

DECISION MEMORANDUM

DATE: August 17, 2017

FROM: Bill Schmithorst

TO: Brownfields Agreement File

RE: Former Belmont Dyers
18 Linstowe Drive
Belmont, Gaston County
BF # 20094-16-036

Based on the following information, it has been determined that the above referenced Brownfields Property, whose intended use is for no uses other than high density residential, multi-family residential, open space, and parking, can be made suitable for such uses.

Introduction:

The Brownfields Property is approximately 12 acres and it contains an office building formerly occupied by a dyeing manufacturer (Exhibit 1). The Brownfields Property is bordered to the north by land used for single family residential; to the east by land used for single family residential, the City of Belmont Pump Station, and the Catawba River; to the south by River Drive and land used for low and high density residential; and to the west by Linstowe Drive and land used for single family residential.

Redevelopment Plans:

Redevelopment plans for the Brownfields Property include high density residential, open space, recreation, parking, and with prior written DEQ approval, other commercial uses.

Site History:

The Brownfield Property was developed with a textile mill prior to 1929. At that time, the Brownfield Property contained a main production building, a boiler building, an attached warehouse, caustic and sulphuric acid tanks, gasoline underground storage tanks (USTs), a detached warehouse, and the current office building. Two railroad spurs serviced the Brownfield Property's operations until the mid-1960s. An attached dye house addition was completed by 1965. Former textile operations at the Brownfields Property consisted of yarn mercerizing, bleaching, and dyeing.

The Brownfields Property was occupied by the Belmont Processing Company until the mid-1940s, when Aberfoyle Manufacturing Company took over operations at the Brownfields Property. The Brownfields Property was operated by Belmont Dyers Company from the mid-1970s until 2003. Meridian Specialty Yarn Group, Inc. (Meridian), a division of Meridian Industries, Inc., obtained the Brownfields Property through the acquisition of Belmont Dyers Company in June 1990. During this time period, Michelle Textiles also operated in a portion of the building. The former main

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production building and former dye house contained textile bleaching and dyeing operations that began in late 1920s and continued through closure of the mill in 2003. The former mill buildings were razed beginning in mid-2007, and the Brownfields Property has remained vacant since that time. The Brownfields Property is comprised of three parcels and is currently owned by The Metropolitan Group, Inc. The Prospective Developer contracted to purchase the Brownfields Property on September 16, 2016.

Historic Sanborn Fire Insurance maps from the 1920s through 1940s indicate the presence of three gasoline underground storage tanks (USTs) off the southeast corner of the former manufacturing building. A 1990 environmental assessment report identified one gasoline UST and one spent dye liquor underground tank at the Brownfields Property. It is unclear from available reports if the USTs have been closed and removed.

Environmental Conditions Summary

Soil and groundwater assessments were conducted at the Brownfields Property from 1991 to the present. Assessment and remediation at the Brownfields Property are currently being conducted by the Remediating Party Meridian Specialty Yarn Group, Inc. pursuant to a voluntary Administrative Agreement with the DEQ Inactive Hazardous Sites Branch (IHSB) Registered Environmental Consultant (REC) program under Site ID No. NONCD0001335. A summary of the environmental conditions at the Brownfield Property exceeding their respective standard and/or screening levels is provided in Exhibit 2.

Soil

Soil assessments were conducted at the Brownfield Property in 1991, 2005, and 2016. The soil assessment conducted in 1991 indicated the presence of low level pesticides and volatile organic compounds (VOCs) in shallow soil at the Brownfields Property. However, the 1991 assessment results are presented in an unsigned draft report, therefore, the results are not valid for risk screening purposes. A total of 13 soil borings were advanced during a September 2005 site assessment for the purpose of collecting soil samples for VOC analysis. Analytical laboratory results showed that no VOCs were detected above residential risk screening levels. During the September 2005 assessment, a suspected abandoned sewer line was encountered while drilling along the southern boundary of the Brownfields Property. A sludge sample was collected from the sewer line and analyzed by a laboratory for VOCs. Compounds detected in the sludge sample included 1,4-dichlorobenzene (170 ug/kg), tetrachloroethylene (23 ug/kg), and 1,2,4-trichlorobenzene (270 ug/kg). Analytical results indicate that the sewer line could be a possible source of VOCs in groundwater.

