PRIVILEGED AND CONFIDENTIAL

MONTHLY STATUS REPORT
INTERIM CORRECTIVE MEASURES
RADIO MATERIALS CORPORATION RCRA FACILITY INVESTIGATION (RFI)

Report Date: November 15, 2010

Facility Name: Radio Materials Corporation (RMC)
1095 East Summit Street
Attica, Indiana 47918
U.S. EPA # IND 005 477 021

Submitted to: Dr. Bhooma Sundar, U.S. Environmental Protection Agency (U.S. EPA) Region 5

CRA Project #: 019190

Activity: Vapor Intrusion Mitigation, Soil Vapor Extraction (SVE), and Groundwater Interim Corrective Measures (ICMs)

Prepared by: Brad Lewis
Conestoga-Rovers & Associates (CRA)

Reporting Period: October 1 to October 31, 2010

Significant Events and/or Activities Performed During This Reporting Period:

- Submitted vapor mitigation system specifications for U.S. EPA's review and received approvals as follows:

Property Address	***Date Draft Submitted to U.S. EPA***	***Date Approved by U.S. EPA***
402 Baxter Street	10/15/10	10/18/10
417 Hollovy Street	10/15/10	10/18/10
418 Baxter Street	10/20/10	10/25/10

- Completed installation of vapor mitigation systems at the following residences:

Property Address	***VM System Completion Date***
900 Taylor Street	10/01/10
808 Park Avenue	10/14/10
1001 Reimer Road	10/21/10

- Conducted vapor mitigation system verification sampling at the following residences:

Property Address	*Date Sampled*
408 Hollovy Street	10/6/10
710 Summit Street	10/6/10
406 Hollovy Street	10/22/10
708 Park Avenue	10/22/10
419 Baxter Street	10/27/10
411 Hollovy Street	10/27/10

- Conducted indoor and subslab air sampling at the following residences:

Property Address	*Date Sampled*
407 Baxter Street	10/13/10
410 Baxter Street	10/13/10
706 Summit Street	10/13/10
408 West Street	10/13/10
417 Baxter Street	10/22/10

- Submitted the September 2010 monthly status report for the vapor intrusion mitigation ICM work to U.S. EPA on October 15, 2010
- Submitted the September 2010 federal Discharge Monitoring Report (DMR) and state Monthly Monitoring Report (MMR) as required by the National Pollutant Discharge Elimination System (NPDES) Permit No. IN006357 to the Indiana Department of Environmental Management (IDEM) on October 7, 2010
- Submitted a response on October 15, 2010 to U.S. EPA's August 31, 2010 comment letter on the Groundwater Interim Corrective Measures Design Plans and Specifications documents previously submitted to U.S. EPA on February 26, 2010
- Submitted revised Groundwater Interim Corrective Measures Design Plans and Specifications documents to U.S. EPA on October 15, 2010
- Provided U.S. EPA with list of owners of residences that still require access agreement to conduct vapor mitigation activities on October 19, 2010
- Compiled, reviewed, and validated analytical data from indoor air sampling activities and categorized residences based on the analytical data received consistent with the Vapor Intrusion Mitigation ICM Work Plan
- Continued attempts to contact residents and seek access to perform residential sampling, residential surveys, and installation of approved control measures where access has not yet been granted
- Conducted operation and maintenance (O&M) activities for the SVE systems (see Attachment A)

Anticipated Activities to be Performed During the Next Reporting Period (November 1 to November 30, 2010):

- Continue attempts to contact residents and seek access to perform residential sampling, residential surveys, and installation of appropriate control measures
- Compile, review, and validate analytical data from indoor air sampling activities and categorize residences based on the analytical data consistent with the Vapor Intrusion Mitigation ICM Work Plan
- Complete the design of vapor mitigation systems for 404 Baxter Street, 905 Summit Street, 704 Taylor Street, 706 Taylor Street, 806 Taylor Street, and other residences where access is granted
- Continue conducting residential monitoring consistent with the approved Vapor Mitigation ICM Work Plan
- Issue data transmittal letters to residents as analytical data becomes available
- Conduct operation and maintenance activities for the SVE systems
- Submit a monthly status report for October 2010

Available Analytical Data Generated During the Reporting Period:

- Validated analytical data generated during October 2010, which has not previously been transmitted to U.S. EPA, is provided in Attachment B

Resident Information Generated During the Reporting Period:

- Data transmittal letters sent to residents on October 26, 2010 are provided in Attachment C
- Final as-built documents for the vapor intrusion mitigation systems installed during this period are provided in Attachment D

Information Needed/Issues to be Addressed:

- None to report

Project Schedule Status:

- No changes to project schedule

Status/Changes to Key Project Personnel:

- No changes to key project personnel

In the event that clarification or further information is required, please contact Steven Wanner or Brad Lewis at (317) 291-7007

ATTACHMENT A

OCTOBER 2010 SVE OM&M STATUS REPORT

ATTACHMENT A

MONTHLY SOIL VAPOR EXTRACTION (SVE) SYSTEM INFORMATION
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

MONTH: OCTOBER 2010

SVE System	*Run Time During Month (hr)*	*Cumulative Run Time (hr)*	*Date Recorded*
SWMU 5 System	673	14,789	10/22/10
SWMU 11 System	706	13,569	10/22/10
SWMU 1/2 System	15	9,089	10/31/10

SVE System	*Zones*	*Average Blower Influent PID Reading (ppm)*	*Blower Effluent PID Reading (ppm)*	*Date Recorded*
SWMU 5 System	Blue/Green	9.0	N/D (1)	N/D (1)
	Red/Orange	4.5		
SWMU 11 System	All	2.2		
SWMU 1/2 System	All	N/D (2)	1.0	9/30/10

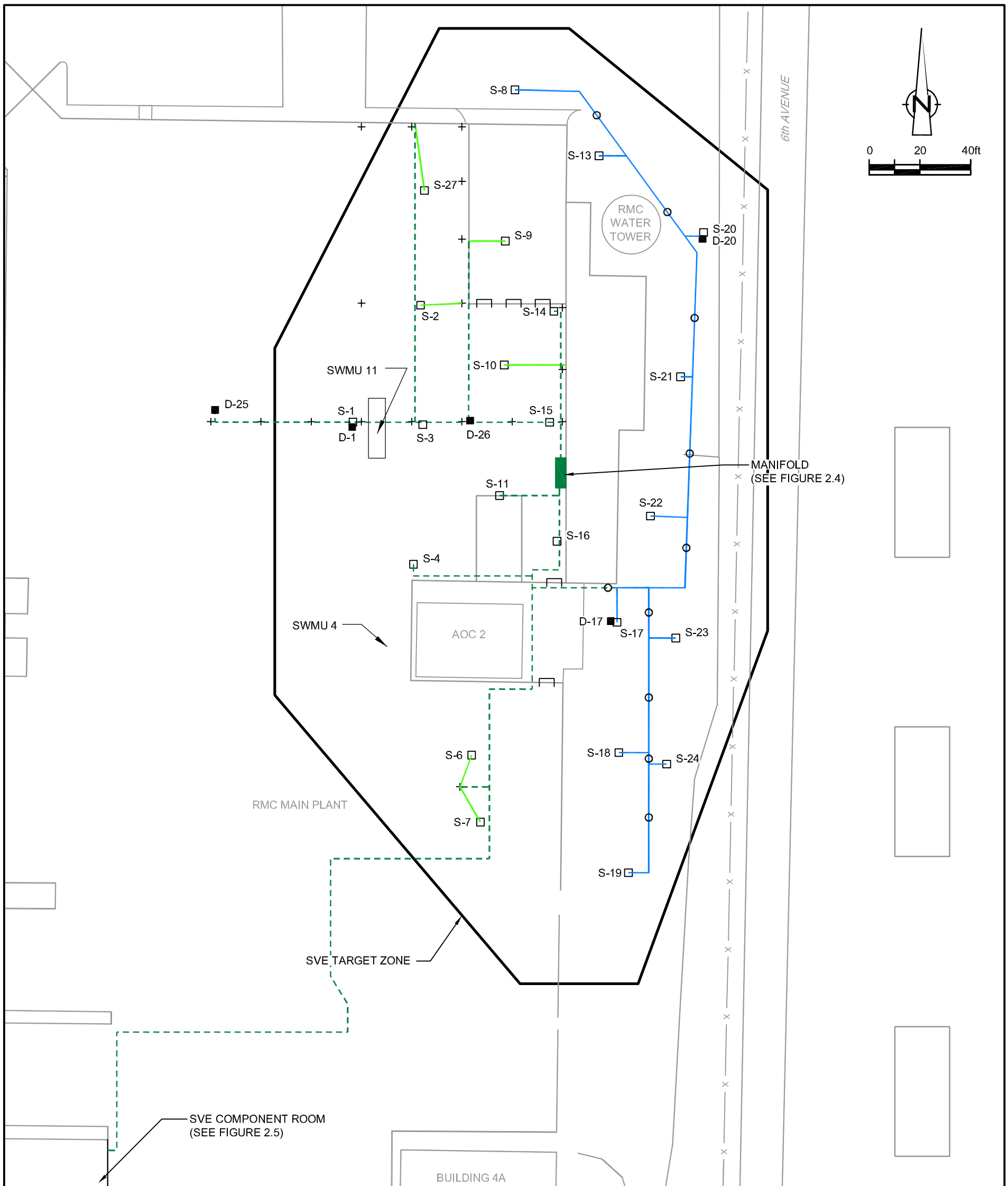
SVE System	*TCE Removal During Month (lb)*	*PCE Removal During Month (lb)*	*cDCE Removal During Month (lb)*
SWMU 5 System	11	7	2
SWMU 11 System	4	11	2
SWMU 1/2 System	0.1	1	0.02
Monthly Totals	15	19	4

SVE System	*Cumulative TCE Removal Estimate (ton)*	*Cumulative PCE Removal Estimate (ton)*	*Cumulative cDCE Removal Estimate (ton)*
SWMU 5 System	3.1	0.6	0.4
SWMU 11 System	0.4	1.5	0.1
SWMU 1/2 System	0.04	0.4	0.04
Cumulative Totals	**3.5**	**2.5**	**0.5**

Significant Operation, Maintenance & Monitoring Activities/Notes:

1. During October 2010, the SWMU 5 System (HB 1300 Blower System) was extracting from Zone 1 (Red) and Zone 5 (Orange) on 10/1, 10/8 to 10/15, and 10/22 to 10/29 and from Zone 3 (Blue) and Zone 4 (Green) from 10/1 to 10/8, 10/15 to 10/22, and 10/29 to 10/31. The zones are depicted on the attached figure 2.7.
2. During October 2010, the SWMU 11 System (HB 950 Blower System) was targeted to all indoor and outdoor wells as depicted on the attached figure 2.2.
3. Approximately 1,800 gallons of condensate/knockout water per week was discharged to the City of Attica sewer system, as needed. This complies with the City of Attica's request not to exceed 2,000 gallons per week. All water was generated by the SWMU 5 and SWMU 11 systems.
4. The SWMU 1/2 System ran seldom during October 2010 due to electrical and control issues. Troubleshooting and repairs are scheduled for the week of November 1, 2010.

N/D (1) - Not determined as the inline effluent PID meter needs repairs/cleaning.
N/D (2) - Not determined as the only inline PID meter is installed in the effluent line.
PCE - Tetrachloroethene
TCE - Trichloroethene
cDCE - cis-1,2-Dichloroethene
VOC - Volatile Organic Compound



NOTES:

1.) 23 SHALLOW WELLS WITH SINGLE PIPING RUNS INSIDE BUILDING TO MANIFOLDS AND A COMBINED PIPING RUN (i.e., 1 HEADER PIPE FOR DEEP AND SHALLOW WELLS) OUTSIDE BUILDING.

2.) 5 DEEP WELLS WITH SINGLE PIPING RUNS INSIDE BUILDING TO MANIFOLDS AND A COMBINED PIPING RUN (i.e., 1 HEADER PIPE FOR DEEP AND SHALLOW WELLS).

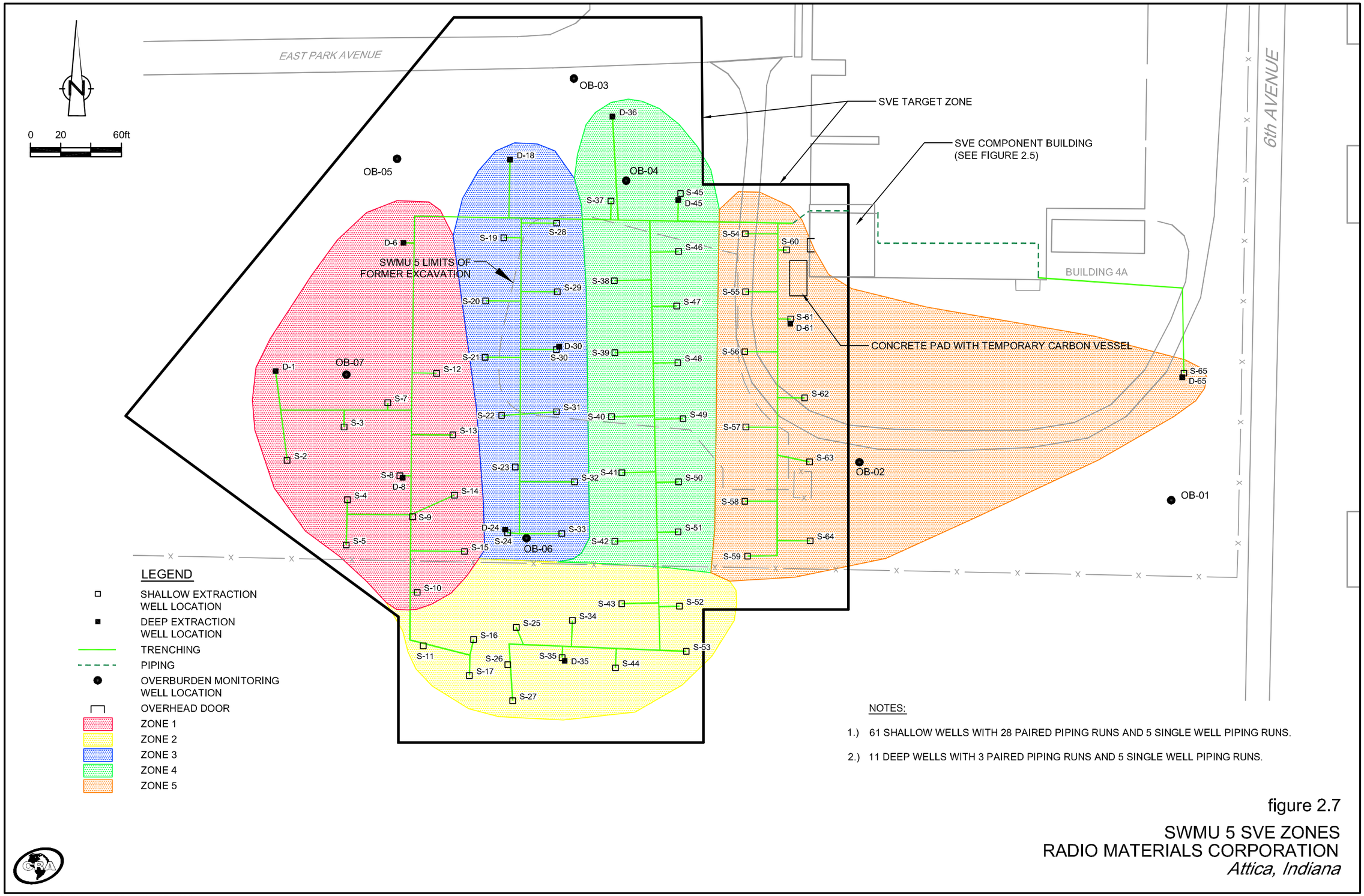
LEGEND

- SHALLOW EXTRACTION WELL LOCATION
- DEEP EXTRACTION WELL LOCATION
- CONCRETE CUTTING
- OVERHEAD PIPING
- OUTDOOR HEADER PIPING/TRENCHED
- COLUMN LOCATION (APPROXIMATE)
- OVERHEAD DOOR
- MONITORING POINTS

figure 2.2

AS-BUILT OF SVE WELLS AND TRENCHES IN SWMU 11/AOC 2
RADIO MATERIALS CORPORATION
Attica, Indiana

19190-10(020)GN-WA002 FEB 10/2010



NOTES:

1.) 61 SHALLOW WELLS WITH 28 PAIRED PIPING RUNS AND 5 SINGLE WELL PIPING RUNS.

2.) 11 DEEP WELLS WITH 3 PAIRED PIPING RUNS AND 5 SINGLE WELL PIPING RUNS.

figure 2.7

SWMU 5 SVE ZONES
RADIO MATERIALS CORPORATION
Attica, Indiana

19190-10(020)GN-WA006 OCT 07/2009

ATTACHMENT B

OCTOBER 2010 ANALYTICAL DATA SUMMARY

TABLE B.1

OCTOBER 2010 AMBIENT AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Location:		*AA-26*	*AA-26*	*AA-40*	*AA-40*	*AA-40*	*AA-40*
Sample ID:		*AA-092410-NH-002*	*AA-092910-NH-001*	*AA-092210-NH-001*	*AA-100610-MG-001*	*AA-101310-MG-001*	*AA-102210-MG-001*
Sample Date:		*9/24/2010*	*9/29/2010*	*9/22/2010*	*10/6/2010*	*10/13/2010*	*10/22/2010*
Parameters	*Units*						
Volatile Organic Compounds							
1,1-Dichloroethene	ug/m3	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	0.77	ND (0.056)	0.066	ND (0.056)	0.064	ND (0.055)
Tetrachloroethene	ug/m3	0.89	0.38	ND (0.14)	ND (0.14)	0.30	0.18
trans-1,2-Dichloroethene	ug/m3	ND (0.055)	ND (0.056)	ND (0.056)	ND (0.056)	ND (0.056)	ND (0.055)
Trichloroethene	ug/m3	3.8	0.25	0.21	0.14	0.31	0.15
Vinyl chloride	ug/m3	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)

TABLE B.2

OCTOBER 2010 INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*407 Baxter St.*	*410 Baxter St.*	*410 Baxter St.*	*410 Baxter St.*	*417 Baxter St.*	*417 Baxter St.*
Address Location:		*Main Level*	*Basement*	*Main Floor*	*Second Floor*	*Basement*	*Main Floor*
Sample ID:		*IA-101310-MG-004*	*IA-101310-MG-011*	*IA-101310-MG-010*	*IA-101310-MG-009*	*IA-102210-MG-003*	*IA-102210-MG-004*
Sample Date:		*10/13/2010*	*10/13/2010*	*10/13/2010*	*10/13/2010*	*10/22/2010*	*10/22/2010*
Parameters	*Units*						
Volatile Organic Compounds							
1,1-Dichloroethene	ug/m3	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	0.061	0.092	0.11	0.098	ND (0.056)	ND (0.055)
Tetrachloroethene	ug/m3	0.72	0.95	0.85	0.80	3.0	2.3
trans-1,2-Dichloroethene	ug/m3	ND (0.056)	ND (0.055)	ND (0.055)	ND (0.055)	ND (0.056)	ND (0.055)
Trichloroethene	ug/m3	0.52	0.72	0.80	0.74	0.30	0.29
Vinyl chloride	ug/m3	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)

TABLE B.2

OCTOBER 2010 INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*417 Baxter St.*	*908 Derrick St.*	*406 Hollovy St.*	*408 Hollovy St.*	*701 Park Ave*	*701 Park Ave*
Address Location:		*Second Floor*	*Main Floor*	*Main Level*	*Main Level*	*Basement*	*Main Level*
Sample ID:		*IA-102210-MG-005*	*IA-092210-NH-006*	*IA-102210-MG-006*	*IA-100610-MG-004*	*IA-092210-NH-003*	*IA-092210-NH-004*
Sample Date:		*10/22/2010*	*9/22/2010*	*10/22/2010*	*10/6/2010*	*9/22/2010*	*9/22/2010*
Parameters	*Units*						
Volatile Organic Compounds							
1,1-Dichloroethene	ug/m3	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	ND (0.055)	0.085	ND (0.055)	ND (0.055)	0.14	0.15
Tetrachloroethene	ug/m3	2.3	0.23	0.32	0.30	0.45	0.26
trans-1,2-Dichloroethene	ug/m3	ND (0.055)	ND (0.056)	ND (0.055)	ND (0.055)	ND (0.056)	ND (0.056)
Trichloroethene	ug/m3	0.29	0.28	0.19	0.17	0.89	0.67
Vinyl chloride	ug/m3	ND (0.013)	0.013	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)

TABLE B.2

OCTOBER 2010 INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*701 Park Ave*	*705 Park Ave*	*705 Park Ave*	*708 Park Ave*	*708 Park Ave*	*800 Park Ave*
Address Location:		*Second Level*	*Basement*	*Main Level*	*Basement*	*Main Level*	*Basement*
Sample ID:		*IA-092210-NH-005*	*IA-092410-NH-008*	*IA-092410-NH-009*	*IA-102210-MG-001*	*IA-102210-MG-002*	*IA-092910-NH-004*
Sample Date:		*9/22/2010*	*9/24/2010*	*9/24/2010*	*10/22/2010*	*10/22/2010*	*9/29/2010*
Parameters	*Units*						
Volatile Organic Compounds							
1,1-Dichloroethene	ug/m3	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	ND (0.056)	0.096	0.14	0.068	0.066	0.17
Tetrachloroethene	ug/m3	0.37	0.19	0.22	2.0	0.90	4.3
trans-1,2-Dichloroethene	ug/m3	ND (0.056)	ND (0.056)	ND (0.055)	ND (0.055)	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	0.18	0.51	0.66	0.87	0.56	1.1
Vinyl chloride	ug/m3	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)

TABLE B.2

OCTOBER 2010 INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*800 Park Ave*	*800 Park Ave*	*804 Park Ave*	*804 Park Ave*	*806 Park Ave*	*806 Park Ave*
Address Location:		*Main Level*	*Second Level*	*Basement*	*Main Level*	*Basement*	*Main Level*
Sample ID:		*IA-092910-NH-005*	*IA-092910-NH-006*	*IA-092210-NH-001*	*IA-092210-NH-002*	*IA-092910-NH-001*	*IA-092910-NH-002*
Sample Date:		*9/29/2010*	*9/29/2010*	*9/22/2010*	*9/22/2010*	*9/29/2010*	*9/29/2010*
Parameters	*Units*						
Volatile Organic Compounds							
1,1-Dichloroethene	ug/m3	0.030	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	0.18	0.15	0.59	0.53	0.16	0.16
Tetrachloroethene	ug/m3	13	1.4	2.8	1.9	0.57	0.54
trans-1,2-Dichloroethene	ug/m3	ND (0.056)	ND (0.055)	ND (0.055)	ND (0.055)	ND (0.055)	ND (0.056)
Trichloroethene	ug/m3	1.0	0.82	3.1	2.5	0.98	0.91
Vinyl chloride	ug/m3	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)

TABLE B.2

OCTOBER 2010 INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*806 Park Ave*	*706 Summit St.*	*706 Summit St.*	*706 Summit St.*	*710 Summit St.*	*1106 Taylor*
Address Location:		*Main Level*	*Basement*	*Main Level*	*Second Level*	*Main Level*	*Main Level*
Sample ID:		*IA-092910-NH-003*	*IA-101310-MG-001*	*IA-101310-MG-002*	*IA-101310-MG-003*	*IA-100610-MG-001*	*IA-092410-NH-007*
Sample Date:		*9/29/2010*	*10/13/2010*	*10/13/2010*	*10/13/2010*	*10/6/2010*	*9/24/2010*
		(Duplicate)					
Parameters	*Units*						
Volatile Organic Compounds							
1,1-Dichloroethene	ug/m3	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	0.17	0.10	0.12	0.11	ND (0.056)	ND (0.056)
Tetrachloroethene	ug/m3	0.59	0.66	0.60	0.57	0.40	0.40
trans-1,2-Dichloroethene	ug/m3	ND (0.056)	ND (0.055)	ND (0.055)	ND (0.055)	ND (0.056)	ND (0.056)
Trichloroethene	ug/m3	1.0	0.74	0.81	0.78	0.29	0.050
Vinyl chloride	ug/m3	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)

TABLE B.2

OCTOBER 2010 INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*408 West*	*408 West*	*408 West*
Address Location:		*Basement*	*Main Level*	*Main Level*
Sample ID:		*IA-101310-MG-008*	*IA-101310-MG-006*	*IA-101310-MG-007*
Sample Date:		*10/13/2010*	*10/13/2010*	*10/13/2010*
				(Duplicate)
Parameters	*Units*			
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	0.069	0.068	0.075
Tetrachloroethene	ug/m3	0.79	0.68	0.69
trans-1,2-Dichloroethene	ug/m3	ND (0.055)	ND (0.055)	ND (0.056)
Trichloroethene	ug/m3	0.86	0.54	0.54
Vinyl chloride	ug/m3	ND (0.013)	ND (0.013)	ND (0.013)

TABLE B.3

OCTOBER 2010 SUBSLAB ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*408 Hollovy St.*	*701 Park Ave*	*705 Park Ave*	*708 Park Ave*	*800 Park Ave*
Address Location:		*Probe*	*Probe*	*Probe*	*Probe*	*Sub Slab*
Sample ID:		*GU-100610-MG-001*	*GU-092210-NH-002*	*GU-092410-NH-003*	*GU-102210-MG-001*	*GU-092910-NH-003*
Sample Date:		*10/6/2010*	*9/22/2010*	*9/24/2010*	*10/22/2010*	*9/29/2010*
Parameters	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethene	ug/m3	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)
Isopropyl alcohol	ug/m3	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
Tetrachloroethene	ug/m3	ND (14)	ND (14)	ND (14)	52	ND (14)
trans-1,2-Dichloroethene	ug/m3	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)
Trichloroethene	ug/m3	ND (11)	130	ND (11)	ND (11)	ND (11)
Vinyl chloride	ug/m3	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE B.3

OCTOBER 2010 SUBSLAB ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*804 Park Ave*	*806 Park Ave*	*806 Park Ave*	*706 Summit St.*	*706 Summit St.*
Address Location:		*Probe*	*North Probe*	*South Probe*	*Probe*	*Probe*
Sample ID:		*GU-092210-NH-001*	*GU-092910-NH-001*	*GU-092910-NH-002*	*GU-101310-MG-001*	*GU-101310-MG-002*
Sample Date:		*9/22/2010*	*9/29/2010*	*9/29/2010*	*10/13/2010*	*10/13/2010*
						(Duplicate)
Parameters	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethene	ug/m3	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)
Isopropyl alcohol	ug/m3	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
Tetrachloroethene	ug/m3	16	260	ND (14)	ND (14)	ND (14)
trans-1,2-Dichloroethene	ug/m3	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)	ND (7.9)
Trichloroethene	ug/m3	ND (11)	89	ND (11)	ND (11)	ND (11)
Vinyl chloride	ug/m3	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)

TABLE B.4

OCTOBER 2010 CRAWL SPACE ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:		*407 Baxter St.*	*908 Derrick St.*	*1106 Taylor*
Address Location:		*Crawl Space*	*Crawl Space*	*Crawl Space*
Sample ID:		*IA-101310-MG-005*	*AC-092210-NH-001*	*AC-092410-NH-002*
Sample Date:		*10/13/2010*	*9/22/2010*	*9/24/2010*
Parameters	*Units*			
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	ND (0.020)	ND (0.019)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	ND (0.056)	0.089	ND (0.056)
Tetrachloroethene	ug/m3	0.97	0.21	ND (0.14)
trans-1,2-Dichloroethene	ug/m3	ND (0.056)	ND (0.053)	ND (0.056)
Trichloroethene	ug/m3	0.67	0.29	0.044
Vinyl chloride	ug/m3	ND (0.013)	ND (0.012)	0.028

ATTACHMENT C

DATA TRANSMITTAL LETTERS
TRANSMITTED TO RESIDENTS IN OCTOBER 2010

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Betty Henry
501 6th Street
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Ms. Henry,

The purpose of this letter is to provide you with the most recent sampling results for your residence located at 501 6th Street in Attica, Indiana. A summary of the indoor air sampling results for the residence is provided in Table 1.

The indoor air sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air results for the samples collected in September 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. Additionally, the results indicate an indoor air source of tetrachloroethene (PCE) from the main floor of your residence is possible. The laboratory report for the indoor air samples collected from your residence is provided in Attachment A.

The analytes listed in Table 1 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***501 6th***	***501 6th***	***501 6th***
Sample Location:			***Basement***	***Main Level***	***Second Level***
Sample ID:			***IA-091010-MG-001***	***IA-091010-MG-002***	***IA-091010-MG-003***
Sample Date:			***9/10/2010***	***9/10/2010***	***9/10/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***			
Volatile Organic Compounds					
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	ND (0.055)	0.058	ND (0.055)
Tetrachloroethene	ug/m3	4.1	0.80	2.1	0.99
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.52	0.42	0.057
Vinyl chloride	ug/m3	2.8	ND (0.013)	ND (0.013)	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0104 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: Reported:	09/14/10 10:00 09/17/10 14:28

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0104-01 (IA-091010-MG-001 - Air)						**Sampled: 09/10/10 12:50**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 01:33	MSD	DLK	10I0124
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 01:33	MSD	DLK	10I0124
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/15/10 01:33	MSD	DLK	10I0124
Tetrachloroethene	**0.80**		ug/m3	0.14	1.0	09/15/10 01:33	MSD	DLK	10I0124
Trichloroethene	**0.52**		ug/m3	0.027	1.0	09/15/10 01:33	MSD	DLK	10I0124
Vinyl chloride	ND		ug/m3	0.013	1.0	09/15/10 01:33	MSD	DLK	10I0124
Surr: 4-Bromofluorobenzene (70-130%)	*112 %*					09/15/10 01:33	MSD	DLK	10I0124
Surr: 1,2-Dichloroethane-d4 (70-130%)	*104 %*					09/15/10 01:33	MSD	DLK	10I0124
Surr: Toluene-d8 (70-130%)	*90 %*					09/15/10 01:33	MSD	DLK	10I0124

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0104 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: Reported:	09/14/10 10:00 09/17/10 14:28

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0104-02 (IA-091010-MG-002 - Air)						**Sampled: 09/10/10 12:48**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.058**		ug/m3	0.055	1.0	09/15/10 22:11	MSD	DLK	10I0125
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 22:11	MSD	DLK	10I0125
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/15/10 22:11	MSD	DLK	10I0125
Tetrachloroethene	**2.1**		ug/m3	0.14	1.0	09/15/10 22:11	MSD	DLK	10I0125
Trichloroethene	**0.42**		ug/m3	0.027	1.0	09/15/10 22:11	MSD	DLK	10I0125
Vinyl chloride	ND		ug/m3	0.013	1.0	09/15/10 22:11	MSD	DLK	10I0125
Surr: 4-Bromofluorobenzene (70-130%)	*100 %*					09/15/10 22:11	MSD	DLK	10I0125
Surr: 1,2-Dichloroethane-d4 (70-130%)	*100 %*					09/15/10 22:11	MSD	DLK	10I0125
Surr: Toluene-d8 (70-130%)	*88 %*					09/15/10 22:11	MSD	DLK	10I0125

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0104 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: Reported:	09/14/10 10:00 09/17/10 14:28

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0104-03 (IA-091010-MG-003 - Air)						**Sampled: 09/10/10 12:53**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 03:03	MSD	DLK	10I0124
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 03:03	MSD	DLK	10I0124
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/15/10 03:03	MSD	DLK	10I0124
Tetrachloroethene	**0.99**		ug/m3	0.14	1.0	09/15/10 03:03	MSD	DLK	10I0124
Trichloroethene	**0.057**		ug/m3	0.027	1.0	09/15/10 03:03	MSD	DLK	10I0124
Vinyl chloride	ND		ug/m3	0.013	1.0	09/15/10 03:03	MSD	DLK	10I0124
Surr: 4-Bromofluorobenzene (70-130%)	*101 %*					09/15/10 03:03	MSD	DLK	10I0124
Surr: 1,2-Dichloroethane-d4 (70-130%)	*105 %*					09/15/10 03:03	MSD	DLK	10I0124
Surr: Toluene-d8 (70-130%)	*99 %*					09/15/10 03:03	MSD	DLK	10I0124

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Kyle Sichts
406 Baxter Street
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Mr. Sichts,

The purpose of this letter is to provide you with the sampling results for your residence located at 406 Baxter Street in Attica, Indiana. A summary of the indoor air sampling results for your residence is provided in Table 1. Table 2 provides a summary of the crawlspace air sampling results for your residence.

The indoor air and crawlspace air sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air results for the samples collected in August 2010 indicate that one compound, tetrachloroethene (PCE), was detected above U.S. EPA-approved action levels. The crawlspace air results for the sample collected in September 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. Additionally, the low concentration of PCE in the crawlspace air relative to the higher concentration in the indoor air sample, suggests a possible indoor air source for this compound. The laboratory reports for the indoor air and crawlspace air samples collected from your residence are provided in Attachment A.

The analytes listed in Tables 1 and 2 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***406 Baxter St.***
Sample Location:			***Main Level***
Sample ID:			***IA-090310-MG-001***
Sample Date:			***9/3/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***	
Volatile Organic Compounds			
1,1-Dichloroethene	ug/m3	200	0.12
cis-1,2-Dichloroethene	ug/m3	60	ND (0.055)
Tetrachloroethene	ug/m3	4.1	6.5
trans-1,2-Dichloroethene	ug/m3	60	0.13
Trichloroethene	ug/m3	12.2	0.56
Vinyl chloride	ug/m3	2.8	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

TABLE 2

CRAWLSPACE AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:	***406 Baxter St.***
Sample Location:	***Crawl Space***
Sample ID:	***AC-090310-MG-001***
Sample Date:	***9/3/2010***

Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***	
Volatile Organic Compounds			
1,1-Dichloroethene	ug/m3	200	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	ND (0.055)
Tetrachloroethene	ug/m3	4.1	0.68
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)
Trichloroethene	ug/m3	12.2	0.12
Vinyl chloride	ug/m3	2.8	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0053 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-01 (IA-090310-MG-001 - Air)						**Sampled: 09/03/10 11:30**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/09/10 10:53	MSD	DLK	10I0089
trans-1,2-Dichloroethene	**0.13**		ug/m3	0.055	1.0	09/09/10 10:53	MSD	DLK	10I0089
1,1-Dichloroethene	**0.12**		ug/m3	0.020	1.0	09/09/10 10:53	MSD	DLK	10I0089
Tetrachloroethene	**6.5**		ug/m3	0.14	1.0	09/09/10 10:53	MSD	DLK	10I0089
Trichloroethene	**0.56**		ug/m3	0.027	1.0	09/09/10 10:53	MSD	DLK	10I0089
Vinyl chloride	ND		ug/m3	0.013	1.0	09/09/10 10:53	MSD	DLK	10I0089
Surr: 4-Bromofluorobenzene (70-130%)	*97 %*					09/09/10 10:53	MSD	DLK	10I0089
Surr: 1,2-Dichloroethane-d4 (70-130%)	*101 %*					09/09/10 10:53	MSD	DLK	10I0089
Surr: Toluene-d8 (70-130%)	*97 %*					09/09/10 10:53	MSD	DLK	10I0089

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: Project: Project Number:	LTI0053 RMC / Attica, Indiana 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-09 (AC-090310-MG-001 - Air)						**Sampled: 09/03/10 11:31**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/09/10 14:51	MSD	DLK	10I0089
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/09/10 14:51	MSD	DLK	10I0089
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/09/10 14:51	MSD	DLK	10I0089
Tetrachloroethene	**0.68**		ug/m3	0.14	1.0	09/09/10 14:51	MSD	DLK	10I0089
Trichloroethene	**0.12**		ug/m3	0.027	1.0	09/09/10 14:51	MSD	DLK	10I0089
Vinyl chloride	ND		ug/m3	0.013	1.0	09/09/10 14:51	MSD	DLK	10I0089
Surr: 4-Bromofluorobenzene (70-130%)	*100 %*					09/09/10 14:51	MSD	DLK	10I0089
Surr: 1,2-Dichloroethane-d4 (70-130%)	*90 %*					09/09/10 14:51	MSD	DLK	10I0089
Surr: Toluene-d8 (70-130%)	*100 %*					09/09/10 14:51	MSD	DLK	10I0089

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Mona McDougal
c/o Marvin and Nancy Osborne Estate
414 Baxter Street
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Ms. McDougal,

The purpose of this letter is to provide you with the most recent sampling results for your residence located at 414 Baxter Street in Attica, Indiana. A summary of the indoor air sampling results for your residence is provided in Table 1. A summary of subslab soil vapor sampling results for your residence is provided in Table 2.

The indoor air and subslab soil vapor sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air results for samples collected in August 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. One compound, tetrachloroethene (PCE), was detected above U.S. EPA-approved action levels in the subslab soil vapor sample collected in August 2010. The laboratory reports for the indoor air and subslab soil vapor samples collected from your residence are provided in Attachment A.

The analytes listed in Table 1 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***414 Baxter St.***	***414 Baxter St.***	***414 Baxter St.***
Sample Location:			***Basement***	***Main Floor***	***Main Floor***
Sample ID:			***IA-082510-MG-001***	***IA-082510-MG-002***	***IA-082510-MG-003***
Sample Date:			***8/25/2010***	***8/25/2010***	***8/25/2010***
		U.S. EPA-approved			***(Duplicate)***
Parameters	***Units*** [1]	***Action Levels***			
Volatile Organic Compounds					
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	0.14	0.12	0.12
Tetrachloroethene	ug/m3	4.1	1.9 J	1.9 J	2.1
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	12.2	1.1	1.0	1.1
Vinyl chloride	ug/m3	2.8	0.061	ND (0.013)	0.014

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

J - Estimated

TABLE 2

SUBSLAB SOIL VAPOR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***414 Baxter St.***	***414 Baxter St.***
Sample Location:			***East Probe***	***West Probe***
Sample ID:			***GU-082510-MG-002***	***GU-082510-MG-001***
Sample Date:			***8/25/2010***	***8/25/2010***
Parameters	***Units*** [1]	***U.S. EPA-Approved Action Levels***		
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	2,000	ND (7.9)	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	600	ND (7.9)	ND (7.9)
Isopropyl alcohol	ug/m3	NS[2]	ND (25)	ND (25)
Tetrachloroethene	ug/m3	41	360	260
trans-1,2-Dichloroethene	ug/m3	600	ND (7.9)	ND (7.9)
Trichloroethene	ug/m3	122	30	23
Vinyl chloride	ug/m3	28	ND (10)	ND (10)

Notes

[1] ug/m3 - micrograms per cubic meter

[2] NS - No standard for this analyte that is used as a tracer gas during sampling

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-01 (IA-082510-MG-001 - Air)						**Sampled: 08/25/10 11:16**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.14**	I	ug/m3	0.055	1.0	09/04/10 03:32	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND	I	ug/m3	0.055	1.0	09/04/10 03:32	MSD	DLK	10I0088
1,1-Dichloroethene	ND	I	ug/m3	0.020	1.0	09/04/10 03:32	MSD	DLK	10I0088
Tetrachloroethene	**1.9**	I	ug/m3	0.14	1.0	09/04/10 03:32	MSD	DLK	10I0088
Trichloroethene	**1.1**	I	ug/m3	0.027	1.0	09/04/10 03:32	MSD	DLK	10I0088
Vinyl chloride	**0.061**	I	ug/m3	0.013	1.0	09/04/10 03:32	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*91 %*	*I*				09/04/10 03:32	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*98 %*	*I*				09/04/10 03:32	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*75 %*	*I*				09/04/10 03:32	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-02 (IA-082510-MG-002 - Air)						**Sampled: 08/25/10 11:15**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.12**	I	ug/m3	0.055	1.0	09/03/10 15:21	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND	I	ug/m3	0.055	1.0	09/03/10 15:21	MSD	DLK	10I0088
1,1-Dichloroethene	ND	I	ug/m3	0.020	1.0	09/03/10 15:21	MSD	DLK	10I0088
Tetrachloroethene	**1.9**	I	ug/m3	0.14	1.0	09/03/10 15:21	MSD	DLK	10I0088
Trichloroethene	**1.0**	I	ug/m3	0.027	1.0	09/03/10 15:21	MSD	DLK	10I0088
Vinyl chloride	ND	I	ug/m3	0.013	1.0	09/03/10 15:21	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*92 %*	*I*				09/03/10 15:21	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*103 %*	*I*				09/03/10 15:21	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*73 %*	*I*				09/03/10 15:21	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-04 (IA-082510-MG-003 - Air)						**Sampled: 08/25/10 11:15**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.12**		ug/m3	0.055	1.0	09/04/10 01:54	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/04/10 01:54	MSD	DLK	10I0088
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/04/10 01:54	MSD	DLK	10I0088
Tetrachloroethene	**2.1**		ug/m3	0.14	1.0	09/04/10 01:54	MSD	DLK	10I0088
Trichloroethene	**1.1**		ug/m3	0.027	1.0	09/04/10 01:54	MSD	DLK	10I0088
Vinyl chloride	**0.014**		ug/m3	0.013	1.0	09/04/10 01:54	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*95 %*					09/04/10 01:54	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*103 %*					09/04/10 01:54	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*74 %*					09/04/10 01:54	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-05 (GU-082510-MG-001 - Air)						**Sampled: 08/25/10 11:20**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 07:43	MSA	AD	10I0041
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 07:43	MSA	AD	10I0041
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 07:43	MSA	AD	10I0041
2-Propanol	ND		ug/m3	25	1.0	09/03/10 07:43	MSA	AD	10I0041
Tetrachloroethene	**260**		ug/m3	14	1.0	09/03/10 07:43	MSA	AD	10I0041
Trichloroethene	**23**		ug/m3	11	1.0	09/03/10 07:43	MSA	AD	10I0041
Vinyl chloride	ND		ug/m3	10	1.0	09/03/10 07:43	MSA	AD	10I0041
Surr: 4-Bromofluorobenzene (70-130%)	*107 %*					09/03/10 07:43	MSA	AD	10I0041
Surr: 1,2-Dichloroethane-d4 (70-130%)	*116 %*					09/03/10 07:43	MSA	AD	10I0041
Surr: Toluene-d8 (70-130%)	*115 %*					09/03/10 07:43	MSA	AD	10I0041

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-09 (GU-082510-MG-002 - Air)						**Sampled: 08/25/10 11:18**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 09:03	MSA	AD	10I0041
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 09:03	MSA	AD	10I0041
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 09:03	MSA	AD	10I0041
2-Propanol	ND		ug/m3	25	1.0	09/03/10 09:03	MSA	AD	10I0041
Tetrachloroethene	**360**		ug/m3	14	1.0	09/03/10 09:03	MSA	AD	10I0041
Trichloroethene	**30**		ug/m3	11	1.0	09/03/10 09:03	MSA	AD	10I0041
Vinyl chloride	ND		ug/m3	10	1.0	09/03/10 09:03	MSA	AD	10I0041
Surr: 4-Bromofluorobenzene (70-130%)	*102 %*					09/03/10 09:03	MSA	AD	10I0041
Surr: 1,2-Dichloroethane-d4 (70-130%)	*111 %*					09/03/10 09:03	MSA	AD	10I0041
Surr: Toluene-d8 (70-130%)	*118 %*					09/03/10 09:03	MSA	AD	10I0041

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Anthony Gregory
507 Canada Street
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Mr. Gregory,

The purpose of this letter is to provide you with the sampling results for your residence located at 507 Canada Street in Attica, Indiana. A summary of the indoor air sampling results for your residence is provided in Table 1. Table 2 provides a summary of the subslab soil vapor sampling results for your residence.

The indoor air and subslab soil vapor sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air and subslab soil vapor sample results for samples collected in September 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. The laboratory reports for the indoor air and subslab soil vapor samples collected from your residence are provided in Attachment A.

The analytes listed in Tables 1 and 2 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***507 Canada***	***507 Canada***
Sample Location:			***Basement***	***Main Level***
Sample ID:			***IA-091510-MG-001***	***IA-091510-MG-002***
Sample Date:			***9/15/2010***	***9/15/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***		
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	0.085	0.13
Tetrachloroethene	ug/m3	4.1	0.33	0.45
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.47	0.75
Vinyl chloride	ug/m3	2.8	ND (0.013)	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

TABLE 2

SUBSLAB SOIL VAPOR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:	***507 Canada***
Sample Location:	***East Probe***
Sample ID:	***GU-091510-MG-001***
Sample Date:	***9/15/2010***

Parameters	***Units*** [1]	***U.S. EPA-Approved Action Levels***	
Volatile Organic Compounds			
1,1-Dichloroethene	ug/m3	2,000	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	600	ND (7.9)
Isopropyl alcohol	ug/m3	NS[2]	ND (25)
Tetrachloroethene	ug/m3	41	ND (14)
trans-1,2-Dichloroethene	ug/m3	600	ND (7.9)
Trichloroethene	ug/m3	122	ND (11)
Vinyl chloride	ug/m3	28	ND (10)

Notes

[1] ug/m3 - micrograms per cubic meter

[2] NS - No standard for this analyte that is used as a tracer gas during sampling

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0146 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: Reported:	09/17/10 09:50 09/28/10 11:18

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0146-01 (IA-091510-MG-001 - Air)						**Sampled: 09/15/10 15:29**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.085**		ug/m3	0.055	1.0	09/25/10 03:14	MSD	DLK	10I0202
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/25/10 03:14	MSD	DLK	10I0202
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/25/10 03:14	MSD	DLK	10I0202
Tetrachloroethene	**0.33**		ug/m3	0.14	1.0	09/25/10 03:14	MSD	DLK	10I0202
Trichloroethene	**0.47**		ug/m3	0.027	1.0	09/25/10 03:14	MSD	DLK	10I0202
Vinyl chloride	ND		ug/m3	0.013	1.0	09/25/10 03:14	MSD	DLK	10I0202
Surr: 4-Bromofluorobenzene (70-130%)	*99 %*					09/25/10 03:14	MSD	DLK	10I0202
Surr: 1,2-Dichloroethane-d4 (70-130%)	*100 %*					09/25/10 03:14	MSD	DLK	10I0202
Surr: Toluene-d8 (70-130%)	*99 %*					09/25/10 03:14	MSD	DLK	10I0202

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0146 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: Reported:	09/17/10 09:50 09/28/10 11:18

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0146-02 (IA-091510-MG-002 - Air)						**Sampled: 09/15/10 15:30**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.13**		ug/m3	0.055	1.0	09/25/10 03:59	MSD	DLK	10I0202
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/25/10 03:59	MSD	DLK	10I0202
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/25/10 03:59	MSD	DLK	10I0202
Tetrachloroethene	**0.45**		ug/m3	0.14	1.0	09/25/10 03:59	MSD	DLK	10I0202
Trichloroethene	**0.75**		ug/m3	0.027	1.0	09/25/10 03:59	MSD	DLK	10I0202
Vinyl chloride	ND		ug/m3	0.013	1.0	09/25/10 03:59	MSD	DLK	10I0202
Surr: 4-Bromofluorobenzene (70-130%)	*101 %*					09/25/10 03:59	MSD	DLK	10I0202
Surr: 1,2-Dichloroethane-d4 (70-130%)	*99 %*					09/25/10 03:59	MSD	DLK	10I0202
Surr: Toluene-d8 (70-130%)	*95 %*					09/25/10 03:59	MSD	DLK	10I0202

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0146 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/17/10 09:50 Reported: 09/28/10 11:18	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0146-04 (GU-091510-MG-001 - Air)						**Sampled: 09/15/10 15:28**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/21/10 07:23	MSA	AA	10I0164
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/21/10 07:23	MSA	AA	10I0164
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/21/10 07:23	MSA	AA	10I0164
2-Propanol	ND		ug/m3	25	1.0	09/21/10 07:23	MSA	AA	10I0164
Tetrachloroethene	ND		ug/m3	14	1.0	09/21/10 07:23	MSA	AA	10I0164
Trichloroethene	ND		ug/m3	11	1.0	09/21/10 07:23	MSA	AA	10I0164
Vinyl chloride	ND		ug/m3	10	1.0	09/21/10 07:23	MSA	AA	10I0164
Surr: 4-Bromofluorobenzene (70-130%)	*107 %*					09/21/10 07:23	MSA	AA	10I0164
Surr: 1,2-Dichloroethane-d4 (70-130%)	*118 %*					09/21/10 07:23	MSA	AA	10I0164
Surr: Toluene-d8 (70-130%)	*100 %*					09/21/10 07:23	MSA	AA	10I0164

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Jerry and Sue Victory
304 Columbia Street
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Mr. and Mrs. Victory,

The purpose of this letter is to provide you with the sampling results for your residence located at 304 Columbia Street in Attica, Indiana. A summary of the indoor air sampling results for your residence is provided in Table 1. Table 2 provides a summary of the subslab soil vapor sampling results for your residence.

The indoor air and subslab soil vapor sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air and subslab soil vapor sample results for samples collected in September 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. The laboratory reports for the indoor air and subslab soil vapor samples collected from your residence are provided in Attachment A.

The analytes listed in Tables 1 and 2 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***304 Columbia***	***304 Columbia***
Sample Location:			***Basement***	***Main Level***
Sample ID:			***IA-091010-MG-004***	***IA-091010-MG-005***
Sample Date:			***9/10/2010***	***9/10/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***		
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)
Tetrachloroethene	ug/m3	4.1	2.7	0.29
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.16	0.21
Vinyl chloride	ug/m3	2.8	ND (0.013)	0.020

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

TABLE 2

SUBSLAB SOIL VAPOR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:	***304 Columbia***
Sample Location:	***Probe***
Sample ID:	***GU-091010-MG-001***
Sample Date:	***9/10/2010***

Parameters	***Units*** [1]	***U.S. EPA-Approved Action Levels***	
Volatile Organic Compounds			
1,1-Dichloroethene	ug/m3	2,000	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	600	ND (7.9)
Isopropyl alcohol	ug/m3	NS[2]	ND (25)
Tetrachloroethene	ug/m3	41	ND (14)
trans-1,2-Dichloroethene	ug/m3	600	ND (7.9)
Trichloroethene	ug/m3	122	ND (11)
Vinyl chloride	ug/m3	28	ND (10)

Notes

[1] ug/m3 - micrograms per cubic meter

[2] NS - No standard for this analyte that is used as a tracer gas during sampling

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0104 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: Reported:	09/14/10 10:00 09/17/10 14:28

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0104-05 (IA-091010-MG-004 - Air)						**Sampled: 09/10/10 14:41**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 04:33	MSD	DLK	10I0124
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 04:33	MSD	DLK	10I0124
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/15/10 04:33	MSD	DLK	10I0124
Tetrachloroethene	**2.7**		ug/m3	0.14	1.0	09/15/10 04:33	MSD	DLK	10I0124
Trichloroethene	**0.16**		ug/m3	0.027	1.0	09/15/10 04:33	MSD	DLK	10I0124
Vinyl chloride	ND		ug/m3	0.013	1.0	09/15/10 04:33	MSD	DLK	10I0124
Surr: 4-Bromofluorobenzene (70-130%)	*90 %*					09/15/10 04:33	MSD	DLK	10I0124
Surr: 1,2-Dichloroethane-d4 (70-130%)	*98 %*					09/15/10 04:33	MSD	DLK	10I0124
Surr: Toluene-d8 (70-130%)	*88 %*					09/15/10 04:33	MSD	DLK	10I0124

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0104 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: Reported:	09/14/10 10:00 09/17/10 14:28

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0104-06 (IA-091010-MG-005 - Air)						**Sampled: 09/10/10 14:43**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 22:56	MSD	DLK	10I0125
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/15/10 22:56	MSD	DLK	10I0125
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/15/10 22:56	MSD	DLK	10I0125
Tetrachloroethene	**0.29**		ug/m3	0.14	1.0	09/15/10 22:56	MSD	DLK	10I0125
Trichloroethene	**0.21**		ug/m3	0.027	1.0	09/15/10 22:56	MSD	DLK	10I0125
Vinyl chloride	**0.020**		ug/m3	0.013	1.0	09/15/10 22:56	MSD	DLK	10I0125
Surr: 4-Bromofluorobenzene (70-130%)	*109 %*					09/15/10 22:56	MSD	DLK	10I0125
Surr: 1,2-Dichloroethane-d4 (70-130%)	*92 %*					09/15/10 22:56	MSD	DLK	10I0125
Surr: Toluene-d8 (70-130%)	*90 %*					09/15/10 22:56	MSD	DLK	10I0125

TestAmerica
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3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0104 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: Reported:	09/14/10 10:00 09/17/10 14:28

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0104-07 (GU-091010-MG-001 - Air)						**Sampled: 09/10/10 14:40**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/15/10 03:06	MSA	AA	10I0107
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/15/10 03:06	MSA	AA	10I0107
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/15/10 03:06	MSA	AA	10I0107
2-Propanol	ND		ug/m3	25	1.0	09/15/10 03:06	MSA	AA	10I0107
Tetrachloroethene	ND		ug/m3	14	1.0	09/15/10 03:06	MSA	AA	10I0107
Trichloroethene	ND		ug/m3	11	1.0	09/15/10 03:06	MSA	AA	10I0107
Vinyl chloride	ND		ug/m3	10	1.0	09/15/10 03:06	MSA	AA	10I0107
Surr: 4-Bromofluorobenzene (70-130%)	*96 %*					09/15/10 03:06	MSA	AA	10I0107
Surr: 1,2-Dichloroethane-d4 (70-130%)	*82 %*					09/15/10 03:06	MSA	AA	10I0107
Surr: Toluene-d8 (70-130%)	*118 %*					09/15/10 03:06	MSA	AA	10I0107

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Jessie Gallagher
126 North Perry Street
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Ms. Gallagher,

The purpose of this letter is to provide you with the most recent sampling results for your residence located at 401 Hollovy Street in Attica, Indiana. A summary of the indoor air sampling results for your residence is provided in Table 1. A summary of subslab soil vapor sampling results for your residence is provided in Table 2.

The indoor air and subslab soil vapor sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air results for samples collected in August 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. One compound, tetrachloroethene (PCE), was detected above U.S. EPA-approved action levels in the subslab soil vapor sample collected in August 2010. The laboratory reports for the indoor air and subslab soil vapor samples collected from your residence are provided in Attachment A.

The analytes listed in Table 1 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

We will contact you in the near future concerning mitigation measures for your residence consistent with the U.S. EPA-approved work plan. In the meantime, if you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***401 Hollovy St.***	***401 Hollovy St.***	***401 Hollovy St.***
Sample Location:			***Basement***	***Main Level***	***Second Level***
Sample ID:			***IA-082710-MG-014***	***IA-082710-MG-015***	***IA-082710-MG-016***
Sample Date:			***8/27/2010***	***8/27/2010***	***8/27/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***			
Volatile Organic Compounds					
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	0.11	0.12	ND (0.055)
Tetrachloroethene	ug/m3	4.1	0.58	0.54	0.34
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.37	0.37	0.32
Vinyl chloride	ug/m3	2.8	ND (0.013)	ND (0.013)	0.014

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

TABLE 2

SUBSLAB SOIL VAPOR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:	***401 Hollovy St.***
Sample Location:	***Probe***
Sample ID:	***GU-082710-MG-006***
Sample Date:	***8/27/2010***

Parameters	***Units*** [1]	***U.S. EPA-Approved Action Levels***	
Volatile Organic Compounds			
1,1-Dichloroethene	ug/m3	2,000	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	600	ND (7.9)
Isopropyl alcohol	ug/m3	NS[2]	ND (25)
Tetrachloroethene	ug/m3	41	96
trans-1,2-Dichloroethene	ug/m3	600	ND (7.9)
Trichloroethene	ug/m3	122	11
Vinyl chloride	ug/m3	28	ND (10)

Notes

[1] ug/m3 - micrograms per cubic meter

[2] NS - No standard for this analyte that is used as a tracer gas during sampling

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-21 (IA-082710-MG-014 - Air)						**Sampled: 08/27/10 14:38**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.11**		ug/m3	0.055	1.0	09/03/10 22:09	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 22:09	MSD	DLK	10I0088
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 22:09	MSD	DLK	10I0088
Tetrachloroethene	**0.58**		ug/m3	0.14	1.0	09/03/10 22:09	MSD	DLK	10I0088
Trichloroethene	**0.37**		ug/m3	0.027	1.0	09/03/10 22:09	MSD	DLK	10I0088
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 22:09	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*93 %*					09/03/10 22:09	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*100 %*					09/03/10 22:09	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*96 %*					09/03/10 22:09	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-22 (IA-082710-MG-015 - Air)						**Sampled: 08/27/10 14:32**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.12**		ug/m3	0.055	1.0	09/03/10 22:53	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 22:53	MSD	DLK	10I0088
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 22:53	MSD	DLK	10I0088
Tetrachloroethene	**0.54**		ug/m3	0.14	1.0	09/03/10 22:53	MSD	DLK	10I0088
Trichloroethene	**0.37**		ug/m3	0.027	1.0	09/03/10 22:53	MSD	DLK	10I0088
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 22:53	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*95 %*					09/03/10 22:53	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*97 %*					09/03/10 22:53	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*97 %*					09/03/10 22:53	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-23 (IA-082710-MG-016 - Air)						**Sampled: 08/27/10 14:34**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 23:38	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 23:38	MSD	DLK	10I0088
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 23:38	MSD	DLK	10I0088
Tetrachloroethene	**0.34**		ug/m3	0.14	1.0	09/03/10 23:38	MSD	DLK	10I0088
Trichloroethene	**0.32**		ug/m3	0.027	1.0	09/03/10 23:38	MSD	DLK	10I0088
Vinyl chloride	**0.014**		ug/m3	0.013	1.0	09/03/10 23:38	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*114 %*					09/03/10 23:38	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*104 %*					09/03/10 23:38	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*95 %*					09/03/10 23:38	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-19 (GU-082710-MG-006 - Air)						**Sampled: 08/27/10 14:40**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/11/10 11:01	MSA	AD	10I0130
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/11/10 11:01	MSA	AD	10I0130
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/11/10 11:01	MSA	AD	10I0130
2-Propanol	ND		ug/m3	25	1.0	09/11/10 11:01	MSA	AD	10I0130
Tetrachloroethene	**96**		ug/m3	14	1.0	09/11/10 11:01	MSA	AD	10I0130
Trichloroethene	**11**		ug/m3	11	1.0	09/11/10 11:01	MSA	AD	10I0130
Vinyl chloride	ND		ug/m3	10	1.0	09/11/10 11:01	MSA	AD	10I0130
Surr: 4-Bromofluorobenzene (70-130%)	*100 %*					09/11/10 11:01	MSA	AD	10I0130
Surr: 1,2-Dichloroethane-d4 (70-130%)	*111 %*					09/11/10 11:01	MSA	AD	10I0130
Surr: Toluene-d8 (70-130%)	*118 %*					09/11/10 11:01	MSA	AD	10I0130

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Harrison Steel Casting Co.
c/o Pete Bodine
PO Box 60
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Mr. Bodine,

The purpose of this letter is to provide you with the sampling results for the residence located at 415 Hollovy Street in Attica, Indiana. A summary of the indoor air sampling results for the residence is provided in Table 1. Table 2 provides a summary of the subslab soil vapor sampling results for the residence.

The indoor air and subslab soil vapor sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air and subslab soil vapor sample results for samples collected in September 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. The laboratory reports for the indoor air and subslab soil vapor samples collected from the residence are provided in Attachment A.

The analytes listed in Tables 1 and 2 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***415 Hollovy St.***
Sample Location:			***Main Level***
Sample ID:			***IA-090310-MG-005***
Sample Date:			***9/3/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***	
Volatile Organic Compounds			
1,1-Dichloroethene	ug/m3	200	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	ND (0.055)
Tetrachloroethene	ug/m3	4.1	0.18
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)
Trichloroethene	ug/m3	12.2	ND (0.027)
Vinyl chloride	ug/m3	2.8	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

TABLE 2

SUBSLAB SOIL VAPOR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:	***415 Hollovy St.***
Sample Location:	***Probe***
Sample ID:	***GU-090310-MG-003***
Sample Date:	***9/3/2010***

Parameters	***Units*** [1]	***U.S. EPA-Approved Action Levels***	
Volatile Organic Compounds			
1,1-Dichloroethene	ug/m3	2,000	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	600	ND (7.9)
Isopropyl alcohol	ug/m3	NS[2]	ND (25)
Tetrachloroethene	ug/m3	41	ND (14)
trans-1,2-Dichloroethene	ug/m3	600	ND (7.9)
Trichloroethene	ug/m3	122	ND (11)
Vinyl chloride	ug/m3	28	ND (10)

Notes

[1] ug/m3 - micrograms per cubic meter

[2] NS - No standard for this analyte that is used as a tracer gas during sampling

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0053 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-08 (IA-090310-MG-005 - Air)						**Sampled: 09/03/10 13:14**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/09/10 14:07	MSD	DLK	10I0089
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/09/10 14:07	MSD	DLK	10I0089
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/09/10 14:07	MSD	DLK	10I0089
Tetrachloroethene	**0.18**		ug/m3	0.14	1.0	09/09/10 14:07	MSD	DLK	10I0089
Trichloroethene	ND		ug/m3	0.027	1.0	09/09/10 14:07	MSD	DLK	10I0089
Vinyl chloride	ND		ug/m3	0.013	1.0	09/09/10 14:07	MSD	DLK	10I0089
Surr: 4-Bromofluorobenzene (70-130%)	*109 %*					09/09/10 14:07	MSD	DLK	10I0089
Surr: 1,2-Dichloroethane-d4 (70-130%)	*98 %*					09/09/10 14:07	MSD	DLK	10I0089
Surr: Toluene-d8 (70-130%)	*97 %*					09/09/10 14:07	MSD	DLK	10I0089

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0053 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-07 (GU-090310-MG-003 - Air)						**Sampled: 09/03/10 13:15**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/15/10 02:26	MSA	AA	10I0107
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/15/10 02:26	MSA	AA	10I0107
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/15/10 02:26	MSA	AA	10I0107
2-Propanol	ND		ug/m3	25	1.0	09/15/10 02:26	MSA	AA	10I0107
Tetrachloroethene	ND		ug/m3	14	1.0	09/15/10 02:26	MSA	AA	10I0107
Trichloroethene	ND		ug/m3	11	1.0	09/15/10 02:26	MSA	AA	10I0107
Vinyl chloride	ND		ug/m3	10	1.0	09/15/10 02:26	MSA	AA	10I0107
Surr: 4-Bromofluorobenzene (70-130%)	*94 %*					09/15/10 02:26	MSA	AA	10I0107
Surr: 1,2-Dichloroethane-d4 (70-130%)	*79 %*					09/15/10 02:26	MSA	AA	10I0107
Surr: Toluene-d8 (70-130%)	*120 %*					09/15/10 02:26	MSA	AA	10I0107

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Rita Evans
900 Park Avenue
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Ms. Evans,

The purpose of this letter is to provide you with the sampling results for your residence located at 900 Park Avenue in Attica, Indiana. A summary of the indoor air sampling results for your residence is provided in Table 1. Table 2 provides a summary of the subslab soil vapor sampling results for your residence.

The indoor air and subslab soil vapor sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air and subslab soil vapor sample results for samples collected in September 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. The laboratory reports for the indoor air and subslab soil vapor samples collected from your residence are provided in Attachment A.

