GEOCON

P1387-05-03 September 18, 2008

GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS



The Al Angelo Company Mr. Albert Angelo III 404 E 15th Street Vancouver, Washington 98663

Subject:

400 MILL PLAIN CENTER VANCOUVER, WASHINGTON DRYWELL DECOMMISSIONING

Dear Mr. Angelo:

Geocon Northwest, Inc. (Geocon) has observed the decommissioning of three (3) drywells at the 400 Mill Plain Center site, located at 400 Mill Plain Boulevard in Vancouver, Washington (Figure 1, Site Vicinity Map). The drywells were located beneath the northern portion of the former Denny's Restaurant building, and appear to have been used for surface drainage of a development that predated the restaurant. The drywells were encountered during excavation activities and were decommissioned on an expedited basis to minimize financial and schedule impacts to construction. Geocon has previously completed several phases of geotechnical investigation at the subject property, and a review of boring logs indicates the depth to groundwater to be greater than 50 feet below the ground surface (bgs). The approximate locations of the drywells are illustrated on the Site Plan, Figure 2.

The first drywell (DW-1) was encountered on August 19, 2008, and the other two (DW-2 and DW-3) were encountered on September 2, 2008. All of the drywells were observed to be similarly constructed with a red brick liner that had an approximate diameter of 4-feet. The depth of the drywells was measured to be approximately 20 feet bgs in DW-1, 13 feet bgs in DW-2 and 17 feet bgs in DW-3. The top of each drywell was buried beneath approximately 1 foot of soil. Water was not observed in any of the drywells. Four lateral drain tiles were observed in the upper portion of DW-1, and are assumed to be connected to a surface drainage system.

Samples of sediment that had accumulated in the bottom of the drywells were collected for laboratory analyses. The samples were analyzed by Northwest Methods for the presence of total petroleum hydrocarbons (TPH) as gasoline (NWTPH-Gx) and diesel and oil (NWTPH-Dx), volatile organic compounds (VOC's) by US Environmental Protection Agency (EPA) Method 8260B, total metals by EPA 6000/7000 Series Methods, and Toxicity Characteristic Leaching Procedure (TCLP) metals by EPA 6000/7000 Series Methods. The analytical results are summarized below in Tables 1, 2, and 3. The soil samples were collected by a Geocon staff member from a decontaminated hand auger directly into laboratory prepared eight ounce clear glass jars with Teflon lined screw caps while wearing new nitrile gloves. Upon collection, the samples were properly labeled, placed into an iced cooler, and maintained under chain of custody protocol. The samples were delivered to APEX Labs in Tigard, Oregon for analytical testing. Copies of the laboratory analytical reports are attached.

400 Mill Plain Center Vancouver, Washington **Drywell Decommissioning**

TABLE 1 SUMMARY OF ANALYTICAL RESULTS PETROLEUM HYDROCARBONS AND VOLATILE ORGANIC COMPOUNDS

Sample	Sample Date	Depth (ft bgs)	NWTPH-Gx	TWN	EPA 8260B	
			Gasoline	Diesel	Oil	VOC's
DW-1	8/19/08	20	4.93U	32.0U	70.6	ND
DW-2	9/02/08	13	6.24U	28.9U	58.7	ND
DW-3	9/02/08	17	9.56U	147	393	ND
MTCA Method A Cleanup Levels			100	2000	2000	

Analytical results are presented in milligrams per kilogram (mg/kg).
MTCA Method A Cleanup Levels were obtained from Table 745-1 of 173-340 WAC for Industrial Properties.

U - Indicates analyte not detected at detection limit shown. ND - Indicates all analytes for the analytical suite were not detected at or above the respective method reporting limits.

BOLD - Indicates detection of analyte at value shown.

TABLE 2 SUMMARY OF ANALYTICAL RESULTS **TOTAL METALS**

Sample ID	Sample Date		TOTAL Metals								
		Depth (ft bgs)	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	
DW-1	8/19/08	20	4.03	135	2	18.5	25.7	0.206	1.14U	2.28U	
	9/02/08	13	5.89	111	1.39U	20.5	86.7	5.82	1.39U	2.77U	
DW-2					1.59U	30.3	432	10.4	1.59U	7.09	
DW-3	9/02/08	17	7.99	233	טשט,ו	THE RESERVE TO THE RE			1		
MTCA M	ethod A Cleanup	Levels	20		2	2000	1000	2	**		
EDA Rec	ion 6 Screening	Leveis		100000	**				5700	5700	

Analytical results for Total Metats are presented in miligrams per kilogram (mg/kg).

