

Integrated Environmental Solutions

FID# 246009170 ERP#7 744 Heartland Trail 53717-1934 P.O. Box 8923 53708-8923 Madison, WI Telephone: 608-831-4444

Fax: 608-831-3334

February 10, 2004

Mr. John Feeney Wisconsin Department of Natural Resources 1155 Pilgrim Road Plymouth, WI 53073



Subject: Vapor Pathway Assessment Results – Tecumseh Products Company Grafton, Wisconsin, Facility (WDNR FID# 24-6009170, BRRTS# 02-46-000751)

Dear Mr. Feeney:

A vapor assessment was performed by RMT downgradient of the above-referenced facility on November 11, 2003. The assessment was completed in accordance with our October 24, 2003, submittal that was subsequently approved by the Wisconsin Department of Natural Resources (WDNR) on 29 October 2003.

The soil vapor sample was collected at the proposed location approximately 500 feet downgradient of the loading dock area at Tecumseh Products Company. A direct-push soil boring (SV-1) was advanced to approximately 15 feet below the ground surface (bgs). The water table was encountered at 12.2 bgs in the silty sand outwash. See Attachment 1 for soil boring logs and boring abandonment forms. A small-diameter PVC well was placed in the borehole at a depth of 15.4 feet, and approximately 3 gallons of groundwater were purged at approximately 500 cc/min with a peristaltic pump and dedicated tubing. After the well had been purged and the turbidity of the purge water had subsided, a groundwater sample was collected for VOC analysis. Analytical results for the groundwater sample found no detectable VOC concentrations (all chloroethene detection limits were less than 1 μ g/L). See Attachment 2 for complete groundwater results.

An adjacent direct-push soil boring (SV-1A) was advanced to 12 feet bgs, where the well screen was exposed (from approximately 8 to 12 feet bgs). The well screen and casing were purged with a landfill gas sampling meter. The purged gas was screened for methane, carbon dioxide, and oxygen using the landfill gas meter, and for organic vapors using a PID. When the landfill gas meter indicated that the purged gas concentrations had stabilized, a soil vapor sample was collected into a Summa canister. Field readings indicated no volatile compounds or methane in the soil vapors, and analytical results for the soil vapor sample (SV-1) and the field blank had no detectable concentrations at limits of 13 to 80 μ g/m³. With the exception of chloroethene, the concentrations of all the chlorinated VOCs were well below the Table 2C screen values for soil gas presented by the USEPA (Draft Guidance for Evaluating Vapor Intrusion, November 2002). The detection limit for chloroethene (13 μ g/m³) is between the 2.8 μ g/m³ screen level at a 0.1 attenuation factor and the 28 μ g/m³ at the 0.01 attenuation factor. However, the chloroethene concentration at the water table was less than 0.18 μ g/L, or at least 10 times less than the Table 2C groundwater concentration, making

Looks good. IF. 2/23/04 Mr. John Feeney Wisconsin Department of Natural Resources February 10, 2004 Page 2

it likely that soil gas concentration was well below the screening level. See Attachment 3 for complete vapor results.

The groundwater results for the July 2003 and January 2004 sampling events show trichloroethene concentrations at the facility property line of 120 to 2,400 μ g/L and downgradient concentrations as high as 300 μ g/L. These results suggest that the plume of impacted groundwater observed downgradient of the Tecumseh facility has sunk below the water table surface approximately 500 feet further downgradient. This isolates the dissolved VOC plume from the unsaturated zone. The lack of volatile impacts at the water table and the soil vapor samples completed as part of this assessment indicate that volatile gases are unlikely to be generated at concentrations of concern downgradient of the source area and the vapor pathway is not of concern at the Tecumseh facility.

Please contact me, at (608) 662-5708, or at bernd.rehm@rmtinc.com, if you have any questions.

Sincerely,

RMT, Inc.

Bernd W. Rehm, P.G., C.P.G.

