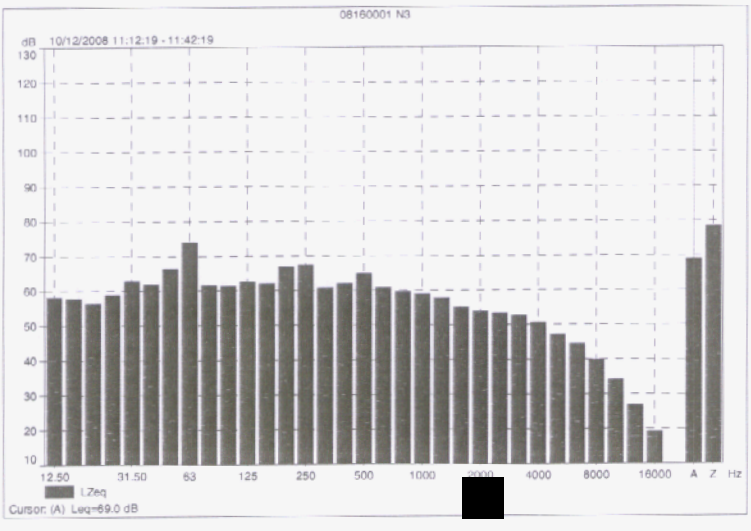
Station	Time	$L_{Aeq\ 30\ min}$ dB	$L_{AF10\ 30\ min}$ dB	$L_{AF90\ 30\ min}$ dB	Noise audible
N1	1331-1401	69	71	52	Grab operating from 1333-1345, following truck arrival at 1330. No other emissions audible over grab. From 1345, emissions dominated by movement of intermittent forklift truck, telescopic loader and van onsite near SW corner. Also emissions from waste management activities in shed near SW corner. Offsite emissions chiefly from local and distant traffic. Grab and baler-shears restarted 1357, and dominant until end of interval.
N2	1410-1440	65	67	52	Grab & baler-shears dominant until shut off at 1412, and again after start up at 1427. In between, noise audible from intermittent forklift truck onsite. Offsite emissions chiefly from local and distant traffic.
N3	1112-1142	69	71	64	Grab and baler-shears machine in continuous use at NE corner and dominant. No other noise audible.
N4	1243-1313	67	60-63*	46-48*	Located 1 m from corner due to safety considerations, thus **6 dB correction included** to correct for near field interference from two facades. Grab and baler-shears not operating. 1247-1252: Skip lorry tipping metal in sorting area. Emissions audible at low level from manual handling of waste and sporadic vehicle movements onsite. Intermittent traffic movements on industrial estate road outside entrance audible. Continuous emissions audible from air handling unit at premises to N. Emissions from other sources throughout surrounding industrial estate also audible continuously, including traffic, hammering, saws/grinders and horns. Aircraft.
N5	1210-1240	59	59	52	Grab and baler-shears machine dominant until shut off at 1215. Thereafter, emissions audible at low level from manual handling of waste and sporadic vehicle movements onsite. Offsite nose sources audible as described at N4.
NSL1	1520-1550	58	60	51	No site emissions discernible among all surrounding sources audible, including local traffic, distant traffic, pedestrians, aircraft and emissions from surrounding commercial premises such as reversing alarms.

