BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

May 14, 2018

Via E-Mail (todd.caffoe@dec.ny.gov)
Mr. Todd M. Caffoe, P.E.
Project Manager
New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414

Re: Former Brainerd Manufacturing Site #V00519-8
115 North Washington Street, East Rochester, NY
Summary of Corrective Action and Preliminary Results

Dear Mr. Caffoe:

On behalf of Despatch Industries Inc., Benchmark Environmental Engineering & Science, PLLC (Benchmark) herein provides a summary of the groundwater injections and monitoring performed in accordance with the April 2017 Corrective Action Plan for the Former Brainerd Manufacturing Facility.

REMEDIAL ACTIVITIES

Between October 16 and 20, 2017, Regenesis Remediation Services (RRS) injected its PlumeStop® liquid activated carbon (PlumeStop), Hydrogen Release Compound (HRC®), and Bio-Dechlor Inoculum® (BDI) reagents in the vicinity of groundwater monitoring wells MW-5 and MW-6 (located along the plume axis) through direct-push technology injection points at a treatment interval of 23 to 34 feet below ground surface (fbgs). The same products were released directly into deactivated pumping well PW-1R at the screened interval of 27 to 34 fbgs. Figure 1 illustrates the approximate injection locations.

Nothnagle Drilling, Inc. of Scottsville, NY performed all drilling services, and Benchmark provided oversight and documentation of the remedial activities. RRS's Application Summary Report in Attachment 1 provides detailed information on injection location, depth, pressure, flow rate and volume for each treatment area.

POST-INJECTION GROUNDWATER MONITORING

On July 10, 2017, for design verification purposes and to provide baseline data, Benchmark collected groundwater samples from monitoring wells MW-5 and MW-6 and pumping well PW-1R for analysis of Target Compound List (TCL) volatile organic compounds (VOCs) and biogeochemical parameters (e.g., nitrate, sulfate, iron). Benchmark sampled these same wells for TCL VOC analysis on November 30, 2017, one month following the PlumeStop injection, and again on February 27, 2018.

Table 1 provides a comparison of historic, pre-injection, and post-injection groundwater analytical results for wells MW-5, MW-6 and PW-1R to the New York State Department of Environmental Conservation (NYSDEC) Class GA groundwater quality standards and guidance values (GWQS/GVs). As indicated on Table 1, tetrachloroethene (PCE) and trichloroethene (TCE) were either not detected or reported at concentrations below GWQSs at all three locations during the February 2018 sampling event. The data show significant reductions in concentration; up to a 99% reduction of PCE in source well MW-6. The only exceedances of GWQS/GVs are acetone and 2-butanone (aka. methyl ethyl ketone, MEK) in downgradient well MW-5. These by-products are attributed to incomplete fermentation of the HRC, which is a common occurrence and reflective of a highly reducing biogeochemical environment and large excess of organic carbon. These by-products are transient and will be used by the microbes in the in-situ reactive zone. HRC will likely remain for another year; however, acetone and MEK concentrations are expected to steadily decrease.

NEXT STEPS

The final post-injection groundwater monitoring event is scheduled for the end of May 2018. Per our discussion, we intend to shut down both pumping wells while we monitor the groundwater. If the May groundwater concentrations confirm continued success of the source area remedial activities, we will request NYSDEC approval to discontinue post-injection groundwater monitoring and permanently decommission the gPRO groundwater treatment system and three re-injection wells. At that time, Benchmark will update the December 2013 Final Engineering Report and Site Management Plan (SMP) and submit these documents to NYSDEC. The SMP will include a proposed groundwater monitoring schedule and criteria for decommissioning of the pump and treat remedial system.

Please contact us if you have any questions or require additional information.

