

**BIRMINGHAM CITY COUNCIL**

**REPORT OF THE ACTING DIRECTOR OF REGULATION AND ENFORCEMENT  
TO THE LICENSING AND PUBLIC PROTECTION COMMITTEE**

**14 SEPTEMBER 2016**  
**ALL WARDS**

**OUTBREAK OF CRYPTOSPORIDIOSIS AT  
COCKS MOORS WOODS LEISURE CENTRE**

1. Summary

- 1.1 During May Environmental Health received notification of 3 cases of cryptosporidium illness in members of the public via our infection control team, where a common factor was that during April they had used the pool at Cocks Moors Woods Leisure Centre (CMW)
- 1.2 The matter was investigated in partnership with Public Health England and the management of the pool. This report details the investigation that was carried out to protect public health.

2. Recommendation

- 2.1 That the report be noted.

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### 3. Background

- 3.1 Cryptosporidium is a protozoan (parasite) that is excreted in the faeces of humans, sheep, cattle (especially young calves and lambs) and other mammals. The infectious form of the parasite is an "Oocyst". This Oocyst is microscopic and is resistant to chlorine. Infection occurs after accidentally swallowing an oocyst in contaminated water or direct contact with faeces.
- 3.2 Infection often causes profuse and watery diarrhoea and abdominal cramps. Fatigue, fever, loss of appetite, nausea or vomiting can be additional symptoms. Symptoms last 7 days on average but may last for up to 4 weeks, with the person remaining infectious for up to 2 weeks after symptoms cease.
- 3.3 As Cryptosporidium species are resistant to chlorine, filtration is the means by which the oocysts are removed from any contaminated water.

### 4. Cocks Moors Woods Leisure Centre

- 4.1 Cocks Moors Woods Leisure Centre is the largest leisure centre in South Birmingham, situated on the Alcester Road South. Previously ran by Birmingham City Council Leisure Services, it is now managed by Birmingham Community Leisure Trust (BCLT). The leisure centre was in the process of being refurbished, the first phase being the gyms and dance studios, with the pool changing facilities and poolside planned later.
- 4.2 Cocks Moors Woods Pool is a leisure pool with a beach area (advertised as the baby pool) with a mushroom fountain, wave pool, features including tipping buckets and a large 50m slide. During the day the features are turned off and the pool is used for swimming and formal swimming lessons.
- 4.3 The beach area is level with the outside of the pool to allow easy access into the water. The water laps over the floor tiles, around the pool especially in busy times, but would run back into the pool due to the slope of the tiles.
- 4.4 Due to the features and slides the pool uses Pool Cure as a disinfectant, in combination with Calcium Hypochlorite, as this chemical is said to reduce the acidity of the air and so reduce cases of Flume Cough in lifeguards and reduce corrosion of fixtures and fittings.
- 4.5 The pool is accessed two ways – via the changing rooms or via double sliding door from the coffee shop giving access to fixed tables and chairs situated by the poolside. The public were allowed to walk in and out of the pool area without any requirement to take shoes off or use shoe covers.
- 4.6 It has been noted on social media many complaints had been made regarding the dirty state of the pool changing rooms and the nappy bins being full to overflowing.

## 5. Timeline of Actions

- 5.1 On 12<sup>th</sup> May 2016 the leisure centre was visited by Environmental Health officers, one of which holds the ISRM Pool Plant Managers Certificate. Your officers were met and shown around by the duty manager.
- 5.2 The pool was in use at the time of the visit by both the public and a school having swimming lesson including a young child in the beach area. He clearly had a swim nappy on, in line with the Centres policy. The features were not on.
- 5.3 Your officers accessed the pool via the double doors from the coffee shop and used their own shoe covers as they entered. It was noted that there were no shoe covers for the poolside spectators. The duty manager confirmed they have no restrictions on outdoor shoes being worn by the poolside, shoe covers are not provided. The white tiles around the pool looked visibly darker with surface and ingrained dirt.
- 5.4 The plant room was visited and the pool test results for the week reviewed, all chlorine levels were satisfactory as were pH levels. Pool cure is tested twice weekly and the last test on Wednesday 11 May 2016 showed a level of 2ppm of pool cure in the pool water and so more chemical was added to the pool to bring the level up to 4.2 ppm, although no follow up test was recorded to see if this had been achieved.
- 5.5 The centre has a policy for all fouling of the pool to be recorded and stated that there had been *no records* of any fouling in the pool in the last 18 months.
- 5.6 The pool was last backwashed (where they ran the circulation system backwards to clean and loosen the sand filters and dispose of water coming out of the filter) on Saturday 7 May. The backwash is done every Saturday. As indicated cryptosporidium is controlled by physical filtration and it is essential that the sand filters operate effectively.
- 5.7 The centre has the water tested for bacteriological quality (TVC, Coliforms, and pseudomonas) every month. The last test was done on the 10 May 2016 and results were not yet back. The previous month's results could not be viewed as the manager had been sent them and his files could not be accessed. A request for both of April's pool checks and the last 3 months bacterial test results were requested to be emailed to Environmental Health as a matter of urgency.
- 5.8 Officers instructed that BLCT close the pool and carry out the emergency Diarrhoeal fouling protocol as per BSI Codes of practice and also the Pool water Guide on the Treatment and quality of swimming pool water (Pool water treatment advisory group). The duty manager confirmed they would voluntarily close the pool. They were to undertake the following as per protocol:
  - Close the pool immediately.