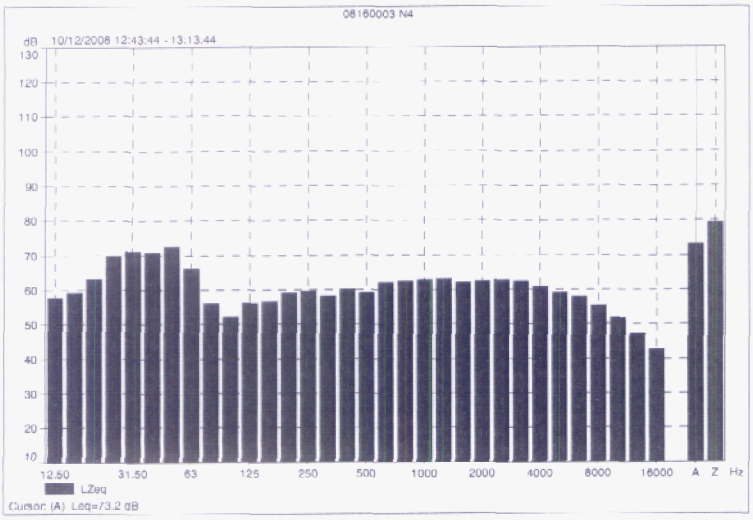
*6 dB correction cannot be applied to L_{AF10} and L_{AF90} values as these are statistical parameters. Corrected values presented are estimates.