Sincerely,
Benchmark Environmental Engineering & Science, PLLC

Thomas H. Forbes, P.E.
Principal Engineer

ec: Bernette Schilling (NYSDEC Region 8)
Justin Deming (NYSDOH)
Steven Berninger (NYSDOH)
Alan Shaffer (Despatch)
Wade Lippman

File: 0040-002-400

TABLE

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 1

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

CORRECTIVE ACTION PLAN
Former Brainerd Manufacturing Facility
East Rochester, New York

Parameter[1]	GWQS/GV[3]	Monitoring Well Location																														
		MW-5												MW-6												PW-1R							
		Historic Groundwater Sampling Events									Pre-Injection	Post-Injection	Post-Injection	Historic Groundwater Sampling Events									Pre-Injection	Post-Injection	Post-Injection					Pre-Injection	Post-Injection	Post-Injection
		08/22/06	01/30/12	03/05/13	06/26/13	9/25/13	12/04/13	06/04/14	06/04/15	06/28/16	07/10/17	11/30/17	02/27/18	08/22/06	01/30/12	03/05/13	06/26/13	09/25/13	12/04/13	06/04/14	06/04/15	06/28/16	07/10/17	11/30/17	02/27/18	1/30/12	6/4/14	6/4/15	6/28/16	07/10/17	11/30/17	02/27/18
TCL Volatile Organic Compounds (ug/L)																																
Acetone	**50**	ND	ND	ND	ND	ND	3.4 J	3.3 J	ND	ND	7.3 J	**200**	**200**	ND	ND	ND	ND	ND	5.0 J	ND	ND	ND	ND	ND	49	ND	ND	13	6.9 J	ND	30 J	6.0 J
Bromodichloromethane	**5**	ND	ND	0.51 J	ND	ND	ND	ND	ND	0.54 J	ND	ND	ND	ND	4.4	0.47 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8 J	ND	ND	ND	ND	ND
Bromoform	**50**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	**50**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**71 J**	**320**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.7 J	ND	ND	ND	ND	ND	**160**	ND
Carbon Disulfide	**60**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**87**	ND	ND	ND	ND	ND	ND	**12**	ND	ND	ND	2.4 J	ND
Methyl tert-butyl ether	**10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Acetate	**NR**	ND	ND	ND	ND	ND	ND	4.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.5 J	2 J	ND	ND	ND	ND
Toluene	**5**	ND	ND	ND	ND	ND	0.51 J	0.71 J	ND	ND	ND	ND	ND	3.2 J	0.95 J	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	**7**	1.4 J	1.3	**18**	ND	ND	ND	ND	ND	0.98 J	ND	ND	ND	ND	**14**	2	ND	ND	0.51 J	ND	ND	ND	ND	ND	ND	1.1	1.3 J	0.72 J	ND	ND	ND	0.44 J
Tetrachloroethene	**5**	**1600**	**2800**	**590**	**400**	**150**	**110**	**50**	**40**	**530 D**	**14**	ND	ND	**3100**	**1700**	**410**	**1600**	**1300**	**1600**	**1500**	**570**	**1200**	**390**	**90**	3.5 J	**360**	**92**	**160**	**120**	**100**	ND	0.74 J
Trichloroethene	**5**	**1400**	**1500**	**260**	**240**	**59**	**52**	**23**	**20**	**330 D**	**8.5**	ND	ND	**1500**	**660**	**95**	**520**	**450**	**570**	**560**	**130**	**340**	**110**	**51**	4.9	**220**	**75**	**94**	**71**	**70**	ND	4.7
Trichlorofluoromethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1 Dichloroethene	**5**	0.56 J	0.67 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichlorethene	**5**	0.80 J	0.95 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**5**	**11**	**6.3 J**	1.3	ND	ND	ND	ND	ND	1.5	ND	ND	ND	**16 J**	4	ND	ND	ND	3.8	ND	ND	ND	ND	ND	ND	0.96 J	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	**1**	**1.5 J**	ND	ND	ND	ND	ND	ND	ND	0.57 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1 Dichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	**5**	--	ND	ND	ND	ND	ND	--	--	--	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND	--	--	--	ND	ND	ND
Total Chlorinated VOCs[4]	**NA**	**3,000**	**4,302**	**850**	**640**	**209**	**162**	**73**	**60**	**860**	**23**	**0**	**0**	**4,600**	**2,360**	**505**	**2,120**	**1,750**	**2,170**	**2,060**	**700**	**1,540**	**500**	**141**	**8.4**	**580**	**167**	**254**	**191**	**170**	**0.0**	**5.4**

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. MS/MSD collected at PW-1.
3. NYSDEC Class "GA" Groundwater Quality Standards/Guidance Values (GWQS/GV), 6 NYCRR Part 703.
4. Sum of chlorinated VOCs means adding the concentrations of tetrachloroethene, trichloroethene, cis & trans-1,2-dichlorethene, and 1,1-dichloroethene.
5. The enhanced hydrogen injection began operation in July 2012.

