North Wales Prison

Wrexham

Remediation Validation Report - Addendum

Planning Permission Ref: P/2013/0671

Report for

August 2017

Hydrock Ref: R/14656/100

DOCUMENT CONTROL SHEET

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Checked		Chris Hitches MSc	
Approved		Dr Scott Elliott	

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1	22 August 2017	Draft issue for client review.
2	23 August 2017	Final Issue

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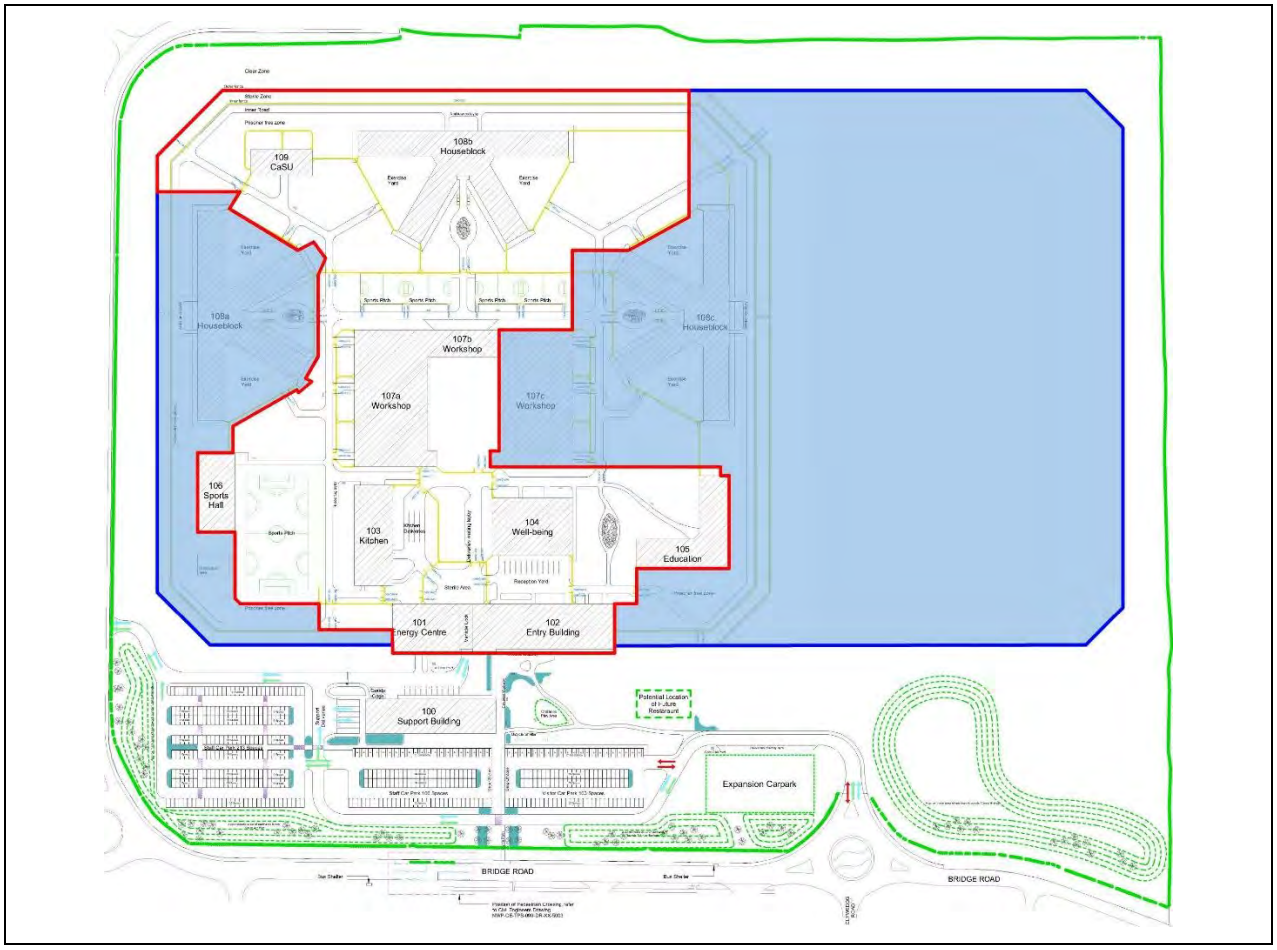
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EXPLANATORY NOTE

Hydrock Remediation Validation Report Reference R/14656/099 dated February 2017 was 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 was available for handover to the Ministry of Justice as at March 2017.

The relevant area is that within the red line shown on the plan in Box 1 below. All remediation works within the red line were verified as completed in accordance with the approved Remediation Method Statement set out in Hydrock Reports Reference R/14656/003 and R/14656/005. This part of the facility is now occupied.

Box 1: Initial Completion Area



This Hydrock report R/14656/100 (Remediation Validation Report: Addendum dated August 2017) is issued with the objective of obtaining discharge of Planning Conditions 9 and 10 for the remainder of the site, that is, the area outside of the red line (blue shading) shown in Box 1 above.

It may be noted that the original intention to produce an updated version of Report R/14656/099 to cover the whole of the site was superseded after an email exchange between Ms Angela Guy, Contaminated Land Officer, Wrexham CBC, and Mr Eric Cooper, wherein it was agreed that a Report Addendum covering the remaining area was the preferred alternative. This report R/14656/100 is issued in compliance with that agreement.

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 2 below:

Box 2: 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 of R/14656/099) 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 Activities and Subject Areas Covered by this Addendum

Remedial works relevant to this addendum are:

1. Works relevant to completion of the Expansion Area, comprising the following:

    a. Re-use of the stockpiled material on the Expansion Area itself (noting that the materials constituting the stockpiles were all derived from service trench and foundation excavations elsewhere on the site);

    b. Import and placement of recycled compost under the WRAP protocol on some parts of the Expansion Area after levelling (to render the natural clay soils more fertile);

c. Re-use of some of the stockpiled soils to form the landscape bund near the front entrance;

2. Import and placement of soils for landscaping in the main prison area.

Each of these issues is given separate attention in Sections 2 and 3 of this report.

1.4 Contractual Works

The relevant works were undertaken via a series of separate contracts as below:

Service Trench and Foundations Excavations

Contract Reference WP 2200: Kiernan Construction, Rowan House, 8-10 Rough Hey Road, Ribbleton, 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

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.

Reprofiling of the Expansion Area and Completion of the Landscape Bund

Contract Reference WP 9050: Expansion Zone Site Works – D Morgan PLC – New Hey, Chester Road, Great Sutton, Ellesmere Port, CH66 2LS

2.0 WORKS ON THE EXPANSION AREA

2.1 Scope of Activities

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 (validation of this material is covered in the Main Report). The excess was placed in stockpiles in the Expansion Area pending re-use and it is the validation of this excess material that is the subject of this Addendum.

All works connected with the re-use of materials from service trench excavations were carried out in accordance with a Materials Management Plan prepared (and Declared) in accordance with the CL:AIRE Definition of Waste Code of Practice (see Appendix D of Remediation Validation Report Reference R/14656/099 dated February 2017).

However, some of the stockpiled materials were used to complete the landscaped bund near the entrance to the site. Appendix C contains three aerial photographs showing the initial levelling of the stockpiles and the creation of the landscape bund.

As described in Section 1.4 above, several different contractors were involved in this work, under the overall management of Lend Lease.

2.2 Stockpiling, Testing, and Earth Movements

2.2.1 Materials Tracking System

All stockpiling took place on the expansion area. In accordance with the Materials Tracking System set out in the Materials Management Plan, records were kept of:

- Where the materials came from to form the stockpiles (that is, the relevant areas of service-trench or foundation excavations);
- The location of each stockpile, referenced by number;
- Chemical test data relating to each stockpile;
- Final placement of each stockpile as either:
    - Local spreading on the expansion area itself;
    - Transport and placement on the landscaped mound with occasional use of subsoil in other landscaped areas.

Records are attached to this Addendum Report as described below.

2.2.2 Materials Movements

A sequence of working drawings at Appendix D shows where materials came from to form the stockpiles and where the materials were finally placed.

2.2.3 Testing of Stockpiled Materials

Appendix E is a working drawing showing each stockpile with a reference to a chemical test result that is contained in Appendix F.

Because the service trench and foundation excavations took place on land resulting from the bulk earthworks contract:

- the ground had already been subject to testing as part of the bulk earthworks contract and was proven to be free of both asbestos and chemical substances in excess of the limit values set out in the remediation strategy reports;
- the testing of the stockpiles on the expansion area was precautionary and restricted to confirmatory testing for asbestos only.

It may be noted from the results at Appendix F that none of the stockpiled soils on the expansion area contained asbestos in excess of the 0.001 % w/w threshold.

2.2.4 Frequency of Testing

The total amount of stockpiled material was 43,207m^3 and the number of tests is 57.

Therefore, the test rate is 1 test per 758m^3 of material which is greater than the 1 test per 1000m^3 material required by the remediation strategy.

2.2.5 Import of Recycled Compost

Parts of the expansion area were treated with recycled compost imported under the WRAP protocol. This material was subject to testing as reported in Hydrock Letter Report R/14656/012, which is included as Appendix E4 to Hydrock Validation Main Report R/14656/099.

On completion, the expansion area and the landscape bund will feature grass and wildflower seeding. The expansion area is not publicly accessible.

3.0 LANDSCAPING

3.1 Works Description

As at March 2017, some areas of landscaping that were created using imported topsoil remained incomplete. This work has now finished and the areas grassed over.

These areas are close to occupied areas of the prison and security issues prevented standard testing of soils after placement in all cases. However, all imported soil stockpiles were tested prior to the soils being placed and material movements tracked, in addition to the soils that were sampled and tested after placement.

Appendix G contains the following information:

- A working drawing showing the location of stockpiles and where the material was moved to;
- Chemical tests results for each of the stockpiles and placed soil samples; and
- An analysis showing that there were no exceedances of the limit values set out in the remediation strategy reports.

4.0 SURFACE WATER DISCHARGES

4.1 Context

As noted in the Main Report, 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.

4.2 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 m^3/hr);
- Monthly Environmental Permit Monitoring Reports to NRW.

4.3 Site Control and Monitoring Arrangements

4.3.1 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.

4.3.2 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.

4.3.3 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.

4.3.4 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 m^3/hr) limit could not be exceeded.

4.4 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.

4.5 Surrender of the Permit

The discharge arrangement will have ceased by the end of August 2017 with all surface runoff leaving the site in the urban drainage system managed by Welsh Water.

An application will subsequently be made to NRW to surrender the permit.

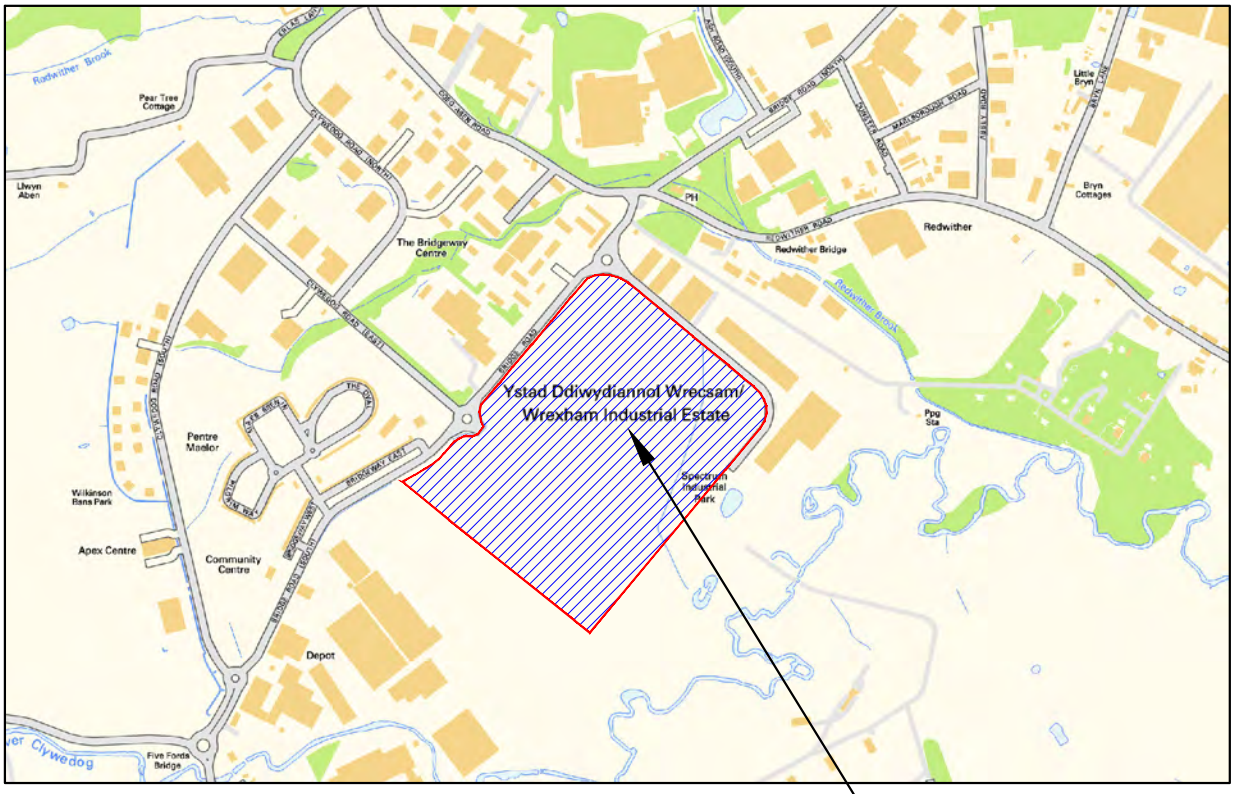
Appendix A

Drawings

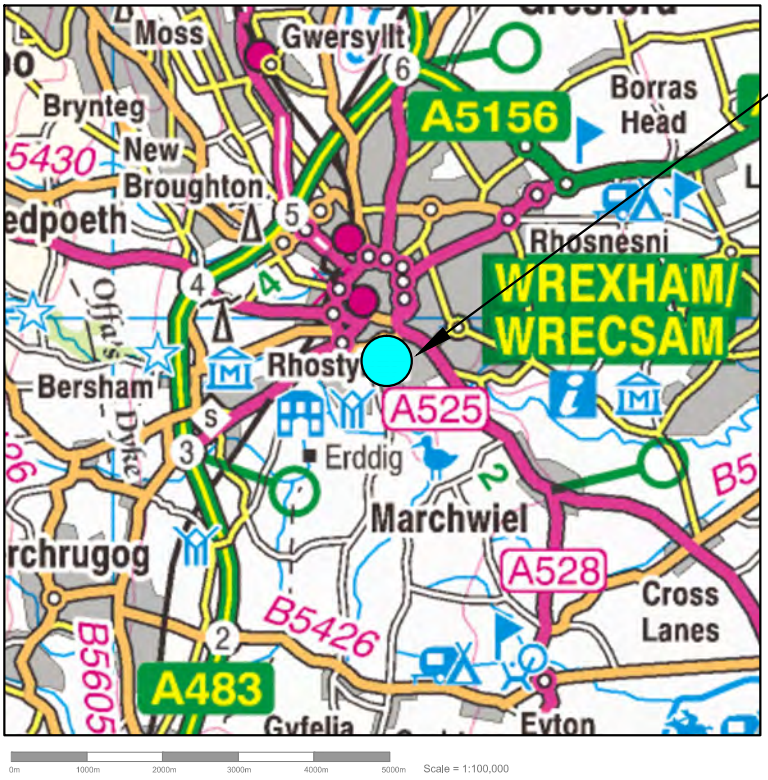
Drawings included in this report:

14656/D001 – Site Location Plan

NWP-AR-CAP-099-DR-01-1001 – Site Masterplan



SITE LOCATION





Rev	Date	Description	By	Ckd
A	07/10/14	FINAL	LW	TW

This drawing is the copyright of Hydrock Consultants Ltd

Drawing Status: FINAL

Client : LEND LEASE

Project Title: NORTH WALES PRISON

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Architect :

Drawing Title: Site Location Plan

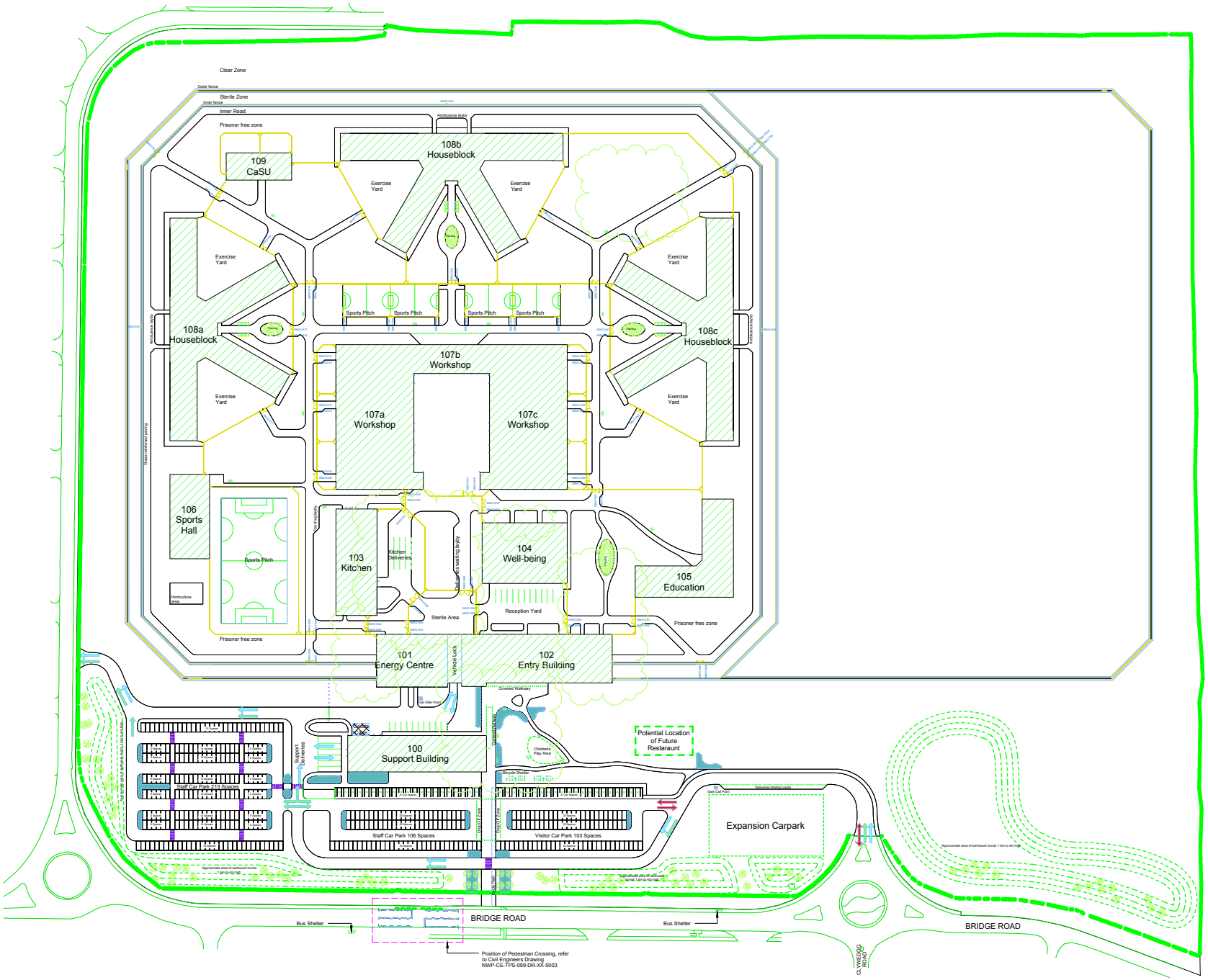
Hydrock Job No: C/14656

Drawn	Checked	Scale @ A4	Date	Issue Date
LW	TW	AS SHOWN	12/09/14	12/09/14

Drawing Number: 14656/D001

Revision: A

A1



Note
This drawing is to be read in conjunction with
- NWP-AR-CAP-099-SH-01-1003 - Site Fence Schedule
- NWP-AR-CAP-099-DR-ZZ-1010 - Perimeter Security & Zonal Fence Requirements
- NWP-LA-CAP-099-LA-XX-501 & 502 - Planting Plan for Public Entrance Zones
- NWP-LA-CAP-099-LA-XX-603 - Typical Bund Sections

Bunds shown indicatively - Refer to Landscape Architects Drawings

Gate Schedule

Gate No.	Gate Type	Description
099/G1002	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1004	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1008	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1008	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1009	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1011	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1013	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1015	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1017	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1019	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1021	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1023	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1024	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1025	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1030	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1037	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1038	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1040	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1042	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1044	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1045	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1047	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1050	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1052	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1054	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1055	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1057	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1060	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1061	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1063	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1065	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1072	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1078	G20-A	4m Wide Double Leaf Vehicle Gate
099/G1068	G20-B	5m Wide Double Leaf Vehicle Gate
099/G1069	G20-B	5m Wide Double Leaf Vehicle Gate
099/G1071	G20-B	5m Wide Double Leaf Vehicle Gate
099/G1074	G20-B	5m Wide Double Leaf Vehicle Gate
099/G1001	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1003	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1005	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1007	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1010	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1012	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1014	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1018	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1018	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1020	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1022	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1026	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1027	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1028	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1029	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1031	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1032	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1033	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1034	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1035	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1036	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1039	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1041	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1043	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1046	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1048	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1049	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1051	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1053	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1056	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1058	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1059	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1062	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1064	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1066	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1067	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1070	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1073	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1075	G21-A	1.3m Wide Single Leaf Pedestrian Gate
099/G1077	G21-A	1.3m Wide Single Leaf Pedestrian Gate

LEGEND

- Location of Buildings
- Grass
- Tarmac
- Paving
- Gravel
- Shrub
- Proposed earth banks - Approximate area of earthwork bunds 1.5m to 4m high
- Proposed covered walkway
- Denotes Double / Vehicle Gate
- Pedestrian gate
- Visitors Entry/Exit Route
- Staff Entry/Exit Route
- Service Vehicles Entry/Exit Route
- Existing Site Fence Line
- Benches
- Road Guard Rail

SCALE BAR: 0cm 2cm 4cm 6cm 8cm 10cm

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

Refer to the relevant Construction (Design and Management) documentation where applicable.

It is assumed that all works on this drawing will be carried out by a competent contractor, working where appropriate to an approved method statement.

Revision	Description	Date
T03	By: MMD Chk: DD App: KB Site plan updated to match V.E. - 110 Multifaith removed, 104 Wellbeing footprint modified, Shorter footprint to 101 Energy & 102 Entry, Covered walkway footprint reduced, Delivery layout updated, Fences updated accordingly	05/03/2015
T02	By: MMD Chk: KB App: JM Site Fences updated, ZNs, sports pitches ommitted, Gate Schedule and Numbers added.	10/11/2014
T01	By: MMD Chk: KB App: JM Issued for AMP.	24/10/2014

Designers
CAPITA

Project
North Wales Prison

Title
099 Site Masterplan
General Arrangement
Site Plan

DRAWING STATUS:
D2 – Fit for Tender

Project No.	Scale & Size
CS 070997	1 : 1000

Drawing Identifier	Revision
NWP-AR-CAP-099-DR-01-1001	T03

Appendix B

Planning Permission

In pursuance of its powers under the Acts an Orders referred to below, the County Borough Council as Local Planning Authority, hereby determines your application in accordance with the particulars and plans comprising the application

wrexham
COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL
wrecsam

Applicant	MINISTRY OF JUSTICE / NATIONAL OFFENDER MANAGEMENT SERVICES	**Code Number**	ABE P/2013/0671
Agent	GVA MR NICK HARDY 3 BRINDLEY PLACE BIRMINGHAM B1 2JB	**Date Received**	01/10/2013
		Decision Date	30/04/2014

Town and Country Planning Act, 1990

Town and Country Planning (Environmental Impact Assessment) Regulations 1999

Location of application

FORMER FIRESTONE FACTORY SITE, BRIDGE ROAD, WREXHAM INDUSTRIAL ESTATE, WREXHAM, LL13 9QA

Description of application

OUTLINE PLANNING APPLICATION FOR THE CONSTRUCTION OF A PRISON (MAXIMUM FLOORSPACE OF 76,370 SQM GROSS EXTERNAL AREA) WITHIN A SECURE PERIMETER FENCE TOGETHER WITH ACCESS, PARKING, VISITOR / SUPPORT BUILDING, ENERGY CENTRE, LANDSCAPING, CONSTRUCTION COMPOUND AND ASSOCIATED ENGINEERING WORKS.

In reaching this decision the Council has had regard to the relevant policies in the Wrexham Unitary Development Plan which are as follows:-

E4	Employment development within settlements
EC6	Biodiversity Conservation
GDP1	Development objectives
T8	Parking

Particulars of decision that permission be GRANTED
Subject to the following:-

Applicant	MINISTRY OF JUSTICE / NATIONAL OFFENDER MANAGEMENT SERVICES	**Code Number**	ABE P/2013/0671
Agent	GVA MR NICK HARDY 3 BRINDLEY PLACE BIRMINGHAM B1 2JB	**Date Received** **Decision Date**	01/10/2013 30/04/2014

Condition(s)

1. Approval of the following details shall be obtained from the Local Planning Authority before each part of the development is commenced:
a) the appearance of the building(s);
b) the layout of the building(s);
c) the landscaping of the site.
2. Plans and particulars of the reserved matters referred to in condition 1 (above) shall be submitted in writing to the Local Planning Authority before the expiry of three years from the date of this permission. The development shall only be carried out in strict conformity with such details as are approved.
3. The development hereby approved shall be commenced before the expiry of five years from the date of this permission or before the expiry of two years from the date of approval of the last of the reserved matters required to be approved, whichever is the later.
4. Each new non-residential building hereby permitted shall be constructed to achieve a minimum [Building Research Establishment Environmental Assessment Method (BREEAM)] overall 'Very Good' standard and achieve the mandatory credits for 'Excellent' under issue Ene1 - Reduction of CO2 Emissions (or subsequent equivalent quality assured scheme) in accordance with the requirements of BREEAM 2011. The development shall be carried out entirely in accordance with the approved assessment and certification.
5. Construction of any building hereby permitted shall not begin until an 'Interim Certificate' has been submitted to the Local Planning Authority, certifying that a minimum BREEAM overall 'Very Good' standard and the mandatory credits for 'Excellent' under issue Ene1 - Reduction of CO2 Emissions (or subsequent equivalent quality assured scheme) has been achieved for that individual building in accordance with the requirements of BREEAM 2011.
6. Prior to the occupation of the individual buildings, or within a timescale otherwise agreed in writing with the Local Planning Authority, a 'Final Certificate' shall be submitted to the Local Planning Authority, certifying that a minimum BREEAM overall 'Very Good' standard and the mandatory credits for 'Excellent' under issue 'Ene1 - Reduction of CO2 Emissions' (or subsequent equivalent quality assured scheme) has been achieved for that building in accordance with the requirements of BREEAM 2011.

Applicant	MINISTRY OF JUSTICE / NATIONAL OFFENDER MANAGEMENT SERVICES	**Code Number**	ABE P/2013/0671
Agent	GVA MR NICK HARDY 3 BRINDLEY PLACE BIRMINGHAM B1 2JB	**Date Received**	01/10/2013
		Decision Date	30/04/2014

7. The reserved matters application(s) shall include a scheme for the comprehensive and integrated drainage of the site indicating how foul water, surface water and land drainage. The scheme as approved shall be implemented in accordance with a timescale to be agreed as part of the submitted details and maintained thereafter.

8. The details required by condition 07 shall include an assessment into the potential for disposing of surface water by means of Sustainable urban Drainage Systems (SuDS) in accordance with the principles of sustainable drainage systems set out in Technical Advice Note 15: Development and Flood Risk. Where a SuDS scheme is to be implemented, the details required by condition 07 shall:

i) Provide information about the design storm period and intensity, the method employed to delay and control the surface water discharged from the site and the measures taken to prevent pollution of receiving ground water and/or surface waters;

ii) Specify the responsibilities of each party for the implementation of the SuDS scheme, together with a timetable for that implementation; and,

iii) Provide a timescale for implementation, management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime.

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.

11. The reserved matters application shall include a Construction Environment and Management Plan. Construction shall thereafter be carried out in strict accordance with the Construction Environment and Management Plan details as approved.

12. No underground tanks for the storage of fuels, oils or gas shall be installed until full structural details of the installation, including details of: excavation, the tank(s), tank surround, associated pipework and monitoring system have been submitted to and approved in writing by the Local Planning

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Authority. Any tanks for fuels, oils or gas storage shall thereafter only be installed in strict accordance with the details as approved.