Senior Consultant

Attachments:

Attachment 1: Boring Logs and Boring Abandonment Forms for SV-1/SV-1A

Attachment 2: SV-1 Groundwater Sample Results

Attachment 3: SV-1 Vapor Sample Results

cc: C. Warzecha, WDHFS

B. Shah, Tecumseh Products

H. Handzel, DeWitt, Ross & Stevens

Attachment 1 Boring Logs and Boring Abandonment Forms for SV-1/SV-1A

	State of Wisconsin
ř	Department of Natural Resources

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State of Wisconsin
Department of Natural Resources

03084W.GPJ W. DNR98.GDT 12/8/03

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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Signati	ıre	V.	1	1CL	_				MT, Inc		ail N	Andina	. 11/1	2717						608.831.4444

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin Department of Natural Resources

WELL/DRILHOLE/BOREHOLE ABANDONMENT Form 3300-5 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5 and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking	Water Watershe	d/Wastewater 🔲 Waste M	lanagement	Remediati	on/Redevelopi	ment 🔲 O	ther:				
(1) GENERAL INFO	DRMATION		(2) FACI	LITY/OWNE	R INFORMA	ATION					
WI Unique Well No.	DNR Well ID No.	County	Facility Na	ame umseh	Produc	to Cert	o (TPC)				
Common Well Name	SV-IA	Gov't Lot (If applicable)	Facility ID	009170	License	e/Permit/Moni	oring No.				
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☐ Drilled	Driven (Sandpoint)	☐ Dug	1	ing Material R			□ No				
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If Yes, To What D				nite - Sand Slu	rry (11 lb./gal.	. wt.) L Ber	tonite - Sand Slurry				
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Street or Route	Telephon	e Number	Сод	ments :			1.75				
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Madison	W1 5:	3717									

State of Wisconsin Department of Natural Resources

WELL/DRILHOLE/BOREHOLE ABANDONMENT Form 3300-5 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5 and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking	Water Watershe	d/Wastewater	anagement	Remediation	n/Redevelopn	nent 🔲 Ot	her:				
(1) GENERAL INFO			(2) FACILITY/OWNER INFORMATION								
WI Unique Well No.	DNR Well ID No.	County OZGUKEE	Facility Na	me Junseh	Preduc	to Cort	oring No.				
Common Well Name	SV-I	Gov't Lot (If applicable)	24-60	09170	License	/Permit/Monit	oring No.				
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(7) Name of Person or F	, ,	k Date of Abandonmen いしょしゅう	t .		OR DNR OR	COUNTY USE	ONLY				
Signature of Person Doin	ng Work	Date Signed	Dat	e Received	No	ted By					
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City, State, Zip Gode	WIS	53717									

Attachment 2 SV-1 Groundwater Sample Results



Corporate Office & Laboratory

1241 Bellevue Street, Suite 9, Green Bay, WI 54302 920-469-2436, 800-7-ENCHEM, Fax: 920-469-8827

www.enchem.com

Analytical Report Number: 841026

Client: RMT - MADISON

Project Name: TPC
Project Number: 3084.20

 Number
 Field ID
 Matrix
 Collection Date

 841026-001
 SV-1
 WATER 11/11/03

 841026-002
 TRIP BLANK
 WATER 11/11/03

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. Reported results shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested.

