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Results of 1st Half 1998 IRM Groundwater Monitoring Skinner Landfill West Chester, Ohio

Prepared for:
Skinner Landfill PRP Group

Prepared by:
Rust E&I
12 Metro Park Road
Albany, New York 12205

August, 1998

Quality through teamwork

RUST

Rust Environment & Infrastructure

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1.0 INTRODUCTION

This report presents and discusses the analytical results of the 1st Half 1998 round of IRM groundwater sampling at the Skinner Landfill site. This groundwater sampling and analysis was performed in accordance with the December 9, 1992 Administrative Consent Order, the June 4, 1993 Quality Assurance Project Plan (QAPjP) and the modifications to these documents outlined in a letter to Dr. Larry I. Bone, Chairperson of the Skinner PRP Group Technical Committee from Mr. Jamey Bell, USEPA Remedial Project Manager, dated October 10, 1995.

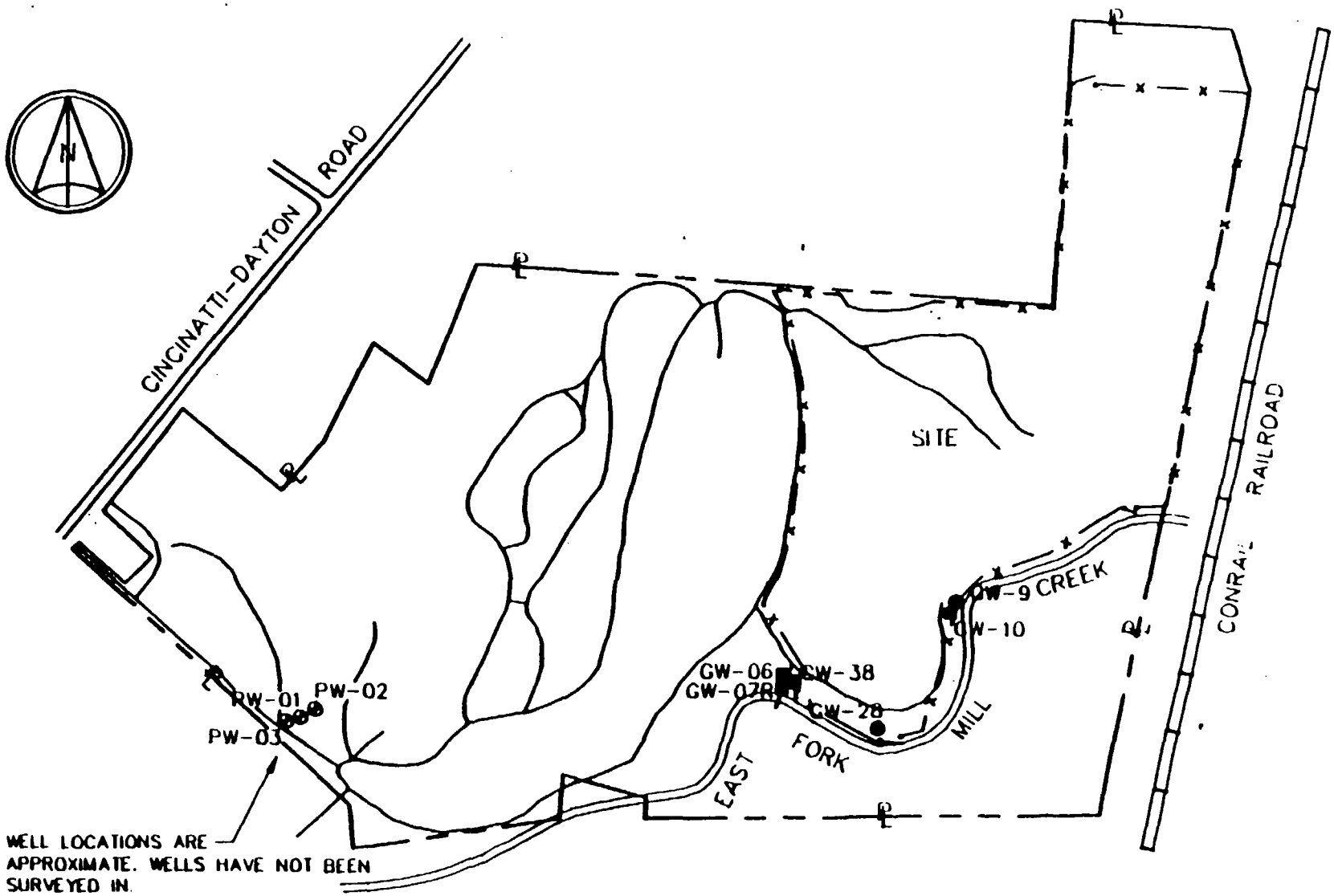
2.0 GROUNDWATER SAMPLING AND ANALYTICAL RESULTS

2.1 Groundwater Sampling and Analysis

Groundwater samples were collected on April 27 and 28, 1998 by Rust Environment & Infrastructure, Inc. (Rust) personnel. The locations of the nine IRM monitoring wells are shown on Figure 1. Table 1 presents some basic information about these wells (*i.e.*, depth, screened interval, and nature of formation being monitored). Field notes documenting sample collection, field measurements and field calibrations are presented in Appendix A. Laboratory analysis for volatile organics and inorganics was performed by Severn Trent Envirotest (STL). All samples were analyzed following USEPA Contract Laboratory Program (CLP) protocols. The volatile organics were analyzed following the USEPA low level CLP procedure, OLC01.0, and the inorganics were analyzed following the CLP ILM03.0 Statement of Work (SOW).

The laboratory data have been validated by Rust chemists and the data validation summaries are presented by parameter group in Appendices B and C. Analytical results are presented in Tables 2 and 3. With the exception of data modified by the data validation process, the tables show the results as reported by the laboratory using standard CLP data qualifiers. The most frequently used qualifiers are as follows: U indicates not detected at the listed reporting limit, J (organics) and B (inorganics) indicate an estimated value above the method detection limit (MDL) or the instrument detection limit (IDL) but below the CLP contract required quantitation or detection limit. Data modified by the data validation process are shown in shaded grid boxes, and detections are shown in bold with bold outlining on the table grid.

Time: 9:56:25
Date: 11/23/1993
Drawing File: D:\DWG\SKINNER\2A9268_6.DWG (RJN)
Xrefs: None



DUNN CORPORATION
12 Metro Park Rd.
Albany, N.Y. 12205

IRM GROUNDWATER MONITORING LOCATIONS

SKINNER LANDFILL
WEST CHESTER, OHIO

PROJECT NO	DATE	DWG NO	SCALE	FIGURE NO
35347600	11/23/93	2A9268_6	1"=400'	

Table 1 - Well Information

Well ID	Total Depth	Screened Interval	Unit Screened
PW-01	18.5 '	6 - 18.5 '	Silty Clay with Gravel
PW-02	65 '	51.5 - 65 '	Fine to Medium Gravel
PW-03	86.5 '	79 - 86.5 '	Interbedded Shale and Limestone
GW-06	41 '	28.5 - 41'	Silty Clay and Clayey Silt
GW-07R	16 '	6 - 16'	Silty Clay with Gravel
GW-09	27 '	19 - 27'	Interbedded Shale and Limestone
GW-10	14 '	3 - 14'	Sandy Silt
GW-28	28 '	19.3 - 28 '	Interbedded Shale and Limestone
GW-38	60 '	39.4 - 60'	Interbedded Shale and Limestone

wellinfo.xls (amn)

2.2 Volatile Organics Results

Volatile organic analytical results are summarized in Table 2. Low concentrations of one or more volatile organic compounds were detected in the groundwater samples collected from monitoring wells GW-07R and GW-10. All of the reported concentrations were below the applicable USEPA drinking water standards.

Please note that all of the acetone and 2-butanone results have been rejected and are considered unusable. Acetone and 2-butanone are not site related contaminants, however, and rejection of the results for these two compounds does not impact use of the volatile organic analytical data in evaluating the groundwater quality at the site. The Volatile Organic Data Validation Summary (Appendix B) discusses this issue in more detail.

2.3 Inorganics Results

Inorganic analytical data are summarized in Table 3. Metal analyses were performed on samples that were field filtered through 0.45 micron filters prior to preservation. The samples contained essentially no suspended sediment and therefore represent dissolved matrix samples.

Aluminum concentrations in groundwater from monitoring wells PW-01, PW-03, GW-06, GW-07R, GW-10 and GW-28 exceeded the USEPA National Secondary Drinking Water Standard (NSDWS) of 200 ug/L. Iron concentrations in groundwater from each of the monitoring wells sampled exceeded the NSDWS of 300 ug/L, and the manganese concentrations in groundwater from each of the monitoring wells exceeded the NSDWS of 50 ug/L. Please note that although the manganese concentration for sample PW-02 did not exceed the NSDWS, the manganese concentration for its field duplicate, sample PW-02 Dup, did. The NSDWS are not enforceable by law, and the aluminum, iron and manganese standards are based primarily on aesthetic reasons (taste, staining of laundry and porcelain, *etc.*). The lead concentration in groundwater from monitoring well GW-06 (42.4 ug/L) exceeds the USEPA action level concentration of 15.0 ug/L.

