

BS 8576:2013



BSI Standards Publication

Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs)

bsi.

...making excellence a habit.™

Publishing and copyright information

The BSI copyright notice displayed in this document indicates when the document was last issued.

© The British Standards Institution 2013

Published by BSI Standards Limited 2013

ISBN 978 0 580 75667 2

ICS 13.080.01

The following BSI references relate to the work on this standard:

Committee reference EH/4

Draft for comment 12/30248026DC

Publication history

First published April 2013

Amendments issued since publication

Date	Text affected
-------------	----------------------

Contents

Foreword *iii*

1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	General	4
5	Health and safety	5
6	Development of preliminary conceptual model and preliminary risk assessment	7
7	Setting objectives	13
8	Developing the investigation strategy	13
8.1	General considerations	13
8.2	Preparation of monitoring and sampling plan	15
8.3	Installation options	16
8.4	Location of monitoring installations	24
8.5	Response zones (monitoring depths)	25
8.6	Timing and frequency of monitoring of permanent gases	26
8.7	Deciding the appropriate level of gas monitoring of permanent gases	31
8.8	Timing and frequency of monitoring of VOCs	32
8.9	Personnel	32
9	Field work – permanent gases	33
9.1	General considerations	33
9.2	Construction of gas monitoring wells	34
9.3	Instruments for on-site use	42
9.4	Recording information when monitoring or sampling	49
9.5	Making on-site measurements	49
9.6	Sampling for laboratory measurements	53
9.7	Storage and transport of samples for laboratory analysis	54
10	Field work – VOCs	54
10.1	General considerations	54
10.2	Construction of unsaturated zone gas monitoring wells to sample for VOCs	54
10.3	Construction of near-surface monitoring ports to sample VOCs in ground gas	59
10.4	Installation of a flux box to sample VOCs in ground gas	60
10.5	Instruments for on-site use	61
10.6	Recording information when monitoring or sampling	62
10.7	Making on-site measurements	63
10.8	Sampling for laboratory measurements	63
10.9	Storage and transport of samples for laboratory analysis	68
11	Monitoring and sampling reports	69
12	Quality assurance	70
12.1	General	70
12.2	Field checks on instruments	70
12.3	Calibration of instruments	70
12.4	Chain of custody	71
12.5	Quality control samples	71
13	Refining the conceptual model	73
14	Report on the investigation	73

Annexes

Annex A (informative)	Regulation of land contamination	74
Annex B (informative)	Radon	78
Annex C (informative)	Anaerobic degradation and the formation of methane and carbon dioxide	85
Annex D (informative)	Sources, properties and hazards of selected gases	87
Annex E (informative)	Sampling protocols – Permanent gases	94