13. The details required by condition 01 shall include details of the location and layout of vehicular parking, turning facilities and loading/unloading areas and a timetable for the provision of the parking, turning and unloading areas. Vehicular parking, turning and loading areas shall be laid out, surfaced and drained in strict accordance with the details as approved and thereafter permanently retained and kept free of any obstruction, and made available solely for the parking, turning, loading and unloading of vehicles at all times.

14. The reserved matters application shall include details of a new signalised pedestrian and cyclist crossing to be provided on Bridge Road. The development shall not be brought into use until a signalised pedestrian and cyclist crossing has been provided in accordance with the details as approved.

15. The reserved matters application shall include details of the siting and appearance of two new bus shelters that shall be provided on Bridge Road. The development shall not be brought into use until the two new bus shelters have been sited on Bridge Road in accordance with the details as approved.

16. The details submitted in respect of condition 01 shall include the siting, height and appearance of all lighting columns to be located outside of the perimeter fence.

17. The development shall not be brought into use until a Final Travel Plan has been submitted to and approved in writing by the Local Planning Authority. The Final Travel Plan shall include a program of annual monitoring reports that shall be submitted to the Local Planning Authority for written approval within one month of the anniversary of the first use of the development every year, up to and including the fifth anniversary. The Final Travel Plan shall be implemented in full. Should the annual monitoring reports demonstrate that there is insufficient on-site parking, additional parking shall be provided in accordance with a scheme that shall first have been submitted to and approved in writing by the Local Planning Authority.

18. The reserved matters application shall include a scheme of directional signage from the A483, A534 and A525 and roads within the industrial estate. The development shall not be brought into use until the scheme of signage as approved has been implemented in full.

19. Prior to first use of the development hereby granted permission the vehicular access onto the unclassified road adjoining the north-eastern boundary of the site shall provide visibility splays of 2.4 metres x 70 metres to the north-west and 2.4 metres x 120 metres to the south-east measured to the nearside edge of the adjoining highway. Within these splays there shall be no

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obstruction above the level of the adjoining carriageway. The splays shall thereafter be permanently retained clear of any such obstruction to visibility.

20. The ENVIRON Ecological Mitigation Strategy and Habitat Management Plan dated September 2013 and the ENVIRON Addendum to Ecological Strategy and Habitat Management Plan dated December 2013 shall be implemented in full in accordance with the timescales referred to therein.

21. Prior to their appointment, details of the organisation(s) who will be responsible for implementation of the ENVIRON Ecological Mitigation Strategy and Habitat Management Plan and the ENVIRON Addendum to Ecological Strategy and Habitat Management Plan shall be submitted to the Local Planning Authority.

22. Once operational the rating level of any noise generated by reason of this development shall not exceed the pre-existing background level by more than 5dB(A) at any time. The noise levels shall be determined at the nearest noise sensitive premises, and measurements and assessment shall be made in accordance with BS4142:1997 Method of Rating Industrial Noise Affecting Mixed Residential and Industrial areas.

23. Development shall not commence a scheme of off-site landscaping of the land between Bridge Road and Bridgeway East has been submitted to and approved in writing by the Local Planning Authority. Off-site landscaping shall thereafter be implemented in the first planting season (November to March) or seeding season (April to September) following commencement of development.

Reason(s)

1. To comply with the provisions of the Town and Country Planning (Development Management Procedure) (Wales) Order 2012.

2. To comply with Section 92 of the Town and Country Planning Act, 1990.

3. To comply with Section 92 of the Town and Country Planning Act, 1990.

4. To comply with the requirements for sustainable buildings published by the Welsh Government (Planning Policy Wales Edition 5 (2012)).

5. To comply with the requirements for sustainable buildings published by the Welsh Government (Planning Policy Wales Edition 5 (2012)).

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6. To comply with the requirements for sustainable buildings published by the Welsh Government (Planning Policy Wales Edition 5 (2012)).
7. To ensure that effective drainage facilities are provided for the proposed development, and that no adverse impact occurs tot eh environment or the existing public sewerage system.
8. To ensure satisfactory drainage of the site and to avoid flooding.
9. In the interests of the amenities of the future occupants of the buildings.
10. In the interests of the amenities of the future occupants of the buildings
11. To protect the amenities of the occupiers of nearby properties.
12. The site is within 15m of the River Clywedog, which is a tributary of the River Dee, which is a Water Protection Zone, the site is on a Secondary A aquifer and in close proximity to a potable abstraction used for human consumption.
13. To provide for the parking and turning of vehicles clear of the highway and to ensure that reversing by vehicles into or from the highway is rendered unnecessary in the interest of traffic safety.
14. In the interests of pedestrian safety.
15. In the interests of providing public transport access to the site.
16. To ensure a satisfactory standard of appearance of the development in the interests of the visual amenities of the area.
17. To promote reduced dependency on the motor vehicle and to be able to respond to any parking issues that arise from the operation of the site.
18. In the interests of highway safety.
19. To ensure that adequate visibility is provided at the proposed point of access to the highway.
20. In order to protect wildlife interests, which are afforded special protection.
21. In order to protect wildlife interests, which are afforded special protection.
22. To protect the amenities of the occupiers of nearby properties.
23. In the interests of the amenities of the occupiers of properties on Bridgeway East and the visual amenity of the area.

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Note(s) to applicant

You are advised to contact Dwr Cymru Welsh Water's Developer Services on 0800 917 2652 to ensure that there is adequate headroom in their existing abstraction licences in order to be able to supply this development.

Officer Appointed for this purpose
Head of Community Wellbeing and Development

Refer to the Statement of Applicant's Rights and General Information enclosed or refer to the following link:-

http://www.wrexham.gov.uk/english/planning_portal/publications/info_sheets.htm

Appendix C

Aerial Photographs



Figure 1



Figure 2



Figure 3

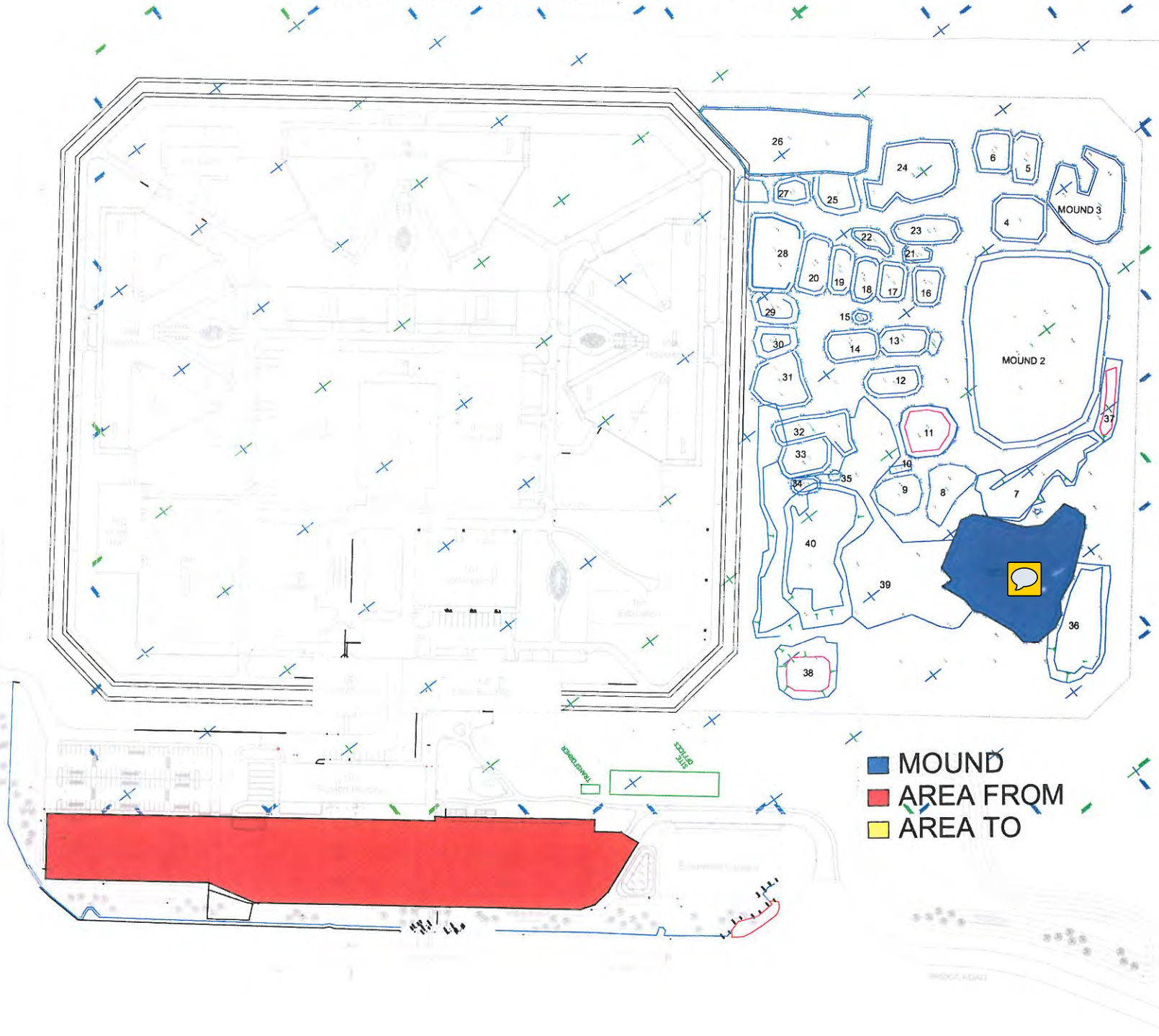
Appendix D

Materials Tracking

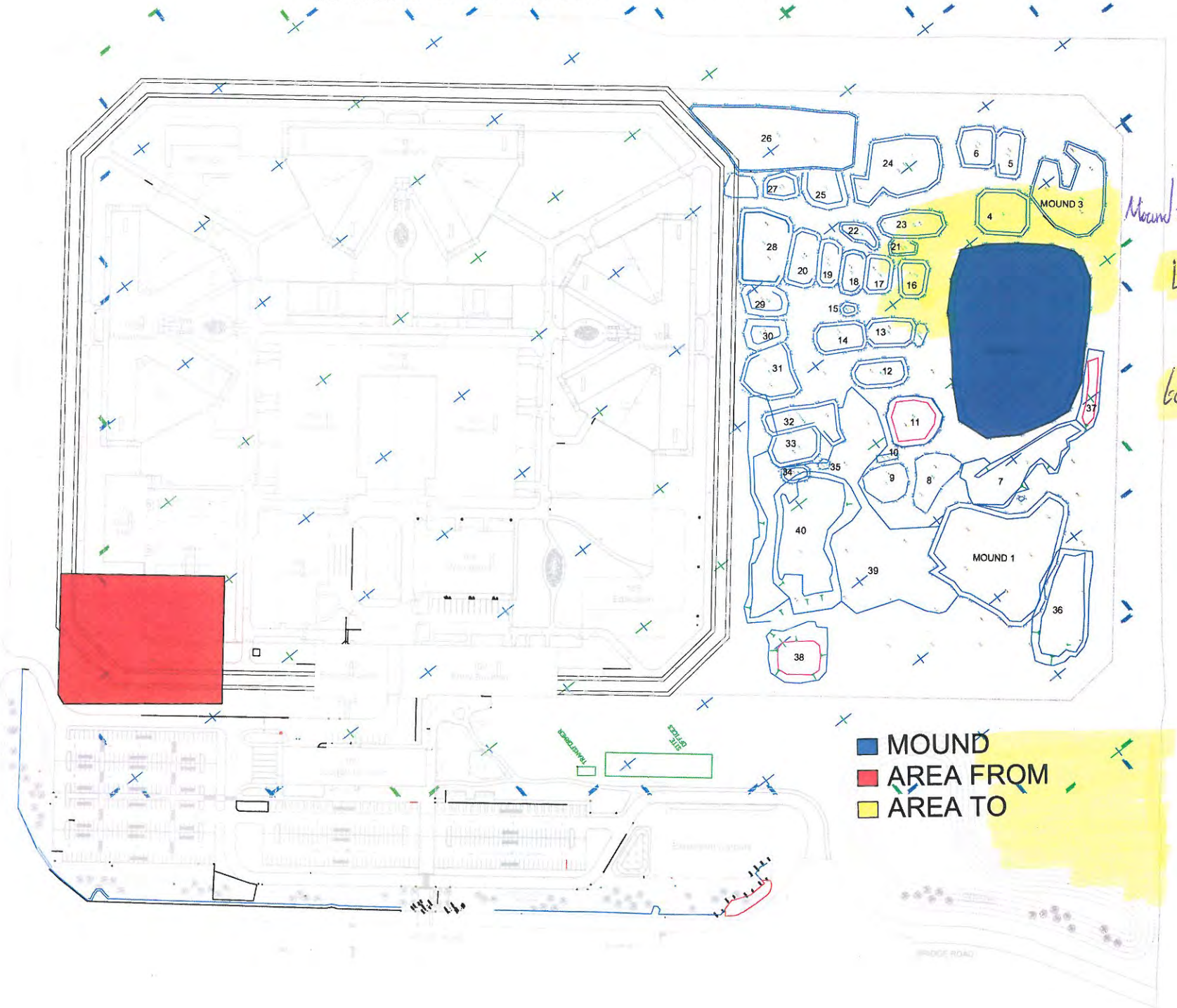
Expansion zone stockpiles **Materials Movement plan**

Stockpile	Date moved	Percentage moved	Area From	Area To	Comments
1	18/07/2017	100%	Expansion Zone	Landscape Area	
2	11/07/2017	40%	Expansion Zone	Expansion zone	Spread and leveled
		60%	Expansion Zone	Landscape Area	
3	05/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
4	05/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
5	05/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
6	05/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
7	12/07/2017	100%	Expansion Zone	Landscape Area	
8	31/07/2017	100%	Expansion Zone	Landscape Area	
9	02/08/2017	100%	Expansion Zone	Landscape Area	
10	02/08/2017	100%	Expansion Zone	Landscape Area	
11	06/07/2017	50%	Expansion Zone	Landscape Area	
	10/07/2017	50%	Expansion Zone	Expansion zone	Spread and leveled in place
12	10/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
13	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
14	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
15	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
16	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
17	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
18	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
19	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
20	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
21	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
22	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
23	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
24	04/07/2017	100%	Expansion Zone	Moved to landscape Area	
25	06/07/2017	100%	Expansion Zone	Moved to landscape Area	
26	05/07/2017	100%	Expansion Zone	Moved to landscape Area	
27	06/07/2017	100%	Expansion Zone	Moved to landscape Area	
28	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
29	04/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
30	19/07/2017	100%	Expansion Zone	Moved to landscape Area	
31	20/07/2017	100%	Expansion Zone	Moved to landscape Area	
32	07/08/2017	100%	Expansion Zone	Landscape Area	
33	08/08/2017	100%	Expansion Zone	Landscape Area	
34	09/08/2017	100%	Expansion Zone	Landscape Area	
35	10/08/2017	100%	Expansion Zone	Landscape Area	
36	17/07/2017	100%	Expansion Zone	Expansion zone	Spread and leveled in place
37	13/07/2017	100%	Expansion Zone	Moved to landscape Area	
38	12/08/2017	100%	Expansion Zone	Landscape Area	
39	04/08/2017	100%	Expansion Zone	Landscape Area	
40	28/06/2017	75%	Expansion Zone	Landscape Area	
		25%	Expansion Zone	Expansion zone	

MATERIAL MOVEMENT PLAN - MOUND 1



MATERIAL MOVEMENT PLAN - MOUND 2

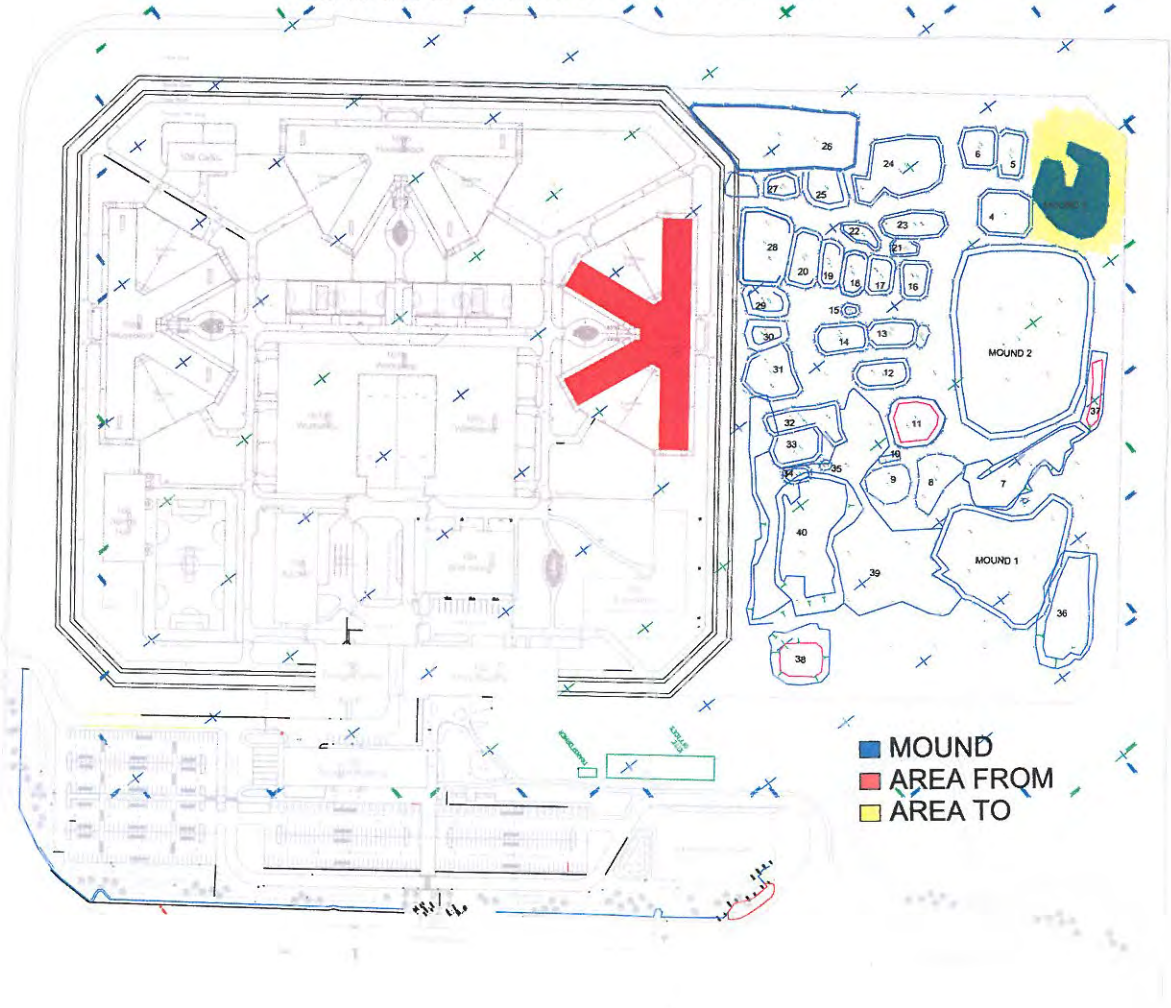


Mound 2 – 11/07/2017

40% Spread in expansion zone

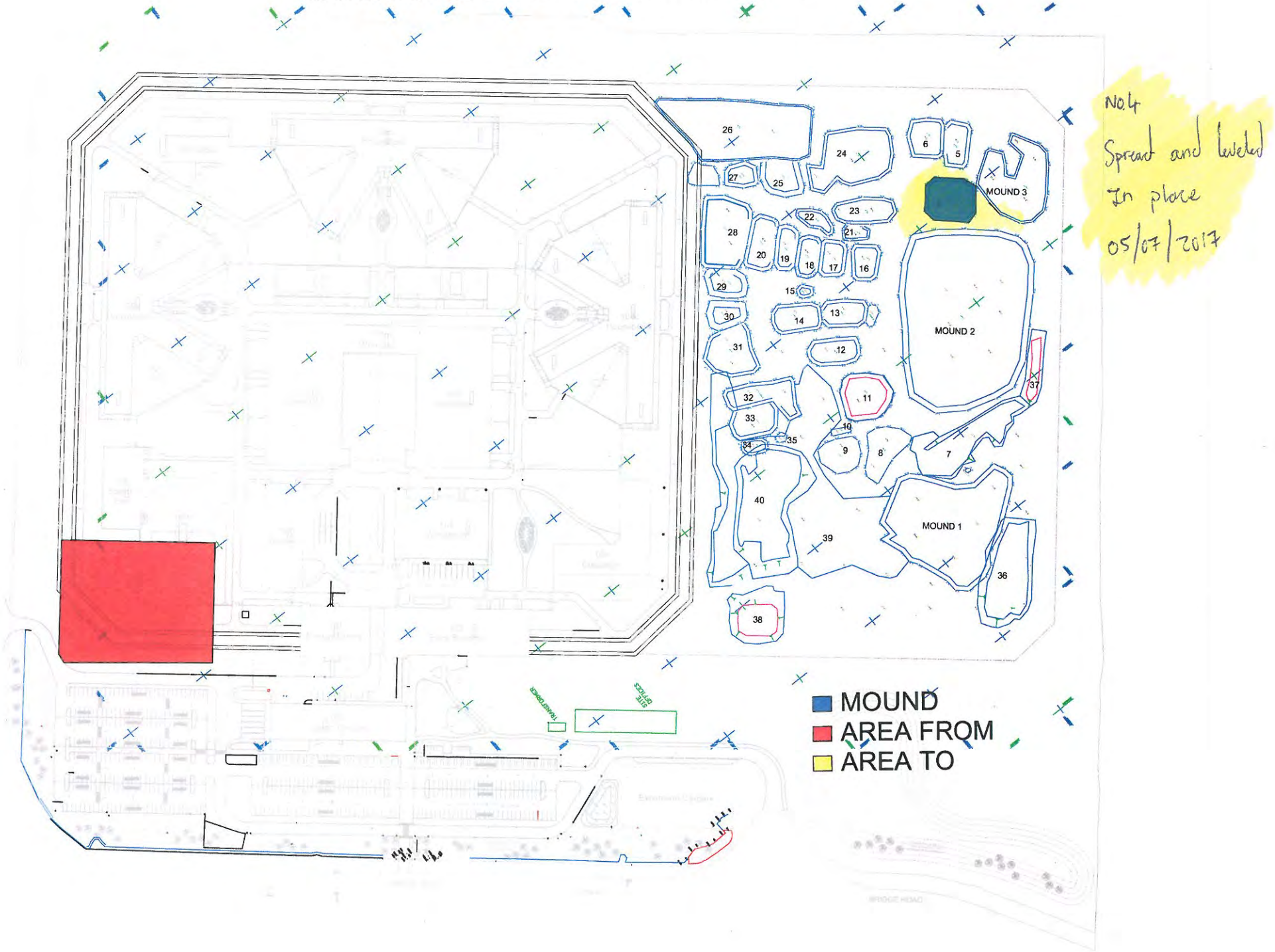
60% To landscape area.

MATERIAL MOVEMENT PLAN - MOUND 3



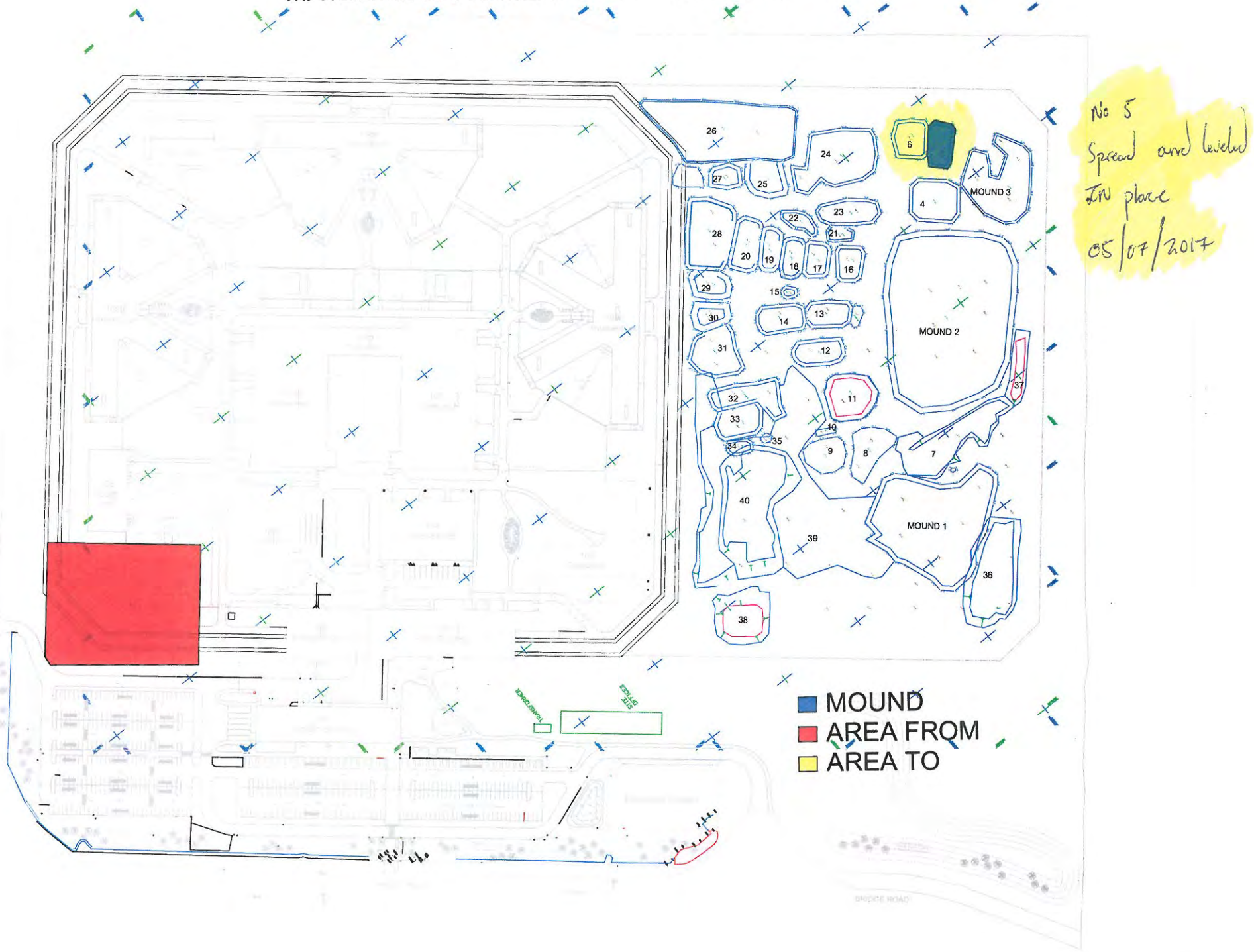
* Mound 3 Spread and leveled in place. 05/07/2017