Approval Signature

Date

Analytical Report Number: 841026

1241 Bellevue Street Green Bay, WI 54302 920-469-2436

Client: RMT - MADISON

Project Name: TPC
Project Number: 3084.20

Field ID: SV-1

Matrix Type: WATER Collection Date: 11/11/03

Report Date: 11/18/03 Lab Sample Number: 841026-001

VOLATILES - SPECIAL LIS	T									Prep Dat	te: 11/17/03
Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,1,1-Trichloroethane	<	0.90	0.90	3.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	<	0.20	0.20	0.67		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1.1.2-Trichloroethane	<	0.42	0.42	1.4		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	<	0.75	0.75	2.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	<	0.57	0.57	1.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	<	0.74	0.74	2.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	<	0.97	0.97	3.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	<	0.97	0.97	3.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	<		0.87	2.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane		0.56	0.56	1.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	<	0.83	0.83	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	<	0.36	0.36	1.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	<	0.46	0.46	1.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	<	0.83	0.83	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	<	0.87	0.87	2.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	<	0.61	0.61	2.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	<	0.95	0.95	3.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	<	0.62	0.62	2.1		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	<	0.85	0.85	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	<	0.74	0.74	2.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Benzene	<	0.41	0.41	1.4		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Bromobenzene		0.82	0.82	2.7		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Bromodichloromethane	<	0.56	0.56	1.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	<		0.49	1.6		.1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chlorobenzene		0.43	0.41	1.4		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	<	0.81	0.81	2.7		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chloroethane		0.97	0.97	3.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chloroform			0.37	1.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
	<	0.24	0.24	0.80		1	ug/L ug/L		11/17/03	SW846 5030B	SW846 8260B
Chloromethane	<		0.83	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	<		0.99	3.3		1	ug/L ug/L		11/17/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane		0.76	0.76	2.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	<		0.76	1.8		1	ug/L ug/L		11/17/03	SW846 5030B	SW846 8260B
Ethylbenzene	<	0.79	0.79	2.6		1	ug/L ug/L		11/17/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane		0.79	0.73	2.2		1	ug/L ug/L		11/17/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene			0.59	2.0		1	ug/L ug/L		11/17/03	SW846 5030B	SW846 8260B
Isopropylbenzene	<		0.43	1.4		1	ug/L ug/L		11/17/03	SW846 5030B	SW846 8260B
Methylene Chloride	<	0.43 0.61	0.43	2.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether						1			11/17/03	SW846 503OB	SW846 8260B
Naphthalene		0.74	0.74	2.5			ug/L		11/17/03	SW846 503OB	SW846 8260B
n-Butylbenzene		0.93	0.93	3.1		1 1	ug/L ug/L		11/17/03	SW846 503OB	SW846 8260B
n-Propylbenzene	<		0.81	2.7		1	ug/L ug/L		11/17/03	SW846 503OB	SW846 8260B
p-Isopropyltoluene	<		0.67	2.2		1			11/17/03	SW846 503OB	SW846 8260B
sec-Butylbenzene	<		0.89	3.0		1	ug/L		11/17/03	SW846 503OB	SW846 8260B
tert-Butylbenzene	<		0.97	3.2		1	ug/L		11/17/03	SW846 503OB	SW846 8260B
Tetrachloroethene	<		0.45	1.5		1	ug/L ug/L		11/17/03	SW846 503 OB	SW846 8260B
Toluene		0.67	0.67	2.2			-		11/17/03	SW846 503 OB	SW846 8260B
trans-1,2-Dichloroethene	<		0.89	3.0		1	ug/L		11/17/03	SW846 503 OB	SW846 8260B
Trichloroethene		0.48	0.48	1.6		1	ug/L		11/17/03	SW846 503 OB	SW846 8260B
Vinyl Chloride	<	0.18	0.18	0.60		1	ug/L		1111103	340-0 303-00	377040 0200B

En Chem Inc.

Analytical Report Number: 841026

1241 Bellevue Street Green Bay, WI 54302 920-469-2436

Client: RMT - MADISON

Project Name: TPC
Project Number: 3084.20

Field ID: SV-1

Matrix Type: WATER

Collection Date: 11/11/03

Report Date: 11/18/03

Lab Sample Number: 841026-001

VOLATILES - SPECIAL	L LIST									Prep Da	te: 11/17/03
Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Ani Method
Xylene, o	<	0.83	0.83	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Xylenes, m + p	<	1.8	1.8	6.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B

