

**Chittenden County Brownfields Program  
Site Nomination / Assistance Request Form**

*For information on types of assistance available and  
CCRPC's protocol for deciding if, and to what degree to assist a request, see:  
<http://www.ccrpcvt.org/our-work/economic-development/brownfields/>*

Site Name: Montpelier Granite Works, Inc.  
Site's Street Address/Town/Zip Code: 65 Granite Shed Lane  
Parcel Tax ID #: \_\_\_\_\_ Property Size (Acres): 1.7  
Zoning District: Riverfront  
Describe current use(s): Vacant now

Describe former use(s): Manufacturing plant for Granite

Are there plans for acquisition and/or redevelopment? ☒ Yes waiting on buyer ☐ No

**If yes, attach a separate one to two-page document describing the anticipated benefits of the redevelopment** such as housing units, commercial development, jobs, economic impact, recreation, etc. (see Site Evaluation Criteria at link above for the types of information to provide).

Have studies been conducted to identify or assess contamination? ☒ Yes ☐ No

If yes, please identify the title, author and date of the report, and if available, send us a PDF: \_\_\_\_\_

Johnson Company Phase II ESA, May 2018 & ECAA, August 2018

Potential contaminants include: ☒ Petroleum ☐ Other contaminants

What type(s) of site assessment or cleanup planning assistance are you seeking? Circle all that apply

☐ Environmental Site Assessment ☐ Phase II Environmental Site Assessment  
☐ Soil Monitoring during Construction ☐ Archeological Site Assessment / Recon  
☐ Historic Preservation issues ☒ Cleanup ☐ Corrective Action Planning  
Other Shallow Soil Vapor Investigation

**Property Owner Information:**

Name: Michelle Parker Signature: M Parker  
Mailing Address: \_\_\_\_\_  
Phone: 802-229-8565 Email: mparker@granitevalues.com

**Nomination Submitted By:**

Name or Office: CVRPC Date Submitted: Nov 7 2018  
Mailing Address: 29 Main Street, Suite 4, Montpelier, VT 05602  
Phone: 802.229.0389 Email: rock@cvregion.com

**Please Return Site Nomination Form (via PDF is preferred) to:**

Dan Albrecht, Senior Planner

Chittenden County Regional Planning Commission 110 West Canal St., Suite 202 Winooski, VT 05404

Phone: (802) 846-4490 Ext. \*29; Email: [dalbrecht@ccrpcvt.org](mailto:dalbrecht@ccrpcvt.org)

Brownfields Site Evaluation Criteria		
Project Name: Montpelier Granite Works		
Address/Project Location: 43 Granite Shed Lane, Montpelier VT 05602		
Applicant: Central Vermont Regional Planning Commission on behalf of Michele Parker (current owner)		
Reviewer: Emily Nosse-Leirer, CCRPC		
Required Characteristics	Possible Points	Scoring
Is the property owner willing to sign a Participation Agreement and Site Access	Yes = continue	Yes
Does the site meet DEC eligibility criteria for petroleum sites and/or EPA eligibility	No = Not eligible	Yes
Is the planned use consistent with current zoning?		Yes
Project Location (10 pts Total)		
Is the project located in Burlington or Winooski?	(Yes=2, No=0)	0
Is the project located in a Center, Enterprise, Metro, Suburban or Village Regional Planning Area (as identified in the most recently adopted regional plan)?	(Yes=2, No=0)	2
Is the project located within a designated state center? (Including areas with pending applications)	(Yes=2, No=0)	2
Does the project site have existing water, sewer, electric, transportation and/or natural gas infrastructure serving it?	(Yes=2, No=0)	2
Is the project located adjacent to another brownfields site?	(Yes=2, No=0)	2
Project Location Economic Conditions (5 pts Total)		
Is the project located in an area where the poverty rate is higher than the County-wide average?	Up to 5 points	0
Housing Potential (30 points total)		
Will site cleanup enable housing development in an area planned for high density housing or mixed-use development by the municipality?	Up to 10 points	0
Will site cleanup contribute to alleviating identified housing need as identified in relevant adopted municipal documents?		
Will site cleanup allow multiple housing units (in excess of what is already on site) to be built?	1/2 point per unit, 20 points maximum.	0
Commercial Potential (20 points total)		
Will site cleanup enable commercial development in an area planned for high density commercial or mixed-use development by the municipality and region?	Up to 20 points	15
Is the project a mixed-use project?		
Open Space and Recreation Potential (10 points total)		
Will site cleanup enable improvement or construction of a park in an area where it can be readily accessed by an underserved population?	Up to 10 points	5
Will site cleanup involve creating or improving open or recreational space as part of a		
Project Economic Impact (25 pts Total)		
Does the project have the potential to create or retain jobs?	1 point per FTE job, up to 10 points	5
If no direct jobs are created or retained, does the project lead to indirect job creation?	Up to 15 points	10
Does the project have other economic development benefits?		
Initial Score		43
100 points possible		
Bonus Categories		
If the project will enable housing unit construction, will a percentage of them be perm	1/2 point per percentage point affordable, up to 20 points.	0
Is the developer/property owner willing to pay for the Phase I or pay for part of the Phase II or Corrective Action Plan? CCRPC NOTE: CVRPC has spent a large amount of their brownfields money on this site.	Up to 15 points	15
Does proposed site cleanup mitigate impacts to surface water?	Up to 10 points	0
Additional Notes: The project is adjacent to a proposed extension of Montpelier's bike path along the Winooski River.		
Bonus Score		15
45 points possible		
TOTAL SCORE		58