3.0 SUMMARY

Analytical data indicated that groundwater from each of the monitoring wells exhibited volatile organic concentrations that were below applicable USEPA Drinking Water Standards. The data also indicated that groundwater from six (6) of the monitoring wells exhibited aluminum concentrations that exceeded the NSDWS, and that the iron and manganese concentrations in groundwater samples from all nine (9) monitoring well locations exceeded the NSDWS. As noted above, the NSDWS are not enforceable by law, and the aluminum, iron and manganese standards are based primarily on aesthetic reasons (taste, staining of laundry and porcelain, *etc.*).

Table 2 - Volatile Organics Results

Analytical Method: OLC01.0
Sample Media: water
Analytical Units: ug/L

Skinner Landfill
Summary of Groundwater Analysis Per IRM

ANALYTE / Well #	PW-01	PW-02	PW-03	GW-06	GW-07R	GW-09	GW-10	GW-28	GW-38
Date Sampled	4/27/98	4/27/98	4/27/98	4/27/98	4/27/98	4/28/98	4/28/98	4/28/98	4/27/98
Date Analyzed	5/7/98	5/8/98	5/7/98	5/7/98	5/7/98	5/8/98	5/8/98	5/8/98	5/8/98
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
chloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
methylene chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
acetone	R	R	R	R	R	R	R	R	R
carbon disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	2	1 U	1 U
cis-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-butanone	R	R	R	R	R	R	R	R	R
bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloropropane	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U	1 U
cis-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-trichloroethane	1 U	1 U	1 U	1 U	0.6 J	1 U	1 U	1 U	1 U
benzene	1 U	1 U	1 U	1 U	1 U	1 U	0.8 J	1 U	1 U
trans-1,3-dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m. p.-xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
o.-xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dibromo-3-chloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
1) All results expressed in micrograms per liter (ug/L).
2) Standard Organic Data Qualifiers have been used.
3) Sample PW-02 Dup is a field duplicate of sample PW-02.

Table 3 - Inorganics Results

Analytical Method: ILM03.0
Sample Media: water
Analytical Units: ug/L

Skinner Landfill
Summary of Groundwater Analysis Per IRM

ANALYTE / Well # / Date Sampled	PW-01 4/27/98		PW-02 4/27/98		PW-03 4/27/98		GW-06 4/27/98		GW-07R 4/27/98		GW-09 4/28/98		GW-10 4/28/98		GW-28 4/28/98		GW-38 4/27/98	
aluminum	703		47.8	B	260		1,360		268		104	B	277		545		114	B
antimony	6.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
arsenic	2.0	U	2.0	U	2.0	U	4.9	B	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
barium	127	B	501		1,170		1,430		121	B	679		55.6	B	103	B	656	
beryllium	0.66	U	0.33	U	0.33	U	0.97	B	0.33	U	0.33	U	0.33	U	0.33	U	0.33	U
cadmium	0.66	U	0.33	U	0.33	U	0.89	B	0.34	B	0.33	U	0.33	U	0.33	U	0.33	U
calcium	538,000		55,000		174,000		218,000		128,000		95,700		244,000		162,000		77,000	
chromium	0.89	U	0.79	B	0.55	B	1.2	B	0.44	U	1.4	B	0.44	U	5.0	B	0.75	B
cobalt	2.9	B	7.9	U	1.1	B	12.0	B	1.8	B	0.51	B	2.8	B	5.2	B	1.4	B
copper	9.0	B	3.6	B	7.2	B	20.1	B	6.8	B	2.6	B	9.6	B	3.9	B	3.5	B
iron	3,330		618		1,390		4,910		504		1,830		762		2,420		1,730	
lead	6.9		1.1	U	1.1	U	42.4		2.0	B	1.1	U	2.5	B	7.0		1.1	U
magnesium	37,000		21,900		56,500		30,000		16,700		38,100		63,500		18,300		34,400	
manganese	3,110		30.9		189		1,270		501		85.4		426		415		223	
mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
nickel	8.9	B	2.3	B	5.8	B	10.8	B	7.2	B	3.6	B	8.6	B	33.0	B	3.6	B
potassium	3,700	B	17,000		58,000		28,400		4,500	B	7,520		43,500		32,700		16,300	
selenium	2.6	B	3.5	B	1.9	B	2.4	B	2.1	B	1.8	U	1.8	U	1.8	U	2.8	B
silver	4.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
sodium	44,600		357,000		958,000		74,100		14,000		46,900		67,000		441,000		139,000	
thallium	4.6	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U
vanadium	2.9	B	0.56	U	0.81	B	5.1	B	0.68	B	0.65	B	0.64	B	1.2	B	0.56	U
zinc	32.7	B	7.2	B	59.7	B	102		27.1		17.4	B	14.6	B	44.2		30.2	
cyanide	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Notes:
1) All results expressed in micrograms per liter (ug/L).
2) Standard Inorganic Data Qualifiers have been used.
3) Sample PW-02 Dup is a field duplicate of sample PW-02.

APPENDIX A

GROUNDWATER SAMPLING FIELD NOTES

Getting Dark

6:00 Collect Sample from 7R
3 Voa, 1 CN, 1 metal
Filtered

7:00 leave site after
putting covers back on
wells

7-27-98 - MONDAY

Brandee Pederson, Chip Council, Karen Fields

9:30 Collect water levels

P-03 - 14.96 Depth to water
P-01 - 11.61
P-02 - 13.63
GW-38 - 15.01
GW-06 - 13.82
GW-7R - 3.19
GW-28 - 16.44
GW-9 - 23.38
GW-10 - 2.05

Volume Calcs

P-03	P-01	P-02
88.57	20.02	65.14
- 14.96	- 11.61	- 13.63
73.61	8.41	51.51
x .17	x .17	x .17
12.5137	1.4297	8.7567

GW 38	GW 06	GW 7R
48.05	34.16	13.98
15.01	13.82	.19
33.04	20.44	12.79
x .17	x .17	x .17
5.6168	3.5598	2.1743

GW-28	GW-9	GW 10
29.99	29.40	14.56
16.44	23.38	2.05
13.55	6.02	12.51
x .17	x .17	x .17
2.3035	1.0234	2.1267

1 Vol (gal)

P-03	12.6
P-01	1.4
P-02	8.8
GW-38	5.6
GW 06	3.6
GW 7R	2.2
GW 28	2.3
GW 9	1.1
GW-10	2.2

Check calibration of pH, cond, temp meter

Cal 4.0 → 4.0

Cal 10.0 → 10.09

PW 03 10:45 Start bailing

1 well volume 12.5 gal.

Vol	pH	Cond	Temp	Time	Observ
1	7.22	1294	60.4	11:19	Cloud
15 gal	7.38	1725	61.6	11:30	Cloudy

Dry at 15 gal.

11:30 Go to lunch & let well recharge before sampling.

12:30 Return from lunch & start bailing wells PW-01 & PW-02.

PW-01 1 Vol = 1.4

Vol	pH	Cond	Temp	Time	Observ
1	7.05	621	58.0	12:39	Cloudy
2	7.06	241	57.5	12:43	Cloudy
3	7.03	269	56.5	12:45	Cloudy
4	7.01	399	56.5	12:46	Cloudy
5	7.02	153	56.2	12:48	Cloudy
6	7.16	560	56.5	12:49	Cloudy
7	7.34	247	56.5	12:54	Cloudy
8	7.33	199	56.3	12:56	Cloudy
9	7.24	203	56.3	12:58	Cloudy

PW-02 1 vol = 8.8 gal

Vol	pH	Cond	Temp	Time	Observed
1	10.25	287	64.5	12:57	Milky
2	8.00	696	58.5	13:07	Grayish little clear
3	7.83	511	59.3	13:20	Grayish little clear
4	7.82	416	58.2	13:40	Milky clear Grayish
5	7.70	402	60.0	14:00	Grayish

13:30 Start sampling wells PW-01, PW-02 & PW-03

14:30 End sampling at PW-01, PW-02, PW-03 go to wells GW-38, GW-06, GW-7R

GW-38 1 vol = 5.6 gal

Vol	pH	Cond	Temp	Time	Observ
1	9.23	4250	66.8	15:05	Clear
2	7.81	3760	59.5	15:14	Clear
3	7.58	2960	58.1	15:26	Clear

GW-06 1 vol = 3.6

Vol	pH	Cond	Temp	Time	Observ.
3 gal	9.14	1420	61.4	15:06	Slightly cloudy
6 gal	7.65	2820	59.3	15:16	" "
9 gal	7.57	3530	58.3	15:26 15:30	Clear

Dry at 9 gal

GW-7R 1 vol = 2.2

Vol	pH	Cond	Temp	Time	Observ
15 gal	7.38	[illegible]	56.4	15:35	Cloudy

Note - conductivity meter does not seem to be working properly

30 gal	7.42	666	55.7	15:38	Cloudy
45 gal	7.35	688	55.3	15:40	Clear Slightly Turbid
60 gal	7.38	702	54.5	15:42	Slightly Turbid

15:45 Start sampling GW-7R

16:00 Start sampling GW-38 Cents in Cyanide sample.

16:15 Start sampling GW-06.

