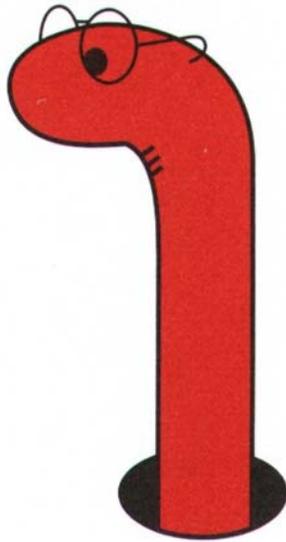


# **Electronic Report**



## **WORMS EYE**

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Our Ref: Goodshaw Lane \ BB4 8TN \ 2021  
Date: 16 August 2021

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**GOODSHAW LANE, CRAWSHAWBOOTH, BB4 8TN**  
**PROPOSED INVESTIGATION**

**INTRODUCTION**

A residential development is proposed. Following a PRA (16/8/21) the objective is to design a suitable investigation to consider contamination and landfill gas issues.

**SITE DESCRIPTION**

The site is a rectangular plot, 52 by 40 metres, located to the southeast of Goodshaw Lane in Crawshaw Booth and at OS Grid Reference 381412, 426038. The site comprises an overgrown plot with a collection of derelict barns (sheet metal and suspected asbestos cement sheet clad) at the south and southwest corner. There is a slope down to the southwest along the northeast of the site.

To the northeast, southeast and southwest are fields and to the northwest are houses. The area slopes down to the southwest.

**PROPOSED DEVELOPMENT**

It is proposed to build a detached house at the southwest/middle with driveway and detached garage to the northwest and a garden to the northeast.

## **INDUSTRY PROFILE**

The site is a partially filled quarry with derelict sheds.

<b>Industry</b>	<b>Possible Contaminants</b>
Potential Contaminants	Metals: copper, zinc, chromium, nickel, lead, arsenic, Inorganic compounds: cyanide, thiocyanate, sulphates Mineral oils, fuel oils (TPH) Asbestos General hydrocarbons (PAH)

## **CONCEPTUAL MODEL**

<b>Source</b>	<b>Receptors</b>	<b>Pathway</b>	<b>Potential/Likely Pollutant Linkage</b>
Asbestos	End-users	Inhalation	Yes
	Off-site	Migration off-site	Yes
Inorganics (metals, cyanide etc)	Householders	Direct contact, ingestion, from home grown vegetables, ingestion and inhalation of dust	Yes
	Groundwater	Leaching towards	Unlikely
	River/stream	Leaching towards	Unlikely
Sulphate	Building fabric	Concrete directly in contact with soil	Yes
Hydrocarbons (PAHs, TPHs)	Householders	Direct contact, ingestion, from home grown vegetables, ingestion and inhalation of dust	Yes
	Service pipes	Seeping into drinking water pipes	Yes
	Groundwater	Migrating towards	Unlikely
	River/stream	Migrating/leaching towards	Unlikely
Hydrocarbon Vapours	Householders	Inhalation of vapours indoors and outdoors	No
Landfill gas	End-users - in buildings	Seeping into buildings, explosion, asphyxiation	Possible
Radon	End-users - in buildings	Seeping into buildings	Yes

## **PROPOSED INVESTIGATION**

### **Contamination**

Taking into account the past use of the site it is unlikely that contamination will be present at high levels. However, low levels, exceeding stringent residential thresholds, are expected.

An intrusive investigation is required, consisting of boreholes/trial holes and tests to confirm the presence/absence and extent of contamination on the site. The filled quarry and derelict sheds are specific point sources for contamination and the investigation will need to target these, proposed gardens (most sensitive part of the development), proposed house and provide all round coverage.

It is recommended that the existing buildings are cleared prior to the investigation.

Proposed Action

Following demolition, drill 4 boreholes up to 5m deep and excavate 5 trial holes to about 0.6m deep.

- Test 7 shallow samples for heavy metals, cyanide, sulphate, asbestos, TPHs and PAHs.
- Test 3 deeper samples for sulphate.
- Test 2 samples towards the base of the former quarry for TPHs and PAHs.
- Test 1 deeper samples for a suite of contaminants suitable for selecting drinking water pipes.

**Controlled Waters**

A low risk to controlled water is expected and no further action is considered necessary at this stage. This will need to be reviewed following the soil tests.

**Landfill Gas/Ground Gas**

The site is a partially filled quarry and there are filled quarries in the surrounding area with a low to very low gas risk anticipated.

A gas testing programme is required, it is suggested that further investigation is carried out into the depth and nature of the fill material on site with an initial investigation comprising 3 monitors and 4 tests over 1 month. Subject to these findings an allowance should be made for increasing the period of monitoring up to 3 months.

Proposed Action

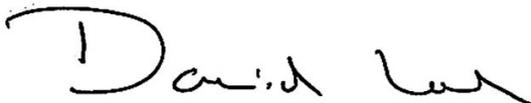
- Install 3 gas monitoring points.
- Test for methane, carbon dioxide, oxygen and gas outflow on 4 occasions over 1 month.
- Allow for increasing the testing to 3 months, subject to initial readings, depth and nature of fill material and lab test results.

**General**

The PRA and these proposals should be issued to the Local Authority for their comments before proceeding with the investigation.

Yours faithfully

on behalf of Worms Eye Ltd



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