

March 19, 2025

Michael Merlone MGP XI-A Town Center Lake Forest, LLC 425 California Street, Tenth Floor San Francisco, California 94104

RE: CARBON BARRIER WORK PLAN FORMER MAGIC CLEANERS SITE 17171 BOTHELL WAY NORTHEAST LAKE FOREST PARK, WASHINGTON FARALLON PN: 1993-009

Dear Michael Merlone:

Farallon Consulting, L.L.C. (Farallon) has prepared this letter on behalf of MGP XI-A Town Center Lake Forest, LLC (Client) to present the basis of design for planned injection activities related to installation of a carbon barrier at the property located at 17171 Bothell Way Northeast in Lake Forest Park, Washington (herein referred to as the Property) (Figure 1). The Property includes two former dry cleaner facilities, the Former Magic Cleaners Site located in the northeastern portion of the Property, now operated as a Rite Aid (herein referred to as the Former Magic Cleaners Site), and the Former Forest Park Cleaners located in the southwestern portion of the Property (herein referred to as the Former Forest Park Cleaners Site). The carbon barrier installation activities described herein pertain solely to the Former Magic Cleaners Site. The Former Magic Cleaners Site was re-enrolled in the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) in 2024 with VCP Project No. NW3370.

The Former Magic Cleaners Site is located within the southeastern portion of King County Parcel No. 4019301655, which is developed with a large T-shaped one- and two-story commercial/retail building, a two-story professional building, and a single-story bank building. The Former Magic Cleaners Site was located at the eastern end of the commercial/retail building, which was constructed in 1964 with extensive renovations taking place in 1988 and 1989. During renovation activities in 1989, solvent fumes were noted beneath the location of the Former Magic Cleaners Site. Constituents of concern confirmed in soil and groundwater included the halogenated volatile organic compounds (HVOCs) tetrachloroethene (PCE) and trichloroethene (TCE) that were related to dry cleaning operations, and acetone. The contaminated soils were removed from the Property and a sump with a pumping system was installed to remove shallow groundwater contamination.



The contamination issues associated with the Former Magic Cleaners Site were initially reported to Ecology in 1998. Former owner-operators conducted additional investigation and cleanup work that was communicated to Ecology under the VCP. Remediation efforts included excavation of impacted soils, installation and operation of a density driven convection (DDC) system for groundwater remediation, and installation and operation of a subslab depressurization system (SSDS) to mitigate vapor intrusion.

In 2006, former owner-operators recorded an Environmental Covenant on the Property, with Ecology citing conditions regarding ongoing groundwater treatment, monitoring, and continued operation of the SSDS (Figure 2). The Environmental Covenant also included other routine restrictions and conditions on affected media and land use at the locations where PCE-impacted media persisted, pending demonstration that the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) cleanup levels have been achieved for all affected media throughout the Former Magic Cleaners Site. The former owner-operators ceased operations of the DDC system by 2009, but continued to monitor groundwater and maintain the SSDS.

The Property was purchased in 2014 by the Client. The Client conducted additional environmental assessment work between 2014 and 2018 to better understand current conditions regarding the Former Magic Cleaners Site groundwater impacts. The Client also continues to operate the SSDS.

Groundwater monitoring has been conducted from 2017 through November 2024. The groundwater monitoring data was supplemented with reconnaissance groundwater analytical data collected from direct-push borings completed in 2018 by TOR Environmental, Inc. to evaluate the distribution of target HVOCs and assess whether biodegradation was occurring throughout the plume area. Analytical data from samples collected have indicated that concentrations of the target HVOCS related to the former dry cleaning operations, which include PCE, TCE, dichloroethene isomers, and vinyl chloride, are all present, indicating biodegradation of PCE is occurring throughout the plume area. The groundwater data has been sufficient to define the estimated limits of the plume (Figure 3).

The 2018 reconnaissance groundwater data and monitoring well results indicated that PCE exceeding the MTCA Method A groundwater cleanup level was located in the area down-gradient/south of the Former Magic Cleaners tenant space and was biodegrading along the flow path, generating DCE isomers and vinyl chloride to the south approaching the Property boundary. The groundwater data from the monitoring wells also indicates that the PCE



release has attenuated significantly from 2017 to 2024 (Figure 3). Currently, vinyl chloride is the only target HVOC that exceeds the MTCA groundwater cleanup levels.

A permeable reactive carbon barrier is proposed to mitigate target HVOCs present in the northern plume area from being transported downgradient while allowing additional resonance time in the barrier to allow biodegradation to occur more effectively.

CARBON BARRIER DESIGN

The carbon barrier design is based on the results of soil and groundwater investigations performed by Farallon and others. Groundwater analytical data are presented on Figure 3. Groundwater analytical results, geochemical parameters, groundwater elevations, and aquifer testing results are presented on Tables 1 through 4.

The work proposed herein will be performed in accordance with the requirements set forth in MTCA, including comments received from Ecology during review of the scope of work herein.

CARBON BARRIER DESIGN DATA COLLECTION

The following results of subsurface investigations conducted by Farallon, TOR, and others were used to finalize the specific carbon barrier design elements:

- Groundwater analytical results for target HVOCs (Table 1) were used to identify the carbon barrier treatment area, estimate the lateral and vertical dimensions of the carbon barrier, assist in calculating necessary product quantities, and identify analytes and parameters for performance and confirmation monitoring.
- Subsurface lithology was used to evaluate whether the carbon could be effectively distributed in the subsurface to mitigate dispersion of the target HVOCs, design the carbon barrier injection point spacing, and estimate the quantity of carbon that could be injected. Soil encountered beneath the Property during previous investigations generally consisted of poorly graded fine to coarse sand with varying amounts of silt and gravel to a depth of approximately 15 to 20 feet below ground surface (bgs), underlain by well graded sand with gravel to the maximum explored depth of 25 feet bgs. The predominantly sand lithology with limited quantities of fine-grained material presents ideal subsurface conditions for the carbon barrier injections to be effective. Boring logs and monitoring well construction details are presented in Attachment A.



- Groundwater elevation measurements and flow direction were used to determine the orientation of carbon barrier. Groundwater generally was encountered at elevations between approximately 31 and 37 feet North American Vertical Datum of 1988, corresponding to depths ranging from approximately 3 to 13 feet bgs (Table 2). Groundwater beneath the Property has been interpreted to flow to the south and southeast toward Lyon Creek. Carbon barrier injection point transects were designed to be oriented perpendicular to the direction of groundwater flow. The upper limits of the treatment intervals were determined based on the seasonal groundwater fluctuations in the treatment area.
- Aquifer testing was conducted to estimate the rate of groundwater flow required to estimate the appropriate thickness of the carbon barrier. The flow rate also was used to evaluate the potential for groundwater to flow around the barrier, and if necessary, increase the length beyond the desired treatment area where target HVOCs are believed to be concentrated. The mean hydraulic conductivity was estimated to be 4 feet per day. Slug test results are included in Table 3.
- Geochemical data, including analytical results for methane, ethane, ethene, total
 organic carbon, manganese, ferrous iron, nitrate, sulfate, and alkalinity, were
 collected from monitoring wells within and proximate to treatment area to evaluate
 the potential for reductive dechlorination via biodegradation of the target HVOCs
 captured by the carbon barrier to occur without enhancement. If the rate of
 biodegradation is insufficient, there is the potential for breakthrough to occur once
 the sorbent capacity of the barrier is reached. Ongoing evaluation of groundwater
 geochemistry during future performance groundwater monitoring will be conducted to
 estimate the lifespan of the barrier design and determine whether enhancement
 agents should be used to achieve the cleanup goals. Geochemical results are
 included in Table 4.

The results of the evaluation of the information cited above were used to design a carbon barrier that is expected to mitigate further down-gradient dispersion of target HVOCs that currently exceed the MTCA cleanup levels and allow biodegradation to occur more effectively.

