B U C K
ENVIRONMENTAL SERVICES
engineering & analytical services

Note:

This Annual Report has been reproduced without the 48 pages of analytical laboratory reports. The results of these reports are included in the summary on the two page spreadsheet titled "SCM Site, Town of Cortlandville, Historical TCE, Total VOC."

April 12, 2000

Kevin Delaney, P.E.
Environmental Engineer I
Division of Environmental Remediation
NYS Department of Environmental Conservation
615 Erie Blvd. West
Syracuse, NY 13204

Re: SCM Site-Town of Cortlandville- 1999 Annual Report

Dear Kevin:

In our correspondence to you of 10-20-99, we submitted stripper influent and effluent data for the first three quarters of 1999. We also apprised you of changes in ownership at the subject site and plans for subdivision of two lots from the northeast corner of the SCM parcel pending NYSDEC approval. This report will present the fourth quarter air stripper data, monitoring well data from the Fall of 1999, and present an overview of 1999 activities. Recommendations for changes in stripper operation are also included. Two spreadsheets of analytical data are attached for your review.

First, it is our understanding that NYSDEC approved the petition for change in property description, and that the two lots are no longer considered a part of the listed site. As a part of the petition presented in the Fall of 1999, monitoring well data and a contaminant plume map were presented. The map is included in this package for reference.

Although the site changed ownership in 1999, the new owner, SCWP LLP, was able to retain the services of a long-time Smith Corona Manager, Michael Chernago. Mr. Chernago has been involved in the remediation project and site listing from the beginning in the mid-1980's. He was responsible for management of the air stripper and liaison with O'Brien and Gere during Smith Corona's final years of ownership. In his new position with SCWP, Mr. Chernago continues to be responsible for operation and maintenance of the system and directs our firm's monitoring and reporting activities.

Mr. Chernago has apprised us that the air stripper operated continuously during 1999 except for less than one day downtime for routine maintenance. The pumping rate at the end of the year was 830 gpm, which leads to a conclusion that at least 435 million gallons of ground water were pumped and treated during 1999. Influent and effluent samples were obtained and analyzed on a quarterly basis during 1999 and are summarized in an enclosed spreadsheet entitled ***Air Stripper Data***. The average 1999 influent concentration was 8.0 ug/l, which continues to indicate a trend of improving groundwater quality.

Recovery Well Average TCE Concentration

1996	19 ug/l
1997	16 ug/l
1998	13 ug/l
1999	8 ug/l

None of the four effluent samples had any detectable amount of TCE or other halogenated volatile organics present. The maximum permissible level of TCE in the effluent is the same as the drinking water standard of 5.0 ug/l.

Sixteen monitoring wells from the SCWP site were sampled on 8-27-99. Two additional wells were sampled on 9-8-99 after removing bees' nests from the casings. Two new wells were installed and sampled on 11-2-99. This composite sampling event is summarized on the attached spreadsheet entitled ***Historical TCE, Total VOC-SCM Site***. Eight wells have TCE concentrations in excess of the 5 ug/l groundwater standard while ten wells meet the standard. The two wells with the highest total VOC concentrations were MW-11 (35 ug/l) and MW-7 (31 ug/l). The highest groundwater TCE concentration on the SCWP site was 24 ug/l at MW-7. The well data indicate that groundwater quality is continuing to improve at the site.

It is apparent that, although the current remediation system has worked well, operating the stripper at current flow rates and groundwater concentrations is extremely inefficient. During 1999 the stripper cost approximately $75,000 in energy costs and removed approximately 45 lb of TCE ($1,700/lb). The stripper was designed to handle high concentrations of TCE and the recovery well was positioned sufficiently downgradient from the spill area to capture the leading edge of the plume. Two recommendations follow from this.

First, because the average influent concentration is now so low, the stripper can meet discharge limits with normal gravitational aeration (i.e., blower turned off). This was demonstrated in an experiment on 7-20-99 when the system was operated with the blower turned off for approximately 5 hours. The results were as follows:

10:15 am	influent to tower	8.1 ug/l TCE
12:15 pm	" "	8.7 ug/l
12:17 pm	effluent at tower	2.9 ug/l
2:15 pm	Influent to tower	9.0 ug/l
2:17 pm	effluent at tower	2.8 ug/l
2:20 pm	effluent at end of pipe	2.8 ug/l
2:22 pm	effluent, bottom water cascade	1.2 ug/l

It is clear that the stripper can remove approximately 70% of the TCE with the blower off and the resultant discharge (at the bottom of the water cascade) is only 25% of the allowable level. This change in operation would save approximately $13,000/yr.

