



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

North Central District Headquarters  
P. O. Box 818  
Rhinelander, Wisconsin 54501  
(715)362-7616

December 17, 1990

RECEIVED  
WI. DEPT. OF NATURAL RESOURCES

File Ref: 4440

DEC 18 1990

WI. RAPIDS AREA HDO  
WI RAPIDS. WI

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA, Region 5  
230 South Dearborn Street  
Chicago Il. 60604

SUBJECT: Wausau Water Supply Interim Action  
Monthly Status Report, November 1990

Dear Ms. Guerriero:

Please find enclosed the November 1990 monthly status report for the Wausau Water Supply Interim Action at Marathon Electric. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated August 6, 1990 with regard to our oversight of this project.

On November 13, 1990 the Groundwater Monitoring Plan dated August 3, 1990 was implemented.

If you have any questions, please contact me at 715-369-8965.

Sincerely,

Michelle DeBrock-Owens  
NCD Superfund Coordinator

MDO;mdo

Enclosure

cc → Donald Grasser - Wisconsin Rapids  
Suzanne Bangert - SW/3  
Terry Evanson - SW/3  
Gary Kulibert - NCH

WAUSAU WATER SUPPLY INTERIM ACTION MONTHLY STATUS REPORT, NOV. 1990

Project Purpose

The interim remedial action at Marathon Electric (M.E.) includes installation of a pump and treat system consisting of a 16-inch extraction well, pump and pumphouse, discharge manhole, and discharge outlet with riprapped section.

The purpose of the system is to create a cone of depression by pumping groundwater at a rate of 1600 gallons per minute to:

1. prevent further migration of the contamination plume known as the "west plume" northerly toward the City of Wausau municipal water supply wells and
2. treat the groundwater by discharge into a manhole with splash pad and over a riprapped discharge section so as to volatilize organic compounds known from past monitoring to be in the groundwater.

Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Interim Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) dated September 8, 1989 and a Letter of Agreement between EPA and WDNR dated August 6, 1990 .

### Project Status

Attached is the schedule for the groundwater sampling and waterlevel measurement events.

On November 13 and 14 (prior to start-up) monitoring wells, the extraction well and production wells 3 and 6 were sampled. Waterlevel measurements were also taken.

On November 14, at 1700 hours, the extraction well system was started.

A press release was issued on November 14, announcing the start-up of the Interim Action.

### Personnel On-site

1. John (Jack) Sittler, Carl Hanke, Rolly Russell, and John Myshka are all hired by Marathon Electric to implement the monitoring plan. Jack Sittler is the project manager and contact.
2. Mark Becker, Conestoga-Rovers & Associates Limited (CRA), was on-site November 13 - 16 and November 26 - 28. Mark was on-site to train the Marathon Electric personnel and oversee their work.
3. Michelle Owens and Don Grasser, WI-DNR, are on-site periodically to oversee the field work activities per the agreement with EPA.
4. Margaret Guerriero, EPA, was on-site November 15 to observe the field work activities.

### Schedule Changes and Explanations

At this time there has been no deviation from the attached schedule.

### Problems Encountered & Resolutions

- \*Problem 1. EPA and WIDNR were not given a schedule of the monitoring events at the start-up of the system.
- \*Resolution 1. Marathon Electric provided EPA and WIDNR with a schedule on November 29.
- \*Problem 2. There was confusion on the QA/QC for the extraction well sampling.
- \*Resolution 2. Margaret G. said that for every extraction well sampling event a Duplicate and MS/MSD for the influent or effluent needs to be taken. Alternate between the influent and effluent during sampling events.
- \*Problem 3. The effluent is extremely difficult to collect directly into the small VOC vial.
- \*Resolution 3. They can use a disposable bottle, set in a dipper, to obtain a bulk sample which they can pour into the VOC vial. A new bottle will be used each sampling event.

\*Problem 4. On Nov. 26, MW C2S was dry. Likely due to the drawdown caused by the extraction well.

\*Resolution 4. Margaret and I chose MW C7S or MW C3S to replace MW C2S. C7S was almost dry and C3S only had a 1 inch PVC well pipe. So MW R3S was finally chosen to replace C2S.

\*Problem 5. There is water leaking from the base of the pump on the extraction well.

\*Resolution 5. The leak was temporarily fixed by placing a sealant and concrete around the base of the pump. This leak will have to be looked at when the well is shut down for maintenance.

\*Problem 6. At times there were some Health and Safety deficiencies.

\*Resolution 6. Don Grasser reminded the sampling personnel that they should be at least in level E. They should have hard hats and safety boots. The person encountering groundwater should be wearing gloves and Tyvek. The person taking field measurements and/or handling sample bottles should be wearing gloves.

#### Departures from the Work Plan and other associated plans

Departures from plans and the outcome are mentioned in the Problems and Resolution section above.

#### Other Changes & Additions

Margaret G. and I chose wells C4D, W52, W53A and W54 for the TCL/TAL parameter sampling as required in the sampling plan.

#### Summary

The project is currently on schedule and going very well. Any departures from the approved plans and/or problems encountered have been approved and/or rectified.

MARATHON ELECTRIC MANUFACTURING CORP

GROUNDWATER SAMPLING & WATERLEVEL MEASUREMENT SCHEDULE

NOVEMBER 25, 1990 J.H.S.

TIME PERIOD	MONITORING WELLS		EXTRACTION WELL		PRODUCTION WELLS	
	SAMPLING	WATER LEVEL	SAMPLING	WATER LEVEL	SAMPLING	WATER LEVEL
12 HRS PRIOR TO START		NOV 15		NOV 15		
MONTH 1						
WEEK 1	NOV 15/16	NOV 16 NOV 19 NOV 21	NOV 15/16  NOV 19	NOV 15/16 NOV 17 NOV 18 NOV 19 NOV 20 NOV 21	NOV 15/16 *	
WEEK 2	NOV 26/27	NOV 26/27	NOV 23 NOV 26/27	NOV 23 NOV 26/27		
WEEK 3	DEC 3/4	DEC 3/4	NOV 29 DEC 3/4	NOV 29 DEC 3/4	DEC 3/4 *	
WEEK 4	DEC 10/11	DEC 10/11	DEC 6 DEC 10/11	DEC 6 DEC 10/11		
MONTH 2		DEC 17	DEC 17	DEC 17 DEC 21 DEC 28		
	JAN 7/8	JAN 7/8	JAN 7/8	JAN 7/8	JAN 7/8 *	
MONTH 3	FEB 4/5	JAN 21 FEB 4/5	JAN 21 FEB 4/5	JAN 21 FEB 4/5	FEB 4/5	
MONTH 4	MAR 4/5	FEB 18 MAR 4/5	MAR 4/5	FEB 18 MAR 4/5	MAR 4/5 *	
MONTH 5	APR 1/2	MAR 18 APR 1/2	APR 1/2	MAR 18 APR 1/2	APR 1/2 *	
MONTH 6	MAY 6/7	APR 15 MAY 6/7	MAY 6/7	APR 15 MAY 6/7	MAY 6/7	
3RD QUARTER	AUG 5/6	AUG 5/6	AUG 5/6	AUG 5/6	AUG 5/6	
4TH QUARTER	NOV 4/5	NOV 4/5	NOV 4/5	NOV 4/5	NOV 4/5	

NOTE: FROM MONTH 6 AND THEREAFTER PRODUCTION WELLS NO. 3, 6, 7 & 9 WILL BE SAMPLED AT EACH SAMPLING EVENT

PRODUCTION WELLS MARKED WITH AN ASTERISK, ONLY WELLS 3 & 6 WILL BE SAMPLED



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

RECEIVED  
WI. DEPT. OF NATURAL RESOURCES

North Central District Headquarters  
P. O. Box 818  
Rhinelander, Wisconsin 54501  
(715)362-7616

January 11, 1991

JAN 16 1991

File Code: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA, Region 5  
230 South Dearborn Street  
Chicago Il. 60604

WI. RAPIDS AREA HDQ.  
WI RAPIDS, WI

SUBJECT: Wausau Water Supply Interim Action  
Monthly Status Report, December 1990

Dear Ms. Guerriero:

Please find enclosed the December 1990 monthly status report for the Wausau Water Supply Interim Action at Marathon Electric. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated August 6, 1990 with regard to our oversight of this project.

On November 13, 1990 the Groundwater Monitoring Plan dated August 3, 1990 was implemented.

If you have any questions, please contact me at 715-369-8965.

Sincerely,

Michelle DeBrock-Owens  
NCD Superfund Coordinator

MDO;mdo

Enclosure

cc: Donald Grasser - Wisconsin Rapids  
Suzanne Bangert - SW/3  
Terry Evanson - SW/3  
Gary Kulibert - NCH

WAUSAU WATER SUPPLY INTERIM ACTION MONTHLY STATUS REPORT, December 1990

Project Purpose

The interim remedial action at Marathon Electric (M.E.) includes installation of a pump and treat system consisting of a 16-inch extraction well, pump and pumphouse, discharge manhole, and discharge outlet with riprapped section.

The purpose of the system is to create a cone of depression by pumping groundwater at a rate of 1600 gallons per minute to:

1. prevent further migration of the contamination plume known as the "west plume" northerly toward the City of Wausau municipal water supply wells and
2. treat the groundwater by discharge into a manhole with splash pad and over a riprapped discharge section so as to volatilize organic compounds known from past monitoring to be in the groundwater.

Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Interim Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) dated September 8, 1989 and a Letter of Agreement between EPA and WDNR dated August 6, 1990 .

### Project Status

Attached is the schedule for the groundwater sampling and waterlevel measurement events.

Two major sampling events occurred in December. The first was during week three, on December 3 & 4. The second was during week four, on December 10 & 11.

On December 3 & 4 monitoring wells C4D, W52, W53A, W54, and the extraction well's influent and effluent were sampled for the whole TCL/TAL parameter list.

