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**WORKPLAN AND COST ESTIMATE FOR
QUARTERLY GROUND-WATER
MONITORING**

**FORMER POWER PLANT
W61 N617 MEQUON AVENUE
CEDARBURG, WISCONSIN**

**(WDNR FID #246100800 ERR-LUST)
(PECFA CLAIM #53012-2017-17)**

March 14, 1996

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(CLW131246)

Mr. Dale Lythjohan
Cedarburg Light and Water Commission
N30 W5926 Lincoln Boulevard
Post Office Box 5926
Cedarburg, Wisconsin 53012

RE: Workplan and Cost Estimate for Quarterly Ground-Water Monitoring, Former Power Plant, W61 N617 Mequon Avenue, Cedarburg, Wisconsin, (WDNR FID# 246100800 ERR-LUST) (PECFA Claim #53012-2017-17)

Dear Mr. Lythjohan:

We understand that the Wisconsin Department of Natural Resources (WDNR) has approved long-term ground-water monitoring as an appropriate remedial response for the above referenced site (Reference 1). Water quality is to be monitored quarterly for the first year and annually thereafter depending on results. Consequently, Northern Environmental Technologies, Incorporated (Northern Environmental) has prepared this workplan and cost estimate for one year of quarterly ground-water quality monitoring.

BACKGROUND INFORMATION

The subject property is a former electrical generating plant owned and operated by the Cedarburg Light and Water Commission (CLW). Two 20,000-gallon diesel fuel underground storage tanks (USTs) were reportedly cleaned and abandoned in place at the property during April 1986 (Reference 2). One 1000-gallon gasoline/diesel UST was cleaned, removed, and disposed of at the same time (Reference 2). A closure assessment was not required when the USTs were decommissioned.

The CLW retained Northern Environmental to drill and sample boreholes near the closed USTs during 1993 to assess the possible presence of contamination. Diesel range organic (DRO) compounds and gasoline range organic (GRO) compounds were detected in the soil sample. This finding was reported to the WDNR, and the CLW retained Northern Environmental to perform a remedial investigation. The site investigation was completed during April 1994 (Reference 3). Ground-water contamination was discovered. A report was prepared describing the investigation and presenting the results (Reference 3). The WDNR requested that an additional monitoring well be installed south of the Power Plant (Reference 4). The

well (MW500) was drilled and installed during December 1994. No DRO or petroleum volatile organic compounds (PVOCs) were detected above the laboratory method detection limits in the soil sample collected during MW500 drilling. No volatile organic compounds (VOCs) or DRO were detected above the method detection limits in the ground-water samples collected from MW500.

In an unrelated project, Mercury Marine, Incorporated removed polychlorinated biphenyl (PCB)-contaminated sediments from Cedar Creek which abuts the western property boundary during 1994. DRO contaminated soil was discovered in excavations dug in the stream bank beneath the power plant cooling towers. The WDNR and CLW were notified. Northern Environmental collected soil samples from the excavations to assess the extent of contamination. Excavation soil samples were laboratory analyzed for DRO and PVOCs. High concentrations of DRO are present beneath the cooling towers on the bank of Cedar Creek.

Additional ground-water quality monitoring was performed during June 1995. The installation of MW500, the additional ground-water monitoring, and the stream-bank excavation sampling were summarized in a report dated October 19, 1995 (Reference 5). Ground-water samples from MW200 have contained up to 2000 micrograms per liter ($\mu\text{g/l}$) of DRO, and trichloroethene and tetrachloroethene have also been detected above WDNR water quality enforcement standards. DRO concentration up to 150 $\mu\text{g/l}$ and benzene concentration above the preventive action limit have been detected in ground-water samples from MW300.

SCOPE OF WORK

Four ground-water monitoring wells are present at the site (MW200, MW300, MW400, and MW500). Ground-water flow direction, gradient, and quality will be monitored quarterly (approximately every three months) in each well for one year. Static-water elevations will be measured in each ground-water monitoring well to evaluate ground-water flow direction and gradient. Ground-water samples will be collected from all four monitoring wells and laboratory analyzed to evaluate ground-water quality. The wells will be purged and sampled in accordance with the WDNR guidelines (Reference 6). Purge water will be stored on site in 55-gallon drums. Appropriate disposal of the purge water will be determined based on laboratory analysis results.

Ground-water samples will be submitted under chain-of-custody to a WDNR-certified laboratory for analysis of GRO using the Wisconsin Modified Method and VOCs using Environmental Protection Agency (EPA) Method 8021. Quality assurance/quality control samples including one duplicate, one field blank, and one trip blank will also be collected. The duplicate sample will be analyzed for VOCs to quantify laboratory precision. The blanks will only be analyzed if low concentrations of contaminants are detected to evaluate field and laboratory procedures. All laboratory analyses will be performed by a WDNR-certified laboratory.

Following each of the first three quarterly ground-water monitoring events, Northern Environmental will prepare a brief report summarizing the methods and data. The quarterly reports will:

- ▲ Summarize past and current water table elevations
- ▲ Include current water table contour map showing ground-water flow direction
- ▲ Summarize past and current ground-water quality data
- ▲ Include laboratory reports and associated chain-of-custody records for the current quarter

An annual report will be prepared after the fourth quarter of ground-water monitoring. Past and present water quality data will be analyzed and interpreted, conclusions will be presented, and the need for further work will be evaluated. As stated previously, if site conditions permit, the monitoring frequency may be reduced to once annually.