Analytical Report Number: 841026

1241 Bellevue Street Green Bay, WI 54302 920-469-2436

Client: RMT - MADISON

Project Name: TPC
Project Number: 3084.20

Field ID: TRIP BLANK

Matrix Type: WATER
Collection Date: 11/11/03
Report Date: 11/18/03

Lab Sample Number: 841026-002

VOLATILES - SPECIAL LIS	ST.									Prep Da	te: 11/17/03
Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Ani Method
1,1,1-Trichloroethane	<	0.90	0.90	3.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	<	0.20	0.20	0.67		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	<	0.42	0.42	1.4		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,1-Dichloroethane	<	0.75	0.75	2.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,1-Dichloroethene	<	0.57	0.57	1.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	<	0.74	0.74	2.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	<	0.97	0.97	3.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	<	0.97	0.97	3.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	<	0.87	0.87	2.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dibromoethane	<	0.56	0.56	1.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	<	0.83	0.83	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dichloroethane	<	0.36	0.36	1.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,2-Dichloropropane	<	0.46	0.46	1.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	<	0.83	0.83	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	<	0.87	0.87	2.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,3-Dichloropropane	<	0.61	0.61	2.0		. 1	ug/L		11/17/03	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	<	0.95	0.95	3.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
2,2-Dichloropropane	<	0.62	0.62	2.1		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
2-Chlorotoluene	<	0.85	0.85	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
4-Chlorotoluene	<	0.74	0.74	2.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Benzene	<	0.41	0.41	1.4		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Bromobenzene	<	0.82	0.82	2.7		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Bromodichloromethane	<	0.56	0.56	1.9		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Carbon Tetrachloride	<	0.49	0.49	1.6		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chlorobenzene	<	0.41	0.41	1.4		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chlorodibromomethane	<	0.81	0.81	2.7		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chloroethane	<	0.97	0.97	3.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chloroform	<	0.37	0.37	1.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Chloromethane	<	0.24	0.24	0.80		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	<	0.83	0.83	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	<	0.99	0.99	3.3		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Diisopropyl Ether	<	0.76	0.76	2.5		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Ethylbenzene		0.54	0.54	1.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Fluorotrichloromethane	<	0.79	0.79	2.6		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Hexachlorobutadiene	<	0.67	0.67	2.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Isopropylbenzene	<	0.59	0.59	2.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Methylene Chloride	<	0.43	0.43	1.4		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether		0.61	0.61	2.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Naphthalene		0.74	0.74	2.5		1	ug/L		11/17/03	SW846 503OB	SW846 8260B
n-Butylbenzene		0.93	0.93	3.1		1	ug/L		11/17/03	SW846 503OB	SW846 8260B
n-Propylbenzene	<	0.81	0.81	2.7		1	ug/L		11/17/03	SW846 503 OB	SW846 8260B
p-Isopropyitoluene	<	0.67	0.67	2.2		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
sec-Butylbenzene		0.89	0.89	3.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
tert-Butylbenzene	<	0.89	0.03	3.2		1	ug/L		11/17/03	SW846 503 OB	SW846 8260B
Tetrachloroethene	<	0.45	0.45	1.5		1	ug/L		11/17/03	SW846 503 OB	SW846 8260B
Toluene	<	0.67	0.45	2.2		1	ug/L ug/L		11/17/03	SW846 503OB	SW846 8260B
trans-1,2-Dichloroethene	<	0.89	0.89	3.0		1	ug/L ug/L		11/17/03	SW846 503 OB	SW846 8260B
			0.48	3.0 1.6		1			11/17/03	SW846 503 OB	SW846 8260B
Trichloroethene	<	0.48					ug/L				SW846 8260B
Vinyl Chloride	<	0.18	0.18	0.60		1	ug/L		11/17/03	SW846 503 OB	344040 0200D

En Chem Inc.