### Personnel On-site

1. John (Jack) Sittler, Carl Hanke, Rolly Russell, and Merlin Huehnurfuss (replaced John Myshka) are all hired by Marathon Electric to implement the monitoring plan. Jack Sittler is the project manager and contact.
2. Mark Becker, Conestoga-Rovers & Associates Limited (CRA), was on-site December 3 & 4. Mark was on-site to train the Marathon Electric personnel and oversee their work.
3. Michelle Owens and Don Grasser, WI-DNR, are on-site periodically to oversee the field work activities per the agreement with EPA.

### Schedule Changes and Explanations

At this time there has been no deviation from the attached schedule.

### Problems Encountered & Resolutions

\*Problem 1. C2S is dry. C7S is almost dry. C3S has only a 1 inch diameter well.

\*Resolution 1. EPA and WDNR chose well R3S to replace C2S.

### Departures from the Work Plan and other associated plans

No departures were noted during week 3 & 4 sampling.

### Other Changes & Additions

Margaret G. and I chose wells C4D, W52, W53A and W54 for the TCL/TAL parameter sampling as required in the sampling plan.

### Summary

The project is currently on schedule and going very well. Any departures from the approved plans and/or problems encountered have been approved and/or rectified.



MARATHON ELECTRIC MANUFACTURING CORP

GROUNDWATER SAMPLING & WATERLEVEL MEASUREMENT SCHEDULE

NOVEMBER 25, 1990 J.H.S.

TIME PERIOD	MONITORING WELLS		EXTRACTION WELL		PRODUCTION WELLS	
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MONTH 1						
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WEEK 2	NOV 26/27	NOV 26/27	NOV 23 NOV 26/27	NOV 23 NOV 26/27		
WEEK 3	DEC 3/4	DEC 3/4	NOV 29 DEC 3/4	NOV 29 DEC 3/4	DEC 3/4 *	
WEEK 4	DEC 10/11	DEC 10/11	DEC 6 DEC 10/11	DEC 6 DEC 10/11		
MONTH 2		DEC 17	DEC 17	DEC 17 DEC 21 DEC 28		
	JAN 7/8	JAN 7/8	JAN 7/8	JAN 7/8	JAN 7/8 *	
MONTH 3	FEB 4/5	JAN 21 FEB 4/5	JAN 21 FEB 4/5	JAN 21 FEB 4/5	FEB 4/5	
MONTH 4	MAR 4/5	FEB 18 MAR 4/5	MAR 4/5	FEB 18 MAR 4/5	MAR 4/5 *	
MONTH 5	APR 1/2	MAR 18 APR 1/2	APR 1/2	MAR 18 APR 1/2	APR 1/2 *	
MONTH 6	MAY 6/7	APR 15 MAY 6/7	MAY 6/7	APR 15 MAY 6/7	MAY 6/7	
3RD QUARTER	AUG 5/6	AUG 5/6	AUG 5/6	AUG 5/6	AUG 5/6	
4TH QUARTER	NOV 4/5	NOV 4/5	NOV 4/5	NOV 4/5	NOV 4/5	

NOTE: FROM MONTH 6 AND THEREAFTER PRODUCTION WELLS NO. 3, 6, 7 & 9 WILL BE SAMPLED AT EACH SAMPLING EVENT

PRODUCTION WELLS MARKED WITH AN ASTERISK, ONLY WELLS 3 & 6 WILL BE SAMPLED



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

North Central District Headquarters  
P. O. Box 818  
Rhineland, Wisconsin 54501  
(715)362-7616

February 11, 1991

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA, Region 5  
230 South Dearborn Street  
Chicago Il. 60604

RECEIVED  
WI. DEPT. OF NATURAL RESOURCES

FEB 12 1991

WI. RAPIDS AREA HDO  
WI RAPIDS WI

File Code: 4440

SUBJECT: Wausau Water Supply Interim Action  
Monthly Status Report, January 1991

Dear Ms. Guerriero:

Please find enclosed the January 1991 monthly status report for the Wausau Water Supply Interim Action at Marathon Electric. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated August 6, 1990 with regard to our oversight of this project.

On November 13, 1990 the Groundwater Monitoring Plan dated August 3, 1990 was implemented.

If you have any questions, please contact me at 715-369-8965.

Sincerely,

Michelle DeBrock-Owens  
NCD Superfund Coordinator

MDO;mdo

Enclosure

cc → Donald Grasser - Wisconsin Rapids  
Suzanne Bangert - SW/3  
Terry Evanson - SW/3  
Sue Coll - U.S. EPA, Region 5, 230 S. Dearborn St., Chicago Il. 60604

## WAUSAU WATER SUPPLY INTERIM ACTION MONTHLY STATUS REPORT, January 1991

### Project Purpose

The interim remedial action at Marathon Electric (M.E.) includes installation of a pump and treat system consisting of a 16-inch extraction well, pump and pumphouse, discharge manhole, and discharge outlet with rippapped section.

The purpose of the system is to create a cone of depression by pumping groundwater at a rate of 1600 gallons per minute to:

1. prevent further migration of the contamination plume known as the "west plume" northerly toward the City of Wausau municipal water supply wells and
2. treat the groundwater by discharge into a manhole with splash pad and over a rippapped discharge section so as to volatilize organic compounds known from past monitoring to be in the groundwater.

### Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Interim Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) dated September 8, 1989 and a Letter of Agreement between EPA and WDNR dated August 6, 1990 .

### Project Status

Attached is the schedule for the groundwater sampling and waterlevel measurement events.

A sampling event occurred on January 7 & 8. This sampling event met the requirement for Month 2 monitoring.

### Personnel On-site

1. John (Jack) Sittler, Carl Hanke, Rolly Russell, and Merlin Huehnurfuss(replaced John Myshka) are all hired by Marathon Electric to implement the monitoring plan. Jack Sittler is the project manager and contact.
2. Michelle Owens was onsite January 8, 1991 to oversee a portion of the sampling activities. Michelle Owens and Don Grasser, WI-DNR, are on-site periodically to oversee the field work activities per the agreement with EPA.

### Schedule Changes and Explanations

Other sampling events in January and the first part of February were delayed due to the CLP lab Radion closing its doors and no longer analyzing samples.

### Problems Encountered & Resolutions

\*Problem 1. The cone of depression, of the extraction well, is much larger than expected when pumping at 1600 gpm. The shallow monitoring wells near the extraction well are drying up and the extraction well may be pulling in contaminants from elsewhere.

\*Resolution 1. EPA and WDNR has agreed to throttle back on the pumping rate to 800 gpm. This was done on January 31, 1991. The aquifer will be monitored and allowed to stabilize. The pumping rate will be decreased again if the cone of influence goals are not met.

\*Problem 2. Radion lab closed it's doors and ended the contract for analyzing samples from this site.

\*Resolution 2. The PRP's requested bids from labs who would follow the existing QAPP. Sampling at the site would resume the week of February 11, 1991.

\*Problem 3. Earlier analysis of the effluent showed a discharge level exceedance for Copper and Zinc. These levels are suspicious because of the lab qualifier.

\*Resolution 3. The DNR requested that another sample be taken to determine if there are Copper and Zinc exceedances. A local lab was used until the PRP's could find another lab.

### Departures from the Work Plan and other associated plans

Sampling events scheduled for the end of January were canceled(refer to Problem 2 above). This was considered a Force Majeure under the Consent Decree. Sampling would resume the week of February 11 and would continue per the approved monitoring plan schedule.

### Other Changes & Additions

EPA and DNR will need to determine if there will need to be an amendment to the Consent Decree describing the new pumping rate for the extraction well.

### Summary

The PRP's are searching for a new lab, another sample was taken of the effluent to determine if there is exceedances of Copper and Zinc and the originally approved schedule will resume February 11, 1991.

file



State of Wisconsin | DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

1681 2nd Ave. So., Rm. 118  
Wisconsin Rapids, WI 54494  
(715)421-7840

March 12, 1991

File Ref: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Mrs. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply Interim Action  
Monthly Status Report, February 1991

Dear Ms. Guerriero and Mrs. DeBrock-Owens:

Please find enclosed the February 1991 monthly status report for the Wausau Water Supply Interim Action at Marathon Electric. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated August 6, 1990 with regard to our oversight of this project.

Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

Enclosure

pc: Suzanne Bangert - SW/3, Madison  
Terry Evanson - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL  
60604

## WAUSAU WATER SUPPLY INTERIM ACTION MONTHLY STATUS REPORT, Feb., 1991

### Project Purpose

The interim remedial action at Marathon Electric (M.E.) includes installation of a pump and treat system consisting of a 16-inch extraction well, pump and pump house, discharge manhole, and discharge outlet with riprapped section.

The purpose of the system is to create a cone of depression by pumping groundwater at a rate of 1600 gallons per minute to:

1. prevent further migration of the contamination plume known as the "west plume" northerly toward the City of Wausau municipal water supply wells and
2. treat the groundwater by discharge into a manhole with splash pad and over a riprapped discharge section so as to volatilize organic compounds known from past monitoring to be in the groundwater.

### Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Interim Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) dated September 8, 1989 and a Letter of Agreement between EPA and WDNR dated August 6, 1990.

### Project Status

The schedule for the groundwater sampling and water level measurements events was developed on November 25, 1990.

The sampling event scheduled for February 4 & 5 for Month 2 monitoring was conducted on February 12 & 13.

### Personnel On-site

1. John (Jack) Sittler, PRP Project Manager, with Marathon Electric, is on-site periodically to manage the overall monitoring plan. Rolly Russell and Merlin Huehnurfuss conducted the water level measurements, in-field measurements for pH, temperature and conductivity, and sampling of the required wells on February 12 & 13.
2. Don Grasser, EPA oversight construction engineer with WI-DNR, was on-site February 12, 1991 to oversee a portion of the sampling activities.

