

## Swan Lifeline site disinfection protocol:

### Phase 1:

#### 1.1. Pen clearance:

Removal of loose materials (e.g. feathers, leaves etc..) was undertaken in pens 1a, 1b and 2 over the 12<sup>th</sup> January 2022, pens 3-5 on 13<sup>th</sup> January 2022 and pens 6 and 7 on the 14<sup>th</sup> January 2022.

Material was swept from the ground and removed by hand from fences and fence lines prior to being bagged and burnt on site on the 14<sup>th</sup> January 2022.

#### 1.2. Wastewater (1):

The water contained within the ponds of pens 1a-7 at the time of the cull was pumped to an area of land within the site's boundary on the 18<sup>th</sup> January 2022. Waste from the ponds' sump holes was removed by hand and burnt on-site.

#### 1.3. De-greasing (1):

De-greasing of all pens, and mats contained within, empty ponds interior fences and shed exteriors was conducted using a petrol steam cleaner, Karcher HDS 601C, at 120-150°C. This model contains an 8l in-built detergent tank. We used Karcher's 5l RM 555 Universal Cleaner.

See Table 1, below, for dates.

Following de-greasing all matting contained within pens 1a-7 was removed to facilitate the cleaning of those areas. Mats were securely stored in pen 1, where no birds have been housed since October 2021.

#### 1.4. Jet-washing pens (1):

Jet-washing of the pens 1a-7 occurred following de-greasing. As with the de-greasing protocol, pen floors, ponds, fences and shed exteriors were included in this phase and was done using an industrial petrol-powered jet-wash with a pressure capability of 15l of water per minute.

See Table 1, below, for dates.

Pen	De-greasing (1)	Jet-Washing (1)	De-greasing (2)
1a	24 <sup>th</sup> January 2022	27 <sup>th</sup> January 2022	9 <sup>th</sup> February 2022
1b	24 <sup>th</sup> January 2022	27 <sup>th</sup> January 2022	9 <sup>th</sup> February 2022
2	24 <sup>th</sup> January 2022	26 <sup>th</sup> January 2022	9 <sup>th</sup> February 2022
3	20 <sup>th</sup> January 2022	25 <sup>th</sup> January 2022	8 <sup>th</sup> February 2022
4	20 <sup>th</sup> January 2022	25 <sup>th</sup> January 2022	8 <sup>th</sup> February 2022
5	20 <sup>th</sup> January 2022	24 <sup>th</sup> January 2022	8 <sup>th</sup> February 2022
6	19 <sup>th</sup> January 2022	21 <sup>st</sup> January 2022	7 <sup>th</sup> February 2022
7	19 <sup>th</sup> January 2022	21 <sup>st</sup> January 2022	7 <sup>th</sup> February 2022

Table 1 (above): first phase of pen de-greasing and jet-washing of all pens.

### 1.5. Housing attached to pens:

Of the eight pens subject to disinfection, three (pens 4, 5 and 6) feature adjacent housing/sheds for animals undergoing ongoing treatment. None of those sheds housed animals immediately prior to the outbreak of Avian Influenza at Swan Lifeline (shed 4 last housed a swan in November 2021, shed 5 last housed swans in July 2021 and pen 6 last housed animals in the summer of 2018). However, the interior surfaces of all sheds were disinfected using Anigene Disinfection Cleaner for Animal Welfare at a dilution of 1:100.

Sheds 4 and 5 were disinfected on 21<sup>st</sup> January 2022 and shed 6 on 26<sup>th</sup> January 2022.

### 1.6. Wastewater (2):

A test of the pH level of a sample of the wastewater of pen 6 created by jet-washing was done on the 26<sup>th</sup> January 2022 using Universal Indicator strips pH1-14.

Once jet-washing was completed in all pens on the 27<sup>th</sup> January 2022, all pond wastewater was tested for pH levels. To raise the pH of all wastewater to 11, we added Bluewater pH Increaser containing Sodium Carbonate. We added 500gms per 10,000 gallons of water and re-tested the pH in all pools after at least eight hours and repeated the process until the desired level had been achieved.

Wastewater was then pumped from all ponds to the same area of land as wastewater (1) and any residual matter in the ponds' sump holes was removed by hand and burnt on-site on the 31<sup>st</sup> January 2022.

## Phase 2:

### 2.1. Disinfection (1):

Pens 1a-7 were disinfected using Virkon S 50g sachets diluted in a 15l backpack pressure sprayer. We measured the area of contiguous pen complexes and calculated a ratio of 300ml of diluted disinfectant per m<sup>2</sup> to ascertain the volume needed to cover each complex (see Table 2, below).

Disinfection of all pens was conducted over the afternoon of 31<sup>st</sup> January 2022.

Pen complex	Total area	Number of sachets x 15l
1a, 1b	156m <sup>2</sup>	3.12
2, 3, 4	240m <sup>2</sup>	4.8
5	70 m <sup>2</sup>	1.4
6, 7	85m <sup>2</sup>	1.7

Table 2 (above): pen complexes are those pens that are linked by an adjoining gate, their total area and the number of sachets used per 15ls.