SPECIFIC DESIGN ELEMENTS

The proposed carbon barrier consists of a 130-foot-long transect in the area depicted on Figure 2. Approximately 13,000 pounds of activated carbon product will be injected along



the transect. A slurry of activated carbon and water will be injected into the subsurface using temporary injection points. A total of 20 injection points will be completed, which will be arranged in two rows spaced approximately 15 feet apart along the transect. The transect geometry assumes a radius of influence of 7.5 feet over a depth interval of 20 feet. Modifications to the injection approach may be necessary based on conditions encountered in the field at the time of installation. The estimated target injection depth is approximately 5 to 20 feet bgs. An objective of the injection design is to fill 25 to 50 percent of the available soil pore volume within the barrier area with activated carbon.

The injection points will likely be arranged in an offset pattern rather than in parallel rows to account for heterogeneity in the subsurface and create a continuous carbon barrier perpendicular to the direction of groundwater flow. This design is anticipated to be sufficient to capture the majority of the residual target HVOC mass in groundwater based on the available historical soil and groundwater data.

At each injection point, the activated carbon slurry will be injected under low pressure at 2.5foot depth intervals (injection intervals) from the bottom of the proposed carbon barrier depth of approximately 20 feet bgs to minimize potential for surface breakthrough and maximize the carbon distribution in the subsurface. Approximately 122 gallons of carbon slurry containing approximately 108 pounds of carbon and potable water will be injected at each of the six injection intervals, for a total of approximately 650 pounds of carbon to be injected at each injection point. The carbon to water ratio and injection pressure may be adjusted based on the ability to inject into the formation. If necessary to achieve an effective barrier, additional injection points may be added to ensure the activated carbon is distributed throughout the barrier area and to the target depth of 20 feet bgs.

The distribution of carbon in the subsurface will be assessed by drilling multiple borings within and surrounding the transect dimensions during the injection process to confirm the injection design parameters prior to completing the entire transect; which will allow for modifications to the injection parameters. Continuous soil cores will be collected at each location and the distribution of the carbon will be assessed. Farallon has assumed that up to eight borings to depths of 20 to 25 feet bgs will be completed to evaluate the carbon distribution and confirm the barrier is being installed as designed.

Farallon will install one 2-inch-diameter monitoring well with a 10-foot-long 0.010-inch slotted screen, to a depth of up to 20 feet bgs inside the carbon barrier immediately up-gradient of monitoring well MW-3. The monitoring well will be installed after the carbon



barrier is installed. Soil sampling during the well installation will also be conducted to evaluate the distribution of carbon. The data from this monitoring well will provide information on biodegradation of HVOCs captured by the barrier and provide data on when the carbon sorptive capacity has been reached. If the sorptive capacity is reached, then enhancing natural attenuation processes may be necessary to restore the sorptive capacity.

PERFORMANCE AND COMPLIANCE MONITORING

Performance and compliance monitoring will include sampling groundwater monitoring wells within and proximate to the treatment area to evaluate the effectiveness of the carbon barrier injections. Groundwater sampling will be conducted at monitoring wells MW-1 through MW-3, MW-4R, MW-5, MW-6, DDC-7, and a new well to be installed within the carbon barrier to monitor the effectiveness of the barrier and lifespan of the carbon (Figure 2).

The following parameters are proposed for performance and compliance monitoring of the carbon barrier injections:

Parameter	Method	Purpose
Target HVOCs	Volatile organic compounds by U.S. Environmental Protection Agency Method 8260D	Evaluation of the effectiveness of the carbon barrier injections, including confirmation that the target HVOCs are being immobilized and are biodegrading.
pH, dissolved oxygen, oxidation-reduction potential, electrical conductivity	Handheld flow-through meter field monitoring	Monitoring whether conditions continue to be favorable for biodegradation of the target HVOCs, and confirmation that representative groundwater samples are collected from monitoring wells.
Total organic carbon	Method SM5310C	Monitoring the presence of carbon at select wells proximate to the carbon barrier to evaluate potential for interference with future analysis of target HVOCs due to sorption by carbon in sample.

Semiannual groundwater sampling events will be conducted to assess the effectiveness of the carbon barrier and ongoing biodegradation of the target HVOCs throughout the Property. The groundwater sampling data above will also be used to monitor the lifespan of the carbon barrier and if enhancing natural attenuation rates within the barrier will be necessary to renew/prolong the barrier lifespan to achieve cleanup objectives.



CLOSING

This letter provides Ecology with the details anticipated necessary to understand the rationale and basis for design of the carbon barrier installation as a component of the cleanup action. A formal Opinion Letter is not being requested at this time. However, if Ecology wishes to provide informal technical assistance on the content herein that will facilitate future closure of the former Magic Cleaners Site, that feedback is appreciated. Once Ecology's feedback is received, if any, the carbon barrier permitting process with the Underground Injection Control (UIC) department of Ecology will be initiated. Once approval from the UIC department is received, the carbon barrier installation will be scheduled. Ecology will be notified of the schedule in the event a site visit during installation and verification of the carbon distribution is desired.

Please contact either of the undersigned at (425) 295-0800 if you require additional information or would like to schedule a technical assistance meeting.

Sincerely,

Farallon Consulting, L.L.C.

Glenn McKenney, L.G. Project Geologist



Jeffrey Kaspar, L.G., L.H.G. Principal Geologist



- Attachments: Figure 1, Subject Property Vicinity Map Figure 2, Proposed Carbon Barrier Location Figure 3, Groundwater Analytical Data Table 1, Groundwater Analytical Results for Target HVOCs Table 2, Groundwater Elevations Table 3, Aquifer Testing Results Table 4, Geochemical Parameters Attachment A, Boring and Monitoring Well Logs
- cc: David Unruh, Ecology Northwest Regional Office

GM/JK:cm

FIGURES

CARBON BARRIER WORK PLAN Former Magic Cleaners Site 17171 Bothell Way Northeast Lake Forest Park, Washington

Farallon PN: 1993-009









TABLES

CARBON BARRIER WORK PLAN Former Magic Cleaners Site 17171 Bothell Way Northeast Lake Forest Park, Washington

Farallon PN: 1993-009

					Analytical R	esults (microgra	ms per liter) ¹	
Sample Location	Sampled By	Sample Date	Sample Identification	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
	-		F	ormer Magic Clea	aners			
			Reconnaissa	nce Boring Grou	ndwater Samples			
B-1	TOR	8/31/2018		6.0	< 0.20	< 0.20	< 0.20	< 0.20
B-2	TOR	8/31/2018		7.7	< 0.20	< 0.20	< 0.20	< 0.20
B-3	TOR	8/31/2018		2.5	< 0.20	< 0.20	< 0.20	< 0.20
B-4	TOR	8/31/2018		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
B-5	TOR	8/31/2018		7.6	0.66	0.66	< 0.20	< 0.20
B-6	TOR	8/31/2018		3.4	0.34	0.22	< 0.20	< 0.20
B-7	TOR	8/31/2018		1.4	< 0.20	< 0.20	< 0.20	< 0.20
B-8	TOR	8/31/2018		0.45	< 0.20	< 0.20	< 0.20	< 0.20
B-9	TOR	8/31/2018		1.3	0.49	0.48	< 0.20	0.67
B-10	TOR	8/31/2018		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
B-11	TOR	8/31/2018		< 0.20	< 0.20	0.29	< 0.20	< 0.20
B-12	TOR	8/31/2018		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
B-13	TOR	8/31/2018		< 0.20	< 0.20	2.3	< 0.20	0.98
			Monitorin	g Well Groundwa	ater Samples			
DDC-7	Farallon	6/13/2024	DDC-7-061324	< 0.20	< 0.20	0.22	< 0.20	0.28
DDC-7	Farallon	11/20/2024	DDC-7-112024	< 0.20	< 0.20	0.26	< 0.20	< 0.20
	AESI	8/9/2016	MW 1 080916	< 1	< 1	< 1	< 1	< 0.2
	Farallon	3/30/2021	MW-1-033021	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
MW-1	Farallon	2/9/2023	MW-01-020923	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
10100-1	Farallon	8/8/2023	MW-01-080823	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	2/22/2024	MW-1-022224	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	11/19/2024	MW-1-111924	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
MTCA Clear	up Levels for C	Groundwater ²		5	5	16 ³	160 ³	0.2