### Schedule Changes and Explanations

The February 4 & 5 sampling event was delayed until February 12 & 13 because of the change in laboratories discussed in the January 1991 monthly report.

### Problems Encountered & Resolutions

\*Problem 1. Some difficulties have been experienced trying to keep the bladders inflated and/or starting pumping on the designated pumps in the monitoring wells. The cause is unknown.

\*Resolution 1. The Marathon Electric samplers kept trying and in some cases increase the pressure on the pump controller until the pump works successfully.

### Departures from the Work Plan and Other Associated Plans

\*Departure 1. The sampling schedule was changed due to a Force Majeure as noted above in the schedule changes. The sampling is expected to be back on schedule in March. Samples will be sent to Enviroscan Laboratory in Rothschild, WI in the interim as Radian Labs is closing.

### Other Proposed Departures or Items of Discussion

1. John (Jack) Sittler retired in late February from Marathon Electric and will no longer be involved with this project. Wally Mattson will be the new Project Manager for Marathon Electric for the Interim Action.

2. On February 12, 1991, the WDNR Oversight Engineer observed a flow of 955 gpm on the extraction well flow meter over a one minute timed period.

### Summary

A change in laboratories resulted in a change in the sampling schedule, however, this was only temporary and the sampling will be back on schedule in March.

Wally Mattson is the new Project Manager for Marathon Electric.

Marathon Electric is presently using Enviroscan Laboratory in Rothschild, WI.

DRG:drg

file



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

1681 2nd Ave. So., Rm. 118  
Wisconsin Rapids, WI 54494  
(715)421-7840

April 10, 1991

File Ref: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Mrs. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply Interim Action  
Monthly Status Report, March 1991

Dear Ms. Guerriero and Mrs. DeBrock-Owens:

Please find enclosed the March 1991 monthly status report for the Wausau Water Supply Interim Action at Marathon Electric. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated August 6, 1990 with regard to our oversight of this project.

Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

Enclosure

pc: Suzanne Bangert - SW/3, Madison  
Terry Evanson - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL  
60604



## WAUSAU WATER SUPPLY INTERIM ACTION MONTHLY STATUS REPORT, Mar., 1991

### Project Purpose

The interim remedial action at Marathon Electric (M.E.) includes installation of a pump and treat system consisting of a 16-inch extraction well, pump and pump house, discharge manhole, and discharge outlet with riprapped section.

The purpose of the system is to create a cone of depression by pumping groundwater at a rate of 1600 gallons per minute to:

1. prevent further migration of the contamination plume known as the "west plume" northerly toward the City of Wausau municipal water supply wells and
2. treat the groundwater by discharge into a manhole with splash pad and over a riprapped discharge section so as to volatilize organic compounds known from past monitoring to be in the groundwater.

### Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Interim Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) dated September 8, 1989 and a Letter of Agreement between EPA and WDNR dated August 6, 1990.

### Project Status

The schedule for the groundwater sampling and water level measurements events was developed on November 25, 1990.

The sampling event for March 4 & 5 for Month 4 monitoring was conducted as scheduled.

### Personnel On-site

1. Wally Mattson, PRP Project Manager, with Marathon Electric, is on-site periodically to manage the overall monitoring plan. Rolly Russell, Merlin Huehnurfuss and John Myshka conducted the water level measurements, in-field measurements for pH, temperature and conductivity, and sampling of the required wells on March 4 & 5.
2. Don Grasser, EPA oversight construction engineer with WI-DNR, was on-site March 4, 1991 to oversee a portion of the sampling activities.

## Schedule Changes and Explanations

None.

## Problems Encountered & Resolutions

\*Problem 1. Some difficulties have been experienced trying to keep the bladders inflated and/or starting pumping on the designated pumps in the monitoring wells. The samplers encountered this problem at W54, a flush mount well, during this sampling event.

\*Resolution 1. The Marathon Electric samplers pulled the pump at W54 and found that there was water in the bladder. After draining the bladder, the pump was re-installed and worked properly.

## Departures from the Work Plan and Other Associated Plans

\*Departure 1. Duplicate samples for the metals re-sampling at selected sampling points were not collected because the new lab (see items #2 & #3 below) didn't send enough sample containers.

## Other Proposed Departures or Items of Discussion

1. John (Jack) Sittler retired in late February from Marathon Electric and will no longer be involved with this project. Wally Mattson is the new Project Manager for Marathon Electric for the Interim Action.

2. Samples from this and future sampling rounds are sent to S-Cubed, A Division of Maxwell Laboratories, 3398 Carmel Mountain, San Diego, CA, an EPA certified lab according to Ed Roberts, CRA. This lab has been approved for this project by EPA, according to Mr. Roberts.

3. In addition to the regular sampling, the M.E. samplers collected samples for metals analyses at monitoring wells W52, W53A, W54, C4D, and the extraction well influent and effluent. U.S. EPA wanted the metals sampling to be done again and the analyses to be done at an EPA certified lab because there were some problems with the metals analyses results from Enviroscan Laboratory for the samples collected in December 1990. M.E. sent these samples to S-Cubed Lab. in San Diego, CA.

4. The WDNR Oversight Engineer has observed a flow of around 950 gpm on the extraction well flow meter over a one minute timed period. This is substantially higher than the 850 gpm flow rate observed over a 24 hour period by the samplers.

In addition, the samplers reported that the shallower wells are recovered since the pump has been throttled back, but they also stated that it appears that the flow rate may be moving upward.

I discussed these flow rate issues with Wally Mattson, M.E., and Ed Roberts, CRA. The samplers will continue to monitor the flow

rate and Ed Roberts will be checking on the flow rate to make sure that it is not moving up as it is very important from a modelling standpoint to maintain a consistent rate.

**Summary**

Wally Mattson is the new Project Manager for Marathon Electric.

Marathon Electric is presently using S-Cubed Laboratory in San Diego, CA for all sample analyses. The metals samples for five selected sampling points noted above were re-sampled and were also sent to this lab, an EPA certified lab.

Ed Roberts, CRA, will be checking on the present discharge flow rate of the extraction well to make sure it is maintaining the desired rate.

DRG:drg

file



State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

1681 2nd Ave. So., Rm. 118  
Wisconsin Rapids, WI 54494  
(715)421-7840

May 7, 1991

File Ref: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Mrs. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply Interim Action  
Monthly Status Report, April 1991

Dear Ms. Guerriero and Mrs. DeBrock-Owens:

Please find enclosed the April 1991 monthly status report for the Wausau Water Supply Interim Action at Marathon Electric. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated August 6, 1990 with regard to our oversight of this project.

Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads 'Donald R. Grasser'.

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

Enclosure

pc: Suzanne Bangert - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL  
60604

## WAUSAU WATER SUPPLY INTERIM ACTION MONTHLY STATUS REPORT, Apr., 1991

### Project Purpose

The interim remedial action at Marathon Electric (M.E.) includes installation of a pump and treat system consisting of a 16-inch extraction well, pump and pump house, discharge manhole, and discharge outlet with riprapped section.

The purpose of the system is to create a cone of depression by pumping groundwater at a rate of 1600 gallons per minute to:

1. prevent further migration of the contamination plume known as the "west plume" northerly toward the City of Wausau municipal water supply wells and
2. treat the groundwater by discharge into a manhole with splash pad and over a riprapped discharge section so as to volatilize organic compounds known from past monitoring to be in the groundwater.

### Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Interim Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) dated September 8, 1989 and a Letter of Agreement between EPA and WDNR dated August 6, 1990.

### Project Status

The schedule for the groundwater sampling and water level measurements events was developed on November 25, 1990.

The sampling event for April 1 & 2 for Month 5 monitoring was conducted as scheduled. The nine monitoring wells, including R2D, C4D, R4D, WSWD, W52, W53, W53A, W54, W55, and the extraction well influent and effluent were sampled for VOCs and field tested for pH, temperature and conductivity.

### Personnel On-site

1. Wally Mattson, PRP Project Manager, with Marathon Electric, is on-site periodically to manage the overall monitoring plan. Rolly Russell, Merlin Huehnurfuss and John Myshka conducted the water level measurements, in-field measurements for pH, temperature and conductivity, and sampling of the required wells on April 1 & 2.
2. Don Grasser, EPA oversight construction engineer with WI-DNR, was on-site April 1, 1991 to oversee sampling activities.

**Schedule Changes and Explanations**

None.

**Problems Encountered & Resolutions**

None.

**Departures from the Work Plan and Other Associated Plans**

None.

**Other Proposed Departures or Items of Discussion**

1. John (Jack) Sittler retired in late February from Marathon Electric and will no longer be involved with this project. Wally Mattson is the new Project Manager for Marathon Electric for the Interim Action.

2. Samples are now sent to S-Cubed, A Division of Maxwell Laboratories, 3398 Carmel Mountain, San Diego, CA, an EPA certified lab according to Ed Roberts, CRA. This lab has been approved for this project by EPA, according to Mr. Roberts.

**Summary**

The April sample round was conducted for nine monitoring wells and the extraction well influent and effluent with no problems or departures. Samples were sent to S-Cubed laboratory.

DRG:drg



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

1681 2nd Ave. So., Rm. 118  
Wisconsin Rapids, WI 54494  
(715)421-7840

file

June 10, 1991

File Ref: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Mrs. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply Interim Action  
Monthly Status Report, May 1991

Dear Ms. Guerriero and Mrs. DeBrock-Owens:

Please find enclosed the May 1991 monthly status report for the Wausau Water Supply Interim Action at Marathon Electric. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated August 6, 1990 with regard to our oversight of this project.

