



CITY OF PORTLAND ENVIRONMENTAL SERVICES



Materials Testing Laboratory

1405 North River Street, Bldg 117, Portland, Oregon 97227 ■ Sam Adams, Commissioner ■ Dean Marriott, Director

DATE: 06/19/08
TO: Sean Bistoff 106/1100
FROM: Ryan Christie 117/MTL
SUBJECT: BES 8576 Oaks Bottom Piezometer Memorandum

In November 2003, GRI under the direction of Tetra Tech and the City of Portland Bureau of Environmental Services (BES) installed four monitoring wells (standpipes) (B-1, B-2, HA-1, and HA-2) within Oaks bottom to measure groundwater levels. Since installation the water levels in the MWs have been collected by Tetra Tech on a monthly basis. It was determined by the previous project manager, Scott Clements, that more frequent groundwater data collection was desired and therefore in September and October 2007, the MTL installed 5 VW piezometers (P-1 through P-5) to record groundwater levels on a continuous basis within the Oaks Bottom area as part of the Oak Bottom Habitat Restoration Project. In November 2007, the MTL took over the task of measuring the open standpipe water levels at 3 of the 4 locations (SP-1 through SP-3) since we are already at the site maintaining dataloggers and dumping accumulated data (see the MTL piezometer data report dated November 28, 2007). The fourth standpipe (B-2) is located outside of the project boundaries and the project has no interest in obtaining data at this time. The table below shows the elevations (COP datum) of each of the piezometers and standpipes.

Piezometer/Standpipe #	GRI Boring #	Elevation (ft)
P-1	N/A	13.44
P-2	N/A	12.03
P-3	N/A	13.82
P-4	N/A	12.75
P-5	N/A	13.13
SP-1	B-1	31.82
SP-2	HA-2	14.21
SP-3	HA-1	12.78

Attached is a map showing the general locations for each piezometer/standpipe and the boring logs for each piezometer/standpipe. Two fence diagrams were created from the boring log data and are attached to this memorandum. Line A – A’ is a fence diagram that transects the site generally from south to north and includes borings SP-2, P-1, P-2, P-4, and SP-1. Line B – B’ transects the site from west to east and includes borings P-3, P-2, and P-5.

Generally, silt with clay was observed throughout the site down to the maximum depth explored in each boring. GRI observed a 12-inch lens of sand near the base of boring SP-1 (GRI B-1).

We observed lenses of clayey soils with more plasticity in borings P-3, P-5, and P-4. In boring P-5, we observed a 2-foot thick lens of silty gravel near the base of the boring. In boring P-3, we observed a layer of silty sand at the base of the boring. The piezometer in P-3 was installed within the silty sand layer. In borings P-1, P-2, P-4, and P-5 the piezometers were installed within the silt or clay layer at the base of each boring.

Groundwater was observed in all of the borings at the time of exploration. The observed groundwater levels at the time of exploration are shown on the attached logs. The piezometer data collected from P-1 through P-5 since the time of installation shows seasonal variations in the groundwater levels. Perched groundwater can occur within or above layers of silt and clay, but no perched water levels were encountered within the limits of the explorations.