



North Wales Prison, Wrexham

Remediation Validation Report
Planning Permission Ref:
P/2013/0671)

Report for



February 2017

Hydrock Ref: R/14656/099



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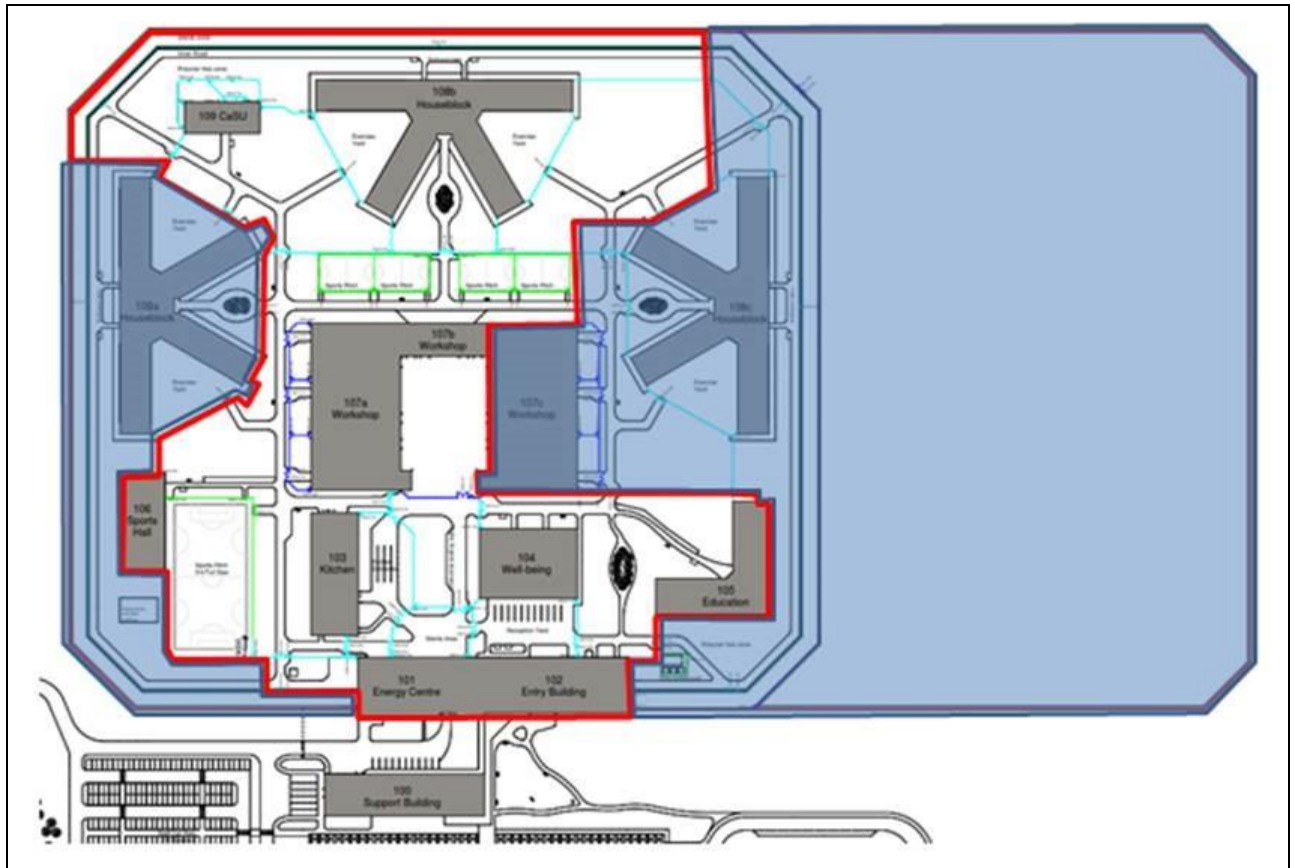
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Issue 1 of this Hydrock Verification Report reference R/14656/099 dated February 2017 is issued with the objective of obtaining discharge of Planning Conditions 9 and 10 of Wrexham County Borough Council (WCBC) Planning Permission Reference P/2013/0671 relating to contamination, but only for that part of the development site which is available for handover to the Ministry of Justice as at February 2017.

Box 1: Initial Completion Area



When the landscaping is complete and the soils verified as acceptable, a second version of the verification report will be issued covering the whole of the site. At that point, Conditions 9 and 10 for the whole of the development site can be discharged.