The Department is currently reviewing the RD\RA Work Plan received from Conestoga-Rovers & Associates Ltd. Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

Enclosure

pc: Suzanne Bangert - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL  
60604

## WAUSAU WATER SUPPLY INTERIM ACTION MONTHLY STATUS REPORT, May, 1991

### Project Purpose

The interim remedial action at Marathon Electric (M.E.) includes installation of a pump and treat system consisting of a 16-inch extraction well, pump and pump house, discharge manhole, and discharge outlet with riprapped section.

The purpose of the system is to create a cone of depression by pumping groundwater at a rate of 1600 gallons per minute to:

1. prevent further migration of the contamination plume known as the "west plume" northerly toward the City of Wausau municipal water supply wells and
2. treat the groundwater by discharge into a manhole with splash pad and over a riprapped discharge section so as to volatilize organic compounds known from past monitoring to be in the groundwater.

### Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Interim Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) dated September 8, 1989 and a Letter of Agreement between EPA and WDNR dated August 6, 1990.

### Project Status

The schedule for the groundwater sampling and water level measurements events was developed on November 25, 1990.

The sampling event for May 6 & 7 for Month 6 monitoring was conducted as scheduled. The nine monitoring wells, including R2D, C4D, R4D, WSWD, W52, W53, W53A, W54, W55, and the extraction well influent and effluent were sampled for VOCs and field tested for pH, temperature and conductivity.

### Personnel On-site

1. Wally Mattson, PRP Project Manager, with Marathon Electric, is on-site periodically to manage the overall monitoring plan. Rolly Russell, Merlin Huehnurfuss and John Myshka conducted the water level measurements, in-field measurements for pH, temperature and conductivity, and sampling of the required wells on May 6 & 7.
2. Don Grasser, EPA oversight construction engineer with WI-DNR,



was on-site May 7, 1991 to oversee a portion of the sampling activities.

#### Schedule Changes and Explanations

None.

#### Problems Encountered & Resolutions

I met with Wally Mattson to discuss some issues.

He had thought that the samplers sampled Friday, but apparently they were just preparing bottles by labelling. I discussed my concern about using unused bottles from the previous sampling round with regard to trip blanks, introduced contamination in bottles stored in the well house, and the inability to differentiate between bottles if they are not labelled as such.

I told Wally that due to the small detection limits of chemicals and the high cost of sampling it is important that they try to avoid any unnecessary actions that might jeopardize the samples and results.

I informed Wally that I would check with the samplers to determine if there is a trip blank with the unused samples from last round, and with Ed Roberts on this sampling protocol. Wally was going to check with the lab.

The samplers said that they thought they had about 3 or 4 bottles left from last time. I asked them to note which sample number (bottles) were the leftovers in the sampling log and that they were from a different lab. I explained my concerns about using unused bottles from other rounds. They informed me that they were not always getting enough bottles so had to use leftover ones that they were told they could be use up to 45 days after receiving. I told them that this would have to be corrected with the lab to make sure they are receiving the correct number of bottles each time sufficiently in advance of the sample day so they have time to label them.

I discussed these issues with Ed Roberts of CRA later in the day and he informed me that unused bottles won't be a problem any more since sampling will be conducted on a quarterly basis from now on, so any unused bottles could not be used because they would be beyond the 45 day holding period anyway. He will make sure the lab is sending the correct number of bottles.

#### Departures from the Work Plan and Other Associated Plans

None.

#### Other Proposed Departures or Items of Discussion

I briefed Wally on WDNR's roles on this project and my oversight

responsibilities. I discussed the letter of understanding about verbally communicating schedule changes and plan changes to WDNR (EPA's oversight representative) at least 48 hours prior to the change and follow up written notification as this was the first opportunity we have had to sit down and talk.

Summary

The May sample round was conducted for nine monitoring wells and the extraction well influent and effluent with no problems or departures, with the exception of the sample bottle issue. Samples were sent to S-Cubed laboratory.

DRG:drg



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Wisconsin Rapids Area Headquarters  
1681 Second Ave. South  
Wisconsin Rapids, WI 54494  
TELEPHONE 715-421-7840

Carroll D. Besadny  
Secretary

July 25, 1991

File Ref: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U. S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Mrs. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply, Monthly Status Report, June 1991

Dear Ms. Guerriero and Mrs. DeBrock-Owens:

During the month of June, no site activities were conducted that required field oversight by WDNR staff, therefore, no oversight report is enclosed. WDNR staff did provide assistance and input on decisions made to shut down the extraction well (EW-1) so that the ripped discharge area could be repaired.

The Department is currently reviewing the RD\RA Work Plan received from Conestoga-Rovers & Associates Ltd. Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

pc: Suzanne Bangert - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL 60604



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Wisconsin Rapids Area Headquarters  
1681 Second Ave. South  
Wisconsin Rapids, WI 54494  
TELEPHONE 715-421-7840

Carroll D. Besadny  
Secretary

August 20, 1991

File Ref: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Ms. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply, Monthly Status Report, July, 1991

Dear Ms. Guerriero and Ms. DeBrock-Owens:

During the month of July, no site activities were conducted that required field oversight by WDNR staff, therefore, no oversight report is enclosed.

The Department received the RD\RA Work Plan submitted by Conestoga-Rovers & Associates Ltd. on May 31, 1991 and submitted comments on the Pre-Design portion of the report to the U.S. EPA on July 25, 1991. The Department is currently reviewing the remaining portion of the RD\RA Work Plan and will send these comments to EPA this week.

Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

pc: Suzanne Bangert - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL 60604

*file copy*



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

1681 2nd Ave. So., Rm. 118  
Wisconsin Rapids, WI 54494  
(715)421-7840

September 26, 1991

File Ref: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Ms. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply Interim Action  
Monthly Status Report, August 1991

Dear Ms. Guerriero and Ms. DeBrock-Owens:

Please find enclosed the August 1991 monthly status report for the Wausau Water Supply Interim Action at Marathon Electric. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated August 6, 1990 with regard to our oversight of this project.

In addition to the on-site oversight as described in the enclosed report, the WDNR completed its review of the draft Final RD\RA Work Plan and associated documents by Conestoga-Rovers & Associates dated August 8, 1991. Comments were submitted to EPA on August 23, September 5, and discussed during several conference calls for inclusion in EPA's response to CRA.

Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

Enclosure

pc: Suzanne Bangert - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL  
60604

## WAUSAU WATER SUPPLY INTERIM ACTION MONTHLY STATUS REPORT, Aug, 1991

### Project Purpose

The interim remedial action at Marathon Electric (M.E.) includes installation of a pump and treat system consisting of a 16-inch extraction well, pump and pump house, discharge manhole, and discharge outlet with rippapped section.

The purpose of the system is to create a cone of depression by pumping groundwater at a rate of 1600 gallons per minute to:

1. prevent further migration of the contamination plume known as the "west plume" northerly toward the City of Wausau municipal water supply wells and
2. treat the groundwater by discharge into a manhole with splash pad and over a rippapped discharge section so as to volatilize organic compounds known from past monitoring to be in the groundwater.

### Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Interim Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) dated September 8, 1989 and a Letter of Agreement between EPA and WDNR dated August 6, 1990.

### Project Status

The schedule for the groundwater sampling and water level measurements events was developed on November 25, 1990.

The quarterly sampling event for August 5 & 6 was conducted as scheduled. The nine monitoring wells, including R2D, C4D, R4D, WSWD, W52, W53, W53A, W54, W55, and the extraction well influent and effluent were sampled for VOCs and field tested for pH, temperature and conductivity. Water levels were also done.

### Personnel On-site

1. Wally Mattson, PRP Project Manager, with Marathon Electric, is managing the overall monitoring program. Todd Lynn is now working in M.E.'s new environmental position and will become more involved with the project as time goes on. Rolly Russell, Merlin Huehnurfuss and John Myshka conducted the water level measurements, in-field measurements for pH, temperature and conductivity, and sampling of the required wells on August 5 & 6.

2. Don Grasser, EPA oversight construction engineer with WI-DNR, was on-site August 6, 1991 to oversee a portion of the sampling activities.

#### Schedule Changes and Explanations

None.

#### Problems Encountered & Resolutions

1. The samplers didn't receive the sample bottles on the preceding Thursday as usual from S-Cubed Lab. They contacted the lab and the bottles were sent special delivery and received on Friday. The samplers are now sending the unused bottles back with the rest of the bottles containing samples since they cannot be used for the next quarterly sampling round.
2. I smelled a banana oil odor near the sampling van and discovered that the samplers were using a spray solvent to help loosen bolts on the flush mount caps for replacement with stainless steel bolts. I told them not to be using chemicals around the samples as they could introduce contamination from solvents on their hands. They all washed their hands with TSP and distilled water before sampling again.
3. Someone has moved rocks around on the riprap discharge section again. Todd Lynn said M.E. would likely install barbed wire on top of the enclosure fence and place "No Trespassing" and international "danger" symbol signs on the fence to keep people out.

#### Departures from the Work Plan and Other Associated Plans

None.

#### Other Proposed Departures or Items of Discussion

1. Nitrogen is being used to purge and pull samples from well WSWD as it is difficult to access this well with the well wizard. Todd Lynn informed me that this was approved by Ed Roberts, CRA.
2. I discussed some other environmental issues pertaining to the M.E. property with Todd Lynn as noted in the field notes.

#### Summary

The August quarterly sample round was conducted for nine monitoring wells and the extraction well influent and effluent with no problems or departures, with the exception of the solvent use issue. Samples were sent to S-Cubed laboratory.

DRG:drg



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Wisconsin Rapids Area Headquarters  
1681 Second Ave. South  
Wisconsin Rapids, WI 54496  
TELEPHONE 715-421-7840

Carroll D. Besadny  
Secretary

October 16, 1991

File Ref: 4440

Ms. Margaret Guerriero  
Remedial Project Manager  
U.S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Ms. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply, Monthly Status Report, Sept., 1991  
Final Remedial Design/Remedial Action

Dear Ms. Guerriero and Ms. DeBrock-Owens:

Please find enclosed the September 1991 monthly status report for the Final Remedial Design/Remedial Action (RD/RA) for the Wausau Water Supply site in Wausau, Wisconsin. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated December 21, 1990 with regard to our oversight of this project.