Second, the two highest concentrations of TCE are approximately 200' from the existing recovery well. A small, shallow, recovery well placed northwest of MW-7 could more directly impact the TCE in that area of the plume. Assuming a flow rate of approximately 25-75 gpm, the tower would have no difficulty handling the additional flow. By operating this additional recovery well, it is likely that the original recovery well would meet the TCE groundwater standard within a year or so and the entire remediation system could then be reduced in scope. The cost to install this additional recovery well is estimated at $10,000-$12,000.

Monitoring activities for 2000 have been scheduled and are now underway. The aeration tower will be monitored quarterly and the on-site wells will be sampled once during the year pending your review and recommendations.

Please call any time if you have questions with the content of this report. If I don't hear from you first, I'll contact you in a few weeks to discuss the recommendations above and any comments or suggestions you may have.

Sincerely,

John H. Buck, P.E.
President

Attachments:
Spreadsheet-Air Stripper Data
Spreadsheet-Historical TCE
4th quarter stripper lab reports
Monitoring well lab reports
Drawing-Monitoring Well Location Plan

Cc:
K. Ochs (SCWP)
C. Shafer, Esq. (RSS)
M. Chernago (SCWP)
J. Helgren, P.E. (CCHD)

Smith Corona Site
Town of Cortlandville
Air Stripper Data

	INFLUENT		EFFLUENT	
Date	**TCE**	**DCE**	**TCE**	**DCE**
10-29-90	84	na	1	na
11-01-90	30	na	1	na
11-05-90	32	na	1	na
11-07-90	35	na	1	na
11-09-90	32	na	1	na
11-12-90	32	na	1	na
12-13-90	34	na	nd	na
01-17-91	39	na	nd	na
03-07-91	43	na	1	na
4-11-91	47	na	nd	na
6-24-91	35	16	nd	nd
2-20-92	14	3	nd	nd
5-13-92	32	9	nd	nd
8-18-92	34	10	nd	nd
11-23-92	29	10	nd	nd
2-18-93	31	8	nd	nd
5-20-93	37	6	nd	nd
8-18-93	28	nd	nd	nd
11-24-93	14	1	nd	nd
2-28-94	19	nd	nd	nd
6-2-94	25	nd	nd	nd
9-8-94	19	15	nd	nd
12-29-94	22	4	nd	nd
2-21-95	23	4	nd	nd
5-31-95	17	4	nd	nd
8-29-95	11	nd	nd	nd
11-30-95	10	nd	nd	nd
2-27-96	16	2	nd	nd
5-22-96	24	2	nd	nd
8-27-96	18	2	nd	nd
11-21-96	17	2	nd	nd
2-18-97	22	2	nd	nd
5-14-97	12	1	nd	nd
8-20-97	14	1	nd	nd
11-25-97	18	2	nd	nd
2-18-98	16	1	nd	nd
5-22-98	21	2	nd	nd
8-27-98	14	1	nd	nd
11-05-98	nd	nd	nd	nd
2-99	8	nd	nd	nd
6-99	8	nd	nd	nd
9-99	10	nd	nd	nd
12-99	6	nd	nd	nd
3/17/00	15	nd	nd	nd

SCM SITE
Town of Cortlandville
Historical TCE, Total VOC
(ug/l in groundwater)

