



Signhills Academy
Pool Technical Operating Procedure

Approved by:	Premises	Dated: Spring 2026
Next review due by:	Spring 2027	

Signhills Academy's intention is to always provide a swimming pool technical operation that is safe, healthy and environmentally friendly. We aim to maintain compliance with the PWTAG Code of Practice and where relevant other national standards.

1.0 Measuring, Monitoring, Analysis and Improvement

The effectiveness of the operation of the water treatment plant and management system is measured, monitored and analysed on a regular basis, to identify opportunities for improvement.

The academy monitors the safe and effective performance of pool operation through:

- Bacteriological monitoring
- Chemical monitoring
- Plant and treatment systems monitoring
- Feedback from regulatory authorities and pool users
- Actions taken to ensure compliance with operational procedures
- Any corrective and preventative actions
- Responding to incidents and other emergencies

2.0 Management Systems

2.1 Academy Staff

The Headteacher is responsible for writing and reviewing the PTOP. This will be reviewed annually by the Premises, Health & Safety Committee of the Governing Body and whenever major adaptations are made or if there is a notable incident affecting pool water safety.

The Caretaker is responsible for the day-to-day implementation of the PTOP.

Both the Headteacher and Caretaker hold Pool Plant qualifications, which are renewed every three years. At least one of them is either on-site or on-call during all hours of operation.

2.2 Pool Hirers

Additionally, each pool hirer has an on-site a Designated Person. The Designated Person is capable of testing the pool water quality and is aware of the safe levels required for use. The Designated Person is also knowledgeable and competent regarding the operation of the facility in terms as required in the pool emergency action plan.

3.0 Water Quality

This pool operates the water treatment system continuously.

3.1 Primary Disinfection

Calcium Hypochlorite Granules is the primary disinfectant which is monitored and dosed automatically. For at least the first test each day, the results of manual testing are compared to those on the automated dosing display. The controller is recalibrated if the difference is more than 0.25.

3.2 Secondary Disinfection

This pool uses UV to help prevent the threat from Cryptosporidium and to limit combined chlorine.

3.3 pH balance

Sodium Hydrogen Sulphate is used to lower pH which is monitored and dosed automatically. For at least the first test each day, the results of manual testing are compared to those on the automated dosing display. The controller is recalibrated if the difference is more than 0.2.

3.4 Dilution with Fresh Water

We replace pool water with fresh mains water as a part of the twice-weekly water treatment regime during backwashing, replacing approximately 5% of the water each time.

3.5 Coagulant / Clarifier

Polyaluminum Chloride (PAC) is dosed automatically via a constant dosing system.

4.0 Water Sampling

Swimming pool water is regularly manually tested to ensure that the correct chemical balance is maintained. The most important tests are for chlorine (i.e. levels of disinfectant) and pH. The tests will determine the amounts of free chlorine, combined chlorine and total chlorine. Free chlorine is the amount of chlorine freely available for disinfection. The other chlorine readings give a fuller picture of the condition of the water.

4.1 Free Chlorine

Free Chlorine tests are normally taken at the start of each day and prior to each hire period. The following routine is used:

1. The sample is taken from the same place in the pool each time.
2. The sample is taken from a depth of approximately 30cm, halfway along the long side of the pool furthest from the school field.
3. The test-tube is rinsed with pool water before taking the sample.
4. On completion of tests the test-tube is rinsed out with pool water.
5. If a result is unsatisfactory, repeat tests are taken (up to three times).

The pool is closed if there is chemical or physical evidence of unsatisfactory disinfection.

4.2 Clarity

Pool water clarity is visually checked at the start of each hire period and at any point where concerns are raised. The pool is closed if lifeguards / swimming teachers are concerned about clarity affecting the safe use of the pool.

4.3 Water Quality Standards – Chemical Quality

The following target standards apply

	Target	Pool Closure
Free chlorine	1- 3 mg/l	≤0.75mg/l. ≥10mg/l
Combined chlorine	<50% of free chlorine	
pH	7.2-7.8	≤ 7.0 ≥8.4
TDS (total dissolved solids)	1000 above source water to 3000 max	
Alkalinity	80mg/l-200mg/l	
Calcium hardness	80-300mg/l	

Pool air temperature is kept at approximately 1°C above the water temperature.

