

Notes from DNR Appropriation Permit Reviews and Requirements (March 2009 – October 2009) and Resulting Revisions to Master Plan

HUGO: Potential for well interference

Issue	DNR raised the issue of the potential for well interference. The March draft of the Master Plan did not flag Hugo for the potential for well interference.
DNR Requirements	<ul style="list-style-type: none"> ▪ Inventory of domestic wells within a mile radius of proposed new well ▪ Design/perform aquifer pump test (7 days) ▪ Monitor existing monitoring well ▪ Provide a geological cross-section
Revisions to Master Plan	<p>Refined screening method for well interference due to prevalence of private wells – now a potential issue for all communities</p> <p>Clarified 2 step monitoring plan requirements. Screening:</p> <ul style="list-style-type: none"> ▪ Inventory domestic wells 1 mile radius ▪ Conduct basic screening analysis <p>Data Collection:</p> <ul style="list-style-type: none"> ▪ Added pump test requirement (1 to 30 days in duration) ▪ Take daily or more frequent measurement of water levels in at least one observation well in appropriate location (use existing well(s) when available) ▪ Provide geological cross-section

COLUMBUS: No issues

Issue	No issue identified in Master Plan or resulting from DNR review of appropriation request.
DNR Requirement	Collection of weekly water level readings from all production wells with pumping status of well at time of reading, with data to be submitted electronically on a quarterly basis to the DNR.
Revisions Plan Change	<p>Clarified minimum actions for all communities:</p> <ul style="list-style-type: none"> ▪ Measure water levels at existing production wells and any observation wells at least weekly from May through September and at least monthly October through April and to submit the data to the DNR.

CHANHASSEN: Potential impact to calcareous fen

Issue	Potential impact to a calcareous fen identified in Master Plan and through DNR review of permit request.
DNR Requirements	<p>Develop monitoring plan that includes:</p> <ul style="list-style-type: none"> ▪ Monitoring water levels in a well at the fen (use existing well(s) when available) ▪ Constructing a well nest to monitor water levels between production wells and fen in the aquifer being pumped and the aquifer that is connected to the calcareous fen (use existing well(s) when available)
Revisions to Master Plan	<p>Clarified monitoring plan requirements:</p> <ul style="list-style-type: none"> ▪ Take daily or more frequent measurement of water levels adjacent to the calcareous fen ▪ Take daily or more frequent measurement of water levels in at least one observation well or well nest in the proposed aquifer between the well field and the calcareous fen

PRIOR LAKE: Potential for well interference and impact to calcareous fen

Issue	Potential for well interference and potential impact to calcareous fen identified in Master Plan and through DNR review of permit request.
DNR Requirements	<p>Community is already addressing the issues identified by the DNR, therefore the community will be required to continue the following activities:</p> <ul style="list-style-type: none"> ▪ Monitor water levels in observation well between the calcareous fen and pumping wells (automated system taking hourly measurements) ▪ Report water levels in production wells (minimum weekly)
Revisions to the Master Plan	<p>Note: DNR is currently monitoring water levels in and adjacent to the Savage Fen.</p> <p>Clarified monitoring plan requirements:</p> <ul style="list-style-type: none"> ▪ Take daily or more frequent measurement of water levels in the calcareous fen ▪ Take daily or more frequent measurement of water levels in at least one observation well or well nest in the proposed aquifer between the well field and the calcareous fen

RAMSEY: Potential impacts of gw pumping on sw feature

Issue	Potential impacts from groundwater pumping on surface water features identified in the March draft of the Master Plan and through DNR review of permit request.
DNR Requirements	Lake Itasca well nest <ul style="list-style-type: none">▪ Weekly monitoring of water levels in two monitoring wells▪ Weekly reading of surface water body level gage Wellfield well nest <ul style="list-style-type: none">▪ Continuous water level recorders are to be installed in bedrock and water table monitoring wells.▪ Water levels should be recorded every 6 hours.▪ Submit electronic data to the DNR quarterly.
Revisions to Master Plan	Clarified monitoring plan requirements: <ul style="list-style-type: none">▪ Take daily or more frequent measurement of water levels and flows at the surface water feature▪ Take daily or more frequent measurement of water levels in at least one observation well or well nest in the proposed aquifer between the well field and at the surface water feature▪ Submit the data to the DNR quarterly