The analytes listed in Tables 1 and 2 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***900 Park Ave***	***900 Park Ave***	***900 Park Ave***
Sample Location:			***Basement***	***Main Level***	***Second Level***
Sample ID:			***IA-090310-MG-002***	***IA-090310-MG-003***	***IA-090310-MG-004***
Sample Date:			***9/3/2010***	***9/3/2010***	***9/3/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***			
Volatile Organic Compounds					
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	ND (0.056)	0.066	0.072
Tetrachloroethene	ug/m3	4.1	0.26	0.43	0.36
trans-1,2-Dichloroethene	ug/m3	60	ND (0.056)	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.069	0.33	0.35
Vinyl chloride	ug/m3	2.8	ND (0.013)	ND (0.013)	0.013

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

TABLE 2

SUBSLAB SOIL VAPOR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***900 Park Ave***	***900 Park Ave***
Sample Location:			***Sub Slab - Northeast***	***Sub Slab - Southwest***
Sample ID:			***GU-090310-MG-001***	***GU-090310-MG-002***
Sample Date:			***9/3/2010***	***9/3/2010***
Parameters	***Units*** [1]	***U.S. EPA-Approved Action Levels***		
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	2,000	ND (7.9)	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	600	ND (7.9)	ND (7.9)
Isopropyl alcohol	ug/m3	NS[2]	ND (25)	ND (25)
Tetrachloroethene	ug/m3	41	ND (14)	ND (14)
trans-1,2-Dichloroethene	ug/m3	600	ND (7.9)	ND (7.9)
Trichloroethene	ug/m3	122	ND (11)	12
Vinyl chloride	ug/m3	28	ND (10)	ND (10)

Notes

[1] ug/m3 - micrograms per cubic meter

[2] NS - No standard for this analyte that is used as a tracer gas during sampling

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0053 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-02 (IA-090310-MG-002 - Air)						**Sampled: 09/03/10 12:35**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.056	1.0	09/09/10 11:41	MSD	DLK	10I0089
trans-1,2-Dichloroethene	ND		ug/m3	0.056	1.0	09/09/10 11:41	MSD	DLK	10I0089
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/09/10 11:41	MSD	DLK	10I0089
Tetrachloroethene	**0.26**		ug/m3	0.14	1.0	09/09/10 11:41	MSD	DLK	10I0089
Trichloroethene	**0.069**		ug/m3	0.027	1.0	09/09/10 11:41	MSD	DLK	10I0089
Vinyl chloride	ND		ug/m3	0.013	1.0	09/09/10 11:41	MSD	DLK	10I0089
Surr: 4-Bromofluorobenzene (70-130%)	*93 %*					09/09/10 11:41	MSD	DLK	10I0089
Surr: 1,2-Dichloroethane-d4 (70-130%)	*99 %*					09/09/10 11:41	MSD	DLK	10I0089
Surr: Toluene-d8 (70-130%)	*97 %*					09/09/10 11:41	MSD	DLK	10I0089

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0053 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-03 (IA-090310-MG-003 - Air)						**Sampled: 09/03/10 12:36**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.066**		ug/m3	0.055	1.0	09/09/10 12:27	MSD	DLK	10I0089
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/09/10 12:27	MSD	DLK	10I0089
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/09/10 12:27	MSD	DLK	10I0089
Tetrachloroethene	**0.43**		ug/m3	0.14	1.0	09/09/10 12:27	MSD	DLK	10I0089
Trichloroethene	**0.33**		ug/m3	0.027	1.0	09/09/10 12:27	MSD	DLK	10I0089
Vinyl chloride	ND		ug/m3	0.013	1.0	09/09/10 12:27	MSD	DLK	10I0089
Surr: 4-Bromofluorobenzene (70-130%)	*101 %*					09/09/10 12:27	MSD	DLK	10I0089
Surr: 1,2-Dichloroethane-d4 (70-130%)	*95 %*					09/09/10 12:27	MSD	DLK	10I0089
Surr: Toluene-d8 (70-130%)	*97 %*					09/09/10 12:27	MSD	DLK	10I0089

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Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0053 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-04 (IA-090310-MG-004 - Air)						**Sampled: 09/03/10 12:37**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.072**		ug/m3	0.055	1.0	09/09/10 13:13	MSD	DLK	10I0089
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/09/10 13:13	MSD	DLK	10I0089
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/09/10 13:13	MSD	DLK	10I0089
Tetrachloroethene	**0.36**		ug/m3	0.14	1.0	09/09/10 13:13	MSD	DLK	10I0089
Trichloroethene	**0.35**		ug/m3	0.027	1.0	09/09/10 13:13	MSD	DLK	10I0089
Vinyl chloride	**0.013**		ug/m3	0.013	1.0	09/09/10 13:13	MSD	DLK	10I0089
Surr: 4-Bromofluorobenzene (70-130%)	*95 %*					09/09/10 13:13	MSD	DLK	10I0089
Surr: 1,2-Dichloroethane-d4 (70-130%)	*97 %*					09/09/10 13:13	MSD	DLK	10I0089
Surr: Toluene-d8 (70-130%)	*89 %*					09/09/10 13:13	MSD	DLK	10I0089

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3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0053 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-05 (GU-090310-MG-001 - Air)						**Sampled: 09/03/10 12:40**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/14/10 08:48	MSA	AA	10I0097
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/14/10 08:48	MSA	AA	10I0097
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/14/10 08:48	MSA	AA	10I0097
2-Propanol	ND		ug/m3	25	1.0	09/14/10 08:48	MSA	AA	10I0097
Tetrachloroethene	ND		ug/m3	14	1.0	09/14/10 08:48	MSA	AA	10I0097
Trichloroethene	ND		ug/m3	11	1.0	09/14/10 08:48	MSA	AA	10I0097
Vinyl chloride	ND		ug/m3	10	1.0	09/14/10 08:48	MSA	AA	10I0097
Surr: 4-Bromofluorobenzene (70-130%)	*101 %*					09/14/10 08:48	MSA	AA	10I0097
Surr: 1,2-Dichloroethane-d4 (70-130%)	*105 %*					09/14/10 08:48	MSA	AA	10I0097
Surr: Toluene-d8 (70-130%)	*122 %*					09/14/10 08:48	MSA	AA	10I0097

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Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: Project: Project Number:	LTI0053 RMC / Attica, Indiana 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/08/10 10:20 Reported: 09/20/10 11:06

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0053-06 (GU-090310-MG-002 - Air)						**Sampled: 09/03/10 12:41**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/14/10 09:27	MSA	AA	10I0097
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/14/10 09:27	MSA	AA	10I0097
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/14/10 09:27	MSA	AA	10I0097
2-Propanol	ND		ug/m3	25	1.0	09/14/10 09:27	MSA	AA	10I0097
Tetrachloroethene	ND		ug/m3	14	1.0	09/14/10 09:27	MSA	AA	10I0097
Trichloroethene	**12**		ug/m3	11	1.0	09/14/10 09:27	MSA	AA	10I0097
Vinyl chloride	ND		ug/m3	10	1.0	09/14/10 09:27	MSA	AA	10I0097
Surr: 4-Bromofluorobenzene (70-130%)	*102 %*					09/14/10 09:27	MSA	AA	10I0097
Surr: 1,2-Dichloroethane-d4 (70-130%)	*123 %*					09/14/10 09:27	MSA	AA	10I0097
Surr: Toluene-d8 (70-130%)	*121 %*					09/14/10 09:27	MSA	AA	10I0097

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Bill and Judy Martin
1005 Reimer Road
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Mr. and Mrs. Martin,

The purpose of this letter is to provide you with the most recent sampling results for your residence located at 1005 Reimer Road in Attica, Indiana. A summary of the indoor air sampling results for the residence is provided in Table 1.

The indoor air sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air results for the samples collected in August 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. The laboratory report for the indoor air samples collected from your residence is provided in Attachment A.

The analytes listed in Table 1 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***1005 Reimer Rd***	***1005 Reimer Rd***
Sample Location:			***Main Level - Bedroom Hall***	***Main Level - Kitchen***
Sample ID:			***IA-082510-MG-005***	***IA-082510-MG-004***
Sample Date:			***8/25/2010***	***8/25/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***		
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	200	0.022	0.020
cis-1,2-Dichloroethene	ug/m3	60	ND (0.056)	ND (0.055)
Tetrachloroethene	ug/m3	4.1	ND (0.14)	0.25
trans-1,2-Dichloroethene	ug/m3	60	ND (0.056)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.048	0.12
Vinyl chloride	ug/m3	2.8	ND (0.013)	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-07 (IA-082510-MG-004 - Air)						**Sampled: 08/25/10 12:45**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 19:07	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 19:07	MSD	DLK	10I0088
1,1-Dichloroethene	**0.020**		ug/m3	0.020	1.0	09/03/10 19:07	MSD	DLK	10I0088
Tetrachloroethene	**0.25**		ug/m3	0.14	1.0	09/03/10 19:07	MSD	DLK	10I0088
Trichloroethene	**0.12**		ug/m3	0.027	1.0	09/03/10 19:07	MSD	DLK	10I0088
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 19:07	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*100 %*					09/03/10 19:07	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*102 %*					09/03/10 19:07	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*96 %*					09/03/10 19:07	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-08 (IA-082510-MG-005 - Air)						**Sampled: 08/25/10 12:47**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.056	1.0	09/03/10 01:10	MSD	DLK	10I0036
trans-1,2-Dichloroethene	ND		ug/m3	0.056	1.0	09/03/10 01:10	MSD	DLK	10I0036
1,1-Dichloroethene	**0.022**		ug/m3	0.020	1.0	09/03/10 01:10	MSD	DLK	10I0036
Tetrachloroethene	ND		ug/m3	0.14	1.0	09/03/10 01:10	MSD	DLK	10I0036
Trichloroethene	**0.048**		ug/m3	0.027	1.0	09/03/10 01:10	MSD	DLK	10I0036
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 01:10	MSD	DLK	10I0036
Surr: 4-Bromofluorobenzene (70-130%)	*97 %*					09/03/10 01:10	MSD	DLK	10I0036
Surr: 1,2-Dichloroethane-d4 (70-130%)	*98 %*					09/03/10 01:10	MSD	DLK	10I0036
Surr: Toluene-d8 (70-130%)	*101 %*					09/03/10 01:10	MSD	DLK	10I0036

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Joe Riley
P.O. Box 392
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Mr. Riley,

The purpose of this letter is to provide you with the sampling results for your residence located at 1050 Summit Street in Attica, Indiana. A summary of the indoor air sampling results for your residence is provided in Table 1. Table 2 provides a summary of the subslab soil vapor sampling results for your residence.

The indoor air and subslab soil vapor sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). One compound, tetrachloroethene (PCE), was detected above the U.S. EPA-approved action level in the indoor air sample obtained from the basement. The indoor air samples obtained from the main and second levels of the residence were below U.S. EPA-approved action levels. The subslab soil vapor results for samples collected in August 2010 indicate that the concentrations of all analytes are below U.S. EPA-approved action levels for subslab soil vapors. Additionally, the absence of PCE in the subslab air samples, combined with its presence in the indoor air sample collected from the basement, suggests a possible indoor air source for this compound. The laboratory report for the air samples collected from your residence are provided in Attachment A.

The analytes listed in Tables 1 and 2 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***1050 Summit St.***	***1050 Summit St.***	***1050 Summit St.***
Sample Location:			***Basement***	***Main Level***	***Second Level***
Sample ID:			***IA-082710-MG-006***	***IA-082710-MG-007***	***IA-082710-MG-008***
Sample Date:			***8/27/2010***	***8/27/2010***	***8/27/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***			
Volatile Organic Compounds					
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)	ND (0.055)
Tetrachloroethene	ug/m3	4.1	9.1	0.91	0.87
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.099	0.13	0.094
Vinyl chloride	ug/m3	2.8	ND (0.013)	ND (0.013)	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

TABLE 2

SUBSLAB SOIL VAPOR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***1050 Summit St.***	***1050 Summit St.***
Sample Location:			***East Probe***	***West Probe***
Sample ID:			***GU-082710-MG-004***	***GU-082710-MG-003***
Sample Date:			***8/27/2010***	***8/27/2010***
Parameters	***Units*** [1]	***U.S. EPA-Approved Action Levels***		
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	2,000	ND (7.1)	ND (7.9)
cis-1,2-Dichloroethene	ug/m3	600	ND (7.1)	ND (7.9)
Isopropyl alcohol	ug/m3	NS[2]	ND (22)	ND (25)
Tetrachloroethene	ug/m3	41	ND (12)	ND (14)
trans-1,2-Dichloroethene	ug/m3	600	ND (7.1)	ND (7.9)
Trichloroethene	ug/m3	122	ND (9.6)	ND (11)
Vinyl chloride	ug/m3	28	ND (9.2)	ND (10)

Notes

[1] ug/m3 - micrograms per cubic meter

[2] NS - No standard for this analyte that is used as a tracer gas during sampling

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
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3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-13 (IA-082710-MG-006 - Air)						**Sampled: 08/27/10 09:19**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 01:56	MSD	DLK	10I0036
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 01:56	MSD	DLK	10I0036
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 01:56	MSD	DLK	10I0036
Tetrachloroethene	**9.1**		ug/m3	0.14	1.0	09/03/10 01:56	MSD	DLK	10I0036
Trichloroethene	**0.099**		ug/m3	0.027	1.0	09/03/10 01:56	MSD	DLK	10I0036
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 01:56	MSD	DLK	10I0036
Surr: 4-Bromofluorobenzene (70-130%)	*108 %*					09/03/10 01:56	MSD	DLK	10I0036
Surr: 1,2-Dichloroethane-d4 (70-130%)	*100 %*					09/03/10 01:56	MSD	DLK	10I0036
Surr: Toluene-d8 (70-130%)	*96 %*					09/03/10 01:56	MSD	DLK	10I0036

TestAmerica
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3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-14 (IA-082710-MG-007 - Air)						**Sampled: 08/27/10 09:23**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 02:41	MSD	DLK	10I0036
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 02:41	MSD	DLK	10I0036
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 02:41	MSD	DLK	10I0036
Tetrachloroethene	**0.91**		ug/m3	0.14	1.0	09/03/10 02:41	MSD	DLK	10I0036
Trichloroethene	**0.13**		ug/m3	0.027	1.0	09/03/10 02:41	MSD	DLK	10I0036
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 02:41	MSD	DLK	10I0036
Surr: 4-Bromofluorobenzene (70-130%)	*100 %*					09/03/10 02:41	MSD	DLK	10I0036
Surr: 1,2-Dichloroethane-d4 (70-130%)	*100 %*					09/03/10 02:41	MSD	DLK	10I0036
Surr: Toluene-d8 (70-130%)	*97 %*					09/03/10 02:41	MSD	DLK	10I0036

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-15 (IA-082710-MG-008 - Air)						**Sampled: 08/27/10 09:24**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 03:26	MSD	DLK	10I0036
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 03:26	MSD	DLK	10I0036
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 03:26	MSD	DLK	10I0036
Tetrachloroethene	**0.87**		ug/m3	0.14	1.0	09/03/10 03:26	MSD	DLK	10I0036
Trichloroethene	**0.094**		ug/m3	0.027	1.0	09/03/10 03:26	MSD	DLK	10I0036
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 03:26	MSD	DLK	10I0036
Surr: 4-Bromofluorobenzene (70-130%)	*110 %*					09/03/10 03:26	MSD	DLK	10I0036
Surr: 1,2-Dichloroethane-d4 (70-130%)	*104 %*					09/03/10 03:26	MSD	DLK	10I0036
Surr: Toluene-d8 (70-130%)	*95 %*					09/03/10 03:26	MSD	DLK	10I0036

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-10 (GU-082710-MG-003 - Air)						**Sampled: 08/27/10 09:20**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 09:41	MSA	AD	10I0041
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 09:41	MSA	AD	10I0041
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/03/10 09:41	MSA	AD	10I0041
2-Propanol	ND		ug/m3	25	1.0	09/03/10 09:41	MSA	AD	10I0041
Tetrachloroethene	ND		ug/m3	14	1.0	09/03/10 09:41	MSA	AD	10I0041
Trichloroethene	ND		ug/m3	11	1.0	09/03/10 09:41	MSA	AD	10I0041
Vinyl chloride	ND		ug/m3	10	1.0	09/03/10 09:41	MSA	AD	10I0041
Surr: 4-Bromofluorobenzene (70-130%)	*106 %*					09/03/10 09:41	MSA	AD	10I0041
Surr: 1,2-Dichloroethane-d4 (70-130%)	*118 %*					09/03/10 09:41	MSA	AD	10I0041
Surr: Toluene-d8 (70-130%)	*117 %*					09/03/10 09:41	MSA	AD	10I0041

TestAmerica
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3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-11 (GU-082710-MG-004 - Air)						**Sampled: 08/27/10 09:21**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.1	0.90	09/11/10 09:42	MSA	AD	10I0130
trans-1,2-Dichloroethene	ND		ug/m3	7.1	0.90	09/11/10 09:42	MSA	AD	10I0130
1,1-Dichloroethene	ND		ug/m3	7.1	0.90	09/11/10 09:42	MSA	AD	10I0130
2-Propanol	ND		ug/m3	22	0.90	09/11/10 09:42	MSA	AD	10I0130
Tetrachloroethene	ND		ug/m3	12	0.90	09/11/10 09:42	MSA	AD	10I0130
Trichloroethene	ND		ug/m3	9.6	0.90	09/11/10 09:42	MSA	AD	10I0130
Vinyl chloride	ND		ug/m3	9.2	0.90	09/11/10 09:42	MSA	AD	10I0130
Surr: 4-Bromofluorobenzene (70-130%)	*102 %*					09/11/10 09:42	MSA	AD	10I0130
Surr: 1,2-Dichloroethane-d4 (70-130%)	*108 %*					09/11/10 09:42	MSA	AD	10I0130
Surr: Toluene-d8 (70-130%)	*122 %*					09/11/10 09:42	MSA	AD	10I0130

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Terry and Krista McClimans
707 E. Taylor Street
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Mr. and Mrs. McClimans,

The purpose of this letter is to provide you with the sampling results for your residence located at 707 Taylor Street in Attica, Indiana. A summary of the indoor air sampling results for your residence is provided in Table 1. Table 2 provides a summary of the subslab soil vapor sampling results for your residence.

The indoor air and subslab soil vapor sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air and subslab soil vapor sample results for samples collected in August 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. The laboratory reports for the indoor air and subslab soil vapor samples collected from your residence are provided in Attachment A.

The analytes listed in Tables 1 and 2 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***707 Taylor***	***707 Taylor***	***707 Taylor***
Sample Location:			***Basement***	***Main level***	***Second Level***
Sample ID:			***IA-082710-MG-009***	***IA-082710-MG-010***	***IA-082710-MG-011***
Sample Date:			***8/27/2010***	***8/27/2010***	***8/27/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***			
Volatile Organic Compounds					
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	ND (0.055)	0.11	ND (0.055)
Tetrachloroethene	ug/m3	4.1	0.64	0.50	0.48
trans-1,2-Dichloroethene	ug/m3	60	ND (0.055)	ND (0.055)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.23	0.32	0.30
Vinyl chloride	ug/m3	2.8	ND (0.013)	ND (0.013)	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

TABLE 2

SUBSLAB SOIL VAPOR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:	***707 Taylor***
Sample Location:	***Probe***
Sample ID:	***GU-082710-MG-005***
Sample Date:	***8/27/2010***

Parameters	***Units*** [1]	***U.S. EPA-Approved Action Levels***	
Volatile Organic Compounds			
1,1-Dichloroethene	ug/m3	2,000	ND (7.9) UJ
cis-1,2-Dichloroethene	ug/m3	600	ND (7.9) UJ
Isopropyl alcohol	ug/m3	NS[2]	67
Tetrachloroethene	ug/m3	41	22 J
trans-1,2-Dichloroethene	ug/m3	600	ND (7.9) UJ
Trichloroethene	ug/m3	122	ND (11) UJ
Vinyl chloride	ug/m3	28	ND (10) UJ

Notes

[1] ug/m3 - micrograms per cubic meter

[2] NS - No standard for this analyte that is used as a tracer gas during sampling

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

J - Estimated

UJ - Estimated reporting limit

ATTACHMENT A

LABORATORY REPORT

TestAmerica
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3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-16 (IA-082710-MG-009 - Air)						**Sampled: 08/27/10 10:54**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 04:11	MSD	DLK	10I0036
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 04:11	MSD	DLK	10I0036
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 04:11	MSD	DLK	10I0036
Tetrachloroethene	**0.64**		ug/m3	0.14	1.0	09/03/10 04:11	MSD	DLK	10I0036
Trichloroethene	**0.23**		ug/m3	0.027	1.0	09/03/10 04:11	MSD	DLK	10I0036
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 04:11	MSD	DLK	10I0036
Surr: 4-Bromofluorobenzene (70-130%)	*92 %*					09/03/10 04:11	MSD	DLK	10I0036
Surr: 1,2-Dichloroethane-d4 (70-130%)	*96 %*					09/03/10 04:11	MSD	DLK	10I0036
Surr: Toluene-d8 (70-130%)	*90 %*					09/03/10 04:11	MSD	DLK	10I0036

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-17 (IA-082710-MG-010 - Air)						**Sampled: 08/27/10 10:53**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.11**		ug/m3	0.055	1.0	09/04/10 02:44	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/04/10 02:44	MSD	DLK	10I0088
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/04/10 02:44	MSD	DLK	10I0088
Tetrachloroethene	**0.50**		ug/m3	0.14	1.0	09/04/10 02:44	MSD	DLK	10I0088
Trichloroethene	**0.32**		ug/m3	0.027	1.0	09/04/10 02:44	MSD	DLK	10I0088
Vinyl chloride	ND		ug/m3	0.013	1.0	09/04/10 02:44	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*97 %*					09/04/10 02:44	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*95 %*					09/04/10 02:44	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*95 %*					09/04/10 02:44	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-18 (IA-082710-MG-011 - Air)						**Sampled: 08/27/10 10:52**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 20:36	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 20:36	MSD	DLK	10I0088
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 20:36	MSD	DLK	10I0088
Tetrachloroethene	**0.48**		ug/m3	0.14	1.0	09/03/10 20:36	MSD	DLK	10I0088
Trichloroethene	**0.30**		ug/m3	0.027	1.0	09/03/10 20:36	MSD	DLK	10I0088
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 20:36	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*99 %*					09/03/10 20:36	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*102 %*					09/03/10 20:36	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*91 %*					09/03/10 20:36	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-12 (GU-082710-MG-005 - Air)						**Sampled: 08/27/10 10:55**			
EPA TO15 (Med-level) - Volatile Organic Compounds by GC/MS									
cis-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/11/10 10:23	MSA	AD	10I0130
trans-1,2-Dichloroethene	ND		ug/m3	7.9	1.0	09/11/10 10:23	MSA	AD	10I0130
1,1-Dichloroethene	ND		ug/m3	7.9	1.0	09/11/10 10:23	MSA	AD	10I0130
2-Propanol	**67**		ug/m3	25	1.0	09/11/10 10:23	MSA	AD	10I0130
Tetrachloroethene	**22**		ug/m3	14	1.0	09/11/10 10:23	MSA	AD	10I0130
Trichloroethene	ND		ug/m3	11	1.0	09/11/10 10:23	MSA	AD	10I0130
Vinyl chloride	ND		ug/m3	10	1.0	09/11/10 10:23	MSA	AD	10I0130
Surr: 4-Bromofluorobenzene (70-130%)	*104 %*					09/11/10 10:23	MSA	AD	10I0130
Surr: 1,2-Dichloroethane-d4 (70-130%)	*108 %*					09/11/10 10:23	MSA	AD	10I0130
Surr: Toluene-d8 (70-130%)	*117 %*					09/11/10 10:23	MSA	AD	10I0130

Radio Materials Corporation (RMC)
Environmental Investigation and Cleanup
CRA - Technical Consultants for RMC Project
6520 Corporate Drive
Indianapolis, IN 46278

October 26, 2010

CERTIFIED MAIL

Burnadette Jordan
807 E. Taylor Street
Attica, IN 47918

Re: Update on Environmental Activities at the Radio Materials Corporation Site

Dear Ms. Jordan,

The purpose of this letter is to provide you with the most recent sampling results for your residence located at 807 Taylor Street in Attica, Indiana. A summary of the indoor air sampling results for the residence is provided in Table 1.

The indoor air sampling results were compared to the most conservative (lowest) site-specific, risk-based, residential action levels approved by U.S. Environmental Protection Agency (U.S. EPA). The indoor air results for the samples collected in August 2010 indicate that the concentrations of all detected analytes are below U.S. EPA-approved action levels. The laboratory report for the indoor air samples collected from your residence is provided in Attachment A.

The analytes listed in Table 1 are volatile organic compounds (VOCs) that are present in the groundwater beneath certain areas of Attica. These compounds historically were used in a variety of commercial and industrial settings, and can be found in numerous common household products and materials as well.

If you have any questions, please feel free to contact me at the telephone number listed below or the U.S. EPA Project Manager, Dr. Bhooma Sundar at (312) 886-1660.

Sincerely,

Steven J. Wanner
Environmental Consultant for RMC Project
Telephone: (317) 291-7065

cc: Dr. Bhooma Sundar, U.S. EPA

TABLE 1

INDOOR AIR ANALYTICAL RESULTS SUMMARY
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Sample Address:			***807 Taylor***	***807 Taylor***
Sample Location:			***Basement***	***Main Level***
Sample ID:			***IA-082710-MG-012***	***IA-082710-MG-013***
Sample Date:			***8/27/2010***	***8/27/2010***
Parameters	***Units*** [1]	***U.S. EPA-approved Action Levels***		
Volatile Organic Compounds				
1,1-Dichloroethene	ug/m3	200	ND (0.020)	ND (0.020)
cis-1,2-Dichloroethene	ug/m3	60	ND (0.056)	0.070
Tetrachloroethene	ug/m3	4.1	0.41	0.38
trans-1,2-Dichloroethene	ug/m3	60	ND (0.056)	ND (0.055)
Trichloroethene	ug/m3	12.2	0.42	0.64
Vinyl chloride	ug/m3	2.8	ND (0.013)	ND (0.013)

Notes

[1] ug/m3 - micrograms per cubic meter

ND ( ) - Compound not detected at the quantitation limit stated in parentheses

ATTACHMENT A

LABORATORY REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-03 (IA-082710-MG-012 - Air)						**Sampled: 08/27/10 14:24**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	ND		ug/m3	0.056	1.0	09/03/10 16:06	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.056	1.0	09/03/10 16:06	MSD	DLK	10I0088
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 16:06	MSD	DLK	10I0088
Tetrachloroethene	**0.41**		ug/m3	0.14	1.0	09/03/10 16:06	MSD	DLK	10I0088
Trichloroethene	**0.42**		ug/m3	0.027	1.0	09/03/10 16:06	MSD	DLK	10I0088
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 16:06	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*97 %*					09/03/10 16:06	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*98 %*					09/03/10 16:06	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*98 %*					09/03/10 16:06	MSD	DLK	10I0088

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
3585 Cadillac Avenue, Suite A Costa Mesa, CA 92626 * 714-258-8610 * Fax 714-258-0921

Conestoga Rovers & Associates, Inc. Indianapolis 6520 Corporate Drive Indianapolis, IN 46278 Michael Richardson	Work Order: LTI0012 Project: RMC / Attica, Indiana Project Number: 019190-01 / Indoor Air/Soil Gas Sampling	Received: 09/02/10 10:10 Reported: 09/17/10 10:45	

ANALYTICAL REPORT

Analyte	Result	Data Qualifiers	Units	RL	Dilution	Date Analyzed	Instrument	Analyst	QC Batch
Sample ID: LTI0012-20 (IA-082710-MG-013 - Air)						**Sampled: 08/27/10 14:26**			
EPA TO15 - Volatile Organic Compounds by GC/MS (SIM)									
cis-1,2-Dichloroethene	**0.070**		ug/m3	0.055	1.0	09/03/10 21:23	MSD	DLK	10I0088
trans-1,2-Dichloroethene	ND		ug/m3	0.055	1.0	09/03/10 21:23	MSD	DLK	10I0088
1,1-Dichloroethene	ND		ug/m3	0.020	1.0	09/03/10 21:23	MSD	DLK	10I0088
Tetrachloroethene	**0.38**		ug/m3	0.14	1.0	09/03/10 21:23	MSD	DLK	10I0088
Trichloroethene	**0.64**		ug/m3	0.027	1.0	09/03/10 21:23	MSD	DLK	10I0088
Vinyl chloride	ND		ug/m3	0.013	1.0	09/03/10 21:23	MSD	DLK	10I0088
Surr: 4-Bromofluorobenzene (70-130%)	*92 %*					09/03/10 21:23	MSD	DLK	10I0088
Surr: 1,2-Dichloroethane-d4 (70-130%)	*94 %*					09/03/10 21:23	MSD	DLK	10I0088
Surr: Toluene-d8 (70-130%)	*97 %*					09/03/10 21:23	MSD	DLK	10I0088

ATTACHMENT D

FINAL AS-BUILT DOCUMENTS FOR
VAPOR INTRUSION MITIGATION SYSTEMS
COMPLETED IN OCTOBER 2010

VAPOR MITIGATION AS-BUILT SPECIFICATIONS

904 PARK AVENUE
ATTICA, INDIANA

Prepared for:
KRAFT FOODS GLOBAL, INC.

Prepared by:
Conestoga-Rovers & Associates

6520 Corporate Drive
Indianapolis, IN 46278

Office: (317) 291-7007
Fax: (317) 328-2666

web: http:\\www.CRAworld.com

SEPTEMBER 13, 2010
REVISION (0)
REFERENCE NO. 019190

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

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SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

LIST OF ATTACHMENTS

ATTACHMENT A	RESIDENTIAL INSPECTION FORM
ATTACHMENT B	SITE PLAN
ATTACHMENT C	TYPICAL SYSTEM DRAWING
ATTACHMENT D	SITE PHOTOGRAPHS BEFORE SYSTEM CONSTRUCTION
ATTACHMENT E	MATERIAL SPECIFICATIONS AND MSDS
ATTACHMENT F	FIELD MODIFICATION FORMS
ATTACHMENT G	AS-BUILT DRAWING
ATTACHMENT H	SITE PHOTOGRAPHS AFTER SYSTEM CONSTRUCTION
ATTACHMENT I	VAPOR INTRUSION MITIGATION COMPLETION FORM

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

1.0 PIPING INSTALLATION REQUIREMENTS

1. All vent stack piping will be solid, rigid pipe not less than 4-inch inside diameter (ID).
2. All manifold piping will be rigid pipe not less than 4-inch ID.
3. All suction point piping will be rigid pipe not less than 3-inch ID.
4. All pipe joints and connections in vapor intrusion (VI) systems, both interior and exterior, will be sealed permanently. Exceptions include installation of radon fans and sump covers.
5. VI system piping installed in the interior or on the exterior of a building, will be insulated where condensation on the pipe's exterior may drip onto and damage ceilings and floors, etc., and where water vapor, from the soil, may condense inside the pipe, and then freeze partially or fully blocking the soil gas exhaust.
6. VI piping will be fastened to the structure of the building with hangers, strapping, or other supports that will secure it adequately.
7. VI piping will not be attached to or supported by existing pipes, ducts, conduits, or any kind of equipment.
8. VI piping will not block window and doors or access to installed equipment.
9. Supports for VI piping should be installed at least every 6 feet on horizontal runs. Vertical runs will be secured either above or below the points of penetration through floors, ceilings, and roofs, or at least every 8 feet on runs that do not penetrate floors, ceilings, or roofs.
10. To prevent blockage of air flow into the bottom of suction point pipes, they will be supported and secured in a permanent manner that prevents their downward movement to the bottom of suction pits.
11. Horizontal runs in VI system piping will be sloped to ensure that water from rain or condensation drains downward into the ground beneath the slab or soil gas retarder membrane.
12. To reduce the risk of vent stack blockage due to heavy snowfall, to reduce the potential for re-entrainment of vapor into the living spaces of a building, and to prevent direct exposure of individuals outside of buildings, the discharge from vent stack pipes of active soil depressurization systems will meet the following minimum requirements.

The discharge from vent stacks pipes will be:

- Vertical and upward, outside the structure, at least 10 feet above the ground level, above the edge of the roof, and will also meet the separation requirements. Whenever practicable, they will be above the highest roof of the buildings and above the highest ridge.
- Ten feet or more away from any window, door, or other opening into conditioned or otherwise occupiable spaces of the structure, if the discharge point is not at least 2 feet above the top of such openings.
- Ten feet or more away from any opening into the conditioned or other occupiable spaces of an adjacent building. Chimney flues will be considered openings into conditioned or otherwise occupiable space.
- For vent stack pipes that penetrate the roof, the point of discharge will be at least 12 inches above the surface of the roof.
- When a horizontal run of vent stack pipe penetrates the gable end walls, the piping outside the structure will be routed to a vertical position so that the discharge point meets the requirements.
- Points of discharge that are not in a direct line of sight from openings into conditioned or otherwise occupiable space because of intervening objects, such as dormers, chimneys, windows around the corner, etc. will meet the separation requirements.

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

2.0 VAPOR INTRUSION BLOWER INSTALLATION REQUIREMENTS

1. Contractor will install a Fantech Model HP 220 for this application.
2. Blower will be installed outside the building, outside of occupiable space, and above the conditioned spaces of a building. Blower location is chosen to minimize the risk of vapor entry into living spaces which could result from leaks in fan housing or in the vent stack piping above the fan.
3. Blower will be installed in a configuration that avoids condensation buildup in the blower housing.
4. Blower will be rated for outdoor use and installed in a weather proof protective housing.
5. Blower will be mounted and secured in a manner that minimizes transfer of vibration to the structural framing of the building.
6. To facilitate maintenance and future replacement, blower will be installed in the vent pipe using removable couplings or flexible connections that can be tightly secured to both the fan and the vent pipe.

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

3.0 GENERAL SEALING REQUIREMENTS

1. Opening around the suction point piping penetrations of the slab, accessible openings around utility penetrations of the slab, accessible openings around utility penetrations of the foundation walls and slab, and other openings in slabs will be sealed, using methods and materials that are permanent and durable.
2. Openings and cracks where the slab meets the foundation wall and cracks in the floors will be sealed using urethane caulk or equivalent material. When the joint is greater than 1/2 inch in width, a foam backer rod or other comparable filler material will be inserted into the joint before the application of the sealant.
3. For hollow cinderblock or hollow concrete block wall foundations, the top voids of accessible blocks will be sealed using and insulating expandable foam material.
4. Porous basement foundation walls and floors (i.e., cinderblock and concrete block, mortar between bricks, etc.) will be sealed by applying a vapor-tight product (Ames Blue Max and Ames Block & Wall). Prior to applying the product, the walls and floor will be cleaned and primed as appropriate and cracks in the blocks and mortar will be sealed as described in this section.
5. Basement floor drains will be fitted with a P-trap in a manner that provides a minimum 6-inch standing water seal depth. All concrete removed during fitting of P-traps will be fully repaired.
6. Any seams in soil gas retarder membranes used for submembrane depressurization systems, passive or active, will be a minimum 6 mil reinforced polyethylene lapped at least 12 inches.
7. The membrane's seams will be sealed with caulk or other adhesive and the joints will be taped.
8. The edges of the membrane will be sealed to the walls and floor using a vapor-resistant sealant or adhesive.

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

4.0 ACTIVE SUB-SLAB DEPRESSURIZATION (SSD) REQUIREMENTS

1. To enhance pressure field extension, excavate as much as 1 ft^3 of sub-slab material below and around each suction point pipe. The end of the suction point pipe will have an excavated hole, at least one pipe diameter deep, directly below it. This hole will be backfilled with pea gravel to support the suction pipe.

5.0 SUBMEMBRANE DEPRESSURIZATION (SMD) REQUIREMENTS

1. Section Not Applicable.

6.0 ELECTRICAL REQUIREMENTS

1. All mitigation system electrical components will be UL listed.
2. Wiring will not be located inside the VI system piping or within any other heating or cooling ductwork.
3. A disconnecting means is a switch, a plugged cord, or a branch circuit overcurrent device.
   - A disconnecting means will be present in the electric circuit powering VI fans.
   - Operation of the VI fan's disconnecting means must not interrupt the power to other electrical devices in the dwelling.
4. Fan, cords, plugs, receptacles, receptacle enclosures, switches, switch enclosures, etc., intended for outside use must have a weatherproof and unattended use rating.
5. A hard-wired electrical connection (with a disconnect switch) will be installed outdoors.

7.0 MATERIALS

1. As a minimum, all plastic VI system piping in depressurization systems will be made of Schedule 40 PVC piping material.
2. Fittings used in VI system piping will be of the same material as the piping itself. This material compatibility enables the required cementing of all piping connections. However, when mounting fans, rubber couplings suitable for use in sanitary sewer systems will be used instead of cemented pipe joints.
3. The plastic pipe cleaner and cement will be compatible with the kind of plastic in the VI system piping and will be used as recommended by its manufacturer.
4. When sealing holes for plumbing rough-in or other large openings in slabs and foundation walls that are below the grounds surface, non-shrink mortar, grouts, expanding foam, or similar materials designed for such application will be used.
5. Flexible membranes installed as soil gas retarders will be a minimum of 6 mil polyethylene or equivalent flexible material.

8.0 MONITORING AND LABELING

1. The system will include a RadonAway Checkpoint IIa alarm mechanism that will provide a visual and audible indication of system degradation and failure.
   - The alarm mechanism will be located where it is easily seen and heard.
   - The RadonAway Checkpoint IIa alarm mechanism is capable of having its calibration quickly verified on site.
   - The RadonAway Checkpoint IIa alarm mechanism is powered by house current, it shall be installed on a nonswitched circuit and be designed to reset automatically after a power failure.
2. System vacuum monitor will consist of a mechanical monitor such as Dwyer U-tube manometer with readout or a Dwyer Model 25 or equivalent manometer with readout.
3. Mechanical VI mitigation system monitors will be clearly marked to indicate the initial pressure readings.
4. VI system description label will be placed on the mitigation system, the electric service entrance panel, or other prominent location.
   - This label will be legible from a distance of at least 3 ft.
   - This label will display the following information: the words "VI Mitigation System-Do Not Alter or Disconnect", the installer's name and phone number, the date of installation.
   - A label will be affixed to the electric circuit box stating "VI System Circuit Do Not Disconnect".
   - Labels will be placed on the soil ventilation piping in prominent areas stating "Soil Ventilation Pipe Not for Plumbing or Other Use" or similar
5. The circuit breaker(s) controlling the circuits on which the fan and system failure warning devices operate will be labeled using the words "Vapor Intrusion", or if two circuits, "VI Fan", and "VI Monitor". If other rooms and appliances are on the circuit, they should also be shown on the label.

9.0 OTHER SPECIFICATIONS

9.1 SEALING OF EXPOSED DIRT IN BASEMENT

1. The exposed dirt in the northeast corner of the south room of the basement will be sealed with a vapor membrane.
2. The exposed dirt below the east foundation wall of the south room of the basement will be sealed with a vapor membrane.
3. The membranes will be attached to the basement walls and floor as described in Section 3.0.

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

10.0 SIGNATURES/APPROVALS

10.1 DESIGN APPROVALS

This design was completed, reviewed, and approved by the individuals below.

By:

Preparer's Signature — Date: 05-27-10

Project Manager's Signature — Date: 5/26/10

Engineer's Signature/Seal — Date: 5/26/10

STEVEN EDWARD DAVIS
REGISTERED
No. 19900080
STATE OF INDIANA
PROFESSIONAL ENGINEER

This design was reviewed by the individuals below.

By:

Contractor Representative's Signature — Date: 5/26/10

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

10.2 CONSTRUCTION APPROVALS

I have completed the inspection of the VI mitigation system and certify that the installation was completed in accordance with the approved design specifications and any approved modifications thereto.

By:

Steve Davis	9/13/10
CRA CQA Inspector's Signature	Date
Tom Burt	9-13-10
Contractor's Representative's Signature	Date
Steve Davis	9/23/10
Engineer's Signature/Seal	Date

STEVEN EDWARD DAVIS
REGISTERED
No.
19900080
STATE OF
INDIANA
PROFESSIONAL ENGINEER

ATTACHMENT A

RESIDENTIAL INSPECTION FORM

CONESTOGA-ROVERS & ASSOCIATES

6520 Corporate Drive
Indianapolis, Indiana 46278
Telephone: (317) 291-7007 Fax: (317) 328-2666
www.CRAworld.com

RESIDENTIAL INSPECTION FORM

Preparer's Name: J. Bolint Date: 04-14-10

Site Address: 904 Park Ave.

Part I - Occupants

List of Current Occupants/Occupation (include children)

Name	*Age*	*Address: (Lot # or apt. #)*	*Sex (M/F)*	*Occupation*	*Basement Occupancy (Yes/No)*	*Attic Occupancy (Yes/No)*
PJ, Stoll			M			
Stoll			F			
Stoll			M			
Stoll			F			

Part II - Building Characteristics

Building type: (residential) / multi-family residential / office / strip mall / commercial / industrial / other

Describe building: _____ Year constructed: ?

Number of floors at or above grade: 3

Number of floors below grade: 1 (full basement) / crawl space / partial basement / partial crawlspace / slab on grade)

Depth of basement below grade surface: 7+ ft Basement size: _____ ft²

Basement floor construction: (concrete) / soil / slab / stone /other (specify): _____

Describe further as appropriate: _____

Foundation walls: (poured concrete) / (cinder blocks) / stone / bricks /other (specify): _____

Basement sump present? *Yes* / (*No*) Sump pump? ~~*Yes / No*~~ Water in sump? ~~*Yes / No*~~

Basement floor drains present? (*Yes*) / *No* Water in drain? (*Yes*) / *No*

Significant cracks present in basement floor? *Yes* (*No*) Describe: _____

Significant cracks present in basement walls? *Yes* / (*No*) Describe: _____

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? *Yes* / (*No*)

Is there a whole house fan? *Yes* / (*No*)

Type of ground cover outside of building: (grass) / concrete / asphalt /other (specify) _____

Sub-slab vapor/moisture barrier in place? *Yes* / *No* / *Don't know*

Type of barrier: _____

Type of heating system (circle all that apply):

hot air circulation	hot air radiation	wood stove	steam radiation
heat pump	hot water radiation	kerosene heater	electric baseboard
central air conditioning	fireplace	other (specify): _____	

Type of fuel utilized for heating system (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene / other (specify): _____

Type of fuel utilized for water heater:

Natural gas / electric

Backdrafting test conducted on non-electric appliances: Yes / *No* / *Not Applicable*

List appliances tested and observations: HE Furnace - water heater passed

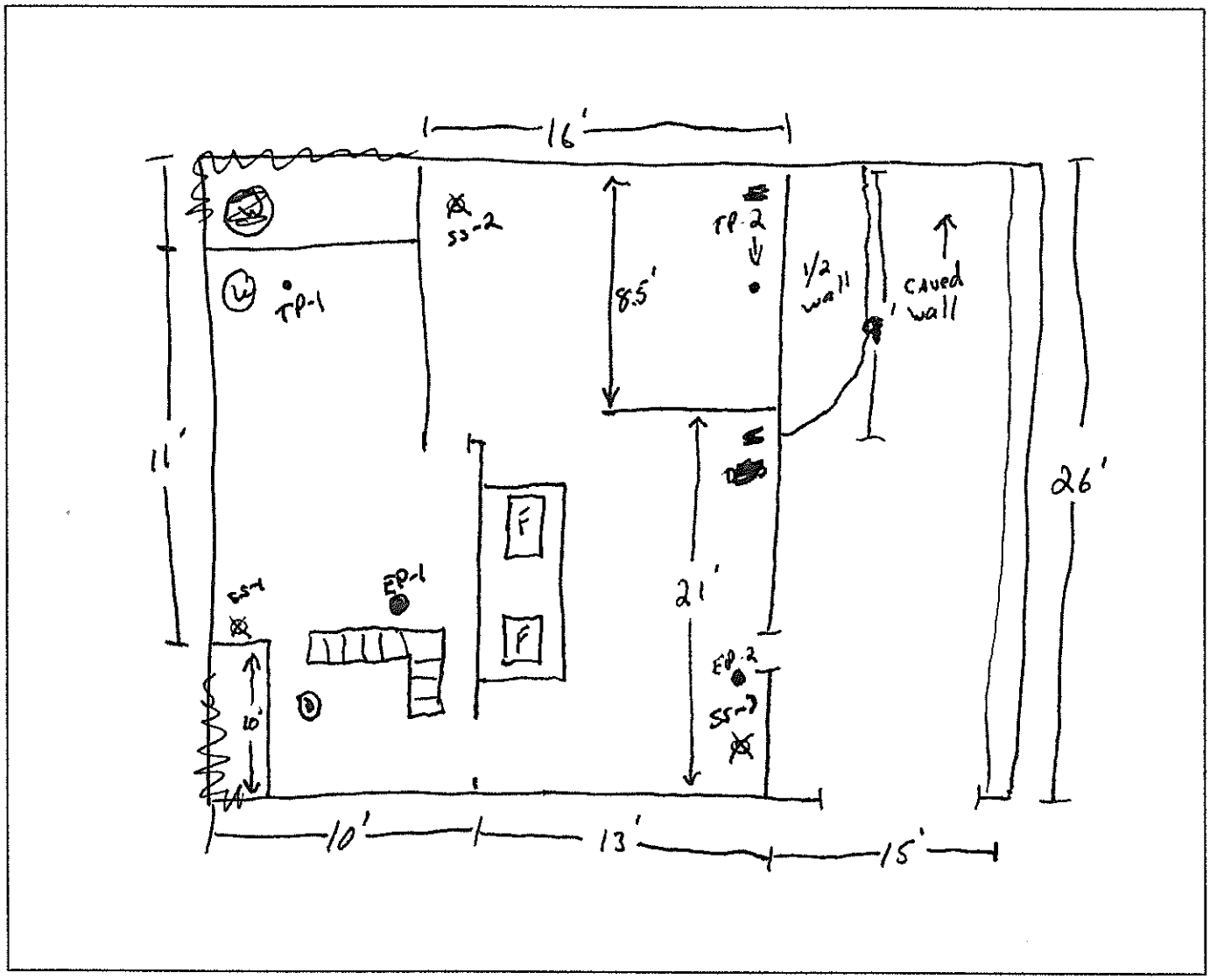
Are utility penetrations present through basement walls, foundation walls, and floors of houses with crawlspaces? Yes / No Describe:

HVAC, Elec, Water, Gas

Describe any other potential vapor diffusion routes observed (e.g., old coal chutes through basement walls, etc.)

Damaged wall - garage area see photos

Provide Drawing of the lowest floor of the building



EP-1 Installed

SS-1 = 0.030

SS-2 = 0.005

SS-3 0.000

TP-1 0.016

TP-2 0.009

EP-2 Installed

TP-2 = 0.019

SS-3 = 0.052

Provide Drawing of the main floor of the building

No Access

Provide Drawing of the second floor of the building, if present

NO Access

Part III - Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room) at the time of inspection.

Potential Sources	Location (s)
Gasoline storage cans	NO
Gas-powered equipment (mowers, etc)	NO
Kerosene storage cans	NO
Paints / thinners / strippers	yes
Cleaning solvents	NO
Moth balls	NO
Insecticides	NO
New furniture / upholstery	NO
New carpeting / flooring	NO
Hobbies - glues, paints, lacquers, photographic darkroom chemicals, etc.	NO
Other (specify):	

Part IV - Miscellaneous Items

Do any of the occupants of the building smoke? *Yes / No*

Does the building have an attached garage directly connected to living space? *Yes / No*

If so, is a car usually parked in the garage? *Yes / No*

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? *Yes / No*

Do the occupants of the building have their clothes dry cleaned? *Yes / No*

If yes, how often? Weekly / monthly / 3-4 times a year

When was the last dry cleaned garment brought home? _____

Do any of the occupants use solvents in work? *Yes / No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? *Yes / No*

Has there ever been a fire in the building? *Yes / No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes / No*

If yes, when? _____ and where? _____

Other Observations:

_____

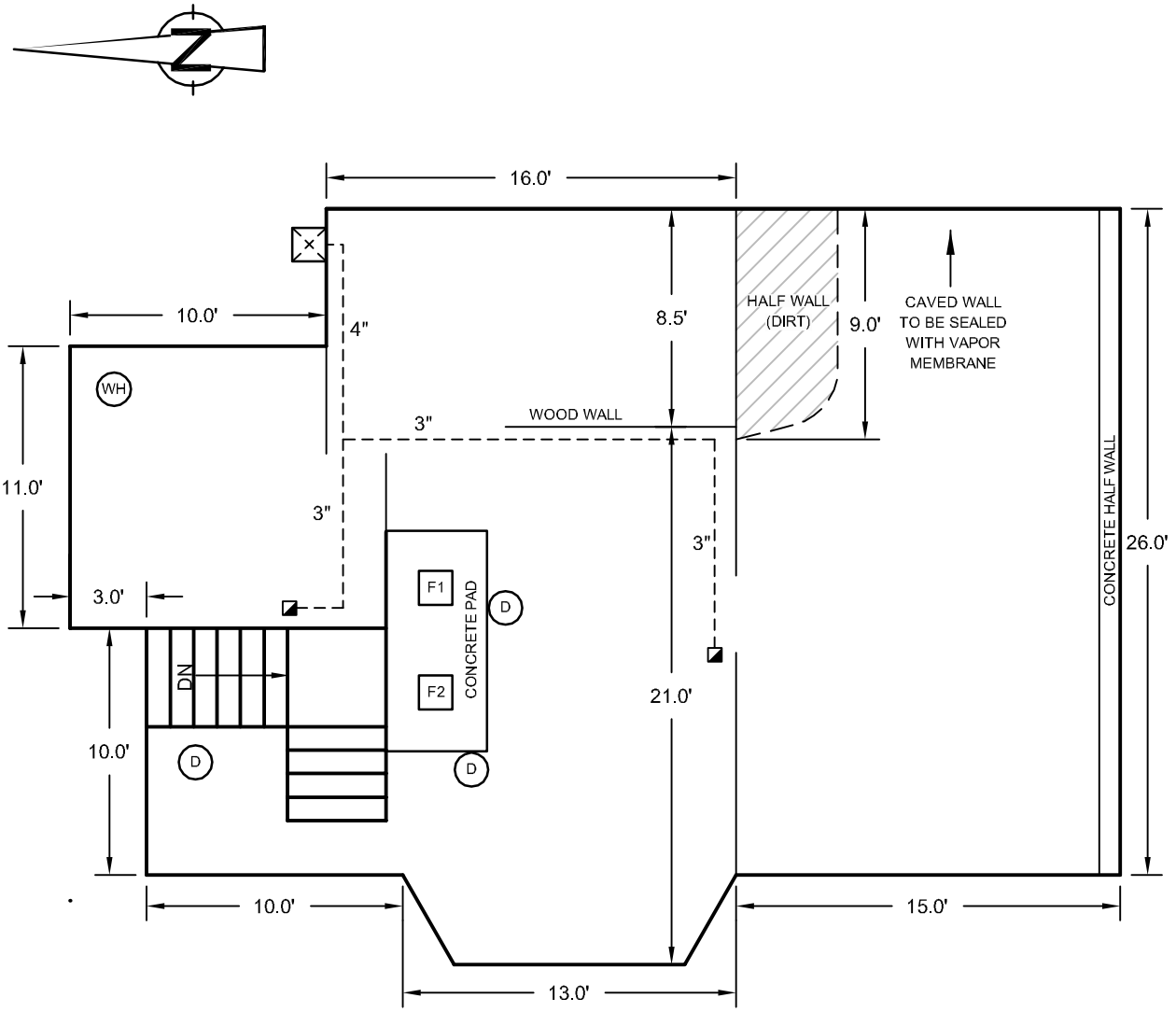
_____

_____

_____

ATTACHMENT B

SITE PLAN



LEGEND

- F — FURNACE
- EXTERIOR MOUNTED RADON FAN
- WH — WATER HEATER
- D — DRAIN WITH TRAP INSTALLED
- SUB SLAB EXTRACTION POINT
- VAPOR MEMBRANE
- PIPE RUN/I.D.

NOTES

FOUNDATION WALLS ARE CONCRETE BLOCK AND POURED CONCRETE

VAPOR INTRUSION MITIGATION SYSTEM DESIGN
904 PARK AVENUE
Attica, Indiana

19190-01(035)GN-WA030 MAY 12/2010

ATTACHMENT C

TYPICAL SYSTEM DRAWING

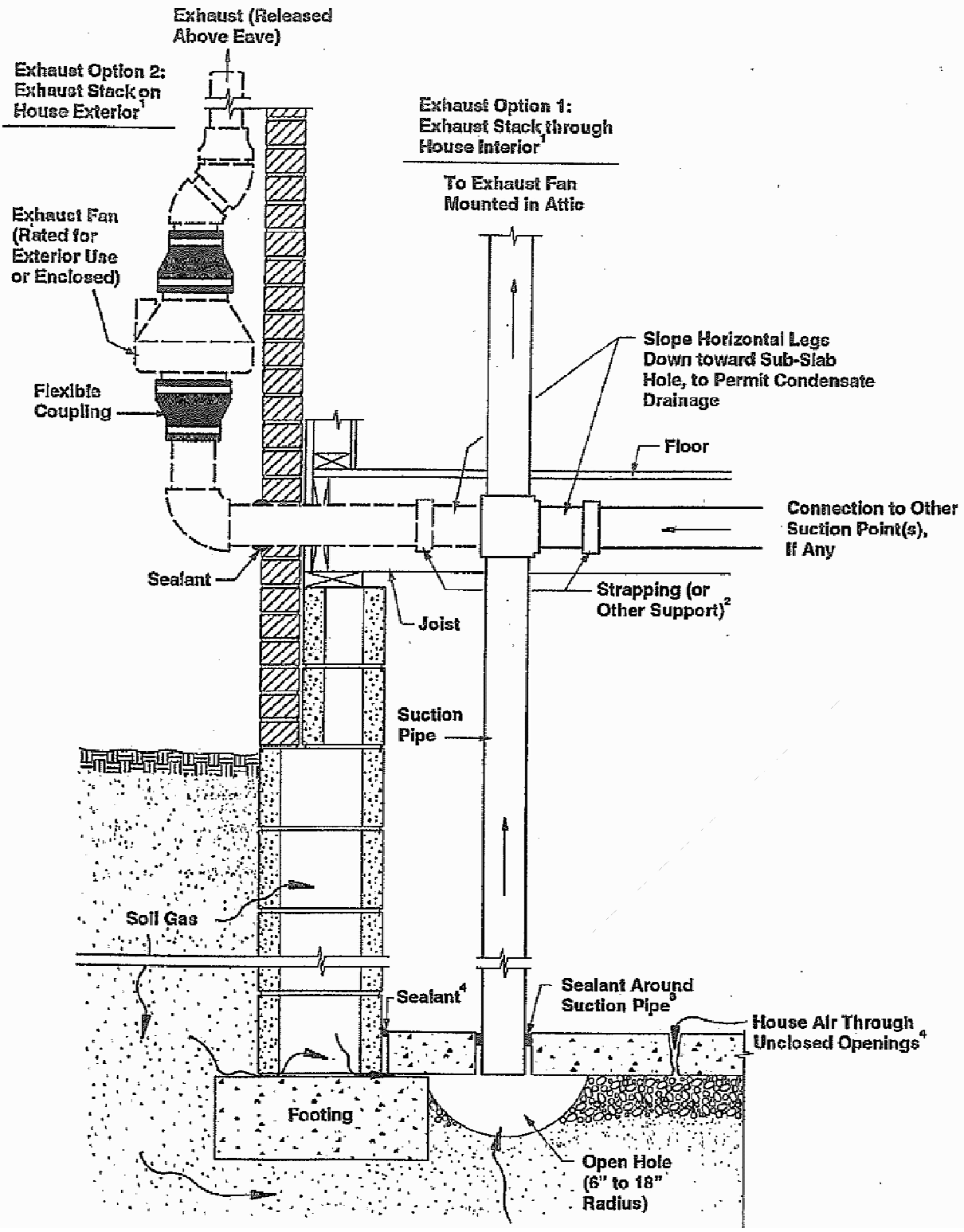


figure GS-1

TYPICAL SUBSLAB DEPRESSURIZATION (SSD) SYSTEM

Attica, Indiana

REFERENCE: EPA/625/R-93/011

19190-01(034)GN-WA003 JAN 20/2010

ATTACHMENT D

SITE PHOTOGRAPHS BEFORE SYSTEM CONSTRUCTION

Photo 1 – Damaged wall in south room of basement

Photo 2 – South room of basement showing damaged wall and exposed soil

SITE PHOTOGRAPHS

Photo 3 – Floor drain in basement

Photo 4 – Furnaces in basement

SITE PHOTOGRAPHS

Photo 5 – Water heater in basement

Photo 6 – Basic wall construction is cinder block and poured concrete; concrete floor slab

SITE PHOTOGRAPHS

Photo 7 – Water damage in basement

Photo 8 – Cinder block and concrete wall

SITE PHOTOGRAPHS

ATTACHMENT E

MATERIAL SPECIFICATIONS AND MSDS

LIST OF MATERIAL SPECIFICATIONS AND MSDS
904 Park Avenue
ATTICA, INDIANA

Component	***Product Code***	***Product Use***
Adhesive Tape	Eternabond (DoubleStick)	Attach membrane to walls and floor
Adhesive Tape Primer	Eternabond (EternaPrime)	
Caulk	NuFlex 110 Gutter Seal	Seal cracks and small gaps in walls and floor
Fan	Fantech HP220	
Fan Guard	FG-43	
Fan Housing	WFH89	Protect fan from weather
Foam Applicator Cleaning Agent	TriggerFoam Cleaner	
Foam Sealant	Power Fasteners PowerFoam and TriggerFoam	Seal larger openings
Pipe Cement	WELD-ON 717	Connect piping
Roofing Sealant	Geocel 3300	Seal around roof penetrations
Sealant	Ames Block & Wall	Top coating for walls and floors
Sealant	Ames Blue Max	Base coating for walls and floors
Seam Tape	Retarder Tape (R4-Tape)	Connect membrane sheets
System Alarm	RadonAway Checkpoint IIa	Monitor system vacuum
Vapor Barrier	Dura-Skrim (6 mil)	Seal crawlspace
Vent Cap	RC40-4	Keep debris and birds out of vent pipe

ETERNABOND

DoubleStick

MicroSealant Putty Tape

DoubleStick is pure EternaBond advanced MicroSealant with a removable siliconized release liner on each side. Designed to bond two surfaces, even two surfaces made of two or more dissimilar materials. DoubleStick creates a tight, permanent, waterproof seal. DoubleStick remains flexible to temperatures as low as -70°F making it virtually impossible to thermally shock the seal causing a leak.

DoubleStick Bonds to a wide range of surfaces including EPDM, TPO, most PVC, CSPE/Hypalon, CPE , SBS, APP modifieds, asphalt BURs, coal tar BURs, tiles, shingle, coated and non-coated aluminum and metal roofs, galvanized steel, gypsum board, wood, polyethylene, propylene, polystyrene, fiberglass, brick, concrete, masonry, OSB board, shielding membranes, etc.

Basic Use

DoubleStick tape is a self-sealing adhesive creating a water-tight, conformable seal between two or more irregular surfaces, and/or creates a weather proof, permanent bond between two or more similar or dissimilar surfaces. Use as a lap seal, under the foot of an equipment curb or skylight, or roll it into a bead or ball of MicroSealant to form a gasket, seal a gap or seal, or as needed.

Composition

DoubleStick utilizes EternaBond's advanced MicroSealant Technology, a 100% solids formulation of synthetic resins, thermoplastics and non-curing rubber (non butyl) with a built in primer, between two silicone release liners.

Technical Data

Adhesion	19lbs/in width
Application temperature	150°F to -20°F ambient
Available widths	Up to 48" as special order
Dielectric strength	Exceeds 12 kV
Elongation	>500%
Insulation resistance	10 to the 6th power megohms
Low temperature flexibility	½" radius at -30°F
Permanence	.001 perms maximum
Pliability	No cracks in membrane
Shelf Life	Up to 5 years
Standard case quantity	100 sq. ft. per case
Standard roll sizes	1", 2", 4", 6" X 50'
Temperature flexibility range	-70°F - >200°F
Total thickness	standard 30 mils or 60mils 40 mils or 80 mils available
Water vapor test (ASTME 96B)	.005 grms/100" sq./24hrs/100°F

Surface Preparation

Surface must be clean and dry. Moisture, dust, dirt, or other foreign matter should be removed. Remove oil and grease, etc. with EternaClean or a non residue cleaner such as acetone or lacquer thinner. Remove salt and other contaminants

Application

To apply the DoubleStick, remove one side of the release liner and apply to the surface to be protected or bonded. Rub or roll with pressure using your hand or a steel roller to activate bonding process. Remove the second release liner and apply second surface to tape, apply pressure. DoubleStick also can be used as a putty. Remove both release liners and roll into a rope. Place over gap and mold to seal opening. This material may be applied to clean dry surfaces from 150°F to -20°F ambient. Treat surface with EternaPrime for installations from 40°F to -20°F ambient.

ETERNABOND, Inc.
75 E. Division
Mundelein, IL, USA
Telephone: 888-336-2663
Fax: 847-837-9449
www.eternabond.com

ETERNABOND, INC. MATERIAL SAFETY DATA SHEET (TACTA01O)

Provided by: ETERNABOND, INC.
75 E. Division St.
Mundelein, IL 60060
847-837-9400

This form is designed to meet the requirements of the U.S. Labor Department OSHA form no 174.

SECTION I – PRODUCT IDENTIFICATION

Product: **ETERNABOND DOUBLESTICK**
24 Hour Emergency Assistance – Infotrac (800)-535-5053

Chemical Name: N/A
Chemical Family: Polyolefin and Synthetic Elastomer
Formula: N/A

HMIS/NFPA HAZARD RATINGS:	
Health Hazard:	0
Flammability Hazard	1
Reactivity Hazard	0

SECTION II – HAZARDOUS COMPONENTS

NONE

SECTION III – PHYSICAL DATA

Boiling Point Range: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Solubility in Water: Insoluble
Percent Volatile by Weight: N/A
Evaporation Rate: N/A
Appearance and Odor: Gray Sealant
Specific Gravity: 1.04 (adhesive)

SECTION IV– FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method: 450 Degrees Fahrenheit COC
Flammable Limits: N/A
Extinguishing Media: Carbon dioxide, dry chemical, foam, water fog, and water spray
Special Fire Fighting Procedures: Use water spray to cool fire exposed surfaces and to protect personnel.
Unusual Fire and Explosion Hazards: To

SECTION V – HEALTH HAZARD DATA

Permissible Exposure Level: N/A
Effects of Overexposure:

- **Eyes:** N/A
- **Ingestion:** Acute oral LD50 is greater than 10g/kg
- **Inhalation:** N/A
- **Skin:** N/A.

Emergency and First Aid Procedures:

- **Eyes:** Flush with water.
- **Ingestion:** Contact a physician
- **Inhalation:** N/A
- **Skin:** Remove with waterless hand cleaner. Wash with soap and water

Medical Conditions generally aggravated by exposure: N/A

Primary Routes of Entry:

- **Eyes:** None
- **Ingestion:** Not a normal exposure
- **Inhalation :** None
- **Skin:** None

Chemicals contained herein listed as carcinogens or potential carcinogens:
NTP: NONE **IARC:** NONE **OSHA:** NONE

SECTION VI – REACTIVITY DATA

Stability: Stable
Conditions to Avoid: Overheating
Incompatibility (Material to Avoid): Avoid contact with strong oxidizing agents
Hazardous Decomposition Products: Flammable Hydrocarbons
Hazardous Polymerization: Will not occur.

SECTION VII – SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Sweep up
Waste disposal method: Dispose of in accordance with Federal, State and local regulations.