The following items of test apparatus are required:

- Electronic Comparator
- 10ml test tubes
- Pool test tablets (DPD 1&2, Phenol Red, Total Alkalinity and Calcium hardness)
- Pool plant log
- Thermometer
- Total dissolved solids meter

All items must be well-maintained and kept clean.

4.3.1 The following readings are taken daily:

- Pool air temperature
- Relative humidity
- Pool water temperature
- Pool pH level
- Pool chlorine residuals (total and combined chlorine)

4.3.2 The following readings are taken fortnightly by an external contractor:

- Alkalinity
- Calcium hardness
- Total dissolved solids
- Balanced water test (Langeliers saturation index)

4.4 Independent Microbiological Testing

Second Element (external contractor) take samples of pool water and arrange for a laboratory to undertake microbiological tests on a monthly basis.

These tests include:

- Aerobic colony counts or total viable count (safe up to 10cfu per ml)
- Total coliforms (absent in 100ml)
- Escherichia coli (absent in 100ml)
- Pseudomonas aeruginosa (up to 10 per 100ml)
- pH, Total Chlorine and Free Chlorine

The pool will be closed if microbiological testing raises concerns. Specialist advice will be sort to address any issues prior to the pool reopening.

5.0 Cleaning

5.1 Pool Area

The poolside is swilled with pool water and the water is cleared down the surface drains after each school / hire session.

5.2 Changing Rooms

All floors in the changing rooms, toilets and shower areas are thoroughly cleaned each day.

- Hard surface Cleaner is used to clean changing room and shower floors. The floors are thoroughly rinsed to ensure that floor-cleaning materials do not enter the pool water.
- Shield is used to clean all surfaces.

5.3 Pool bottom

The pool bottom is kept clear of contamination, algae, and general debris by monthly suction cleaning and whenever debris is reported.

6.0 Maintenance Routines

6.1 Plant Rooms

The plant room consists of two secure areas, not accessible by unauthorised persons. They are not used for general storage, or for storing chemicals, other than those specified in Annexe D. This ensures adequate separation from other chemicals and substances. SDSs are available for all the chemicals in the plant room; including pool chemicals, cleaning chemicals, pool water testing chemicals and chemicals used in maintenance programmes. (Annexe D)

6.2 Maintenance

Plant, including electrical equipment, is inspected and maintained in accordance with a planned programme. The main plant systems in use are;

- Gas boiler
- Circulation pump
- Filtration Units
- Air Handling Unit
- Automated Dosing System
- UV System
- Electronic Comparator

6.3 Inlets and outlets

Inlets and outlets are inspected visually every day and, once per half term, subject to closer examination for obstruction, impact damage and vandalism and to make sure that they are correctly in place. If they are damaged or missing, swimming is suspended immediately.

6.4 Filters & Strainers

- The two main filters contain a polyester filtration system. These are cleaned twice-weekly by backwashing until the water runs clear.
- The pump strainer basket is changed and cleaned twice-weekly.
- The two skimmer baskets are emptied twice-weekly.
- The automated dosing pre-analysis filter is cleaned at least three times per week and when the flow rate drops.

Additional cleaning takes place as required.

6.5 Personal Protective Equipment (PPE)

The Headteacher and Caretaker take the advice of suppliers about what PPE is needed and ensure that this is provided and maintained;

- Gloves
- Workwear
- Goggles
- Foot wear
- Respirator

7.0 Delivery and Storage of Chemicals

7.1 Delivery

Chemical stocks are monitored to ensure that no more than 3 x 25kg containers of any chemical are stored on site.

Only the Headteacher or Caretaker can be involved in the handling and storage of pool chemicals.

Deliveries proceed only when the Caretaker is available to receive and check the materials.

Chemical containers are delivered to the storage area by the supplier via sack barrow. They are not left unattended, are kept upright and never rolled.

7.2 Chemical Storage

Chemical stores are kept clean and dry for the storage of solid materials, protected from sunlight and separated from hot pipework or plant. Chemical stores have warning signs, are secure and accessible only to authorised people.

7.3 Hand Dosing

Hand dosing in normal operation is not permitted at this pool except under the explicit permission of the Headteacher.