					Analytical R	esults (microgra	ms per liter) ¹	
Sample Location	Sampled By	Sample Date	Sample Identification	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
	Unknown	1/30/1997		ND	ND	ND		ND
	Unknown	5/30/1997		ND	ND	ND		ND
	Unknown	9/12/1997		ND	ND	ND		ND
	Unknown	12/10/1997		ND	ND	ND		ND
	Unknown	1/28/1999		ND	ND	ND		ND
	Unknown	3/8/1999		ND	ND	ND		ND
	Unknown	6/10/1999		ND	ND	ND		ND
	Unknown	4/21/2000		ND	ND	ND		ND
	Unknown	11/30/2000		ND	ND	ND		ND
	Unknown	1/3/2003		ND	ND	ND		ND
	URS	9/20/2004		1.63	ND	ND		ND
	URS	1/26/2005		1.96	ND	ND		ND
	URS	10/6/2005		2.72	ND	ND		ND
	URS	2/10/2006		1.57	ND	ND		ND
	URS	3/1/2007		1.35	ND	ND		ND
MW-2	URS	9/14/2007		1.94	ND	ND		ND
10100-2	URS	3/28/2008		0.51	ND	ND		ND
	URS	9/18/2008		0.97	ND	ND		ND
	URS	6/16/2009		ND	ND	ND		ND
	URS	9/9/2009		1.3	ND	ND		ND
	URS	3/13/2014	MW-2-031314	< 1.00	< 0.500	< 1.00	< 1.00	< 0.200
	AESI	8/9/2016	MW 2 080916	< 1	< 1	< 1	< 1	< 0.2
	AESI	11/8/2016	MW_2 161108	< 1	< 1	< 1	< 1	< 0.2
	AESI	2/9/2017	MW 2 20170209	< 1	< 1	< 1	< 1	< 0.2
	AESI	5/16/2017	MW 2:170516	< 1	< 1	< 1	< 1	< 0.2
	AESI	8/9/2017	MW 2 170809	< 1	< 1	< 1	< 1	< 0.2
	TOR	8/31/2018		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	4/16/2021	MW-2-041621	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	2/9/2023	MW-02-020923	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	8/8/2023	MW-02-080823	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	2/22/2024	MW-2-022224	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	11/19/2024	MW-2-111924	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
TCA Clean	up Levels for C	Groundwater ²		5	5	16 ³	160 ³	0.2

					Analytical R	esults (microgra	ms per liter) ¹	
Sample Location	Sampled By	Sample Date	Sample Identification	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
	Unknown	1/30/1997		27.9	2.42	3.54		ND
	Unknown	5/30/1997		37.3	3.41	2.68		ND
	Unknown	9/12/1997		18.7	3.72	3.28		ND
	Unknown	12/10/1997		33.6	2.97	2.85		ND
	Unknown	9/22/1998		11.0	3.20	2.80		ND
	Unknown	1/28/1999		32.0	3.17	2.87		ND
	Unknown	3/8/1999		24.1	2.65	2.53		0.437
	Unknown	6/10/1999		23.7	3.72	2.68		ND
	Unknown	4/24/2000		26.6	2.35	1.84		0.169
	Unknown	11/30/2000		18.7	2.49	2.36		0.228
	Unknown	1/23/2002		23.5	4.16	2.49		ND
	Unknown	5/3/2002		24.5	4.32	2.22		ND
	Unknown	9/20/2002		4.45	3.90	4.58		ND
MW-3	Unknown	1/3/2003		22.3	3.60	1.72		ND
10100-3	URS	2/13/2004		26.5	3.14	1.65		ND
	URS	8/11/2004		20.1	4.2	1.83		0.126
	URS	1/1/2005		11.8	2.62	1.74		0.240
	URS	10/6/2005		17.4	3.17	1.71		ND
	URS	2/10/2006		18.6	2.18	0.97		ND
	URS	3/1/2007		17.3	1.83	0.76		ND
	URS	9/14/2007		13.4	2.37	0.82		ND
	URS	3/28/2008		9.62	1.33	0.68		ND
	URS	9/18/2008		16.5	2.10	0.68		ND
	URS	6/16/2009		9.4	0.94 J	ND		ND
	URS	9/9/2009		48	4.9	ND		ND
	URS	3/13/2014	MW_3_031314	9.06	1.04	< 1.00	< 1.00	< 0.200
	AESI	8/9/2016	MW 3 080916	7.9	1.3	< 1	< 1	< 0.2
	AESI	11/8/2016	MW 3 161108	8.9	1.0	< 1	< 1	< 0.2
TCA Clean	up Levels for G	Froundwater ²		5	5	16 ³	160 ³	0.2

					Analytical R	esults (microgra	ms per liter) ¹	
Sample Location	Sampled By	Sample Date	Sample Identification	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
	AESI	2/9/2017	MW <u>3</u> 20170209	6.1	< 1	< 1	< 1	< 0.2
	AESI	5/16/2017	MW 3:170516	6.8	< 1	< 1	< 1	< 0.2
	AESI	8/9/2017	MW 3 170809	7.3	1.2	< 1	< 1	< 0.2
MW-3	Farallon	4/16/2021	MW-3-041621	2.5	0.60	1.0	< 0.20	0.21
(continued)	Farallon	2/9/2023	MW-03-020923	1.4	0.78	1.1	< 0.20	0.24
	Farallon	8/8/2023	MW-03-080823	2.1	0.82	2.1	< 0.20	0.33
	Farallon	2/22/2024	MW-3-022224	1.5	0.67	0.87	< 0.20	0.21
	Farallon	11/19/2024	MW-3-111924	1.1	0.71	1.1	< 0.20	< 0.20
	Unknown	4/21/2000		ND	ND	ND		ND
	Unknown	11/30/2000		ND	ND	ND		ND
	Unknown	1/23/2002		ND	ND	ND		ND
	Unknown	5/3/2002		ND	ND	ND		ND
	Unknown	9/20/2002		ND	ND	ND		ND
	Unknown	1/3/2003		ND	ND	ND		ND
	URS	6/11/2003		ND	ND	ND		ND
	URS	12/31/2003		ND	ND	ND		ND
	URS	2/13/2004		ND	ND	ND		ND
MW-4	URS	8/11/2004		ND	ND	ND		ND
10100-4	URS	1/26/2005		ND	ND	ND		ND
	URS	10/6/2005		ND	ND	ND		ND
	URS	2/10/2006		ND	ND	ND		ND
	URS	3/1/2007		ND	ND	ND		ND
	URS	9/14/2007		ND	ND	ND		ND
	URS	3/28/2008		ND	ND	ND		ND
	URS	9/18/2008		ND	ND	ND		ND
	URS	6/16/2009		ND	ND	ND		ND
	URS	9/9/2009		ND	ND	ND		ND
	URS	3/13/2014	MW 4-031314	< 1.00	< 0.500	< 1.00	< 1.00	< 0.200
ITCA Clean	up Levels for G	Groundwater ²		5	5	16 ³	160 ³	0.2