		2/90	4/90	8/90	11/90	2/91	5/91	8/91	11/91	2/92	5/92	8/92	11/92	2/93	5/93	8/93	11/93	2/94	6/94	9/94	12/94	2/95	5/95	11/95	5/96	11/96	5/97	11/97	5/98	11/98	8/99
MW-1S																															
	TCE	<1	39	47	41	25	17	19	12	9	13	15	2	11	26	3	13	7	19	13	9	11	8	11	5	8	10	11	15	8	6.9
	TCE Yearly Ave.				32				18				10				13				13			10		7		11		12	6.9
	Total VOC's	<1	39	47	41	25	21	23	13	9	15	17	2	13	34	3	13	7	22	15	9	13	8	11	5	8	10	11	16	8	6.9
	Tot. VOC Yearly Ave.				32				21				11				16				13			11		7		11		12	6.9
MW-1D																															
	TCE	32	28	<1	25	25	18	19	12	13	13	14	13	14	13	12	16	12	13	9	11	12	12	13	7	10	7	8	7	7	7.8
	TCE Yearly Ave.				21				19				13				14				11			12		9		8		7	7.8
	Total VOC's	32	28	<1	25	25	24	24	12	13	14	16	15	16	16	115	17	13	13	10	13	14	14	13	7	11	7	8	7	7	7.8
	Tot. VOC Yearly Ave.				21				21				15				16				12			14		9		8		7	7.8
MW-2S																															
	TCE	4	5	5	6	8	6	8	10	5	7	5	5	5	7	7	4	4	4	3	4	4	4	na	4	na	3	na	4	na	3.5
	TCE Yearly Ave.				5				8				6				6				4			4		4		3		4	3.5
	Total VOC's	4	5	5	6	8	6	8	12	5	7	8	5	5	7	7	4	4	4	3	4	4	4	na	4	na	3	na	4	na	3.5
	Tot. VOC Yearly Ave.				5				9				6				6				4			3		4		3		4	3.5
MW-2D																															
	TCE	6	6	9	8	7	5	7	9	5	5	5	5	3	4	6	3	3	2	3	2	2	3	na	2	na	2	na	1	na	2.5
	TCE Yearly Ave.				7				7				5				4				3			3		2		2		1	2.5
	Total VOC's	6	6	9	8	7	5	7	10	5	5	5	5	3	4	6	3	3	2	6	2	2	3	na	2	na	2	na	1	na	2.5
	Tot. VOC Yearly Ave.				7				7				5				4				3			2		2		2		1	2.5
MW-3																															
	TCE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	4	<1	<1	<1	<1	na	19	na	2	<1	8	na	<1
	TCE Yearly Ave.				0				0				0				0				1			1		19		1		8	<1
	Total VOC's	<1	<1	<1	<	<1	<1	<1	<1	<1	<1	<1	2	1	<1	<1	<1	<1	4	<1	<1	<1	<1	na	33	na	2	<1	12	na	<1
	Tot. VOC Yearly Ave.				0				0				1				0				1			0		33		1		12	<1
MW-4S																															
	TCE	<1	1	<1	2	<1	1	2	1	<1	1	1	1	<1	1	<1	<1	na	<1	<1	<1	<1	1	na	<1	na	<1	na	<1	na	<1
	TCE Yearly Ave.				1				1				1				0				0			1		0		0		0	<1
	Total VOC's	<1	1	<1	2	<1	1	2	1	<1	1	1	1	<1	1	<1	<1	na	<1	<1	<1	<1	1	na	<1	na	<1	na	<1	na	<1
	Tot. VOC Yearly Ave.				1				1				1				0				0			0		0		0		0	<1
MW-4D																															
	TCE	<1	1	1	<1	1	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	na	<1	<1	<1	<1	<1	na	<1	na	<1	na	<1	na	<1
	TCE Yearly Ave.				1				1				0				0				0			1		0		0		0	<1
	Total VOC's	<1	1	1	<1	1	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	na	<1	<1	<1	<1	<1	na	<1	na	<1	na	<1	na	<1
	Tot. VOC Yearly Ave.				1				1				0				0				0			0		0		0		0	<1
MW-5S																															
	TCE	1	1	2	3	<1	1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	na	<1	na	<1	na	<1	na	<1
	TCE Yearly Ave.				2				1				0				0				0			1		0		0		0	<1
	Total VOC's	1	1	3	3	<1	1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	na	<1	na	<1	na	<1	na	<1
	Tot. VOC Yearly Ave.				2				1				0				0				0			0		0		0		0	<1
MW-5D																															
	TCE	2	3	3	5	3	3	3	1	<1	1	2	1	<1	2	2	<1	<1	<1	<1	<1	<1	1	na	2	na	2	na	<1	na	<1
	TCE Yearly Ave.				3				3				1				1				0			1		2		2		<1	<1
	Total VOC's	2	3	8	5	3	3	3	1	<1	1	2	1	<1	2	2	<1	<1	<1	<1	<1	<1	2	na	2	na	2	na	<1	na	<1
	Tot. VOC Yearly Ave.				5				3				1				1				0			1		2		2		<1	<1
MW-6																															
	TCE	na	26	43	35	38	62	8	na	18	30	40	21	21	70	32	19	45	50	20	17	18	14	7	34	14	18	7	<1	10	5
	TCE Yearly Ave.				35				36				27				36				33			13		24		13		5	5
	Total VOC's	na	26	43	35	38	62	8	na	18	30	40	21	21	70	32	19	45	50	20	17	18	14	7	34	14	18	7	<1	10	5
	Tot. VOC Yearly Ave.				26				27				27				36				33			13		24		13		5	5
MW-7																															
	TCE	290	300	19	63	190	57	19	na	11	57	130	130	120	67	25	18	85	60	49	49	45	23	na	56	na	25	na	26	na	24
	TCE Yearly Ave.				168				89				82				58				61			34		56		25		26	24
	Total VOC's	290	300	19	63	190	157	30	na	15	167	250	250	175	136	25	19	137	153	84	62	84	25	na	73	na	35	na	39	na	31
	Tot. VOC Yearly Ave.				168				94				171				89				114			55		73		35		39	31
MW-8																															
	TCE	70	260	10	48	31	110	8	3	31	31	48	16	12	14	18	10	61	11	10	12	9	8	3	98	6	8	2	10	3	2
	TCE Yearly Ave.				97				38				32				14				24			7		52		5		7	2
	Total VOC's	70	283	10	48	31	110	8	3	31	31	48	16	12	14	18	10	61	11	10	12	9	8	3	98	6	8	2	10	3	2
	Tot. VOC Yearly Ave.				103				38				32				14				24			7		52		5		7	2
MW-9																															