SECTION VIII – SPECIAL PROTECTION INFORMATION

Respiratory Protection: N/A
Ventilation: N/A
Eye Protection: N/A
Protective Gloves: N/A

SECTION IX – SPECIAL PRECAUTIONS

Precautions to be taken in handling and storing: Do not store near flame, heat or strong oxidizing agents.

SECTION X - NOTES

Note: N/A = not applicable
Issue Date: February 21, 1996 (kk)
Revision Date: March 17, 2000
NE = not established
Issued By: D. Kathrein
Review Date: September 1, 2009 D Kathrein

Information herein is given in good faith and is, to the best of our knowledge and belief, accurate and reliable. However, since information herein was obtained, in part, from independent suppliers not under the direction and supervision of ETERNABOND, INC., ETERNABOND, INC., makes no warranty or representation, express or implied, that information is accurate, reliable, complete or representative. ETERNABOND, INC., warrants only that it has made no effort to censor other than trade secret information or to conceal deleterious aspects of its products. The data shown above in no way modifies, amends, or enlarges any specifications or warranty.

All components of this product are listed in the EPA/TSCA Inventory or Chemical Substances.

ETERNABOND

EternaPrime

EternaBond EternaPrime is a specially formulated primer developed specifically for EternaBond tapes. EternaPrime is based on a VOC exempt solvent. EternaPrime meets all federal standards for health and environmental safety.

EternaPrime is designed to work with all EternaBond tapes and was specifically developed for preparation of surfaces when installing EternaBond tapes in low ambient temperatures from 40°F down to -20°F. It is also widely used as a coalescing agent on surfaces which have difficult to remove dirt or conditions which may encapsulate the EternaBond tape.

*Do not use on PVC.

Basic Use

EternaPrime is used to prepare surfaces for application of all EternaBond tapes. Recommended uses include, but are not limited to dirty surfaces which are difficult to clean completely (tar and gravel), potentially loose surfaces (mortar), porous surfaces (wood or concrete), and anytime the EternaBond tape is applied at temperatures below 40°F ambient.

Composition

EternaPrime is based on a VOC exempt solvent with a blend of our elastomers and resins infused into the solvent.

Technical Data

Application Temperature	-20°F – 205°F
Coverage	300+ Sq. Ft. per gallon
Drying Time at 60°F	15 Minutes
Film thickness	+/- 4 mils when wet
Flash Point	110°F
Standard can sizes	½ pint, 1 quart, 1 gallon
Standard case quantity	24 ½ pints per case, 12 quarts per case, 1 gal. per case.
Viscosity	135 – 152 cps
Weight	10 lbs. per gallon

Surface Preparation

Surface must be dry. Remove heavy accumulations of loose rust and scale, dust, talc, and dirt. Oil, grease, and other contaminants should be removed with EternaClean or a non-residue cleaner. Do not use EternaPrime on PVC roofs as reactivation of some plasticizers may occur.

Application

EternaPrime can be sprayed, rolled, or brushed onto surface (stir frequently).

ETERNABOND, Inc.
75 E. Division
Mundelein, IL, USA
Telephone: 888-336-2663
Fax: 847-837-9449
www.eternabond.com

ETERNABOND, INC. MATERIAL SAFETY DATA SHEET

Provided by: ETERNABOND, INC.
75 E. Division St.
Mundelein, IL 60060
847-837-9400

This form is designed to meet the requirements of the U.S. Labor Department OSHA form no 174.

SECTION I – PRODUCT IDENTIFICATION

Product**: ETERNABOND ETERNAPRIME**
24 Hour Emergency Assistance – Infotrac (800)-535-5053

Chemical Name: Mixture
Chemical Family: Mixture

HMIS/NFPA HAZARD RATINGS:

Health Hazard:	1
Flammability Hazard	3
Reactivity Hazard	0

SECTION II – HAZARDOUS COMPONENTS

NAME	C.A.S. #	EXPOSURE LIMITS	% by Weight
Thermoplastic Rubber	66070-58-4	OSHA PEL NA ACGIH TLV NA	3-7
Hydrocarbon Resin	69430-35-9	OSHA PEL NA ACGHI TLV NA	5-11
*Hexane	110-54-3	OSHA TWA: 50ppm (skin) 50 ppm (skin)	80-95
Tetrakis[methylene(3,5,-di-(tert)-butyl -4-hydroxyhydrocinniamate)]methane	6683-19-8	OSHA TWA: NE ACGIH TWA: NE	.01-.05

~Denotes constituent of above listed ingredient. % Concentration is of product mass.
* Identified as SARA section 313 reportable.

SECTION III – PHYSICAL DATA

BOILING POINT:	69° C	SPECIFIC GRAVITY:	.75
FLASH POINT (SETA):	<0° C	VAPOR DENSITY:	3.0
EVAPORATION RATE: (butyl acetate = 1.0)	8.1	SOLUBILITY:	NEG

APPEARENCE AND ODOR: Clear liquid with a hydrocarbon odor.

SECTION IV– FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Class "B" dry chemical, carbon dioxide, or other suitable extinguishing material such as dry sand. Do not use halogenated agents. When flames have been eliminated, cover residue with dry extinguishing agent or dry sand and allow it to remain undisturbed until it has cooled. If fire appears to increase in intensity, stop using these agents. Apply Class "D" extinguishing agent or more dry, inert, granular material. Ring fire with extinguishing material and allow the fire to burn out.

SPECIAL FIRE FIGHTING PROCEDURES: If the fire does not respond to above agents or they are not available, use foam or water FOG as a last resort. Water may also be used to cool exposed, but not burning, containers. These products may float and be re-ignited on top of water. Personnel fighting fire should use a self contained breathing apparatus.

UNUSUAL FIRE and/or EXPLOSION HAZARDS: Closed containers may explode in a fire. Keep containers cool and remove to a safe location.

SECTION V – HEALTH HAZARD DATA

EYE CONTACT: These products are mildly irritating to the eyes. The effect of prolonged eye contact is not known. Flush with water immediately for at least 15 minutes. Seek Medical attention immediately.

SKIN CONTACT: Prolonged or repeated contact can cause dermatitis. Wash skin with waterless hand cleaner followed by soap and water. If redness appears treat it as a sunburn, if redness persists or rash appears seek medical attention immediately.

INHALATION: Upper respiratory tract irritation. May cause nausea or dizziness. High vapor concentrations can cause central nervous system depression, liver, and kidney damage. Remove individual to fresh air, upwind from fume source. If irritation persists seek medical attention immediately.

INGESTION: Acute gastrointestinal tract irritation. DO NOT INDUCE VOMITING. Prevent aspiration into lungs. Aspiration of even small amounts into lungs may result in aspiration pneumonitis. Seek medical attention immediately.

Pre-existing eye, skin, and respiratory disorders may be aggravated by exposure to these products. Exposure to high concentrations of fumes may have an anesthetic effect.

SECTION VI – REACTIVITY DATA

STABILITY:	Stable
HAZARDOUS POLYMERIZATION:	Will not occur
INCOMPATABILITY:	Strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of carbon, various hydrocarbon fragments

SECTION VII – SPILL OR LEAK PROCEDURES

PRECAUTIONS IN CASE OF SPILL: Contain spill as quickly as possible. Keep flowing material away from heat, sparks, or open flames. Do not smoke near a spill. Use clay (Oil Dry™), sand, earth, etc. to absorb the spill. Put material into a suitable steel drum which can be closed securely.

WASTE DISPOSAL: Bury in an approved landfill according to federal, state, and local regulations. Empty containers that have been completely emptied and the residue allowed to dry are not considered hazardous waste.

HANDLING & STORAGE PRECAUTIONS: Store away from heat, sparks, and open flames. Solvent vapors are heavier than air and may be moved from the source location by ventilation systems to points far away. Do not store near oxidizers.

OTHER PRECAUTIONS: Keep container closed when not in use. Store in a dry ventilated area. Maintain package labeling during storage.

SECTION VIII – SPECIAL PROTECTION INFORMATION

VENTILATION: Use natural cross ventilation, local (mechanical) pick-up, and/or general area mechanical cross ventilation. Ventilation pattern should be designed to prevent accumulation of heavier than air solvent vapors. Ventilation must be sufficient to maintain solvent vapor concentrations below the TLV.

RESPIRATORY PROTECTION: As required if airborne concentrations are above the TLV. If respirators become necessary use NIOSH approved unit for organic vapor and dusts.

PROTECTIVE CLOTHING: As necessary to prevent wetting of the skin.

EYE PROTECTION: As necessary in accordance with 29 CFR 1910.113

OTHER PRECAUTIONS: With good industrial hygiene no other precautions should be necessary. These products are intended for professional use. Use only after the appropriate Product Data Bulletin has been read and understood.

SECTION IX – SPECIAL PRECAUTIONS

Precautions to be taken in handling and storing: For industrial use only. Keep out of reach of children. Keep container closed. Avoid prolonged or repeated contact with skin. Avoid breathing vapors. Do not take internally. Store in a cool place. Store in tightly closed containers in a ventilated fire resistant area away from heat, open flame, sparks or strong oxidizing agents. Ground all equipment. Use only in a well ventilated area. Use only non-sparking tools. Vapors are heavier than air and will collect in low areas such as pits. Chronic overexposure may create health risks. Wash thoroughly after handling or contact. Do not eat, drink or smoke in areas where this product is used. Do not apply air pressure, puncture or weld on or near containers. Do not reuse containers.

SECTION X – NOTES

***DOT INFORMATION*:**

EternaPrime is regulated as Flammable Liquids per CFR 172.504. All bulk shipments in containers with a capacity of 119 gallons or more and all other shipments over 1000 lbs. MUST display Flammable placards and be fully secured before and during transit. They must be placed on all four sides of the vehicle.
UN#: 1133
Class: 3
Packing Group: II
NA

Note: NA = not applicable NE = not established
Issue Date: May 1, 2006 Issued By: R. Barry
Revision Date: September 1, 2009

Information herein is given in good faith and is, to the best of our knowledge and belief, accurate and reliable. However, since information herein was obtained, in part, from independent suppliers not under the direction and supervision of ETERNABOND, Inc., ETERNABOND, Inc. makes no warranty or representation, express or implied, that the information is accurate, reliable, complete or representative. ETERNABOND, Inc., warrants only that it has made no effort to censor other than trade secret information or to conceal deleterious aspects of its products. The data shown above in no way modifies, amends, or enlarges any specification or warranty.

110 Butyl Rubber Gutter Seal

NuFlex SEALANTS

SPECIALTY SEALANTS TECHNICAL DATA SHEET

NuFlex® 110 Butyl Rubber Caulk and Gutter Seal is a single component, "solvent release" butyl, designed to provide excellent exterior weathering properties. **NuFlex® 110** is formulated for use on many dissimilar building surfaces. It is our best narrow-bead sealant. Ideal for sealing gutter down spouts, metal storm windows, doors and lap joints. It adheres well to damp surfaces.

FEATURES & TYPICAL USES:

NuFlex® 110 is for use in areas where a sealant of more resiliency than ordinary caulk is required. Principal use is to seal narrow seams. **NuFlex® 110** is excellent under shower tracks or metal thresholds and other exterior building materials. **NuFlex® 110** can be used successfully on metal, glass, wood, brick, stone, masonry and paint to prevent the passage of air and moisture through narrow openings, whether the construction materials are similar or dissimilar. **NuFlex® 110** is not recommended where joints will have extreme movement or where openings are over 9.5 mm (3/8") wide.

Easy application:	**NuFlex® 110** can be easily applied with standard caulking guns or power caulking equipment.
Exceptional adhesion:	**NuFlex® 110** adheres well to most exterior sealing applications.
High durability:	**NuFlex® 110** will not crack and is resistant to sunlight, ozone, water, vapour transmission, cleaning chemicals and weathering.
Good stretch recovery:	**NuFlex® 110** will recover 70% of 100% elongation.
Extensive flexibility:	**NuFlex® 110** remains flexible over an extreme temperature range.
Optional painting:	**NuFlex® 110** forms a skin within 24 hours. Painting is unnecessary, but if desired, can be done after NuFlex® 110 has cured for one week. NuFlex® 110 is non-staining, with no discoloration.

SURFACE PREPARATION & APPLICATON:

The surface to be caulked should be sound, clean and dry, and be free of oil, grease, rust, corrosion or loose paint. A Primer may be required for certain surfaces. **NuFlex® 110** should not be applied when temperature is 4°C (40°F) or less. **NuFlex® 110** should be at room temperature when applied. If the sealant has been stored in a cool area, place in a heated room for several hours before using. Cut tip off cartridge just above threads, cut tip of nozzle to desired bead size and attach to cartridge. Insert cartridge into standard caulking gun to apply, or use any power equipment for normal caulking compounds or sealants. This product may be smoothed with a knife dipped in mineral spirits or water. Clean tools with mineral spirits or paint thinner. Care should be exercised when using **NuFlex® 110** on certain types of plastic, as crazing might result.

CAUTION:

Use in well ventilated areas and avoid breathing vapors. On contact, uncured sealant irritates eyes. Flush eyes with lukewarm water. Call physician. Avoid skin contact and do not ingest. Consult the Material Safety Data Sheet. Combustible, keep away from heat and open flame. **Keep out of reach of children.**

SHELF-LIFE & STORAGE:

Shelf-life is 12 months from date of shipment from our plant when stored in a clean, dry area with temperatures between 18°C to 43°C (65°F to 110°F). Avoid repeated freeze/thaw of **NuFlex® 110** while still in the cartridge. For best results, keep the sealant in tightly closed containers when not in use.

FEATURES:

- Skinning butyl rubber.
- Exterior / interior use.
- Adheres to many dissimilar building materials.
- The ideal exterior weathering sealant.

AVAILABLE SIZES & COLOUR:

- *300 mL (10.1 fl.oz.) cartridge*
- 12 cartridges per case
- 144 cases per skid
- Available in larger sizes*
- Available colors include: white, grey, and black.
- **Special order items may require lead times and minimum order quantities.*

MANUFACTURED BY:

NUCO INC. T: 519.823.4994 TF: 1.800.853.3984
150 Curtis Drive F: 519.823.1099 E: sales@nucoinc.com
Guelph, ON N1K 1N5

110 Butyl Rubber Gutter Seal

NuFlex SEALANTS

SPECIALTY SEALANTS TECHNICAL DATA SHEET

TYPICAL PROPERTIES:

These values are not intended for use in preparing specifications. Spec Writers; please contact NUCO Inc. before writing specifications if any further information is required.

Description	Specification
As Supplied	
Specific Gravity:	*1.32*
% Solid:	*80% minimum*
Flash Point:	*40°C (105°F)*
Slump Resistance – (ASTM D2202):	*Pass*
Application Temperature Range – (ASTM 603):	*4°C to 49°C (40°F to 120°F)*
Tack-Free Time – (ASTM D2377):	*2 hours*
Cure Time:	*21 days, solvent release*
As Cured	
Joint Movement:	*± 7.5%*
Weight per gallon – (ASTM D1475):	*11.0 lbs*
Volume Shrinkage – (ASTM C1241):	*20% maximum*
Staining – (ASTM D2203):	*Pass*
Service Temperature Range – (ASTM C1299):	*-29°C to 93°C (-20°F to 200°F)*

DISCLOSURE

The information and data contained herein is BASED ON INFORMATION WE BELIEVE TO BE RELIABLE. Please read all statements, recommendations or suggestions herein in conjunction with our CONDITIONS of SALE which apply to all goods supplied by us. We assume no responsibility for the use of theses statements, recommendations or suggestions, nor do we intend them as recommendation for any use which would infringe any patent or copyright.

SPECIFICATIONS:

NuFlex® 110 meets:

- CGSB 19-GP-14
- ASTM C-1311
- U.S. Federal Spec TT-S-001657, Type 1, TT-C-05 98C, TTC-1796A,
- AAMA 808.3.

WARRANTY INFORMATION:

NUCO Inc., warrants only that its product will meet its specifications. NUCO shall in no event be liable for incidental or consequential damage. NUCO's liability, expressed or implied is limited to the stated selling price of any goods found to be defective.

NuFlex SEALANTS

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www.**NuFlex**.com

MATERIAL SAFETY DATA SHEET

SECTION 01 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION:

Chemical Name:	**NUFLEX® 110 GUTTER SEAL, BUTYL RUBBER SEALANT**
Manufacturer:	**NUCO INC.** **150 Curtis Drive** **Guelph, Ontario N1K 1N5** **Tel: (519)-823-4994** **Fax: (519)-823-1099** **Infotrac 24 Hour Emergency Tel: (800)-535-5053**
Date:	**July 1, 2008**
Prepared by:	**Technical Services Department**
WHMIS Classification:	**B3, D2B**
Product Use:	**Caulking compound**

SECTION 02 – COMPOSITION / INFORMATION ON INGREDIENTS:

Ingredients	CAS No.	%	LD50(Oral-rat)	LC50(Inhalation-rat)
Mineral Spirits	8052-41-3	10.0 – 30.0	Not available	Not available

The ingredients listed above are controlled products as defined in CPR, am. SOR/88-555 or 29 CFR 1910.1200

SECTION 03 – HAZARDS INDENTIFICATION:

ROUTES OF ENTRY INTO THE BODY (ACUTE EFFECTS):

Eyes:	**Direct contact may cause mild irritation.**
Skin:	**May cause slight irritation. Symptoms may include localized redness, swelling and itching.**
Inhalation:	**Irritates respiratory passages very slightly. Overexposure may cause upper respiratory tract irritation, headache, dizziness, drowiness, and slowed reaction time.**
Ingestion:	**Low ingestion hazard in normal use. Irritation may cause abdominal pain, nausea, diarrhea and vomiting.**

WHMIS HAZARD SYMBOL(S):

SECTION 04 - FIRST AID MEASURES:

Eyes:	**Flush with copious quantities of lukewarm water. Do not attempt to physically remove the solids or gums from the eye. Seek medical attention immediately.**
Skin:	**Remove contaminated clothing. Wash thoroughly with warm water and non-abrasive soap. Seek medical attention if you feel ill or a reaction develops.**
Inhalation:	**Remove to fresh air and provide water. Seek medical attention if you feel ill or a reaction develops.**
Ingestion:	**Get medical attention.**

SECTION 05 - FIRE FIGHTING MEASURES:

Flammable Conditions:	**Avoid direct sources of heat or ignition in uncured state. Solvent vapors are heavier than air and may travel along the ground and be ignited by sources distant from handling points.**
Extinguishing Media:	**Carbon dioxide, dry chemical, water fog or foam. Water can be used to cool fire exposed containers.**
Fire Fighting Measures:	**Treat as a Class "B" fire. Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving**

	chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan.
Flash Point:	**Closed cup 106°F (41°C)**
Flammability Limits:	**Lower Explosion Limit - 0.5% by volume** **Upper Explosion Limit - 6.0% by volume**
Autoignition Temperature:	**490°F (254°C)**
Hazardous Decomposition Products:	**Carbon oxides, aldehydes and traces of incompletely burned carbon products.**
Sensitivity - Impact:	**Not available**
Static:	**Not available**

SECTION 06 – ACCIDENTAL RELEASE MEASURES:

Containment / Clean Up:	**Restrict access to the area of the spill. Provide ventilation, NIOSH / MSHA approved respirator and protective clothing. Scrape up caulk and place in container for disposal. Cleaning may require steam or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state, provincial, federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup.**

SECTION 07 – HANDLING AND STORAGE:

Handling and Storage:	**Store in an adequately ventilated area under dry conditions between 50°F (10°C) to 77°F (25°C) and keep container tightly sealed when not in use. Use only in well ventilated area. Containers may retain product residues and vapors.**

SECTION 08 – EXPOSURE CONTROL / PERSONAL PROTECTION:

Component Exposure Limits:	**Mineral Spirits (CAS# 8052-41-3): Provide adequate ventilation to control exposures within the following exposure guidelines: ACGIH TLV: 100 ppm, OSHA PEL: 500 ppm.**
Respiratory:	**Wear an organic vapor NIOSH / MSHA approved respirator.**
Ventilation:	**In indoor applications, passive ventilation (opening of doors and windows) is recommended. Local exhaust as necessary to keep exposure levels within guidelines.**
Personal Protective Equipment:	**Safety glasses with side-protection, impermeable gloves (e.g., neoprene, nitrile, silver shield (R)), coveralls or apron are important in preventing contamination of eyes, skin and clothing. Wash thoroughly after handling.**

SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES:

Physical State:	**Paste, various colors**
Odor and Appearance:	**Solvent odor, thixotropic caulk**
Odor Threshold:	**Not available**
Specific Gravity:	**1.32**
Vapor Pressure:	**5 mm Hg @ 78°F (26°C)**
Vapor Density:	**5.0**
Evaporation Rate:	**0.12**
Boiling Point:	**352°F (178°C)**
Freezing Point:	**Not available**
pH:	**Not available**
Coeff. Oil/Water Distribution:	**Not available**

SECTION 10 – STABILITY AND REACTIVITY:

Chemical Stability:	**Stable**
Incompatible Materials:	**Strong oxidizing agents**
Reactive Conditions:	**Incompatible materials.**
Hazardous Polymerization:	**Will not occur.**

SECTION 11 - TOXICOLOGICAL INFORMATION:

Effects of overexposure:	**Prolonged and repeated skin contact may cause dermatitis or aggravate pre-existing skin disorders. Inhalation of high vapor concentration or ingestion may cause headache, vomiting, dizziness and nausea.**
Sensitization:	**No known applicable information.**
Carcinogenicity:	**No ingredients considered by IARC, NTP or OSHA to be carcinogens.**

Reproductive Toxicity:	**No known applicable information.**
Teratogenicity:	**No known applicable information.**
Mutagenicity:	**No known applicable information.**
Synergistic Products:	**No known applicable information.**

SECTION 12 – ECOLOGICAL INFORMATION:

Air:	**Complete information is not yet available.**
Water:	**Complete information is not yet available.**
Soil:	**Complete information is not yet available.**

SECTION 13 – DISPOSAL CONSIDERATIONS:

Waste Disposal:	**Dispose in accordance with Federal, State / Provincial and local regulations. Under RCRA 40 CFR 261 deemed to be a hazardous waste due to ignitability.**

SECTION 14 - TRANSPORT INFORMATION:

Shipping Information:	**DOT PROPER SHIPPING NAME: Adhesive containing Flammable Liquid.** **DOT HAZARD CLASS: UN 1133** **IDENTIFICATION NO.: NMFC Item No. 149610** **TDG CLASSIFICATION: Class 3.3, Packing Group III (General Exemption 1.33 for Domestic Shipments).**

SECTION 15 - REGULATORY INFORMATION:

TSCA Inventory Status:	**Chemical components listed on TSCA inventory except as exempted.**
NFPA Profile:	**Health 1, Flammability 2, Reactivity 0**
SARA TITLE III Chemical Listings:	**Section 302 Extremely Hazardous Substances (40 CFR 355): None** **Section 304 CERCLA Hazardous Substances (40 CFR 302): None** **Section 311/312 Hazard Class (40 CFR 370): Acute: Yes; Chronic: Yes; Fire: Yes; Pressure: No; Reactive: No** **Section 313 Toxic Chemicals (40 CFR 372): None present or none present in reportable quantities.**
State Substance List:	**This product contains a listed substance(s) that appears on one or more of the Substance Lists for Pennsylvania, Massachusetts and New Jersey: mineral spirits (CAS# 8052-41-3).**
California Proposition 65 List:	**No known applicable information.**
Volatile Organic Content:	**248 grams per liter (2.07 lb/gallon), 18.79% by weight (CARB Method 310).**
Domestic Substance List:	**Chemical components listed on DSL except as exempted.**

SECTION 16 - OTHER INFORMATION:

The information herein is given in good faith, but no warranty, express or implied, is made. Product users should make independent judgements of the suitability of this information to ensure proper use and to protect the health and safety of employees.

Form: MSDSNUFLEX110BGUTTERSEAL,BUTYLRUBBERSEALANT Rev.: 6 Date: 06/08

Fantech

HP SERIES

FANS FOR RADON APPLICATIONS
WITH IMPROVED UV RESISTANCE!

TRUST THE INDUSTRY STANDARD.
HERE'S WHY:

Don't put your reputation at stake by installing a fan you know won't perform like a Fantech! For nearly twenty years, Fantech has manufactured quality ventilation equipment for Radon applications. Fantech is the fan Radon contractors have turned to in over 1,000,000 successful Radon installations worldwide.

Fantech external rotor motor

FANTECH HP SERIES FANS MEET THE CHALLENGES OF RADON APPLICATIONS:

HOUSING
- UV resistant, UL Listed durable plastic
- UL Listed for use in commercial applications
- Factory sealed to prevent leakage
- Watertight electrical terminal box
- Approved for mounting in wet locations - i.e. Outdoors

MOTOR
- Totally enclosed for protection
- High efficiency EBM motorized impeller
- Automatic reset thermal overload protection
- Average life expectancy of 7-10 years under continuous load conditions

RELIABILITY
- Five Year Full Factory Warranty
- Over 1,000,000 successful radon installations worldwide

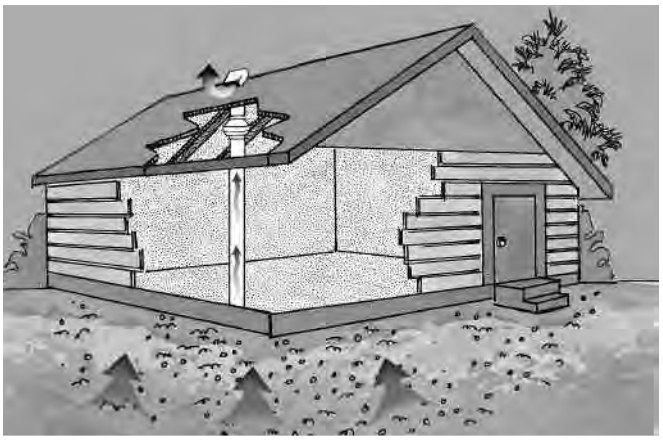
IMPROVING INDOOR AIR QUALITY THROUGH BETTER VENTILATION

www.fantech.net

Fantech

HP Series Fans are Specially Designed with Higher Pressure Capabilities for Radon Mitigation Applications

MOST RADON MITIGATORS WHO PREVIOUSLY USED THE FANTECH FR SERIES FANS HAVE SWITCHED TO THE NEW HP SERIES.



PERFORMANCE DATA

Fan Model	Volts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.								Max. Ps
				0"	0.5"	0.75"	1.0"	1.25"	1.5"	1.75"	2.0"	
HP2133	115	14 - 20	0.17	134	68	19	-	-	-	-	-	0.84
HP2190	115	60 - 85	0.78	163	126	104	81	58	35	15	-	1.93
HP175	115	44 - 65	0.57	151	112	91	70	40	12	-	-	1.66
HP190	115	60 - 85	0.78	157	123	106	89	67	45	18	1	2.01
HP220	115	85 - 152	1.30	344	260	226	193	166	137	102	58	2.46

HVI MEMBER™

PERFORMANCE CURVES

Fantech provides you with independently tested performance specifications.

The performance curves shown in this brochure are representative of the actual test results recorded at Texas Engineering Experiment Station/Energy Systems Lab, a recognized testing authority for HVI. Testing was done in accordance with AMCA Standard 210-85 and HVI 916 Test Procedures. Performance graphs show air flow vs. static pressure.

Use of HP Series fans in low resistance applications such as bathroom venting will result in elevated sound levels. We suggest FR Series or other Fantech fans for such applications.

HP FEATURES INCLUDE

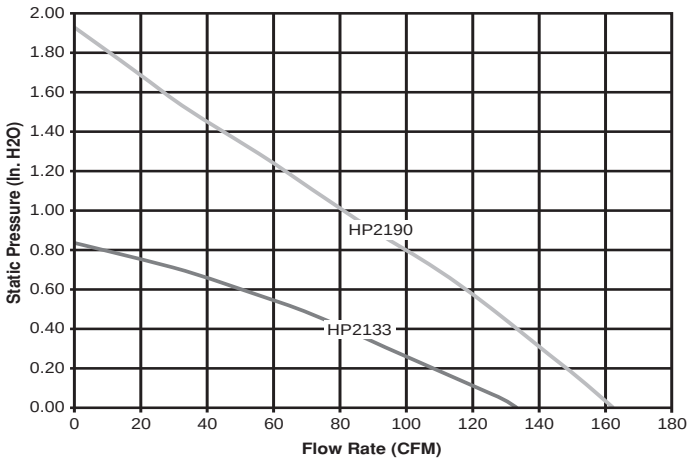
- Improved UV resistant housings approved for commercial applications.
- UL Approved for Wet Locations (Outdoors)
- Sealed housings and wiring boxes to prevent Radon leakage or water penetration
- Energy efficient permanent split capacitor motors
- External wiring box
- Full Five Year Factory Warranty

c UL us

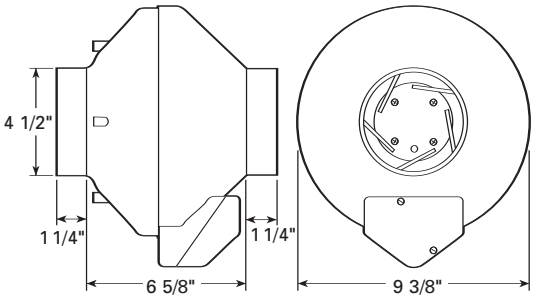
NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

HP2133 & HP2190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.

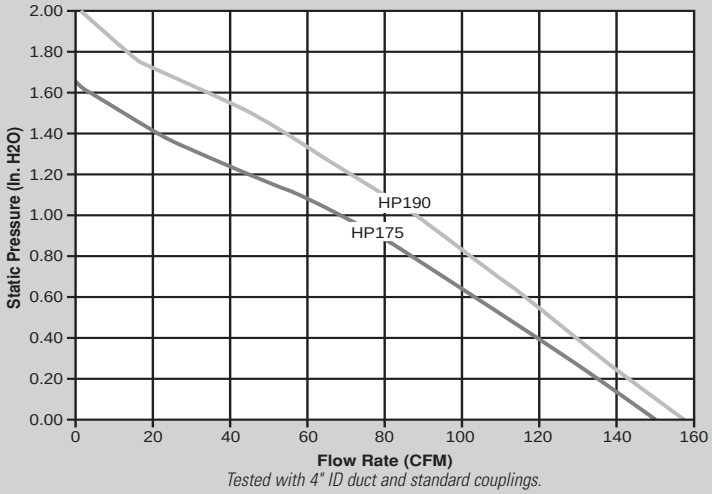


HP2133 – For applications where lower pressure and flow are needed. Record low power consumption of 14-20 watts! Often used where there is good sub slab communication and lower Radon levels.

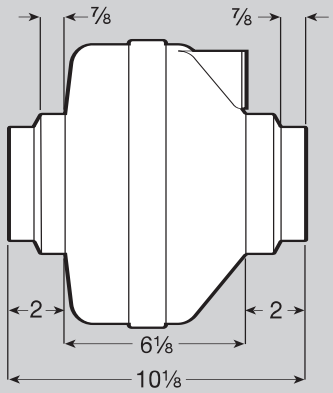
HP2190 – Performance like the HP190 but in a smaller housing. Performance suitable for the majority of installations.

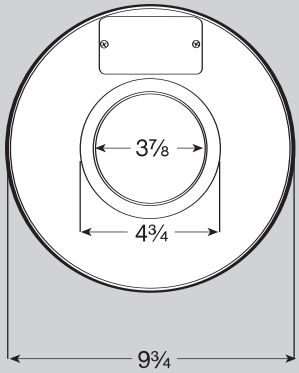
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #156-44, Pipeconx PCX 56-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP175 & HP190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.



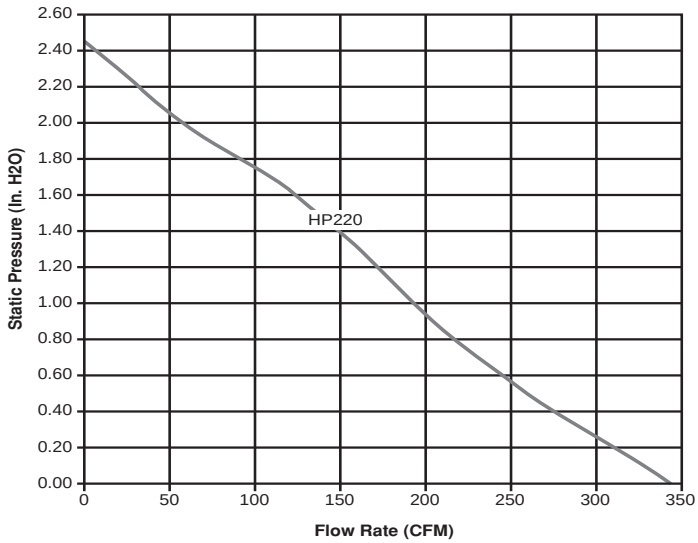


HP175 – The economical choice where slightly less air flow is needed. Often used where there is good sub slab communication and lower Radon levels.

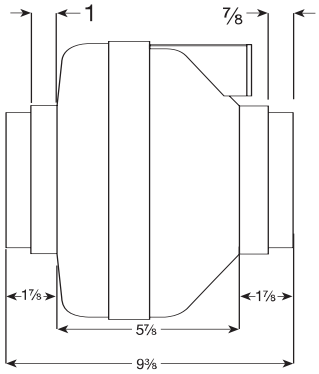
HP190 – The standard for Radon Mitigation. Ideally tailored performance curve for a vast majority of your mitigations.

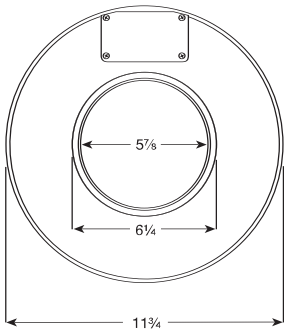
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #151-44, Pipeconx PCX 51-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP220 RADON MITIGATION FAN



Tested with 6" ID duct and standard couplings.





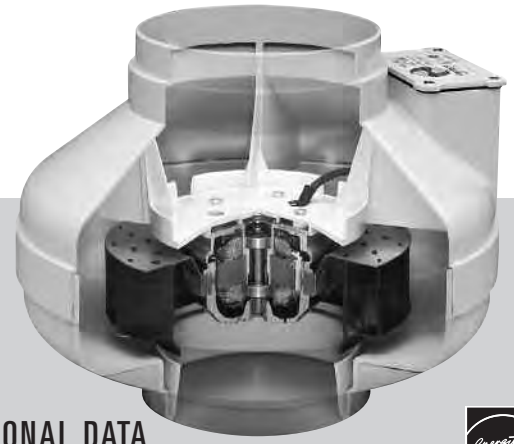
HP 220 – Excellent choice for systems with elevated radon levels, poor communication, multiple suction points and large subslab footprint. Replaces FR 175.

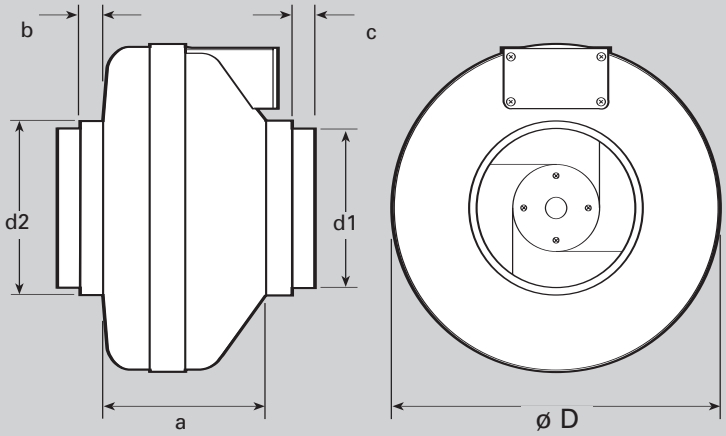
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #156-64, Pipeconx PCX 56-64 or equivalent.
For 3" PVC pipe use Indiana Seals #156-63, Pipeconx PCX 56-63 or equivalent.

Fantech

FR SERIES

THE ORIGINAL MITIGATOR





DIMENSIONAL DATA

model	øD	d1	d2	a	b	c
FR100	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR110	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR125	9 1/2	–	4 7/8	6 1/8	7/8	–
FR140	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR150	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR160	11 3/4	5 7/8	6 1/4	6 3/8	1	7/8
FR200	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR225	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR250	13 1/4	–	9 7/8	6 1/4	–	1 1/2

All dimensions in inches

PERFORMANCE DATA

Fan Model	Energy Star	RPM	Volts	Rated Watts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.							Max. Ps	Duct Dia.
							0"	.2"	.4"	.6"	.8"	1.0"	1.5"		
FR100	✔	2900	115	19	13 - 19	0.18	122	100	78	55	15	-	-	0.87"	4"
FR125	✔	2950	115	18	15 - 18	0.18	148	120	88	47	-	-	-	0.79"	5"
FR150	✔	2750	120	71	54 - 72	0.67	263	230	198	167	136	106	17	1.58"	6"
FR160	-	2750	115	129	103 - 130	1.14	289	260	233	206	179	154	89	2.32"	6"
FR200	✔	2750	115	122	106 - 128	1.11	408	360	308	259	213	173	72	2.14"	8"
FR225	✔	3100	115	137	111 - 152	1.35	429	400	366	332	297	260	168	2.48"	8"
FR250*	-	2850	115	241	146 - 248	2.40	649	600	553	506	454	403	294	2.58"	10"

FR Series performance is shown with ducted outlet. Per HVI's Certified Ratings Program, charted air flow performance has been derated by a factor based on actual test results and the certified rate at .2 inches WG.
** Also available with 8" duct connection. Model FR 250-8. Special Order.*

NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

FIVE YEAR WARRANTY

DURING ENTIRE WARRANTY PERIOD:

FANTECH will replace any fan which has a factory defect in workmanship or material. Product may need to be returned to the Fantech factory, together with a copy of the bill of sale and identified with RMA number.

FOR FACTORY RETURN YOU MUST:

- Have a Return Materials Authorization (RMA) number. This may be obtained by calling FANTECH either in the USA at 1.800.747.1762 or in CANADA at 1.800.565.3548. Please have bill of sale available.
- The RMA number must be clearly written on the outside of the carton, or the carton will be refused.
- All parts and/or product will be repaired/replaced and shipped back to buyer; no credit will be issued.

OR

The Distributor may place an order for the warranty fan and is invoiced.
The Distributor will receive a credit equal to the invoice only after product is returned prepaid and verified to be defective.

FANTECH WARRANTY TERMS DO NOT PROVIDE FOR REPLACEMENT WITHOUT CHARGE PRIOR TO INSPECTION FOR A DEFECT. REPLACEMENTS ISSUED IN ADVANCE OF DEFECT INSPECTION ARE INVOICED, AND CREDIT IS PENDING INSPECTION OF RETURNED MATERIAL. DEFECTIVE MATERIAL RETURNED BY END USERS SHOULD NOT BE REPLACED BY THE DISTRIBUTOR WITHOUT CHARGE TO THE END USER, AS CREDIT TO DISTRIBUTOR'S ACCOUNT WILL BE PENDING INSPECTION AND VERIFICATION OF ACTUAL DEFECT BY FANTECH.

THE FOLLOWING WARRANTIES DO NOT APPLY:

- Damages from shipping, either concealed or visible. Claim must be filed with freight company.
- Damages resulting from improper wiring or installation.
- Damages or failure caused by acts of God, or resulting from improper consumer procedures, such as:

1. Improper maintenance
2. Misuse, abuse, abnormal use, or accident, and
3. Incorrect electrical voltage or current.

- Removal or any alteration made on the FANTECH label control number or date of manufacture.
- Any other warranty, expressed, implied or written, and to any consequential or incidental damages, loss or property, revenues, or profit, or costs of removal, installation or reinstallation, for any breach of warranty.

WARRANTY VALIDATION

- The user must keep a copy of the bill of sale to verify purchase date.
- These warranties give you specific legal rights, and are subject to an applicable consumer protection legislation. You may have additional rights which vary from state to state.

DISTRIBUTED BY:

Fantech
United States 1712 Northgate Blvd. • Sarasota, FL. 34234 • 1.800.747.1762 • www.fantech.net
Canada 50 Kanalflakt Way • Bouctouche, NB E4S 3M5 • 1.800.565.3548 • www.fantech.ca

Item #: 411741
Rev Date: 120407

Fantech, reserves the right to modify, at any time and without notice, any or all of its products' features, designs, components and specifications to maintain their technological leadership position.

MSDS

MSDS No:	31
Rev Date:	1/20/10
Rev No:	2

1 MATERIAL SAFETY DATA SHEET

Product Name:	**TriggerFoam™ Cleaner**
Description:	Cleaning agent for TriggerFoam™ Dospensing Tools
Supplier:	Powers Fasteners, Inc. 2 Powers Lane, Brewster, NY 10509
Customer Service:	800-524-3244
Emergency Phone:	(CHEMTREC) Within USA: (800) 424-9300; Outside USA: 01 (703) 527-3887

2 INGREDIENTS

	CAS Number	ACGIH TWA	OSHA PEL
Acetone	76-64-1	500ppm	1000ppm
Propane	74-98-6	1000ppm*	1000ppm
Isobutane	75-28-5	1000ppm*	NE
Butane	107-97-9	1000ppm*	NE

*Note: The ACGIH TLVs for Propane, Isobutane and Butane are as *Aliphatic hydrocarbon gases.*
This product is classified as hazardous under OSHA regulations (29CFR 1910.1200).

Abbreviations: NE= Not established

3 SAFE USAGE RECOMMENDATIONS

Ventilation: Avoid breathing vapors or mist. Use with adequate ventilation, either natural or mechanical.

Eye Protection: Safety goggles are recommended. Saftey glasses with side shields should be used as a minimum. Direct eye contact with product can cause irritation and corneal burns.

Skin Protection: Avoid skin contact. Use neoprene or rubber gloves. Prolonged skin contact may cause irritation and dryness.

Respiratory Protection: Avoid breating vapors or mist. Can be irritating to respiratory tract. Excessive exposure in poorly ventillated areas may cause dizziness or headache.

Notice: For professional use. Keep away from children.

4 EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately flush eyes with clean water for 15 minutes and call a physician.

Skin: Wash with soap and water. Launder clothing before reuse. Seek medical attention if any symptoms develop.

Inhalation: Move to fresh air if dizziness or headache occurs. Contact physician if symptoms persist.

Ingestion: Immediately rinse mouth with water and call a physician. Drink 1-2 glasses of water. Do not induce vomitting unless directed by a physian.

Other: Contact a physician if there is any question about the seriousness of the exposure.

5 HEALTH HAZARD INFORMATION

Hazards: Pressurized flammable liquid and gas. Keep away from fire and heat (>120F). Do not smoke while using product.

6 PHYSICAL CHARACTERISTICS

Appearance:	Clear liquid and gas.
Boiling Point:	NE **Flash Point:** -18F (0C)
(Air=1) Vapor Density:	>1
(Water=1) Evaporation Rate:	NE
Specific Gravity:	1.1
VOC Content:	0.2
Odor:	Mild amine-like
Solubility in Water:	Insoluble
pH:	NE

7 FIRE, HAZARD AND REACTIVITY DATA

Flammability:	Extremely Flammable
Stability:	Stable. Hazardous polymerization will not occur.
Incompatibility:	Strong acids, bases and alcohols.
Unusual fire or Explosion Hazards:	None Known.
Extinguishing Media:	Foam, CO_2, Dry Chemical
Fire Fighting:	Self-contained breathing equipment recommended.
Hazardous Combustion Products:	CO, NO, HCN, HCL

8 TRANSPORTATION AND REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910. 1200.
HMIS Codes:	Health 2, Flammability: 3, Physical Hazard: 2 PPE: B Flash Point: -18F (0C)
US DOT Proper Shipping Name:	Consumer Commodity ORM-D UN 1950 Class: 2.1 PG: N/A
Canadian TDGR Proper Shipping Name:	Aerosols UN 1950 Class: 2.1 PG: N/A
IMO/IMDG Proper Shipping Name:	Aerosols UN 1959 Class 2.1 PG: N/A EmS: F-d, S-U
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product does not contain any Section 313 reportable ingredients.

9 STORAGE, CLEAN-UP, AND DISPOSAL

Storage:	Store in a cool, dry place. Keep from freezing and extreme heat, which may shorten shelf life.
Spills:	Collect spilled contents with absorbent material and place in a sealable container for proper disposal.
Waste Disposal:	Dispose of in accordance with federal, state and local regulations.
EPA Waste Codes:	D001, D003 (aerosol cans)

The information and recommendations provided herin are based on information available to us at the time of preparation. We make no other warranty, expressed or implied, as to its correctness, completeness, or as to the results and reliance of the information.

Foam

Power Foam & Trigger Foam

Fills, Bonds, Seals & Insulates

29 oz. Gun Foam

12 oz. Straw Foam

29 oz. Straw Foam

Powers is a proud member of:

Evergreen MARKETING GROUP

Powers® FASTENERS

PowerFoam™

PowerFoam™ is a single component, moisture curing expanding polyurethane foam. The adhesive strength of PowerFoam™ allows it to be set on various types of building elements including concrete, brick, wood, metal, aluminum and steel. When installing the foam, consideration should be given to the two fold expansion of the foam after it leaves the plastic tube. The surface of the foam initially dries within 1-4 hours and becomes fully cured in 12-15 hours. The foam works best at room temperature. It is dispensed through a straw-like plastic tube that is packaged with the can. The structure of the hardened foam provides excellent insulation against heat and noise.

29 oz. Straw Foam

12 oz. Straw Foam

APPLICATIONS

PowerFoam™ is for applications where it is not necessary to control the size of the bead or the rate of flow. PowerFoam™ can be used in a wide variety of applications. Use it to fill, seal or insulate. It blocks drafts, stops leaks, saves energy, adheres to all types of construction material, deadens sound, acts as a buoyancy material once cured, controls radon, confines asbestos fibers, and can be used in HVAC applications. PowerFoam™ also seals and keeps out insects and rodents. After installation, it is recommended that a full 24 hours elapse prior to scraping, sanding, staining or painting.

TYPICAL USES

INSULATING

- Around window frames, sills, door frames floor / wall joints
- Electrical junction boxes
- Attics
- Refrigeration units and pipes
- Air conditioning systems

FILLING

- Breaches in walls
- Pipe penetrations in non-fire-rated walls
- Voids in concrete forms
- Underground utility ductwork
- Sound dampening

FEATURES

- CFC free propellant
- Polyurethane system
- Class B3 flame retardant
- Contains no urea formaldehyde or PCBs
- Works with PVC
- Physiologically harmless when fully cured
- Neutral odor
- Does not rot or deteriorate with age
- Water resistant

ADVANTAGES

- High foam yield - up to 1.6ft³ per 29 oz. can
- Also available in convenient 12 oz. cans
- Precision plastic valve helps prevent pressure loss and prolongs shelf life
- Minimal subsequent expansion (+/- 10%)

TECHNICAL DATA

Volume yield	1.4 - 1.6 ft³ (40-45 liters) free foamed
Specific gravity (of foamed product)	1.25 - 1.56 lb./ft³
Application temperature	+ 32°F / 0°C min. (for application surfaces)
Tack free time	5 - 10 minutes (depending on temp. and humidity)
Cutting time	15 - 20 minutes (depending on temp. and humidity)
Initial drying time	1 - 4 hours (depending on temp. and humidity)
Full curing time	12 - 15 hours (depending on temp. and humidity)
Water absorption	Max. 1% of volume
Temperature resistance	-8°F to +212°F
Tensile strength	7.25 - 14.5 psi
Elongation at breakage	20 - 25 %
Contents	12 oz. (375g) Net Weight and 29 oz. (900g) Net Weight
Shelf life	24 months (+40°F to +75°F - higher temp., shorter shelf life) Must be stored in vertical position

POWERFOAM

CAT. NO.	DESCRIPTION	STD. BOX	STD. CTN.
8130	PowerFoam™ 12 oz.	12	12
8132	PowerFoam™ 29 oz.	12	12

APPROVALS & LISTINGS

Underwriters Laboratories - File No. R16754
Caulking and Sealants Surface Burning Characteristics
ASTM E 84 (12.5%)
Flame Spread 10
Smoke Developed 30

TriggerFoam™

29 oz. Gun Foam

TriggerFoam™ is a one part polyurethane expanding foam which sets into its final form by using moisture present in the air. When installing the foam, consideration should be given to the two fold expansion of the foam after it leaves the nozzle. The surface of the foam initially dries within 1-4 hours and becomes fully cured in 12-15 hours. TriggerFoam™ sets well on ordinary surfaces such as concrete, brick, metal etc. Surfaces do not require preparation and can also be damp. After installation, it is recommended that a full 24 hours elapse prior to scraping, sanding, staining or painting. The foam has a R-5 value when used in place of traditional installation methods.

Fills around pipe and electrical conduit

Trigger cleaner makes clean up simple and easy.

APPLICATIONS

TriggerFoam™ is dispensed through a special gun that allows the user to control the rate of flow as well as the size of the bead for more precise placement of the product, allowing it to be used in a wide variety of applications. Use it to fill, seal or insulate. It blocks drafts, stops leaks, saves energy, adheres to all types of construction material, deadens sound, acts as a buoyancy material once cured, controls radon, confines asbestos fibers, and can be used in HVAC applications.

TYPICAL USES

INSULATING

- Around window frames, sills, door frames floor / wall joints
- Electrical junction boxes
- Attics
- Refrigeration units and pipes
- Air conditioning systems

FILLING

- Breaches in walls
- Pipe penetrations in non-fire-rated walls
- Voids in concrete forms
- Underground utility ductwork
- Sound dampening

FEATURES

- CFC free propellant
- Polyurethane system
- Class B2 flame retardant
- Contains no urea formaldehyde or PCBs
- Works with PVC
- Physiologically harmless when fully cured
- Neutral odor
- Does not rot or deteriorate with age

ADVANTAGES

- Stop and Go application product remains liquid in applicator until dispensed
- Easily adjustable applicator can dispense foam beads as small as 1/8"
- High foam yield - up to 1.6ft³ per 29 oz. can
- Precision plastic valve helps prevent pressure loss and prolongs shelf life
- Minimal subsequent expansion (+/- 10%)
- Hardened steel dispenser tip for longer life on metal tool

TECHNICAL DATA

Volume yield	1.4 - 1.6 ft³ (40-45 liters) free foamed
Specific gravity (of foamed product)	1.25 - 1.56 lb./ft³
Application temperature	+ 32°F / 0°C min. (for application surfaces)
Tack free time	5 - 10 minutes (depending on temp. and humidity)
Cutting time	15 - 20 minutes (depending on temp. and humidity)
Initial drying time	1 - 4 hours (depending on temp. and humidity)
Full curing time	12 - 15 hours (depending on temp. and humidity)
Water absorption	Max. 1% of volume
Temperature resistance	-8°F to +212°F
Tensile strength	7.25 - 14.5 psi
Elongation at breakage	20 - 25 %
Contents	29 oz. (900g) Net Weight
Shelf life	24 months (+40°F to +75°F - higher temp., shorter shelf life) Must be stored in vertical position

8139

8140

8142

TRIGGERFOAM TOOLS & ACCESSORIES

CAT. NO.	DESCRIPTION	STD. BOX	STD. CTN.
8137	TriggerFoam™ Subfloor Gun 22"	1	1
8139	TriggerFoam™ Plastic Gun	1	1
8140	TriggerFoam™ Gun	1	1
8141	TriggerFoam™ Gun replacement brass tip	1	10
8142	TriggerFoam™ Cleaner 20 oz.	12	12

TRIGGERFOAM

CAT. NO.	DESCRIPTION	STD. BOX	STD. CTN.
8136	TriggerFoam™ 29 oz.	1	1

APPROVALS & LISTINGS

Underwriters Laboratories - File No. R16754
Caulking and Sealants Surface Burning Characteristics
ASTM E 84 (12.5%)
Flame Spread 5
Smoke Developed 10

ASTM E 90
Sound Transmission Classification 60

POWERS FASTENERS **BRANCH INFORMATION**

USA LOCATIONS

CITY	ADDRESS	CONTACT	PHONE	FAX
Atlanta	5405 Buford Hwy Suite 410 Norcross, GA 30071-3984	Robert Brito	678-966-0000	678-966-9242
Boston	2 Powers Lane, Brewster, NY 10509	Jack Armour	800-524-3244	914-576-6483
Charlotte	349 L West Tremont Avenue, Charlotte, NC 28203	Bob Aurisy	704-375-5012	704-376-5517
Chicago	2472 Wisconsin Avenue, Downers Grove, IL 60515	Dan Gilligan	630-960-3156	630-960-3912
Dallas	10625 King Williams Drive, Dallas, TX 75220	Chad Estill	972-506-9258	972-506-9290
Denver	2475 West Second Street #35, Denver, CO 80223	Aaron Minnis	303-922-9202	303-922-9228
Detroit	21600 Wyoming Avenue, Oak Park, MI 48237	Glen Gaskill	248-543-8600	248-543-8601
Florida	9208 Palm River Road, Bldg. 3, Suite 305, Tampa, FL 33619	T.J. Bland/Mark Mamula	813-626-4500	813-626-4545
Houston	20 North Sampson Street, Houston, TX 77003	Chris Salisbury	713-228-1524	713-228-1528
Indianapolis	15290 Stony Creek Way, Noblesville, IN 46060	Bill Trainor	317-773-1668	317-773-1690
Kansas City / St Louis	716 East 16th Avenue, North Kansas City, MO 64116	Don James, Jr.	816-472-5038	816-472-5040
Los Angeles	2761 Dow Avenue, Tustin, CA 92780	Jack Stewart	714-731-2500	714-731-2566
Maryland	3137-B Pennsy Drive, Landover, MD 20785	Gary Engleman	301-773-1722	301-341-5119
Milwaukee	12020 W. Feerick Street, Milwaukee, WI 53222	Donn Raduenz	414-466-2400	414-466-3993
Minneapolis	351 Wilson Street, NE Minneapolis, MN 55413	Rick Gruye	612-331-3756	612-331-3549
Nashville/Memphis	221 Blanton Avenue, Nashville, TN 37210	Ira Liss	615-248-2667	615-248-2676
New Orleans	14141 Airline Highway, Tezcuco Building #3, Baton Rouge, LA 70809	Cal Zenor	225-756-7871 or 225-756-7851	225-756-7981
New York	2 Powers Lane, Brewster, NY 10509	John Partridge	914-235-6300	914-576-6483
Philadelphia	2 Powers Lane, Brewster, NY 10509	Curtis Fickert	800-524-3244	914-576-6483
Phoenix	3602 E. Southern Ave, Suite 5 Phoenix, AZ 85040	Craig Hering	602-431-8024	602-431-8027
Pittsburgh	1360 Island Avenue, Mckees Rocks, PA 15136	Bill Dugan	412-771-3010	412-771-9858
Rochester	410 Atlantic Avenue, Rochester, NY 14609	Mike Kolstad	585-288-2080	585-288-8732
Salt Lake City	2212 SW Temple #4, Salt Lake City, UT 84115	Bruce Burnett	801-466-3406	801-484-0731
San Francisco	28970 Hopkins Street, Suite B+C, Hayward, CA 94545	Frans Honig	510-293-1500	510-293-1505
Seattle	129 South Kenyon, Seattle, WA 98108	Darin Arnold/Jim Swink	206-762-5812	206-762-5817

INTERNATIONAL LOCATIONS

CITY	ADDRESS	CONTACT	PHONE	FAX
Australia	Factory 3, 205 Abbotts Road, Dandenong, South Victoria 3175	Phil Rose	+61 3 8787 5888	+61 3 8787 5899
British Columbia	63 Fawcett Road Coquitlam, V3K 6V2	Distributor	604-540-0200	604-540-0212
Canada	6950 Edwards Blvd. Mississauga Ontario L5T 2W2	Mark Russell	905-673-7295	905-673-6490
Europe	Westrak 208, 1771 SV Wieringerwerf, Netherlands	Paul Geuvers	+31 888 769 377	+31 227 594 759
Manitoba	1810 Dublin Avenue Man. Winnipeg, R3H 0H3	Distributor	204-633-0064	204-694-1261
New Zealand	PO Box 302 076 North Harbour Auckland	Claye Sesto	+64 9415 2425	+64 9415 2627
Quebec	For name of nearest distributor call Powers Industries Ltd at	Mark Russell	905-673-7295	905-673-6490
Thailand	80/89 MOO4 Petchakasem Road, Bangkae Bangkok 10160	Chalee Surakavanichakorn	+661 826 5821	

LATIN & CARIBBEAN DISTRIBUTION INQUIRIES

COUNTRY/REGION	ADDRESS	CONTACT	PHONE	FAX
Brasil	HARD, Rua Dr. Humberto Pinheiro Viera, 150 Lote B, 1 B Distrito Industrial, Joinville, Brasil		(55) 4749 7209	
Colombia	Electrogeno, S.A., Carrera 52 #71c-38, Bogota, Colombia		(57) 1 6600 9436	
Costa Rica	Electro Mechanics Supply, La Uruca Contiguo Banco Ntnl., De Costa Rica Condominio, Horizontal Bodega #9, San Jose, Costa Rica		(506) 2233-2595	
Dominican Republic	Calle Estancia Nueva #17 E Esquina Cul-De-Sac 9, San Geronimo, Santo Domingo	Rodfor Team	809-224-5615	809-472-8640
Ecuador	Av. Colon E 4 - 127 (1424), Entre Amazonas Y 9 De Octubre Los Rios #100 Y Manual Galecio	Sermaco - Quito (Casa Matriz) Sermaco - Guayaquil	593-2254-3703	593-2250-5013
Guatemala	Tecnofijaciones, 6 Avenue 8-56 Zona 9, Zona 9, Guatemala	Oscar Lucas Penagos	502-233-4-3478	-
Latin America	9208 Palm River Road, Ste 305, Tampa, Florida 33619	Michael Gaffigan	954-914-6665	813-626-4545
Panama	Centro-Industrial, Via Cincuentenario, No. 7910, Ciudad Panama, Panama		(507) 302-8022	
Venezuela	Calle Sucre/Qta. Maudora, #1721 Entre Cec Acosta Y San Ignacio Chacao, Caracas	Distributor	58 212 264 1313	58 212 263 0219
Trinidad - Tobago	Ft. Farfan, 3-5 Ibis Avenue, Ibis Acres, San Juan	Derek Cumming	(868) 674-7896	

Note: The information and data contained within this documentation was current as of January 2009. The information is for marketing purposes only and is subject to change and updates as needed. Powers Fasteners, Inc. reserves the right to change designs and specifications without notice or liability for such changes. Please contact Powers Fasteners for the most current and up to date available information or refer to our website at www.powers.com

Powers Fasteners 2 Powers Lane, Brewster, NY 10509 P: (914) 235-6300 F:(914) 576-6483
Powers Fasteners Canada Ltd. 6950 Edwards Boulevard Mississauga Ontario L5T-2W2 Canada
P: (905) 673-7295 or 1-800-387-3480 F: (905) 673-6490

www.powers.com

Cat. No. 49040 1/09
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MSDS

MSDS No:	30
Rev Date:	1/20/10
Rev No:	2

1 MATERIAL SAFETY DATA SHEET

Product Name:	**POWERFOAM™ / TRIGGERFOAM™**
Description:	Polyurethane foam filler, insulating foam, backing foam, penetration sealant
Supplier:	Powers Fasteners, Inc. 2 Powers Lane, Brewster, NY 10509
Customer Service:	800-524-3244
Emergency Phone:	(CHEMTREC) Within USA: (800) 424-9300; Outside USA: 01 (703) 527-3887

2 INGREDIENTS

	CAS Number		ACGIH TWA	OSHA PEL
Polymethylene polyphenyl isocyanate	9016-87-9	(as MDI)	0.005 ppm	0.02ppm
Dimethyl ether	115-10-6		1000ppm*	NE
Propane	74-98-6		1000ppm*	1000ppm
Isobutane	75-28-5		1000ppm*	NE

*Note: The ACGIH TLV listed above is for Dimethyl ether is an AIHA WEEL. The ACGIH TLVVs listed above for Propane and Isobutane are as *Aliphatic hydrocarbon gases*

This product is classified as hazardous per OSHA regulations (29CFR 1910-1200).

Abbreviations: NE= Not established

3 SAFE USAGE RECOMMENDATIONS

Ventilation: Avoid breathing vapors or mist. Use with adequate ventilation, either natural or mechanical. Sensitized individuals shoud avoid using this product.

Eye Protection: Avoid eye contact. Safety goggles recommended. Wear safety glasses with side shields as a minimum, as product can stick to eyes.

Skin Protection: Avoid skin contact. Wear impermeable gloves. Product can adhere to skin and cause a rash or sentisization.

Respiratory Protection: Vapor may cause irritation of the breathing tract and sensitization. Use in a well-ventillated area.

Notice: For professional use. Keep away from children.

4 EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately flush eyes with clean water for 15 minutes and call a physician.

Skin: Wash with soap and water. Launder clothing before reuse. Seek medical attention if any symptoms develop.

Inhalation: If breathing becomes uncomfortable or asthma-like symptoms develop, discontinue use and move to fresh air. Contact physician if symptoms persist.

Ingestion: Immediately rinse mouth with water and call a physician. Drink 1-2 glasses of water. Do not induce vomitting unless directed by a physian.

Other: Contact a physician if there is any question about the seriousness of the exposure.

5 HEALTH HAZARD INFORMATION

Hazards: Direct, prolonged contact with product can cause irritation and sensitization to some individuals. Those who develop an allergic response should avoid future use of this product.

Contents are pressurized for dispensing and are extremely flammable.

6 PHYSICAL CHARACTERISTICS

Appearance:	Beige foam. Sticky when wet.
Density	1.1
Boiling Point:	NE
(Air=1) Vapor Density:	>1
(Water=1) Evaporation Rate:	NE
Specific Gravity:	1.1
VOC Content:	100 g/l
Odor:	Mild amine-like
Solubility in Water:	Insoluble
pH:	NE

7 FIRE, HAZARD AND REACTIVITY DATA

Flammability:	Extremely Flammable	Flash Point: 0F, -18C Boiling Point: NE
Stability:	Stable. Hazardous polymerization will not occur.	
Incompatibility:	Strong acids, bases and alcohols.	
Unusual fire or Explosion Hazards:	Extremely flammable. Contains pressurized, flammable propellants. Containers can rupture if exposed to fire or direct heat.	
Extinguishing Media:	Foam, COx, HCN, Nox	
Fire Fighting:	Self-contained breathing equipment recommended.	
Hazardous Combustion Products:	CO, NO, HCN, HCL	

8 TRANSPORTATION AND REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910. 1200.	
HMIS Codes:	Health: 3, Flammability: 3, Physical Hazard: 1.	PPE: B Flash Point: -18F (0C)
US DOT Proper Shipping Name:	Consumer commodity ORM-D	
Canadian TDGR Proper Shipping Name:	Consumer commodity (Aerosols) UN1950 Class 2.1, PG: None	
IATA/ICAO Proper Shipping Name:	AEROSOLS UN1950 Class 2.1, PG: None	
IMO/IMDG Proper Shipping Name:	AEROSOLS UN1950 Class 2.1, PG: None	EmS: F-D, S-U
Packing Instructions:	Passenger Aircraft: Y203 or 203 Cargo Aircraft Only: 203	
TSCA Inventory Status:	Chemical components listed on TSCA inventory.	
SARA Title III, Section 313:	Contains Polymethylene polyphenyl isocyanate.	

9 STORAGE, CLEAN-UP, AND DISPOSAL

Storage:	Store in a cool, dry place. Keep from freezing and extreme heat, which may shorten shelf life.
Spills:	Follow above personal protective measures. Product will harden upon contact with air and moisture. After hardening, scrape up foam and dispose of in a sealable container.
Waste Disposal:	Dispose of in accordance with federal, state and local regulations.
EPA Waste Codes:	D001, D003 (aerosol cans)

The information and recommendations provided herin are based on information available to us at the time of preparation. We make no other warranty, expressed or implied, as to its correctness, completeness, or as to the results and reliance of the information.