## MEMO

Date: November 7, 2018

To: Dan Albrecht, CCRPC Senior Planner

From: Clare Rock, CVRPC Senior Planner

Re: Brownfields Funding Request: Granite Works, Montpelier, Vermont

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**Property Address:** Granite Works, 43 Granite Shed Lane, Montpelier VT 05602

**Type of Request:** Funding Type: Petroleum Brownfields Assessment Funds – DEC petrol eligibility attached

Proposed Investigation: Shallow Soil Vapor Investigation

Cost Estimate: \$15,196 – The Johnson Company Cost Estimate attached

**Site Description:** The site is approximately 1.7 acres and is comprised of an historic granite shed (the main manufacturing building), a warehouse, a canopy for outside storage of materials, small (0.04 acre) settling pond is located at the northeast corner of the property. Granite operations have ceased and the business operations along with the machinery and remaining inventory were moved to another granite shed in Barre. The buildings are vacant and the site is unutilized.

The site is located on Granite Shed Lane and is within the Montpelier Riverfront zoning district. The District includes land along Barre Street and Berlin Street on either side of the Winooski River. The land in this district is served by city water and sewer, a gridded street network and public transit. The district has historically been characterized by a mix of residential, commercial and industrial uses extending outward from downtown along the river. The purpose of this district is to encourage compact, higher-density infill development, particularly multi-family housing, within walking distance of downtown. This district is also intended to recognize the natural constraints and hazards created by the river corridor, and to encourage redevelopment of the riverfront as a public amenity and greenway corridor. The property is also included within Montpelier TIF District which demonstrates the City's desire to foster development and redevelopment of properties within the area.

This property was enrolled in CVRPC brownfields program, is petroleum eligible and has undergone a Phase I (not funded by CVRPC), Phase II, Supplemental Phase II, and an ECAA. CVRPC has invested ~\$78,000 of EPA brownfields funds in the project thus far. CVRPC has expended all available brownfield grant funds and therefore not provide further funds.

A prospective purchaser was planning on redeveloping the property for commercial use and enrolled in the BRELLA program. Yet due to recent financing complications the purchaser has withdrawn. To aid in the marketability of the property and at the advisement of VTDEC a Soil Vapor Investigation is being recommended now to better understand the potential risk (if any) of contaminated vapor intrusion into the building. The DEC site manager is Kim Cadwell.

The current owner (Michele Parker) is in the process of securing another prospective purchaser at this time. (Discussions are progressing with Connor Contracting.) In light of current events a redevelopment plan has not been defined, yet the owner is committed to transiting this site from a vacant former granite shed to a more productive use which will most likely include commercial redevelopment.

Upon the findings of the proposed Shallow Soil Vapor Investigation it is anticipated a prospective purchaser will be secured, and a redevelopment plan defined. It is possible the property owner/prospective purchaser may also be seeking funding for the development of a Corrective Action Plan.