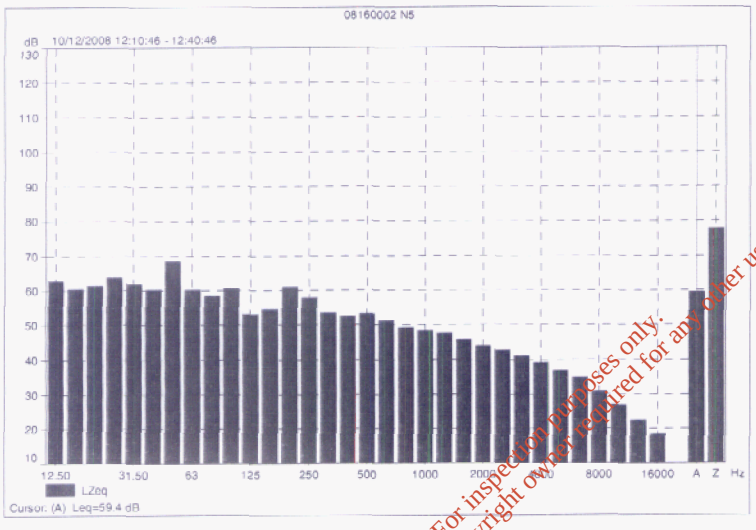
Appendix 6: Frequency Spectra

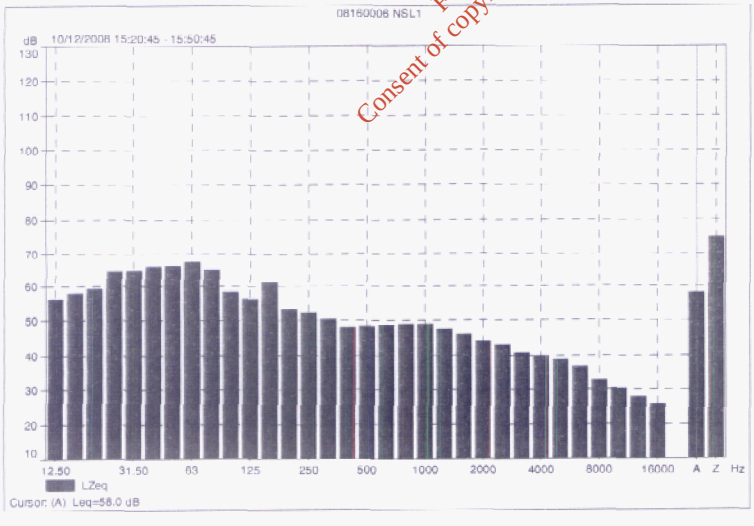










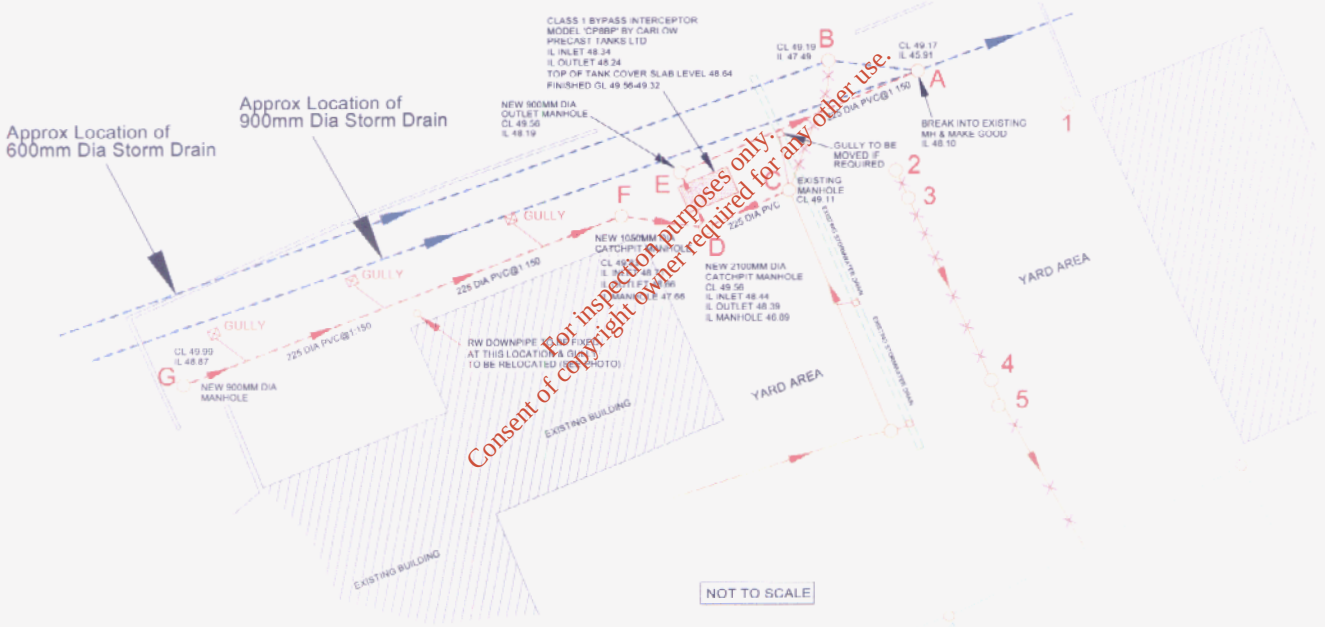


Greenstar Facility, Cookstown Industrial Estate, Tallaght, Dublin

Proposed Surface Water Drainage Upgrading Works

Scope of Proposed Works

The proposed works are shown on the schematic sketch below and sketch attached:-



The proposed works are to generally comprise of the following:-

1.0 As the existing ground is a reinforced concrete yard area all the proposed works will require saw cutting and excavation of concrete slab.

2.0 Construct new 225mm diameter uPVC storm drain between new manhole 'G' and new manhole 'F' – approximate length 25m. Manhole 'G' 900mm diameter – Manhole 'F' 1050mm.

3.0 Manhole 'F' to be constructed as a catch-pit manhole to enable capture and settlement of solids by providing for a 1.0m deep sump area within the manhole.

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4.0 3 No. gullies to be constructed at the locations shown with connection to the 225mm diameter pipe between new manholes 'G' and 'F'.

5.0 Construct new 225mm diameter uPVC storm drain between manhole 'F' and new manhole 'D' – approximate length 4.0m. New manhole 'D' to be constructed as a 2100mm diameter catch-pit manhole to enable capture and settlement of solids by providing for a 1.5m deep sump area within the manhole.

6.0 Construct new 225mm diameter uPVC storm drain between existing manhole 'C' and new manhole 'D' – approximate length 4.3m.

7.0 Existing storm drain between manhole 'C' and existing manhole 'B' to be abandoned by plugging and/or grouting or concreting the upstream and downstream end for a minimum distance of 500mm. Manhole cover and frame at 'C' to be replaced.