Definitions:

J = Estimated value; result is less than the sample quantitation limit but greater than zero.
ND = parameter not detected above laboratory detection limit.
NR = parameter not regulated by 6NYCRR TOGS 1.1.1 Part 703
N* = Indicates the spike or duplicate analysis is not within the quality control limits
"--" = Not analyzed
" ** " = Field threshold value; when exceeded, field filtered metals sample is collected (i.e., dissolved metals).

BOLD = Analytical result exceeds individual GWQS/GV.

FIGURE

F:\CAD\Benchmark\Despatch\2-Corrective Action Plan (2017)\Figure 4; Planned Plume Stop Inj w UT.dwg

2 Plumestop injection zones, 9 points each

Plumestop Injected directly into PW-1R

IP-11 IP-12 IP-13 IP-14 IP-15 IP-16 IP-17 IP-18 IP-10 MW-5 SB-2

PW-1R

MW-4

PW-2

MW-6

SB-1

MW-1

MW-3

RECEIVING

STORAGE

PAINTING

ASSEMBLY

SHOW ROOM

STOCK ROOM

SHIPPING 2

SHIPPING 1

SHIPPING 3

IP-1 IP-2 IP-3 IP-4 IP-5 IP-6 IP-7 IP-18 IP-19

MAINTENANCE

LUNCH ROOM

OFFICES

STAINING

N

100' 0' 100' 200'

SCALE: 1 INCH = 100 FEET
SCALE IN FEET
(approximate)

EXPLANATION

- FORMER BRAINERD PLANT
- OFFSITE BUILDING
- PW-1R PUMPING WELL LOCATION
- MW-4 MONITORING WELL LOCATION
- IP-2 PLUMESTOP INJECTION POINT (19)
- APPROXIMATE LOCATION OF SOIL CORE
- SANITARY SEWER
- 8" WATER LINE
- FLOOR DRAIN

DATE: AUGUST 2017
DRAFTED BY: RFL

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

JOB NO.: 0040-002-400

PLUMESTOP INJECTION LOCATIONS

FORMER BRAINERD MANUFACTURING FACILITY
NYSDEC SITE NO. V00519-8
EAST ROCHESTER, NEW YORK

PREPARED FOR
DESPATCH INDUSTRIES, INC.

FIGURE 1

ATTACHMENT 1

RRS APPLICATION SUMMARY REPORT

REGENESIS
REMEDIATION SERVICES
Technology-Based Solutions for the Environment

Global Headquarters
1011 Calle Sombra
San Clemente, CA 92673
Ph: (949) 366-8000
Fax: (949) 366-8090

December 7, 2017

REGENESIS Proposal No. MaD56017

Lori Riker
Benchmark Environmental Engineering & Science, PLLC
2558 Hamburg Turnpike Suite 300
Buffalo, NY 14218

SUBJECT: Application Summary Report for Remedial Services at the Brainerd facility in Rochester, NY

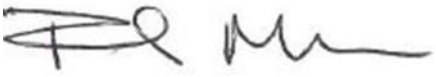
Lori,

REGENESIS Remediation Services (RRS) has recently completed an *in-situ* injection application of PlumeStop® Liquid Activated Carbon (PlumeStop), Hydrogen Release Compound (HRC), and the bioaugmentation culture BioDechlor INOCOLUM Plus (BDI) at the Brainerd facility (the Site) located at 115 North Washington Street, Rochester, NY 14445. The objective was to stimulate rapid, biologically-mediated, anaerobic destruction of chlorinated solvents in groundwater within each of the specified treatment areas.