7.4 Chemical dosing operations

Written procedures are provided for tank filling (Annexe B). Chemicals are added to water and never the other way around when preparing solutions. Non-liquid chemicals are kept dry until dissolved in water.

The frequency of dosing is normally;

- Calcium Hypochlorite Granules – 2 / 3 times per week
- Sodium Hydrogen Sulphate (pH minus)

The chemical dosing system monitors and automatic controls are interlinked with the circulation pumps and the circulation of water through the system. This ensures that dosing stops if there is pump failure or significant loss of pumping rate. These systems are designed to always fail to safety.

7.5 Chemical Line Safety

All chemical pipework, suction lines, delivery lines and tanks are marked to identify the contents and the direction of flow. Disinfectant and pH dosing systems are kept separate. Dosing sets are separated in individual bunds.

7.6 Chemical Spillage

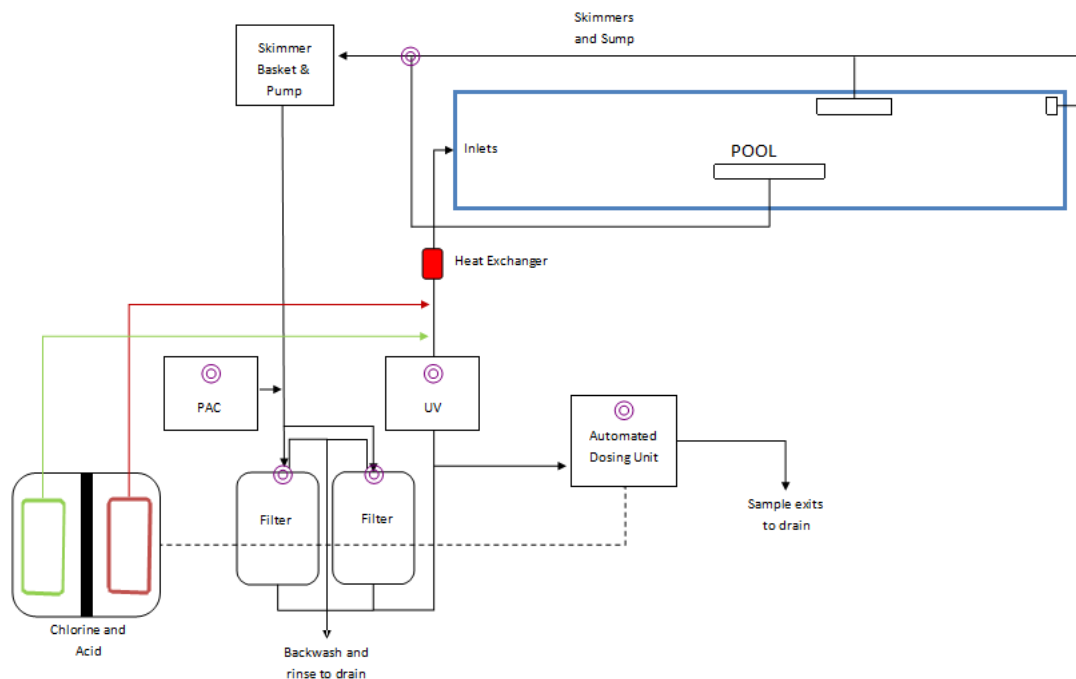
Any spillage is cleared away using a safe method agreed upon between the chemical supplier and the academy (Annexe D).

8.0 Records and Logs

The following records and logs are completed by identified persons (below) and maintained by the Academy Office.

Record / Log	Responsible
Pool water log quality	Caretaker / Designated Person / Gray Fox
Bacterial Analysis	Second Element
Incident Log	Designated Person
Automatic monitoring calibration	Caretaker
Monthly inspection of safety equipment & PPE	Caretaker
Staff training logs	Academy Business Manager

Annexe A – Schematic



Annexe B – Tank Filling Procedures

1. Another member of staff is informed prior to the start of the process.
2. PPE used - work wear, gloves, goggles and a respirator.
3. The storage room door is propped open.
4. Ensure the agitator is not operating (Calcium Hypochlorite Granules).
5. A hosepipe is used to raise the level of the tank by 50 litres. The hosepipe **MUST** not be submerged in the liquid.
6. The hosepipe is rinsed in the pool.
7. The dry chemical is added – 1.5kg Calcium Hypochlorite Granules / 3kg Sodium Hydrogen Sulphate (pH minus).
8. The tank lid is replaced.
9. Check for any spillage.
10. The agitator is switched on (Calcium Hypochlorite Granules) / Manual agitator used (Sodium Hydrogen Sulphate).
11. Member of staff informed of completion.