- Add increased levels of coagulant.
  - Add disinfectants to the upper levels of the operating range.
  - Physically clean the pool.
  - Run the pool for 6 continuous cycles with increased coagulation.
  - Backwash the filters.
  - Ensure all disinfectant levels, pool cure and pH are up to required levels before reopening the pool.
  - In addition to the above they were requested to clean and disinfect the poolside and to introduce a “no outdoor shoe and pushchair” policy to remove the risk of shoes etc. bringing contaminants into the pool area.
- 5.9 It should be noted that officers were informed the backwash could not be conducted on full power, as this would result in a sudden surge of water into a local brook and would cause flooding and affect the wildlife. Previous full power backwashes had apparently killed the wildlife in the stream. Therefore, they were requested to backwash the filters on as high power as possible without flooding the stream until the water passing through the filter was totally clear (there is a window in the pipework to allow this to be done), regardless of how long this took.
- 5.10 Officers then checked the changing rooms with regards to the condition and nappy bins. Although the structure was old and tired, with evidence of some corrosion on metal fittings particularly near the floor, the changing rooms were physically clean, there were no malodours. All nappy bins were checked, in fact there was only one nappy in any of the many bins situated in both rooms.
- 5.11 Lifeguards are expected to check the changing rooms at the change of every shift (every half hour) and deal with any problems. The duty manager confirmed there is a disparity with the fact that the majority of lifeguards are male and so the female facilities will not be checked as often. In these cases admin staff are supposed to undertake a walk through.
- 5.12 The pool reopened a day later but within a further 2 days a fouling incident took place requiring a second period of closure to instigate remedial measures. Following confirmation of test results showing the presence of cryptosporidium in both the pool and backwash, the closure of the pool was maintained pending a full review of remedial measures, including a fundamental reconstruction of the filter media, as it was clear that these were not effective.
- 5.13 A further visit was carried out on 21st June 2016 to determine if the pool could be reopened. Investigations into the filter found the filter media to have totally solidified. This was removed and the filters relined and new filter medium added. New backwash nozzles were also added to pipework.
- 5.14 Whilst the latest pool tests were clear the following matters were outstanding:
- The dye test achieved only 85% coverage of the pool in the expected 15 minutes. The area of the pool not covered was approximately an

oval in the middle of the pool. This indicated that the flow was not sufficient.

- Further examination found the flow meter in the plant room was not working at all. A new one is on order, but it is unclear as to whether staff had reported the fault and that the centre management had no idea as to whether the pool had the correct flow for the number of bathers.
- Management were advised not to use the pool if the filters could not be backwashed at full power. BCLT are fitting a temporary holding tank for the backwash water to the system so that the backwash water can be collected and released slowly into the drains without flooding the local area. A permanent holding tank has been commissioned and works will commence once details are finalised. The permanent tank is anticipated to be 5m x 2m x 3m in size.
- The suction outlet grill in the pool has been identified as being too small, in line with current guidelines, (which means that the suction is great in a small area) and so may pose an entrapment risk.

5.15 A further revisit on 24 June 2016 confirmed that all outstanding matters were concluded and the pool was cleared to reopen.

## 6. Northfield Baths

6.1 As an example of good practice, a notice was posted by BCLT on their website that Northfield Pool was closed due to diarrhoeal fouling on the 14 June 2016. The pool had remained closed following this incident and an appointment was made to visit the site on the 22 June. BCLT indicated on 16 June 2016 that the reason they were keeping the pool closed was precautionary and they wanted to stay closed until they had tested the pool and had a negative Cryptosporidium test.

6.2 The pool was visited by officers and was still closed at the time of the visit. BCLT confirmed that a Bacteriological test and Cryptosporidium test were taken from the pool on the 20 June and that they were purely keeping the pool closed as a precaution.

6.3 All pool test records were checked and no issues were noted at all with the 2 hourly pool side monitoring that took place prior to the incident.

6.4 The incident took place during a school swimming lesson at 10.10am. The lifeguard spotted the diarrhoea in the pool, but they or the swim instructor could not identify which child was the ill person. The pool was immediately evacuated and the PWTAG/BSI Code of Practice Protocol on Diarrhoeal fouling followed, namely:

- Coagulant levels increased.
- Chlorine levels increased.
- Pool thoroughly cleaned and cleaning equipment cleaned afterwards.
- Pool run through 6 turnovers of the pool through filters.

- The filters were then backwashed.
- 6.5 The pool completed two incident report forms – the first an in-house BCC form that is site specific for Northfield detailing how long the 6 Turnovers should take as a minimum and then completed the BCLT standard form that BCLT use across all their pool in the UK.
- 6.6 The pool plant was inspected. In discussions with the Pool operators there was nothing to suggest that the pool was not being managed correctly and the filters are being backwashed at full power until the effluent runs clear - as is PWTAG and BSI Code of Practice Guidelines.
- 6.7 Although the small pool uses a separate system to the main pool, as the children had been in both pools the decision was made to close both pools. Unfortunately the test results came back as positive for cryptosporidium in the backwash water, a decision appears to have been taken to maintain closure of the pool pending replacement of the baths in the future.
- 6.8 As a consequence of these incidents Environmental Health are working with BCLT to fully assess compliance at all pools under their management.
7. Consultation
- 7.1 The work outlined in this report involves consultation with interested parties such as Public Health England and Serco.
8. Implications for Resources
- 8.1 There are no specific resource implications from investigating this incident.
9. Implications for Policy Priorities
- 9.1 Safe swimming facilities is not only crucial to the health and safety of citizens and visitors to the City but is also consistent with other policy priorities including economic success, staying safe and being healthy.
- 9.2 It is important that all groups within Birmingham, as well as visitors to the city, are offered suitable standards leisure facilities to allow them the healthy lifestyle opportunities to which they are entitled.
10. Public Sector Equality Duty
- 10.1 Equality issues are accounted for during activities carried out by officers.

## **ACTING DIRECTOR OF REGULATION AND ENFORCEMENT**

Background Papers: nil