RRS mobilized a support pickup truck, injection trailer, and personnel to the site to begin work over five (5) days from October 16th, 2017 to October 20th, 2017. All product was shipped prior to the start of the application. Nothnagle drilling provided direct push drilling services. RRS staffed this project with experienced project personnel who oversaw all elements of the field work and ensured a safe, successful injection application. Please review the attached application summary page, injection log, and photo log for more detail on the application.

RRS appreciates the opportunity to work at this site with Benchmark. RRS will be available to interpret the field data as it is collected, or answer any questions. If you need additional information regarding the application process or attached field notes, please contact Paul Mansur at 630.335.9563 or Ian Doliana at 814.418.4655.

Sincerely,



Paul Mansur
East Region Project Manager
REGENESIS Remediation Services

Ian Doliana
Staff Engineer
REGENESIS Remediation Services

REGENESIS
REMEDIATION SERVICES
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Application Summary Page

PLUME STOP Liquid Activated Carbon

BDI PLUS BIO-DECHLOR INOCULUM

HRC HYDROGEN RELEASE COMPOUND

OVERVIEW

Client: Benchmark Environmental
Client PM: Lori Riker
RRS Project Manager: Paul Mansur

Site Address: 115 North Washington Street, Rochester, NY
Project Name: Brainerd Facility
Project Dates: 10-16-2017 to 10-20-2017

TREATMENT TECHNOLOGY

RRS utilized the following remediation technologies during the application event: PlumeStop, HRC, and the bioaugmentation culture BDI. PlumeStop coats the aquifer soil particles with a thin layer of carbon which sorbes contaminants from groundwater while providing an ideal matrix for bacterial biodegradation. HRC is then fermented by endemic bacteria to provide an electron donor for biodegradation conducted by BDI. BDI is microbial consortium containing species of Dehalococcoides which are capable of fully degrading chlorinated solvents in the subsurface.

RRS employed remediation design specifications as outlined in technical designs submitted to Benchmark personnel on January 16, 2017.

APPLICATION

The remediation technologies were applied at two (2) treatment locations within the facility identified as MW-05/MW-06, and PW-1R. MW-05/MW-06 had two (2) separate treatment areas which correlated to specific well locations. These treatment areas were further identified as the MW-05 and MW-06 areas.

RRS applied the PlumeStop by mixing the remediation technology in the RRS injection trailer and injected through direct push borings advanced with a leading 1.5 inch O.D. retractable stainless-steel injection screen (3-foot length). PlumeStop was applied in treatment interval of 34 to 23 feet below ground surface (bgs), by a bottom up injection method evenly over the entire 11-foot interval. Each area received PlumeStop at different injection concentrations, which were consistent to approved technical design. Non-potable mixing water was provided by a spigot located inside the facility. During the application of PlumeStop, the bioaugmentation culture, BDI, was "slipped stream injected" with PlumeStop that has been deoxygenated by the addition of sodium bisulfite to minimize atmospheric exposure. Injection pressures were observed generally between 0 and 45 pounds per square inch (psi). Injection flowrates were generally maintained between 1 and 3 gallons per minute (gpm)

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Injections were completed by pumping on 2 to 4 injection point locations at a time, using the RRS injection trailer manifold system. Product surfacing/short circuiting was periodically encountered during the application event. Surfacing issues were dealt with by tightening injection tooling, and sealing the borings with bentonite clay.

After the PlumeStop and BDI remediation technologies were applied in each treatment area, RRS then applied the HRC technology utilizing a GeoProbe GP-300 grout pump. The HRC was applied at the same injection point location as the PlumeStop and BDI. 1.5 inch steel expendable tip injection tooling was advanced to 34 ft. bgs, then retracted to 23 ft. bgs creating a cavity over the entire injection interval. Upon completion of applying the remediation technologies, each boring location was backfilled bentonite and sealed with concrete.