## *2.2. Pen mats and pathways around site*

Matting had been removed from pens 1a-7 following the first de-greasing in January and stored in pen 1. Mats were jet-washed within pen 1 over 1<sup>st</sup>-3<sup>rd</sup> February 2022. All run-off water from jet-washing was contained within the pond in pen 1.

Pathways around the site were also jet-washed over the dates of 1<sup>st</sup>-3<sup>rd</sup> February 2022.

## *2.3. De-greasing (2):*

The second round of de-greasing was conducted using the same guidelines set out in 1.3. One difference however occurred in that all matting was de-greased within pen 1.

Dates for de-greasing (2) for pens can be found in Table 1 (above), while de-greasing of mats took place over 7<sup>th</sup>-9<sup>th</sup> February 2022, after the allotted pens for each day had been completed.

## *2.4. Disinfection (2):*

The second disinfection of pens 1a-7 was conducted using the same guidelines as set out in 2.1. All pens were done over the 10<sup>th</sup> February 2022.

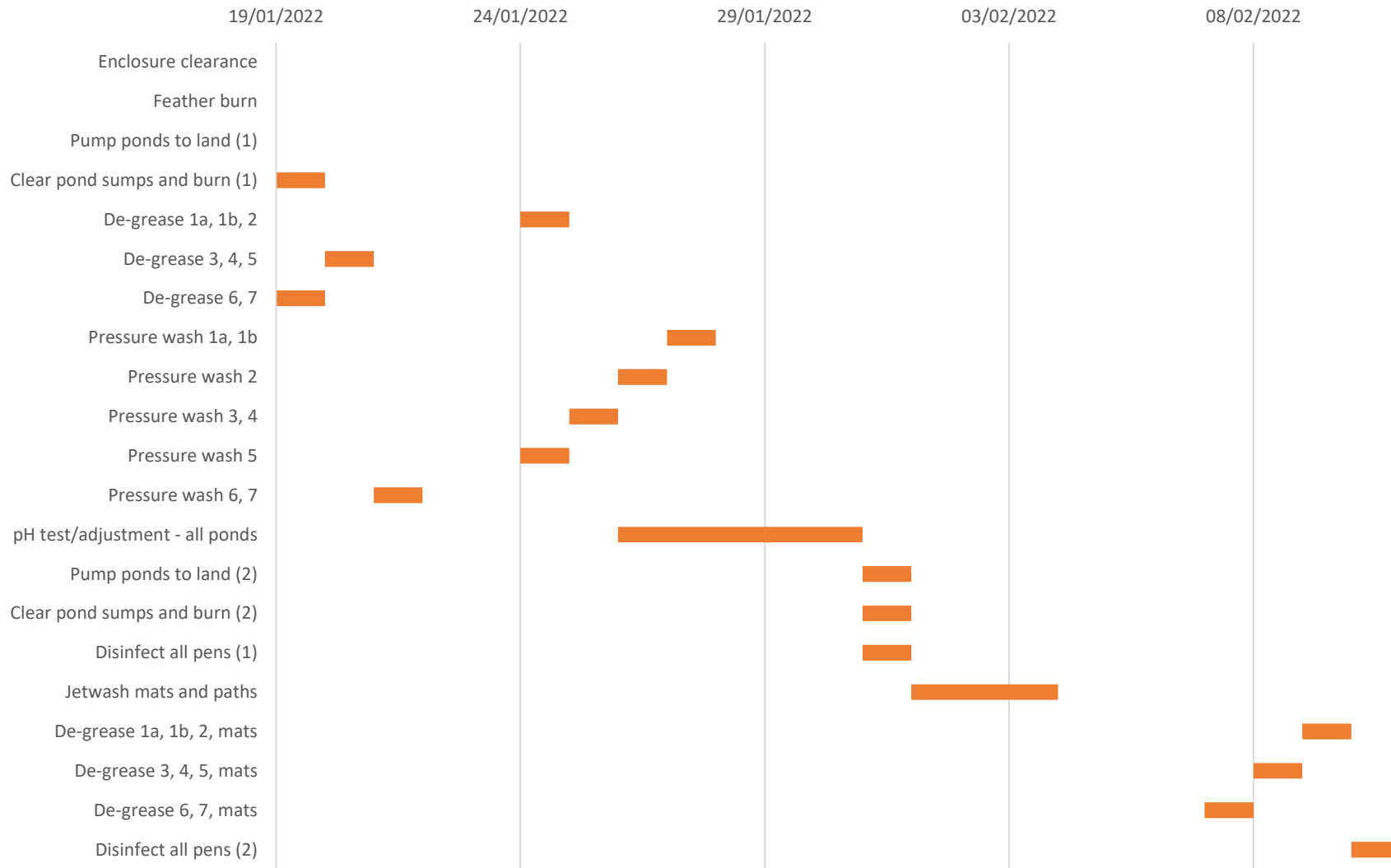


Figure 1 (above): Timeline of all work completed to-date.