The following Reports have been prepared by the Johnson Company under CVRPC brownfields grant, copies are available upon request:

- Phase II Environmental Site Assessment (includes supplemental investigation), May 2018
- Evaluation of Corrective Action Alternative, August 2018



State of Vermont  
Department of Environmental Conservation  
Waste Management & Prevention Division  
1 National Life Drive – Davis 1  
Montpelier, VT 05620-3704  
(802) 461-5857  
[Kimberly.Caldwell@vermont.gov](mailto:Kimberly.Caldwell@vermont.gov)

September 25, 2017

Dorrie Paar  
U.S. EPA – New England  
5 Post Office Square  
Boston, MA 02109-3912

RE: Petroleum Eligibility Determination  
Montpelier Granite Works  
43-65 Granite Shed Lane  
Montpelier, VT 05602

Dear Ms. Paar:

Based on my review of the information available in the state records and provided by the Central Vermont Regional Planning Commission (CVRPC), the property known as Montpelier Granite Works at 43-65 Granite Shed Lane, Montpelier, VT is eligible for petroleum funding as defined in the *FY 2017 Guidelines for Brownfields Assessment Grants*.

The following criteria were evaluated:

1. Site Description: Identify a.) the name of the site; b.) the address of the site; c.) whether this site is contaminated by petroleum or hazardous substances; d.) the operational history and current use(s) of the site; and e.) environmental concerns, if known, at the site.
  - a. **Site Name**: Montpelier Granite Works
  - b. **Address**: 43-65 Granite Shed Lane, Montpelier, VT 05602
  - c. **Site Contamination**: Petroleum contamination is suspected based on a Phase II Investigation Report (dated 6/15/17) from Wheeler Environmental Services (WES) and on petroleum-based products stored and utilized at the Site.
  - d. **Operational History and Current Use**: The site is currently used for Granite manufacturing and has been used as such for more than 123 years.
  - e. **Environmental Concerns**: The Phase II ESA by Wheeler Environmental Services identified elevated PID screening results from soil borings advanced in a storage area for drums of mineral spirits. These readings were indicative of a release to the environment.
2. Previous Assessments. Explain the phase of assessment, if any, that has been completed to date. Provide dates of the assessment(s).

Phase I ESA- Wheeler Environmental Services, LLC., February 2017  
Phase II ESA- Wheeler Environmental Services, LLC., June 2017



3. Areas of Concern. *Identify how the site became contaminated and, to the extent possible, describe the nature and extent of the contamination.*

Use of petroleum products may have resulted in on-site releases:

- Oil storage tank - Soil borings and PID screening around the fill pipe of the 6,000-gallon fuel oil AST indicate a potential release, possibly from the tank or from fill/transfer activities.
- Settling pond - A soil boring adjacent to the settling pond describes “oily globules and sheens” at the 8 to 12-foot interval.
- Main manufacturing shed/drum storage area and floor drain trench system – Elevated PID screening results indicate a release to the area. Nature and extent have not been defined.
- Shallow soil borings and sediment in the trench floor drain system were screened with a PID and the response indicated possible petroleum contamination. According to the WES Phase I;  
*“there are seven 55-gallon drums that either currently (two drums) or formerly contained mineral spirits stored in the main manufacturing area. There are several hundred feet of a floor trench system throughout the main manufacturing building. This trench carries the manufacturing process wastewater to a sump at the south end of the building, from which it is pumped into the settling pond. Given the oily globules found near the settling pond and the suspected release of the mineral spirits used in the manufacturing process.”*

4. Site Owner. *Identify the current and immediate past owner of the site.*

- a. Current owner: Montpelier Granite Works
- b. Immediate past owner: Pieces of the property were conveyed from different owners to Montpelier Granite Works as noted below. The deeds include a 1973 Plat excerpt of the property. These documents do not constitute a title examination. There may be more or fewer immediate past owners of portions of the property.
  - Russell Edson Sr. and Eleanore Edson, dba Northeast Granite Company (1998, Quit Claim Deed)
  - Steve Mureta and Ann Mureta (1970, Warranty Deed)
  - Alexander MacDuff (1967, Warranty Deed)

5. Acquisition of the Site. *Identify when and by what method the current owner acquired the property (e.g., purchase, tax foreclosure, donation, eminent domain)*

Montpelier Granite Works purchased portions of the property between ~1967-1998, as noted above.