During the month of September, the Pre-design phase of the soil vapor extraction (SVE) system design, part of the Final Action RD/RA work, began at the Wausau Chemical property. The start-up meeting for this phase was conducted on September 23 and Ms. DeBrock-Owens and I attended this meeting. The Pre-design work began on September 24 at which time WDNR initiated on-site oversight.

Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

pc: Suzanne Bangert - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL 60604



**MONTHLY STATUS REPORT, Sept., 1991**  
**WAUSAU WATER SUPPLY FINAL REMEDIAL ACTION**

**Project Purpose**

The final remedial action at the Wausau Water Supply site involves the comprehensive cleanup and remediation of the volatile organic compound (VOC) contaminated soils, landfill waste, and groundwater at this site. The final action includes construction of the final remedial components - the Soil Vapor Extraction (SVE) systems at the Wausau Chemical and Marathon Electric properties - installed and operated in conjunction with the existing groundwater remediation components, and implementation of the final action monitoring program plan.

The purpose of the SVE systems will be to extract volatile organic compounds (VOCs) from the contaminated soils and/or landfill waste at these properties, east and west of the Wisconsin River, and to capture these compounds in activated carbon units for final destruction off-site at an approved facility.

Prior to the design and construction of the final SVE system, a Pre-design study will be conducted. Soil gas samples will be collected and analyzed to define the spatial distribution of VOC contamination sources and drive-point air permeability tests will be performed to determine permeabilities of the soils and/or waste at the east and west properties described above. This data will be used to help locate and design the Pre-design pilot SVE systems. During construction of the pilot SVE wells, soil samples will be collected and analyzed, and temporary piezometers and soil gas sampling probes will be installed around the wells. Step rate and constant rate flow tests will then be conducted at each well. The results of these tests, along with the soils and soil gas sampling and analyses results, will be used to design and construct the final SVE systems and carbon treatment units, and to determine soil cleanup levels which will assure that groundwater standards will be met.

The purpose of the existing groundwater remediation components will continue to be the extraction and treatment of VOC contamination in the groundwater. These components include:

- 1) The operation of existing municipal water supply production wells as a groundwater extraction system and utilization of the existing municipal air strippers as treatment for the extracted groundwater.
- 2) The operation of the existing extraction well and treatment manhole and rippapped discharge section installed during the Interim Action by the City of Wausau and Marathon Electric.

In addition to the operation of these soil and groundwater remediation components, the final action will include the implementation of the final action monitoring program plan including:

- 1) Utilization of the groundwater extraction points and the existing groundwater monitoring well network to measure flow rates and groundwater elevations, and for sampling and analyses, to monitor the performance of the groundwater remediation components and to determine that cleanup levels have been met in the groundwater.
- 2) Measuring air flow rates and pressures at soil gas monitoring points and the SVE systems, and conducting sampling and analyses of soil gas and the SVE extraction system off-gas vapors, to monitor the performance of the SVE systems and to determine that cleanup levels have been met in the soils and landfill waste.

### Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Final Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) lodged on November 9, 1990, and a Letter of Agreement between EPA and WDNR signed December 21, 1990.

### Project Status

<u>Activity</u>	<u>Time Period</u>	<u>Completion Date</u>
Soil Gas Set-up	Sept. 23	Sept. 23
Start-up meeting	Sept. 23	Sept. 23
Wausau Chemical Soil Gas Survey (47 locations, 94 sample points)	Sept. 24 - Oct. 3	Sept. 29
Soil Gas Break	Oct. 3 - 8	Sept. 30 - Oct. 7

### Personnel On-site

1. Wally Mattson, PRP Project Manager, with Marathon Electric, is managing the overall monitoring program. Todd Lynn is now working in M.E.'s new environmental position and may become more involved with the project as time goes on.
2. WDNR personnel on-site included:

Michelle DeBrock-Owens, project manager, attended the start-up meeting on Sept. 23 and the press conference on Sept. 24. She was also on site on Sept. 27, accompanied by Gary Kulibert, Tom Jerow and Scott Watson, all of WDNR, to observe the site work and Hydro Geo Chem, Inc. setup.

Don Grasser, EPA oversight construction engineer, attended the start-up meeting on Sept. 23 and was on-site on Sept. 24 - 27 to oversee the Pre-Design SVE work activities.

3. Hydro Geo Chem (HGC), Inc. personnel on-site included:

Walter Weinig, Site Manager, Patricia Schumann, analytical chemist and day to day site manager, Bob Agnew, lab chemist in the mobile lab, and Mario Pauker, soil gas rig operator, all attended the start-up meeting. The HGC personnel were on-site every day of the Pre-Design work, except for Walter Weinig who was on-site for the first one or two days of the soil gas surveys to assure that operations were conducted according to the approved work plan.

**Schedule Changes and Explanations**

1. As noted in the table above, the soil gas survey at Wausau Chemical was completed four days ahead of schedule and the subsequent soil gas survey at the landfill and Marathon Electric is proposed to be started one or two days ahead of the original schedule. Also, HGC has proposed to combine Phases 1 & 2 (landfill and Marathon Electric) soil gas surveys into to one time period from October 8 to October 19, eliminating the originally scheduled break between these phases.

**Problems Encountered & Resolutions**

1. None.

**Departures from the Work Plan and Other Associated Plans**

1. One of the soil gas sample locations (two soil gas samples) could not be accessed within the impoundment area on the south end of Wausau Chemical due to the extensive piping from their groundwater extraction and air stripper unit at this location. The other four sample locations in this impoundment area were adjusted so as to get adequate coverage of the area.

**Other Items of Discussion**

1. A total of 47 soil gas sample locations were completed at the Wausau Chemical site with two sample depths (approximately 4 ft. and 8 ft.) at each location for a total of 94 samples for soil gas analyses. In addition, blanks and duplicates were

analyzed according to the work plan.

2. WDNR took photographs and did video-camcording to document various aspects of the soil gas survey.

**Summary**

The soil gas survey at Wausau Chemical was conducted with no significant problems and completed ahead of schedule. Various levels of the target compounds were detected across the site. These results are compiled each day on the computer system in HGC's on site laboratory.

DRG:drg

File



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Wisconsin Rapids Area Headquarters  
1681 Second Ave. South  
Wisconsin Rapids, WI 54494  
TELEPHONE 715-421-7840

Carroll D. Besadny  
Secretary

November 1, 1991

File Ref: 4440

Ms. Karla Johnson  
Remedial Project Manager  
U.S. EPA  
230 S. Dearborn Street, 5HS-11  
Chicago, IL 60604

Ms. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply, Monthly Status Report, Oct., 1991  
Final Remedial Design/Remedial Action

Dear Ms. Johnson and Ms. DeBrock-Owens:

Please find enclosed the October 1991 monthly status report for the Final Remedial Design/Remedial Action (RD/RA) for the Wausau Water Supply site in Wausau, Wisconsin. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated December 21, 1990 with regard to our oversight of this project.

During the month of October, the Pre-design phase of the soil vapor extraction (SVE) system design, part of the Final Action RD/RA work, continued with the completion of the soil gas survey and the construction of two of the three SVE wells. WDNR conducted oversight of these field activities and is also currently reviewing the revised RD/RA work plan by CRA & Assoc. Ltd. dated October 16, 1991.

Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

pc: Suzanne Bangert - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL 60604

**MONTHLY STATUS REPORT, Oct., 1991**  
**WAUSAU WATER SUPPLY FINAL REMEDIAL ACTION**

**Project Purpose**

The final remedial action at the Wausau Water Supply site involves the comprehensive cleanup and remediation of the volatile organic compound (VOC) contaminated soils, landfill waste, and groundwater at this site. The final action includes construction of the final remedial components - the Soil Vapor Extraction (SVE) systems at the Wausau Chemical and Marathon Electric properties - installed and operated in conjunction with the existing groundwater remediation components, and implementation of the final action monitoring program plan.

The purpose of the SVE systems will be to extract volatile organic compounds (VOCs) from the contaminated soils and/or landfill waste at these properties, east and west of the Wisconsin River, and to capture these compounds in activated carbon units for final destruction off-site at an approved facility.

Prior to the design and construction of the final SVE system, a Pre-design study will be conducted. Soil gas samples will be collected and analyzed to define the spatial distribution of VOC contamination sources and drive-point air permeability tests will be performed to determine permeabilities of the soils and/or waste at the east and west properties described above. This data will be used to help locate and design the Pre-design pilot SVE systems. During construction of the pilot SVE wells, soil samples will be collected and analyzed, and temporary piezometers and soil gas sampling probes will be installed around the wells. Step rate and constant rate flow tests will then be conducted at each well. The results of these tests, along with the soils and soil gas sampling and analyses results, will be used to design and construct the final SVE systems and carbon treatment units, and to determine soil cleanup levels which will assure that groundwater standards will be met.

The purpose of the existing groundwater remediation components will continue to be the extraction and treatment of VOC contamination in the groundwater. These components include:

- 1) The operation of existing municipal water supply production wells as a groundwater extraction system and utilization of the existing municipal air strippers as treatment for the extracted groundwater.
- 2) The operation of the existing extraction well and treatment manhole and riprapped discharge section installed during the Interim Action by the City of Wausau and Marathon Electric.