Powers FASTENERS

GHS SAFETY DATA SHEET

WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe

Date Revised: **FEB 2010**
Supersedes: **SEP 2009**

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe**

PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Carson, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: Tel. 800.424.9300, 703.527.3887 CHEMTREC (International) **Medical:** Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2B				

GHS LABEL: **OR**

Signal Word: **Danger**

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H332: Harmful if inhaled	P280: Wear protective gloves/protective clothing/eye protection/face protection
H335: May cause respiratory irritation	P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
H336: May cause drowsiness or dizziness	P403+P233: Store in a well ventilated place. Keep container tightly closed
EUH019: May form explosive peroxides	P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	25 - 70
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	5 - 36
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	10 - 25

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke
Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

	HMIS	NFPA
Health	2	2
Flammability	3	3
Reactivity	0	0

0-Minimal
1-Slight
2-Moderate
3-Serious
4-Severe

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL:
Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	
Cyclohexanone	20 ppm	50 ppm	50 ppm	

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gray or clear, heavy syrupy liquid		
Odor:	Ketone	**Odor Threshold:**	0.88 ppm (Cyclohexanone)
pH:	Not Applicable		
Melting/Freezing Point:	-108.5℃ (-163.3℉) Based on first melting component: THF	**Boiling Range:**	66℃ (151℉) to 156℃ (313℉)
Boiling Point:	66℃ (151℉) Based on first boiling component: THF	**Evaporation Rate:**	> 1.0 (BUAC = 1)
Flash Point:	-20℃ (-4℉) TCC based on THF	**Flammability:**	Category 2
Specific Gravity:	0.963 @23℃ (73℉)	**Flammability Limits:**	**LEL:** 1.1% based on Cyclohexanone
Solubility:	Solvent portion soluble in water. Resin portion separates out.		**UEL:** 11.8% based on THF
Partition Coefficient n-octanol/water:	Not Available	**Vapor Pressure:**	129 mm Hg @ 20℃ (68℉)based on THF
Auto-ignition Temperature:	321℃ (610℉) based on THF	**Vapor Density:**	>2 (Air = 1)
Decomposition Temperature:	Not Applicable	**Other Data: Viscosity:**	Heavy bodied
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A,VOC content is: ≤ 510 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable
Hazardous decomposition products: None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid: Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials: Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact
Acute symptoms and effects:
Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects: None known to humans

Toxicity:	LD_{50}	LC_{50}
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m^3 (rat)
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m^3 (rat)
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: None Known
Mobility: In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l.
Degradability: Biodegradable
Bioaccumulation: Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name: Adhesives
Hazard Class: 3
Secondary Risk: None
Identification Number: UN 1133
Packing Group: PG II
Label Required: Class 3 Flammable Liquid
Marine Pollutant: NO

EXCEPTION for Ground Shipping
DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant
Symbols: F, Xi
Risk Phrases:
R11: Highly flammable.
R20: Harmful by inhalation.
R36/37: Irritating to eyes and respiratory system.
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

Safety Phrases:
S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.
S46: If swallowed, seek medical advise immediately and show this container or label.

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

SECTION 16 - OTHER INFORMATION

Specification Information:
Department issuing data sheet: IPS, Safety Health & Environmental Affairs
E-mail address: <EHSinfo@ipscorp.com>
All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
Training necessary: Yes, training in practices and procedures contained in product literature.
Reissue date / reason for reissue: 2/23/10 / Updated GHS Standard Format
Intended Use of Product: Solvent Cement for PVC Plastic Pipe

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Geocel®

3300® POLYURETHANE ROOFING SEALANT

TECHNICAL DATA

MIAMI-DADE COUNTY APPROVED

1. PRODUCT NAME:

3300® Polyurethane Roofing Sealant

2. MANUFACTURER:

GEOCEL CORPORATION
P.O. Box 398
Elkhart, IN 46515 USA
Phone: (800) 348-7615
Fax: (800) 348-7009
www.GeocelUSA.com

3. PRODUCT DESCRIPTION:

3300® Polyurethane Roofing Sealant is a single component, high performance polyurethane sealant that withstands extreme weather conditions and cures to a flexible weatherproof seal.

3300 Sealant is approved for roof assemblies covered by the High Velocity Hurricane Zone of the Florida Building Code. Miami-Dade County Product Control Approval for TAS-132, NOA #07-1003.02.

- Miami-Dade County product approved for hurricane-tough adhesion
- Withstands extreme weather conditions
- Meets LEED and NAHB guidelines
- Moisture cure
- Permanently flexible
- Minimal shrinkage
- Non-sag formula
- Low odor, low VOC
- VOC & CARB compliant
- 30-year life expectancy
- Primerless adhesion
- Paintable, non-corrosive
- Contains no TDI (toluene diisocyanate)
- Meets TT-S-00230C Type II Class A, ASTM C920-98 Type S

Basic Uses: 3300 Sealant can be used in roofing applications such as concrete roofing tile, clay roofing tile, metal roofing, kynar coated metal and composition shingles. Other applications include building-lath paper repair, gutters, HVAC, flashing, skylights, roofing seams, roofing projections, termination points and vents. 3300 Sealant bonds to most common building substrates including stone, masonry, ceramics, wood, steel, aluminum, asphalt, building paper, BUR, concrete, fiberglass and vinyl.

Application Limitations:

- Do not apply over damp or contaminated surfaces
- Do not apply to absorptive surfaces such as marble, limestone, or granite without prior testing for discoloration or staining

Colors: White, gray, limestone, bronze, medium bronze, tan, aluminum gray, and black

Grade: Gun grade consistency

Packaging: 10.1 fl. oz. cartridges

Applicable Standards:

- ASTM C920, TYPE S, GRADE NS, CLASS 25, USE NT, A AND M.
- US Federal Specification TT-S 00230C (COMB-NBS) for one-component sealants as Class A, non-sag.
- Canadian Specification CAN/CGSB 19.13-M87.
- CARB and SCAQMD Compliant. Meets VOC Requirements for OTC Regulation.

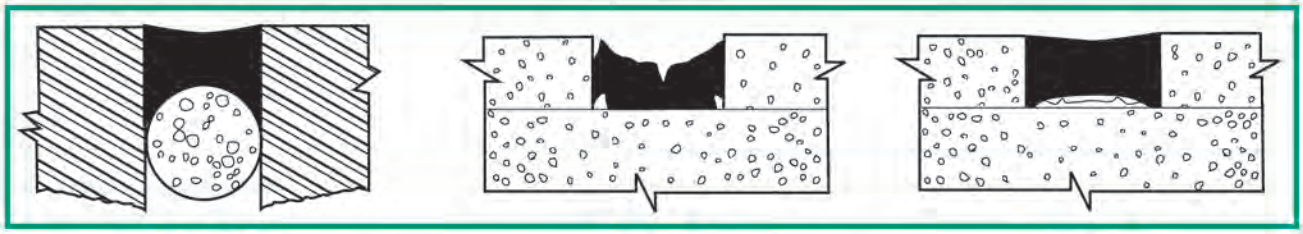

FIGURE 1
Proper Depth Control

FIGURE 2
Joints without Bond Breaker

FIGURE 3
Joints with Bond Breaker

The effects on the sealant with and without bond breakers are illustrated in Figures Two and Three.

TECHNICAL DATA

Property	Results	Test Method
Tensile Strength	133 psi	ASTM D 412
Elongation	685%	ASTM D 412
Modulus of Elongation	65 psi	ASTM D 412
Adhesion Peel	>5 piw	ASTM C 794
Type A Hardness	42	ASTM D 2240
UV Resistance	Pass	ASTM C 793

4. TECHNICAL DATA: (See chart on back.)

5. INSTALLATION:

Joint Design: The width of the joint should be a minimum of 4 times the anticipated movement. In joints up to 1/2" wide, the depth of the sealant should be equal to the width, but not less than 1/4". In joints wider than 1/2", the depth should be maintained at 5/8". Lap shear joints should have a width of at least twice the anticipated movement.

Surface Preparation: Joints to receive sealant must be sound, smooth, uniform in dimensions, and free from defects and foreign material. They must be clean, dry, free of frost and all contaminants, such as curing compounds, sealers (waterproofing), coatings, etc. Sealant adhesion should be tested on each different substrate prior to caulking. To test adhesion, apply a sealant bead and allow to cure thoroughly. Then pull one end of the bead to test adhesive strength.

Joint Backing: Joint depth should not exceed 5/8". An open cell backer rod should be used to control joint depth. In shallow joints, a bond breaker tape should be installed to prevent three-point contact.

Service Temperature:
-40° F to 150° F (-40° C to 66° C)
Application Temperature:
-40° F to 150° F (-40° C to 66° C)

Application and Tooling: Apply with conventional caulking equipment. Fill joints from the back to prevent voids and air pockets. If application temperature is below 40° F (5° C), precautions should be taken to ensure the substrates are completely dry and frost free. Immediately after application, tooling is recommended to ensure firm, full contact with the joint sides.

Cleaning: Remove 3300 sealant from gun and tools before it cures. This may be done by scraping and use of solvents such as Xylol. Cured materials may be removed by cutting with sharp tools or sandpapering.

Storage and Shelf Life: Unopened containers should be protected from heat, moisture, and direct sun. Do not open containers until all preparatory work has been completed. Material in unopened containers is usable for up to 1 year when stored at 75° F (25° C).

6. AVAILABILITY AND COST:

Marketed throughout the U. S., Canada, and in select foreign markets. It is available from various lumber yards, hardware stores, home centers, construction material and industrial distributors. Cost and further technical data are available from your local Geocel representative or from Geocel's corporate offices.

Warning: Use only with adequate ventilation. Keep away from heat and flame. Do not take internally. Avoid eye and skin contact. KEEP OUT OF REACH OF CHILDREN. This product as supplied may be harmful or fatal if swallowed. If swallowed DO NOT induce vomiting. If contacted on eyes, flush thoroughly with clear water for at least 15 minutes. In either case, call a physician immediately. If contacted on skin, wash thoroughly with soap and water.

7. LIMITED WARRANTY:

Geocel Corporation warrants that the product is manufactured according to their published standards. The company guarantees for 5 years from date of manufacture that 3300 Polyurethane Roofing Sealant will not crack due to normal expansion and contraction and that it will not lose its adhesion or cohesion. Geocel Corporation will, at its option, either refund the purchase price of, or provide replacement for, that portion of 3300 Sealant which fails to perform in accordance with this warranty. Such refund or replacement will constitute the limit of Geocel's liability and obligation for any such failure. Geocel Corporation will not be liable or obligated otherwise for any loss or damage arising directly or indirectly from this product, or the use or failure thereof, whether based on breach of warranty or negligence.

8. MAINTENANCE:

If sealant is damaged and the bond is intact, cut out the damaged area and recaulk. No primer is required. If the bond has been affected, remove the sealant, clean and prepare the joint in accordance with the instructions under "Surface Preparation," and recaulk.

9. TECHNICAL SERVICES:

Geocel representatives throughout the U.S. are available to provide technical assistance. Geocel's in-house technical staff and laboratory facilities are equipped to respond to specific requests for further information and/or applications testing.

THEORETICAL YIELD
Per 10.1 fl. oz. Cartridge

Joint Size	Linear Feet
1/4" x 1/4"	24.1
1/4" x 3/8"	16.0
1/4" x 1/2"	12.0
1/2" x 3/8"	8.4
1/2" x 1/2"	6.0
3/4" x 1/2"	4.0

THERE IS A DIFFERENCE

	NON-CORROSIVE	PAINTABLE	Adheres to: WOOD	BRICK (unprimed)	ASPHALT	METAL	VINYL	CONCRETE (unprimed)	BUILDING LATH PAPER
POLYURETHANE	●	●	●	●	●	●	●	●	●
SILICONE			●		●	●			

Geocel® ISO 9001 Certified
P.O. Box 398
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(800) 348-7615 • Fax (800) 348-7009
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MATERIAL SAFETY DATA SHEET

Geocel®

Date Issued: 08/03/2007
MSDS No: 68101
Date Revised: 04/08/2010
Revision No: 4

3300 Colors

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3300 Colors

MANUFACTURER
Geocel, LLC
P.O. Box 398
Elkhart, IN 46515-0398
Product Stewardship: 574-264-0645

24 HR. EMERGENCY TELEPHONE NUMBERS
ChemTel - 800-255-3924

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: This product is irritating to the eyes and skin. Thermal decomposition/burning may produce toxic gases and fume. Closed containers may rupture when exposed to high temperatures, or when the product has been contaminated with water.

Avoid breathing hot mists and vapors. This product contains a respiratory and skin sensitizer. Causes respiratory tract irritation and may cause allergic respiratory reaction. May cause permanent respiratory damage. Product vapors are potentially irritating to skin. May cause allergic skin reaction and dermatitis.

POTENTIAL HEALTH EFFECTS

EYES: This product may cause irritation to the eyes. May cause temporary corneal injury.

SKIN: Skin contact may cause irritation. Isocyanates may react with skin protein and moisture to cause itching, reddening, swelling, scaling or blistering. Individuals previously sensitized to this material may experience these sysptoms from exposure to very small amounts of liquid or vapor.

INGESTION: May cause irritation and corrosive action in the mouth, throat and digestive tract.

INHALATION: Single large does, and/or repeated exposures, may lead to sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms), causing an individual to experience adverse effects at exposure levels well below exposure limits or guidelines. Symptoms may include chest tightness, wheezing, shortness of breath, coughing or asthmatic attack, and may be delayed up to several hours. Extreme asthmatic reactions can be life threatening. Once sensitized, an individual may experience adverse symptoms upon exposure to dust, cold air or other irritants. Sensitization can last several months, years or be permanent in some cases.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Visual effects may include eye irritation, blurred vision, diplopia, changes in color perception, restricition of visual fields, and complete blindness.

SKIN: Irritation of the skin.

INGESTION: Diarrhea.

INHALATION: Irritation of upper respiratory tract, asthmatic symptoms, chest tightness, breathing difficulty, coughing, short throat.

TARGET ORGAN STATEMENT: The eyes, lungs and skin may be targeted and damaged by components of the product.

HEALTH HAZARDS: This product contains Methylene Diphenyl Isocyanate (MDI) which is a potential skin sensitizer and has been shown to alter cells in certain experiments. Although inconclusive, these cellular changes are thought to indicate potential carcinogenicity. Risk to your health depends on duration and concentration of exposure.

COMMENTS: Signs and symptoms of overexposure to this product include headache, irritation of upper respiratory tract, asthmatic symptoms, chest tightness, breathing difficulty, coughing, dizziness, weakness, fatigue, eye irritation, skin irritation, diarrhea.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS	EINECS
Xylenes (o-,m-,p- Isomers)	1 - 5	1330-20-7	215-535-7
Ethyl Benzene	0.5 - 1.5	100-41-4	- -
Methylene Disphenyl Isocyanate	0.1 - 1	101-68-8	202-966-0

4. FIRST AID MEASURES

EYES: Immediately flush with plenty of water for at least 15 minutes. Get medical attention or advice.

SKIN: Remove contaminated clothing to prevent further skin exposure and dispose of properly. In situations involving considerable skin contact, place the contaminated person in a deluge shower for at least 15 minutes. For minor exposures, wash thoroughly with soap and clean water. Get medical attention if irritation persists.

INGESTION: If ingested, get immediate medical attention. Do not induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to a victim who is unconscious or is having convulsions.

INHALATION: Remove to fresh air. Get medical attention immediately for a large dose exposure or if cough or other symptoms develop. Administer oxygen or artifical respiration as needed.

NOTES TO PHYSICIAN: Treat symptomatically and supportively.
Eyes: Stain for evidence of corneal injury. If cornea is burned, apply antibiotic/steroid preparation as needed.
Skin: This product contains a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.
Ingestion: Treat symptomatically.
Inhalation: This material contains a known pulmonary sensitizer.
Any individual experiencing dermal or pulmonary sensitization should be removed from exposure to any diisocyanate. May aggravate existing heart conditions, particularly those with abnormal heart rhythms. If overexposure to the solvents in this product is suspected, testing should include nervous system and brain effects including recent memory, mood, concentration, headaches and altered sleep patterns. Liver and kidney function should be evaluated. This material, if aspirated into the lungs, may cause chemical pneumonitis; treat the affected person appropriately.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: 74.4°C (166°F)

EXTINGUISHING MEDIA: Use dry chemical, carbon dioxide, or foam. Water spray (fog).

HAZARDOUS COMBUSTION PRODUCTS: Additional decomposition products include oxides of nitrogen, amines, hydrogen cyanide and isocyanate-containing compounds.

EXPLOSION HAZARDS: None known.

FIRE FIGHTING EQUIPMENT: Firefighters should wear full protective clothing including self contained breathing apparatus.

SENSITIVE TO STATIC DISCHARGE: Not known.

SENSITIVITY TO IMPACT: Not known.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Wearing the personal protective equipment designated in Section 8, carefully contain the spill and transfer to the appropriate container for disposal. Do not discharge to lakes, streams, ponds, or sewers. Dispose of in compliance with local, state, and federal regulations.

LARGE SPILL: Wearing the personal protective equipment designated in Section 8, carefully contain the spill and transfer to the appropriate container for disposal. Do not discharge to lakes, streams, ponds, or sewers. Dispose of in compliance with local, state, and federal regulations. Ventilate well while cleanup is in process and until fumes dissipate.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL: Isolate spill area. Stop discharge if safe to do so. Stop material from entering sewers or water streams. Scrape up polyurethane and deposit into appropriate containers.

LAND SPILL: Isolate spill area. Stop discharge if safe to do so. Stop material from contaminating soil. Scrape up polyurethane and deposit into appropriate containers.

7. HANDLING AND STORAGE

HANDLING: Wash hands thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face shields, and gloves. Professionally launder contaminated clothing before re-use. Do not breathe vapors, mists or dusts. Do not breathe fumes generated when the material is overheated or burned. Use adequate ventilation. Wear respiratory protection if the material is heated, sprayed, used in a confined space or if exposure limit is exceeded. This product can produce asthmatic sensitization. Individuals with lung or breathing problems or prior allergic reactions to isocyanate must avoid fumes from this product. Wear appropriate protective equipment to avoid contact with skin and eyes.

STORAGE: Store in a cool, dry, well-ventilated area away from heat, ignition sources and direct sunlight. Water contamination should be avoided. Cool location should be 60-80 degrees F or 15-30 degrees C.

COMMENTS: Attention! Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container for food, clothing, or products for human or animal consumption, or where skin contact can occur.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		**ppm**	**mg/m^3**	**ppm**	**mg/m^3**
Xylenes (o-,m-,p- Isomers)	**TWA**	100	435	100	434
	STEL			150	651
Ethyl Benzene	**TWA**	100	435	100	434
	STEL			125	543
Methylene Disphenyl Isocyanate	**TWA**			0.005	0.051

ENGINEERING CONTROLS: Use local exhaust or general ventilation where the potential exists to exceed the PEL or TLV exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields or goggles when handling this material.

SKIN: Wear appropriate clothing to minimize skin contact with this product.

RESPIRATORY: Avoid breathing vapor and/or mists. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator.

OTHER USE PRECAUTIONS: Eyewash fountains and emergency showers should be readily available.

COMMENTS: Wash hands thoroughly after each use, especially before eating or smoking. Good personal hygiene practices should always be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Paste

ODOR: Solvent

COLOR: Various

pH: Not Applicable

PERCENT VOLATILE: 4

FREEZING POINT: NA = Not Applicable

FLASHPOINT AND METHOD: 74.4°C (166°F)

DENSITY: 11.22

(VOC): 3.900 %

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: Yes

STABILITY: This product is stable under normal conditions but will react slightly with water to release some heat and carbon dioxide. The reaction is not violent. Carbon dioxide, carbon monoxide and in high temperature (800 °F) low oxygen atmospheres such as in fire situations, hydrogen cyanide may be released.

POLYMERIZATION: Hazardous polymerization can occur with elevated temperatures or contact with water.

CONDITIONS TO AVOID: Avoid strong acids. Avoid amines, strong bases, alcohols and metallic hydrides.

HAZARDOUS DECOMPOSITION PRODUCTS: Unknown due to the complex nature of this material. Fumes from complete or incomplete combustion may include carbon dioxide, carbon monoxide, water vapor, oxides of nitrogen and a wide variety of innocuous or toxic fumes. Additional decomposition products include oxides of nitrogen, amines, hydrogen cyanide and isocyanate-containing compounds.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Irritating to the eyes.

SKIN EFFECTS: Irritating to the skin.

CARCINOGENICITY

Chemical Name	IARC Status
Ethyl Benzene	2B

Notes: This product contains Methylene Diphenyl Isocyanate (MDI). MDI is not listed by the NTP, IARC or regulated by OSHA as a carcinogen. However, it has been shown to alter cells in certain experiments. Although inconclusive, these cellular changes are thought to indicate potential carcinogenicity.

REPEATED DOSE EFFECTS: Single large does, and/or repeated exposures, may lead to sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms), causing an individual to experience adverse effects at exposure levels well below exposure limits or guidelines. Symptoms may include chest tightness, wheezing, shortness of breath, coughing or asthmatic attack, and may be delayed up to several hours. Extreme asthmatic reactions can be life threatening. Once sensitized, an individual may experience adverse symptoms upon exposure to dust, cold air or other irritants. Sensitization can last several months, years or be permanent in some cases. Chronic exposure may cause lung damage, including fibrosis and decreased lung function, which may be permanent.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Organic solvents produce slight to moderate toxicity to aquatic life. Insufficient data exists to evaluate the effect on plants, birds or land animals.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

OTHER SHIPPING INFORMATION: Generators must consult DOT laws and regulations to ensure the product is being transported appropriately.

AIR (ICAO/IATA): Not regulated as dangerous goods.

VESSEL (IMO/IMDG): Not regulated as dangerous goods.

COMMENTS: Not regulated as dangerous goods.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: This product poses the following physical and health hazard(s) as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986:

FIRE: Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

313 REPORTABLE INGREDIENTS: This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR372. CAS #: 101-68-8 MDI, CAS #: 1330-20-7 Xylene and CAS #100-41-4 Ethyl Benzene.

EPCRA SECTION 313 SUPPLIER NOTIFICATION

Chemical Name	Wt.%	CAS
Xylenes (o-,m-,p- Isomers)	1 - 5	1330-20-7
Ethyl Benzene	0.5 - 1.5	100-41-4

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Chemical Name	Wt.%	CERCLA RQ
Xylenes (o-,m-,p- Isomers)	1 - 5	100
Ethyl Benzene	0.5 - 1.5	1,000
Methylene Disphenyl Isocyanate	0.1 - 1	5,000

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS
Xylenes (o-,m-,p- Isomers)	1330-20-7
Ethyl Benzene	100-41-4
Methylene Disphenyl Isocyanate	101-68-8

CALIFORNIA PROPOSITION 65: This product contains the following product on California's Proposition 65 List: CAS# 100-41-4 Ethyl Benzene.

Chemical Name	Wt.%	Listed
Ethyl Benzene	0.5 - 1.5	Cancer

16. OTHER INFORMATION

PREPARED BY: Technical Staff

REVISION SUMMARY: Revision #: 4. This MSDS replaces the January 28, 2010 MSDS. Any changes in information are as follows: In Section 14: International (IMO /IMDG) - Note, Air (IATA /ICAO) - Note, TREMCARD - Additional Information

NFPA STORAGE CLASSIFICATION: Health 2, Flammability 2, Physical Hazard 0

HMIS RATINGS NOTES: Health 2, Flammability 2, Physical Hazard 0, PPE X

HMIS FLAMMABILITY 0
HEALTH HAZARD 1 | 0 REACTIVITY
SPECIFIC HAZARD

PHYSICAL PERFORMANCE PROPERTIES

AMES'® BLOCK & WALL™ LIQUID RUBBER

Ames' Block & Wall Liquid Rubber is a waterproofing sealant for below grade walls and interior applications. Block & Wall Liquid Rubber is heavy duty, yet easily applied by brush, roller or sprayer. This product is formulated to resist fungus, mold and mildew. Our subterranean applications system will withstand up to 100 P.S.I. water pressures. It is potable water compliant. Block & Wall Liquid Rubber cleans up easily with water.

Appearance (cured).....	Liquid Rubber
Appearance (liquid).....	Thick, white liquid
Color.....	Tintable white (Ames Block & Wall Liquid Rubber may be tinted to pastel colors using universal latex colorants)
Solar Reflectance.....	Up to 98%
Mildew resistance.....	Excellent
Weight.....	Approx. 8.8 lbs/1gallon
Solvent.....	Water
Odor.....	Mild
Permeability.....	.016 perm rating with 10 mils/min. of coating
Elongation.....	Up to 700%
Strength.....	250 PSI
Viscosity.....	160 krebs approximate
PH as shipped.....	9.5 - 10
Specific Gravity.....	1.10
Freeze/Thaw Stability Test of dried material.....	At -35 degrees F, Ames Block & Wall Liquid Rubber passes 180 degree bend test. If frozen while in liquid form, the product may be rendered unusable.
Setting time.....	30 min. - 1 hour at 50° -100° F. at less than 30% humidity
Cure time.....	Approximately 2 to 8 hours at 50° to 100° F. at less than 30% humidity
Material composition.....	Waterbase elastomeric rubberized plastic
Toxicity.....	Non-toxic when dry
Flash point.....	1800° C
Fire rating.....	Class "A" ASTM E-108. over AC. ASTM E-84 zero smoke
Coverage rate.....	Approx. 100 square feet per gallon
Voc Content.....	Less than 1 gram per liter

Formulas have been tested in accordance with ASTM E 108 E-108 Class "A" over AC.ASTM E-84 zero smoke, zero ignition. **Important:** Apply a small amount to ensure the product performs satisfactorily.

Ames Research Laboratories, Inc., PO Box 1350 Jefferson, OR USA 97352
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Ames' Block & Wall Liquid Rubber™

Material **S**afety **D**ata **S**heets (MSDS)

HMIS-NPCA-MFPA	Health	1
	Flammability	1
	Reactivity	0
	Personal Protection	

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION		
PRODUCT NAME	Ames' Block & Wall Liquid Rubber™	
IDENTIFICATION		
DATE PRINTED		
PRODUCT USE/CLASS	Latex Paints & Coatings, water born dispersion	
MANUFACTURER	Ames Research Laboratories, Inc. Jefferson, Oregon 97352	**Corporate Office:** PO Box 1350 Jefferson, Oregon 97352-1350
EMERGENCY TELEPHONE	1-888-345-0809	
PREPARER (optional)		
PHONE	(503) 588-3330	
PREPARE DATE	12-11-08	

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS			
ITEM	CHEMICAL NAME	CAS NUMBER	% BY WT
01	Carboxylated Acryl Styrene Butadiene rubber (proprietory trade secret claims)	Proprietary	45-55
02	Water	7732-18-5	45-55
03			
04			
05			

Material is not known to contain Toxic Chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372. Product alkaline to PH-10. May cause stomach distress if ingested. Do not ingest.

SECTION 3 – HAZARDOUS IDENTIFICATION	
EMERGENCY OVERVIEW: No significant immediate hazards for emergency response are known. Milky white liquid emulsion. Slight odor. Dike and contain spill. Avoid dilution of spills.	
EYE CONTACT	May cause slight transient (temporary) eye irritation. Corneal injury unlikely.
SKIN CONTACT	Short single exposure not likely to cause significant skin irritation. Prolonged and repeated exposure may cause slight skin irritation. Material may stick to skin causing irritation upon removal. A single, prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.
INHALATION	With good ventilation, a single exposure to vapors is not expected to cause adverse effects.
INGESTION	Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
SYSTEMIC EFFECTS (Other target organs)	No relevant information found.

SECTION 4 – FIRST AID MEASURES	
FIRST AID	
EYE CONTACT	Immediately flush eyes with large quantities of clean water for at least 15 minutes. Consult a physician.
SKIN CONTACT	Wash skin with soap and water. Remove contaminated clothing. Seek medical attention if irritation develops. Wash contaminated clothing before reuse.
INHALATION	Remove affected individual(s) to fresh air. Seek medical attention if breathing difficulty develops.
INGESTION	If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
NOTES TO PHYSICIAN	No specific antidote. Supportive care. Treatment based on judgement of the physician in response to reactions of the patient.

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SECTION 5 - FIRE FIGHTING MEASURES	
FLASH POINT	Not applicable
METHOD USED	Not applicable
AUTOIGNITION TEMPERATURE	Not applicable
FLAMMABLE LIMITS IN AIR (LOWER)	Not applicable
FLAMMABLE LIMITS IN AIR (UPPER)	Not applicable
FIRE FIGHTING EXTINGUISHING MEDIA	To extinguish combustible residues of this product, use water fog, carbon dioxide, dry chemical or foam.
FIRE FIGHTING EQUIPMENT	Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. If protective equipment is not available or not used, fight fire from a protected location or safe distance.
FIRE FIGHTING INSTRUCTIONS	Keep people away. Isolate fire area and deny unnecessary entry. Containers of this material may build up pressure if exposed to heat (fire). Use a water spray to cool fire-exposed containers.
FIRE/EXPLOSION HAZARDS	This material will not burn unless it is evaporated to dryness.
HAZARDOUS COMBUSTION PRODUCTS	Under fire conditions, some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to hydrocarbons, carbon monoxide and dense smoke.

SECTION 6 – ACCIDENTAL RELEASE MEASURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:	
PERSONAL PRECAUTIONS	Avoid unnecessary exposure and contact. Barricade the area to restrict access. Persons not wearing protective equipment (see section 8) should be excluded from the area of the spill until clean-up has been completed.
ENVIRONMENTAL PRECAUTIONS	Stop leak at source when it is safe to do so. Dike and contain spill. Prevent spilled material from contaminating soil or entering drains, sewers, streams or other bodies of water.
CLEANUP PROCEDURES	Avoid dilution with water to minimize the extent of the spill. Recover and recycle spilled latex if possible, otherwise, collect with absorbent material and transfer to appropriate containers for disposal. Water may be used for final cleaning of affected area.

SECTION 7 – HANDLING AND STORAGE	
HANDLING:	Practice reasonable care to avoid repeated, prolonged skin contact. An eye wash station and a safety shower should be readily accessible to workers wherever this material is stored or used.
STORAGE:	Keep from freezing. Store at temperatures between 40° F and 110° F. Material may develop bacteria odor on long-term storage. No safety problems known.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION	
EXPOSURE LIMITS GUIDELINES	There are no exposure limits assigned to the polymer in this product by the Occupational Safety and Health Administration (OSHA) or American Conference of Governmental Industrial Hygenists (ACGIH).
ENGINEERING CONTROLS	Good general ventilation should be sufficient for most conditions.
PERSONAL PROTECTIVE EQUIPMENT	EYES: Wear safety glasses with side shields or goggles. SKIN: Wear clean, long-sleeved, body-covering, clothing. Nitrile, neoprene®, or rubber gloves should provide protection against skin contact. INHALATION: For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, or areas are poorly ventilated, use an approved air-purifying respirator.

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SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES			
BOILING RANGE:	212ºF (100° C)	VAPOR DENSITY:	0.624 @ 80° F (26.7^{O} C)
ODOR:	Slight odor	PHYSICAL STATE	Liquid
APPEARANCE:	Thick, white liquid.	SPECIFIC GRAVITY:	0.98 - 1.04
pH	9.0 – 10.0	VAPOR PRESSURE	17.5 mm Hg @ 68° F (20° C)
FREEZING POINT	32° F (0 ^{O} C)		
SOLUBILITY	Product is sold as dilutable. Polymer component is insoluble		
ADDITIONAL INFORMATION	The physical data listed are for a series of latexes. For specific properties on any given latex, see the product bulletin.		

(See Section 16 for abbreviation legend)

SECTION 10 –STABILITY AND REACTIVITY	
STABILITY	This material is stable during storage and during its extended use.
INCOMPATIBLE MATERIALS/SUBSTANCES	Addition of chemicals, such as acids or multivalent metal salts, may cause coagulation.
CONDITIONS TO AVOID	Avoid freezing temperatures (less than 32° F or 0° C). Products decompose at elevated temperatures.
HAZARDOUS DECOMPOSITION PRODUCTS	Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Thermal decomposition may produce various hydrocarbons and irritating, acrid vapors.
HAZARDOUS POLYMERIZATION	Hazardous polymerization will not occur.

SECTION 11 – TOXICOLOGICAL PROPERTIES	
ACUTE TOXICITY (HUMANS)	Refer to section 3 for available information on potential health effects. For detailed toxicological data, write or call the address or non-emergency number shown in section 1.
SKIN:	Based on properties of similar polymers, the polymer is not hazardous.
INGESTION:	Based on properties of similar polymers, the polymer is not hazardous.
INHALATION:	Based on properties of similar polymers, the polymer is not hazardous.

SECTION 12 – ECOLOGICAL INFORMATION	
MOVEMENT & PARTITIONING	Latex dispersions will color water a milky white. No bioconcentration of the polymeric component is expected because of its high molecular weight.
DEGRADATION & PERSISTENCE	The polymeric component is not expected to biodegrade.
ECOTOXICITY	Based largely or completely on information for similar material(s): Material is practically non-toxic to aquatic organisms on an acute basis (LC50 or EC50 > 100 mg/L in the most sensitive species tested).

SECTION 13 – DISPOSAL CONSIDERATIONS	
DISPOSAL METHOD:	Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

SECTION 14 – TRANSPORTATION INFORMATION	
DEPT. OF TRANSPORTATION (DOT) – US	This product is not regulated by D. O. T. when shipped domestically by land.
TRANSPORTATION OF DANGEROUS GOODS (TDG) - CANADA	This product is not regulated by TDG when shipped domestically by land.

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SECTION 15 – REGULARTORY INFORMATION
U.S. FEDERAL REGULATIONS: Occupational Safety and Health Act (OSHA): This material is not classified as hazardous under the criteria of the US Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200. TSCA Section 8(b) – Inventory Status: All components of this material are listed on or are exempt from the US toxic Substances Control Act (TSCA) inventory. SARA Title III Section 313 Toxic Chemical List (TCL): To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements. SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: - Not to have met any hazard category.
WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) – CANADA: Workplace Hazardous Materials Information System (WHMIS) – Canada: This material is not classified as a controlled product under the Canadian workplace Hazardous Material Information System. Canadian Inventory Status: All components of this material are listed on the Canadian Domestic Substances List (DSL).
ADDITIONAL INFORMATION: California Proposition 65: This material contains a chemical known to the State of California to cause cancer. - 4-Vinylclohexene

SECTION 16 – OTHER INFORMATION				
HMIS RATINGS:	HEALTH 1	FLAMMABILITY 1	REACTIVITY 0	PERSONAL PROTECTION
PREVIOUS REVISION DATE				
REASON FOR REVISION	typo			
LEGEND:	N.A. not applicable, N.E. Not established, N.D. Not determinded			
VOLATILE ORGANIC COMPOUNDS	VOC compliant			
ABBREVIATIONS USED:	N/A (information or data not available); NTP (National Toxicology Program); IARC (International Agency for Research on Cancer); NIOSH (National Institute of occupational Safety and Health administration); PEL (Permissible Exposure Limit) [8 hr. TWA][OSHA]; TLV (Threshold Limit Value)[8 hr. TWA][ACGIH]; STEL (Short term exposure limit)[15 min. TWA][OSHA]; C (ceiling value).			
DISCLAIMER:	Ames Research Laboratories, Inc. believes that the information provided is accurate and reliable as of the date of this material safety data sheet and is given in good faith. No warranty expressed or implied is made as to the accuracy, reliability or completeness of the information. Any use of this data and information must be determined by the user to be in accordance with applicable Federal, State and Local laws and regulations. Ames Research Laboratories, Inc. urges persons receiving this information to make their own determination as to the information's suitability and applicability for an intended use. Note: This information must be included in all MSDS that are copied and distributed for this material.			

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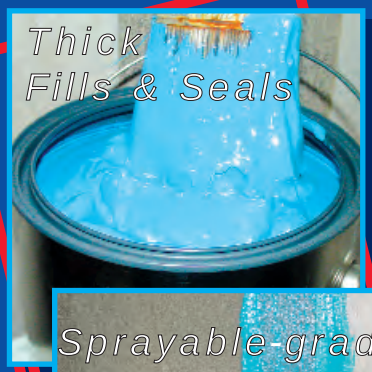
AMES' BLUE MAX™
Sprayable-Grade Liquid Rubber
Basement, ICF, Below-Grade Block & Concrete Waterproofing

Ames' Blue Max™ is a special blend of adhesive, high strength elastomeric liquid rubber, available in a sprayable-grade and a trowel-grade. It is the best technology today for waterproofing in extreme wet situations such as flat roofs, below grade foundations, basement walls, cisterns and many other applications. It is high in solids and dries to a tough 800% elastic membrane that resists cracking and peeling. Blue Max™ is impervious to water when applied in a uniform and seamless fashion with adequate millage. Blue Max sprayable-grade flows into cracks and crevices as a liquid and sets up as a durable rubber to seal leaks wherever they occur. It dries to a translucent blue color.

Blue Max is also an excellent coating for ICF (insulated concrete forms). The adhesive qualities in Blue Max actually glue surfaces together and strengthen wall construction. Blue Max out performs isocyanate urethanes, and works well as a primer and waterproofing membrane for Ames' products such as Safe-T-Deck, Maximum-Stretch, Block & Wall and many other coatings. Blue Max must be top coated for UV protection in exterior applications.

This coating contains no petroleum, is non-toxic, low odor, and environmentally friendly. It can be used as a potable water coating. Blue Max is easy to apply ~ simply roll, brush or spray. Clean up with soap and water.

Nothing else like it in the world!



This water tank was built using concrete blocks sealed only with Ames' Blue Max. This is simply a demonstration of its waterproofing and adhesive power.

WATERPROOFS & REPAIRS:

Old Flat Tar Roofs
Metal Roofs
Rusty Metal
Wood
Concrete
EPDM Rubber Roofs
Roof Valleys
Gutters
Concrete Pipes
Masonry
Roof Decks

Basement Walls
Below-Grade Walls
Plywood Sub-Roofs
Insulated Concrete Forms
Cisterns
Water Troughs
Catch Basins
Ponds & Fountains
Water Troughs
Catch Basins
Ponds
Fountains

AMES' BLUE MAX™
Trowel-Grade Liquid Rubber
Waterproofs Roofs, Walls, Decks & Concrete

Ames' Blue Max trowel-grade is a thick, velvety rich, version of our sprayable-grade Blue Max coating that can be used as a caulk or filler. Blue Max trowel-grade is thick and adhesive to bridge gaps and cracks in concrete, concrete blocks, foundations and many other applications. Blue Max trowel-grade is easy to apply with a brush or trowel. It can be used with other Ame's coatings where a filler is needed for an optimal waterproof system.

As with our sprayable-grade, Blue Max trowel-grade is highly resistant to standing water situations such as flat roofs or water containment. Blue Max is an excellent coating for ICF (insulated concrete forms), as well as metal, wood, concrete, and many other applications. Exterior applications must be topcoated for UV protection.

ENVIRONMENTALLY FRIENDLY

LOW ODOR

INSULATED I.C.F. CERTIFIED CONCRETE FORMS

WATER CLEAN-UP

VOC FREE — VOC under 0.10/0 less than 1 gram per liter

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HMIS FLAMMABILITY
HEALTH HAZARD 1 | 0 | 0 REACTIVITY
SPECIFIC HAZARD

PHYSICAL PERFORMANCE PROPERTIES

AMES'® BLUE MAX™

Ames' Blue Max is a special blend of adhesive, high strength elastomeric liquid rubber. It is the best technology today for waterproofing in extreme wet situations such as flat roofs, below grade foundations, basement walls, cisterns, water troughs, catch basins, ponds and fountains. It is high in solids and dries to a tough 800% elastic membrane that resists cracking and peeling. Blue Max is impervious to water when applied in a uniform and seamless fashion with adequate millage. Blue Max is available in a trowel-grade and a sprayable-grade. It dries to a translucent blue color. Water clean up.

Appearance (cured).....	Liquid Rubber
Appearance (liquid).....	Thick & creamy
Color.....	Blue
Mildew Resistance.....	Excellent
Weight.....	8.0 lbs / 1 gallon
Solvent.....	Water
Odor.....	Mild
Permeability.....	.016 E-96
Elongation.....	Up to 800%
Strength.....	Tensile ASTM D-638 14 days 625%
Humidity.....	Best applied at when humidity level is below 50%
Freeze/Thaw Stability Test.....	If frozen while in liquid form, may be damaged or solidify. Protect from freezing.
Setting time.....	Begins to dry in 30 minutes to 2 hours depending on application thickness and weather.
Cure time.....	Continues to cure for up to 2 weeks.
Toxicity.....	Non-toxic after curing.
Flash Point.....	1500° F. (estimated)
Coverage rate.....	Approximately 100 sq. ft. per gallon per coat
Voc Content.....	Less than 1 gram per liter.

Ames Research Laboratories, Inc., PO Box 1350 Jefferson, OR USA 97352
Toll-Free: 1-888-345-0809 • Phone: 503-588-3330 • Fax: 503-364-2380 • www.amesresearch.com • amesstaff@amesresearch.com

Ames' Blue Max™
Regular-grade

Material **S**afety **D**ata **S**heets (MSDS)

HMIS-NPCA-MFPA	Health	1
	Flammability	1
	Reactivity	0
	Personal Protection	

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION		
PRODUCT NAME	Ames' Blue Max™ Regular-grade	
IDENTIFICATION		
DATE PRINTED		
PRODUCT USE/CLASS	Latex Paints & Coatings, water born dispersion	
MANUFACTURER	Ames Research Laboratories, Inc. Jefferson, Oregon 97352	**Corporate Office:** PO Box 1350 Jefferson, Oregon 97352-1350
EMERGENCY TELEPHONE	1-888-345-0809	
PREPARER (optional)		
PHONE	(503) 588-3330	
PREPARE DATE	05-05-09	

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS			
ITEM	CHEMICAL NAME	CAS NUMBER	% BY WT
01	A specialty formulated waterbase man-made rubber technology. Further information provided upon qualified request to our customers. Fax your request to 503-364-2380. Include: address, phone number, and company name for further information.	Proprietary	45-55
02	Water	7732-18-5	45-55
03			

Material is not known to contain Toxic Chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372. Product alkaline to PH-10. May cause stomach distress if ingested. Do not ingest.

SECTION 3 – HAZARDOUS IDENTIFICATION	
EMERGENCY OVERVIEW: No significant immediate hazards for emergency response are known. Milky white liquid emulsion. Slight odor. Dike and contain spill. Avoid dilution of spills.	
EYE CONTACT	May cause slight transient (temporary) eye irritation. Corneal injury unlikely.
SKIN CONTACT	Short single exposure not likely to cause significant skin irritation. Prolonged and repeated exposure may cause slight skin irritation. Material may stick to skin causing irritation upon removal. A single, prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.
INHALATION	With good ventilation, a single exposure to vapors is not expected to cause adverse effects.
INGESTION	Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
SYSTEMIC EFFECTS (Other target organs)	No relevant information found.

SECTION 4 – FIRST AID MEASURES	
FIRST AID	
EYE CONTACT	Immediately flush eyes with large quantities of clean water for at least 15 minutes. Consult a physician.
SKIN CONTACT	Wash skin with soap and water. Remove contaminated clothing. Seek medical attention if irritation develops. Wash contaminated clothing before reuse.
INHALATION	Remove affected individual(s) to fresh air. Seek medical attention if breathing difficulty develops.
INGESTION	If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
NOTES TO PHYSICIAN	No specific antidote. Supportive care. Treatment based on judgement of the physician in response to reactions of the patient.

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SECTION 5 - FIRE FIGHTING MEASURES	
FLASH POINT	Not applicable
METHOD USED	Not applicable
AUTOIGNITION TEMPERATURE	Not applicable
FLAMMABLE LIMITS IN AIR (LOWER)	Not applicable
FLAMMABLE LIMITS IN AIR (UPPER)	Not applicable
FIRE FIGHTING EXTINGUISHING MEDIA	To extinguish combustible residues of this product, use water fog, carbon dioxide, dry chemical or foam.
FIRE FIGHTING EQUIPMENT	Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. If protective equipment is not available or not used, fight fire from a protected location or safe distance.
FIRE FIGHTING INSTRUCTIONS	Keep people away. Isolate fire area and deny unnecessary entry. Containers of this material may build up pressure if exposed to heat (fire). Use a water spray to cool fire-exposed containers.
FIRE/EXPLOSION HAZARDS	This material will not burn unless it is evaporated to dryness.
HAZARDOUS COMBUSTION PRODUCTS	Under fire conditions, some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to hydrocarbons, carbon monoxide and dense smoke.

SECTION 6 – ACCIDENTAL RELEASE MEASURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:	
PERSONAL PRECAUTIONS	Avoid unnecessary exposure and contact. Barricade the area to restrict access. Persons not wearing protective equipment (see section 8) should be excluded from the area of the spill until clean-up has been completed.
ENVIRONMENTAL PRECAUTIONS	Stop leak at source when it is safe to do so. Dike and contain spill. Prevent spilled material from contaminating soil or entering drains, sewers, streams or other bodies of water.
CLEANUP PROCEDURES	Avoid dilution with water to minimize the extent of the spill. Recover and recycle spilled latex if possible, otherwise, collect with absorbent material and transfer to appropriate containers for disposal. Water may be used for final cleaning of affected area.

SECTION 7 – HANDLING AND STORAGE	
HANDLING:	Practice reasonable care to avoid repeated, prolonged skin contact. An eye wash station and a safety shower should be readily accessible to workers wherever this material is stored or used.
STORAGE:	Keep from freezing. Store at temperatures between 40° F and 110° F. Material may develop bacteria odor on long-term storage. No safety problems known.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION	
EXPOSURE LIMITS GUIDELINES	There are no exposure limits assigned to the polymer in this product by the Occupational Safety and Health Administration (OSHA) or American Conference of Governmental Industrial Hygenists (ACGIH).
ENGINEERING CONTROLS	Good general ventilation should be sufficient for most conditions.
PERSONAL PROTECTIVE EQUIPMENT	EYES: Wear safety glasses with side shields or goggles. SKIN: Wear clean, long-sleeved, body-covering, clothing. Nitrile, neoprene®, or rubber gloves should provide protection against skin contact. INHALATION: For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, or areas are poorly ventilated, use an approved air-purifying respirator.

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SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES			
BOILING RANGE:	212ºF (100° C)	VAPOR DENSITY:	0.624 @ 80° F (26.7^{O} C)
ODOR:	Slight odor	PHYSICAL STATE	Liquid
APPEARANCE:	Thick, blue liquid.	SPECIFIC GRAVITY:	0.98 - 1.04
pH	9.0 – 10.0	VAPOR PRESSURE	17.5 mm Hg @ 68° F (20° C)
FREEZING POINT	32° F (0 ^{O} C)		
SOLUBILITY	Product is sold as dilutable. Polymer component is insoluble		
ADDITIONAL INFORMATION	The physical data listed are for a series of latexes. For specific properties on any given latex, see the product bulletin.		

(See Section 16 for abbreviation legend)

SECTION 10 –STABILITY AND REACTIVITY	
STABILITY	This material is stable during storage and during its extended use.
INCOMPATIBLE MATERIALS/SUBSTANCES	Addition of chemicals, such as acids or multivalent metal salts, may cause coagulation.
CONDITIONS TO AVOID	Avoid freezing temperatures (less than 32° F or 0° C). Products decompose at elevated temperatures.
HAZARDOUS DECOMPOSITION PRODUCTS	Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Thermal decomposition may produce various hydrocarbons and irritating, acrid vapors.
HAZARDOUS POLYMERIZATION	Hazardous polymerization will not occur.

SECTION 11 – TOXICOLOGICAL PROPERTIES	
ACUTE TOXICITY (HUMANS)	Refer to section 3 for available information on potential health effects. For detailed toxicological data, write or call the address or non-emergency number shown in section 1.
SKIN:	Based on properties of similar polymers, the polymer is not hazardous.
INGESTION:	Based on properties of similar polymers, the polymer is not hazardous.
INHALATION:	Based on properties of similar polymers, the polymer is not hazardous.

SECTION 12 – ECOLOGICAL INFORMATION	
MOVEMENT & PARTITIONING	Latex dispersions will color water a milky white. No bioconcentration of the polymeric component is expected because of its high molecular weight.
DEGRADATION & PERSISTENCE	The polymeric component is not expected to biodegrade.
ECOTOXICITY	Based largely or completely on information for similar material(s): Material is practically non-toxic to aquatic organisms on an acute basis (LC50 or EC50 > 100 mg/L in the most sensitive species tested).

SECTION 13 – DISPOSAL CONSIDERATIONS	
DISPOSAL METHOD:	Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

SECTION 14 – TRANSPORTATION INFORMATION	
DEPT. OF TRANSPORTATION (DOT) – US	This product is not regulated by D. O. T. when shipped domestically by land.
TRANSPORTATION OF DANGEROUS GOODS (TDG) - CANADA	This product is not regulated by TDG when shipped domestically by land.

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SECTION 15 – REGULARTORY INFORMATION

U.S. FEDERAL REGULATIONS: Occupational Safety and Health Act (OSHA): This material is not classified as hazardous under the criteria of the US Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 8(b) – Inventory Status: All components of this material are listed on or are exempt from the US toxic Substances Control Act (TSCA) inventory.

TSCA Section 12(b)-Export Notification: 4-Vinylcyclohexene (CAS# 100-40-3) is subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Reporting requirements.

SARA Title III Section 304 – CERCLA: Components of this product are not subject to reporting under the requirements of the Comprehensive Environmental Response. Compensation, and Liability Act. (CERCLA)

SARA Title III Section 313 Toxic Chemical List (TCL): To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: - Not to have met any hazard category.

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) – CANADA: Workplace Hazardous Materials Information System (WHMIS) – Canada: This material is not classified as a controlled product under the Canadian workplace Hazardous Material Information System.

Canadian Inventory Status: All components of this material are listed on the Canadian Domestic Substances List (DSL).

Additional Canadian Regulatory Information: This product does not contain a substance present on the WHMIS Ingredient Disclosure List. (IDL) which is at or above the specified concentration limit.

ADDITIONAL INFORMATION: California Proposition 65: This material contains a chemical known to the State of California to cause cancer. The California Safe Drinking Water and Toxic Enforcement Act of 1986 requires that clear and reasonable warning be given prior to exposing any person to this chemical.
- 4-Vinylclohexene

SECTION 16 – OTHER INFORMATION

HMIS RATINGS:	HEALTH 1	FLAMMABILITY 1	REACTIVITY 0	PERSONAL PROTECTION
PREVIOUS REVISION DATE	12-11-08			
REASON FOR REVISION	Added information for Canada			
LEGEND:	N.A. not applicable, N.E. Not established, N.D. Not determinded			
VOLATILE ORGANIC COMPOUNDS	VOC compliant			
ABBREVIATIONS USED:	N/A (information or data not available); NTP (National Toxicology Program); IARC (International Agency for Research on Cancer); NIOSH (National Institute of occupational Safety and Health administration); PEL (Permissible Exposure Limit) [8 hr. TWA][OSHA]; TLV (Threshold Limit Value)[8 hr. TWA][ACGIH]; STEL (Short term exposure limit)[15 min. TWA][OSHA]; C (ceiling value).			
DISCLAIMER:	Ames Research Laboratories, Inc. believes that the information provided is accurate and reliable as of the date of this material safety data sheet and is given in good faith. No warranty expressed or implied is made as to the accuracy, reliability or completeness of the information. Any use of this data and information must be determined by the user to be in accordance with applicable Federal, State and Local laws and regulations. Ames Research Laboratories, Inc. urges persons receiving this information to make their own determination as to the information's suitability and applicability for an intended use. Note: This information must be included in all MSDS that are copied and distributed for this material.			

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White Retarder Seam Tape

- White retarder material with adhesive made to adhere to radon retarder/crawlspace barrier (for seams).
- 4" X 210'
- Matches white side of barrier and blends in for reduced visibility/seamless appearance.

Other related products:

6 MIL MULTI PURPOSE DURA-SKRIM PLASTIC

BUTYL SEALANT 10 oz

RB-205 RETARDER BUTTONS

RB400 WB RADON RETARDER

©2010 Radon Control Inc.

INSTALLATION & OPERATING INSTRUCTIONS
Instruction P/N IN015 Rev E
FOR *CHECKPOINT IIa*™ P/N 28001-2 & 28001-3
RADON SYSTEM ALARM

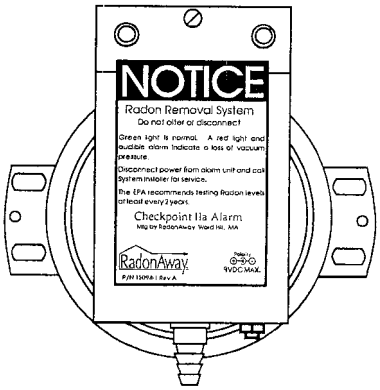
INSTALLATION INSTRUCTIONS
(WALL MOUNTING)

Select a suitable wall location near a vertical section of the suction pipe. The unit should be mounted about four or five feet above the floor and as close to the suction pipe as possible. Keep in mind that with the plug-in transformer provided, the unit must also be within six feet of a 120V receptacle. **NOTE: The Checkpoint IIa is calibrated for vertical mounting, horizontal mounting will affect switchpoint calibration.**

Drill two ¼" holes 4" apart horizontally where the unit is to be mounted.

Install the two ¼" wall anchors provided.

Hang the CHECKPOINT IIa from the two mouting holes located on the mounting bracket. Tighten the mounting screws so the unit fits snugly and securely against the wall.



Drill a 5/16" hole into the side of the vent pipe about 6" higher than the top of the unit.

Insert the vinyl tubing provided about 1" inside the suction pipe.

Cut a suitable length of vinyl tubing and attach it to the pressure switch connector on the CHECKPOINT IIa.

CALIBRATION AND OPERATION.

The CHECKPOINT IIa units are calibrated and sealed at the factory to alarm when the vacuum pressure falls below the factory setting and should not normally require field calibration. Factory Settings are:
28001-2 -.25" WC Vacuum
28001-3 -.10" WC Vacuum

To Verify Operation:

With the exhaust fan off or the pressure tubing disconnected and the CHECKPOINT IIa plugged in, both the red indicator light and the audible alarm should be on.

Turn the fan system on or connect the pressure tubing to the fan piping. The red light and the audible alarm should go off. The green light should come on.

Now turn the fan off. The red light and audible alarm should come on in about two or three seconds and the green light should go out.

WARRANTY INFORMATION

Subject to applicable consumer protection legislation, RadonAway warrants that the CHECKPOINT IIa will be free from defective material and workmanship for a period of (1) year from the date of purchase. Warranty is contingent on installation in accordance with the instructions provided. This warranty does not apply where repairs or alterations have been made or attempted by others; or the unit has been abused or misused. Warranty does not include damage in shipment unless the damage is due to the negligence of RadonAway. All other warranties, expressed or written, are not valid. To make a claim under these limited warranties, you must return the defective item to RadonAway with a copy of the purchase receipt. RadonAway is not responsible for installation or removal cost associated with this warranty. In no case is RadonAway liable beyond the repair or replacement of the defective product FOB RadonAway.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THERE IS NO WARRANTY OF MERCHANTIBILITY. ALL OTHER WARRANTIES, EXPRESSED OR WRITTEN, ARE NOT VALID.

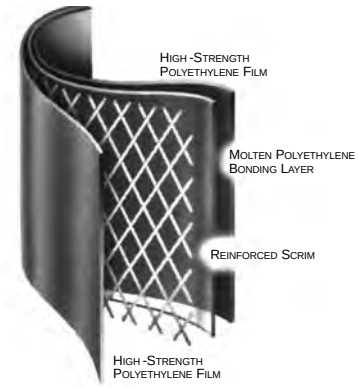
For service under these warranties, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. **No returns can be accepted without an RMA.** If factory return is required, the customer assumes all shipping costs to and from factory.

Manufactured by:
RadonAway
Ward Hill, MA
(978)-521-3703

DURA◆SKRIM® 6CC, 6BB, 6WB & 6WW

PRODUCT DESCRIPTION

DURA◆SKRIM 6CC, 6BB, 6WB & 6WW are economical, reinforced films designed for applications requiring puncture resistance and high tear strengths. A heavy-duty scrim reinforcement, laminated between two layers of virgin high-strength polyethylene film, results in a material that resists punctures and immediately stops tears. The addition of carbon black and ultra violet inhibitors to **DURA◆SKRIM 6BB, 6WB** and **DURA◆SKRIM 6WW**, respectively, increases outdoor longevity. **DURA◆SKRIM 6** is the first choice for applications requiring greater performance than common 6 and 10 mil plastic sheeting.



PRODUCT USE

DURA◆SKRIM 6CC, 6BB, 6WB & 6WW are used in short to mid-term applications requiring a light weight, tear-resistant, reinforced film. The white side of **DURA◆SKRIM 6WB and 6WW** are excellent choices for covering applications that require minimal heat build up and condensation. **DURA◆SKRIM 6WW** meets or exceeds ASTM E-1745, Class "C" standard as an underslab vapor retarder.

SIZE & PACKAGING

DURA◆SKRIM 6CC, 6BB, 6WB & 6WW are available in a variety of widths and lengths. Panel sizes up to 100,000 square feet are available. All panels are accordion folded and tightly rolled on a heavy-duty core for ease of handling and time-saving installation.

PRODUCT	PART NUMBER
DURA◆SKRIM 6CC	R6CC
DURA◆SKRIM 6BB	R6BB
DURA◆SKRIM 6WB	R6WBK
DURA◆SKRIM 6WW	R6WWK

COMMON APPLICATIONS

- Construction Site Covers
- Temporary Erosion Control
- Lumber Covers
- Shipping Covers
- Pallet Covers
- Remediation Covers
- Cargo Wraps
- Insulation Membranes
- Building Enclosures
- Concrete Curing Covers
- Vapor Retarders
- Silage Covers
- Temporary Walls
- Fumigation Covers
- Asbestos Abatements

Barge Liner

RAVEN INDUSTRIES
Engineered Films Division

DURA◆SKRIM® 6CC, 6BB, 6WB & 6WW

PROPERTIES	TEST METHOD	DURA◆SKRIM 6CC		DURA◆SKRIM 6BB		DURA◆SKRIM 6WB		DURA◆SKRIM 6WW	
		English	Metric	English	Metric	English	Metric	English	Metric
Appearance		Clear		Black/Black		White/Black		White/White	
Thickness, Nominal		6 mil	0.15 mm	6 mil	0.15 mm	6 mil	0.15 mm	6 mil	0.15 mm
Weight Per MSF		24 lbs.	11 kg	24 lbs.	11 kg	27 lbs.	12 kg	28 lbs.	13 kg
Construction		Extrusion laminated with scrim reinforcement							
1" Tensile Strength	ASTM D7003	44 lbf.	196 N	43 lbf.	191 N	44 lbf.	196 N	42 lbf.	187 N
Elongation at Break	ASTM D7003	550%	550%	550%	550%	550%	550%	550%	550%
Grab Tensile	ASTM D7004	55 lbf.	245 N	55 lbf.	245 N	55 lbf.	245 N	55 lbf.	245 N
***Trapezoid Tear**	ASTM D4533	40 lbf.	178 N	40 lbf.	178 N	40 lbf.	178 N	40 lbf.	178 N
Hydrostatic Resistance	ASTM D751	40 psi	280 kPa	40 psi	280 kPa	40 psi	280 kPa	40 psi	280 kPa
Mullen Burst	ASTM D751	90 psi	620 kPa	90 psi	620 kPa	90 psi	620 kPa	90 psi	620 kPa
Maximum Use Temperature		180°F	82°C	180°F	82°C	180°F	82°C	180°F	82°C
Minimum Use Temperature		-70°F	-57°C	-70°F	-57°C	-70°F	-57°C	-70°F	-57°C
WVTR	ASTM E96 Method A	0.03 g/100in²/day	0.5 g/m²/day	0.03 g/100in²/day	0.5 g/m²/day	0.03 g/100in²/day	0.5 g/m²/day	0.03 g/100in²/day	0.5 g/m²/day
Perm Rating	ASTM E96 Method A	0.07 U.S. Perms	0.05 Metric Perms	0.07 U.S. Perms	0.05 Metric Perms	0.07 U.S. Perms	0.05 Metric Perms	0.07 U.S. Perms	0.05 Metric Perms

*Tests are an average of diagonal directions.

DURA◆SKRIM 6WW meets or exceeds ASTM E-84 standard, Class "A" for surface burning characteristics of building materials and also ASTM E-1745, Class "C" standard for water vapor retarders used in contact with soil or granular fill under concrete slabs.

DURA◆SKRIM 6CC, 6BB, 6WB & 6WW are four layer reinforced extrusion laminates. The outer layers consist of a high-strength polyethylene. Carbon black in the 6BB and UV stabilizers in the 6WW increase longevity.

DURA◆SKRIM 6CC, 6BB, 6WB & 6WW are reinforced with a minimum of 1000 denier scrim laid in a diagonal pattern spaced 3/8" apart.

Note: To the best of our knowledge, these are typical property values and are intended as guides only, not as specification limits. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.

RAVEN INDUSTRIES
Engineered Films Division

PLANT LOCATION
Sioux Falls, South Dakota

www.dura-skrim.com

SALES OFFICE
P.O. Box 5107
Sioux Falls, SD 57117-5107
(605) 335-0174
(605) 331-0333 - FAX
800-635-3456

2/06 EFD 1073

ATTACHMENT F

FIELD MODIFICATION FORMS

August 18, 2010

Reference No. 019190

ADDENDUM NO. 01
FIELD MODIFICATION TO DESIGN SPECIFICATIONS
VAPOR MITIGATION SYSTEM
904 PARK AVENUE
ATTICA, INDIANA

By this Addendum No. 01, the Design Specifications - Vapor Mitigation System dated May 25, 2010 shall be amended as specified below.

1. South wall was in too poor a condition (Crumbling and oil on block) to paint so CRA began installation of membrane. Per the request of the homeowner the membrane was removed. The south wall was coated with one coat of Eucoseal and Blue Max.
2. Per residence request short sections of interior walls will get one coat of white paint.
3. We will shovel some of the collapsed east wall back and then cover the rest with membrane.

The Contractor shall acknowledge receipt of this Addendum in the space provided below.

Except as modified by this Addendum, the Design Specifications - Vapor Mitigation System previously issued shall remain unchanged.

