

Stoltz, Carrie R - DNR

From: Dave Larsen <dlarsen@reiengineering.com>
Sent: Tuesday, March 13, 2018 10:52 AM
To: Stoltz, Carrie R - DNR
Subject: Greater Bass Lake Proposal
Attachments: 7083 CBI and SVE (6 mo) #2.pdf; 20180312152545911.pdf; GR17-007REV2.pdf; 1091_001.pdf

Carrie, proposal for carbon injection, SVE install and direct contact soil management.

Carbon injection locations are identified in the attached proposal. Costs are based on mobilization from North Carolina. If work can be completed concurrent with other approved work in WI, cost savings will be realized.

REI todo - skid steer will be at site for injection

Direct contact soil will be addressed through use of a geomembrane. Top 1' of soil in the 40'x30' area will be removed, membrane installed and clean gravel will be placed over membrane. Soil will be stockpiled on and covered with 6 mil plastic sheeting. Impacted soil stockpile will be plumbed into proposed SVE system for final treatment. SVE system will be plumbed into four (4) proposed 2" diameter SVE wells drilled to 19' depth and completed with 15' screens. SVE is proposed to operate for 6 months.

Groundwater to be sampled on a quarterly basis for 4 quarters (8 MW's (PVOC/N) and potable (524.2 - MAY WANT TO REDUCE TO VOC TO SAVE \$\$). *→ must meet standards*

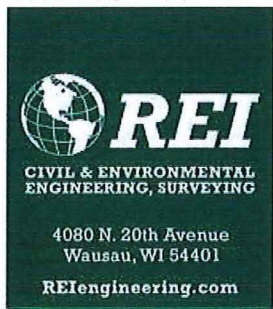
Propose to complete minimal report after injections and system install, after 2nd sample event and after 4th sample event. Under current budget (minus any anticipated cost savings) we are approximately \$12-13K under maximum reimbursement budget.

Thank you,

David N. Larsen P.G.

Senior Hydrogeologist / Professional Geologist




*(per Dave)
Cheaper to run SVE, than
haul soils to LF.*



David N. Larsen, P.G.
Senior Hydrogeologist
Dlarsen@REIengineering.com

Tel: 1-877-734-7745
715-675-9784
Cell: 715-551-3434
Fax: 715-675-4060

** REI is providing a discount for SVE trailer lease to save \$ for this project. Normal/Regular lease rate is \$1350.00/month. Discount Rate is \$1000.00/month*

Connect with us :   

Confidentiality Notice: This message is intended for the recipient only. If you have received this e-mail in error please disregard.

Usual and Customary Standardized Invoice #23 January 2018- July 2018



RR-092a

PECFA #: 54485-9999-76
 BRRTS #: 03-24-563946
 Site Name: Greater Bass Lake Storage, LLC
 Site Address: N9276 Mill Road, Summit Lake

Vendor Name: REI
 Invoice #: _____
 Invoice Date: Proposal Date 3-12-18
 Check #: _____

U&C Total \$ 12,384.97
 Variance to U&C Total \$ 111,489.43
 Grand Total \$ 123,874.40

TASK	TASK DESCRIPTION	SERVICES	ACTIVITY CODE	ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAX UNIT COST	UNITS	TOTAL MAX
1	GW Sampling		GS05	Sample Collection	Well	\$ 72.45	36	\$ 2,608.20
1	GW Sampling		GS25	Primary Mob/Demob	Site	\$ 628.11	4	\$ 2,512.44
4	Waste Disposal	Consultant	WD05	Consultant Coordination	Site	\$ 137.13	4	\$ 548.52
4	Waste Disposal	Commodity	WD10	GW Sample and/or Purge	Drum	\$ 42.11	4	\$ 168.44
4	Waste Disposal	Commodity	WD25	Primary Mob/Demob	Site	\$ 287.70	4	\$ 1,150.80
6	Letter Report/Addendum		LRA05	Letter Report/Addendum	Letter	\$ 1,039.29	3	\$ 3,117.87
15	Misc. Drilling Activities & Supplies		MDT21	Drum, 55 gal. DOT steel	Each	\$ 55.13	4	\$ 220.52
36	Change Order Request		COR05	Change Order Request (cost cap exceedance requests)	Change Order	\$ 381.78	1	\$ 381.78
Variance	Carbon Based Injectate Proposal				Variance	\$ 71,125.36	1	\$ 71,125.36
Variance	SVE Install				Variance	\$ 18,831.35	1	\$ 18,831.35
Variance	SVE Year One				Variance	\$ 21,532.72	1	\$ 21,532.72

Wells: GB-1 Thru GB-8 + (1) pw = 9 wells x 4 = 36 samplers

Usual and Customary Standardized Invoice #23

January 2018- July 2018



RR-092A

TOTAL LAB CHARGES \$ 1,676.40 TASK 33 36 \$1,676.40 TASK 24 0 \$ -

MATRIX	REF CODE	REIMBURSABLE ANALYTE	UNITS	MAX COST	SAMPLES	TOTAL	MAX COST	SAMPLES	TOTAL
AIR	A1	Benzene	SAMPLE	\$ 44.94		\$ -			
AIR	A2	BETX	SAMPLE	\$ 49.46		\$ -			
AIR	A3	GRO	SAMPLE	\$ 46.10		\$ -			
AIR	A4	VOC's	SAMPLE	\$ 71.93		\$ -			
WATER	W1	GRO/PVOC	SAMPLE	\$ 29.19		\$ -			
WATER	W2	PVOC	SAMPLE	\$ 26.99		\$ -			
WATER	W3	PVOC + 1,2 DCA	SAMPLE	\$ 43.79		\$ -			
WATER	W4	PVOC + Naphthalene	SAMPLE	\$ 30.35	32	\$ 971.20			
WATER	W5	VOC	SAMPLE	\$ 71.93		\$ -			
WATER	W6	PAH	SAMPLE	\$ 72.98		\$ -			
WATER	W7	Lead	SAMPLE	\$ 12.39		\$ -			
WATER	W8	Cadmium	SAMPLE	\$ 13.55		\$ -			
WATER	W9	Hardness	SAMPLE	\$ 12.39		\$ -			
WATER	W10	BOD, Total	SAMPLE	\$ 23.63		\$ -			
WATER	W11	Nitrate	SAMPLE	\$ 11.24		\$ -			
WATER	W12	Total Kjeldahl	SAMPLE	\$ 20.27		\$ -			
WATER	W13	Ammonia	SAMPLE	\$ 16.91		\$ -			
WATER	W14	Sulfate	SAMPLE	\$ 10.19		\$ -			
WATER	W15	Iron	SAMPLE	\$ 10.19		\$ -			
WATER	W16	Manganese	SAMPLE	\$ 10.19		\$ -			
WATER	W17	Alkalinity	SAMPLE	\$ 10.19		\$ -			
WATER	W18	methane	SAMPLE	\$ 46.10		\$ -			
WATER	W19	Phosphorous	SAMPLE	\$ 18.06		\$ -			
WATER	W20	VOC Method 524.2	SAMPLE	\$ 176.30	4	\$ 705.20			
WATER	W21	EDB Method 504	SAMPLE	\$ 95.45		\$ -			
SOILS	S1	GRO	SAMPLE	\$ 24.78		\$ -	\$ 24.78		\$ -
SOILS	S2	DRO	SAMPLE	\$ 30.35		\$ -	\$ 30.35		\$ -
SOILS	S3	GRO/PVOC	SAMPLE	\$ 28.14		\$ -	\$ 28.14		\$ -
SOILS	S4	PVOC	SAMPLE	\$ 25.83		\$ -	\$ 25.83		\$ -
SOILS	S5	PVOC + 1,2 DCA + Naphthalene	SAMPLE	\$ 49.46		\$ -	\$ 49.46		\$ -
SOILS	S6	PVOC + Naphthalene	SAMPLE	\$ 36.02		\$ -	\$ 36.02		\$ -
SOILS	S7	VOC	SAMPLE	\$ 71.93		\$ -	\$ 71.93		\$ -
SOILS	S8	SPLP Extraction VOC only	SAMPLE	\$ 50.61		\$ -	\$ 50.61		\$ -
SOILS	S9	PAH	SAMPLE	\$ 72.98		\$ -	\$ 72.98		\$ -
SOILS	S10	Lead	SAMPLE	\$ 12.39		\$ -	\$ 12.39		\$ -
SOILS	S11	Cadmium	SAMPLE	\$ 14.60		\$ -			\$ -
SOILS	S12	Free Liquid	SAMPLE	\$ 11.24		\$ -			\$ -
SOILS	S13	Flash Point	SAMPLE	\$ 25.83		\$ -			\$ -
SOILS	S14	Grain Size - dry	SAMPLE	\$ 42.74		\$ -			\$ -
SOILS	S15	Grain Size - wet	SAMPLE	\$ 57.33		\$ -			\$ -
SOILS	S16	Bulk Density	SAMPLE	\$ 13.55		\$ -			\$ -
							TASK 24 TOTAL \$ -		

