



RECEIVED  
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2003 NOV 17 PM 12: 43

November 13, 2003  
Ref. No. 23516-034

Mr. Eric Lardiere  
Whittaker Corporation  
1955 N. Surveyor Avenue  
Simi Valley, CA 93063

Subject: Transmittal of SCIENTECH, Inc. Document

Dear Mr. Lardiere:

Please find the enclosed document detailing the October 2003 groundwater-sampling event conducted by SCIENTECH, Inc. at the Whittaker site near Greenville, PA. This document should be attached as Addendum 8 to the site Groundwater Monitoring Plan (SCIENTECH Document Number 82A9103, Revision 2).

In summary, the sampling event went well and there are no significant findings to report. It should be noted, however, that because a different analytical method was used at the laboratory handling the quality control (QC) sample, the gross alpha and gross beta results are not comparable.

This was likely the final annual groundwater-sampling event that will be conducted under the Groundwater Monitoring Plan. Once the on-site decommissioning operations begin in 2004, SCIENTECH will operate under a new Environmental Monitoring Plan that will describe groundwater, surface water, and air sampling activities. SCIENTECH expects to initially sample groundwater and surface water on a quarterly basis commencing at the time of major on-site excavation activities.

Should you have any questions or comments, please call me at (864) 235-3695.

Regards,

A handwritten signature in cursive script, appearing to read "Kevin E. Taylor".

Kevin E. Taylor, PE  
Project Manager

KET/lhc  
Enclosure

cc: R. Ragland w/enclosure  
B. Werner w/enclosure  
R. Woods w/enclosure



143 West Street  
New Milford, CT 06776  
(860) 210-3000

**DOCUMENT TRANSMITTAL CONTROL FORM  
NUMBER 62826**

Page 1 of 1

**Date Issued:** 11/13/2003  
**Project No.:** 23516  
**Assigned to:** Randolph Ragland, USNRC Region 1  
662

475 Allendale Road  
King of Prussia, PA 19406

Document No.	Rev. No.	Comments	Document Title
82A9103	02	1 Controlled Copy - Addendum #8	Whittaker Groundwater Monitoring Program

By signing this transmittal, you are acknowledging receipt of the controlled document(s) listed above. A controlled document means that you will automatically receive revisions made to the document(s). If Document Control does not receive this transmittal, you may be removed from distribution at the discretion of the SCIENTECH NES Quality Assurance Manager.

Please return this transmittal by: **12/13/2003**

☐ I no longer require the attached documents. Please remove my name from distribution.

I hereby acknowledge receipt of the above document(s) and have destroyed or marked obsolete all prior revisions.

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Please sign, date and return this Transmittal form to:

**SCIENTECH, Inc., Attention: Document Control**

143 West Street, New Milford, CT 06776 or FAX: (860) 210-3015

## ADDENDUM AUTHORIZATION

10-Nov-03  
Effective DateDocument Title Groundwater Monitoring PlanDocument No. 82A9103, Rev. 2Addendum No. 8

Originator

  
Kevin E. TaylorFor Site/Utility Whittaker Site, Greenville, PA

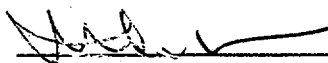
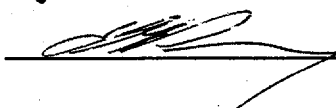
## Description of Addendum:

Report on site groundwater monitoring activities for the third quarter of 2003.

## Reason for Change:

Results of the ANNUAL groundwater monitoring are to be submitted per Section 3 of the Groundwater Monitoring Plan.

## APPROVALS:

<u>Title</u>	<u>Signature</u>	<u>Date</u>
Technical Reviewer		<u>11/12/03</u>
Department Manager		<u>11/12/03</u>

Approvals for the Addendum shall at least be equal to the Approval of the base document and may include customer sign off:

Distribute to all SCIENTECH Control Copy holders of affected document and

None

A copy of this authorization shall be attached to the affected document.

November 12, 2003

Subject: Whittaker Site Groundwater Monitoring Well Sampling, October 2003

## **INTRODUCTION**

In accordance with Whittaker Corporation's U.S. Nuclear Regulatory Commission (NRC) License No. SMA-1018, Amendment No. 8, Condition No. 14, and SCIENTECH, Inc. (SCIENTECH) Document No. 82A9103, Revision 2, "Groundwater Monitoring Plan, Whittaker Corporation, Greenville, PA" (the Plan), well sampling activities were conducted on October 1 and 2, 2003. Jeff Kronick (Project Engineer) and Mark Burno (Senior Environmental Geologist) of SCIENTECH, Inc. conducted the sampling activities. Well sampling procedures and analytical protocol are discussed and specified in the Plan.

## **ACTIVITIES**

Groundwater monitoring well sampling was conducted in conjunction with the Third Quarter 2003 site inspection activities. The site inspection activities are addressed in a separate SCIENTECH quarterly inspection report (82A9104, Revision 2, Addendum 18).