					Analytical R	esults (microgra	ms per liter) ¹	
Sample Location	Sampled By	Sample Date	Sample Identification	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
	AESI	11/8/2016	MW_4R 161108	< 1	< 1	< 1	< 1	< 0.2
	AESI	2/9/2017	MW 4R 20170209	< 1	< 1	< 1	< 1	< 0.2
	AESI	5/16/2017	MW 4R:170516	< 1	< 1	< 1	< 1	< 0.2
	AESI	8/9/2017	MW 4R 170809	< 1	< 1	< 1	< 1	< 0.2
MW-4R	TOR	8/28/2018		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
10100-415	Farallon	3/30/2021	MW-4R-033021	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	2/9/2023	MW-4R-020923	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	8/8/2023	MW-04R-080823	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	2/22/2024	MW-4R-022224	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	11/19/2024	MW-4R-111924	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	URS	2/13/2004		ND	ND	ND		ND
	URS	8/11/2004		ND	ND	ND		ND
	URS	1/26/2005		ND	ND	ND		ND
	URS	10/6/2005		ND	ND	ND		ND
	URS	2/10/2006		ND	ND	ND		ND
	URS	3/1/2007		ND	ND	ND		ND
	URS	9/14/2007		0.430	ND	ND		ND
	URS	3/28/2008		ND	ND	ND		ND
	URS	9/18/2008		ND	ND	ND		ND
	URS	6/16/2009		ND	ND	ND		ND
MW-5	URS	9/9/2009		ND	ND	ND		ND
C-VVIVI	URS	3/13/2014	MW_5_031314	< 1.00	< 0.500	< 1.00	< 1.00	< 0.200
	AESI	8/11/2016	MW 5 081116	< 1	< 1	< 1	< 1	< 0.2
	AESI	11/8/2016	MW 5 161108	< 1	< 1	< 1	< 1	< 0.2
	AESI	2/9/2017	MW 5 20170209	< 1	< 1	< 1	< 1	< 0.2
	AESI	5/16/2017	MW 5:170516	< 1	< 1	< 1	< 1	< 0.2
	AESI	8/9/2017	MW 5 170809	< 1	< 1	< 1	< 1	< 0.2
	Farallon	3/30/2021	MW-5-033021	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	2/9/2023	MW-05-020923	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	8/8/2023	MW-05-080823	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	2/22/2024	MW-5-022224	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	Farallon	11/19/2024	MW-5-111924	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
CA Clear	up Levels for O	Groundwater ²		5	5	16 ³	160 ³	0.2

					Analytical R	esults (microgra	ms per liter) ¹	
Sample Location	Sampled By	Sample Date	Sample Identification	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
	Unknown	1/28/1999		49.5	4.48	3.67		ND
	Unknown	3/8/1999		52.7	3.83	3.30		ND
	Unknown	6/10/1999		43.7	5.53	4.65		0.212
	Unknown	4/21/2000		47.3	6.11	4.94		ND
	Unknown	11/30/2000		19.2	5.80	7.99		0.998
	Unknown	1/23/2002		17.2	3.61	3.74		0.597
	Unknown	5/3/2002		21.0	4.84	4.77		ND
	Unknown	9/20/2002		23.9	4.47	4.99		0.576
	Unknown	1/3/2003		11.8	2.82	3.57		ND
	URS	6/11/2003		12.5	3.17	3.21		0.480
	URS	12/31/2003		9.34	3.41	4.07		0.800
	URS	8/11/2004		11.2	3.24	3.27		0.757
	URS	1/26/2005		4.31	1.96	4.17		1.42
	URS	10/6/2005		0.61	1.02	7.79		2.25
	URS	2/10/2006		0.32	1.23	5.82		0.480
	URS	3/1/2007		2.62	1.79	4.52		0.850
MW-6	URS	9/14/2007		0.97	1.60	5.58		1.63
	URS	3/28/2008		ND	0.26	3.41		1.03
	URS	9/18/2008		0.98	1.12	3.87		2.01
	URS	6/16/2009		ND	0.63 J	1.3		0.24
	URS	9/9/2009		6.8	2.4	ND		ND
	URS	3/13/2014	MW-6-031314	< 1.00	< 0.500	< 1.00	< 1.00	0.692
	AESI	8/9/2016	MW 6 080916	2.7	< 1	1.5	< 1	0.51
	AESI	11/8/2016	MW 6 161108	2.8	< 1	1.3	< 1	0.65
	AESI	2/9/2017	MW 6 20170209	1.3	< 1	1.8	< 1	0.61
	AESI	5/16/2017	MW 6:170516	3.6	1.1	1.6	< 1	0.38
	AESI	8/9/2017	MW 6 170809	2.0	1.1	2.1	< 1	0.65
	TOR	8/28/2018		5.0	0.61	0.84	< 0.20	0.39
	Farallon	3/30/2021	MW-6-033021	< 0.20	< 0.20	1.3	< 0.20	1.6
	Farallon	2/9/2023	MW-06-020923	1.5	0.38	1.0	< 0.20	0.66
	Farallon	8/8/2023	MW-06-080823	4.0	0.60	0.58	< 0.20	0.34
	Farallon	2/22/2024	MW-6-022224	1.6	0.43	0.98	< 0.20	0.67
	Farallon	11/19/2024	MW-6-111924	0.59	0.38	0.68	< 0.20	0.69
MTCA Clean	up Levels for C			5	5	16 ³	160 ³	0.2

NOTES:

Results in **bold** and highlighted yellow denote concentrations exceeding applicable cleanup levels.

< denotes analyte not detected at or exceeding the reporting limit listed.

- denotes sample not analyzed or information unknown.

¹Analyzed by U.S. Environmental Protection Agency (EPA) Method 8260B/8260C/8260D. Data collected in 1997 and 1998 analyzed by EPA Method 8010B.

²Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013, unless otherwise noted.

³Washington State Model Toxics Control Act Cleanup Regulation Cleanup Levels and Risk Calculations, Standard Method B Values for Groundwater, https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC

AESI = Associated Earth Sciences, Inc. DCE = Dichloroethene

D&M = Dames & Moore Group Company Farallon = Farallon Consulting, L.L.C.

J = result is an estimate

ND = analyte not detected and reporting limit is unknown

PCE = tetrachloroethene

TCE = trichloroethene

TOR = TOR Environmental, Inc.

URS = URS Corporation

HVOC =halogenated volatile organic compound

Location	Screened Interval (feet bgs) ¹	Top of Casing Elevation (feet MSL) ²	Monitoring Date	Depth to Water (feet) ³	Water Level Elevation (feet MSL) ²
		Former Ma	agic Cleaners		
DDC-7	3 to 8 & 18 to 23	N/A	6/13/2024	7.68	N/A
DDC-7	3 10 0 0 10 10 23	IN/A	11/18/2024	7.46	N/A
			1/30/1997	12.63	42.77
			3/25/1997	12.59	42.81
			5/30/1997	12.68	42.72
			9/12/1997	13.13	42.27
MW-1	10 to 25	55.4	12/10/1997	13.27	42.13
10100-1	10 10 25	55.4	3/30/2021	12.79	42.61
			2/9/2023	13.06	42.34
			8/8/2023	13.32	42.08
			2/22/2024	12.93	42.47
			11/18/2024	13.33	42.07
			1/30/1997	4.90	38.38
			3/25/1997	4.95	38.33
			5/30/1997	5.10	38.18
			9/12/1997	5.26	38.02
			12/10/1997	5.35	37.93
			1/3/2003	6.08	37.20
			9/20/2004	8.20	35.08
			1/26/2005	5.34	37.94
			10/6/2005	5.07	38.21
			2/10/2006	5.11	38.17
			3/1/2007	5.15	38.13
			9/14/2007	5.61	37.67
MW-2	3 to 15	43.28	3/28/2008	5.24	38.04
			9/18/2008	5.67	37.61
			6/10/2009	5.35	37.93
			9/9/2009	5.45	37.83
			3/13/2014	5.01	38.27
			5/16/2017	5.45	37.83
			8/9/2017	6.00	37.28
			3/30/2021	5.01	38.27
			4/16/2021	5.07	38.21
			2/9/2023	5.09	38.19
			8/8/2023	5.52	37.76
			2/22/2024	4.99	38.29
			11/18/2024	5.10	38.18