MATRIX	REF CODE	REIMBURSABLE ANALYTE	UNITS	MAX COST	SAMPLES	TOTAL	MAX COST	SAMPLES	TOTAL
SOILS	S17	Permeability	SAMPLE	\$ 41.58		\$ -			
SOILS	S18	Nitrogen as Total Kjeldahl	SAMPLE	\$ 20.27		\$ -			
SOILS	S19	Nitrogen as Ammonia	SAMPLE	\$ 16.91		\$ -			
SOILS	S20	% Organic Matter	SAMPLE	\$ 29.19		\$ -			
SOILS	S21	TOC as NPOC	SAMPLE	\$ 57.33		\$ -			
SOILS	S22	Soil Moisture Content	SAMPLE	\$ 6.83		\$ -			
SOILS	S23	Air Filled Porosity	SAMPLE	\$ 25.83		\$ -			
SOILS	S24	% Total Solids	SAMPLE	\$ 6.83		\$ -			
SOILS	S25	Field Capacity	SAMPLE	\$ 28.14		\$ -			
SOILS	S26	TCLP Lead	SAMPLE	\$ 83.16		\$ -			
SOILS	S27	Cation Exchange (Ca, MG, & K)	SAMPLE	\$ 26.99		\$ -			
SOILS	S28	TCLP Cadmium	SAMPLE	\$ 83.16		\$ -			
SOILS	S29	TCLP Benzene	SAMPLE	\$ 83.16		\$ -			
		Viscosity + Density							
LNAPL	LFPS01	Interfacial tension I (LNAPL/water [dyne/cm])	SAMPLE	\$ 561.33		\$ -			
		Interfacial tension II (LNAPL/air [dyne/cm])							
		Interfacial tension III (water/air) [dyne/cm])							
TASK 33 TOTAL						\$ 1,676.40			

Table 1
Greater Bass Lake Storage, LLC
REI Engineering, Inc.
CBI Quote
Proposal Date 3-12-18

Commodity Services

CBI Contractor (Quote Attached)	lump	1	\$40,605.00	\$40,605.00
Geoprobe Contractor (Quote Attached)	lump	1	\$8,580.00	\$8,580.00
Waste Disposal	lump	1	\$150.00	\$150.00
Private Locator	lump	1	\$450.00	\$450.00

See Raith costs - msa + cedar

Design

Subcontractor Design and Coordination (REI)	hr	20	\$109.67	\$2,193.40
---	----	----	----------	------------

Injection Oversight

Project Management	hr	5	\$109.67	\$548.35
Administrative	hr	2	\$42.65	\$85.30
Injection Permit Preparation	hr	8	\$109.67	\$877.36
Job Prep	hr	12	\$79.20	\$950.40
Field Time - Injection (Sr Level)	hr	40	\$109.67	\$4,386.80
Field Time - Injection (Jr Level)	hr	40	\$79.20	\$3,168.00
Travel (REI x 2)	hr	8	\$75.00	\$600.00
Mileage (federal rate)	mi	350	\$0.545	\$190.75
Field Truck	day	5	\$75.00	\$375.00
Per diem per person (federal rate)	day	5	\$288.00	\$1,440.00

See Raith costs - msa + cedar

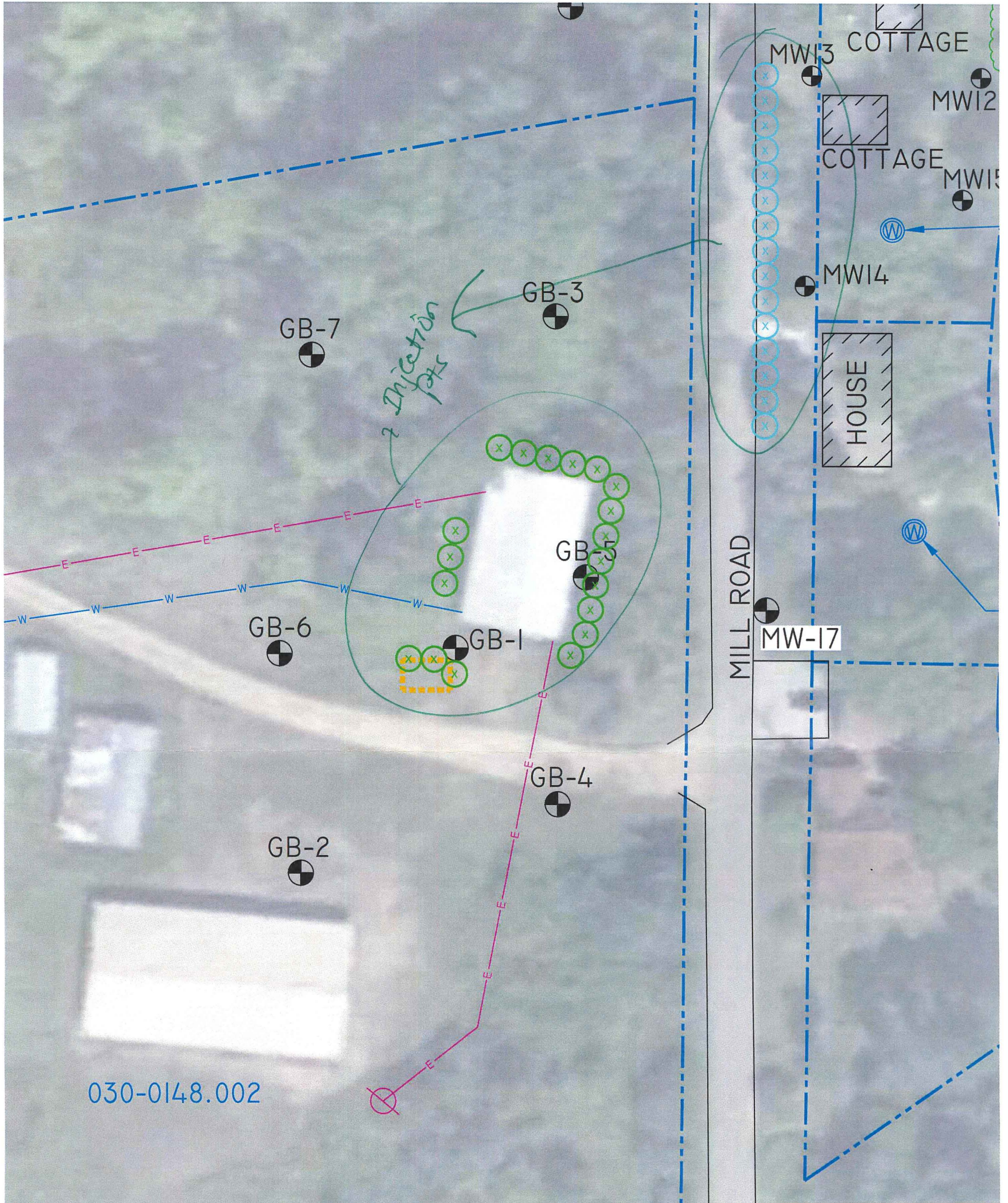
Is this needed?

?