On February 6, 2007, a fuel line associated with the 5,000-gallon oil aboveground storage tank (AST) was ruptured during demolition activities at the Brownfields Property resulting in a release of fuel oil. The oil entered a stormwater drain and discharged into the Catawba River east of the Brownfields Property. Because the discharge of oil to the Catawba River violated the Clean Water Act, the United States Environmental Protection Agency (US EPA) oversaw the assessment and remediation of the incident (FPN# E07408). Impacted soil was subsequently excavated and transported to an off-site facility

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for disposal. No reports have been provided documenting results from assessment or remediation activities related to the incident.

A limited soil assessment was conducted at the Brownfields Property in November 2016. Soil samples were analyzed for SVOCs and RCRA metals. Results from the assessment showed that select SVOC compounds, arsenic, and manganese detected in soil exceeded residential screening levels. Although the samples were submitted for analysis of RCRA metals, the samples were not analyzed by the laboratory for arsenic.

A soil and soil gas assessment was conducted in May and June 2017. Shallow soil samples were collected and analyzed for SVOCs. One sample located in the southeastern area of the Brownfields Property was analyzed for RCRA metals. Laboratory results showed an exceedance of residential risk based screening levels for arsenic. No SVOCs were detected above residential risk based screening levels.

Soil Vapor

A soil gas assessment was conducted at the Brownfields Property in May 2017. Results from the assessment showed that VOCs (primarily PCE) exceeded residential soil gas risk screening levels near the southern property boundary. The highest concentration of TCE reported was 16,000 ug/m³.

Groundwater

Groundwater assessment activities have been conducted at the Brownfield Property from 1991 through 2017. Groundwater assessment results indicate that shallow groundwater impacts (primarily PCE) are present in the central, southern, and eastern portions of the Brownfields Property at concentrations exceeding North Carolina groundwater 2L standards. In addition, results indicate that groundwater contamination may have migrated off-site to the south and southeast of the Brownfields Property.

Surface Water

The Catawba River is located to the east and southeast of the Brownfields Property and is a potential receptor. Surface water samples were collected annually from the Catawba River from 2005 through 2009, and analyzed for VOCs. No VOCs were detected in surface water above surface water quality standards.

Potential Receptors

Potential receptors are: construction workers, on-site workers, residents, adjacent residential properties, City of Belmont pump station, Catawba River, and trespassers.

Contaminated Media

DEQ has evaluated data collected from the following media at the subject property: soil, soil-gas, surface water, and groundwater. DEQ relies on the following data to base its conclusions regarding the subject property and its suitability for its intended reuse.

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Soil

Soil contaminants above residential screening levels include: arsenic, manganese, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene.

Groundwater

Groundwater contaminants above the NCAC 2L Standard include: benzene, chlorobenzene, 1,4-dichlorobenzene, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, and 1,2,4-trichlorobenzene.

Soil Vapor

Soil vapor contaminants detected above IHSB Residential Screening Levels include: tetrachloroethene, trichloroethene, 1,2,4-trimethylbenzene.

Risk Calculations

Risk Calculations were performed using Excel worksheets provided by Sandy Mort, NCDEQ Brownfields Toxicologist. The risk calculations indicated the following based on available data, including the following media: groundwater, subsurface residual soil, and soil gas:

PRIMARY CALCULATORS				
Receptor	Pathway	Carcinogenic Risk	Hazard Index	Risk exceeded?
Resident	Soil Combined Pathways	7.0E-05	5.0E-01	No
	Groundwater Combined Pathways	1.7E-04	3.4E+01	YES
	Groundwater Combined Pathways	1.3E-06	1.9E+00	YES
Construction Worker	Soil Combined Pathways	1.3E-06	3.1E+00	YES
VAPOR INTRUSION CALCULATORS				
Receptor	Pathway	Carcinogenic Risk	Hazard Index	Risk exceeded?
Resident	Groundwater to Indoor Air	3.2E-05	7.8E+00	YES
	Soil Gas to Indoor Air	5.6E-05	1.2E+01	YES

The mediums affected include groundwater, groundwater to indoor air, soil vapor, and subsurface soil. The groundwater, groundwater to indoor air and soil vapor risk drivers are primarily related to PCE detected in groundwater and potentially subsurface soil. The risk drivers for subsurface soil are arsenic and SVOCs. The PD is proposing to add appropriate vapor mitigation systems to buildings constructed onsite in areas with elevated VOC soil vapor concentrations to address potential vapor intrusion issues. In