Analytical Report Number: 841026

1241 Bellevue Street Green Bay, WI 54302 920-469-2436

Client: RMT - MADISON

Project Name: TPC

Project Number: 3084.20 Field ID: TRIP BLANK Matrix Type: WATER

Collection Date: 11/11/03

Report Date: 11/18/03

Lab Sample Number: 841026-002

VOLATILES - SPECIAL LIST Prep Date: 11/17/0											
Analyte		Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Xylene, o	<	0.83	0.83	2.8		1	ug/L		11/17/03	SW846 5030B	SW846 8260B
Xylenes, m + p	<	1.8	1.8	6.0		1	ug/L		11/17/03	SW846 5030B	SW846 8260B

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
В	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
В	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
С	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
Ε	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
Ε	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
Н	All	Preservation, extraction or analysis performed past holding time.
J	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
J	Organic	Concentration detected is greater than the method detection limit but less than the reporting limit.
K	Inorganic	Sample received unpreserved. Sample was either preserved at the time of receipt or at the time of sample preparation.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
N	All	Spiked sample recovery not within control limits.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
٧	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
Х	All	See Sample Narrative.
&	Ali	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.

En Chem Inc.

Analysis Summary by Laboratory

1241 Bellevue Street Green Bay, WI 54302

1090 Kennedy Avenue Kimberly, WI 54136

841026-002 841026-001

Test Group Name

VOLATILES - SPECIAL LIST

G G

Wisconsin Certification

G = En Chem Green Bay

405132750 / DATCP: 105 000444

K = En Chem Kimberly

445134030

S = En Chem Superior

Not Applicable

C = Subcontracted Analysis

7

En Chem. Inc. Cooler Receipt Log

Batch No. 84/076	-		o.pt Log			
Project Name or ID		o. of Coolers:	/Tem	nps: <u>R</u> 0∓		
A. Receipt Phase: Date cooler was ope	ned: <u>(///3/0-3</u>	Ву:	(X	Water transport		
1: Were samples received on ice? (Must b	oe ≤6C)		ES NO2			
2. Was there a Temperature Blank?		Y	ES NO			
3: Were custody seals present and intact?	? (Record on COC)	Y	ES NO			
4: Are COC documents present?			ES NO2			
5: Does this Project require quick turn aro	und analysis?	Ý	ES NO			
6: Is there any sub-work?		Υ	ES 🚱			
7: Are there any short hold time tests?		/	res 1468			
8: Are any samples nearing expiration of i	nold-time? (Within 2 days)	Y	ES ¹	Contacted by/M	/ho	
9: Do any samples need to be Filtered or	Preserved in the lab?	Y	ES ¹	Contacted by/M	/ho	
B. Check-in Phase: Date samples were	Checked-in: // /3 /0	<u> 5</u> Ву:	(X			
1: Were all sample containers listed on th			_	NA		•
2: Sign the COC as received by En Chem	. Completed	y	NO NO			
3: Do sample labels match the COC?		Y	ÆS NO²			-
4: Completed pH check on preserved sam				€		
(This statement does not apply to wate 5: Do samples have correct chemical pres	servation?	Ý	'ES NO ²	₩		
(This statement does not apply to water 6: Are dissolved parameters field filtered?				(
7: Are sample volumes adequate for tests	requested?		NO ²			
8: Are VOC samples free of bubbles >6mi	m	γ	€S NO ²	NA		
9: Enter samples into logbook. Completed	1		NO NO			
10: Place laboratory sample number on a	Il containers and COC. Compl	eted	ES NO			
11: Complete Laboratory Tracking Sheet	(LTS). Completed		YES NO	W		
12: Start Nonconformance form			YES NO	R		
13: Initiate Subcontracting procedure. Co	mpleted		YES NO	®		
14: Check laboratory sample number on a	all containers and COC	15 (YES NO	NA		
Short Hold-time tests:	•					
48 Hours or less	7 days	II -	Footnotes		7	
Coliform (6 hrs) Hexavalent Chromium (24 Hrs)	Flashpoint TSS		1 Notify proper lammediately.	ab group		
BOD -	Total Solids			conformance memo	.	
Nitrite or Nitrate	TDS	1	•		1	
Low Level Mercury	Sulfide			•		
Ortho Phosphorus	Free Liquids Total Volatile Solids					
Turbidity Surfactants	Aqueous Extractable Organic	s- ALL				
Sulfite	Unpreserved VOC's					
En Core Preservation	Ash				İ	
Color			·			
Rev. 4/11/03, Attachment to 1-REC-5	i.				•	

Subject to QA Audit.