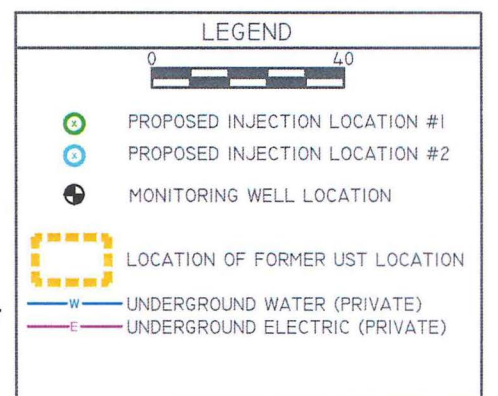
Supplies and Equipment

Skidsteer/Forklift	day	5	\$250.00	\$1,250.00
480v, 100 kVA Diesel Generator	day	5	\$625.00	\$3,125.00
Delivery / Pickup	each	2	\$450.00	\$900.00
Portable dual phase vacuum system	lump	1	\$500.00	\$500.00
1500 gallon poly tank and pump	day	5	\$150.00	\$750.00
Total				\$71,125.36

** This site has 37 injection points and will take 5-days US-Raith (20 pts) and 3 days.*



BASE DRAWING PROVIDED BY REI ENGINEERING, INC.
 PROPOSED INJECTION LOCATIONS ADDED BY
 GEOLOGIC RESTORATION, PLLC



DRAWN EAC	REVISED EAC	CHECKED BEC
DATE 9/13/17	DATE 1/31/18	DATE 1/31/18

FIGURE 1 (PROPOSED INJECTION LOCATIONS)

GREATER BASS LAKE STORAGE
 N9276 MILL ROAD
 SUMMIT LAKE, WISCONSIN



GESTRA Engineering, Inc.
 191 W. Edgerton Avenue
 Milwaukee, WI 53205
 Phone: (414)-933-7444
 Fax: (414) 933-7844

Break Down of Contract Drilling

Project: **Greater Bass Injection Project**
 Proposal Number: P18132-60
 Site Location: Summit Lake, WI.
 Date: 3/12/2018
 Client: REI Engineering
 Estimated By: TRW

Attn: Dave Larsen P.G.

Estimate Based on the Request for Proposal

	Units	Unit Price	Quantity	Total Cost	Assumptions
Mobilization/Demobilization	Lump Sum	\$1,500.00	1	\$1,500.00	Track mounted 7822 DT
Daily Probe Services 0-30'	Day	\$1,250.00	5	\$6,250.00	Blind probe to 30'. Fee based on 10 on site hours. Additional Hours will be charged at \$150.00 Hr. Fee's based on a 1 person crew, assistance to be provided by REI Engineering.
	Lineal Foot	\$10.50	0	\$0.00	
Temp Well Installation	Lineal Foot	\$8.50	0	\$0.00	
Filter Sand & Bentonite Seal	Lineal Foot	\$5.00	0	\$0.00	
Protective Covers	Each	\$85.00	0	\$0.00	5 Inch flush covers. Does not include coring of pavement.
Boring Abandonment	Lineal Foot	\$1.50	0	\$0.00	
Pavement Penetration /Patch	Each	\$15.00	0	\$0.00	
Decontamination	Daily	\$125.00	0	\$0.00	Assumed Pressure washing to be completed at the end of each day. Removal of injectant to be easily removed with hot pressure washing
D.O.T. Drum	Each	\$65.00	0	\$0.00	
Per Diem	Each	\$150.00	5	\$750.00	
Coordination	Hourly	\$80.00	1.0	\$80.00	GESTRA to call in a diggers hotline ticket. Client responsible for clearing all private utilities in the work areas.
Total Estimated Project Cost				\$8,580.00	<i>VCS</i>

Additional Services

	Units	Unit Rate	Quantity	Total Est.	Assumptions
Total					
Project Total					

This quotation is an estimate and is not a lump sum. GESTRA reserves the right to charge for services as performed according to the attached fee schedule.

Quotation Prepared By:

Quotation Accepted By:

Timothy R. Winkler, Drilling Manager

Print Name and Position

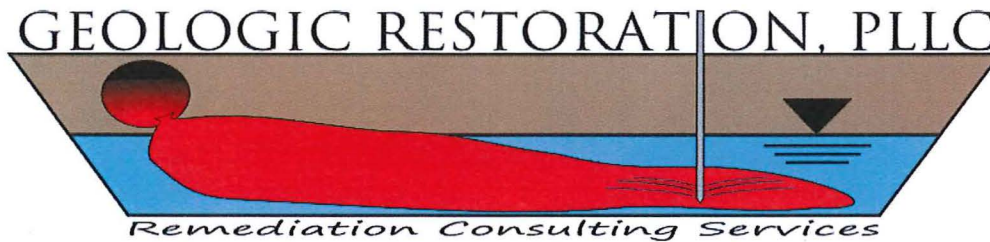
Print Name and Position

Timothy R. Winkler
 Signature

Signature

3/12/2018

Date



January 31, 2018

David N. Larsen, P.G.
REI Engineering
4080 N. 20th Avenue
Wausau, WI 54401

**Re: Proposal for Carbon Based Injectate (CBI) Injection Services
Greater Bass Lake Storage
N7296 Mill Road
Summit Lake, WI 54485
BRTTS #03-34-563946
PECFA #54485-9999-76
GR Proposal # GR17-007REV2**

Dear Mr. Larsen:

Geologic Restoration, PLLC (GR) appreciates the opportunity to provide our proposal for CBI injection services to REI Engineering, Inc. (REI). Our proposal includes our understanding of the project information, our proposed scope of services, GR-320-IRC™ Carbon summary, CleanInject® process summary, fee estimate, schedule, assumptions and authorization information.

Project Information

The following project information is based on reports and emails provided by REI.

The referenced site is located at N7296 Mill Road, Summit Lake, Wisconsin 54485 (Figure 1). The site was formerly operated as a sawmill and farm that maintained three (3) Underground Storage Tanks (USTs). Based on DATCP registration records, the contents of the tanks were diesel and leaded gasoline. The tanks were reportedly removed in December of 1988. The site currently operates as a self-storage facility.

According to an REI Site Investigation Report dated March 2017, the investigation at the Greater Bass Lake Storage was prompted by the discovery of inconsistent contamination trends during the investigation for the Raith Logging LUST site (BRTTS #03-34-001281) located to the northeast of the referenced property. During the Greater Bass Lake site investigation, soil and groundwater contamination was identified, originating from the former UST basin.

The Greater Bass Lake site lithology has been described as fine sandy topsoil over a layer of clay from ground surface to approximately four (4) feet below ground surface (bgs). Medium to coarse grained sands and gravel was reported between approximately four (4) feet to twenty-four (24) feet bgs. Soil contamination above the NR 720 Groundwater Pathway standard was detected in multiple locations, including the area

around the former UST basin, the west side of a blue storage shed and south/southeast to boring B8 (Figure 1).

Groundwater (GW) was measured to be approximately twenty (20) feet bgs. Site specific hydraulic conductivity values were calculated to be between approximately 0.022 feet / day to 0.032 feet / day. Groundwater appears to be flowing to the northeast and east towards the Greater Bass Lake and Raith Logging site. Benzene concentrations exceeding the NR 140 Enforcement Standard (ES) were reported in multiple well locations. REI has speculated that the contamination plumes from the referenced site and the Raith Logging site have likely commingled beneath the N9295 Mill Road address. It is possible that the commingled plume is discharging to the surface water of Greater Bass Lake.

REI is considering carbon injection in groundwater to reduce impacted groundwater concentrations and limit offsite migration. GR has prepared a carbon injection plan based on the site information detailed above.

Proposed Scope of Services

We will mobilize a CleanInject® injection trailer and crew to the site for performance of carbon based Injectate injection. Based on our discussion, the following specifications will apply:

Approximately 34 Injection locations are proposed for the project (see Figure 1). Injections should be spaced approximately 10 feet apart from one another. Injections should be performed every 2 feet in depth with a total of approximately 7 injection intervals at each location. The injection depths should be between approximately 18 to 30 feet below ground surface.

Approximately 7,420 pounds of Carbon GR-320-IRC™ CBI should be injected at the subject site. Injection intervals should be alternated between odd and even depths at adjacent boring locations, if deemed necessary, to maximize the CBI distribution in the formation. The CBI load per injection interval was determined based on the proximity to the contamination source. GR will conduct the work using 40 hour HAZWOPER trained personnel in level D personal protective equipment. GR equipment operators are also third-party certified to operate heavy equipment onsite.

