US EPA, Region 1
NCCW-GP Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, Ma 02114-2023

9/23/2008

FROM:
Communications & Power Industries, Beverly Microwave Division
150 Sohier Road
Beverly, Ma 01915-5595

Current NCCW-NPDES General Permit No. **MAG250520**

We hereby request extension of coverage under a General Permit to discharge Non contact cooling water.

Find attached our Notice of Intent (NOI) Appendix 5. with the following attachments:

1. 7Q10 and dilution calculations e-mail from Kathleen Keohane
2. Attachment A "Surface water temperature rise calculations"
3. Site topography plan
4. Site building and drainage plan showing upstream and downstream sampling points
5. MSDS's for granular activated carbon (dechlorination) and calcium carbonate (neutralization for corrosivity)
6. Northeast Environmental laboratories –sampling results for upstream and downstream receiving waters.
7. DEP letter approval for Neutralization (Calcium carbonate)
8. DEP and EPA NOI receipt letters from January 2005.
9. DEP transmittal form from the previous application. (DEP only)
10. Notice of Termination for outfall No. 2

Overview

The Communications & Power Industries, Beverly Microwave Division (formerly owned by Varian and Bomac) has been manufacturing Electron tubes at the 150 Sohier Road, Beverly location since 1950.

NCCW use: Municipal supply water is used to cool heat exchangers for a closed loop recirculating water system. After leaving the heat exchangers the NCCW passes through granular carbon cylinders to dechlorinate and a calcium carbonate cylinder for corrosivity neutralization (previously approved). The NCCW water then dumps into a holding tank from which a recirculating system pump draws its cooling water to cool equipment. The heat load of the equipment requiring cooling varies based on production requirements and products being manufactured.

The dechlorination cylinders we installed appear to be capable of maintaining the chlorine levels <15 ppb. The neutralization tank of calcium carbonate is used to reduce the corrosivity of the water and although desired can be eliminated if required.

Any excess NCCW from this holding tank (after evaporative losses due to an open cooling tower) overflows to a drain line which dumps into a storm drain manhole (mixing point). This manhole is also fed by the drainage coming from Brimbal Avenue and the highway runoff from route 128 (upstream

sampling points) plus, part of the CPI parking lot and roof drain runoff.

The manhole receiving the NCCW is a part of the drainage system known as the "un-named tributary to the Bass River". It is the road drainage from Brimbal Avenue and Route 128 and not a natural stream or river. It historically has been at a minimum, completely dry or at a maximum overflowing at the maximum capacity of the drain lines feeding it.

The attached test results from Northeast Environmental Laboratories of the upstream and down stream receiving waters shows a high enough iron and manganese content so as to interfere in the colorimetric analysis which results in inaccurate readings such that chlorine cannot be reported. The iron and manganese is presumed to be the result of effluent from upstream trash landfills

Cc: Mass DEP, Division of Watershed Management
627 Main Street, 2nd floor
Worcester, MA 01608

Mark Scott
Director of Facilities, ECA
Communications & Power Industries, Beverly Microwave Division
150 Sohier Road
Beverly, Ma 01915-5595

Ph. 978-279-0155
Fax 978-720-4495
Mark.scott@bmd.cpii.com

MAG250520
9/25/08

APPENDIX 5
Notice of Intent (NOI) for the Noncontact Cooling Water General Permit

1. General facility information. Please provide the following information about the facility.

a) Name of facility:
Communications &Power Industries, Beverly Microwave Division
Current general permit No.MAG250520

Type of Business: **Manufacturer of Electron Tubes**

Facility Location Address :
150 Sohier Road
Beverly, Ma 01915-5595

longitude:_W70-52-55 latitude: N42-34-25

Facility SIC codes: 3671

Facility Mailing Address (if not location address)

b) Name of facility owner:
Communications & Power Industries Inc.

