

**Proposal for the Implementation of the MiddFoil®  
Process of Eurasian Water Milfoil Control**



*Prepared for:*

**Lake Cadillac**

*Prepared by:*

**EnviroScience, Inc.  
3781 Darrow Rd.  
Stow, OH 44224-4035**

Project Number: 801-1666

October 7, 2005

## Project Description

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Lake Cadillac has been undergoing an explosion of EWM in the past several years. Although heavy infestation covers relatively limited areas at present, milfoil has expanded tremendously over the past year and broad shallow areas of the lake have the potential to be affected. Because of this, EWM poses a considerable long-term threat to the recreational potential and ecological health of the lake.

A subcommittee of the newly formed Lake Cadillac Association is evaluating several alternatives for dealing with this problem. Chief among them are the use of herbicides and the Eurasian watermilfoil (EWM) weevil *E. lecontei* used as the active biological control agent in the MiddFoil® process. In addition to being an environmentally safe and sound approach, milfoil weevils can provide long-term permanent control as opposed to repeated chemical application indefinitely. MiddFoil® programs can be applied in one year or over multiple years, but multiple-year stocking provides a number of advantages, not the least of which is helping ensure more rapid lake-wide control.

At the request of the subcommittee, EnviroScience has prepared the following proposal which incorporates several options based on annual cost. Although every lake responds somewhat differently and there are few hard and fast guidelines for application, it is clear that the length of time needed for the weevils to achieve lake-wide control is proportional to the number that are stocked. In cases where 60,000 to 70,000 weevils were stocked in each of two years in a 1,600 acre Michigan lake, dramatic impacts were achieved during the first season and the milfoil was largely controlled within two years. More gradual results over a three to five year period can be expected if fewer weevils are used.

In keeping with the committee's desire to consider a range of treatment approaches, we have outlined several options below. Each option envisions stocking over a three year period and includes expenses that are associated with stocking, surveying and reporting. Data collected during the surveys helps provide the information necessary to make future adjustments to the program. It also provides the client with an annual report detailing the status of the MiddFoil® program.

A portion of the survey and reporting expenses are fixed, and therefore, these costs are not entirely dependent on the number of weevils stocked. Survey expenses do increase during each year of the program because as new stocking sites are added each year, both new sites and stocking sites from the previous year(s) must be monitored.

Regardless of the option selected, three general tasks must be accomplished each year as part of the Lake Cadillac MiddFoil® program.



### **Task 1: Initial survey, mapping of sites, and weevil stocking**

An initial survey is conducted prior to each stocking event during the growing season (June – August). Beds of EWM-dominated aquatic are marked using Global Positioning System (GPS) technology, surveyed to document the future progress of the program, and finally stocked with *E. lecontei* weevils. In addition to stocked sites, one or more monitoring sites not stocked with weevils, are established to gauge the progression of the program in other parts of the lake. The detailed surveys conducted at each of the project sites gather both qualitative and quantitative data to evaluate and measure the plant community, the density of the weevil population and the density of the EWM.

Project sites are selected, in part, by input from the client, and in part by the presence of conditions in and around the site that would contribute to a successful propagation and overwintering of the weevil population. Three to eight units (1,000 weevils per unit) of weevils are generally stocked per site.

### **Task 2: Follow-up Survey**

A follow-up survey will be conducted at the end of the growing season (August-September). Follow-up surveys are conducted each year after a stocking event and a final follow-up survey is conducted one year after the final stocking event. The surveys gather qualitative and quantitative data using the same protocols that are used during the initial surveys.

### **Task 3: Reporting**

Reports summarizing the progress of the MiddFoil program are generated at the end of each stocking year (September – December) and pursuant to the final follow-up survey. The reports include the evaluation of the data collected from the surveys and a detailed map of the project sites

## **Pricing**

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### Option I:

Under this option, approximately 75,000 weevils will be stocked in each of the next three years with a final follow-up survey performed in 2009. This aggressive approach has the potential to largely eliminate EWM as a nuisance by the end of the decade. Under this scenario, 10 to 15 distinct areas around the lake can be stocked each year, providing lake-wide coverage within a very short period of time.

It should be noted that based on our evaluation of the lake and its shoreline, we believe that weevils can be established and overwinter successfully anywhere around the lake. Despite the close proximity of roads and asphalt paths, buffer zones of adequate size for overwintering are present along the shore.