On October 1, SCIENTECH first measured the depths to groundwater for all 10 site monitoring wells (MW-1 to MW-10). SCIENTECH sampled wells MW-1, MW-2, MW-3, and MW-5 on October 1 and wells MW-4 and MW-6 through MW-10 on October 2. Water samples were collected in one-gallon plastic containers for gross alpha and gross beta analysis. The wells were productive and sampling proceeded without any problems. Previous sampling results indicated little to no difference in gross alpha and gross beta concentrations in filtered and unfiltered water sample; therefore, only unfiltered samples were collected.

Groundwater samples were analyzed for gross alpha and gross beta activity using gas flow proportional counting (GFPC) by ATL International, Inc. (ATL) radioanalytical laboratory in Gaithersburg, MD. For quality assurance purposes, SCIENTECH sent a quality assurance (QA) sample from MW-10 to General Engineering Laboratories (GEL) in Charleston, SC.

## **RESULTS**

Table 1 provides a summary of groundwater analytical results for MW-1 through MW-10 for gross alpha and gross beta as reported by ATL. All results were less than the water quality contaminant limits of 15 picocuries per liter (pCi/L) gross alpha and less than 50 pCi/L gross beta. In fact, no sample has had concentrations greater than either limit since April 2001. As a result, none of the samples were analyzed for isotopic distribution. The maximum reported alpha activity was 8.52 pCi/L for the sample collected from MW-4 while the maximum beta activity was 21.9 pCi/L for the sample collected from MW-8. Of the 11 samples (including the one duplicate sample run by ATL for MW-9), 6 were less than the laboratory's minimum detectable activity (MDA) for gross alpha and 3 were less than the laboratory's minimum detectable activity for gross beta.

**TABLE 1**  
**GROUNDWATER ANALYSIS DATA**

Field ID	LAB ID	SMP Received		Analysis	Result	Error	MDA	Unit
MW-1	STW061	~ 4000	ml	Alpha	1.82	0.863	2.72	pCi/L
				Beta	5.64	1.19	3.53	pCi/L
MW-2	STW062	~ 4000	ml	Alpha	4.89	1.18	3.16	pCi/L
				Beta	9.29	1.32	3.58	pCi/L
MW-3	STW063	~ 4000	ml	Alpha	0.253	0.663	2.34	pCi/L
				Beta	1.66	1.01	3.31	pCi/L
MW-4	STW064	~ 4000	ml	Alpha	8.52	1.25	2.66	pCi/L
				Beta	9.48	1.26	3.35	pCi/L
MW-5	STW065	~ 4000	ml	Alpha	0.0931	0.615	2.20	pCi/L
				Beta	7.71	1.18	3.29	pCi/L
MW-6	STW066	~ 4000	ml	Alpha	5.43	1.11	2.83	pCi/L
				Beta	6.65	1.17	3.36	pCi/L
MW-7	STW067	~ 4000	ml	Alpha	2.12	0.735	2.20	pCi/L
				Beta	4.41	1.08	3.29	pCi/L
MW-8	STW068	~ 4000	ml	Alpha	5.32	1.04	2.93	pCi/L
				Beta	21.9	1.76	3.67	pCi/L
MW-9	STW069	~ 4000	ml	Alpha	1.86	0.795	2.51	pCi/L
				Beta	1.48	0.958	3.13	pCi/L
MW-10	STW070	~ 4000	ml	Alpha	6.57	1.18	3.00	pCi/L
				Beta	11.7	1.26	3.18	pCi/L
<b>Duplicate Analysis</b>								
MW-9	STW069	~ 4000	ml	Alpha	1.22	0.825	2.71	pCi/L
(ATL)				Beta	3.23	1.06	3.34	pCi/L
MW-10	89320001			Alpha	11.3	2.49	2.20	pCi/L
(GEL)				Beta	21.7	3.55	5.02	pCi/L

The duplicate analysis run by ATL on the MW-9 sample showed acceptable agreement; all samples were less than the minimum detectable activity (MDA). The result from the MW-10 primary sample (analyzed by ATL) and MW-10 duplicate sample (analyzed by GEL) were not comparable as the GEL results were about twice the concentration reported by ATL. Sampling technique has been eliminated as a possible source for this discrepancy because the 2 one-gallon sample containers (one for each lab) were not filled sequentially. Rather, SCIENTECH first filled each container approximately half way before completely filling any of the containers. A likely source of the discrepancy is that GEL used U.S. Environmental Protection Agency (EPA) Method 900.0 to analyze the sample. This method is designed for drinking water analysis and does not perform well for water with more than 500 parts per million (ppm) dissolved solids. ATL used EPA Method 9510, which is for groundwater analysis and included analytical protocols better suited for water containing high levels of dissolved solids.

Table 2 compares gross alpha and gross beta results from each Whittaker site groundwater sampling event dating back to May 2000. This data does not include duplicate samples analyzed at a QA laboratory.