A Safety-Vac vacuum recovery system (or equivalent if provided by REI) will be used to recover CBI that surfaces. The recovered material will be reused, if possible, by pumping the slurry into available injection points. The injection point locations are selected to avoid monitoring wells; however, the CBI distribution is dictated by the formation materials and structure. Preferential pathways to monitoring wells or ground surface may exist causing CBI to flow beyond predicted radiuses of influence and enter wells or surface.

Locations*	Injection Points	Injection Depth	Intervals	Carbon per Interval	Total Carbon
1	19	18 - 30 ft.	7	40 lbs.	5,320 lbs.
2	15	18 - 30 ft.	7	20 lbs.	2,100 lbs.
TOTAL CARBON					7,420 lbs.

* See Figure 1 for injection point locations.

ESTIMATED TOTAL CARBON: ~ 7,420 lbs.

ESTIMATED WATER USAGE: ~ 8,000 gal.

ESTIMATED INJECTION POINTS: ~ 34

ESTIMATED INJECTION INTERVALS: ~ 7

GR-320-IRC CBI

GR-320-IRC CBI is a mixture of coal and coconut activated carbon. The carbon can be either virgin or reactivated, depending upon the requirements for the site. The particle size is that of a powdered activated carbon, with 90% of the particles passing the 320 sieve (44 microns or smaller). The particle size of the carbon facilitates the mixing with potable water into a slurry and the injection into the subsurface using the CleanInject system.

CleanInject Process

The CleanInject system was designed to safely, efficiently, and accurately transfer, mix, and inject CBI into the subsurface.

The GR-320-IRC carbon slurry is mixed within the CleanInject trailer by utilizing multiple components, including a graduated water tank, water transfer pump, mixing tank, carbon powder pump, and weighing scales. A 1000 lbs. carbon super sack is placed on the weighing scales via a fork lift and the initial weight is recorded. During the mixing process, a hose connected to the powder pump draws carbon from the super sack into the mixing tank. The water tank is filled by connecting a water source to the water spigot on the outside of the trailer. During mixing, the water source is shut off so the water tank volume can be recorded. Water and carbon are pumped into the mixing tank simultaneously via the transfer pump and powder pump; the mixture ratio is controlled by monitoring the carbon super sack weight via the scales, and the water volume within the graduated tank. Water sprayers inside the mixing tank provide dust suppression. The mixing tank is equipped with a mixer motor to keep the carbon slurry evenly distributed. The carbon slurry is actively recirculated by the injection pump which is described below.

The CleanInject injection trailer is equipped with an injection pump that is controlled by a variable frequency drive (VFD). The pump is capable of a flow rate up to approximately 45 gallons per minute (GPM) without any backpressure. To minimize daylighting, the pump is typically operated at its minimum frequency of 30 Hertz, which reduces the maximum flow rate to approximately 20 GPM. The actual flow rate during injection is dictated by the formation materials being injected into.

The injection pump inlet port pulls carbon slurry from the mixing tank via a high pressure hose. The pump outlet port connects to the injection line assembly in-between two high pressure ball valves and a pressure relief valve. One ball valve controls flow to the

injection hose leading to the Geoprobe rig, the other valve controls flow to the recirculation line leading back to the mixing tank. The pressure relief valve has a hose that also leads back to the mixing tank.

The injection pump actively recirculates the carbon slurry while the system is running but not injecting. During the recirculation process, the recirculation valve is open and the injection valve is closed. The carbon slurry is pumped from the mixing tank to the injection line assembly and back into the mixing tank through the recirculation line. When it is time to inject, the injection valve is first opened, and then the recirculation valve is closed. The injection pressure is monitored on a pressure gauge attached to the injection line assembly. If the pressure exceeds 1000 PSI, the pressure relief valve automatically opens and carbon is directed back to the mixing tank. The amount of carbon slurry injected is measured by a fluid level gauge on the mixing tank. Once the current injection interval is complete, the recirculation valve is first opened, and then the injection valve is closed.

During injection, the starting pressure averages between roughly 50 to 150 PSI in order to open the check valve present within the injection tip connected to the Geoprobe rods. The maximum injection pressure is 1100 PSI; pressures exceeding 1000 PSI will open the pressure relief valve on the injection line. The injection/recirculation valves must be fully open or fully closed to prevent damage to internal components; therefore the actual pressure during injection is dictated by the formation materials and structure. In cases where low pressure injection is required, the recirculation valve can be left open during injection, causing excess pressure to flow through the recirculation line back to the mixing tank.

Fee Estimate

The following unit rates will apply to the project:

ITEM	AMOUNT	UNIT	UNIT RATE	COST
Reactivated Carbon GR-320-IRC™ and CleanInject® System, Two Operators	7,420	Pounds	\$4.00	\$29,680.00
Virgin Carbon GR-320-IRC™ and CleanInject® System, Two Operators	7,420	Pounds	\$5.00	\$37,100.00
ITEM	AMOUNT	UNIT	UNIT RATE	COST
Mobilization / Demobilization	2,200	Miles	\$2.50	\$5,500.00
Per Diem (2 People)	10	Nights	\$200.00 (x2)	\$4,000.00
Safety-Vac Vacuum Recovery System	5	Days	\$75.00	\$375.00
Injection Tips	2	Tip	\$200.00	\$400.00
PPE 2 Man Crew	5	Days	\$30.00	\$150.00
Truck Charge	10	Days	\$50.00	\$500.00
ESTIMATED TOTAL COST			REACTIVATED CARBON	\$40,605.00
			VIRGIN CARBON	\$48,025.00

Schedule

We expect to schedule the work within approximately two to three weeks of authorization, and we estimate the project will require 5 working days to complete. Due to the geographic location of the site, we anticipate performing the work when ambient temperatures are generally above 40 °F and more favorable for CBI injection.

Assumptions

GR assumes the following regarding the proposed CBI injection project:

- REI assures GR will have clear access to the site during daylight hours and that the site area will be cleared of any obstructions that could limit access to injection locations or equipment deployment.
- REI assures GR's injection equipment can remain on-site for the duration of the project.
- Probe\injection locations will be the responsibility of REI, including assurance that locations will be accessible to the probe rig, underground and above ground utilities will not interfere with the drilling process, and GR and REI have legal authorization to drill in the chosen locations. REI will provide necessary traffic control and safety equipment, personnel and permits for injection points located in sidewalks, streets, highways and other high traffic areas.
- REI will provide for private and/or public underground utility locators, as appropriate, and potential damage to utilities will not be the responsibility of GR.
- REI will provide a Geoprobe rig with 1.5" rods and tips capable of penetrating surface and formation materials to the desired injection depths. REI will also be responsible for sealing the completed injection locations and any surface repair required by State regulations or the property owner.
- REI will provide a 4000lb forklift for unloading carbon super sacks from a commercial carrier and for placing the carbon bags onto the weighing scales.
- REI will provide a potable water source onsite capable of producing at least 5 to 10 gallons per minute.
- REI will provide a trailer-mounted, 480volt, 100kVA, diesel generator and necessary fuel to power the generator during the injection project.
- Inclement weather will not interfere with drilling for more than three hours in each work day.
- If work cannot be completed in one day, charges for crew per-diem will be incurred at a cost of \$200/person.
- Additional or lesser amounts of injectate will result in a change to the fees charged for the project.
- The subsurface contains no impenetrable material that would prevent the specified equipment from penetrating to the desired drilling depths.
- An upgrade to Level C personal protective equipment will result in a \$50 per person per day equipment/supplies surcharge and a 10% surcharge on unit rates.
- Drilling surfaces will be thin (<3") asphalt. An additional fee will apply for pavement cutting, if concrete or thick asphalt is present. If ground is too soft to support injection and support equipment, additional charges may apply, or locations may be deemed unsuitable for injection.
- Unforeseen conditions, such as – but not limited to – asphalt pavement greater than 3 inches in thickness, location of pads in concrete areas, or overhead

power, may require additional effort on a time and materials basis to complete the work. GR will contact you for authorization before conducting additional work.

- We assume that carbon that surfaces (day-lighting) can be collected (Safety-Vac Vacuum) and disposed on-site without drumming or other environmental considerations or pressure washed off paved surfaces. If we need to provide drums for other material collection, they will be charged at \$65 each, and the fees for disposal of contents are not included.
- REI will be responsible for removing CBI that enters any onsite monitoring wells or remediation wells.
- REI will be responsible for any and all site cleanup required including disposal of super sacks and pallets.
- REI will provide a dry storage space onsite or waterproof tarps for the super sacks of Carbon GR-320-IRC™ which will be shipped to the site by a commercial carrier.
- Standby time or additional effort will be charged at a crew rate of \$100 per hour.
- REI will hand clear probe locations prior to our arrival to minimize standby time.

