PWA / GROUP

CONSULTING ENGINEERS

Leagram Mill Farm, PR3 2QS

Structural Report

Client: Kim Weld-Blundell

Author: Frazer Clarke

Date: 12/06/2025

Reference: 25039-PWA-00-XX-RP-S-1000-P01

PWAGROUP.CO.UK

Document Control

Issued By Paul Waite Associates Ltd
Summit House
Riparian Way
The Crossings
Cross Hills
Keighley
West Yorkshire
BD20 7BW

01535633350
info@pwagroup.co.uk

Client: Kim Weld-Blundell
Project: Leagram Mill Farm, PR3 2QS
Report: Structural Report
Status: Preliminary
Reference: 25039-PWA-00-XX-RP-S-1000-P01

Document Production Record

Issue Details	Name
Prepared By	Frazer Clarke
Approved By	Michael Walsh

Document Revision Record

Issue Number	Date	Revision Details
P01	12/06/2025	Original Issue

Executive Summary

PWA were appointed to undertake a structural survey of Leagram Mill Farm, following proposals to convert the buildings into dwellings. This report assesses the structural condition of the buildings and highlight any defects requiring attention during the conversion works. The survey excludes non-structural elements such as electrical systems, decorative conditions, and non-structural timber fixtures.

A site inspection was undertaken on 6th July 2025 by Frazer Clarke of PWA Group. The inspection included external and internal elevations. Roof timbers, foundations and encased structural elements were not exposed for detailed inspection.

The smaller building is in a tolerable condition, with a partially collapsed roof, missing/loose masonry, small cracking and areas of damp.

The larger building is in a good condition, there is some areas that require repairs with missing/loose masonry and a compromised timber first floor. Some cracking is present though mainly noted as superficial.

It is recommended that:

- Repair and replace deteriorated timber and masonry components.
- Address roof failures by replacing missing or slipped slates and tiles and replacing roof where it has collapsed.
- Undertake a timber survey.
- Install appropriate wall ties and insulation liners to improve structural integrity.
- Ensure guttering is maintained, timber lintels are replaced and windows installed.

In conclusion the buildings require repairs to prevent further structural deterioration. A scheme of repairs and maintenance plan should be implemented to ensure the long-term stability of the buildings.

Contents

1. Brief 1
2. Unexposed Parts 1
3. Method of Inspection 1
4. Disclosure to a Third Party 1
5. Description of the Site 1
6. Inspection of the Site 2
   6.1. Building 1 2
   6.2. Building 2 3
7. Recommendations 3
8. Conclusion 4
   8.1. Building 1 4
   8.2. Building 2 4

Appendix A – Site Photographs

Appendix B – Desktop Study Information

1. Brief

PWA have been appointed to undertake a structural survey of Leagram Mill Farm following proposals being put forward to convert the buildings into dwellings. The purpose of the report is to comment on the structural condition of the buildings for their conversion and comment on any structural defects which will need addressing during the course of the conversion.

This report is confined to an inspection of the structural elements of Leagram Mill Farm. Therefore, the report excludes any inspection or comment on electrical and mechanical installations, decorative conditions, damp proofing, non-structural timber fixtures, fittings, mouldings, coverings and all other non-structural matters.

Whilst we will use all reasonable skill and care in preparing this report, it should be appreciated that we cannot guarantee that the property will be free from future defects or that existing defects will not suffer further deterioration.

2. Unexposed Parts

Internal inspection is made within the limits of ready accessibility, and it is not normal practice to expose foundations, encased ground beams or give detailed inspections of timber.

3. Method of Inspection

External and internal inspections of the property have been carried out from floor levels. This means that part of the structure, such as roof timbers could not be inspected in detail, and we cannot confirm that they are free from defect.

A site inspection was undertaken on 6th July 2025 by Frazer Clarke of PWA Group. The weather at the time was clear so viewing of the external walls was not compromised. Internally, there was one area with limited light which compromised viewing however the remaining areas were not compromised.