Steven E Davis
Engineer's Signature

10/11/10
Date

Steven E. Davis
Printed Name

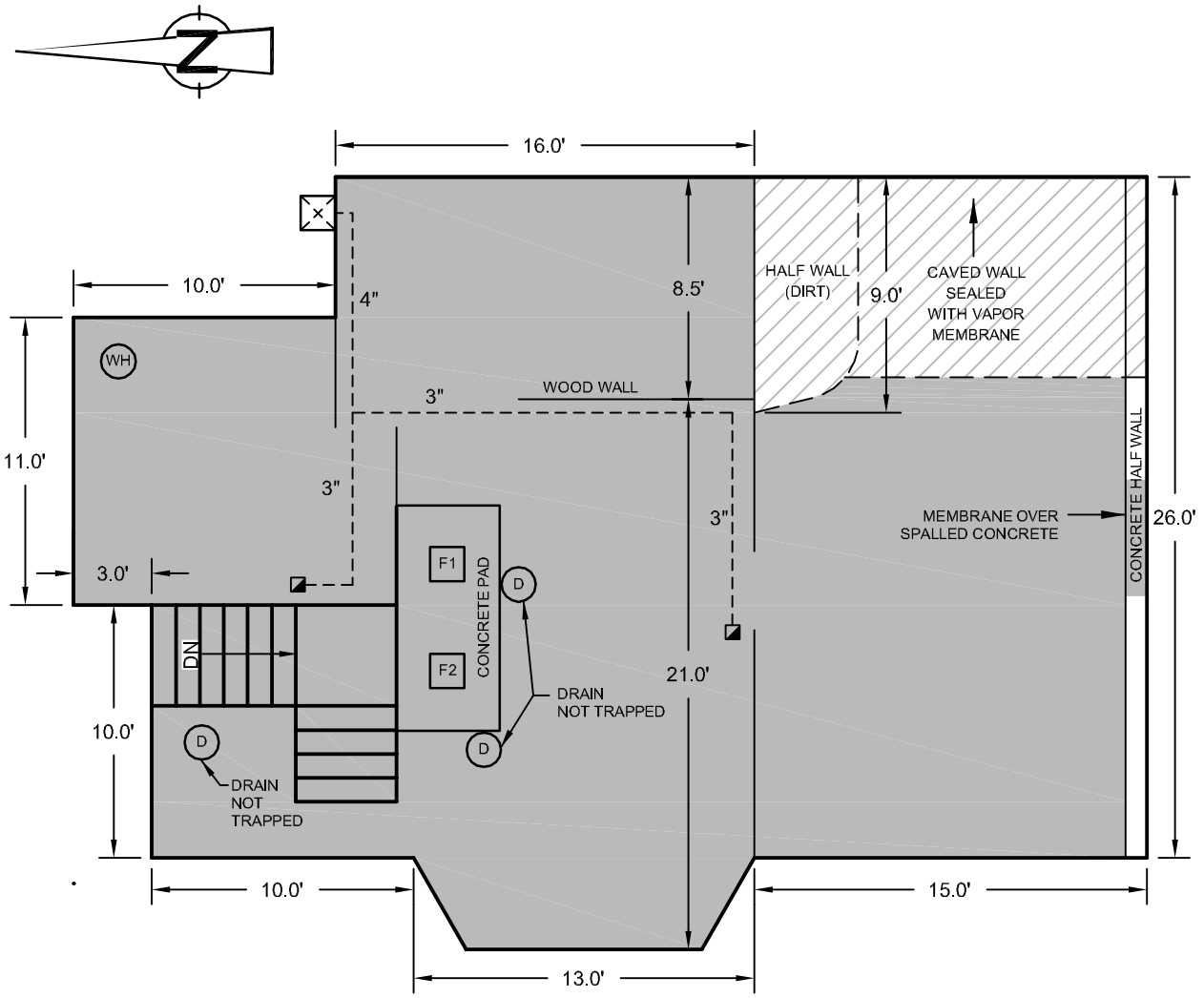
Duke Cain
Contractor Representative's Signature

10/11/10
Date

DUKE CAIN
Printed Name

ATTACHMENT G

AS-BUILT DRAWING



LEGEND

- F — FURNACE
- EXTERIOR MOUNTED RADON FAN
- WH — WATER HEATER
- D — EXISTING DRAIN

LEGEND (NEW)

- SUB SLAB EXTRACTION POINT
- 4" — PVC PIPING/INSIDE DIAMETER
- VAPOR MEMBRANE
- VAPOR TIGHT COATING ON FLOOR AND WALLS

NOTES

FOUNDATION WALLS ARE CONCRETE BLOCK AND POURED CONCRETE

VAPOR INTRUSION MITIGATION SYSTEM AS-BUILT
904 PARK AVENUE
Attica, Indiana

19190-01(035)GN-WA080 SEP 23/2010

ATTACHMENT H

SITE PHOTOGRAPHS AFTER SYSTEM CONSTRUCTION

Photo 1 – Southeast corner of basement

Photo 2 – East wall of south room in basement

SITE PHOTOGRAPHS

Photo 3 – VM system manifold piping showing labeling

Photo 4 – VM system manifold pipe penetration through north wall of basement

SITE PHOTOGRAPHS

Photo 5 – Breaker box with circuit label

Photo 6 – VM system alarm

SITE PHOTOGRAPHS

Photo 7 – VM system manometer

Photo 8 – VM extraction point just outside of the south room

SITE PHOTOGRAPHS

Photo 9 – North room of basement showing floor and wall sealing

Photo 10 – System fan and cover on north wall of residence

SITE PHOTOGRAPHS

Photo 11 – System discharge piping

SITE PHOTOGRAPHS

ATTACHMENT I

VAPOR INTRUSION MITIGATION COMPLETION FORM

CONESTOGA-ROVERS & ASSOCIATES

6520 Corporate Drive
Indianapolis, Indiana 46278
Telephone: (317) 291-7007 Fax: (317) 328-2666
www.CRAworld.com

Vapor Intrusion Mitigation Completion Form
Attica, Indiana

Start Date 8 / 11 / 10 Completion Date 9 / 1 / 10

Inspection Date: 9 / 13 / 10
Inspection Time: 3:00 AM / PM

RESIDENCE INFORMATION

Name: Patrick Stoll
Address: 904 Park Ave.
Phone: 765-764-4259

Basement: Y N
Wall Construction: Brick Block Stone Concrete Other: _____
Floor Construction: Concrete Unfinished Finished
Furnace: Y N
Water Heater: Y N
Other: _____
Crawl Space(s): Y N

VAPOR INTRUSION MITIGATION MEASURES

		Meets Specification Y	N	NA
1.0 PIPING				
Suction Point Pipe Size	Diameter: 3 in	☑	☐	☐
Manifold Pipe Size	Diameter: 4 in	☑	☐	☐
Vent Pipe Size	Diameter: 4 in	☑	☐	☐
Sloping of Horizontal Runs		☑	☐	☐
Vent Pipe Discharge		☑	☐	☐
Supports and Fastening		☑	☐	☐
Installation		☑	☐	☐
2.0 VAPOR INTRUSION FAN				
Fan Model	Brand/Model No.: HP 220	☑	☐	☐
Fan Housing		☑	☐	☐
Installation		☑	☐	☐
3.0 GENERAL SEALING				
Basement Walls:				
Sealant		☑	☐	☐
Vapor Seal Paint		☑	☐	☐
Concrete Block Top Voids		☐	☐	☑
Vapor Barrier	Mil: 6	☑	☐	☐

	Meets Specification Y	N	NA
Basement Floor:			
New Concrete	☐	☐	☑
Vapor Seal Paint	☑	☐	☐
Vapor Barrier Mil: _____	☐	☐	☑
Floating Floor	☐	☐	☑
Sump Pit/Pump	☐	☐	☑
Drains Sealed Type: _____	☐	☐	☑
Floor Joist Vapor Barrier	☐	☐	☑
4.0 SUB-SLAB DEPRESSURIZATION			
Extraction Points No.: 2	☑	☐	☐
Locations	☑	☐	☐
Installation	☑	☐	☐
Backdrafting Test on Non-Electric Appliances	☑	☐	☐
List appliances tested and observations: Furnace + Water Heater both passed			
5.0 SUBMEMBRANE DEPRESSURIZATION			
Seams and Tape	☐	☐	☑
Crawl Space:			
Vapor Barrier Mil: _____	☐	☐	☑
Vapor Barrier Installation:			
Extraction Points No.: _____	☐	☐	☑
Extraction Pipe Installation	☐	☐	☑
6.0 ELECTRICAL			
Component Installation	☑	☐	☐
7.0 MATERIALS			
Electrical	☑	☐	☐
Piping	☑	☐	☐
Membranes	☑	☐	☐
Caulks and Sealants	☑	☐	☐
Wood/Header Boards	☐	☐	☑
8.0 MONITORING AND LABELING			
Manometer Reading: 2.75" H_2O	☑	☐	☐
Vapor Fan Alarm	☑	☐	☐
System Labels	☑	☐	☐
Circuit Breaker Labeling	☑	☐	☐

		Meets Specification		
		Y	N	NA
9.0	OTHER REQUIREMENTS (List from Final Design)			
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

NOTES: _____

Completion Photos Taken (10 Minimum): (Y) N

Project Completed by: Cain Contracting

Inspector: S E D

Signature

Steven E. Davis

Print Name

VAPOR MITIGATION AS-BUILT SPECIFICATIONS

419 BAXTER STREET
ATTICA, INDIANA

Prepared for:
KRAFT FOODS GLOBAL, INC.

Prepared by:
Conestoga-Rovers & Associates

6520 Corporate Drive
Indianapolis, IN 46278

Office: (317) 291-7007
Fax: (317) 328-2666

web: http:\\www.CRAworld.com

SEPTEMBER 14, 2010
REVISION (0)
REFERENCE NO. 019190

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
419 BAXTER STREET
ATTICA, INDIANA

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VAPOR INTRUSION MITIGATION SYSTEM
419 BAXTER STREET
ATTICA, INDIANA

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SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
419 BAXTER STREET
ATTICA, INDIANA

1.0 PIPING INSTALLATION REQUIREMENTS

This section is not applicable.

2.0 VAPOR INTRUSION BLOWER INSTALLATION REQUIREMENTS

This section is not applicable.

3.0 GENERAL SEALING REQUIREMENTS

1. Accessible openings around utility penetrations of the foundation walls will be sealed using urethane caulk or equivalent material. When the joint is greater than 1/2 inch in width, a foam backer rod or other comparable filler material will be inserted into the joint before the application of the sealant.
2. Openings and cracks where the slab meets the foundation wall and cracks in the floors will be sealed using urethane caulk or equivalent material. When the joint is greater than 1/2 inch in width, a foam backer rod or other comparable filler material will be inserted into the joint before the application of the sealant.
3. Porous basement foundation walls will be sealed by applying a vapor-tight product (Ames Blue Max and Ames Block & Wall). Prior to applying the product, the walls will be cleaned and primed as appropriate and cracks in the blocks and mortar will be sealed as described in this section.
4. Areas of basement walls incapable of being sealed with vapor-tight paint will be sealed using a 6-mil thick vapor membrane (DuraSkrim). The edges to the membrane will be sealed to the adjoining painted walls with tape.
5. Any seams in soil gas retarder membranes will be a minimum 6 mil reinforced polyethylene lapped at least 12 inches.
6. The membrane's seams will be sealed with caulk or other adhesive and the joints will be taped.
7. The membrane will be sealed around posts and other penetrations using sealant such as caulk or other vapor-resistant adhesive and secured with hose clamps or strapping material.
8. The crawlspace membrane will be draped over short walls between the basement and the crawlspace and taped and sealed to the basement floor membrane to form one continuous barrier over the crawlspace, short walls, and basement floor.
9. The edges of the floor membrane will be sealed to the walls using a vapor-resistant sealant or adhesive.
10. Where foot traffic is expected on the membrane, the membrane will be a minimum of 12-mil Dura-Skrim and have a double layer of 100 mil Earth Liner installed beneath the membrane. If necessary, leveling sand will be used to improve the floor grade prior to installation of the Earth Liner. An additional layer

of Earth Liner will then be installed on top of the membrane. The top layer of Earth Liner will be covered with 8 mm Strong Rubber Tiles.

Note: The basement walls were incapable of being sealed with the vapor-tight paint and were sealed with a 6 mil vapor membrane in accordance with Item 4 of this section.

4.0 ACTIVE SUB-SLAB DEPRESSURIZATION (SSD) REQUIREMENTS

This section is not applicable.

5.0 SUBMEMBRANE DEPRESSURIZATION (SMD) REQUIREMENTS

This section is not applicable.

6.0 ELECTRICAL REQUIREMENTS

This section is not applicable.

7.0 MATERIALS

1. When sealing holes for plumbing rough-in or other large openings in slabs and foundation walls that are below the ground surface, non-shrink mortar, grouts, expanding foam, or similar materials designed for such application will be used.
2. Sump pit covers will be made of durable plastic or other rot-proof rigid material and be designed to permit airtight sealing.
   - To enable easy removal for sump pump servicing, the cover will be sealed using silicone or other nonpermanent type caulking materials or an airtight gasket and mechanical fasteners.
3. Penetration of sump covers to accommodate electrical wiring, water ejection pipes, or other connections will be designed to permit airtight sealing around penetrations, using caulk or grommets.
4. The sump lid will have a waterless trap to allow water to enter but prevent vapors from leaving sump.
5. Flexible membranes installed in crawlspaces and basement walls as vapor retarders will be a minimum of 6 mil polyethylene or equivalent flexible material.
6. Flexible membranes installed as soil gas retarders where foot traffic is expected will be a minimum of 12 mil polyethylene or equivalent flexible material.
7. Any wood or other material that contacts masonry or soil will be pressure treated, or otherwise protected and resistant to decay and insect attack. Such material would be used to attach membranes to crawlspace walls, etc.
8. Header boards used to fasten the flexible membrane to the basement walls will be pressure treated and securely fastened to the basement wall. Sealant will be used between the boards and the foundation walls to ensure a vapor-tight seal between the header boards and the basement walls.

8.0 MONITORING AND LABELING

This section is not applicable.

9.0 OTHER SPECIFICATIONS

9.1 INSTALLATION OF SUMP PIT

1. A sump pit will be installed to collect condensate generated by the furnace, any potential leakage from the water heater, and any water accumulating under the floor membrane.
2. The sump will be constructed of a perforated PVC or equivalent material with a minimum depth of 18 inches and a minimum diameter of 18 inches and be of sufficient size to accommodate the sump pump.
3. The sump pump shall be a minimum of 1/3 hp and is to be equipped with a check valve. The pump is to be connected to an existing electrical outlet. If no outlet is available, one is to be installed.
4. The sump is to be discharged to the exterior of the home. The discharge area is to be graded so as to allow the discharge water to drain away from the foundation of the home. Discharge piping is to be a minimum of 1 1/2-inch diameter PVC pipe that shall discharge at least 3 feet away from the outer foundation wall.
5. The sump pit is to be sealed to the vapor membrane using urethane caulk of equivalent material.
6. The sump lid is to remain accessible and is not to be covered with the rubber floor tiles. The sump lid will be fitted with a one-way valve or trapped drain to allow water to enter the sump while preventing vapors form escaping.

9.2 REMOVAL OF DEBRIS FROM CRAWLSPACE

1. Debris is to be removed, as needed, from crawlspaces prior to installation of vapor membranes.

9.3 SEALING AND PASSIVE VENTING OF CRAWLSPACE

1. The southwest crawlspace will be sealed by placing membrane over the crawlspace entrance and securing the membrane to the basement walls and

joists. The membrane will be sealed to the walls and joists using adhesive, tape, and/or header boards.

2. Utility penetrations from the basement into the crawlspace will be sealed using expandable foam or urethane caulk.
3. Existing crawlspace vents will be unblocked, as necessary.
4. To the extent practicable, the contractor will install heat tracing and insulation on water pipes in the crawlspace to prevent freezing during cold weather, if applicable.

Note: The contractor discovered that the southwest crawlspace was not inaccessible. The southwest crawlspace was sealed with a 6 mil vapor-tight membrane.

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
419 BAXTER STREET
ATTICA, INDIANA

10.0 SIGNATURES/APPROVALS

10.1 DESIGN APPROVALS

This design was completed, reviewed, and approved by the individuals below.

By:

Preparer's Signature — Date: 06-28-10

Project Manager's Signature — Date: 6/28/10

Engineer's Signature/Seal — Date: 6/28/10

STEVEN EDWARD DAVIS
REGISTERED
No. 19900080
STATE OF INDIANA
PROFESSIONAL ENGINEER

This design was reviewed by the individuals below.

By:

Contractor Representative's Signature — Date: 7-7-10

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
419 BAXTER STREET
ATTICA, INDIANA

10.2 CONSTRUCTION APPROVALS

I have completed the inspection of the VI mitigation system and certify that the installation was completed in accordance with the approved design specifications and any approved modifications thereto.

By:

Steven E Davis	9/14/10
CRA CQA Inspector's Signature	Date
Tom Bandt	9-14-10
Contractor's Representative's Signature	Date
Steven E Davis	9/14/10
Engineer's Signature/Seal	Date

STEVEN EDWARD DAVIS
REGISTERED
No. 19900080
STATE OF INDIANA
PROFESSIONAL ENGINEER

ATTACHMENT A

RESIDENTIAL INSPECTION FORM

CONESTOGA-ROVERS & ASSOCIATES

6520 Corporate Drive
Indianapolis, Indiana 46278
Telephone: (317) 291-7007 Fax: (317) 328-2666
www.CRAworld.com

RESIDENTIAL INSPECTION FORM

Preparer's Name: J. Bolint Date: 05-24-10

Site Address: 419 Baxter

Part I - Occupants

List of Current Occupants/Occupation (include children)

Name	Age	Address: (Lot # or apt. #)	Sex (M/F)	Occupation	Basement Occupancy (Yes/No)	Attic Occupancy (Yes/No)
Barbara Dubois	47		F	Foundry HS	No	NO
Jeremiah Jones	26		M	Bungy/ Danville	—	—

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial / other

Describe building: Single story w/ basement Year constructed: ?

Number of floors at or above grade: 2

Number of floors below grade: 1 (full basement / crawl space / partial basement / partial crawlspace / slab on grade)

Depth of basement below grade surface: -6 ft Basement size: _____ ft²

Basement floor construction: concrete / soil / slab / stone / other (specify): Brick

Describe further as appropriate: Partial brick floor

Foundation walls: poured concrete / cinder blocks / stone / bricks / other (specify): _____

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Basement floor drains present? Yes / No Water in drain? Yes / No

Significant cracks present in basement floor? Yes / No Describe: appears to be former cistern

Significant cracks present in basement walls? Yes / No Describe: Multiple - See photos

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? Yes / No

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Sub-slab vapor/moisture barrier in place? *Yes* / *No* / *Don't know*

Type of barrier: _____

Type of heating system (circle all that apply):

hot air circulation	hot air radiation	wood stove	steam radiation
heat pump	hot water radiation	kerosene heater	electric baseboard
central air conditioning	fireplace	other (specify): window AC	

Type of fuel utilized for heating system (circle all that apply):

Natural gas / electric / fuel oil / wood / coal / solar / kerosene / other (specify): _____

Type of fuel utilized for water heater:

Natural gas / electric

Backdrafting test conducted on non-electric appliances: *Yes* / *No* / *Not Applicable*

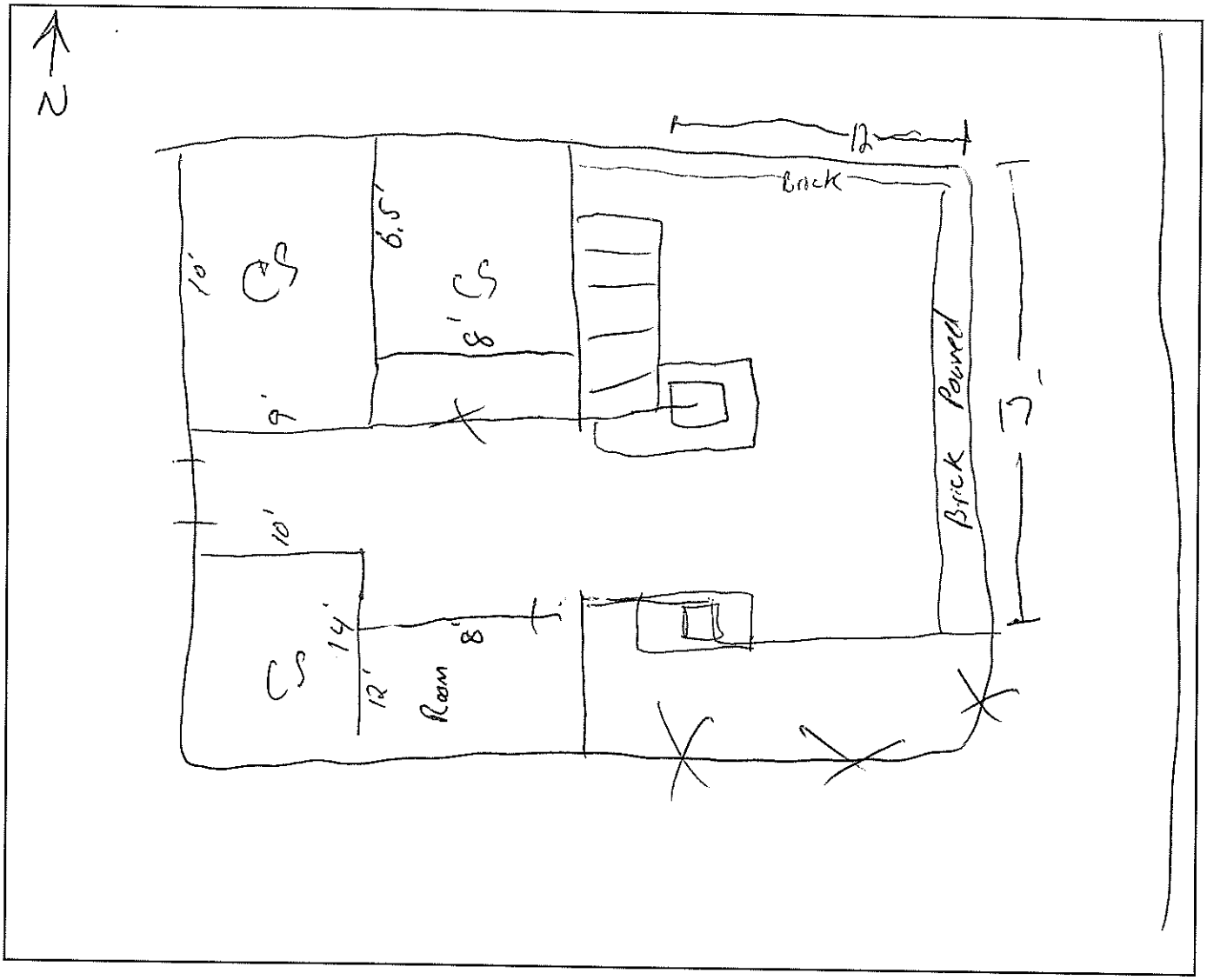
List appliances tested and observations: _____

Are utility penetrations present through basement walls, foundation walls, and floors of houses with crawlspaces? Yes No Describe:

HVAC, Elec, Water, gas

Describe any other potential vapor diffusion routes observed (e.g., old coal chutes through basement walls, etc.)

Provide Drawing of the lowest floor of the building 419 Baxter St.



Provide Drawing of the main floor of the building

NA

Provide Drawing of the second floor of the building, if present

NO 2nd floor

Part III - Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room) at the time of inspection.

Potential Sources	Location (s)
Gasoline storage cans	NO
Gas-powered equipment (mowers, etc)	NO
Kerosene storage cans	NO
Paints / thinners / strippers	NO
Cleaning solvents	NO
Moth balls	NO
Insecticides	NO
New furniture / upholstery	6 mos - couch / chair
New carpeting / flooring	NO
Hobbies - glues, paints, lacquers, photographic darkroom chemicals, etc.	NO
Other (specify):	

Part IV - Miscellaneous Items

Do any of the occupants of the building smoke? *Yes* / *No*

Does the building have an attached garage directly connected to living space? *Yes* / *No*

If so, is a car usually parked in the garage? ~~*Yes / No*~~

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? ~~*Yes / No*~~

Do the occupants of the building have their clothes dry cleaned? *Yes* / *No*

If yes, how often? ~~Weekly / monthly / 3-4 times~~ a year

When was the last dry cleaned garment brought home? _____

Do any of the occupants use solvents in work? *Yes* / *No*

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? ~~*Yes / No*~~

Has there ever been a fire in the building? *Yes* / *No* If yes, when? _____

Has painting or staining been done in the building in the last 6 months? *Yes* / *No*

If yes, when? _____ and where? _____

Other Observations:

_____

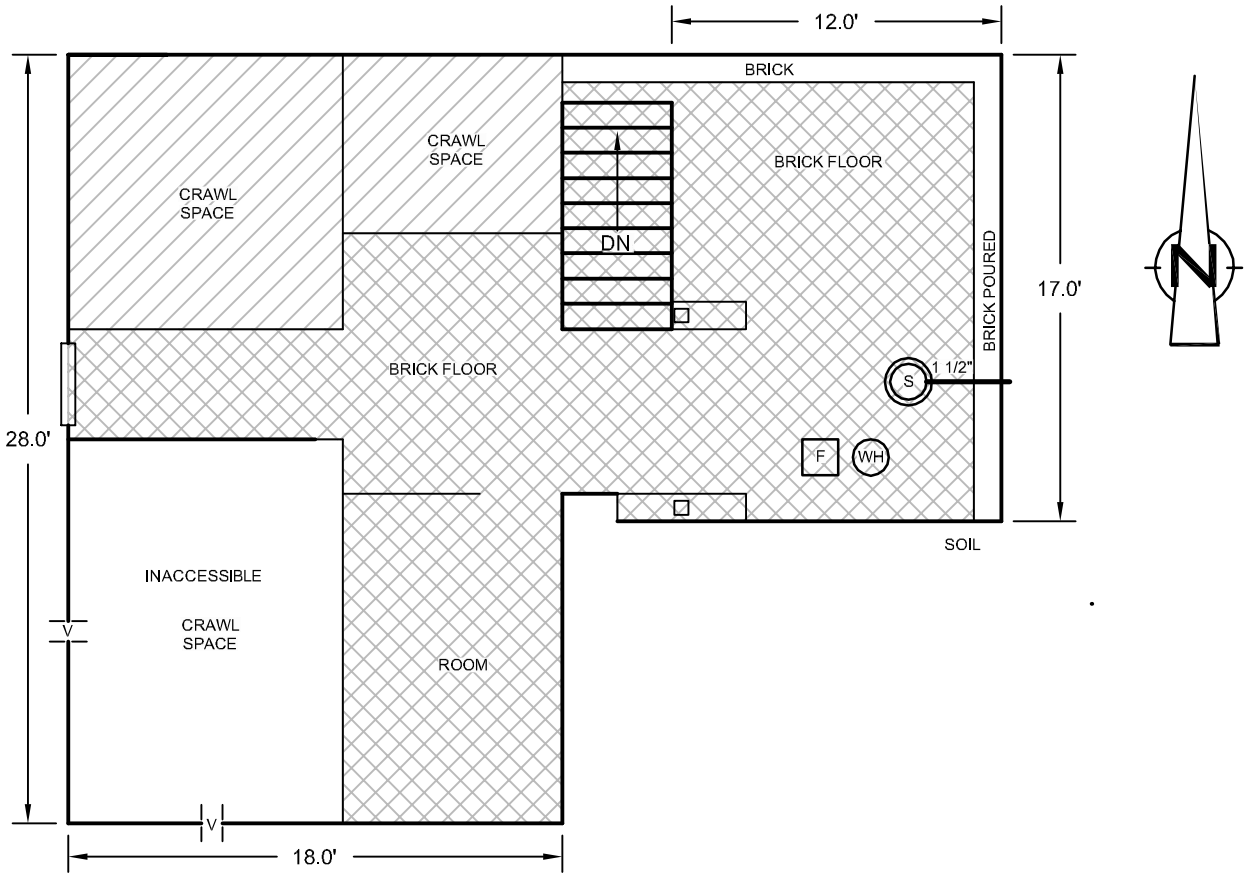
_____

_____

_____

ATTACHMENT B

SITE PLAN



BAXTER STREET

LEGEND (EXISTING)

- F — EXISTING FURNACE
- WH — EXISTING WATER HEATER
- S — EXISTING SUMP
- D — EXISTING FLOOR DRAIN
- V — EXISTING AIR VENT
- 1 1/2" — SUMP WATER DISCHARGE

LEGEND (PROPOSED)

- X — PROPOSED EXTERIOR MOUNTED RADON FAN
- S — PROPOSED SUMP
- D — PROPOSED FLOOR DRAIN
- SUB SLAB EXTRACTION POINT
- SUB-MEMBRANE EXTRACTION POINT
- VENT — PROPOSED NEW VENT LOCATION
- 6-MIL THICK VAPOR MEMBRANE ON FLOORS AND WALLS
- 12-MIL THICK VAPOR MEMBRANE ON FLOORS WITH RUBBER FLOOR TILES, 6-MIL MEMBRANE ON WALLS
- VAPOR TIGHT COATING ON FLOOR AND WALLS (BLUE MAX OR EQUIVALENT)
- 1 1/2" — PROPOSED SUMP WATER DISCHARGE

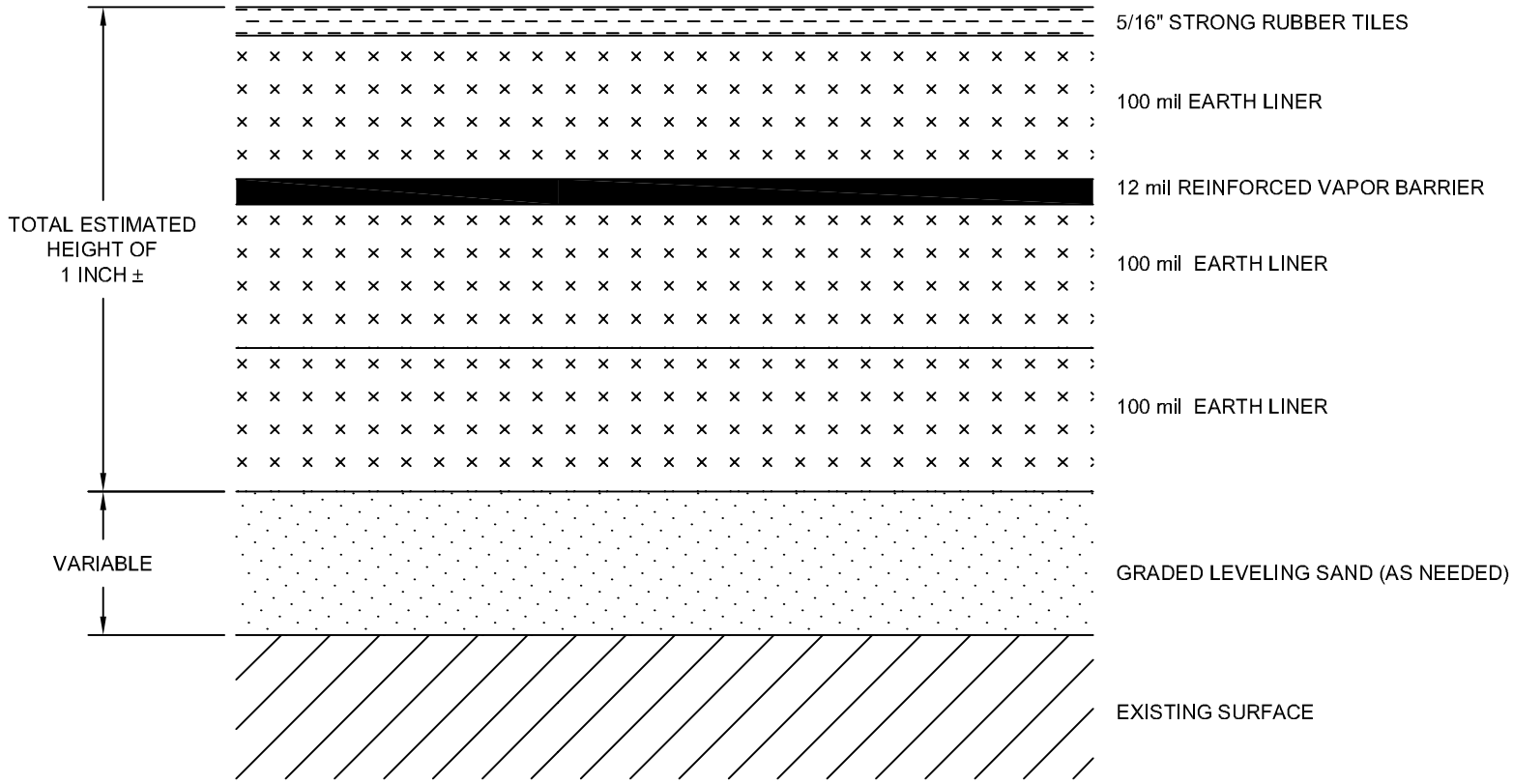
VAPOR INTRUSION MITIGATION SYSTEM DESIGN
419 BAXTER STREET
Attica, Indiana

19190-01(035)GN-WA045 JUN 21/2010

ATTACHMENT C

TYPICAL SYSTEM DRAWING

NOT TO SCALE



GS-5
TYPICAL CROSS-SECTION RUBBER FLOOR SYSTEM
Attica, Indiana

19190-01(035)GN-WA032 APR 23/2010

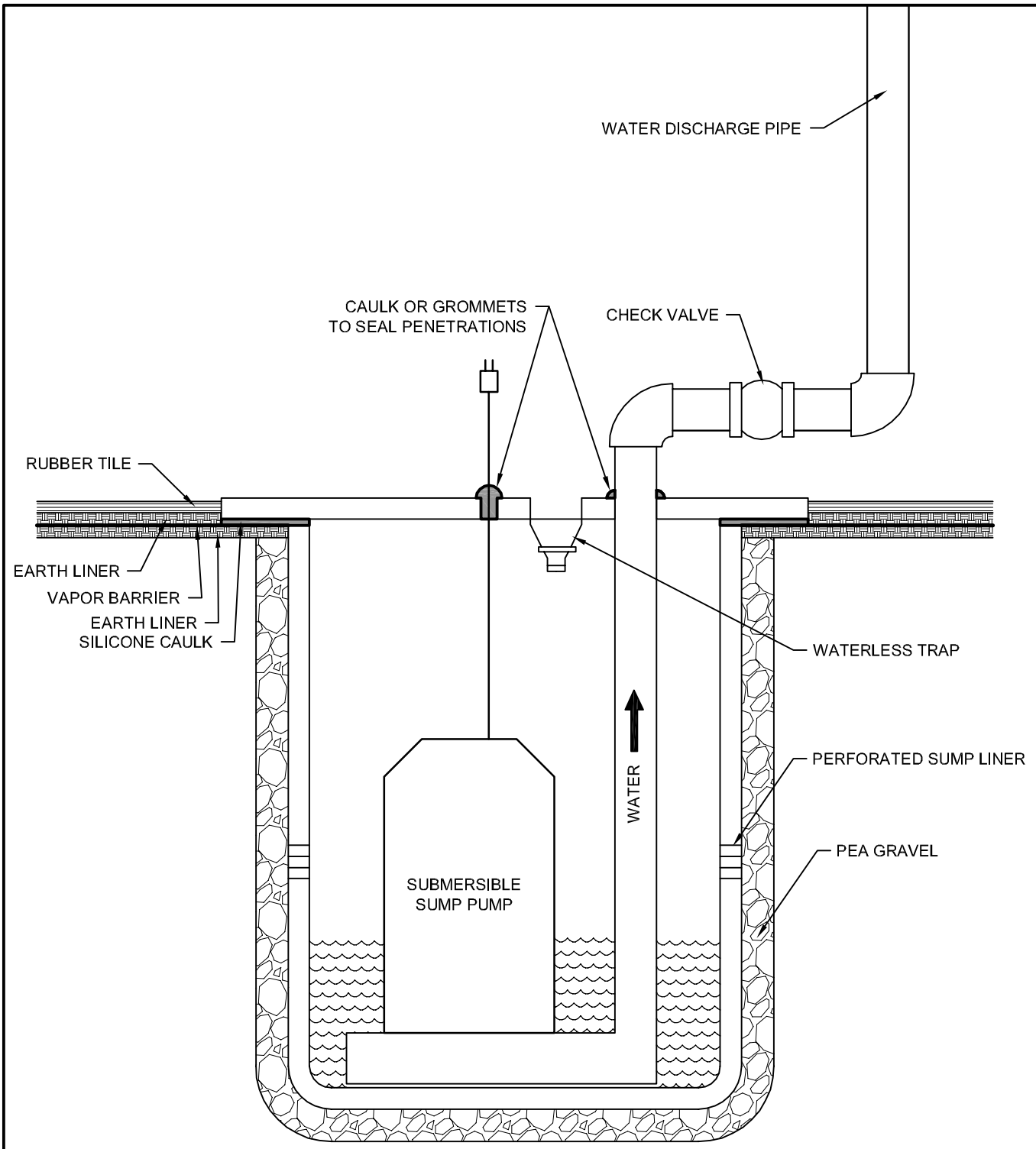


figure GS-9a

TYPICAL PERFORATED SUMP
(MEMBRANE)
Attica, Indiana

REFERENCE: EPA/625/R-93/011

19190-01(035)GN-WA034 JUN 17/2010

ATTACHMENT D

SITE PHOTOGRAPHS BEFORE SYSTEM CONSTRUCTION

Photo 1 – Basement stairs and north wall

Photo 2 – Crawlspace near stairs location

SITE PHOTOGRAPHS

Photo 3 – Crawlspace near stairs

Photo 4 – Exterior basement entrance door

SITE PHOTOGRAPHS

Photo 5 – Entrance to southwest crawlspace; water intrusion staining

Photo 6 – Southwest crawlspace

SITE PHOTOGRAPHS

Photo 7 – Entrance to basement room

Photo 8 – Basement room

SITE PHOTOGRAPHS

Photo 9 – Furnace and water heater location

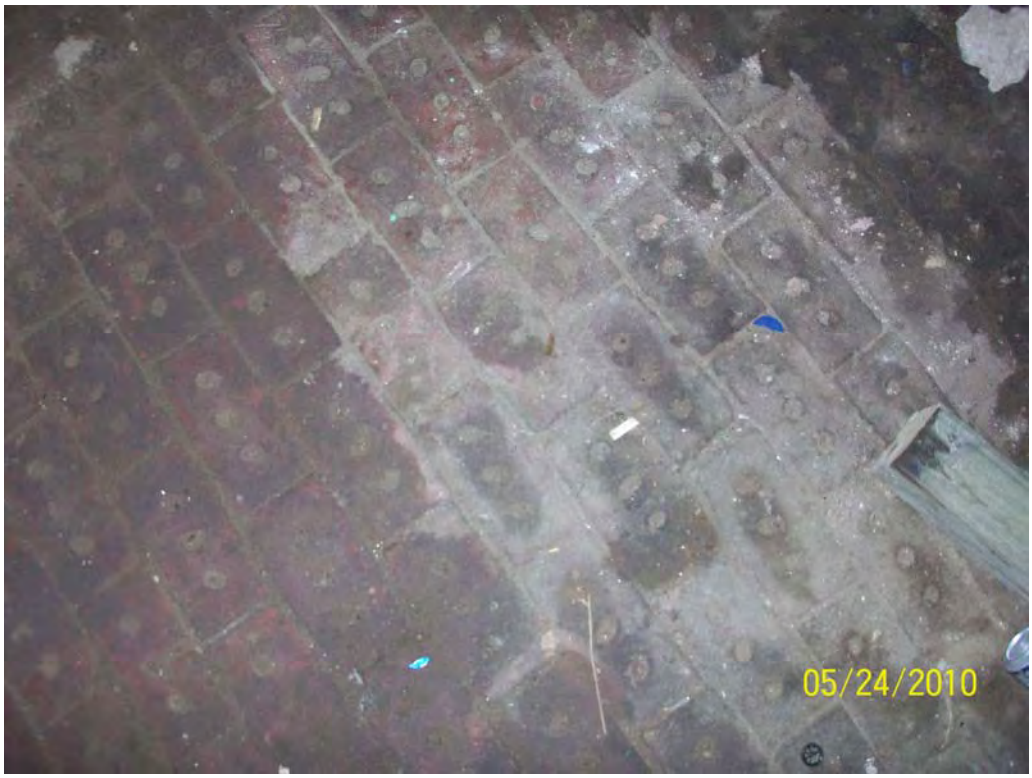


Photo 10 - Brick floor construction – partial coverage in basement

SITE PHOTOGRAPHS

Photo 11 – Damaged east basement wall

SITE PHOTOGRAPHS

ATTACHMENT E

MATERIAL SPECIFICATIONS AND MSDS

LIST OF MATERIAL SPECIFICATIONS AND MSDS
419 BAXTER STREET
ATTICA, INDIANA

Component	***Product Code***	***Product Use***
Adhesive Tape	Eternabond (DoubleStick)	Attach membrane to walls and floor
Adhesive Tape Primer	Eternabond (EternaPrime)	
Caulk	NuFlex 110 Gutter Seal	Seal cracks and small gaps in walls and floor
Earth Liner	EL-1500	Cushion and protect membrane
Foam Applicator Cleaning Agent	TriggerFoam Cleaner	
Foam Sealant	Power Fasteners PowerFoam and TriggerFoam	Seal larger openings
Roofing Sealant	Geocel 3300	Seal around roof penetrations
Rubber Matting	Strong Rubber Tiles	Flooring to protect membrane
Sealant	Ames Block & Wall	Top coating for walls and floors
Sealant	Ames Blue Max	Base coating for walls and floors
Seam Tape	Retarder Tape (R4-Tape)	Connect membrane sheets
Vapor Barrier	Dura-Skrim (12 mil)	Seal crawlspace and dirt floor
Vapor Barrier	Dura-Skrim (6 mil)	Seal crawlspace

ATTACHMENT F

FIELD MODIFICATION FORMS

October 11, 2010

Reference No. 019190

ADDENDUM NO. 1
FIELD MODIFICATION TO DESIGN SPECIFICATIONS
VAPOR MITIGATION SYSTEM
419 BAXTER ST.
ATTICA, INDIANA

By this Addendum No. 1 the Design Specifications - Vapor Mitigation System dated October 11, 2010 shall be amended as specified below.

1. The southwest crawl space, which was labeled inaccessible on the design figure, was accessed and lined with a 6 mil vapor membrane.
2.
3.

The Contractor shall acknowledge receipt of this Addendum in the space provided below.

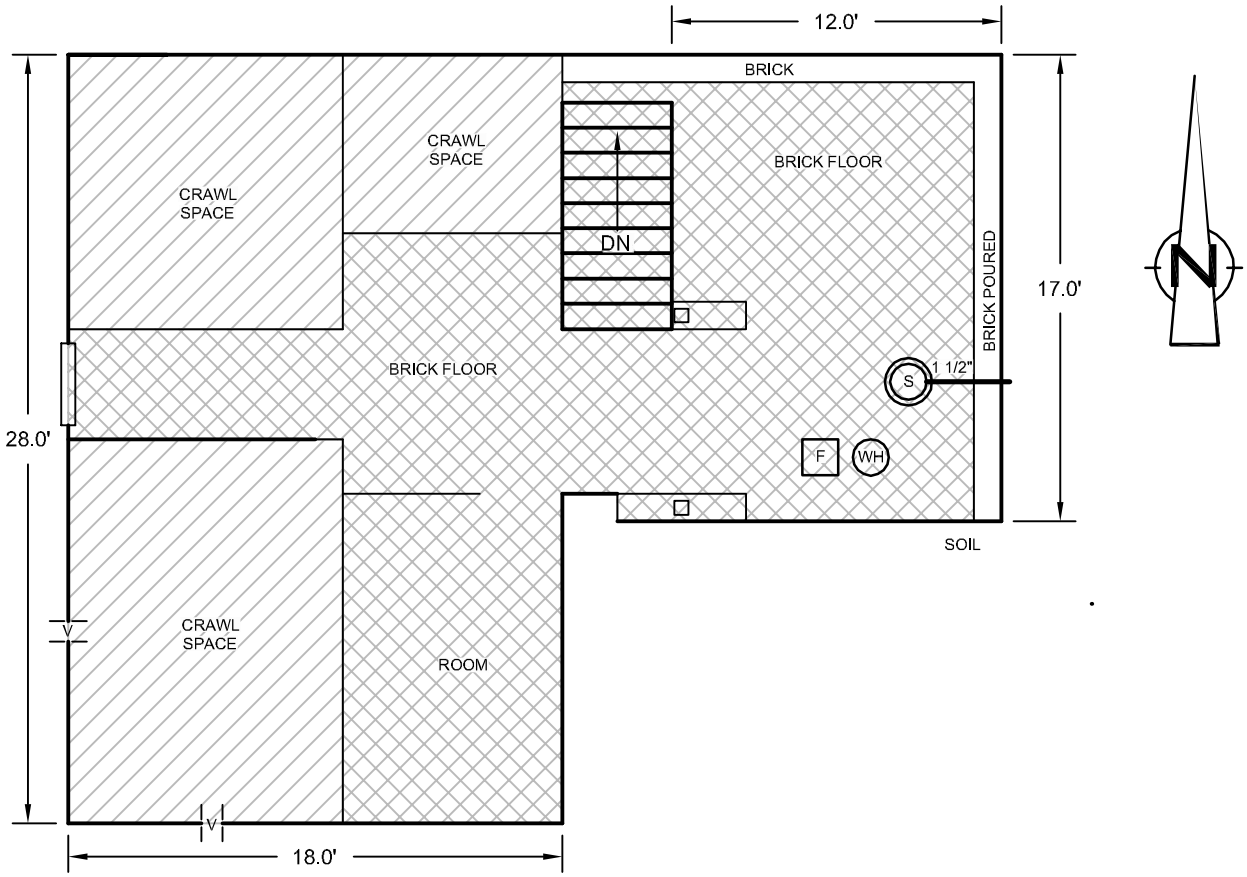
Except as modified by this Addendum, the Design Specifications - Vapor Mitigation System previously issued shall remain unchanged.

Steven E Davis — 10/11/10
Engineer's Signature — Date
Steven E. Davis
Printed Name

Duke Cain — 10/11/10
Contractor Representative's Signature — Date
DUKE CAIN
Printed Name

ATTACHMENT G

AS-BUILT DRAWING



BAXTER STREET

LEGEND (EXISTING)

- F — EXISTING FURNACE
- WH — EXISTING WATER HEATER
- V — EXISTING AIR VENT

LEGEND (NEW)

- X — EXTERIOR MOUNTED RADON FAN
- S — SUMP
- 6-MIL THICK VAPOR MEMBRANE ON FLOORS AND WALLS
- 12-MIL THICK VAPOR MEMBRANE ON FLOORS WITH RUBBER FLOOR TILES, 6-MIL MEMBRANE ON WALLS
- 1 1/2" — SUMP WATER DISCHARGE

VAPOR INTRUSION MITIGATION SYSTEM AS BUILT
419 BAXTER STREET
Attica, Indiana

19190-01(035)GN-WA079 OCT 29/2010

ATTACHMENT H

SITE PHOTOGRAPHS AFTER SYSTEM CONSTRUCTION

Note: Due to camera malfunction, date stamp on photos is incorrect.
All photos taken on September 14, 2010.

Photo 1 – Northeast corner of basement

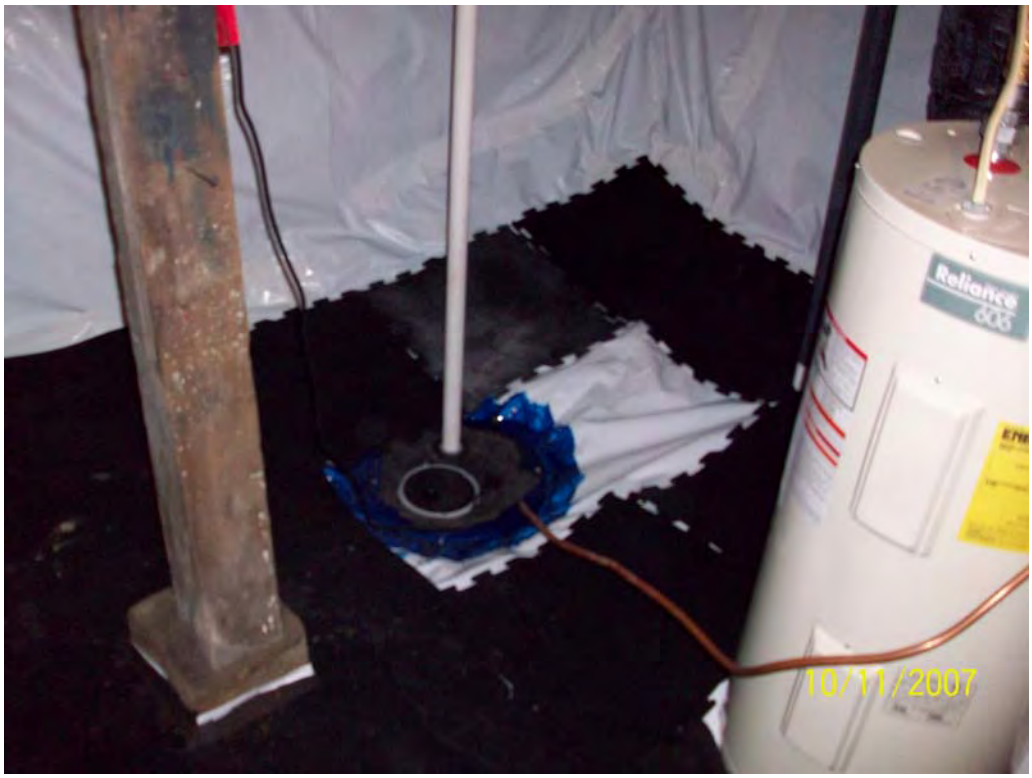


Photo 2 – Newly installed sump in southeast corner of basement

SITE PHOTOGRAPHS

Photo 3 – Sealed basement support column

Photo 4 – Crawlspace next to stairs

SITE PHOTOGRAPHS

Photo 5 – Southwest crawlspace

Photo 6 – Exterior entrance to basement

SITE PHOTOGRAPHS

Photo 7 – Northwest crawlspace

Photo 8 – South room of basement

SITE PHOTOGRAPHS

Photo 9 – Sump discharge pipe penetrating east wall of basement

Photo 10 – Base of stairs

SITE PHOTOGRAPHS

Photo 11 – Sealed utility penetration in north wall

SITE PHOTOGRAPHS

ATTACHMENT I

VAPOR INTRUSION MITIGATION COMPLETION FORM

CONESTOGA-ROVERS & ASSOCIATES

6520 Corporate Drive
Indianapolis, Indiana 46278
Telephone: (317) 291-7007 Fax: (317) 328-2666
www.CRAworld.com

Vapor Intrusion Mitigation Completion Form
Attica, Indiana

Start Date 8 / 26 / 10 Completion Date 9 / 13 / 10

Inspection Date: 9 / 14 / 10
Inspection Time: 4:00 AM / PM

RESIDENCE INFORMATION

Name: Pete Bodine
Address: 419 Baxter St
Phone:

Basement: Y N
Wall Construction: Brick Block Stone Concrete Other:
Floor Construction: Concrete Unfinished Finished
Furnace: Y N
Water Heater: Y N
Other:
Crawl Space(s): Y N

VAPOR INTRUSION MITIGATION MEASURES

		Meets Specification Y	N	NA
1.0 PIPING				
Suction Point Pipe Size	Diameter: _____ in	☐	☐	☑
Manifold Pipe Size	Diameter: _____ in	☐	☐	☑
Vent Pipe Size	Diameter: _____ in	☐	☐	☑
Sloping of Horizontal Runs		☐	☐	☑
Vent Pipe Discharge		☐	☐	☑
Supports and Fastening		☐	☐	☑
Installation		☐	☐	☑
2.0 VAPOR INTRUSION FAN				
Fan Model	Brand/Model No.: _____	☐	☐	☑
Fan Housing		☐	☐	☑
Installation		☐	☐	☑
3.0 GENERAL SEALING				
Basement Walls:				
Sealant		☑	☐	☐
Vapor Seal Paint		☐	☐	☑
Concrete Block Top Voids		☐	☐	☑
Vapor Barrier	Mil: 6 mil	☑	☐	☐

	Meets Specification Y	N	NA
Basement Floor:			
New Concrete	☐	☐	☑
Vapor Seal Paint	☐	☐	☑
Vapor Barrier Mil: 12	☑	☐	☐
Floating Floor	☑	☐	☐
Sump Pit/Pump	☑	☐	☐
Drains Sealed Type: _____	☐	☐	☑
Floor Joist Vapor Barrier	☐	☐	☑
4.0 SUB-SLAB DEPRESSURIZATION			
Extraction Points No.: _____	☐	☐	☑
Locations	☐	☐	☑
Installation	☐	☐	☑
Backdrafting Test on Non-Electric Appliances	☐	☐	☑
List appliances tested and observations: _____			
5.0 SUBMEMBRANE DEPRESSURIZATION			
Seams and Tape	☐	☐	☑
Crawl Space:			
Vapor Barrier Mil: _____	☐	☐	☑
Vapor Barrier Installation:			
Extraction Points No.: _____	☐	☐	☑
Extraction Pipe Installation	☐	☐	☑
6.0 ELECTRICAL			
Component Installation	☑	☐	☐
7.0 MATERIALS			
Electrical	☑	☐	☐
Piping	☐	☐	☑
Membranes	☑	☐	☐
Caulks and Sealants	☑	☐	☐
Wood/Header Boards	☐	☐	☑
8.0 MONITORING AND LABELING			
Manometer Reading: _____	☐	☐	☑
Vapor Fan Alarm	☐	☐	☑
System Labels	☐	☐	☑
Circuit Breaker Labeling	☐	☐	☑

		Meets Specification		
		Y	N	NA
9.0	**OTHER REQUIREMENTS (List from Final Design)**			
	Sump Pit	☑	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

NOTES:

Completion Photos Taken (10 Minimum): (Y) N

Project Completed by:
Cain Contracting

Inspector:
Signature: Steven E. Davis

Print Name: Steven E. Davis

VAPOR MITIGATION AS-BUILT SPECIFICATIONS

405 BAXTER STREET
ATTICA, INDIANA

Prepared for:
KRAFT FOODS GLOBAL, INC.

Prepared by:
Conestoga-Rovers & Associates

6520 Corporate Drive
Indianapolis, IN 46278

Office: (317) 291-7007
Fax: (317) 328-2666

web: http:\\www.CRAworld.com

SEPTEMBER 23, 2010
REVISION (0)
REFERENCE NO. 019190

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
405 BAXTER STREET
ATTICA, INDIANA

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SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
405 BAXTER STREET
ATTICA, INDIANA

LIST OF ATTACHMENTS

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ATTACHMENT B	SITE PLAN
ATTACHMENT C	TYPICAL SYSTEM DRAWING
ATTACHMENT D	SITE PHOTOGRAPHS BEFORE SYSTEM CONSTRUCTION
ATTACHMENT E	MATERIAL SPECIFICATIONS AND MSDS
ATTACHMENT F	FIELD MODIFICATION FORMS
ATTACHMENT G	AS-BUILT DRAWING
ATTACHMENT H	SITE PHOTOGRAPHS AFTER SYSTEM CONSTRUCTION
ATTACHMENT I	VAPOR INTRUSION MITIGATION COMPLETION FORM

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
405 BAXTER STREET
ATTICA, INDIANA

1.0 PIPING INSTALLATION REQUIREMENTS

1. All vent stack piping will be solid, rigid pipe not less than 4-inch inside diameter (ID).
2. All manifold piping will be rigid pipe not less than 4-inch ID.
3. All suction point piping will be rigid pipe not less than 3-inch ID.
4. All pipe joints and connections in vapor intrusion (VI) systems, both interior and exterior, will be sealed permanently. Exceptions include installation of radon fans and sump covers.
5. VI system piping installed in the interior or on the exterior of a building, will be insulated where condensation on the pipe's exterior may drip onto and damage ceilings and floors, etc., and where water vapor, from the soil, may condense inside the pipe, and then freeze partially or fully blocking the soil gas exhaust.
6. VI piping will be fastened to the structure of the building with hangers, strapping, or other supports that will secure it adequately.
7. VI piping will not be attached to or supported by existing pipes, ducts, conduits, or any kind of equipment.
8. VI piping will not block window and doors or access to installed equipment.
9. Supports for VI piping should be installed at least every 6 feet on horizontal runs. Vertical runs will be secured either above or below the points of penetration through floors, ceilings, and roofs, or at least every 8 feet on runs that do not penetrate floors, ceilings, or roofs.
10. To prevent blockage of air flow into the bottom of suction point pipes, they will be supported and secured in a permanent manner that prevents their downward movement to the bottom of suction pits or sump pits, or into the soil beneath a soil gas retarder membrane.
11. Horizontal runs in VI system piping will be sloped to ensure that water from rain or condensation drains downward into the ground beneath the slab or soil gas retarder membrane.
12. To reduce the risk of vent stack blockage due to heavy snowfall, to reduce the potential for re-entrainment of vapor into the living spaces of a building, and to prevent direct exposure of individuals outside of buildings, the discharge from vent stack pipes of active soil depressurization systems will meet the following minimum requirements.

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VAPOR INTRUSION MITIGATION SYSTEM
405 BAXTER STREET
ATTICA, INDIANA

The discharge from vent stacks pipes will be:

- Vertical and upward, outside the structure, at least 10 feet above the ground level, above the edge of the roof, and will also meet the separation requirements. Whenever practicable, they will be above the highest roof of the buildings and above the highest ridge.
- Ten feet or more away from any window, door, or other opening into conditioned or otherwise occupiable spaces of the structure, if the discharge point is not at least 2 feet above the top of such openings.
- Ten feet or more away from any opening into the conditioned or other occupiable spaces of an adjacent building. Chimney flues will be considered openings into conditioned or otherwise occupiable space.
- For vent stack pipes that penetrate the roof, the point of discharge will be at least 12 inches above the surface of the roof.
- When a horizontal run of vent stack pipe penetrates the gable end walls, the piping outside the structure will be routed to a vertical position so that the discharge point meets the requirements.
- Points of discharge that are not in a direct line of sight from openings into conditioned or otherwise occupiable space because of intervening objects, such as dormers, chimneys, windows around the corner, etc. will meet the separation requirements.

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
405 BAXTER STREET
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2.0 VAPOR INTRUSION BLOWER INSTALLATION REQUIREMENTS

1. Contractor will install a Fantech Model HP 220 for this application.
2. Blower will be installed in the building attic. Blower location is chosen to minimize the risk of vapor entry into living spaces which could result from leaks in fan housing or in the vent stack piping above the fan.
3. Blower will be installed in a configuration that avoids condensation buildup in the blower housing.
4. Blower will be mounted and secured in a manner that minimizes transfer of vibration to the structural framing of the building.
5. To facilitate maintenance and future replacement, blower will be installed in the vent pipe using removable couplings or flexible connections that can be tightly secured to both the fan and the vent pipe.
6. The blower vent will exit the roof of the residence and will be sealed using a Kozy Kollar or applicable roof flashing.

Note: Per the request of the resident, the blower vent was installed on the outside of the residence and not through the roof.

3.0 GENERAL SEALING REQUIREMENTS

1. Opening around the suction point piping penetrations of the slab, accessible openings around utility penetrations of the slab, accessible openings around utility penetrations of the foundation walls and slab, and other openings in slabs will be sealed, using methods and materials that are permanent and durable.
2. Openings and cracks where the slab meets the foundation wall and cracks in the floors will be sealed using urethane caulk or equivalent material. When the joint is greater than 1/2 inch in width, a foam backer rod or other comparable filler material will be inserted into the joint before the application of the sealant.
3. For hollow cinderblock or hollow concrete block wall foundations, the top voids of accessible blocks will be sealed using and insulating expandable foam material.
4. Porous basement foundation walls and floor will be sealed by applying a vapor-tight product (Ames Blue Max and Ames Block & Wall) to the walls and floor. Prior to applying the product, the walls and floor will be cleaned and primed as appropriate and cracks in the blocks and mortar will be sealed as described in this section.
5. The existing sump pit will be drained and the concrete dried out prior to the application of vapor-tight sealing products. A solid sump will be installed into the existing sump pit. The sump will be sealed to the existing concrete with urethane caulk.
6. Sealing of the sump will be performed in a manner such that pumping equipment and basement drainage remains fully functional.

Note: The concrete in the existing sump was determined to be competent; therefore, vapor coatings were applied to the concrete of the existing sump. There was no need for installation of a solid sump within the existing sump.

4.0 ACTIVE SUB-SLAB DEPRESSURIZATION (SSD) REQUIREMENTS

1. To enhance pressure field extension, excavate as much as 1 ft^3 of sub-slab material below and around each suction point pipe. The end of the suction point pipe will have an excavated hole, at least one pipe diameter deep, directly below it. This hole will be backfilled with pea gravel to support the suction pipe.

5.0 SUBMEMBRANE DEPRESSURIZATION (SMD) REQUIREMENTS

1. Any seams in soil gas retarder membranes (not covered by concrete slabs) used for submembrane depressurization systems, passive or active, will be a minimum 6 mil reinforced polyethylene lapped at least 12 inches.
2. The membrane's seams will be sealed with caulk or other adhesive and the joints will be taped.
3. The membrane will be sealed around posts and other penetrations using sealant such as caulk or other vapor-resistant adhesive and secured with hose clamps, adhesive tape, or strapping material.
4. The crawl space membrane will be 6 mil reinforced polyethylene and will be taped and sealed to the short basement wall.
5. Reduce the SMD system noise to the extent practicable by:
   - Seal the membrane to reduce the amount of air leakage and its associated noise.
   - Use a suction point design that uses eight or more slots cut parallel to the axis of the pipe into the lowest foot of the suction point pipe, with the slots being 1/2 inch wide and 1/2 inch apart.

6.0 ELECTRICAL REQUIREMENTS

1. All mitigation system electrical components will be UL listed.
2. Wiring will not be located inside the VI system piping or within any other heating or cooling ductwork.
3. Any plugged cord used to supply power to a VI fan will be no more than 6 feet in length.
4. No plugged cord may penetrate a wall or be concealed within a wall.
5. A disconnecting means is a switch, a plugged cord, or a branch circuit overcurrent device.
   - A disconnecting means will be present in the electric circuit powering VI fans.
   - Operation of the VI fan's disconnecting means must not interrupt the power to other electrical devices in the dwelling.
6. Fan, cords, plugs, receptacles, receptacle enclosures, switches, switch enclosures, etc., intended for outside use must have a weatherproof and unattended use rating.
7. A hard-wired electrical connection (with a disconnect switch) will be installed outdoors.

7.0 MATERIALS

1. At a minimum, all VI system piping in depressurization systems will be made of Schedule 40 PVC piping material.
2. Fittings used in VI system piping will be of the same material as the piping itself. This material compatibility enables the required cementing of all piping connections. However, when mounting fans and when making removable connections which facilitate sump pit maintenance, rubber couplings suitable for use in sanitary sewer systems will be used instead of cemented pipe joints.
3. The plastic pipe cleaner and cement will be compatible with the kind of plastic in the VI system piping and will be used as recommended by its manufacturer.
4. When sealing holes for plumbing rough-in or other large openings in slabs and foundation walls that are below the grounds surface, non-shrink mortar, grouts, expanding foam, or similar materials designed for such application will be used.
5. Sump pit covers will be made of durable plastic or other rot-proof rigid material and be designed to permit airtight sealing.
   - To enable easy removal for sump pump servicing, the cover will be sealed using silicone or other nonpermanent type caulking materials or an airtight gasket and mechanical fasteners.
6. Penetration of sump covers to accommodate electrical wiring, water ejection pipes, or suction point pipes will be designed to permit airtight sealing around penetrations, using caulk or grommets.
7. Flexible membranes installed in crawlspaces as soil gas retarders will be a minimum of 6 mil polyethylene or equivalent flexible material.
8. Any wood or other material that contacts masonry or soil will be pressure treated, or otherwise protected and resistant to decay and insect attack. Such material would be used to attach membranes to crawlspace walls, etc.
9. Header boards used to fasten the flexible membrane to the basement walls will be pressure treated and securely fastened to the basement wall. Sealant will be used between the boards and the foundation walls to ensure a vapor-tight seal between the header boards and the basement walls.

Note: Vapor coatings were applied to the existing solid sump. Since there are no perforations in the existing solid sump, there is no need for a sump pit cover.