1.0 INTRODUCTION

1.1 Background

On behalf of the Ministry of Justice, Lend Lease Construction (Europe) Ltd (Lend Lease) is constructing a new prison facility on the Wrexham Industrial Estate, Wrexham. North Wales. A site location plan (Drawing 14656/D001) and a Site Masterplan (Capita Drawing Reference NWP-AR-CAP-099-DR-01-1001) are presented at Appendix A.

Outline Planning Permission reference P/2013/0671 (Appendix B) was granted by Wrexham County Borough Council (WCBC) with two conditions relation to land contamination numbered 9 and 10, as Box 1 below:

Box 1: Contamination Planning Conditions

9. The reserved matters application(s) shall include a scheme to deal with potential contamination at the site. This scheme shall include a phased investigation approach to identify the extent of contamination and any measures required to remediate the site, including post-development monitoring.
10. No part of the development shall be occupied until a Verification Report which demonstrates that the remedial works approved as part of condition no. 9 above have been satisfactorily carried out, has been submitted to and approved in writing by the Local Planning Authority.

By email dated 16 October 2014 (Annex F to Appendix D1) WCBC confirmed that Condition 9 had been discharged.

This Hydrock Report is submitted as part of the information required to discharge Condition 10, Verification (Validation).

1.2 Objectives

The overall objective is to demonstrate that the agreed remediation strategy has been complied with and that the site has been rendered Suitable for Use.

1.3 Parties Involved in Remedial Works

Remedial works mainly involved the excavation and re-use of materials on site in accordance with the approved Remediation Strategy. The main contractor for the prison development is Lend Lease. The remedial works were undertaken via a series of separate contracts as below:

Bulk Earthworks Contract

Main Contractor: Jones Bros. (Ruthin) Civil Engineering Co. Ltd.

Specialist Subcontractor: Redhill Analysts Limited (Licensed Asbestos Analysts).

Specialist Subcontractor: Bagnall UK Limited (Licensed Asbestos Removal Contractors).



Service Trench and Foundations Excavations

The following is a list of contractors that were involved in producing materials from service trench excavations:

Contract Reference WP 2200: Kiernan Construction, Rowan House, 8-10 Rough Hey Road, Ribblesdale, Preston, PR52 5AR.

Contract Reference WP 2205: Jennings BCE, Bod Hyfryd, Tan-y-Graig Road, Lysfaen, Colwyn Bay, Conway, North Wales, LL29 8TH.

Contract Reference WP 9000: External Works - Adana Construction - 140 Higher Hillgate Stockport Cheshire SK1 3QT.

Contract Reference WP 9100: Primary Drainage – McFour Limited - Shamrock Lodge Prees Heath Whitchurch Shropshire SY13 3JX.

Contract Reference WP 9700: Fencing Works – Binns Fencing Limited - Harvest House, Potters Bar, Hertfordshire, EN6 3JF.

Import of soils for landscaping

Abermorddu Source: Wrights Landscaping Limited Elm Works/Unit 1, Pinfold Lane, Mold CH7 6NZ (imported by Anwyll Construction Company Limited, Ewloe Office, St David's Park, Ewloe, Flintshire, CH5 3DT).

Willaston Source: Wrights Landscapes Ltd Unit 1, Elm Works, Pinfold Lane, Alltami, Flintshire, CH7 6NZ.

Tarporley Source: Ashlea Ltd, Scotland Road, Carnforth, Lancs, LA5 9RE.

Chester (Dandy's) Source: Ashlea Ltd, Scotland Road, Carnforth, Lancs, LA5 9RE.

1.4 List of Previous Reports

A list of relevant previous reports is as follows:

Pre-Contract Information

- Travers Morgan Ltd: "Firestone Development Site, Wrexham", reference 1W35245/contam, dated 31st May 1994;
- Various correspondence from Travers Morgan (and later Symonds Travers Morgan) to the Welsh Development Agency, including report summaries and recommendations for remediation;
- ESI Ltd: "Preliminary Risk Assessment, Former Firestone Site, Wrexham Industrial Estate", reference 60895R1, dated December 2012;
- ESI Ltd: "Phase 2 Contaminated Land Investigation, Former Firestone Site, Wrexham Industrial Estate", reference 60895R2, dated December 2012; and



- WYG Environment: “New Prison North Wales, Ground Investigation Factual Report”, Version 3, reference A083839, dated 14th January 2014.