6. No Responsible Party for the Site. *Identify whether the current and immediate past owner dispensed or disposed of petroleum or petroleum product, or exacerbated the existing petroleum-contamination at the site, and whether the current and immediate past owner took reasonable steps with regard to the contamination at the site.*

Montpelier Granite Works used mineral spirits in the manufacturing processes and conducted the manufacturing process in keeping with the historic nature of granite processing operations. Montpelier Granite Works operates the oil storage tank

7. Cleaned Up by a Person Not Potentially Liable. *Identify whether you (the applicant) dispensed or disposed of petroleum or petroleum product, or exacerbated the existing petroleum contamination at the site, and whether you took reasonable steps with regard to the contamination at the site.*

The Central Vermont Regional Planning Commission has never owned, managed, leased, or conducted activities or operations on the Site.

8. Relatively Low Risk. *Identify whether the site is of “relative low risk” compared to other petroleum or petroleum product-only contaminated sites in the state in which the site is located, including whether the site is receiving or using Leaking Underground Storage Tank (LUST) Trust fund monies.*

The site is “relative low risk” and is not receiving or using LUST trust fund monies.

9. Judgments, Orders, or Third Party Suits. *Provide information that no responsible party is identified for the site through, either:*
- A judgment rendered in a court of law or an administrative order that would require any person to assess, investigate, or clean up the site; or*
  - An enforcement action by federal or state authorities against any party that would require any person to assess, investigate, or clean up the site; or*
  - A citizen suit, contribution action or other third party claim brought against the current or immediate past owner, that would, if successful, require the assessment, investigation, or cleanup of the site.*

No judgments, enforcement actions, or third-party suits have been brought against any party.

10. Subject to RCRA. *Identify whether the site is subject to any order under section 9003(h) of the Solid Waste Disposal Act.*

The site is not subject to any order under section 9003(h) of the SWDA.

11. Subject to CERCLA. *Affirm that the site is a.) not listed or proposed for listing on the National Priorities List; b.) not subject to unilateral administrative orders, court orders, administrative orders on consent, or judicial consent decrees issued to or entered into by parties under CERCLA; and c.) not subject to the jurisdiction, custody, or control of the United State government.*

The site is not subject to CERCLA

12. Financial Viability of Responsible Parties. *For any current or immediate past owners identified as responsible for the contamination at the site, provide information regarding whether they have the financial capability to satisfy their obligations under federal or state law to assess, investigate or clean up the site.*

Montpelier Granite Works is no longer a viable business entity. The company had a minimal profit or experienced losses for the past three years. The company sold its business in March 2017 because the business was in decline, and it did not have the financial resources to make needed investments to continue operations. The business would have likely closed in 4-5 years without these investments. Funds from the business sale were used to pay the company’s pension liability for steel workers and to reimburse the new owner for prepaid expenses. It is unlikely Montpelier Granite Work would have the financial resources for an environmental investigation and potential cleanup.

Sincerely,



Kimberly Caldwell, Environmental Analyst  
Sites Management Section

- c: Bonnie Waninger, CVRPC  
Clare Rock, CVRPC  
Patricia Coppolino, VTDEC  
(via electronic mail)



October 16, 2018

(via email)

Michelle Parker  
Montpelier Granite Works  
65 Granite Shed Lane  
Montpelier, Vermont 05602

**Re: Cost Estimate to Shallow Soil Vapor Investigation  
Montpelier Granite Works  
JCO Project # 3-0368-14**

Dear Ms. Parker:

In response to your request and based on the conclusions of a stakeholder meeting on September 28, 2018 between the Vermont Department of Environmental Conservation (VTDEC), Central Vermont Regional Planning Commission (CVRPC), The Johnson Company (JCO), representatives from the City of Montpelier, and yourself (Michelle Parker), JCO is presenting you with the following Proposal for Soil Vapor Investigation services. The following is our proposed scope of work and cost estimate for conducting a Soil Vapor Investigation for the Montpelier Granite Works Site located at 43-65 Granite Shed Lane in Montpelier, Vermont (the Site, SMS# 2017-4714). JCO understands that the Soil Vapor Investigation is being conducted at the request of VTDEC and is intended to better understand the potential risk (if any) of contaminated vapor intrusion into the building. This scope of work and cost estimate does not include supplemental soil sampling to determine the nature and extent of polycyclic aromatic hydrocarbons (PAHs) at the Site.