**TABLE 2**  
**GROUNDWATER CONCENTRATION COMPARISONS**  
**UNFILTERED SAMPLES**

Well Number	May 2000		April 2001		June 2001		September 2001		August 2002		October 2003	
	Gross alpha	Gross beta	Gross alpha	Gross beta	Gross alpha	Gross beta	Gross alpha	Gross beta	Gross alpha	Gross beta	Gross alpha	Gross beta
MW-1	<MDA	29	<MDA	<MDA	4.8	<MDA	<MDA	<MDA	3.2	<MDA	<MDA	5.6
MW-2	15	28	<MDA	13	7.7	6.3	<MDA	<MDA	6.5	5.0	4.9	9.3
MW-3	<MDA	8.6	<MDA	3.9	<MDA	<MDA	<MDA	5.5	<MDA	<MDA	2.5	<MDA
MW-4	9.9	48	26	140	5.7	<MDA	11	5.4	4.6	18	8.5	9.5
MW-5	<MDA	18	<MDA	13	<MDA	12	<MDA	<MDA	<MDA	6.7	<MDA	7.7
MW-6	25	85	15	61	8.0	9.1	<MDA	5.7	5.2	4.7	5.4	6.7
MW-7	6.2	19	<MDA	6.7	<MDA	8.2	<MDA	<MDA	<MDA	11	<MDA	4.4
MW-8	8.6	73	<MDA	39	<MDA	23	6.6	27	5.2	32	5.3	22
MW-9	<MDA	13	<MDA	4.5	<MDA	6.0	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
MW-10	23	95	<MDA	77	7.8	11	11	12	<MDA	2.6	6.6	212

Note: Bold values in Table 2 are greater than their respective water quality contaminant limit.

Table 3 compares the groundwater levels in the monitoring wells for the initial well installation and the five subsequent sampling events. There has been little change in the average water level over the last year.

**TABLE 3**  
**DEPTH TO GROUNDWATER IN MONITORING WELLS**

Well Number	Depth to Groundwater (feet) <sup>a</sup>							Δ Feet <sup>b</sup>
	April 2000	May 2000	April 2001	June 2001	September 2001	August 2002	October 2003	
MW-1	4.27	5.62	4.87	6.25	6.63	6.91	4.89	2.02
MW-2	8.55	10.79	10.99	11.11	11.44	11.36	9.32	2.04
MW-3	0.74	1.44	1.58	1.59	1.90	1.86	0.69	1.17
MW-4	15.17	16.07	16.19	16.39	16.70	16.79	15.33	1.46
MW-5	4.72	7.30	6.93	8.01	8.20	8.32	6.16	2.16
MW-6	19.98	19.48	20.45	20.61	20.70	20.83	20.22	0.61
MW-7	3.98	4.35	4.21	4.36	4.35	4.53	4.31	0.22
MW-8	19.25	19.13	19.74	19.74	19.86	19.60	18.65	0.95
MW-9	2.65	0	0	0	0.05	0	0.1	-0.01
MW-10	20.04	21.51	21.30	21.90	22.45	22.33	20.50	1.83
Average 1-year change in water level								1.25

Note:

<sup>a</sup> Measured from the top of the PVC well casing.

<sup>b</sup> Change in water level change from August 2002 to October 2003.

**ATTACHMENTS**

The following supporting documentation is provided as attachments to this report.

- A Site Well Location Map
- B ATL Water Analysis Report
- C GEL Water Analysis Report
- D SCIENTECH Well Sampling Field Logs
- E SCIENTECH Chain-of-Custody Forms