Hydrock Main Reports

- “North Wales Prison, Wrexham, Land Quality Statement: Area 1”, version2, reference R/14656/002, dated 24th September 2014.
- “North Wales Prison, Wrexham, Land Quality Statement: Areas 2 and 3”, reference R/14656/004, dated 8th October 2014.
- “North Wales Prison, Wrexham, Remediation Strategy and Method Statement, Area 1” reference R/14656/003, dated 01 October 2014.
- “North Wales Prison, Wrexham, Remediation Strategy and Method Statement, Areas 2 & 3” reference R/14656/005, dated 16 October 2014.
- “North Wales Prison, Wrexham, Risk Assessment of Asbestos in Soils” reference R/14656/006 dated 17 October 2014.

Hydrock Letter Reports

- R/14656/007 dated 16th October 2014: Final Gas Risk Assessment
- R/14656/008 dated 21 September 2015: WRAP: Use of Recycled Compost in Landscaped Areas at the North Wales Prison Site, Wrexham (Test Results 1)
- R/14656/012 dated 24 April 2016: WRAP: Use of Recycled Compost in Landscaped Areas at the North Wales Prison Site, Wrexham (Test Results 2)
- R/14656/014 dated 19 May 2016: WRAP: Use of Recycled Compost in Landscaped Areas at the North Wales Prison Site, Wrexham (Test Results 3)
- R/14656/016 dated 20 June 2016: Abermorddu Topsoil Testing
- R/14656/018 dated 06 July 2016: Willaston (Crewe) Topsoil Testing
- R/16456/020 dated 19 September 2016: Tarporley Topsoil Testing

Hydrock Letters

- R/14656/005 dated 10 April 2016: Excavations 13/03/2015 in Soft Spot and Attenuation Tank Area.
- R/14656/007/Revision 1: Watching Brief for Asbestos Remediation at Proposed North Wales Prison.



2.0 REMEDIATION STRATEGY

2.1 Background

For purposes relating to the project programme at the time, the site was split into areas designated 1, 2 and 3, as shown on C14656/002 at Appendix A. Separate Land Quality Statement and Remediation Method Statement reports were issued for Area 1 and Areas 2 & 3 combined.

Hydrock Report reference R/14656/006 dated 17 October 2014 focussed on the risk associated with asbestos in soils and included recommended remedial measures.

The above reports (together with letter report R/14656/007 concerning gas risk) were submitted to the Local Authority and after consultation with the Environment Agency they were deemed sufficient to obtain discharge of Condition 9 (see Annexes F and G of Appendix D1).

Collectively these reports set out a remediation strategy which, if implemented, would render the site suitable for its new use.

2.2 Key Issues

The Land Quality Statement and Remediation Method Statement Reports were consistent in noting that there was no risk of harm associated with chemical contamination in the Made Ground present at the site. However, it was required that topsoil imported for landscaping or other uses (such as a small garden area) should be suitable for that intended use.

The key issue was a requirement for measures to deal with asbestos in soils together with a requirement to deal as necessary with unexpected contamination.

Primarily, the remediation strategy was to be implemented through various earthworks-related contracts, especially the bulk earthworks contract that involved cut-to-fill activities in order to create the required development platform.

2.3 Summary of Remediation Requirements

2.3.1 Materials Management Plans

A fundamental requirement was the preparation and QP Declaration of three Materials Management Plans (MMPs) prepared under the CL:AIRE Definition of Waste Code of Practice to cover:

- The Bulk Earthworks Contract;
- The contracts relating to service trench and foundation excavations;
- The import and placement of clean topsoil.

The objective of these MMPs was to allow safe re-use of material on site and to facilitate the import of clean material arising from donor sites for landscaping without contravening waste regulations.



Each MMP included a Materials Tracking System that specified how material was to be stockpiled, tested, and placed, to become a project record for future reference.

2.3.2 Re-use of Soils Containing Asbestos

The strategy was to accord with the following:

- Soils containing asbestos >0.1% w/w to be removed from site to a suitably licenced facility;
- Soils containing asbestos <0.1% but > 0.001% reusable on site:
 - at depth >1m below ground level;
 - below a clearly recognisable geotextile membrane;
- unrestricted use of soils containing < 0.001% asbestos.

