

Bold Business Centre
Bold Lane, Sutton
St. Helens, WA9 4TX
Telephone: +44 (0)1925 291111 Fax: +44 (0) 1925 291191
Email: mailbox@terraconsult.co.uk Website: www.terraconsult.co.uk

Your Ref
Our Ref 2464LR02-1/NHF

15th July 2015

Lightsource Renewable Energy Limited

7th Floor
33 Holborn
London
EC1N 2HT

Dear Richard,

Geoenvironmental Investigation for Solar Farm Development, Acrefair, Near Wrexham – Updated Investigation Specification

1. Introduction

Further to our letter of the 29th June 2015 (reference 2464/L01-1/CSE) we have reviewed the information received from Angela Guy of Wrexham County Borough Council (WCBC) in relation to wastes deposited at the Acrefair site, especially in relation to chemical waste from ‘Monsanto’ and gas works waste.

The purpose of this letter is to assess the requirements for any changes in the proposed scope of the intrusive investigation based on the information received from WCBC.

2. Summary of Findings provided by WCBC

Information provided by WCBC was obtained from a detailed search of the records held by the Council in relation to the site. TerraConsult have reviewed the information in order to assess if changes to the proposed scope of works is required. This information has also helped to produce a proposed exploratory hole location plan.

A summary of the pertinent information is detailed below:

Chemical Drums – 1985 Records

In 1985 it is reported that 20 drums of unknown chemical waste were deposited at some point in the 1970's. The drums were reportedly placed on a clay floor of the open cast cut and completely surrounded by compacted clay. The level of the Nant Coal Seam cut was at 146 m OD which is approximately 37 m below ground level

Implications:

- The location of the drums is unknown;
- There is some uncertainty if the drums were actually deposits;
- The drums are approximately 37 m below ground level;
- Investigation of these drums cannot be undertaken

Monsanto Waste – 1985 Records

In 1985 it is reported that chemical waste (including phenols) from Monsanto Cefn was deposited at the site in the 1970's. The waste was moved by the Welsh Water Authority to a new clay lined location which is approximately 37 m below ground level. Water monitoring is reported to have shown no impact to water leaving the site.

A plan was received showing the position of the re-deposited wastes (see Figure 1).

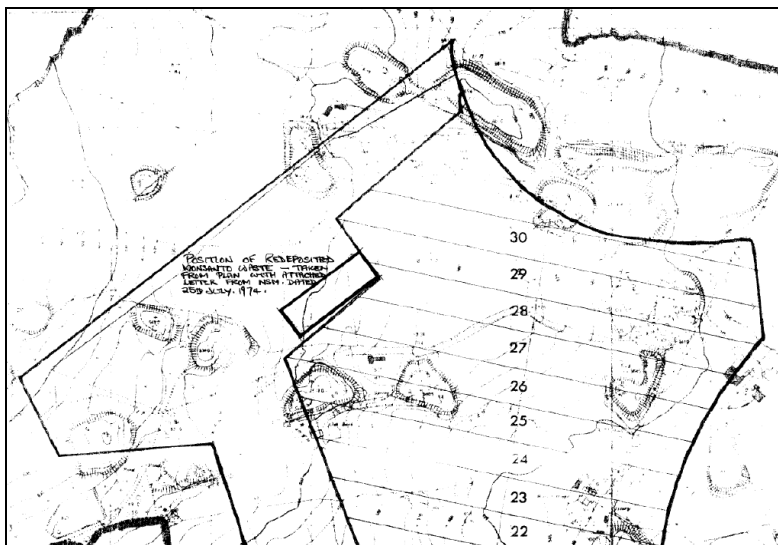


Figure 1: Location of re-Deposited 'Monsanto' Wastes

Assessment of the location of the re-deposited materials, in comparison to the site boundary and historical maps shows the location of the re-deposited 'Monsanto' waste is not located on the site (see Figure 2).

