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Quible & Associates, P.C.

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June 1, 2004

Cooperage, LLC
Attention: Graham Farmer
230 Beech Street
Wilmington, NC 28405

Re: Cooperage Tract, Belhaven
Phase II Environmental Site Assessment: Soil and Ground Water Sampling

Dear Sirs:

Please find enclosed a report of findings for a Phase II Environmental Site Assessment (Phase II) at the above referenced facility. The site is located at the intersections of NC State Highway 92 and US 264 and approximately centered around Latitude 76° 49' 25.3" and Longitude 36° 26' 12.3". A USGS Topographic Quadrangle Map showing the site location has been included as **Figure 1**.

Phase II activities were conducted at the Cooperage at the request of the Cooperage LLC. Findings in the Phase I Environmental Site Assessment (Phase I) indicated that past activities conducted on the properties had the potential to lead to the contamination of the soils and ground waters at the tract. Historical property uses included a marina, offering petroleum products for retail sale, and an agricultural supplier offering pesticides, herbicides and fertilizers for retail sale. In addition, an adjacent property to the north was a retail bulk petroleum products facility. The purpose of the Phase II is to ascertain whether or not soil or ground water contamination exists at a facility by sampling soils and ground waters in those areas identified in the Phase I as having the potential of being contaminated based on past activities, eyewitness accounts and/or field observations. In general, samples were collected from the suspected source areas as identified in the Phase I Report.

Based on the findings and recommendations of the Phase I, soil and/or ground water sampling was conducted in those specific areas identified in the Phase I Report on April 6, 2004, and on May 9, 2004. Three soil samples and two ground water samples were collected on April 6, 2004, and an additional ground water sample was collected from the former location of the Above Ground Storage Tank (AST) on May 9, 2004.

Soil samples were collected using a clean stainless steel hand auger bucket which was decontaminated between borings using water and alconox. Soils were transferred into laboratory provided containers using clean disposable latex gloves. Ground water samples were collected from the shallow water table using disposable polyethylene bailers and poured into laboratory provided containers using clean disposable latex gloves. Sampling locations are shown on **Figure 2**. Products stored in the AST at the marina and at the bulk facility were reported to be either gasoline or diesel, therefore, the soils sampled were analyzed for Total Petroleum Hydrocarbons (TPH), gasoline range and diesel range organics by the California Method 8015/5030 and 8015/3550, respectively.

Sampling location justification and methodology were as follows:

- **SB-1**- Located along midline of former AST associated with the marina.
- **SB-2**- Located directly beneath the dispenser associated with the former AST at the marina.
- **SB-3**- located along property boundary with former bulk petroleum sales facility.
- **TW-1**- located adjacent to former dispenser pad of fertilizer building.
- **TW-2**- located adjacent to ramp where solid fertilizer was offloaded-location of well was also adjacent to former pesticide and herbicide building. Soils in the sampling location consisted of clays, water was not encountered in the shallow boring.
- **TW-3**- located adjacent to unloading bay at former pesticides and herbicides storage building.
- **GW-1**- located adjacent to SB-1 along midline of former AST associated with the marina. The ground water sample was analyzed for volatile organics by method 8260B.

Based on ground water analytical results, there is evidence of nitrates, ammonia and phosphate contamination in the shallow water table in the vicinity of the former fertilizer mixing and distribution building (TW-1 shown on **Figure 2**). Concentrations that exceed the NCAC 2L Groundwater Standards for ammonia (3,927 mg/L), total phosphorous (9.35 mg/L) and total nitrates (4,257 mg/L) in ground water were reported in the samples collected from TW-1. None of the other ground waters or soils sampled on April 6, 2004 had any concentrations above the detection limits as specified in the laboratory analytical report for the specified parameters. However, a petroleum odor was detected during the collection of the soil sample, SB-1 from underneath the former AST associated with the marina. A table summarizing the results of the soil sampling analytical results conducted during the Phase II has been included as **Table 1**.

An additional ground water sample (GW-1) was collected from a boring installed on May 9, 2004, adjacent to SB-1. A noticeable petroleum odor was again detected during the advancement of the boring. The ground water sample was submitted to a certified laboratory and analyzed for volatile organics using method 8260B. Detectable concentrations that exceeded the NCAC 2L Groundwater Standards for benzene (59.6 µg/L), n-butylbenzene (560 µg/L), sec-butylbenzene (91.0 µg/L), ethylbenzene (1,022 µg/L), isopropylbenzene (101 µg/L), p-isopropyltoluene (114 µg/L), naphthalene (584 µg/L), n-propylbenzene (393 µg/L), styrene (103 µg/L), 1,2,4 trimethylbenzene (3,822 µg/L), 1,3,5 trimethylbenzene (837 µg/L) and total (m,o,p) xylenes (6,668 µg/L) were reported in the ground water sample collected from GW-1. In addition, detectable concentrations of toluene (977 µg/L) were reported in the ground water sample collected from GW-1.

