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Analysis of test pumping at the Wellfleet Boy Scout Camp municipal wells

The town of Wellfleet constructed two water-supply wells in 2009 at the site commonly referred to as the Boy Scout Camp. The wells are approximately ¼ mile west of Duck Pond. A pumping test was conducted in December 2009 to determine the potential yield of the wells and estimate the area and amount of water table drawdown associated with the pumping.

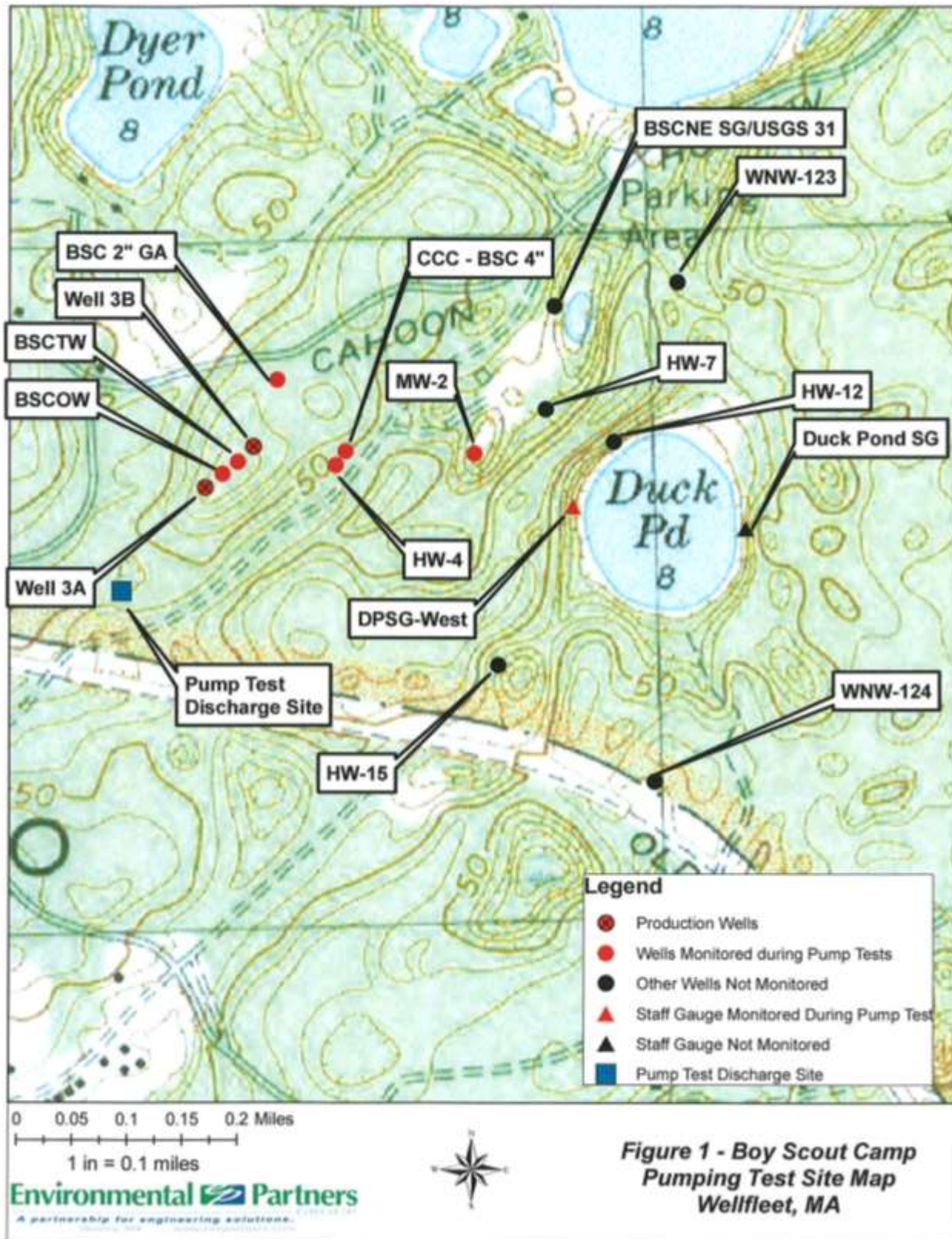
The pumping test was supervised by Environmental Partners. They have submitted a report to the Wellfleet Dept. of Public Works and provided a copy to me and NPS staff at Cape Cod National Seashore. The pumping test was conducted at 300 gpm for 5 days. The water table drawdown at the most distant monitoring well (730 feet) was approximately 0.4 feet at the end of 5 days of continuous pumping. Water levels in the monitoring wells showed a diurnal tidal cycle.

NPS monitored water levels in two wells before, during, and after the pumping test. Well WNW-123 is about 600 feet north of Duck Pond and 2000 feet NNE of the Wellfleet municipal supply wells. Well WNW-124 is about 700 feet south of Duck Pond and 2400 feet SSE of the Wellfleet municipal supply wells. Plots of the water level data are attached to this report.

