

Meridian Environmental Consulting, LLC

February 14, 2015

Carrie Stoltz Wisconsin Department of Natural Resources 107 Sutliff Avenue Rhinelander, Wisconsin 54501

Subject:

Remedial Action Plan: Soil Vapor Extraction System

Autostop (former) 119 W. 9th Street North Ladymith, Wisconsin 54848 BRRTS No. 03-55-282548 PECFA No. 54848-1295-19 Meridian No. 05F630

Doug's Tire (former) 811 Lake Ave W. Ladysmith, Wisconsin 54848 BRRTS No. 03-55-000408 PECFA No. 54848-1215-11 Meridian No. 05F786

Dear Carrie:

This letter report provides a Remedial Action Plan for the above referenced sites.

Meridian originally recommended the following:

- Remove source soils (and accessible smear zone soils) at Autostop
- Soil Vapor Extraction system which extends under Highway 8 to remediate both sites at once (in LNAPL Focus Area)
- Monthly pumping to remove LNAPL accumulating in extraction and SVE wells

DNR would not approve excavation or monthly pumping. Therefore, this modified Plan only includes recommendations for the SVE system. It is our understanding that DNR will close this site with this approach. We caution that SVE Technology will remove only a portion of the petroleum impacts at the site. The remaining petroleum impacts will be left in place and addressed with GIS Registry.

This Plan recommends the following approach to achieving Closure at these two sites:

Autostop

- Soil Contamination: No Further Action. Meridian recommended removing source soils from former pump island/tank area and smear zone. The DNR responded that removal of source soils is not required to achieve Closure. The remaining soil contamination will be addressed with GIS Registry.
- Ground Water Contamination: The extent of impacted ground water and LNAPL is known; no further definition is needed. The LNAPL should be remediated to the extent practicable with the proposed SVE system. The remaining ground water contamination will be left in place and documented with GIS Registry.
- Vapor Intrusion: This will be addressed with the proposed SVE system to the extent practicable.
- Funding: There is approximately \$848,780 in PECFA funds available for this site. This should be adequate to remediate the site sufficiently to achieve Closure based on current DNR guidance.

Doug's Tire

- Soil Contamination: No Further Action. Impacted source soils in the former tank area have been removed to the extent practicable. The residual impacted soil will be documented in the GIS Registry.
- Ground Water Contamination: The extent of impacted ground water and LNAPL is known; no further definition is needed. The LNAPL should be remediated to the extent practicable with the proposed SVE system. The remaining ground water contamination will be documented with GIS Registry.
- Vapor Intrusion: This will be addressed with the proposed SVE system to the extent practicable.
- Funding: There is approximately \$160,897 in PECFA funds available for this site.

Because of the proximity of both sites and the apparent comingled plumes, and similar Remedial Objectives, this Plan proposes a system which addresses both sites. However, it must be noted that the funding limitations at the Doug's site will affect its financial participation in this joint effort.

SVE PILOT TEST

A Pilot Test was completed April 2014 to evaluate the effectiveness of SVE technology at these two sites. A blower was attached to RW-2 at Autostop and to EX-4 at Dougs. Appendix A contains summary tables of the Pilot Test measurements. The Pilot Test measurements indicate SVE technology will remove petroleum vapors at these sites. It should be noted that SVE will not remove all petroleum impacts from the ground water or subsurface.

Based on the Pilot Test at RW-2, a 25 feet radius of influence was measured. Measurements at EX-4 were not complete because water rose within the well during the test. For design purposes, a 25 feet radius of influence is used at both sites.

Air Sample

Based on the high PID readings, it became apparent offgas treatment would be necessary especially at the Autostop site. An air sample was collected from RW-2 and from EX-5 May 13, 2014. A blower (1/3 HP) was attached to RW-2 and EX-5. The blower purged the well for about 20 minutes from RW-2; about 10 minutes from EX-4 due to surface water flooding the well manway. A Tedlar bag was used to

collect an air sample. The air sample was analyzed for VOCs and THC as gasoline (Method TO-3). The analytical report is provided in Appendix A. Summary tables of the air samples are also provided in Appendix A.

The air samples indicate the LNAPL plume at Doug's (EX-4) has lower discharge concentrations than the concentrations measured in RW-2.

Air Regulations

The discharge from the SVE system is subject to DNR air limits of 228 lbs/yr of benzene if the discharge pipe is less than 25 feet high; 936 lbs/yr of benzene if the discharge pipe is greater than 25 feet high. Additionally, the discharge can not exceed 5.7 lb/hr of Total VOCs.

The SVE system will exceed these discharge limits at extraction rates greater than 15 scfm in RW-2 and 20 scfm in EX-4. Therefore, the air discharge will require offgas treatment or the SVE system will have to operate at low flow rates.

PROPOSED SVE SYSTEM

The recommended SVE system is designed to address the LNAPL Focus Area (Figure 1). Petroleum impacts away from the LNAPL Focus Area will not be affected by the proposed SVE system. Our understanding from DNR staff is this approach will be accepted by the DNR Closure Committee when Closure is requested.

SVE Extraction Wells

The SVE system will consist of an array of 4-inch diameter extraction wells located in the LNAPL Focus Area (Figure 2). The wells will be screened from 15-30 feet below grade. These extraction wells will be connected via buried piping to a central mechanical system which will apply a vacuum to the piping and extraction well.

To save costs, we plan to utilize existing extraction wells EX-2, -4, -5 at Dougs and RW-1, -2, -3 at Autostop. We plan to install two extraction wells at Dougs and three extraction wells at Autostop.

Piping

Piping will connect each SVE point to the remediation system located at the south end of the Autostop building (Figure 3). The piping will be 2-inch diameter Sch. 40 PVC installed in 4 feet deep trenches. The piping will rest in a 6-inch sand bed covered by 4 inches of high-density Styrofoam insulation. The trench will then be backfilled to grade with clean sand/gravel fill compacted in 1 foot lifts using a compactor. The trench will be topped with gravel.

The piping will be installed so that it slopes slightly to the SVE vent well where possible. Meridian will be onsite and use survey equipment (Auto Level) to confirm this pitch.

Due to the topography, piping from Doug's wells will slope (south) toward the remediation building. A 2-inch diameter by 2 feet long sump will be added at the point where the piping exits the ground. This sump will capture moisture which accumulates in the piping and will be pumped out as needed.

SVE System

A SVE system will be installed at the south end of the Autostop building (Figure 3). This system is described in more detail in Appendix B.

The mechanical system will consist of a blower which pulls soil gas (i.e., LNAPL vapors) from the subsurface and discharges these vapors to the atmosphere. This discharge will be treated to meet DNR Air limits. The LNAPL vapor concentrations will decrease over time and the offgas treatment system will then be removed. For budgeting purposes, we estimate offgas treatment will be used for 6 months. Subsequent venting without offgas treatment will likely require dilution of the air discharge to meet DNR Air limits.

It is not known how long the system will need to operate but based on similar sites, we expect the system to operate for at least 5 years. This will require ongoing maintenance including equipment repair and replacement.

Offgas Treatment

The offgas from the SVE system will be routed through a flame-oxidation unit rented from Catalytic Combustion of Bloomer, Wisconsin. This system will use LP gas to burn the offgas and remove petroleum concentration to below DNR air limits. Appendix B contains a schematic of the treatment system.