8.0 New Class 1 Bypass Interceptor, Type CP8BP by Carlow Precast Tanks Ltd, to be constructed at the location shown *(Spec. sheet from Carlow Precast attached)*. A 225mm diameter uPVC drain to be constructed between manhole 'D' and the inlet to the interceptor (approximate length 1.2m). A 225mm diameter uPVC drain to be constructed between the outlet from the interceptor to manhole E (approximate length 1.2m).

9.0 Following placing of the bypass interceptor cover slab as supplied, built-up to 200mm below existing ground level with well compacted CC804 material. Interceptor openings and access points to be built-up with brickwork or blockwork. Finished with 200mm thick reinforced concrete slab (approx.3.2m x 1.9m), A393 mesh top and bottom, profile and tie into existing ground levels.

10.0 Construct new 900mm diameter manhole at 'E'.

11.0 Construct new 225mm diameter uPVC storm drain between manhole 'E' and existing manhole 'A' - approximate length 16.3m.

12.0 Break into manhole 'A' as make good as required.

13.0 Existing manholes covers and frames at 'A' and 'B' to be removed and replaced with 2.0m x 2.0m x 0.25m thick reinforced concrete cover slabs. Suitable lifting eyes are to be cast into each of these covers. The covers are placed flush, level and tie into existing ground levels.

14.0 Manhole covers C, D, F, G and covers to the bypass separator to be Group 5 Class E600 in accordance with EN124. Manhole cover E to be a double sealed cover and Group 5 Class E600 in accordance with EN124. Proposed gully covers to be Group 5 Class E600 in accordance with EN124.

15.0 Existing manholes 1, 2, 3, 4, and 5 to be abandoned by removing manhole cover and frame, plugging inlet and outlet pipes at each manhole and backfilling each manhole with concrete and finished flush with existing ground level – approximate volume of concrete required for each manhole is $0.5m^3$. 1 layer of A393 mesh to be placed 40mm below ground at each of these backfilled locations.

16.0 Existing roof water downpipe to the north west corner of the waste transfer shed to be repaired and fixed in place. In order to prevent any surface water run-off from the yard area entering the roof water drainage system a new gully to accommodate this down pipe is to be constructed within the raised area as shown in the photo below, with connection to the existing adjacent manhole. The cover of this manhole to be replaced with a Group 5 Class E600 double seal cover in accordance with EN124.

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Additional Information To Be Noted By The Contractor

- The works will be undertaken within a working yard area facility. The contractor shall ensure constant liaison with the facility operator and accommodate any requirements of the operator.
- The contractor shall be responsible for the removal and disposal off site of all surplus materials.
- All concrete reinstatement works mush be finished off to a high standard, structurally sound and tie into existing ground levels without high or low points which may affect the future integrity of the concrete yard.
- All lengths and levels listed above are approximate and are to be confirmed by the contractor on-site.
- The contractor shall contact Carlow Precast Tanks Ltd in relation to any special requirements for the bypass interceptor.
- The separator is to be constructed a minimum of 1.5m from the centre line of the existing 900mm diameter storm drain.
- Manhole 'E' is to be constructed a minimum of 1.0m from the centre line of the existing 900mm diameter storm drain.
- The 225mm diameter storm drain between manhole 'F' and manhole 'D' is to be constructed a minimum of 1.0m from the corner of the adjacent building.
- The 225mm diameter storm drain between manhole 'E' and manhole 'A' may require an existing gully to be moved and re-set and the reinstatement of an existing stormwater drain. The contractor shall allow for these works in his price.

Information To Be Provided By The Contractor

The contractor is to provide the following information in relation to the proposed works:-

- A lump sump fixed price for undertaking the works as listed and described above and any other works that the contractor deems necessary to satisfactory complete the works, including any temporary or accommodation works.
- Details of C2 tax clearance and details of current employers and public liability insurance
- Details of health and safety training undertaken by any personnel to work on site
- A brief method statement for the works to be undertaken
- The contractor shall be required to complete a Health & Safety risk assessment form. This form shall be provided by the engineer. No works to commence until this form has been completed, submitted to and approved by the engineer.