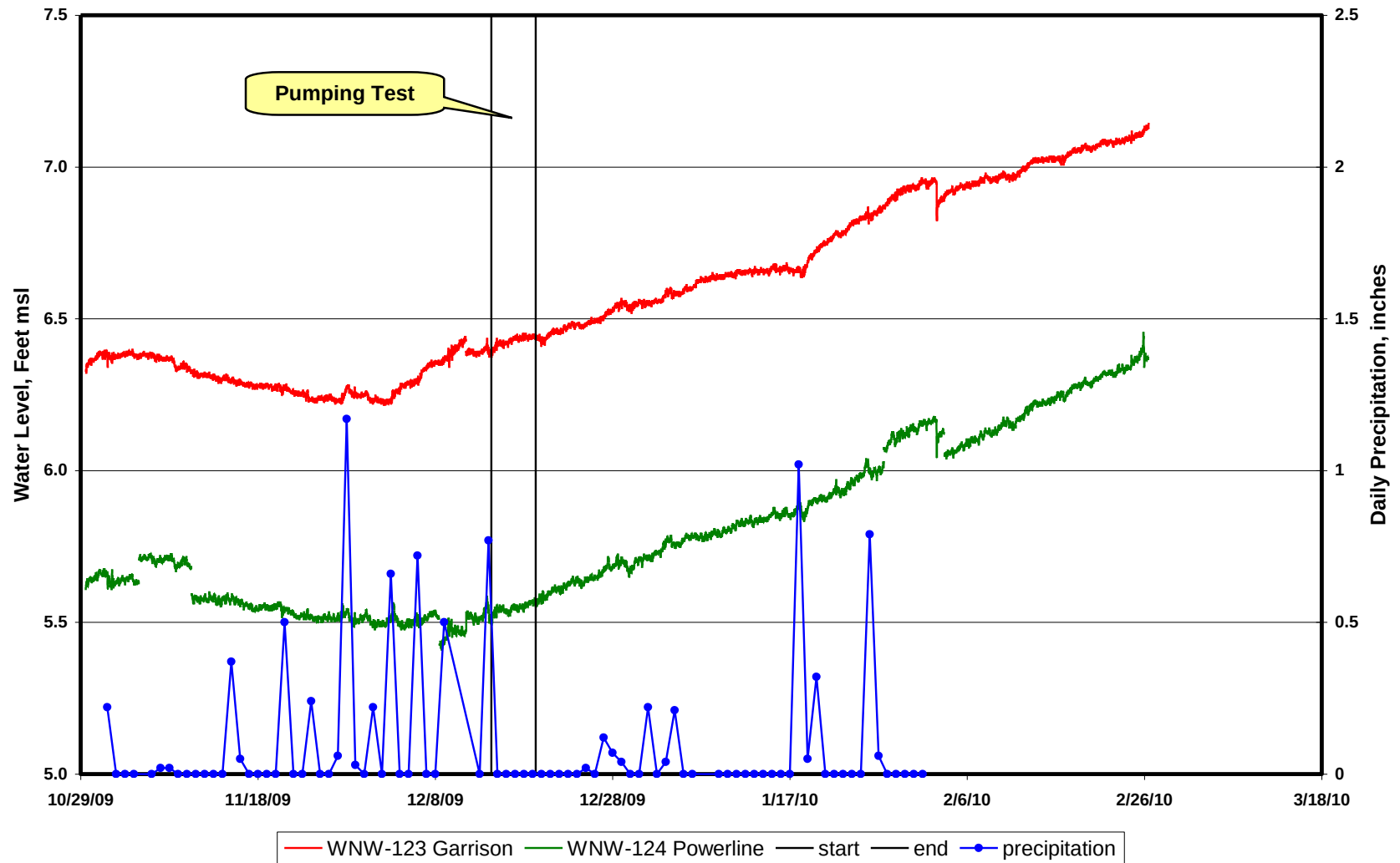
There was no observable water level change in these wells that could be attributed to groundwater pumping at the Boy Scout Camp. The pumping test lasted only 5 days, but the pumping rate was 300 gpm. The town is seeking a permit that would allow pumping up to 100,000 gallons per day from both wells; or 70 gpm. (That's a total of 100,000 gpd, not 100,000 gallons for each well.) The test pumping rate was more than four times greater than the normal operating pumping rate.

It is unlikely that groundwater pumping at the Boy Scout Camp would affect water table elevations at the two NPS monitoring wells (WNW-123 and WNW-124) or surface water elevations at Duck Pond. Natural seasonal fluctuation of the water table and changes from rainfall recharge events would further mask the effects of groundwater pumping and complicate analysis of monitoring data.

Better options for monitoring the water table elevation for changes caused by groundwater pumping would be at one of the monitoring wells between the Boy Scout Camp and Duck Pond. These wells are labeled as MW-2 and HW-7 on the attached map. If manpower and equipment are available, and these wells can be located, it would be prudent to monitor water levels for the first 2 years that the wells are pumped to determine whether there is an affect on the water table elevation.



Two wells near Duck Pond



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