16:45 Return to office & put samples in refrigerator

14 [illegible]

Deanne Pederson, [illegible]

9:45 Arrive at GW 28 to begin well purging & sampling

pH meter calibration
4.0 std → reads 4.13
10.0 std → reads 10.03

GW-28 - 1 vol - 2.3 gal

Vol	pH	Cond	Temp	Time	Observe
1	7.85	2610	58.3	10:04	Slightly turbid
2	7.70	2950	56.8	10:01	Slightly turbid
3	7.91	2600	57.5	10:15	Slightly turbid

10:30 Sample GW-28

Arrive @ GW-09
Start bailing @ 11:00
GW-09 - 1 vol = 1.1 gal

Vol	pH	Cond	Temp	Time	Observe
1	7.64	854	63	11:03	turbid
2	7.58	904	58	11:07	"
3	7.42	947	57.7	11:12	"

11:15 Sample GW-09

Start bailing GW-10 1 vol = 2.2 gal

Vol	pH	Cond	Temp	Time	Observe
1	7.71	1818	62.5	11:17	Cloudy
2	7.61	1664	58.2	11:20	"
3	7.59	1613	57.0	11:25	"

Sample at 11:45

Go to lunch at 12:00

13:00 Return to site. Put 2 bales of hay along fence where erosion is occurring. Brander conducts fence inspection.

14:30 Return to office to pack samples for shipment to lab.

STL Envirotest

CHAIN OF CUSTODY

315 Fullerton Avenue
Newburgh, NY 12550
TEL (914) 562-0890
FAX (914) 562 0841

CUSTOMER NAME: RUST
ADDRESS: 11785 Highway Drive #102
CITY, STATE, ZIP: Cincinnati, OH 45241
NAME OF CONTACT: Brandee Pederson
PHONE NO.: 513/483 5365
PROJECT LOCATION: Skinner Landfill
PROJECT NUMBER / PO NO.:

REPORT TYPE
STANDARD ☐ ISRA ☐
NYASP A ☐ B ☐ CLP ☐
OTHER _____

TURNAROUND
☐ NORMAL _____
☐ QUICK _____
☐ VERBAL _____

REPORT # (Lab Use Only)

NY PUBLIC WATER SUPPLIES
SOURCE ID ___ ___ ___
ELRP TYPE ___ ___ ___
FEDERAL ID ___ ___ ___ ___ ___ ___ ___

DW = DRINKING WATER S = SOIL
WW = WASTE WATER SL = SLUDGE GW = GROUND WATER

STE#	SAMPLING DATE	TIME AM PM	COMP	GRAB	MATRIX	CLIENT I.D.	Total Number of Containers	40ml Glass HCL	Liter Amber Sulfuric Acid	Liter Amber Organic Washed	Liter Plastic Nitric Acid	Liter Plastic Sodium Hydroxide	Liter Plastic	Liter Plastic Sulfuric Acid	250ml Plastic	125ml Plastic Sterile	250ml Amber	2 oz. Qorpak	ANALYSIS REQUESTED
PW-01 (ms/msd)	4/27/98	13.45		✓	GW	Skinner Landfill	4	2			1	1							metals / Cyanide / VOC
PW-01	↓	13.50		✓	GW	↓	4	2			1	1							metals / Cyanide / VOC
PW-02	↓	14.00		✓	GW	↓	4	2			1	1							metals / Cyanide / VOC
PW-02 Dup	↓	14:30		✓	GW	↓	4	2			1	1							metals / Cyanide / VOC
GW-06	↓	16.15		✓	GW	↓	2	2											VOC
GW-07R	↓	15.45		✓	GW	↓	2	2											VOC
PW-03	↓	15.00		✓	GW	↓	2	2											VOC
Field Blank	↓	14.45			GW	↓	2	2											VOC
Trip Blank							2	2											VOC
GW-38	4/27/98	16.02		✓	GW	Skinner Landfill	2	2											VOC
GW-10	4/28/98	11.45		✓	GW	↓	2	2											VOC
GW-28	↓	10.30		✓	GW	↓	2	2											VOC
GW-9	↓	11.15		✓	GW		2	2											VOC

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
[signature]	STL	4/28/98					
Brandee Pederson	RUST	4/28/98	15:30				

COMMENTS: Please send results to Ed Reed - RUST Albany

CHAIN OF CUSTODY

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
TEL (914) 562-0890
FAX (914) 562-0841

CUSTOMER NAME: RUST
ADDRESS: 11785 Highway Drive STE 100
CITY, STATE, ZIP: Cincinnati, OH 45241
NAME OF CONTACT: Brandee Pederson
PHONE NO.: 513/483/5365
PROJECT LOCATION: Skinner Landfill
PROJECT NUMBER / PO NO.:

REPORT TYPE
STANDARD ☐ ISRA ☐
NYASP A ☐ B ☐ CLP ☐
OTHER _____

TURNAROUND
☐ NORMAL _____
☐ QUICK _____
☐ VERBAL _____

REPORT # (Lab Use Only)
[redacted]

DW = DRINKING WATER S = SOIL
WW = WASTE WATER SL = SLUDGE GW = GROUND WATER

NY PUBLIC WATER SUPPLIES
SOURCE ID ___ ___ ___
ELRP TYPE ___ ___ ___
FEDERAL ID ___ ___ ___ ___ ___ ___ ___

STE#	SAMPLING DATE	TIME AM PM	COMP	GRAB	MATRIX	CLIENT I.D.	Total Number of Containers	40ml Glass HCL	Liter Amber Sulfuric Acid	Liter Amber Organic Washed	Liter Plastic Nitric Acid	Liter Plastic Sodium Hydroxide	Liter Plastic	Liter Plastic Sulfuric Acid	250ml Plastic	125ml Plastic Sterile	250ml Amber	2 oz Ziplock	ANALYSIS REQUESTED
GW-07R	4/27	15:45		✓	GW	Skinner Landfill	2				1	1							Metals, Cyanide
PW-03	↓	15:00		✓	GW		2				1	1							↓
GW-06		16:15		✓	GW		2				1	1							
GW-38		16:00		✓	GW		2				1	1							
Field Blank	↓	14:45		✓	GW		2				1	1							
GW-09	4/28	11.15		✓	GW		2				1	1							
GW-10	↓	11.45		✓	GW		2				1	1							
GW-38	↓	10.30		✓	GW		2				1	1							✓

LAB

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
[signature]	STL	4/22/98					
Brandee Pederson	RUST	4/28/98	15:30				

COMMENTS: Send results to Ed Nied - Rust Albany

APPENDIX B

VOLATILE DATA VALIDATION SUMMARY

Volatile Organic Data Validation Summary
Skinner Landfill Site
West Chester, Ohio
Analytical Laboratory: Severn Trent Envirotest
Sample Delivery Group RS807

Analytical results for nine (9) groundwater samples with matrix QC, one (1) field duplicate, one (1) field blank and one (1) trip blank from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) **National Functional Guidelines for Organic Data Review** (Draft 12/90, Revised 6/91) and the USEPA **Superfund Analytical Methods for Low Concentration Water for Organics Analysis** (6/91). This validation pertains to the following samples collected by Rust Environment & Infrastructure (Rust) personnel on April 27 and 28, 1998:

PW-01	**PW-03**	**GW-28**
PW-01 MS	**GW-06**	**GW-38**
PW-01 MSD	**GW-07R**	**Field Blank**
PW-02	**GW-09**	**Trip Blank**
PW-02 Dup	**GW-10**	

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Data
- Blank Summary and Data
- GC/MS Instrument Performance Check
- Target Compound Identification/Quantitation
- EPA/NIH Mass Spectral Library Search for TICs
- Quantitation Reports and Mass Spectral Data
- Initial and Continuing Calibration Data
- Internal Standard Areas and Retention Times
- Field Duplicate Data

The above items were in compliance with USEPA OLC01.0 laboratory quality control (QC) criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

Deliverable Requirements

Please note that sample GW-07R was collected from well GW-07R, a replacement well for well GW-07 which contains an unremovable obstruction and can not be sampled.

Surrogate Recoveries

The bromofluorobenzene (BFB) surrogate recoveries for samples GW-06 and GW-28 were not listed on the Low Concentration Volatile System Monitoring Compound Recovery form (Form 2A). Both recoveries were within the contract required QC limits however, and no data have been qualified based upon this minor clerical error.

The BFB recovery for sample GW-10 was 79%, which is outside of the contract required QC limits of 80-120%. In accordance with the Statement of Work (SOW), the sample was reanalyzed and the BFB recovery for this reanalysis was 77%, which is also outside of the contract required QC limits, and the laboratory reported the data for both the original analysis and the reanalysis, with the reanalysis reported as GW-10RE. In accordance with USEPA data validation criteria, the data from the original analysis has been qualified with a "V" due to variance from quality control criteria and are considered estimated while the results of the reanalysis have been rejected.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results

Sample PW-01 was selected for MS/MSD analysis and all applicable matrix QC criteria have been met for this analysis.

Blank Summary and Data

The compound chloroform was detected as in the field blank at an estimated concentration of 0.6 micrograms per liter (ug/L). No data have been qualified based upon the chloroform result reported for this blank, however, because chloroform was not detected in any of the associated samples.