Email address of owner: don.coleman@bmd.cpii.com
Corporate V.P. Don Coleman

Owner's Tel #: 978-922-6000 _____
Owner's Fax # 978-922-8914_____

Owner is (check one): 1. Federal____ 2. State _____ 3.Tribal_____
4. Private___X___ 4. Other _____(Describe)

Address of owner (if different from facility address)
607 Hansen Way
Palo Alto, Ca

Legal name of Operator, if not owner: _____

Owner/Operator Contact Name: Mark Scott

Owner/Operator Contact Tel Number: 978-279-0155 Fax Number: 978-720-4495_____

Owner/Operator Contact email: mark.scott@bmd.cpii.com _____

Operator Address (if different from owner)

d) Attach topographic map indicating the locations of the facility and the receiving water; all NCCW discharge points; upstream and downstream monitoring points. Map attached? _____

e) Check Yes or No for the following:

1. Has a prior NPDES permit been granted for the discharge? Yes __X__ No____ If Yes, Permit Number: MAG250520
2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes_____ No___X___
3. Is the facility covered by an individual NPDES permit? Yes_____ No__X___ If Yes, Permit Number ____
4. Is there a pending application on file with EPA for this discharge? Yes _X No _____ If Yes, date of submittal: January 20, 2005

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed)

a) Name of receiving water into which discharge will occur: __Un-named tributary to the Bass River

State Water Quality Classification: Class B Warm Water Freshwater: ___X___ Marine Water: _____

b) Describe the discharge activities for which the owner/applicant is seeking coverage:

Municipal supply water is used to cool heat exchangers for a closed loop recirculating water system. After leaving the heat exchangers the NCCW passes through granular carbon cylinders to dechlorinate and a calcium carbonate cylinder for corrosivity neutralization (previously approved). The NCCW water then dumps into a holding tank from which a recirculating system pump draws its cooling water to cool equipment. Any excess NCCW (after evaporative losses due to an open cooling tower) from this holding tank overflows to a drain line manhole. This manhole is fed by the drainage coming from Brimbal Avenue and the highway runoff from route 128 plus, part of the CPI parking lot and roof drains.

c) FOR MASSACHUSETTS FACILITIES ONLY: Engineering Calculations: Submit the completed engineering calculation of the surface water temperature rise as shown in Attachment A of the General Permit. Check if attached: ____X_____

Note: The Δ Tr is high because the receiving "river" is actually a road and drainage runoff ditch with no volume of water.

d) Number of outfalls ___1___

For each outfall:

e) What is the maximum daily and average monthly flow of the discharge? Note that EPA will use the flow reported here as the facility's permitted effluent flow limit. Max Daily Flow _____17000____ GPD Average Flow ____4386_____ GPD

Note: Average flow numbers from previous 12 months usage. Max daily flow was 7280 GPD. The 17000 GPD was an anomaly due to a malfunctioning valve. Max. GPD is approximately 10,000.

f) What is the maximum daily and average monthly temperature of the discharge (in degrees F)? Max Temp. _78.3_ Average Temp. __72.5

Note: Average based on previous 12 month actuals.

g) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH ____7.98___ Min pH ___6.58___

Note: based on previous 12 month actuals. (We do not adjust Ph)

h) **FOR MASSACHUSETTS FACILITIES ONLY: Is the source water of the NCCW potable water? Yes__X__ No _____ If Yes, EPA will calculate the Total Residual Chlorine limit for facilities located in Massachusetts.**

i) **Is the discharge continuous? Yes __X__ No _____ If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B) _____**
If (P), number of days or months per year of the discharge _____ and the specific months of discharge _____;
If (I), number of days/year there is a discharge _____

j) **Latitude and longitude of each discharge within 100 feet: outfall 1: long.W 70-52-51 lat. N42-34-25.5**
(Seehttp://www.epa.gov/tri/report/siting_tool)

k) **Provide the calculated seven day-ten year low flow (7Q10) of the receiving water _____.02_ cfs**
Please attach any calculation sheets used to support stream flow and dilution calculations.
See General Permit Attachment B for equations and additional information.