SCM SITE
Town of Cortlandville
Historical TCE, Total VOC
(ug/l in groundwater)

	TCE	16	3	5	10	4	11	3	4	3	3	4	4	4	33	8	1	2	24	5	3	5	5	<1	18	2	1	<1	<1	5	7
	TCE Yearly Ave.				9				6				4				12				9			3		10		1		3	7
	Total VOC's	16	4	5	10	4	14	3	4	3	3	4	4	4	42	8	1	2	24	5	3	5	5	<1	22	2	1	<1	<1	5	7
	Tot. VOC Yearly Ave.				9				6				4				14				9			3		12		1		3	7
MW-10S																															
	TCE	73	63	110	59	63	27	32	50	44	170	40	32	26	25	37	27	28	31	24	15	16	16	23	17	18	13	13	15	19	16
	TCE Yearly Ave.				76				43				72				29				25			18		18		13		18	16
	Total VOC's	73	63	110	59	110	33	44	62	57	228	46	37	29	32	37	31	31	31	27	16	17	18	25	18	20	13	13	17	19	17
	Tot. VOC Yearly Ave.				76				62				92				32				26			20		19		13		18	17
MW-10D																															
	TCE	23	27	33	60	33	54	31	40	30	10	41	37	32	19	32	25	21	21	22	22	30	23	19	10	16	12	18	10	20	13
	TCE Yearly Ave.				36				40				30				27				23			24		13		15		15	13
	Total VOC's	23	27	33	60	33	66	39	45	35	12	46	43	36	21	32	28	22	21	25	24	32	26	19	10	16	12	18	10	20	13
	Tot. VOC Yearly Ave.				36				46				34				29				23			26		13		15		15	13
MW-11																															
	TCE	2600	150	44	3400	480	290	31	na	50	420	29	<50	54	170	<50	<50	72	<50	51	51	42	38	19	170	85	46	10	27	11	14
	TCE Yearly Ave.				1549				267				125				56				44			33		128		28		19	14
	Total VOC's	2600	150	44	3400	480	5090	141	na	440	630	375	230	344	1170	1700	<50	1062	1260	105	130	101	87	144	300	415	96	41	49	11	35
	Tot. VOC Yearly Ave.				1549				1428				419				804				639			111		358		69		30	35
MW-12S																															
	TCE	190	220	280	120	270	190	100	21	46	50	150	140	150	150	180	100	110	170	88	88	100	na	24	82	60	82	11	80	23	11
	TCE Yearly Ave.				203				145				97				145				114			62		71		47		52	11
	Total VOC's	190	220	280	120	270	330	137	23	83	62	196	179	172	183	180	109	119	192	99	102	101	na	57	93	73	88	11	102	23	11
	Tot. VOC Yearly Ave.				203				190				130				161				128			56		83		50		63	11
MW-12D																															
	TCE	21	13	17	23	17	12	12	13	10	45	10	9	13	11	15	8	7	16	9	5	7	6	6	5	5	5	4	2	8	11
	TCE Yearly Ave.				19				14				19				11				9			6		5		5		5	11
	Total VOC's	21	13	17	23	17	14	12	13	11	52	12	9	13	13	15	8	7	16	9	5	7	6	6	5	5	5	4	2	8	12
	Tot. VOC Yearly Ave.				19				14				21				12				9			6		5		5		5	12
MW-BE1																															
	TCE																														<1
	TCE Yearly Ave.																														<1
	Total VOC's																														<1
	Tot. VOC Yearly Ave.																														<1
MW-BE2																															
	TCE																														<1
	TCE Yearly Ave.																														<1
	Total VOC's																														<1
	Tot. VOC Yearly Ave.																														<1

Notes:
1. Units are ug/l.
2. Data from 2/90 thru 11/98 were transcribed from an OBG spreadsheet.
3. Data after 11/98 were entered directly from lab reports.
4. Most data are from Upstate Labs, Inc. .Data after xxx is from Buck Env. Labs, Inc.
5. Wells xxx and xxx were installed in 1999 by Buck Engineering.