### Option I First Year Project Expenses 2006

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor		\$2,920.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$3,670.00</b>		
<b>Task 2: Follow-up Survey</b>				
Labor		\$2,520.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost Task 2</b>		<b>\$3,270.00</b>		
<b>Task 3: Report</b>				
First year interim report with map - Total Cost Task 3		<b>\$800.00</b>		
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2006	1,000 eggs & larvae	75	\$1,200.00	<b>\$90,000.00</b>
<b>Total First Year Cost</b>		<b>\$97,740.00</b>		

### Option I Second Year Project Expenses 2007

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor		\$3,275.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$4,025.00</b>		
<b>Task 2: Follow-up Survey</b>				
Labor		\$2,845.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost Task 2</b>		<b>\$3,595.00</b>		
<b>Task 3: Report</b>				
Second year interim report with map - Total Cost Task 3		<b>\$800.00</b>		
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2007	1,000 eggs & larvae	75	\$1,200.00	<b>\$90,000.00</b>
<b>Total Second Year Cost</b>		<b>\$98,420.00</b>		



## Option I Third Year Project Expense 2008

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor		\$3,600.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$4,350.00</b>		
<b>Task 2: Follow-up Survey</b>				
Labor		\$3,170.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost Task 2</b>		<b>\$3,920.00</b>		
<b>Task 3: Report</b>				
Third year interim report with map - Total Cost Task 3		<b>\$800.00</b>		
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2008	1,000 eggs & larvae	75	\$1,200.00	<b>\$90,000.00</b>
<b>Total Third Year Cost</b>		<b>\$99,070.00</b>		

## Option I Forth Year Project Expense 2009

<b>Task 1: Final follow-up survey</b>				
Labor		\$3,170.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$800.00		
<b>Total Cost of Task 1</b>		<b>\$3,970.00</b>		
<b>Task 2: Report</b>				
Final report with map - Total Cost Task 2		<b>\$950.00</b>		
<b>Total Forth Year Cost</b>		<b>\$4,920.00</b>		

### Option II:

Under this option, approximately 50,000 weevils will be stocked in each of the next three years with a final follow-up survey performed in 2009. Under this scenario, eight to twelve distinct areas around the lake can be stocked each year.

Although every lake responds somewhat differently, it is expected that this option will take one or two years longer to establish lake-wide control of the milfoil. However, this will be largely dependent on the overall management strategy implemented, including the amount and length of time that herbicides are used. Assuming that some degree of herbicide use is implemented along with this



option, a high degree of oversight will be necessary to ensure that the herbicides don't interfere with the weevils. The spread of the weevils from the stocking sites will need to be carefully monitored to allow the Association to make good decisions regarding minimizing or curtailing herbicide use in subsequent years.

### Option II First Year Project Expenses 2006

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor				\$2,520.00
Other Direct Cost (GPS Rental, travel, per diem)				\$750.00
<b>Total Cost of Task 1</b>				<b>\$3,270.00</b>
<b>Task 2: Follow-up Survey</b>				
Labor				\$2,120.00
Other Direct Cost (GPS Rental, travel, per diem)				\$750.00
<b>Total Cost Task 2</b>				<b>\$2,870.00</b>
<b>Task 3: Report</b>				
First year interim report with map - Total Cost Task 3				<b>\$800.00</b>
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2006	1,000 eggs & larvae	50	\$1,200.00	<b>\$60,000.00</b>
<b>Total First Year Cost</b>				<b>\$66,940.00</b>

### Option II Second Year Project Expenses 2007

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor				\$2,820.00
Other Direct Cost (GPS Rental, travel, per diem)				\$750.00
<b>Total Cost of Task 1</b>				<b>\$3,570.00</b>
<b>Task 2: Follow-up Survey</b>				
Labor				\$2,420.00
Other Direct Cost (GPS Rental, travel, per diem)				\$750.00
<b>Total Cost Task 2</b>				<b>\$3,170.00</b>
<b>Task 3: Report</b>				
Second year interim report with map - Total Cost Task 3				<b>\$800.00</b>
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2007	1,000 eggs & larvae	50	\$1,200.00	<b>\$60,000.00</b>
<b>Total Second Year Cost</b>				<b>\$67,540.00</b>



## Option II Third Year Project Expense 2008

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor		\$3,120.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$3,870.00</b>		
<b>Task 2: Follow-up Survey</b>				
Labor		\$2,720.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost Task 2</b>		<b>\$3,470.00</b>		
<b>Task 3: Report</b>				
Third year interim report with map - Total Cost Task 3		<b>\$800.00</b>		
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2008	1,000 eggs & larvae	50	\$1,200.00	<b>\$60,000.00</b>
<b>Total Third Year Cost</b>		<b>\$68,140.00</b>		