Operation and Maintenance

The remediation system will require regular maintenance visits to address any mechanical and operation issues that arise. Additionally, the air discharge will be monitored as required by DNR regulations, that is, daily for 3 days, weekly for 3 weeks, and then monthly thereafter. The air samples will be analyzed for benzene and Total VOCs. As the concentrations decrease and stabilize, the air monitoring may be completed with a PID subject to DNR approval.

Disposal of Remediation Waste

Impacted soil from installation of the extraction wells will be disposed at a landfill. The excavated soil from the trenches is expected to be clean and will be be re-used (if suitable sand or gravel) or disposed at gravel pit as clean soils.

Water which accumulates in the knockout tank and pipe sumps will be temporarily stored onsite and disposed either at a POTW or by a waste hauler.

COST ESTIMATE

Appendix C contains summary tables of the estimated cost for the proposed SVE system.

The cost is for:

- SVE System
- Power hookup
- SVE Extraction wells (7)
- Piping (trenching and install)
- System start up
- Operation and Maintenance for First Year
- Reporting (As-Built Report, Two 6 month O&M Reports)

We will use U&C for installing the SVE extraction wells.

We will obtain 3 Bids for the piping (trenching and install). These Bids will be obtained after DNR approves the RAP.

We request a variance for purchase of the SVE system, power hookup, O&M for first year, and reporting.

The cost of future operation of the system will be determined at the end of the first year.

SCHEDULE

Our goal is to install the vents and piping in June of 2015. This requires the cost approval be obtained by March 2015 so that equipment can be ordered, bidding completed, contractors hired, power hookup ordered, etc. Any delays in cost approvals will delay implementation of this Plan.

PROJECT TEAM

Meridian Environmental Consulting, LLC is partnering with REI, Inc. of Wausau to complete the remediation at this site. REI installed and is operating a SVE system across the road from these two sites. This experience will help achieve cost-effective remediation.

The Project Manager and PECFA Agent is Ken Shimko of Meridian. Dave Larsen of REI will be the field supervisor in charge of system assembly, startup, operation and maintenance. Meridian has two engineers (contract employees) who will provide engineering support as needed: Gary Gilbert and Robert Evangelisti (Wisconsin PE).

SIGNATURES

I, Kenneth Shimko (Meridian Environmental Consulting, LLC), hereby certify that I am a hydrogeologist as that term is defined in s. NR712.03(1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR700 to 726, Wis. Adm. Code.

SHIMKO PG-1061 AU CLAIB

Date Feb. 14, 2015

I, Robert Evangelisti (Meridian Environmental Consulting, LLC), hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR700 to 726, Wis. Adm. Code.

Robethangeliti

Date_ 2/18/15

Robert Evangelisti, P.E. CEA, CHMM, CSP



FIGURES

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Appendix A

Pilot Test Results

FIELD TEST DATA FORM - TEST @ RW2 SOIL VAPOR EXTRACTION FIELD TEST SYSTEM / PRESSURE MEASUREMENTS

Test Date: 4/26/14

Site Name / Location: Doug's Tire / Auto Stop - Ladysmith, WI

Client : Meridian Environmental Consulting, LLC. Site Personnel: Gary Gilbert / Ken Shimko

Weather Conditions: 50's, partly cloudy, 5-10 mph easterly wind

SYSTEM MEASUREMENTS										
SVE TEST @ RW2, START @ 1200 END @ 1400										
Data Collection Time	time	1150	1215	1300	1345	1400				
Operating Time	hr:min	Backgrnd	0:15	1:00	1:45	2:00				
Flow Rate (E)	SCFM	>100	90	75	70	70				
Blower Pressure (I)	in. H2O	8	60	68	68	68				
LEL (E)	%	0.0	70	60	59	59				
O2 (E)	%	20.9	19.1	19.0	19.1	19.1				
Dilution Air Valve	% Open	Closed	50	50	50	50				

PRESSURE MEASUREMENTS (-)

Data Collection Time	hr:min	1150	1215	13.00	1345	1400			
Operating Time	hr:min	Backgrnd	0:15	1:00	1:45	2:00			
Extr. Point Pressure	in. H2O	0.0	58	66	66	66			
MW200	in. H2O	0.0	3.00	2.40	2.40	2.30			
MW7	in. H2O	0.0	0.75	0.70	0.70	0.70			
RW1	in. H2O	0.0	0.75	0.60	0.70	0.70			
EX5	in. H2O	0.0	0.40	0.45	0.45	0.45			
MW400	in. H2O	0.0	0.40	0.25	0.30	0.30			
MW3	in. H2O	0.0	0.15	0.25	0.25	0.25	 		
EX4	in.H2O	0.0	0.15	0.20	0.20	0.20			
RW3	in. H2O	0.0	0.10	0.10	0.10	0.10			
MW800	in. H2O	0.0	0.10	0.05	0.05	0.05			
MW100	in. H2O	0.0	0.10	0.00	0.00	0.00			
MW6	in. H2O	0.0	0.00	0.00	0.00	0.00			
EX3	in. H2O	0.0	0.00	0.00	0.00	0.00			

COMMENTS / OBSERVATIONS:

I = Blower Inlet, E = Blower Exhaust

Background = Data collected w/system running (not connected to extraction point)

Dilution Air Valve = 1 inch plastic ball valve

At 80 inches of water vacuum (approx. 35 scfm) at extraction point with closed dilution valve, system pulled up liquid from extraction point Extraction blower = Rotron En606, 1ph/230v

FIELD TEST DATA FORM - TEST @ EX4 SOIL VAPOR EXTRACTION FIELD TEST SYSTEM / PRESSURE MEASUREMENTS

<u>Test Date: 4/26/14</u> <u>Site Name / Location: Doug's Tire / Auto Stop - Ladysmith. WI</u> <u>Weather Conditions: 50's, partly cloudy, 5-10 mph easterly wind</u>

<u>Client : Meridian Environmental Consulting, LLC.</u> <u>Site Personnel: Gary Gilbert / Ken Shimko</u>

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SYSTEM MEASUREMENTS

		S	VE TEST (a EX4,	START @	1515	END @ 1600	 	
Data Collection Time	time	1500	1530	1600					
Operating Time	hr:min	Backgrnd	0:15	0:45		-		 [
Flow Rate (I)	SCFM	>100	110	110	1			1	
Blower Pressure (I)	in. H2O	9	50	48	1				
PID (E)	PPMv	0.0	778	772					
LEL (E)	%	0.0	6	12					
O2 (E)	. %	20.9	16.8	17.5					
Dilution Air Valve	% Open	Closed	50	50					

Data Collection Time	br:min	1500	1530	1600			
Operating Time	hr:min	Backgrnd	0:15	0:45			
Extr. Point Pressure	in. H2O	0.0	28-	27			
EX5	in. H2O	0.0	20	20			
MW3	in. H2O	0.0	9	12			
MW5	in. H2O	0.0	1.10	1.25			
RW2	in. H2O	0.0	0.75	0.75			
MW400	in. H2O	0.0	0.50	0.50			
RW1	in. H2O	0.0	0.40	0.50	· .		
MW200	in. H2O	0.0	0.35	0.35		1	
MW7	in. H2O	0.0	0.35	0.35			
103	in. H2O	0.0	0.25	0.25			
MW100	in. H2O	0.0	0.20	0.15			
EX3	in. H2O	0.0	0.15	0.15	•		
EX6	in. H2O	0.0	0.10	0.15			
RW3	in. H2O	0.0	0.05	0.05			
MW800	in. H2O	0.0	0.05	0.05			
EX7	in. H2O	0.0	0.00	0.00			
MW6	in H2O	0.0	0.00	0.00			1