In addition to the operation of these soil and groundwater remediation components, the final action will include the implementation of the final action monitoring program plan including:

- 1) Utilization of the groundwater extraction points and the existing groundwater monitoring well network to measure flow rates and groundwater elevations, and for sampling and analyses, to monitor the performance of the groundwater remediation components and to determine that cleanup levels have been met in the groundwater.
- 2) Measuring air flow rates and pressures at soil gas monitoring points and the SVE systems, and conducting sampling and analyses of soil gas and the SVE extraction system off-gas vapors, to monitor the performance of the SVE systems and to determine that cleanup levels have been met in the soils and landfill waste.

**Project Oversight**

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Final Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) lodged on November 9, 1990, and a Letter of Agreement between EPA and WDNR signed December 21, 1990.

**Project Status**

<u>Activity</u>	<u>Time Period</u>	<u>Completion Date</u>
Landfill & Marathon Electric Soil Gas Survey (50 locations, 87 sample points)	Oct. 8 - 14	Oct. 14
SVE Well & Piezometer Construction	Oct. 30 & 31	Ongoing

**Personnel On-site**

1. Wally Mattson, PRP Project Manager, with Marathon Electric, is managing the overall monitoring program. Todd Lynn is now working in M.E.'s new environmental position and may become more involved with the project as time goes on.
2. WDNR personnel on-site included:  
  
Don Grasser, EPA oversight construction engineer, was on-site on Oct. 30 and 31 to oversee the construction of the pilot SVE well construction/installation activities.
3. Hydro Geo Chem (HGC), Inc. personnel on-site included:

Walter Weinig, Site Manager, Patricia Schumann, analytical chemist and day to day site manager, Bob Agnew, lab chemist in the mobile lab, and Mario Pauker, soil gas rig operator, were on-site every day of the Pre-Design soil gas survey work, except for Walter Weinig who was on-site for the first day only to assure that operations were conducted according to the approved work plan.

Walter Weinig, Site Manager, and Mario Pauker, geologist, were on-site Oct. 29-31 for all Pre-design SVE well work.

4. WTD Environmental Drilling personnel included:

Emmett R. Brophy and David Nieuwenhuis were on-site Oct. 30 and 31 to conduct the drilling work for soils classification and the two pilot SVE well installations at the Wausau Chemical property.

**Schedule Changes and Explanations**

1. HGC combined Phases 1 & 2 (Landfill and Marathon Electric) soil gas surveys into to one time period from October 8 to October 19, eliminating the originally scheduled break between these phases. As noted above, they completed this work ahead of schedule on October 14.
2. The pilot SVE well construction\installation scheduled to start on Oct. 28 was delayed one day because the HNu meter for air monitoring was not working properly.

**Problems Encountered & Resolutions**

1. None.

**Departures from the Work Plan and Other Associated Plans**

- 1) On Oct. 30 Hydro Geo Chem's (HGC) HNu meter was experiencing problems due to the excessive humidity, so they rented and used an Organic Vapor Analyzer (OVA). On Oct. 31, they found that they were out of calibration gas for the HNu meter, so they continued to use the OVA meter.
- 2) On Oct. 30 the WDNR oversight engineer inquired about the grout being used in the SVE wells. He was informed by Walter Weinig, HGC, that it was cement\bentonite grout. On Oct. 31 the oversight engineer observed a bag of the grout up close and noticed it was Aquagel Gold Seal a "high solids bentonite clay" grout only. He asked Walter about this and he said he had not noticed this and assumed that WTD Environmental Drilling was following the specifications calling for cement\bentonite grout. Weinig didn't see a problem with



this, however, as it should give a good seal. The oversight engineer told him that structurally it is probably not as good because it doesn't have cement, especially for around protective pipes, but it should be noted that the grout they are using has been approved for groundwater monitoring wells by WDNR as per NR 141.

The following are proposed departures from the work plan:

- 1) The drillers do not have to conduct split spoon sampling in the Marathon Electric (landfill) SVE well borehole or the permanent piezometers (3 hole locations with 3 piezometers in each hole), so they have proposed (on Oct. 31) to plug the bottom of the auger with a nylon plug so that material does not move up inside the auger. When the hole has been bored to the desired depth, the nylon plug is knocked out of the bottom and left in place at the bore hole bottom. Again, this method has been approved by WDNR previously such as the blind drilling done by WTD at the Mid-State Landfill. The oversight engineer sees no problem with approving this method for the landfill SVE borehole and the 3 permanent piezometer boreholes associated with the SVE well. HGC will be noting the boring cuttings at the landfill and collecting the required samples of the cuttings as per the work plan.
- 2) HGC proposes to use bentonite chips rather than cement/bentonite grout as shown in the work plan (Figure B.3.3) for the three permanent piezometer boreholes. This will save having to wait over night for the slurry to settle before they can install the next of the 3 piezometers in each hole. Since the casing will be 4.25" and the stainless steel tube to the piezometer is only 0.25", there should not be any problem with bridging or getting the chips down the hole. The main concern is assuring that the bentonite chips are hydrated sufficiently by placing in small lifts and hydrating between lifts. In the past we have recommended hydration in 6" lifts and certainly no more than one foot.

#### Other Items of Discussion

1. A total of 50 soil gas sample locations were completed at the Marathon Electric site. 37 of the locations (old landfill) had two sample depths (at approximately 3-5 ft. and 10-15 ft.) at each location for a total of 74 samples. 13 locations (ME parking lot near building) had one sample depth (about 5 ft.) at each location. So there were 87 samples total for soil gas analyses. In addition, blanks and duplicates were analyzed according to the work plan.
2. The decontamination of the drilling equipment during the soil gas survey and the SVE well construction is accomplished by high pressure hot water or steam cleaning of equipment in a

container and pumping the contaminated water from the container into sanitary sewer manholes. Decontamination of the drill rig will be accomplished by setting up the rig over the manhole and using a sheet of plastic with an opening into the manhole as an apron to assure that the contaminated water flows into the manhole.

Drill cuttings from the SVE well construction have been containerized in approved DOT drums labelled "Hazardous Waste". In addition, the drums are to be specifically identified as to the contents and source of contents by spray painting this information directly on the drums.

3. WDNR took photographs and did video-camcording to document various aspects of the soil gas survey.
4. A press release developed by Laurie Groskopf, WDNR Public Information Officer, was sent out on October 25, 1991.

### Summary

The soil gas survey at Marathon Electric was conducted with no significant problems and completed ahead of schedule.

According to HGC, VOC concentrations were relatively low in the landfill area. The highest concentrations of VOCs were in the northeast corner of the south parking lot near the Interim Action extraction well, the same area shown to have high VOCs during the RI study. No vinyl chloride was detected and low methane concentrations (highest was 1%) were observed in the landfill area. The only detect in the Marathon Electric 13 sample points was chloroform at 0.33 ppb. These results are compiled each day on the computer system in HGC's on site laboratory.

The SVE well construction/installations are going very well as the two at Wausau Chemical are complete. Air monitoring with an OVA meter, including screening the borehole, soil samples, and breathing space, showed zero readings in the area of the northwest loading dock and various readings on the south side of the building (drum storage area) ranging from 2 ppm just inside the auger top to 1300 ppm on one soil sample. The breathing space monitoring showed levels well below the 5 ppm action level.

DRG:drg

file



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny  
Secretary

Wisconsin Rapids Area Headquarters  
1681 Second Ave. South  
Wisconsin Rapids, WI 54494  
TELEPHONE 715-421-7840

December 9, 1991

File Ref: 4440

Ms. Karla Johnson  
Remedial Project Manager  
U.S. EPA  
77 West Jackson Boulevard, HSRW-6J  
Chicago, IL 60604

Ms. Michelle DeBrock-Owens  
Project Manager  
Wisconsin DNR  
P.O. Box 818  
Rhineland, WI 54501

SUBJECT: Wausau Water Supply, Monthly Status Report, Nov., 1991  
Final Remedial Design/Remedial Action

Dear Ms. Johnson and Ms. DeBrock-Owens:

Please find enclosed the November 1991 monthly status report for the Final Remedial Design/Remedial Action (RD/RA) for the Wausau Water Supply site in Wausau, Wisconsin. This report addresses the subjects outlined in the Letter of Agreement between EPA and WDNR dated December 21, 1990 with regard to our oversight of this project.

During the month of November, the Pre-design phase of the soil vapor extraction (SVE) system design, part of the Final Action RD/RA work, continued with the construction of the third pre-design SVE well, installation of one of three proposed permanent soil/gas piezometers, installation of temporary soil/gas piezometers, and completion of the pre-design SVE tests, one at each of the pre-design SVE wells. WDNR conducted oversight of these field activities and has also completed its review of the revised RD/RA work plan by CRA & Assoc. Ltd. dated October 16, 1991.

Please contact me at (715) 421-7840, if you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads 'Donald R. Grasser'.

Donald R. Grasser, P.E.  
Superfund Construction Engineer

DRG:drg

pc: Superfund Unit Leader - SW/3, Madison  
Sue Coll - U.S. EPA, Region 5, 230 Dearborn St., Chicago, IL 60604

**MONTHLY STATUS REPORT, Nov., 1991**  
**WAUSAU WATER SUPPLY FINAL REMEDIAL ACTION**

**Project Purpose**

The final remedial action at the Wausau Water Supply site involves the comprehensive cleanup and remediation of the volatile organic compound (VOC) contaminated soils, landfill waste, and groundwater at this site. The final action includes construction of the final remedial components - the Soil Vapor Extraction (SVE) systems at the Wausau Chemical and Marathon Electric properties - installed and operated in conjunction with the existing groundwater remediation components, and implementation of the final action monitoring program plan.

The purpose of the SVE systems will be to extract volatile organic compounds (VOCs) from the contaminated soils and/or landfill waste at these properties, east and west of the Wisconsin River, and to capture these compounds in activated carbon units for final destruction off-site at an approved facility.