## Option II Forth Year Project Expense 2009

<b>Task 1: Final follow-up survey</b>				
Labor		\$2,720.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$3,470.00</b>		
<b>Task 2: Report</b>				
Final report with map - Total Cost Task 2		<b>\$950.00</b>		
<b>Total Forth Year Cost</b>		<b>\$4,420.00</b>		

### Option III:

Under this option, approximately 30,000 weevils will be stocked in each of the next three years with a final follow-up survey performed in 2009. Under this scenario, four to six distinct areas around the lake can be stocked each year. As with Option II, the amount of time required for lake-wide control is difficult to predict and will depend on the overall management strategy implemented, including the amount and length of time that herbicides are used.



### Option III First Year Project Expenses 2006

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor		\$2,270.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$3,020.00</b>		
<b>Task 2: Follow-up Survey</b>				
Labor		\$1,870.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost Task 2</b>		<b>\$2,620.00</b>		
<b>Task 3: Report</b>				
First year interim report with map - Total Cost Task 3		<b>\$800.00</b>		
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2006	1,000 eggs & larvae	30	\$1,200.00	<b>\$36,000.00</b>
<b>Total First Year Cost</b>		<b>\$42,440.00</b>		

### Option III Second Year Project Expenses 2007

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor		\$2,570.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$3,320.00</b>		
<b>Task 2: Follow-up Survey</b>				
Labor		\$2,170.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost Task 2</b>		<b>\$2,920.00</b>		
<b>Task 3: Report</b>				
Second year interim report with map - Total Cost Task 3		<b>\$800.00</b>		
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2007	1,000 eggs & larvae	30	\$1,200.00	<b>\$36,000.00</b>
<b>Total Second Year Cost</b>		<b>\$43,040.00</b>		



### Option III Third Year Project Expense 2008

<b>Task 1: Initial survey, mapping of sites, and weevil stocking</b>				
Labor		\$2,870.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$3,620.00</b>		
<b>Task 2: Follow-up Survey</b>				
Labor		\$2,470.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost Task 2</b>		<b>\$3,220.00</b>		
<b>Task 3: Report</b>				
Third year interim report with map - Total Cost Task 3		<b>\$800.00</b>		
<b>Weevils</b>				
Year	Unit	# Of Units	Unit Cost	Total
2008	1,000 eggs & larvae	30	\$1,200.00	<b>\$36,000.00</b>
<b>Total Third Year Cost</b>		<b>\$43,640.00</b>		

### Option III Forth Year Project Expense 2009

<b>Task 1: Final follow-up survey</b>				
Labor		\$2,470.00		
Other Direct Cost (GPS Rental, travel, per diem)		\$750.00		
<b>Total Cost of Task 1</b>		<b>\$3,220.00</b>		
<b>Task 2: Report</b>				
Final report with map - Total Cost Task 2		<b>\$950.00</b>		
<b>Total Forth Year Cost</b>		<b>\$4,170.00</b>		



## Yearly Summary of Expenses

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### Option I

Year	Survey & Report Expenses	Number of Weevils	Weevil Cost	Total Cost
2006	\$7,740	75,000	\$90,000	\$97,740
2007	\$8,420	75,000	\$90,000	\$98,420
2008	\$9,070	75,000	\$90,000	\$99,070
2009	\$4,920	0	-	\$4,920
<b>Total</b>	<b>\$29,650</b>	<b>225,000</b>	<b>\$270,000</b>	
<b>Total Cost of the Project- Option I</b>				<b>\$300,150</b>

### Option II

Year	Survey & Report Expenses	Number of Weevils	Weevil Cost	Total Cost
2006	\$6,940	50,000	\$60,000	\$66,940
2007	\$7,540	50,000	\$60,000	\$67,540
2008	\$8,140	50,000	\$60,000	\$68,140
2009	\$4,420	0	-	\$4,420
<b>Total</b>	<b>\$29,650</b>	<b>150,000</b>	<b>\$180,000</b>	
<b>Total Cost of the Project- Option II</b>				<b>\$207,040</b>