**SCIENTECH, Inc.**

Document No.82A9103

Revision No. 2

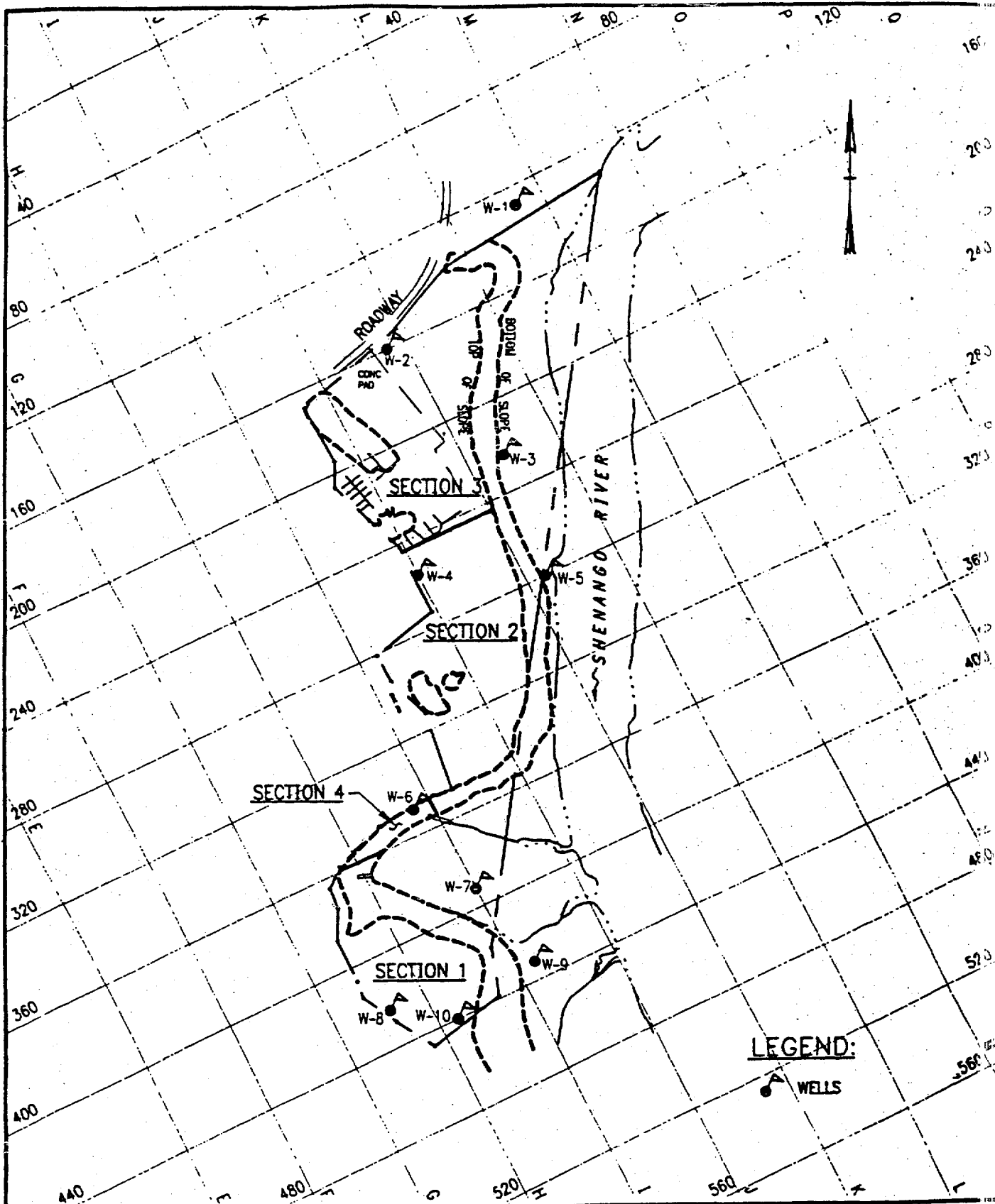
Addendum No. 8


**ATTACHMENT A**

**Site Well Location Map**

**(1 page)**





DOCUMENT CONTROL NO.	PROJECT	WHITTAKER PROPERTY PYMATUNING TWP., MERCER CO., PA	 SCIENTECH NEB, Inc. 44 Shaker Road Danbury, CT 06810 (203) 796-5000	PROJECT # 3077-200
829103-ADDM. 1				FILENAME: 3077200A
REVISION NO.	DRAWING	GROUNDWATER MONITORING WELL LOCATIONS		SCALE: 1" = 200'
				DATE: 8/4/10
				BY: AD
				FIGURE # 1

**ATTACHMENT B**

**ATL Water Analysis Report**

**(2 pages)**

**ATL International, Inc.**  
**Radioanalytical Laboratory**

Corporate Offices  
 20010 Century Blvd.  
 Suite 500  
 Germantown, MD 20874  
 301-972-4430  
 301-972-6904 (fax)

Laboratory  
 8146 Beechcraft Ave.  
 Gaithersburg, MD 20879  
[atl-lab@atlintl.com](mailto:atl-lab@atlintl.com)  
 301-947-4455  
 301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 10/29/2003  
 Customer ID: SC-00001  
 Customer: SCIENTECH

Sampler's Name: Mark Burno/Jeff Kronick  
 Scientech P.O. No: 29756  
 Project Number: 23516-100  
 Project Name: Whittaker

Sample Date: 10/01/2003 - 10/02/2003  
 Matrix: Water  
 Requested Analyses: Gross Alpha & Beta  
 Report Level: QA-I  
 Report Due: 11/03/2003

Comments: All samples have been preserved in the field. Sample Quantity is the nominal amount of water received.  
 If Gross Alpha is > 15 pCi/L or Gross Beta is > 50 pCi/L, Analyze sample for Isotopic U, Isotopic Th, and Gamma Spec.