4. Disclosure to a Third Party

This report may not be relied upon by a third party for any purpose without written consent of this practice. Furthermore, this report has been prepared and issued specifically for the benefit of the addressee and no responsibility will be extended to any third party for the whole or any part of its content.

5. Description of the Site

Leagram Mill Farm is located off Little Bowland Road, Leagram. There are two single storey buildings and are currently not used. It is unclear from historic maps when these were constructed.

From reviewing geological records in the area, we expect that the ground consists of boulder clay and limestone. (See appendix B)

The stone walls are of a rubble fill construction being some 400-600mm thick. All the external elevations are roughly coursed stone. The only exception to this is an area of the larger building which has a blockwork liner wall constructed within a steel frame inbound of the existing stone walls.

Internally the walls are roughly coursed stone with some whitewashed and some with concrete render. The exception to this is in the smaller building where some brickwork walls have been used.

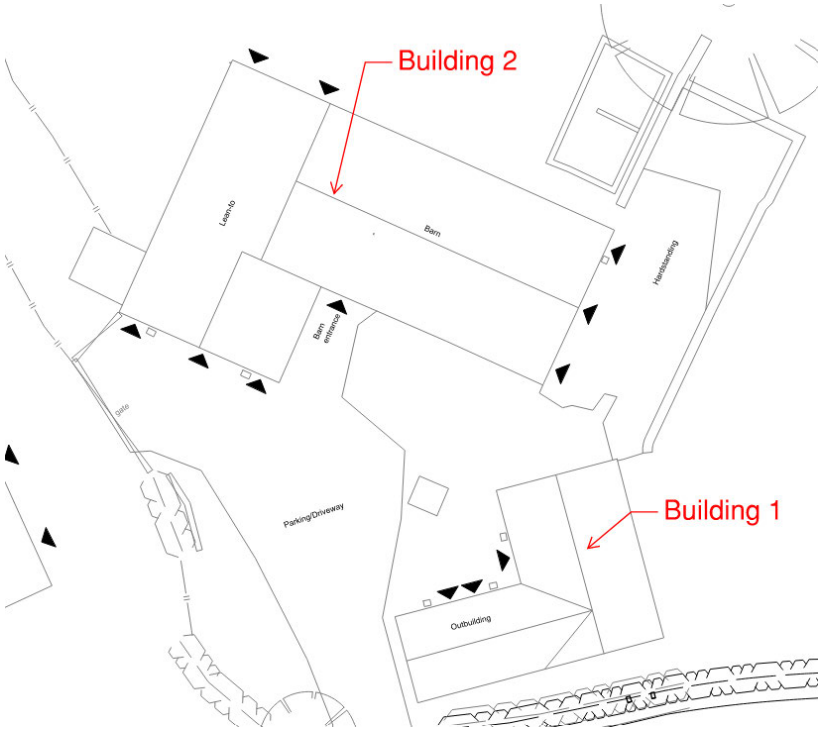
The roof to the smaller building has a pitch of approximately 30°. The roof is clad in stone slates & the roof is a traditional rafter and purlin construction. The larger building roof varies in pitch & construction, varying from a traditional construction with blue slate to a truss construction with blue slate. Sections of this building looks to have been re-roofed recently.

The external & internal lintels to the windows are a combination of timber, stone and concrete, with the timber and stone appearing to be historic and are not recent additions to the building.

The ground floor of the buildings are solid construction varying in heights and some areas being sloped.

6. Inspection of the Site

Refer to Appendix A for photos referenced in this report.



6.1. Building 1

The roof timbers visually appeared damp in areas, it was also noted that the roof has holes in across its length at the ridge and along its pitch. The structure is at risk of degradation from water ingress. (Photo 1 & 2).

A section of the roof is in a state of disrepair. The roof has collapsed. (Photo 3).

The external and internal walls are missing masonry, and holes are present in the wall. (Photo 4 & 5).

The external and internal walls have missing/loose mortar. (Photo 6).