Authorization

To authorize us to proceed, please sign and return one copy of our proposal. The work will be performed in accordance with the attached Master Client Services Agreement which is incorporated herein by reference.

Geologic Restoration, PLLC sincerely appreciates the opportunity to provide REI with our proposal for CBI injection services. Please contact us if you have any questions or when we can be of further service.

Respectfully,

Geologic Restoration, PLLC

Eric A Chew

Eric A Chew, GIT
Project Geologist

Brian E Chew Sr.

Brian E Chew, Sr. P.G.
Principal Hydrogeologist

Accepted By:

X _____ Date: _____
Signature, Title and Printed Name

Attachments:

GEOLOGIC RESTORATION, PLLC
MASTER CLIENT SERVICES AGREEMENT

This MASTER CLIENT SERVICES AGREEMENT constitutes the whole entire agreement between Geologic Restoration, PLLC, a North Carolina corporation and REI Engineering, Inc. (hereinafter called CLIENT).

I. SCOPE OF SERVICES

GEOLOGIC RESTORATION will perform the scope of services outlined in any proposal prepared by GEOLOGIC RESTORATION and agreed to in writing and signed by an authorized representative of CLIENT. GEOLOGIC RESTORATION has no obligation to perform services and/or provide work product not expressly included in each proposal. CLIENT agrees that the proposal contains all criteria, design, and construction standards and other information relating to CLIENT's requirements for the services to be performed by GEOLOGIC RESTORATION.

II. FEES, BILLING, TERMS, AND PAYMENT

The charges for the services, labor and materials provided by GEOLOGIC RESTORATION hereunder shall be based on time and materials, unit rates, and/or lump sum basis as described in the proposal. If the charges are to be on a time and materials and/or unit rate basis, a fee schedule may also be attached hereto or made available from GEOLOGIC RESTORATION at the CLIENT's request. CLIENT agrees to pay all of such charges. If CLIENT requests that GEOLOGIC RESTORATION perform any services or provide any materials in addition to and separate from the Scope of Services outlined in Section I, CLIENT agrees to reimburse GEOLOGIC RESTORATION directly for those services either following the basis in the proposal or following a mutually agreed upon basis.

GEOLOGIC RESTORATION may require a suitable retainer prior to commencement of our work. Such amount shall be held on account until the final invoice is prepared, at which time your account will be reconciled.

GEOLOGIC RESTORATION agrees to provide CLIENT with a description of services performed for CLIENT and the fees and charges associated with such services. Monthly invoices are due and payable in U.S. dollars upon receipt. Invoices not paid within thirty (30) days of date of invoice are subject to an interest charge of one and one-half percent (1.5%) on the outstanding balance for each month or portion thereof beyond the thirty (30) day period. CLIENT shall promptly notify GEOLOGIC RESTORATION in writing if CLIENT objects to any portion of an invoice, and in any event within fourteen (14) days of receipt of the statement containing the item to which the CLIENT objects. CLIENT is responsible for all costs and reasonable attorney's fees incurred by GEOLOGIC RESTORATION in collecting past due amounts, or in otherwise enforcing this agreement. GEOLOGIC RESTORATION without any liability to CLIENT, reserves the right to withhold any services, work product, and /or reports pending payment of CLIENT's invoices.

GEOLOGIC RESTORATION reserves the right to revise its fee schedule subject to thirty (30) day notice. In the event GEOLOGIC RESTORATION revises its fee schedule, CLIENT shall have fifteen (15) days from receipt of notice of the revision to determine whether to terminate this agreement.

III. TERMINATION

CLIENT or GEOLOGIC RESTORATION may terminate this agreement for any reason and at any time by written notification to the other party. Termination will become effective thirty (30) calendar days after receipt of the termination notice. If this agreement is terminated, GEOLOGIC RESTORATION agrees to deliver to CLIENT all work product, reports, drafts and other

documents prepared pursuant to this agreement within fifteen (15) days of notice of termination, provided however that GEOLOGIC RESTORATION has been paid in full for all charges (i.e., fees and expenses) incurred by GEOLOGIC RESTORATION through the date of termination. Any revision to the scope of services shall be pursuant to a change order agreed to by CLIENT and made a part of this agreement.

IV. WARRANTY

GEOLOGIC RESTORATION will perform the work under this agreement as an independent contractor/consultant utilizing reasonable care and skill in accordance and consistent with customary industry standards. This standard of care is the sole and exclusive standard of care that will be applied to measure GEOLOGIC RESTORATION's performance of the work. There are no other representations or warranties made by GEOLOGIC RESTORATION except those included specifically herein. In particular, but not by way of limitation, GEOLOGIC RESTORATION makes no representation or warranty that the implementation or use of the recommendations, or findings or conclusions of a report, if report is presented, will result in compliance with applicable law or provide a totally satisfactory result. Moreover, any and all implied representations or warranties arising out of the work are hereby expressly disclaimed and negated. IN PARTICULAR, BUT NOT BY WAY OF LIMITATION, NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

All recommendations, findings, and conclusions made by GEOLOGIC RESTORATION will be made to the best of GEOLOGIC RESTORATION's knowledge, opinion, and belief, based upon information CLIENT made available to GEOLOGIC RESTORATION at the time of review, and upon a variety of factors which may include, but are not limited to the following: federal, state, and local laws, rules, codes, regulations and ordinances; market conditions; energy costs; wage rates; and political climate. A change of any of the factors upon which the review is based may adversely affect the recommendations, findings, and conclusions, if any, expressed by GEOLOGIC RESTORATION.

V. RESPONSIBILITY OF CLIENT TO PROVIDE ACCURATE AND SUFFICIENT INFORMATION

It is CLIENT's responsibility to disclose to GEOLOGIC RESTORATION prior environmental reports and analytical results relating to the work that is the subject of this agreement and to advise of known hazardous wastes or hazardous substances, petroleum products, underground storage tanks and other matters relevant to the work that is the subject of this Agreement. In addition, it is CLIENT's responsibility to disclose to GEOLOGIC RESTORATION its knowledge of the location of any man-made objects, including but not limited to underground utilities, relative to any field test or subsurface penetrations. When contracted to perform subsurface penetrations, Geologic Restoration will follow the industry standard of care regarding the location of utilities, piping and other subsurface obstacles prior to the advancement of borings, wells, trenches, excavations, or other subsurface penetrations. Specifically, Geologic Restoration will:

1. Contact ULOCO at least 48 hours prior to commencement of invasive activities;
2. Contract or have Geologic Restoration's drilling contractor contract with a private utility location service to locate subsurface utilities, obstructions and proposed boring and/or excavation locations; and,
3. Hand auger or have Geologic Restoration's drilling contractor hand auger the upper 4 feet of each boring or excavation to verify the absence of utilities.

Having done the above, or if Client or Clients contractor is responsible the above, Geologic Restoration shall not be responsible for any damages (direct or indirect) or injury to any persons or to public or private property whether within or outside of the areas covered by the Project including, but not limited to, any releases to the environment from contents of piping or subsurface vessels.

It is the client's responsibility to provide site-specific drawings of site utilities and system layouts, including, but not limited to underground storage tanks, product and dispenser piping, water, sewer, electrical, telecommunications lines, and any other underground utilities and to make available any other reasonably available information or persons with information concerning the site in the areas of Geologic Restoration's planned activities.

Unless otherwise noted, CLIENT warrants the accuracy and sufficiency of the information, plans, specifications and other material that it provides to GEOLOGIC RESTORATION for use in connection with GEOLOGIC RESTORATION performing its work under this Agreement, irrespective of whether such information and materials are provided directly by CLIENT to GEOLOGIC RESTORATION or indirectly from one of CLIENT's other contractors, dealers or agents.