Field ID	ATL ID	SMP Received	Analysis	Result	Error	MDA	Unit	Flag
MW-1	STW061	~ 4000 ml	Gross Alpha	1.82E+00	8.63E-01	2.72E+00	pCi/L	
			Gross Beta	5.64E+00	1.19E+00	3.53E+00	pCi/L	
MW-2	STW062	~ 4000 ml	Gross Alpha	4.89E+00	1.18E+00	3.16E+00	pCi/L	
			Gross Beta	9.29E+00	1.32E+00	3.58E+00	pCi/L	
MW-3	STW063	~ 4000 ml	Gross Alpha	2.53E-01	6.63E-01	2.34E+00	pCi/L	
			Gross Beta	1.66E+00	1.01E+00	3.31E+00	pCi/L	
MW-4	STW064	~ 4000 ml	Gross Alpha	8.52E+00	1.25E+00	2.66E+00	pCi/L	
			Gross Beta	9.48E+00	1.26E+00	3.35E+00	pCi/L	
MW-5	STW065	~ 4000 ml	Gross Alpha	9.31E-02	6.15E-01	2.20E+00	pCi/L	
			Gross Beta	7.71E+00	1.18E+00	3.29E+00	pCi/L	
MW-6	STW066	~ 4000 ml	Gross Alpha	5.43E+00	1.11E+00	2.83E+00	pCi/L	
			Gross Beta	6.65E+00	1.17E+00	3.36E+00	pCi/L	
MW-7	STW067	~ 4000 ml	Gross Alpha	2.12E+00	7.35E-01	2.20E+00	pCi/L	
			Gross Beta	4.41E+00	1.08E+00	3.29E+00	pCi/L	

**ATL International, Inc.**  
**Radioanalytical Laboratory**

Corporate Offices  
20010 Century Blvd.  
Suite 500  
Germantown, MD 20874  
301-972-4430  
301-972-6904 (fax)

Laboratory  
8146 Beechcraft Ave.  
Gaithersburg, MD 20879  
[atl-lab@atlintl.com](mailto:atl-lab@atlintl.com)  
301-947-4455  
301-947-4469 (fax)

**REPORT OF ANALYTICAL RESULTS**

Report Date: 10/29/2003  
Customer ID: SC-00001  
Customer: SCIENTECH

Sampler's Name: Mark Burno/Jeff Kronick  
Scientech P.O. No: 29756  
Project Number: 23516-100  
Project Name: Whittaker

Sample Date: 10/01/2003 - 10/02/2003

Matrix: Water

Requested Analyses: Gross Alpha & Beta

Report Level: QA-I

Report Due: 11/03/2003

Comments: All samples have been preserved in the field. Sample Quantity is the nominal amount of water received.  
If Gross Alpha is > 15 pCi/L or Gross Beta is > 50 pCi/L, Analyze sample for Isotopic U, Isotopic Th, and Gamma Spec.

Field ID	ATL ID	SMP Received		Analysis	Result	Error	MDA	Unit	Flag
MW-8	STW068	~ 4000	ml	Gross Alpha	5.32E+00	1.04E+00	2.93E+00	pCi/L	
				Gross Beta	2.19E+01	1.76E+00	3.67E+00	pCi/L	
MW-9	STW069	~ 4000	ml	Gross Alpha	1.86E+00	7.95E-01	2.51E+00	pCi/L	
				Gross Beta	1.48E+00	9.58E-01	3.13E+00	pCi/L	
MW-10	STW070	~ 4000	ml	Gross Alpha	6.57E+00	1.18E+00	3.00E+00	pCi/L	
				Gross Beta	1.17E+01	1.26E+00	3.18E+00	pCi/L	
Duplicate Analysis									
MW-9	STW069	~ 4000	ml	Gross Alpha	1.22E+00	8.25E-01	2.71E+00	pCi/L	
				Gross Beta	3.23E+00	1.06E+00	3.34E+00	pCi/L	

ATL warrants that these analytical results were obtained in accordance with ATL Radioanalytical Laboratory Procedures and Quality Assurance Program. ATL makes no other warranty, expressed or implied, including fitness for any particular purpose.

Zhibo (David) Lin - Radiochemist

Jou Hwang, PhD - Laboratory Manager

**ATTACHEMENT C**

**GEL Water Analysis Report**

**(3 pages)**

**GENERAL ENGINEERING LABORATORIES, LLC**  
2040 Savage Road Charleston SC 29407 - (843) 556-3171 - www.gel.com

**Certificate of Analysis**

Company : Scientech  
Address : 143 West Street  
New Milford, Connecticut 06776

Contact: Kevin Taylor  
Project: Routine Analysis-GW Monitoring

Report Date: November 12, 2003

Page 1 of 1

Client Sample ID: MW-10 Dup  
Sample ID: 89320001  
Matrix: Ground Water  
Collect Date: 02-OCT-03 14:55  
Receive Date: 06-OCT-03  
Collector: Client

Project: SCIN00401  
Client ID: SCIN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Gross A/B, liquid											
Alpha		11.3 +/-2.49	2.20	5.00	pCi/L		MPR1	10/14/03	0352	283458	1
Beta		21.7 +/-3.55	5.02	5.00	pCi/L						

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EPA 900.0	

**Notes:**

The Qualifiers in this report are defined as follows :

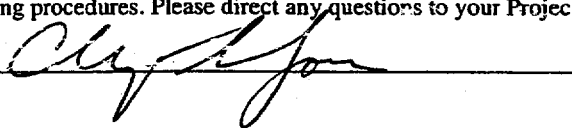
- < Result is less than amount reported.
- > Result is greater than amount reported.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D.
- U Indicates the target analyte was analyzed for but not detected above the detection limit.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- Y QC Samples were not spiked with this compound.
- h Sample preparation or preservation holding time exceeded.