PRESSURE MEASUREMENTS (-)

COMMENTS / OBSERVATIONS:

I = Blower Inlet, E = Blower Exhaust

Background = Data collected w/system running (not connected to extraction point)

Dilution Air Valve = 1 inch plastic ball valve

Extraction blower = Rotron En606, 1 ph/230 v

Tested EX5 and MW3 : Tests could not be run due to low permeability soils and/or insufficient air flow from formation

At approximately 1630 test was discontinued due to reduced air flow and increased extraction point pressure

RW-2 EMISSION RATE INFORMATION (50 scfm) SVE AIR RESULTS - RW2 LADYSMITH, WISCONSIN

Sample Parameters	CAS No.	Average Conc. (ug/m3)	Emission Rate (ug/sec)	Emission Rate (lbs/hr)	Emission Rate (lbs/day)	Emission Rate (lbs/yr)	Emission Rate (tons/yr)
Benzene	71-43-2	1,560,000	36,816	0.3	7.0	2,554.3	1.277
Total VOCS (THC as gas)		95,100,000	2,244,360	17.8	426.6	155,711.9	77.856
NOTES:							

Air Flow Rate (SCFM) = 50

CONVERSIONS

Liters/Cubic Feet =	28.32
Pounds/Gram =	0.0022
Min/Day =	1440
Grams/Micrograms =	0.000001
Min/Sec ==	0.0166667

Maximum Emisions:

Benzene = 228 lbs/yr (936 if stack is 25 ft high) Total VOCs = 216 lbs/day Total VOCs = 78,840 lbs/yr Total VOCs must be less than 5.7 lb/hr

FORMULAS

ug/sec = Liters/Cubic Feet * Fl	low Rate (scfm) * Min/Sec * Conc (ug/I)]
lbs/day = Grams/Microgram *	Liters/Cubic Feet * Pounds/Gram * Flow Rate (scfm) * Min/Day * Conc (ug/I)	
ug/1 = ug/m3 / 1000		

Sample collected from RW2 on 5/14/14 from Ken Shimko using smaller air blower than used during SVE test.

1 ppmv Benzene = 3,250 ug/m3 1 ppmv THC as Gasoline = 4,340 ug/m3

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2000 ppmv = 868000 ug/m3 gasoline = 6.2 lbs/gal water = 8.345 lb/gal

> Page 1 of 1 SVE Test - Offgas - emission calcs

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EX-4 EMISSION RATE INFORMATION (50 scm) SVE AIR RESULTS - EX4 LADYSMITH, WISCONSIN

		Average	Emission	Emission	Emission	Emission	Emission		
Sample		Conc.	Rate	Rate	Rate	Rate	Rate	Emission Rate	
Parameters	CAS No.	(ug/m3)	(ug/sec)	(lbs/hr)	(lbs/day)	(lbs/yr)	(tons/yr)	(gal/yr)*	
Benzene	71-43-2	997,000	23,529	0.186	4.47	1,632.4	0.816	259.117	1
Total VOCS*(THC as gas)		65,100,000	1,536,360	12.168	292.03	106,591.4	53.296	16,919.274	
NOTES:									2
Air Flow Rate (SCFM) =	50			- <u>,</u>				*assume 6.2 lb/	gal gasoline

CON	VERSIONS	
		•

Liters/Cubic Feet =	28.32
Pounds/Gram =	0.0022
Min/Day =	1440
Grams/Micrograms -	0.000001
Min/Sec =	0.0166667

Maximum Emisions:

Benzene = 228 lbs/yr Total VOCs = 216 lbs/day Total VOCs = 78,840 lbs/yr

FORMULAS
ug/sec = Liters/Cubic Feet * Flow Rate (scfm) * Min/Sec * Conc (ug/l)
lbs/day = Grams/Microgram * Liters/Cubic Feet * Pounds/Gram * Flow Rate (scfm) * Min/Day * Conc (ug/l)
ug/l = ug/m3 / 1000

Sample collected from EX4 on 5/14/14 from Ken Shimko using smaller air blower than used during SVE test.

1 ppmv Benzene = 3,250 ug/m3 1 ppmv THC as Gasoline = 4,340 ug/m3

2000 ppmv = §68000 ug/m3 0.0019096 lb/m3 0.50577666 lb/gal gasoline = 6.2 lbs/gal water = 8.345 lb/gal

> Page 1 of 1 SVE Test - Offgas - emission calcs

Meridian

ace Analvtica www.pacelabs.con

Pace Analytical Services, Inc. 1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

May 20, 2014

Kennith Shimko Meridain Environmental Consulting, LLC 2711 North Elco Rd Fall Creek, WI 54742

RE: Project: LADYSMITH Pace Project No.: 4096321

Dear Kennith Shimko:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me:

Sincerely,

Greion

Brian Basten brian basten@pacelabs.com Project Manager

Enclosures

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REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: LADYSMITH Pace Project No.: 4096321

Minnesota Certification IDs 1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926,01 Alabama Certification #40770 Alabama Certification #40770 Alaska Certification #: UST-078 Alaska Certification #MN00064 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #: Pace Georgia Certification #: 959 Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909 Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace Montana Certification #: MT0092 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 Wisconsin Certification #: 999407970 West Virginia Certification #: 382 West Virginia Te-15 Approval West Virginia DHHR #:9952C

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc. 1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

SAMPLE SUMMARY

Project: Pace Project N	LADYSMITH 0.: 4096321				
Lab ID	Sample ID	Matrix	Date Collected	Date Received	
4096321001 4096321002	RW-2 (1) +{2) EX-4 (1) +(2)	Air Air	.05/13/14 09:30 05/13/14 10:15	05/14/14 08:35 05/14/14 08:35	

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SAMPLE ANALYTE COUNT

Project:	LADYSMITH				
Pace Project No.: 4096321					
Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
4096321001	RW-2 (1) +(2)	TO-3Air	JRB	10	PASI-M
4096321002	EX-4 (1) +(2)	TO-3 Air	JRB	10	PASI-M

REPORT OF LABORATORY ANALYSIS



Pace Analyfical Services, Inc. 1241 Bellevue Street - Suite 9 Green Bay, Wt 54302 (920)469-2436

PROJECT NARRATIVE

Project:	LADYSMITH
Pace Project N	No.: 4096321
Method:	
Client:	
Date: N	May 20, 2014
General Inform	nation:
2 samples were	e analyzed for TO-3 Air. All samples were received in acceptable condition with any exceptions noted below.
Hold Time:	
The samples we	ere analyzed within the method required hold times with any exceptions noted below.
Initial Calibrati	ons (including MS Tune as applicable):
All criteria were	within method requirements with any exceptions noted below.
Continuing Cal	libration:
All criteria were	within method requirements with any exceptions noted below.
Internal Standa	rds:
All internal stand	lards were within QC limits with any exceptions noted below.
Surrogates:	
Ali surrogates we	ere within QC limits with any exceptions noted below.
Method Blank:	
All analytes were	e below the report limit in the method blank, where applicable, with any exceptions noted below.
Laboratory Con	trol Spike:
All laboratory cor	ntrol spike compounds were within QC limits with any exceptions noted below.
Matrix Spikes:	
All percent recover	eries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.
Additional Com	ments:
Analyte Commen	ts:
QC Batch: AIR/20	265
E: Analyte	e concentralion exceeded the calibration range. The reported result is estimated.
• EX-4	(1) +(2) (Lab ID: 4096321002)
• Tł	HC as Gas
• N-	
• RW-2	(1) +(2) (Lab ID: 4096321001)
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• n-	
hisdata package	e has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LADYSMITH