Location	Screened Interval (feet bgs) ¹	Top of Casing Elevation (feet MSL) ²	Monitoring Date	Depth to Water (feet) ³	Water Level Elevation (feet MSL) ²
			1/30/1997	6.29	34.38
			3/25/1997	6.25	34.42
			5/30/1997	5.57	35.10
			9/12/1997	6.51	34.16
			12/10/1997	7.11	33.56
			1/23/2002	6.92	33.75
			5/2/2002	3.00	37.67
			9/20/2002	7.28	33.39
			1/3/2003	8.91	31.76
			6/11/2003	9.23	31.44
			9/12/2003	8.85	31.82
			2/13/2004	8.23	32.44
			8/11/2004	7.34	33.33
			1/26/2005	7.09	33.58
			10/6/2005	7.28	33.39
MW-3	3 to 15	40.67	2/10/2006	6.98	33.69
			3/1/2007	6.72	33.95
			9/14/2007	7.39	33.28
			3/28/2008	7.10	33.57
			9/18/2008	7.38	33.29
			6/10/2009	7.13	33.54
			9/9/2009	7.32	33.35
			3/13/2014	6.95	33.72
			5/16/2017	7.39	33.28
			8/9/2017	8.09	32.58
			3/30/2021	7.40	33.27
			4/16/2021	7.32	33.35
			2/9/2023	7.04	33.63
			8/8/2023	7.55	33.12
			2/22/2024	6.98	33.69
			11/18/2024	6.98	33.69

Location	Screened Interval (feet bgs) ¹	Top of Casing Elevation (feet MSL) ²	Monitoring Date	Depth to Water (feet) ³	Water Level Elevation (feet MSL) ²
			1/30/1997	2.73	33.82
			3/25/1997	2.82	33.73
			5/30/1997	3.35	33.20
			9/12/1997	3.64	32.91
			12/10/1997	3.42	33.13
			1/23/2002	3.28	33.27
			5/2/2002	3.27	33.28
			9/20/2002	3.77	32.78
			1/3/2003	3.99	32.56
			6/11/2003	4.61	31.94
			9/12/2003	4.52	32.03
MW-4	2.5 to 15	36.55	2/13/2004	4.03	32.52
			8/11/2004	3.53	33.02
			1/26/2005	3.41	33.14
			10/6/2005	3.67	32.88
			2/10/2006	3.08	33.47
			3/1/2007	3.10	33.45
			9/14/2007	3.79	32.76
			3/28/2008	3.20	33.35
			9/18/2008	3.89	32.66
			6/10/2009	3.42	33.13
			9/9/2009	4.00	32.55
			3/13/2014	3.01	33.54
			5/16/2017	4.09	32.46
			8/9/2017	4.69	31.86
			3/30/2021	4.31	32.24
MW-4R	2.5 to 15 ⁴	36.55 ⁴	2/9/2023	4.29	32.26
			8/8/2023	4.53	32.02
			2/22/2024	4.21	32.34
			11/18/2024	4.12	32.43

Location	Screened Interval (feet bgs) ¹	Top of Casing Elevation (feet MSL) ²	Monitoring Date	Depth to Water (feet) ³	Water Level Elevation (feet MSL) ²
			1/30/1997	5.73	34.73
			3/25/1997	5.76	34.70
			5/30/1997	5.98	34.48
			9/12/1997	6.41	34.05
			12/10/1997	6.57	33.89
			10/6/2005	6.55	33.91
			2/10/2006	6.14	34.32
			3/1/2007	6.14	34.32
			9/14/2007	7.20	33.26
			3/28/2008	6.41	34.05
MW-5	3 to 15	40.46	9/18/2008	7.20	33.26
			6/10/2009	6.78	33.68
			9/9/2009	6.95	33.51
			3/13/2014	9.31	31.15
			5/16/2017	6.19	34.27
			8/9/2017	7.40	33.06
			3/30/2021	6.55	33.91
			2/9/2023	6.68	33.78
			8/8/2023	7.46	33.00
			2/22/2024	6.17	34.29
			11/18/2024	6.40	34.06
			1/23/2002	3.43	36.61
			5/2/2002	3.36	36.68
			9/20/2002	4.30	35.74
			1/3/2003	4.73	35.31
			6/11/2003	4.99	35.05
			9/12/2003	5.10	34.94
			2/13/2004	4.35	35.69
			8/11/2004	4.04	36.00
			1/26/2005	3.84	36.20
			10/6/2005	4.15	35.89
			2/10/2006	3.37	36.67
			3/1/2007	3.39	36.65
			9/14/2007	4.23	35.81
MW-6	4.5 to 14.5	40.04	3/28/2008	3.45	36.59
			9/18/2008	4.15	35.89
			6/10/2009	3.89	36.15
			9/9/2009	4.00	36.04
			3/13/2014	3.40	36.64
			5/16/2017	3.40	36.58
				4.26	
			8/9/2017 3/30/2021	4.26 3.52	35.78 36.52
				3.52	
			4/16/2021		36.37
			2/9/2023	3.70	36.34
			8/8/2023 2/22/2024	4.30	35.74
				3.50	36.54
		Former Fores	11/18/2024	3.81	36.23

Notes:

¹In feet below ground surface. ²In feet above mean sea level.

³ In feet below top of well casing.

⁴ Top of casing elevation and screened interval for MW-4R are estimates as the values were set to those of MW-4 as survey and well log information is not available for MW-4R.

bgs = below ground surface MSL = mean sea level

Table 3Aquifer Testing ResultsFormer Magic CleanersLake Forest Park, WashingtonFarallon PN: 1993-009

Monitoring Well Tested	Date Tested	Test Conducted	Estimated Hydraulic Conductivity (centimeters/second)	Average Hydraulic Conductivity (centimeters/second) Former Magic Cleaner	· /	Hydraulic Conductivity Geometric Mean (feet/day)	Groundwater Seepage Velocity (feet per year)
MW-2	4/16/2021	Rising Head	2.60E-04	3.15E-04			
10100-2	4/16/2021	Falling Head	3.71E-04	3.13E-04		4.00E+00	
MW-3	4/16/2021	Rising Head	7.51E-03	4.97E-03	1.41E-03		105.2
10100-3	4/16/2021	Falling Head	2.44E-03	4.97E-03	1.41E-03	4.000+00	105.2
MW-6	4/16/2021	Rising Head	2.78E-03	1.80E-03			
	4/16/2021	Falling Head	8.12E-04	1.002-00			

NOTES:

Groundwater seepage velocity (V) = Kı/n

K = hydraulic conductivity

ı = hydraulic gradient of 0.018 feet per foot

 η = effective porosity of 0.25 (unitless) for silty sands and gravels

Table 4 **Geochemical Parameters** Former Magic Cleaners Lake Forest Park, Washington Farallon PN: 1993-009

