

November 4, 2009
Job No. 32795.14-C



Mr. Gary Jablonski
Rhode Island Department of Environmental Management
Office of Waste Management
235 Promenade Street
Providence, Rhode Island 02908

Re: Residential Drinking Water Treatment Systems
Residence No.'s 14, 16 and 18 River Street
Alton, Rhode Island

530 Broadway
Providence
Rhode Island
02909
401-421-4140
FAX 401-751-8613
www.gza.net

Dear Mr. Jablonski:

Since January 2005, our client, Charbert, Division of NFA Corp., has been conducting quarterly monitoring of the residential drinking water treatment systems (WTS) it installed at 14, 16 and 18 River Street in Alton, Rhode Island, in compliance with the June 29, 2005 *Consent Agreement*. We are writing on behalf of Charbert, to request a reduction in the frequency of monitoring of the WTS at the 14, 16 and 18 River Street properties because the quarterly sampling results obtained in the four and half years since these systems were installed indicate that a semi-annual schedule is sufficient to assess system performance. These sampling results are explained in detail below.

Based on these results, GZA is also requesting RIDEM approval of a proposed schedule for determining the point when these water treatment systems can be decommissioned

BACKGROUND

The water treatment systems at these three properties were designed by GZA and submitted to RIDEM and RIDOH for approval in December of 2004 in response to the August 11, 2004 Notice of Violation issued by RIDEM. GZA's initial proposed monitoring program was modified per RIDEM's December 31, 2004 comments. The WTS were installed in January 2005 and are currently operating with quarterly monitoring and servicing being supplied by Charbert through GZA.

The monitoring program currently consists of:

Quarterly at the Point Of Compliance (Post-Treatment, Interior Tap)

- Volatile organic compounds using EPA Method 524.2, with tentatively identified compounds (TICs);
- Semi-volatile organic compounds using EPA Method 8270C with low detection limits and TICs. Concentrations below the Method Detection Limit (MDL) are reported as estimated values and flagged with a "J";
- Total coliform bacteria using Method SM9221B.

Semi-Annually Monitoring Between the Carbon Filters

- Volatile organic compounds using EPA Method 524.2, with TICs at the sample port between the two carbon filters to evaluate break-through of contaminants from the first filter and alert maintenance personnel that it is time to change the carbon.



For the convenience of the homeowners, GZA coordinates the sampling with the quarterly maintenance program. Charbert, via GZA, issues written reports to the home owners and copies to RIDEM and RIDOH.

WATER QUALITY TESTING RESULTS SUMMARY

Quarterly testing results of treated water samples at 14, 16 and 18 River Street have predominantly been non-detect for VOCs, SVOCs and coliform bacteria. The only exceptions to this was the detection of di-n-butylphthalate in all three tap samples on November 1, 2006, at an estimated concentrations of 5.6, 6.6 and 5.4 µg/L, respectively, and of bis(2-ethylhexyl)phthalate in the 14 River Street tap sample, at an estimated concentration of 1.3 µg/L on May 1, 2005. Acenaphthene was detected in the tap sample from 16 River Street at an estimated concentration of 0.23 µg/L on August 1, 2007. These few detections are all well below any risk-based or regulatory drinking water quality criteria.

The untreated "raw" well water at 14 River Street has been sampled by GZA four times, the untreated well water at 16 River Street five times and the untreated well water at 18 River Street six times, since the treatment systems were installed in January 2005. The laboratory results of the untreated water sampling and analysis for all three residences is summarized in Table 1, attached. The results of the untreated well water testing at 14 River Street has all been non-detect since February 2005, with the exception of trichloroethene (TCE), which was detected at 0.87 µg/mL in February 2009. The RIDEM GA Groundwater Objective for TCE is 5 ppb. The results of the untreated well water testing at 18 River Street have also been non-detect since February 2005, with the exception of one VOC TIC detected on February 2, 2009, at an estimated concentration of 1 µg/L. The same VOC TIC was also detected in the trip blank at an estimated concentration of 1.2 µg/L on that date.

Low level VOCs have consistently been detected in the untreated well water at 16 River Street. The concentration and number of detected compounds have shown a downward trend since the start of this monitoring program. In the November 2005 sample, 7 VOCs were detected compared with two VOC compounds detected in February of 2009. Cis-1,2-dichloroethene and 1,1,1-trichloroethane were detected at 4.6 µg/L and 13 µg/L, respectively in November of 2005 and in February 2009 the same compounds were present at 0.66 µg/L and 1.5 µg/L, respectively. There has never been an exceedance of the RIDEM GA Groundwater Objectives or the RIDEM preventative action limits (PAL) in the water samples collected by GZA at 16 River Street.

TREATMENT SYSTEM DECOMMISSIONING

This sampling data demonstrates that the untreated well water at all three River Street residences has been compliant with the RIDEM GA Groundwater Objectives and PALs for the past four years. Furthermore, the well water at 14 and 18 River Street does not show any impact from the

known contaminants at the Charbert facility. This data indicates that there is no ongoing reason to continue treating the water at 14, 16 and 18 River Street.