Based on laboratory results reported in the ground water sample collected from GW-1, a petroleum release has occurred and ground water has been affected. However, the extent of the contamination is not known at this time. Given the location of the sample, the source of the contamination is likely the AST formerly located at the site. Tables summarizing the results of the ground water analytical data have been included as **Table 2A and Table 2B.** A copy of the laboratory analytical reports have been included as **Appendix A**.

Please note, per the Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater, "Following the discovery of a discharge, a responsible party is required to take immediate action to terminate and control the discharge, and to prevent and mitigate any fire, explosion or vapor hazards. The responsible party must also notify the Department immediately of the discovery or release in accordance with NCGS 143-215.85 and 15A NCAC 2L.0106". There do not appear to be any fire, explosion or vapor hazards associated with the releases at the Cooperage tract. However, there are ground water quality violations that should be reported to the Division of Water Quality-Ground Water Section-Washington Regional Office (252) 946-6481.

Based on the results of the ground water samples there are currently two ground water quality violations at the Cooperage Tract. None of the soil samples analyzed for the constituents listed in the laboratory report had any reportable concentrations for the specific contaminants analyzed. Please note, sampling and assessment activities at the facility have been limited to those items discussed herein and in the Phase I Environmental Site Assessment Report prepared by Quible & Associates, P.C. In addition, ground water and soil sampling only provide soil and ground water quality information for those constituents analyzed and in the areas specifically identified in **Figure 2** (Sampling Location Map). The extent or degree of contaminants in the soils and/or ground waters at the site is not clear at this time. To fully understand the ground water contaminant plumes and their potential effects on humans and the environment, a more comprehensive site assessment would be required.

A summary of activities necessary to assess and actively remediate the contaminants on site has been prepared and included in a separate letter to offer an idea of the tasks and associated costs required to gain a no further action status (NFA) at the site. Please do not hesitate to contact the undersigned at 252.261.3300 if you have any questions or concerns in this matter.

Sincerely,

Quible & Associates, P.C.

