
ARTICLE 14 RESPONSE

APPENDIX 3

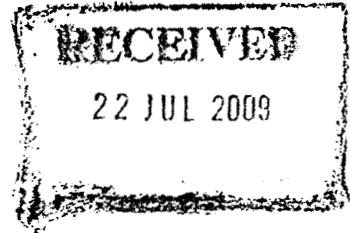
Details of Waste Water Treatment Plant

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WASTE WATER MAINTENANCE LTD.

D2 Tougher Business Park, Newhall, Naas, Co. Kildare.
Tel: 045 447585/447584. Fax: 045 447584. Email: info@wastewater.ie



To: The Environmental Section
Kildare County Council

Re: Cemex Site

Date: 30/06/09

To Whom It May Concern:

Waste Water Maintenance Ltd has carried out an on-site suitability assessment and percolation tests on this site.

During the assessment the existing septic tank on site was inspected and found not to meet the EPA Guidelines and therefore it is considered unsuitable for continued use and will need to be replaced with a new system.

It was noted that the soil structure in the trial hole for the first 0 – 0.8 / 1.0m of subsoil was very compact and most likely have been compacted over time by use of heavy traffic over time while the quarry was in operation.

In addition as per the recommendations in Section 5.0 of the Site Characterisation Form it is advised that the subsoil be loosened to a minimum depth of 1.5m and that the percolation area is fenced off to prevent heavy traffic from causing any damage by compression to the area.

A larger polishing filter has also been recommended to allow for any additional loading to the system by truck drivers or site visitors as added protection.

Please feel free to contact me should you require any further information on 086-6042822.

Yours sincerely,

A handwritten signature in black ink, appearing to be "Aidan Comerford".

Aidan Comerford
Dip. EIA/SEA Mgmt.
EPA/FAS Certified

SITE SUITABILITY REPORT

Test Compiled By: Waste Water Maintenance Ltd.
Planning Reference Number: Not Available
Job No: 2165

NAME: Cemex ROI Ltd.
SITE: Walshestown Pit, Walshestown, Co. Kildare
Water / Bedrock below ground level: Not encountered at time of testing
Average T-Value: 25
Average P-Value:
Soil Type: Grey Brown Podzolics
Sub Soil: Limestone sands & gravels
Bedrock Type: Silurian Metasediments & volcanics
Aquifer Type: Pu-Poor Aquifer-Bedrock which is Generally Unproductive
Vulnerability Class: High
Ground Water Protection Response: R1
Important Surface Features: None noted

SITE CONDITIONS FROM ABOVE INFORMATION:

The site should be suitable for an on-site sewage system subject to good practice.

RECOMMENDATIONS:

With no water in the trial hole and good soakage recorded in the percolation tests the site is suitable for an on-site sewage system subject to good practice. The existing septic tank is considered unsuitable and should be replaced. Taking into consideration the surface waters it is recommended to install an Advanced Treatment System discharging the effluent to a constructed subsurface polishing filter. The base of the trenches should be positioned between 0.8/1.0m. The system must be installed in accordance with the EPA Waste Water Manual for Domestic Houses.

The percolation pipes should be rigid pipe not land drainage pipe and there should be a minimum distance of 0.9m of soil between the bottom of the percolation trench and water table or bedrock at all times. The trenches have to be 450mm wide with 2.45m between the centres of the pipes.

With a loading taken at 40 litres per person per day a polishing filter of 21 linear metres would be required. However taking into consideration the surface waters and possible additional usage from truck drivers and site visitors it is recommended to install 48 linear metres in the polishing filter to provide added protection. No single length of trench should exceed 20m, therefore the required length of trench must be constructed as a series of shorter trenches.

COMMENTS: We would recommend an Oakstown BAF Sewage Treatment System (EN Certified) (See enclosed specifications) serving up to 6 staff and allowing for some additional usage by drivers and site visitors subject to the above recommendations and the County Councils approval.

If you would like any further information on treatment plants please contact the office.

Regards.