8.0 MONITORING AND LABELING

1. The system will include a RadonAway Checkpoint IIa alarm mechanism that will provide a visual and audible indication of system degradation and failure.
   - The alarm mechanism will be located where it is easily seen and heard.
   - The RadonAway Checkpoint IIa alarm mechanism is capable of having its calibration quickly verified on site.
   - The RadonAway Checkpoint IIa alarm mechanism is powered by house current, it shall be installed on a nonswitched circuit and be designed to reset automatically after a power failure.
2. System vacuum monitor will consist of a mechanical monitor such as Dwyer U-tube manometer with readout or a Dwyer Model 25 or equivalent manometer with readout.
3. Mechanical VI mitigation system monitors will be clearly marked to indicate the initial pressure readings.
4. VI system description label will be placed on the mitigation system, the electric service entrance panel, or other prominent location.
   - This label will be legible from a distance of at least 3 ft.
   - This label will display the following information: the words "VI Mitigation System-Do Not Alter or Disconnect", the installer's name and phone number, the date of installation.
   - A label will be affixed to the electric circuit box stating "VI System Circuit Do Not Disconnect".
   - Labels will be placed on the soil ventilation piping in prominent areas stating "Soil Ventilation Pipe Not for Plumbing or Other Use" or similar
5. The circuit breaker(s) controlling the circuits on which the fan and system failure warning devices operate will be labeled using the words "Vapor Intrusion", or if two circuits, "VI Fan", and "VI Monitor". If other rooms and appliances are on the circuit, they should also be shown on the label.

9.0 OTHER SPECIFICATIONS

9.1 REPAIR AND SEALING OF DAMAGED BASEMENT WALL

1. The damaged brick (east) retaining wall will be replaced by a concrete retaining wall of similar dimensions. The section measures approximately 12 feet in length by 3 feet in height.
2. The wall will be sealed on both sides using materials and methods as described in Section 3.0.
3. Any soil remaining on the basement floor after repair will be used to backfill behind the wall once construction is complete. Adequate time for curing (approximately 48 hrs.) will be allowed prior to backfilling. If necessary, additional soil will be added to return the partial crawl space to grade.
4. Crawlspace vapor barrier will be sealed to the repaired retaining wall using materials and methods described in Section 3.0.

Note: The resident repaired both the east retaining wall and the broken concrete between the two halves of the basement prior to vapor mitigation work. The voids in the concrete block wall installed by the resident were reported filled with concrete. The repaired areas were sealed with vapor-tight coatings according to the specifications in Section 3.0.

9.2 INSTALLATION OF SUMP PIT

1. A sump pit will be installed to collect condensate generated by the furnace and any potential leakage from the water heater.
2. The sump will be constructed of non-perforated PVC or equivalent material with a minimum depth of 18 inches and a minimum diameter of 18 inches and be of sufficient size to accommodate the sump pump.
3. The sump pump shall be a minimum of 1/3 hp and is to be equipped with a check valve. The pump is to be connected to an existing electrical outlet. If no outlet is available, one is to be installed.
4. The sump is to be discharged to the exterior of the home. The discharge area is to be graded so as to allow the discharge water to drain away from the foundation of the home. Discharge piping is to be a minimum of 1 1/2-inch PVC

pipe and the discharge pipe outlet shall be a minimum of 3 feet from the foundation wall.

5. The sump pit is to be sealed to the concrete floor using urethane caulk or equivalent material.

Note: The concrete of the existing sump pit was examined and determined to be competent for application of a vapor-tight coating; therefore, there was no need to install a new non-perforated PVC sump within the existing sump.

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
405 BAXTER STREET
ATTICA, INDIANA

10.0 SIGNATURES/APPROVALS

10.1 DESIGN APPROVALS

This design was completed, reviewed, and approved by the individuals below.

By:

Preparer's Signature — Date: 05-27-10

Project Manager's Signature — Date: 5/26/10

Engineer's Signature/Seal — Date: 5/26/10

STEVEN EDWARD DAVIS
REGISTERED
No. 19900080
STATE OF INDIANA
PROFESSIONAL ENGINEER

This design was reviewed by the individuals below.

By:

Contractor Representative's Signature — Date: 5/26/10

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
405 BAXTER STREET
ATTICA, INDIANA

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REGISTERED
No. 19900080
STATE OF INDIANA
PROFESSIONAL ENGINEER

This design was reviewed by the individuals below.

By:

Contractor Representative's Signature — Date: 5/26/10

SYSTEM SPECIFICATIONS
VAPOR INTRUSION MITIGATION SYSTEM
405 BAXTER STREET
ATTICA, INDIANA

10.2 CONSTRUCTION APPROVALS

I have completed the inspection of the VI mitigation system and certify that the installation was completed in accordance with the approved design specifications and any approved modifications thereto.

By:

Steven E Davis	9/28/10
CRA CQA Inspector's Signature	Date
Tom Burritt	9-23-10
Contractor's Representative's Signature	Date
Steven E Davis	10/6/10
Engineer's Signature/Seal	Date

STEVEN EDWARD DAVIS
REGISTERED
No. 19900080
STATE OF INDIANA
PROFESSIONAL ENGINEER

ATTACHMENT A

RESIDENTIAL INSPECTION FORM

Reference No. 019190

RESIDENTIAL INSPECTION FORM
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Preparer's Name: J. Bolint Date: 03-15-10

Site Address: 405 Baxter

Part I - Occupants

List of Current Occupants/Occupation (include children)

Name (Age)	Address: (Lot # or apt. #)	Sex (M/F)	Occupation
Jim Young		M	
Janet Young	405 Baxter	F	MNTC Supervisor

Part II - Building Characteristics

Building type: (residential) / multi-family residential / office / strip mall / commercial / industrial / other

Describe building: _____ Year constructed: ~1918

Number of floors at or above grade: 2

Number of floors below grade: 1 (full basement) / crawl space / partial basement partial basement /partial crawlspace / slab on grade)

Depth of basement below grade surface: 6+ ft Basement size: _____ ft²

Basement floor construction: (concrete) / (soil) / slab / stone / (other) (specify): Brick

Describe further as appropriate: _____

Foundation walls: poured concrete / (cinder blocks) / (stone) / (bricks) / other (specify): _____

Basement sump present? (Yes) / No Sump pump? (Yes) / No Water in sump? (Yes) / No

Basement floor drains present? Yes / (No) Water in drain? Yes / (No)

Significant cracks present in basement floor? Yes / (No) Describe: _____

Significant cracks present in basement walls? Yes / (No) Describe: _____

Is there evidence of seepage, leaks or flooding (e.g., standing water, high-water marks, damp walls/floors, water-damaged furniture/carpets/walls, etc.) (Yes) / No Describe: Brick wall collapsed

RESIDENTIAL INSPECTION FORM
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Are the basement walls or floor sealed with waterproof paint or epoxy coatings? *Yes* / *No*

Is there a whole house fan? *Yes* / *No*

Type of ground cover outside of building: grass / concrete / asphalt / other (specify) _____

Sub-slab vapor/moisture barrier in place? *Yes* / *No* / *Don't know*

Type of barrier: Visqueen ~4 mil

Type of heating system (circle all that apply):

hot air circulation	hot air radiation	wood stove	steam radiation
heat pump	hot water radiation	kerosene heater	electric baseboard
central air conditioning	fireplace	other (specify): _____	

Type of fuel utilized (circle all that apply):

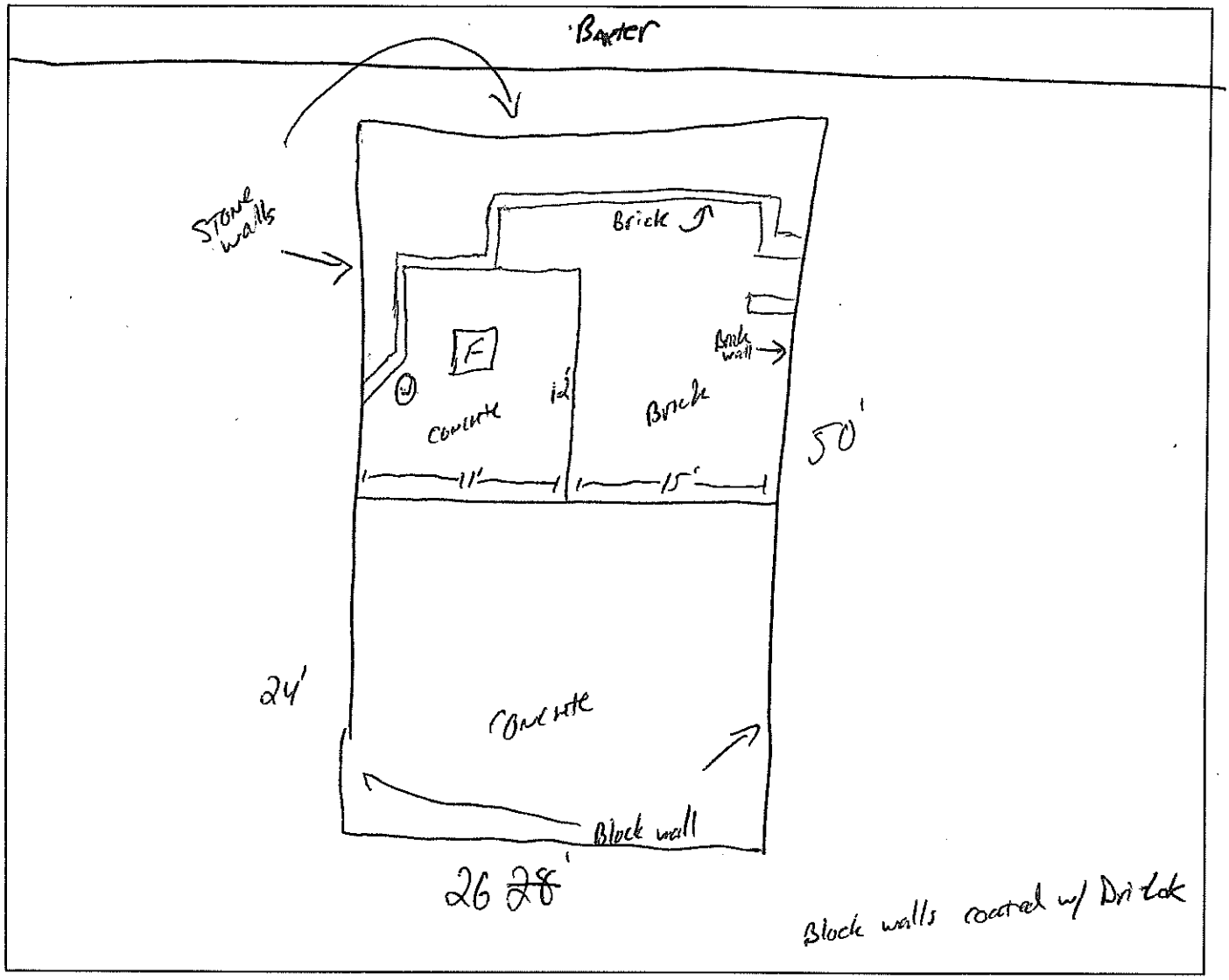
Natural gas / electric / fuel oil / wood / coal / solar / kerosene / other (specify): _____

Are utility penetrations present through basement walls, foundation walls, and floors of houses with crawlspaces? *Yes* / *No* Describe: _____

Describe any other potential vapor diffusion routes observed (e.g., old coal chutes through basement walls, etc.)

RESIDENTIAL INSPECTION FORM
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Provide Drawing of the lowest floor of the building

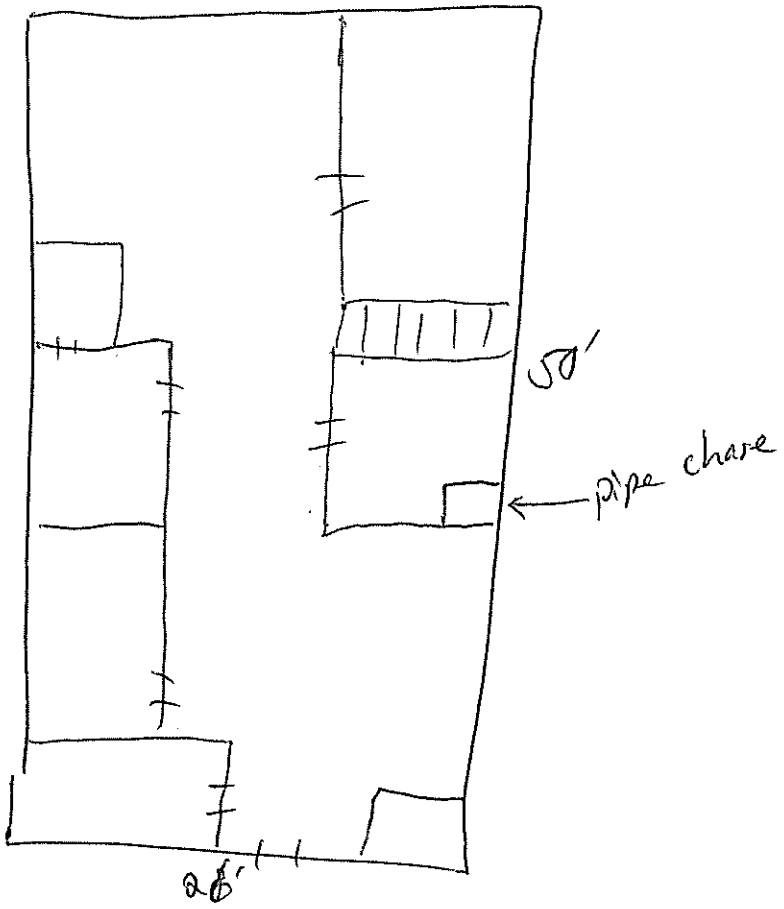


Vapor Intrusion Mitigation System Design
405 Baxter St.
Attica, IN

RESIDENTIAL INSPECTION FORM
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

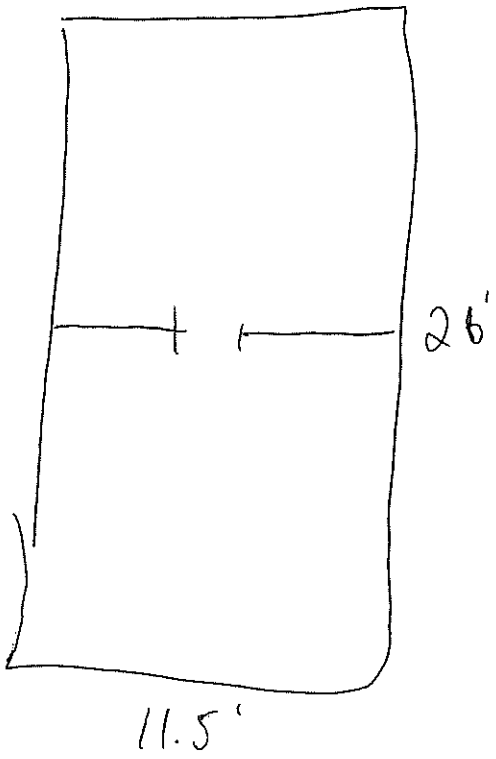
Provide Drawing of the main floor of the building

Baxter



RESIDENTIAL INSPECTION FORM
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Provide Drawing of the second floor of the building, if present



RESIDENTIAL INSPECTION FORM
RADIO MATERIALS CORPORATION
ATTICA, INDIANA

Part III - Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor & room) at the time of inspection.

Potential Sources	Location (s)
Gasoline storage cans	garage
Gas-powered equipment (mowers, etc)	gar
Kerosene storage cans	gar
Paints / thinners / strippers	NO
Cleaning solvents	household cleaners
Moth balls	—
Insecticides	—
New furniture / upholstery	—
New carpeting / flooring	—
Hobbies - glues, paints, lacquers, photographic darkroom chemicals, etc.	—
Other (specify):	—

Part IV - Miscellaneous Items

Do any of the occupants of the building smoke? (Yes) / No

Does the building have an attached garage directly connected to living space? Yes / (No)

If so, is a car usually parked in the garage? ~~Yes / No~~

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? ~~Yes / No~~

Do the occupants of the building have their clothes dry cleaned? Yes / (No)

If yes, how often? ~~Weekly / monthly~~ / 3-4 times a year

When was the last dry cleaned garment brought home? —

Do any of the occupants use solvents in work? (Yes) / No

If yes, what types of solvents are used? Bio degradable de greaser

If yes, are their clothes washed at work? (Yes) / No

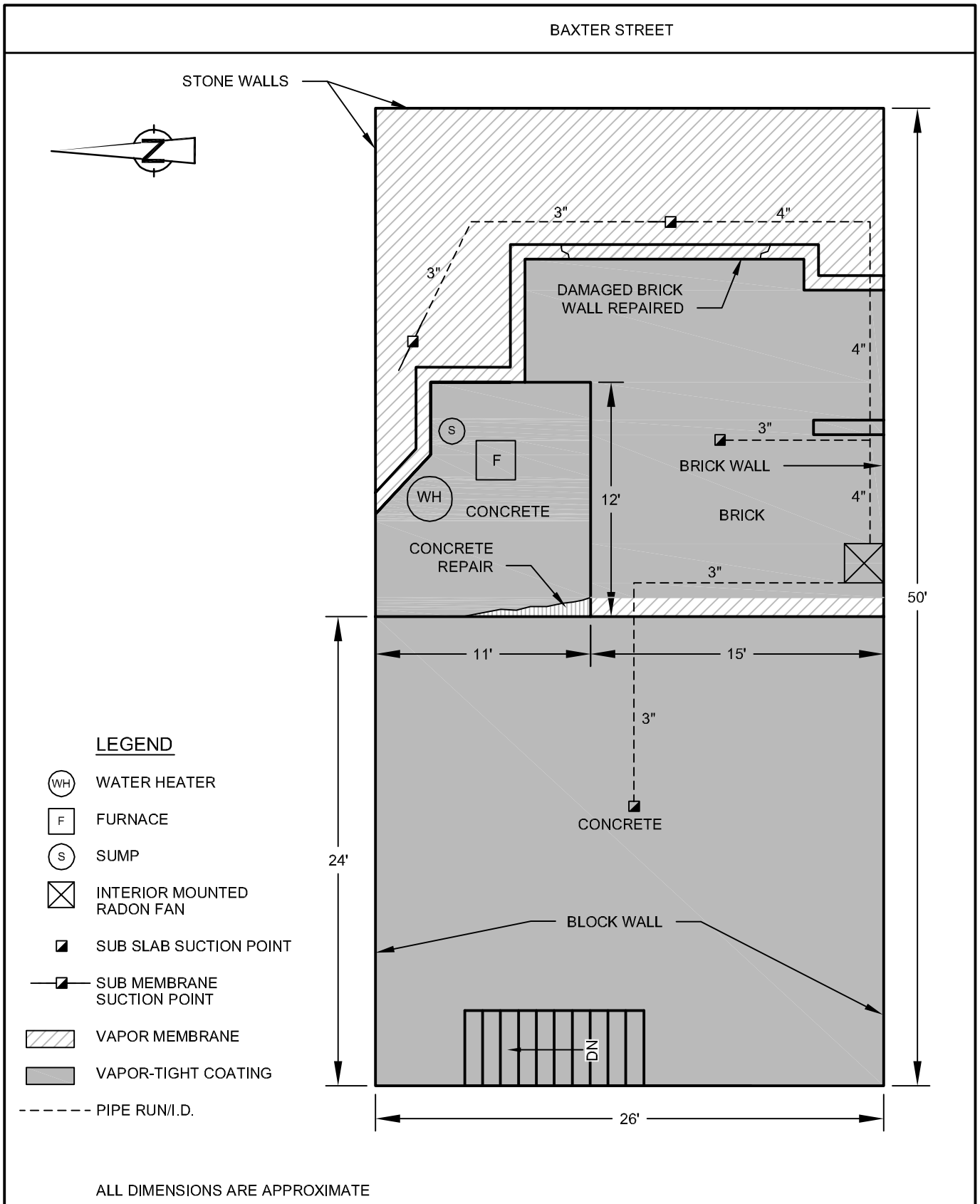
Has there ever been a fire in the building? (Yes) / No If yes, when? >35 yrs

Has painting or staining been done in the building in the last 6 months? Yes / (No)

If yes, when? — and where? —

ATTACHMENT B

SITE PLAN



ALL DIMENSIONS ARE APPROXIMATE

VAPOR INTRUSION MITIGATION SYSTEM DESIGN
405 BAXTER STREET
Attica, Indiana

19190-01(035)GN-WA012 MAY 10/2010

ATTACHMENT C

TYPICAL SYSTEM DRAWING

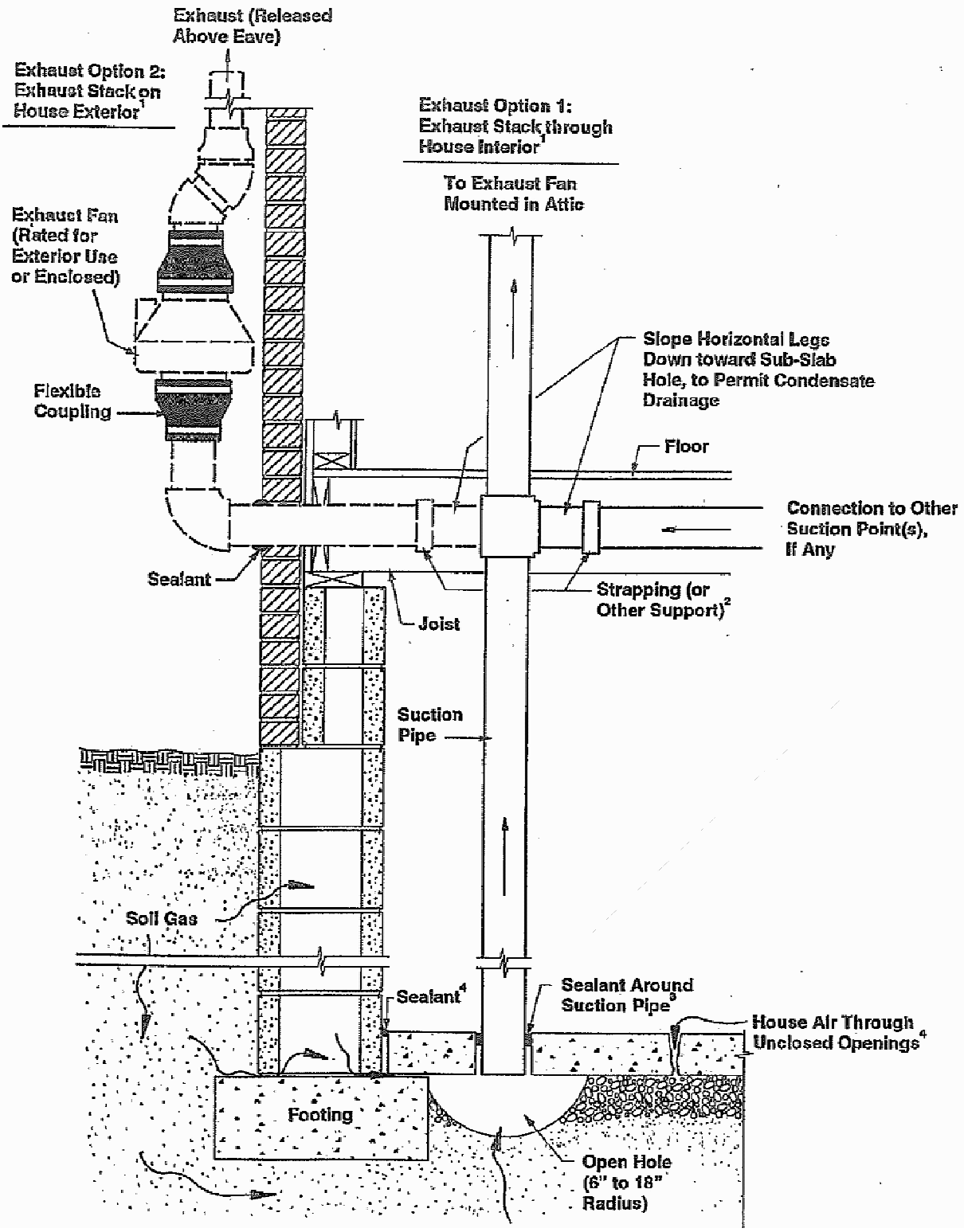


figure GS-1

TYPICAL SUBSLAB DEPRESSURIZATION (SSD) SYSTEM

Attica, Indiana

REFERENCE: EPA/625/R-93/011

19190-01(034)GN-WA003 JAN 20/2010

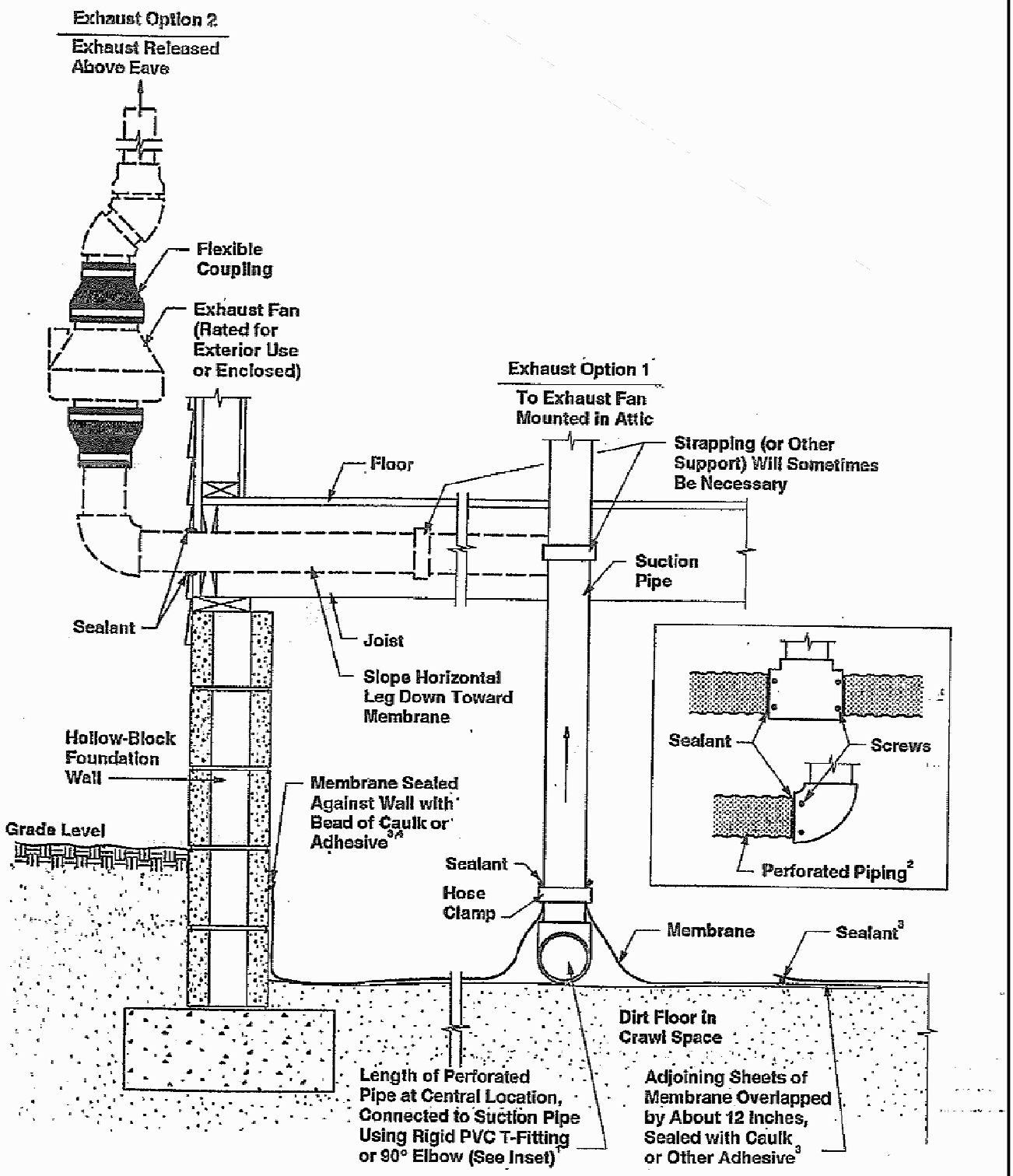


figure GS-4

TYPICAL SUBMEMBRANE DEPRESSURIZATION SYSTEM

Attica, Indiana

REFERENCE: EPA/625/R-93/011

19190-01(034)GN-WA006 JAN 20/2010

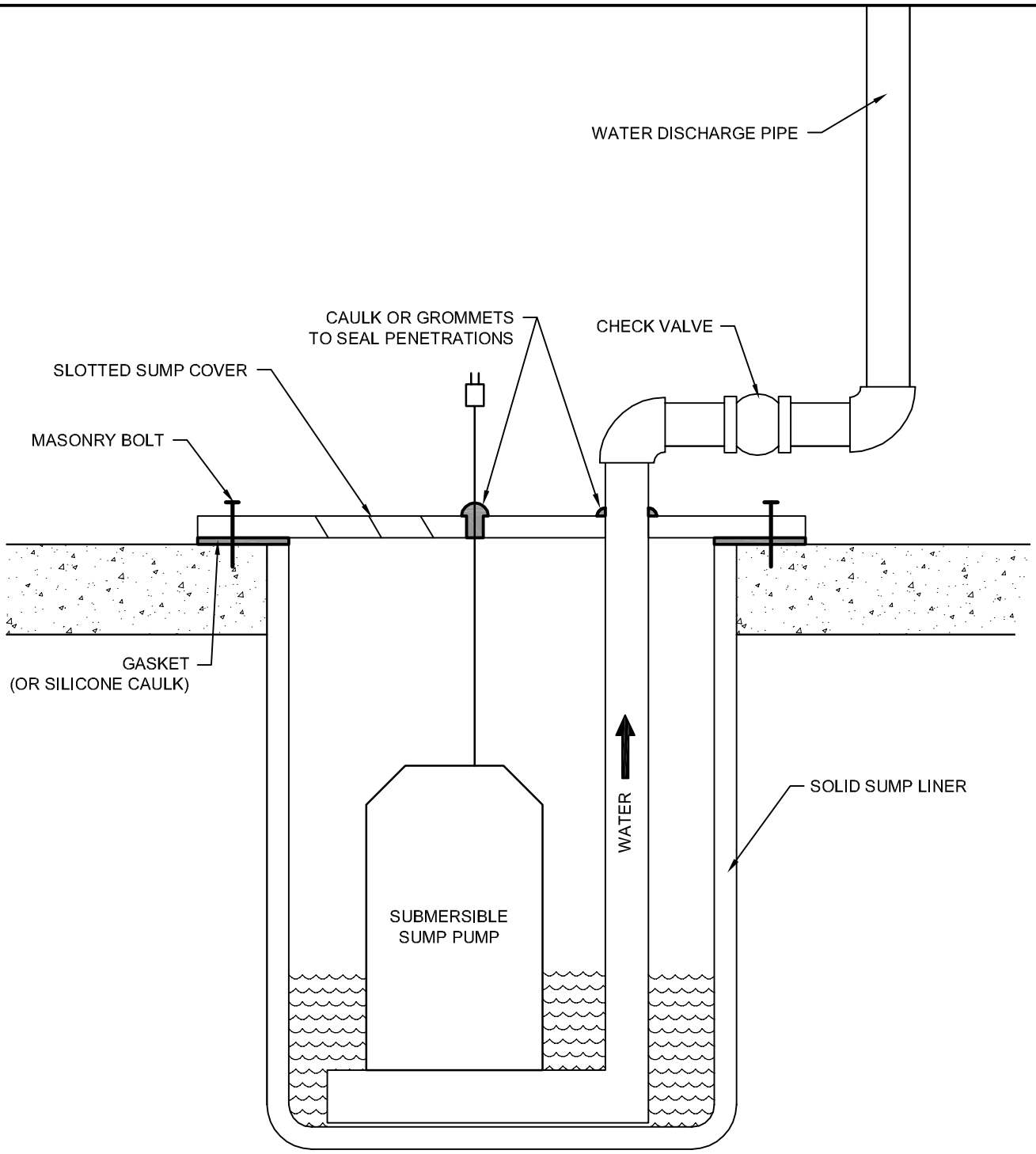


figure GS-6

TYPICAL SOLID SUMP
(CONCRETE FLOOR)
Attica, Indiana

REFERENCE: EPA/625/R-93/011

19190-01(034)GN-WA009 MAY 06/2010

ATTACHMENT D

SITE PHOTOGRAPHS BEFORE SYSTEM CONSTRUCTION

Photo 1 - Northwest corner of basement showing stairs

Photo 2 - Southeast corner of basement showing damaged brick wall

SITE PHOTOGRAPHS

Photo 3 - Floor elevation/construction type difference in middle of basement

Photo 4 - Brick, block, and stone wall construction near furnace and water heater on concrete slab

SITE PHOTOGRAPHS

ATTACHMENT E

MATERIAL SPECIFICATIONS AND MSDS

LIST OF MATERIAL SPECIFICATIONS AND MSDS
405 BAXTER STREET
ATTICA, INDIANA

Component	***Product Code***
Adhesive Tape	Eternabond (DoubleStick)
Adhesive Tape Primer	Eternabond (EternaPrime)
Caulk	NuFlex 110 Gutter Seal
Fan	Fantech HP220
Fan Guard	FG-43
Fan Housing	WFH89
Foam Applicator Cleaning Agent	TriggerFoam Cleaner
Foam Sealant	Power Fasteners PowerFoam and TriggerFoam
Pipe Cement	WELD-ON 717
Roofing Sealant	Geocel 3300
Sealant	Ames Block & Wall
Sealant	Ames Blue Max
Seam Tape	Retarder Tape (R4-Tape)
System Alarm	RadonAway Checkpoint IIa
Vapor Barrier	Dura-Skrim (12 mil)
Vapor Barrier	Dura-Skrim (6 mil)
Vent Cap	RC40-4

ETERNABOND

DoubleStick

MicroSealant Putty Tape

DoubleStick is pure EternaBond advanced MicroSealant with a removable siliconized release liner on each side. Designed to bond two surfaces, even two surfaces made of two or more dissimilar materials. DoubleStick creates a tight, permanent, waterproof seal. DoubleStick remains flexible to temperatures as low as -70°F making it virtually impossible to thermally shock the seal causing a leak.

DoubleStick Bonds to a wide range of surfaces including EPDM, TPO, most PVC, CSPE/Hypalon, CPE , SBS, APP modifieds, asphalt BURs, coal tar BURs, tiles, shingle, coated and non-coated aluminum and metal roofs, galvanized steel, gypsum board, wood, polyethylene, propylene, polystyrene, fiberglass, brick, concrete, masonry, OSB board, shielding membranes, etc.

Basic Use

DoubleStick tape is a self-sealing adhesive creating a water-tight, conformable seal between two or more irregular surfaces, and/or creates a weather proof, permanent bond between two or more similar or dissimilar surfaces. Use as a lap seal, under the foot of an equipment curb or skylight, or roll it into a bead or ball of MicroSealant to form a gasket, seal a gap or seal, or as needed.

Composition

DoubleStick utilizes EternaBond's advanced MicroSealant Technology, a 100% solids formulation of synthetic resins, thermoplastics and non-curing rubber (non butyl) with a built in primer, between two silicone release liners.

Technical Data

Adhesion	19lbs/in width
Application temperature	150°F to -20°F ambient
Available widths	Up to 48" as special order
Dielectric strength	Exceeds 12 kV
Elongation	>500%
Insulation resistance	10 to the 6th power megohms
Low temperature flexibility	½" radius at -30°F
Permanence	.001 perms maximum
Pliability	No cracks in membrane
Shelf Life	Up to 5 years
Standard case quantity	100 sq. ft. per case
Standard roll sizes	1", 2", 4", 6" X 50'
Temperature flexibility range	-70°F - >200°F
Total thickness	standard 30 mils or 60mils 40 mils or 80 mils available
Water vapor test (ASTME 96B)	.005 grms/100" sq./24hrs/100°F

Surface Preparation

Surface must be clean and dry. Moisture, dust, dirt, or other foreign matter should be removed. Remove oil and grease, etc. with EternaClean or a non residue cleaner such as acetone or lacquer thinner. Remove salt and other contaminants

Application

To apply the DoubleStick, remove one side of the release liner and apply to the surface to be protected or bonded. Rub or roll with pressure using your hand or a steel roller to activate bonding process. Remove the second release liner and apply second surface to tape, apply pressure. DoubleStick also can be used as a putty. Remove both release liners and roll into a rope. Place over gap and mold to seal opening. This material may be applied to clean dry surfaces from 150°F to -20°F ambient. Treat surface with EternaPrime for installations from 40°F to -20°F ambient.

ETERNABOND, Inc.
75 E. Division
Mundelein, IL, USA
Telephone: 888-336-2663
Fax: 847-837-9449
www.eternabond.com

ETERNABOND, INC. MATERIAL SAFETY DATA SHEET (TACTA01O)

Provided by: ETERNABOND, INC.
75 E. Division St.
Mundelein, IL 60060
847-837-9400

This form is designed to meet the requirements of the U.S. Labor Department OSHA form no 174.

SECTION I – PRODUCT IDENTIFICATION

Product: **ETERNABOND DOUBLESTICK**
24 Hour Emergency Assistance – Infotrac (800)-535-5053

Chemical Name: N/A
Chemical Family: Polyolefin and Synthetic Elastomer
Formula: N/A

HMIS/NFPA HAZARD RATINGS:	
Health Hazard:	0
Flammability Hazard	1
Reactivity Hazard	0

SECTION II – HAZARDOUS COMPONENTS

NONE

SECTION III – PHYSICAL DATA

Boiling Point Range: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Solubility in Water: Insoluble
Percent Volatile by Weight: N/A
Evaporation Rate: N/A
Appearance and Odor: Gray Sealant
Specific Gravity: 1.04 (adhesive)

SECTION IV– FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method: 450 Degrees Fahrenheit COC
Flammable Limits: N/A
Extinguishing Media: Carbon dioxide, dry chemical, foam, water fog, and water spray
Special Fire Fighting Procedures: Use water spray to cool fire exposed surfaces and to protect personnel.
Unusual Fire and Explosion Hazards: To

SECTION V – HEALTH HAZARD DATA

Permissible Exposure Level: N/A
Effects of Overexposure:

- **Eyes:** N/A
- **Ingestion:** Acute oral LD50 is greater than 10g/kg
- **Inhalation:** N/A
- **Skin:** N/A.

Emergency and First Aid Procedures:

- **Eyes:** Flush with water.
- **Ingestion:** Contact a physician
- **Inhalation:** N/A
- **Skin:** Remove with waterless hand cleaner. Wash with soap and water

Medical Conditions generally aggravated by exposure: N/A

Primary Routes of Entry:

- **Eyes:** None
- **Ingestion:** Not a normal exposure
- **Inhalation :** None
- **Skin:** None

Chemicals contained herein listed as carcinogens or potential carcinogens:
NTP: NONE **IARC:** NONE **OSHA:** NONE

SECTION VI – REACTIVITY DATA

Stability: Stable
Conditions to Avoid: Overheating
Incompatibility (Material to Avoid): Avoid contact with strong oxidizing agents
Hazardous Decomposition Products: Flammable Hydrocarbons
Hazardous Polymerization: Will not occur.

SECTION VII – SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Sweep up
Waste disposal method: Dispose of in accordance with Federal, State and local regulations.

SECTION VIII – SPECIAL PROTECTION INFORMATION

Respiratory Protection: N/A
Ventilation: N/A
Eye Protection: N/A
Protective Gloves: N/A

SECTION IX – SPECIAL PRECAUTIONS

Precautions to be taken in handling and storing: Do not store near flame, heat or strong oxidizing agents.

SECTION X - NOTES

Note: N/A = not applicable
Issue Date: February 21, 1996 (kk)
Revision Date: March 17, 2000
NE = not established
Issued By: D. Kathrein
Review Date: September 1, 2009 D Kathrein

Information herein is given in good faith and is, to the best of our knowledge and belief, accurate and reliable. However, since information herein was obtained, in part, from independent suppliers not under the direction and supervision of ETERNABOND, INC., ETERNABOND, INC., makes no warranty or representation, express or implied, that information is accurate, reliable, complete or representative. ETERNABOND, INC., warrants only that it has made no effort to censor other than trade secret information or to conceal deleterious aspects of its products. The data shown above in no way modifies, amends, or enlarges any specifications or warranty.

All components of this product are listed in the EPA/TSCA Inventory or Chemical Substances.

ETERNABOND

EternaPrime

EternaBond EternaPrime is a specially formulated primer developed specifically for EternaBond tapes. EternaPrime is based on a VOC exempt solvent. EternaPrime meets all federal standards for health and environmental safety.

EternaPrime is designed to work with all EternaBond tapes and was specifically developed for preparation of surfaces when installing EternaBond tapes in low ambient temperatures from 40°F down to -20°F. It is also widely used as a coalescing agent on surfaces which have difficult to remove dirt or conditions which may encapsulate the EternaBond tape.

*Do not use on PVC.

Basic Use

EternaPrime is used to prepare surfaces for application of all EternaBond tapes. Recommended uses include, but are not limited to dirty surfaces which are difficult to clean completely (tar and gravel), potentially loose surfaces (mortar), porous surfaces (wood or concrete), and anytime the EternaBond tape is applied at temperatures below 40°F ambient.

Composition

EternaPrime is based on a VOC exempt solvent with a blend of our elastomers and resins infused into the solvent.

Technical Data

Application Temperature	-20°F – 205°F
Coverage	300+ Sq. Ft. per gallon
Drying Time at 60°F	15 Minutes
Film thickness	+/- 4 mils when wet
Flash Point	110°F
Standard can sizes	½ pint, 1 quart, 1 gallon
Standard case quantity	24 ½ pints per case, 12 quarts per case, 1 gal. per case.
Viscosity	135 – 152 cps
Weight	10 lbs. per gallon

Surface Preparation

Surface must be dry. Remove heavy accumulations of loose rust and scale, dust, talc, and dirt. Oil, grease, and other contaminants should be removed with EternaClean or a non-residue cleaner. Do not use EternaPrime on PVC roofs as reactivation of some plasticizers may occur.

Application

EternaPrime can be sprayed, rolled, or brushed onto surface (stir frequently).

ETERNABOND, Inc.
75 E. Division
Mundelein, IL, USA
Telephone: 888-336-2663
Fax: 847-837-9449
www.eternabond.com

ETERNABOND, INC. MATERIAL SAFETY DATA SHEET

Provided by: ETERNABOND, INC.
75 E. Division St.
Mundelein, IL 60060
847-837-9400

This form is designed to meet the requirements of the U.S. Labor Department OSHA form no 174.

SECTION I – PRODUCT IDENTIFICATION

Product**: ETERNABOND ETERNAPRIME**
24 Hour Emergency Assistance – Infotrac (800)-535-5053

Chemical Name: Mixture
Chemical Family: Mixture

HMIS/NFPA HAZARD RATINGS:

Health Hazard:	1
Flammability Hazard	3
Reactivity Hazard	0

SECTION II – HAZARDOUS COMPONENTS

NAME	C.A.S. #	EXPOSURE LIMITS	% by Weight
Thermoplastic Rubber	66070-58-4	OSHA PEL NA ACGIH TLV NA	3-7
Hydrocarbon Resin	69430-35-9	OSHA PEL NA ACGHI TLV NA	5-11
*Hexane	110-54-3	OSHA TWA: 50ppm (skin) 50 ppm (skin)	80-95
Tetrakis[methylene(3,5,-di-(tert)-butyl -4-hydroxyhydrocinniamate)]methane	6683-19-8	OSHA TWA: NE ACGIH TWA: NE	.01-.05

~Denotes constituent of above listed ingredient. % Concentration is of product mass.
* Identified as SARA section 313 reportable.

SECTION III – PHYSICAL DATA

BOILING POINT:	69° C	SPECIFIC GRAVITY:	.75
FLASH POINT (SETA):	<0° C	VAPOR DENSITY:	3.0
EVAPORATION RATE: (butyl acetate = 1.0)	8.1	SOLUBILITY:	NEG

APPEARENCE AND ODOR: Clear liquid with a hydrocarbon odor.

SECTION IV– FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Class "B" dry chemical, carbon dioxide, or other suitable extinguishing material such as dry sand. Do not use halogenated agents. When flames have been eliminated, cover residue with dry extinguishing agent or dry sand and allow it to remain undisturbed until it has cooled. If fire appears to increase in intensity, stop using these agents. Apply Class "D" extinguishing agent or more dry, inert, granular material. Ring fire with extinguishing material and allow the fire to burn out.

SPECIAL FIRE FIGHTING PROCEDURES: If the fire does not respond to above agents or they are not available, use foam or water FOG as a last resort. Water may also be used to cool exposed, but not burning, containers. These products may float and be re-ignited on top of water. Personnel fighting fire should use a self contained breathing apparatus.

UNUSUAL FIRE and/or EXPLOSION HAZARDS: Closed containers may explode in a fire. Keep containers cool and remove to a safe location.

SECTION V – HEALTH HAZARD DATA

EYE CONTACT: These products are mildly irritating to the eyes. The effect of prolonged eye contact is not known. Flush with water immediately for at least 15 minutes. Seek Medical attention immediately.

SKIN CONTACT: Prolonged or repeated contact can cause dermatitis. Wash skin with waterless hand cleaner followed by soap and water. If redness appears treat it as a sunburn, if redness persists or rash appears seek medical attention immediately.

INHALATION: Upper respiratory tract irritation. May cause nausea or dizziness. High vapor concentrations can cause central nervous system depression, liver, and kidney damage. Remove individual to fresh air, upwind from fume source. If irritation persists seek medical attention immediately.

INGESTION: Acute gastrointestinal tract irritation. DO NOT INDUCE VOMITING. Prevent aspiration into lungs. Aspiration of even small amounts into lungs may result in aspiration pneumonitis. Seek medical attention immediately.

Pre-existing eye, skin, and respiratory disorders may be aggravated by exposure to these products. Exposure to high concentrations of fumes may have an anesthetic effect.

SECTION VI – REACTIVITY DATA

STABILITY:	Stable
HAZARDOUS POLYMERIZATION:	Will not occur
INCOMPATABILITY:	Strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of carbon, various hydrocarbon fragments

SECTION VII – SPILL OR LEAK PROCEDURES

PRECAUTIONS IN CASE OF SPILL: Contain spill as quickly as possible. Keep flowing material away from heat, sparks, or open flames. Do not smoke near a spill. Use clay (Oil Dry™), sand, earth, etc. to absorb the spill. Put material into a suitable steel drum which can be closed securely.

WASTE DISPOSAL: Bury in an approved landfill according to federal, state, and local regulations. Empty containers that have been completely emptied and the residue allowed to dry are not considered hazardous waste.

HANDLING & STORAGE PRECAUTIONS: Store away from heat, sparks, and open flames. Solvent vapors are heavier than air and may be moved from the source location by ventilation systems to points far away. Do not store near oxidizers.

OTHER PRECAUTIONS: Keep container closed when not in use. Store in a dry ventilated area. Maintain package labeling during storage.

SECTION VIII – SPECIAL PROTECTION INFORMATION

VENTILATION: Use natural cross ventilation, local (mechanical) pick-up, and/or general area mechanical cross ventilation. Ventilation pattern should be designed to prevent accumulation of heavier than air solvent vapors. Ventilation must be sufficient to maintain solvent vapor concentrations below the TLV.

RESPIRATORY PROTECTION: As required if airborne concentrations are above the TLV. If respirators become necessary use NIOSH approved unit for organic vapor and dusts.

PROTECTIVE CLOTHING: As necessary to prevent wetting of the skin.

EYE PROTECTION: As necessary in accordance with 29 CFR 1910.113

OTHER PRECAUTIONS: With good industrial hygiene no other precautions should be necessary. These products are intended for professional use. Use only after the appropriate Product Data Bulletin has been read and understood.

SECTION IX – SPECIAL PRECAUTIONS

Precautions to be taken in handling and storing: For industrial use only. Keep out of reach of children. Keep container closed. Avoid prolonged or repeated contact with skin. Avoid breathing vapors. Do not take internally. Store in a cool place. Store in tightly closed containers in a ventilated fire resistant area away from heat, open flame, sparks or strong oxidizing agents. Ground all equipment. Use only in a well ventilated area. Use only non-sparking tools. Vapors are heavier than air and will collect in low areas such as pits. Chronic overexposure may create health risks. Wash thoroughly after handling or contact. Do not eat, drink or smoke in areas where this product is used. Do not apply air pressure, puncture or weld on or near containers. Do not reuse containers.

SECTION X – NOTES

***DOT INFORMATION*:**

EternaPrime is regulated as Flammable Liquids per CFR 172.504. All bulk shipments in containers with a capacity of 119 gallons or more and all other shipments over 1000 lbs. MUST display Flammable placards and be fully secured before and during transit. They must be placed on all four sides of the vehicle.
UN#: 1133
Class: 3
Packing Group: II
NA

Note: NA = not applicable NE = not established
Issue Date: May 1, 2006 Issued By: R. Barry
Revision Date: September 1, 2009

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110 Butyl Rubber Gutter Seal

NuFlex SEALANTS

SPECIALTY SEALANTS TECHNICAL DATA SHEET

NuFlex® 110 Butyl Rubber Caulk and Gutter Seal is a single component, "solvent release" butyl, designed to provide excellent exterior weathering properties. **NuFlex® 110** is formulated for use on many dissimilar building surfaces. It is our best narrow-bead sealant. Ideal for sealing gutter down spouts, metal storm windows, doors and lap joints. It adheres well to damp surfaces.

FEATURES & TYPICAL USES:

NuFlex® 110 is for use in areas where a sealant of more resiliency than ordinary caulk is required. Principal use is to seal narrow seams. **NuFlex® 110** is excellent under shower tracks or metal thresholds and other exterior building materials. **NuFlex® 110** can be used successfully on metal, glass, wood, brick, stone, masonry and paint to prevent the passage of air and moisture through narrow openings, whether the construction materials are similar or dissimilar. **NuFlex® 110** is not recommended where joints will have extreme movement or where openings are over 9.5 mm (3/8") wide.

Easy application:	**NuFlex® 110** can be easily applied with standard caulking guns or power caulking equipment.
Exceptional adhesion:	**NuFlex® 110** adheres well to most exterior sealing applications.
High durability:	**NuFlex® 110** will not crack and is resistant to sunlight, ozone, water, vapour transmission, cleaning chemicals and weathering.
Good stretch recovery:	**NuFlex® 110** will recover 70% of 100% elongation.
Extensive flexibility:	**NuFlex® 110** remains flexible over an extreme temperature range.
Optional painting:	**NuFlex® 110** forms a skin within 24 hours. Painting is unnecessary, but if desired, can be done after NuFlex® 110 has cured for one week. NuFlex® 110 is non-staining, with no discoloration.

SURFACE PREPARATION & APPLICATON:

The surface to be caulked should be sound, clean and dry, and be free of oil, grease, rust, corrosion or loose paint. A Primer may be required for certain surfaces. **NuFlex® 110** should not be applied when temperature is 4°C (40°F) or less. **NuFlex® 110** should be at room temperature when applied. If the sealant has been stored in a cool area, place in a heated room for several hours before using. Cut tip off cartridge just above threads, cut tip of nozzle to desired bead size and attach to cartridge. Insert cartridge into standard caulking gun to apply, or use any power equipment for normal caulking compounds or sealants. This product may be smoothed with a knife dipped in mineral spirits or water. Clean tools with mineral spirits or paint thinner. Care should be exercised when using **NuFlex® 110** on certain types of plastic, as crazing might result.

CAUTION:

Use in well ventilated areas and avoid breathing vapors. On contact, uncured sealant irritates eyes. Flush eyes with lukewarm water. Call physician. Avoid skin contact and do not ingest. Consult the Material Safety Data Sheet. Combustible, keep away from heat and open flame. **Keep out of reach of children.**

SHELF-LIFE & STORAGE:

Shelf-life is 12 months from date of shipment from our plant when stored in a clean, dry area with temperatures between 18°C to 43°C (65°F to 110°F). Avoid repeated freeze/thaw of **NuFlex® 110** while still in the cartridge. For best results, keep the sealant in tightly closed containers when not in use.

FEATURES:

- Skinning butyl rubber.
- Exterior / interior use.
- Adheres to many dissimilar building materials.
- The ideal exterior weathering sealant.

AVAILABLE SIZES & COLOUR:

- *300 mL (10.1 fl.oz.) cartridge*
- 12 cartridges per case
- 144 cases per skid
- Available in larger sizes*
- Available colors include: white, grey, and black.
- **Special order items may require lead times and minimum order quantities.*

MANUFACTURED BY:

NUCO INC. T: 519.823.4994 TF: 1.800.853.3984
150 Curtis Drive F: 519.823.1099 E: sales@nucoinc.com
Guelph, ON N1K 1N5

110 Butyl Rubber Gutter Seal

NuFlex SEALANTS

SPECIALTY SEALANTS TECHNICAL DATA SHEET

TYPICAL PROPERTIES:

These values are not intended for use in preparing specifications. Spec Writers; please contact NUCO Inc. before writing specifications if any further information is required.

Description	Specification
As Supplied	
Specific Gravity:	*1.32*
% Solid:	*80% minimum*
Flash Point:	*40°C (105°F)*
Slump Resistance – (ASTM D2202):	*Pass*
Application Temperature Range – (ASTM 603):	*4°C to 49°C (40°F to 120°F)*
Tack-Free Time – (ASTM D2377):	*2 hours*
Cure Time:	*21 days, solvent release*
As Cured	
Joint Movement:	*± 7.5%*
Weight per gallon – (ASTM D1475):	*11.0 lbs*
Volume Shrinkage – (ASTM C1241):	*20% maximum*
Staining – (ASTM D2203):	*Pass*
Service Temperature Range – (ASTM C1299):	*-29°C to 93°C (-20°F to 200°F)*

DISCLOSURE

The information and data contained herein is BASED ON INFORMATION WE BELIEVE TO BE RELIABLE. Please read all statements, recommendations or suggestions herein in conjunction with our CONDITIONS of SALE which apply to all goods supplied by us. We assume no responsibility for the use of theses statements, recommendations or suggestions, nor do we intend them as recommendation for any use which would infringe any patent or copyright.

SPECIFICATIONS:

NuFlex® 110 meets:

- CGSB 19-GP-14
- ASTM C-1311
- U.S. Federal Spec TT-S-001657, Type 1, TT-C-05 98C, TTC-1796A,
- AAMA 808.3.

WARRANTY INFORMATION:

NUCO Inc., warrants only that its product will meet its specifications. NUCO shall in no event be liable for incidental or consequential damage. NUCO's liability, expressed or implied is limited to the stated selling price of any goods found to be defective.

NuFlex SEALANTS

MANUFACTURED BY:

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150 Curtis Drive F: 519.823.1099 E: sales@nucoinc.com
Guelph, ON N1K 1N5

www.**NuFlex**.com

MATERIAL SAFETY DATA SHEET

SECTION 01 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION:

Chemical Name:	**NUFLEX® 110 GUTTER SEAL, BUTYL RUBBER SEALANT**
Manufacturer:	**NUCO INC.** **150 Curtis Drive** **Guelph, Ontario N1K 1N5** **Tel: (519)-823-4994** **Fax: (519)-823-1099** **Infotrac 24 Hour Emergency Tel: (800)-535-5053**
Date:	**July 1, 2008**
Prepared by:	**Technical Services Department**
WHMIS Classification:	**B3, D2B**
Product Use:	**Caulking compound**

SECTION 02 – COMPOSITION / INFORMATION ON INGREDIENTS:

Ingredients	CAS No.	%	LD50(Oral-rat)	LC50(Inhalation-rat)
Mineral Spirits	8052-41-3	10.0 – 30.0	Not available	Not available

The ingredients listed above are controlled products as defined in CPR, am. SOR/88-555 or 29 CFR 1910.1200

SECTION 03 – HAZARDS INDENTIFICATION:

ROUTES OF ENTRY INTO THE BODY (ACUTE EFFECTS):

Eyes:	**Direct contact may cause mild irritation.**
Skin:	**May cause slight irritation. Symptoms may include localized redness, swelling and itching.**
Inhalation:	**Irritates respiratory passages very slightly. Overexposure may cause upper respiratory tract irritation, headache, dizziness, drowiness, and slowed reaction time.**
Ingestion:	**Low ingestion hazard in normal use. Irritation may cause abdominal pain, nausea, diarrhea and vomiting.**

WHMIS HAZARD SYMBOL(S):

SECTION 04 - FIRST AID MEASURES:

Eyes:	**Flush with copious quantities of lukewarm water. Do not attempt to physically remove the solids or gums from the eye. Seek medical attention immediately.**
Skin:	**Remove contaminated clothing. Wash thoroughly with warm water and non-abrasive soap. Seek medical attention if you feel ill or a reaction develops.**
Inhalation:	**Remove to fresh air and provide water. Seek medical attention if you feel ill or a reaction develops.**
Ingestion:	**Get medical attention.**

SECTION 05 - FIRE FIGHTING MEASURES:

Flammable Conditions:	**Avoid direct sources of heat or ignition in uncured state. Solvent vapors are heavier than air and may travel along the ground and be ignited by sources distant from handling points.**
Extinguishing Media:	**Carbon dioxide, dry chemical, water fog or foam. Water can be used to cool fire exposed containers.**
Fire Fighting Measures:	**Treat as a Class "B" fire. Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving**

	chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan.
Flash Point:	**Closed cup 106°F (41°C)**
Flammability Limits:	**Lower Explosion Limit - 0.5% by volume** **Upper Explosion Limit - 6.0% by volume**
Autoignition Temperature:	**490°F (254°C)**
Hazardous Decomposition Products:	**Carbon oxides, aldehydes and traces of incompletely burned carbon products.**
Sensitivity - Impact:	**Not available**
Static:	**Not available**

SECTION 06 – ACCIDENTAL RELEASE MEASURES:

Containment / Clean Up:	**Restrict access to the area of the spill. Provide ventilation, NIOSH / MSHA approved respirator and protective clothing. Scrape up caulk and place in container for disposal. Cleaning may require steam or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state, provincial, federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup.**

SECTION 07 – HANDLING AND STORAGE:

Handling and Storage:	**Store in an adequately ventilated area under dry conditions between 50°F (10°C) to 77°F (25°C) and keep container tightly sealed when not in use. Use only in well ventilated area. Containers may retain product residues and vapors.**

SECTION 08 – EXPOSURE CONTROL / PERSONAL PROTECTION:

Component Exposure Limits:	**Mineral Spirits (CAS# 8052-41-3): Provide adequate ventilation to control exposures within the following exposure guidelines: ACGIH TLV: 100 ppm, OSHA PEL: 500 ppm.**
Respiratory:	**Wear an organic vapor NIOSH / MSHA approved respirator.**
Ventilation:	**In indoor applications, passive ventilation (opening of doors and windows) is recommended. Local exhaust as necessary to keep exposure levels within guidelines.**
Personal Protective Equipment:	**Safety glasses with side-protection, impermeable gloves (e.g., neoprene, nitrile, silver shield (R)), coveralls or apron are important in preventing contamination of eyes, skin and clothing. Wash thoroughly after handling.**

SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES:

Physical State:	**Paste, various colors**
Odor and Appearance:	**Solvent odor, thixotropic caulk**
Odor Threshold:	**Not available**
Specific Gravity:	**1.32**
Vapor Pressure:	**5 mm Hg @ 78°F (26°C)**
Vapor Density:	**5.0**
Evaporation Rate:	**0.12**
Boiling Point:	**352°F (178°C)**
Freezing Point:	**Not available**
pH:	**Not available**
Coeff. Oil/Water Distribution:	**Not available**

SECTION 10 – STABILITY AND REACTIVITY:

Chemical Stability:	**Stable**
Incompatible Materials:	**Strong oxidizing agents**
Reactive Conditions:	**Incompatible materials.**
Hazardous Polymerization:	**Will not occur.**

SECTION 11 - TOXICOLOGICAL INFORMATION:

Effects of overexposure:	**Prolonged and repeated skin contact may cause dermatitis or aggravate pre-existing skin disorders. Inhalation of high vapor concentration or ingestion may cause headache, vomiting, dizziness and nausea.**
Sensitization:	**No known applicable information.**
Carcinogenicity:	**No ingredients considered by IARC, NTP or OSHA to be carcinogens.**

Reproductive Toxicity:	**No known applicable information.**
Teratogenicity:	**No known applicable information.**
Mutagenicity:	**No known applicable information.**
Synergistic Products:	**No known applicable information.**

SECTION 12 – ECOLOGICAL INFORMATION:

Air:	**Complete information is not yet available.**
Water:	**Complete information is not yet available.**
Soil:	**Complete information is not yet available.**

SECTION 13 – DISPOSAL CONSIDERATIONS:

Waste Disposal:	**Dispose in accordance with Federal, State / Provincial and local regulations. Under RCRA 40 CFR 261 deemed to be a hazardous waste due to ignitability.**

SECTION 14 - TRANSPORT INFORMATION:

Shipping Information:	**DOT PROPER SHIPPING NAME: Adhesive containing Flammable Liquid.** **DOT HAZARD CLASS: UN 1133** **IDENTIFICATION NO.: NMFC Item No. 149610** **TDG CLASSIFICATION: Class 3.3, Packing Group III (General Exemption 1.33 for Domestic Shipments).**

SECTION 15 - REGULATORY INFORMATION:

TSCA Inventory Status:	**Chemical components listed on TSCA inventory except as exempted.**
NFPA Profile:	**Health 1, Flammability 2, Reactivity 0**
SARA TITLE III Chemical Listings:	**Section 302 Extremely Hazardous Substances (40 CFR 355): None** **Section 304 CERCLA Hazardous Substances (40 CFR 302): None** **Section 311/312 Hazard Class (40 CFR 370): Acute: Yes; Chronic: Yes; Fire: Yes; Pressure: No; Reactive: No** **Section 313 Toxic Chemicals (40 CFR 372): None present or none present in reportable quantities.**
State Substance List:	**This product contains a listed substance(s) that appears on one or more of the Substance Lists for Pennsylvania, Massachusetts and New Jersey: mineral spirits (CAS# 8052-41-3).**
California Proposition 65 List:	**No known applicable information.**
Volatile Organic Content:	**248 grams per liter (2.07 lb/gallon), 18.79% by weight (CARB Method 310).**
Domestic Substance List:	**Chemical components listed on DSL except as exempted.**

SECTION 16 - OTHER INFORMATION:

The information herein is given in good faith, but no warranty, express or implied, is made. Product users should make independent judgements of the suitability of this information to ensure proper use and to protect the health and safety of employees.

Form: MSDSNUFLEX110BGUTTERSEAL,BUTYLRUBBERSEALANT Rev.: 6 Date: 06/08

Fantech

HP SERIES

FANS FOR RADON APPLICATIONS
WITH IMPROVED UV RESISTANCE!

TRUST THE INDUSTRY STANDARD.
HERE'S WHY:

Don't put your reputation at stake by installing a fan you know won't perform like a Fantech! For nearly twenty years, Fantech has manufactured quality ventilation equipment for Radon applications. Fantech is the fan Radon contractors have turned to in over 1,000,000 successful Radon installations worldwide.