Warren D. Eadus

cc: file

FIGURES

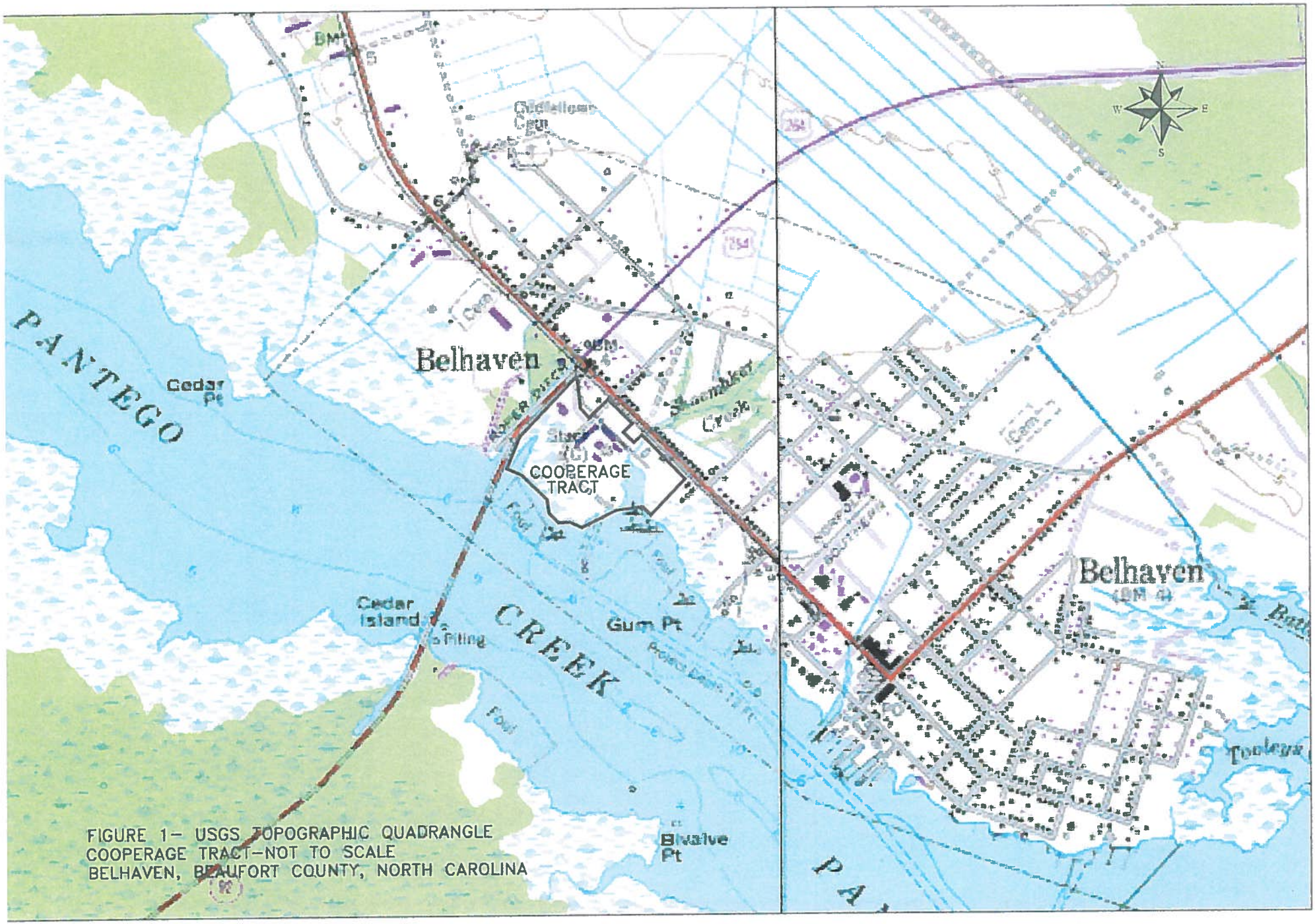

FIGURE 1– USGS TOPOGRAPHIC QUADRANGLE
COOPERAGE TRACT–NOT TO SCALE
BELHAVEN, BEAUFORT COUNTY, NORTH CAROLINA

FIGURE 2– AERIAL PHOTOGRAPH: SOIL AND GROUND WATER SAMPLING LOCATIONS
COOPERAGE TRACT
BELHAVEN, BEAUFORT COUNTY, NORTH CAROLINA

TABLES

TABLE 1
SUMMARY OF LABORATORY ANALYTICAL DATA
SOIL SAMPLES
COOPERAGE, BELHAVEN-APRIL 6, 2004

Sample Location	Depth (ft.)	TPH-GRO[1] 8015/5030	TPH-DRO[2] 8015/3550
SB-1	2.5-3.0	<5.0[3]	<5.0
SB-2	2.5-3.0	<5.0	<5.0
SB-3	3.5-4.0	<5.0	<5.0
Action Level[4]		40	10

Notes:
1. Total Petroleum Hydrocarbon-Gasoline Range Organics analysis performed by the California Method.
2. Total Petroleum Hydrocarbon-Diesel Range Organics analysis performed by the California Method
3. Less than the method detection limit as specified in the laboratory analytical report. Results reported in mg/L.
4. Action Levels as stated in July 2000 Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater.

TABLE 2A
SUMMARY OF LABORATORY ANALYTICAL DATA-Pesticides, Herbicides and Fertilizers[1]
GROUND WATER SAMPLES
COOPERAGE, BELHAVEN-APRIL 6, 2004

Sample Location	Sample Interval	Ammonia Nitrogen	TKN	Total phosphorous	2,4-D	Endrin	Heptachlor	Lindane	Pyridine	Toxaphene	2,4,5-TP Silvex	Chlordane
TW-1	0-5	**3,927**[2]	**4,275**	**9.35**	NA[3]	NA	NA	NA	NA	NA	NA	NA
TW-2	NS[4]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW-3	NA	NA	NA	NA	<0.1[5]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
GQS[6]		MDL[7]	10	MDL	10.0	0.02	0.008	0.4	5.0	0.5	1.0	0.03

Notes:
1. Results reported in mg/L. Ground water samples analyzed for pesticides and herbicides by methods 8081 and 8051, respectively. For a complete listing of all compounds analyzed please refer to the complete laboratory analytical report.
2. Concentrations in bold face type exceed the 2L Standards or the Method Detection Limit specified in the laboratory analytical report.
3. Sample not analyzed for compound listed.
4. No sample collected.
5. Less than the method detection limit specified in the laboratory analytical report.
6. Ground Water Quality Standards as published in NCAC 15A 02L .0202.
7. Method Detection Limit-specified in the laboratory analytical report.