VI. CLIENT EXCLUSIVITY AND AUTHORITY

The work to be performed by GEOLOGIC RESTORATION under this Agreement is solely for the benefit of CLIENT. This Agreement shall not be construed as creating any contractual relationship of any kind between GEOLOGIC RESTORATION and any third party. It is the intent of GEOLOGIC RESTORATION and CLIENT that there are no third party beneficiaries of this Agreement. The fact that CLIENT may enter into other agreements with third parties that provide GEOLOGIC RESTORATION the authority to inspect or reject work being performed by the third party shall not give rise to any duty or responsibility on the part of GEOLOGIC RESTORATION in favor of such third party.

Further, CLIENT covenants and agrees that CLIENT has full legal authority, as agent, to contract for all of the owner(s) and agrees that representations, warranties, and indemnification provided herein extend to GEOLOGIC RESTORATION and its agents on behalf of these parties, but the work performed will not give rise to any responsibility on the part of GEOLOGIC RESTORATION and its agents to these third parties.

The information and materials provided by GEOLOGIC RESTORATION to CLIENT in connection with the work shall be utilized by CLIENT only for the purposes contemplated by this agreement, and shall not be provided by CLIENT to third parties for their use without the prior written consent of GEOLOGIC RESTORATION, except that GEOLOGIC RESTORATION agrees that information and materials provided by GEOLOGIC RESTORATION to CLIENT may be provided to and used by environmental agencies (including but not limited to the North Carolina Department of Environment, and Natural Resources or equivalent agencies in other states and the United States Environmental Protection Agency), CLIENT's attorneys, and pursuant to any valid court order.

GEOLOGIC RESTORATION agrees that all reports and other documents prepared for CLIENT pursuant to this agreement are the property of CLIENT, however GEOLOGIC RESTORATION may retain copies of all documents. GEOLOGIC RESTORATION also agrees that it will not disclose to any third party any documents, reports, laboratory data or other information generated, created or produced for CLIENT pursuant to this agreement unless required by law, pursuant to a valid court order or with written permission from CLIENT.

The following policy applies to documents retained by GEOLOGIC RESTORATION unless specific exceptions have been agreed to in the Client Services Agreement: appropriate correspondence, technical, contractual, health and safety information for this scope of work will be retained for a period of three years. After three years from the final report, projects will be purged to retain only technical reports, contractual agreements, health and safety documentation, and final status correspondence.

VII. FIELD WORK AND HAZARDOUS SUBSTANCES

GEOLOGIC RESTORATION is to have free access to the applicable properties at the times and on the dates field activities are scheduled. Delays to GEOLOGIC RESTORATION beyond an aggregate total of 60 minutes during inspection are subject to waiting time charges to the extent such delays are caused by CLIENT or its employees, contractors or agents. Delays due to

locating or arising from damage to underground structures and cables are subject to waiting time charges.

The procedures performed do not assure that contamination will be detected or that contamination detected is indicative of the full scope of possible contamination at the site. Further, the laboratory analysis and organic vapor analyzer readings must be viewed as an indication only of conditions in the borings drilled. Further testing in any boreholes or in groundwater sampling can produce different test results. Geological and hydrogeological conditions and contamination levels can vary between specific locations on the same site. Nothing in this section limits or modifies the standard by which GEOLOGIC RESTORATION's performance will be measured as provided in Section III of this Agreement.

CLIENT acknowledges that GEOLOGIC RESTORATION and its subcontractors have played no part in the creation, placement, or existence of any hazardous substance or pollution sources which may exist at the site. CLIENT recognizes that common exploratory methods such as the advancement of borings and installation of wells have inherent risks, such as the potential to penetrate through contaminated material and serve as a conduit for the migration of the contamination. GEOLOGIC RESTORATION assumes no responsibility for such inherent risks and shall have no liability for them. CLIENT shall have complete responsibility for making any required disclosures to any governmental authority or third party, and for taking any action not specifically included in the proposed services. CLIENT shall be responsible for all costs and consequences arising from the discovery of unanticipated hazardous substances or pollutants. CLIENT acknowledges that under no circumstances is GEOLOGIC RESTORATION a generator, operator, treater, storer, transporter, or disposer of any hazardous substances or pollutants found at or near the site. All materials contaminated by hazardous substances or pollutants, including samples are the property and responsibility of CLIENT.

Should a contractor(s) not retained by GEOLOGIC RESTORATION be involved in the Work, CLIENT will advise such contractor(s) that GEOLOGIC RESTORATION's Work does not include supervision or direction of the means, methods or actual work of the contractor(s), his employees or agents. CLIENT will also inform contractor that the presence of GEOLOGIC RESTORATION's field representative for project administration, assessment, observation or testing will not relieve the contractor of its responsibilities for performing their work in accordance with the plans and specifications. If a contractor (not a subcontractor of GEOLOGIC RESTORATION) is involved in the Work, CLIENT agrees, in accordance with generally accepted construction practices, that the contractor will be solely and completely responsible for working conditions on the Subject Property, including security and safety of all persons and property during performance of their work, and compliance with all CLIENT safety requirements and OSHA regulations. These requirements will apply continuously and will not be limited to normal working hours. It is agreed that GEOLOGIC RESTORATION will not be responsible for the work of the contractor or their site safety or security on the Subject Property, other than for GEOLOGIC RESTORATION's employees and subcontractors, and that GEOLOGIC RESTORATION does not have the duty or right to stop the work of the contractor.

VIII. LIMITATIONS ON CLIENT'S RIGHTS AND REMEDIES

GEOLOGIC RESTORATION shall not be liable in any way for work that is performed in accordance with the prescribed standard of care or for the failure to discover any condition that, pursuant to that standard, could not reasonably have been discovered as a result of the work performed.

CLIENT agrees that GEOLOGIC RESTORATION's liability for damage arising indirectly or directly out of or relating to any error, omission or other professional negligence of GEOLOGIC RESTORATION, its agents, employees, or subcontractors in the performance of work under this agreement or otherwise will be limited to a sum not to exceed the contract price under this Agreement defined as the total man-time charges and reimbursable expenses paid to GEOLOGIC RESTORATION under this Agreement and shall be limited to direct damages. Without limiting the foregoing, GEOLOGIC RESTORATION shall in no event be liable for economic, incidental or consequential damages. CLIENT hereby waives all such damages and

remedies other than recovery of the contract price under this Agreement, as above defined. In no event will GEOLOGIC RESTORATION's directors, owners, officers, employees, or agents be liable to CLIENT, or any third party, for any liabilities, losses, damages, or expenses of any nature whatsoever, whether direct or indirect, caused by or resulting from the work (or use of the work).

IX. INDEMNIFICATION

To the fullest extent permitted by law, CLIENT will defend, indemnify and hold harmless GEOLOGIC RESTORATION, its directors, owners, officers, agents, contractors, and employees against any and all claims, demands or causes of action, and all costs, losses, liabilities, expenses and judgments, incurred in connection therewith, including attorney's fees and court costs (collectively referred to as the "Damages"), brought by any of CLIENT's employees or representatives, or by any third party, based upon, in connection with, resulting from or arising out of any of the following: (a) CLIENT's or GEOLOGIC RESTORATION's actions or inactions, other than the gross negligence or willful misconduct of GEOLOGIC RESTORATION under this agreement, (b) CLIENT's use of the work that is the subject of this Agreement, (c) any allegation that GEOLOGIC RESTORATION has handled, operated, generated, treated, stored, transported, or disposed of hazardous waste under the Resource Conservation and Recovery Act of 1976 as amended or any other similar federal, state or local regulation or law provided GEOLOGIC RESTORATION has fully and completely complied with all laws, regulations and ordinances applicable to the handling and management of all hazardous wastes and hazardous substances or (d) the CLIENT'S actual or alleged violation of any federal, state or local law or regulation. In the event that both CLIENT and GEOLOGIC RESTORATION are adjudicated at fault with respect to damages or injuries sustained by the claimant, CLIENT shall indemnify GEOLOGIC RESTORATION for the portion of the damage or injuries caused by CLIENT.

Subject to the limitations set forth in Section VIII above, GEOLOGIC RESTORATION agrees to indemnify and hold harmless CLIENT, its directors, owners, officers, agents, contractors, and employees against any and all claims, demands or causes of action, and all costs, losses, liabilities, expenses and judgments incurred in connection therewith, including attorney's fees and court costs, brought by any person or third party based upon, in connection with, resulting from or arising out of GEOLOGIC RESTORATION'S gross negligence, fraud or willful misconduct in the performance of this agreement.