Soils containing asbestos <0.1% but > 0.001% were only re-used on the landscape bund located near the entrance on the south west corner of the site.

The fate of stockpiled soils in accordance with the above rules (i.e. where it was placed) was to be based on testing of stockpiles at specified rates. If asbestos was observed visually in a sample under laboratory test conditions it was subject to gravimetric and PCOM (quantitative) testing at the same laboratory.

2.3.3 Hand Picking

It is a feature of asbestos in Made Ground that it is frequently encountered as cement bonded material, which, subject to current CAR, can be safely hand-picked and bagged for off-site disposal, thus rendering otherwise unusable material usable.

2.3.4 Protection of the Workforce

The requirement to protect the workforce against exposure to asbestos was recognised and a series of measures was put into place including:

- Training of site operatives in respect of Asbestos Awareness to an extent that fully complies with CAR 2012;
- Use of PPE including disposable overalls, face-fitted dust masks etc.
- Adherence to site hygiene practices sufficient to prevent soils being transported into welfare spaces and subsequently drying out;
- Dampening of soils during excavation and materials movement activities to inhibit release of fibres;
- Air monitoring throughout the works to ensure that there was no unacceptable fibre release.

2.3.5 HSE Involvement

The HSE was contacted in respect of the 'litter picking' proposals and it was confirmed that the works were not notifiable unless the litter picking extended beyond the general concept of



picking occasional fragments (as distinct from large-scale asbestos removal, which was never the case). Relevant correspondence is presented at Annex D of Appendix D1.

2.3.6 Final Validation

On completion of the bulk earthworks the completed development platform was subject to testing for asbestos approximately on a 75 grid to demonstrate that there was no asbestos >0.001% in the upper 1m of ground.

The results are presented in Section 6 and represent conditions after completion of the bulk earthworks contract and the service trench/foundations installation contracts, with only the landscaping works to follow.

The validation relating to import of soils for landscaping is dealt with separately in Section 5.



3.0 BULK EARTHWORKS CONTRACT

3.1 Works Description

The Bulk Earthworks contract undertaken by Jones Bros. involved re-profiling the site in a cut to fill operation, in accordance with the schematics attached at Appendix C1.

Aerial photographs showing work in progress are attached at Appendix C2. Appendix C3 contains photographs taken during the delineation of suspected asbestos hot-spots.

3.2 Contract Dates (actual time on site)

The Bulk Earthworks contract start date was: 13 November 2014.

The Bulk Earthworks contract end date was: 16 August 2015.

3.3 Materials Management Plan (MMP)

The MMP pertaining to the Bulk Earthworks Contract is attached at Appendix C4.

The Declaration was made on 02 November 2014 by Ms Lucinda Farrington who carries QP Registration No 184.

3.4 Materials Tracking System

A Materials Tracking System was employed to maintain records of the excavation, stockpiling, testing, and re-use of materials

Daily surveys before and after excavation were undertaken to provide evidence of the quantity of materials moved. The data was transferred to CAD drawings and filed together with a daily summary materials movement spreadsheet, showing destination of materials.

An example is shown in Appendix C5. The total amount of such information is extremely large and it is proposed that this example is sufficient for the purposes of this validation report. A full set of records will be retained as part of overall project completion and is available for inspection as required.

3.5 Unexpected Contamination

3.5.1 Context

There were four areas of unexpected contamination, each of which was successfully dealt with as described below.

3.5.2 Soft-Spot

Hydrock letter reference C14656/005 included herein at Appendix C6 describes the occurrence of a 'soft-spot' area which was thought to be an area of localised hydrocarbon contamination (based on hydrocarbon sheens on water being observed in the excavation). Within the development this area is overlain by the high security fence and is marked 'prisoner-free zone'



so it is a low risk area in terms of contamination. The area was subject to excavation and validation testing as reported in the letter.

3.5.3 Attenuation Tank Area

The end use of this area is the staff car park with the attenuation tank below it. When excavating the tank there was some evidence of hydrocarbon contamination so the soils were subject to testing as reported in Hydrock letter reference C14656/005 included herein at Appendix C6. Again, the area was subject to excavation and the potentially contaminated material (easily discernible from uncontaminated material by sight and smell) was set aside for validation testing, the soils being re-used in the landscape bund.

