

Government of Hong Kong Special Administrative Region
Drainage Services Department

Booklet containing –

- (1) Brief of Survey;
- (2) Drawing nos.KDS0512/533, KDS0512/534, KDS0512/535, KDS0512/536, KDS0512/537 and KDS0512/538;
- (3) Technical Specification;
- (4) Conditions of Employment and
- (5) Guidance Notes for Contractors, Consultants and Suppliers on Environmental Protection.

Quotation No. 2/2009
HYDROGRAPHIC SURVEY for
Maintenance of Tidal Channels
Tuen Mun River, So Kwun Wat Channel, Tai Lam Chung Channel,
San Tin Drainage Channels, Tai Po River, Lam Tsuen River,
Kam Tin River, Shan Pui River and Navigation Channel

Brief of Survey

Maintenance of Tidal Channels

**Tuen Mun River, So Kwun Wat Channel, Tai Lam Chung Channel,
San Tin Drainage Channels, Tai Po River, Lam Tsuen River,
Kam Tin River, Shan Pui River and Navigation Channel**

1. Area to be Surveyed

The River Channels are shown edged black and indicated with chainages on the respective plans as follows:

Group A Channel	Cross Sections at 50m intervals and Longitudinal Section to be taken for the following Chainages (Therabout)	Plan No.	Coordinate list for Cross Section markers at every 100m
Tuen Mun River	0 to 41+68	KDS0512/533	Annex A
So Kwun Wat Channel	0 to 6+57	KDS0512/534	Annex B
Tai Lam Chung Channel	0 to 15+50	KDS0512/535	Annex C
San Tin Drainage Channels: San Tin East Channel San Tin Y Channel San Tin West Channel	E1+04 to E25+44 Y0+88 to Y13+63 W0 to W22+82	KDS0512/536	Annex D Annex E Annex F
Tai Po River Lam Tsuen River	A-3+69 to A14+09 0 to 30+00	KDS0512/537	Annex G Annex H
Group B Channel	Cross Sections at 50m intervals Longitudinal Section to be taken for the following Chainages	Plan No.	Coordinate list for Cross Section markers at every 100m
Kam Tin River	B0 to B45+35	KDS0512/538	Not Applicable
Shan Pui River	A-3+21 to A34+19		
Navigation Channel	N0 to N17+00		

The total area of the River Channels to be surveyed (the Site) is about 204 hectares.

2. Scope of the Survey

The scope of the Survey : –

- 2.1. To provide appropriate horizontal and vertical controls including tide gauges in the vicinity of the Channels;
- 2.2. To carry out Hydrographic Survey of the Channels, and to provide 1: 1000 Hydrographic Survey Plans showing the surveyed river bed levels of each of the Channels;

- 2.3. To survey Longitudinal Section along the center line of the Channels with the limits as shown in Section 1 above, and to provide a set of Longitudinal Section Drawings of each of the Channels.
- 2.4. For each of the Channels in Group A, to establish new cross section markers and to re-establish lost or disturbed markers for Cross Section Reference Stations (CRS) in accordance with the positions and coordinates as per Annexes A, B, C, D, E, F, G or H, to survey along Cross Sections at 50m intervals with reference to the CRSs with the limits as shown in Section 1 above, and to provide a set of Cross Section Drawings, such Cross Section Drawings to be drawn at 50m intervals normal to the centre line for each of such Channels.
- 2.5. For each of the Channels in Group B, to survey along Cross Sections at 50m intervals normal to the centre line with the limits as shown in Section 1 above, and to provide a set of Cross Section Drawings, such Cross Section Drawings to be drawn at 50m intervals normal to the centre line for each of such Channels.
- 2.6. To provide digital data for the Hydrographic Survey Plans, the Longitudinal and Cross Section Drawings, Controls established and all Survey and Sounding points; and
- 2.7. To provide a record of sediment types at survey points according to Appendix B to the Technical Specification and to record the top levels of the soft sediment (where applicable) and consolidated sediment layers.
- 2.8. To calculate, by end area method or a method approved by Engineer's Representative, the volumes of sediment that above the trigger levels and that above the riverbed design levels of each Channel with the limits as shown in section 1 above, and to provide a volume calculation report with the cross section area of sediment at 50 meter interval on each channel. The calculation sheet shall be prepared in excel format with incorporation of former river channel information provided by Engineer's Representative.

3. Survey Requirements

- 3.1. The Survey shall be carried out by either echo sounding or land survey methods according to the Technical Specification and its appendices.
- 3.2. In areas where echo sounder could not be operated, the Contractor may employ either chain sounding or sounding pole to carry out the soundings. Sounding pole should be constructed according to Appendix D of the Technical Specifications.
- 3.3. Density of spot levels taken by land survey methods and soundings taken by chain sounding or sounding pole shall not be less than the density of sounding surveys as specified in Section 3.4 below for Group A Channels and in Section 3.5 below for Group B Channels. The density of spot level along Longitudinal Section lines must be provided at separation not more than 20 metres apart.