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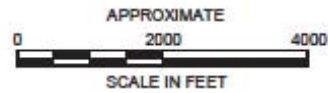
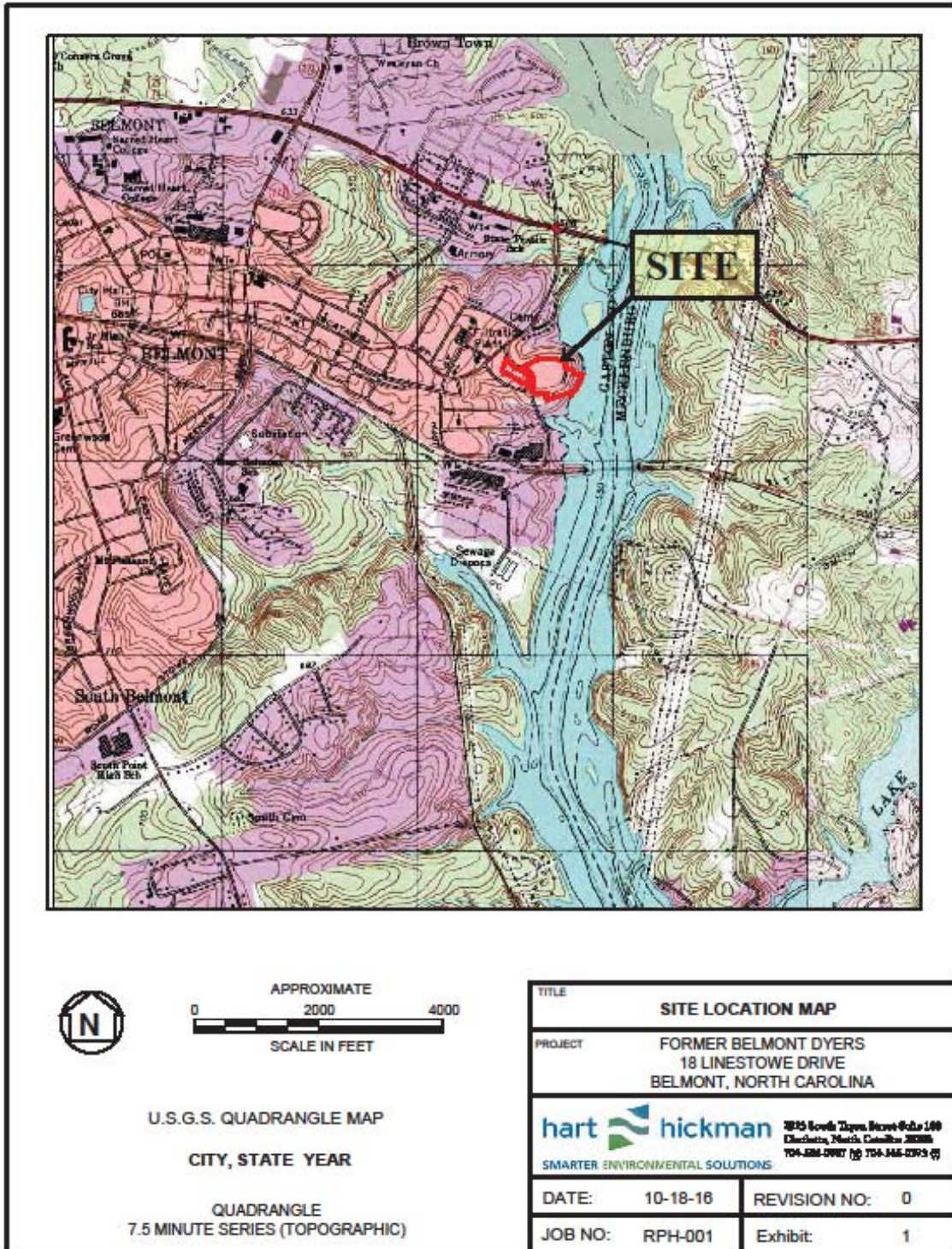
addition, the PD will add appropriate dust control measures to address potential exposure to arsenic and SVOCs during construction.

Required Land Use Restrictions

Based on the site-specific data provided to the Brownfield program, the site reuse is suitable for high density residential, multi-family residential, open space, and parking, as long as the agreed upon land use restrictions in the BFA are followed.