The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by



# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: November 12, 2003

Page 1 of 2

Client : Scientech  
143 West Street  
New Milford, Connecticut  
Contact: Kevin Taylor  
Workorder: 89320

Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	283458										
QC1200505884	89383005	DUP									
Alpha		U	-0.331	U	-0.0531	pCi/L	N/A	(0%-20%)	MPRI	10/14/03	13:27
			+/-0.737		+/-0.909						
Beta		U	-0.63	U	0.645	pCi/L	N/A	(0%-20%)			
			+/-1.72		+/-1.97						
QC1200505887	LCS										
Alpha	69.8				58.0	pCi/L		83	(75%-125%)	10/13/03	16:18
					+/-7.24						
Beta	224				210	pCi/L		94	(75%-125%)		
					+/-11.3						
QC1200505883	MB										
Alpha		U	-0.101		-0.101	pCi/L				10/13/03	15:23
			+/-0.813		+/-0.813						
Beta		U	0.187		0.187	pCi/L					
			+/-2.18		+/-2.18						
QC1200505885	89383005	MS									
Alpha	105	U	-0.331		87.5	pCi/L		84	(75%-125%)	10/13/03	16:18
			+/-0.737		+/-11.3						
Beta	336	U	-0.63		320	pCi/L		96	(75%-125%)		
			+/-1.72		+/-17.3						

### Notes:

The Qualifiers in this report are defined as follows:

- < Result is less than amount reported.
- > Result is greater than amount reported.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D.
- U Indicates the target analyte was analyzed for but not detected above the detection limit.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- Y QC Samples were not spiked with this compound.
- h Sample preparation or preservation holding time exceeded

## GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

### QC Summary

Workorder: 89320

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
----------	-----	--------	------	----	-------	------	------	-------	-------	------	------

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



**SCIEN TECH, Inc.**

Document No.82A9103

Revision No. 2

Addendum No. 8

**ATTACHMENT D**

**SCIEN TECH Well Sampling Field Logs**

**(10 pages)**

# MW-1

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
Project Number: 23516-0100

Field Staff: MGBurno  
J Kronick



Well ID	PID (ppm)	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal)	Depth Pump Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-1	--	4.89	4.87	5.56	--	14	18.38	18.37	10/1/03	10:40	10:41	11:30

Tubing Type	Sampling Device	Depth to Screen (ft.)	Screen Elevation (ft.)	Screen Length (ft.)	Mid- Screen Depth (ft.)	Casing Type	Well Diameter (inches)	Well Bottom Elevation (ft.)	Top of PVC Elevation (ft.)	Average Pumping Rate	Date Sampled	Sample Time
Polyethylene	Submer. Pump	8.60	917.61	10	13.60	Steel/PVC	2	907.61	926.21	0.38	10/1/03	11:25

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos)	Dissolved Oxygen (mg/kg)	Approximate Volume	
						Removed (L)	Pumping Rate (L/min)
10:44	Changed control box: could not fine tune low flow rate with one of the control boxes						
10:47	5.33	6.7	14.8	69	4.0	2.0	0.00
10:50	5.52	6.7	14.8	69	9.1	3.5	0.50
10:53	5.66	6.6	14.8	68	8.0	6.0	0.66
10:56	5.50	6.7	14.7	68	6.7	6.8	0.26
10:59	5.47	6.7	14.8	68	6.3	7.5	0.23
11:02	5.48	6.7	14.8	69	5.8	9.0	0.50
11:05	5.48	6.7	14.9	69	5.4	10.0	0.33
11:08	5.47	6.7	14.8	69	5.1	11.0	0.33
11:11	5.47	6.7	14.8	69	4.8	12.0	0.33
11:14	5.46	6.7	14.9	69	4.4	13.2	0.40
11:17	5.58	6.7	14.9	69	4.1	14.2	0.33
11:20	5.49	6.8	15.0	69	3.8	15.2	0.33

Note: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:

- + or - 0.1 for pH
- + or - 3% for Specific Conductivity - SC
- + or - 10% for Dissolved Oxygen - DO

\* Unable to achieve minimum drawdown of <0.3 feet at these wells in accordance with work plan submitted to the New Jersey Department of Environmental Protection dated June 12, 2000. Three well volumes were removed prior to sampling.

Readings taken at 3 minute intervals.