### Option III

Year	Survey & Report Expenses	Number of Weevils	Weevil Cost	Total Cost
2006	\$6,440	30,000	\$36,000	\$42,440
2007	\$7,040	30,000	\$36,000	\$43,040
2008	\$7,640	30,000	\$36,000	\$43,640
2009	\$4,170	0	-	\$4,170
<b>Total</b>	<b>\$25,290</b>	<b>90,000</b>	<b>\$108,000</b>	
<b>Total Cost of the Project- Option III</b>				<b>\$133,290</b>



## Terms and Agreement

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EnviroScience, Inc. will provide services and organisms for application of the MiddFoil® process to Cadillac Lake as outlined in the attached proposal. Should the Cadillac Lake Association be dissatisfied with the progress of the project, the Association may, at its option, prematurely terminate this agreement by requesting the same in writing by December 31<sup>st</sup> of 2006, 2007, or 2008. The Cadillac Lake Association will only be financially responsible for services rendered up to that point plus one additional follow-up survey and report performed in the following summer.

Payment for each year's costs are due in full at the time of the initial stocking or survey each year. A deposit of 20% of the first year's project cost is due at the time the signed contract is submitted. Please note: Stocking priority is determined by the date we receive a signed contract and deposit. The price in this proposal is valid for 120 days from the date of issuance

Submitted by:

Martin Hilovsky  
President

### Accepted and Authorized to Proceed

Please select and option:

- Option I
- Option II
- Option II

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**Signature**

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**Date**



## Standard Terms and Conditions

### 1. General

The following Standard Terms and Conditions, together with the attached Proposal and Fee Schedule constitute the Agreement between EnviroScience, Inc. ("ES") and the entity or person to whom the proposal is addressed ("Client") for the performance of professional services outlined in the proposal. The Standard Fee Schedule may be omitted for Lump Sum type Agreements.

### 2. Performance of Services

ES's services will be performed in accordance with generally accepted practices of engineers and/or scientists providing similar services at the same time, in the same locale, and under like circumstances. No warranty, express or implied, except as specified in Section 9 below, is included or intended by this Agreement.

### 3. Invoices, Payments

ES will submit Invoices to Client monthly for work completed during the previous month and a final invoice upon completion of services. Payment will be due within thirty (30) days from invoice date. Client agrees to pay a service charge of one and one-half (1½) percent per month (18% per annum) on past due payments. If an invoice remains unpaid for a period in excess of sixty (60) days, ES reserves the right to pursue all appropriate remedies including stopping work and retaining all drawings and information without recourse. In the event ES must engage counsel to enforce overdue payments, Client will reimburse ES for all reasonable attorney's fees and court costs.

### 4. Insurance

ES is protected by Workers' Compensation Insurance, Commercial General Liability Insurance, Professional Liability and Automobile Liability Insurance coverages. ES will furnish certificates of insurance upon Client's request. Client agrees that ES will not be liable or responsible for any loss or damage beyond the amounts, limits, exclusions, and conditions of such insurance.

### 5. Disclosure of Hazards

ES will take reasonable precautions for the health and safety of ES's employees while at the Client's Site with consideration for the available information regarding existing hazards. Client will furnish to ES at the time of the Client's authorization to proceed, all information known to the Client, Client's Counsel, or Site Owner concerning physical hazards, oil, hazardous, toxic, radioactive or asbestos material in, on or near the site. If hazards are known to exist and the Client fails to advise ES of such substance or condition, and during the course of the work they are discovered, and such discovery in ES's opinion results or may result in injury or a health risk to persons, whether ES's employees or others, Client agrees to assume full responsibility and liability and shall hold ES harmless for any and all claims,

demands, suits, or liabilities for personal injury including disease, medical expenses, including but not limited to, continued health monitoring, and/or death, or property damage, and for economic loss, including consequential damages.

### 6. Confidentiality

ES will hold confidential all business and technical information obtained or generated in performance of services under this Agreement. ES will not disclose such information without Client's written and/or verbal consent except to the extent required for: 1) performance of services under this Agreement; 2) compliance with professional standards of conduct for the preservation of public safety, health, and welfare; 3) compliance with any court order, statute or law, or governmental directive; and/or 4) protection of ES against claims or liabilities arising from the performance of services under this Agreement. ES's obligations hereunder shall not apply to information in the public domain or lawfully obtained on a non-confidential basis from others.