MATERIAL MOVEMENT PLAN - MOUND 4



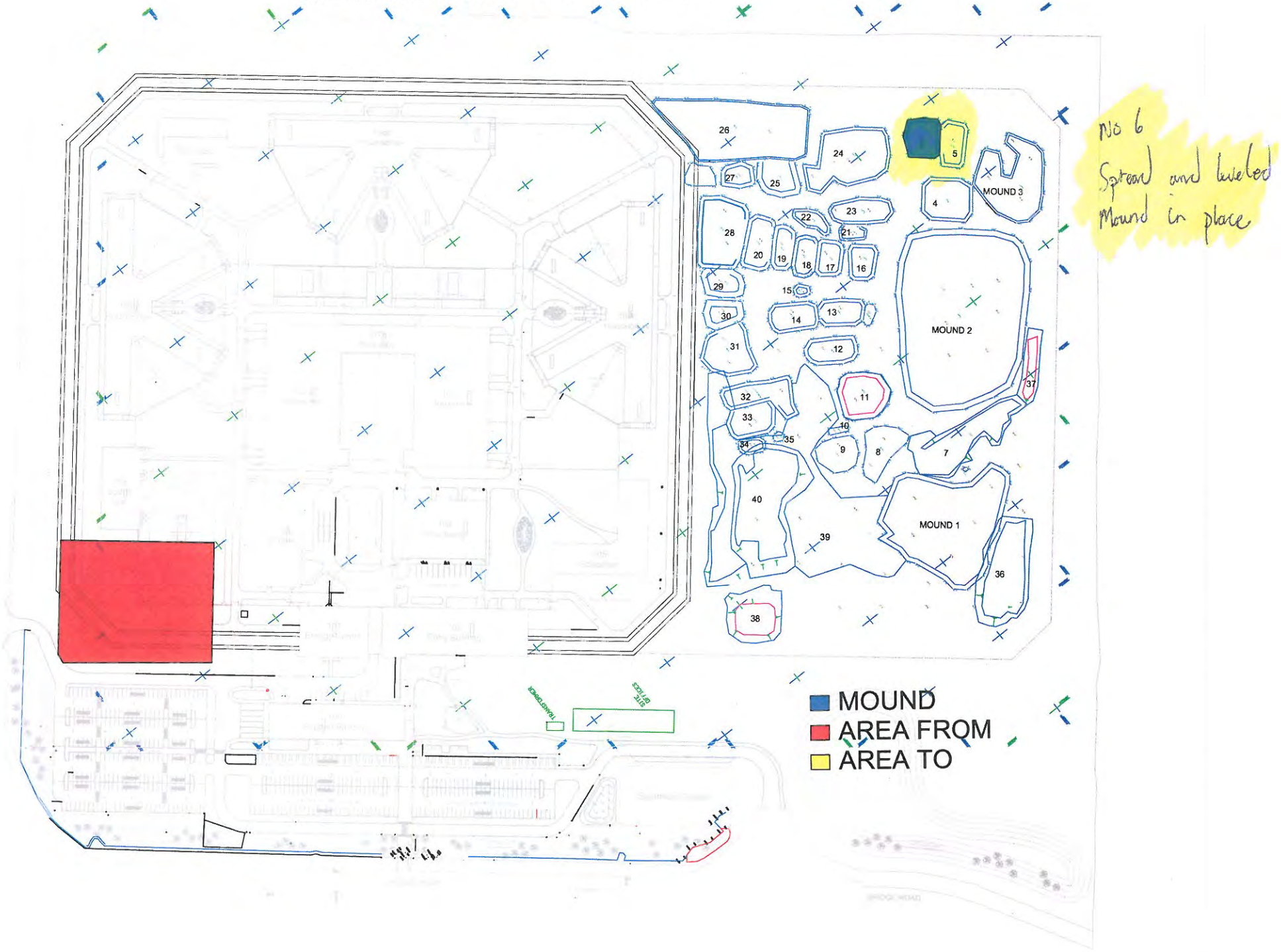
No.4
Spread and leveled
In place
05/07/2017

MATERIAL MOVEMENT PLAN - MOUND 5



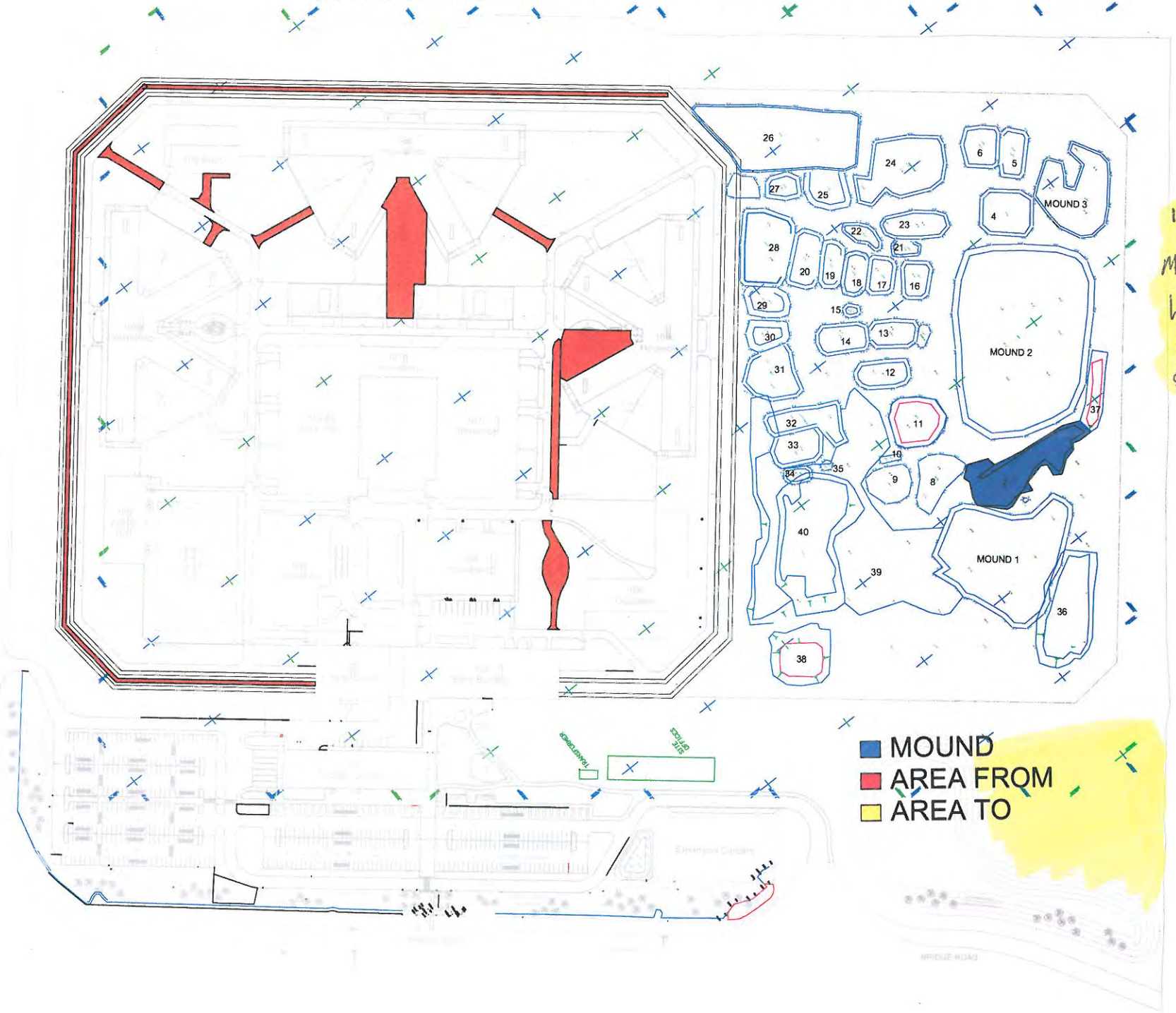
No 5
Spread and leveled
In place
05/07/2017

MATERIAL MOVEMENT PLAN - MOUND 6



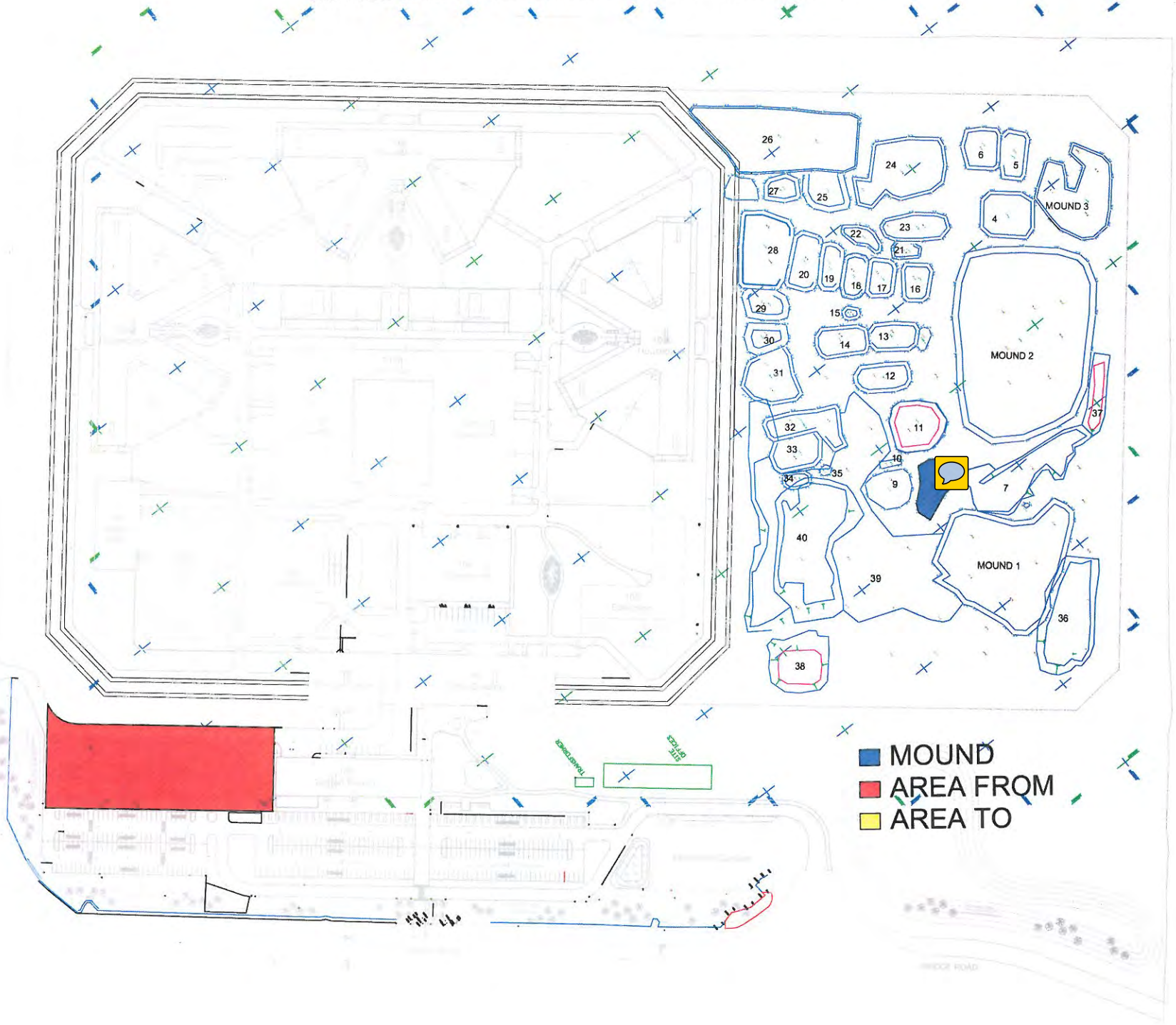
No 6
Spread and leveled
Mound in place

MATERIAL MOVEMENT PLAN - MOUND 7

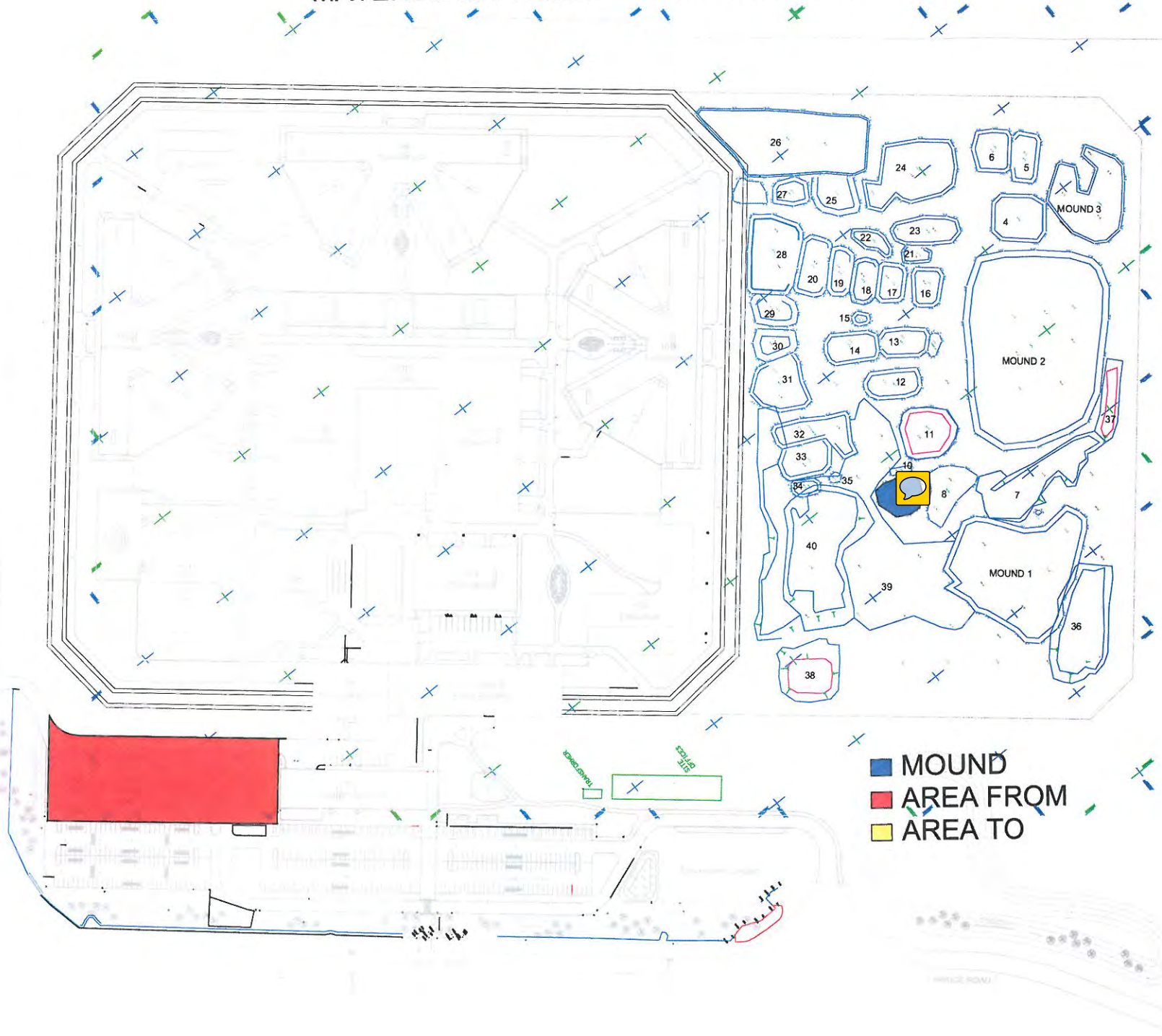


12/07/2017
Mound 7
Load Haul and
Placed in land-
Scape area.

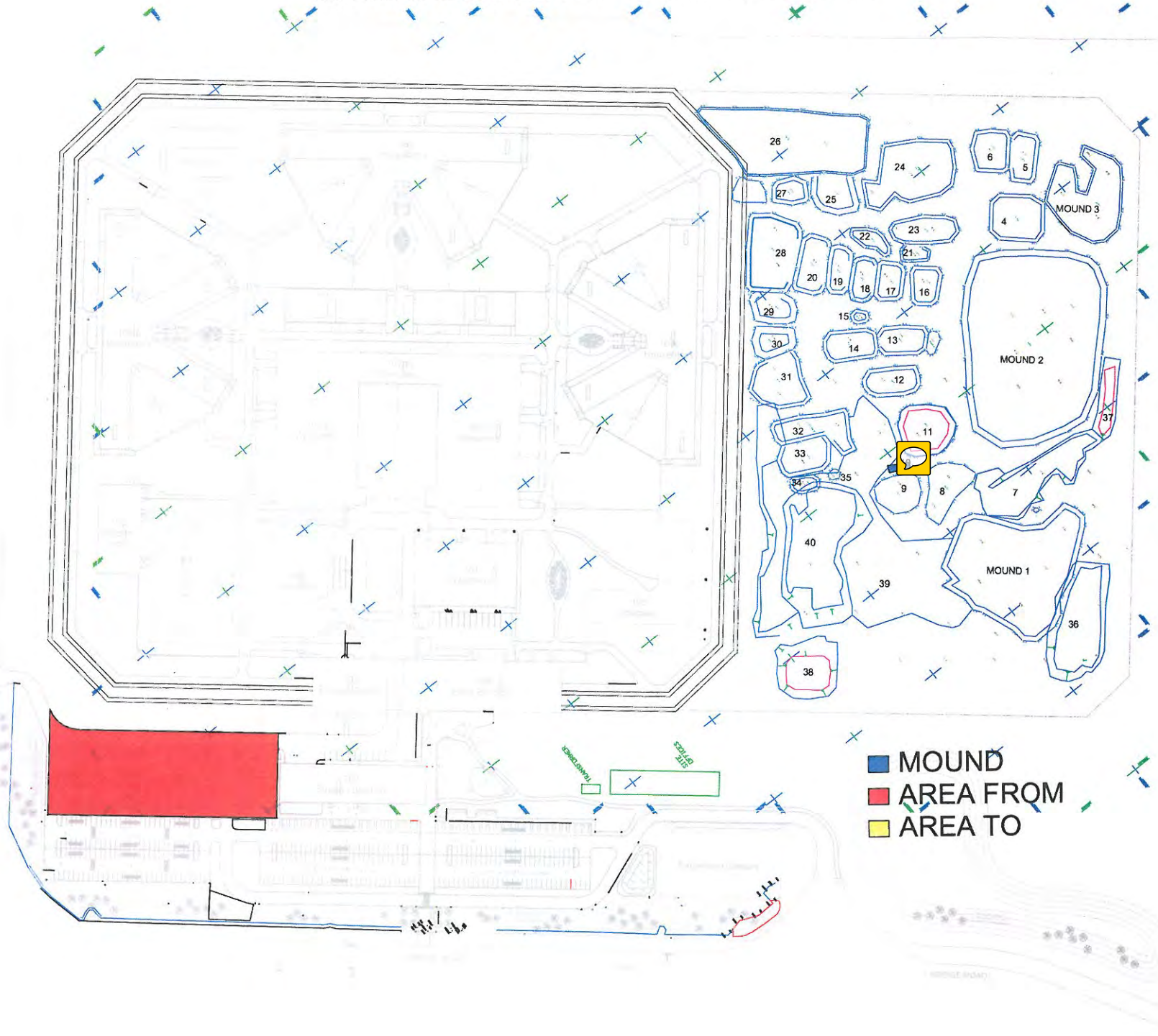
MATERIAL MOVEMENT PLAN - MOUND 8



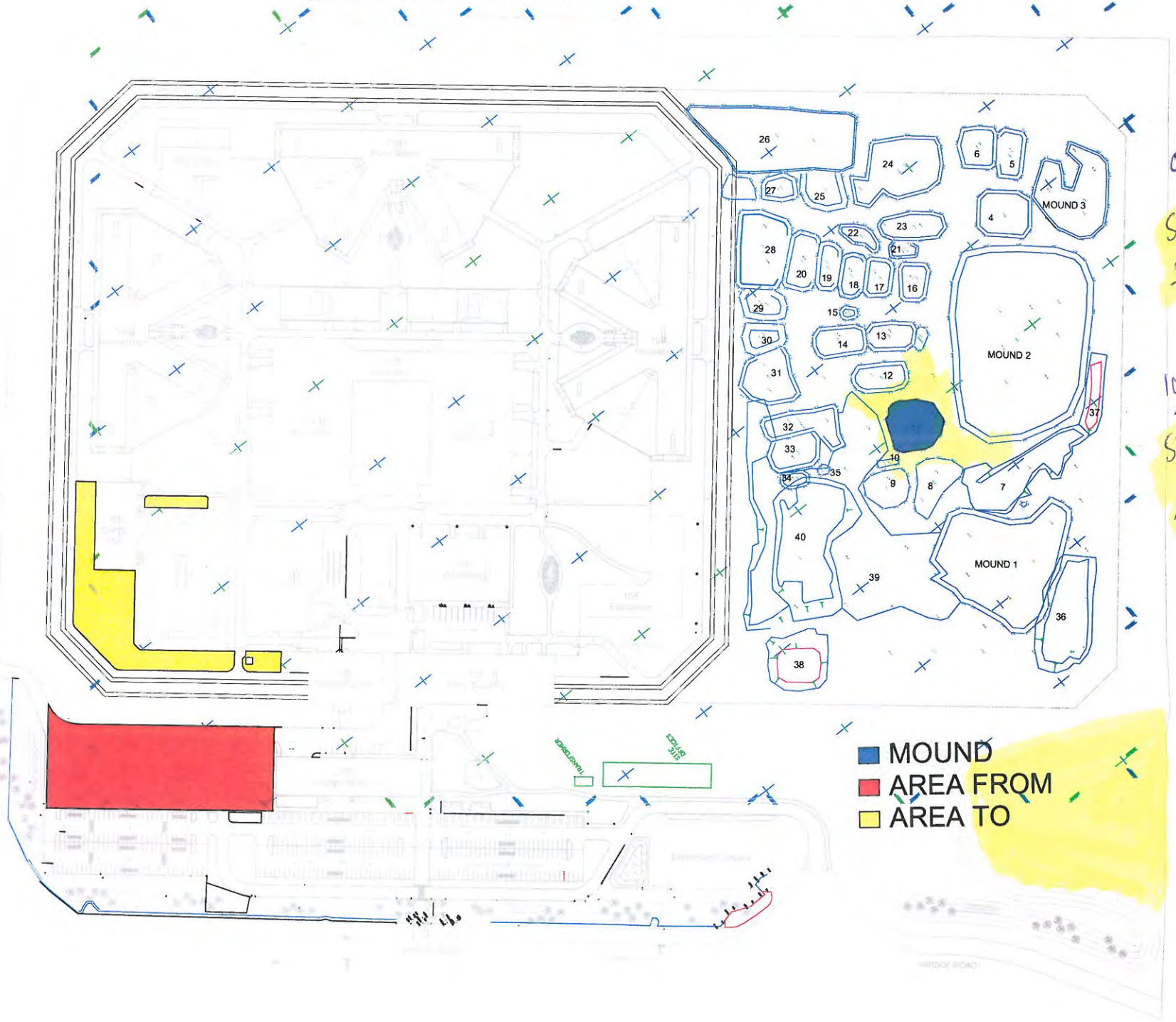
MATERIAL MOVEMENT PLAN - MOUND 9



MATERIAL MOVEMENT PLAN - MOUND 10

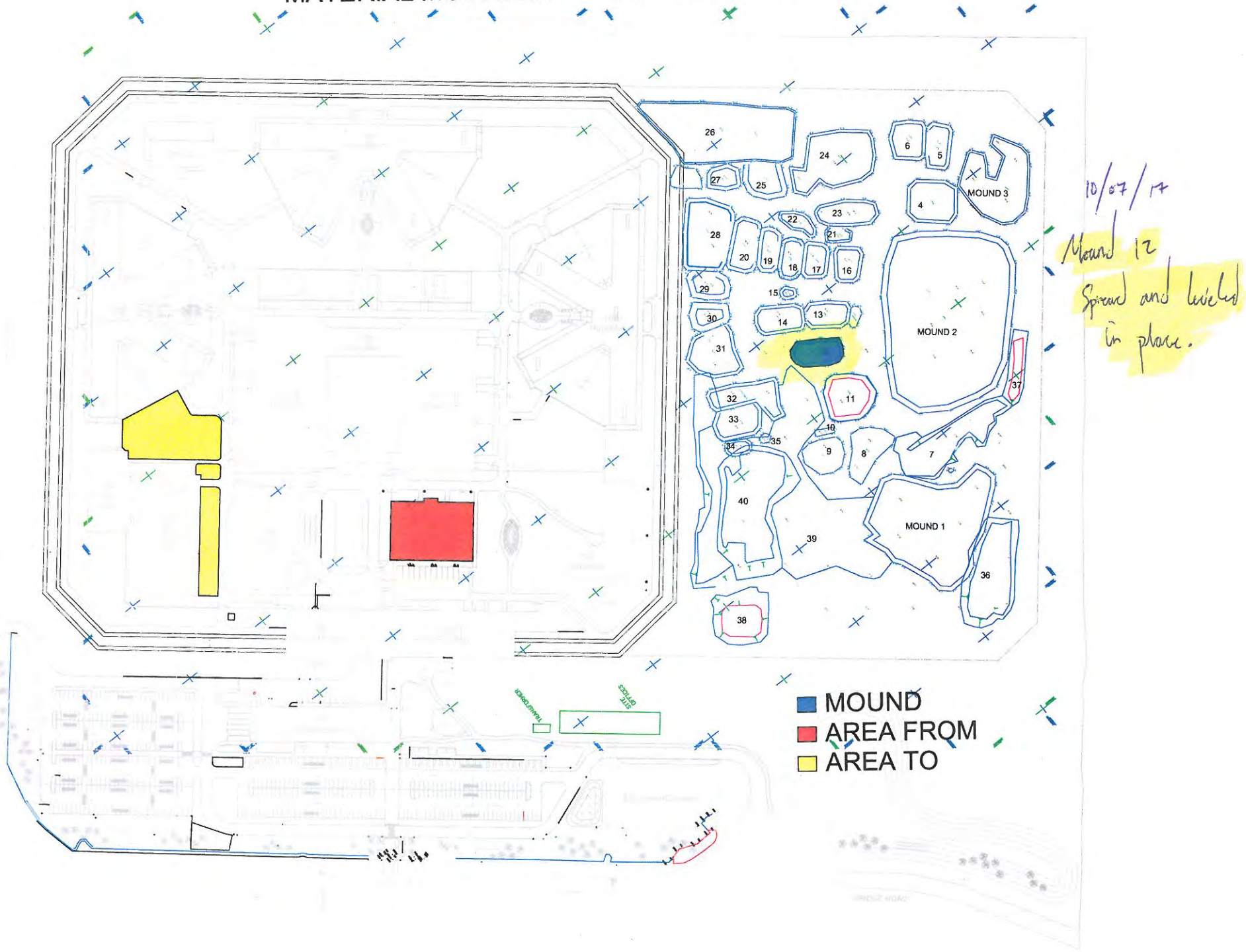


MATERIAL MOVEMENT PLAN - MOUND 11



06/07/2017
50% Moved to landscape area
10/07/2017
50% Spread and Leveled in place.

MATERIAL MOVEMENT PLAN - MOUND 12



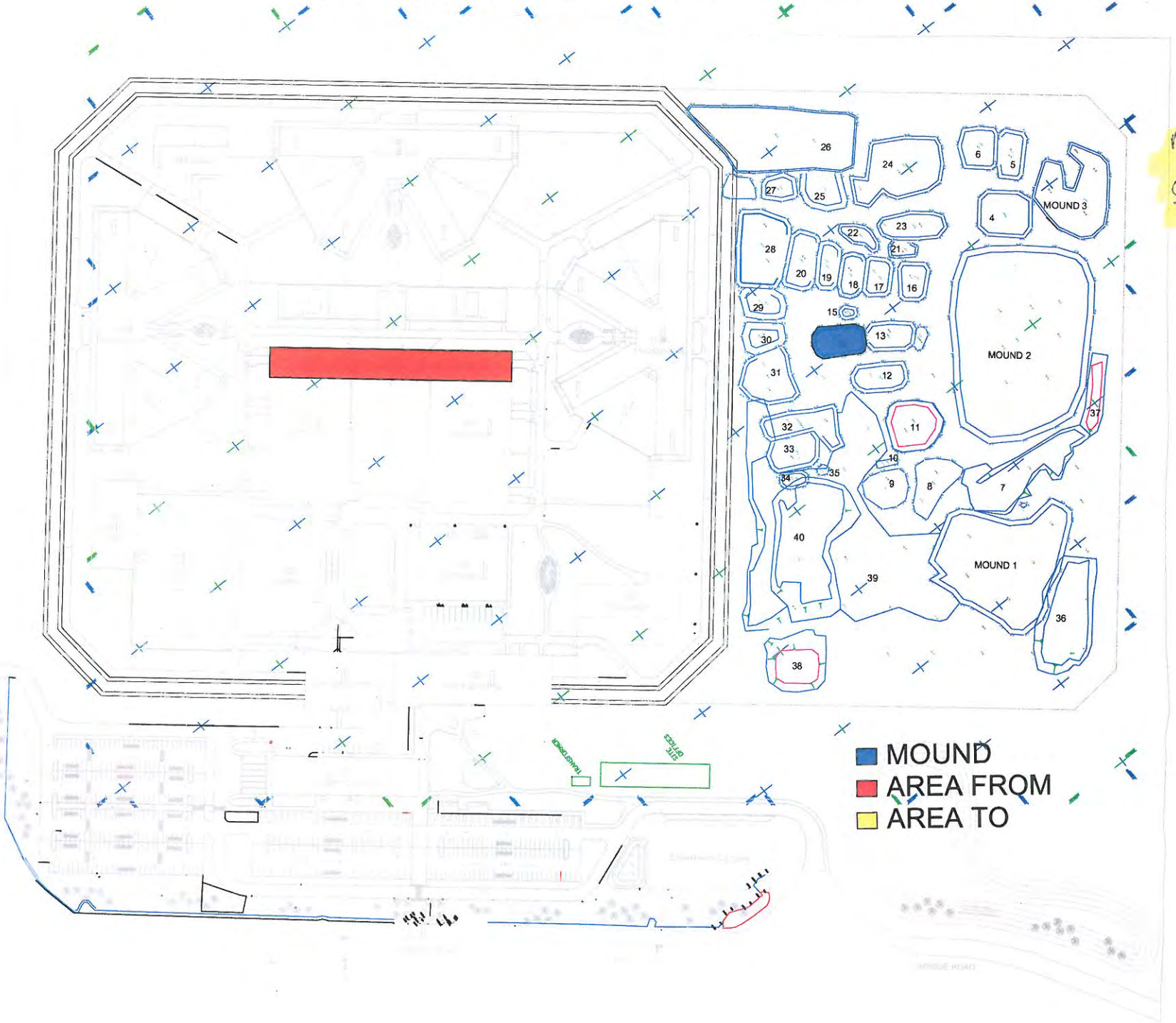
10/07/17
Mound 12
Spread and leveled
in place.