3.5.4 Phase 3 Area

During the Bulk Earthworks Contract an area of unusually high asbestos content was encountered in the Phase 3 area.

This area was quarantined and subject to additional site-specific investigation, testing, and remediation (involving excavation of unacceptable materials and their removal off site). Details (including waste consignment notes) are provided in Hydrock letter C14656/007 which is attached at Appendix C7.

3.5.5 Haul Road

A former haul road (probably dating back to the demolition of the original factory), located as shown in Appendix C8, was exposed during excavation and parts of it were noted to have been made up of demolition rubble that contained fragments of cement-bonded asbestos and asbestos insulation board (AIB). The area was subject to investigation and fully delineated. The remedial solution was litter picking of the area with the bagged asbestos being taken off site. The work was carried out by specialist contractor Bagnall and their Method Statement for the works is presented at Appendix C8.

3.6 Validation Testing

The results of validation testing carried out after completion of the bulk earthworks contract are described in Section 6 of this report.



4.0 SERVICE TRENCH EXCAVATIONS

4.1 Works Description

Construction of the prison facility necessitated the excavation of service trenches and foundations, processes that generated an excess of materials that required stockpiling and testing to enable re-use in accordance with the remediation strategy. Most of the re-use was for backfilling the trenches and the remainder used as fill.

As described in Section 1.3, several different contractors were involved in this work, under the overall management of Lend Lease.

4.2 Contract Dates

The contract works took place approximately between September 2015 and November 2016.

4.3 Materials Management Plan

A Materials Management Plan for this work is included at Appendix D1.

4.4 Excavation, Testing, and Re-use of Materials

A Materials Tracking System was employed to maintain records of the excavation, stockpiling, testing, and re-use of materials.

An example is shown in Appendix D2. The total amount of such information is large and it is proposed that this example is sufficient for the purposes of this validation report. A full set of records will be retained as part of overall project completion and is available for inspection as required.

4.5 Validation Testing

Validation testing applicable to the Service Trench Excavations is described in Section 6.



5.0 TOPSOIL IMPORT FOR LANDSCAPING

5.1 Works Description

Fertile topsoil was required for areas of landscaping at the site. The relevant areas are shown on the TEP Drawing at Appendix E1 called Detailed Planting Plan- Overall Plan. Appendix E2 contains Hydrock Drawing 16456/D016 showing the location of samples taken from imported soils, whether as stockpiles, or following placement, or both.

Topsoil was procured as follows:

- Import of compost derived from recycled material under the WRAP protocol (for mixing with site won natural clays); and
- Import and placement of topsoil from off-site sources (imported under the CL:AIRE Definition of Waste Code of Practice as Direct Transfer of clean, naturally occurring materials).

5.2 Contract Dates

Landscaping work started in December 2015 and is scheduled for completion in August 2017.

5.3 Explanatory Note

Please refer to the Explanatory Note to Issue 1 on page iii of this report.

At the time of completing Issue 1 of this Verification Report, parts of the new facility are ready to hand over to the Ministry of Justice for occupancy, but the landscaping outside of that area is incomplete. Issue 1 of this report is intended to cover the area within the red line boundary shown on Page iii.

Outside of that area it is only the landscaping that is incomplete. Landscape soils in the remaining areas will be verified later and results presented in a revised version of the Verification Report later in 2017.

5.4 Materials Management Plan (MMP)

A copy of the MMP for the import and placement of topsoil is attached at Appendix E3. The MMP was amended and re-declared every time a soil supplier was added to the system.

5.5 Materials Tracking System

A Materials Tracking System, primarily relating to the testing of materials after placement, was Annex H to the MMP and a copy is attached at Appendix E3.

5.6 Testing and Validation

All materials were tested at source and tested again after import and/or placement to confirm suitability. Hydrock drawing 16456/D016 at Appendix E2 shows the relationship between stockpiles and placement. In some cases, for security reasons, it was not possible to test the



stockpile only, and not the material as placed. However the relationship between the stockpile and the placement area is always recorded.

Relevant test data is presented as follows:

- Appendix E4: WRAP compost testing;
- Appendix E5: Abermorddu source testing;
- Appendix E6: Crewe (Willaston) source testing;
- Appendix E7: Tarporley source testing;
- Appendix E8: Dandy's Topsoil, Chester; and
- Appendix E9: Validation testing after import and/or placement.

