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Internal wave driven transport of fluid away from the boundary of a lake CHRIS REHMANN, Iowa State University, DANIELLE WAIN, University of Washington, MICHAEL KOHN, JOSHUA SCANLON, Iowa State University — A field study was conducted at West Okoboji Lake near Arnolds Park, Iowa to study transport of fluid resulting from wind forcing on summer stratification. A tracer was injected at the boundary of the lake and surveyed on four separate occasions over a period of three days. Although the Lake number was below 10 in two sustained periods, no elevated mixing occurred near the boundary. Nevertheless, dye injected at the boundary moved almost 950 m into the interior in 29 h. Advection by internal waves accounts for much of the transport, and shear dispersion from the spatially varying velocities in the internal wave field may explain at least some of the rest.

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