

Summary of Land-Subsidence Monitoring Dominion Cove Point Study

A GPS campaign was conducted October 15-21, 2018 to determine the heights of four 3d marks to assess the potential effects of groundwater withdrawals from Maryland's coastal plain aquifers. The marks are located near major well fields in southern Maryland at Cove Point (mark COV1), Lexington Park (mark LEX1), and Waldorf (mark WAL1). One mark at Rosaryville State Park (mark ROS1) in southern Maryland is located in an area of relatively low groundwater use. The GPS data were processed using the National Geodetic Survey's Online Positioning User Service (OPUS) Projects utility. The ellipsoid heights determined through OPUS Projects were -1.521 meters at COV1, -2.075 meters at LEX1, 33.815 meters at ROS1, and 28.764 meters at WAL1. Height uncertainty (2 standard deviations) for the measurements as reported by OPUS Projects is approximately +/- 0.001 meters. The greatest change between the first measurements made in 2016 and 2018 occurred at WAL1 at ~0.026 meters.

A GPS campaign was conducted October 7-14, 2019 concurrent with dozens of marks observed across the Mid-Atlantic region as part of an effort by the National Geodetic Survey, U.S. Geological Survey, Virginia Tech, Maryland Geological Survey, and others, to determine rates of vertical land motion. The results of that campaign are currently being evaluated.

Ellipsoid Heights (IGS08 reference frame), meters

	COV1	Two Sigma	LEX1	Two Sigma	ROS1	Two Sigma	WAL1	Two Sigma
10/2016	-1.512	0.001	-2.076	0.001	33.820	0.001	28.790	0.001
10/2017	-1.508	0.001	-2.088	0.001	33.834	0.001	28.797	0.002
10/2018	-1.521	0.001	-2.075	0.001	33.815	0.001	28.764	0.001