TREATMENT LOCATION MW-05/MW-06

A total of 5,922 gallons of PlumeStop was mixed to 5,500 ppm and applied within the MW-05/MW-06 treatment location, totaling 6,800 lbs. of undiluted PlumeStop. Product quantities by area are as follows:

MW-05/MW-06 Area	
PlumeStop	6,800 lbs.
HRC	800 lbs.
BDI	9 L

Per Point	
PlumeStop	377.8 lbs.
HRC	44 lbs.
BDI	0.5 L

Application Method: Bottom-Up, direct push drilling with 3-foot retractable screens and expendable tips

Injection Depth: MW-05 - 34 to 23 ft. bgs
MW-06 - 34 to 23 ft. bgs

Number of Injection Points: 18

Point Spacing: In the MW-06 area points were placed to form two (2) linear barriers normal to ground water flow on both sides of MW-6. The upgradient barrier consisted of four (4) points, while the downgradient barrier consisted of five (5) points. In the MW-05 area five (5) points were placed in a linear barrier downgradient of the well, with the remaining four (4) points placed along the building wall forming an arch upgradient of the well. All points were spaced approximately 8 ft. apart.

Average Injection Flowrates: *MW-05 - 2.3 gpm*
MW-06 - 2.5 gpm

Average Injection Pressures: *MW-05 - 8.6 psi*
MW-06 - 3.1 psi

Distribution Monitoring: Monitoring wells were checked periodically by Benchmark and RRS personnel during and after injections for indications of PlumeStop influence. PlumeStop was observed in MW-05 and MW-06. No PlumeStop was observed in OW-1 during or following injections.

REGENESIS
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Deviations from Proposal:

1. The BDI did not arrive on-site until 10/17/2017 at approximately noon. Since injection activities had already begun, the BDI was applied to the MW-06 area during HRC injections. The same slip stream method described above was used, with deoxygenated water used to flush. The BDI was added after 5 gallons of water primed the boring to remove oxygen, followed by 15 gallons of flush water to ensure distribution. HRC was injected after the BDI.
2. IP-17 in the MW-05 area had to be abandoned after several attempts were made to establish flow. After each of the three (3) attempts the injection tooling immediately became clogged with silt. The volume was moved to IP-16 which had to be re-drilled.

Please see attached Tables 1 for details on injection flow rates and pressures observed.

TREATMENT LOCATION PW-1R

A total of 1,023 gallons of PlumeStop was mixed to 7,500 ppm and applied within the PW-1R treatment location, totaling 1600 lbs. of undiluted PlumeStop applied in the area.

PW-1R Area	
PlumeStop	1600 lbs.
HRC	120 lbs.
BDI	4 L

Application Method: 7 ft. dual bladder well packer
Injection Depth: 27 to 34 ft. bgs
Number of Injection Points: 1
Average Injection Flowrates: *4.1 gpm*
Average Injection Pressures: *0*

Deviations from Proposal:

1. The injection interval was changed from the original REGENSIS proposal by benchmark personnel.

Please see attached Tables 2 for details on injection flow rates and pressures observed.

Benchmark Environmental Engineering & Science, PLCC - Brainerd Manufacturing Facility