Fantech external rotor motor

FANTECH HP SERIES FANS MEET THE CHALLENGES OF RADON APPLICATIONS:

HOUSING
- UV resistant, UL Listed durable plastic
- UL Listed for use in commercial applications
- Factory sealed to prevent leakage
- Watertight electrical terminal box
- Approved for mounting in wet locations - i.e. Outdoors

MOTOR
- Totally enclosed for protection
- High efficiency EBM motorized impeller
- Automatic reset thermal overload protection
- Average life expectancy of 7-10 years under continuous load conditions

RELIABILITY
- Five Year Full Factory Warranty
- Over 1,000,000 successful radon installations worldwide

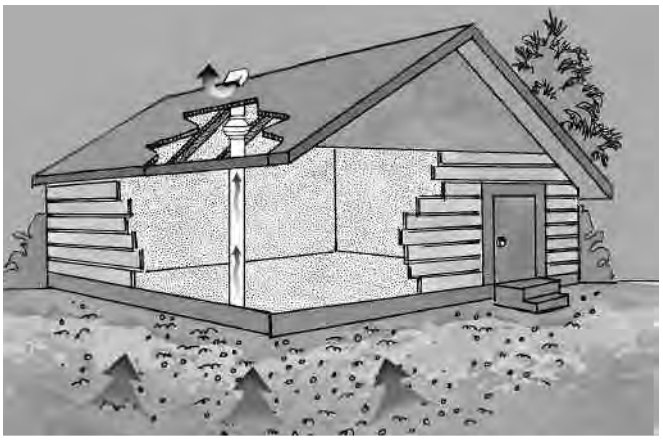
IMPROVING INDOOR AIR QUALITY THROUGH BETTER VENTILATION

www.fantech.net

Fantech

HP Series Fans are Specially Designed with Higher Pressure Capabilities for Radon Mitigation Applications

MOST RADON MITIGATORS WHO PREVIOUSLY USED THE FANTECH FR SERIES FANS HAVE SWITCHED TO THE NEW HP SERIES.



PERFORMANCE DATA

Fan Model	Volts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.								Max. Ps
				0"	0.5"	0.75"	1.0"	1.25"	1.5"	1.75"	2.0"	
HP2133	115	14 - 20	0.17	134	68	19	-	-	-	-	-	0.84
HP2190	115	60 - 85	0.78	163	126	104	81	58	35	15	-	1.93
HP175	115	44 - 65	0.57	151	112	91	70	40	12	-	-	1.66
HP190	115	60 - 85	0.78	157	123	106	89	67	45	18	1	2.01
HP220	115	85 - 152	1.30	344	260	226	193	166	137	102	58	2.46

HVI MEMBER™

PERFORMANCE CURVES

Fantech provides you with independently tested performance specifications.

The performance curves shown in this brochure are representative of the actual test results recorded at Texas Engineering Experiment Station/Energy Systems Lab, a recognized testing authority for HVI. Testing was done in accordance with AMCA Standard 210-85 and HVI 916 Test Procedures. Performance graphs show air flow vs. static pressure.

Use of HP Series fans in low resistance applications such as bathroom venting will result in elevated sound levels. We suggest FR Series or other Fantech fans for such applications.

HP FEATURES INCLUDE

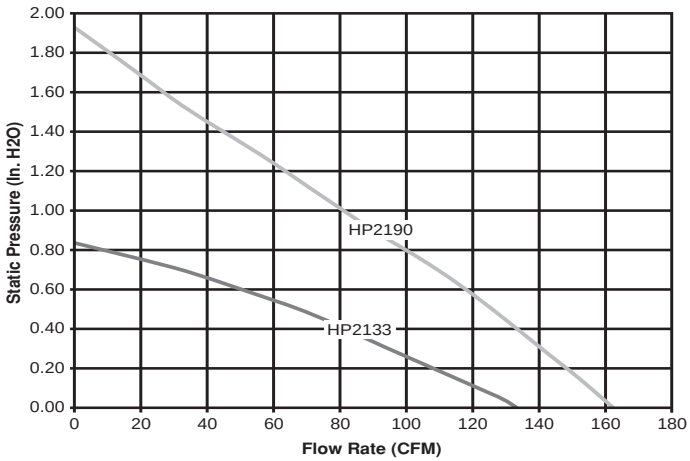
- Improved UV resistant housings approved for commercial applications.
- UL Approved for Wet Locations (Outdoors)
- Sealed housings and wiring boxes to prevent Radon leakage or water penetration
- Energy efficient permanent split capacitor motors
- External wiring box
- Full Five Year Factory Warranty

c UL us

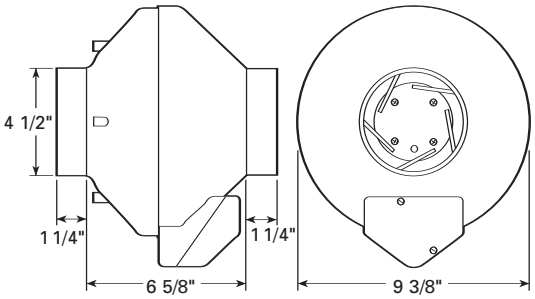
NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

HP2133 & HP2190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.

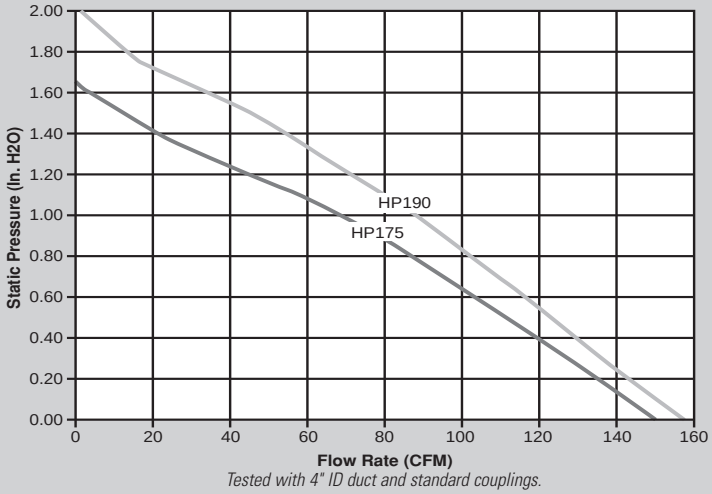


HP2133 – For applications where lower pressure and flow are needed. Record low power consumption of 14-20 watts! Often used where there is good sub slab communication and lower Radon levels.

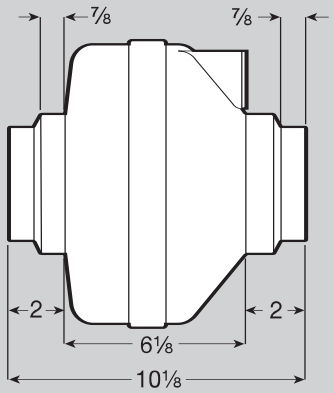
HP2190 – Performance like the HP190 but in a smaller housing. Performance suitable for the majority of installations.

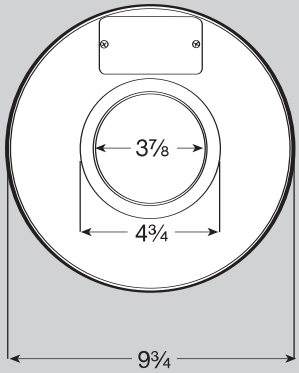
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #156-44, Pipeconx PCX 56-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP175 & HP190 RADON MITIGATION FANS



Tested with 4" ID duct and standard couplings.



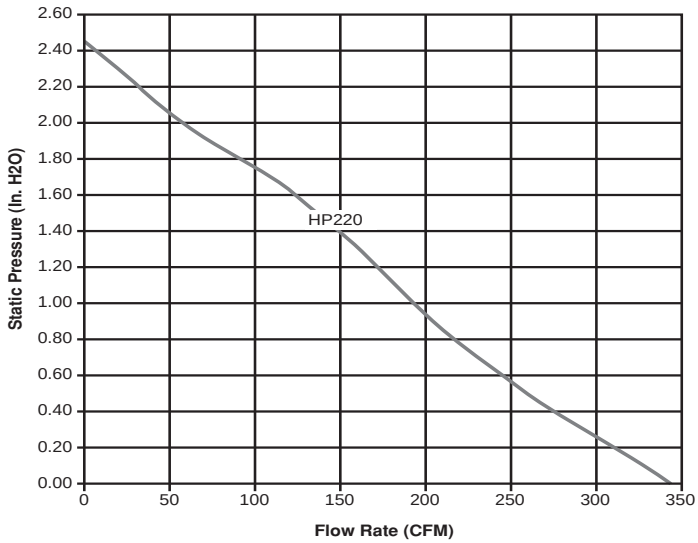


HP175 – The economical choice where slightly less air flow is needed. Often used where there is good sub slab communication and lower Radon levels.

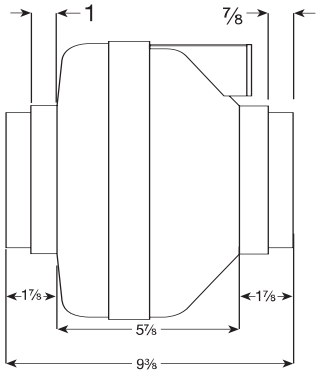
HP190 – The standard for Radon Mitigation. Ideally tailored performance curve for a vast majority of your mitigations.

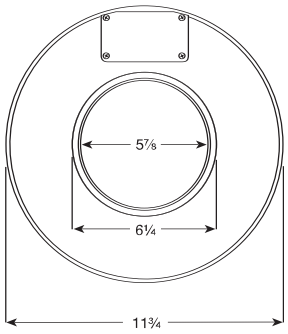
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #151-44, Pipeconx PCX 51-44 or equivalent.
For 3" PVC pipe use Indiana Seals #156-43, Pipeconx PCX 56-43 or equivalent.

HP220 RADON MITIGATION FAN



Tested with 6" ID duct and standard couplings.





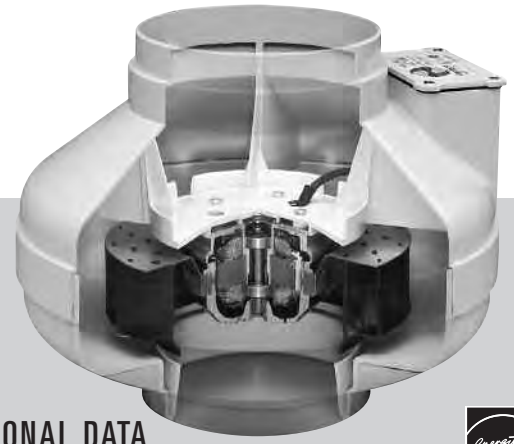
HP 220 – Excellent choice for systems with elevated radon levels, poor communication, multiple suction points and large subslab footprint. Replaces FR 175.

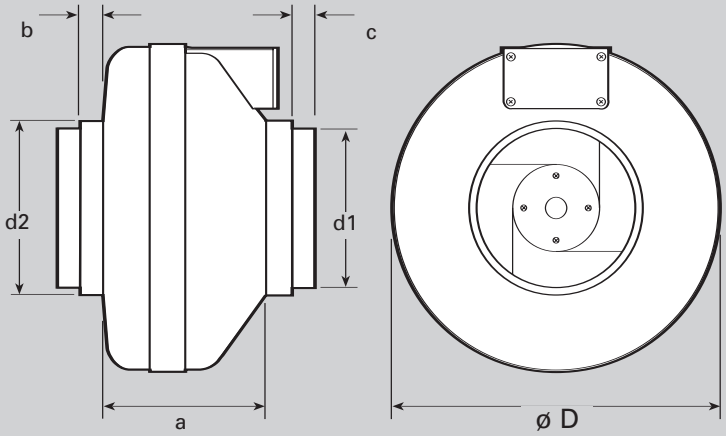
Fans are attached to PVC pipe using flexible couplings.
For 4" PVC pipe use Indiana Seals #156-64, Pipeconx PCX 56-64 or equivalent.
For 3" PVC pipe use Indiana Seals #156-63, Pipeconx PCX 56-63 or equivalent.

Fantech

FR SERIES

THE ORIGINAL MITIGATOR





DIMENSIONAL DATA

model	øD	d1	d2	a	b	c
FR100	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR110	9 1/2	3 7/8	4 7/8	6 1/8	7/8	7/8
FR125	9 1/2	–	4 7/8	6 1/8	7/8	–
FR140	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR150	11 3/4	5 7/8	6 1/4	5 7/8	1	7/8
FR160	11 3/4	5 7/8	6 1/4	6 3/8	1	7/8
FR200	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR225	13 1/4	7 7/8	9 7/8	6 1/4	1 1/2	1 1/2
FR250	13 1/4	–	9 7/8	6 1/4	–	1 1/2

All dimensions in inches

PERFORMANCE DATA

Fan Model	Energy Star	RPM	Volts	Rated Watts	Wattage Range	Max. Amps	CFM vs. Static Pressure in Inches W.G.							Max. Ps	Duct Dia.
							0"	.2"	.4"	.6"	.8"	1.0"	1.5"		
FR100	✔	2900	115	19	13 - 19	0.18	122	100	78	55	15	-	-	0.87"	4"
FR125	✔	2950	115	18	15 - 18	0.18	148	120	88	47	-	-	-	0.79"	5"
FR150	✔	2750	120	71	54 - 72	0.67	263	230	198	167	136	106	17	1.58"	6"
FR160	-	2750	115	129	103 - 130	1.14	289	260	233	206	179	154	89	2.32"	6"
FR200	✔	2750	115	122	106 - 128	1.11	408	360	308	259	213	173	72	2.14"	8"
FR225	✔	3100	115	137	111 - 152	1.35	429	400	366	332	297	260	168	2.48"	8"
FR250*	-	2850	115	241	146 - 248	2.40	649	600	553	506	454	403	294	2.58"	10"

FR Series performance is shown with ducted outlet. Per HVI's Certified Ratings Program, charted air flow performance has been derated by a factor based on actual test results and the certified rate at .2 inches WG.
** Also available with 8" duct connection. Model FR 250-8. Special Order.*

NOTE:

Installations that will result in condensate forming in the outlet ducting should have a condensate bypass installed to route the condensate outside of the fan housing. Conditions that are likely to produce condensate include but are not limited to: outdoor installations in cold climates, long lengths of outlet ducting, high moisture content in soil and thin wall or aluminum outlet ducting. Failure to install a proper condensate bypass may void any warranty claims.

FIVE YEAR WARRANTY

DURING ENTIRE WARRANTY PERIOD:

FANTECH will replace any fan which has a factory defect in workmanship or material. Product may need to be returned to the Fantech factory, together with a copy of the bill of sale and identified with RMA number.

FOR FACTORY RETURN YOU MUST:

- Have a Return Materials Authorization (RMA) number. This may be obtained by calling FANTECH either in the USA at 1.800.747.1762 or in CANADA at 1.800.565.3548. Please have bill of sale available.
- The RMA number must be clearly written on the outside of the carton, or the carton will be refused.
- All parts and/or product will be repaired/replaced and shipped back to buyer; no credit will be issued.

OR

The Distributor may place an order for the warranty fan and is invoiced.
The Distributor will receive a credit equal to the invoice only after product is returned prepaid and verified to be defective.

FANTECH WARRANTY TERMS DO NOT PROVIDE FOR REPLACEMENT WITHOUT CHARGE PRIOR TO INSPECTION FOR A DEFECT. REPLACEMENTS ISSUED IN ADVANCE OF DEFECT INSPECTION ARE INVOICED, AND CREDIT IS PENDING INSPECTION OF RETURNED MATERIAL. DEFECTIVE MATERIAL RETURNED BY END USERS SHOULD NOT BE REPLACED BY THE DISTRIBUTOR WITHOUT CHARGE TO THE END USER, AS CREDIT TO DISTRIBUTOR'S ACCOUNT WILL BE PENDING INSPECTION AND VERIFICATION OF ACTUAL DEFECT BY FANTECH.

THE FOLLOWING WARRANTIES DO NOT APPLY:

- Damages from shipping, either concealed or visible. Claim must be filed with freight company.
- Damages resulting from improper wiring or installation.
- Damages or failure caused by acts of God, or resulting from improper consumer procedures, such as:

1. Improper maintenance
2. Misuse, abuse, abnormal use, or accident, and
3. Incorrect electrical voltage or current.

- Removal or any alteration made on the FANTECH label control number or date of manufacture.
- Any other warranty, expressed, implied or written, and to any consequential or incidental damages, loss or property, revenues, or profit, or costs of removal, installation or reinstallation, for any breach of warranty.

WARRANTY VALIDATION

- The user must keep a copy of the bill of sale to verify purchase date.
- These warranties give you specific legal rights, and are subject to an applicable consumer protection legislation. You may have additional rights which vary from state to state.

DISTRIBUTED BY:

Fantech
United States 1712 Northgate Blvd. • Sarasota, FL. 34234 • 1.800.747.1762 • www.fantech.net
Canada 50 Kanalflakt Way • Bouctouche, NB E4S 3M5 • 1.800.565.3548 • www.fantech.ca

Item #: 411741
Rev Date: 120407

Fantech, reserves the right to modify, at any time and without notice, any or all of its products' features, designs, components and specifications to maintain their technological leadership position.

MSDS

MSDS No:	31
Rev Date:	1/20/10
Rev No:	2

1 MATERIAL SAFETY DATA SHEET

Product Name:	**TriggerFoam™ Cleaner**
Description:	Cleaning agent for TriggerFoam™ Dospensing Tools
Supplier:	Powers Fasteners, Inc. 2 Powers Lane, Brewster, NY 10509
Customer Service:	800-524-3244
Emergency Phone:	(CHEMTREC) Within USA: (800) 424-9300; Outside USA: 01 (703) 527-3887

2 INGREDIENTS

	CAS Number	ACGIH TWA	OSHA PEL
Acetone	76-64-1	500ppm	1000ppm
Propane	74-98-6	1000ppm*	1000ppm
Isobutane	75-28-5	1000ppm*	NE
Butane	107-97-9	1000ppm*	NE

*Note: The ACGIH TLVs for Propane, Isobutane and Butane are as *Aliphatic hydrocarbon gases.*
This product is classified as hazardous under OSHA regulations (29CFR 1910.1200).

Abbreviations: NE= Not established

3 SAFE USAGE RECOMMENDATIONS

Ventilation: Avoid breathing vapors or mist. Use with adequate ventilation, either natural or mechanical.

Eye Protection: Safety goggles are recommended. Saftey glasses with side shields should be used as a minimum. Direct eye contact with product can cause irritation and corneal burns.

Skin Protection: Avoid skin contact. Use neoprene or rubber gloves. Prolonged skin contact may cause irritation and dryness.

Respiratory Protection: Avoid breating vapors or mist. Can be irritating to respiratory tract. Excessive exposure in poorly ventillated areas may cause dizziness or headache.

Notice: For professional use. Keep away from children.

4 EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately flush eyes with clean water for 15 minutes and call a physician.

Skin: Wash with soap and water. Launder clothing before reuse. Seek medical attention if any symptoms develop.

Inhalation: Move to fresh air if dizziness or headache occurs. Contact physician if symptoms persist.

Ingestion: Immediately rinse mouth with water and call a physician. Drink 1-2 glasses of water. Do not induce vomitting unless directed by a physian.

Other: Contact a physician if there is any question about the seriousness of the exposure.

5 HEALTH HAZARD INFORMATION

Hazards: Pressurized flammable liquid and gas. Keep away from fire and heat (>120F). Do not smoke while using product.

6 PHYSICAL CHARACTERISTICS

Appearance:	Clear liquid and gas.
Boiling Point:	NE **Flash Point:** -18F (0C)
(Air=1) Vapor Density:	>1
(Water=1) Evaporation Rate:	NE
Specific Gravity:	1.1
VOC Content:	0.2
Odor:	Mild amine-like
Solubility in Water:	Insoluble
pH:	NE

7 FIRE, HAZARD AND REACTIVITY DATA

Flammability:	Extremely Flammable
Stability:	Stable. Hazardous polymerization will not occur.
Incompatibility:	Strong acids, bases and alcohols.
Unusual fire or Explosion Hazards:	None Known.
Extinguishing Media:	Foam, CO_2, Dry Chemical
Fire Fighting:	Self-contained breathing equipment recommended.
Hazardous Combustion Products:	CO, NO, HCN, HCL

8 TRANSPORTATION AND REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910. 1200.
HMIS Codes:	Health 2, Flammability: 3, Physical Hazard: 2 PPE: B Flash Point: -18F (0C)
US DOT Proper Shipping Name:	Consumer Commodity ORM-D UN 1950 Class: 2.1 PG: N/A
Canadian TDGR Proper Shipping Name:	Aerosols UN 1950 Class: 2.1 PG: N/A
IMO/IMDG Proper Shipping Name:	Aerosols UN 1959 Class 2.1 PG: N/A EmS: F-d, S-U
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product does not contain any Section 313 reportable ingredients.

9 STORAGE, CLEAN-UP, AND DISPOSAL

Storage:	Store in a cool, dry place. Keep from freezing and extreme heat, which may shorten shelf life.
Spills:	Collect spilled contents with absorbent material and place in a sealable container for proper disposal.
Waste Disposal:	Dispose of in accordance with federal, state and local regulations.
EPA Waste Codes:	D001, D003 (aerosol cans)

The information and recommendations provided herin are based on information available to us at the time of preparation. We make no other warranty, expressed or implied, as to its correctness, completeness, or as to the results and reliance of the information.

Foam

Power Foam & Trigger Foam

Fills, Bonds, Seals & Insulates

29 oz. Gun Foam

12 oz. Straw Foam

29 oz. Straw Foam

Powers is a proud member of:

Evergreen MARKETING GROUP

Powers® FASTENERS

PowerFoam™

PowerFoam™ is a single component, moisture curing expanding polyurethane foam. The adhesive strength of PowerFoam™ allows it to be set on various types of building elements including concrete, brick, wood, metal, aluminum and steel. When installing the foam, consideration should be given to the two fold expansion of the foam after it leaves the plastic tube. The surface of the foam initially dries within 1-4 hours and becomes fully cured in 12-15 hours. The foam works best at room temperature. It is dispensed through a straw-like plastic tube that is packaged with the can. The structure of the hardened foam provides excellent insulation against heat and noise.

29 oz. Straw Foam

12 oz. Straw Foam

APPLICATIONS

PowerFoam™ is for applications where it is not necessary to control the size of the bead or the rate of flow. PowerFoam™ can be used in a wide variety of applications. Use it to fill, seal or insulate. It blocks drafts, stops leaks, saves energy, adheres to all types of construction material, deadens sound, acts as a buoyancy material once cured, controls radon, confines asbestos fibers, and can be used in HVAC applications. PowerFoam™ also seals and keeps out insects and rodents. After installation, it is recommended that a full 24 hours elapse prior to scraping, sanding, staining or painting.

TYPICAL USES

INSULATING

- Around window frames, sills, door frames floor / wall joints
- Electrical junction boxes
- Attics
- Refrigeration units and pipes
- Air conditioning systems

FILLING

- Breaches in walls
- Pipe penetrations in non-fire-rated walls
- Voids in concrete forms
- Underground utility ductwork
- Sound dampening

FEATURES

- CFC free propellant
- Polyurethane system
- Class B3 flame retardant
- Contains no urea formaldehyde or PCBs
- Works with PVC
- Physiologically harmless when fully cured
- Neutral odor
- Does not rot or deteriorate with age
- Water resistant

ADVANTAGES

- High foam yield - up to 1.6ft³ per 29 oz. can
- Also available in convenient 12 oz. cans
- Precision plastic valve helps prevent pressure loss and prolongs shelf life
- Minimal subsequent expansion (+/- 10%)

TECHNICAL DATA

Volume yield	1.4 - 1.6 ft³ (40-45 liters) free foamed
Specific gravity (of foamed product)	1.25 - 1.56 lb./ft³
Application temperature	+ 32°F / 0°C min. (for application surfaces)
Tack free time	5 - 10 minutes (depending on temp. and humidity)
Cutting time	15 - 20 minutes (depending on temp. and humidity)
Initial drying time	1 - 4 hours (depending on temp. and humidity)
Full curing time	12 - 15 hours (depending on temp. and humidity)
Water absorption	Max. 1% of volume
Temperature resistance	-8°F to +212°F
Tensile strength	7.25 - 14.5 psi
Elongation at breakage	20 - 25 %
Contents	12 oz. (375g) Net Weight and 29 oz. (900g) Net Weight
Shelf life	24 months (+40°F to +75°F - higher temp., shorter shelf life) Must be stored in vertical position

POWERFOAM

CAT. NO.	DESCRIPTION	STD. BOX	STD. CTN.
8130	PowerFoam™ 12 oz.	12	12
8132	PowerFoam™ 29 oz.	12	12

APPROVALS & LISTINGS

Underwriters Laboratories - File No. R16754
Caulking and Sealants Surface Burning Characteristics
ASTM E 84 (12.5%)
Flame Spread 10
Smoke Developed 30

TriggerFoam™

29 oz. Gun Foam

TriggerFoam™ is a one part polyurethane expanding foam which sets into its final form by using moisture present in the air. When installing the foam, consideration should be given to the two fold expansion of the foam after it leaves the nozzle. The surface of the foam initially dries within 1-4 hours and becomes fully cured in 12-15 hours. TriggerFoam™ sets well on ordinary surfaces such as concrete, brick, metal etc. Surfaces do not require preparation and can also be damp. After installation, it is recommended that a full 24 hours elapse prior to scraping, sanding, staining or painting. The foam has a R-5 value when used in place of traditional installation methods.

Fills around pipe and electrical conduit

Trigger cleaner makes clean up simple and easy.

APPLICATIONS

TriggerFoam™ is dispensed through a special gun that allows the user to control the rate of flow as well as the size of the bead for more precise placement of the product, allowing it to be used in a wide variety of applications. Use it to fill, seal or insulate. It blocks drafts, stops leaks, saves energy, adheres to all types of construction material, deadens sound, acts as a buoyancy material once cured, controls radon, confines asbestos fibers, and can be used in HVAC applications.

TYPICAL USES

INSULATING

- Around window frames, sills, door frames floor / wall joints
- Electrical junction boxes
- Attics
- Refrigeration units and pipes
- Air conditioning systems

FILLING

- Breaches in walls
- Pipe penetrations in non-fire-rated walls
- Voids in concrete forms
- Underground utility ductwork
- Sound dampening

FEATURES

- CFC free propellant
- Polyurethane system
- Class B2 flame retardant
- Contains no urea formaldehyde or PCBs
- Works with PVC
- Physiologically harmless when fully cured
- Neutral odor
- Does not rot or deteriorate with age

ADVANTAGES

- Stop and Go application product remains liquid in applicator until dispensed
- Easily adjustable applicator can dispense foam beads as small as 1/8"
- High foam yield - up to 1.6ft³ per 29 oz. can
- Precision plastic valve helps prevent pressure loss and prolongs shelf life
- Minimal subsequent expansion (+/- 10%)
- Hardened steel dispenser tip for longer life on metal tool

TECHNICAL DATA

Volume yield	1.4 - 1.6 ft³ (40-45 liters) free foamed
Specific gravity (of foamed product)	1.25 - 1.56 lb./ft³
Application temperature	+ 32°F / 0°C min. (for application surfaces)
Tack free time	5 - 10 minutes (depending on temp. and humidity)
Cutting time	15 - 20 minutes (depending on temp. and humidity)
Initial drying time	1 - 4 hours (depending on temp. and humidity)
Full curing time	12 - 15 hours (depending on temp. and humidity)
Water absorption	Max. 1% of volume
Temperature resistance	-8°F to +212°F
Tensile strength	7.25 - 14.5 psi
Elongation at breakage	20 - 25 %
Contents	29 oz. (900g) Net Weight
Shelf life	24 months (+40°F to +75°F - higher temp., shorter shelf life) Must be stored in vertical position

8139

8140

8142

TRIGGERFOAM TOOLS & ACCESSORIES

CAT. NO.	DESCRIPTION	STD. BOX	STD. CTN.
8137	TriggerFoam™ Subfloor Gun 22"	1	1
8139	TriggerFoam™ Plastic Gun	1	1
8140	TriggerFoam™ Gun	1	1
8141	TriggerFoam™ Gun replacement brass tip	1	10
8142	TriggerFoam™ Cleaner 20 oz.	12	12

TRIGGERFOAM

CAT. NO.	DESCRIPTION	STD. BOX	STD. CTN.
8136	TriggerFoam™ 29 oz.	1	1

APPROVALS & LISTINGS

Underwriters Laboratories - File No. R16754
Caulking and Sealants Surface Burning Characteristics
ASTM E 84 (12.5%)
Flame Spread 5
Smoke Developed 10

ASTM E 90
Sound Transmission Classification 60

POWERS FASTENERS **BRANCH INFORMATION**

USA LOCATIONS

CITY	ADDRESS	CONTACT	PHONE	FAX
Atlanta	5405 Buford Hwy Suite 410 Norcross, GA 30071-3984	Robert Brito	678-966-0000	678-966-9242
Boston	2 Powers Lane, Brewster, NY 10509	Jack Armour	800-524-3244	914-576-6483
Charlotte	349 L West Tremont Avenue, Charlotte, NC 28203	Bob Aurisy	704-375-5012	704-376-5517
Chicago	2472 Wisconsin Avenue, Downers Grove, IL 60515	Dan Gilligan	630-960-3156	630-960-3912
Dallas	10625 King Williams Drive, Dallas, TX 75220	Chad Estill	972-506-9258	972-506-9290
Denver	2475 West Second Street #35, Denver, CO 80223	Aaron Minnis	303-922-9202	303-922-9228
Detroit	21600 Wyoming Avenue, Oak Park, MI 48237	Glen Gaskill	248-543-8600	248-543-8601
Florida	9208 Palm River Road, Bldg. 3, Suite 305, Tampa, FL 33619	T.J. Bland/Mark Mamula	813-626-4500	813-626-4545
Houston	20 North Sampson Street, Houston, TX 77003	Chris Salisbury	713-228-1524	713-228-1528
Indianapolis	15290 Stony Creek Way, Noblesville, IN 46060	Bill Trainor	317-773-1668	317-773-1690
Kansas City / St Louis	716 East 16th Avenue, North Kansas City, MO 64116	Don James, Jr.	816-472-5038	816-472-5040
Los Angeles	2761 Dow Avenue, Tustin, CA 92780	Jack Stewart	714-731-2500	714-731-2566
Maryland	3137-B Pennsy Drive, Landover, MD 20785	Gary Engleman	301-773-1722	301-341-5119
Milwaukee	12020 W. Feerick Street, Milwaukee, WI 53222	Donn Raduenz	414-466-2400	414-466-3993
Minneapolis	351 Wilson Street, NE Minneapolis, MN 55413	Rick Gruye	612-331-3756	612-331-3549
Nashville/Memphis	221 Blanton Avenue, Nashville, TN 37210	Ira Liss	615-248-2667	615-248-2676
New Orleans	14141 Airline Highway, Tezcuco Building #3, Baton Rouge, LA 70809	Cal Zenor	225-756-7871 or 225-756-7851	225-756-7981
New York	2 Powers Lane, Brewster, NY 10509	John Partridge	914-235-6300	914-576-6483
Philadelphia	2 Powers Lane, Brewster, NY 10509	Curtis Fickert	800-524-3244	914-576-6483
Phoenix	3602 E. Southern Ave, Suite 5 Phoenix, AZ 85040	Craig Hering	602-431-8024	602-431-8027
Pittsburgh	1360 Island Avenue, Mckees Rocks, PA 15136	Bill Dugan	412-771-3010	412-771-9858
Rochester	410 Atlantic Avenue, Rochester, NY 14609	Mike Kolstad	585-288-2080	585-288-8732
Salt Lake City	2212 SW Temple #4, Salt Lake City, UT 84115	Bruce Burnett	801-466-3406	801-484-0731
San Francisco	28970 Hopkins Street, Suite B+C, Hayward, CA 94545	Frans Honig	510-293-1500	510-293-1505
Seattle	129 South Kenyon, Seattle, WA 98108	Darin Arnold/Jim Swink	206-762-5812	206-762-5817

INTERNATIONAL LOCATIONS

CITY	ADDRESS	CONTACT	PHONE	FAX
Australia	Factory 3, 205 Abbotts Road, Dandenong, South Victoria 3175	Phil Rose	+61 3 8787 5888	+61 3 8787 5899
British Columbia	63 Fawcett Road Coquitlam, V3K 6V2	Distributor	604-540-0200	604-540-0212
Canada	6950 Edwards Blvd. Mississauga Ontario L5T 2W2	Mark Russell	905-673-7295	905-673-6490
Europe	Westrak 208, 1771 SV Wieringerwerf, Netherlands	Paul Geuvers	+31 888 769 377	+31 227 594 759
Manitoba	1810 Dublin Avenue Man. Winnipeg, R3H 0H3	Distributor	204-633-0064	204-694-1261
New Zealand	PO Box 302 076 North Harbour Auckland	Claye Sesto	+64 9415 2425	+64 9415 2627
Quebec	For name of nearest distributor call Powers Industries Ltd at	Mark Russell	905-673-7295	905-673-6490
Thailand	80/89 MOO4 Petchakasem Road, Bangkae Bangkok 10160	Chalee Surakavanichakorn	+661 826 5821	

LATIN & CARIBBEAN DISTRIBUTION INQUIRIES

COUNTRY/REGION	ADDRESS	CONTACT	PHONE	FAX
Brasil	HARD, Rua Dr. Humberto Pinheiro Viera, 150 Lote B, 1 B Distrito Industrial, Joinville, Brasil		(55) 4749 7209	
Colombia	Electrogeno, S.A., Carrera 52 #71c-38, Bogota, Colombia		(57) 1 6600 9436	
Costa Rica	Electro Mechanics Supply, La Uruca Contiguo Banco Ntnl., De Costa Rica Condominio, Horizontal Bodega #9, San Jose, Costa Rica		(506) 2233-2595	
Dominican Republic	Calle Estancia Nueva #17 E Esquina Cul-De-Sac 9, San Geronimo, Santo Domingo	Rodfor Team	809-224-5615	809-472-8640
Ecuador	Av. Colon E 4 - 127 (1424), Entre Amazonas Y 9 De Octubre Los Rios #100 Y Manual Galecio	Sermaco - Quito (Casa Matriz) Sermaco - Guayaquil	593-2254-3703	593-2250-5013
Guatemala	Tecnofijaciones, 6 Avenue 8-56 Zona 9, Zona 9, Guatemala	Oscar Lucas Penagos	502-233-4-3478	-
Latin America	9208 Palm River Road, Ste 305, Tampa, Florida 33619	Michael Gaffigan	954-914-6665	813-626-4545
Panama	Centro-Industrial, Via Cincuentenario, No. 7910, Ciudad Panama, Panama		(507) 302-8022	
Venezuela	Calle Sucre/Qta. Maudora, #1721 Entre Cec Acosta Y San Ignacio Chacao, Caracas	Distributor	58 212 264 1313	58 212 263 0219
Trinidad - Tobago	Ft. Farfan, 3-5 Ibis Avenue, Ibis Acres, San Juan	Derek Cumming	(868) 674-7896	

Note: The information and data contained within this documentation was current as of January 2009. The information is for marketing purposes only and is subject to change and updates as needed. Powers Fasteners, Inc. reserves the right to change designs and specifications without notice or liability for such changes. Please contact Powers Fasteners for the most current and up to date available information or refer to our website at www.powers.com

Powers Fasteners 2 Powers Lane, Brewster, NY 10509 P: (914) 235-6300 F:(914) 576-6483
Powers Fasteners Canada Ltd. 6950 Edwards Boulevard Mississauga Ontario L5T-2W2 Canada
P: (905) 673-7295 or 1-800-387-3480 F: (905) 673-6490

www.powers.com

Cat. No. 49040 1/09
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MSDS

MSDS No:	30
Rev Date:	1/20/10
Rev No:	2

1 MATERIAL SAFETY DATA SHEET

Product Name:	**POWERFOAM™ / TRIGGERFOAM™**
Description:	Polyurethane foam filler, insulating foam, backing foam, penetration sealant
Supplier:	Powers Fasteners, Inc. 2 Powers Lane, Brewster, NY 10509
Customer Service:	800-524-3244
Emergency Phone:	(CHEMTREC) Within USA: (800) 424-9300; Outside USA: 01 (703) 527-3887

2 INGREDIENTS

	CAS Number		ACGIH TWA	OSHA PEL
Polymethylene polyphenyl isocyanate	9016-87-9	(as MDI)	0.005 ppm	0.02ppm
Dimethyl ether	115-10-6		1000ppm*	NE
Propane	74-98-6		1000ppm*	1000ppm
Isobutane	75-28-5		1000ppm*	NE

*Note: The ACGIH TLV listed above is for Dimethyl ether is an AIHA WEEL. The ACGIH TLVVs listed above for Propane and Isobutane are as *Aliphatic hydrocarbon gases*

This product is classified as hazardous per OSHA regulations (29CFR 1910-1200).

Abbreviations: NE= Not established

3 SAFE USAGE RECOMMENDATIONS

Ventilation: Avoid breathing vapors or mist. Use with adequate ventilation, either natural or mechanical. Sensitized individuals shoud avoid using this product.

Eye Protection: Avoid eye contact. Safety goggles recommended. Wear safety glasses with side shields as a minimum, as product can stick to eyes.

Skin Protection: Avoid skin contact. Wear impermeable gloves. Product can adhere to skin and cause a rash or sentisization.

Respiratory Protection: Vapor may cause irritation of the breathing tract and sensitization. Use in a well-ventillated area.

Notice: For professional use. Keep away from children.

4 EMERGENCY AND FIRST AID PROCEDURES

Eyes: Immediately flush eyes with clean water for 15 minutes and call a physician.

Skin: Wash with soap and water. Launder clothing before reuse. Seek medical attention if any symptoms develop.

Inhalation: If breathing becomes uncomfortable or asthma-like symptoms develop, discontinue use and move to fresh air. Contact physician if symptoms persist.

Ingestion: Immediately rinse mouth with water and call a physician. Drink 1-2 glasses of water. Do not induce vomitting unless directed by a physian.

Other: Contact a physician if there is any question about the seriousness of the exposure.

5 HEALTH HAZARD INFORMATION

Hazards: Direct, prolonged contact with product can cause irritation and sensitization to some individuals. Those who develop an allergic response should avoid future use of this product.

Contents are pressurized for dispensing and are extremely flammable.

6 PHYSICAL CHARACTERISTICS

Appearance:	Beige foam. Sticky when wet.
Density	1.1
Boiling Point:	NE
(Air=1) Vapor Density:	>1
(Water=1) Evaporation Rate:	NE
Specific Gravity:	1.1
VOC Content:	100 g/l
Odor:	Mild amine-like
Solubility in Water:	Insoluble
pH:	NE

7 FIRE, HAZARD AND REACTIVITY DATA

Flammability:	Extremely Flammable	Flash Point: 0F, -18C Boiling Point: NE
Stability:	Stable. Hazardous polymerization will not occur.	
Incompatibility:	Strong acids, bases and alcohols.	
Unusual fire or Explosion Hazards:	Extremely flammable. Contains pressurized, flammable propellants. Containers can rupture if exposed to fire or direct heat.	
Extinguishing Media:	Foam, COx, HCN, Nox	
Fire Fighting:	Self-contained breathing equipment recommended.	
Hazardous Combustion Products:	CO, NO, HCN, HCL	

8 TRANSPORTATION AND REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910. 1200.	
HMIS Codes:	Health: 3, Flammability: 3, Physical Hazard: 1.	PPE: B Flash Point: -18F (0C)
US DOT Proper Shipping Name:	Consumer commodity ORM-D	
Canadian TDGR Proper Shipping Name:	Consumer commodity (Aerosols) UN1950 Class 2.1, PG: None	
IATA/ICAO Proper Shipping Name:	AEROSOLS UN1950 Class 2.1, PG: None	
IMO/IMDG Proper Shipping Name:	AEROSOLS UN1950 Class 2.1, PG: None	EmS: F-D, S-U
Packing Instructions:	Passenger Aircraft: Y203 or 203 Cargo Aircraft Only: 203	
TSCA Inventory Status:	Chemical components listed on TSCA inventory.	
SARA Title III, Section 313:	Contains Polymethylene polyphenyl isocyanate.	

9 STORAGE, CLEAN-UP, AND DISPOSAL

Storage:	Store in a cool, dry place. Keep from freezing and extreme heat, which may shorten shelf life.
Spills:	Follow above personal protective measures. Product will harden upon contact with air and moisture. After hardening, scrape up foam and dispose of in a sealable container.
Waste Disposal:	Dispose of in accordance with federal, state and local regulations.
EPA Waste Codes:	D001, D003 (aerosol cans)

The information and recommendations provided herin are based on information available to us at the time of preparation. We make no other warranty, expressed or implied, as to its correctness, completeness, or as to the results and reliance of the information.

Powers FASTENERS

GHS SAFETY DATA SHEET

WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe

Date Revised: **FEB 2010**
Supersedes: **SEP 2009**

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **WELD-ON® 717™ Low VOC Cements for PVC Plastic Pipe**

PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Carson, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: Tel. 800.424.9300, 703.527.3887 CHEMTREC (International) **Medical:** Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2B				

GHS LABEL: **OR**

Signal Word: **Danger**

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H332: Harmful if inhaled	P280: Wear protective gloves/protective clothing/eye protection/face protection
H335: May cause respiratory irritation	P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
H336: May cause drowsiness or dizziness	P403+P233: Store in a well ventilated place. Keep container tightly closed
EUH019: May form explosive peroxides	P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	25 - 70
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	5 - 36
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	10 - 25

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke
Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

	HMIS	NFPA
Health	2	2
Flammability	3	3
Reactivity	0	0

0-Minimal
1-Slight
2-Moderate
3-Serious
4-Severe

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL:
Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	
Cyclohexanone	20 ppm	50 ppm	50 ppm	

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gray or clear, heavy syrupy liquid		
Odor:	Ketone	**Odor Threshold:**	0.88 ppm (Cyclohexanone)
pH:	Not Applicable		
Melting/Freezing Point:	-108.5℃ (-163.3℉) Based on first melting component: THF	**Boiling Range:**	66℃ (151℉) to 156℃ (313℉)
Boiling Point:	66℃ (151℉) Based on first boiling component: THF	**Evaporation Rate:**	> 1.0 (BUAC = 1)
Flash Point:	-20℃ (-4℉) TCC based on THF	**Flammability:**	Category 2
Specific Gravity:	0.963 @23℃ (73℉)	**Flammability Limits:**	**LEL:** 1.1% based on Cyclohexanone
Solubility:	Solvent portion soluble in water. Resin portion separates out.		**UEL:** 11.8% based on THF
Partition Coefficient n-octanol/water:	Not Available	**Vapor Pressure:**	129 mm Hg @ 20℃ (68℉)based on THF
Auto-ignition Temperature:	321℃ (610℉) based on THF	**Vapor Density:**	>2 (Air = 1)
Decomposition Temperature:	Not Applicable	**Other Data: Viscosity:**	Heavy bodied
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A,VOC content is: ≤ 510 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable
Hazardous decomposition products: None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid: Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials: Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact
Acute symptoms and effects:
Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects: None known to humans

Toxicity:	LD_{50}	LC_{50}
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m^3 (rat)
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m^3 (rat)
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: None Known
Mobility: In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 510 g/l.
Degradability: Biodegradable
Bioaccumulation: Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name: Adhesives
Hazard Class: 3
Secondary Risk: None
Identification Number: UN 1133
Packing Group: PG II
Label Required: Class 3 Flammable Liquid
Marine Pollutant: NO

EXCEPTION for Ground Shipping
DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant
Symbols: F, Xi
Risk Phrases:
R11: Highly flammable.
R20: Harmful by inhalation.
R36/37: Irritating to eyes and respiratory system.
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

Safety Phrases:
S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.
S46: If swallowed, seek medical advise immediately and show this container or label.

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

SECTION 16 - OTHER INFORMATION

Specification Information:
Department issuing data sheet: IPS, Safety Health & Environmental Affairs
E-mail address: <EHSinfo@ipscorp.com>
All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
Training necessary: Yes, training in practices and procedures contained in product literature.
Reissue date / reason for reissue: 2/23/10 / Updated GHS Standard Format
Intended Use of Product: Solvent Cement for PVC Plastic Pipe

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Geocel®

3300® POLYURETHANE ROOFING SEALANT

TECHNICAL DATA

MIAMI-DADE COUNTY APPROVED

1. PRODUCT NAME:

3300® Polyurethane Roofing Sealant

2. MANUFACTURER:

GEOCEL CORPORATION
P.O. Box 398
Elkhart, IN 46515 USA
Phone: (800) 348-7615
Fax: (800) 348-7009
www.GeocelUSA.com

3. PRODUCT DESCRIPTION:

3300® Polyurethane Roofing Sealant is a single component, high performance polyurethane sealant that withstands extreme weather conditions and cures to a flexible weatherproof seal.

3300 Sealant is approved for roof assemblies covered by the High Velocity Hurricane Zone of the Florida Building Code. Miami-Dade County Product Control Approval for TAS-132, NOA #07-1003.02.

- Miami-Dade County product approved for hurricane-tough adhesion
- Withstands extreme weather conditions
- Meets LEED and NAHB guidelines
- Moisture cure
- Permanently flexible
- Minimal shrinkage
- Non-sag formula
- Low odor, low VOC
- VOC & CARB compliant
- 30-year life expectancy
- Primerless adhesion
- Paintable, non-corrosive
- Contains no TDI (toluene diisocyanate)
- Meets TT-S-00230C Type II Class A, ASTM C920-98 Type S

Basic Uses: 3300 Sealant can be used in roofing applications such as concrete roofing tile, clay roofing tile, metal roofing, kynar coated metal and composition shingles. Other applications include building-lath paper repair, gutters, HVAC, flashing, skylights, roofing seams, roofing projections, termination points and vents. 3300 Sealant bonds to most common building substrates including stone, masonry, ceramics, wood, steel, aluminum, asphalt, building paper, BUR, concrete, fiberglass and vinyl.

Application Limitations:

- Do not apply over damp or contaminated surfaces
- Do not apply to absorptive surfaces such as marble, limestone, or granite without prior testing for discoloration or staining

Colors: White, gray, limestone, bronze, medium bronze, tan, aluminum gray, and black

Grade: Gun grade consistency

Packaging: 10.1 fl. oz. cartridges

Applicable Standards:

- ASTM C920, TYPE S, GRADE NS, CLASS 25, USE NT, A AND M.
- US Federal Specification TT-S 00230C (COMB-NBS) for one-component sealants as Class A, non-sag.
- Canadian Specification CAN/CGSB 19.13-M87.
- CARB and SCAQMD Compliant. Meets VOC Requirements for OTC Regulation.

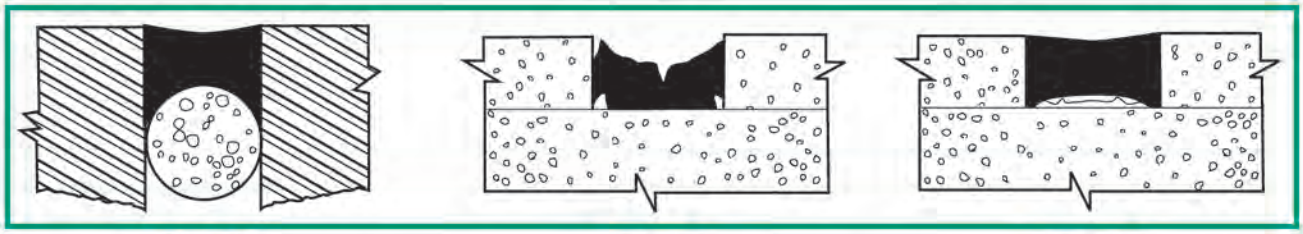

FIGURE 1
Proper Depth Control

FIGURE 2
Joints without Bond Breaker

FIGURE 3
Joints with Bond Breaker

The effects on the sealant with and without bond breakers are illustrated in Figures Two and Three.

TECHNICAL DATA

Property	Results	Test Method
Tensile Strength	133 psi	ASTM D 412
Elongation	685%	ASTM D 412
Modulus of Elongation	65 psi	ASTM D 412
Adhesion Peel	>5 piw	ASTM C 794
Type A Hardness	42	ASTM D 2240
UV Resistance	Pass	ASTM C 793

4. TECHNICAL DATA: (See chart on back.)

5. INSTALLATION:

Joint Design: The width of the joint should be a minimum of 4 times the anticipated movement. In joints up to 1/2" wide, the depth of the sealant should be equal to the width, but not less than 1/4". In joints wider than 1/2", the depth should be maintained at 5/8". Lap shear joints should have a width of at least twice the anticipated movement.

Surface Preparation: Joints to receive sealant must be sound, smooth, uniform in dimensions, and free from defects and foreign material. They must be clean, dry, free of frost and all contaminants, such as curing compounds, sealers (waterproofing), coatings, etc. Sealant adhesion should be tested on each different substrate prior to caulking. To test adhesion, apply a sealant bead and allow to cure thoroughly. Then pull one end of the bead to test adhesive strength.

Joint Backing: Joint depth should not exceed 5/8". An open cell backer rod should be used to control joint depth. In shallow joints, a bond breaker tape should be installed to prevent three-point contact.

Service Temperature:
-40° F to 150° F (-40° C to 66° C)
Application Temperature:
-40° F to 150° F (-40° C to 66° C)

Application and Tooling: Apply with conventional caulking equipment. Fill joints from the back to prevent voids and air pockets. If application temperature is below 40° F (5° C), precautions should be taken to ensure the substrates are completely dry and frost free. Immediately after application, tooling is recommended to ensure firm, full contact with the joint sides.

Cleaning: Remove 3300 sealant from gun and tools before it cures. This may be done by scraping and use of solvents such as Xylol. Cured materials may be removed by cutting with sharp tools or sandpapering.

Storage and Shelf Life: Unopened containers should be protected from heat, moisture, and direct sun. Do not open containers until all preparatory work has been completed. Material in unopened containers is usable for up to 1 year when stored at 75° F (25° C).

6. AVAILABILITY AND COST:

Marketed throughout the U. S., Canada, and in select foreign markets. It is available from various lumber yards, hardware stores, home centers, construction material and industrial distributors. Cost and further technical data are available from your local Geocel representative or from Geocel's corporate offices.

Warning: Use only with adequate ventilation. Keep away from heat and flame. Do not take internally. Avoid eye and skin contact. KEEP OUT OF REACH OF CHILDREN. This product as supplied may be harmful or fatal if swallowed. If swallowed DO NOT induce vomiting. If contacted on eyes, flush thoroughly with clear water for at least 15 minutes. In either case, call a physician immediately. If contacted on skin, wash thoroughly with soap and water.

7. LIMITED WARRANTY:

Geocel Corporation warrants that the product is manufactured according to their published standards. The company guarantees for 5 years from date of manufacture that 3300 Polyurethane Roofing Sealant will not crack due to normal expansion and contraction and that it will not lose its adhesion or cohesion. Geocel Corporation will, at its option, either refund the purchase price of, or provide replacement for, that portion of 3300 Sealant which fails to perform in accordance with this warranty. Such refund or replacement will constitute the limit of Geocel's liability and obligation for any such failure. Geocel Corporation will not be liable or obligated otherwise for any loss or damage arising directly or indirectly from this product, or the use or failure thereof, whether based on breach of warranty or negligence.

8. MAINTENANCE:

If sealant is damaged and the bond is intact, cut out the damaged area and recaulk. No primer is required. If the bond has been affected, remove the sealant, clean and prepare the joint in accordance with the instructions under "Surface Preparation," and recaulk.

9. TECHNICAL SERVICES:

Geocel representatives throughout the U.S. are available to provide technical assistance. Geocel's in-house technical staff and laboratory facilities are equipped to respond to specific requests for further information and/or applications testing.

THEORETICAL YIELD
Per 10.1 fl. oz. Cartridge

Joint Size	Linear Feet
1/4" x 1/4"	24.1
1/4" x 3/8"	16.0
1/4" x 1/2"	12.0
1/2" x 3/8"	8.4
1/2" x 1/2"	6.0
3/4" x 1/2"	4.0

THERE IS A DIFFERENCE

	NON-CORROSIVE	PAINTABLE	Adheres to: WOOD	BRICK (unprimed)	ASPHALT	METAL	VINYL	CONCRETE (unprimed)	BUILDING LATH PAPER
POLYURETHANE	●	●	●	●	●	●	●	●	●
SILICONE			●		●	●			

Geocel® ISO 9001 Certified
P.O. Box 398
Elkhart, IN 46515
(800) 348-7615 • Fax (800) 348-7009
www.GeocelUSA.com

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MATERIAL SAFETY DATA SHEET

Geocel®

Date Issued: 08/03/2007
MSDS No: 68101
Date Revised: 04/08/2010
Revision No: 4

3300 Colors

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3300 Colors

MANUFACTURER
Geocel, LLC
P.O. Box 398
Elkhart, IN 46515-0398
Product Stewardship: 574-264-0645

24 HR. EMERGENCY TELEPHONE NUMBERS
ChemTel - 800-255-3924

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: This product is irritating to the eyes and skin. Thermal decomposition/burning may produce toxic gases and fume. Closed containers may rupture when exposed to high temperatures, or when the product has been contaminated with water.

Avoid breathing hot mists and vapors. This product contains a respiratory and skin sensitizer. Causes respiratory tract irritation and may cause allergic respiratory reaction. May cause permanent respiratory damage. Product vapors are potentially irritating to skin. May cause allergic skin reaction and dermatitis.

POTENTIAL HEALTH EFFECTS

EYES: This product may cause irritation to the eyes. May cause temporary corneal injury.

SKIN: Skin contact may cause irritation. Isocyanates may react with skin protein and moisture to cause itching, reddening, swelling, scaling or blistering. Individuals previously sensitized to this material may experience these sysptoms from exposure to very small amounts of liquid or vapor.

INGESTION: May cause irritation and corrosive action in the mouth, throat and digestive tract.

INHALATION: Single large does, and/or repeated exposures, may lead to sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms), causing an individual to experience adverse effects at exposure levels well below exposure limits or guidelines. Symptoms may include chest tightness, wheezing, shortness of breath, coughing or asthmatic attack, and may be delayed up to several hours. Extreme asthmatic reactions can be life threatening. Once sensitized, an individual may experience adverse symptoms upon exposure to dust, cold air or other irritants. Sensitization can last several months, years or be permanent in some cases.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Visual effects may include eye irritation, blurred vision, diplopia, changes in color perception, restricition of visual fields, and complete blindness.

SKIN: Irritation of the skin.

INGESTION: Diarrhea.

INHALATION: Irritation of upper respiratory tract, asthmatic symptoms, chest tightness, breathing difficulty, coughing, short throat.

TARGET ORGAN STATEMENT: The eyes, lungs and skin may be targeted and damaged by components of the product.

HEALTH HAZARDS: This product contains Methylene Diphenyl Isocyanate (MDI) which is a potential skin sensitizer and has been shown to alter cells in certain experiments. Although inconclusive, these cellular changes are thought to indicate potential carcinogenicity. Risk to your health depends on duration and concentration of exposure.

COMMENTS: Signs and symptoms of overexposure to this product include headache, irritation of upper respiratory tract, asthmatic symptoms, chest tightness, breathing difficulty, coughing, dizziness, weakness, fatigue, eye irritation, skin irritation, diarrhea.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS	EINECS
Xylenes (o-,m-,p- Isomers)	1 - 5	1330-20-7	215-535-7
Ethyl Benzene	0.5 - 1.5	100-41-4	- -
Methylene Disphenyl Isocyanate	0.1 - 1	101-68-8	202-966-0

4. FIRST AID MEASURES

EYES: Immediately flush with plenty of water for at least 15 minutes. Get medical attention or advice.

SKIN: Remove contaminated clothing to prevent further skin exposure and dispose of properly. In situations involving considerable skin contact, place the contaminated person in a deluge shower for at least 15 minutes. For minor exposures, wash thoroughly with soap and clean water. Get medical attention if irritation persists.

INGESTION: If ingested, get immediate medical attention. Do not induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to a victim who is unconscious or is having convulsions.

INHALATION: Remove to fresh air. Get medical attention immediately for a large dose exposure or if cough or other symptoms develop. Administer oxygen or artifical respiration as needed.

NOTES TO PHYSICIAN: Treat symptomatically and supportively.
Eyes: Stain for evidence of corneal injury. If cornea is burned, apply antibiotic/steroid preparation as needed.
Skin: This product contains a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.
Ingestion: Treat symptomatically.
Inhalation: This material contains a known pulmonary sensitizer.
Any individual experiencing dermal or pulmonary sensitization should be removed from exposure to any diisocyanate. May aggravate existing heart conditions, particularly those with abnormal heart rhythms. If overexposure to the solvents in this product is suspected, testing should include nervous system and brain effects including recent memory, mood, concentration, headaches and altered sleep patterns. Liver and kidney function should be evaluated. This material, if aspirated into the lungs, may cause chemical pneumonitis; treat the affected person appropriately.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: 74.4°C (166°F)

EXTINGUISHING MEDIA: Use dry chemical, carbon dioxide, or foam. Water spray (fog).

HAZARDOUS COMBUSTION PRODUCTS: Additional decomposition products include oxides of nitrogen, amines, hydrogen cyanide and isocyanate-containing compounds.

EXPLOSION HAZARDS: None known.

FIRE FIGHTING EQUIPMENT: Firefighters should wear full protective clothing including self contained breathing apparatus.

SENSITIVE TO STATIC DISCHARGE: Not known.

SENSITIVITY TO IMPACT: Not known.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Wearing the personal protective equipment designated in Section 8, carefully contain the spill and transfer to the appropriate container for disposal. Do not discharge to lakes, streams, ponds, or sewers. Dispose of in compliance with local, state, and federal regulations.

LARGE SPILL: Wearing the personal protective equipment designated in Section 8, carefully contain the spill and transfer to the appropriate container for disposal. Do not discharge to lakes, streams, ponds, or sewers. Dispose of in compliance with local, state, and federal regulations. Ventilate well while cleanup is in process and until fumes dissipate.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL: Isolate spill area. Stop discharge if safe to do so. Stop material from entering sewers or water streams. Scrape up polyurethane and deposit into appropriate containers.

LAND SPILL: Isolate spill area. Stop discharge if safe to do so. Stop material from contaminating soil. Scrape up polyurethane and deposit into appropriate containers.

7. HANDLING AND STORAGE

HANDLING: Wash hands thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, face shields, and gloves. Professionally launder contaminated clothing before re-use. Do not breathe vapors, mists or dusts. Do not breathe fumes generated when the material is overheated or burned. Use adequate ventilation. Wear respiratory protection if the material is heated, sprayed, used in a confined space or if exposure limit is exceeded. This product can produce asthmatic sensitization. Individuals with lung or breathing problems or prior allergic reactions to isocyanate must avoid fumes from this product. Wear appropriate protective equipment to avoid contact with skin and eyes.

STORAGE: Store in a cool, dry, well-ventilated area away from heat, ignition sources and direct sunlight. Water contamination should be avoided. Cool location should be 60-80 degrees F or 15-30 degrees C.

COMMENTS: Attention! Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container for food, clothing, or products for human or animal consumption, or where skin contact can occur.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		**ppm**	**mg/m^3**	**ppm**	**mg/m^3**
Xylenes (o-,m-,p- Isomers)	**TWA**	100	435	100	434
	STEL			150	651
Ethyl Benzene	**TWA**	100	435	100	434
	STEL			125	543
Methylene Disphenyl Isocyanate	**TWA**			0.005	0.051

ENGINEERING CONTROLS: Use local exhaust or general ventilation where the potential exists to exceed the PEL or TLV exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields or goggles when handling this material.

SKIN: Wear appropriate clothing to minimize skin contact with this product.

RESPIRATORY: Avoid breathing vapor and/or mists. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA) or a supplied air respirator.

OTHER USE PRECAUTIONS: Eyewash fountains and emergency showers should be readily available.

COMMENTS: Wash hands thoroughly after each use, especially before eating or smoking. Good personal hygiene practices should always be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Paste

ODOR: Solvent

COLOR: Various

pH: Not Applicable

PERCENT VOLATILE: 4

FREEZING POINT: NA = Not Applicable

FLASHPOINT AND METHOD: 74.4°C (166°F)

DENSITY: 11.22

(VOC): 3.900 %

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: Yes

STABILITY: This product is stable under normal conditions but will react slightly with water to release some heat and carbon dioxide. The reaction is not violent. Carbon dioxide, carbon monoxide and in high temperature (800 °F) low oxygen atmospheres such as in fire situations, hydrogen cyanide may be released.

POLYMERIZATION: Hazardous polymerization can occur with elevated temperatures or contact with water.

CONDITIONS TO AVOID: Avoid strong acids. Avoid amines, strong bases, alcohols and metallic hydrides.

HAZARDOUS DECOMPOSITION PRODUCTS: Unknown due to the complex nature of this material. Fumes from complete or incomplete combustion may include carbon dioxide, carbon monoxide, water vapor, oxides of nitrogen and a wide variety of innocuous or toxic fumes. Additional decomposition products include oxides of nitrogen, amines, hydrogen cyanide and isocyanate-containing compounds.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Irritating to the eyes.

SKIN EFFECTS: Irritating to the skin.

CARCINOGENICITY

Chemical Name	IARC Status
Ethyl Benzene	2B

Notes: This product contains Methylene Diphenyl Isocyanate (MDI). MDI is not listed by the NTP, IARC or regulated by OSHA as a carcinogen. However, it has been shown to alter cells in certain experiments. Although inconclusive, these cellular changes are thought to indicate potential carcinogenicity.

REPEATED DOSE EFFECTS: Single large does, and/or repeated exposures, may lead to sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms), causing an individual to experience adverse effects at exposure levels well below exposure limits or guidelines. Symptoms may include chest tightness, wheezing, shortness of breath, coughing or asthmatic attack, and may be delayed up to several hours. Extreme asthmatic reactions can be life threatening. Once sensitized, an individual may experience adverse symptoms upon exposure to dust, cold air or other irritants. Sensitization can last several months, years or be permanent in some cases. Chronic exposure may cause lung damage, including fibrosis and decreased lung function, which may be permanent.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Organic solvents produce slight to moderate toxicity to aquatic life. Insufficient data exists to evaluate the effect on plants, birds or land animals.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

OTHER SHIPPING INFORMATION: Generators must consult DOT laws and regulations to ensure the product is being transported appropriately.

AIR (ICAO/IATA): Not regulated as dangerous goods.

VESSEL (IMO/IMDG): Not regulated as dangerous goods.

COMMENTS: Not regulated as dangerous goods.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: This product poses the following physical and health hazard(s) as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986:

FIRE: Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

313 REPORTABLE INGREDIENTS: This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR372. CAS #: 101-68-8 MDI, CAS #: 1330-20-7 Xylene and CAS #100-41-4 Ethyl Benzene.

EPCRA SECTION 313 SUPPLIER NOTIFICATION

Chemical Name	Wt.%	CAS
Xylenes (o-,m-,p- Isomers)	1 - 5	1330-20-7
Ethyl Benzene	0.5 - 1.5	100-41-4

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Chemical Name	Wt.%	CERCLA RQ
Xylenes (o-,m-,p- Isomers)	1 - 5	100
Ethyl Benzene	0.5 - 1.5	1,000
Methylene Disphenyl Isocyanate	0.1 - 1	5,000

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS
Xylenes (o-,m-,p- Isomers)	1330-20-7
Ethyl Benzene	100-41-4
Methylene Disphenyl Isocyanate	101-68-8

CALIFORNIA PROPOSITION 65: This product contains the following product on California's Proposition 65 List: CAS# 100-41-4 Ethyl Benzene.

