

# Guidelines for Waterway Off-takes And Works Plan Requirements

## D I V E R S I O N S M A N A G E M E N T

These guidelines aim to provide diversion licence holders with assistance on appropriate arrangements for off-takes from waterways. This information is intended as preliminary advice only. Licensees should contact Melbourne Water's diversion officers with any queries or site specific issues.

### The "right" Way

Inlet and outlet lines, pumps and associated equipment should be set up to minimise impacts on the waterway and adjacent lands and ensure designated environmental flows will be protected at all times.

Appropriate configurations include the following elements:

- Positioning of the end of the suction line above the base environmental flow level of the creek. This ensures the creek is never "sucked dry".
- Provision of a small hard stand (preferably concrete) area for the pump and associated equipment.
- Provision of bunding around diesel pumps and fuel storages to contain any spills.
- Construction of the hard stand area level with the natural surface and offset at least 5 metres from the top of the waterway bank.
- Minimal disturbance to the bank area by inlet and outlet lines. This may be achieved by running the lines underground or ensuring they are suitably fixed in place.
- Ensure that the end of the suction line is fixed and does not cause erosion of the waterway bed or bank.

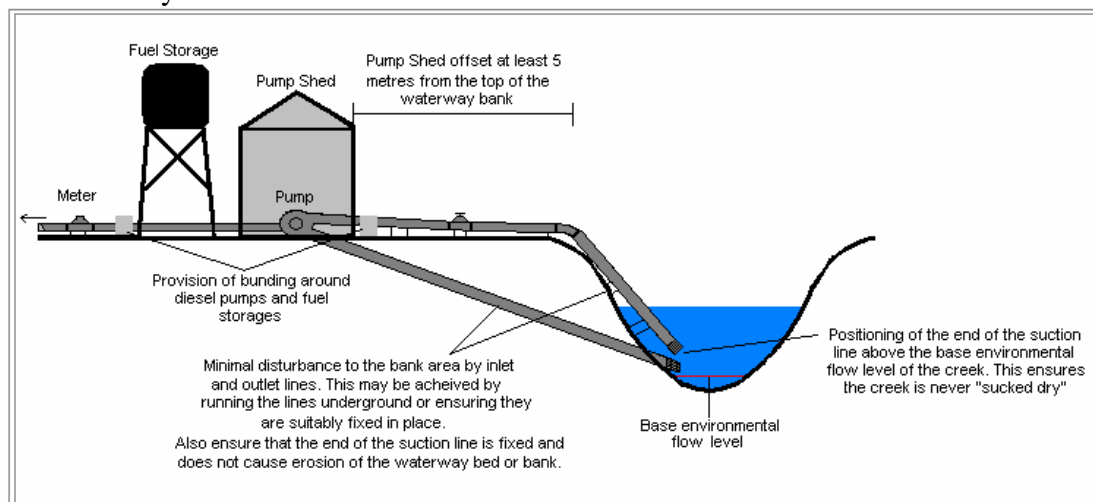


Figure 1: Cross section of the “right” way a waterway off-take should be installed

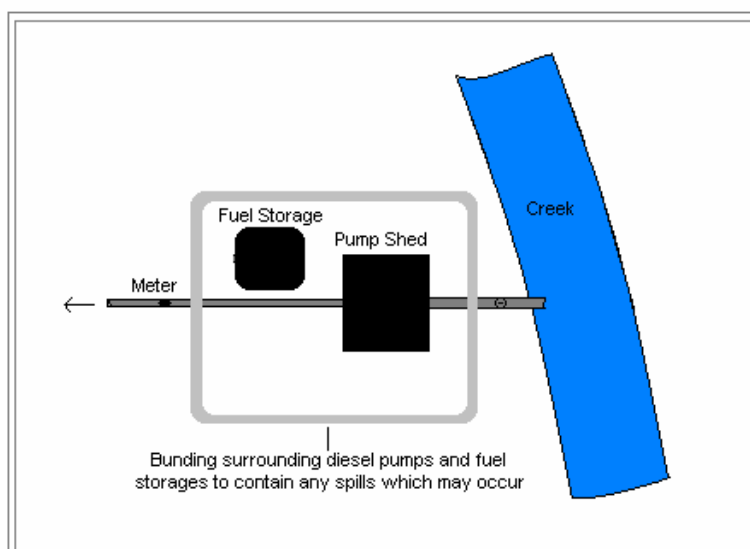


Figure 2: Birds eye view of the “right” way a waterway off-take should be installed

## The "wrong" Way

Diversion off-takes **should not**:

- Create any dam or sump on or adjacent to the waterway unless specific approval for such works has been obtained.
- Create unnecessary disturbance to the waterway and adjacent lands. This includes:
  - Clearing of vegetation;
  - Creation of berms or levees;
  - Leaving suction lines unsecured.
- Place pumps and equipment directly adjacent to waterway or on top of the bank.
- Raise pump and equipment housing areas above the natural surface level.
- Create trenches or alternative flow routes from the natural waterway course.
- Place the base of the suction line on the bed of the watercourse or so as to impact on the passing of environmental flows.
- Allow any part of the suction line to be unsecured within or on the banks of the waterway.