Reviewed by/date_

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(Please Print Legibly)	RMT		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					kannel		
Branch or Location: Madissen		EN		HEN	/ [1241 Bellevue Green Bay, WI 920-469-2	54302		
Project Contact:	P. Chase		ועו	•		iC.		Fax 920-469		7
_	62-5453			che	mistry for the environ	тепі.			Pag	e of
Telephone:			C	HAIN	OF C	UST	DDY	109174	Quote #	
Project Number:	3084.20					*Preservati		.*	Mail Repor	1 To: 7. (No. 50
Project Name:	PC			A=None H=Sodi	B≒HCL ım Bisulfate Solı	C=H2SO4 ution I=S	D=HN03 E=En odium Thiosulfate	nCore F=Methanol G=NaOl J=Other	Company:	RMT lac
Project State:	<u>V. </u>				(YES/NO)	<u>'</u> M/			Address:	744 Hee Hend Tr
Sampled By (Print) : _	Poter M Chissi	- 		ESERVATION		<u> </u>	_/_/-	///		Madrey WI
PO #:					45 32 °	/ / /	/ / /	Invoice	е То: <u>Ас</u> ф	b kec
Data Package Option	s - (please circle if requested)	Regulatory Program	Matrix Codes	ζģ				Company:		
Sample Results Only EPA Level II (Subject	•	UST RCRA	W=Water S=Soil A=Air		\forall \cdot \rangle	' / /	/ / /	Address:		trouble de la company de la co
EPA Level III (Subject	to Surcharge)	SDWA NPDES CERCLA	C=Charcoal B=Biota	£ 1/2,	`/ /			, N		
EPA Level IV (Subject		COLLECTIO	SI=Sludge IN	14 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3				Address:		LAR COMMENTS
(Lab Use Only)	FIELD ID	DATE TIN	MAINIX	/ 70/		(- (-		CLIENT COMMENTS		LAB COMMENTS (Lab Use Only)
001	5V-1	1/11 16	NW		**************************************				3-40 mls	
500	Trip Blank								15-410 mile	H.O 7.B. COC by Lab.
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Capital part Affirmation for									20 A STATE OF THE	
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Space and the second				¥ •					20,000	
Rush Turnaround Tin	ne Requested (TAT) - Prelim	Relinquisko	d By:		,Da f e/	lime:	Received By:	Carrier Control	Date/Time:	En Chem Project No.
(Rush TAT subject to a		TA.	MAK	1/	11/2/03	099	h	<i>A</i> 1	1 "	841026
Date Needed:	and the state of t	Relinquished	By: W		Date/		Received By:	11/19/	ate/Time:	Sample Receipt Temp.
Transmit Prelim Rush Results by (circle):				11703	1120	Ahan	nepen //3/03	1120	ROF	
Phone Fax E-Mail Retriquishe		d Bý:	117	Dete/	Time:	Received By:		bato riijie.	Sample Receipt pH (Wet/Metals)	
		empe	ue /13	3/03	1375	Pagelyed By		1/13/03 /345 Date/Time:	N //	
Fax #:		Relinquishe	и ву.	' (✓ Date/	inde.	Received By:		Date/ fillie:	Cooler Custody Seal
Samples	on HOLD are subject to ng and release of liability	Relinquishe	d By:		Date/	līme:	Received By:	1.0	Date/Time:	Present / Not Present Intact / Not Intact
special pitol		_L					L		· · · · · · · · · · · · · · · · · · ·	Version 4.0: 07/03

Attachment 3

SV-1 Vapor Sample Results



Air Toxics Ltd. Introduces the Electronic Report

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- · Results; and
- Chain of Custody (copy).



AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #:

0311223

Work Order Summary

CLIENT:

Mr. Pete Chase

RMT, Inc.

BILL TO: Mr. Pete Chase

RMT, Inc.

744 Heartland Trail

Madison, WI 53717

744 Heartland Trail

Madison, WI 53717

PHONE:

608-831-4444

P.O. #

FAX:

608-831-3334

PROJECT #

DATE RECEIVED:

11/13/03

CONTACT:

3084.20 TPC, Inc.

DECEIDT

DATE COMPLETED:

11/26/03

DeDe Dodge

			RECEIF
FRACTION#	<u>NAME</u>	<u>TEST</u>	VAC./PRES.
01A	Blank (3195)	Modified TO-15	0.0 "Hg
02A	SV-1 (3024)	Modified TO-15	5.5 "Hg
03A	Lab Blank	Modified TO-15	NA
04A	CCV	Modified TO-15	NA
05A	LCS	Modified TO-15	NA

amna	**************************************	1337
	IFIED	HY

Sinda d. Fruman

11/26/03

Laboratory Director

Certification numbers: AR DEQ - 03-084-0, CA NELAP - 02110CA, LA NELAP-AI 30763, NJ NELAP - CA004 NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/03, Expiration date: 06/30/04

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE Modified TO-15 RMT, Inc. Workorder# 0311223

Two 1 Liter Silonite Canister samples were received on November 13, 2003. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits for each compound.

Method modifications taken to run these samples include:

Requirement BFB acceptance criteria	TO-15 CLP protocol	ATL Modifications SW-846 protocol
Concentration of IS spike	10 ppbv	25 ppbv when 0.5/2.0 ppbv is used for the reporting limit
Dilutions for initial calibration	Dynamic dilutions or static using canisters	Syringe dilutions
Daily CCV	= 30% Difference</td <td><!--= 30% Difference with two allowed out up to </=40%.; flag and narrate outliers</td--></td>	= 30% Difference with two allowed out up to </=40%.; flag and narrate outliers</td
Primary ions for Quantification	Freon 114: 85, Carbon Tetrachloride: 117, Trichloroethene: 130, Ethyl Benzene, m,p- and o-Xylene: 91	Freon 114: 135, Carbon Tetrachloride: 119, Trichloroethene: 95, Ethyl Benzene, m,p- and o-Xylene: 106
IS Recoveries	Within 40% of mean over ICAL for blanks, and w/in 40 % of daily CCV for samples	Within 40% of CCV recoveries for blank and samples

Receiving Notes

The chain of custody information for sample Blank (3195) did not match the entry on the sample tag. The discrepancy was noted in the Login email and the information on the chain of custody was used to process and report the sample.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

- B Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
 - J Estimated value.
 - E Exceeds instrument calibration range.
 - S Saturated Peak.
 - Q Exceeds quality control limits.
 - U Compound analyzed for but not detected above the reporting limit.
 - UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

SAMPLE NAME: Blank (3195)

ID#: 0311223-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: Dil. Factor:	i111818 8.08		Date of Collection: Date of Analysis: 1	1.00
Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	4.0	10	Not Detected	Not Detected
1,1-Dichloroethene	4.0	16	Not Detected	Not Detected
1,1-Dichloroethane	4.0	17	Not Detected	Not Detected
cis-1,2-Dichloroethene	4.0	16	Not Detected	Not Detected
1,1,1-Trichloroethane	4.0	22	Not Detected	Not Detected
1,2-Dichloroethane	4.0	17	Not Detected	Not Detected
Trichloroethene	4.0	22	Not Detected	Not Detected
trans-1,2-Dichloroethene	16	65	Not Detected	Not Detected
Container Type: 1 Liter Silonite C	Canister			
Surrogates		%Recovery		Method Limits
Toluene-d8		98		70-130
1,2-Dichloroethane-d4		92		70-130