Chemical Name	Wt.%	Listed
Ethyl Benzene	0.5 - 1.5	Cancer

16. OTHER INFORMATION

PREPARED BY: Technical Staff

REVISION SUMMARY: Revision #: 4. This MSDS replaces the January 28, 2010 MSDS. Any changes in information are as follows: In Section 14: International (IMO /IMDG) - Note, Air (IATA /ICAO) - Note, TREMCARD - Additional Information

NFPA STORAGE CLASSIFICATION: Health 2, Flammability 2, Physical Hazard 0

HMIS RATINGS NOTES: Health 2, Flammability 2, Physical Hazard 0, PPE X

HMIS FLAMMABILITY 0
HEALTH HAZARD 1 | 0 REACTIVITY
SPECIFIC HAZARD

PHYSICAL PERFORMANCE PROPERTIES

AMES'® BLOCK & WALL™ LIQUID RUBBER

Ames' Block & Wall Liquid Rubber is a waterproofing sealant for below grade walls and interior applications. Block & Wall Liquid Rubber is heavy duty, yet easily applied by brush, roller or sprayer. This product is formulated to resist fungus, mold and mildew. Our subterranean applications system will withstand up to 100 P.S.I. water pressures. It is potable water compliant. Block & Wall Liquid Rubber cleans up easily with water.

Appearance (cured).....	Liquid Rubber
Appearance (liquid).....	Thick, white liquid
Color.....	Tintable white (Ames Block & Wall Liquid Rubber may be tinted to pastel colors using universal latex colorants)
Solar Reflectance.....	Up to 98%
Mildew resistance.....	Excellent
Weight.....	Approx. 8.8 lbs/1gallon
Solvent.....	Water
Odor.....	Mild
Permeability.....	.016 perm rating with 10 mils/min. of coating
Elongation.....	Up to 700%
Strength.....	250 PSI
Viscosity.....	160 krebs approximate
PH as shipped.....	9.5 - 10
Specific Gravity.....	1.10
Freeze/Thaw Stability Test of dried material.....	At -35 degrees F, Ames Block & Wall Liquid Rubber passes 180 degree bend test. If frozen while in liquid form, the product may be rendered unusable.
Setting time.....	30 min. - 1 hour at 50° -100° F. at less than 30% humidity
Cure time.....	Approximately 2 to 8 hours at 50° to 100° F. at less than 30% humidity
Material composition.....	Waterbase elastomeric rubberized plastic
Toxicity.....	Non-toxic when dry
Flash point.....	1800° C
Fire rating.....	Class "A" ASTM E-108. over AC. ASTM E-84 zero smoke
Coverage rate.....	Approx. 100 square feet per gallon
Voc Content.....	Less than 1 gram per liter

Formulas have been tested in accordance with ASTM E 108 E-108 Class "A" over AC.ASTM E-84 zero smoke, zero ignition. **Important:** Apply a small amount to ensure the product performs satisfactorily.

Ames Research Laboratories, Inc., PO Box 1350 Jefferson, OR USA 97352
Toll-Free: 1-888-345-0809 • Phone: 503-588-3330 • Fax: 503-364-2380 • www.amesresearch.com • amesstaff@amesresearch.com

Ames' Block & Wall Liquid Rubber™

Material **S**afety **D**ata **S**heets (MSDS)

HMIS-NPCA-MFPA	Health	1
	Flammability	1
	Reactivity	0
	Personal Protection	

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION		
PRODUCT NAME	Ames' Block & Wall Liquid Rubber™	
IDENTIFICATION		
DATE PRINTED		
PRODUCT USE/CLASS	Latex Paints & Coatings, water born dispersion	
MANUFACTURER	Ames Research Laboratories, Inc. Jefferson, Oregon 97352	**Corporate Office:** PO Box 1350 Jefferson, Oregon 97352-1350
EMERGENCY TELEPHONE	1-888-345-0809	
PREPARER (optional)		
PHONE	(503) 588-3330	
PREPARE DATE	12-11-08	

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS			
ITEM	CHEMICAL NAME	CAS NUMBER	% BY WT
01	Carboxylated Acryl Styrene Butadiene rubber (proprietory trade secret claims)	Proprietary	45-55
02	Water	7732-18-5	45-55
03			
04			
05			

Material is not known to contain Toxic Chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372. Product alkaline to PH-10. May cause stomach distress if ingested. Do not ingest.

SECTION 3 – HAZARDOUS IDENTIFICATION	
EMERGENCY OVERVIEW: No significant immediate hazards for emergency response are known. Milky white liquid emulsion. Slight odor. Dike and contain spill. Avoid dilution of spills.	
EYE CONTACT	May cause slight transient (temporary) eye irritation. Corneal injury unlikely.
SKIN CONTACT	Short single exposure not likely to cause significant skin irritation. Prolonged and repeated exposure may cause slight skin irritation. Material may stick to skin causing irritation upon removal. A single, prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.
INHALATION	With good ventilation, a single exposure to vapors is not expected to cause adverse effects.
INGESTION	Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
SYSTEMIC EFFECTS (Other target organs)	No relevant information found.

SECTION 4 – FIRST AID MEASURES	
FIRST AID	
EYE CONTACT	Immediately flush eyes with large quantities of clean water for at least 15 minutes. Consult a physician.
SKIN CONTACT	Wash skin with soap and water. Remove contaminated clothing. Seek medical attention if irritation develops. Wash contaminated clothing before reuse.
INHALATION	Remove affected individual(s) to fresh air. Seek medical attention if breathing difficulty develops.
INGESTION	If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
NOTES TO PHYSICIAN	No specific antidote. Supportive care. Treatment based on judgement of the physician in response to reactions of the patient.

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SECTION 5 - FIRE FIGHTING MEASURES	
FLASH POINT	Not applicable
METHOD USED	Not applicable
AUTOIGNITION TEMPERATURE	Not applicable
FLAMMABLE LIMITS IN AIR (LOWER)	Not applicable
FLAMMABLE LIMITS IN AIR (UPPER)	Not applicable
FIRE FIGHTING EXTINGUISHING MEDIA	To extinguish combustible residues of this product, use water fog, carbon dioxide, dry chemical or foam.
FIRE FIGHTING EQUIPMENT	Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. If protective equipment is not available or not used, fight fire from a protected location or safe distance.
FIRE FIGHTING INSTRUCTIONS	Keep people away. Isolate fire area and deny unnecessary entry. Containers of this material may build up pressure if exposed to heat (fire). Use a water spray to cool fire-exposed containers.
FIRE/EXPLOSION HAZARDS	This material will not burn unless it is evaporated to dryness.
HAZARDOUS COMBUSTION PRODUCTS	Under fire conditions, some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to hydrocarbons, carbon monoxide and dense smoke.

SECTION 6 – ACCIDENTAL RELEASE MEASURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:	
PERSONAL PRECAUTIONS	Avoid unnecessary exposure and contact. Barricade the area to restrict access. Persons not wearing protective equipment (see section 8) should be excluded from the area of the spill until clean-up has been completed.
ENVIRONMENTAL PRECAUTIONS	Stop leak at source when it is safe to do so. Dike and contain spill. Prevent spilled material from contaminating soil or entering drains, sewers, streams or other bodies of water.
CLEANUP PROCEDURES	Avoid dilution with water to minimize the extent of the spill. Recover and recycle spilled latex if possible, otherwise, collect with absorbent material and transfer to appropriate containers for disposal. Water may be used for final cleaning of affected area.

SECTION 7 – HANDLING AND STORAGE	
HANDLING:	Practice reasonable care to avoid repeated, prolonged skin contact. An eye wash station and a safety shower should be readily accessible to workers wherever this material is stored or used.
STORAGE:	Keep from freezing. Store at temperatures between 40° F and 110° F. Material may develop bacteria odor on long-term storage. No safety problems known.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION	
EXPOSURE LIMITS GUIDELINES	There are no exposure limits assigned to the polymer in this product by the Occupational Safety and Health Administration (OSHA) or American Conference of Governmental Industrial Hygenists (ACGIH).
ENGINEERING CONTROLS	Good general ventilation should be sufficient for most conditions.
PERSONAL PROTECTIVE EQUIPMENT	EYES: Wear safety glasses with side shields or goggles. SKIN: Wear clean, long-sleeved, body-covering, clothing. Nitrile, neoprene®, or rubber gloves should provide protection against skin contact. INHALATION: For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, or areas are poorly ventilated, use an approved air-purifying respirator.

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SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES			
BOILING RANGE:	212ºF (100° C)	VAPOR DENSITY:	0.624 @ 80° F (26.7^{O} C)
ODOR:	Slight odor	PHYSICAL STATE	Liquid
APPEARANCE:	Thick, white liquid.	SPECIFIC GRAVITY:	0.98 - 1.04
pH	9.0 – 10.0	VAPOR PRESSURE	17.5 mm Hg @ 68° F (20° C)
FREEZING POINT	32° F (0 ^{O} C)		
SOLUBILITY	Product is sold as dilutable. Polymer component is insoluble		
ADDITIONAL INFORMATION	The physical data listed are for a series of latexes. For specific properties on any given latex, see the product bulletin.		

(See Section 16 for abbreviation legend)

SECTION 10 –STABILITY AND REACTIVITY	
STABILITY	This material is stable during storage and during its extended use.
INCOMPATIBLE MATERIALS/SUBSTANCES	Addition of chemicals, such as acids or multivalent metal salts, may cause coagulation.
CONDITIONS TO AVOID	Avoid freezing temperatures (less than 32° F or 0° C). Products decompose at elevated temperatures.
HAZARDOUS DECOMPOSITION PRODUCTS	Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Thermal decomposition may produce various hydrocarbons and irritating, acrid vapors.
HAZARDOUS POLYMERIZATION	Hazardous polymerization will not occur.

SECTION 11 – TOXICOLOGICAL PROPERTIES	
ACUTE TOXICITY (HUMANS)	Refer to section 3 for available information on potential health effects. For detailed toxicological data, write or call the address or non-emergency number shown in section 1.
SKIN:	Based on properties of similar polymers, the polymer is not hazardous.
INGESTION:	Based on properties of similar polymers, the polymer is not hazardous.
INHALATION:	Based on properties of similar polymers, the polymer is not hazardous.

SECTION 12 – ECOLOGICAL INFORMATION	
MOVEMENT & PARTITIONING	Latex dispersions will color water a milky white. No bioconcentration of the polymeric component is expected because of its high molecular weight.
DEGRADATION & PERSISTENCE	The polymeric component is not expected to biodegrade.
ECOTOXICITY	Based largely or completely on information for similar material(s): Material is practically non-toxic to aquatic organisms on an acute basis (LC50 or EC50 > 100 mg/L in the most sensitive species tested).

SECTION 13 – DISPOSAL CONSIDERATIONS	
DISPOSAL METHOD:	Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

SECTION 14 – TRANSPORTATION INFORMATION	
DEPT. OF TRANSPORTATION (DOT) – US	This product is not regulated by D. O. T. when shipped domestically by land.
TRANSPORTATION OF DANGEROUS GOODS (TDG) - CANADA	This product is not regulated by TDG when shipped domestically by land.

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SECTION 15 – REGULARTORY INFORMATION
U.S. FEDERAL REGULATIONS: Occupational Safety and Health Act (OSHA): This material is not classified as hazardous under the criteria of the US Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200. TSCA Section 8(b) – Inventory Status: All components of this material are listed on or are exempt from the US toxic Substances Control Act (TSCA) inventory. SARA Title III Section 313 Toxic Chemical List (TCL): To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements. SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: - Not to have met any hazard category.
WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) – CANADA: Workplace Hazardous Materials Information System (WHMIS) – Canada: This material is not classified as a controlled product under the Canadian workplace Hazardous Material Information System. Canadian Inventory Status: All components of this material are listed on the Canadian Domestic Substances List (DSL).
ADDITIONAL INFORMATION: California Proposition 65: This material contains a chemical known to the State of California to cause cancer. - 4-Vinylclohexene

SECTION 16 – OTHER INFORMATION				
HMIS RATINGS:	HEALTH 1	FLAMMABILITY 1	REACTIVITY 0	PERSONAL PROTECTION
PREVIOUS REVISION DATE				
REASON FOR REVISION	typo			
LEGEND:	N.A. not applicable, N.E. Not established, N.D. Not determinded			
VOLATILE ORGANIC COMPOUNDS	VOC compliant			
ABBREVIATIONS USED:	N/A (information or data not available); NTP (National Toxicology Program); IARC (International Agency for Research on Cancer); NIOSH (National Institute of occupational Safety and Health administration); PEL (Permissible Exposure Limit) [8 hr. TWA][OSHA]; TLV (Threshold Limit Value)[8 hr. TWA][ACGIH]; STEL (Short term exposure limit)[15 min. TWA][OSHA]; C (ceiling value).			
DISCLAIMER:	Ames Research Laboratories, Inc. believes that the information provided is accurate and reliable as of the date of this material safety data sheet and is given in good faith. No warranty expressed or implied is made as to the accuracy, reliability or completeness of the information. Any use of this data and information must be determined by the user to be in accordance with applicable Federal, State and Local laws and regulations. Ames Research Laboratories, Inc. urges persons receiving this information to make their own determination as to the information's suitability and applicability for an intended use. Note: This information must be included in all MSDS that are copied and distributed for this material.			

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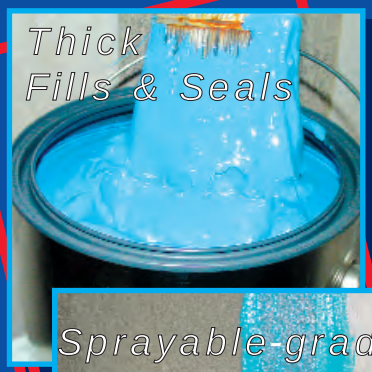
AMES' BLUE MAX™
Sprayable-Grade Liquid Rubber
Basement, ICF, Below-Grade Block & Concrete Waterproofing

Ames' Blue Max™ is a special blend of adhesive, high strength elastomeric liquid rubber, available in a sprayable-grade and a trowel-grade. It is the best technology today for waterproofing in extreme wet situations such as flat roofs, below grade foundations, basement walls, cisterns and many other applications. It is high in solids and dries to a tough 800% elastic membrane that resists cracking and peeling. Blue Max™ is impervious to water when applied in a uniform and seamless fashion with adequate millage. Blue Max sprayable-grade flows into cracks and crevices as a liquid and sets up as a durable rubber to seal leaks wherever they occur. It dries to a translucent blue color.

Blue Max is also an excellent coating for ICF (insulated concrete forms). The adhesive qualities in Blue Max actually glue surfaces together and strengthen wall construction. Blue Max out performs isocyanate urethanes, and works well as a primer and waterproofing membrane for Ames' products such as Safe-T-Deck, Maximum-Stretch, Block & Wall and many other coatings. Blue Max must be top coated for UV protection in exterior applications.

This coating contains no petroleum, is non-toxic, low odor, and environmentally friendly. It can be used as a potable water coating. Blue Max is easy to apply ~ simply roll, brush or spray. Clean up with soap and water.

Nothing else like it in the world!



This water tank was built using concrete blocks sealed only with Ames' Blue Max. This is simply a demonstration of its waterproofing and adhesive power.

WATERPROOFS & REPAIRS:

Old Flat Tar Roofs
Metal Roofs
Rusty Metal
Wood
Concrete
EPDM Rubber Roofs
Roof Valleys
Gutters
Concrete Pipes
Masonry
Roof Decks

Basement Walls
Below-Grade Walls
Plywood Sub-Roofs
Insulated Concrete Forms
Cisterns
Water Troughs
Catch Basins
Ponds & Fountains
Water Troughs
Catch Basins
Ponds
Fountains

AMES' BLUE MAX™
Trowel-Grade Liquid Rubber
Waterproofs Roofs, Walls, Decks & Concrete

Ames' Blue Max trowel-grade is a thick, velvety rich, version of our sprayable-grade Blue Max coating that can be used as a caulk or filler. Blue Max trowel-grade is thick and adhesive to bridge gaps and cracks in concrete, concrete blocks, foundations and many other applications. Blue Max trowel-grade is easy to apply with a brush or trowel. It can be used with other Ame's coatings where a filler is needed for an optimal waterproof system.

As with our sprayable-grade, Blue Max trowel-grade is highly resistant to standing water situations such as flat roofs or water containment. Blue Max is an excellent coating for ICF (insulated concrete forms), as well as metal, wood, concrete, and many other applications. Exterior applications must be topcoated for UV protection.

ENVIRONMENTALLY FRIENDLY

LOW ODOR

INSULATED I.C.F. CERTIFIED CONCRETE FORMS

WATER CLEAN-UP

VOC FREE — VOC under 0.10/0 less than 1 gram per liter

Ames Research Laboratories, Inc.
Toll-Free: 888-345-0809 • www.amesresearch.com

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HMIS FLAMMABILITY
HEALTH HAZARD 1 | 0 | 0 REACTIVITY
SPECIFIC HAZARD

PHYSICAL PERFORMANCE PROPERTIES

AMES'® BLUE MAX™

Ames' Blue Max is a special blend of adhesive, high strength elastomeric liquid rubber. It is the best technology today for waterproofing in extreme wet situations such as flat roofs, below grade foundations, basement walls, cisterns, water troughs, catch basins, ponds and fountains. It is high in solids and dries to a tough 800% elastic membrane that resists cracking and peeling. Blue Max is impervious to water when applied in a uniform and seamless fashion with adequate millage. Blue Max is available in a trowel-grade and a sprayable-grade. It dries to a translucent blue color. Water clean up.

Appearance (cured).....	Liquid Rubber
Appearance (liquid).....	Thick & creamy
Color.....	Blue
Mildew Resistance.....	Excellent
Weight.....	8.0 lbs / 1 gallon
Solvent.....	Water
Odor.....	Mild
Permeability.....	.016 E-96
Elongation.....	Up to 800%
Strength.....	Tensile ASTM D-638 14 days 625%
Humidity.....	Best applied at when humidity level is below 50%
Freeze/Thaw Stability Test.....	If frozen while in liquid form, may be damaged or solidify. Protect from freezing.
Setting time.....	Begins to dry in 30 minutes to 2 hours depending on application thickness and weather.
Cure time.....	Continues to cure for up to 2 weeks.
Toxicity.....	Non-toxic after curing.
Flash Point.....	1500° F. (estimated)
Coverage rate.....	Approximately 100 sq. ft. per gallon per coat
Voc Content.....	Less than 1 gram per liter.

Ames Research Laboratories, Inc., PO Box 1350 Jefferson, OR USA 97352
Toll-Free: 1-888-345-0809 • Phone: 503-588-3330 • Fax: 503-364-2380 • www.amesresearch.com • amesstaff@amesresearch.com

Ames' Blue Max™
Regular-grade

Material **S**afety **D**ata **S**heets (MSDS)

HMIS-NPCA-MFPA	Health	1
	Flammability	1
	Reactivity	0
	Personal Protection	

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION		
PRODUCT NAME	Ames' Blue Max™ Regular-grade	
IDENTIFICATION		
DATE PRINTED		
PRODUCT USE/CLASS	Latex Paints & Coatings, water born dispersion	
MANUFACTURER	Ames Research Laboratories, Inc. Jefferson, Oregon 97352	**Corporate Office:** PO Box 1350 Jefferson, Oregon 97352-1350
EMERGENCY TELEPHONE	1-888-345-0809	
PREPARER (optional)		
PHONE	(503) 588-3330	
PREPARE DATE	05-05-09	

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS			
ITEM	CHEMICAL NAME	CAS NUMBER	% BY WT
01	A specialty formulated waterbase man-made rubber technology. Further information provided upon qualified request to our customers. Fax your request to 503-364-2380. Include: address, phone number, and company name for further information.	Proprietary	45-55
02	Water	7732-18-5	45-55
03			

Material is not known to contain Toxic Chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372. Product alkaline to PH-10. May cause stomach distress if ingested. Do not ingest.

SECTION 3 – HAZARDOUS IDENTIFICATION	
EMERGENCY OVERVIEW: No significant immediate hazards for emergency response are known. Milky white liquid emulsion. Slight odor. Dike and contain spill. Avoid dilution of spills.	
EYE CONTACT	May cause slight transient (temporary) eye irritation. Corneal injury unlikely.
SKIN CONTACT	Short single exposure not likely to cause significant skin irritation. Prolonged and repeated exposure may cause slight skin irritation. Material may stick to skin causing irritation upon removal. A single, prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.
INHALATION	With good ventilation, a single exposure to vapors is not expected to cause adverse effects.
INGESTION	Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
SYSTEMIC EFFECTS (Other target organs)	No relevant information found.

SECTION 4 – FIRST AID MEASURES	
FIRST AID	
EYE CONTACT	Immediately flush eyes with large quantities of clean water for at least 15 minutes. Consult a physician.
SKIN CONTACT	Wash skin with soap and water. Remove contaminated clothing. Seek medical attention if irritation develops. Wash contaminated clothing before reuse.
INHALATION	Remove affected individual(s) to fresh air. Seek medical attention if breathing difficulty develops.
INGESTION	If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
NOTES TO PHYSICIAN	No specific antidote. Supportive care. Treatment based on judgement of the physician in response to reactions of the patient.

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SECTION 5 - FIRE FIGHTING MEASURES	
FLASH POINT	Not applicable
METHOD USED	Not applicable
AUTOIGNITION TEMPERATURE	Not applicable
FLAMMABLE LIMITS IN AIR (LOWER)	Not applicable
FLAMMABLE LIMITS IN AIR (UPPER)	Not applicable
FIRE FIGHTING EXTINGUISHING MEDIA	To extinguish combustible residues of this product, use water fog, carbon dioxide, dry chemical or foam.
FIRE FIGHTING EQUIPMENT	Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. If protective equipment is not available or not used, fight fire from a protected location or safe distance.
FIRE FIGHTING INSTRUCTIONS	Keep people away. Isolate fire area and deny unnecessary entry. Containers of this material may build up pressure if exposed to heat (fire). Use a water spray to cool fire-exposed containers.
FIRE/EXPLOSION HAZARDS	This material will not burn unless it is evaporated to dryness.
HAZARDOUS COMBUSTION PRODUCTS	Under fire conditions, some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to hydrocarbons, carbon monoxide and dense smoke.

SECTION 6 – ACCIDENTAL RELEASE MEASURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:	
PERSONAL PRECAUTIONS	Avoid unnecessary exposure and contact. Barricade the area to restrict access. Persons not wearing protective equipment (see section 8) should be excluded from the area of the spill until clean-up has been completed.
ENVIRONMENTAL PRECAUTIONS	Stop leak at source when it is safe to do so. Dike and contain spill. Prevent spilled material from contaminating soil or entering drains, sewers, streams or other bodies of water.
CLEANUP PROCEDURES	Avoid dilution with water to minimize the extent of the spill. Recover and recycle spilled latex if possible, otherwise, collect with absorbent material and transfer to appropriate containers for disposal. Water may be used for final cleaning of affected area.

SECTION 7 – HANDLING AND STORAGE	
HANDLING:	Practice reasonable care to avoid repeated, prolonged skin contact. An eye wash station and a safety shower should be readily accessible to workers wherever this material is stored or used.
STORAGE:	Keep from freezing. Store at temperatures between 40° F and 110° F. Material may develop bacteria odor on long-term storage. No safety problems known.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION	
EXPOSURE LIMITS GUIDELINES	There are no exposure limits assigned to the polymer in this product by the Occupational Safety and Health Administration (OSHA) or American Conference of Governmental Industrial Hygenists (ACGIH).
ENGINEERING CONTROLS	Good general ventilation should be sufficient for most conditions.
PERSONAL PROTECTIVE EQUIPMENT	EYES: Wear safety glasses with side shields or goggles. SKIN: Wear clean, long-sleeved, body-covering, clothing. Nitrile, neoprene®, or rubber gloves should provide protection against skin contact. INHALATION: For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, or areas are poorly ventilated, use an approved air-purifying respirator.

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SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES			
BOILING RANGE:	212ºF (100° C)	VAPOR DENSITY:	0.624 @ 80° F (26.7^{O} C)
ODOR:	Slight odor	PHYSICAL STATE	Liquid
APPEARANCE:	Thick, blue liquid.	SPECIFIC GRAVITY:	0.98 - 1.04
pH	9.0 – 10.0	VAPOR PRESSURE	17.5 mm Hg @ 68° F (20° C)
FREEZING POINT	32° F (0 ^{O} C)		
SOLUBILITY	Product is sold as dilutable. Polymer component is insoluble		
ADDITIONAL INFORMATION	The physical data listed are for a series of latexes. For specific properties on any given latex, see the product bulletin.		

(See Section 16 for abbreviation legend)

SECTION 10 –STABILITY AND REACTIVITY	
STABILITY	This material is stable during storage and during its extended use.
INCOMPATIBLE MATERIALS/SUBSTANCES	Addition of chemicals, such as acids or multivalent metal salts, may cause coagulation.
CONDITIONS TO AVOID	Avoid freezing temperatures (less than 32° F or 0° C). Products decompose at elevated temperatures.
HAZARDOUS DECOMPOSITION PRODUCTS	Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Thermal decomposition may produce various hydrocarbons and irritating, acrid vapors.
HAZARDOUS POLYMERIZATION	Hazardous polymerization will not occur.

SECTION 11 – TOXICOLOGICAL PROPERTIES	
ACUTE TOXICITY (HUMANS)	Refer to section 3 for available information on potential health effects. For detailed toxicological data, write or call the address or non-emergency number shown in section 1.
SKIN:	Based on properties of similar polymers, the polymer is not hazardous.
INGESTION:	Based on properties of similar polymers, the polymer is not hazardous.
INHALATION:	Based on properties of similar polymers, the polymer is not hazardous.

SECTION 12 – ECOLOGICAL INFORMATION	
MOVEMENT & PARTITIONING	Latex dispersions will color water a milky white. No bioconcentration of the polymeric component is expected because of its high molecular weight.
DEGRADATION & PERSISTENCE	The polymeric component is not expected to biodegrade.
ECOTOXICITY	Based largely or completely on information for similar material(s): Material is practically non-toxic to aquatic organisms on an acute basis (LC50 or EC50 > 100 mg/L in the most sensitive species tested).

SECTION 13 – DISPOSAL CONSIDERATIONS	
DISPOSAL METHOD:	Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

SECTION 14 – TRANSPORTATION INFORMATION	
DEPT. OF TRANSPORTATION (DOT) – US	This product is not regulated by D. O. T. when shipped domestically by land.
TRANSPORTATION OF DANGEROUS GOODS (TDG) - CANADA	This product is not regulated by TDG when shipped domestically by land.

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SECTION 15 – REGULARTORY INFORMATION

U.S. FEDERAL REGULATIONS: Occupational Safety and Health Act (OSHA): This material is not classified as hazardous under the criteria of the US Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 8(b) – Inventory Status: All components of this material are listed on or are exempt from the US toxic Substances Control Act (TSCA) inventory.

TSCA Section 12(b)-Export Notification: 4-Vinylcyclohexene (CAS# 100-40-3) is subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Reporting requirements.

SARA Title III Section 304 – CERCLA: Components of this product are not subject to reporting under the requirements of the Comprehensive Environmental Response. Compensation, and Liability Act. (CERCLA)

SARA Title III Section 313 Toxic Chemical List (TCL): To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: - Not to have met any hazard category.

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) – CANADA: Workplace Hazardous Materials Information System (WHMIS) – Canada: This material is not classified as a controlled product under the Canadian workplace Hazardous Material Information System.

Canadian Inventory Status: All components of this material are listed on the Canadian Domestic Substances List (DSL).

Additional Canadian Regulatory Information: This product does not contain a substance present on the WHMIS Ingredient Disclosure List. (IDL) which is at or above the specified concentration limit.

ADDITIONAL INFORMATION: California Proposition 65: This material contains a chemical known to the State of California to cause cancer. The California Safe Drinking Water and Toxic Enforcement Act of 1986 requires that clear and reasonable warning be given prior to exposing any person to this chemical.
- 4-Vinylclohexene

SECTION 16 – OTHER INFORMATION

HMIS RATINGS:	HEALTH 1	FLAMMABILITY 1	REACTIVITY 0	PERSONAL PROTECTION
PREVIOUS REVISION DATE	12-11-08			
REASON FOR REVISION	Added information for Canada			
LEGEND:	N.A. not applicable, N.E. Not established, N.D. Not determinded			
VOLATILE ORGANIC COMPOUNDS	VOC compliant			
ABBREVIATIONS USED:	N/A (information or data not available); NTP (National Toxicology Program); IARC (International Agency for Research on Cancer); NIOSH (National Institute of occupational Safety and Health administration); PEL (Permissible Exposure Limit) [8 hr. TWA][OSHA]; TLV (Threshold Limit Value)[8 hr. TWA][ACGIH]; STEL (Short term exposure limit)[15 min. TWA][OSHA]; C (ceiling value).			
DISCLAIMER:	Ames Research Laboratories, Inc. believes that the information provided is accurate and reliable as of the date of this material safety data sheet and is given in good faith. No warranty expressed or implied is made as to the accuracy, reliability or completeness of the information. Any use of this data and information must be determined by the user to be in accordance with applicable Federal, State and Local laws and regulations. Ames Research Laboratories, Inc. urges persons receiving this information to make their own determination as to the information's suitability and applicability for an intended use. Note: This information must be included in all MSDS that are copied and distributed for this material.			

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White Retarder Seam Tape

- White retarder material with adhesive made to adhere to radon retarder/crawlspace barrier (for seams).
- 4" X 210'
- Matches white side of barrier and blends in for reduced visibility/seamless appearance.

Other related products:

6 MIL MULTI PURPOSE DURA-SKRIM PLASTIC

BUTYL SEALANT 10 oz

RB-205 RETARDER BUTTONS

RB400 WB RADON RETARDER

©2010 Radon Control Inc.

INSTALLATION & OPERATING INSTRUCTIONS
Instruction P/N IN015 Rev E
FOR *CHECKPOINT IIa*™ P/N 28001-2 & 28001-3
RADON SYSTEM ALARM

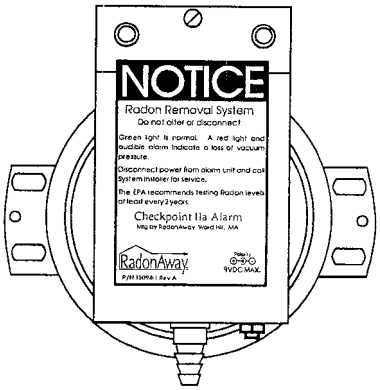
INSTALLATION INSTRUCTIONS
(WALL MOUNTING)

Select a suitable wall location near a vertical section of the suction pipe. The unit should be mounted about four or five feet above the floor and as close to the suction pipe as possible. Keep in mind that with the plug-in transformer provided, the unit must also be within six feet of a 120V receptacle. **NOTE: The Checkpoint IIa is calibrated for vertical mounting, horizontal mounting will affect switchpoint calibration.**

Drill two ¼" holes 4" apart horizontally where the unit is to be mounted.

Install the two ¼" wall anchors provided.

Hang the CHECKPOINT IIa from the two mouting holes located on the mounting bracket. Tighten the mounting screws so the unit fits snugly and securely against the wall.



Drill a 5/16" hole into the side of the vent pipe about 6" higher than the top of the unit.

Insert the vinyl tubing provided about 1" inside the suction pipe.

Cut a suitable length of vinyl tubing and attach it to the pressure switch connector on the CHECKPOINT IIa.

CALIBRATION AND OPERATION.

The CHECKPOINT IIa units are calibrated and sealed at the factory to alarm when the vacuum pressure falls below the factory setting and should not normally require field calibration. Factory Settings are:
28001-2 -.25" WC Vacuum
28001-3 -.10" WC Vacuum

To Verify Operation:

With the exhaust fan off or the pressure tubing disconnected and the CHECKPOINT IIa plugged in, both the red indicator light and the audible alarm should be on.

Turn the fan system on or connect the pressure tubing to the fan piping. The red light and the audible alarm should go off. The green light should come on.

Now turn the fan off. The red light and audible alarm should come on in about two or three seconds and the green light should go out.

WARRANTY INFORMATION

Subject to applicable consumer protection legislation, RadonAway warrants that the CHECKPOINT IIa will be free from defective material and workmanship for a period of (1) year from the date of purchase. Warranty is contingent on installation in accordance with the instructions provided. This warranty does not apply where repairs or alterations have been made or attempted by others; or the unit has been abused or misused. Warranty does not include damage in shipment unless the damage is due to the negligence of RadonAway. All other warranties, expressed or written, are not valid. To make a claim under these limited warranties, you must return the defective item to RadonAway with a copy of the purchase receipt. RadonAway is not responsible for installation or removal cost associated with this warranty. In no case is RadonAway liable beyond the repair or replacement of the defective product FOB RadonAway.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THERE IS NO WARRANTY OF MERCHANTIBILITY. ALL OTHER WARRANTIES, EXPRESSED OR WRITTEN, ARE NOT VALID.

For service under these warranties, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. **No returns can be accepted without an RMA.** If factory return is required, the customer assumes all shipping costs to and from factory.

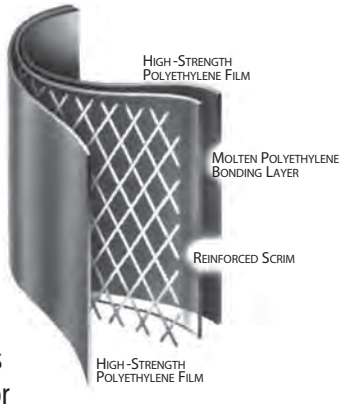
Manufactured by:
RadonAway
Ward Hill, MA
(978)-521-3703

DURA♦SKRIM® 8BB, 8WB, 12BB & 12WB

Four-Layer Reinforced Extrusion Laminate

RAVEN INDUSTRIES

Product Description



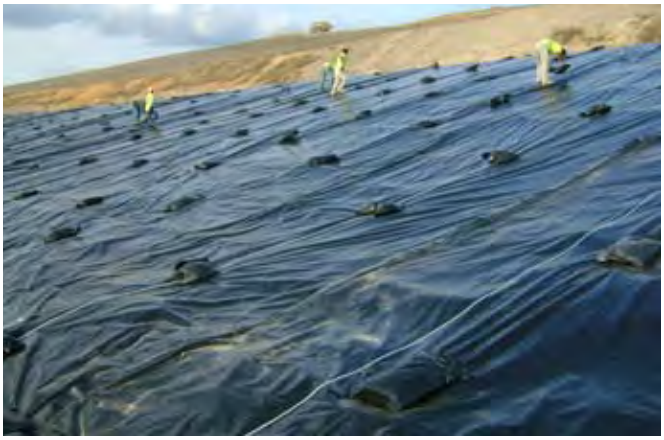
DURA♦SKRIM® 8BB, 8WB, 12BB and 12WB consist of two sheets of high-strength virgin polyethylene film laminated together with a third layer of molten polyethylene. The white outer layer (DURA♦SKRIM 8WB and 12WB) contains UV inhibitors and thermal stabilizers and the black outer layer(s) contains carbon black to enhance outdoor life. The white outer layer is also designed to reduce heat build up and condensation. A heavy scrim reinforcement placed between these plies greatly enhances tear resistance and increases service life. DURA♦SKRIM's heavy-duty diamond reinforcement responds to tears immediately by surrounding and stopping the tear.

Product Use

DURA♦SKRIM® 8BB, 8WB, 12BB and 12WB are used in more demanding applications requiring high tear resistance. They perform well as medium weight liners or covers and meet or exceed ASTM E-1745 Class "C" standard as an underslab vapor retarder. Please inquire about DURA♦SKRIM® R8BV and R12BV for long-term applications up to 5 years, meeting GRI-GM22 Standard Specifications for scrim reinforced geomembranes used in exposed, temporary applications.

Size & Packaging

DURA♦SKRIM® 8BB, 8WB, are available in a variety of widths up to 125,000 square feet and up to 80,000 square feet in 12BB and 12WB. All panels are accordion folded and tightly rolled on a heavy-duty core for ease of handling and time-saving installation.



Temporary Rain Shed Cover

Product	Part #
DURA♦SKRIM 8BB	R8BBR
DURA♦SKRIM 8WB	R8WBK
DURA♦SKRIM 12BB	R12BBR
DURA♦SKRIM 12WB	R12WBK

APPLICATIONS

- Cargo Coverings
- Interim Landfill Covers
- Daily Landfill Covers
- Temporary Erosion Control
- Divider Curtains
- Remediation Covers or Liners
- Pit/Pond Liners
- Underslab Vapor Retarders
- Temporary Earthen Liners
- Temporary Rainshed Covers

DURA♦SKRIM® 8BB, 8WB, 12BB & 12WB

ISO 9001:2008 CERTIFIED MANAGEMENT SYSTEM

Four-Layer Reinforced Extrusion Laminate

		DURA♦SKRIM 8BB & 8WB		DURA♦SKRIM 12BB & 12WB	
PROPERTIES	**TEST METHOD**	Imperial	Metric	Imperial	Metric
APPEARANCE		Black/Black or White/Black		Black/Black or White/Black	
THICKNESS, NOMINAL		8 mil	0.20 mm	12 mil	0.30 mm
WEIGHT		38 lbs/MSF 5.5 oz./yd^2	185 g/m^2	58 lbs/MSF 8.4 oz./yd^2	283 g/m^2
CONSTRUCTION		Extrusion laminated with scrim reinforcement			
***TENSILE STRENGTH** lbf/in. (N/cm)	ASTM D7003	60 lbf	105 N	64 lbf	112 N
***ELONGATION AT BREAK**	ASTM D7003	600%	600%	650%	650%
***GRAB TENSILE**	ASTM D7004	80 lbf	356 N	100 lbf	445 N
****TONGUE TEAR**	ASTM D5884	30 lbf	133 N	40 lbf	178 N
CBR PUNCTURE RESISTANCE	ASTM D6241	240 lbf	1068 N	290 lbf	1290 N
MULLEN BURST RESISTANCE	ASTM D751	70 psi	482 kPa	100 psi	689 kPa
MAXIMUM USE TEMPERATURE		180°F	82°C	180°F	82°C
MINIMUM USE TEMPERATURE		-70°F	-57°C	-70°F	-57°C
PERMEABILITY					
WVTR	ASTM E96 Procedure B	0.030 g/100in^2/day	0.46 g/m^2/day	0.023 g/100in^2/day	0.35 g/m^2/day
PERMS grains/(ft^2·hr·in·Hg) (g/(24hr·m^2·mm Hg))	ASTM E96 Procedure B	0.066 Perms	(0.044) Perms	0.051 Perms	(0.034) Perms

*Tests are an average of diagonal directions.
** Test are an average of machine and transverse directions.

DURA♦SKRIM® 8BB, 8WB, 12BB and 12WB are four-layer reinforced extrusion laminates. The black outer layers consist of a high-strength polyethylene film containing carbon black. The white sides contain UV and thermal stabilizers. DURA♦SKRIM® 8 and 12 mil are reinforced with a minimum of a 1000 denier scrim laid in a diagonal pattern spaced 3/8" apart with an additional machine direction scrim every 3" across the width. The individual plies are laminated together with molten polyethylene.

DURA♦SKRIM® 8 and 12 both meet or exceed ASTM E-1745, Class "C" standard for water vapor retarders used in contact with soil or granular fill under concrete slabs.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. Chemical resistance as well as other performance criteria is not implied or given and actual testing must be performed for applicability in specific applications and/or conditions. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.

RAVEN INDUSTRIES

Engineered Films Division
P.O. Box 5107
Sioux Falls, SD 57117-5107
Ph: (605) 335-0174 • Fx: (605) 331-0333

Toll Free: 800-635-3456
Email: efdsales@ravenind.com
www.ravenefd.com

Limited Warranty available at www.RavenEFD.com

MATERIAL SAFETY DATA SHEET		QUICK IDENTIFIER (In Plant Common Name)	
		Dura-Skrim 12WB	R12WBK
Manufacturer's Name	RAVEN INDUSTRIES INC.	***Emergency Telephone Numbers***	800-635-3456 605-335-0174
Address	P.O. Box 5107 Sioux Falls, SD 57117	***Other Information***	1812 "E" Avenue Sioux Falls, SD 57104
Signature of Person Responsible for Preparation	Don Smith	***Date Prepared***	**June 1, 2006**

Section 1 - IDENTITY

Common Name: (Used on Label) (Trade Name & Synonyms)	Dura-Skrim 12WB	***CAS Number(s)***	26221-73-8 25038-59-9
Chemical Name	**Copolymer of Ethylene and Octene-1 film 91%** **Polyester fiber 9%**	***Chemical Family***	Polyolefin Polyester
Formula	(CH2 - CH2) n		

Section 2 - HAZARDOUS INGREDIENTS

Principal Hazardous Component(s) - Chemical and Common Nam	***%***	***Threshold Limit Value (units)***
None		

Section 3 - PHYSICAL & CHEMICAL CHARACTERISTICS (Fire & Explosion Data)

Boiling Point	Not Applicable (N/A)			***Specific Gravity***	N/A	***Vapor Pressure, mmHg***	N/A
Percent Volatile by Volume (%)	N/A	***Vapor Density***	N/A	***Evaporation Rate***	N/A		
Solubility in Water	Insoluble in Water			***Reactivity in Water***	N/A		
Appearance and Odor	White, Black, odorless reinforced plastic film.						
Flash Point	N/A	***Flammability Limits in Air, by Volume (%)***	***Lower*** N/A	***Upper*** N/A	***Auto Ignition Temperature***	>660°F (estimate based upon raw material AIT)	
Extinguisher Media	Use water spray or dry chemical						

Special Fire Fighting Proced. Fire fighters should wear a self-contained breathing apparatus when there is a possibility of exposure to smoke, fumes or hazardous decomposition products. If possible, water should be applied as a spray from a fogging nozzle since this material is a surface burning material.

Unusual Fire and Explosion Hazards None Known

Section 4 - PHYSICAL HAZARDS

Stability	***Unstable***		***Conditions to Avoid*** Temperatures over 570°F may release combustible gases.
	Stable	X	
Incompatibility (Materials to Avoid)	None Known		
Hazardous Decomposition Products	Combustion will produce CO2, CO and organic vapors		
Hazardous Polymerization	***May Occur***		***Conditions to Avoid*** N/A
	Will not Occur	X	

Section 5 - HEALTH HAZARDS

Threshold Limit Value	N/A

Signs and Symptoms of Exposure

1. Acute Overexposure	Not Determined	***2. Chronic Overexposure***	Not Determined

Medical Conditions Generally Aggravated by Exposure	There are no known medical conditions aggravated by exposure to this product.

Chemical Listed as Carcinogen or Potential Carcinogen		***National Toxicology Program***	Not Listed	***L.A.R.C. Monographs***	Not Listed	***OSHA*** Not Listed
OSHA Permissible Exposure Limit	None	***ACGIH Threshold Limit Value***	None	***Other Expos. Limit Used***	None	

Emergency and First Aid Procedures	Most problems will result from exposure to molten materials.
1. Inhalation	N/A
2. Eyes	If contacted by molten material, immediately flush eyes with plenty of cool water for at least 15 minutes. Do not permit victim to rub eyes. Immediately seek medical attention.
3. Skin	If contact by molten material, cool immediately with cool water. Do not attempt to remove any solidified material. Immediately seek medical attention.
4. Ingestion	If material is ingested, contact a physician or Poison Control Center as appropriate whenever any foreign object is swallowed.

Section 6 - SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type)	During Thermal Processing

Ventilation	***Local Exhaust***	***Mechanical (General)***	***Special***	***Other***
N/A	N/A	N/A	N/A	N/A

Protective Gloves	Wear protective gloves during thermal processing.	***Eye Protection***	Wear eye protection during thermal processing.
Other Protective Clothing or Equipment	none		

Section 7 - SPECIAL PRECAUTIONS AND SPILL / LEAK PROCEDURES

Precautions to be Taken in Handling and Storage	This product should be stored in a manner that they are not exposed to heat and sources of ignition. A static charge may be present on finished products.
Other Precautions	None
Steps to be Taken in Case Material is Released or Spilled	N/A
Waste Disposal Methods	Dispose in accordance with local, state and federal regulations

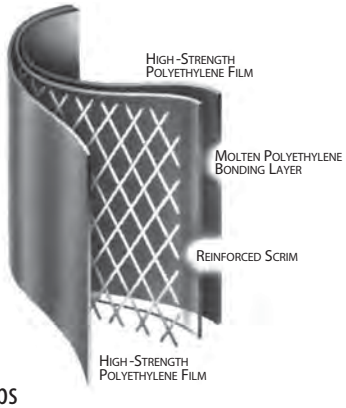
IMPORTANT - Do not leave blank spaces. If information is unavailable, unknown or does not apply, so indicate

DURA•SKRIM® 6BB, 6WB & 6WW

Four-Layer Reinforced Extrusion Laminate

RAVEN INDUSTRIES

Product Description



DURA•SKRIM® 6BB, 6WB & 6WW are economical, reinforced films designed for applications requiring puncture resistance and high tear strengths. A heavy-duty scrim reinforcement, laminated between two layers of virgin high-strength polyethylene film, results in a material that resists punctures and immediately stops tears. The addition of carbon black and ultra violet inhibitors to DURA•SKRIM® 6BB, 6WB and 6WW, respectively, increases outdoor longevity. DURA•SKRIM® 6 is the first choice for applications requiring greater performance than common 6 and 10 mil plastic sheeting.

Product Use

DURA•SKRIM® 6BB, 6WB & 6WW are used in short to mid-term applications requiring a light weight, tear-resistant, reinforced film. The white side of DURA•SKRIM® 6WB and 6WW are excellent choices for covering applications that require minimal heat build up and condensation. DURA•SKRIM® 6WW meets or exceeds ASTM E-1745, Class "C" standard as an underslab vapor retarder and is an excellent choice as an in-wall and roof vapor retarder as well.

Size & Packaging

DURA•SKRIM® 6BB, 6WB & 6WW are available in a variety of widths and lengths. Panel sizes up to 100,000 square feet are available. All panels are accordion folded and tightly rolled on a heavy-duty core for ease of handling and time-saving installation.

Pile Covers

Product	Part #
DURA•SKRIM 6BB	R6BB
DURA•SKRIM 6WB	R6WBK
DURA•SKRIM 6WW	R6WWK

APPLICATIONS

- Construction Site Covers
- Temporary Erosion Control
- Lumber Covers
- Shipping Covers
- Pallet Covers
- Remediation Covers
- Cargo Wraps
- Insulation Membranes
- Building Enclosures
- Concrete Curing Covers
- Silage Covers
- Temporary Walls
- Fumigation Covers

DURA•SKRIM® 6BB, 6WB & 6WW

ISO 9001:2008 CERTIFIED MANAGEMENT SYSTEM

Four-Layer Reinforced Extrusion Laminate

		DURA•SKRIM 6BB		DURA•SKRIM 6WB		DURA•SKRIM 6WW	
PROPERTIES	**TEST METHOD**	Imperial	Metric	Imperial	Metric	Imperial	Metric
APPEARANCE		Black/Black		White/Black		White/White	
THICKNESS, NOMINAL		6 mil 0.	15 mm	6 mil 0.	15 mm	6 mil	0.15 mm
WEIGHT		24 lbs/MSF 3.5 oz/yd2	117 g/m²	27 lbs/MSF 3.9 oz/yd2	132 g/m²	28 lbs/MSF 4.0 oz/yd2	137 g/m²
CONSTRUCTION		Extrusion laminated with scrim reinforcement					
TENSILE STRENGTH lbf/in. (N/cm)	ASTM D7003	42 lbf.	187 N	42 lbf.	187 N	42 lbf.	187 N
ELONGATION AT BREAK	ASTM D7003	450%	450%	450%	450%	450%	450%
GRAB TENSILE	ASTM D7004	65 lbf.	289 N	65 lbf.	289 N	65 lbf.	289 N
***TRAPEZOID TEAR**	ASTM D4533	50 lbf.	222 N	50 lbf.	222 N	50 lbf.	222 N
HYDROSTATIC RESISTANCE	ASTM D751	40 psi	280 kPa	40 psi	280 kPa	40 psi	280 kPa
MULLEN BURST	ASTM D751	60 psi	413 kPa	60 psi	413 kPa	60 psi	413 kPa
MAXIMUM USE TEMPERATURE		180°F	82°C	180°F	82°C	180°F	82°C
MINIMUM USE TEMPERATURE		-70°F	-57°C	-70°F	-57°C	-70°F	-57°C
PERMEABILITY							
WVTR	ASTM E96 Method A	0.03 g/100in²/day	0.5 g/m²/day	0.03 g/100in²/day	0.5 g/m²/day	0.03 g/100in²/day	0.5 g/m²/day
PERM RATING grains/(ft²·hr·in·Hg) (g/(24hr·m²·mm Hg))	ASTM E96 Method A	0.07 Perms	(0.05) Perms	0.07 Perms	(0.05) Perms	0.07 Perms	(0.05) Perms

*Tests are an average of diagonal directions.

DURA♦SKRIM® 6WW meets or exceeds ASTM E-84 standard, Class "A" for surface burning characteristics of building materials and also ASTM E-1745, Class "C" standard for water vapor retarders used in contact with soil or granular fill under concrete slabs.

DURA♦SKRIM® 6BB, 6WB & 6WW are four-layer reinforced extrusion laminates. The outer layers consist of a high-strength polyethylene. Carbon black in the 6BB and UV stabilizers in the 6WW increase longevity.

DURA♦SKRIM® 6BB, 6WB & 6WW are reinforced with a minimum of 1000 denier scrim laid in a diagonal pattern spaced 3/8" apart.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. Chemical resistance as well as other performance criteria is not implied or given and actual testing must be performed for applicability in specific applications and/or conditions. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.

RAVEN INDUSTRIES

Engineered Films Division
P.O. Box 5107
Sioux Falls, SD 57117-5107
Ph: (605) 335-0174 • Fx: (605) 331-0333

Toll Free: **800-635-3456**
Email: **efdsales@ravenind.com**
www.ravenefd.com

Limited Warranty available at www.RavenEFD.com

10/10 EFD 1073

MATERIAL SAFETY DATA SHEET	QUICK IDENTIFIER (In Plant Common Name)	
	Dura-Skrim 6WB	R6WBK

Manufacturer's Name	RAVEN INDUSTRIES INC.	***Emergency Telephone Numbers***	800-635-3456 605-335-0174
Address	P.O. Box 5107 Sioux Falls, SD 57117	***Other Information***	1812 "E" Avenue Sioux Falls, SD 57104
Signature of Person Responsible for Preparation	Don Smith	***Date Prepared***	**June 1, 2006**

Section 1 - IDENTITY

Common Name: (Used on Label) (Trade Name & Synonyms)	Dura-Skrim 6WB	***CAS Number(s)***	26221-73-8 25038-59-9
Chemical Name	**Copolymer of Ethylene and Octene-1 film 80%** **Polyester fiber 20%**	***Chemical Family***	Polyolefin Polyester
Formula	(CH2 - CH2) n		

Section 2 - HAZARDOUS INGREDIENTS

Principal Hazardous Component(s) - Chemical and Common Nam	***%***	***Threshold Limit Value (units)***
None		

Section 3 - PHYSICAL & CHEMICAL CHARACTERISTICS (Fire & Explosion Data)

Boiling Point	Not Applicable (N/A)			***Specific Gravity***	N/A	***Vapor Pressure, mmHg***	N/A
Percent Volatile by Volume (%)	N/A	***Vapor Density***	N/A	***Evaporation Rate***	N/A		
Solubility in Water	Insoluble in Water			***Reactivity in Water***	N/A		
Appearance and Odor	White, Black, odorless reinforced plastic film.						
Flash Point	N/A	***Flammability Limits in Air, by Volume (%)***	***Lower*** N/A	***Upper*** N/A	***Auto Ignition Temperature***	>660°F (estimate based upon raw material AIT)	
Extinguisher Media	Use water spray or dry chemical						
Special Fire Fighting Proced.	Fire fighters should wear a self-contained breathing apparatus when there is a possibility of exposure to smoke, fumes or hazardous decomposition products. If possible, water should be applied as a spray from a fogging nozzle since this material is a surface burning material.						
Unusual Fire and Explosion Hazards	None Known						

Section 4 - PHYSICAL HAZARDS

Stability	***Unstable***		***Conditions to Avoid*** Temperatures over 570°F may release combustible gases.
	Stable	X	
Incompatibility (Materials to Avoid)	None Known		
Hazardous Decomposition Products	Combustion will produce CO2, CO and organic vapors		
Hazardous Polymerization	***May Occur***		***Conditions to Avoid*** N/A
	Will not Occur	X	

Section 5 - HEALTH HAZARDS

Threshold Limit Value	N/A

Signs and Symptoms of Exposure

1. Acute Overexposure	Not Determined	***2. Chronic Overexposure***	Not Determined

Medical Conditions Generally Aggravated by Exposure	There are no known medical conditions aggravated by exposure to this product.

Chemical Listed as Carcinogen or Potential Carcinogen	***National Toxicology Program***	Not Listed	***L.A.R.C. Monographs***	Not Listed	***OSHA***	Not Listed

OSHA Permissible Exposure Limit	None	***ACGIH Threshold Limit Value***	None	***Other Expos. Limit Used***	None

Emergency and First Aid Procedures	Most problems will result from exposure to molten materials.
1. Inhalation	N/A
2. Eyes	If contacted by molten material, immediately flush eyes with plenty of cool water for at least 15 minutes. Do not permit victim to rub eyes. Immediately seek medical attention.
3. Skin	If contact by molten material, cool immediately with cool water. Do not attempt to remove any solidified material. Immediately seek medical attention.
4. Ingestion	If material is ingested, contact a physician or Poison Control Center as appropriate whenever any foreign object is swallowed.

Section 6 - SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type)	During Thermal Processing

Ventilation	***Local Exhaust***	***Mechanical (General)***	***Special***	***Other***
N/A	N/A	N/A	N/A	N/A

Protective Gloves	Wear protective gloves during thermal processing.	***Eye Protection***	Wear eye protection during thermal processing.

Other Protective Clothing or Equipment	none

Section 7 - SPECIAL PRECAUTIONS AND SPILL / LEAK PROCEDURES

Precautions to be Taken in Handling and Storage	This product should be stored in a manner that they are not exposed to heat and sources of ignition. A static charge may be present on finished products.
Other Precautions	None
Steps to be Taken in Case Material is Released or Spilled	N/A
Waste Disposal Methods	Dispose in accordance with local, state and federal regulations

IMPORTANT - Do not leave blank spaces. If information is unavailable, unknown or does not apply, so indicate

ATTACHMENT F

FIELD MODIFICATION FORMS

September 23, 2010 Reference No. 019190

ADDENDUM NO. 1
FIELD MODIFICATION TO DESIGN SPECIFICATIONS
VAPOR MITIGATION SYSTEM
405 BAXTER STREET
ATTICA, INDIANA

By this Addendum No. 1, the Design Specifications - Vapor Mitigation System dated May 25, 2010 shall be amended as specified below.

1. The contractor did not repair the damaged basement wall as specified in Section 9.1 of the design at the request of the resident. Resident completed repair.
2. The contractor did not install a new sump pit as specified in section 9.2 of the design. The contractor sealed the existing concrete sump pit using a vapor-tight product (Ames Blue Max and Block and Wall).

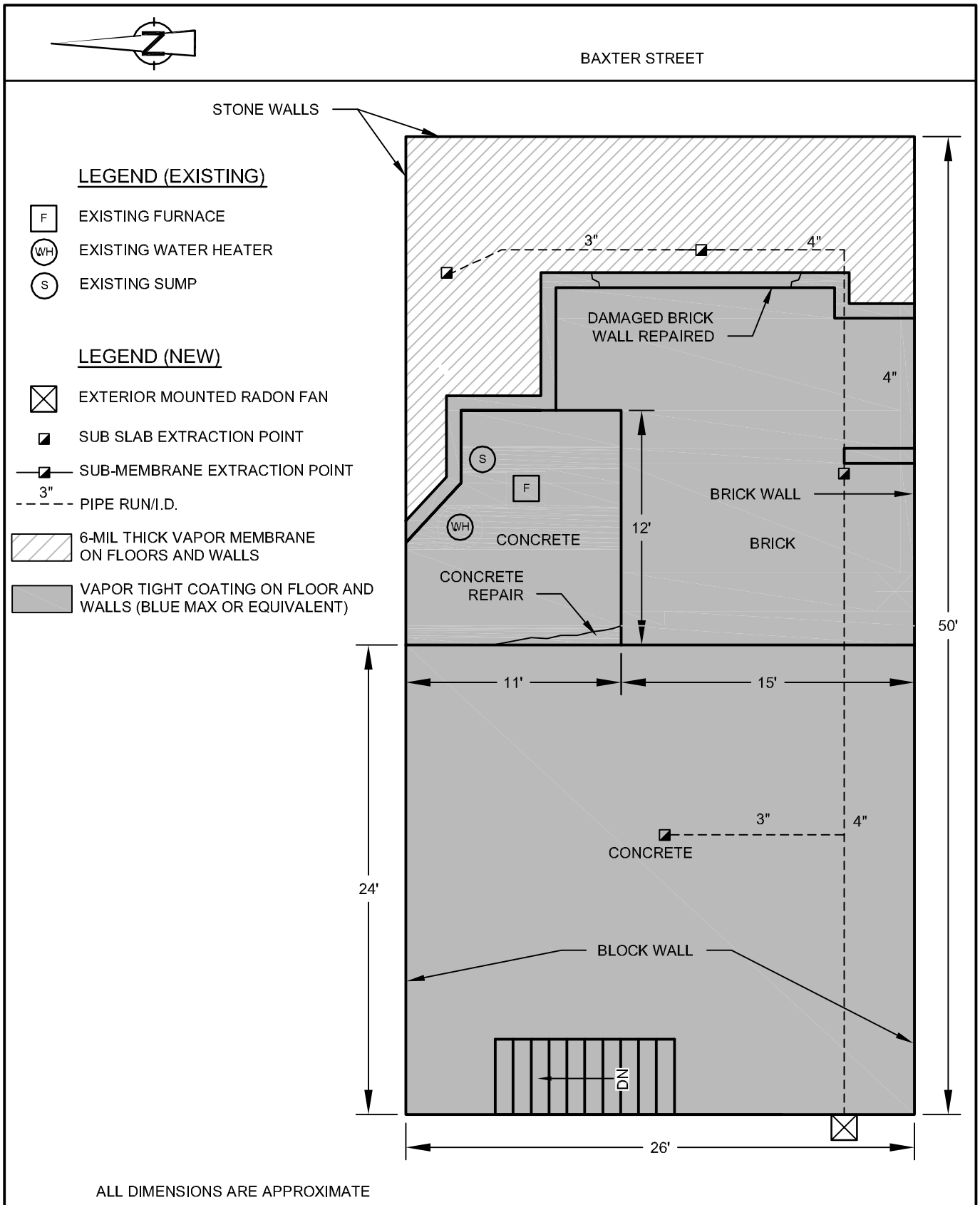
The Contractor shall acknowledge receipt of this Addendum in the space provided below.

Except as modified by this Addendum, the Design Specifications - Vapor Mitigation System previously issued shall remain unchanged.

S E Da	11/3/10
Engineer's Signature	Date
Steven E. Davis	
Printed Name	
D. Cain	11-2-10
Contractor Representative's Signature	Date
D. Cain	
Printed Name	

ATTACHMENT G

AS-BUILT DRAWING



ALL DIMENSIONS ARE APPROXIMATE

VAPOR INTRUSION MITIGATION SYSTEM AS-BUILT
405 BAXTER STREET
Attica, Indiana

19190-01(035)GN-WA086 NOV 15/2010

ATTACHMENT H

SITE PHOTOGRAPHS AFTER SYSTEM CONSTRUCTION

Photo 1 – North wall of basement

Photo 2 – VM system extraction point in center of basement

SITE PHOTOGRAPHS

Photo 3 – Sealed sump next to furnace

Photo 4 – Membrane in east crawlspace and submembrane extraction point

SITE PHOTOGRAPHS

Photo 5 – VM header pipe in east crawlspace

Photo 6 – Southeast corner of basement showing VM header pipe and sealing of walls and floor

SITE PHOTOGRAPHS

Photo 7 – VM extraction point along south wall of basement

Photo 8 – VM pipe label

SITE PHOTOGRAPHS

Photo 9 – VM fan and housing on west wall of residence

Photo 10 – Exterior portion of VM system

SITE PHOTOGRAPHS

ATTACHMENT I

VAPOR INTRUSION MITIGATION COMPLETION FORM

CONESTOGA-ROVERS & ASSOCIATES

6520 Corporate Drive
Indianapolis, Indiana 46278
Telephone: (317) 291-7007 Fax: (317) 328-2666
www.CRAworld.com

Vapor Intrusion Mitigation Completion Form
Attica, Indiana

Start Date 9 / 16 / 10 Completion Date 9 / 23 / 10

Inspection Date: 9 / 23 / 10
Inspection Time: 10:30 AM / PM

RESIDENCE INFORMATION

Name: James Young
Address: 405 Baxter St
Phone: 765-764-4682

Basement: (Y) N
Wall Construction: (Brick) (Block) (Stone) Concrete Other: _____
Floor Construction: (Concrete) Unfinished Finished
Furnace: (Y) N
Water Heater: (Y) N
Other: _____
Crawl Space(s): Y (N)

VAPOR INTRUSION MITIGATION MEASURES

		Meets Specification Y	N	NA
1.0 PIPING				
Suction Point Pipe Size	Diameter: 3 in	☑	☐	☐
Manifold Pipe Size	Diameter: 4 in	☑	☐	☐
Vent Pipe Size	Diameter: 4 in	☑	☐	☐
Sloping of Horizontal Runs		☑	☐	☐
Vent Pipe Discharge		☑	☐	☐
Supports and Fastening		☑	☐	☐
Installation		☑	☐	☐
2.0 VAPOR INTRUSION FAN				
Fan Model	Brand/Model No.: HP 220	☑	☐	☐
Fan Housing		☑	☐	☐
Installation		☑	☐	☐
3.0 GENERAL SEALING				
Basement Walls:				
Sealant		☑	☐	☐
Vapor Seal Paint		☑	☐	☐
Concrete Block Top Voids		☐	☐	☑
Vapor Barrier	Mil: _____	☐	☐	☑

	Meets Specification Y	N	NA
Basement Floor:			
New Concrete	☐	☐	☑
Vapor Seal Paint	☑	☐	☐
Vapor Barrier Mil: _____	☐	☐	☑
Floating Floor	☐	☐	☑
Sump Pit/Pump	☑	☐	☐
Drains Sealed Type: _____	☐	☐	☑
Floor Joist Vapor Barrier	☐	☐	☑
4.0 SUB-SLAB DEPRESSURIZATION			
Extraction Points No.: 2	☑	☐	☐
Locations	☑	☐	☐
Installation	☑	☐	☐
Backdrafting Test on Non-Electric Appliances	☐	☐	☐
List appliances tested and observations: _____			
5.0 SUBMEMBRANE DEPRESSURIZATION			
Seams and Tape	☑	☐	☐
Crawl Space:			
Vapor Barrier Mil: 6	☑	☐	☐
Vapor Barrier Installation:			
Extraction Points No.: 2	☑	☐	☐
Extraction Pipe Installation	☑	☐	☐
6.0 ELECTRICAL			
Component Installation	☑	☐	☐
7.0 MATERIALS			
Electrical	☑	☐	☐
Piping	☑	☐	☐
Membranes	☑	☐	☐
Caulks and Sealants	☑	☐	☐
Wood/Header Boards	☐	☐	☑
8.0 MONITORING AND LABELING			
Manometer Reading: 0.75" H_2O	☑	☐	☐
Vapor Fan Alarm	☑	☐	☐
System Labels	☑	☐	☐
Circuit Breaker Labeling	☑	☐	☐

9.0 OTHER REQUIREMENTS (List from Final Design)	Meets Specification Y	N	NA
New Sump	☐	☐	☑
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

NOTES:

Completion Photos Taken (10 Minimum): (Y) N

Project Completed by: Cain Contracting

Inspector: S E Davis — Signature

Steven E. Davis — Print Name