

The Hutt River dye release was initiated at 10:00 a.m., nearly one and a half hours after low tide which occurred at 8:42a.m. The dye release was completed at 10:30. During this period a moderate wind was blowing from the north-west diagonally across the river and downstream. Observations made during this period (see Table 1) show that:

- The Hutt River near the true left bank flowed in a downstream direction throughout the incoming tide, both at depth and at the surface. The north-west wind would have assisted surface water movement in this direction (refer Figures 2 and 3).
- Salinity ranged between 7.7 and 8.15 ppm, indicating a mixture of freshwater and seawater (brackish water).
- A series of spot releases of dye into the Waiwhetu Stream mouth during this period showed a relatively strong upstream water movement in the Waiwhetu both at depth and at the surface (refer Figure 4).
- Water flowing downstream along the Hutt River near the true left bank was observed to be flowing into and upstream along the Waiwhetu Stream.

Table 1: Observations in the Hutt River 20m downstream of the Waiwhetu Stream mouth

Status	Time	Conductivity (uS/m)	Salinity (ppb)	Observation of dye plume
--	9.55am	10,800	7.95	none
Start dye release	10:00am	11,182	8.15	Downstream, close to true left bank; no movement towards Waiwhetu Stream
Dye release	10:15am	10,906	7.92	Downstream, close to true left bank; no movement towards Waiwhetu Stream
Finish dye release	10:30am	10,300	7.70	Downstream, close to true left bank; no movement towards Waiwhetu Stream



Figure 2: The dye tracer observed flowing downstream during the incoming tide



Figure 3: View of dye tracer moving downstream; Port Road corner in the distance



Figure 4: View of dye tracer moving upstream in Waiwhetu Stream (from a spot release of dye at stream mouth)