				Elect	ron Recept	ors	Me	etals	Meta	bolic Bypro	ducts	Water Quality Parameters									
Sample Location	Sampled/ Measured By	Sample Date	Sample Identification	Dissolved Oxygen ¹ (mg/L)	Nitrate ² (mg/L)	Sulfate ³ (mg/L)	Ferrous Iron⁴ (mg/L)	Manganes e (II) ⁴ (mg/L)	Methane ⁵ (µg/L)	Ethane ⁵ (μg/L)	Ethene ⁵ (μg/L)	TOC ⁶ (mg/L)	Alkalinity ⁷ (mg/L CaCO3)	Total Dissolved Solids ⁸ (mg/L)	рН¹	Temperature ¹ (°Celsius)	Conductivity ¹ (mS/cm)	ORP ¹ (mV)	Turbidity ¹ (NTU)		
	-								ormer Magio						-						
DDC-7	Farallon	6/13/2024	DDC-7-061324	1.74											6.32	15.8	0.357	9.9	21.55		
DDC-1	Farallon	11/20/2024	DDC-7-112024	0.86											6.30	14.7	0.416	5.2	6.08		
	Farallon	3/30/2021	MW-1-033021	1.83			0.0	0.0							6.34	13.4	0.299	167.5	6.85		
MW-1	Farallon	8/8/2023	MW-01-080823	3.59											6.39	16.2	0.275	196.3	30.14		
	Farallon	2/22/2024	MW-1-022224	3.82											6.30	14.1	0.222	230.7	7.37		
	Farallon	11/19/2024	MW-1-111924	3.95											6.25	14.5	0.245	289.6	13.15		
	AESI	5/16/2017	MW-2:170516	0.14											6.43	13.5	0.180	-16.9	4.2		
	AESI	8/9/2017	MW 2 170809	-0.08 (IE)											6.59	18.9	0.1601	36.7	10.5		
MW-2	Farallon	4/16/2021	MW-2-041621	0.49	0.17	7.5	0.0	0.0	1.4	< 0.22	< 0.29	< 1.0	84	110	6.86	13.4	0.184	136.9	1.01		
	Farallon	8/8/2023	MW-02-080823	0.13											6.76	18.4	0.213	131.7	33.26		
	Farallon	2/22/2024	MW-2-022224	0.27											6.47	13.0	0.197	168.1	4.22		
	Farallon	11/19/2024	MW-2-111924	1.86											6.19	13.4	0.444	78.5	8.07		
	AESI	5/16/2017	MW-3:170516	0.15											6.15	12.1	0.3327	73.1	5.3		
	AESI	8/9/2017	MW 3 170809	-0.15 (IE)											6.21	17.1	0.2823	84.4	7.9		
MW-3	Farallon	4/16/2021	MW-3-041621	0.30	0.13	12	1.0 to 1.5	0.3	88	< 0.22	< 0.29	4.7	140	230	6.43	12.7	0.412	41.4	1.08		
	Farallon	8/8/2023	MW-03-080823	0.11											6.23	18.5	0.586	7.5	24.81		
	Farallon	2/22/2024 11/19/2024	MW-3-022224	0.20											6.16	12.2	0.598 0.606	19.2 9.5	3.48		
	Farallon		MW-3-111924	0.69											6.10	13.5		9.5 -61.7	8.00		
	AESI AESI	5/16/2017 8/9/2017	MW-4R:1705016 MW 4R 170809	0.19											6.71 6.45	13.3 18.6	0.1952 0.2306	-61.7	214.7 2.2		
	Farallon	3/30/2021	MW-4R-033021	-0.13 (IE) 0.32			0.5	0.3							6.78	13.8	0.2306	-49.6 24.1	5.29		
MW-4R	Farallon	8/8/2023	MW-04R-080823	0.32											6.84	13.0	0.291	-14.9	30.15		
	Farallon	2/22/2023	MW-4R-022224	0.09											7.07	13.9	0.271	-14.9	30.15		
	Farallon	11/19/2024	MW-4R-111924	0.23											6.95	13.9	0.188	-23.8	5.19		
	AESI	5/16/2017	MW-5:170516	0.32											6.36	12.3	0.2727	58.5	3		
	AESI	8/9/2017	MW 5 170809	0.0											6.09	15.6	0.2205	87.4	2.1		
	Farallon	3/30/2021	MW-5-033021	0.37	< 0.050	13	0.0	0.0	2.0	< 0.22	< 0.29	< 1.0	110	200	6.34	11.6	0.463	183.0	6.24		
MW-5	Farallon	8/8/2023	MW-05-080823	0.40											6.39	17.2	0.468	112.8	27.83		
	Farallon	2/22/2024	MW-5-022224	7.59											6.32	11.1	0.168	187.2	64.94		
	Farallon	11/19/2024	MW-5-111924	6.99											6.12	13.7	0.086	243.4	96.60		
	AESI	5/16/2017	MW-6:170516	0.14											6.1	12.4	0.3797	-75.7	4.5		
	AESI	8/9/2017	MW 6 170809	0.01											6.25	20.4	0.4078	-57.6	13.9		
	Farallon	3/30/2021	MW-6-033021	0.35	0.18	< 5.0	3.5	0.0	1,400	< 0.22	< 0.29	13	140	380	6.23	11.4	0.775	-33.6	17.48		
MW-6	Farallon	8/8/2023	MW-06-080823	0.13											6.20	21.4	0.736	11.5	40.23		
	Farallon	2/22/2024	MW-6-022224	0.23											6.24	11.8	0.786	-2.1	12.80		
	Farallon	11/19/2024	MW-6-111924	0.94											6.10	15.1	0.774	-11.8	8.23		
NOTES													1			•			<u>ا</u>		

NOTES:

< denotes analyte not detected at or above the reporting limit listed.</p>

- denotes sample not analyzed, parameter not measured, or information unknown.

¹Collected using a field instrument.

²Analyzed by U.S. Environmental Protection Agency (EPA) Method 353.2.

³Analyzed by ASTM Method D516-11.

⁴Measured in the field using Hach field test kits.

⁵Analyzed by Method RSK-175.

⁶Analyzed by Standard Method 5310B.

⁷Analyzed by EPA Method 310.2 or Standard Method 2320B.

⁸Analyzed by Standard Method 2540C.

AESI = Associated Earth Sciences, Inc.

electron receptors = compounds that gain electrons and are sources of energy during biodegradation ° = degrees

Farallon = Farallon Consulting, L.L.C.

IE = instrument error

mg/L = milligrams per liter

mg/L CaCO3 = milligrams per liter as calcium carbonate equivalents

mS/cm = milliSiemens per centimeter specific conductance units

1 of 1

mV = millivolt units for measurement of oxidation-reduction potential (ORP)

metabolic byproducts = compounds that result from biodegradation processes

NTU = Nephelometric Turbidity Units TOC = total organic carbon µg/L = micrograms per liter

ATTACHMENT A BORING AND MONITORING WELL LOGS

CARBON BARRIER WORK PLAN Former Magic Cleaners Site 17171 Bothell Way Northeast Lake Forest Park, Washington

Farallon PN: 1993-009

DATE DRILLED: 8/14/01								Γ		<u></u>
LOGGED BY: LBB										
REFERENCE ELEVATION:	- <u></u>									
DRILL RIG: CME 75		<u></u>							P	IEZOMETER
BORING DIAMETER: 15" 10.25" ID HSA				Ē		5		/EL	CO	NSTRUCTION
DEPTH TO GROUNDWATER: 쯬3' Below Ground Surfa	ce	<u></u>		H (FEE	LER	'S/FO	mqq)	ER LEV		
DESCRIPTION AND CLASSIFIC	ATION			DEPTH (FEET)	SAMPLER	BLOWS/FOOT	(mqq) MVO	WATER LEVEL		
DESCRIPTION AND REMARKS	COLOR	CONSIST.	ТҮРЕ							2.5' STICKUP
Concrete 3"				_ 2				<u> </u>		
SAND, fine to coarse with minor silt, minor Gravel, moist	Brown		Fill		*		NT	▼		0.01" SLOT PVC
SAND, fine to medium, minor Gravel, wet, high % is fine Sand, wet	Brown		SP	- 6 -	*		NT			SCREEN
				8 10						10/20 SAND PACK
				 - 12	*		1.7			BENTONITE PELLETS
				— 14 — - - — 16 —	*		2			
				- 18						2/12 SAND PACK
				— 20 — - -	*		1			0.01" SLOT PVC SCREEN
				22 24	*		0			SUMP
			•						↔ 6" PVC	
BOTTOM OF WELL @ 25' * Indicates Grab Sample										
		I	I.	.	WI	LL LOG	<u> </u>	<u></u>		
Wasatch Environmental, Ind	MAGIC CLEANERS LAKE FORREST PARK, WASHINGTON									
	PROJECT NO.: 1494-02 WELL NO.: DDC 1									