As required by Chapter NR 712, Wisconsin Administrative Code, project activities will be supervised by a Northern Environmental Wisconsin registered professional engineer and/or a Wisconsin registered professional geologist meeting State criteria for the practice of hydrogeology. Copies of all reports will be submitted to the WDNR and Wisconsin Department of Industry, Labor and Human Relations (WDILHR).

ESTIMATED COST

Northern Environmental will furnish or arrange for the necessary technical staff, labor, equipment, and materials to complete this workplan. Due to the variable scope of the proposed work, this project will be completed on a time and materials basis according to the fee schedule provided in Attachment A. The total estimated cost to complete the ground-water monitoring program is \$25,400.00 and is itemized below:

Consulting/Engineering Services		
Manage Project	\$ 4,600.00	
Field Work	3,100.00	
Field Equipment and Mileage Charges	1,500.00	
Analyze Data	5,000.00	
Prepare Reports	5,000.00	
Prepare PECFA Claim	<u>500.00</u>	
Subtotal	\$19,700.00	
Laboratory Services	\$ 5,200.00	
Contaminated Water Disposal	<u>500.00</u>	
Subtotal	<u>\$ 5,700.00</u>	
Total Estimated Cost		\$25,400.00

These costs assume that dangerous concentrations of potentially hazardous constituents will not be encountered and that all field work can proceed with EPA Level "D" personal

protection. Laboratory services were obtained by competitive bidding of an annual contract and will be billed through Northern Environmental. Northern Environmental does not apply cost mark ups to services subcontracted through our firm.

A portion of costs to complete the proposed ground-water monitoring program may be eligible for reimbursement under the PECFA program. Northern Environmental will complete the Petroleum Environmental Cleanup Fund Act (PECFA) application for reimbursement of eligible costs following completion of the fourth quarter report. The PECFA application can be submitted after all invoices are completed and paid. The following quotation is required by the WDILHR to notify you of your financial responsibility under the PECFA program.

"Although the Petroleum Environmental Cleanup Fund Act (PECFA) may require a substantial share of the cost of conducting a remediation of a petroleum contamination, the owner will have a program deductible which they must pay. In addition, there may be costs not covered by the PECFA fund or are above the maximums that will be reimbursed for by the fund. A remediation may cost you more than the deductible."

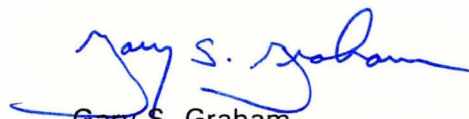
OTHER CONSIDERATIONS

In conjunction with the necessary technical expertise, Northern Environmental offers our clients a complete package of insurance including statutory liability, comprehensive general liability, automobile liability, engineers' errors and omissions (E&O) and engineers' pollution liability policy (EPL). The EPL policy carried by Northern Environmental is a companion policy to our regular E&O coverage containing the standard pollution exclusion. Together, our E&O and EPL policies provide our clients the best professional liability coverage available on the market today, coverage which exceeds that required by the PECFA program. Northern Environmental believes our clients desire this type of coverage, and that it is necessary for any responsible engineering firm such as Northern Environmental.

This workplan and all information contained herein is supplied expressly for the purpose of evaluation by the addressed party, and shall not be released to, or implemented by, any third party without the approval of Northern Environmental.

Northern Environmental appreciated your continued trust in our firm. Please feel free to contact us if you have any comments or questions.

Sincerely,
**Northern Environmental
Technologies, Incorporated**


Gary S. Graham
Senior Project Manager

GSG/jat

REFERENCES

- 1) Letter: Kaye K. Vance (Office of the Cedarburg City Attorney) to Mr. John Feeney (Wisconsin Department of Natural Resources), February 13, 1996.
- 2) Invoice: National Tank Service of Wisconsin to Cedarburg Light and Water Commission, April 25, 1986.
- 3) Northern Environmental Technologies, Incorporated, *Site Investigation Results, Former Power Plant, W61 N617 Mequon Avenue, Cedarburg, Wisconsin*, April 15, 1994.
- 4) Conversation: Andrew Boettcher (Wisconsin Department of Natural Resources) with Gary S. Graham (Northern Environmental Technologies, Incorporated), November, 1994.
- 5) Northern Environmental Technologies, Incorporated, *Site Investigation Results, Former Cedarburg Light and Water Commission Power Plant, W61 N617 Mequon Avenue, Cedarburg, Wisconsin*, October 19, 1995.
- 6) Wisconsin Department of Natural Resources, *Ground-Water Sampling Procedures, Field Manual, PUBL-WR-168*, September 1987.

ATTACHMENT A

**NORTHERN ENVIRONMENTAL TECHNOLOGIES, INCORPORATED
FEE SCHEDULE**

FEE SCHEDULE

(Effective May 1, 1995)

Director/Principals	\$105.00 - 125.00/hr
Project Managers	\$80.00 - 90.00/hr
Hydrogeologists	\$52.00 - 90.00/hr
Engineers	\$52.00 - 90.00/hr
Geologists	\$50.00 - 85.00/hr
Environmental Scientists	\$50.00 - 85.00/hr
Environmental Technicians	\$39.00 - 50.00/hr
Accounting	\$46.00 - 58.00/hr
Administrative	\$30.00 - 48.00/hr

* Equipment and Materials charged on a unit cost basis