The groundwater remedial objective for the Charbert facility, as stated in Section 4.22 of the October 15, 2007 *Remedial Action Work Plan* (RAWP) was to reduce volatile organic compound levels to GA Groundwater Objectives at the downgradient points of compliance, and provide drinking water meeting Federal Safe Drinking Water Act requirements (i.e., MCLs) to residents at 14, 16 and 18 River Street. This was to be accomplished by:

1. Treating identified chlorinated aliphatic hydrocarbons (CAHs) and petroleum hydrocarbons (PHC) source areas via air sparging soil venting;
2. Reducing the risk to residents from the consumption of contaminated groundwater at 14, 16 and 18 River Street through the installation, operation and maintenance of the point-of-use water treatment systems until ambient groundwater quality is compliant with drinking water standards;
3. Source reduction of contaminant discharge to the on-Site lagoons;
4. Management of residual overburden groundwater contamination through groundwater containment and monitored natural attenuation.

At this time the air sparge and vent system has been installed and is operating. With the facility closure in March of 2008, wastewater discharge to the on-Site lagoons has ceased. The raw well water at the three residences with treatment systems meets drinking water standards. Thus, all remedial objectives have been met and GZA proposes that the treatment systems at 14, 16 and 18 River Street be decommissioned following one year of consecutive monitoring with no VOCs detected above the RIDEM PALs. Given the recent results, GZA would consider the February 2, 2009 sampling to be the first round of samples without PAL exceedances, because prior monitoring on February 1, 2008 also met these criteria. As such, we recommend discontinuing treatment of the well water if the February 2010 samples do not have any PAL exceedances.

PROPOSED MONITORING SCHEDULE

Based on the above, GZA proposes to reduce the frequency of monitoring from quarterly to semi-annually for the three River Street WTS. The proposed program is as follows:

Semi-Annual Testing at the Point of Compliance (Post-Treatment, Interior Tap)

- Volatile organic compounds using EPA Method 524.2;
- Semi-volatile organic compounds using EPA Method 8270C with low detection limits. Concentrations below the MDL will be reported as estimated values and flagged with a "J";
- Total coliform bacteria using Method SM9221B.

Semi-Annual Monitoring Between the Carbon Filters

- Volatile organic compounds using EPA Method 524.2, at the sample port between the two carbon filters to evaluate break-through of contaminants from the first filter and alert maintenance personnel that it is time to change the carbon.

Semi-Annual Monitoring of the Untreated Well Water

- Volatile organic compounds using EPA Method 524.2 to test the untreated well water.
- Semi-Annual testing of the raw well water is proposed to continue for 24 months following removal of the treatment systems to ensure continued compliance with groundwater quality criteria.



We also want to note that Mark Mageau, the owner and occupant of 14 River Street, has verbally requested that the sampling and analysis schedule be reduced to a semi-annual event. Mr. Mageau has informed GZA that the quarterly sampling is inconvenient for him. As indicated in GZA's September 21, 2009 quarterly letter, GZA has agreed to reduce Mr. Mageau's monitoring to semi-annually.

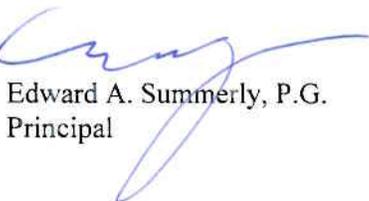
Note that GZA will continue to perform quarterly maintenance on all three WTS, and will continue to coordinate the sampling with the quarterly maintenance program as long as they are in operation.

We look forward to your approval of this revised monitoring program for 14, 16 and 18 River Street and to your approval of the proposed treatment system decommissioning protocol. Please feel free to call Ed Summerly or Stephen Andrus at (401) 421-4140 (or via email at edward.summerly@gza.com or stephen.andrusz@gza.com) with any questions or comments.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.


Stephen Andrus, P.E.
Assistant Project Manager


Edward A. Summerly, P.G.
Principal

SMA/EAS:mac

Attachments: Tables 1

cc: Richard Amirault, RIDOH

**TABLE 1
UNTREATED WATER ANALYTICAL SUMMARY**

*14, 16 and 18 River Street
Alton, Rhode Island*

14 RIVER STREET									
PARAMETERS	UNITS	RIDEM GA		SAMPLED BY AND DATE					
		RIDEM GA GROUND WATER OBJECTIVE	GROUND WATER PREVENTATIVE ACTION LIMIT	RIDEM 6/10/2003	RIDEM 11/18/2003	GZA 11/5/2004	GZA 2/11/2005	GZA 2/01/2008	GZA 2/02/2009
Volatile Organic Compounds									
Methyl Tertiary-Butyl Ether (MTBE)	ug/L	40	20	6.8	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	100	ND	4.8	3.7	ND	ND	ND
1,1-Dichloroethene	ug/L	7	3.5	ND	0.6	0.5	ND	ND	ND
Cis-1,2-Dichloroethene (Cis-1,2-DCE)	ug/L	70	35	ND	ND	0.73	ND	ND	ND
Tetrachloroethene (PCE)	ug/L	5	2.5	ND	0.8	0.53	ND	ND	ND
Trichloroethene (TCE)	ug/L	5	2.5	ND	ND	ND	ND	ND	0.87
Tentatively Identified Compounds									
Volatile TICs	ug/L	NS	NS	NT	NT	ND	ND	ND	ND