For any new pump or works on or adjacent to a waterway, you will need to make a works licence application to Melbourne Water. To enable the proper assessment of your works proposal Melbourne Water will require submission of a Works Plan.

## Works Plan

A Works Plan must include :

### A. SITING MAP FOR THE PROPOSED WORKS

A map of the proposed works is to be prepared which clearly identifies:

- (a) property boundaries and land ownership of all land occupied by the works;

- (b) existing native vegetation,
- (c) location of existing features, e.g. waterways, works, buildings, powerlines, easements, roads, access tracks, fences, channels, drains, pipelines, water storages; and
- (d) location of proposed features, e.g. pump, buildings, suction lines, delivery lines, fences, tanks, access tracks, etc. (works must be located to avoid unstable sections of the waterway e.g. banks that are susceptible to slumping like the outside of tight river bends or vertical banks, and away from areas where siltation is likely to affect inlets e.g.. the inside of bends where sand accumulates)

## **B. CONSTRUCTION PLAN FOR THE PROPOSED WORK**

A plan for constructing the proposed works is to be prepared which clearly identifies how the applicant will:

- (a) liaise with relevant Aboriginal and cultural heritage authorities and avoid or minimise the impacts on any sites or objects identified;
- (b) avoid or minimise disturbance to native vegetation;
- (c) restore any native vegetation that is disturbed with local indigenous species in accordance with an *approved* native vegetation offset plan;
- (d) demolish any disused pumphouses or other works, which are assessed as having no aesthetic or historic value, and remove the material from the site within 30 days of the works becoming redundant;
- (e) return disturbed soil to its original profile and compact and revegetate it to protect it from erosion (the slopes of waterway banks may require beaching to protect against erosion from river flow);
- (f) restore ground surface levels disturbed by excavation and installation and revegetate with local indigenous species;
- (g) constrain access to the works to one single track with a vehicle turn around area;
- (h) where practical, consolidate works site so that existing and new works can be serviced by one access track;
- (i) close and revegetate existing tracks that will not be required for future access;
- (j) where practical, make use of existing powerlines, works and access tracks;
- (k) place new powerlines underground;
- (l) ensure pumphouses are as small as practicable, with housing only for the works required to divert water from the waterway (filters, filtrate, irrigation controls, fertigation and other equipment must not be placed on the waterway);
- (m) construct the walls of the pumphouse from dark-stained timber or colorbond sheeting in colours compatible with the surrounding environment;
- (n) screen the pumphouse from the waterway by planting and maintaining locally indigenous species;

- (o) fix power authority-approved electrical fittings above the Nominal Flood Protection Level, that is the 100 year Average Recurrence Interval (ARI) floodlevel plus a freeboard margin of 300mm;
- (p) place delivery pipes from the pumphouse underground;
- (q) raise suction pipes above bank slopes and secure them with steel or concrete supporting posts designed to minimise the collection of flood debris; and
- (r) ensure the inlet, strainer and foot valves can accommodate fluctuations in water levels (including fluctuations below any existing weir pool minimum operating levels).

## **C. OPERATION AND MAINTENANCE PLAN FOR THE PROPOSED WORKS**

A plan for operating and maintaining the proposed works is to be prepared which clearly identifies how the applicant will:

- (a) keep the site clear of rubbish and debris at all times;
- (b) monitor and overcome any damage, erosion or degradation to the waterway or riparian zone resulting from the works; and
- (c) prevent fill, or lubricant, or any other matter used in connection with works and appliances from entering into and polluting the waterway, or aquifer, or the riparian or riverine environment; and
- (d) not interfere with or restrict the access rights of the public or other water users.

### **Further Information**

Should you have any queries relating to the configuration of your off-take or your diversion licence in general, please contact Melbourne Water's Diversions Management Team for assistance on (03) 9784 6373

### **Document Review**

This document is due to be reviewed by December 2009.