Timber lintels are present over door openings; these will need replacing as part of the conversion works.

Damp was noted in areas of the building. (Photo 7).

There is a series of small vertical cracks varying in size from 1-5mm, some of these were noted in the finishes, but it was not possible to confirm whether these were present in the masonry. (Photo 8, 9 & 10).

The guttering is in poor condition and is missing in some areas, the structure is at risk of degradation from water ingress.

6.2. Building 2

The roof trusses visually appeared damp in areas.

The external and internal walls are missing masonry and holes are present in the wall. (Photo 11 & 12).

The external and internal walls have missing/loose mortar. (Photo 13).

Timber lintels are present over openings; these will need replacing as part of the conversion works.

There are windows missing, leaving the structure is at risk of water ingress.

A small area of first floor is in a state of disrepair, it has partially collapsed. (Photo 14).

The guttering is in poor condition and is blocked in some areas from vegetation and is also missing in some areas, the structure is at risk of degradation.

There is vegetation present on the external walls. (Photo 15).

Steelwork is showing signs of rust and oxidisation in areas. (Photo 16).

There is a series of small cracks varying in size from 0.1-5mm, some of these were noted in the finishes, but it was not possible to confirm whether these were present in the masonry. (Photo 17, 18 & 19).

7. Recommendations

Hairline cracks of less than 0.1mm in size are classed as negligible and no action is required for these.

Cracking ranging from 0.1-1mm can be treated using normal decoration methods.

Cracking ranging from 1-5mm should be treated using a suitable lining. Some external repointing may be required to ensure water tightness.

Cracking ranging from 5-15mm require opening up and being patched by a mason. External repointing and possibly a small amount of masonry replacement.

A full scheme for crack repairs should be undertaken.

A full timber survey must be undertaken to determine whether the timber is suitable for re-use and does not need replacing.

All slipped slates/tiles must be replaced and the roof made good.

Where the roof has failed, this must be replaced.

Any vegetation in gutters must be removed and maintained thereafter. Where further damage to the guttering has occurred or is missing these areas must be made good.

Any loose or missing mortar should be repointed/replaced and made good.

Any loose or missing masonry should be replaced and made good.

It is noted that timber lintels are present throughout the buildings, it would be advised that these are replaced with suitable concrete lintels.

Windows are to be installed to prevent water ingress.

Roof flashings above damp timbers must be repaired to prevent any further water ingress.

It is assumed that a blockwork liner wall will be constructed (where not currently present) to the internal perimeter of the buildings to allow for insulation to be introduced. The new blockwork liner wall should be tied back to the existing external walls using wall ties at appropriate horizontal and vertical centres. The wall ties should allow for vertical movement to allow for any settlement between the liner walls and existing walls. A new foundation will also be required to support the liner wall.

8. Conclusion

8.1. Building 1

Structurally speaking the building is suitable for conversion, providing the advised remedial works are undertaken, the lack of maintenance to the roof has resulted in the partial collapse and slates slipping therefore holes forming. A scheme of repairs is required to prevent any more collapse which will only accelerate if left unaddressed.

8.2. Building 2

Structurally speaking the building is in good condition, a small scheme of repairs is required to prevent any future issues or degradation of existing structural issues.

General maintenance should be carried out on both properties regularly and issues outlined in this report should be addressed and monitored to ensure that any defects do not deteriorate further or reappear.

Overall, if the above issues outlined are addressed then the buildings would be suitable for conversion.

Should any defects noted above be present, then a suitably qualified engineer should be notified.