1. No use other than for. Definitions for Hotel, Open Space, High Density Residential, Commercial, Recreation, Open Space, and Parking.
2. No groundwater use
3. No disturbing soil without DEQ approval or for landscape/mowing/pruning/repair of underground infrastructure (written notice to DEQ)/work for EMP.
5. Soil Import/Export.
6. No new buildings until DEQ says indoor air is safe/no VI issues/VI protection installed.
8. EMP
9. Access to Brownfields Property for environmental assessment.
10. NBP reference in deed.
11. No contaminants on property except for de minimis amounts, fluid in vehicles, fuels for generators/equipment.
12. Written agreement with homeowners association for ongoing maintenance of vapor mitigation systems.
13. Final grade soil sampling for RCRA metals, SVOCs, VOCs and pesticides will be conducted.
14. LURU submission January 1st

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U.S.G.S. QUADRANGLE MAP

CITY, STATE YEAR

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)


TITLE	SITE LOCATION MAP	
PROJECT	FORMER BELMONT DYERS 18 LINSTOWE DRIVE BELMONT, NORTH CAROLINA	
		2875 South Tryon Street Suite 100 Charlotte, North Carolina 28205 704-586-2987 fax 704-586-2923 ej
DATE:	10-18-16	REVISION NO: 0
JOB NO:	RPH-001	Exhibit: 1

Exhibit 2

The most recent environmental sampling at the Property reported in the Environmental Reports occurred on May 16, 2017. The following tables set forth, for contaminants present at the Property above unrestricted use standards or screening levels, the maximum and most recent concentrations found at each sample location, and the applicable standard or screening level. Screening levels and groundwater standards are shown for reference only and are not set forth as cleanup levels for purposes of this Agreement.

GROUNDWATER

Groundwater contaminants in micrograms per liter (the equivalent of parts per billion), the standards for which are contained in Title 15A of the North Carolina Administrative Code, Subchapter 2L (2L), Rule .0202, (April 1, 2013 version):

Groundwater Contaminant	Sample Location	Date of Sampling	Maximum Concentration Exceeding Standard (µg/L)	Date of Sampling	Most Recent Concentration Exceeding Standard (µg/L)	Standard (µg/L)
Benzene	MW-1D	11/5/07	1.6	11/5/07	1.6	1
	MW-1IR	1/24/09	1	1/24/09	1	
Chlorobenzene	PMW-6IR	3/22/16	58	3/22/16	58	50
1,4-Dichlorobenzene	PMW-6IR	3/22/16	26	3/22/16	26	6
	PMW-6SR	3/22/16	9.7	3/22/16	9.7	
cis-1,2-Dichloroethene	PMW-6SR	3/22/16	96	3/22/16	96	70
Tetrachloroethylene	GP-10-42'	9/27/05	1.4	9/27/05	1.4	0.7
	GP-8-48'	9/27/05	5.5	9/27/05	5.5	
	MW-1	5/10/05	64	11/18/06	52	
	MW-1D	6/8/05	280	11/5/07	130	
	MW-1DR	7/12/09	18	7/12/09	18	
	MW-1I	9/20/04	36	11/18/06	24	
	MW-1R	7/12/09	9.1	7/12/09	9.1	
	MW-1IR	1/24/09	2.1	1/24/09	2.1	
	MW-2	5/10/05	2.7	11/5/07	1.2	
	MW-2R	7/12/09	2.7	7/12/09	2.7	
	MW-3	5/10/05	1.9	7/12/09	<0.5	
	PMW-1IR	3/22/16	3.2	3/22/16	3.2	
	PMW-1SR	3/22/16	6.2	3/22/16	6.2	
	PMW-3SR	3/22/16	1.2	3/22/16	1.2	
PMW-4SR	3/22/16	5.6	3/22/16	5.6		
Tetrachloroethylene	PMW-5SR	3/22/16	110	3/22/16	110	0.7
	PMW-6IR	3/22/16	91	3/22/16	91	

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	PMW-6SR	3/22/16	200	3/22/16	200	
Trichloroethylene	MW-1	9/20/04 & 5/10/05	11	11/18/06	6.2	3
	MW-1D	6/8/05	15	11/5/07	9	
	PMW-1DR	3/22/16	9	3/22/16	9	
1,2,4- Trichlorobenzene	PMW-6IR	3/22/16	86	3/22/16	86	70