A tentatively identified compound (TIC) with a retention time of 28.65 minutes was detected in both the field blank and the trip blank associated with the samples in this SDG. In accordance with EPA data validation criteria, this TIC was rejected as laboratory derived and not site related when identified in the associated samples in this SDG. Please note that rejection of this data has no effect on the usability or validity of the data reported for target compounds in these samples.

The compound 1-propanol was detected as a TIC in method blank VBLK732. No data have been qualified based upon the 1-propanol TIC result reported for this method blank, however, because this compound was not detected in any of the associated samples.

Initial and Continuing Calibration Data

Although the Statement of Work (SOW) specifies a minimum average relative response factor (RRF) of 0.01 for all volatile compounds, the criteria employed for technical review purposes are different from those used in the method. For data review purposes, all volatile compounds must have an RRF of 0.05 or greater. The RRF for acetone (RRF=0.020) and 2-butanone (RRF=0.030) in the initial calibration are both less than the technical criteria specified. In accordance with EPA data validation guidelines, the acetone and 2-butanone results have been rejected and are considered unusable.

Field Duplicate Data

Sample PW-02 Dup is a field duplicate of sample PW-02. No volatile organic target compounds were detected in either sample PW-02 or its field duplicate. Therefore, the field duplicate data is indicative of acceptable sampling and analytical precision.

Summary

In summary, based on 420 sample data points, 40 of which were qualified as estimated, and 20 qualified as unusable, and since estimated data are considered valid and usable, the usability of this data package is 95.2%.

Anthony M. Nace	7 AUGUST 98
Reviewed By	Date
Ed Fabrikar	8/11/98
Approved By	Date

Volatile Organic Analytical Data

Skinner Landfill
West Chester, Ohio

Sampling Dates: April 27 and 28, 1998

Compound / Sample ID	PW-01	PW-02	PW-02 Dup	PW-03	GW-06	GW-07R	GW-09	GW-10	GW-28	GW-38	Field Blank	Trip Blank
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Methylene Chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UV	2 U	2 U	1 U	1 U
Acetone	R	R	R	R	R	R	R	R	R	R	R	R
Carbon Disulfide	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2 V**	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	**0.6 J**	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
2-Butanone	R	R	R	R	R	R	R	R	R	R	R	R
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	**1**	1 U	1 UV	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	**0.6 J**	1 U	1 UV	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.8 JV**	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UV	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UV	5 U	5 U	5 U	5 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
Xylene (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UV	1 U	1 U	1 U	1 U

Notes:

1) All results expressed in micrograms per liter (ug/L)
2) Standard Organic Data Qualifiers have been used
3) Sample PW-02 Dup is a field duplicate of sample PW-02

Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	PW-01	Date Collected:	27-APR-98
ETL Sample Number:	185807-01	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	07-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8098.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~	~~3~~	~~J~~ 5 R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

GMM
7 AUG 98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	PW-01	Date Collected:	4/27/98
STE Lab No.:	185807-01	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/7/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l
	NONE FOUND		

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FORM I - VOA

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315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	PW-02	Date Collected:	27-APR-98
ETL Sample Number:	185807-02	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	07-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8099.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

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STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	PW-02	Date Collected:	4/27/98
STE Lab No.:	185807-02	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/7/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8099.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l
	NONE FOUND		

FORM I - VOA

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Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	PW-02 DUP	Date Collected:	27-APR-98
ETL Sample Number:	185807-03	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	08-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8113.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

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315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	PW-02 DUP	Date Collected:	4/27/98
STE Lab No.:	185807-03	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/8/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8113.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l
	NONE FOUND		

FORM I - VOA

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STL Envirotest
315 Fullerton Avenue
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Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	PW-03	Date Collected:	27-APR-98
ETL Sample Number:	185807-06	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	07-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8103.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

Cmm
7 AUG 98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	PW-03	Date Collected:	4/27/98
STE Lab No.:	185807-06	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/7/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8103.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l
	NONE FOUND		

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Volatile Organics Analysis Data Sheet
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91.4

Client ID:	GW-06	Date Collected:	27-APR-98
ETL Sample Number:	185807-04	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	07-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8100.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~	~~4~~	~~J~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

CLM
7 AUG 98

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Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	GW-06	Date Collected:	4/27/98
STE Lab No.:	185807-04	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/7/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8100.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l
	NONE FOUND		

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Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	GW-07R	Date Collected:	27-APR-98
ETL Sample Number:	185807-05	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	07-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8102.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1	1	
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1	.6	J
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

GMT
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315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	GW-07R	Date Collected:	4/27/98
STE Lab No.:	185807-05	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/7/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8102.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l
	~~unknown~~	~~28.65~~	~~1.0~~ ~~J~~ R

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Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	GW-9	Date Collected:	28-APR-98
ETL Sample Number:	185807-12	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	08-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8111.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

CMM
7 AUG 98

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Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	GW-9	Date Collected:	4/28/98
STE Lab No.:	185807-12	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/8/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8111.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l
	NONE FOUND		

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Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	GW-10	Date Collected:	28-APR-98
ETL Sample Number:	185807-10	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	08-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8109.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier	
74-87-3	Chloromethane	1		U	✓
74-83-9	Bromomethane	1		U	✓
75-01-4	Vinyl chloride	1		U	✓
75-00-3	Chloroethane	1		U	✓
75-09-2	Methylene chloride	2		U	✓
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~	~~✓~~ R
75-15-0	Carbon Disulfide	1		U	✓
75-35-4	1,1-Dichloroethene	1		U	✓
75-35-3	1,1-Dichloroethane	1	2		✓
156-59-4	cis-1,2-Dichloroethene	1		U	✓
156-60-5	trans-1,2-Dichloroethene	1		U	✓
67-66-3	Chloroform	1		U	✓
107-06-2	1,2-Dichloroethane	1		U	✓
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~	~~✓~~ R
74-97-5	Bromochloromethane	1		U	✓
71-55-6	1,1,1-Trichloroethane	1		U	✓
56-23-5	Carbon tetrachloride	1		U	✓
75-27-4	Bromodichloromethane	1		U	✓
78-87-5	1,2-Dichloropropane	1		U	✓
10061-01-5	cis-1,3-Dichloropropene	1		U	✓
79-01-6	Trichloroethene	1		U	✓
124-48-1	Dibromochloromethane	1		U	✓
79-00-5	1,1,2-Trichloroethane	1		U	✓
71-43-2	Benzene	1	.8	J	✓
10061-02-6	trans-1,3-Dichloropropene	1		U	✓
75-25-2	Bromoform	1		U	✓
108-10-1	4-Methyl-2-pentanone	5		U	✓
591-78-6	2-Hexanone	5		U	✓
127-18-4	Tetrachloroethene	1		U	✓
79-34-5	1,1,2,2-tetrachloroethane	1		U	✓
106-93-4	1,2-Dibromoethane	1		U	✓
108-88-3	Toluene	1		U	✓
108-90-7	Chlorobenzene	1		U	✓
100-41-4	Ethyl Benzene	1		U	✓
100-42-5	Styrene	1		U	✓
108-38-3/106-42-3	m,p-Xylene	1		U	✓
95-47-6	o-Xylene	1		U	✓
541-73-1	1,3-Dichlorobenzene	1		U	✓
106-46-7	1,4-Dichlorobenzene	1		U	✓
95-50-1	1,2-Dichlorobenzene	1		U	✓
96-12-8	1,2-Dibromo-3-chloropropane	1		U	✓
108-05-4	Vinyl acetate	1		U	✓

GMT
7 AUG 98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	GW-10	Date Collected:	4/28/98
STE Lab No.:	185807-10	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/8/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8109.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l	
540-54-5	1-chloropropane	8.58	0.7	J

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7 AUG 98

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID:	GW-10RE	Date Collected:	4/28/98
STE Lab No.:	185807-10RE	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/1/98
% Solid:		Report Date:	6/5/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8112.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	Detection Limit ug/l	Conc ug/l
74-87-3	Chloromethane	1.0	U
74-83-9	Bromomethane	1.0	U
75-01-4	Vinyl Chloride	1.0	U
75-00-3	Chloroethane	1.0	U
75-09-2	Methylene Chloride	2.0	U
67-64-1	Acetone	5.0	3.0 J
75-15-0	Carbon Disulfide	1.0	U
75-35-4	1,1-Dichloroethene	1.0	U
75-34-3	1,1-Dichloroethane	1.0	2.0
156-59-4	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
67-66-3	Chloroform	1.0	U
107-06-2	1,2-Dichloroethane	1.0	U
78-93-3	2-Butanone	5.0	U
74-97-5	Bromochloromethane	1.0	U
71-55-6	1,1,1-Trichloroethane	1.0	U
56-23-5	Carbon Tetrachloride	1.0	U
75-27-4	Bromodichloromethane	1.0	U
78-87-5	1,2-Dichloropropane	1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	U
79-01-6	Trichloroethene	1.0	U
124-48-1	Dibromochloromethane	1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	U
71-43-2	Benzene	1.0	0.7 J
10061-02-6	trans-1,3-Dichloropropene	1.0	U
75-25-2	Bromoform	1.0	U
108-10-1	4-Methyl-2-Pentanone	5.0	U
591-78-6	2-Hexanone	5.0	U
127-18-4	Tetrachloroethene	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-88-3	Toluene	1.0	U
108-90-7	Chlorobenzene	1.0	U
100-41-4	Ethylbenzene	1.0	U
100-42-5	Styrene	1.0	U
1330-20-7	Xylenes, Total	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	U