All works shall be undertaken in accordance with the following specification:-

Civil Engineering Specification for the Water Industry (CESWI) 5th Edition – Published by WRc

(A copy of this specification can be obtained from the engineer upon request).

Programme Constraints

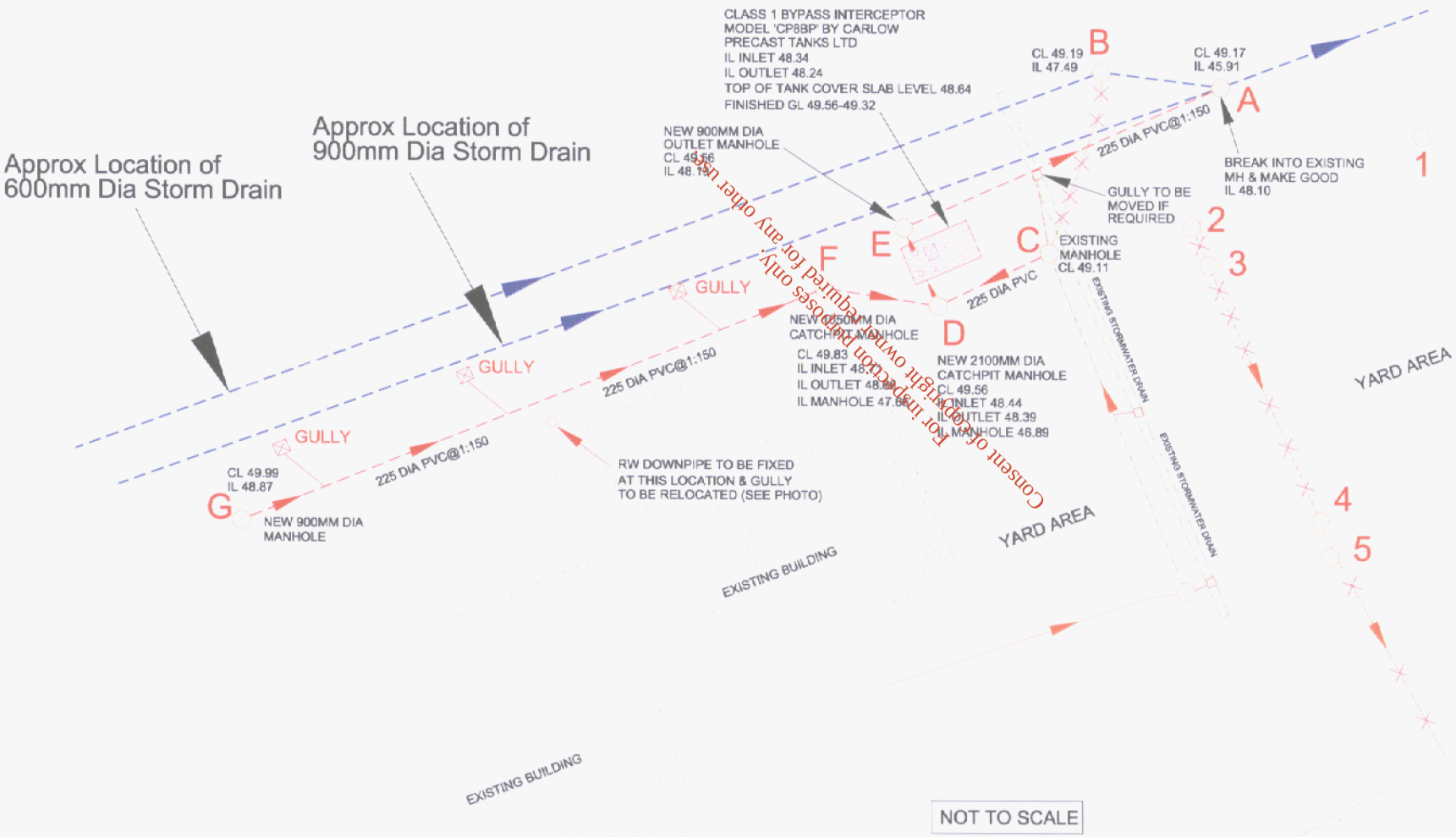
The client requires the work to be completed as soon as possible. The contractor is therefore requested to provide an estimated timescale for the works.