MTCA Method A Cleanup Levels were obtained from Table 745-1 of 173-340 WAC for industrial Properties. EPA Region 6 Screening Levels are for the Industrial-Outdoor Worker exposure, and were applied where the analyte was not listed in MTCA. U - Indicates analyte not detected at detection limit shown.

BOLD - Indicates detection of analyte at value shown.

TABLE 3 SUMMARY OF ANALYTICAL RESULTS **TCLP METALS**

			TCLP Metals							
Sample ID	Sample Date	Depth (ft bgs)	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
DW-1	8/19/08	20	0.10	1.25U	0.05U	0.10	0.05U	0.004U	0.05U	0.10
		1	<u> </u>	1.25U	0.05U	0.1U	0.05U	0.004U	0.05U	0.10
DW-2	9/02/08	13	0.10						0.05U	0.10
DW-3	9/02/08	17	0.10	1.25U	0.05U	<u> 0.1U</u>	0.478	0.004U	0.000	0.10

Analytical results for TCLP Metals are presented in milligrams per liter (mg/l).

U - Indicates analyte not detected at detection limit shown.

BOLD - indicates detection of analyte at value shown.

400 Mill Plain Center Vancouver, Washington Drywell Decommissioning

Project No. P1387-05-03 September 18, 2008

A review of the analytical results for the samples showed detections of diesel and oil range petroleum hydrocarbons, total metals, and TCLP lead. The test results for gasoline range petroleum hydrocarbons, VOC's, and most of the TCLP metals showed no detection at or above the respective method reporting limits. The analytical results for the detections of diesel and oil range petroleum hydrocarbons were flagged by the laboratory, which indicated the result was elevated due to the presence of individual analyte peaks in the quantitation range that was not representative of the reported fuel pattern. The detected results were compared with the State of Washington Model Toxics Control Act (MTCA) Cleanup Regulations (173-340 WAC) for industrial properties or EPA Region 6 Screening Levels (where MTCA screening levels were not tabulated) to assess potential risks to human health or the environment. This review showed that mercury was exceeding the MTCA screening level in sediment samples collected from DW-2 and DW-3. The MTCA screening level for mercury is listed at 2 milligrams per kilogram (mg/kg). The analytical results for analysis of total metals shows detections of mercury at 5.82 and 10.4 in DW-2 and DW-3 respectively.

Based on the analytical results of sample DW-1 in comparison to MTCA Method A cleanup Levels, the drywell was permanently decommissioned by filling it with controlled density fill (CDF) to an approximate depth of 3 feet beneath planned footing elevations for the proposed new structure. Crushed rock was placed and compacted between the top of the CDF and footing elevation. Drywells DW-2 and DW-3 were encountered when mass grading was in full operations with numerous other activities being completed onsite. In an effort to minimize financial and schedule impacts to construction and based on the analytical results from DW-1, drywells DW-2 and DW-3 were decommissioned with CDF immediately after sample collection, which encapsulated the sediment in the bottom of the drywells. In the short time since the drywells were assessed, construction has progressed and several large footings have been constructed above the subject area. The volume of the impacted sediment is minimal and does not present an unacceptable hazard to human health or the environment, as it is buried beneath several feet of CDF and is effectively immobilized.

Based on a review of potential exposure routes and receptors, the impacted sediment does not present a risk to human health or the environment. Discussions with representatives of the Washington Department of Ecology (DOE) indicate that the most feasible alternative to manage the impacted media is through the use of institutional controls. This would allow the impacted sediment to remain in place until the structure is demolished, and will require that a cleanup action be completed at that time. This process would record site details in a database maintained by the DOE. A copy of this report should be submitted to the DOE for their review and approval.

400 Mill Plain Center Vancouver, Washington Drywell Decommissioning

Should you have any questions regarding this report or require additional information, please contact the undersigned at your convenience. We thank you for the opportunity to work with you on this project.

Sincerely, Geocon Northwest, Inc.



KEVIN SCHLEH

Kevin Schleh, L.G., L.H.G., L.E.G.

Engineering Geologist

Attachments:

Figure No. 1 — Site Vicinity Map Figure No. 2 - Site Plan Laboratory Analytical Reports

ks:WS

(3) Addressee

cc: Mr. Andy Jacobsen, Wilson and Associates

Wesley Spang, Ph.D., P.E

resident



SOURCE: THOMAS BROTHERS MAP 2008 PORTLAND METRO AREA

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SITE VICINITY

DRYWELL DECOMMISSIONING ANGELO D STREET OFFICE BUILDING VANCOUVER, WASHINGTON

September 2008

P1387-05-03

FIG. 1