	2/01		••••					[<u> </u>		
	3/01				-						
LOGGED BY: LBE	3				-						
REFERENCE ELEVATION:											
DRILL RIG: CM	E 75										IEZOMETER
BORING DIAMETER: 15"	10.25" ID HSA		-		E1)		001	Ê	NEL	CO	NSTRUCTION
DEPTH TO GROUNDWATER: ≅3	8' Below Ground Surface				DEPTH (FEET)	SAMPLER	BLOWS/FOOT	(mqq) MVO	WATER LEVEL		
DESCRIPTIC	ON AND CLASSIFICA	TION			DEPT	SAM	BLOV	MVO	WAT		
DESCRIPTION AND R	EMARKS	COLOR	CONSIST.	TYPE							2.5' STICKUP
Concrete 6"				****	<u> </u>						
SAND, fine to coarse with G	ravel, moist to wet	Brown		Fill	- 4 -	*		0	-		0.01" SLOT PVC
SAND, fine to medium, with % silt, wet, large % is		Brown		SP		*		Ŭ			SCREEN
						*		1.2			10/20 SAND PAC
					- 10 -						
					- 12 -						BENTONITE CHIPS
	,				14 	*		1.8			
					 - 18						2/12 SAND PACK
					 - 20						0.01" SLOT PVC SCREEN
					_ 22 _	*		0			
Clayey SILT, wet, observed o lead auger	n bottom 2' of	Dark Brown		ML	_ 24 _						SUMP
										↔ 6" PVC	
											-
BOTTOM OF WELL @ 25'											
* Indicates Grab Sample											
Some heaving when pulling 25-20 feet	augers from										
20-20 1661											
a sa a sa an											
11/						WE	LL LOG				
VVASAT FNUIDONIAE	Wasatch Environmental, Inc.			LAK	M Ke forr		clean Ark, V		NGTC	N	
	PROJECT NO.: 1494-02 WELL NO.: DDC 3						<u> . </u>				

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DATE DRILLED:	8/13/01											
LOGGED BY:	LBB				-							
REFERENCE ELEVATION:				.=								
, DRILL RIG:	CME 75										EZOMETER	
BORING DIAMETER:	15" 10.25" ID HSA; Pilot wi	th 4.25" H	SA and 2" Spo	oons	E		100	_ ب	NEL	COI	NSTRUCTION	
DEPTH TO GROUNDWATER:	≆ 3' Below Ground Surface				DEPTH (FEET)	SAMPLER	BLOWS/FOOT	(mqq) MVO	WATER LEVEL			
DESCRIP	TION AND CLASSIFICA	TION			DEPT	SAM	BLOV	N N	WAT			
DESCRIPTION ANI	COLOR	CONSIST.	TYPE							2.5' STICKUP		
Concrete 6"					_ 2 _							
wet, 2" of rounded	SAND, fine to medium, minor Gravel, moist to wet, 2" of rounded pea gravel at bottom of split spoon		Medium Dense	Fill	 4		3 5 7	0.5	-		0.01 [®] SLOT PVC SCREEN	
SAND, fine to medium, m large % is fine San	SAND, fine to medium, minor Gravel, wet, large % is fine Sand		Very Dense	SP	- 6 - 8							
-											10/20 SAND PAC	
					10 		27 23+	0				
					— 12 —		-				BENTONITE CHIPS	
					 14							
							7 11 6					
no Gravel present			Medium Dense		16			0			2/12 SAND PACK	
					— 18 —							
SAND, fine to coarse wit	n Gravel, wet	Dark Brown	Very Dense	SW	 - 20 -		30				0.01" SLOT PVC	
							20+	0.5			SCREEN	
					— 22 —		_					
Clayey SILT, wet, observed lead auger	d on bottom 2' of	Gray		ML	24					↔	SUMP	
										6" PVC		
BOTTOM OF WELL @ 25'												
Indicates split-spoo	n sampler											
11/						W	ELL LOG					
Wasatch Environmental, Inc.				LAK			C CLEANERS PARK, WASHINGTON					
							WELL NO.: DDC 4					

					T						
DATE DRILLED: 8	3/16/01										
LOGGED BY: L	LBB]						
REFERENCE ELEVATION:	ANY MARKET - ANY - FRANK - CARE - ANY -										
DRILL RIG: C	CME 75									P	EZOMETER
BORING DIAMETER:	15" 10.25" ID HSA; Pilot wi	ith 4.25* HS	A and 2" Spo	oons	Ē		OT	6	VEL	CO	NSTRUCTION
DEPTH TO GROUNDWATER:	≆ 4.5' Below Ground Surfa	ce			DЕРТН (FEET)	LER	BLOWS/FOOT	(mqq) MVO	WATER LEVEL		
DESCRIPT	TION AND CLASSIFICA	ATION			DEPTI	SAMPLER	BLOW	MVO	WATI		
DESCRIPTION AND) REMARKS	COLOR	CONSIST.	TYPE							2.5' STICKUP
Grass		Brown		Fill	_ 2 _						10/20 SAND PACK
SAND, fine to coarse, with	n Gravel and Cobble					-					
SAND, fine, with lenses of	silt, wet	Gray Brown		SP ML	- 4 -		3 5		▼		0.01" SLOT PVC SCREEN
		(lenses)		(lenses	6 -	┝━┖━┙	5				
SAND, fine to coarse, with	n Gravel, wet	Dark		SW	8		14 15				2/12 SAND PACK
		Brown			- ° -		19				
					- 10 -		10 11				
		Gray			- 12 -	┠─┸─	13				BENTONITE
											CHIPS
					- 14 						
SAND, fine to coarse, with		Gray		SP	- 16						
large % is fine Sanc	1										2/12 SAND PACK
					- 10		-				
					- 20						0.01" SLOT PVC SCREEN
					- 22 -						
											SUMP
					- 24						
										<→ 6" PVC	
BOTTOM OF WELL @ 25'											
Indicates split-spoor	n sampler										
	1/1					WE	LL LOG				
r VVASA	Wasatch Environmental, Inc.						CLEA		NCT	ואר	
ENVIRONME	ENTAL, I NC	• •	<u></u>		KE FORR	E21 P	- <u></u>			JN 	
	,				PROJECT NO.: 1494-02 WELL NO.: DDC 5						

				·····					
DATE DRILLED: 8/15/01									
LOGGED BY: LBB]					
REFERENCE ELEVATION:									
DRILL RIG: CME 75									PIEZOMETER
BORING DIAMETER: 15" 10.25" ID HSA; Pilot v	vith 4.25* HS	A and 2" Spc	ons	1 🗄		10	Ê	VEL	CONSTRUCTION
DEPTH TO GROUNDWATER: ≅ 4.5' Below Ground Sur		DEPTH (FEET)	SAMPLER	BLOWS/FOOT	(mqq) MVO	WATER LEVEL			
DESCRIPTION AND CLASSIFIC	CATION			DEPT	SAM	BLOV	MVO	WAT	2.5' STICKUP
DESCRIPTION AND REMARKS	COLOR	CONSIST.	ТҮРЕ						
Asphalt 2"				<u> </u>					
GRAVEL, with Sand	Brown		Fill						0.01"
SAND, fine to medium, with Gravel, and	Brown		sw	- 4 	 	15		_	SLOT PVC SCREENS
Cobble, wet, large % is fine Sand			******	- 6 -		18 20			
SAND, fine with minor Silt, wet	Gray		SM	- 8		20			
SAND, fine, wet	Gray		SP						2/12
				- 10 -		11 11			SAND PACK
				- 12 -		11			
									TR 30 PELLETS
SAND, fine to medium, wet		:		- 14 -		15			
GRAVEL, with medium to coarse Sand, wet	Gray		GW	— 16 —		35+ -			2/12 SAND
SAND, fine to coarse, with Gravel, wet	Brown		SW						PACK
SAND, The to coarse, with Gravel, wet	to		300						0.01*
	Black			20		23 27+			SLOT PVC SCREENS
				— 22 —		-			
				 — 24 —		27 23+		2"~	
						-			↔
									6" PVC
BOTTOM OF WELL @ 25'									
Indicates split-spoon sampler									
					WE	LL LOG			
Wasatch Environmental, Ind				MAGIC CLEANERS					
ENVIRONMENTAI ING	<u> </u>		LAK	KE FORREST PARK, WASHINGTON					N .
	PROJECT NO	.: 1494-	02						