4-Bromofluorobenzene

96

70-130

SAMPLE NAME: SV-1 (3024)

ID#: 0311223-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: [Date of Collection: 11/11/03 Date of Analysis: 11/19/03 06:53 AM

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	4.9	13	Not Detected	Not Detected
1,1-Dichloroethene	4.9	20	Not Detected	Not Detected
1,1-Dichloroethane	4.9	20	Not Detected	Not Detected
cis-1,2-Dichloroethene	4.9	20	Not Detected	Not Detected
1,1,1-Trichloroethane	4.9	27	Not Detected	Not Detected
1,2-Dichloroethane	4.9	20	Not Detected	Not Detected
Trichloroethene	4.9	27	Not Detected	Not Detected
trans-1,2-Dichloroethene	20	80	Not Detected	Not Detected

Container Type: 1 Liter Silonite Canister

		Method Limits	
Surrogates	%Recovery		
Toluene-d8	97	70-130	
1,2-Dichloroethane-d4	90	70-130	
4-Bromofluorobenzene	96	70-130	

SAMPLE NAME: Lab Blank

ID#: 0311223-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Compound	Rpt. Limit (ppbv)	Rpt. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Vinyl Chloride	0.50	1.3	Not Detected	Not Detected
1,1-Dichloroethene	0.50	2.0	Not Detected	Not Detected
1,1-Dichloroethane	0.50	2.0	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.50	2.0	Not Detected	Not Detected
1,1,1-Trichloroethane	0.50	2.8	Not Detected	Not Detected
1,2-Dichloroethane	0.50	2.0	Not Detected	Not Detected
Trichloroethene	0.50	2.7	Not Detected	Not Detected
trans-1,2-Dichloroethene	2.0	8.0	Not Detected	Not Detected

Container Type: NA - Not Applicable

		Method Limits	
Surrogates	%Recovery		
Toluene-d8	98	70-130	
1,2-Dichloroethane-d4	96	70-130	
4-Bromofluorobenzene	100	70-130	

SAMPLE NAME: CCV

ID#: 0311223-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name: i111805a	Date of Collection: NA
Dil. Factor: 1.00	
	Date of Analysis: 11/18/03 03:19 PM

Compound		%Recovery
Vinyl Chloride		109
1,1-Dichloroethene		106
1,1-Dichloroethane		106
cis-1,2-Dichloroethene		107
1,1,1-Trichloroethane		108
1,2-Dichloroethane		108
Trichloroethene		106
trans-1,2-Dichloroethene		104
Container Type: NA - Not Applicable		
		Method
Surrogates	%Recovery	Limits
Toluene-d8	99	70-130
1.2-Dichloroethane-d4	99	70-130

102

4-Bromofluorobenzene

70-130

SAMPLE NAME: LCS

ID#: 0311223-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

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	44000	48 44 & 1 &
File Name: i1	11809 Date of Co	llection: NA
		MODIUM IN A SECURITION OF THE PERSON OF THE
Dil. Factor:	1.00 Date of Ar	alysis: 11/18/03 06:37 PM
	INV DUCTOR	417010: 11110100 00:01 1 III
		and with the contract of the c

Compound		%Recovery				
Vinyl Chloride		108				
1,1-Dichloroethene 1,1-Dichloroethane cis-1,2-Dichloroethane 1,1-Trichloroethane 1,2-Dichloroethane Trichloroethene		94				
		88 100 100 102 107 108				
				trans-1,2-Dichloroethene		
				Container Type: NA - Not Applicable		
						Method
				Surrogates	%Recovery	Limits
Toluene-d8	97			70-130		
1,2-Dichloroethane-d4	94	70-130				
4-Bromofluorobenzene	102	70-130				



CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance FOLSOM, CA 95630-4719 with all applicable local, State, Federal, national, and international laws, regulations and (916) 985-1000 FAX: (916) 985-1020 ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B

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