Notes:

1. Highlighted results indicate a detected parameter.
2. Highlighted and bold results indicate a detected parameter that exceeds a regulatory limit.
3. NS = No Standard
4. NT = Not Tested
5. ND = Not Detected

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*14, 16 and 18 River Street
Alton, Rhode Island*

16 RIVER STREET								
PARAMETERS	UNITS	RIDEM GA GROUND WATER OBJECTIVE	RIDEM GA GROUND WATER PREVENTATIVE ACTION LIMIT	SAMPLED BY AND DATE				
				RIDEM 6/10/2003	Clayton 11/12/2003	RIDEM 11/18/2003	Richmond 8/11/2004	GZA 11/5/2004
Volatile Organic Compounds								
1,1,1-Trichloroethane	ug/L	200	100	ND	2.1	5.3	ND	13
1,1-Dichloroethane	ug/L	5	2.5	ND	0.2	ND	0.41	ND
1,1-Dichloroethene	ug/L	7	3.5	ND	0.36	0.8	0.95	2.2
Acetone	ug/L	---	---	ND	2.4	ND	ND	ND
Benzene	ug/L	5	2.5	ND	0.98	1.1	ND	1
bis(2-Ethylhexyl)phthalate	ug/L	---	---	ND	ND	ND	1.7	ND
Cis-1,2-Dichloroethene (Cis-1,2-DCE)	ug/L	70	35	ND	2.2	2.7	3.1	4.6
2 Chlorotoluene	ug/L	---	---	ND	ND	ND	ND	0.53
Di-N-Butyl phthalate	ug/L	---	---	ND	ND	ND	4.2	ND
Tetrachloroethene (PCE)	ug/L	5	2.5	ND	0.24	0.8	ND	2.3
Trichloroethene (TCE)	ug/L	5	5	ND	0.45	0.6	ND	0.73
Tentatively Identified Compounds								
Volatile TICs	ug/L	---	---	NT	16.35	NT	NT	1.3

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*14, 16 and 18 River Street
Alton, Rhode Island*

16 RIVER STREET							
PARAMETERS	UNITS	RIDEM GA GROUND WATER OBJECTIVE	RIDEM GA GROUND WATER PREVENTATIVE ACTION LIMIT	SAMPLED BY AND DATE			
				GZA 2/11/2005	GZA 2/01/2008	GZA 9/09/2008	GZA 02/02/09
Volitile Organic Compounds							
1,1,1-Trichloroethane	ug/L	200	100	ND	5.2	3.3	1.5
1,1-Dichloroethane	ug/L	5	2.5	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	3.5	ND	ND	ND	ND
Acetone	ug/L	---	---	ND	ND	ND	ND
Benzene	ug/L	5	2.5	ND	1.1	ND	ND
bis(2-Ethylhexyl)phthalate	ug/L	---	---	ND	ND	ND	ND
Cis-1,2-Dichloroethene (Cis-1,2-DCE)	ug/L	70	35	ND	2.7	1.4	0.66
2 Chlorotoluene	ug/L	---	---	ND	ND	ND	ND
Di-N-Butyl phthalate	ug/L	---	---	ND	ND	ND	ND
Tetrachloroethene (PCE)	ug/L	5	2.5	ND	1.1	0.7	ND
Trichloroethene (TCE)	ug/L	5	5	ND	ND	ND	ND
Tentatively Identified Compounds							
Volatile TICs	ug/L	---	---	ND	ND	10.4	2.5

Notes:

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UNTREATED WATER ANALYTICAL SUMMARY**

*14, 16 and 18 River Street
Alton, Rhode Island*

18 RIVER STREET								
PARAMETERS	UNITS	RIDEM GA GROUND WATER OBJECTIVE	RIDEM GA GROUND WATER PREVENTATIVE ACTION LIMIT	SAMPLED BY AND DATE				
				RIDEM 6/10/2003	Clayton 11/12/2003	RIDEM 11/18/2003	Richmond 8/11/2004	GZA 11/5/2004
Volatile Organic Compounds								
Chloroform	ug/L	NS	NS	ND	ND	5.6	0.4	0.96
Tentatively Identified Compounds								
Volatile TICs	ug/L	NS	NS	NT	5.93	NT	NT	4.6
PARAMETERS	UNITS	RIDEM GA GROUND WATER OBJECTIVE	RIDEM GA GROUND WATER PREVENTATIVE ACTION LIMIT	SAMPLED BY AND DATE				
				GZA 2/11/2005	GZA 2/01/2008	GZA 8/01/2008	GZA 02/02/2009	GZA 08/19/2009
Volatile Organic Compounds								
Chloroform	ug/L	NS	NS	ND	ND	ND	ND	ND
Tentatively Identified Compounds								
Volatile TICs	ug/L	NS	NS	ND	ND	ND	1.0*	ND

Notes:

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 5. ND = Not Detected
- * = Compound also detected in trip blank