



# CONSTRUCTION OF TEMPORARY COFFERDAMS

STAGES 1 & 2 AT CANAL 2 IN JUBAIL FOR ROYAL COMMISSION





INSTALLATION OF SANDBAGS COFFERDAM @ SUPPLY CANAL



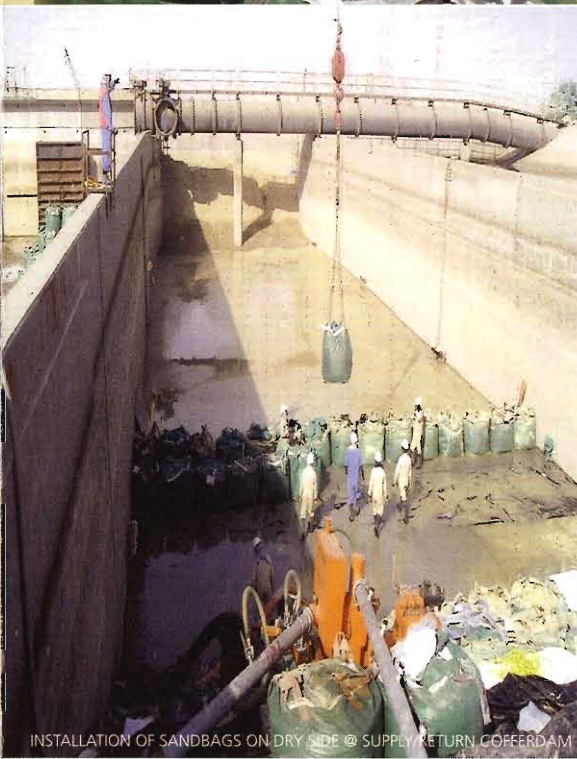
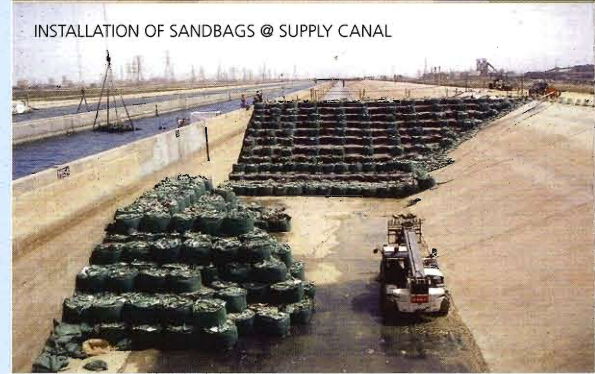
TRANSPORTATION OF SAND BAGS



MAC was commissioned by Al-Harbi Trading & Contracting Co. Ltd. of Riyadh, to carry out the Construction of Temporary Cofferdams in two stages for the Industrial Facilities Expansion Project at the Royal Commission Canal 2 in Jubail. The objective of the project was to extend/reconstruct the existing seawater laterals as well as the end canal head-works to facilitate future expansions in the industrial area.



INSTALLATION OF SANDBAGS @ SUPPLY CANAL



INSTALLATION OF SANDBAGS ON DRY SIDE @ SUPPLY RETURN COFFERDAM

In order to demolish the existing head-works and to re-construct it, the end portion of the main canal in the vicinity of the head-work was isolated from water, by holding a cofferdams across all of the three Intake, Return & Intake/Return compartments of the canal, at different phases, without affecting the normal operation of the existing plants.

MAC's scope of work was to construct temporary cofferdams and to dismantle them later within a short period of 4 months.

MAC built six temporary dams using large sandbags (two dams on each compartment). The primary dam was constructed while the canal was full of water. Later, the head-work side was emptied by pumping water to the sea side and a secondary dam was built on the dry side as a double protection for the works at the head-work side.

The length of each dam was approximately 20 meters and the water was retained up to 6 meters height.

- Jumbo poly-propylene bags filled with sand were used to construct the dams.
- Because of the reach, high capacity cranes had to be used to lift and lower the sand bags into position using certified operators and riggers.
- Experienced divers were employed to adjust the bags in position under water.
- The bags were later protected by PVC geo membranes to achieve a complete water tight structure.
- Standby pumps were installed at site to dewater any potential leakage from the primary dam and regular underwater inspections were carried out to check any damage to the geo-membrane.

The major challenge for MAC was to execute this urgent work within the small available time as well as placing the sandbags in the right position underwater.