MASSACHUSETTS FACILITIES: See Part 3.4 and Appendix 1 of the General Permit for more information on ACEC.
Areas of Critical Environmental Concern (ACEC): Does the discharge occur in an ACEC? Yes _____ No __X__
If yes, provide the name of the ACEC: _____

3. NCCW Source Water Information. Please provide information about the NCCW source water, using separate sheets as necessary:

a) Indicate source of the NCCW (i.e., municipal water supply, private well, surface water withdrawal, groundwater): Source: _____ **Name of Source Water: _ Salem Beverly Water Supply (Municipal Water Supply)** **Is the source registered/permitted under MA Water Management Act or NHDES Water User Registration Rule (Env Wq 2202)? Yes___ _ No__X_** **If yes, registration number: _____**	**b) If source water is surface water:** **i) Is it a freshwater river or stream Yes_____ No__X___** **ii) Is it a lake? _____ reservoir?_____** **iii) Is it tidal river? _____ estuary? _____ ocean?_____** **c) Is the source water groundwater? Yes _____ No ___X___ If yes, see Appendix 8 and submit effluent and surface water test results, as required in Part 5.4 of the General Permit.** **d) Does the facility use both a primary and backup source of noncontact cooling water? Yes _____ No _____X_____** **If yes, attach information that identifies and explains the primary and backup sources of noncontact cooling water for and how often the backup supply was used in last three years.**

4. Best Technology Available for CWIS

Are you subject to BTA requirements at Part 4.2 of the General Permit? (Facility's discharge is covered by this General Permit and the facility withdraws noncontact cooling water from surface source water). Yes_____ No____X___ If No, explain: No CWIS

If YES, attach the facility-specific BTA description as required in Part 4.3 of the General Permit. For additional information and guidance, see Questions 13-23 of the NCCW Fact Sheet, posted at http://www.epa.gov/region1/npdes/nccwgp.html. Provide a map showing the location of each CWIS intake structure; NCCW outfall(s) and any CWIS feature referred to in the BTA description.

Include in your description:

_____ Measures to meet the General Permit Part 4.3.a general BTA requirements, including documentation that describes the facility's monitoring program for impinged fish and/or invertebrate; or the required alternative monitoring plan frequency and/or protocol
_____ A characterization of the source water body's aquatic life habitat in the vicinity of each CWIS during the seasons when the CWIS may be in use
_____ The attributes of the current CWIS
_____ Design measures of the CWIS
_____ Operation measures of the CWIS
_____ Historical occurrence of impinged fish for the past five years
_____ If applicable, a demonstration that the facility's intake rate is commensurate with a closed-cycle recirculation system
_____ Other components to reduce impingement and/or entrainment of aquatic life

4. BTA FOR CWIS CONTINUED:

Provide the following information for each CWIS to support your attached facility-specific BTA description.
Design capacity of the of the CWIS _____MGD
Maximum monthly average intake of the CWIS during the previous five years _____MGD Month in which this flow occurred _____
Maximum through-screen design intake velocity _____feet/second (fps)

For facilities where the CWIS is located on a freshwater river or stream, provide the following information:
The source water's annual mean flow _____cubic feet/second (cfs) as available from USGS or other appropriate source
The design intake flow as a % of the source water's annual mean flow _____ Attach calculations if equal to or less than 5% of annual mean flow.
The source water's 7Q10 _____cfs. See Attachment B of the General Permit for more information on 7Q10 determinations.
The design intake flow as a percent of the source water's 7Q10 _____

5. Contaminant Information

If applicable, attach a listing of all non-toxic pH neutralization and/or dechlorination chemicals used, including chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the NCCW discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC_{50} in percent for aquatic organism(s)).

Declorination: Calgon, "Filtasorb 400" Granular activated carbon for potable water (no contaminants in effluent)
Neutralization for Corrosivity (previously approved, desired but not critical):Quikrete "Limestone" (calcium carbonate) < 1 mg/l discharge. (SEE ATTACHED) MSDS's)

6. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendix 2, Part C, Step 4, of the General Permit. In addition, respond to the following questions.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes____No__X__

b) Has any consultation with the federal services been completed? Yes___ No___

c) Is consultation underway? Yes ____ No____

d) What were the results of the consultation with the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service (check one):
a "no jeopardy" opinion _____or written concurrence____ on a finding that the discharges are not likely to adversely affect any endangered species or

e) Which of the five eligibility criteria listed in Appendix 2, Section B (A,B,C,D or E) have you met? _____

f) Attach a copy of the most current federal listing of endangered and threatened species from the USF&W web site listed in Appendices 2, 2.1 and 4

7. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility site or in proximity to the discharge? Yes _____ No __X__

Have any State or Tribal historic preservation officers been consulted in this determination? Yes _____ or No ___X__ If yes, attach the results of the consultation(s).

c) Which of the three National Historic Preservation Act requirements listed in Appendix 3, Section C (1,2 o3) have you met? _____

8. Supplemental Information: Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit

9. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the noncontact cooling water (NCCW) system; (2) the discharge consists solely of NCCW (to reduce temperature) and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product (other than heat) or finished product; (4) if the discharge of noncontact cooling water subsequently mixes with other wastewater (i.e.stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for noncontact cooling water; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. (SEE DATA ON CALCIUM CARBONATE OPTION FOR NEUTRALIZATION)

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name: Communications & Power Industries, Beverly Microwave Division

Operator signature: 9/24/08

Title: Corporate Vice President, President of CPI-BMD

Date: 9/24/2008

Federal regulations require this application to be signed as follows:
1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

scott, mark

From: Keohane, Kathleen (DEP) [Kathleen.Keohane@state.ma.us]
Sent: Tuesday, August 05, 2008 5:38 PM
To: scott, mark
Subject: 7Q10 and dilution factor

any of the watershed tools don't work in the the North Shore watershed because it is very flat. That being said, using MassGIS, we estimated a 7Q10 of 0.65 sq mi. We so use a flow factor of 0.02 cfs per square mile for watersheds under 10 sq mi.

65 sq mi x 0.02 cfs = 0.013 cfs = 0.008 MGD

om July 2006 to June 2008, the highest flow at outfall 001 was 0.017 MGD

lution factor = $\frac{0.008 \text{ MGD} + 0.017}{0.017} = 1.5$

/e monthly TRC = 11 ug/l TRC x 1.5 = 16.5 ug/l
ax daily TRC = 19 ug/l TRC x 1.5 = 28.5 ug/l

) you will either have to treat or go closed loop.

ope this helps. Give me a call if I can answer any questions before Thursday.

athleen Keohane
urface Water Discharge Permits Program
assDEP Division of Watershed Management
27 Main Street
'orcester, MA 01608
none: 508-767-2856
ax: 508-791-4131
'or Use in Intra-Agency Policy Deliberations Only"

Appendix A (Surface Water Temperature rise Calculations

Using example 2 of attachment A

ΔTr = change in "River" temperature
ΔTp = change in temperature (effluent- influent ° F)
Mp = mass of effluent
Mr = mass of "river"

Tr = Mp/ Mr X ΔT p

72.5°F ave. influent temp
35°F min. influent temp
37.5°F = ΔTp

Mp = **.017 mgd** (extreme max.)
Mr = .02 cfs/sq. mi x .65 sq. mi.=.013 cfs x .645 mgd/cfs = **.00838 mgd**

ΔTr = .017/ .00838 x 37.5 °F = 76 °F

APPENDIX 7

Noncontact Cooling Water General Permit
Notice of Termination

1) Name of facility: **Communications & Power Industries, Beverly Microwave Division**	Mailing address of facility: **150 Sohier Road** **Beverly, Ma. 01915-5595**	
2) Name of the operator: **Communications & Power Industries Inc.**	Address of operator: **607 Hansen Way** **Palo Alto, Ca. 94304**	
3) NPDES permit number assigned: **MAG250520, (OUTFALL NO. 002 ONLY)**	Telephone number of the operator: **978-279-0155**	Location of the facility: Latitude: **W 70-52-55** Longitude: **N 42-34-25**
4) Has the discharge been permanently terminated? Yes **X** No _____ Reason for termination (i.e., discharge connect to sewer, installed closed loop system, etc): **Installed Close Loop System (OUTFALL NO. 002 ONLY)**		
5) Signatory requirements according to 40 CFR Section 122.22 and certification statement: *I certify under penalty of law that all discharges from the identified facility that are authorized by the Noncontact Cooling Water General Permit (NCCW GP) have been terminated. I understand that by submitting this Notice of Termination (NOT), I am no longer authorized to discharge waters covered by the NCCW GP and that discharging pollutants from the activity covered by the NCCW GP is unlawful under the Clean Water Act where the discharge is not authorized by a permit. I also understand that the submission of this NOT does not release an owner/operator from liability for any violation of the NCCW GP or the Clean Water Act.* Signature of operator _____ Date 9/24/08 **Don Coleman** Title:**President, CPI, BMD**		

Northeast Environmental Laboratory, Inc.