Aidan Comerford
Director

SITE CHARACTERISATION FOR AN ON-SITE WASTEWATER TREATMENT SYSTEM

SITE LOCATION

Walshestown Pit, Walshestown, Naas, Co. Kildare

DATE

30/06/2009

Job Number

2165

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QUALITY CONTROL RECOMMENDATION:

In view of the recent EPA report with concerns to groundwater pollution we recommend that Waste Water Maintenance carry out a site visit to verify that the correct type and size of percolation / polishing filter area is installed as recommended in our reports. A verification report can be forwarded to the County Council if required.

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- 2 Desk Study
- 3 On-Site Assessment
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 - 3.3 *Percolation Test*
- 4 Conclusions
- 5 Recommendations

Appendix:

- > Site Maps
- > EPA Tables
- > Test Hole & Site Photographs
- > Site Specific Cross Section Of Percolation Trench

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1.0 General Details

<i>Name of applicant:</i>	Cemex ROI Ltd	
<i>Address of applicant</i>	Block A1, Eastpoint Business Park, Dublin 3	
<i>Phone Number:</i>	c/o Goulder Associates Ireland 045-874411	
<i>Fax Number:</i>		
<i>E-mail:</i>		
<i>Site Location:</i>	Walshestown Pit, Walshestown, Naas, Co. Kildare	
<i>Facility Usage:</i>	Small Office & Staff	Maximum 5 staff. Small canteen with microwave and toaster only
<i>Proposed Water Supply:</i>	Mains	

2.0 Desk Study

<i>Soil Type:</i>	Minimal Grey Brown Podzolics		
<i>Sub Soils:</i>	Limestone sands & gravels		
<i>Bedrock Type:</i>	Silurian Metasediments & volcanics		
<i>Aquifer Type:</i>	Pu-Poor Aquifer-Bedrock which is Generally Unproductive Lg-Gravel Aquifer		
<i>Vulnerability:</i>	High		
<i>Groundwater Protection Scheme (Y/N):</i>	Yes		
<i>Groundwater Protection Response:</i>	R1		
<i>Source Protection Area</i>	SI	<input type="checkbox"/> No	SO <input type="checkbox"/> No
<i>Presence of Significant Sites:</i>	Located on old quarry grounds with adjacent quarry to NE on opposite side of road		
<i>Past Experience in the Area:</i>	Generally good soakage		
<i>Comments:</i>	Groundwater may be a target		

3.0 On-Site Assessment

3.1 Visual Assessment

<i>Landscape Position:</i>	Hilly
<i>Slope:</i>	Slopes from rear SW to NE to almost flat at test area Slope 1:10 to 1:20
Surface Features	
<i>Houses</i>	None within 100m, Old site offices on site >10m
<i>Site Boundaries</i>	Fencing, trees and some wall frontage
<i>Roads</i>	Local road passes front north eastern boundary
<i>Existing Land Use</i>	Old sand and gravel quarry
<i>Outcrops (rock and/or soil)</i>	None within 150m
<i>Surface Water Ponding</i>	None noted at time of testing
<i>Lakes/Surface water features</i>	Pond area lies in the northern corner of the site >100m
<i>Beaches / shellfish areas/ wetlands</i>	Pond area lies in the northern corner of the site >100m
<i>Karst Features</i>	None within 150m
<i>Watercourse / stream</i>	Stream flows along the front boundary >15m
<i>Drainage Ditches</i>	None around the site
<i>Wells</i>	None
<i>Springs</i>	None noted
<i>Type of Vegetation</i>	No soakage indicators noted
<i>Ground Condition</i>	Very firm mainly hardcore / gravel based surface
<i>Comments on above information incorporation desk study information:</i>	
Surface waters are a target. Fast flowing stream passes front of the site.	
Limited usage of an on-site system will reduce risk.	
Existing septic tank old, single chamber and considered unsuitable - will need to be replaced	

3.2 Trial Hole

Date and time of excavation: 16/06/2009
 Date and time of examination: 30/06/2009
 Depth of Trial Pit (m): 2.1m
 Depth from ground level to water table (m): Not encountered at time of testing
 Depth from ground level to bedrock (m): Not encountered at 2.1m

Details of trial hole:

Depth (m)	Soil Classification & Texture	Soil Structure	Density / compactness	Colour	Preferential Flowpaths	T-Test					
0.1	Hardcore / gravelly Surface										
0.2											
0.3											
0.4	sandy SILT/CLAY	Massive	Very Firm	Light Brown	Random	T-Top					
0.5											
0.6											
0.7											
0.8	Threads 6/8 Ribbons 80-105mm Dilates					T-Base					
0.9	very sandy gravelly SILT with cobbles	Blocky	Dense	Brown	Random						
1.0											
1.1											
1.2											
1.3											
1.4											
1.5											
1.6							Threads 3/5 Ribbons 20-50mm Dilates with ease				
1.7											
1.8											
1.9											
2.0											
2.1											
2.2	END OF PIT AT 2.1M										
2.3											
2.4											
2.5											
2.6											
2.7											
2.8											
2.9											
3.0											

Other Information: Depth of Water Ingress: None noted
 Rock Type (if present): None
 Plasticity / Dilatancy: See above
 Likely T-value: >10<50

Evaluation: Groundwater is not a target. The compactness of the subsoils will affect soakage. Area has hardcore surface and has had heavy machinery around it over the years which appears to be reflected in the first 0 - 0.8m where very compact soils were encountered.

3.3 Percolation Test

T-test		1	2
Depth from ground level to top of test hole (mm):		600	600
Depth from ground level to base of test hole (mm):		1000	1000
Depth of test hole (mm):		400	400
Test Hole Dimensions (length x breath) (mm):		300X300	300X300
Date of Test:		30/06/2009	30/06/2009
Date Pre-soaking started:		29/06/2009	29/06/2009
Time filled to 400mm		08:38	08:39
Time at 300mm		09:30	09:24

Test hole:	1			2		
Fill No.	Time at 300mm	Time at 200mm	Δt (min)	Time at 300mm	Time at 200mm	Δt (min)
1	09:30	10:48	78	09:24	10:32	68
2	10:48	12:40	112	10:32	11:55	83
3	12:40	15:15	155	11:55	13:42	107
	Average Δt		115	Average Δt		86

Average Δt (hole1) / 4 = 28.8 (t1) Average Δt (hole2) / 4 = 21.5 (t2)

T-value = (t1+t2) / 2 = 25.15 (min/25mm) T =

Comment: Subsoil is suitable for the treatment of effluent

P-test		1	2
Depth of test hole (from ground level)(mm):			
Hole Dimensions (length x breath) (mm):			
Date of Test:			
Date Pre-soaking started:			
Time filled to 400mm			
Time at 300mm			

Test hole:	1			2		
Fill No.	Time at 300mm	Time at 200mm	Δt (min)	Time at 300mm	Time at 200mm	Δt (min)
1						
2						
3						
	Average Δt			Average Δt		

Average Δt (hole1) / 4 = (t1) Average Δt (hole2) / 4 = (t2)

P-value = (t1+t2) / 2 = (min/25mm) P =

Comment: Hardcore surface on the site for first 0 - 0.3/4m

4.0 Conclusions

This Site is Suitable for:

- (a) A septic tank and soil percolation system ✓
- (b) A septic tank and intermittent filter system and polishing unit;
or A septic tank and constructed wetlands and polishing unit ✓
- (c) A mechanical aeration system and polishing unit ✓

5.0 Recommendations

There is an existing septic tank on the site beside where the tests have been carried out. However it is a single chamber tank and old and considered unsuitable for use. Taking into consideration the proximity of the stream and the aquifer it is recommended to install an advanced treatment system to provide added protection. Having encountered very compact / dense sub soils it is advised that when constructing a subsurface polishing filter that soil loosening is also carried out to a depth of 1.5m and that the whole percolation area is fenced off to prevent heavy transport from damaging it by compressing the ground. The system must be installed in accordance with the EPA Waste water Manuals. Please see cover letter attached.