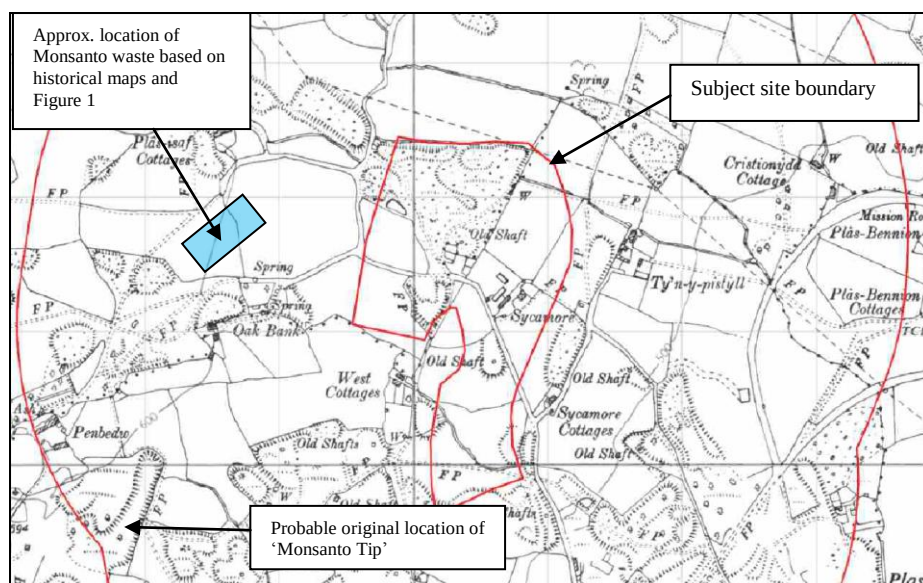


Figure 2: Site Location and Approximate Location of Re-Deposited 'Monsanto' Wastes

Implications:

- Original location of the 'Monsanto' waste is not fully known, and cannot be investigated as possible location is off site (see Figure 2);
- The new location of the 'Monsanto' waste is approximately 300 m to the west of the site;
- The wastes are deposited approximately 37 m below ground level;
- Investigation of these waste materials cannot be undertaken;

Gas Works Waste – 1985, 1987 and 1988 Records

Information held by WCBC showed that suspected gas works waste (including tar, spent oxides and overburden) removed from across the whole Acrefields site in July 1985. Further material was encountered in September 1985, and analysis showed the material contained relatively high concentrations of phenols and hydrocarbons. The material was required to be removed to a toxic waste site, however, records from January 1987 show this did not occur, and the materials were covered in colliery spoil.

Later information shows that 5000 tonnes of gas works waste was deposited. In December 1987, 9 boreholes were drilled to 15 m in the suspected location of the gas works waste, in the location of the proposed lake. 4 boreholes contained gas works waste, with a further 2 suspected of containing gas works wastes. The effected area was concluded to be approximately 30 m by 20 m and 2 m deep.

Assessment of the data in February 1988 indicated the concentrations would not be of concern for residential end use. At this time the Council recommended that the lake was drained and restored with cohesive soils as cover. No records exist to indicate this was undertaken. Assessment of boreholes provided in the 1988 report (undertaken by City of Birmingham Engineers Department indicates that phenolic odours were generally encountered in the top 2 to 3 m.

The borehole location plan of the intrusive investigation does not contain enough information to allow for the locations to be properly assessed. Therefore, in terms of the potential location of the pond / lake area, information has to be obtained from the restoration scheme. Figure 3 below shows the proposed location of the lake.