JCO understands that Chittenden County Regional Planning Commission (CCRPC) may be willing to fund this investigation using their brownfield assessment grant for petroleum eligible sites. The VTDEC and EPA have determined that assessment related to the mineral spirits at the Site are indeed petroleum eligible costs.

## **1.0 BACKGROUND**

During a 2017/2018 Phase II Environmental Site Assessment (ESA) conducted by JCO, light non-aqueous phase liquid (LNAPL) was identified floating on the groundwater table under the northern portion of the Main Manufacturing Building near a former drum storage area. This LNAPL, likely a weathered mineral spirit, has the potential to impact soil gas below the building.





## **2.0 PROPOSED SCOPE OF WORK**

### **2.1 QAPP Development**

Assuming CCRPC (or another RPC) brownfield grant funding will fund this assessment, JCO will prepare a site-specific QAPP that will describe the objectives and methodologies of the proposed investigation. The site-specific QAPP will be developed in accordance with the VTDEC July 27, 2017 Investigation and Remediation of Contaminated Properties Rule (IRule) and in accordance with EPA 540-R-98-038, Quality Assurance Guidance for Conducting Brownfields Site Assessments. This QAPP will include detailed information pertaining to the sampling design and methods, including field and analytical procedures for the entire field investigation. The QAPP will be required to be submitted to EPA Region I for approval prior to conducting any subsurface investigation work. For cost saving purposes, we will request that the VTDEC and the EPA review the site-specific QAPP in lieu of a separate work plan. If it is determined Brownfield funding will not be used, JCO would develop a work plan for VTDEC review instead of a QAPP.

### **2.2 Proposed Scope of Work**

In order to determine if there are soil gas impacts below the building footprint, JCO proposes an investigation of soil vapor at the Site. This investigation will include the installation of eight soil vapor sampling points, three of which will be located in the soil/gravel area in the northern portion of the building immediately surrounding the LNAPL plume (monitoring well, MW-6). Five of the eight soil vapor sampling points will be installed through the concrete slab. JCO will install the sampling points using hand tools (hand auger and hammer drill). The soil vapor sampling points will be helium leak tested to determine if a proper seal was formed around the sample tubing to prevent short-circuiting of ambient air. The sample points will be allowed to equilibrate overnight. The following day, the soil vapor samples will be collected over an 8-hour duration. Considering the potential for a poor seal at the points installed in soil/gravel area, a lower flow rate is preferred, which can be established over a longer sample duration. The soil vapor samples will be sent to a laboratory for analysis of volatile organic compounds (VOCs) via EPA method TO-15. One duplicate sample will also be collected per the EPA and VTDEC Quality Assurance and Quality Control (QA/QC) requirements.

Analytical results of the soil vapor samples will be compared to the industrial VTDEC Vapor Intrusion Screening Values for Sub-slab Soil Gas (VISV-SSG). An exceedance of an industrial VISV-SSG would suggest that there is the potential for indoor air to be impacted by soil vapor to an extent that a possible risk might exist to future building occupants. This could possibly trigger a follow-up indoor air investigation in the building to determine if indoor air is indeed impacted. If it is determined that migration of the LNAPL vapor has impacted indoor air at concentrations exceeding the industrial VISV-SSG, then mitigation measures may be required unless a site-specific risk assessment is performed; based on restricted building usage, exposure risks may be acceptable under a limited use scenario. If active mitigation is preferred to support a potential redevelopment project, it may include some of the following actions:



- removal of the LNAPL (vapor source);
- removal of impacted soil (vapor source);
- sealing of the unfinished portion of the floor in the north end of the building;
- and/or installation of a soil vapor extraction system.

Institutional controls would mostly likely be required on the property under any of these options. These institutional controls may restrict reuse options and require some degree of ongoing operations and maintenance (i.e. deed restriction in the land records). Some of these alternatives are discussed in the JCO September 10, 2018 Evaluation of Corrective Action Alternatives (ECAA) report for Montpelier Granite Works.