Plumestop Injection Summary Log

MW-05 and MW-6 Areas

Table 1

Injection Point	Date	Time	Injection Depth (feet)	Injection Pressure (psi)	Flow Rate (gpm)	Volume of PlumeStop Injected			Total gallons Per Location	Pounds of PlumeStop Injected Per Location	Litres of BDI Per Interval	Pounds of HRC Injected Per Interval	Comments	Injection Tooling
						Beginning Flow Meter (gal)	Ending Flow Meter (gal)	Gallons Injected Per Interval						
1	10/16/2017	12:03	34-31	8.0	2.4	0	90	90	329	377.8	0.50	44.00		3-Foot Screen
		12:22	31-28	2.0	2.2	90	180	90						
		12:44	28-25			180	269	90						
		13:48	25-23	0.0	2.7	269	329	60						
2	10/16/2017	12:29	34-31	10.0	2.3	0	91	91	329	377.8	0.50	44.00		3-Foot Screen
		13:01	31-28	8.0	2.4	91	180	89						
		13:41	28-25	0.0	2.5	180	269	90						
		14:10	25-23	0.0	2.3	269	329	60						
3	10/16/2017	16:11	34-31	10.0	2.3	0	90	90	329	377.4	0.50	44.00		3-Foot Screen
	10/17/2017	8:13	31-28	8.0	2.2	90	181	91						
		8:56	28-25	6.0	2.4	181	270	89						
		9:25	25-23	0.0	2.2	270	329	59						
4	10/17/2017	10:08	34-31	16.0	2.3	0	90	90	329	377.4	0.50	48.00		3-Foot Screen
		10:55	31-28	20.0	2.2	90	180	90						
		12:27	28-25	10.0	1.4	180	271	91					surfaced from IP-5, let settle	
		13:01	25-23	0.0	1.7	271	329	58						
5	10/16/2017	15:42	34-31	10.0	2.4	0	90	90	329	377.4	0.50	44.00	surfaced, let settle	3-Foot Screen
	10/17/2017	8:51	31-28	0.0	1.7	90	180	90					tightened rod, continued injections	
		9:35	28-25	0.0	2.5	180	270	90						
		10:03	25-23	0.0	2.5	270	329	59						
6	10/16/2017	12:29	34-31	26.0	2.4	0	89	89	329	377.4	0.50	44.00		3-Foot Screen
		13:03	31-28	10.0	2.5	89	179	90						
		13:43	28-25	20.0	2.6	179	271	92						
		14:03	25-23	0.0	2.4	271	329	58						
7	10/16/2017	15:37	34-31	18.0	2.3	0	91	91	330	378.5	0.50	44.00		3-Foot Screen
		16:33	31-28	10.0	2.2	91	180	90						
	10/17/2017	8:37	28-25	0.0	2.5	180	270	90						
		8:58	25-23	0.0	2.4	270	329	59						
8	10/17/2017	11:03	34-31	45.0	1.3	0	90	90	329	377.4	0.50	44.00		3-Foot Screen
		11:46	31-28	10.0	2.4	90	180	90						
		12:31	28-25	15.0	2.3	180	272	92						
		12:51	25-23	0.0	2.4	272	329	57						
9	10/17/2017	10:44	34-31	16.0	2.5	0	90	90	329	377.4	0.50	44.00		3-Foot Screen
		11:10	31-28	10.0	2.6	90	180	90						
		12:08	28-25	12.0	2.4	180	270	90						
		12:55	25-23	0.0	2.6	270	329	59						
10	10/18/2017	8:53	34-31	0.0	2.7	0	90	90	329	377.4	0.14	44.00		3-Foot Screen
		9:32	31-28	0.0	3.0	90	180	90			0.14			
		10:01	28-25	0.0	3.0	180	270	90			0.14			
		10:26	25-23	0.0	2.7	270	329	59			0.08			
11	10/17/2017	14:38	34-31	15.0	2.1	0	91	91	329	377.4	0.14	44.00		3-Foot Screen
		15:17	31-28	0.0	2.4	91	180	89			0.14			
		15:54	28-25	0.0	2.4	180	270	90			0.14			
		16:18	25-23	0.0	2.5	270	329	59			0.08			
12	10/18/2017	13:21	34-31	0.0	2.8	0	90	90	329	377.4	0.14	44.00	surfaced initially, tighened rods, and sealed with bentonite	3-Foot Screen
		14:07	31-28	6.0	2.7	90	180	90			0.14			
		14:51	28-25	0.0	2.5	180	270	90			0.14			
		15:21	25-23	0.0	2.3	270	329	59			0.08			
13	10/17/2017	15:18	34-31	6.0	1.6	0	90	90	329	377.4	0.14	44.00	surfaced around rod, sealed and settled	3-Foot Screen
		16:11	31-28	0.0	2.3	90	180	90			0.14			
	10/18/2017	7:52	28-25	0.0	2.4	180	272	92			0.14			
		8:17	25-23	0.0	2.6	272	329	57			0.08			
14	10/18/2017	10:15	34-31	15.0	2.0	0	90	90	329	377.4	0.14	48.00		3-Foot Screen
		10:50	31-28	15.0	3.0	90	180	90			0.14			
		11:44	28-25	10.0	2.2	180	271	91			0.14			
		12:20	25-23	0.0	2.4	271	329	58			0.08			

