

Equipment:	SediGraph III 5120
Location:	Sediment Analysis Lab (B15)
Brief description of work:	Automatic particle size analysis using an internal, fixed-position X-ray source.

Declaration

We the undersigned have assessed the activity and associated risks and declare that the risks will be controlled by the methods listed. Those using the equipment must read the assessment and sign to agree to the methods defined. The equipment will be reassessed whenever there is significant change and at least annually.

Signed:

Name of Principal Investigator:

Name(s) of Researcher(s):

Date: 20-Dec-06

Review date for risk assessment: 20-Dec-07

Purpose

The purpose of this document is to establish the safe working procedures to be followed to control the hazards, and the risks which could arise from them, of the work associated with this using the SediGraph equipment.

SediGraph Equipment

The SediGraph uses X-rays to determine suspended sediment concentration. The X-ray beam is contained within the unit, and is inaccessible to the operator at all times. Radiation levels outside the SediGraph are well below 0.5 milliroentgen per hour.

Although the risk posed by the X-ray is minimal, users should:

- familiarise themselves with the X-ray keyswitch to toggle between active and standby mode - an **amber X-RAY STANDBY** light and a **red X-RAY ON** light clearly show the status of the X-ray
- familiarise themselves with the location of system **ON/OFF** switches, to the rear of the SediGraph unit and MasterTech carousel
- turn the keyswitch to standby when the system is not in immediate use, and turn the system off completely when analysis has been completed
- read Appendix K of the SediGraph III 5120 Operator's Manual for further X-ray safety information

The MasterTech carousel has a number of moving parts, and a high speed stirrer and ultrasonic probe. Not only would interference with this system result in significant damage to the instrument, it is possible that fingers and/or clothing could become caught within the mechanisms.

To reduce the risk of trapping, users should:

- ensure they are not wearing any clothing or accessories that could become trapped within the carousel
- ensure they keep their a safe distance from the instrument when in use

Lone Working

The door to the Sediment Analysis Lab (B15) must be kept closed, and it is possible that those working in B15 would go undetected.

To minimise the potential risks associated with lone working, users should:

- those working on the SediGraph should notify the lab staff when they intend to be in B15, and if possible leave a note on the door to clarify when they are present in the Lab.

Computer Work

The computer linked to the SediGraph is not intended for extended use, and hence the position and style of computer, desk and stool are not ergonomically designed. Users might develop back ache if sat at the computer for too long.

To minimise this risk, users should:

- ensure they take regular breaks from the computer
- not proceed with extensive data analysis on the SediGraph computer – the software is available on other machines that are better suited to longer periods of use
- only use the SediGraph computer to set up the operation schedule, to start and stop the analysis and to retrieve data on completion of the analysis

XRF

The SediGraph is located in the same room as the XRF, which is covered by a specific risk assessment. Users of the SediGraph should be aware however that liquid nitrogen is used to maintain the temperature on the XRF source. There is therefore a monitor-alarm in the room, to detect the potential hazard of liquid nitrogen leakage leading to oxygen depletion.

In the event of the alarm sounding:

- all occupants must leave the room immediately, and wedge the door open to increase air supply

I have read, understood and agree to abide by the safety information and risk assessments provided.

Name	Sign