Pace Project No.: 4096321

Sample: RW-2 (1) +(2)	Lab I	Lab ID: 4096321001			/14 09:30	0 Received:	Received: 05/14/14 08:35 Matrix: Air				
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual		
TO3 GCV AIR BTEX BAG	Analytic	cal Method: TO-3	Air								
Benzene	480	vmqq	10.0	5.0	100		05/15/14 17:33	71 43 3			
Ethylbenzene	23.6	ppmy	10.0	0.80	100		05/15/14 17:32	2 100-41-4			
n-Hexane	4210	ppmv	10.0	0.60	100		05/15/14 17:32	110.54.3	E C		
Methyl-tert-butyl ether	756	ppmv	10.0	5.0	100		05/15/14 17:32	1634_DA 4	L		
THC as Gas	21900 ppmv		100	12.8	100		05/15/14 17:32	. 1034-04-4	F		
Toluene	501	ppmv	10.0	5.0	100		05/15/14 17:32	108-88-3	L		
1,2,4-Trimethylbenzene	16.4 ppmv		10.0	2.0	100		05/15/14 17:32	05 63 6			
1,3,5-Trimethylbenzene	1.8J ppmv		10.0	1.7	100		05/15/14 17:32	108-67-8			
m&p-Xylene	74.4	ppmv	20.0	1.6	100		05/15/14 17:32	179601-23-1			
o-Xylene	18.8	ppmv	10.0	0.90	100		05/15/14 17:32	95-47-6	•		
Sample: EX-4 (1) +(2) Parameters	Lab ID	: 4096321002 Units		1: 05/13/1	4 10:15 DE	Received: 0	5/14/14 08:35 Ma	atrix: Alr	0:101		
O3 GCV AIR BTEX BAG	Analytica	Method: TO 2 A						CAS NO.			
	/ maryinea	mealod, 10-5 A	41								
	307 p	pmv	10.0	5.0	100		05/15/14 18:03	71-43-2			
linyidenzene	11.2 p	pmv	10.0	0.80	100	-	05/15/14 18:03	100-41-4			
	2680 p	pmv	10.0	0.60	100		05/15/14 18:03	110-54-3	Ε		
Weinyi-tert-butyi ether	519 p	pmv	10.0	5.0	100		05/15/14 18:03	1634-04-4			
no as Gas	15000 p	pmv	100	12.8	100		05/15/14 18:03	,	ε.		
	257 p	pmv	10.0	5.0	100		05/15/14 18:03	108-88-3			
	5.0J p	pmv	10.0	2.0	100		05/15/14 18:03	95-63-6			
So Yulana	1.8J p	pmv	10.0	1.7	100		05/15/14 18:03	108-67-8			
ap-Aylene	51 2 D	EX INC. A	20.0	4 6	100		054544 40.00	170001 00 1			
Vulone	5 t	pinv	20.0	1.0	100		05/15/14 18:03	179601-23-1			

REPORT OF LABORATORY ANALYSIS

ace Analytical www.pacelabs.com

Pace Analytical Services, Inc. 1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

QUALITY CONTROL DATA

Project: L Pace Project No.: 4	ADYSMITH 096321						·
QC Batch:	AIR/20265		Analysis Met	hod: T	0-3 Air		
QC Batch Method:	TO-3Air	` .	Analysis Des	cription: T	03 GCV AIR BTEX	BAG	
Associated Lab Samp	les: 4096321001, 409	96321002					
METHOD BLANK: 1	682155	·	Matrix:	Air			 · · · · · · · · · · · · · · · · · · ·
Associated Lab Sampl	es: 4096321001, 409	96321002					
			Blank	Reporting			
Paramet	er	Units	Result	Limit	Analyzed	Qualifiers	
1,2,4-Trimethylbenzen	e ppmv		<0.020	0.10	05/15/14 12:24		
1,3,5-Trimethylbenzen	e ppmv		<0.017	0.10	05/15/14 12:24		
Benzene	ppmv		<0.050	0.10	05/15/14 12:24		
Ethylbenzene	ppmv		<0.0080	0,10	05/15/14 12:24		
m&p-Xylene	ppmv		<0.016	0.20	05/15/14 12:24		. N
Methyi-tert-butyi ether	ppmv		<0.050	0.10	05/15/14 12:24		
n-Hexane	ppmv		<0.0060	0.10	05/15/14 12:24		
o-Xylene	ppmv		<0.0090	0.10	05/15/14 12:24		
THC as Gas	ppmv		0.19J	1.0	05/15/14 12:24		
Toluene	ppmv		<0.050	0.10	05/15/14 12:24		

ABORATORY CONTROL SAMPLE & LCSD: 1682156 1682157										
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
1,2,4-Trimethylbenzene	ppmv	1	1.1	0.92	106	92	70-130	14	30	
1,3,5-Trimethylbenzene	ppmv	1	1.0	0.92	104	92	70-130	12	30	
Benzene	ppmv	1	0.95	0.91	95	91	70-130	4	30	
Ethylbenzene	ppmv	1	0.96	0.88	96	88	70-130	8	30	
m&p-Xylene	ppmv	2	1.9	1.8	97	89	70-130	8	30	
Methyl-tert-butyl ether	ppmv	1	0.96	0.90	96	90	70-130	6	30	
n-Hexane	ppmv	1	1.1	1. 1	109	108	70-130	.6	30	
o-Xylene	ppmv	1	0.98	0.89	98	89	70-130	9	30	
THC as Gas	ppmv	10	9.7	9.2	97	92	70-130	5	30	
Toluene	ppmv	1	0.94	0.90	94	90	70-130	4	30	

REPORT OF LABORATORY ANALYSIS

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Page 7 of 11



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QUALIFIERS

Project.	LADYSMITH
Pace Project No.:	4096321

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content. ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazlne (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

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PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

Analyte concentration exceeded the calibration range. The reported result is estimated.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	LADYSMITH				
Pace Project No.:	4096321				
ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1096321001 1096321002	RW-2 (1) +(2) EX-4 (1) +(2)	TO-3 Air TO-3 Air	AIR/20265 AIR/20265		
					2
				· .	