As indicated at E9, the test data are compliant with the import criteria set out in the Remediation Method Statements.

Regarding the information presented in E9 the sample locations are shown on Hydrock drawing 16456/D016 at Appendix E2. All tests on soils show them to be compliant.



6.0 VALIDATION TESTING

6.1 Context

This section presents evidence that after the bulk earthworks and service trench excavations etc. (referred to hereafter as 'earthworks') were completed, the development platform was compliant with the remediation strategy, especially that there was no asbestos >0.001 % w/w in the upper 1m of ground.

The validation relating to import of soils for landscaping is dealt with separately in Section 5.

The focus is on compliance with asbestos criteria, particularly the requirement for no asbestos > 0.001% w/w in soils in the 0-1m depth zone. However, chemical test data were also obtained to demonstrate compliance with commercial end use criteria.

6.2 Works Sequence

The following works sequence applied:

- Completion of bulk earthworks;
- Validation testing across the development site;
- Excavation and removal of material at three non-compliance points;
- Completion of service trench excavations;
- Repeat testing at selected locations.

6.3 Methodology

Continuous samples in the upper 1m were obtained and combined, then reduced by 'coning and quartering', this being the standard method for obtaining sampled for asbestos testing. Thus the sample results are each representative of the 0 -1m depth zone.

At the laboratory the samples were checked visually for the presence of asbestos fragments or loose fibres and if detected the site was then subject to gravimetric testing to determine the weight of asbestos in the sample and by the PCOM method to determine how much was loose fibres.

Validation sample locations are shown on Hydrock Drawing 16456/D017 at Appendix F1. In some cases, more than one sample was taken from the material at the same location (hence there being more than one number at a particular sample location).

6.4 Test Results

Test results are presented as follows:

Appendix F2: Bulk earthworks testing (all data, including intermediate testing (i.e. Work in Progress)).



Appendix F3: After completion of all earthworks (i.e. including service trench and foundation excavations plus repeat confirmatory testing on some F2 locations).

A summary of asbestos results is presented in Table 6.1. The Table 6.1 data presents the results from the data at Appendices F2 and F3 relevant to asbestos validation (i.e. with intermediate test results omitted). Full compliance with the remediation strategy is demonstrated.

6.5 Findings

6.5.1 Asbestos

In accordance with the remediation strategy, on completion of the earthworks, no soils in the 0-1m depth zone contain asbestos > 0.001% w/w.

In three places this condition was achieved after additional excavation where minor exceedences of the remediation target were detected.

6.5.2 Chemical Test Data

It was not a requirement of the Remediation Method Statement to obtain chemical test data for soils but some samples were taken on an ad-hoc basis to confirm the acceptably low risk estimated from the earlier site investigations.

Data obtained by the Bulk Earthworks Contractor are included in Appendix F2. Data obtained by Hydrock are included in Appendix F4.

A comparison of the chemical test data with GAC values (commercial end use) is presented at Appendix F5. There are no exceedences of any of the parameters, which include, metals, PAH, and TPH.

6.6 Conclusions

It is concluded that the remediation strategy has been complied with in that:

- There is no evidence of asbestos >0.001 % w/w present in the upper 1m of ground;
- There is no evidence of unacceptable chemical contamination in the upper 1m of ground.

In both cases this conclusion is conservative in that the 0m reference level is located below a thickness of construction materials including concrete slabs, roads, pavements, or validated landscape materials.



Table 6.1 Asbestos Validation Test Results Summary

NAD: No Asbestos Detected ACM: Asbestos-Containing Materials PCOM: a quantification technique (Phase Contrast Optical Micros