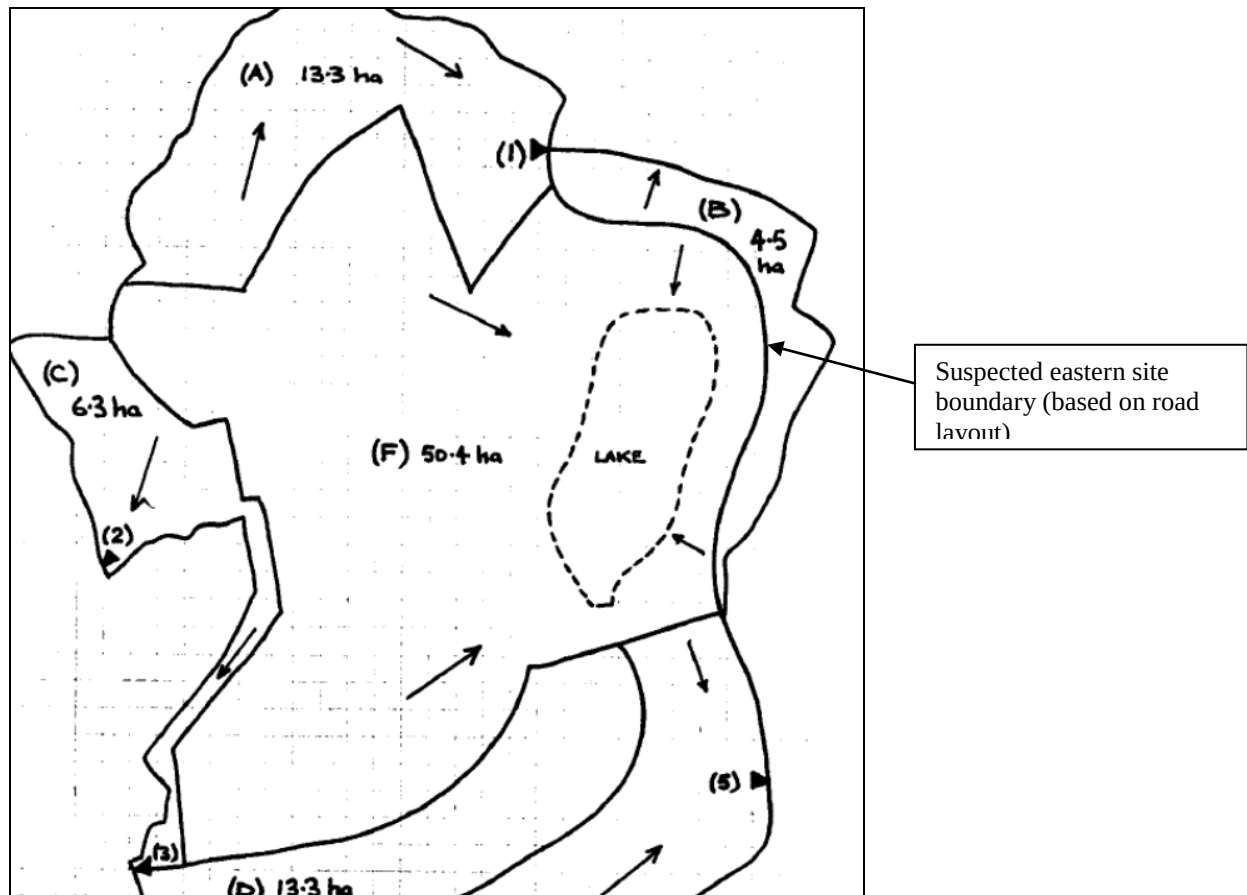


Figure 3: Proposed Lake Location from Restoration Plan

Implications

- It is possible that the gas works waste is located in the northeastern part of the site;
- The has works waste is likely to be located within the top 5 m of the site, based on available information relating to depth to materials and possible draining and infilling of the lake;
- Deeper intrusive investigations should be concentrated in the northeastern part of the site to investigate potential relatively shallow gas works waste.

3. Amended Proposed Intrusive Investigation

Based on the above information , the overall scope of works we do not proposed to change from the original specification presented in our letter reference 2464L01-1/CSE. However, rather than 10 samples being targeted at the 'Monsanto' wastes, which have been shown to

not be located on the site, these samples will be concentrated in the northeast of the site to investigate potential relatively shallow gas works wastes.

An additional 20 samples will be distributed across the site, targeting the proposed buildings, proposed service trench as well as randomly distributed across the proposed area of the solar farm.