MATERIAL MOVEMENT PLAN - MOUND 13



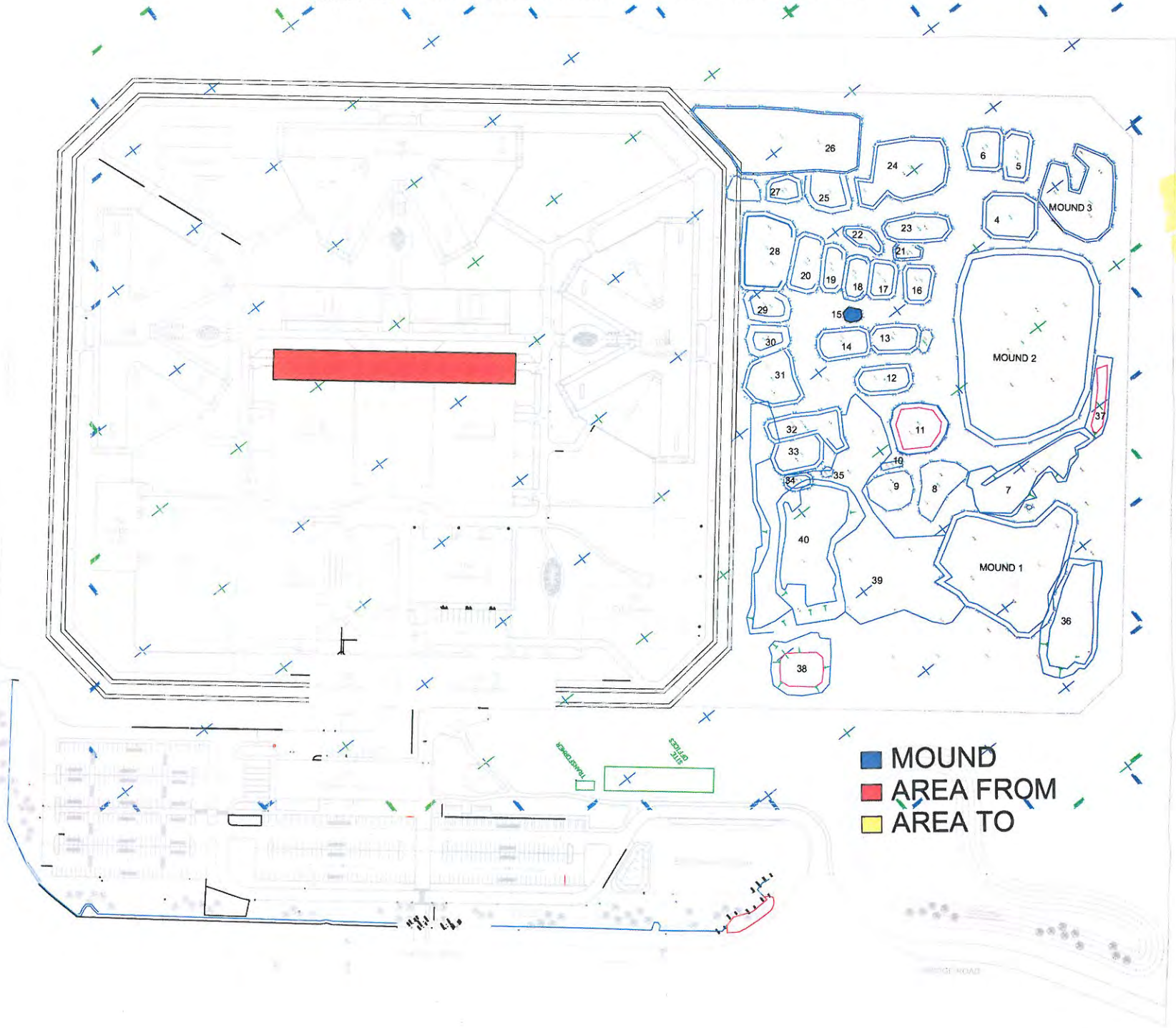
No 13
Spread and leveled in Place
04/07/12

MATERIAL MOVEMENT PLAN - MOUND 14



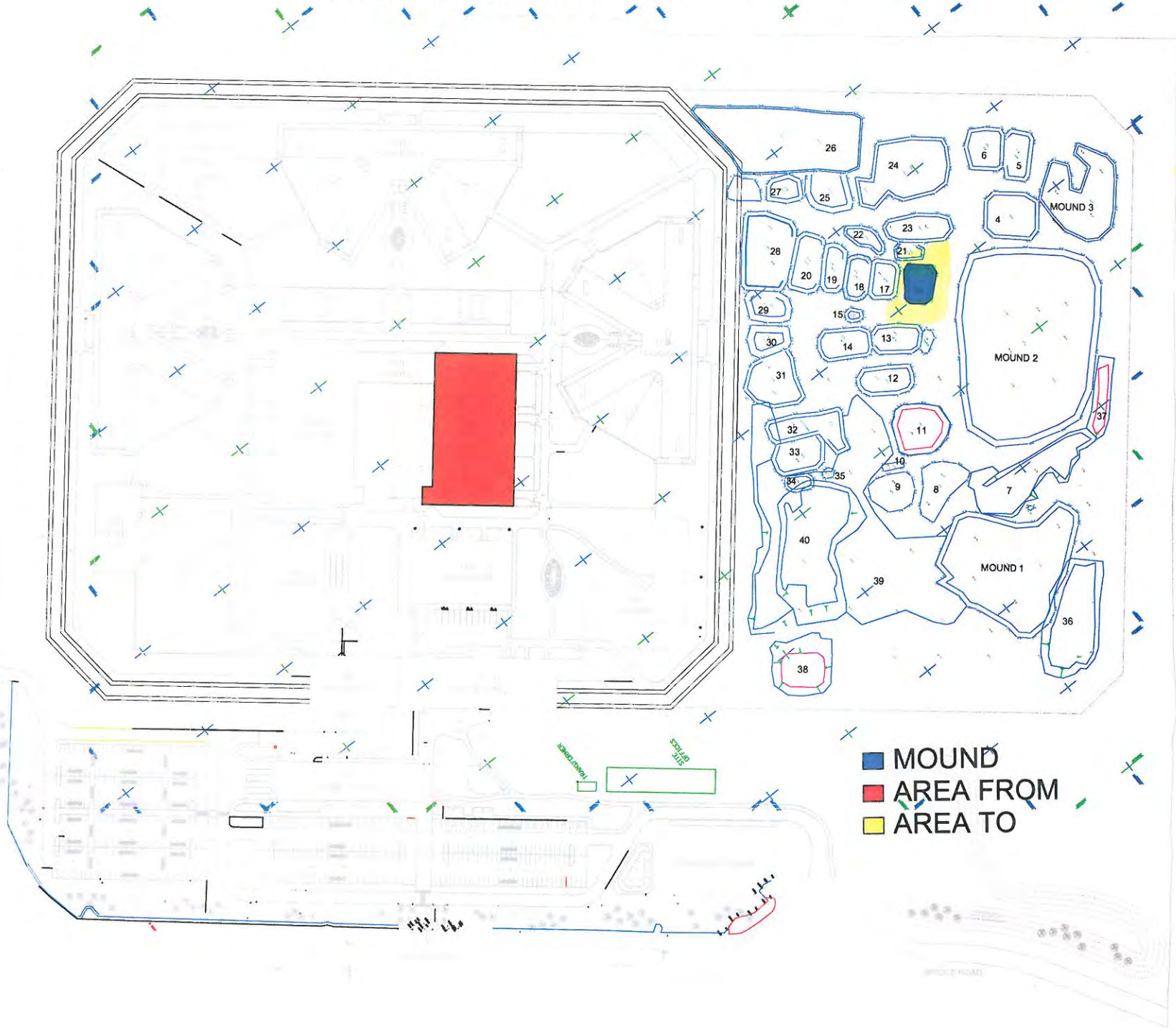
No 14
Spread and leveled
in place.
04/04/17.