Location	Detection	Gravimetric (%w/w)	PCOM (%w/w)	Total (%w/w)	Comment
132	NAD	-	-	-	
133	Trace	<0.001%	<0.001%	<0.001%	Chrysotile trace but <0.001% on quantification.
134	NAD	-	-	-	
135	NAD	-	-	-	
136	NAD	-	-	-	
137	NAD	-	-	-	
138	NAD	-	-	-	
139	NAD	-	-	-	
140	NAD	-	-	-	
141	ACM debris	<0.001%	<0.001%	<0.001%	Chrysotile content but <0.001% on quantification.
142	Possible ACM	0.3998	<0.001%	<0.4004%	Unconfirmed as ACM but location remediated and reinstated as a precaution.
TP09	NAD	-	-	-	Repeat test on 142 above after remediation.
143	NAD	-	-	-	
144	NAD	-	-	-	
145	NAD	-	-	-	
145	NAD	-	-	-	
146	NAD	-	-	-	
147	NAD	-	-	-	
148	NAD	-	-	-	
149	NAD	-	-	-	
150	NAD	-	-	-	
151	Loose fibres	<0.001%	<0.001%	<0.001%	Chrysotile present but <0.001% on quantification.
152	NAD	-	-	-	
153	NAD	-	-	-	
154	NAD	-	-	-	
155	Fibres in soil	<0.001%	<0.001%	0.0013	Marginal exceedence but location remediated and reinstated.
TP07	NAD	-	-	-	Repeat test on 155 above after remediation.
156	NAD	-	-	-	
157	NAD	-	-	-	



TP08	NAD	-	-	-	
158	NAD	-	-	-	
159	Loose fibres	<0.001%	<0.001%	<0.001%	Chrysotile present but <0.001% on quantification.
210	NAD	-	-	-	
TP01	NAD	-	-	-	
TP02	NAD	-	-	-	
213	NAD	-	-	-	
TP04	NAD	-	-	-	
215	NAD	-	-	-	
216	NAD	-	-	-	
217	NAD	-	-	-	
TP03	NAD	-	-	-	
219	NAD	-	-	-	
220	Chrysotile	0.0164 %	0.0012 %	0.0176%	Asbestos bitumen. Location remediated and reinstated.
TP06	NAD	-	-	-	Repeat test on 220 above after remediation.
TP05	NAD	-	-	-	
TP10	NAD	-	-	-	
TP11	NAD	-	-	-	
TP12	NAD	-	-	-	
TP13	NAD	-	-	-	
TP14	NAD	-	-	-	



7.0 SURFACE WATER DISCHARGES

7.1 Context

During construction the site generated surface runoff which flowed via a perimeter ditch to a detention pond prior to off-site discharge to the River Clywedog.

This process was regulated by Natural Resources Wales which, in March 2015, issued Lend Lease with Environmental Permit reference EPR/AB3790HG for a water discharge activity. A copy of the Permit is attached at Appendix G.

7.2 Permit Conditions

The main permit conditions are:

- No visible oil or grease;
- Suspended solids not to exceed 60 mg/l;
- pH to be between 6 and 9 pH units;
- Discharge not to exceed 5.6 l/s (20 m³/hr);
- Monthly Environmental Permit Monitoring Reports to NRW.

7.3 Site Control and Monitoring Arrangements

7.3.1 No Visible Oil or Grease

The lagoon was inspected daily for visual signs of oil or grease, either of which would have been noticeable at the surface. A record of the daily inspections was kept at site and a copy was included in the Monthly Environmental Permit Monitoring Report.

7.3.2 pH Control

The water is pumped out of the lagoon on an as-required basis and enters a Siltbuster SD4 pH correction unit that ensures compliance with the pH 6-9 requirement. The pH of the water is automatically measured by a probe and recorded on a data logger for routine inspection. The results were presented in the Monthly Environmental Permit Monitoring Report.

7.3.3 Silt Control (Suspended Solids)

After passing through the pH correction unit the water enters a Siltbuster FB50 unit to remove suspended solids. The discharge water was checked for appearance daily and the observations recorded on the same inspection sheet as the oil/grease record above. Every month a discharge water sample was taken and subject to laboratory analysis for suspended solids. The results were presented in the Monthly Environmental Permit Monitoring Report.



7.3.4 Discharge

Continuous flow measurement was considered to be unnecessary. It was agreed with NRW that discharge would be controlled with a valve calibrated such that the 5.6 l/s (20 m³/hr) limit could not be exceeded.

7.4 Reporting and Compliance

Monthly Environmental Permit Monitoring Reports have been submitted to NRW since the permit was issued in March 2016.

There have been no issues of non-compliance and this has been confirmed by NRW by issue of a Compliance Assessment Report in response to each Monthly Environmental Permit Monitoring Report.

7.5 Surrender of the Permit

It is expected that by August 2017 the whole of the site will be connected to the network and no off-site drainage via the detention pond will be required. At this time an application will be made to NRW to surrender the Permit. Until that time, monitoring and reporting will continue as above.