Additional sampling will be spread across the site to provide coverage. In addition, samples will be taken in close proximity to the proposed enclosed structures where maintenance staff / site engineers will be based. In addition, samples will be taken where excavations for service provision are planned. Figure 4 below shows the proposed exploratory hole locations:

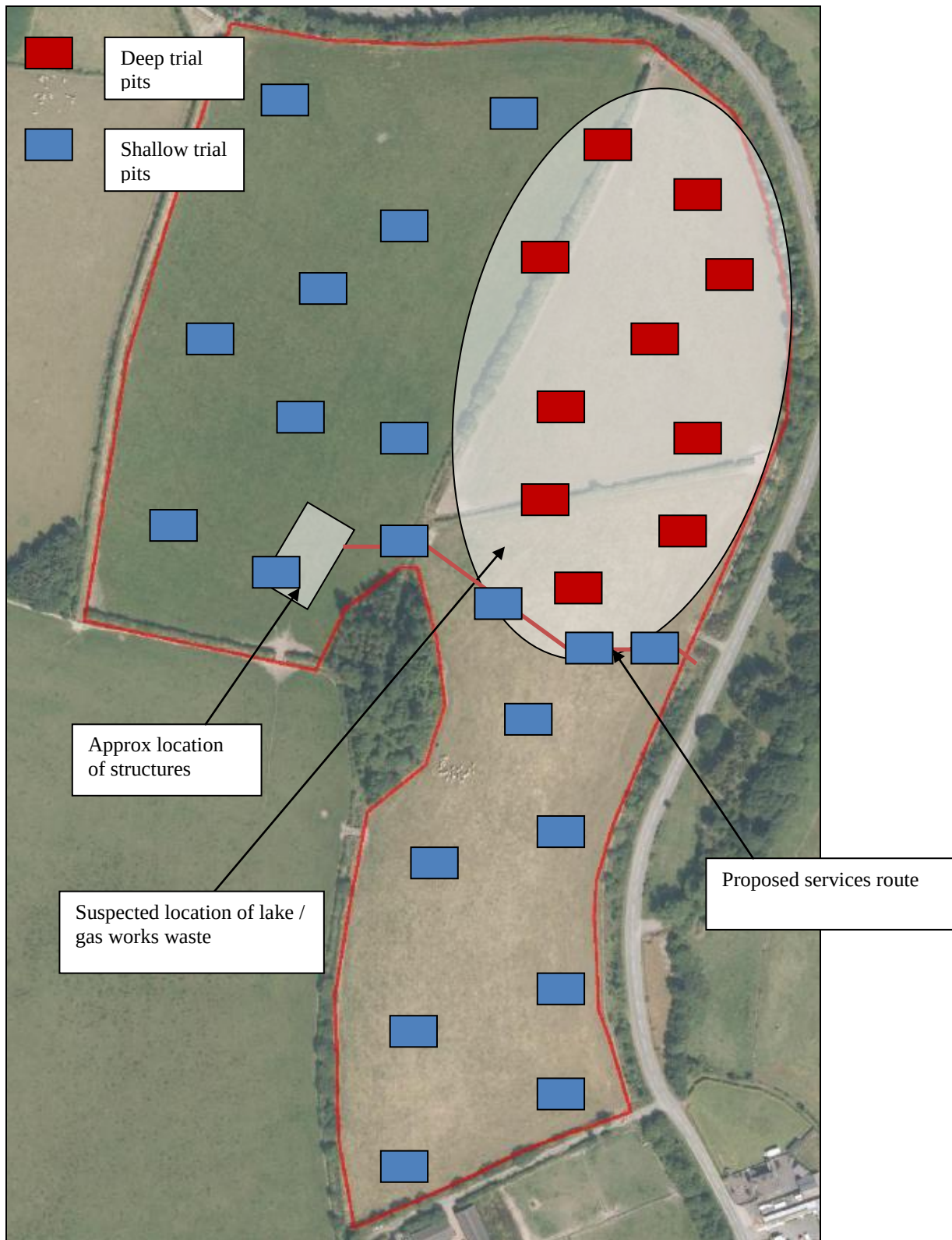


Figure 4: Proposed Exploratory Hole Locations

We trust that the information provide provides justification for the scope of the proposed investigation. We will be on site on Friday 17th July to undertake the proposed investigation. Any comments received before then would be gratefully received.

Yours sincerely
for and on behalf of TerraConsult Ltd

N Frost

N Frost
Principal Geologist