Injection Point	Date	Time	Injection Depth (feet)	Injection Pressure (psi)	Flow Rate (gpm)	Volume of PlumeStop Injected			Total gallons Per Location	Pounds of PlumeStop Injected Per Location	Litres of BDI Per Interval	Pounds of HRC Injected Per Interval	Comments	Injection Tooling
						Beginning Flow Meter (gal)	Ending Flow Meter (gal)	Gallons Injected Per Interval						
15	10/18/2017	13:21	34-31	15.0	2.9	0	90	90	332	380.8	0.14	44.00		3-Foot Screen
		14:07	31-28	4.0	2.3	90	180	90			0.14			
		14:52	28-25	0.0	2.4	180	270	90			0.14			
		15:10	25-23	0.0	2.3	270	326	56			0.08		surfaced on final interval, unable to seal	
16	10/18/2017	7:54	34-31	8.0	2.2	0	92	92	329	377.4	0.14	44.00		3-Foot Screen
		8:40	31-28	8.0	2.3	92	181	89			0.14			
		9:02	28-25	0.0	3.0	181	270	89			0.14			
		9:43	25-23	0.0	2.9	270	329	59			0.08			
IP 16 redrill	10/18/2017	7:31	34-31	0.0	2.8	0	90	90	331	379.7	0.14	44.00	IP-17 screen silted multiple attempts, redistbuted to IP-16 (redrilled)	3-Foot Screen
	10/19/2017	7:57	31-28	0.0	2.7	90	180	90			0.14			
		8:27	28-25	0.0	3.1	180	270	90			0.14			
		8:52	25-23	0.0	2.4	270	331	61			0.08			
18	10/18/2017	10:50	34-31	10.0	2.9	0	92	92	329	377.4	0.14	44.00		3-Foot Screen
		11:19	31-28	0.0	3.1	92	180	88			0.14			
		11:40	28-25	0.0	2.8	180	270	90			0.14			
		12:45	25-23	0.0	1.2	270	329	59			0.08		surfaced, allowed to settle and sealed with bentonite	

Total Project Volume PlumeStop	Total Project Pounds PlumeStop	Total Project Volume BDI (Liter)	Total Project Pounds HRC
5929	6800	9	800

Benchmark Environmental Engineering & Science, PLCC - Brainerd Manufacturing Facility