### 7. Ownership of Documents and Processes

All documents (including drawings, specifications, estimates, field notes, and other data) and all processes (including scientific, technological, software, and other concepts, whether or not patentable), created, prepared or furnished under this Agreement by ES or ES's independent contractors and consultants pursuant to this Agreement, are instruments of service in respect of the project and shall remain the property of ES whether or not the Project is completed. ES shall retain ownership of all documents, drawings, specifications, estimates, field notes, other data, and developed technology or processes and any copyright or right to patent thereto. Client may make and retain copies thereof as is necessary; however, such documents are not intended or represented to be suitable for additions, extension, alterations, or completion of the project by others, or use in any other project. Any reuse without written verification or adaptation by ES for the specific purpose intended is at Client's sole risk without liability or legal exposure to ES or its independent contractors or consultants. Client shall indemnify, defend, and hold harmless ES and its independent contractors, and consultants from all claims, damages, losses, and expenses, including attorney's fees arising out of or resulting therefrom. Any such verification or adaptation will entitle ES to further compensation.

### 8. Trade Secrets and Proprietary Information

Client acknowledges that ES has developed a number of protocols, techniques, and procedures, as well as specialized equipment for performing and ensuring the quality of laboratory and field services that it provides. Further, the Client acknowledges that ES regards this technical information as being its trade secrets. Client agrees not to use or disclose, directly or indirectly, any such trade secret



to any person or organization, unless expressly authorized by ES.

9. MiddFoil® Process-specific Terms, Conditions and Warranty

a). Any written or verbal information, other than published scientific studies or written ES sales literature, transferred by ES to the Client concerning the methodology used to rear and stock organisms used in the MiddFoil® process are considered proprietary by ES, and are specifically considered to be trade secrets. In addition to the conditions set forth in Section 8, to protect these trade secrets and comply with state and federal regulations, the Client agrees not to remove, transfer, culture, or otherwise use MiddFoil® organisms supplied by ES in any other location or for any other purpose.

b). Client hereby agrees to allow ES access to the waterbody for a period ten years from the date of this contract for the purposes of continued research. Client also authorizes ES to collect limited numbers of adult MiddFoil® organisms from the waterbody for culturing purposes. In the event that ES collects organisms for this purpose, ES agrees to provide a written report detailing its activities, and furthermore agrees to restock within the same season two times the number of organisms removed.

10. References

Client agrees that ES has authority to utilize Clients name and general descriptions of the project work or service performed as references to other clients.

11. Limitation of Liability/Dispute

To the fullest extent permitted by law, the total liability of ES to Client, and anyone claiming by, through, or under Client, for any and all injuries, claims, losses, expenses, or damages whatsoever arising out of or in any way related to ES's services, from any cause or causes whatsoever, including, but not limited to, negligence, errors, omissions, strict liability, breach of contract, or breach of warranty, shall be limited to an amount of \$50,000 or ES's fee, whichever is greater.

If Client prefers not to limit ES's liability to this sum, ES may increase this limitation upon Client's written request.

12. Dispute Resolution

All claims, disputes or controversies arising out of or in relation to the interpretation, application or enforcement of this Agreement shall be first submitted to non-binding mediation pursuant to the Rules for Commercial Mediation of the American Arbitration Association.

13. Legal Action

All legal actions by either party against the other for any cause or causes, including but not limited to breach of this Agreement, negligence, misrepresentation, breach of warranty or failure to perform in accordance with the standard of care, however denominated, shall be barred five (5) years from the day after completion of ES's services or the

time that the party knew or should have known of this claim, whichever is sooner. In the event that Client institutes a suit against ES, and if such suit is not successfully prosecuted, or if it is dismissed, or if a verdict is rendered for ES, Client agrees to pay ES any and all costs of defenses, including attorney's fees, expert witnesses' fees, and court costs and any and all other expenses of defense which may be reasonably necessary, immediately following dismissal of the case or immediately upon judgment being rendered in favor of ES.

14. Precedence

These Terms and Conditions shall take precedence over any inconsistent or contradictory provisions contained in any proposal, contract, purchase order, requisition, notice to proceed, or like document.

15. Severability

If any of the Terms and Conditions are finally determined to be invalid or unenforceable in whole or part, the remaining provision shall remain in full force and effect and be binding upon the parties. The parties agree to reform these Terms and Conditions to replace any such invalid or unenforceable provision with a valid and enforceable provision that comes as close as possible to the intention of the stricken provision.

16. Survival

These conditions shall survive the completion of ES's services on this project and the termination of services for any cause.

17. Governing Law

This Agreement shall be governed and construed in accordance with the laws of the state of Ohio.