Signed: _____

Aidan Comerford
Dip. EIA/SEA Mgmt.
EPA/FAS Certified

Address: Waste Water Maintenance Ltd.
D2 Toughers Business Park.
Newhall,
Naas,
Co. Kildare

Contact Details: Phone: 045-44 75 85
Email : info@wastewater.ie

Date of report: 30/06/2009

6.0 Treatment System Design Details

System Type: An Oakstown BAF Sewage Treatment System with soil polishing filter

Proposed Discharge Route Surface Groundwater

Size of Proposed Treatment System: Primary / Septic Tank : 3080
Secondary System :
Percolation Area / Polishing filter : 48m

Proposed Quality Assurance : Installation & Commissioning :
On-going Maintenance:

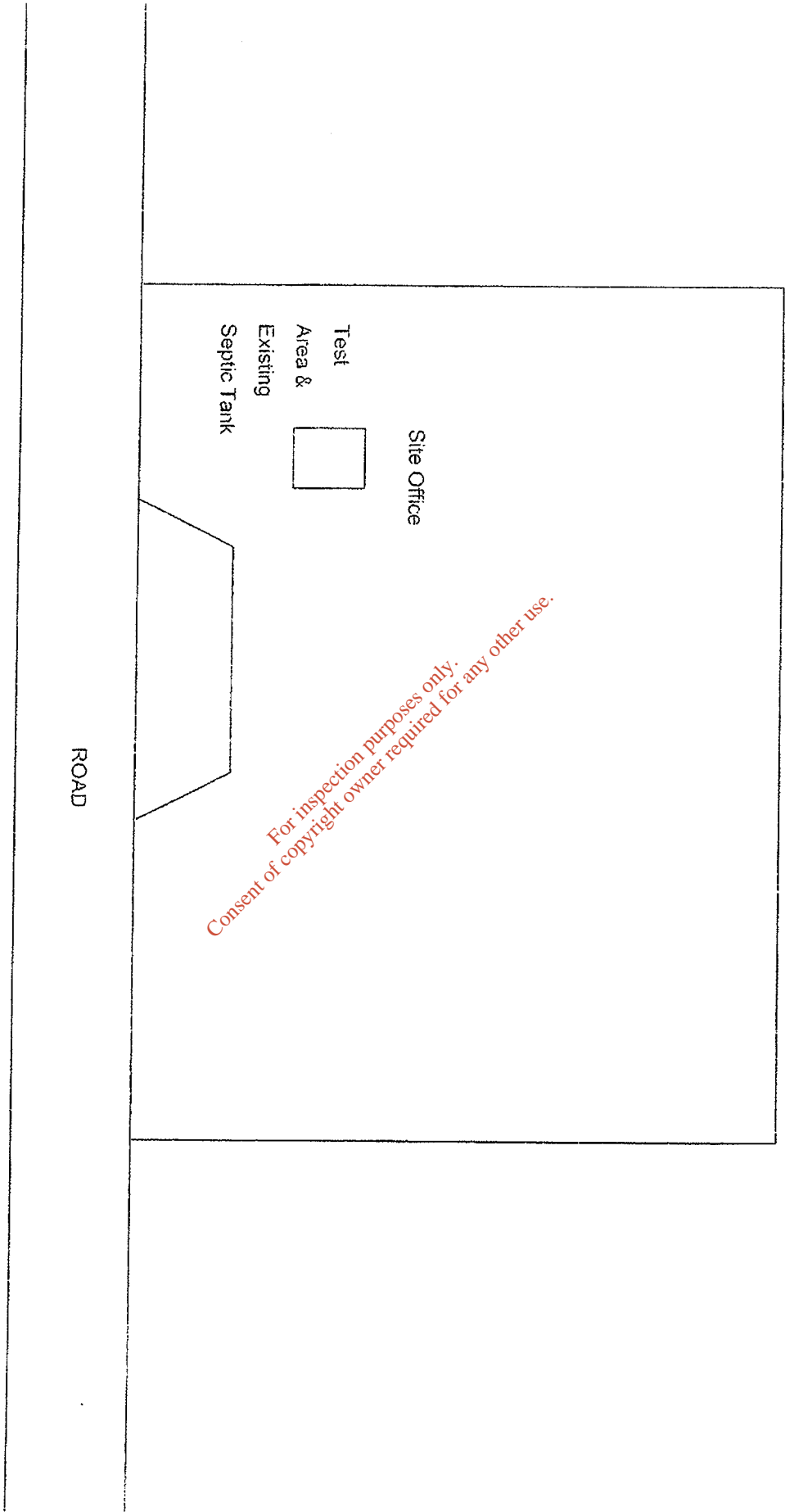
Percolation / Polishing filter Verification to be carried out by Waste Water Maintenance