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STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	GW-28	Date Collected:	28-APR-98
ETL Sample Number:	185807-11	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	08-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8110.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

GMT
7 AUG 98

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Newburgh, NY 12550
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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	GW-28	Date Collected:	4/28/98
STE Lab No.:	185807-11	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/8/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8110.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l	
540-54-5	1-chloropropane	8.58	0.7	J

FORM I - VOA

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NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	GW-38	Date Collected:	27-APR-98
ETL Sample Number:	185807-09	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	08-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8108.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

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STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	GW-38	Date Collected:	4/27/98
STE Lab No.:	185807-09	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/8/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8108.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l
	NONE FOUND		

FORM I - VOA

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7 AUG 98

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Tel: (914) 562-0890
Fax: (914) 562-0841

Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	FIELD BLANK	Date Collected:	27-APR-98
ETL Sample Number:	185807-07	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	07-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8104.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1	.6	J
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	FIELD BLANK	Date Collected:	4/27/98
STE Lab No.:	185807-07	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/7/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8104.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l	
	unknown	28.65	0.6	J

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Newburgh, NY 12550
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Fax: (914) 562-0841

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Volatile Organics Analysis Data Sheet
Form I VOA
91.4

Client ID:	TRIP BLANK	Date Collected:	27-APR-98
ETL Sample Number:	185807-08	Date Received:	29-APR-98
Client Name:	RUST	Date Extracted:	
Project Name:	SKINNER LANDFILL	Date Analyzed:	08-MAY-98
% Solid:	NA	Report Date:	22-JUN-98
Matrix:	2 GW/WW	Column:	DB-624
Sample Wt/Vol:	25ml	Lab File Id:	W8105.D
Level:	LOW	Dilution Factor:	1.00

CAS NO.	Compound	Detection Limit ug/l	Conc. ug/l	Data Qualifier
74-87-3	Chloromethane	1		U
74-83-9	Bromomethane	1		U
75-01-4	Vinyl chloride	1		U
75-00-3	Chloroethane	1		U
75-09-2	Methylene chloride	2		U
~~67-64-1~~	~~Acetone~~	~~5~~		~~U~~ R
75-15-0	Carbon Disulfide	1		U
75-35-4	1,1-Dichloroethene	1		U
75-35-3	1,1-Dichloroethane	1		U
156-59-4	cis-1,2-Dichloroethene	1		U
156-60-5	trans-1,2-Dichloroethene	1		U
67-66-3	Chloroform	1		U
107-06-2	1,2-Dichloroethane	1		U
~~78-93-3~~	~~2-Butanone~~	~~5~~		~~U~~ R
74-97-5	Bromochloromethane	1		U
71-55-6	1,1,1-Trichloroethane	1		U
56-23-5	Carbon tetrachloride	1		U
75-27-4	Bromodichloromethane	1		U
78-87-5	1,2-Dichloropropane	1		U
10061-01-5	cis-1,3-Dichloropropene	1		U
79-01-6	Trichloroethene	1		U
124-48-1	Dibromochloromethane	1		U
79-00-5	1,1,2-Trichloroethane	1		U
71-43-2	Benzene	1		U
10061-02-6	trans-1,3-Dichloropropene	1		U
75-25-2	Bromoform	1		U
108-10-1	4-Methyl-2-pentanone	5		U
591-78-6	2-Hexanone	5		U
127-18-4	Tetrachloroethene	1		U
79-34-5	1,1,2,2-tetrachloroethane	1		U
106-93-4	1,2-Dibromoethane	1		U
108-88-3	Toluene	1		U
108-90-7	Chlorobenzene	1		U
100-41-4	Ethyl Benzene	1		U
100-42-5	Styrene	1		U
108-38-3/106-42-3	m,p-Xylene	1		U
95-47-6	o-Xylene	1		U
541-73-1	1,3-Dichlorobenzene	1		U
106-46-7	1,4-Dichlorobenzene	1		U
95-50-1	1,2-Dichlorobenzene	1		U
96-12-8	1,2-Dibromo-3-chloropropane	1		U
108-05-4	Vinyl acetate	1		U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Client ID:	TRIP BLANK	Date Collected:	4/27/98
STE Lab No.:	185807-08	Date Received:	4/29/98
Client Name:	RUST	Date Extracted:	
Project Name:	Skinner Landfill	Date Analyzed:	5/8/98
% Solid:		Report Date:	6/22/98
Matrix:	Water	Column:	DB-624
Sample Wt/Vol.:	25ml	Lab File ID:	W8105.D
Level:	Low	Dilution Factor:	1

CAS No.	Compound	RT or Scan Number	Estimated Conc. ug/l	
	unknown	28.65	0.6	J

FORM I - VOA

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Organic Data Qualifiers

U - The compound was analyzed for but not detected at or above the quantitation limit indicated.

J - The compound was analyzed for and determined to be present in the sample because the mass spectrum of the compound meets the identification criteria of the method. The concentration reported is an estimated value, less than the practical quantitation limit for the sample.

B - The compound is also found in an associated blank.

V - The reported value is considered estimated due to variance from quality control criteria

S - The reported value is suspected to be due to laboratory contamination.

R - The reported value is unusable and rejected due to variance from quality control criteria.

D - The reported value is taken from the analysis of a diluted sample.

E - The reported value exceeds the calibration range of the instrument.

N - Indicates presumptive evidence for compound identification.

A - Indicates that the compound is an aldol condensation product.

C - Compound identification has been qualitatively confirmed by GC/MS.

P - Indicates that the percent difference between the results from the two analytical columns is greater than 25%.

APPENDIX C

INORGANIC DATA VALIDATION SUMMARY

Inorganic Data Validation Summary
Skinner Landfill Site
West Chester, Ohio
Analytical Laboratory: Severn Trent Envirotest
Sample Delivery Group RS807

Analytical results for nine (9) groundwater samples with matrix QC, one (1) field duplicate, one (1) field blank and one (1) trip blank from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) **Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis** (February 1994 Revision) and the USEPA Region II **Checklist for Evaluation of Metals Data for the Contract Laboratory Program, Appendix A.1**. This validation pertains to the following samples collected by Rust Environment & Infrastructure (Rust) personnel on April 27 and 28, 1998:

PW-01	**PW-03**	**GW-28**
PW-01 MS	**GW-06**	**GW-38**
PW-01 MSD	**GW-07R**	**Field Blank**
PW-02	**GW-09**	**Trip Blank**
PW-02 Dup	**GW-10**	

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times and Sample Preparation
- Initial and Continuing Calibration Data
- CRDL Standards for AA and ICP
- Instrument and Preparation Blank Summary and Data
- ICP Interference Check Sample
- Spiked Sample Recovery Data
- Laboratory Duplicate Data
- Laboratory Control Samples (LCS)
- ICP Serial Dilution Data
- Graphite Furnace Atomic Absorption (GFAA) QC Analysis
- Method of Standard Addition (MSA) Results
- Verification of Instrument Parameters
- Field Duplicate Data

The above items were in compliance with USEPA QC criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

Deliverable Requirements

Please note that sample GW-07R was collected from well GW-07R, a replacement well for well GW-07 which contains an unremovable obstruction and can not be sampled.

The data package originally submitted contained several clerical errors:

- The true value for the mercury continuing calibration verification (CCV) standard is listed incorrectly on page 187 of the report as 2.0 micrograms per liter (ug/L), rather than the actual true value of 2.8 ug/L. This caused the percent recovery to be reported as 134.0% rather than 95.7% on this Initial and Continuing Calibration form (Form 2A). The required corrections were made by the validator.
- The ICP serial dilution was initially reported without taking an additional dilution factor of two (2) into account, and this caused the percent differences to be reported incorrectly on the ICP Serial Dilution form (Form 9). The laboratory made the necessary corrections and submitted a revised Form 9 upon request.
- The Preparation Logs (Form 13) submitted do not properly list the initial and final sample weights for the microwave digestions performed.

Spiked Sample Recovery Data

Sample PW-01 was selected for duplicate and spike analysis and all applicable matrix QC criteria have been met for this analysis with three exceptions: The iron (71.6%), manganese (39.5%) and selenium (71.6%) recoveries were each outside of the QC limits of 75-125% established in the Statement of Work (SOW). In accordance with EPA data validation guidelines, the associated iron and selenium results have each been flagged with a "V" and are considered estimated due to variance from quality control criteria. The manganese sample concentration is greater than four (4) times the spike concentration and therefore does not require qualification.

ICP Serial Dilution Data

As noted above, in the **Deliverable Requirements** section, the ICP serial dilution was initially reported without taking an additional dilution factor of two (2) into account, and this caused the percent differences to be reported incorrectly on the ICP Serial Dilution form (Form 9). The laboratory made the necessary corrections and submitted a revised Form 9 upon request.