MATERIAL MOVEMENT PLAN - MOUND 15



No 15
Spread and leveled in place.
04/07/2017

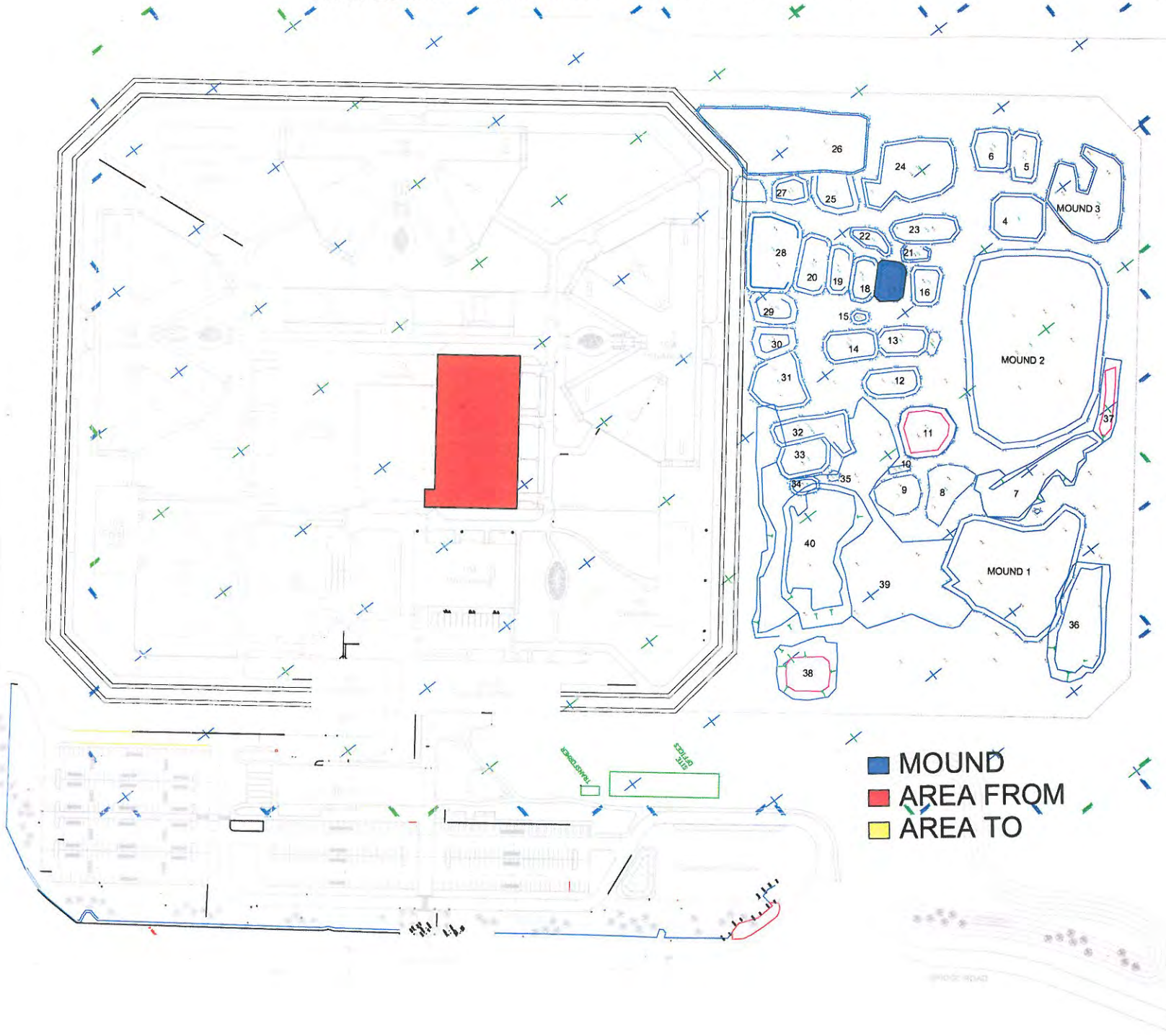
MATERIAL MOVEMENT PLAN - MOUND 16



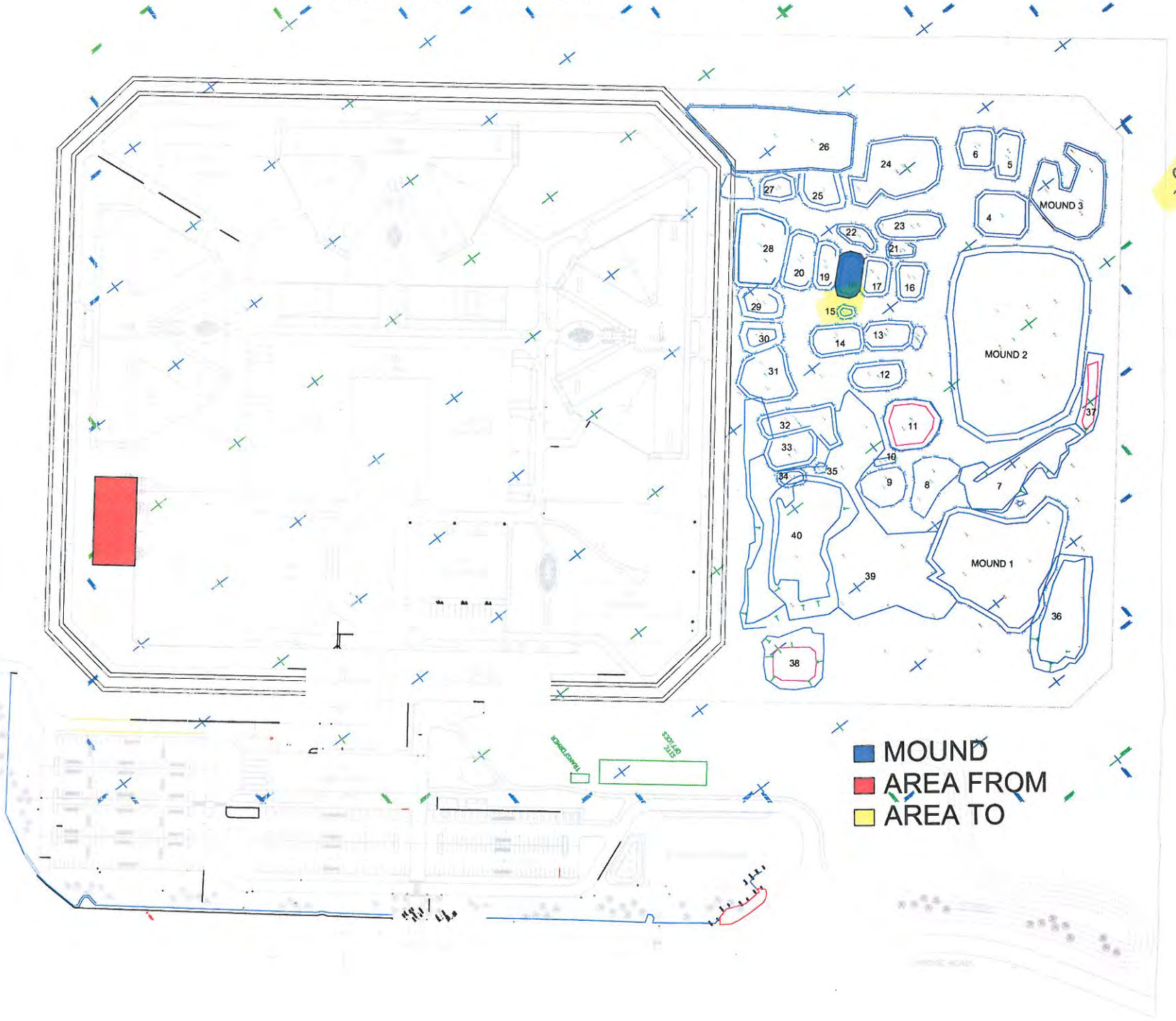
04/07/2017
* Move/Spread
IN PLACE

MATERIAL MOVEMENT PLAN - MOUND 17

04/07/2017
Spread RW place

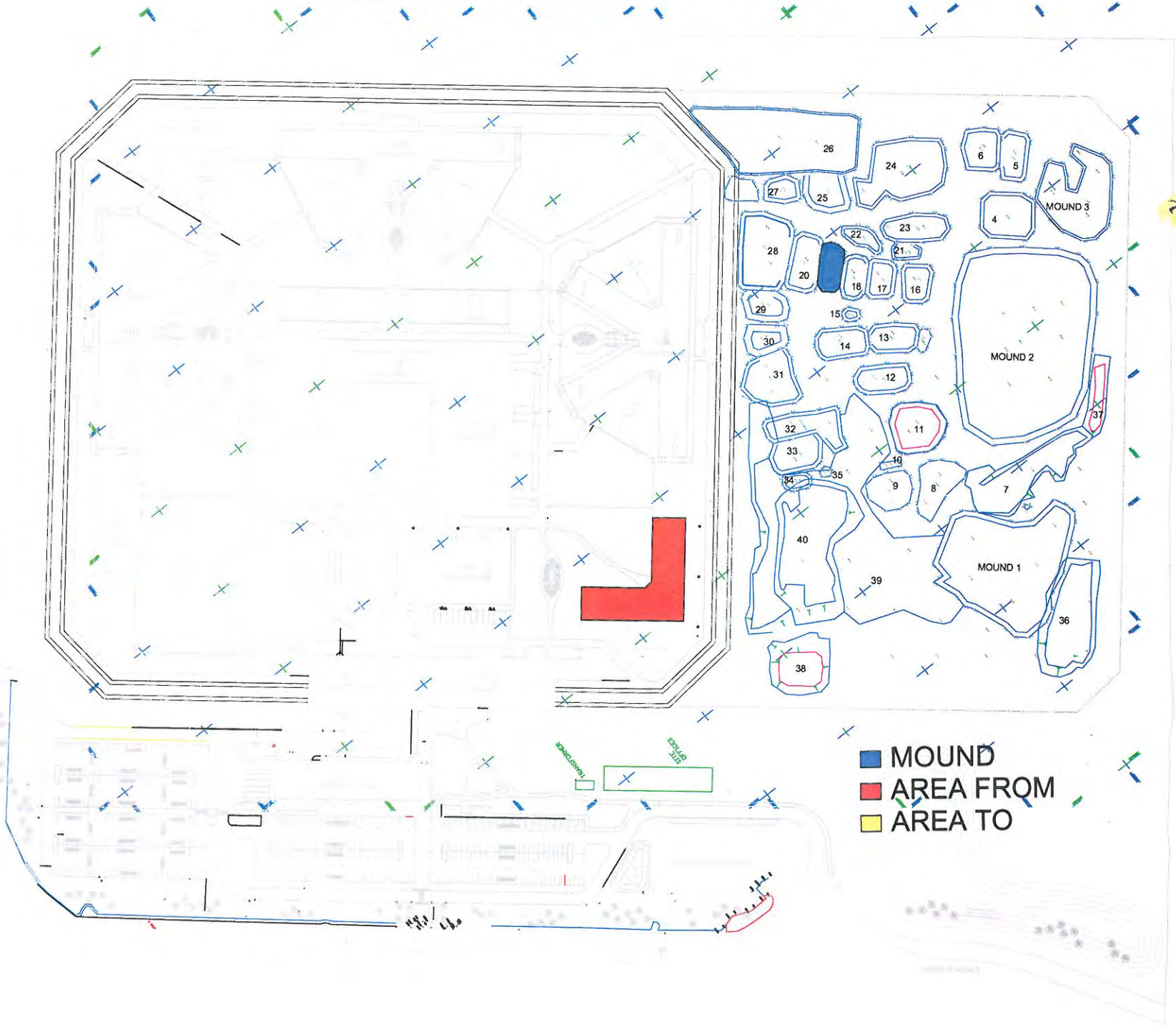


MATERIAL MOVEMENT PLAN - MOUND 18



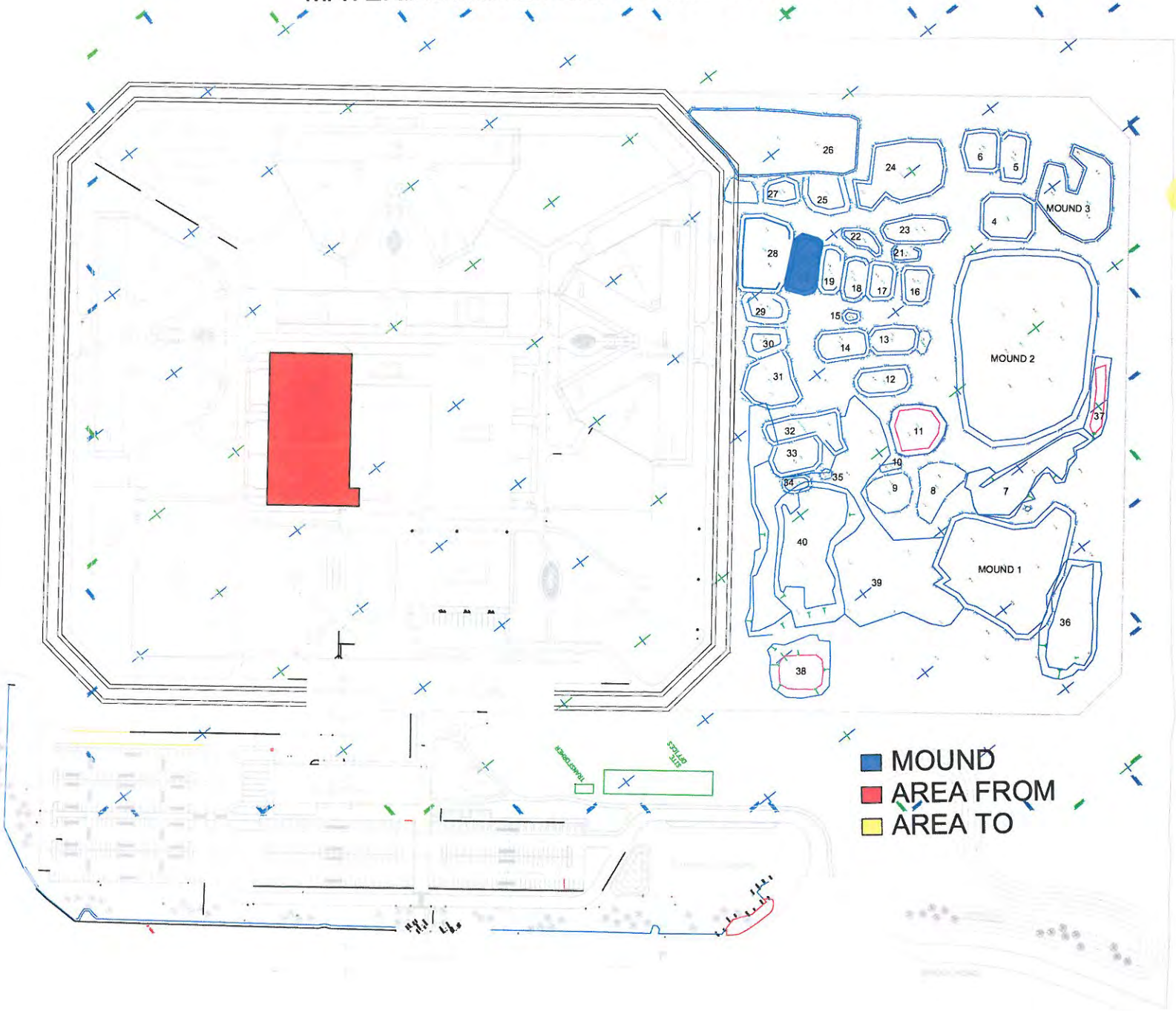
04/07/2017
Spread IN place

MATERIAL MOVEMENT PLAN - MOUND 19

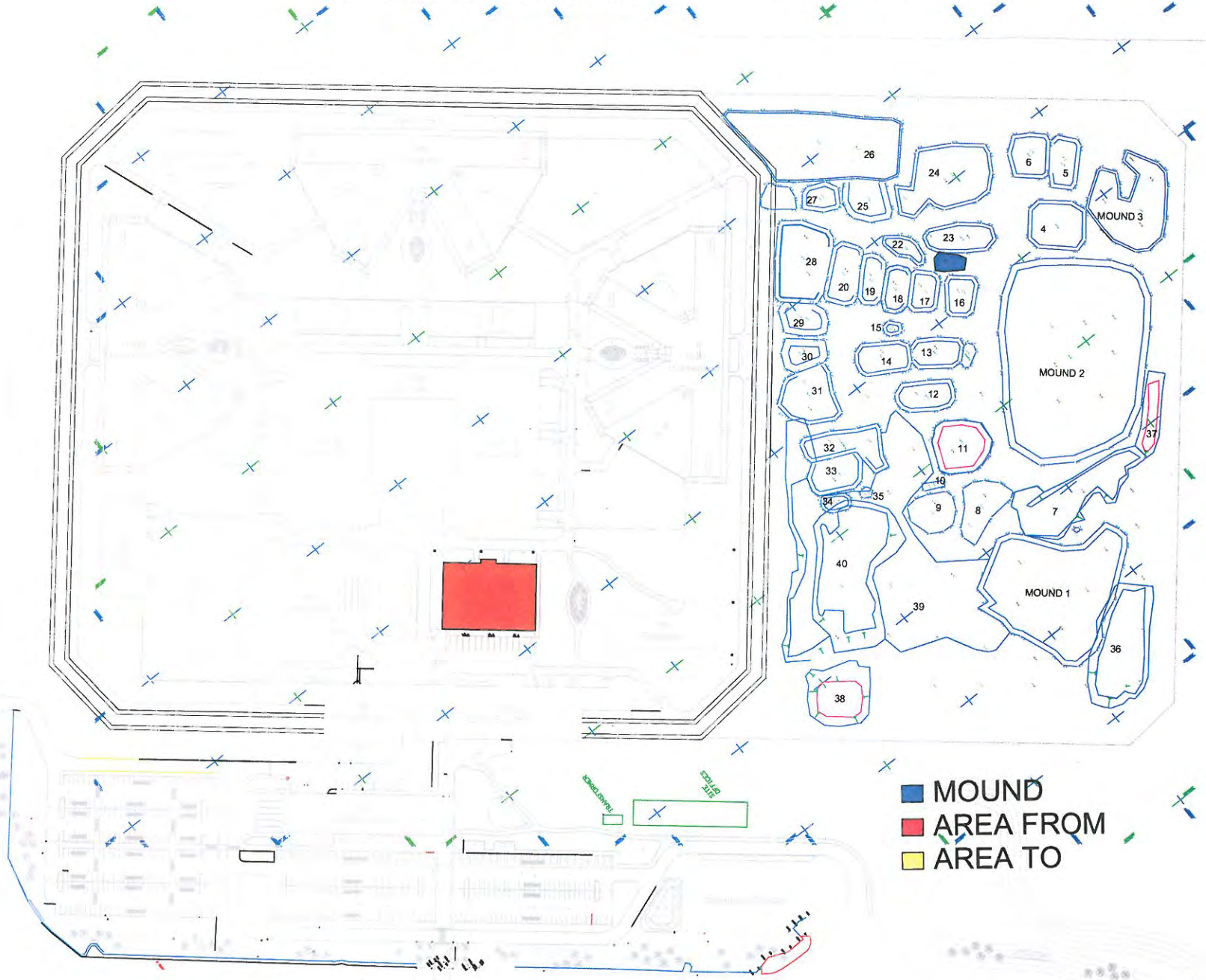


* Spread 2D Place 04/07/17

MATERIAL MOVEMENT PLAN - MOUND 20

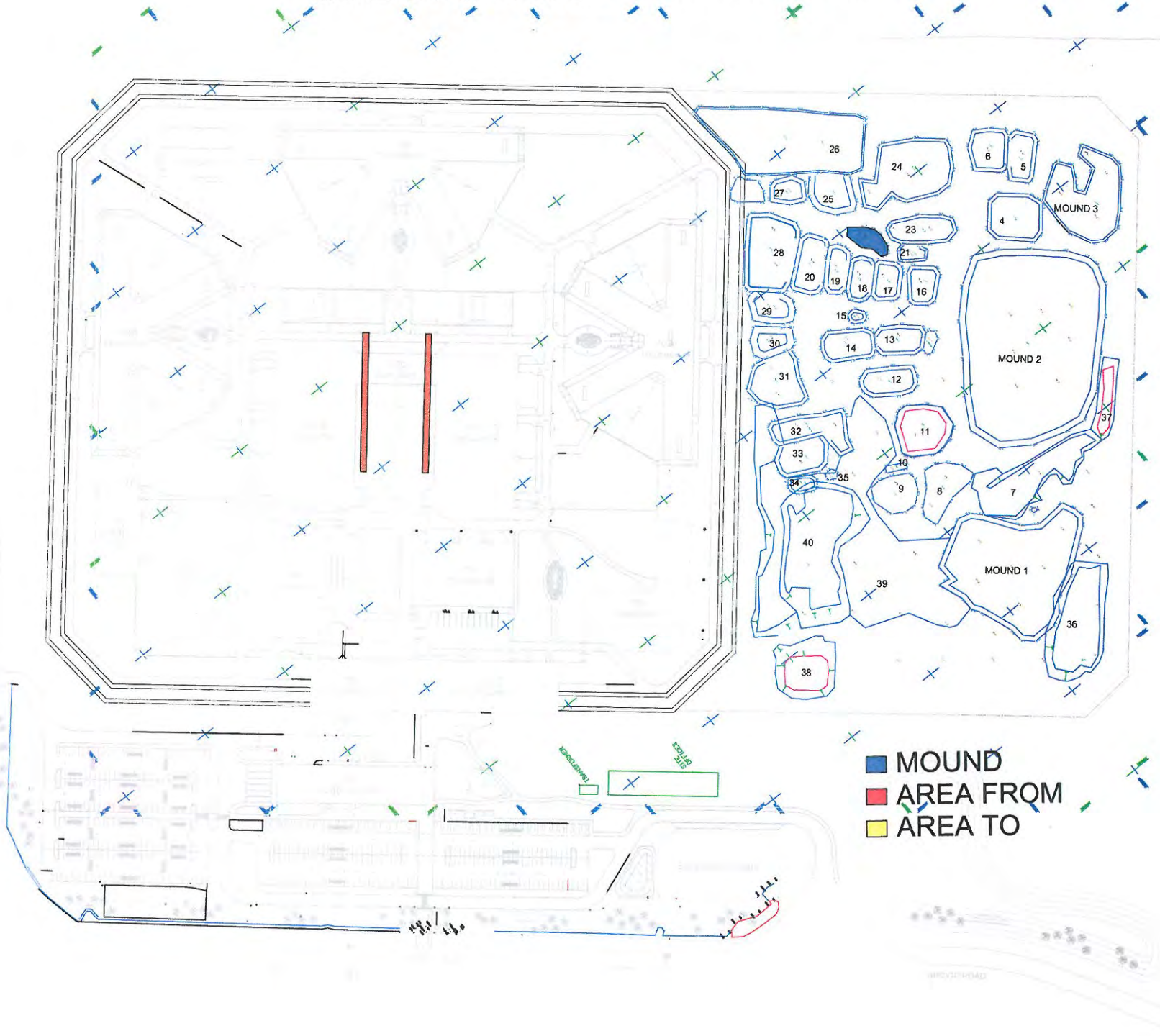


MATERIAL MOVEMENT PLAN - MOUND 21



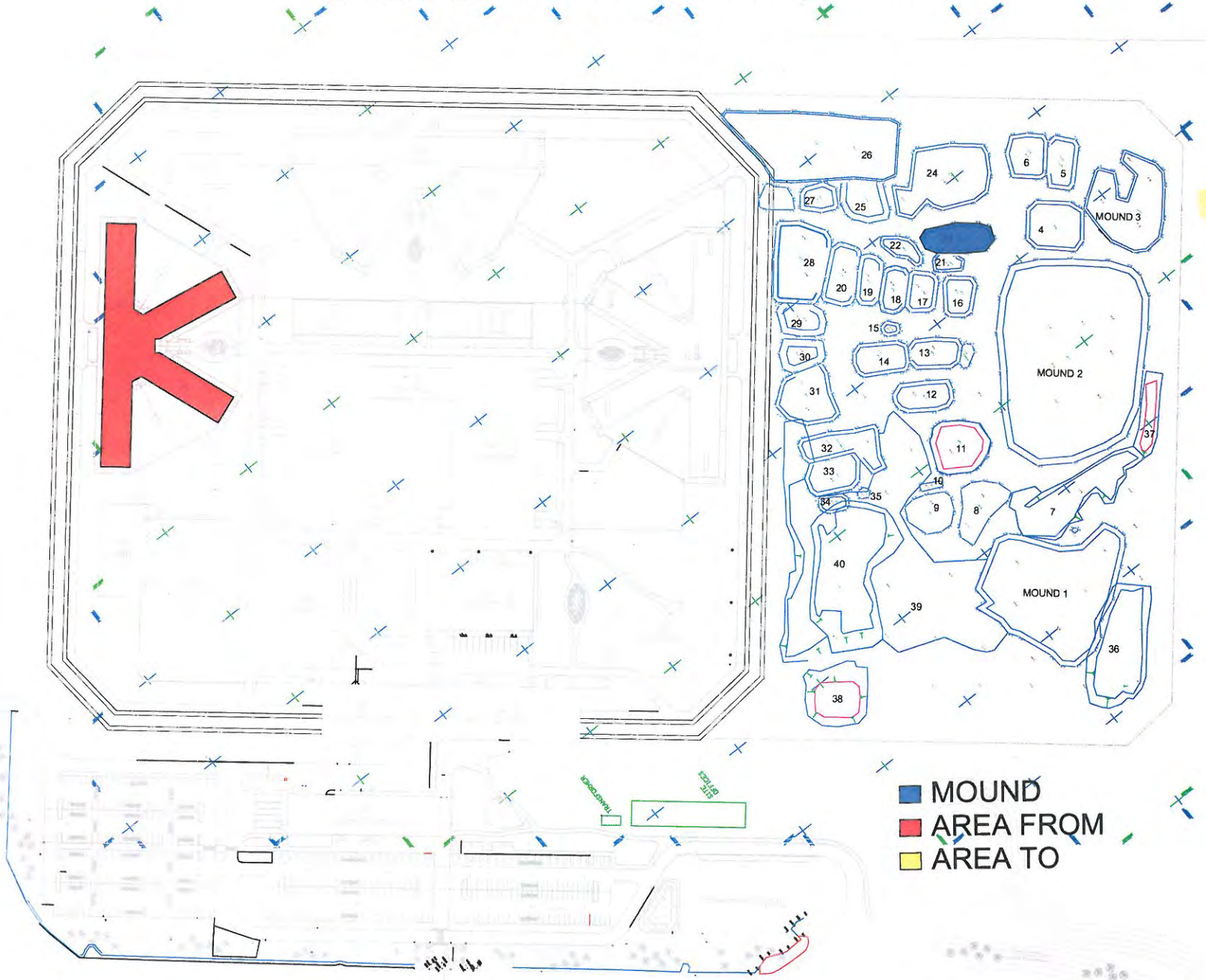
Spread to place 04/07/17

MATERIAL MOVEMENT PLAN - MOUND 22



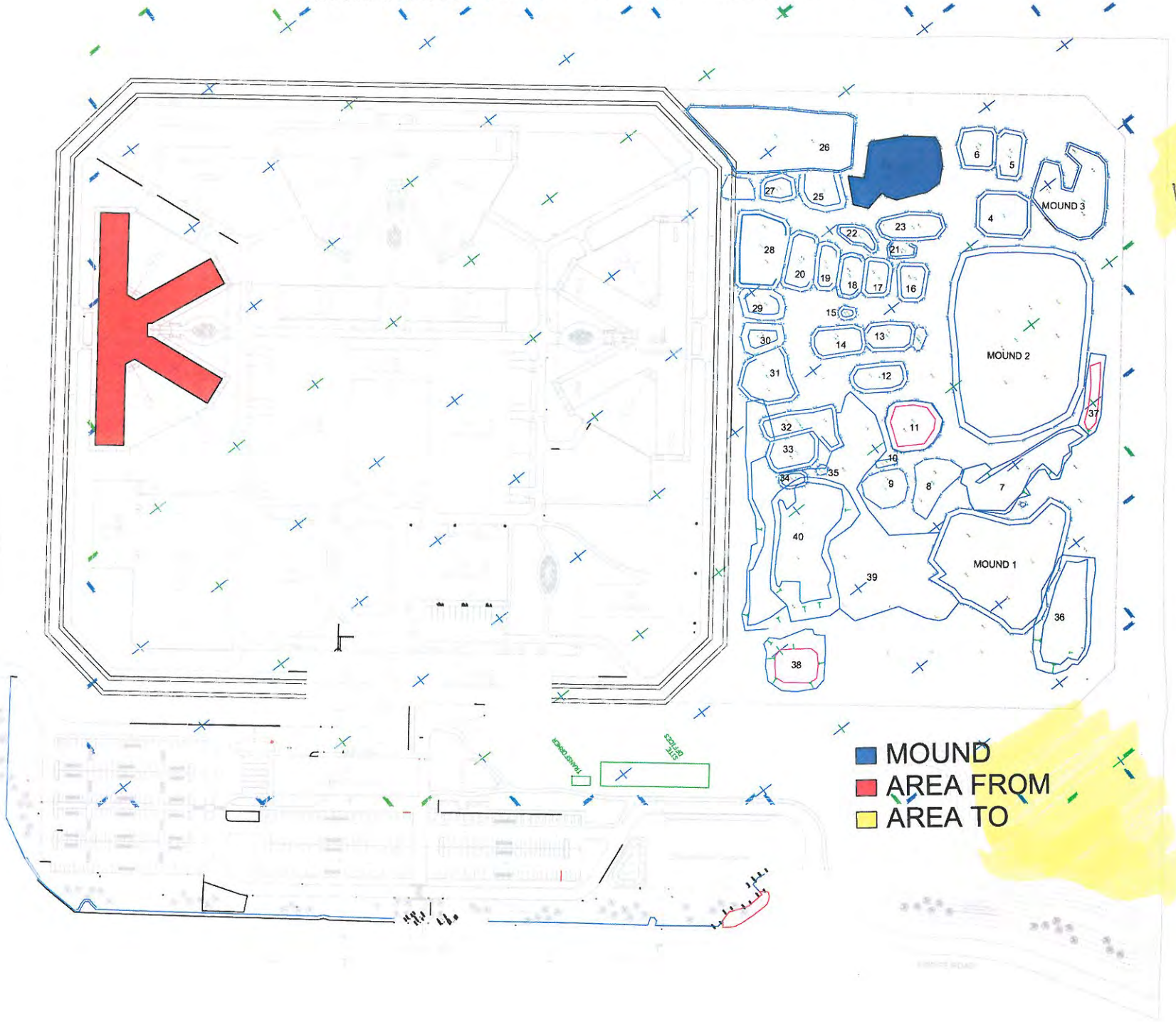
Spread in place
04/07/14

MATERIAL MOVEMENT PLAN - MOUND 23



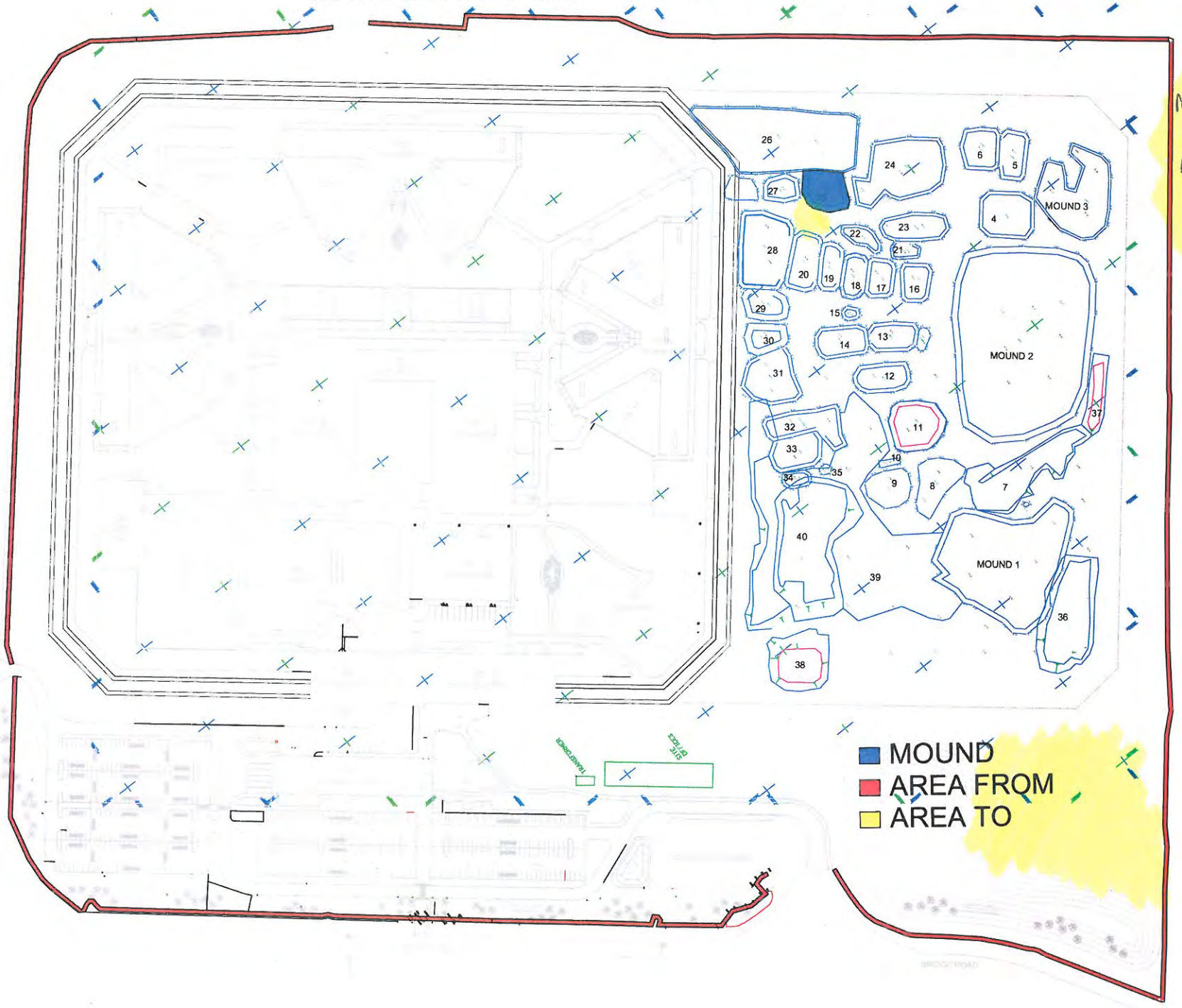
No 23
Spread and levelled in place.
04/07/2017

MATERIAL MOVEMENT PLAN - MOUND 24



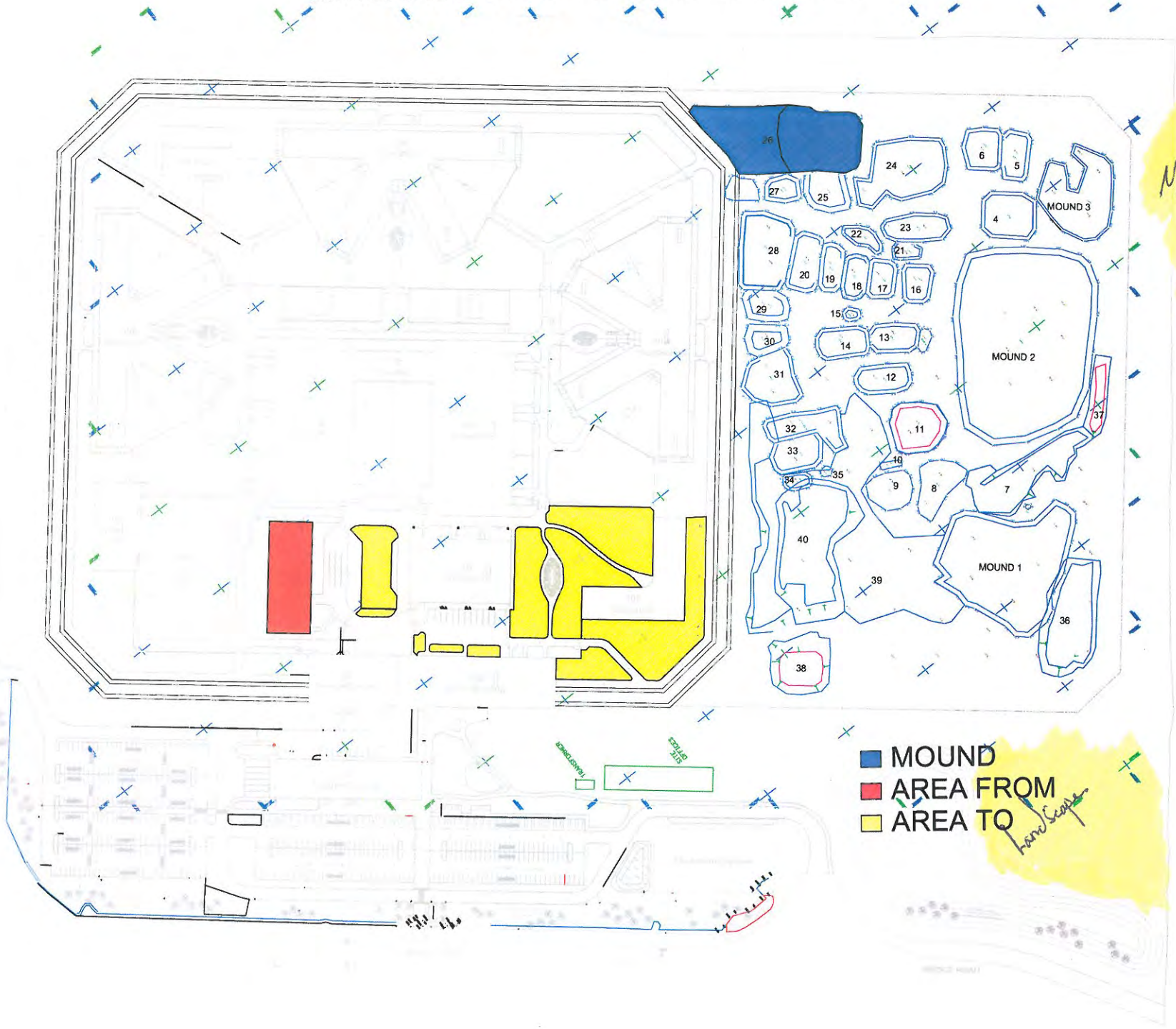
Move to landscape area. 04/07/17.

MATERIAL MOVEMENT PLAN - MOUND 25



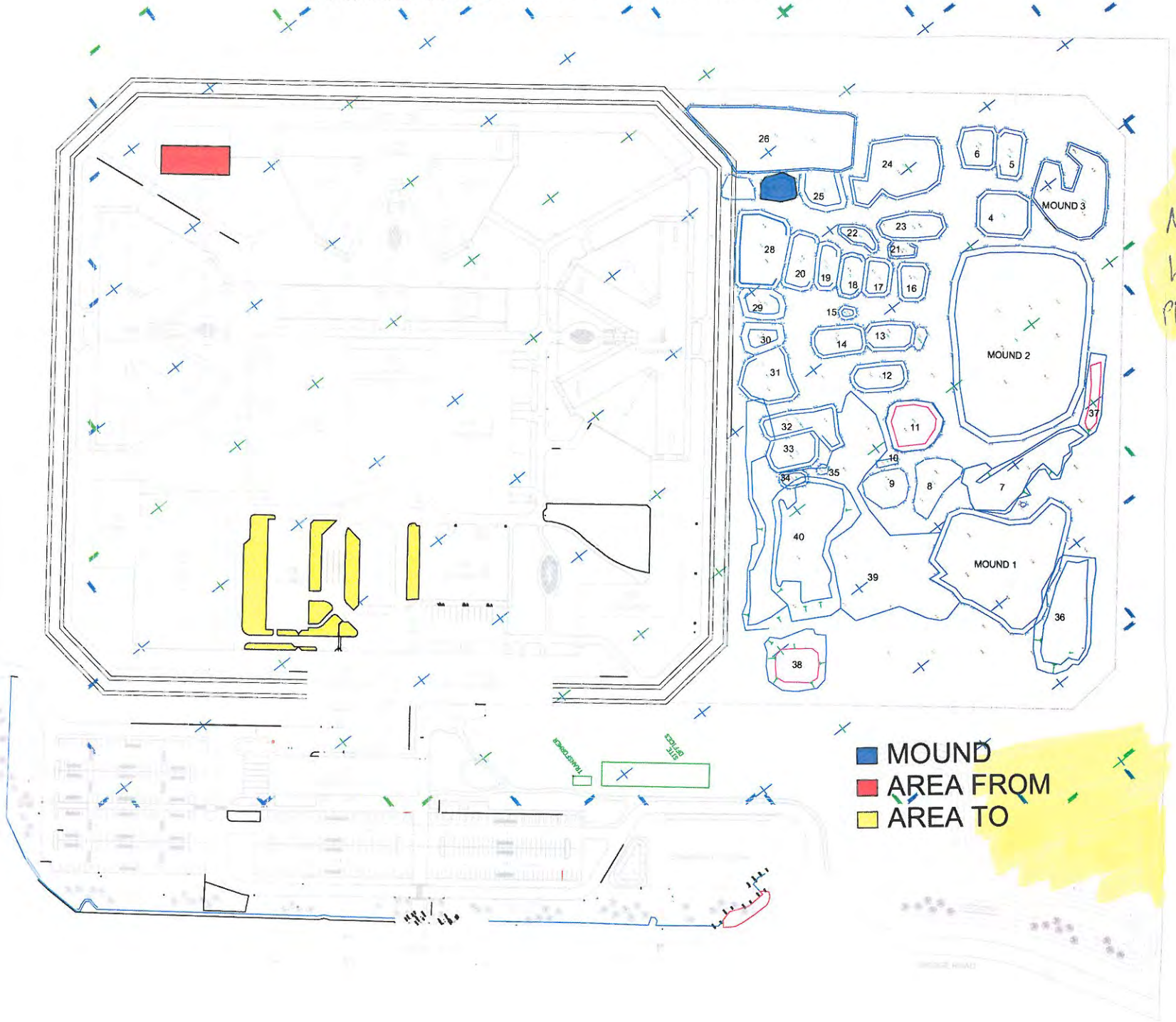
NO 25
Moved to landscape
AREA
05/07/17

MATERIAL MOVEMENT PLAN - MOUND 26



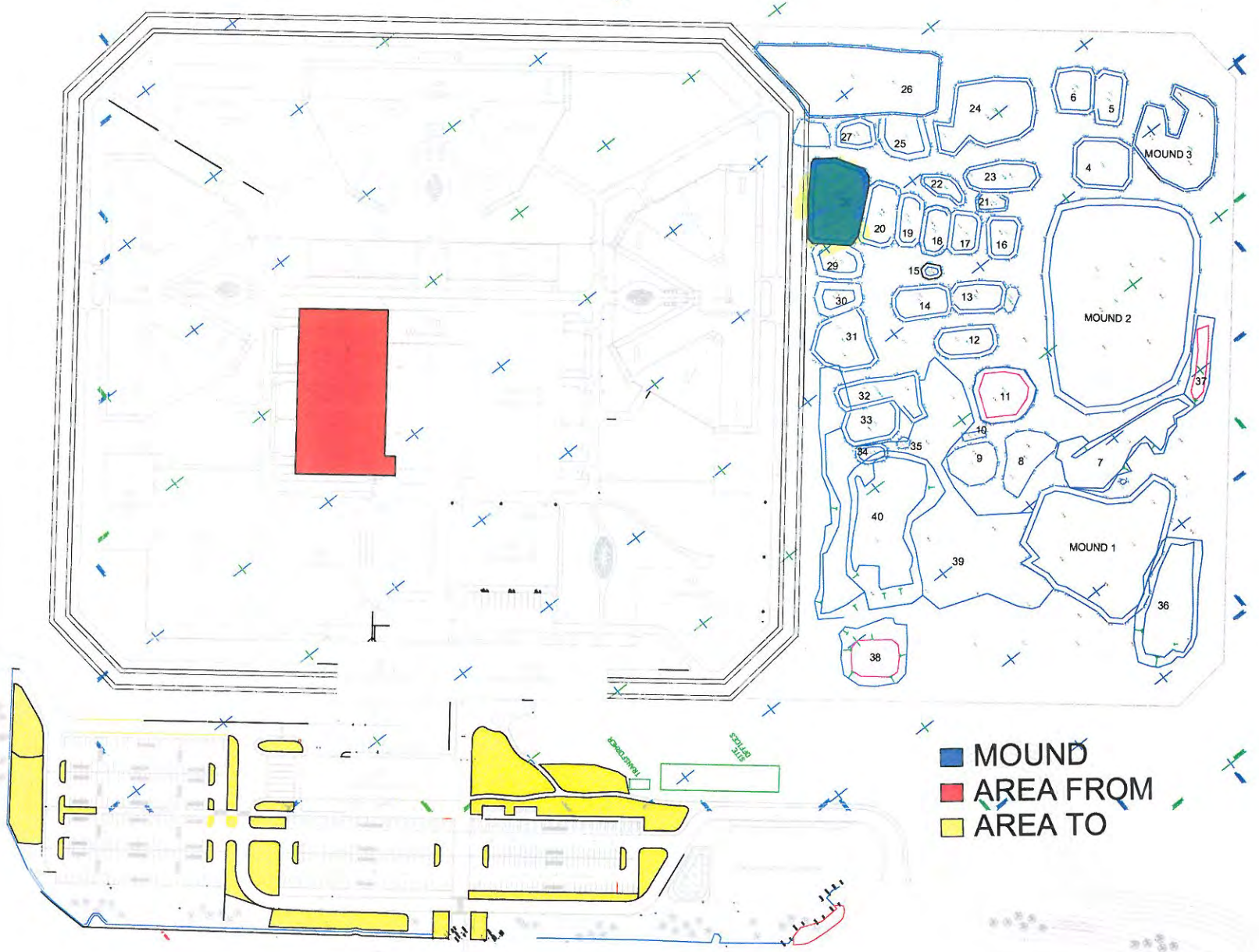
No 26
Moved to landscape area
06/07/2017