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

		The Chain-of-Custody is	a LEGAL DOCUMENT. All relevant fie	los must be completed a	ccurately.	4296321
ection A	Section B	· ·	Section C		. Pa	nger of O
guired Client Information:	Required Project Information:		invoice information:			1740457
idense Eno. (5)	2 hen	shimko	Ken Sh;	mta		1142431
ZTI D. ELCO KA			Company Name: Mar 2.2	LA E.C. R	EGULATORY AGENC	Y
Fall Creek WI !!	547742		Address;	Г	NPDES GRO	UND WATER
kshinks maidre cur	Purchase Order No.:		Pace Quote PELFA	1		
715-579-D72 3 8 mail.	Project Name: Z	sur it	Manager Scott UI	12-C 1	Site Location	
equested Due Date/FAT:	Project Number.		Paca Profile #:		STATE	
				Requested Ar	nalysis Filtered (YIN)	
Section D Matri	x Condes ਵ ଲ					
Reguérad Client Information MATRIX	X CODE	COLLECTED	Preservatives	×	╶┼┉┽━┽╶┼╶┼┈┼	
Water Waste Wa		COMPOSITE		23		
Product SofVSolid	P P ST/	RT END/GRAB				(NIA
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(A-Z, 0-9 /) Air Samole IDs MUST BE UNIQUE TIssue						
Other						
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	, ce Analytical *	Document No.: E-MAIL A. 105 and 60			Page 1 of 1 Issuing Authority; Page Minapada Duration Office		
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Short Hold Time Analysis (77 hr17	- XIIII				·····	
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Sufficient Volume?		<u></u>					
Correct Containers Used?		<u></u>			· · · · · ·	<u></u>	
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Sample Labels Match COC? Samples Received: 2 2 2 Canister Sample Number 1 Sample Number 1 Sample Number 1 Sample Number 1 Sample Number 1 Sample Number 1 Canister Canister Comments/Resolution:	Can ID	Sample Nur	PCM S2 Flow Controlle mber	Can ID	Stand Sample Number	d Alone G Can ID	R
Sample Labels Match COC? Samples Received: 2 2 2 Canister Sample Number 1 Sample Number 1 Sample Number 1 Sample Number 1 Sample Number 1 Constant Not Fick The Second Se	Can ID	Pex e	PCM S2 Flow Controlle mber	Can ID	Stand Sample Number	d Alone G Can ID	
Sample Labels Match COC? Samples Received: 2 2 Canister: Sample Number 1 Sample Number 1 Sample Number 1 Sample Number 1 Sample Number 1 Canister: Sample Number 1 Sample Number 1 Canister: Sample Number 1 Sample Number 1 Canister: Sample Number 1 Sample Number 1 Canister: Sample Sample Number 1 Sample Sample Sa	Can ID	Sample Nur	PCh S2	Date/Time:	Stand Sample Number	d Alone G Can ID Can ID 	

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Pace Analytical Services, Inc. 17 00 Elm Street – Suite 200 Minneapolis, NN 55414 Phone: 612.607.6444 Fax: 612.607.6444

ANALYTICAL RESULTS

Client: PAS Phone: 920	SI Wisconsin -321-9455					Lab Project Numbe Project Name	r: 10267237 e: 4096321 Me	ridian Environmental
Lab Sample No	4096321001		Pi	ojSampleNum:	409632	21001 Dat	e Collected: 0	5/13/14 9:30
Client Sample I	D: RW-2 (1)	+(2)		Matrix:	Air	Dat	e Received: 0	5/14/14 8:35
Parameters		Results	Units	Report Limit	DF	Analyzed	CAS No.	Qualifiers
Air TO-3 Air								
1,2,4-Trimetl	hylbenzene	82000	ug/m3	50000	100	05/15/14 17:32 JRB	95-63-6	
1,3,5-Trimeth	nylbenzene	9000J	ug/m3	50000	100	05/15/14 17:32 JRB	108-67-8	
Benzene		1560000	ug/m3	32000	100	05/15/14 17:32 JRB	71-43-2	4
Ethylbenzene	e	104000	ug/m3	44000	100	05/15/14 17:32 JRB	100-41-4	
m&p-Xylene		328000	ug/m3	88000	100	05/15/14 17:32 JRB	179601-23-1	
Methyl-tert-bu	utyl ether	2770000	ug/m3	37000	100	05/15/1417:32 JRB	1634-04-4	
n-Hexane		15100000	ug/m3	36000	100	05/15/14 17:32 JRB	110-54-3	E
o-Xylene		83000	ug/m3	44000	100	05/15/14 17:32 JRB	95-47-6	
THC as Gas		95100000	ug/m3	430000	100	05/15/14 17:32 JRB		E
Toluene		1920000	ug/m3	38000	100	05/15/14 17:32 JRB	108-88-3	

DISCLAIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EPA rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

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SUPPLEMENTAL REPORT Units Conversion Request

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Pace Analytical Services, Ir.c. 1700 Elm Street – Suite 200 Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

ANALYTICAL RESULTS

Client: PASI Wisconsi Phone: 920-321-9455	n				Lab Project Number Project Name	: 10267237 : 4096321 Me	idian Environmental
Lab Sample No: 409	6321002	Pr	ojSampleNum:	409632	21002 Date	e Collected: 05	5/13/14 10:15
Client Sample ID:	EX-4 (1) +(2)		Matrix:	Air	Date	e Received: 05	5/14/14 8:35
Parameters	Results	Units	Report Limil	DF	Analyzed	CAS No.	Qualifiers
Air TO-3 Air							
1,2,4-Trimethylbenzene	25000J	ug/m3	50000	100	05/15/14 18:03 JRB	95-63-6	
1,3,5-Trimethylbenzene	9000J	ug/m3	50000	100	05/15/14 18:03 JRB	108-67-8	
Benzene	997000	ug/m3	32000	100	05/15/14 18:03 JRB	71-43-2	
Ethylbenzene	49400	ug/m3	44000	100	05/15/14 18:03 JRB	100-41-4	
m&p-Xylene	226000	ug/m3	88000	100	05/15/14 18:03 JRB	179601-23-1	
Methyl-tert-butyl ether	1900000	ug/m3	37000	100	05/15/14 18:03 JRB	1634-04-4	
n-Hexane	9600000	ug/m3	36000	100	05/15/14 18:03 JRB	110-54-3	E
•-Xylene	75500	ug/m3	44000	100	05/15/14 18:03 JRB	95-47-6	
THC as Gas	65100000	ug/m3	430000	100	05/15/14 18:03 JRB		E
Toluene	984000	ug/m3	38000	100	05/15/14 18:03 JRB	108-88-3	

DISCL AIMER: These results have been converted to the units shown from the original units of measurement assuming 20 degrees Celsius and 1 atmosphere pressure. Values were not rounded according to EP A rounding rules. THC is quantitated based on the average response factors of several compounds; the nominal molecular weight of THC used for units conversion is the average of the molecular weights of the compounds used for quantitation.

Date: 5/21/2014 .

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SUPPLEMENTAL REPORT

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Units Conversion Request

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ANALYTICAL RESULTS

Client:	PASI Wisconsin	
Phone:	920-321-9455	

Lab Project Number: 10267237 Project Name: 4096321 Meridian Environmental

PARAMETER FOOTNOTES

ND Not detected at or above adjusted reporting limit

NC Not Calculable

J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

[E] Analyte concentration exceeded the calibration range. The reported result is estimated.