X. ARBITRATION

All claims, disputes and other matters in question between the CLIENT and GEOLOGIC RESTORATION arising out of, or relating to, this Agreement or the breach thereof and where the amount in controversy exceeds \$10,000, may, at the option of either party, be decided by arbitration in accordance with the Rules of the American Arbitration Association then existing and the Federal Rules of Civil Procedure regarding this discovery. The foregoing agreement to arbitrate and any other agreement to arbitrate with an additional person or persons duly consented to by the CLIENT and GEOLOGIC RESTORATION shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

Note of the demand for arbitration shall be filed by the party electing arbitration in writing with the other party and with the American Arbitration Association. The demand to arbitration shall be made within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

Unless otherwise agreed in writing, GEOLOGIC RESTORATION shall carry on the work and maintain its progress during any arbitration proceedings, and the CLIENT shall continue to make payments to GEOLOGIC RESTORATION in accordance with this Agreement.

XI. NON-WAIVER OF DEFAULTS

Any failure by either party at any time, or from time to time, to enforce or require the strict keeping and performance of any of the terms and conditions of this Agreement, or to terminate this Agreement under section III, shall not affect or impair the right of that party at any time to avail itself of such remedies as it may have for any breach or breaches of such terms and conditions.

XII. COMPLETE AGREEMENT

This Agreement, along with its attachments, including the GEOLOGIC RESTORATION proposal incorporates all of the previous and contemporaneous discussions, representations, understandings, and agreements between the parties with respect to the subject matter of this Agreement. The terms and conditions expressed in this Agreement shall not be altered except in writing, signed by both parties. Use of any of CLIENT's pre-printed or standard business forms (such as purchase orders) in the administration of any portion of the services to be performed under this Agreement shall be for the CLIENT's convenience only, and any provision contained in any such form that is in conflict with the terms of this MASTER CLIENT SERVICES AGREEMENT shall be deemed stricken and null and void.

The headings in this Agreement are for general categorization and are not intended to be legal descriptions.

XIII. APPLICABLE LAW

This Agreement is governed by, and will be construed in accordance with the laws of the State of North Carolina. Any disputes shall be resolved in Charlotte, North Carolina. No delay or failure of performance due to causes outside of the reasonable control of GEOLOGIC RESTORATION shall be deemed a breach of this agreement. This agreement shall survive and be enforceable even if a provision of this agreement is found to be legally unenforceable.

XIV. AUTHORIZATIONS

By: _____ Date: _____

Geologic Restoration, PLLC - Signature & Typed/Written Name

Name of Client: _____

Organization, Entity, or Individual Responsible for Payment

Accepted By: _____ Date: _____

Signature and Title

Typed or Written Name and Title

**GEOLOGIC RESTORATION, PLLC
2018 FEE SCHEDULE**

A. PERSONNEL RATES

Administrative Staff	\$65.00 / hour
Technician	\$65.00 / hour
CleanInject® Trailer Operator	\$100.00 / hour
Senior Technician	\$95.00 / hour
Professional I Staff	\$65.00 / hour
Professional II Staff	\$85.00 / hour
Project Manager	\$95.00 / hour
Principal / Technical Specialist	\$140.00 / hour
Expert Witness	\$180.00 / hour

Overtime Rates for Hourly Workers:

** Rates for Technicians and other hourly personnel will be charged at a 1.5 rate multiplier for work time over 8.0 hours per day and on weekends and at a 2.0 rate multiplier on holidays.*

B. EXPENSE RATES

PPE (2 Man Crew)	\$30.00 / day
Truck Charge	\$50.00 / day
Project Expenses	Cost + 15%
Subcontract Services	Cost + 15%
Supplies	Cost + 15%
Construction Services	Cost + 15%

C. TRAVEL

Mileage	\$0.75 / mile
CleanInject® Trailer Mobilization (Includes Labor)	\$2.50 / mile
Meal Per Diem	\$40.00 / day
Travel Expenses (hotel, airfare, car, etc.)	Cost + 15%

D. EQUIPMENT

Carbon Injection Equipment Rates

CleanInject® Trailer and Reactivated Carbon GR-320-IRC™	\$4.00 / lb.
CleanInject® Trailer and Virgin Coconut Shell Carbon GR-320-IRC™	\$5.00 / lb.
Injection Tip	\$200.00 / each
Injection Rod 1.5 Inch x 3 Feet – 4 hole	\$200.00 / each
CleanInject® Trailer, Operator Standby Time	\$100.00 / hr.

Water Monitoring Equipment Rates

Water Level Indicator	\$40.00 / day
Interface Probe	\$60.00 / day
Peristaltic Pump	\$75.00 / day
Redi-Flo Pump & Controller	\$170.00 / day
Purge Pump (Proactive)	\$160.00 / day
YSI 63 Conductivity, pH Meter	\$70.00 / day
Dissolved Oxygen Meter	\$70.00 / day

Soil Sampling Equipment

Sediment Sampler	\$50.00 / day
Hand Auger	\$45.00 / day

Air Monitoring Equipment

Organic Vapor Analyzer	\$90.00 / day
Dwyer Magnehelic (analog)	\$15.00 / day

Generic Field Equipment

Surveying Equipment (Transit or Laser)	\$50.00 / day
Safety-Vac Vacuum Recovery System w/ EX40 Subaru 14 hp motor & 55 Gallon Drum	\$75.00 / day
Magnetic Locator	\$45.00 / day
Pressure Washer	\$135.00 / day
Well Sampling Equipment	\$20.00 / sample
Trimble GPS Unit	\$145.00 / day
Concrete Coring Rig and Bit Usage	\$150.00 / day
Abrasive Cutoff Saw	\$35.00 / day
Light Stand	\$25.00 / day
Trailer	\$35.00 / day
Field Computer	\$50.00 / day
Hammer Drill and Chisel	\$100.00 / day
Husqvarna Brush Cutter	\$50.00 / day
Honda 2" Trash Pump	\$35.00 / day
Digital Camera	\$40.00 / day

SVE System Install Variance

Table 2
Variance Request
Greater Bass Lake Storage, LLC
System Install
Proposal Date 3-12-18

Commodities	Units	Quantity	Rate	Events	Total	Subtotal
Commodities						
Gestra Quote	Is	1	\$80.00	1	\$80.00	
PM						
Blind Drill	ft	76	\$15.00	1	\$1,140.00	
2" SVE Wells Install	ft	76	\$12.50	1	\$950.00	
Decon	day	2	\$200.00	1	\$400.00	
knockout plugs	ea	4	\$15.00	1	\$60.00	
Per Diem	day	1	\$150.00	1	\$150.00	
(No mob)						\$2,780.00
Well Installation						
Well Install Oversight	hr	10	\$109.67	1	\$1,096.70	
(No mob)						\$1,096.70
TerraTex						
TerraTex Membrane	lump	1	\$550.00	1	\$550.00	
Remove top 1' in 50'x50' area	lump	1	\$650.00	1	\$650.00	
Gravel	lump	1	\$650.00	1	\$650.00	
Plastic sheeting under TerraTex membrane	lump	1	\$250.00	1	\$250.00	
Plastic sheeting to wrap soil	lump	1	\$250.00	1	\$250.00	
						\$1,850.00
System Install						
Electrical power drop	estimated	1	\$1,500.00	1	\$1,500.00	
Electrician - wire trailer to power drop	ls	1	\$1,500.00	1	\$1,500.00	
						\$3,000.00
Design						
Project Management - SVE System design	hr	10	\$109.67	1	\$1,096.70	
						\$1,096.70
System Installation - all above ground piping						
Construction Oversight - Sr Level	hr	15	\$109.67	1	\$1,645.05	
Construction Oversight - Jr Level	hr	15	\$79.20	1	\$1,188.00	
Job Prep - system install	hr	10	\$109.67	1	\$1,096.70	
Travel - system install (2 people)	hr	6	\$75.00	3	\$1,350.00	
Mileage - diesel truck	mi	130	\$0.545	3	\$212.55	
Above ground piping for SVE wells and soil stockpile	ls	1	\$500.00	1	\$500.00	
Fence Panels	ea	48	\$25.00	1	\$1,200.00	
						\$7,192.30
Minimal System Construction O&M Report						
Drafting - as built report	hr	4	\$67.02	1	\$268.08	
Report Review - as built report	hr	1	\$109.67	1	\$109.67	
Secretarial - Misc	hr	5	\$42.65	1	\$213.25	
Secretarial - as built report	hr	3	\$42.65	1	\$127.95	
Summary Report - as built report	hr	10	\$109.67	1	\$1,096.70	
						\$1,815.65

System Installation Total \$18,831.35

Dave will send quote. This work will be performed during after injection

REI started will not make it blind drill 76' - can't do for w/c costs

REI to dig & install

same as other sites

done after injection

accounting / Invoicing Commodities, ect.