File: \\nes-n\Dept\DEPT020\23516-100 Whittaker\31069 (2290) Whittaker\DELVD\SGN\Groundwater Report Files\Well Sampling Filed Logs 10-2003.xls

Sheet: MW-1

10:53 Reduced flow

11:17 Reduced flow

Dissolved oxygen did not stabilize within + or - 10%. However, pH, specific conductance and temperature were stabilized and a sample was collected.

Prepared by: MGB

Date 10/10/03

Reviewed by: CV

Date 10/10/03

## Groundwater Sampling Log

**Project: Whittaker Corporation, Greenville, PA**

**Project Number: 23516-0100**

**Field Staff:**

MGBurno

J Kronick



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal)	Depth Pump Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
	(ppm)											
MW-2	--	9.32	9.15	10.38	--	20	26.74	26.68	10/1/03	11:37	11:40	12:16

Tubing Type	Sampling Device	Depth to Screen (ft.)	Screen Elevation (ft.)	Screen Length (ft.)	Mid-Screen Depth (ft.)	Casing Type	Well Diameter (inches)	Well Bottom Elevation (ft.)	Top of PVC Elevation (ft.)	Average Pumping Rate	Date Sampled	Sample Time
Polyethylene	Submer. Pump	11.84	936.37	15	19.34	Steel/PVC	2	921.37	948.21	0.14	10/1/03	12:00

[illegible]

Note: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:

+ or - 0.1 for pH

+ or - 3% for Specific Conductivity - SC

+ or - 10% for Dissolved Oxygen - DO

\* Unable to achieve minimum drawdown of <0.3 feet at these wells in accordance with work plan submitted to the New Jersey Department of Environmental Protection dated June 12, 2000. Three well volumes were removed prior to sampling.

Readings taken at 3 minute intervals.

11:47 Reduced flow

11:51 Increased flow

Prepared by: MGB

Date 10/10/03

Reviewed by: CV

Date 10/10/03

File: \\nes-nt\Dept\DEPT020\23516-100 Whitaker\31069 (2290) Whitaker\DELVDSGN\Groundwater Report Files\Well Sampling Filed.Logs 10-2003.xls

Sheet: MW-2

## Groundwater Sampling Log

**Field Staff:** MGBurno

J Kronick

[illegible]

Date 10/10/03

Sheet: MW-3

Prepared by: MGB  
Date 10/10/03  
Reviewed by: CV  
Date 10/10/03

Date 10/10/03

Date 10/10/03

Date 10/10/03



## Groundwater Sampling Log

**Project: Whittaker Corporation, Greenville, PA**

**Project Number: 23516-0100**

**Field Staff:**

**MGBurno**

**J Kronick**



Well ID	PID (ppm)	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal)	Depth Pump Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stoppe
MW-8	--	18.65	18.65	18.81	--	25	28.10	28.06	10/2/03	13:40	14:02	14:20

Tubing Type	Sampling Device	Depth to Screen (ft.)	Screen Elevation (ft.)	Screen Length (ft.)	Mid-Screen Depth (ft.)	Casing Type	Well Diameter (inches)	Well Bottom Elevation (ft.)	Top of PVC Elevation (ft.)	Average Pumping Rate	Date Sampled	Sample Time
Polyethylene	Submer. Pump	16.6	938.55	15	24.10	Steel/PVC	2	923.55	955.15	0.32	10/2/03	14:15

[illegible]

Note: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:

+ or - 0.1 for pH

+ or - 3% for Specific Conductivity - SC

+ or - 10% for Dissolved Oxygen - DO

\* Unable to achieve minimum drawdown of <0.3 feet at these wells in accordance with work plan submitted to the

New Jersey Department of Environmental Protection dated June 12, 2000. Three well volumes were removed prior to sampling.

Readings taken at 3 minute intervals.

File: \\nes-nt\dep\DEPT020\23516-100 Whitaker\31069 (2290) Whitaker\DELVD\SGM\Groundwater Report Files\Well Sampling Filed Logs 10-2003.xls

Sheet: MW-8

14:02 Replaced Durham Geo pump with Grunfos pump; Durham Geo pump not working

Prepared by: MGB

Date 10/10/03

Reviewed by: CV

Date 10/10/03

Date 10/10/03

## Groundwater Sampling Log

**Field Staff:** MGBurno

J Kronick

[illegible]

Date 10/10/03

**SCIENTECH, Inc.**

Document No.82A9103

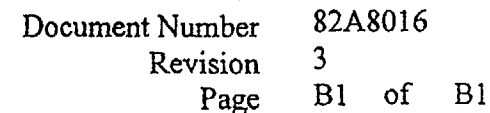
Revision No. 2

Addendum No. 8

**ATTACHEMENT E**

**SCIENTECH Chain-of-Custody Forms**

**(4 pages)**



pg 2 of 2

143 WEST STREET  
NEW MILFORD, CT 06776  
(860) 210-3000

Sampler's Name: Mark Burro / Jeff Kronicke

Project No: 23516-100

Project Name: Whittaker

Project Name: Whittaker  
To: ATL Radioanalytical Lab  
8146 Beechcraft Ave  
Gaithersburg MD 20879

## Comments

[illegible]

10/2/03 15:55

Date/Time

Relinquished By (Signature) W. R.