A review of the revised Form 9 revealed that the percent difference (%D) between the initial sample result and the serial dilution result for both potassium and sodium exceeded ten (10) percent; in accordance with EPA data validation guidelines, the associated potassium and

sodium results have been flagged with a "V" and are considered estimated due to variance from quality control criteria.

Graphite Furnace Atomic Absorption (GFAA) QC Analysis

The following analytical spike recoveries for the samples in this SDG fall outside of the control limits (85-115%):

Arsenic		
	PW-02 Dup	120.2%
	PW-03	121.0%
	GW-07R	115.6%
	GW-09	116.4%
	Field Blank	118.1%
Selenium		
	* PW-01	69.7%
	* PW-02 Dup	73.9%
	* GW-06	82.0%
	* GW-10	65.3%
	* GW-28	75.1%
	* GW-38	81.1%
	Field Blank	124.1%
Lead		
	PW-02 Dup	83.6%
	* PW-03	56.1%
	GW-28	81.8%

In accordance with EPA data validation guidelines, the affected sample results within plus or minus two times the contract required detection limit (CRDL) have been flagged with a "V" and are considered estimated due to variance from quality control criteria. Sample results which have been so flagged are marked by an asterisk (*) above. Please note that because an elevated percent recovery is indicative of a potential false positive, non-detect results with analytical spike recoveries greater than 115% are not flagged.

Field Duplicate Analysis

Table 1 summarizes the relative percent difference (RPD) between sample PW-02 and the field duplicate sample PW-02 Dup. Although there are no established QC limits for field duplicate RPD data, Rust considers RPD values of 40% or less an indication of acceptable sampling and analytical precision. Please note that although the RPD values presented in Table 1 generally indicate acceptable sampling and analytical precision, the aluminum (69.7%D), copper (58.8%D), iron (59.4%D), manganese (66.5%D), nickel (90.5%D) and

zinc (141.0%D) results for both sample PW-02 and PW-02 Dup have been flagged with a "V" due to variance from quality control (QC) criteria. The 200% RPD value for cobalt is considered acceptable because it is not unusual for an analyte to be detected at a level just above the instrument detection limit (IDL) in the sample and not detected at or above the IDL in the duplicate sample due to normal analytical variability.

Summary

In summary, based on 240 sample data points, ten (10) of which were qualified as estimated, and none qualified as unusable, and since estimated data are considered valid and usable, the usability of this data package is 100%.

Cynthia M. Noce — 10 AUG 98

Reviewed By — Date

Ed Edwards — 8/11/98

Approved By — Date

Table 1
RPD Calculations - Field Duplicate Analysis

Sample ID	PW-02	PW-02 Dup	RPD
Analyte			
Aluminum	**47.8 B**	**98.9 B**	69.7%
Antimony	3.0 U	3.0 U	
Arsenic	2.0 U	2.0 U	
Barium	**501**	**586**	15.6%
Beryllium	0.33 U	0.33 U	
Cadmium	0.33 U	0.33 U	
Calcium	**55,000**	**71,300**	25.8%
Chromium	**0.79 B**	**0.60 B**	27.3%
Cobalt	7.9 U	**0.34 B**	200.0%
Copper	**3.6 B**	**6.6 B**	58.8%
Iron	**618**	**1,140**	59.4%
Lead	1.1 U	1.1 U	
Magnesium	**21,900**	**25,000**	13.2%
Manganese	**30.9**	**61.7**	66.5%
Mercury	0.2 U	0.2 U	
Nickel	**2.3 B**	**6.1 B**	90.5%
Potassium	**17,000**	**19,200**	12.2%
Selenium	**3.5 B**	**2.7 B**	25.8%
Silver	2.0 U	3.0 U	
Sodium	**357,000**	**419,000**	16.0%
Thallium	2.3 U	2.3 U	
Vanadium	0.56 U	0.56 U	
Zinc	**7.2 B**	**41.6**	141.0%
Cyanide	10 U	10 U	

Inorganic Analytical Data

Skinner Landfill
West Chester, Ohio

Sampling Dates: April 27 and 28, 1998

Sample ID / Analyte	PW-01	PW-02	PW-02 Dup	PW-03	GW-06	GW-07R	GW-09	GW-10	GW-28	GW-38	Field Blank
Aluminum	703	47.8 B	98.9 B	260	1,360	268	104 B	277	545	114 B	16.6 U
Antimony	6.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Arsenic	2.0 U	2.0 U	2.0 U	2.0 U	4.9 B	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Barium	127 B	501	586	1,170	1,430	121 B	679	55.6 B	103 B	656	8.1 B
Beryllium	0.66 U	0.33 U	0.33 U	0.33 U	0.97 B	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Cadmium	0.66 U	0.33 U	0.33 U	0.33 U	0.89 B	0.34 B	0.33 U	0.33 U	0.33 U	0.33 U	1.3 B
Calcium	538,000	55,000	71,300	174,000	218,000	128,000	95,700	244,000	162,000	77,000	3,130 B
Chromium	0.89 U	0.79 B	0.60 B	0.55 B	1.2 B	0.44 U	1.4 B	0.44 U	5.0 B	0.75 B	1.8 B
Cobalt	2.9 B	7.9 U	0.34 B	1.1 B	12.0 B	1.8 B	0.51 B	2.8 B	5.2 B	1.4 B	0.72 B
Copper	9.0 B	3.6 B	6.6 B	7.2 B	20.1 B	6.8 B	2.6 B	9.6 B	3.9 B	3.5 B	3.6 B
Iron	3,300 V	618	1,140	1,390	4,910	504	1,830	762	2,420	1,730	92.6 B
Lead	6.9	1.1 U	1.1 U	1.1 UV	42.4	2.0 B	1.1 U	2.5 B	7.0	1.1 U	1.1 U
Magnesium	37,000	21,900	25,000	56,500	30,000	16,700	38,100	63,500	18,300	34,400	654 B
Manganese	3,110	30.9	61.7	189	1,270	501	85.4	426	415	223	8.1 B
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	8.9 B	2.3 B	6.1 B	5.8 B	10.8 B	7.2 B	3.6 B	8.6 B	33.0 B	3.6 B	3.4 B
Potassium	3,700 BV	17,000	19,200	58,000	28,400	4,500 B	7,520	43,500	32,700	16,300	76.6 B
Selenium	2.6 BV	3.5 B	2.7 BV	1.9 B	2.4 BV	2.1 B	1.8 U	1.8 UV	1.8 UV	2.8 BV	1.8 U
Silver	4.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Sodium	44,600 V	357,000	419,000	958,000	74,100	14,000	46,900	67,000	441,000	139,000	721 B
Thallium	4.6 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	3.4 B
Vanadium	2.9 B	0.56 U	0.56 U	0.81 B	5.1 B	0.68 B	0.65 B	0.64 B	1.2 B	0.56 U	0.85 B
Zinc	32.7 B	7.2 B	41.6	59.7 B	102	27.1	17.4 B	14.6 B	44.2	30.2	12.8 B
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:

1) All results expressed in micrograms per liter (ug/L).
2) Standard Inorganic Data Qualifiers have been used.
3) Sample PW-02 Dup is a field duplicate of sample PW-02

Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST

Project Name: SKINNER LANDFILL

ETL Sample Number: 185807-01

Client I.D.: PW-01

Date Collected: 27-APR-98

Matrix: 2 GW/WW

Date Received: 29-APR-98

Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	703	UG/L	200.7	03-JUN-98
Antimony	6.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U	UG/L	206.2	27-MAY-98
Barium	127 B	UG/L	200.7	03-JUN-98
Beryllium	0.66 U	UG/L	200.7	03-JUN-98
Cadmium	0.66 U	UG/L	200.7	03-JUN-98
Calcium	538000 ~~E~~	UG/L	200.7	03-JUN-98
Chromium	0.89 U	UG/L	200.7	03-JUN-98
Cobalt	2.9 B	UG/L	200.7	03-JUN-98
Copper	9.0 B	UG/L	200.7	03-JUN-98
Iron	3330 N ~~E~~ V	UG/L	200.7	03-JUN-98
Lead	6.9	UG/L	239.2	20-MAY-98
Magnesium	37000 ~~E~~	UG/L	200.7	03-JUN-98
Manganese	3110 ~~E~~	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	8.9 B	UG/L	200.7	03-JUN-98
Potassium	3700 B E V	UG/L	200.7	03-JUN-98
Selenium	2.6 B W N V	UG/L	270.2	01-JUN-98
Silver	4.0 U	UG/L	200.7	03-JUN-98
Sodium	44600 E V	UG/L	200.7	03-JUN-98
Thallium	4.6 U	UG/L	200.7	03-JUN-98
Vanadium	2.9 B	UG/L	200.7	03-JUN-98
Zinc	32.7 B	UG/L	200.7	03-JUN-98

Remarks:

Qim
10 AUG 98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

Inorganics Analysis Data Sheet

Client ID : PW-01
Client Name : Rust Enviromental
Project Name : Skinner Landfill
Matrix : Groundwater

Report No : 10635
STE Sample Number : 102723
Date Collected : 04/27/98
Date Received: 05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Westfield, MA 0