Dale: 5/21/2014

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SUPPLEMENTAL REPORT Units Conversion Request

Page 3

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Appendix B SVE System Details



SVE Vent Wells

2/13/15

KAS

SVE System Trailer Description

AutoStop and Doug's Tire Combined System O&M

-----SVE EQUIPMENT-----

1 - EN6F72L Rotron EN6F72L 5HP 3PH 230/460V 3PH 50/60HZ

1-AWS120-2 Aluminum Air Water Separator, 120 Gallons, 50 Gallons Working Capacity, 2" NPT Connections, 2" Clear PVC Sight Glass with LL HL HLA Float Tree

1-Goulds NPE Series Pump, 1/2HP 1/60/115-230 XP

I-2" Vacuum Relief Valve

1-Solberg 2" Vacuum Inlet Filter, L Style, Polyester Element, Model

I-2" Solberg Filter Silencer

1-Solberg 2" FPT Discharge Silencer

12 -Dwyer Vacuum Gauge, 0-100" W.C.

1-Bimctal thermometer, 3" dial, 2-1/2" stem length, range 50/550°F, (10/290°C), 5°F (5°C) div.

I-Ametck 2" Flow Meter 45-225 SCFM Range

Part SVE Piping:

2" Galvanized Steel Exhaust Through Roof with Silencer, Flow Meter and Temp Gauge, 1/4" Sample Port

2" SCH 40 PVC From Blower to Air Filter to KO Tank

2" SCH 40 PVC Dilution Line with Ball Valve and Filter Silencer

2" SCH 40 PVC Manifold Header with 8 x Zones

8 x 2" SCH 40 PVC Manifold Zones with Ball Valve, Vacuum Gauge, Pipe Stub Through Wall

I" SCI-I 40 PVC Transfer Pump Piping with Inlet Ball Valve, Check Valve, Wye Strainer, Outlet Ball Valve

-----SYSTEM ENCLOSURE-----

Trailer- New 6' x 12' Hercules w/6'6'' interior height, 36'' side door, rear double doors, roof vent, gravel guard, 3/8 walls, ³/₄ floor, 3500 torsion axle, radial tires, wood luan ceiling, front & rear headers enclosed(for proper insulation), insulate ceiling, insulate walls, 3 year warranty, .030 aluminum exterior

1- Dayton 12inch Hazardous Location Exhaust Fan, 115/208-230V 1PH, 1/4HP Motor, 1347 CFM Max

I-XC B3 N0 Crouse Hinds 1.8KW 240V IPH XP Heater

1- Crouse Hinds Ceiling Mount XP Light Fixture for Class 1 Div 2 Locations

- 1- Dayton 12" Galvanized Steel Fan Guard
- I- Dayton 12" Wall
- 2 Crouse Hinds BiMetal Thermostat XP

1 - Crouse Hinds Light Switch XP

1 - Dayton Intake Louver, 12-18", Galv. Steel

Part Electrical Conduit, Wire, Boxes, Fittings, Etc. For Class 1 Div 2 Group D, Electrical Installation Inside Trailer, General Industrial Electrical, Installation of Equipment on Trailer Exterior Over Tongue

-----CONTROL PANEL-----

Control_Panel 240V 1PH Control Panel Consisting of:

1 - R9D3I00U - EATON 100A NON-FUSIBLE DISCONNECT

1 - PHB2N12F - EATON BLACK/BLUE DISC, HANDLE MECH.

1 - SF320PI-110X10 - EATON 320mm DISC. SHAFT

I - TS3R9DT - EATON DISC. TERMINAL SCREEN, TOP

1 - TS3R9DB - EATON DISC. TERMINAL SCREEN, BOTTOM

2 - LK3R9DL - EATON DISC. LUGS

2 - M22-WRLK3-2-G-K20-230G - EATON 3POS GREEN ILL.

I - M22-L-R-230R - EATON RED PILOT LIGHT, 85-264VAC

I - M22-L-W-230W - EATON WHITE PILOT LIGHT, 85-264VAC

1 - M22-PV1-K01 - EATON EMERGENCY STOP, INC

1 - M22-D-S-K01 - EATON BLACK PUSHBUTTON, INC

I - GBK5 - EATON GROUNDING BAR 5 POSITION

1 - C0250E2AFB - EATON 250VA TRANSFOR MER MULTI-TAP

2 - QCR1015 - EATON BREAKER, 1POLE, 15A

2 - QCR2015 - EATON BREAKER, 2POLE, 15A

1 - WMZT3D40 - EATON MCB, 3POLE, 40A, D CURVE

1 - WMZT3D10 - EATON MCB, 3POLE, 10A, D CURVE

2 - RH3B-UACI20 - IDEC 3POLE RELAY 120V

2 - SH3B-05 - IDEC 3POLE SOCKET

1 - SP1-240S - EATON PANEL MT SURGE PROTECTOR, 240S

2 - 9170/20-12-21 - DUAL CHANNEL ISOLATOR

1 - SCE-36EL3612LP - SAGINAW NEMA 4, 36X36X12

2 - SCE-36P36 - SAGINAW SUB-PANEL 36X36

1 - SCE-PLHG - SAGINAW PADLOCKING HOUSING LATCH

2 - SCE-RH44 - SAGINAW RAIN HOOD

1 - SCE-ELSP3 - SAGINAW SWING OUT PANEL KIT

I - SCE-FA44 - SAGINAW FAN PACKAGE

1 - SCE-FG/\44 - SAGINAW FILTER AND GRILL PACKAGE

1 - KLDR 3 1/2 - LITTELFUSE CLASS CC 3.5A, TIME DELAY

2 - KLDR 4 - LITTELFUSE CLASS CC 4A, TIME DELAY

1 - N3-210-C - TECO DRIVE 230V, 10HP

2 - 6-T-3H-508RPM-406 - E/M HR METER, 115VAC, 2.8-IN RND,

6 - 22 LEGENDS - CUSTOM LEGENDS, 22mm, SILVER, BLACK LETTERING

1 - XTCE007B10A - EATON CONTACTOR 7A, 120V COIL

I - XTOB006BC1 - EATON OVERLOAD 6A

1 - XTCEXFAC20 - EATON AUXILIARY CONTACT, 2NO, B-C FRAME

1 - Sensaphone Cell 682 w/ Clear Door

1 - UL LISTING

I - MISC ELECTRICAL

Contactor/Overload for 5HP 3PH SVE Blower Contactor/Overload for I/2HP 1PH Transfer Pump

2 - HOA Switch, One For Pump One for Blower

1 - Red Pilot Alarm Light

1 - White Pilot Power On Light

1 - E-Stop Push Button

I - Alarm Reset Push Button

1 - 250VA Control Transformer

Circuit Breakers for Blower, Pump, Lights, Fan, Heater, Surge Protector

IS Relay Barriers for KO Tank Level Floats

Nema 4 Control Panel Enclosure With Lockable Dead Front and Inner Swing Door

2 - Hour Meters, For Pump and Blower

Estimated cost for Proposed Remedial System: \$45,000 (inclusive of any applicable taxes and shipping charges).

All new equipment will be warrantied for a period of one (1) year, unless manufacturer's warranty offers additional warranty coverage.

All prices arc valid for a period of thirty (30) days from the date of this letter.