APPENDIX:

- > Site Plan
- > Tables from Wastewater Treatment Manual, EPA 2000
- > Photographs of Trial hole & test holes
- > Drawing of a percolation trench from EPA Manual

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ROUGH SITE SKETCH



Separation Tables

Where an on-site system is in the zone of contribution of a well, the likelihood of contamination and the threat to human health depend largely on five factors.

- The thickness and permeability of subsoil beneath the invert of the percolation trench;
- The permeability of the bedrock, where the well is tapping the bedrock;
- The distance between the well or spring and the on-site system;
- The groundwater flow direction; and
- The level of treatment of effluent.

Table 3 Recommended Minimum Distance between a Receptor and a Percolation Area or Polishing Filter

T or P Value	Type of soil/subsoil *	Depth of soil/subsoil (m) above bedrock (see note 1,2,3,6)	Minimum distance (m) from receptor to percolation area or polishing filter ****				
			Public Water Supply	Karst Feature	Down-gradient Domestic well or flow direction is unknown (see note 5)	Domestic well alongside (no gradient)	Up-gradient domestic well
> 30	CLAY; silty, sandy CLAY (e.g. clayey till) CLAY/SILT	1.2 >3.0	60	15	40 30	25	15
10 - 30	Sandy SILT; Clayey, silty SAND; clayey, silty GRAVEL (e.g. sandy till)	1.2 >8.0	60	15	45 30	25	15
< 10	SAND; GRAVEL; silty SAND	2.0 ** 2.0 *** >8.0 ****	60	15	60 40 30	25	15

* BS5930 descriptions

** water table 1.2-2.0m

*** water table >2.0m

**** The distance from the percolation area or polishing filter means the distance from the periphery of the percolation area or polishing filter and not the centre.

TABLE 4: MINIMUM SEPARATION DISTANCES IN METRES

Type of system	Watercourse stream	Lake	Any Dwelling	Site boundary	Road	Slope breaks/cuts
Septic tank; Prefabricated intermittent filters; mechanical aeration systems	10	50	7	3	4	4
In situ intermittent filters, percolation area; polishing filters	10	50	10	3	4	4

* EPA WasteWater Treatment Manual for Single Houses

Cemex, Walshestown Pit, Walshestown, Naas, Co. Kildare

T - test Holes



Small puddle
in base of trail
hole after
night of heavy
rainfall.