MA 014 NYDOH 10843 NHDES 2539 CT PH-0494 NCDE

Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST

Project Name: SKINNER LANDFILL

ETL Sample Number: 185807-02

Client I.D.: PW-02

Date Collected: 27-APR-98

Matrix: 2 GW/WW

Date Received: 29-APR-98

Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	47.8 B	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U	UG/L	206.2	27-MAY-98
Barium	501	UG/L	200.7	03-JUN-98
Beryllium	0.33 U	UG/L	200.7	03-JUN-98
Cadmium	0.33 U	UG/L	200.7	03-JUN-98
Calcium	55000 E	UG/L	200.7	03-JUN-98
Chromium	0.79 B	UG/L	200.7	03-JUN-98
Cobalt	7.9 U	UG/L	200.7	03-JUN-98
Copper	3.6 B	UG/L	200.7	03-JUN-98
Iron	618 N E	UG/L	200.7	03-JUN-98
Lead	1.1 U	UG/L	239.2	20-MAY-98
Magnesium	21900 E	UG/L	200.7	03-JUN-98
Manganese	30.9 E	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	2.3 B	UG/L	200.7	03-JUN-98
Potassium	17000 E	UG/L	200.7	03-JUN-98
Selenium	3.5 B N	UG/L	270.2	01-JUN-98
Silver	2.0 U	UG/L	200.7	03-JUN-98
Sodium	357000 E	UG/L	200.7	03-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	0.56 U	UG/L	200.7	03-JUN-98
Zinc	7.2 B	UG/L	200.7	03-JUN-98

Remarks:

AMM
10 AUG 98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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Inorganics Analysis Data Sheet

Client ID : PW-02
Client Name : Rust Enviromental
Project Name : Skinner Landfill
Matrix : Groundwater

Report No : 10635
STE Sample Number : 102724
Date Collected : 04/27/98
Date Received: 05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST
Project Name: SKINNER LANDFILL
ETL Sample Number: 185807-03
Client I.D.: PW-02 DUP
Date Collected: 27-APR-98
Matrix: 2 GW/WW
Date Received: 29-APR-98
Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	98.9 B	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U W	UG/L	206.2	27-MAY-98
Barium	586	UG/L	200.7	03-JUN-98
Beryllium	0.33 U	UG/L	200.7	03-JUN-98
Cadmium	0.33 U	UG/L	200.7	03-JUN-98
Calcium	71300 E	UG/L	200.7	03-JUN-98
Chromium	0.60 B	UG/L	200.7	03-JUN-98
Cobalt	0.34 B	UG/L	200.7	03-JUN-98
Copper	6.6 B	UG/L	200.7	03-JUN-98
Iron	1140 N E	UG/L	200.7	03-JUN-98
Lead	1.1 U W	UG/L	239.2	20-MAY-98
Magnesium	25000 E	UG/L	200.7	03-JUN-98
Manganese	61.7 E	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	6.1 B	UG/L	200.7	03-JUN-98
Potassium	19200 E	UG/L	200.7	03-JUN-98
Selenium	2.7 B W N ✓	UG/L	270.2	01-JUN-98
Silver	3.0 U	UG/L	200.7	03-JUN-98
Sodium	419000 E	UG/L	200.7	03-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	0.56 U	UG/L	200.7	03-JUN-98
Zinc	41.6	UG/L	200.7	03-JUN-98

Remarks:

CLM
10 AUG 98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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Inorganics Analysis Data Sheet

Client ID : PW-02 DUP	Report No : 10635
Client Name : Rust Enviromental	STE Sample Number : 102725
Project Name : Skinner Landfill	Date Collected : 04/27/98
Matrix : Groundwater	Date Received: 05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Westfield, MA 0

MA 014 NYDOH 10843 NHDES 2539 CT PH-0494 NCDE

Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST
Project Name: SKINNER LANDFILL
ETL Sample Number: 185807-14
Client I.D.: PW-03
Date Collected: 27-APR-98
Matrix: 2 GW/WW
Date Received: 29-APR-98
Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	260	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U W	UG/L	206.2	27-MAY-98
Barium	1170	UG/L	200.7	03-JUN-98
Beryllium	0.33 U	UG/L	200.7	03-JUN-98
Cadmium	0.33 U	UG/L	200.7	03-JUN-98
Calcium	174000 E	UG/L	200.7	03-JUN-98
Chromium	0.55 B	UG/L	200.7	03-JUN-98
Cobalt	1.1 B	UG/L	200.7	03-JUN-98
Copper	7.2 B	UG/L	200.7	03-JUN-98
Iron	1390 N E	UG/L	200.7	03-JUN-98
Lead	1.1 U W V	UG/L	239.2	20-MAY-98
Magnesium	56500 E	UG/L	200.7	03-JUN-98
Manganese	189 E	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	5.8 B	UG/L	200.7	03-JUN-98
Potassium	58000 E	UG/L	200.7	03-JUN-98
Selenium	1.9 B N	UG/L	270.2	01-JUN-98
Silver	2.0 U	UG/L	200.7	03-JUN-98
Sodium	958000 E	UG/L	200.7	09-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	0.81 B	UG/L	200.7	03-JUN-98
Zinc	59.7	UG/L	200.7	03-JUN-98

Remarks:

amn
10 AUG 98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

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Inorganics Analysis Data Sheet

Client ID : PW-03
Client Name : Rust Enviromental
Project Name : Skinner Landfill
Matrix : Groundwater

Report No : 10635
STE Sample Number : 102727
Date Collected : 04/27/98
Date Received: 05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Westfield, MA 01

Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST
Project Name: SKINNER LANDFILL
ETL Sample Number: 185807-15
Client I.D.: GW-06
Date Collected: 27-APR-98
Matrix: 2 GW/WW
Date Received: 29-APR-98
Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	1360	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	4.9 B	UG/L	206.2	27-MAY-98
Barium	1430	UG/L	200.7	03-JUN-98
Beryllium	0.97 B	UG/L	200.7	03-JUN-98
Cadmium	0.89 B	UG/L	200.7	03-JUN-98
Calcium	218000 E	UG/L	200.7	03-JUN-98
Chromium	1.2 B	UG/L	200.7	03-JUN-98
Cobalt	12.0 B	UG/L	200.7	03-JUN-98
Copper	20.1 B	UG/L	200.7	03-JUN-98
Iron	4910 N E	UG/L	200.7	03-JUN-98
Lead	42.4	UG/L	239.2	20-MAY-98
Magnesium	30000 E	UG/L	200.7	03-JUN-98
Manganese	1270 E	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	10.8 B	UG/L	200.7	03-JUN-98
Potassium	28400 E	UG/L	200.7	03-JUN-98
Selenium	2.4 B W N	UG/L	270.2	01-JUN-98
Silver	2.0 U	UG/L	200.7	03-JUN-98
Sodium	74100 E	UG/L	200.7	03-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	5.1 B	UG/L	200.7	03-JUN-98
Zinc	102	UG/L	200.7	03-JUN-98

Remarks:

amj
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STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

Inorganics Analysis Data Sheet

Client ID :	GW-06	Report No :	10635
Client Name :	Rust Enviromental	STE Sample Number :	102728
Project Name :	Skinner Landfill	Date Collected :	04/27/98
Matrix :	Groundwater	Date Received:	05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Westfield, MA

Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST

Project Name: SKINNER LANDFILL

ETL Sample Number: 185807-13

Client I.D.: GW-07R

Date Collected: 27-APR-98

Matrix: 2 GW/WW

Date Received: 29-APR-98

Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	268	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U W	UG/L	206.2	27-MAY-98
Barium	121 B	UG/L	200.7	03-JUN-98
Beryllium	0.33 U	UG/L	200.7	03-JUN-98
Cadmium	0.34 B	UG/L	200.7	03-JUN-98
Calcium	128000	UG/L	200.7	03-JUN-98
Chromium	0.44 U	UG/L	200.7	03-JUN-98
Cobalt	1.8 B	UG/L	200.7	03-JUN-98
Copper	6.8 B	UG/L	200.7	03-JUN-98
Iron	504 N	UG/L	200.7	03-JUN-98
Lead	2.0 B	UG/L	239.2	20-MAY-98
Magnesium	16700	UG/L	200.7	03-JUN-98
Manganese	501	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	7.2 B	UG/L	200.7	03-JUN-98
Potassium	4500 B E	UG/L	200.7	03-JUN-98
Selenium	2.1 B N	UG/L	270.2	01-JUN-98
Silver	2.0 U	UG/L	200.7	03-JUN-98
Sodium	14000 E	UG/L	200.7	03-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	0.68 B	UG/L	200.7	03-JUN-98
Zinc	27.1	UG/L	200.7	03-JUN-98

Remarks:

GMN
10 AUG 98

000169

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

Inorganics Analysis Data Sheet

Client ID :	GW-07R	Report No :	10635
Client Name :	Rust Enviromental	STE Sample Number :	102726
Project Name :	Skinner Landfill	Date Collected :	04/27/98
Matrix :	Groundwater	Date Received:	05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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53 Southampton R
Westfield, MA 0