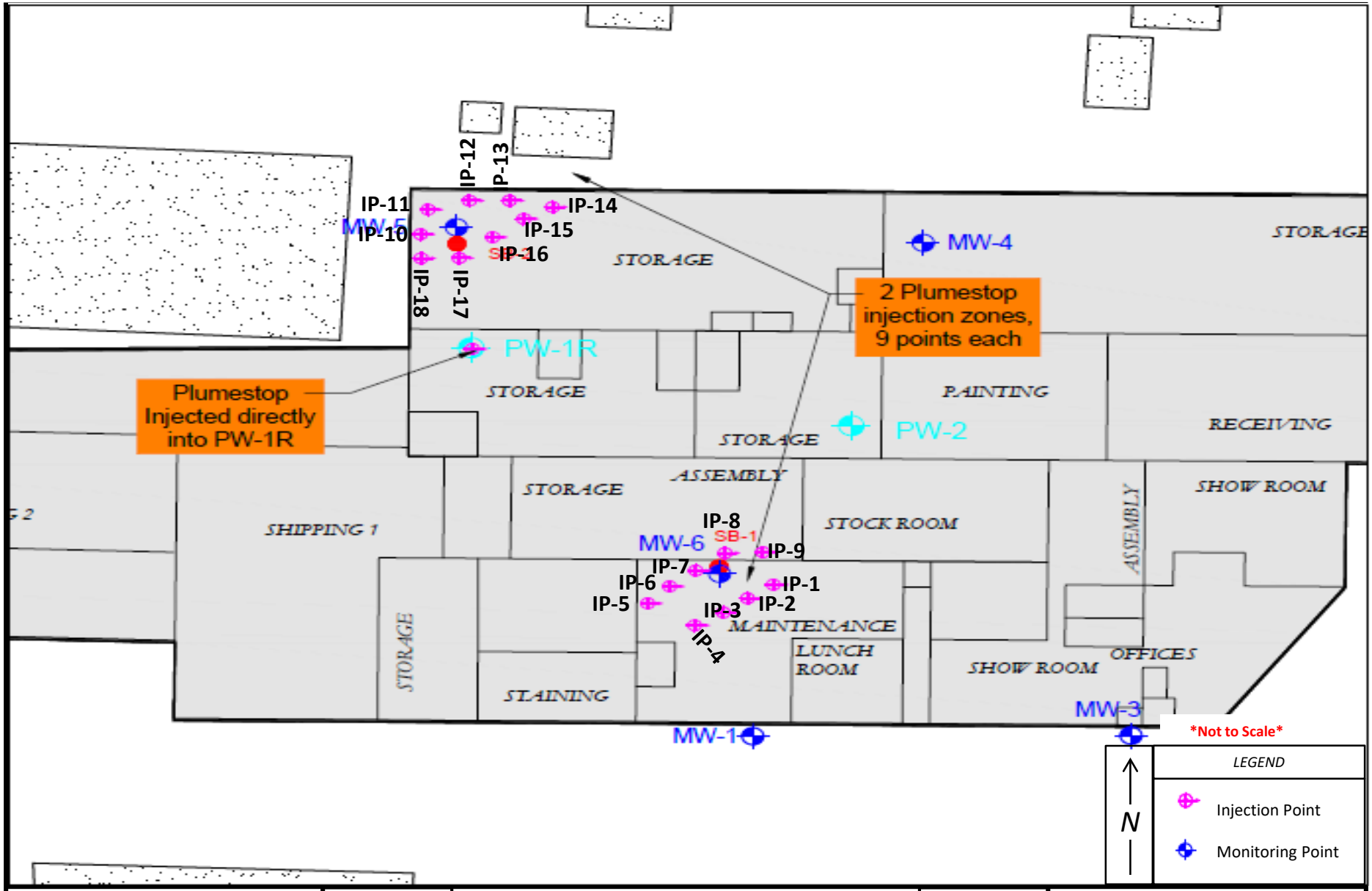
Plumestop Injection Summary Log

PW-1R Area

Table 2

Injection Point	Date	Time	Injection Depth (feet)	Injection Pressure (psi)	Flow Rate (gpm)	Volume of PlumeStop Injected			Total gallons Per Location	Pounds of PlumeStop Injected Per Location	Litres of BDI Per Interval	Pounds of HRC Injected Per Interval	Comments
						Beginning Flow Meter (gal)	Ending Flow Meter (gal)	Gallons Injected Per Interval					
PW-1R	10/19/2017	9:09	34-27	0.0	2.8	0	18	18	1023	1600.1	4.00	120.00	
		9:46				18	125	107					
		10:33			4.3	125	260	135					
		11:00				260	341	81					
		11:23			4.4	341	456	116					
		12:01				456	561	105					
		12:14				561	667	107					
		12:30			4.6	667	733	66					
		13:02			4.4	733	906	173					
		13:20				906	1023	117					

Total Project Volume PlumeStop (gal)	Total Project Pounds PlumeStop	Total Project Volume BDI (Liter)	Total Project Pounds HRC
1023	1600	4	120



PLUME STOP® Liquid Activated Carbon

Prepared By: *IJD*

Figure 1 – Injection Locations Map
Brainerd Facility
115 North Washington Street
Rochester, NY

Date Prepared: *November 2017*

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Photo Log

Photo 1: *RRS injection trailer on-site.*

Photo 2: *GeoProbe unit parked next to injection points.*

Photo 3: View showing 3 injection points.

Photo 4: *Close up of well packer set up in PW-1R.*

Photo 5: *Pumping system removed from PW-1R.*

Photo 6: *GP-300 used to inject HRC.*