MATERIAL MOVEMENT PLAN - MOUND 27



06/07/2017
Mound 27
hard Hard and
Placed in landscape
AREA

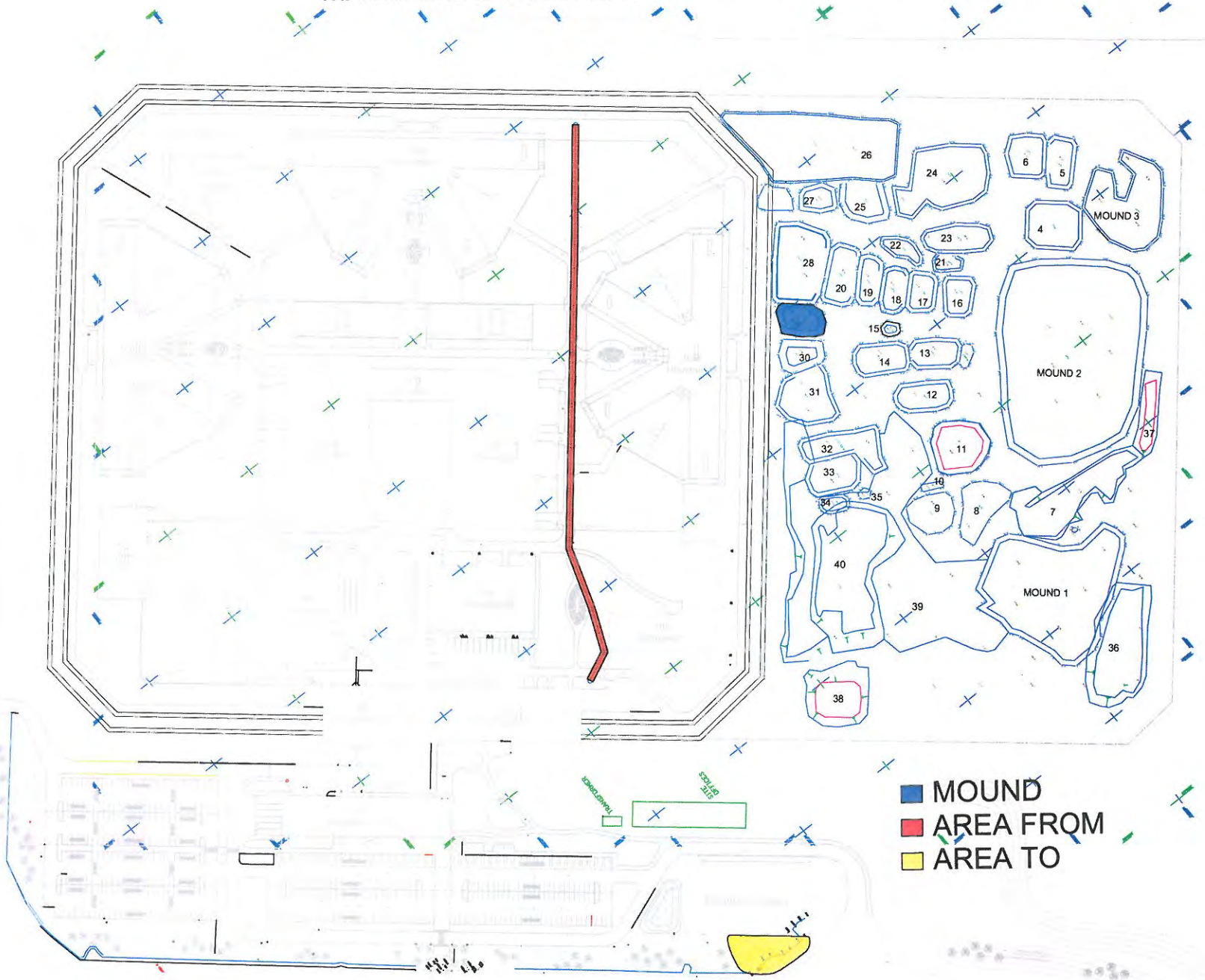
MATERIAL MOVEMENT PLAN - MOUND 28



No 28

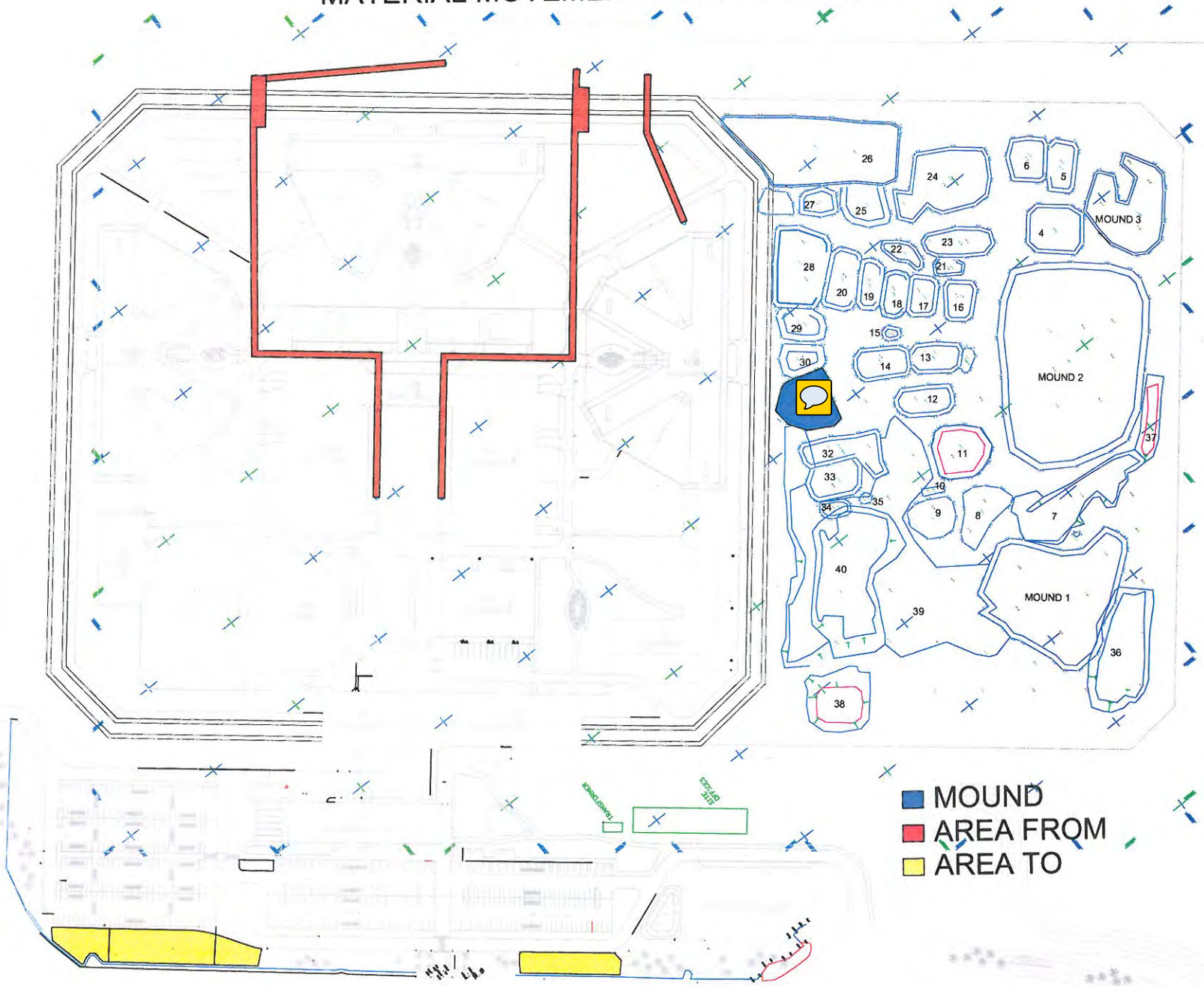
Spread and leveled in place.

MATERIAL MOVEMENT PLAN - MOUND 29

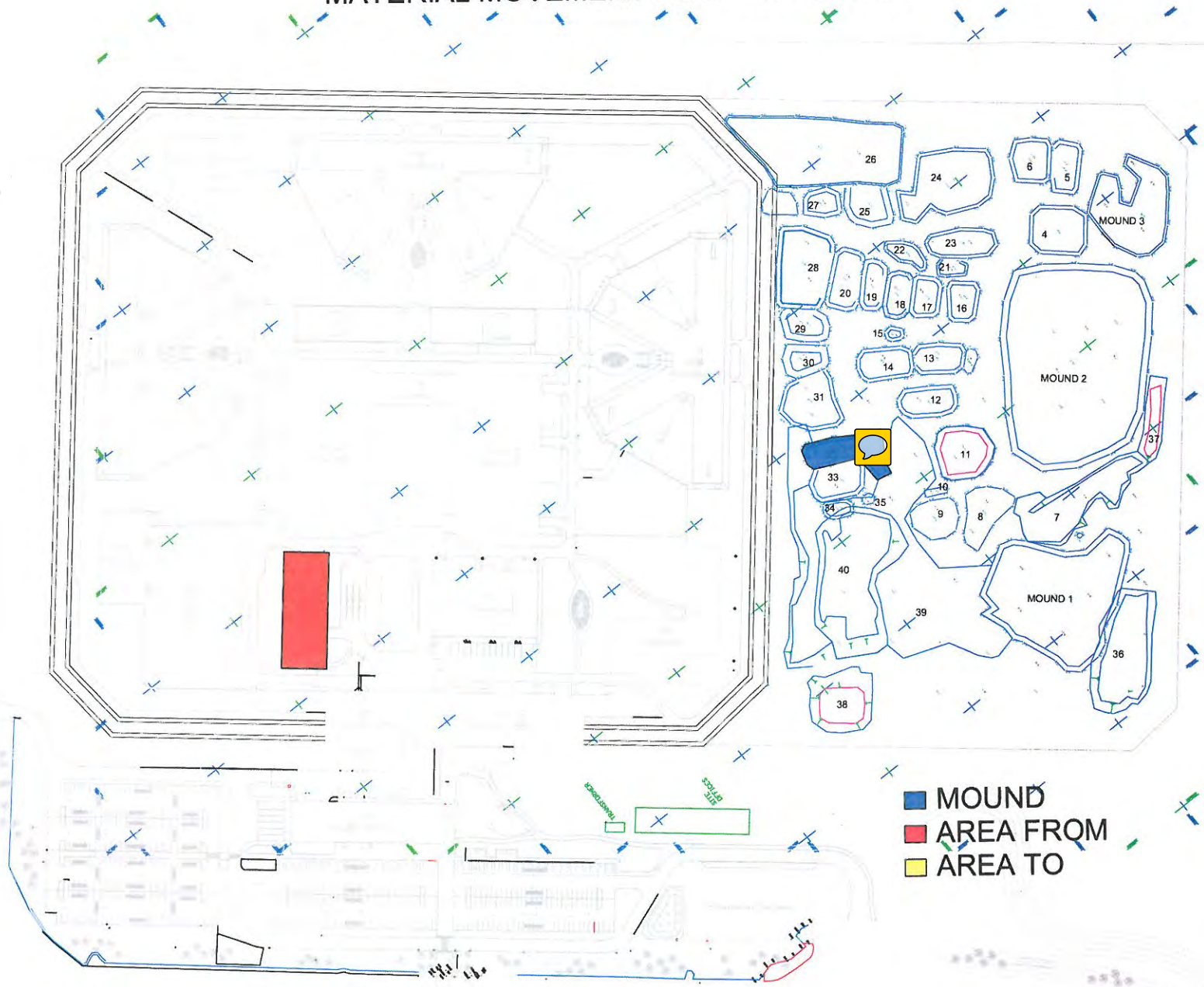


04/07/17
Spread in place.

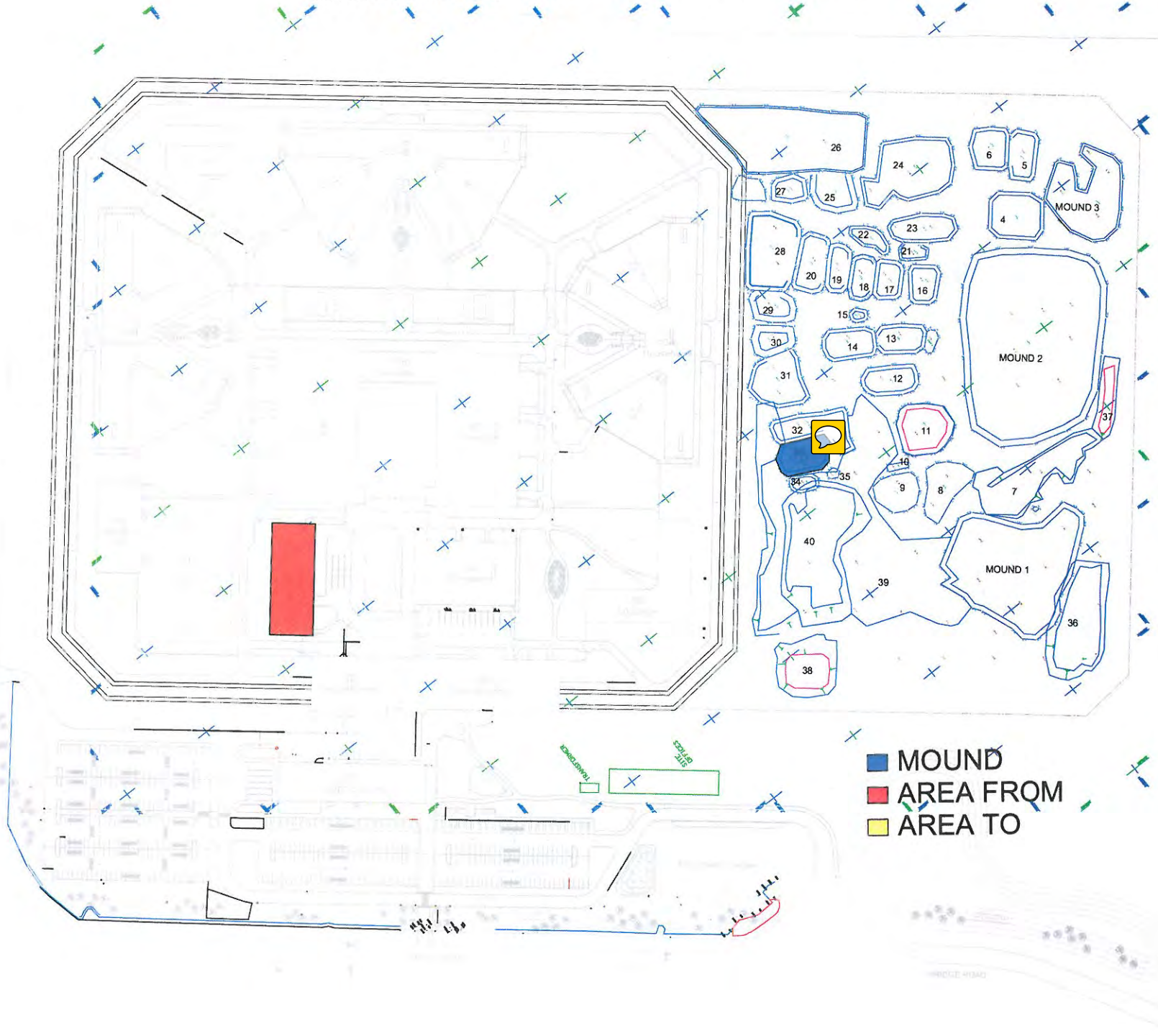
MATERIAL MOVEMENT PLAN - MOUND 31



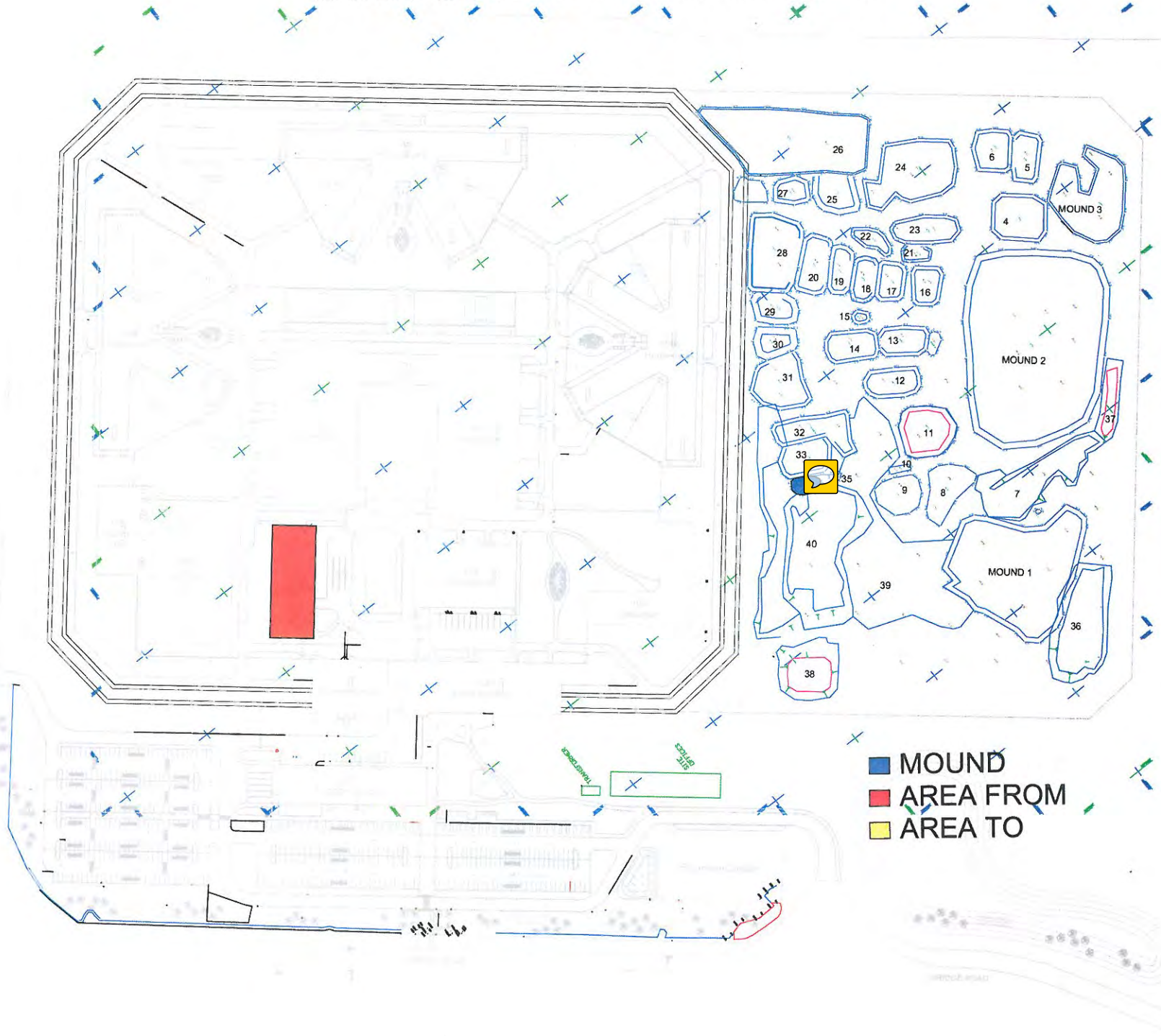
MATERIAL MOVEMENT PLAN - MOUND 32



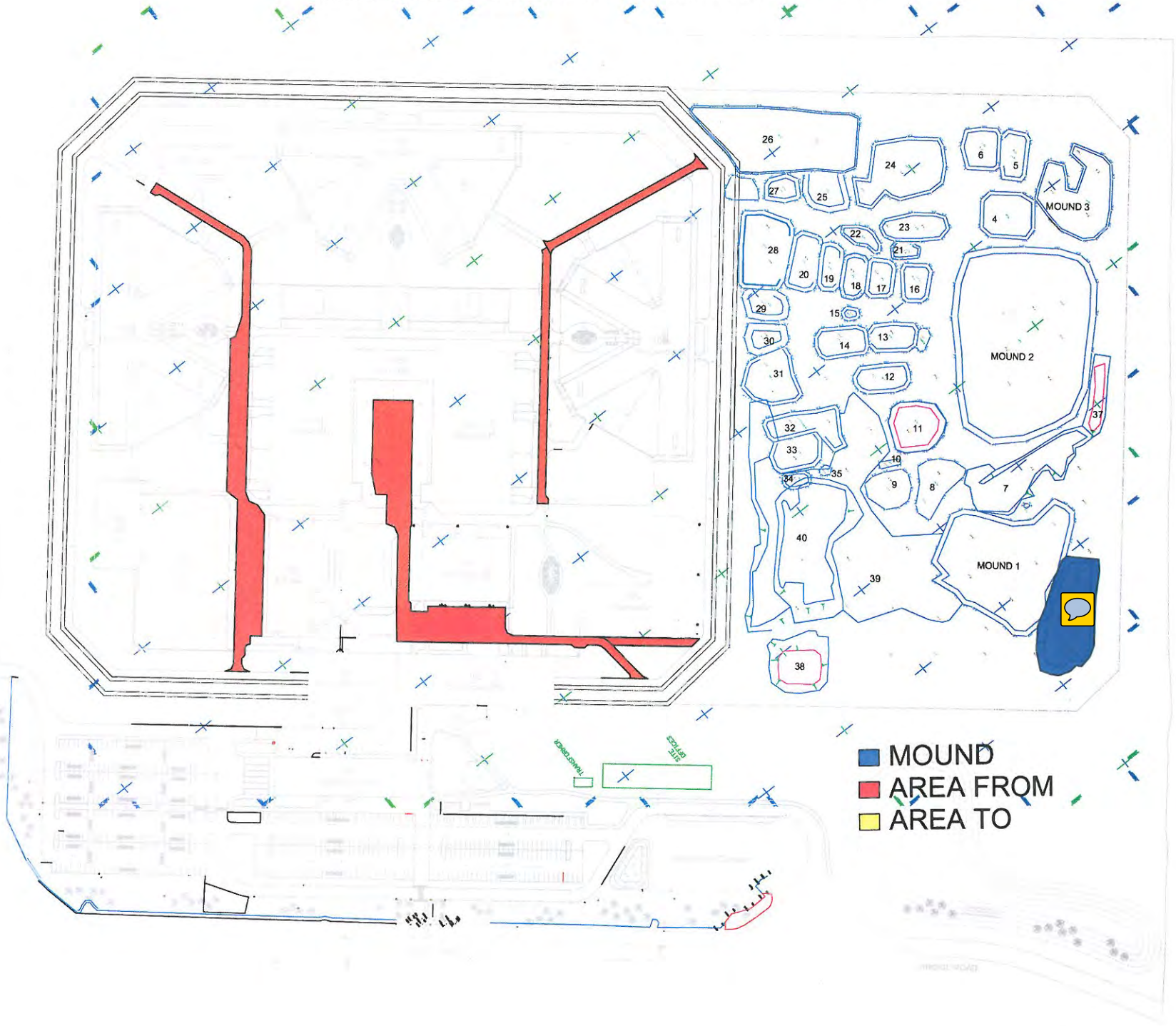
MATERIAL MOVEMENT PLAN - MOUND 33



MATERIAL MOVEMENT PLAN - MOUND 34



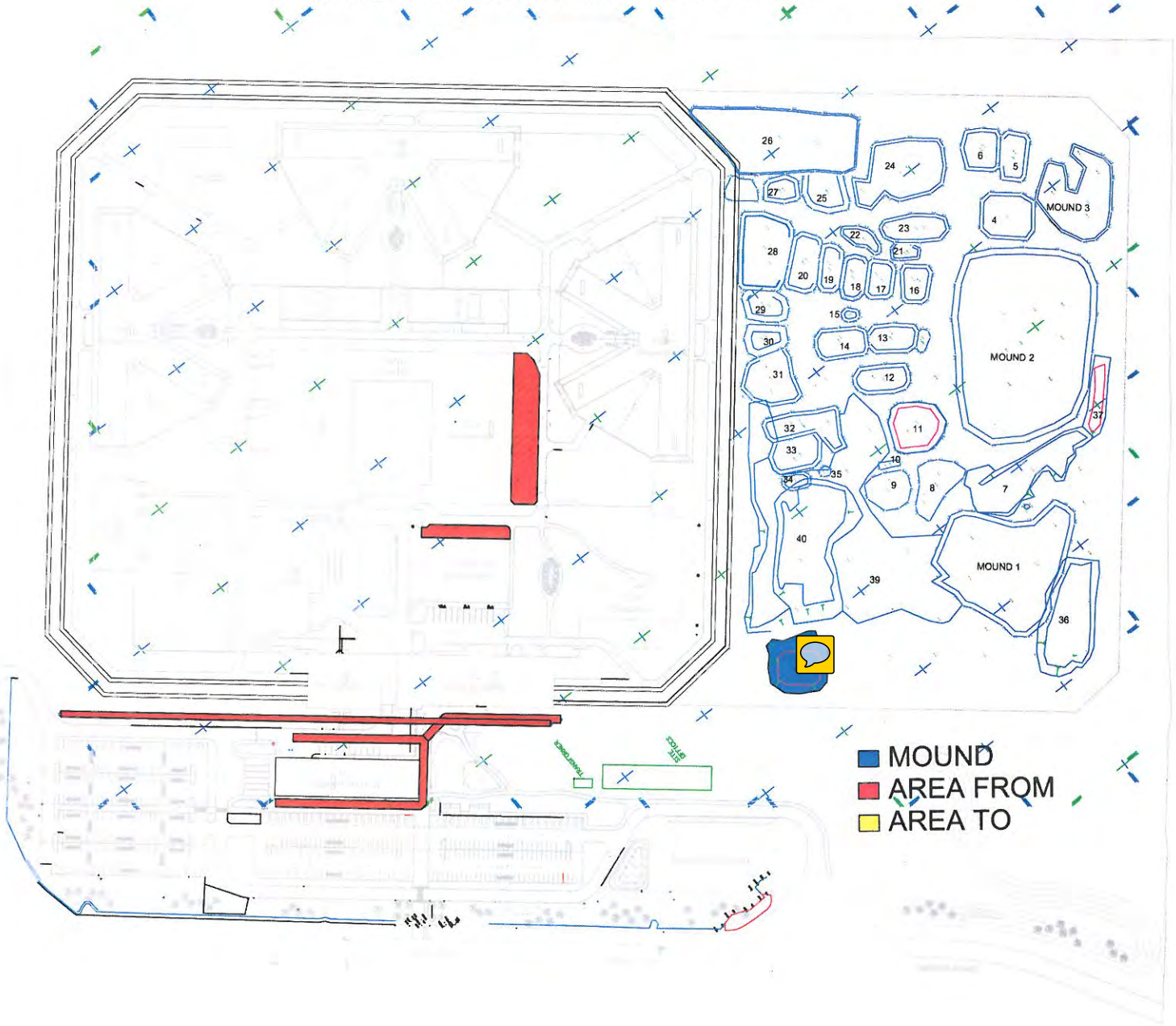
MATERIAL MOVEMENT PLAN - MOUND 36



MATERIAL MOVEMENT PLAN - MOUND 37



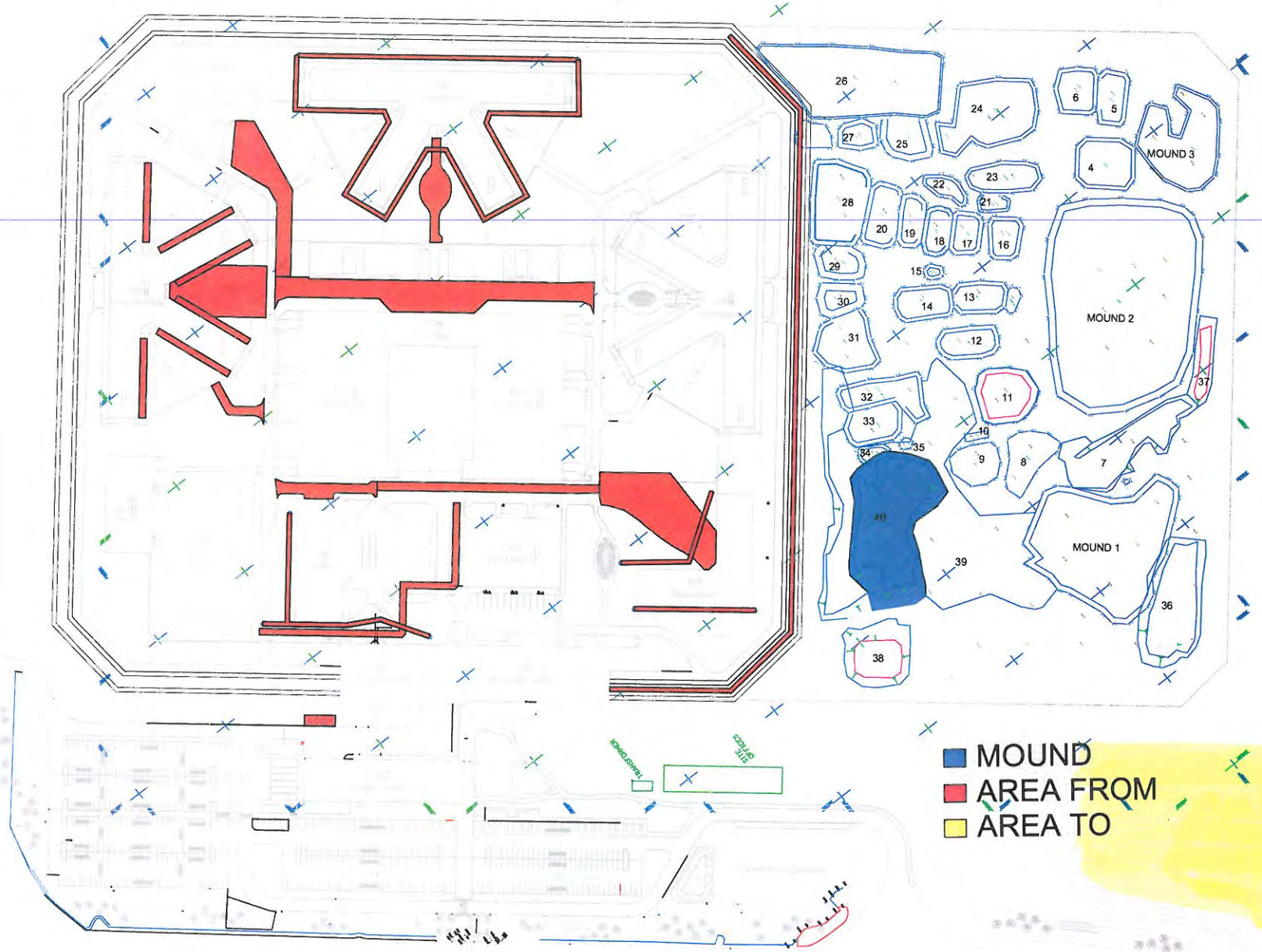
MATERIAL MOVEMENT PLAN - MOUND 38



MATERIAL MOVEMENT PLAN - MOUND 39



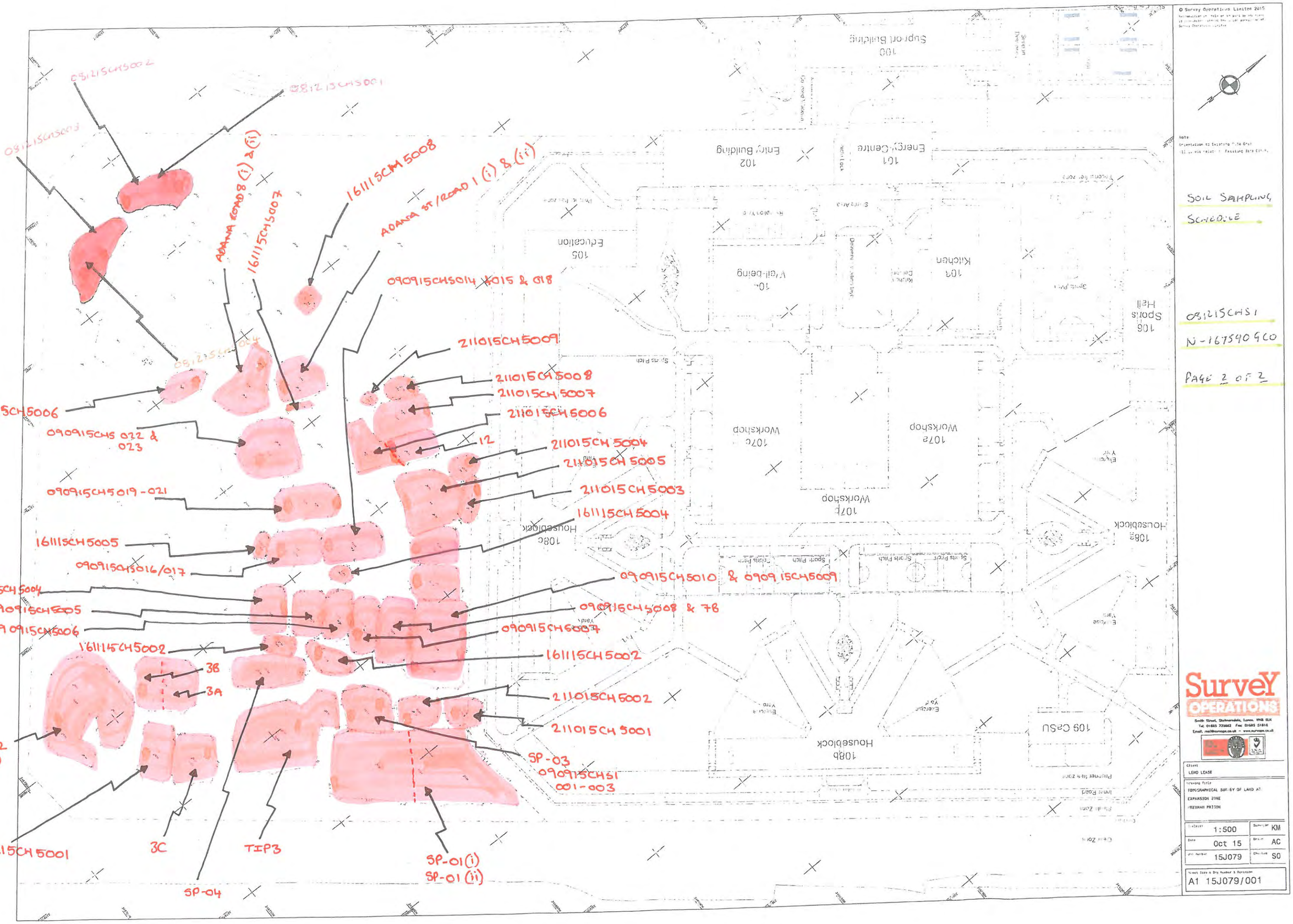
MATERIAL MOVEMENT PLAN - MOUND 40



* Mound 40 Moved to landscape AREA 28/06/2017.