Appendix A – Site Photographs

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

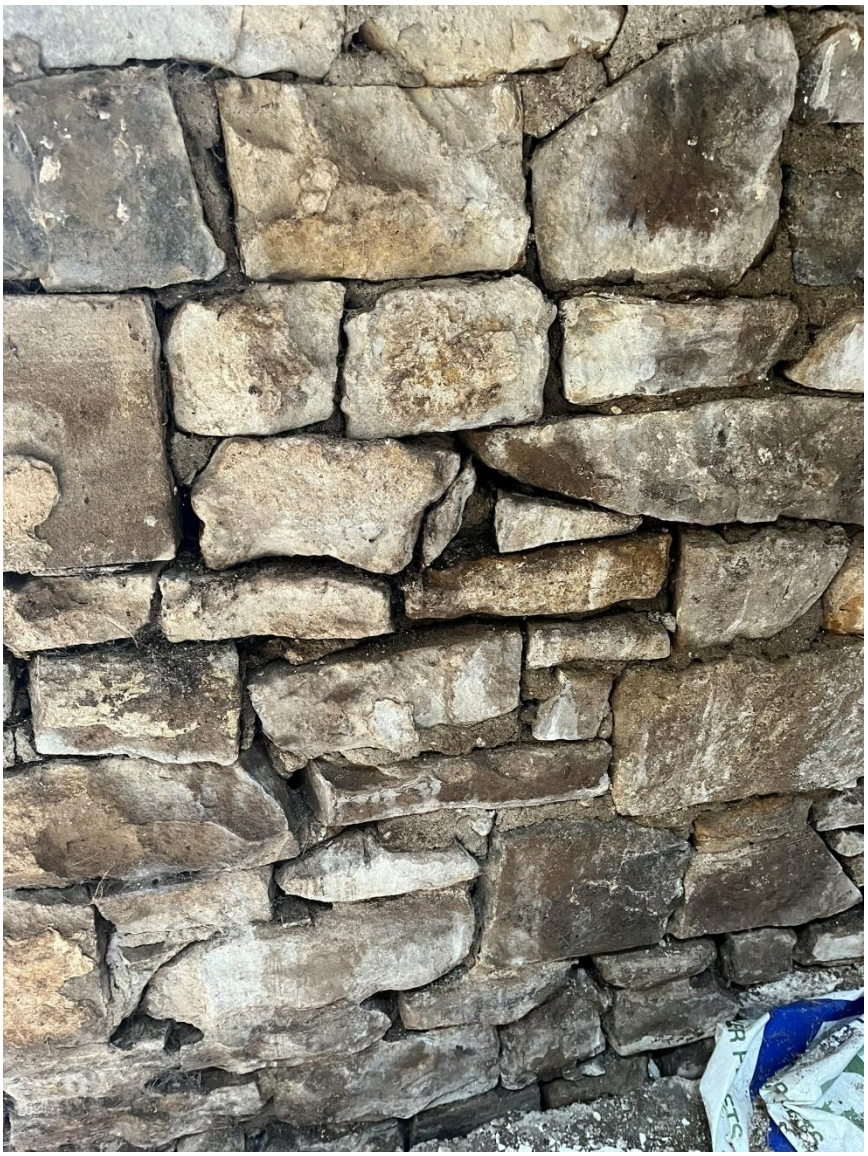


Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

Photo 13

Photo 14

Photo 15

Photo 16

Photo 17

Photo 18

Photo 19

Appendix B – Desktop Study Information

Name of site: Central L.S. North West Water NRN
HIGHER GREYSTONESLEY BH.

W R B No. SD64NW 3 6450-4573
SD64/54
67.
SD64NW

Owner: W R Bailey	Licence no. LA.5504. Appn no. Cancelled	
Occupier	IGS ref. no.	

Nat. grid ref. SD 6450 4573
Status: Borehole - Licensed.
Aquifer: Carb Limestone Series.
Code

	m OD	ft. OD
Ground level	m OD	ft. OD
Level of well top	m OD	ft. OD
Rest water level 21.70	m bwt	ft. bwt
(Date 9.8.90)	m OD	ft. OD

Construction: Method Rotary Date 1990.

Depth bwt	Dia.	Linings (below well top) From	To	Dia.	Type
GL	34.0m	GL.	19.5m	5"	Steel.
		GL	31m.	4"	Slotted Steel.