GROUNDWATER VAPOR INTRUSION RISK

Groundwater contaminants with potential for vapor intrusion (VI) in micrograms per liter (the equivalent of parts per billion), the vapor intrusion screening levels for which are derived from the Residential Vapor Intrusion Screening Levels of the Division of Waste Management October 2016 version):

Groundwater Contaminant with Potential for Vapor Intrusion	Sample Location	Date of Sampling	Maximum Concentration Exceeding Screening Level (µg/L)	Date of Sampling	Most Recent Concentration Exceeding Screening Level (µg/L)	Residential VI Screening Level ¹ (µg/L)
1,4-Dichlorobenzene	PMW-6IR	3/22/16	26	3/22/16	26	25.9
cis-1,2-Dichloroethene	PMW-6SR	3/22/16	96	3/22/16	96	70
Tetrachloroethylene	MW-1	5/10/05	64	11/18/06	52	11.5
	MW-1D	6/8/05	280	11/5/07	130	
	MW-1DR	7/12/09	18	7/12/09	18	
	MW-1I	9/20/04	36	11/18/06	24	
	PMW-5SR	3/22/16	110	3/22/16	110	
	PMW-6IR	3/22/16	91	3/22/16	91	
	PMW-6SR	3/22/16	200	3/22/16	200	
Trichloroethylene	MW-1	9/20/04 & 5/10/05	11	11/18/06	6.2	1
	MW-1D	6/8/05	15	11/5/07	9	
	PMW-1DR	3/22/16	9	3/22/16	9	
1,2,4- Trichlorobenzene	PMW-6IR	3/22/16	86	3/22/16	86	7.19
	PMW-6SR	3/22/16	29	3/22/16	29	

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¹ Screening levels displayed for non-carcinogens are for a hazard quotient equal to 0.2. Screening levels displayed for carcinogens are for a 1.0E-5 lifetime incremental cancer risk.

² NS – Screening level or regulatory not established.

SOIL

Soil contaminants in milligrams per kilogram (the equivalent of parts per million), the screening levels for which are derived from the Preliminary Residential Health-Based Soil Remediation Goals of the Inactive Hazardous Sites Branch of DEQ's Superfund Section (October 2016 version):

Soil Contaminant	Sample Location	Depth (ft)	Date of Sampling	Concentration Exceeding Screening Level (mg/kg)	Residential Screening Level ¹ (mg/kg)
Arsenic	HHSB-5	4-6	5/16/17	2.6	0.68
	SB-3	1-3	11/21/16	3.8	
	SB-4	3-5	11/21/16	2.9	
	SB-5	2-4	11/21/16	3.1	
Benzo(a)anthracene	SB-2	1-3	11/21/16	0.61	0.16
Benzo(a)pyrene	SB-2	1-3	11/21/16	0.62	0.016
Benzo(b)fluoranthene	SB-2	1-3	11/21/16	0.57	0.16
Dibenzo(a,h)anthracene	SB-2	1-3	11/21/16	0.111 J	0.016
Indeno(1,2,3-cd)pyrene	SB-2	1-3	11/21/16	0.53	0.16
Manganese	SB-1	0-2	11/21/16	624	360
	SB-4	2-4	11/21/16	527	

¹Screening levels displayed for non-carcinogens are for a hazard quotient equal to 0.2. Screening levels displayed for carcinogens are for a 1.0E-6 lifetime incremental cancer risk.

NE – No established screening level

SOIL GAS

Soil gas contaminants in micrograms per cubic meter, the screening levels for which are derived from Residential Vapor Intrusion Screening Levels of the Division of Waste Management (October 2016 version):

Soil Gas Contaminant	Sample Location	Date of Sampling	Concentration Exceeding Screening Level (µg/m ³)	Residential Screening Limit ¹ (µg/m ³)
Tetrachloroethylene	HHSG-2	5/16/17	320	278
	HHSG-4/DUP-1	5/16/17	16,000	
	HHSG-5	5/16/17	1,900	
	HHSG-8	6/20/17	360	
1,2,4-Trimethylbenzene	HHSG-5	5/16/17	85	48.7

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*¹Screening levels displayed for non-carcinogens are for a hazard quotient equal to 0.2.
Screening levels displayed for carcinogens are for a 1.0E-5 lifetime incremental cancer risk.*