Prior to the design and construction of the final SVE system, a Pre-design study will be conducted. Soil gas samples will be collected and analyzed to define the spatial distribution of VOC contamination sources and drive-point air permeability tests will be performed to determine permeabilities of the soils and/or waste at the east and west properties described above. This data will be used to help locate and design the Pre-design pilot SVE systems. During construction of the pilot SVE wells, soil samples will be collected and analyzed, and temporary piezometers and soil gas sampling probes will be installed around the wells. Step rate and constant rate flow tests will then be conducted at each well. The results of these tests, along with the soils and soil gas sampling and analyses results, will be used to design and construct the final SVE systems and carbon treatment units, and to determine soil cleanup levels which will assure that groundwater standards will be met.

The purpose of the existing groundwater remediation components will continue to be the extraction and treatment of VOC contamination in the groundwater. These components include:

- 1) The operation of existing municipal water supply production wells as a groundwater extraction system and utilization of the existing municipal air strippers as treatment for the extracted groundwater.
- 2) The operation of the existing extraction well and treatment manhole and riprapped discharge section installed during the Interim Action by the City of Wausau and Marathon Electric.

In addition to the operation of these soil and groundwater remediation components, the final action will include the implementation of the final action monitoring program plan including:

- 1) Utilization of the groundwater extraction points and the existing groundwater monitoring well network to measure flow rates and groundwater elevations, and for sampling and analyses, to monitor the performance of the groundwater remediation components and to determine that cleanup levels have been met in the groundwater.
- 2) Measuring air flow rates and pressures at soil gas monitoring points and the SVE systems, and conducting sampling and analyses of soil gas and the SVE extraction system off-gas vapors, to monitor the performance of the SVE systems and to determine that cleanup levels have been met in the soils and landfill waste.

### Project Oversight

The State of Wisconsin, Department of Natural Resources (WDNR) has entered into an agreement with the United States Environmental Protection Agency (EPA) to serve as the oversight contractor for the EPA on the Wausau Water Supply Final Action as outlined in the Consent Decree between EPA, WDNR, and the Potentially Responsible Parties (PRPs) lodged on November 9, 1990, and a Letter of Agreement between EPA and WDNR signed December 21, 1990.

### Project Status

<u>Activity</u>	<u>Time Period</u>	<u>Completion Date</u>
Permanent Piezometer Construction at Landfill	Nov. 1 - 4	Ongoing (1 of 3 piezometers completed)
Interim Action Quarterly Groundwater Monitoring	Nov. 4 & 5	Nov. 5
Pilot SVE Well Construction (M.E)	Nov. 9 & 10	Nov. 10
SVE Pilot Testing at Three SVE Wells	Nov. 11 - 20	Nov. 20

### Personnel On-site

1. Conestoga - Rovers, & Associates (CRA) personnel on-site included:

Brian Boevers and Chuck Cooke were on-site on Nov. 11 and 12 to oversee part of the first SVE pilot test at the northwest

loading dock SVE pilot well at Wausau Chemical.

2. WDNR personnel on-site included:

Don Grasser, EPA oversight construction engineer, was on-site to oversee the pilot SVE well construction/installation activities and for the SVE pilot tests.

3. Hydro Geo Chem (HGC), Inc. personnel on-site included:

Walter Weinig, Site Manager, and Mario Pauker, geologist and soil gas rig operator, were on-site during the construction/installation of the permanent piezometer and the pilot SVE well at the old landfill area near Marathon Electric. They were also on-site during the SVE pilot tests at the three pilot SVE wells.

Patricia Schumann, analytical chemist, Marita Clark, analytical chemist, John Green and Warren Thompson, technicians, were on-site during the SVE pilot tests.

The HGC personnel worked in two, three-person shifts (day time and night time) during the constant rate and step, SVE pilot tests at the three pilot SVE wells.

4. WTD Environmental Drilling personnel included:

Emmett R. Brophy and David Nieuwenhuis were on-site Nov. 1-4 to construct one of the three permanent piezometer at the Marathon Electric site and Nov. 9 & 10 to construct/install the pilot SVE well at the Marathon Electric site. One helper, name unknown, was on-site occasionally just to deliver supplies.

5. Other personnel:

Dave Erickson, City of Wausau Utilities, Jim, President of Wausau Chemical, and Todd Lynn, Marathon Electric's environmental coordinator, were on-site on at least two occasions each to observe and ask questions about the pilot study.

Rolly Russell, Merlin Heuhnurfuss, and John Myshka, working for Marathon Electric, conducted the Intermim Action quarterly groundwater monitoring, including water levels and samples at the specified monitoring wells in the west side contamination plume, on Nov. 4 & 5.

### Schedule Changes and Explanations

1. The well/piezometer construction scheduled to be completed on Nov. 7, 1991 was extended. The third pilot SVE well was

completed on Nov. 10 and the remaining two of three permanent piezometers have yet to be completed, but will be installed as part of the final SVE system.

Because of auger refusals in the old landfill area the construction of the pilot SVE well there was delayed and only one of the three permanent piezometers could be constructed prior to the SVE pilot test. Temporary piezometer probes were installed instead and used in conjunction with the one permanent piezometer.

2. The individual SVE pilot tests varied from the shedule slightly due to electrical and weather problems, but overall they were started and completed on schedule.

### Problems Encountered & Resolutions

#### Problem 1.

The mobile SVE unit shut down numerous times during the WC-SVE-1 pilot testing due to overloading of the electrical circuit. These shut downs resulted in discontinuous step and constant rate tests at this well. The main contributing factor initially was a large head loss due to the excessive buildup of water in the unit's water separator and on into the carbon absorption units. This excess water (as much as 2 gpm at a 200 cfm flow rate) occurred because of the relatively high flow rate and suction of the larger SVE system pulling water up the SVE wells at Wausau Chemical where groundwater was only about 10 to 14 feet from the ground surface.

#### Resolution 1.

The CRA crew constructed an intermittent water separator drum in-line between the SVE well and the SVE unit water separator which captured the bulk of the water, preventing excessive buildup in the SVE unit.

#### Problem 2.

HGC had auger refusals when drilling the bore holes for the pilot SVE well and permanent piezometers in the landfill near Marathon Electric.

#### Resolution 2.

The ME-SVE-1 pilot well and one piezometer (PZ-1-5', 15, & 25') were completed, but the remaining two piezometers were not completed so as not to delay the SVE pilot tests. Temporary probes were used in place of the other two permanent piezometers which must be constructed/installed as part of the permanent SVE system in the landfill.

## Departures from the Work Plan and Other Associated Plans

All of the departures were discussed with HGC personnel, usually before the work was initiated. According to Walter Weinig, none of the departures should reduce the effectiveness or necessary data collection of the SVE pilot tests. He stated that all departures will be addressed in the "Departure Report". The following departures were observed:

1. Hydro Geo Chem experienced problems with their (HGC) HNu meter at times, so they used an Organic Vapor Analyzer (OVA). At times they had problems with the OVA meter so they took "hard" samples (cartridges) which were analyzed in the lab to monitor for breakthrough of the carbon units.

In addition, HGC used "hard" samples instead of the nonfunctioning HNu meter and OVA meter to get background (prior to start-up) at the soil/gas probes, and for the one hour probe and system samples, all for total VOCs during the first SVE pilot test at the NW loading dock area at Wausau Chemical (WC-SVE-1).

2. Aquagel Gold Seal, a "high solids bentonite clay" grout, was used in the annular space seal in the three pilot SVE well instead of cement\bentonite grout as specified in the Pre-design work plan. It should be noted that the grout they are using has been approved for groundwater monitoring wells by WDNR as per NR 141.
3. The drillers used "blind drilling" at the Marathon Electric (landfill) pilot SVE well (ME-SVE-1) bore hole and the single permanent piezometer (PZ-1) they constructed by plugging the bottom of the auger with a nylon plug so that material does not move up inside the auger. Split spoon sampling is not required at the piezometers and samples had already been collected right near the landfill pilot SVE well in bore holes where there was refusal. HGC was to note the boring cuttings at the landfill and collect the required samples of the cuttings as per the work plan.
4. HGC used bentonite chips rather than cement/bentonite grout as shown in the work plan (Figure B.3.3) for the permanent piezometer annular space seals. The bentonite chips were hydrated in one foot lifts.
5. The drillers used 25 slot (0.025 in.) instead of 50 slot (0.050 in.) slot stainless steel screen in the permanent piezometer.
6. Three sets of temporary drive point piezometers were used at the Marathon Electric\Landfill site in conjunction the one permanent piezometer constructed there (PZ-1), instead of



three permanent piezometers. This was done because there was not enough time to complete the remaining two permanent piezometers before the scheduled date of the pilot SVE test there. The piezometer and pilot SVE well construction in the landfill area were behind schedule due to unanticipated auger refusals in the waste disposal areas.

The temporary probes provided the same type of pressure and soil gas data as the permanent piezometers, except for the temperature data because the permanent piezometers have temperature sensors and the temporary probes do not.

The temperature data was to be collected in the landfill as an indicator of combustibility potential. However, since very low levels of methane were detected in the area of the SVE pilot well and test, combustibility was not a concern now and temperature measurements weren't really necessary. HGC did, however, monitor the temperature probes in the one permanent piezometer and also monitored methane (combustible gases) in the SVE unit (sample point C-1) after the pump where there are higher temperatures.

Combustibility could be a concern during operation of the permanent SVE system at the landfill if injection wells are constructed to introduce air to the soils. The remaining two permanent piezometers with temperature probes must be completed as part of the permanent SVE system and the temporary probe locations may likely be used because they did not experience refusal when driving the points.

7. The motor/pump in the SVE mobile unit was larger than specified in the Pre-design work plan, therefore, it operated at higher flow rates and could not be throttled down to the specified initial flow rate of 50 scfm (standard cubic feet per minute). The smaller unit originally proposed to be used at this site was tied up on another project, so the available larger unit was used.