Summary of geological section	Thickness	Depth
Borehole log available.		
Boulder Clay		17.3m Till
Broken Gritstone		34.0m bedrock

Abstraction rates
gph PWL
gpd

Type of pump
Chem./bact. anal. YES/NO
Well driller: Dales Water Services.

*If insufficient space has been allowed, continue in 'Notes' overleaf.

Site Plan

Notes

The bedrock mapped at this site is Thornton Limestone of the Clitheroe Limestone Formation. "Gritstone" probably drillers error
AB 17/1/91

See Comment on A71-

Name of site: LOWER GREYSTONELEY ABH,

W R B No.: 67 SD 64/54 SD64NW

Owner: W. R. BAILEY | Licence no. Appn no. LA 7036 Cancelled

Occupier: AS ABOVE. | IGS ref. no.

Nat. grid ref.: SD 643 - 452.

Status: ABH Lic Dom. + AGRICULTURAL.

Ground Level	m OD		ft. OD
Level of well top	m OD		ft. OD
Rest water level 24.70	m bwt		ft. bwt
(Date 9.3.90)	m OD		ft. OD

Aquifer: CARB LIMESTONE SERIES.

Code: 107 BDQZZ.

Construction: Method ROTARY Date 1990

Depth bwt	Dia.	Linings (below well top) From	To	Dia.	Type
GL.	34.0m	GL.	19.5m	5"	Steel
		GL.	31m	4"	Slotted Steel

Summary of geological section	Thickness	Depth
BOREHOLE LOG & CASING DETAILS AVAILABLE		
BOULDER CLAY		17.3m. TILL
BROKEN GRITSTONE		34.0m BEDROCK *

Abstraction rates: gph PWL / gpd

Type of pump

Chem./bact. anal. YES/NO

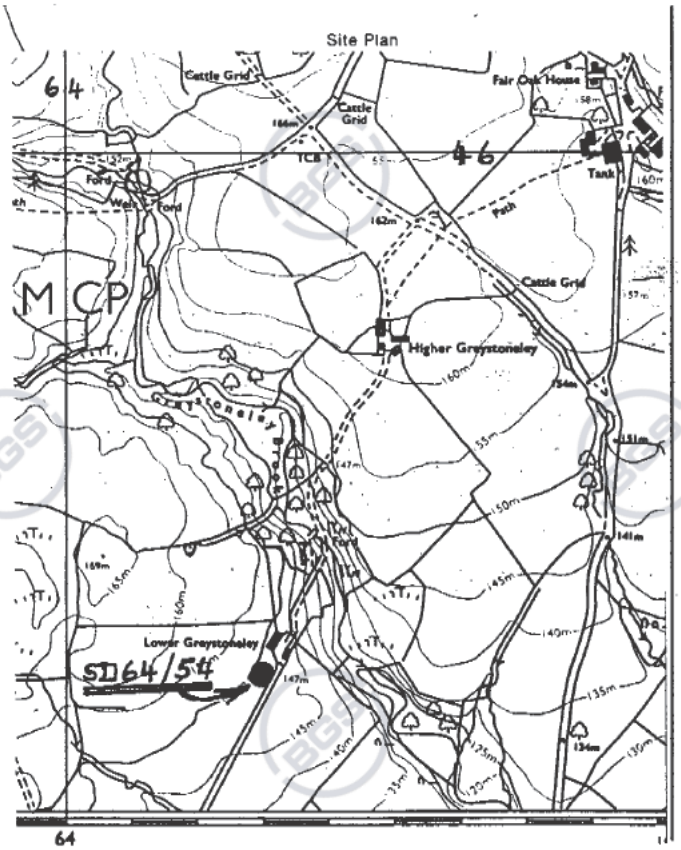
Well driller DALES W.S. LTD.

If insufficient space has been allowed, continue in 'Notes' overleaf.

Lockie 162

CENTRAL LS
NORTHWEST EA

* THE BEDROCK MAPPED AT THIS SITE IS THORNTON LIMESTONE OF THE CLITHEROE LIMESTONE FORMATION. "GRITSTONE" PROBABLY DRILLERS ERROR.
AB 17/1/91



SD64/54 LOWER GREYSTONELEY ABH

Drilled under consent Nº 476.