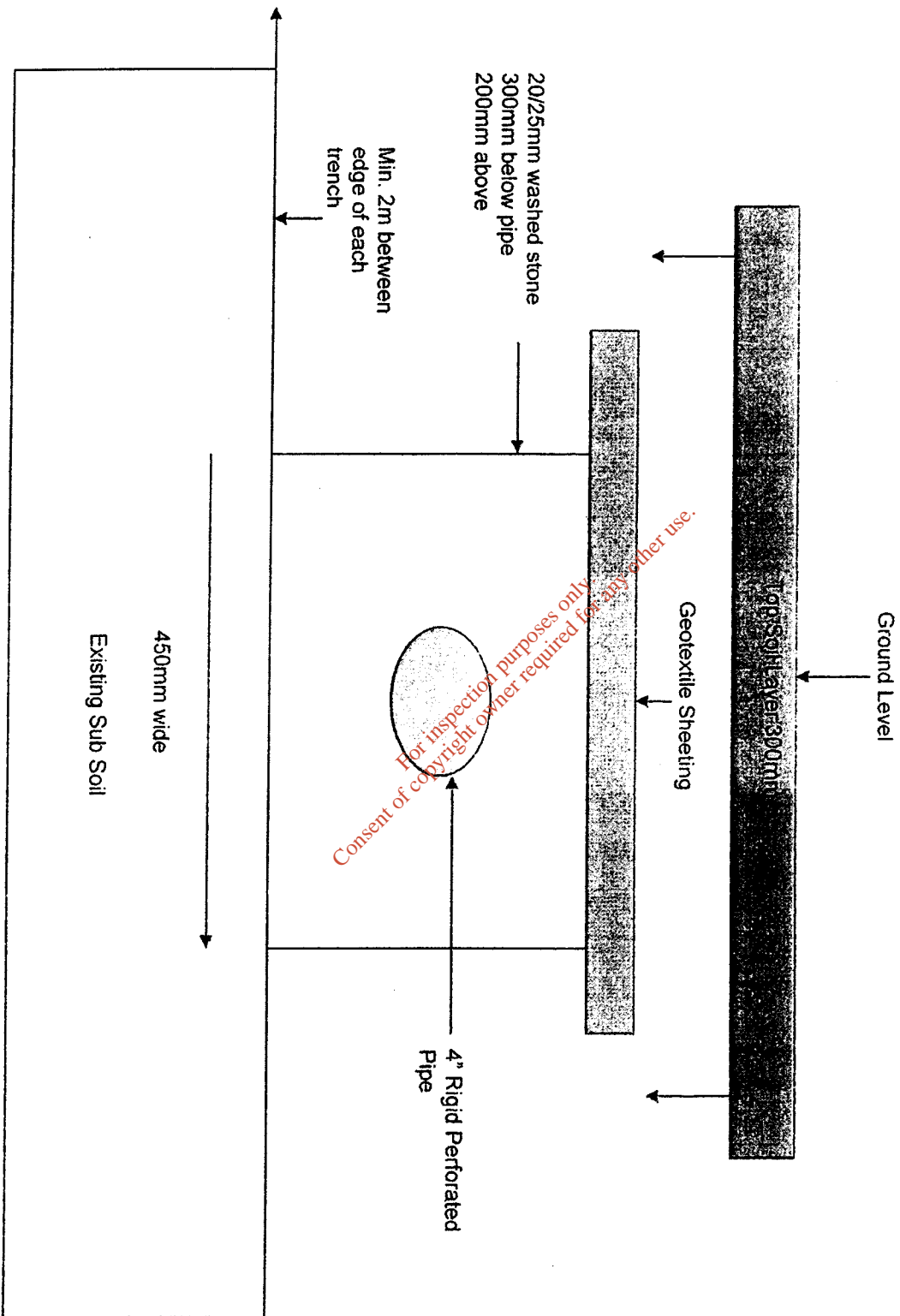
Existing Office
building
served by an
existing septic
tank

Trial Hole & Existing Building



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CROSS SECTION OF PERCOLATION TRENCH



First Ireland

First Ireland House, 15 Parkgate Street, Dublin 8, Ireland

To Whom It May Concern

Professional Indemnity Covernote

Insured	Waste Water Maintenance Ltd
Business Description	Site suitability assessments for On Site Waste Water Treatment Systems
Period of Cover	3 rd July 2009 to 2 nd July 2010
Insurers	W.R. Berkley Insurance
Policy Number	IPRP1A07104869
Limit of Indemnity	€1,000,000
Limit applies to	Any one claim, costs and expenses in addition.

The policy is subject to the insurers terms, conditions and limitations as contained in the policy document.

We trust this information is to your satisfaction. If you have any queries regarding any of the above information or require any further please do not hesitate to contact the undersigned.

Yours Sincerely

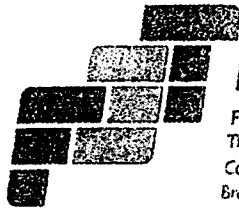
Peter Bourke

Peter Bourke
Corporate Division
Direct Dial: (01) 8820836
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Date: 27/08/2009

Directors: J. Roe (Executive Chairman), C.A. Rooney (Joint Managing), L.A. Gallagher (Joint Managing), T. Gill, P. Mee, M. Heneghan, C. Lyons, C. Duffy, S. Sheridan.

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Site Suitability On-Site Wastewater Treatment

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Awarded to
Bronnta ar

Aidan Comerford

18/04/2008

David O'Rourke

Chair/Cathaoirleach FETAC

Stam Ull Hughes

Chief Executive/Príomhfheidhmeannach FETAC



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