MA 014 NYDOH 10843 NHDES 2539 CT PH-0494 NCDE

Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST
Project Name: SKINNER LANDFILL
ETL Sample Number: 185807-18
Client I.D.: GW-09
Date Collected: 28-APR-98
Matrix: 2 GW/WW
Date Received: 29-APR-98
Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	104 B	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U W	UG/L	206.2	27-MAY-98
Barium	679	UG/L	200.7	03-JUN-98
Beryllium	0.33 U	UG/L	200.7	03-JUN-98
Cadmium	0.33 U	UG/L	200.7	03-JUN-98
Calcium	95700 E	UG/L	200.7	03-JUN-98
Chromium	1.4 B	UG/L	200.7	03-JUN-98
Cobalt	0.51 B	UG/L	200.7	03-JUN-98
Copper	2.6 B	UG/L	200.7	03-JUN-98
Iron	1830 N E	UG/L	200.7	03-JUN-98
Lead	1.1 U	UG/L	239.2	20-MAY-98
Magnesium	38100 E	UG/L	200.7	03-JUN-98
Manganese	85.4 E	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	3.6 B	UG/L	200.7	03-JUN-98
Potassium	7520 E	UG/L	200.7	03-JUN-98
Selenium	1.8 U N	UG/L	270.2	01-JUN-98
Silver	2.0 U	UG/L	200.7	03-JUN-98
Sodium	46900 E	UG/L	200.7	03-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	0.65 B	UG/L	200.7	03-JUN-98
Zinc	17.4 B	UG/L	200.7	03-JUN-98

Remarks:

Cmn
10 AUG 98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

Inorganics Analysis Data Sheet

Client ID :	GW-09	Report No :	10635
Client Name :	Rust Enviromental	STE Sample Number :	102731
Project Name :	Skinner Landfill	Date Collected :	04/28/98
Matrix :	Groundwater	Date Received:	05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Westfield, MA 01

Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST
Project Name: SKINNER LANDFILL
ETL Sample Number: 185807-19
Client I.D.: GW-10
Date Collected: 28-APR-98
Matrix: 2 GW/WW
Date Received: 29-APR-98
Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	277	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U	UG/L	206.2	27-MAY-98
Barium	55.6 B	UG/L	200.7	03-JUN-98
Beryllium	0.33 U	UG/L	200.7	03-JUN-98
Cadmium	0.33 U	UG/L	200.7	03-JUN-98
Calcium	244000 E	UG/L	200.7	03-JUN-98
Chromium	0.44 U	UG/L	200.7	03-JUN-98
Cobalt	2.8 B	UG/L	200.7	03-JUN-98
Copper	9.6 B	UG/L	200.7	03-JUN-98
Iron	762 N E	UG/L	200.7	03-JUN-98
Lead	2.5 B	UG/L	239.2	20-MAY-98
Magnesium	63500 E	UG/L	200.7	03-JUN-98
Manganese	426 E	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	8.6 B	UG/L	200.7	03-JUN-98
Potassium	43500 E	UG/L	200.7	03-JUN-98
Selenium	1.8 U W N ✓	UG/L	270.2	01-JUN-98
Silver	2.0 U	UG/L	200.7	03-JUN-98
Sodium	67000 E	UG/L	200.7	03-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	0.64 B	UG/L	200.7	03-JUN-98
Zinc	14.6 B	UG/L	200.7	03-JUN-98

Remarks:

CLM
10 AUG 98

000181

Inorganics Analysis Data Sheet

Client ID :	GW-10	Report No :	10635
Client Name :	Rust Enviromental	STE Sample Number :	102732
Project Name :	Skinner Landfill	Date Collected :	04/28/98
Matrix :	Groundwater	Date Received:	05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST
Project Name: SKINNER LANDFILL
ETL Sample Number: 185807-20
Client I.D.: GW-28
Date Collected: 28-APR-98
Matrix: 2 GW/WW
Date Received: 29-APR-98
Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	545	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U	UG/L	206.2	27-MAY-98
Barium	103 B	UG/L	200.7	03-JUN-98
Beryllium	0.33 U	UG/L	200.7	03-JUN-98
Cadmium	0.33 U	UG/L	200.7	03-JUN-98
Calcium	162000 E	UG/L	200.7	03-JUN-98
Chromium	5.0 B	UG/L	200.7	03-JUN-98
Cobalt	5.2 B	UG/L	200.7	03-JUN-98
Copper	3.9 B	UG/L	200.7	03-JUN-98
Iron	2420 N E	UG/L	200.7	03-JUN-98
Lead	7.0 W	UG/L	239.2	20-MAY-98
Magnesium	18300 E	UG/L	200.7	03-JUN-98
Manganese	415 E	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	33.0 B	UG/L	200.7	03-JUN-98
Potassium	32700 E	UG/L	200.7	03-JUN-98
Selenium	1.8 U W N ✓	UG/L	270.2	01-JUN-98
Silver	2.0 U	UG/L	200.7	03-JUN-98
Sodium	441000 E	UG/L	200.7	03-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	1.2 B	UG/L	200.7	03-JUN-98
Zinc	44.2	UG/L	200.7	03-JUN-98

Remarks:

CLM
10 AUG98

STL Envirotest
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049

Inorganics Analysis Data Sheet

Client ID : GW-28
Client Name : Rust Enviromental
Project Name : Skinner Landfill
Matrix : Groundwater

Report No : 10635
STE Sample Number : 102733
Date Collected : 04/28/98
Date Received: 05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Westfield, MA 01C

MA 014 NYDOH 10843 NHDES 2539 CT PH-0494 NCDEM

Inorganics Analysis Data Sheet
Form I - IN

Client Name: RUST

Project Name: SKINNER LANDFILL

ETL Sample Number: 185807-16

Client I.D.: GW-38

Date Collected: 27-APR-98

Matrix: 2 GW/WW

Date Received: 29-APR-98

Comments:

Analysis	Result	Units	Method	Analyzed
Aluminum	114 B	UG/L	200.7	03-JUN-98
Antimony	3.0 U	UG/L	200.7	03-JUN-98
Arsenic	2.0 U	UG/L	206.2	27-MAY-98
Barium	656	UG/L	200.7	03-JUN-98
Beryllium	0.33 U	UG/L	200.7	03-JUN-98
Cadmium	0.33 U	UG/L	200.7	03-JUN-98
Calcium	77000 E	UG/L	200.7	03-JUN-98
Chromium	0.75 B	UG/L	200.7	03-JUN-98
Cobalt	1.4 B	UG/L	200.7	03-JUN-98
Copper	3.5 B	UG/L	200.7	03-JUN-98
Iron	1730 N E	UG/L	200.7	03-JUN-98
Lead	1.1 U	UG/L	239.2	20-MAY-98
Magnesium	34400 E	UG/L	200.7	03-JUN-98
Manganese	223 E	UG/L	200.7	03-JUN-98
Mercury	0.2 U	UG/L	245.1	11-MAY-98
Nickel	3.6 B	UG/L	200.7	03-JUN-98
Potassium	16300 E	UG/L	200.7	03-JUN-98
Selenium	2.8 B W N ✓	UG/L	270.2	01-JUN-98
Silver	2.0 U	UG/L	200.7	03-JUN-98
Sodium	139000 E	UG/L	200.7	03-JUN-98
Thallium	2.3 U	UG/L	200.7	03-JUN-98
Vanadium	0.56 U	UG/L	200.7	03-JUN-98
Zinc	30.2	UG/L	200.7	03-JUN-98

Remarks:

Cumn
10 AUG 98

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STL Envirotest
NYSDOH 10142 NJDEP 73015 CTDOHS PH-0554 EPA NY049 PA 68-378 M-NY049
315 Fullerton Avenue
Newburgh, NY 12550
Tel: (914) 562-0890
Fax: (914) 562-0841

Inorganics Analysis Data Sheet

Client ID :	GW-38	Report No :	10635
Client Name :	Rust Enviromental	STE Sample Number :	102729
Project Name :	Skinner Landfill	Date Collected :	04/27/98
Matrix :	Groundwater	Date Received:	05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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53 Southampton
Westfield, MA

MA 014 NYDOH 10843 NHDES 2539 CT PH-0494 NCDE

Inorganics Analysis Data Sheet

Client ID : FIELD BLANK
Client Name : Rust Enviromental
Project Name : Skinner Landfill
Matrix : Groundwater

Report No : 10635
STE Sample Number : 102730
Date Collected : 04/27/98
Date Received: 05/01/98

CAS NO	Analyte	Result	Units	Method	Date Analyzed
	Cyanide, total	0.01U	mg/L	LAC204001A	05/12/98

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Westfield, MA 01

Inorganic Data Qualifiers

U - Indicates analyte result less than the instrument detection limit (IDL) indicated.

B - Indicates analyte result between the IDL and the contract required detection limit (CRDL).

V - The reported value is considered estimated due to variance from quality control criteria

R - The reported value is unusable and rejected due to variance from quality control criteria.

W - Indicates GFAA analytical spike was out of 85-115 percent control limit, while sample absorbance was less than 50% of spike absorbance.

S - The reported value was determined by the method of standard additions (MSA).

+ - Indicates that the correlation coefficient for MSA is less than 0.995.

M - Indicates that GFAA duplicate injection precision criteria was not met.

E - The reported value is considered estimated due to matrix interference.

N - Indicates that the spiked sample recovery was not within control limits.

* - Indicates that the laboratory duplicate analysis was not within control limits.