

4.9 Fire Fighting Foam- involvement of Environmental Protection

Executive Summary

- In 1993, the use of fire fighting foam at the airport ceased when contamination of nearby groundwater supplies was identified
- In January 1995, a programme of regular monitoring of streams and boreholes in the area of the airport and St Ouen's Bay was agreed
- The remediation of the site was completed by the end of the 2003 and the new fire fighting rig was installed in 2004
- Ongoing monitoring of the St Ouen's Bay aquifers, by the Airport Authorities continues, with the results being provided to Environmental Protection and Health Protection for periodic review.

1. Overview of the history of the fire fighting foam contamination of the St Ouen's aquifers.

The airport fire service has historically operated a fire training ground at the eastern end of the Airport site for more than 30 years. At the beginning of the 1990s, a new aircraft rig was set up which utilised pressurised kerosene. The fuel was sprayed over the rig and ignited to allow fire crews to practise.

The airport fire tenders used a 6% solution of AFFF (aqueous film forming foam) in water to extinguish the flames. Any waste effluents, containing unspent fuel, burnt fuel products and foam chemicals, were disposed of to soakaway.

In 1993, the use of foam on site ceased when contamination of nearby groundwater supplies was identified. Training continued using water only, with oil/water effluents continuing to be discharged to soakaway.

In January 1995, a programme of regular monitoring of streams and boreholes in the area was agreed. Over the next five years, groundwater monitoring identified contamination of the surface water, the shale aquifer and the sand aquifer, as well as a number of other properties' water supplies as the plume spread throughout the St. Ouen basin. Several of these properties were connected to mains water during this time.

Up until November 2000, the Regulator had no robust legislation to force the Airport authorities to remediate the fire training ground. The prospect of an enforcement notice under the provisions of the Water Pollution (Jersey) Law, 2000 resulted in a project team being appointed to come up with remedial options for the site.

The Airport and its consultants devised a range of alternative options to remediate the fire training ground and design a new fire training ground with appropriate innovative technology to limit further pollution to the environment. The proposals for a multi-faceted approach were satisfactory to the regulator. They minimised the site's impact on controlled waters, whilst taking into account projected costs for each option.

The final proposal for remediation of the site comprised a combination of:

- Onsite encapsulation of the most contaminated soil,
- Minimising infiltration by capping the site,
- Isolation of the site from groundwater by adding an 18 foot sunken barrier wall, and
- Pumping and treating water under the site using scavenge bores.

The remediation of the site was completed by the end of the 2003 and the new fire fighting rig was installed in 2004.

Ongoing monitoring of the St Ouen's aquifers, by the Airport Authorities continues, with the results being provided to Environmental Protection and Health Protection for periodic review. In addition the Airport Authorities have commissioned a number of reports to assess the ongoing status of the contamination plume and effectiveness of the remediation strategy. These reports are likely to be available from the Airport on request.

2. Fire fighting foam and the marine environment.

There are two potential areas whereby fire fighting foam from the Airport could reach the marine environment:

St Ouen's Bay – Potentially the fire fighting foam plume is making its way through the aquifer towards the beach. Regular monitoring of groundwater in the bay has continued throughout this period. The Airport authorities forward analytical results from the monitoring program to Environmental Protection and Health Protection for review.

St Aubin's Bay - A trade effluent consent is in operation, whereby the Airport authorities trickle feed small quantities of contaminated groundwater into the foul sewer system and subsequently into Bellozanne Sewage Treatment Works. As part of this trade effluent consent, the Airport are required to carry out regular biomonitoring of seaweeds and shellfish in the area of the First Tower Outfall. To date, no fire fighting foam constituents have been detected in these samples. The Airport are also required as part of this consent to look for alternatives foam products to minimise the potential impact on the environment.

3. Budget, manpower and resources considerations

As the sampling is conducted by the Airport Authorities, there are no ongoing budget considerations. The manpower requirements are minimal.