SPECIAL NOTE: THIS borehole was originally registerd as being at Higher Greystoneley but was in fact drilled at Lower H. Both properties are owned by MR Baily It is understood that this bh supplies both the above mentioned properties DCF

BGS informed of this amendment & are the Register & V.I. - DCF.

FORM WR-39/3

ENVIRONMENT AGENCY

PUMPING TEST DATA

OBSERVED SOURCE

CONSENT NO.	947 SD 64/54
Pumping test at	FAIR OAK FARM, CHIPPING
NGR	SD 6484 4609
Observations from	BOREHOLE AT LOWER GREYSTONELEY
NGR	SD 643 452

Description of datum point from which measurements were made (eg ground level, flange, dip tube/other): EDGE OF WELL HEAD CHAMBER (G.L)

Height above ground level (metres):

Date	Time	Elapsed time with respect to start of pumping: Minutes	Hours	Depth of water level below datum (metres)	Drawdown (metres)		Comments (eg duration of any rainfall, time when pump switched on and off if an operating well or borehole)
08/07/96	08·45			24·30			
09/07/96	08·45			24·30			
10/07/96	08·45			24·30			MACHINES ON SITE AT FAIR OAK
11/07/96	08·45			24·30			DRILLING STARTED
12/07/96	08·45			24·30			DRILLING
13/07/96	08·45			24·30			NO DRILLING
14/07/96	08·45			24·30			NO DRILLING
15/07/96	08·45			24·29			DRILLING
16/07/96	08·45			24·25			DRILLING
17/07/96	08·45			24·30			DRILLING
18/07/96	09·00			24·30			DRILLING
19/07/96	11·45			24·31			NO DRILLING PUTTING CASING IN
20/07/96	11·00			24·28			NO DRILLING
21/07/96	09·00			24·37			NO DRILLING
22/07/96	09·00			24·35			NO DRILLING
23/07/96	11·00			24·37			DRILLING
24/07/96	09·15			25·70		PUMP RUNNING	DRILLING
25/07/96	10·45			24·40			NO DRILLING
26/07/96	10·00			24·34			DRILLING FINISHED
27/07/96	08·30			24·35			
28/07/96	08·30			24·30			
29/07/96	09·45			24·34			
30/07/96	08·45			24·40			
31/07/96	10·00			24·40			INSTALLING PUMP
01/08/96	10·00			25·50		PUMP RUNNING	START OF TEST DAY 1
01/08/96	13·00			24·36			
01/08/96	17·00			24·42			
02/08/96	10·30			24·30			DAY 2
02/08/96	12·30			24·32			
02/08/96	16·00			24·40			

GROUNDWATER
DATE RECEIVED 26·3·97

Continue monitoring until the full recovery of source if shown to be affected by pumping.

Use continuation sheet (WR-39/4) if necessary

FORM WR-39/4

ENVIRONMENT AGENCY

PUMPING TEST DATA

CONTINUATION SHEET

CONSENT NO.	947 SD64/54
Pumping test at	FAIR OAK FARM, CHIPPING
NGR	SD 6484 4609
Observations from	BOREHOLE AT LOWER GREYSTONELEY
NGR	SD 643 452

Description of datum point from which measurements were made (eg ground level, flange, dip tube/other): EDGE OF WELL HEAD CHAMBER (G.L)

Height above ground level (metres):