TABLE 2B
SUMMARY OF LABORATORY ANALYTICAL DATA-Volatile Organics[1]
GROUND WATER SAMPLE GW-1
COOPERAGE, BELHAVEN-May 9, 2004[2]

Contaminant	GQS[3]	Reported Concentration
Benzene	1	**59.6[4]**
n-butylbenzene	70	**560**
sec-butylbenzene	70	**91.0**
Ethylbenzene	29	**1022**
Isopropylbenzene	70	**101**
p-Isopropyltoluene	mdl	**114**
Naphthalene	21	**584**
n-propylbenzene	70	**393**
Styrene	100	**103**
Toluene	1,000	977
1,2,4 Trimethylbenzene	350	**3,822**
1,3,5 Trimethylbenzene	350	**837**
Total (m,o,p) xylenes	530	**6,668**

Notes:
1. Ground water sample analyzed for volatile organics by Method 8260 B. Results reported in µg/L.
2. Grab ground water sample collected from boring installed on May 9, 2004.
3. Ground Water Quality Standards as published in NCAC 15A 02L .0202.
4. Concentrations in bold face type exceed the 2L Standards.

APPENDIX A

envirochem
ANALYTICAL & CONSULTING CHEMISTS

Environmental Chemists, Inc.

6602 Windmill Way • Wilmington, North Carolina 28405
(910) 392-0223 (Lab) • (910) 392-4424 (Fax)
EchemW@aol.com

NCDENR: DWQ CERTIFICATE #94, DLS CERTIFICATE #37729

Customer:

QUIBLE & ASSOCIATES
P.O. Drawer 870
Kitty Hawk, N.C. 27949
Attn: Warren Eadus

Date of Report: April 20, 2004

Purchase Order #: 03177

Report Number: 4-2036

REPORT OF ANALYSIS

Date Sampled: 04/06/04

Sampled By: Warren Eadus

Report To: Warren Eadus

Project : 00164

SOIL:

Sample ID	Lab ID	3550 mg/Kg	5030 mg/Kg
SB-1	# 4358	BQL	< 5
SB-2	# 4359	BQL	< 5
SB-3	# 4360	BQL	< 5
Method Detection Limit		10	0.5
Practical Detection Limit		10	5

Comments:

All soil results are on a dry weight basis

3550 = Total Petroleum Fuel Hydrocarbons using SW-846, 3550 with California GC-FID method for Diesel Fuel.

5030 = Total Petroleum Fuel Hydrocarbons using SW-846, 5030 with California GC-FID method for Gasoline

envirochem SM
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GROUNDWATER:

Parameter	TW-1 # 4361
Total Kjeldahl Nitrogen, TKN mg/L	4275
Total Phosphorus, as P mg/L	9.35
Ammonia Nitrogen, NH_3-N mg/L	3927

EPA 8081 Analyte, µg/L	Quantitation Limit µg/L	TW-3 # 4362
Aldrin	0.1	BQL
α–BHC	0.1	BQL
β- BHC	0.1	BQL
γ-BHC (Lindane)	0.1	BQL
δ-BHC	0.1	BQL
Chlordane	0.1	BQL
4,4'-DDD	0.1	BQL
4,4'-DDE	0.1	BQL
4,4'-DDT	0.1	BQL
Dieldrin	0.1	BQL
Endosulfan I	0.1	BQL
Endosulfan II	0.1	BQL
Endosulfan sulfate	0.1	BQL
Endrin	0.1	BQL
Endrin Aldehyde	0.1	BQL
Heptachlor	0.1	BQL
Heptchlor epoxide	0.1	BQL
Hexachlorobenzene	0.1	BQL
Hexachlorocyclopentadiene	0.1	BQL

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GROUNDWATER:

EPA 8151 Analyte, µg/L	Quantitation Limit µg/L	TW-3 # 4362
2,4-D	0.1	BQL
2,4-DB	0.1	BQL
2,4,5-TP (Silvex)	0.1	BQL
2,4,5-T	0.1	BQL
Dalapon	0.1	BQL
Dicamba	0.1	BQL
Dichloroprop	0.1	BQL
Dinoseb	0.1	BQL
MCPA	0.1	BQL
MCPP	0.1	BQL
4-Nitrophenol	0.1	BQL
Pentachlorophenol	0.1	BQL

Comments:

BQL = Below Quantitation Limit

Reviewed by R.K. Highland

James Hicks