WDNR expressed a concern about not being able to collect data at lower flow rates according to the work plan. Walter Weinig, HGC, stated that this should not be a problem as the higher flow rate data can be extrapolated to develop data at lower flow rates. As with any extrapolation data, however, there is always a certain level of uncertainty due to the many variables affecting the soil system. WDNR expressed this concern.

8. HGC reduced the time interval of the step test from 30 minutes to 15 minutes at the first SVE pilot test location (WC-SVE-1) because they weren't getting any useful data at a specific flow rate after 15 minutes as the pressure drop and leveling off of pressure was fairly rapid in the east side plume area.

Also, system shut downs due to electrical problems, resulted in discontinuous step and constant rate tests at this well.

9. Because of the quick pressure recovery in the soils and the fact that it was the night shift and raining, HGC decided to run the constant rate test first at WC-SVE-2, on the south end of the Wausau Chemical building, and then let the soils recover and run the step tests. This is the opposite order of that specified in the Pre-design work plan.
10. The step tests at WC-SVE-2 were run at 20, 15 and 1 minute intervals instead of 30 minutes specified in the work plan. Again, this was because of the rapid pressure drop and leveling off of pressure in the soils in the east side plume area.
11. HGC started with the constant rate test at ME-SVE-1, then the step tests, and then the constant rate test again. This was possible due to the relatively fast recovery in the soils.
12. The six hour VOC sample frequency during the constant rate test at ME-SVE-1 (Marathon Electric/landfill) were cut back to 6 to 8 hour intervals because the lab would only get further and further behind and eventually would have all of the sample cartridges sitting in the lab awaiting analyses. It takes about 30 minutes to run a sample, much of this time taken to have the detector units cleared out prior to running the next sample in order to prevent carry over contamination from the previous sample.

#### Other Items of Discussion

1. The decontamination of the drilling equipment during the SVE pilot well construction and the east side plume soil/gas probes were accomplished by high pressure hot water or steam cleaning of equipment in a container and pumping the contaminated water from the container into sanitary sewer manholes, or by cleaning directly over the manhole.

The decontamination of the soil/gas probes on the west side (landfill) plume was accomplished by steam cleaning the rods over the Interim Action treatment, discharge manhole at EW-1 as was done during the soil/gas survey.

Drill cuttings from the SVE well construction have been containerized in approved DOT drums labelled "Hazardous Waste". In addition, the drums have been specifically identified as to the contents and source of contents by spray painting this information directly on the drums.

2. The 10 foot screens on WC-SVE-1 & 2 wells are at about 4 to 14 feet based on a water table depth of about 10 feet deep at

the time of installation. The water table, in this east side plume area is essentially reflective of the Wisconsin River water level. Just prior to and during the SVE pilot tests on these two wells, the Wisconsin River had been lowered by the water utility company in order to conduct work on the dam gates. Therefore, more of the screened section of the SVE wells was exposed during the tests than what normally might be.

3. On November 11, 1991, the HGC lab noted about 100 ppm of PCE in the soil/gas sample collected at WC-SVE-1, the northwest loading dock at Wausau Chemical.
4. On November 12, 1991, the HGC lab noted about 1080 ppb of PCE and trace BETX in the analyses of a water sample from the water separator unit. This analyses was conducted to see what levels of contaminants existed in this water which was discharged to the sanitary sewer system after HGC received approval from Joe Gehin, Utility Director, City of Wausau.
5. Summary of the step tests at the three SVE pilot wells:

<u>Well</u>	<u>Step and Flow Rate (scfm)</u>	<u>Pressure at SVE Well (psia)</u>	<u>Time (min.)</u>
WC-SVE-1	1) 160.73	13.3	*
	2) 225	12.64	*
	3) 579.79	12.57	*
Restart	1) 155-160	-	*
WC-SVE-2	1) 140	12.8	20
	2) 180	12.3	15
	3) 210-215	11.5	1*
ME-SVE-1	1) 175	13.72	36
	2) 230	13.53	21*
	3) 260	13.43	4*

\* Circuit breaker blew

6. Summary of constant flow rate tests at the three SVE pilot wells:

<u>Well</u>	<u>Flow Rate (scfm)</u>	<u>Pressure at SVE Well (psia)</u>	<u>Absolute</u>
WC-SVE-1	139.3384	12.9064	-1.0876 or 2.2"Hg
WC-SVE-2	No data noted as oversite engineer was not on-site.		
ME-SVE-2	175 (Nov. 18)	-	-

7. There were only some small pressure responses at the probe 100 feet from the WC-SVE-1 well during the constant rate test, consequently, probes were not installed at this great a distance at the WC-SVE-2 location.
8. On November 14, during the constant rate test at WC-SVE-1, soil/gas samples at the sample point after the first carbon unit (C-2) showed levels of 800 ppm. The HNu meter was not working, so "hard" samples were being collected from the SVE system for analyses. Subsequent sampling at the sample point after the second carbon unit (C-3), however, showed that break through was not occurring.

On the morning of Nov. 15, the carbon in the first unit was replaced with 200 pounds of fresh carbon. The spent carbon was put in a D.O.T. spec. drum, labelled "Hazardous Waste" for off-site regeneration.

The HNu meter was working then and was used to continue monitoring the carbon unit sampling points C-1 (before first unit) C-2, and C-3 as the constant rate test was restarted at again at 10:49. Breakthrough of the first carbon unit was detected again at 20:58 on Nov. 15. Subsequent HNu readings at the sample point after the second carbon unit (C-3) showed levels of 2.1 to 2.2 ppm. The test was terminated at 07:44 on Nov. 16 due to break through of the second carbon unit.

During the constant rate test at WC-SVE-2, levels of PCE at the well were around 5000 ppb and as high as around 10,000 ppb. These levels and the increased use of carbon verifies that there are high levels of contaminants in the area south of Wausau Chemical. These high levels of PCE also significantly increased the sample analyses time (25-30 min.) because of the increased time it takes to clear the units of these contaminants between samples to prevent contaminant carry over.

Note that a reading or measurement at sample point C-1, after the SVE pump and before the first carbon unit, is only a direct reading of the gases coming out of the extraction well if the bleeder valve before the SVE pump is totally closed. If the bleeder valve is open in order to reduce the flow at the SVE well head, outside air is being introduced and mixed with the soil gas air from the well, in which case, any measurements taken at C-1 are not directly reflective of the soil gas coming from the SVE well.

9. On Nov. 18, the constant flow rate test at 175 scfm was conducted first at ME-SVE-1, the Marathon Electric/landfill site. Because they were not getting good pressure draw down data, HGC terminated the constant rate test. They re-started the test after pressures stabilized and monitored the pressure

drop at one point (e.g. PZ-1-5 ft.) at two second intervals. They continued to stop, stabilize, and re-start the system to get pressure drop data at the other individual points (PZ-1-15 ft., 25 ft.). Once this was accomplished, HGC ran the step test. After the step test was completed, they re-started a constant rate test again at 175 scfm.

On Nov. 19 and Nov. 20, the constant flow rate test continued to run at ME-SVE-1, but at higher flow rate (192-198 scfm).

10. No break through of the carbon units occurred during the pilot tests at ME-SVE-1.
11. During the pilot tests at ME-SVE-1 on Nov. 18, only low levels of methane were detected. The highest level of explosive gases measured at sample point C-1 with a tri-gas meter calibrated to methane was 1% LEL on that day.

Note that a reading or measurement at sample point C-1, after the SVE pump and before the first carbon unit, is only a direct reading of the gases coming out of the extraction well if the bleeder valve before the SVE pump is totally closed. If the bleeder valve is open in order to reduce the flow at the SVE well head, outside air is being introduced and mixed with the soil gas air from the well, in which case, any measurements taken at C-1 are not directly reflective of the soil gas coming from the SVE well.

10. During the pilot SVE tests at the Marathon Electric/landfill site oxygen and carbon dioxide concentration measurements were taken as an indicator of biodegradation of waste in the landfill. If significant biodegradation is occurring, the addition of more oxygen (air) using injection wells could actually accelerate this process and the cleanup. An example of some readings obtained are: At PZ-1-15 ft. levels were O<sub>2</sub> = 19.9 % and CO<sub>2</sub> = 1.8 %.

11. As discussed above, temperature probes are included in the permanent piezometers to measure temperature for combustibility reasons. An example of temperature readings at PZ-1 are:

<u>Depth (ft.)</u>	<u>Temperature (Degrees C)</u>
5	12.6
15	14.3
25	3.2

12. WDNR took photographs and did video-camcording to document various aspects of the pilot SVE well construction and the SVE pilot tests.

### Summary

The pilot SVE wells and SVE pilot tests were completed essentially on schedule. Only one of the three permanent piezometers, PZ-1, was constructed/installed due to auger refusal problems in the landfill waste. Temporary probes were used in the landfill

instead, in conjunction with PZ-1, in order to complete the SVE pilot tests on schedule. The two remaining piezometers must be completed as part of the final SVE system in the landfill.

The SVE pilot tests were interrupted frequently due to electrical problems (heaters blown or circuit breakers tripped). Initially, these problems were more frequent because of increased head losses on the SVE pump due to a significant build-up of water in the water separator and carbon units. The water build-up problem was eliminated by constructing and placing an additional water separator drum in-line between the SVE well and the unit's separator.

There were many departures from the approved Pre-design work plan which will be addressed by HGC in a "Departure Report", but none of these significantly affected the performance, effectiveness or data collection of the SVE pilot tests, according to HGC. The most significant departure was the use of a larger SVE pump unit which did not allow testing at lower flow rates (around 50 scfm). Though HGC has assured WDNR that data collected at the higher flow rates can be extrapolated to obtain data for lower flow rates, WDNR expressed a concern about the accuracy of this extrapolated data compared to real data.

DRG:drg