



PHOTOS OF DREDGING AND DISPOSAL SITE PLACEMENT

GRAYS HARBOR NAVIGATION IMPROVEMENT PROJECT



Clamshell dredge (bucket capacity 35 cubic yards) onto bottom dump barge (4,000 cubic yard capacity) at Cow Point near Port of Grays Harbor Terminal #4 (February 2009). Bottom dump barge used for direct placement at open water disposal sites. Standard barge is used for upland stockpile/rehandling.



The Corps hopper dredge 'Yaquina' has its own bottom dump capability. A hopper dredge with pump ashore can be used for direct upland placement for beneficial use/rehandling.



Aerial view of hopper dredge drag arm.



Direct beach pump ashore from a hopper dredge via a floating pipeline (over North Jetty of Columbia River onto Benson Beach, 2008). Note sand berms to contain material.