MINIT SOCIETY OF AMERICA (ISA) TABLE SUCCEDING LITTERS (NOORER VOE AMERICA (ISA) TABLE SUCCEDING LITTERS MOORER VOE AMERICA (ISA) OUTUNT INVENTION WODERN MOODER VOE AMERICA (ISA) OUTON WODERN MOODER VOE AMERICA (ISA) <th>Comparison DATE CATALYTIC COMBUSTION CORP. 7/31/08 CATALYTIC COMBUSTION CORP. SOLE: NTS THE COC RENTAL SOLE: NTS THE COC RENTAL NTS TO COC RENTAL THE COC</th>	Comparison DATE CATALYTIC COMBUSTION CORP. 7/31/08 CATALYTIC COMBUSTION CORP. SOLE: NTS THE COC RENTAL SOLE: NTS THE COC RENTAL NTS TO COC RENTAL THE COC
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Appendix C Estimated Costs

Table 1: Summary of Costs for SVE System Installation and First Year O&M

Autostop/Doug's

Item	 Cost
1. System and Installation	\$136,565.50
2. Vents/Piping	\$ 41,786.68
3. Year 1 O&M	\$ 41,607.50
4. Waste Disposal	\$ 4,284.00
Total	\$ 224,243.68

TABLE 2 System Install AutoStop System Install

Description	Units	Quantity	Unit Cost	Total Cost	Subtotals
Commodity Services					
SVF System	le	4	\$45,000,00	¢45,000,00	
Electrician -	15	1	\$45,000.00	\$45,000.00	
Xcel Energy (Power Drop)	is est	1	\$2,000.00	\$2,000.00	
Xcel Energy (Monthiv Charge)	at cost	I	φ2,500.00	φ2,500.00	
Product Tank (500 gallon double wall AST)		1	\$3 250 00	\$3 250 00	
Oxidizer Rental	15		ψ0,200.00	ψ0,200.00	
Delivery/Setup	ls	1	\$2 300 00	\$2 300 00	
Catox Removal	ls	1	\$2,300,00	\$2,300,00	
Lease	Month	6	\$5.000.00	\$30.000.00	
Crane Charge - Install	Est	1	\$2,500.00	\$2,500.00	
Crane Charge - Removal	Est	1	\$2,500.00	\$2,500,00	
LP Gas Usage (estimate \$500 per month)	Month	6	\$500.00	\$3,000.00	
LP Gas Hookup Charge	ls	1	\$500.00	\$500.00	
Privacy Fence	Est	1	\$5,000.00	\$5,000.00	
Phone Charge (Monthly Charge)	at cost	12	\$45.00	\$540.00	
Total Commodity Services	ls				\$102,390.00
Design					
Design Sustam Design (DEI)	h.a.	50		AF 000 00	
System Design (KEI)	nr	50	\$104.00	\$5,200.00	
System Design (Mendian - PE)	()I	20	\$104.00	\$2,080,00	
Total Design					00 000 73
rotal Design	15				\$7,200.00
Construction Oversight					
Construction Coordination (REL-Senior Professional)	hr	30	\$104.00	\$3 120 00	
Construction Coordination (Meridian)	br	20	\$104.00	\$2,080,00	
Construction Coordination (REI - Field Staff)	hr	6	\$87.00	\$522.00	
Construction Oversight - systeminstall (REI - Senior Professional)	hr	50	\$87.00	\$4.350.00	
Construction Oversight - system install (REI - Field Staff)	hr	50	\$87,00	\$4,350,00	
Project Management (Meridian)	hr	10	\$104.00	\$1,040.00	
Travel - system install (REI)	hr	6	\$65.00	\$390.00	
Travel - system install (Meridian)	hr	2	\$65.00	\$130.00	
Mileage - system install (REI)	mi	250	\$0.60	\$150.00	
Mileage- system install (Meridian)	mi	120	\$0.60	\$72.00	
Per Diem - system install/startup (REI)	day	4	\$108.30	\$433,20	
Per Diem - system install/startup (Meridian)	day	1	\$108.30	\$108.30	
Misc PVC Piping/plumbing (REI)	ls	1	\$500.00	\$500.00	
					\$47.045.50
Total Construction Oversight	IS				\$17,245.5U
Remove ovidizer and switch to exhaust stack					
Coordination (REI, Senior Professional)	hr	5	\$104.00	\$520.00	
Coordination (Meridian)	hr	10	\$104.00	\$1,040,00	
Oversight - system install (REI - Senior Professional)	hr	10	\$87.00	\$870.00	
Oversight - system install (Meridian)	hr	10	\$87.00	\$870.00	
Project Management (Meridian)	hr	10	\$104.00	\$1,040.00	
Travel - Oxidizer Removal (REI)	hr	6	\$65.00	\$390.00	
Travel - Oxidizer Removal (Meridian)	hr	2	\$65.00	\$130.00	
Mileage - Oxidizer Removal (REI)	mi	250	\$0.60	\$150.00	
Mileage - Oxidizer Removal (Meridian)	mi	120	\$0.60	\$72.00	
Total Oxidizer Removal	Is				\$5,082.00
Documentation / Reporting					
As-Built and First 6 month O&M			£404.00	CAO 00	
Reporting (REI/Meridian)	nr	35	\$104.00	\$3,640.00 ¢c00.00	
CAD Technician (REI)	nr	8	00.C1¢	\$328 00 \$	
Administrative (REI)	nr	ъ	Φ41.UU	φ320.UU	
Total Decumentation (Decesting	le.				\$4 568 00
rotal bocumentation / Reporting	15				¥ .,= 00.00
Consulting					\$34,175.50
oundurally .					· •
Commodity					\$102,390.00
Total					\$136,565.50

TABLE 3Install Extraction Wells and Underground PipingAutoStop and Doug's Tire Combined System O&M

1. Extraction Well Installation (see enclosed U&C Summary)	U&C	1	1	\$10,780.20	\$10,780.20
2. Underground Piping					
Subcontractors					
Subsurface piping installation	est	1	1	\$16,370.98	\$16,370.98
Horizontal Drilling under Hwy 8	est	1	1	\$7,500.00	\$7,500.00
Field Time (Meridian)	Units	Quantity	Occurrence	Unit Cost	Total Cost
Field Time (Meridian) Pre	Units p Hour	Quantity 8	Occurrence	Unit Cost \$85.00	Total Cost \$680.00
Field Time (Meridian) Pre Field Tim	Units p Hour e Hour	Quantity 8 55	Occurrence 1 1	Unit Cost \$85.00 \$85.00	Total Cost \$680.00 \$4,675.00
Field Time (Meridian) Pre Field Tim trave	UnitspHoureHoureHour	Quantity 8 55 2	Occurrence 1 1 2	Unit Cost \$85.00 \$85.00 \$85.00	Total Cost \$680.00 \$4,675.00 \$340.00
Field Time (Meridian) Pre Field Tim trave mileag	Units p Hour e Hour el Hour e Mile	Quantity 8 55 2 120	Occurrence 1 1 2 2	Unit Cost \$85.00 \$85.00 \$85.00 \$0.60	Total Cost \$680.00 \$4,675.00 \$340.00 \$144.00
Field Time (Meridian) Pre Field Tim trave mileag Per Diem (U&C Overnigh	Units p Hour e Hour e Hour e Mile c) Day	Quantity 8 55 2 120 1	Occurrence 1 2 2 5	Unit Cost \$85.00 \$85.00 \$85.00 \$0.60 \$108.30	Total Cost \$680.00 \$4,675.00 \$340.00 \$144.00 \$541.50
Field Time (Meridian) Pre Field Tim trave mileag Per Diem (U&C Overnigh Project Managemer	Units p Hour e Hour e Hour e Mile :) Day t Hour	Quantity 8 55 2 120 1 8	Occurrence 1 2 2 5 1	Unit Cost \$85.00 \$85.00 \$0.60 \$108.30 \$85.00	Total Cost \$680.00 \$4,675.00 \$340.00 \$144.00 \$541.50 \$680.00

Overall Total \$41,786.68

C:\Users\Ken Shimko\Desktop\[Doug Auto 2-14-15.xlsx]Vents Piping

TABLE 4 System Operation AutoStop and Doug's Tire Combined System O&M

.

