Salt harvesting has occurred intermittently at Lake Suzi at least since the 1950s and possibly earlier. Australian Solar Ponds (the 1987 trading name of Collfred Pty Ltd, Bob Collins and David Frederiksen) previously held MLs 386H, 387H and machinery area 10H. The MLs were later substituted as MLS 26 and 27. Collfred Pty Ltd (then Director David Frederiksen) applied for MLS 148 on 07/10/1987 over a larger area than 386H and 387H (by then MLS 26 and 27) and in substitution for them. MLS 148 was finally granted on 30/12/1993 for a period of 10 years. It is located on Erldunda Station 250 km south of Alice Springs on the Kulgera 250K and Ebenezer 100K mapsheets. The MLS covers 36 hectares and is accompanied by a smaller machinery area, HLDS6 formerly 10H, a few hundred metres to the northwest. The stated purpose of the MLS was to “mine” or harvest dry salt crystals that had accumulated by natural evaporation in Lake Suzi (see accompanying Figure). Collfred proposed to use Lake Suzi as a test bed for solar pond research in conjunction with the University of Western Australia and Melbourne University. It was also mooted to be part of the Queensland Institute of Technology study by Dr Aro Arakel which was looking into both brine and beta-carotene production. Collfred proposed that the salt would be marketed to NT abattoirs for the preservation of hides, for cattle feed supplements and for use in swimming pools. Folio 18 states that salt was also being supplied to Peko at Tennant Creek at the rate of approximately 1200 tonne per annum in bulk bags. The salt was used for extracting bismuth from copper ore as bismuthoxychloride which is used in the pharmaceutical and cosmetic industries. This was some time prior to February 1989. In 1988, bulk salt averaged A$22/t. Shortly thereafter, Peko stopped mining copper and the demand for the salt declined. Although production figures were said to have been supplied to the Department (folio 93), these could not be located, presumably because the salt extraction was considered an extractive operation (folio 134).

MLS 148 was renewed on 04/03/2003, when bulk salt was A$23/t. An accompanying report is in the DoR company reports database as CR2004-0032. Based on this report, other recorded production and sales were to the Department of Infrastructure, Planning and the Environment which purchased 46 tonnes of sodium chloride for use on a road test strip near Tilmouth Well. 2001 was particularly wet with 30 inches of rain and no harvesting was possible that year. A 15/06/2010 email from Franca Frederiksen, on behalf of David Frederiksen, to the DoR stated that “no report has been provided as there has been no mining activity since approximately 2000”. The average sale price for bulk salt in 2009 was US$35/t.

The salt crust is reported to be 98% pure NaCl, which requires no further treatment for general use. The crust is typically about 50 mm thick and over the 36 hectare lease, this amounts to approximately 16,000 tonnes at the surface. A shower of approximately 10 mm of rain is sufficient to replenish the salt crust in MLN 148. Heavy rains cause brine (up to 24% by weight NaCl) to flow from the surrounding country into the lake and although this recharges the salt completely, boggy conditions can prevent harvesting for a period of months afterward. The salt is underlain by “black sludge” being decaying vegetable matter with large salt crystals dispersed throughout.

Collfred harvested salt using a modified Suzuki 4WD and a harvesting tool that cuts 12.5 mm deep and 150 mm wide at 25 kph. The salt is contained within a hopper behind the vehicle and then transported to a stockpile on a concrete slab on HLDS6. The leaseholders reported that salt cannot be stockpiled for long because it cakes hard as crystals lock together and contractors prefer free flowing salt that is easier to handle.

In 2002/03 the leaseholders estimated that, assuming regular rainfall, sustainable harvesting of between 1000 t and 3000 t could be undertaken once or twice a year and would require a workforce of three people. Up to 1000 t could be harvested per week. The mine was said to have an indefinite life.
This information was compiled from the Titles folio and CR2004-0032 on 08/07/2010.

Figure 1. Lake Suzi, MLN 148 and HLDS6.

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