SVE system lease + O&M - 6 mos

TABLE 3
System Operation - 6 Months
Greater Bass Lake Storage, LLC
Proposal Date 3-12-18

	Units	Events	Rate	Total
Lab	1	9	\$45.00	\$405.00
Utility Fees	estimated	6@\$500		\$3,000.00
Field Time				
Prep	1	9	\$109.67	\$987.03
sample/maint	2	9	\$109.67	\$1,974.06
travel	3	9	\$77.00	\$2,079.00
mileage	130	9	\$0.55	\$637.65
Management				
PM	20	1	\$109.67	\$2,193.40
Administrative				
Clerical	15	1	\$42.65	\$639.75
Equipment				
System Lease	1	6	\$1,000.00	\$6,000.00
PID	1	9	\$75.00	\$675.00
Air Sampler	1	9	\$55.00	\$495.00
Contingency Costs				
3 Additional Mobilizations				
Lab	1	3	\$45.00	\$135.00
Prep	1	3	\$109.67	\$329.01
sample/maint	2	3	\$109.67	\$658.02
travel	3	3	\$77.00	\$693.00
mileage	130	3	\$0.62	\$241.80
PID	1	3	\$75.00	\$225.00
Air Sampler	1	3	\$55.00	\$165.00
Year 1 O&M				\$19,085.89
Contingency Costs				\$2,446.83
Overall Total				\$21,532.72

air (Gro + Benzene)
 9 samples < 4 hrs
 etc

Shipping samples,
 Chain of Custody,
 updating system operation tables

Monthly Invoicing

System down -
 power outage/
 other reasons
 * Will have dial-up
 notification for this -
 must be pre-auth

* REI discounting -
 normally 1350/month

\\reifnp\PROJECTS\7000-7099\7083 - Greater Bass Lake Storage\CBI\Proposal 2018\7083 CBI and SVE (6 mo) #2.xlsx\YR1 O&M

9 Sampling Events

* Normal would be (12) events:
 day 1, 2, 3
 week 1, 2, 3
 6 mos - 1/month

REI would like to reduce to 9 (cost savings)
 Sample day 1 + 3
 week 1 + week 3
 6 mos - 1 sample per month

DRAWING FILE: P:\7000-7099\7083 - GREATER BASS LAKE STORAGE\DWG\7083-SITE.DWG LAYOUT: SITE CLOSEUP PLOTTED: MAR 13, 2018 - 10:36AM PLOTTED BY: MATTM



030-0148.002

⊙ Proposed SVE well
▨ Proposed Membrane

LEGEND

0 40
SCALE: 1" = 40'

- ⊙ MONITORING WELL LOCATION
- ⊕ SOIL BORING LOCATION
- ⊙ GEOPROBE BORING LOCATION
- ⊙ LIGHT POLE
- ▨ LOCATION OF FORMER UST LOCATION
- W- UNDERGROUND WATER (PRIVATE)
- E- UNDERGROUND ELECTRIC (PRIVATE)

REI Engineering, INC.

GREATER BASS LAKE STORAGE
N9276 MILL ROAD
SUMMIT LAKE, WISCONSIN

FIGURE 3 : DETAILED SITE MAP - CLOSE-UP

PROJECT No. 7083	PREPARED BY: MCM	DATE: 03/13/2018
---------------------	---------------------	---------------------

Stoltz, Carrie R - DNR

From: Dave Larsen <dlarsen@reiengineering.com>
Sent: Thursday, March 15, 2018 3:40 PM
To: Stoltz, Carrie R - DNR
Subject: RE: Gtr Bass- I need the estimate from Gestra for blind drilling-please thnx EOM
Attachments: 20180129093507367.pdf

This is the bid I used to generate the numbers. As you can see I removed the mob charge since we would have the mob covered under the injection proposal and I reduced the per diem to the \$150 which was the same as the injection proposal. If all goes as planned we should not need the commodity per diem for this scope. This is a lot of work and we are also dealing with CDL contractors so I don't want to make it too thin on budget on the front side. I'm confident we will be able to reduce the overall costs on the GBS site when we combine it with Raith.

If you need more, let me know.

Thank you,
David N. Larsen P.G.
Senior Hydrogeologist / Professional Geologist



REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING

4080 N. 20th Avenue
Wausau, WI 54401
REIengineering.com




David N. Larsen, P.G.
Senior Hydrogeologist
Dlarsen@REIengineering.com

Tel: 1-877-734-7745
715-675-9784

Cell: 715-551-3434

Fax: 715-675-4060

Icons: head, tripod, leaf, water tap

Connect with us :   

Confidentiality Notice: This message is intended for the recipient only. If you have received this e-mail in error please disregard.

From: Stoltz, Carrie R - DNR [mailto:Carrie.Stoltz@wisconsin.gov]
Sent: Thursday, March 15, 2018 3:20 PM
To: Dave Larsen <dlarsen@reiengineering.com>
Subject: Gtr Bass- I need the estimate from Gestra for blind drilling-please thnx EOM
Importance: High

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Carrie Stoltz

Hydrogeologist-Remediation and Redevelopment, AWARE Division

Wisconsin Department of Natural Resources

107 Sutliff Avenue, Rhinelander, WI 54501

Phone: (715)365-8942

Fax: (715)365-8932

Carrie.Stoltz@Wisconsin.gov



dnr.wi.gov





GESTRA Engineering, Inc.
 191 W. Edgerton Avenue
 Milwaukee, WI 53205
 Phone: (414)-933-7444
 Fax: (414) 933-7844

Break Down of Geotechnical Drilling

Project: Greater Bass, Monitoring Wells
 Proposal Number: P18052-60
 Site Location: Summit Lake, WI.
 Date: 1/29/2018
 Client: REI Engineering.
 Mileage r/t: N/A
 Estimated By: TRW

Attn: Dave Larsen, P.G.

Estimate Based on the Request for Proposal

	Units	Unit Price	Quantity	Total Cost	Assumptions
Mobilization/Demobilization	Daily	\$750.00	1	\$750.00	Assume 1 day drilling/sampling.
Soil Borings 4 1/4 Augers	Lineal Foot	\$12.50	76	\$950.00	4 Borings at 19', Blind drilled and converted into 2" monitoring wells.
Well Installation	Lineal Foot	\$15.00	76	\$1,140.00	
Knock Out Plugs	Each	\$15.00	4	\$60.00	
Addition Split Spoon Sample	Each	\$18.00	0	\$0.00	
Hard Drilling- N value>50	Lineal Foot	\$8.50	0	\$0.00	Increase to lineal foot charge.
Borehole Abandonment	Lineal Foot	\$6.00	0	\$0.00	Bentonite chips. 4 1/4 Augers
Pavement Penetration& Patch	Each	\$75.00	0	\$0.00	12" Diameter for flush covers
D.O.T. Drums	Each	\$70.00	0	\$0.00	
Protective Covers	Each	\$165.00	0	\$0.00	
Decontamination	Daily	\$200.00	2	\$400.00	
Private Utility Locator	Each	\$250.00	0	\$0.00	Estimated Cost. Invoiced amount will be actual cost plus 10%
Per Diem	Daily	\$225.00	1	\$225.00	
Coordination	Lump sum	\$80.00	1	\$80.00	GESTRA to call in a diggers hotline ticket. Client responsible for clearing all private utilities in the work areas.
Total Estimated Project Cost				\$3,605.00	

Additional Services

	Units	Unit Rate	Quantity	Total Est.	Assumptions
Project Total					

This quotation is an estimate and is not a lump sum. GESTRA reserves the right to charge for services as performed according to the attached fee schedule.

Quotation Prepared By:

Quotation Accepted By:

Timothy R. Winkler, Drilling Manager

Print Name and Position

Print Name and Position



Signature

Signature

1/29/2018

Date