00/2/03 15:55

Date/Time

## SHIPPING INFORMATION

FedEx

Carrier

Date Shipped

Received By (Signature)

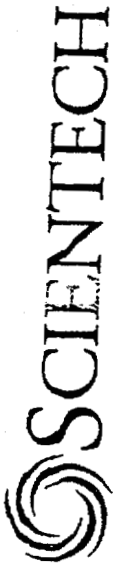
10/6/03 11:00am

Date/time

Received By (Signature)

Date/time

SCIENTECH CONTACT Mark Burno (860) 210-3010  
Name Phone No.



SCIENTECH, Inc. 82A8016 ATTACHMENT B  
CHAIN OF CUSTODY RECORD

Pg 1 of 2



143 WEST STREET  
NEW MILFORD, CT 06776  
(860) 210-3000

Parameters for Analysis

Sample ID No.	Date Collected	Time Collected	Gross alpha and beta
MW-1	10/1/03	11:20	X
MW-2	10/1/03	12:00	X
MW-3	10/1/03	14:10	X
MW-4	10/2/03	09:00	X
MW-5	10/1/03	15:10	X
MW-6			
MW-7			

Sampler's Name: Mark Burno/JOE Warrick

Project No: 23516-100

Project Name: Whittaker

TO: ATL Radioanalytical Lab  
8146 Beechcraft Avenue  
Gaithersburg, MD 20879 (301) 947-4455

Comments

If gross alpha is  $> 15 \text{ pCi/L}$  or gross gamma beta is  $> 50 \text{ pCi/L}$ , analyze the sample for Isotopic H, Isotopic Th, and gamma spec.  
Please reference project # 23516-100 on correspondence.

10/2/03 15:50

Date/Time

Relinquished By (Signature) [Signature]

10/2/03 15:50  
Date/Time

RelEx

SHIPPING INFORMATION

Carrier Express

Date Shipped

Received By (Signature) [Signature]

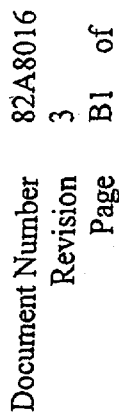
10/6/03 11:00am  
Date/time

Received By (Signature)

Date/time

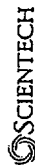
SCIENTECH CONTACT

Name Mark Burno (860) 210-3010  
Phone No.



SCIENTECH, Inc. 82A8016 ATTACHMENT B  
CHAIN OF CUSTODY RECORD

## Parameters for Analysis



143 WEST STREET  
NEW MILFORD, CT 06776  
(860) 210-3000

89320%

Sampler's Name: Mark Bruno / Jeff Kronic

Project No: 23516-160

Project Name: Whittaker

To: General Engineering Laboratories  
2040 Savage Road  
Charleston SC 29407

MW-P Dup	10/2/83	14:55	X
<p>I guess alpha's &gt; 15 pCi/L or gross beta's &gt; .50 pCi/L, or analyse the sample For Isotopic U, Isotopic Th and gamma spec.</p> <p>Please reference</p>			

10/2/63 15:50

Date/Time

Reinquished By (Signature)

10/2/03/15:50

Federal Express 10/3/03

## SHIPPING INFORMATION

Carrier	Date Shipped

         Date Shipped

Adm.

Received By (Signature)

Received By (Signature)

NAME (Last, First, Middle)	DATE/TIME
SCIENTECH CONTACT	Mark Burns 860 210-3010

**Name** \_\_\_\_\_ **Phone No.** \_\_\_\_\_

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# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Scientech</u>	SDG/ARCOC/Work Order:
Date Received: <u>10/16/03</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: <u>PETE WICBER</u>	<u>[Signature]</u> <u>10/16/03</u>

Sample Receipt Criteria	Conforming	NA	Non-Conforming	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		<input checked="" type="checkbox"/>		Circle Temp device serial # 221113011 221113075 109479 <u>109480</u> ice bags • blue ice dry ice <u>none</u> other(describe) <u>RADIOCHEMISTRY</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7 Samples received within holding time?	<input checked="" type="checkbox"/>			Id's and tests affected:
8 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
9 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
10 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected: <u>(1) CONTAINER</u>
11 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
12 Air Bill ,Tracking #'s, & Additional Comments	<u>Redix</u> <u>84361887-3860</u>			

Radiological Information	Non-RAD	RAD	RADII	RSO RAD Receipt #
What is the radiological classification of the samples?	<input checked="" type="checkbox"/>			Comments:
Radioactivity Screening Results (maximum observed CPM)	<u>40</u>			*If > x2 area background is observed on a non-radioactive sample, contact the RSO to investigate.