### **2.3 Reporting**

Following completion of soil vapor investigation work and receipt of analytical data, a report describing the results of the investigation will be prepared. This report will include summaries of sample collection activities, results of field screening/field observations, result summary tables, laboratory analysis reports, Site and area maps, sample collection forms, and field notes. Data will be presented in tabular, graphical, and text forms as appropriate. The report will contain conclusions regarding the nature and extent of contamination at the Site, as well as recommendations for soil vapor management protocols in the context of the IRule. JCO's client will receive a first draft of this report for review. Comments and/or suggested changes will be addressed by JCO and a revised version of the draft investigation report will be forwarded electronically for EPA and VTDEC review.

### **2.4 Additional Consulting Support**

After the investigation report has been issued, JCO will summarize results and present findings at a Stakeholder meeting. In addition, JCO will be available to discuss 'next steps' of the project with VTDEC and Montpelier Granite Works when the project transitions into supplemental sampling and/or a corrective action planning phase. This proposal, scope, and cost estimate does not include revision to the JCO September 10, 2018 ECAA based on the soil vapor sampling results, preparation of a corrective action plan, or supplemental soil and groundwater sampling events.

## **3.0 PROJECT TIMELINE**

JCO anticipates that the field investigation will be completed within 3 weeks of receiving approval to proceed from VTDEC and EPA (i.e. a fully executed QAPP signature page). The DigSafe premark will be completed at least 48 business hours prior to the scheduled sampling date. The standard laboratory turn-around time for the analytical results is 10 business days. A draft investigation report will be prepared and submitted to the client within 30 days of receipt of the final laboratory analytical results. JCO will address comments and after approval, the investigation



report will be provided to VTDEC and EPA for comment. JCO will issue the final investigation report within 1-week of receiving regulatory comments (typically received within 30-days of draft submittal).

#### **4.0 ESTIMATED PROBABLE COST**

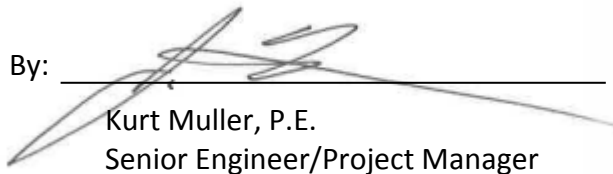
We propose to develop a site-specific Quality Assurance Project Plan (QAPP), conduct a soil vapor investigation, and provide follow-up environmental consulting support on an hourly rate basis, plus expenses, for a total estimated cost of **\$15,196**. A detailed cost estimate spreadsheet for this work is attached. This cost assumes electronic delivery of documents to stakeholders; however, hard copies of documents can be produced upon request at additional cost. Should additional time and/or expenses be required to complete this project, a detailed description of the circumstances leading to any needed additional effort, along with a proposed revised budget, will be prepared and submitted for review and approval prior to proceeding with any additional work.

JCO appreciates the opportunity to provide this proposal for conducting a soil vapor investigation at the Site. If you have any questions regarding this correspondence or require additional information, please do not hesitate to contact us.

Sincerely,

The Johnson Company, INC.

