

In addition to photo stations, an aerial photo of the wetlands will be taken at the end of five monitoring seasons and submitted with the final report. This photo will contrast with the photo used in the November 1990 Wetland Assessment Report and will show any major changes to the wetland vegetation and/or structure.

2. Water Measuring Devices/Wetland Flow Augmentation

Water flow and/or levels will be measured at five locations in the project area. Water levels in the production and observation wells will be monitored, as will the amount of water being pumped into the wetland springs area from the surface water intake. An existing V-notch weir will be used in the upstream end of the culvert in the access road in order to monitor the flow of water through the culvert into the wetlands. Staff gages will be placed in the ponded area directly upstream and downstream of the culvert in order to track water elevation in the wetlands above and below the road.

Monitoring locations to support the wetland maintenance program are shown in Figure 1. The following monitoring methodology is proposed. Staff gages will be emplaced above and below the road culvert (Water Monitoring Locations (WML) #4 and #5). These gages will be read three times per week during the normal dry period (May - October), with the frequency being increased to daily during critical periods (readings will be taken weekly during other months, unless conditions require more frequent inspections). The presence/absence of running water at the upper end of the culvert (WML #3) will also be noted according to this schedule. When the two staff gages show identical water surface elevations (above the lower culvert elevation) indicating backwater from the lower pond, it will be assumed that running water is present. The amount of surface water released to the upper end of the wetland will be monitored continuously using both a flow totalizer as well as instantaneous readings to measure the release of water to the wetland (WML #1). The individual well pump rates and associated ground water levels would continue to be monitored as at present (WML #2).

Whenever the groundwater levels in the wells reach the caution/critical drawdown threshold (actual water surface elevations vary from well to well) and/or if no running water is present at the culvert, this will trigger the following action:

- a) a reduction or cessation of ground water pumping and/or
- b) the initiation of wetland flow augmentation from the surface water intake in an amount at least equal to the groundwater extraction rate until such time as the combination of (reduced) pumping rate and natural or artificial recharge causes the groundwater levels to recover above the drawdown threshold and the presence of running water at the culvert is re-established or maintained.