Date	Time	Elapsed time Hours	Elapsed time Days	Depth of water level below datum (metres)	Drawdown (metres)		Comments
03/08/96	09·30		3	24·31			
03/08/96	12·15			24·36			
03/08/96	17·30			24·41			
04/08/96	11·30		4	24·50			
04/08/96	14·30			24·40			
04/08/96	19·30			25·72		PUMP RUNNING	
05/08/96	08·15		5	24·34			
[illegible]	14·00			24·40			
[illegible]	17·30			24·42			
06/08/96	09·30		1	24·30			START OF RECOVERY TEST
06/08/96	12·30			24·30			
06/08/96	17·30			25·75			
07/08/96	11·15		2	24·40			
07/08/96	13·30			24·38			
07/08/96	17·30			24·30			
08/08/96	09·30		3	24·32			
08/08/96	11·30			24·30			
08/08/96	13·15			24·35			
09/08/96	11·15		4	25·65			
09/08/96	14·00			24·32			
09/08/96	18·00			24·35			
10/08/96	10·00		5	25·10			
10/08/96	15·30			24·36			
10/08/96	17 30			24·34			

GROUNDWATER
DATE RECEIVED 26·3·97

Use continuation sheet (WR-39/4) if necessary

Forms\WR

RECORD OF WELL

For Institute use only Licence No. N 15241

SD64/54

67

At HIGHER GREYSTONELEY FARM,
Town or Village NR. PRESTON,
County LANCS

EXACT SITE OF WELL

Six-inch National Grid sheet and reference SD 645 457

For

State whether owner, tenant, builder, contractor, consultant, etc.:

Address (if different from above)

Level of ground surface above sea level (O.D.) ..... ft (.....m)

*DELETE AS NECESSARY

If well top is not at ground level state how far above:* below: .....ft (.....m)

SHAFT.....ft (.....m); diameter.....ft (.....m);

HEADINGS (please attach details—dimensions and directions)

BORE 150 ft (.....m); diameter: at top 6 in (.....mm);

at bottom.....in (.....mm) ROTARY UNCORED

Full details of permanent lining tubes (position, length, inner and outer diameters, plain slotted etc.):

Water struck at depths of .....ft (.....m) below well top

TEST CONDITIONS

Rest level of water.....ft (.....m) above* below well top. Suction at..... ft (.....m)

Yield on..... hours'* days' test pumping at.....galls per ..... (..... l/s) with

depression to.....ft (.....m) below well top. Recovery to rest level in ..... mins* hours

Capacity of pump.....g.p.h. (.....l/s)

Date of measurements.....

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type ..... **Motive power**.....

Capacity.....galls (.....m³) per hour. Suction at ..... ft (.....m)

below well top. Amount pumped.....galls (.....m³) per day. Estimated

consumption .....galls (.....m³) per week

Well made by G.CLARK DRILLING CONTRACTOR Date of sinking 1981

ADDITIONAL NOTES ANALYSIS (please attach copy if available)

LOG OF STRATA OVERLEAF

THIS B/H was never drilled, notified by N.W.W N.R.A Lilian Else 27-11-90.

Received from G.CLARK

Date 21.1.86

Observation well.....

order .....

log .....

marked on

map .....

map—Grid Sheet.....

(use symbol)

py to.....

.....

te.....

