Now let \( d = 4.5 \), such that barfield lies 2.25 surface wavelengths in front of the wall. The wave envelope for this case is plotted in Figure 6.4 and the maximum displacement at the wall in Figure 6.5.

It can clearly be seen that the choice of \( L_{bw} \) can have drastic effects on the wave field between the barfield and the wall. What seems to be happening is if the spacing is an integer multiple of half of a surface wave length, the wave field becomes trapped between the bars and the wall. This would be due to tertiary reflection of the wave field, primary being offshore reflection, secondary being reflection off the wall and tertiary being the reflection by the barfield of the wave reflected off the wall. The final effect is the standing wave in front of the wall is resonated, and potentially quite violent oscillations may occur.

6.4.2 Response Over a Barfield in Front of Beach

From the above section, it is seen that the new form of the mild slope equation is valid. Now, attention is restricted to the case where a barfield is placed on a mild slope and waves...