Annexe C – Staff Qualifications

Name	Job Role	Qualification	Renewal Date
Steve Carr	Headteacher	Pool Plant Operator	30 May 2027
Tina Corringham	Caretaker	Pool Plant Foundation	18 Nov 2024

Annexe D – Storage of Chemicals, SDS and COSHH

Auto-dosing Controller Room

Calcium Hypochlorite Granules – 25kg containers.

Main Plant Room (Chemicals stored away from the boiler, circulation pump and air-handling unit)

Sodium Hydrogen Sulphate (pH minus) – 25kg containers

Sodium Carbonate (pH plus) – 5kg container

Cationic Polyelectrolyte (Clarifier / Coagulant) – 1 litre

Water Testing Chemicals – small quantities

Assisted Changing Room (secured cupboard)

Jangro Hard surface cleaner – 5kg container

Jangro All-purpose Cleaner – 5kg container

Diversey Room Care R6 Disinfectant – 1 litre

Dymason Peach Toilet Cleaner – 1 litre

Annexe E – Designated Person Guide

Whilst the academy team endeavour to ensure that the system remains fully operational at all times, due to the extended use of the pool, issues can arise. It is the responsibility of the user to ensure that, through testing, the pool is fit for use at the start of each hire session. Two common issues, and how they can be resolved are outlined below. The procedures may only be undertaken by someone holding the 'Pool Plant Foundation' certificate, who has also had on-site familiarisation by the caretaker / headteacher.

Any other concerns / issues must be reported to the caretaker / headteacher immediately.

Auto-dosing Offline

If the test probe flow-rate drops, the float will sink below the sensor, causing the dosing system to turn off. The screen will read 'OFF'. This is likely due to a build-up of scale on the pre-filter. Spare, clean filters (and rubber washers) are kept in the bottom drawer of the storage unit in the Main Plant Room. To change the filter;

1. Close the two red valves either side of the filter / probes
2. Wait until the display reads 'OFF'
3. Unscrew the blue collar on the filter container
4. Pour the water into the bucket below the panel
5. Remove the filter (inc 2 rubber washers) and leave to one side for cleaning
6. Seat the replacement filter (with its 2 end-washers in place) in the filter container
7. Reattach using the blue collar (take care with the black washer)
8. Open the LEFT red valve to flood the chamber
9. Check for leaks. [If leaking, close the red valve before unscrewing and refitting the blue collar. Open LEFT red valve to flood chamber]
10. Open RIGHT red valve
11. Once any air has cleared the system, the float should be in line with the sensor. The display will read 'DELAY' before displaying Chlorine and pH readings
12. Inform the caretaker / headteacher via WhatsApp

Chlorine Reading Too Low

If the dosing system is repeatedly trying to dose (the pump in the Auto-dosing Controller Room will be heard repeatedly 'clicking', causing the pipe to twitch) but the chlorine levels are very low, it is likely due to the level of solution in the Chlorine tank being too low. Water can be added to the remaining solution to raise the level. NO chemical may be added.

1. Another member of the team is informed prior to the start of the process
2. PPE to be used – gloves and goggles. Arms and legs must be covered (overalls are available in the Main Plant Room)
3. The Auto-dosing Controller room door is propped open.
4. Ensure the agitator is not operating (the pump on top of the tank will make a whirring sound when on). Switch off at wall-timer if needed
5. Remove the black tank lid
6. The hosepipe (Main Plant Room) is used to raise the level of the tank by 50 litres. The hosepipe MUST not be submerged in the liquid.
7. The hosepipe is rinsed in the pool
8. The tank lid is replaced
9. The agitator is switched on if needed
10. Open the white bleed-valve on the side of the dosing pump fully, but DO NOT completely remove the valve end
11. Allow several clicks of the pump
12. Tighten the bleed valve
13. Check if Chlorine levels begin to rise
14. Member of team informed of completion
15. Inform the caretaker / headteacher via WhatsApp.