INSTITUTE OF HYDROGEOLOGY EXHIBITION LONDON SW

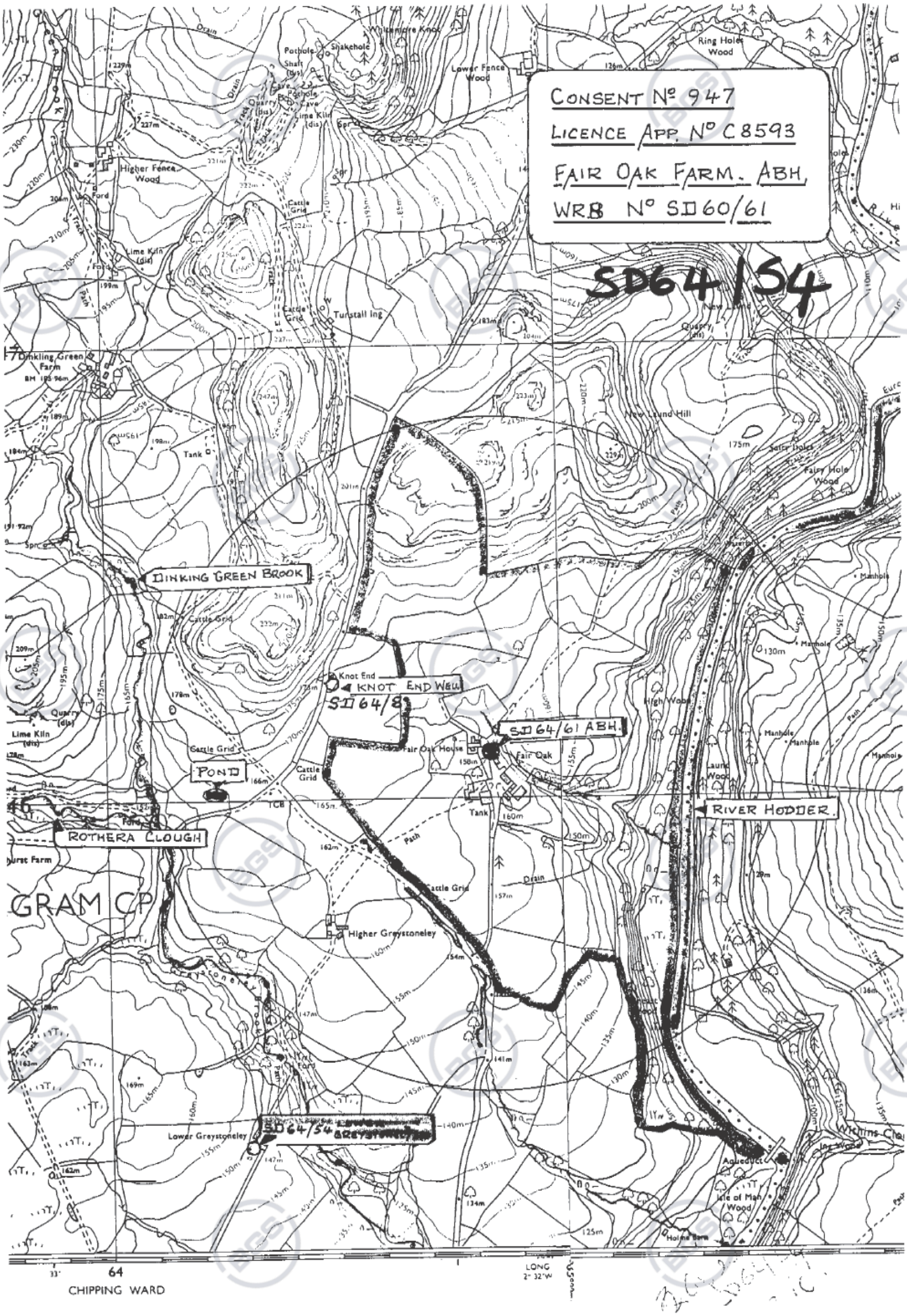
Mary —

data for 3 sites

& the amendment details for the borehole at Lower Greystoneley which was originally registered as being a Higher Greystoneley (SD64/54) WRB No retained & moved to the Lower Greystoneley site.

For Institute use only

Geological Classification	NATURE OF STRATA *If measurements start below ground surface, state how far.*	Thickness			Depth		
		Feet	Inches	Metres	Feet	Inches	Metres


CONSENT Nº 947
LICENCE APP. Nº C8593
FAIR OAK FARM. ABH.
WRB Nº SD60/61
SD64/54
DINKING GREEN BROOK
KNOT END WELL
SD64/8
SD64/61 ABH.
POND
ROTHERA CLOUGH
RIVER HODDER
SD64/54
GRAM CP
CHIPPING WARD
Dinkling Green Farm
Higher Fence Wood
Lower Fence Wood
Ring Hole Wood
Tunstall Ing
New Laund Hill
Fairy Hole Wood
Knot End
Fair Oak House
Fair Oak
Higher Greystoneley
Lower Greystoneley
Aqueduct
Isle of Man Wood
Holme Barn

End of Report