By: \_\_\_\_\_



Kurt Muller, P.E.  
Senior Engineer/Project Manager

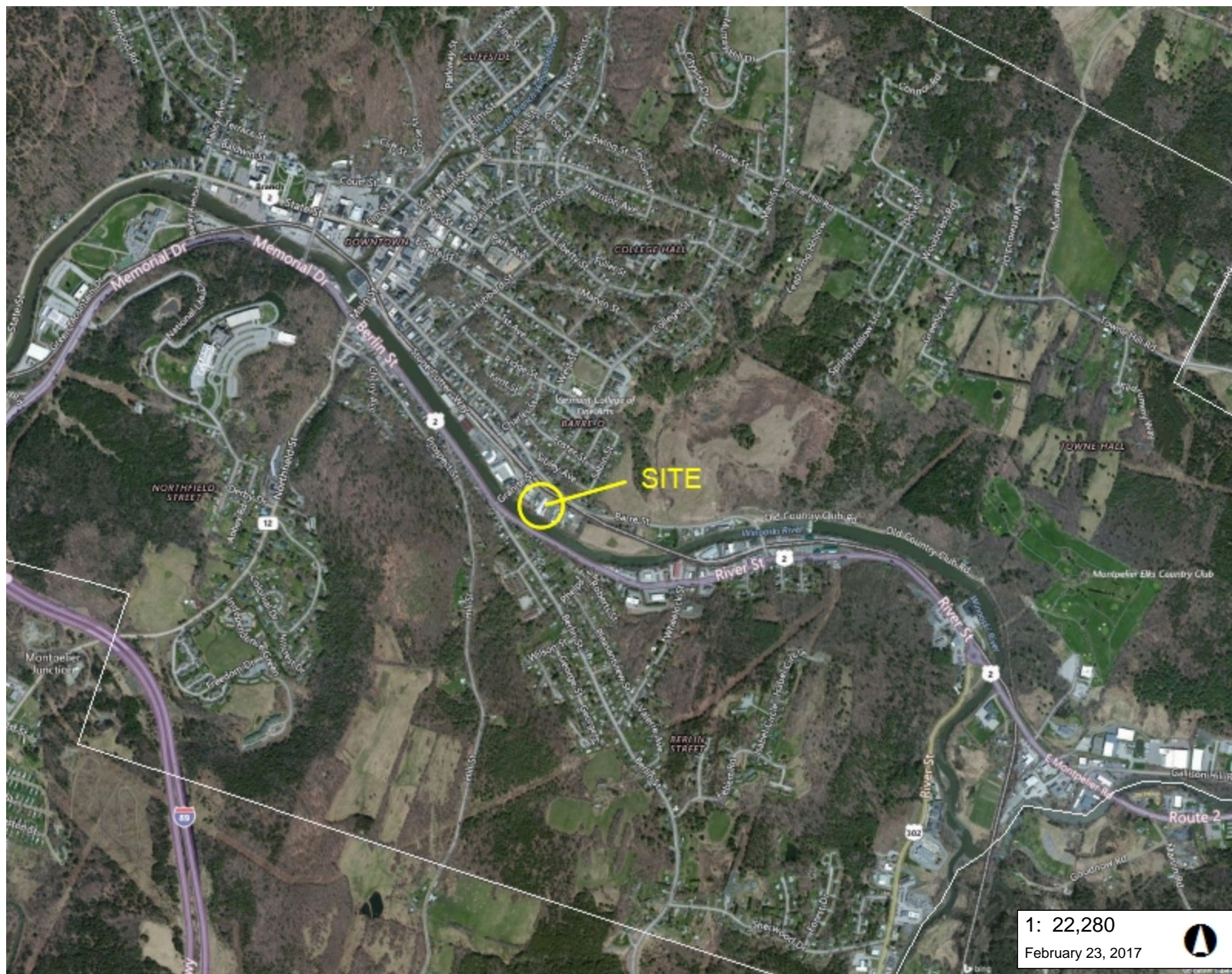
cc: Clare Rock, CVRPC  
Dan Albrecht and Emily Nosse-Leirer, CCRPC

Attachment: Cost Estimate


**Environmental Consulting Services - Soil Vapor Study**  
**Montpelier Granite Works, 65 Granite Shed Lane, Montpelier, VT**