Normal working hours on site are:-

0830 – 1800	Monday to Friday
0830 – 1200	Saturday

No "out of hours" work will be permitted including Sundays or Bank Holidays, unless agreed in writing by the client and the engineer

The contractor's compound, including accommodation, storage of materials and plant shall be agreed with the client and the engineer prior to commencement of works.



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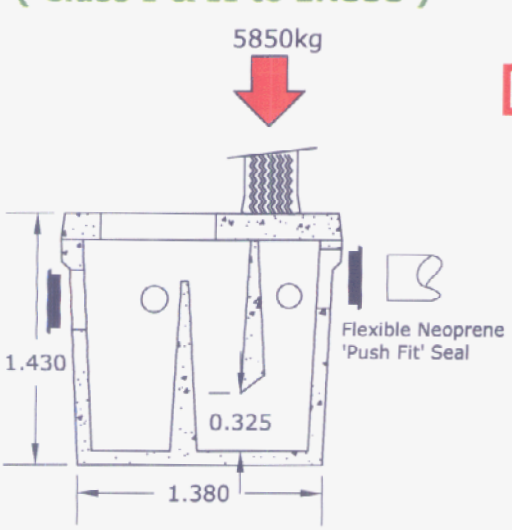
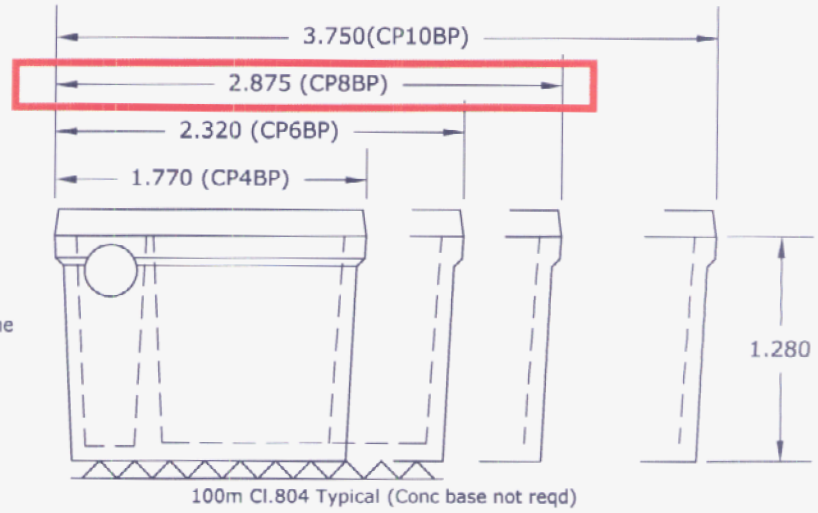
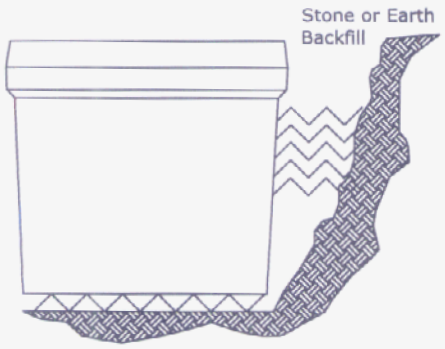