D 4	•••• ••	1.0		
Day 1	-3, Week	(1-3 and	i monthly	thereaπer

		Unit	Quantity	Events	Rate	Total
Lab		sample	1	22	\$45.00	\$990.00
Field Time						
P	rep	hour	1.5	22	\$104.00	\$3,432.00
sample/m	aint	hour	3.5	22	\$87.00	\$6,699.00
tra	avel	hour	5	22	\$65.00	\$7,150.00
mile	age	mile	250	22	\$0.60	\$3,300.00
Managamant						
Management	PM	hour	60	1	\$104.00	\$6,240.00
	••••	neur			·	
Administrative						
Cler	rical	hour	60	1	\$41.00	\$2,460.00
Semi-Annual Reporting (one re	eport	at end of y	ear)			
Reporting (REI/Meridian)		hour	24	1	\$104.00	\$2,496.00
CAD Technician (REI)		hr	4	1	\$75.00	\$300.00
Administrative (REI)		hr	4	· 1	\$41.00	\$164.00
Equipment						
	PID	day	1	22	\$75.00	\$1,650.00
Interface Pi	robe	day	1	22	\$70.00	\$1,540.00
Air Sam	pler	day	1	22	\$55.00	\$1,210.00
Contingency Mobilizations		campla	1	З	\$45.00	\$135.00
Lab Field Time		sample	I '	5	Ψ 1 3,00	9133 .00
	Dron	hour	15	3	\$104.00	\$468.00
، samnle/m	nop	hour	3.5	3	\$87.00	\$913.50
tr	avel	hour	5	3	\$65.00	\$975.00
mile	eage	mile	250	3	\$0.60	\$450.00
Management						
-	PM	hour	1	3	\$104.00	\$312.00
Cle	erical	hour	1	3	\$41.00	\$123.00
Equipment						4005.00
	PID	day	1	3	\$75.00	\$225.00
Interface P	robe	day	1	3	\$70.00	\$210.00
Air San	npler	day	1	3	\$55.00	\$105.00
					Subtotal	\$37,631.00
					Contingency	\$3,976.50
					Total	\$41,607.50

TABLE 5 Waste Disposal AutoStop and Doug's Tire Combined System O&M

Commodity	Units	Events	Rate	Total
Fluid Waste Disposal (pump truck)	1	2	\$1,400.00	\$2,800.00
Field Time				
Prep	0.5	2	\$87.00	\$87.00
sample/maint	2	2	\$87.00	\$348.00
travel	2.5	2	\$65.00	\$325.00
mileage	120	2	\$0.60	\$144.00
Management				
PM	2	2	\$104.00	\$416.00
Administrative				
Clerical	2	2	\$41.00	\$164.00

Commodity	\$2,800.00
Consulting	\$1,484.00
Total	\$4,284.00

C:\Users\Ken Shimko\Desktop\[Doug Auto 2-14-15.xlsx]Waste Disposal

Usual and Customary Standardized Invoice #16 July 2014 - December 2014



PECFA #:		Ver	ndor Name:	Change Order						
BRRT's #:	<u>, , , , , , , , , , , , , , , , , , , </u>		Invoice #:	Change Order	-			U&C Total	\$	10.780.20
Site Name:	Doug's & Autostop	Inv	voice Date:	Februar 2015	-	v	ariance to	U&C Total	\$	· _
Site Address	Ladvsmith		Check #	Change Order	-		(Grand Total	\$	10 780 20
0.007.444.000.					-				Ŷ	10,700.20
TACK	TASKIDESCENETION	SEDVICES	ACTIVITY	ACTIVITY DEFERENCE CODE DESCRIPTION	UNUT	MAX	UNIT	10070		TOTAL
TASK	HASK DESCRIPTION	SERVICES	CODE		UNII	CO	ST	UNIIS		MAX
Dispose of o	drill cuttings from 5 ext	raction w	ells(esti	mate 3 drums per well x 5 = 15 drums	;)					
- 4	Waste Disposal	Consultant	WD05	Consultant Coordination	Site	\$	130.60	1	\$	130.60
4	Waste Disposal	Commodity	WD10	GW Sample and/or Purge	Drum	\$	40.10		\$	-
4	Waste Disposal	Commodity	WD15	Drill Cuttings	Drum	\$	103.00	15	\$	1,545.00
4	Waste Disposal	Commodity	WD17	Landfill Environmental Fee (provide documentation)	ACTUAL COST	ACTUAL	COST	1	\$	75.00
4	Waste Disposal	Commodity	WD20	Free Product	Drum	\$	113.10		\$	-
4	Waste Disposal	Commodity	WD25	Primary Mob/Demob	Site	\$	274.00	1	\$	274.00
Install 5 (fiv	e) SVE extraction wells	(screene	d 15-30	ft bg)(4-inch dia. PVC)						
	Drilling In Unconsolidated Soils -	-								
13.b	Without Soil And/Or GW	Consultant	DR25	Consultant Oversight	Ft	\$	1.50	150	\$	225.00
	Sampling									
	Drilling In Unconsolidated Soils -									
13.b	Without Soil And/Or GW	Consultant	DR30	Primary Mob/Demob	Site	\$	481.10	1	\$	481.10
	Sampling									
	Drilling In Unconsolidated Soils -									
13.e	Without Soil And/Or GW	Commodity	DR60	Drilling in Unconsolidated Soils	Ft	\$	11.40	150	\$	1,710.00
	Sampling									
14	Monitoring Well Installation	Consultant	MWI05	0 - 25 ft bgs	Ft	\$	3.70	125	\$	462.50
14	Monitoring Well Installation	Consultant	MWI10	26 - 75 ft bgs	Ft	\$	2.60	25	\$	65.00
14	Monitoring Well Installation	Commodity	MVVI15	2 inch PVC Casing	Ft	\$	15.90	150	\$	2,385.00
14	Monitoring Well Installation	Commodity	MWI20		Well	\$	140.60	5	\$	703.00
14	Monitoring Well Installation	Commodity	MVVI25	Mob/Demob	Site	\$	522.50		\$	-
15	Misc. Drilling Activities & Supplies		MD105		Mob/Demob	\$	917.50	1	\$	917.50
15	Misc. Drilling Activities & Supplies		MD I 10	Well Cover/flushmount	Each	\$	193.00	5	\$	965.00
15	Misc. Drilling Activities & Supplies		MDT25	Commodity Service Provider Per Diem (drilling and direct	Person	•		2	\$	387.20
45				pusii) Drivete litilitu leeste	F h	¢	193.60	_		
15	Wisc. Drilling Activities & Supplies			Private Utility Locate	⊨acn	\$ •	111.60	1	\$	111.60
20	Son Boring/Wonitoring Vvell Permits		SBIVIVVP05		Permit	Ъ	234.40	1	\$	234.40
31	Consultant Overnight Per Diem		COPDOS	Overnight	Night	\$	108.30	1	\$	108.30