Appendix E

Stockpiles with Test References



SOIL SAMPLING SCHEDULE

09121SCHS1

N-167590 9CO

PAGE 2 OF 2

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Note
Orientation to Existing Site Grid
(If no Grid relate to Existing Site Grid)

Survey Operations
Smith Street, Skelmersdale, Lancs. WN8 8LH
Tel. 01695 725663 Fax. 01695 51816
Email, mail@surveyops.co.uk - www.surveyops.co.uk

Client: LEND LEASE

Drawing Title: TOPOGRAPHICAL SURVEY OF LAND AT EXPANSION ZONE HMP/YOI FRANKLAND

Scale	1:500	Surveyed by	KM
Date	Oct 15	Drawn	AC
Job Number	15J079	Checked	SO

Sheet Size & Drg Number & Revision: A1 15J079/001

Appendix F

Soils Test Data

ALcontrol Laboratories

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
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Fax: (01244) 528701
email: mkt@alcontrol.com
Website: www.alcontrol.com

Redhills
Room 2:15
Hollinwood Business Centre
Albert Street
Oldham
OL8 3QL

Attention: Gareth Cooper

CERTIFICATE OF ANALYSIS

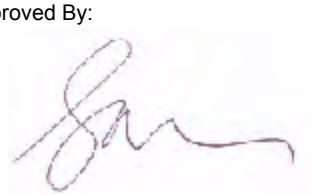
Date:	17 December 2015
Customer:	H_REDHILLS_OLD
Sample Delivery Group (SDG):	151210-21
Your Reference:	N-167590
Location:	North Wales Prison - Wrexham
Report No:	342584

We received 4 samples on Wednesday December 09, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday December 16, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:



Sonia McWhan

Operations Manager

Alcontrol Laboratories is a trading division of ALcontrol UK Limited
Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No.

CERTIFICATE OF ANALYSIS

SDG:	151210-21	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	342584
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12609782	081215CHS001		0.00 - 0.00	08/12/2015
12609783	081215CHS002		0.00 - 0.00	08/12/2015
12609784	081215CHS003		0.00 - 0.00	08/12/2015
12609785	081215CHS004		0.00 - 0.00	08/12/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG:	151210-21	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	342584
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

SOLID

Results Legend

X **Test**

N **No Determination Possible**

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
			12609782	081215CHS001		0.00 - 0.00	1kg TUB
			12609783	081215CHS002		0.00 - 0.00	1kg TUB
			12609784	081215CHS003		0.00 - 0.00	1kg TUB
			12609785	081215CHS004		0.00 - 0.00	1kg TUB
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4		X	X	X	X

CERTIFICATE OF ANALYSIS

SDG:	151210-21	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	342584
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	081215CHS001 0.00 - 0.00 SOLID 08/12/2015 00:00:00 15/12/2015 08:00:02 151210-21 12609782 TM048	16/12/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	081215CHS002 0.00 - 0.00 SOLID 08/12/2015 00:00:00 15/12/2015 08:05:53 151210-21 12609783 TM048	16/12/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	081215CHS003 0.00 - 0.00 SOLID 08/12/2015 00:00:00 15/12/2015 07:48:10 151210-21 12609784 TM048	16/12/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	081215CHS004 0.00 - 0.00 SOLID 08/12/2015 00:00:00 15/12/2015 07:54:20 151210-21 12609785 TM048	16/12/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	151210-21	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	342584
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
TM 304				
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

SDG:	151210-21	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	342584
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	12609782	12609783	12609784	12609785
Customer Sample Ref.	081215CHS001	081215CHS002	081215CHS003	081215CHS004
AGS Ref.				
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	16-Dec-2015	16-Dec-2015	16-Dec-2015	16-Dec-2015

SDG:	151210-21	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	342584
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment . Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect .

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

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email: mkt@alcontrol.com
Website: www.alcontrol.com

Redhills
Room 2:15
Hollinwood Business Centre
Albert Street
Oldham
OL8 3QL

Attention: Gareth Cooper

CERTIFICATE OF ANALYSIS

Date:	20 July 2015
Customer:	H_REDHILLS_OLD
Sample Delivery Group (SDG):	150715-4
Your Reference:	N-167590
Location:	North Wales Prison - Wrexham
Report No:	321540

We received 3 samples on Tuesday July 14, 2015 and 3 of these samples were scheduled for analysis which was completed on Monday July 20, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG:	150715-4	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	321540
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11713009	102		0.00 - 0.00	14/07/2015
11713010	107		0.00 - 0.00	14/07/2015
11713011	108C		0.00 - 0.00	14/07/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG:	150715-4	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	321540
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
			11713009	102		0.00 - 0.00	1kg TUB
			11713010	107		0.00 - 0.00	1kg TUB
			11713011	108C		0.00 - 0.00	1kg TUB
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3	X	X	X		
Sample description	All	NDPs: 0 Tests: 3	X	X	X		

SDG:	150715-4	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	321540
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
11713009	102	0.00 - 0.00	Light Brown	Sandy Clay	0.1 - 2 mm	Stones	None
11713010	107	0.00 - 0.00	Light Brown	Clay	<0.063 mm	Stones	None
11713011	108C	0.00 - 0.00	Light Brown	Clay	<0.063 mm	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	150715-4	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	321540
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	102	107	108C			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid			
			Date Sampled	14/07/2015	14/07/2015	14/07/2015			
			Sample Time	-	-	-			
			Date Received	14/07/2015	14/07/2015	14/07/2015			
			SDG Ref	150715-4	150715-4	150715-4			
			Lab Sample No.(s)	11713009	11713010	11713011			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		1.2	2.5	2.6			

CERTIFICATE OF ANALYSIS

SDG:	150715-4	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	321540
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	102 0.00 - 0.00 SOLID 14/07/2015 00:00:00 15/07/2015 23:19:02 150715-4 11713009 TM048	17/7/15	Kevin Gill	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107 0.00 - 0.00 SOLID 14/07/2015 00:00:00 15/07/2015 23:14:53 150715-4 11713010 TM048	17/7/15	Kevin Gill	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	108C 0.00 - 0.00 SOLID 14/07/2015 00:00:00 15/07/2015 23:23:17 150715-4 11713011 TM048	17/7/15	Kevin Gill	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG:	150715-4	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	321540
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

SDG:	150715-4	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	321540
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	11713009	11713010	11713011
Customer Sample Ref.	102	107	108C
AGS Ref.			
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	20-Jul-2015	20-Jul-2015	20-Jul-2015
Sample description	15-Jul-2015	15-Jul-2015	15-Jul-2015

SDG:	150715-4	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	321540
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known k record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

LODs for wet tests reported on a dry weight basis are not corrected for moisture ntent.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	WhiteAsbestos
Amosite	BrownAsbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

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Website: www.alcontrol.com

Redhills
Room 2:15
Hollinwood Business Centre
Albert Street
Oldham
OL8 3QL

Attention: Gareth Cooper

CERTIFICATE OF ANALYSIS

Date:	17 September 2015
Customer:	H_REDHILLS_OLD
Sample Delivery Group (SDG):	150909-14
Your Reference:	N-167590
Location:	North Wales Prison - Wrexham
Report No:	330225

We received 24 samples on Tuesday September 08, 2015 and 24 of these samples were scheduled for analysis which was completed on Monday September 14, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

SDG:	150909-14	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	330225
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12031213	090915CHS001			09/09/2015
12031214	090915CHS002			09/09/2015
12031215	090915CHS003			09/09/2015
12031216	090915CHS004			09/09/2015
12031217	090915CHS005			09/09/2015
12031218	090915CHS006			09/09/2015
12031219	090915CHS007			09/09/2015
12031220	090915CHS008			09/09/2015
12031221	090915CHS009			09/09/2015
12031222	090915CHS010			09/09/2015
12031223	090915CHS011			09/09/2015
12031224	090915CHS012			09/09/2015
12031226	090915CHS013			09/09/2015
12031227	090915CHS014			09/09/2015
12031228	090915CHS015			09/09/2015
12031229	090915CHS016			09/09/2015
12031230	090915CHS017			09/09/2015
12031231	090915CHS018			09/09/2015
12031232	090915CHS019			09/09/2015
12031233	090915CHS020			09/09/2015
12031234	090915CHS021			09/09/2015
12031235	090915CHS022			09/09/2015
12031237	090915CHS023			09/09/2015
12031238	090915CHS024			09/09/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

SDG:	150909-14	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	330225
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			12031213	12031214	12031215	12031216	12031217	12031218	12031219	12031220	12031221	12031222	12031223	12031224	12031226	12031227	12031228	12031229	12031230	12031231	12031232	12031233	12031234	12031235	12031237	12031238
Lab Sample No(s)																										
Customer Sample Reference			090915CHS001	090915CHS002	090915CHS003	090915CHS004	090915CHS005	090915CHS006	090915CHS007	090915CHS008	090915CHS009	090915CHS010	090915CHS011	090915CHS012	090915CHS013	090915CHS014	090915CHS015	090915CHS016	090915CHS017	090915CHS018	090915CHS019	090915CHS020	090915CHS021	090915CHS022	090915CHS023	090915CHS024
AGS Reference																										
Depth (m)																										
Container			1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3	X										X												X	

CERTIFICATE OF ANALYSIS

SDG: 150909-14
Job: H_REDHILLS_OLD-13
Client Reference: N-167590

Location: North Wales Prison - Wrexham
Customer: Redhills
Attention: Gareth Cooper

Order Number: 10667
Report Number: 330225
Superseded Report:

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS001 SOLID 09/09/2015 00:00:00 09/09/2015 20:56:38 150909-14 12031213 TM048	14/09/15	Kevin Bowron	Soil containing material typical of asbestos bituminous product	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS002 SOLID 09/09/2015 00:00:00 09/09/2015 21:11:52 150909-14 12031214 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS003 SOLID 09/09/2015 00:00:00 10/09/2015 06:18:18 150909-14 12031215 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS004 SOLID 09/09/2015 00:00:00 09/09/2015 18:47:28 150909-14 12031216 TM048	14/09/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS005 SOLID 09/09/2015 00:00:00 09/09/2015 18:50:55 150909-14 12031217 TM048	14/09/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG: 150909-14 **Location:** North Wales Prison - Wrexham **Order Number:** 10667
Job: H_REDHILLS_OLD-13 **Customer:** Redhills **Report Number:** 330225
Client Reference: N-167590 **Attention:** Gareth Cooper **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS006 SOLID 09/09/2015 00:00:00 09/09/2015 18:53:21 150909-14 12031218 TM048	14/09/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS007 SOLID 09/09/2015 00:00:00 09/09/2015 19:34:40 150909-14 12031219 TM048	14/09/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS008 SOLID 09/09/2015 00:00:00 09/09/2015 19:29:05 150909-14 12031220 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS009 SOLID 09/09/2015 00:00:00 09/09/2015 19:22:52 150909-14 12031221 TM048	14/09/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS010 SOLID 09/09/2015 00:00:00 09/09/2015 19:26:26 150909-14 12031222 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS011 SOLID 09/09/2015 00:00:00 09/09/2015 20:36:03 150909-14 12031223 TM048	14/09/15	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG: 150909-14 **Location:** North Wales Prison - Wrexham **Order Number:** 10667
Job: H_REDHILLS_OLD-13 **Customer:** Redhills **Report Number:** 330225
Client Reference: N-167590 **Attention:** Gareth Cooper **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS012 SOLID 09/09/2015 00:00:00 09/09/2015 20:28:23 150909-14 12031224 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS013 SOLID 09/09/2015 00:00:00 09/09/2015 20:53:58 150909-14 12031226 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS014 SOLID 09/09/2015 00:00:00 09/09/2015 21:03:20 150909-14 12031227 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS015 SOLID 09/09/2015 00:00:00 09/09/2015 21:00:41 150909-14 12031228 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS016 SOLID 09/09/2015 00:00:00 09/09/2015 19:03:18 150909-14 12031229 TM048	14/09/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS017 SOLID 09/09/2015 00:00:00 09/09/2015 19:05:54 150909-14 12031230 TM048	14/09/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG: 150909-14 **Location:** North Wales Prison - Wrexham **Order Number:** 10667
Job: H_REDHILLS_OLD-13 **Customer:** Redhills **Report Number:** 330225
Client Reference: N-167590 **Attention:** Gareth Cooper **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS018 SOLID 09/09/2015 00:00:00 09/09/2015 18:59:33 150909-14 12031231 TM048	14/09/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS019 SOLID 09/09/2015 00:00:00 09/09/2015 19:37:10 150909-14 12031232 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS020 SOLID 09/09/2015 00:00:00 09/09/2015 19:32:21 150909-14 12031233 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS021 SOLID 09/09/2015 00:00:00 09/09/2015 20:31:17 150909-14 12031234 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS022 SOLID 09/09/2015 00:00:00 09/09/2015 20:33:30 150909-14 12031235 TM048	14/09/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS023 SOLID 09/09/2015 00:00:00 09/09/2015 20:26:04 150909-14 12031237 TM048	14/09/15	Tomasz Pawlikowski	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG: 150909-14 **Location:** North Wales Prison - Wrexham **Order Number:** 10667
Job: H_REDHILLS_OLD-13 **Customer:** Redhills **Report Number:** 330225
Client Reference: N-167590 **Attention:** Gareth Cooper **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS024 SOLID 09/09/2015 00:00:00 09/09/2015 20:23:31 150909-14 12031238 TM048	14/09/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG:	150909-14	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	330225
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS001 SOLID 09/09/2015 00:00:00 09/09/2015 20:59:14 150909-14 12031213 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	0.0014 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS011 SOLID 09/09/2015 00:00:00 09/09/2015 20:36:54 150909-14 12031223 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	090915CHS023 SOLID 09/09/2015 00:00:00 09/09/2015 20:27:02 150909-14 12031237 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

SDG:	150909-14	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	330225
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
TM 304				
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

SDG:	150909-14	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	330225
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	12031213	12031214	12031215	12031216	12031217	12031218	12031219	12031220	12031221	12031222
Customer Sample Ref.	090915CHS001	090915CHS002	090915CHS003	090915CHS004	090915CHS005	090915CHS006	090915CHS007	090915CHS008	090915CHS009	090915CHS010
AGS Ref.										
Depth										
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015
Asbestos Quantification - Full	14-Sep-2015									

Lab Sample No(s)	12031223	12031224	12031226	12031227	12031228	12031229	12031230	12031231	12031232	12031233
Customer Sample Ref.	090915CHS011	090915CHS012	090915CHS013	090915CHS014	090915CHS015	090915CHS016	090915CHS017	090915CHS018	090915CHS019	090915CHS020
AGS Ref.										
Depth										
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015
Asbestos Quantification - Full	14-Sep-2015									

Lab Sample No(s)	12031234	12031235	12031237	12031238
Customer Sample Ref.	090915CHS021	090915CHS022	090915CHS023	090915CHS024
AGS Ref.				
Depth				
Type	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	14-Sep-2015	14-Sep-2015	14-Sep-2015	14-Sep-2015
Asbestos Quantification - Full			14-Sep-2015	

SDG:	150909-14	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	330225
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors
employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify th non-hydrocarbons, as standards are not routinely run for any other compounds, and more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than:
- Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

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Website: www.alcontrol.com

Redhills
Room 2:15
Hollinwood Business Centre
Albert Street
Oldham
OL8 3QL

Attention: Gareth Cooper

CERTIFICATE OF ANALYSIS

Date:	29 September 2015
Customer:	H_REDHILLS_OLD
Sample Delivery Group (SDG):	150924-16
Your Reference:	N-167590
Location:	North Wales Prison - Wrexham
Report No:	331411

We received 10 samples on Wednesday September 23, 2015 and 10 of these samples were scheduled for analysis which was completed on Tuesday September 29, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

1291

SDG:	150924-16	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	331411
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12116186	220915LWH01			22/09/2015
12116187	220915LWH02			22/09/2015
12116188	220915LWH03			22/09/2015
12116190	220915LWH04			22/09/2015
12116191	220915LWH05			22/09/2015
12116192	220915LWH06			22/09/2015
12116193	220915LWH07			22/09/2015
12116194	220915LWH08			22/09/2015
12116196	220915LWH09			22/09/2015
12116197	220915LWH10			22/09/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	150924-16	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	331411
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			12116186	12116187	12116188	12116190	12116191	12116192	12116193	12116194	12116196	12116197
Lab Sample No(s)												
Customer Sample Reference			220915LWH01	220915LWH02	220915LWH03	220915LWH04	220915LWH05	220915LWH06	220915LWH07	220915LWH08	220915LWH09	220915LWH10
AGS Reference												
Depth (m)												
Container			1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X

CERTIFICATE OF ANALYSIS

SDG:	150924-16	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	331411
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH01 SOLID 22/09/2015 00:00:00 25/09/2015 01:50:38 150924-16 12116186 TM048	28/9/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH02 SOLID 22/09/2015 00:00:00 25/09/2015 01:48:55 150924-16 12116187 TM048	29/9/15	Simon Postlewhite	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH03 SOLID 22/09/2015 00:00:00 25/09/2015 04:09:31 150924-16 12116188 TM048	28/9/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH04 SOLID 22/09/2015 00:00:00 25/09/2015 04:12:03 150924-16 12116190 TM048	29/9/15	Simon Postlewhite	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH05 SOLID 22/09/2015 00:00:00 25/09/2015 04:14:57 150924-16 12116191 TM048	29/9/15	Simon Postlewhite	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG:	150924-16	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	331411
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH06 SOLID 22/09/2015 00:00:00 25/09/2015 04:17:01 150924-16 12116192 TM048	28/9/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH07 SOLID 22/09/2015 00:00:00 25/09/2015 01:46:31 150924-16 12116193 TM048	29/9/15	Simon Postlewhite	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH08 SOLID 22/09/2015 00:00:00 25/09/2015 01:44:19 150924-16 12116194 TM048	28/9/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH09 SOLID 22/09/2015 00:00:00 25/09/2015 01:42:06 150924-16 12116196 TM048	28/9/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	220915LWH10 SOLID 22/09/2015 00:00:00 25/09/2015 04:19:14 150924-16 12116197 TM048	28/9/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG:	150924-16	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	331411
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

SDG:	150924-16	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	331411
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	12116186	12116187	12116188	12116190	12116191	12116192	12116193	12116194	12116196	12116197
Customer Sample Ref.	220915LWH01	220915LWH02	220915LWH03	220915LWH04	220915LWH05	220915LWH06	220915LWH07	220915LWH08	220915LWH09	220915LWH10
AGS Ref.										
Depth										
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	29-Sep-2015	29-Sep-2015	29-Sep-2015	29-Sep-2015	29-Sep-2015	29-Sep-2015	29-Sep-2015	29-Sep-2015	29-Sep-2015	29-Sep-2015

SDG:	150924-16	**Location:**	North Wales Prison - Wrexham	**Order Number:**	
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	331411
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify th non-hydrocarbons, as standards are not routinely run for any other compounds, and more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	WhiteAsbestos
Amosite	BrownAsbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

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OL8 3QL

Attention: Gareth Cooper

CERTIFICATE OF ANALYSIS

Date:	19 October 2015
Customer:	H_REDHILLS_OLD
Sample Delivery Group (SDG):	151008-140
Your Reference:	N-167590
Location:	North Wales Prison - Wrexham
Report No:	334071

We received 10 samples on Thursday October 08, 2015 and 10 of these samples were scheduled for analysis which was completed on Monday October 19, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

1291

SDG:	151008-140	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	334071
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12204726	12		0.00 - 0.00	08/10/2015
12204717	3A		0.00 - 0.00	08/10/2015
12204718	3B		0.00 - 0.00	08/10/2015
12204720	7B		0.00 - 0.00	08/10/2015
12204719	3C		0.00 - 0.00	08/10/2015
12204723	SP-03		0.00 - 0.00	08/10/2015
12204724	SP-04		0.00 - 0.00	08/10/2015
12204721	SP-02 (i)		0.00 - 0.00	08/10/2015
12204722	SP-02 (ii)		0.00 - 0.00	08/10/2015
12204725	TIP 3		0.00 - 0.00	08/10/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	151008-140	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	334071
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			1	2	3	4	5	6	7	8	9	10
Lab Sample No(s)			1204726	1204717	1204718	1204720	1204719	1204723	1204724	1204721	1204722	1204725
Customer Sample Reference			12	3A	3B	7B	3C	SP-03	SP-04	SP-02 (i)	SP-02 (ii)	TP 3
AGS Reference												
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Container			1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X	X	X	X	X	X	X	X	X	X

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	151008-140	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	334071
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	12 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 18:07:30 151008-140 12204726 TM048	19/10/15	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3A 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 18:04:27 151008-140 12204717 TM048	19/10/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3B 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 18:01:40 151008-140 12204718 TM048	19/10/15	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	7B 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 10:20:44 151008-140 12204720 TM048	19/10/15	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	3C 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 17:57:39 151008-140 12204719 TM048	19/10/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	151008-140	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	334071
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP-03 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 10:35:30 151008-140 12204723 TM048	19/10/15	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP-04 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 10:24:45 151008-140 12204724 TM048	19/10/15	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP-02 (i) 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 10:28:23 151008-140 12204721 TM048	19/10/15	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP-02 (ii) 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 10:32:34 151008-140 12204722 TM048	19/10/15	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TIP 3 0.00 - 0.00 SOLID 08/10/2015 00:00:00 14/10/2015 17:53:17 151008-140 12204725 TM048	19/10/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG:	151008-140	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	334071
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
TM 304				
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

SDG:	151008-140	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	334071
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	12204726	12204717	12204718	12204720	12204719	12204723	12204724	12204721	12204722	12204725
Customer Sample Ref.	12	3A	3B	7B	3C	SP-03	SP-04	SP-02 (i)	SP-02 (ii)	TIP 2
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015

SDG:	151008-140	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	334071
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known ..ck record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

. LODs for wet tests reported on a dry weight basis are not corrected for moisture ..ntent.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment . Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect .

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
»	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

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Website: www.alcontrol.com

Redhills
Room 2:15
Hollinwood Business Centre
Albert Street
Oldham
OL8 3QL

Attention: Gareth Cooper

CERTIFICATE OF ANALYSIS

Date:	03 November 2015
Customer:	H_REDHILLS_OLD
Sample Delivery Group (SDG):	151022-11
Your Reference:	N-167590
Location:	North Wales Prison - Wrexham
Report No:	336215

We received 11 samples on Wednesday October 21, 2015 and 11 of these samples were scheduled for analysis which was completed on Monday November 02, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

1291

SDG:	151022-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	336215
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12285149	211015CHS001			21/10/2015
12285147	211015CHS002			21/10/2015
12285152	211015CHS003			21/10/2015
12285153	211015CHS004			21/10/2015
12285155	211015CHS005			21/10/2015
12285150	211015CHS006			21/10/2015
12285154	211015CHS007			21/10/2015
12285151	211015CHS008			21/10/2015
12285156	211015CHS009			21/10/2015
12285148	SP01 (i)			21/10/2015
12285157	SP-01 (ii)			21/10/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	151022-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	336215
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
			12285149	211015CHS001			1kg TUB
			12285147	211015CHS002			1kg TUB
			12285152	211015CHS003			1kg TUB
			12285153	211015CHS004			1kg TUB
			12285155	211015CHS005			1kg TUB
			12285150	211015CHS006			1kg TUB
			12285154	211015CHS007			1kg TUB
			12285151	211015CHS008			1kg TUB
			12285156	211015CHS009			1kg TUB
			12285148	SP01 (i)			1kg TUB
			12285157	SP-01 (ii)			1kg TUB
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11		X X X X X X X X X X X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 4		X X			

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	151022-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	336215
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS001 SOLID 21/10/2015 00:00:00 27/10/2015 07:12:04 151022-11 12285149 TM048	29/10/15	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS002 SOLID 21/10/2015 00:00:00 26/10/2015 07:52:27 151022-11 12285147 TM048	02/11/15	Martin Cotterell	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS003 SOLID 21/10/2015 00:00:00 26/10/2015 07:55:53 151022-11 12285152 TM048	29/10/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS004 SOLID 21/10/2015 00:00:00 27/10/2015 06:45:00 151022-11 12285153 TM048	28/10/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS005 SOLID 21/10/2015 00:00:00 27/10/2015 06:57:32 151022-11 12285155 TM048	28/10/15	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG: 151022-11 **Location:** North Wales Prison - Wrexham **Order Number:** 10667
Job: H_REDHILLS_OLD-13 **Customer:** Redhills **Report Number:** 336215
Client Reference: N-167590 **Attention:** Gareth Cooper **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS006 SOLID 21/10/2015 00:00:00 26/10/2015 08:01:55 151022-11 12285150 TM048	29/10/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS007 SOLID 21/10/2015 00:00:00 27/10/2015 06:48:13 151022-11 12285154 TM048	29/10/15	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS008 SOLID 21/10/2015 00:00:00 26/10/2015 08:00:01 151022-11 12285151 TM048	29/10/15	Paul Poynton	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS009 SOLID 21/10/2015 00:00:00 27/10/2015 06:53:17 151022-11 12285156 TM048	29/10/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP01 (i) SOLID 21/10/2015 00:00:00 27/10/2015 07:03:10 151022-11 12285148 TM048	28/10/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	SP-01 (ii) SOLID 21/10/2015 00:00:00 26/10/2015 07:49:31 151022-11 12285157 TM048	29/10/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG:	151022-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	336215
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS001 SOLID 21/10/2015 00:00:00 27/10/2015 07:12:25 151022-11 12285149 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled ate Received SDG Original Sample Method Number	211015CHS002 SOLID 21/10/2015 00:00:00 26/10/2015 07:53:46 151022-11 12285147 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS007 SOLID 21/10/2015 00:00:00 27/10/2015 06:48:37 151022-11 12285154 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	211015CHS008 SOLID 21/10/2015 00:00:00 26/10/2015 08:00:29 151022-11 12285151 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

SDG:	151022-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	336215
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
TM 304				
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

SDG:	151022-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	336215
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	12285149	12285147	12285152	12285153	12285155	12285150	12285154	12285151	12285156	12285148
Customer Sample Ref.	211015CHS001	211015CHS002	211015CHS003	211015CHS004	211015CHS005	211015CHS006	211015CHS007	211015CHS008	211015CHS009	SP01 (i)
AGS Ref.										
Depth										
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	29-Oct-2015	02-Nov-2015	29-Oct-2015	29-Oct-2015	29-Oct-2015	29-Oct-2015	29-Oct-2015	29-Oct-2015	29-Oct-2015	29-Oct-2015
Asbestos Quantification - Full	30-Oct-2015	02-Nov-2015					29-Oct-2015	30-Oct-2015		

Lab Sample No(s)	12285157
Customer Sample Ref.	SP-01 (ii)
AGS Ref.	
Depth	
Type	SOLID
Asbestos ID in Solid Samples	29-Oct-2015

SDG:	151022-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	336215
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than:
- Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

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email: mkt@alcontrol.com
Website: www.alcontrol.com

Redhills
Room 2:15
Hollinwood Business Centre
Albert Street
Oldham
OL8 3QL

Attention: Gareth Cooper

CERTIFICATE OF ANALYSIS

Date:	16 November 2015
Customer:	H_REDHILLS_OLD
Sample Delivery Group (SDG):	151106-11
Your Reference:	N-167590
Location:	North Wales Prison - Wrexham
Report No:	338198

We received 8 samples on Thursday November 05, 2015 and 8 of these samples were scheduled for analysis which was completed on Thursday November 12, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	151106-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	338198
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12387747	107A001			05/11/2015
12387748	107A002			05/11/2015
12387749	107A003			05/11/2015
12387752	107A004			05/11/2015
12387753	107A005			05/11/2015
12387754	107A006			05/11/2015
12387755	107A007			05/11/2015
12387756	107A008			05/11/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	151106-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	338198
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			12387747	12387748	12387749	12387752	12387753	12387754	12387755	12387756
Lab Sample No(s)										
Customer Sample Reference			107A001	107A002	107A003	107A004	107A005	107A006	107A007	107A008
AGS Reference										
Depth (m)										
Container			1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8	X	X	X	X	X	X	X	X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1			X					

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG:	151106-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	338198
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A001 SOLID 05/11/2015 00:00:00 09/11/2015 08:10:14 151106-11 12387747 TM048	12/11/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A002 SOLID 05/11/2015 00:00:00 09/11/2015 08:05:19 151106-11 12387748 TM048	12/11/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A003 SOLID 05/11/2015 00:00:00 09/11/2015 07:48:43 151106-11 12387749 TM048	12/11/15	Tomasz Pawlikowski	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A004 SOLID 05/11/2015 00:00:00 09/11/2015 07:56:28 151106-11 12387752 TM048	12/11/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A005 SOLID 05/11/2015 00:00:00 09/11/2015 07:37:25 151106-11 12387753 TM048	12/11/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG: 151106-11
Job: H_REDHILLS_OLD-13
Client Reference: N-167590

Location: North Wales Prison - Wrexham
Customer: Redhills
Attention: Gareth Cooper

Order Number: 10667
Report Number: 338198
Superseded Report:

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A006 SOLID 05/11/2015 00:00:00 09/11/2015 07:42:25 151106-11 12387754 TM048	12/11/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A007 SOLID 05/11/2015 00:00:00 10/11/2015 14:10:40 151106-11 12387755 TM048	12/11/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A008 SOLID 05/11/2015 00:00:00 10/11/2015 13:59:18 151106-11 12387756 TM048	12/11/15	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG:	151106-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	338198
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	107A003 SOLID 05/11/2015 00:00:00 09/11/2015 07:52:29 151106-11 12387749 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	151106-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	338198
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
TM 304				
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG:	151106-11	**Location:**	North Wales Prison - Wrexham	**Order Number:**	10667
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	338198
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	12387747	12387748	12387749	12387752	12387753	12387754	12387755	12387756
Customer Sample Ref.	107A001	107A002	107A003	107A004	107A005	107A006	107A007	107A008
AGS Ref.								
Depth								
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	12-Nov-2015	12-Nov-2015	12-Nov-2015	12-Nov-2015	12-Nov-2015	12-Nov-2015	12-Nov-2015	12-Nov-2015
Asbestos Quantification - Full			12-Nov-2015					

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

ALcontrol Laboratories

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Website: www.alcontrol.com

Redhills
Room 2:15
Hollinwood Business Centre
Albert Street
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OL8 3QL

Attention: Gareth Cooper

CERTIFICATE OF ANALYSIS

Date:	25 November 2015
Customer:	H_REDHILLS_OLD
Sample Delivery Group (SDG):	151117-3
Your Reference:	N-167590
Location:	North Wales Prison - Wrexham
Report No:	339504

We received 12 samples on Monday November 16, 2015 and 12 of these samples were scheduled for analysis which was completed on Tuesday November 24, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG:	151117-3	**Location:**	North Wales Prison - Wrexham	**Order Number:**	12144
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	339504
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12450209	ADANIS ROAD8(i)			16/11/2015
12450210	ADANIS ROAD8(ii)			16/11/2015
12450211	ADANIS ST/ROAD1(i)			16/11/2015
12450212	ADANIS ST/ROAD1(ii)			16/11/2015
12450203	161115CMS001			16/11/2015
12450204	161115CMS002			16/11/2015
12450205	161115CMS003			16/11/2015
12450206	161115CMS004			16/11/2015
12450207	161115CMS005			16/11/2015
12450208	161115CMS006			16/11/2015
12450213	161115CMS007			16/11/2015
12450214	161115CMS008			16/11/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	151117-3	**Location:**	North Wales Prison - Wrexham	**Order Number:**	12144
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	339504
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

SOLID

Results Legend

X Test

N No Determination Possible

			12450209	12450210	12450211	12450212	12450203	12450204	12450205	12450206	12450207	12450208	12450213	12450214
Lab Sample No(s)														
Customer Sample Reference			ADANIS ROAD8(i)	ADANIS ROAD8(ii)	ADANIS		161115CMS001	161115CMS002	161115CMS003	161115CMS004	161115CMS005	161115CMS006	161115CMS007	161115CMS008
AGS Reference														
Depth (m)														
Container			1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB	1kg TUB
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 12	X	X	X	X	X	X	X	X	X	X	X	X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2		X	X									

ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

SDG:	151117-3	**Location:**	North Wales Prison - Wrexham	**Order Number:**	12144
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	339504
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	ADANIS ROAD8(i) SOLID 16/11/2015 00:00:00 18/11/2015 09:03:29 151117-3 12450209 TM048	24/11/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	ADANIS ROAD8(ii) SOLID 16/11/2015 00:00:00 18/11/2015 08:51:24 151117-3 12450210 TM048	24/11/15	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	ADANIS ST/ROAD1(i) SOLID 16/11/2015 00:00:00 18/11/2015 08:54:37 151117-3 12450211 TM048	24/11/15	Kevin Bowron	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	ADANIS ST/ROAD1(ii) SOLID 16/11/2015 00:00:00 18/11/2015 09:05:27 151117-3 12450212 TM048	24/11/15	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	161115CMS001 SOLID 16/11/2015 00:00:00 18/11/2015 10:26:27 151117-3 12450203 TM048	24/11/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALcontrol Laboratories

Validated

CERTIFICATE OF ANALYSIS

SDG: 151117-3 **Location:** North Wales Prison - Wrexham **Order Number:** 12144
Job: H_REDHILLS_OLD-13 **Customer:** Redhills **Report Number:** 339504
Client Reference: N-167590 **Attention:** Gareth Cooper **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	161115CMS002 SOLID 16/11/2015 00:00:00 18/11/2015 10:21:25 151117-3 12450204 TM048	24/11/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	161115CMS003 SOLID 16/11/2015 00:00:00 18/11/2015 10:23:15 151117-3 12450205 TM048	24/11/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	161115CMS004 SOLID 16/11/2015 00:00:00 18/11/2015 10:35:29 151117-3 12450206 TM048	24/11/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	161115CMS005 SOLID 16/11/2015 00:00:00 18/11/2015 10:32:26 151117-3 12450207 TM048	24/11/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	161115CMS006 SOLID 16/11/2015 00:00:00 18/11/2015 10:29:38 151117-3 12450208 TM048	24/11/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	161115CMS007 SOLID 16/11/2015 00:00:00 18/11/2015 08:56:46 151117-3 12450213 TM048	24/11/15	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

ALcontrol Laboratories

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CERTIFICATE OF ANALYSIS

SDG: 151117-3
Job: H_REDHILLS_OLD-13
Client Reference: N-167590

Location: North Wales Prison - Wrexham
Customer: Redhills
Attention: Gareth Cooper

Order Number: 12144
Report Number: 339504
Superseded Report:

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	161115CMS008 SOLID 16/11/2015 00:00:00 18/11/2015 08:59:28 151117-3 12450214 TM048	24/11/15	Paul Poynton		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG:	151117-3	**Location:**	North Wales Prison - Wrexham	**Order Number:**	12144
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	339504
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	ADANIS ROAD8(ii) SOLID 16/11/2015 00:00:00 18/11/2015 08:52:23 151117-3 12450210 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	ADANIS ST/ROAD1(i) SOLID 16/11/2015 00:00:00 18/11/2015 08:55:07 151117-3 12450211 TM 304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

SDG:	151117-3	**Location:**	North Wales Prison - Wrexham	**Order Number:**	12144
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	339504
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
ASB_PREP				
TM 304				
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

ALcontrol Laboratories

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CERTIFICATE OF ANALYSIS

SDG:	151117-3	**Location:**	North Wales Prison - Wrexham	**Order Number:**	12144
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	339504
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	12450209	12450210	12450211	12450212	12450203	12450204	12450205	12450206	12450207	12450208
Customer Sample Ref.	ADANIS ROAD8(i)	ADANIS ROAD8(ii)	ADANIS ST/ROAD1 (i)	ADANIS ST/ROAD1 (ii)	161115CMS001	161115CMS002	161115CMS003	161115CMS004	161115CMS005	161115CMS006
AGS Ref.										
Depth										
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	24-Nov-2015	24-Nov-2015	24-Nov-2015	24-Nov-2015	24-Nov-2015	24-Nov-2015	24-Nov-2015	24-Nov-2015	24-Nov-2015	24-Nov-2015
Asbestos Quantification - Full		24-Nov-2015	24-Nov-2015							

Lab Sample No(s)	12450213	12450214
Customer Sample Ref.	161115CMS007	161115CMS008
AGS Ref.		
Depth		
Type	SOLID	SOLID
Asbestos ID in Solid Samples	24-Nov-2015	24-Nov-2015

SDG:	151117-3	**Location:**	North Wales Prison - Wrexham	**Order Number:**	12144
Job:	H_REDHILLS_OLD-13	**Customer:**	Redhills	**Report Number:**	339504
Client Reference:	N-167590	**Attention:**	Gareth Cooper	**Superseded Report:**	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

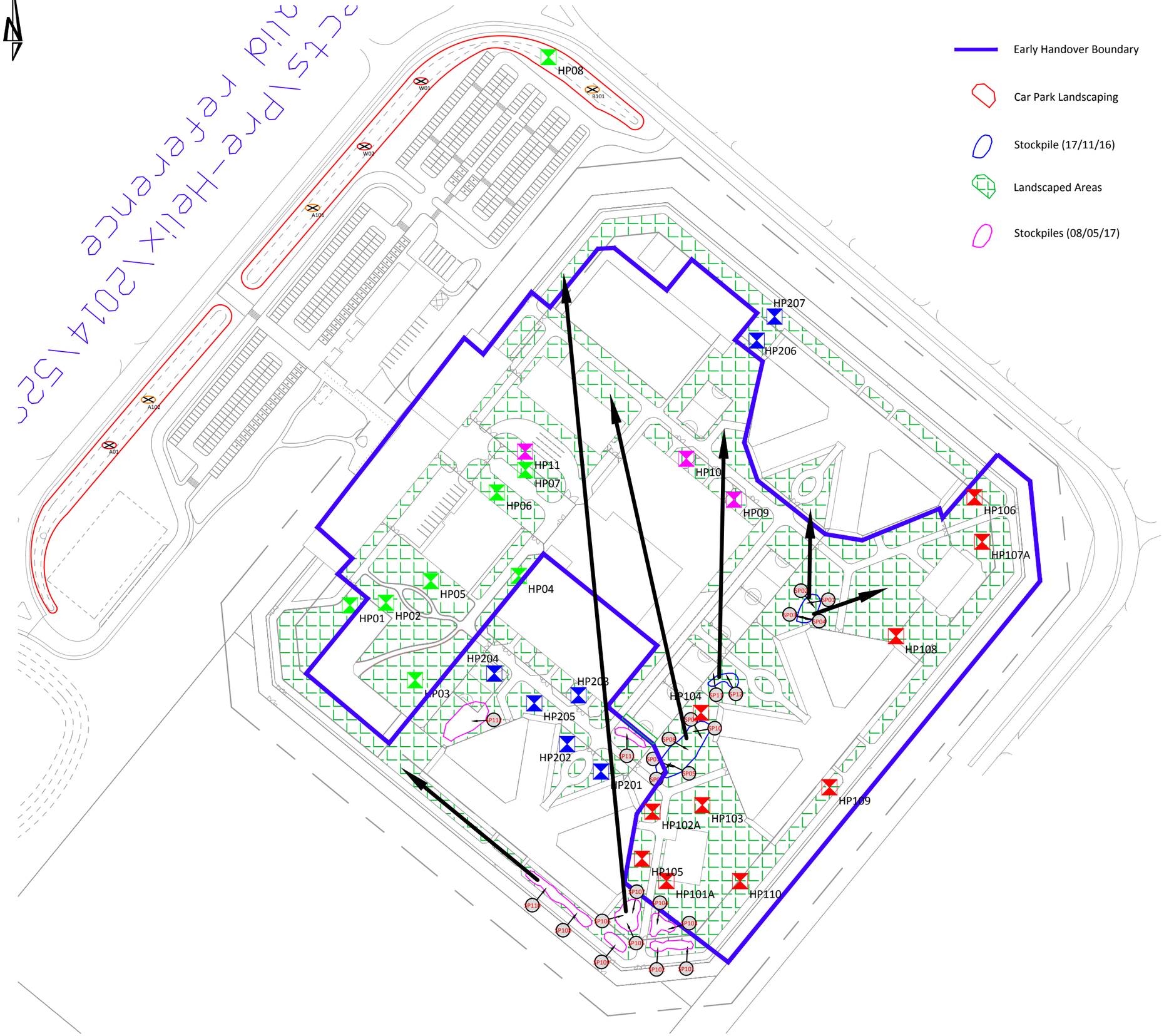
Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Appendix G

Final Landscaping Validation Testing



Notes:

	Sampling Date	Sample Reference	Lab Reference	Comments
Xxx	12/07/2016	A01, W01-W02	16-22616	Shallow Soil Sampling
Xxxx	12/09/2016	A101, B101-B102	16-27846	Shallow Soil Sampling
HPxx	19/10/2016	HP01 - HP08	16-30732	Hand-dug Pits
SPxx	17/11/2016	SP01 - SP12	16-33372	Stockpile Sampling
HPxx	15/12/2016	HP09 - HP11	16-35865	Hand-dug Pits
HP101	16/02/2017	HP101 - HP110	17-40471	Hand-dug Pits
HP101A	27/02/2017	HP101A, HP102A, HP107A	17-41130	Hand-dug Pits
HP201 SP101	08/05/2017	HP201-HP207; SP101-SP112	17-47865	Hand-dug Pits & Stockpile Sampling

Rev	Date	Description	By	Ckd
C	16/08/17	Updated Annotation	CH	EC
B	19/05/17	Additional Sampling	CH	EC
A	28/02/17	Additional Sampling	LW	EC

Architect :

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Client :

LEND LEASE CONSTRUCTION (EUROPE) LTD

Project Title:

NORTH WALES PRISON

Drawing Title:

Topsoil Validation Sampling Plan

Drawing Status:

FINAL

Hydrock Job No:

C14656

Drawn	Checked	Scale @ A3	Date	Issue Date
CH	EC	1:2000	23/01/17	23/01/17

Drawing Number: 14656/D016

Revision: C

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Analytical Report Number : 17-47865

Replaces Analytical Report Number : 17-47865, issue no. 2

Project / Site name:	NWP	**Samples received on:**	09/05/2017
Your job number:	C14656	**Samples instructed on:**	09/05/2017
Your order number:	C-01961-C-POP007908	**Analysis completed by:**	22/05/2017
Report Issue Number:	3	**Report issued on:**	22/05/2017
Samples Analysed:	19 soil samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 17-47865

Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Lab Sample Number				746416	746417	746418	746419	746420
Sample Reference				HP201	HP202	HP203	HP204	HP205
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	14	14	11	9.0	11
Total mass of sample received	kg	0.001	NONE	1.1	1.0	0.98	0.99	1.1
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	< 0.001
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.6	8.5	8.4	8.4	8.6
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.075	0.069	0.061	0.071	0.089
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.017	0.021	0.013	0.016	0.017
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 17-47865

Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Lab Sample Number				746416	746417	746418	746419	746420
Sample Reference				HP201	HP202	HP203	HP204	HP205
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	3.2	2.4	3.5	7.1	2.8
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.09	0.07	0.18	0.16	< 0.06
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	1.8	1.5	1.6	1.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	3.2	5.1	6.4	6.9	7.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	3.7	5.7	6.5	7.3	7.6
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	22	15	15	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	11	14	12	20	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	3.5	4.1	4.7	5.2	3.9
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	3.8	4.5	5.3	6.5	4.5
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	27	34	29	32	30
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic >C21 - C35	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 17-47865

Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Lab Sample Number				746421	746422	746423	746424	746425
Sample Reference				HP206	HP207	SP101	SP102	SP103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	16	8.0	11	12
Total mass of sample received	kg	0.001	NONE	1.0	1.1	1.0	1.1	1.1
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	< 0.001
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.4	8.1	8.4	8.5	7.8
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.091	0.14	0.058	0.063	0.088
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.014	0.015	0.0062	0.0074	0.022
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.60
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.15
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	1.4
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	1.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.71
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.61
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.74
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.34
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.59
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.35
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.42
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	7.03

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Analytical Report Number: 17-47865

Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Lab Sample Number				746421	746422	746423	746424	746425
Sample Reference				HP206	HP207	SP101	SP102	SP103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	3.4	4.1	1.1	< 1.0	5.6
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.20	0.13	0.06	0.08	0.38
Boron (water soluble)	mg/kg	0.2	MCERTS	1.5	1.4	0.7	0.8	1.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	2.9	5.3	< 1.0	3.7	15
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	3.4	5.7	< 1.0	4.0	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	15	5.9	7.3	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	13	14	6.2	6.5	65
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	4.1	4.6	2.6	2.4	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	4.9	4.3	3.1	2.9	18
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	29	32	16	17	85
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic >C21 - C35	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

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Analytical Report Number: 17-47865

Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Lab Sample Number				746426	746427	746428	746429	746430
Sample Reference				SP104	SP105	SP106	SP107	SP108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	11	11	6.8	7.2
Total mass of sample received	kg	0.001	NONE	0.98	1.1	1.2	1.0	1.0
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.6	8.2	7.4	8.3	8.0
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.046	0.073	0.12	0.050	0.096
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.0074	0.021	0.020	0.011	0.011
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.62	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.24	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.2	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.1	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.62	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.53	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.70	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.28	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.58	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.33	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.39	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	6.60	< 0.80	< 0.80

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Analytical Report Number: 17-47865

Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Lab Sample Number				746426	746427	746428	746429	746430
Sample Reference				SP104	SP105	SP106	SP107	SP108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	1.5	1.4	8.8	< 1.0	1.6
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.14	0.10	0.41	0.11	0.18
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	1.1	1.2	0.9	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.3	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	1.7	5.1	13	2.6	5.9
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	2.0	5.8	14	3.1	6.4
Copper (aqua regia extractable)	mg/kg	1	MCERTS	6.5	11	22	7.0	16
Lead (aqua regia extractable)	mg/kg	1	MCERTS	6.0	13	89	7.4	12
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	2.4	3.3	13	2.7	3.7
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	3.0	4.1	19	3.4	4.1
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	14	24	94	19	26
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	29	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic >C21 - C35	mg/kg	10	NONE	< 10	< 10	29	< 10	< 10

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Analytical Report Number: 17-47865

Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Lab Sample Number				746431	746432	746433	746434	
Sample Reference				SP109	SP110	SP111	SP112	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				08/05/2017	08/05/2017	08/05/2017	08/05/2017	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	9.1	9.4	7.8	11	
Total mass of sample received	kg	0.001	NONE	1.1	1.0	0.97	1.0	
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.7	8.2	8.3	8.6	
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.052	0.068	0.071	0.074	
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.0053	0.0093	0.015	0.011	
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	

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Analytical Report Number: 17-47865

Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Lab Sample Number				746431	746432	746433	746434	
Sample Reference				SP109	SP110	SP111	SP112	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				08/05/2017	08/05/2017	08/05/2017	08/05/2017	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	1.6	3.3	4.0	4.2	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.13	0.08	0.10	0.20	
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.9	1.9	1.0	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	
Chromium (III)	mg/kg	1	NONE	3.6	6.9	3.7	4.0	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	3.9	7.3	4.6	4.3	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.8	14	17	14	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	5.7	15	16	22	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.5	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	2.7	4.2	4.6	5.2	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	2.9	4.2	4.9	5.2	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	13	28	31	30	
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	2.3	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	21	
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	
TPH-CWG - Aromatic >C21 - C35	mg/kg	10	NONE	< 10	< 10	< 10	21	

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Analytical Report Number: 17-47865
Project / Site name: NWP
Your Order No: C-01961-C-POP007908

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
746420	HP205		130	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
746425	SP103		130	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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Analytical Report Number : 17-47865

Project / Site name: NWP

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
746416	HP201	None Supplied	None Supplied	Brown loam and sand.
746417	HP202	None Supplied	None Supplied	Brown loam and sand.
746418	HP203	None Supplied	None Supplied	Brown loam and sand with vegetation.
746419	HP204	None Supplied	None Supplied	Brown loam and sand with vegetation.
746420	HP205	None Supplied	None Supplied	Brown loam and sand.
746421	HP206	None Supplied	None Supplied	Brown loam and sand with vegetation.
746422	HP207	None Supplied	None Supplied	Brown loam and sand with vegetation.
746423	SP101	None Supplied	None Supplied	Brown loam and sand with vegetation.
746424	SP102	None Supplied	None Supplied	Brown loam and sand with vegetation.
746425	SP103	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.
746426	SP104	None Supplied	None Supplied	Brown loam and sand with vegetation.
746427	SP105	None Supplied	None Supplied	Brown loam and sand with vegetation.
746428	SP106	None Supplied	None Supplied	Brown loam and sand with vegetation.
746429	SP107	None Supplied	None Supplied	Brown loam and sand.
746430	SP108	None Supplied	None Supplied	Brown loam and sand with vegetation.
746431	SP109	None Supplied	None Supplied	Brown loam and sand with vegetation.
746432	SP110	None Supplied	None Supplied	Brown loam and sand with vegetation.
746433	SP111	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.
746434	SP112	None Supplied	None Supplied	Brown loam and sand with vegetation.

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Analytical Report Number : 17-47865

Project / Site name: NWP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in ouse method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
TPH Chromatogram	TPH Chromatogram.	In-house method	L064-PL	D	NONE
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L076-PL	D	NONE

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Analytical Report Number : 17-47865

Project / Site name: NWP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH7 (Soil)	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS, speciation by interpretation.	In-house method	L064-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Laboratory Report number					17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865	17-47865
Lab Sample Number					746416	746417	746418	746419	746420	746421	746422	746423	746424	746425	746426	746427	746428	746429	746430	746431	746432	746433	746434
Sample Reference					HP201	HP202	HP203	HP204	HP205	HP206	HP207	SP101	SP102	SP103	SP104	SP105	SP106	SP107	SP108	SP109	SP110	SP111	SP112
Sample Number					None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)					None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled					08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017	08/05/2017
Time Taken					None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Import Criteria																			
Asbestos in Soil	Type	N/A	ISO 17025	Nil	Not-detected	Not-detected	Not-detected	Not-detected	<0.001%	Not-detected	Not-detected	Not-detected	Not-detected	<0.001%	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Free Cyanide	mg/kg	1	MCERTS	750	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Phenols (monohydric)	mg/kg	1	MCERTS	180	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	mg/kg	0.05	MCERTS	1.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	170	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.1	MCERTS	280	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.1	MCERTS	160	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.1	MCERTS	92	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.6	< 0.05	< 0.05	0.62	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.1	MCERTS	2300	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.15	< 0.05	< 0.05	0.24	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.1	MCERTS	260	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.4	< 0.05	< 0.05	1.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.1	MCERTS	560	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.2	< 0.05	< 0.05	1.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.71	< 0.05	< 0.05	0.62	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.61	< 0.05	< 0.05	0.53	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	5.6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.74	< 0.05	< 0.05	0.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	8.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.34	< 0.05	< 0.05	0.28	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.83	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.59	< 0.05	< 0.05	0.58	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	3.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.35	< 0.05	< 0.05	0.33	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.76	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	44	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.42	< 0.05	< 0.05	0.39	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	50	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	7.03	< 0.80	< 0.80	6.6	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	32	3.2	2.4	3.5	7.1	2.8	3.4	4.1	1.1	< 1.0	5.6	1.5	1.4	8.8	< 1.0	1.6	1.6	3.3	4	4.2
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	51	0.09	0.07	0.18	0.16	< 0.06	0.2	0.13	0.06	0.08	0.38	0.14	0.1	0.41	0.11	0.18	0.13	0.08	0.1	0.2
Boron (water soluble)	mg/kg	0.2	MCERTS	290	1.4	1.8	1.5	1.6	1.8	1.5	1.4	0.7	0.8	1.1	1.1	1.1	1.2	0.9	1.5	0.7	0.9	1.9	1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	11	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	4.3	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	630	3.2	5.1	6.4	6.9	7.3	2.9	5.3	< 1.0	3.7	15	1.7	5.1	13	2.6	5.9	3.6	6.9	3.7	4
Copper (aqua regia extractable)	mg/kg	1	MCERTS	2300	11	22	15	15	12	14	15	5.9	7.3	20	6.5	11	22	7	16	8.8	14	17	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	200	11	14	12	20	13	13	14	6.2	6.5	65	6	13	89	7.4	12	5.7	15	16	22
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	170	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.5	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	130	3.5	4.1	4.7	5.2	3.9	4.1	4.6	2.6	2.4	11	2.4	3.3	13	2.7	3.7	2.7	4.2	4.6	5.2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	350	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	74	3.8	4.5	5.3	6.5	4.5	4.9	4.3	3.1	2.9	18	3	4.1	19	3.4	4.1	2.9	4.2	4.9	5.2
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	3700	27	34	29	32	30	29	32	16	17	85	14	24	94	19	26	13	28	31	30
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	42	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	100	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	27	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	48	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	24	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	65000	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	65000	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	73	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	130	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	35	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	75	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	150	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.3
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	260	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	1100	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	29	< 10	< 10	< 10	< 10	< 10	21
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	1100	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
Total TPH	mg/kg			50	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	0	23.3