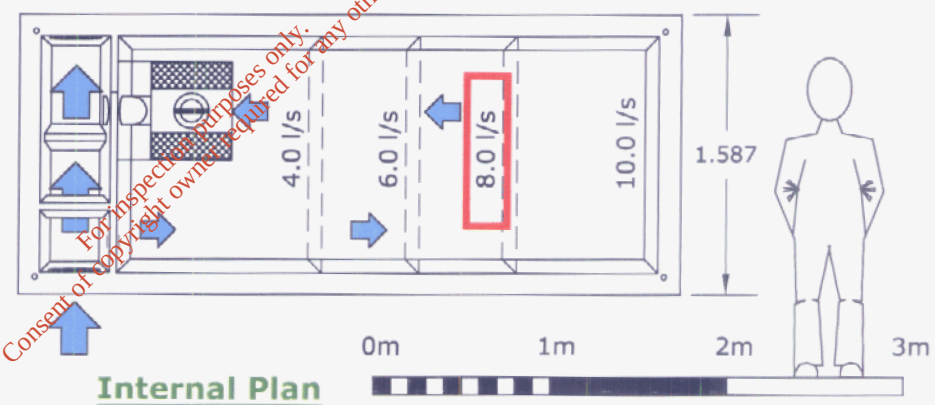
Bypass Section



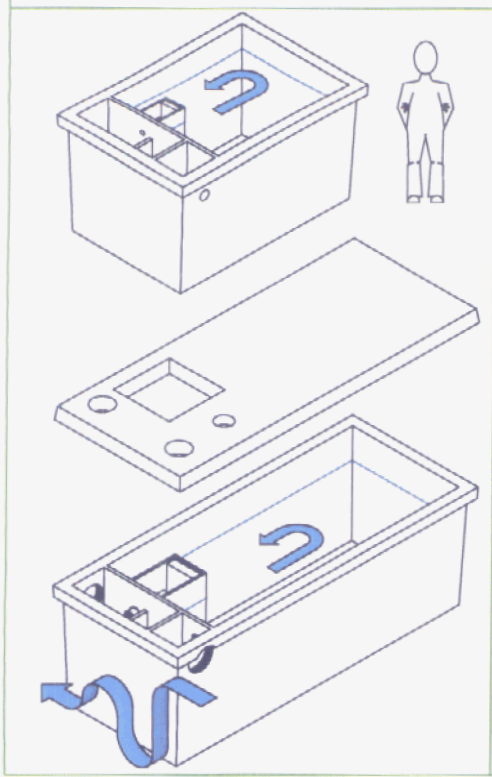
Side Elevation

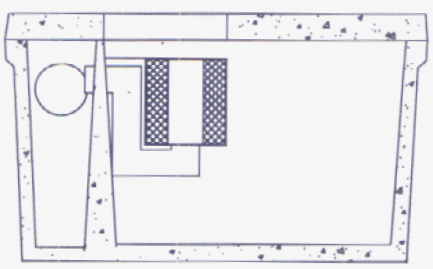


End Elevation

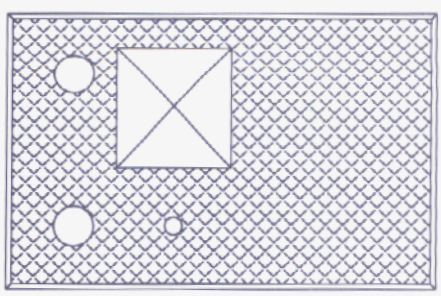


Internal Plan





Long Section



Roof Plan

	Nominal Flow	Storm Flow	Area Drained (m2)	Standard Pipe Size	Crossfall	Inlet Invert to Base	Nominal Oil Storage
CP4BP	4.0l/s	40l/s	2200	110 Dia	75mm	965mm	60 l
CP6BP	6.0l/s	60l/s	3300	150 Dia	75mm	965mm	90 l
CP8BP	8.0l/s	80l/s	4400	225 Dia	125mm	965mm	120 l
CP10BP	10.0l/s	100l/s	5550	300 Dia	125mm	890mm	150 l