Description	Billing Rate/Unit	# Units	Units	Est. Cost	Notes
<b><u>Project Management/QAPP/Workplan Preparation</u></b>					
<i>JCO Labor</i>					
Principal	\$186 hr.	1	hrs.	\$186	Principal-in-charge review
Project Manager	\$125 hr.	4	hrs.	\$500	Project Management, subcontracts, coordination of staff/subcontractors, correspondence with stakeholders, QAPP review
Project Engineer (Engineer IV)	\$97 hr.	8	hrs.	\$776	QAPP and cost est Preparation, Revision, Correspondence with Regulators
CADD/GIS	\$85 hr.	6	hrs.	\$510	Figure preparation
Project Scientist/Engineer II	\$85 hr.	24	hrs.	\$2,040	DRAFT QAPP and cost est Preparation, Revision
Communications fee	each	1	each	\$60	1.5% of JCO labor
<i>QAPP Preparation Subtotal</i>				<b>\$4,072</b>	
<b><u>Coordination with Subs, Digsafe Premark, Project Management</u></b>					
<i>JCO Labor</i>					
Project Manager	\$125 hr.	4	hrs.	\$500	Coordination and Management
Project Scientist/Engineer II	\$85 hr.	2.5	hrs.	\$213	DigSafe pre-mark, site walkover, utility clearance, travel to and from Site
Mileage	\$0.55 mile	2	miles	\$2	One round-trip to site for DigSafe Premark
Communications fee	each	1	each	\$11	1.5% of JCO labor
<i>Preparation Subtotal</i>				<b>\$725</b>	
<b><u>Soil Vapor Investigation</u></b>					
<i>JCO Labor</i>					
Project Manager	\$125 hr.	4	hrs.	\$500	Project Management, coordination of staff
Project Scientist/Engineer II	\$85 hr.	20	hrs.	\$1,700	Two-days: 1-day sample point installation and helium leak testing; 1-day sample collection and location survey
Senior Field Technician (Scientist V)	\$105 hr.	5	hrs.	\$525	Half-day assist vapor point installation
Mileage	\$0.55 mile	6	miles	\$4	Three roundtrips to site for Field Technicians
Communications fee	each	1	each	\$41	1.5% of JCO labor
<i>Field Equipment and Supplies</i>					
Misc. Equipment/Tools/PPE	\$50 day	2	day	\$100	
Meter (temp, pressure)	\$37 day	1	day	\$37	
Helium detector	\$95 day	1	day	\$95	Leak-test
Helium gas	\$160 each	1	each	\$160	Leak-test
Flowmeter	\$27 day	1	day	\$27	Shut-in test
Vacuum gage	\$50 day	1	day	\$50	Shut-in test and cannister readings
Peristaltic pump	\$35 day	1	day	\$35	Shut-in test
Electric Jackhammer	\$90 day	1	day	\$90	Soil vapor (not sub-slab)
Hand Auger w/ extensions	\$20 day	1	day	\$20	Soil vapor (not sub-slab)
Sampling apparatus w/fittings	\$100 each	3	samples	\$300	Soil vapor (not sub-slab)
Bentonite chips	\$18 bag	1	bag	\$18	Soil vapor (not sub-slab)
Sand	\$10 bag	1	bag	\$10	Soil vapor (not sub-slab)
VaporPin installation kit	\$15 day	1	day	\$15	Sub-slab soil vapor
VaporPin temporary use	\$15 pin	5	pins	\$75	Sub-slab soil vapor
Dedicated sample tubing/valves	\$100 sample	5	samples	\$500	Sub-slab soil vapor
Hammer drill w/ bit	\$60 day	1	day	\$60	Sub-slab soil vapor
Hydraulic cement	\$10 event	1	event	\$10	Sub-slab soil vapor
<i>Subcontractor Costs</i>					
Lab - analysis	\$215 each	9	samples	\$1,935	Lab analysis of 9 summas for VOC list via TO-15. Standard TAT (10 bus. days). (8 samples + 1 duplicate). Includes Summa can and regulator rental, batch certification.
JCO 10% General and Administrative Fee for Subcontractors				\$194	
<i>Investigation Subtotal</i>				<b>\$6,500</b>	
<b><u>Reporting</u></b>					
<i>JCO Labor</i>					
Principal	\$186 hr.	1	hrs.	\$186	Principal-in-Charge Review
Project Manager	\$125 hr.	4	hrs.	\$500	Report review and project management
Project Manager	\$125 hr.	3	hrs.	\$375	Follow-up correspondence to discuss implications, opinions, next steps, and VTDEC negotiation
Project Engineer (Engineer IV)	\$97 hr.	5	hrs.	\$485	Report preparation & preliminary review
Project Scientist/Engineer II	\$85 hr.	24	hrs.	\$2,040	Report preparation and revision
CADD/GIS	\$85 hr.	3	hrs.	\$255	Figure/graphic preparation
Communications fee	each	1	each	\$58	1.5% of JCO labor
<i>Reporting Subtotal</i>				<b>\$3,899</b>	
<b>TOTAL</b>				<b>\$15,196</b>	





## LEGEND

 Town Boundary

1: 22,280

February 23, 2017



1,132.0 0 566.00 1,132.0 Meters

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere

© Vermont Agency of Natural Resources

1" = 1857 Ft. 1cm = 223 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

## NOTES

Map created using ANR's Natural Resources Atlas





## LEGEND

☐ Town Boundary



1: 1,393

February 15, 2017



## NOTES

Map created using ANR's Natural Resources Atlas

71.0 0 36.00 71.0 Meters

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere

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1" = 116 Ft. 1cm = 14 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

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Warehouse building, with main manufacturing building to the left.



Main manufacturing building



View across Winooski River toward the rear of the site.