

FCC ENVIRONMENT LIMITED



**CQA PLAN FOR LEACHATE WELL DRILLING OF LMW4NBR
PWLIFAWATKIN LANDFILL SITE**

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Project Quality Assurance

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Purpose

This document was prepared as a Construction Quality Assurance (CQA) Plan for the installation of retro-drill leachate well works for FCC Environment. Sirius Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the Client, for the purposes for which it was originally commissioned and prepared.

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1 SCOPE OF THE LEACHATE DRILLING WORKS

1.1 General Description

The design concepts for leachate well drilling works were developed to accord with the permit for the site.

Leachate well drilling works will involve;

- The retro drilling of one leachate well, namely LMW4NBR;
- Installation of 244mm steel casing, the lower 3m of casing being perforated;
- Installation of a 20/40mm clean hard gravel pack too 1000mm above the casing perforations;
- Installation of a 100mm dry bentonite layer above the placed gravel pack;
- Installation of a 500mm sand layer above the dry bentonite layer;
- Installation of a 100mm dry bentonite layer above the placed sand layer;
- Installation of a hydrated bentonite seal placed above the dry bentonite layer too ground level, and
- Provision and installation of a temporary flexible seal headworks by drillers, permanent headworks to be installed and connected into sites leachate management system by FCC within 7 days of well completion.

2 CQA SUPERVISION

2.1 General

The CQA Project Team will comprise the following:

The CQA Manager - Will be office based and responsible for the following:

- Administration of the CQA program;
- Attendance at selected progress or liaison meetings and is the key contact with regulatory officers;
- Production of the CQA Validation Report.

The CQA Inspector – The representative of the CQA Manager located full time at the site during works requiring CQA supervision and responsible for the following:

- The on-site representative of the CQA Manager;
- To be fully familiar with all CQA requirements for the project;
- Attendance at all CQA-related meetings (e.g. Pre-construction and Progress);
- Keeping daily reports and records;
- Reporting to the CQA Manager any relevant observations;
- Reporting any unresolved deviations from this CQA Plan to the CQA Manager;

- Provision of all records and relevant data to the CQA Manager for the preparation of the final validation report, which will be submitted to the NRW for approval upon completion of the works; and
- Noting and bringing to the attention of the Contractor any on-site activities that could result in damage to the liner system.

Staff undertaking the roles of the CQA Manager and the CQA Inspector should have relevant experience in landfill construction and earthworks control or be supervised by experienced staff until relevant experience is obtained. The CV's of the CQA Project Team shall be supplied to the NRW prior to commencement of the works. Should changes to CQA personnel be required, the Environment Agency shall be immediately notified and the respective CV shall be issued.

2.2 Definitions

For the sake of clarification the following definitions are given:

Construction Quality Assurance (CQA)

- Means a planned and systematic pattern of all means and actions designed to provide confidence that items or services meet contractual and regulatory requirements and shall perform satisfactory in service.

Construction Quality Assurance refers to means and actions employed by the Supervisor, to assure conformity of the preparation, production and installation of this CQA Plan, the Contract Drawings, and Specification. CQA is provided by Sirius.

Construction Quality Control (CQC):

- Means "those actions that provide a means to measure and regulate the characteristics of an item or service to contractual requirements".

Construction Quality Control refers to those actions taken by Manufacturers, Installers, Contractors, or the Employer to ensure that the materials and the workmanship meet the requirements of the Contract Drawings and Specification.

Employer:

Means 'the person or persons, firm or company or other body whom own and have responsibility for the facility. The Employer is FCC Environment (UK) Limited. The Employer has entered into a contract with a Contractor for the execution of the works detailed in the Specification and Contract Drawings. Personal representatives or other parties, e.g. the Supervisor, may represent the Employer on site.

Contractor:

Means 'the person or persons, firm, company or other body to whom the contract has been awarded by the Employer, and includes the Contractor's personal representatives or other parties, e.g. Sub-contractors, Manufacturer's.

The Contractor shall undertake the execution of the works under the terms of the contract.

Specification:

Means, 'that part of the Contract entered into between the Employer and the Contractor, which sets out the Employer's detailed requirements as to how the works should be constructed, tested, measured and quality assured.

This CQA Plan is to be read in conjunction with the Specification Ref: WR7981/01/02 Rev 0 which forms part of this CQA Plan which is included with in the Design Pack.

2.3 Daily Meetings

Meetings will be held daily between the CQA Inspector and the Contractor's representative. The purpose of which is to:

- Review the work activities and locations for that day;
- Note the Contractor's installation personnel and plant for the day/shift;
- Review the previous days progress;
- Review the work schedule;
- Discuss any interfacing with other contractors and/or site operations; and
- Discuss/highlight any problems and identify solutions.

2.4 Site Visits

It is anticipated that from time to time the NRW will visit the site to review the works. During these visits the CQA Inspector shall make available all test results and daily records up to that date for inspection by NRW.

Any problem encountered during construction should be discussed with NRW upon their arrival to site prior to any subsequent site walkover. The CQA Inspector shall discuss the problems encountered any discuss any proposed remediation methods.

2.5 CQA Requirements

The CQA requirements associated with each component of the works are detailed in the individual sections below.

2.6 CQA Proformas

All proformas are to be completed during the works to record the specific elements, these are all to be completed and submitted as part of the validation report.

3 LEACHATE WELL DRILLING

3.1 CQA Requirements

The CQA Inspector shall:

- Assess the Plan submitted by the Contractor for the drilling of Leachate well;
- Ensure that the existing ground level at the point of drilling has been surveyed within 7 days prior to drilling;
- Ensure that following the recent survey the mAOD levels have been recalculated to assess drill depths against the drilling schedule;
- Ensure that the correct materials have been delivered to site and that they are stored safely;
- Ensure that all drilling procedures are conducted safely and that drilling zones are adhered to at all times;
- Ensure that on completion of drilling that the bore is measured with a dip tape to confirm correct drill depths as noted within the drilling schedule;
- Ensure that the well gravel pack is installed in accordance with the Specification document;
- Ensure that the sand/dry bentonite layers are installed in accordance with the Specification document;
- Ensure that the hydrated bentonite seal is installed in accordance with the Specification document;
- Mark the completed well with the well reference number, and
- Take photographs during the construction.

The CQA Inspector shall fully document each item above and the documentation shall be presented in the CQA Validation Report.

4 CQA VALIDATION REPORT

Upon completion of the leachate well drilling works a CQA Validation Report will be prepared summarising the works undertaken and including all CQA documentation prepared. As a minimum this shall include:

- Description of the works
- Drillers NVQ Qualifications
- As-Built Drawings noting well location
- Borehole Logs
- Completed proformas sheets detailing each element of the works;
- Photographic record of the construction
- Daily diaries

The above report will confirm that the works have been carried out in accordance with the Specification as incorporated in this CQA Plan and will be submitted to the NRW for approval within 28 days of completion of the works.