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DATE DRILLED: 8/15/01	· · · · · · · · · · · · · · · · · · ·]								
LOGGED BY: LBB										
REFERENCE ELEVATION:										
DRILL RIG: CME 75										EZOMETER
BORING DIAMETER: 15" 10.25" ID HSA						οī	ê	VEL	CO	NSTRUCTION
DEPTH TO GROUNDWATER: 🛛 😤 5' Below Ground Surface				H (FE	oLER	/S/FO	(mqq) MVO	ER LE'		
DESCRIPTION AND CLASSIFICA	TION			DEPTH (FEET)	SAMPLER	BLOWS/FOOT	MVO	WATER LEVEL		
DESCRIPTION AND REMARKS	COLOR	CONSIST.	TYPE	1						2.0' STICKUP
SAND, fine to coarse, with Gravel and Cobble, moist, large % is fine Sand	Brown		Fill	2						10/20 SAND PACH
SAND, fine to coarse, with Gravel and Cobble, wet	·		SW	- 4 - 6				•		0.01" SLOT PVC SCREEN
	-			 - 8 - 10		1				2/12 SAND PACK
SAND, fine to coarse, with minor Gravel, wet, large % is fine Sand	Brown		SP	 12 14						BENTONITE CHIPS
SAND, fine to coarse, wet	Brown		SW	 - 16 						2/12 SAND PACK
				 - 20 						0.01" SLOT PVC SCREEN
				 - 24						SUMP
									<→ 6* PVC	
BOTTOM OF WELL @ 25.5'										
Indicates split-spoon sampler										
	ļ				WE	LL LOG				
Wasatch Environmental, Inc		LAK		MAGIC CLEANERS E FORREST PARK, WASHINGTO				N		
	PROJECT NO		WELL NO.: DDC 7							





Geologist: MPU Drilling Method: Mobile B-54 remote access rig Sampling Method: Std. split spoon, HSA – 9 1/4", 140# hammer/30" drop Drill Contractor: Cascade Drilling Drill Date: 1/20/97



MW-1 LOG OF BORING AND MONITORING WELL

Lake Forest Park Town Center Seattle LFP Assoc., L.P.

Job No. 28171-585-005



Geologist: MPU Drilling Method: Mobile B-54 remote access rig Sampling Method: Std. split spoon, HSA - 9 1/4", 140# hammer/30" drop Drill Contractor: Cascade Drilling Drill Date: 1/20/97



LOG OF BORING AND MONITORING WELL

Lake Forest Park Town Center Seattle LFP Assoc., L.P.

MW-2



Geologist: MPU Drilling Method: Mobile B-54 remote access rig Sampling Method: Std. split spoon, HSA – 9 1/4", 140# hammer/30" drop Drill Contractor: Cascade Drilling Drill Date: 1/20/97



MW-3 LOG OF BORING AND MONITORING WELL

Inh No 00171 FOR OOF

Lake Forest Park Town Center Seattle LFP Assoc., L.P.

Job No. 28171-585-005



Drilling Method: Mobile B-54 remote access rig Sampling Method: Std. split spoon, HSA – 9 1/4", 140# hammer/30" drop Drill Contractor: Cascade Drilling Drill Date: 1/21/97

DAMES & MOORE

MW-4 LOG OF BORING AND MONITORING WELL

GROUP A DAMES & MOORE GROUP COMPANY

Lake Forest Park Town Center Seattle LFP Assoc., L.P.

Job No. 28171-585-005



Geologist: MPU Drilling Method: Mobile B-54 remote access rig Sampling Method: Std. split spoon, HSA – 9 1/4", 140# hammer/30" drop Drill Contractor: Cascade Drilling Drill Date: 1/21/97



MW-5 LOG OF BORING AND MONITORING WELL

Job No. 28171-585-005

Lake Forest Park Town Center Seattle LFP Assoc., L.P.


Geologist: VDA Drilling method: HSA Sampling method:



Drill contractor: Cascade Drill date: 12/21/98

MW-6 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





Drill contractor: TEG Northwest Drill date: 9/22/98

P-1 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





Drill contractor: TEG Northwest Drill date: 9/22/98

P-2 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 9/22/98

P-3 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 9/22/98

P-4 GEOLOGIC BORING LOG



Drill contractor: TEG Northwest Drill date: 9/22/98



P-5 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 9/22/98

P-6 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





Drill contractor: TEG Northwest Drill date: 9/22/98

P-7 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





Drill contractor: TEG Northwest Drill date: 9/22/98

P-8 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





Drill contractor: TEG Northwest Drill date: 9/22/98

P-9 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





Drill contractor: TEG Northwest Drill date: 9/22/98

P-10 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 9/22/98

P-11 **GEOLOGIC BORING LOG**

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington

Job No. 42368-179-189

42368B11.CDR





Drill contractor: TEG Northwest Drill date: 9/22/98

P-12 GEOLOGIC BORING LOG





A DAMES & MOORE GROUP COMPANY

Drill contractor: TEG Northwest Drill date: 6/7/99

P-13 **GEOLOGIC BORING LOG**

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





A DAMES & MOORE GROUP COMPANY GROUP

Drill contractor: TEG Northwest Drill date: 6/7/99

P-14A **GEOLOGIC BORING LOG**

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





Drill contractor: TEG Northwest Drill date: 6/7/99

P-14 GEOLOGIC BORING LOG

A DAMES & MOUNE GROUP COMPANY

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington

Job No. 42368-179-189

42368B16.CDR





Drill contractor: TEG Northwest Drill date: 6/7/99

P-15 GEOLOGIC BORING LOG

Job No. 42368-179-189

42368B17.CDR





Drill contractor: TEG Northwest Drill date: 6/7/99

P-16 GEOLOGIC BORING LOG



42368B19.CDR



Drill contractor: TEG Northwest Drill date: 6/7/99

P-17 GEOLOGIC BORING LOG





A DAMES & MOORE GROUP COMPANY GROUP

Drill contractor: TEG Northwest Drill date: 6/7/99

P-18 GEOLOGIC BORING LOG





GROUP A DAMES & MOORE GROUP COMPANY

Drill contractor: TEG Northwest Drill date: 6/7/99

P-19 **GEOLOGIC BORING LOG**

42368B21.CDF





Drill contractor: TEG Northwest Drill date: 6/7/99

P-20 GEOLOGIC BORING LOG

42368B22.CDR





P-20A GEOLOGIC BORING LOG

Drill contractor: TEG Northwest

Drill date: 7/9/99





Drill contractor: TEG Northwest Drill date: 6/7/99

P-21 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington





A DAMES & MOORE GROUP COMPANY

Drill contractor: TEG Northwest Drill date: 6/7/99

P-22 GEOLOGIC BORING LOG

12368B25.CDR





Drill contractor: TEG Northwest Drill date: 7/9/99

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P-23 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington

Job No. 42368-179-189

42368B26.CDR



Geologist: VDA Drilling method: GeoProbe

Sampling method: Temporary Screen



Drill contractor: TEG Northwest Drill date: 7/9/99

P-24 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 7/9/99

P-25 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 7/9/99

P-26 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 7/9/99

P-27 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 7/9/99

P-28 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington

Job No. 42368-179-189

42368B31.CDR





Drill contractor: TEG Northwest Drill date: 7/12/99

P-29 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington

Job No. 42368-179-189

10 40960 170 100





Drill contractor: TEG Northwest Drill date: 7/12/99

Job No. 42368-179-189

P-30 GEOLOGIC BORING LOG





Drill contractor: TEG Northwest Drill date: 7/12/99

P-31 GEOLOGIC BORING LOG

Former Magic Cleaners Coin-Operated Dry Cleaner Site Lake Forest Park Town Center, Seattle, Washington

Job No. 42368-179-189

12368B34.CDR