18 Riverside Avenue, Danvers, MA 01923
978-777-4442 DEP #MA123

CPI, Beverly Microwave Division
150 Sohier Road
Beverly, MA 01915-5595

Report Number 29316
Report Date 9/23/08

70663 Grab at upstream brook (main flow from Brimbal Ave, direction), field pH 6.20
Collected 9/19/08 at 13:35 by JL
Received 9/19/08 at 14:10 by DE
Preservation HN03

Parameter	Result	MDL	Units	Method	Analyzed	Lab	By
Iron	28.7	0.04	mg/L	3111B	09/23/08	MA123	JL
Manganese	3.23	0.01	mg/L	3111B	09/23/08	MA123	JL

Field temp: 15.7°C (60.3°F) Iron and manganese analysis performed on acidified, undigested sample.

70664 Grab at upstream brook (flow from 128 exit ramp direction), field pH 6.70
Collected 9/19/08 at 13:45 by JL
Received 9/19/08 at 14:10 by DE
Preservation HN03

Parameter	Result	MDL	Units	Method	Analyzed	Lab	By
Iron	4.31	0.04	mg/L	3111B	09/23/08	MA123	JL
Manganese	0.56	0.01	mg/L	3111B	09/23/08	MA123	JL

Field temp: 17.5°C (63.5°F) Iron and manganese analysis performed on acidified, undigested sample.

70665 Grab at downstream brook (stormwrater drain under bridge), field pH 6.29
Collected 9/19/08 at 14:00 by JL
Received 9/19/08 at 14:10 by DE
Preservation HN03

Parameter	Result	MDL	Units	Method	Analyzed	Lab	By
Iron	25.2	0.04	mg/L	3111B	09/23/08	MA123	JL
Manganese	3.04	0.01	mg/L	3111B	09/23/08	MA123	JL

Field temp: 15.2°C (59.4°F) Iron and manganese analysis performed on acidified, undigested sample.

Upstream and downstream of the non-contact cooling water discharge samples were collected for analysis of total chlorine. However, high levels of iron and manganese contribute interferences in the colorimetric analysis which result in inaccurate readings, therefore chlorine has not been reported.

References

Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Reviewed and Approved by:
John Lovatt
Laboratory Director

29316

Northeast Environmental Laboratory, Inc.
18 Riverside Avenue
Danvers, MA 01923
978 777 4442

Chain of Custody

Communications & Power Industries BMD
150 Sohier Road
Beverly, MA 01915

NEL Id: 70663
Sample Description: Grab at upstream brook (main flow from Brimbal Ave, direction)
Date & Time: 9/19/08 13:35
field pH & temp. 6.20, 15.7°c repeat 6.19, 15.1°c
Preservation: analyse asap
Bottle: 1x500 ml brown plastic
Analysis: Total Residual Chlorine 8370

NEL Id: 70664
Sample Description: Grab at upstream brook (flow from 128 exit ramp direction)
Date & Time: 9/19/08 13:45
field pH & temp. 6.70, 17.5°c repeat 6.89, 17.8°c
Preservation: analyse asap
Bottle: 1x500 ml brown plastic
Analysis: Total Residual Chlorine 8370

NEL Id: ~~9/19/08 - 14 00~~ 70665
Sample Description: Grab at downstream brook (stormwater drain under bridge)
Date & Time: 9/19/08 14:00
field pH & temp. 6.29, 15.2°c repeat 6.31, 15.3°c
Preservation: analyse asap
Bottle: 1x500 ml brown plastic
Analysis: Total Residual Chlorine 8370

Collected by: John Leratt
Received by: [signature]
Date & Time: 9/19/18 14:10

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 18, 2005

Mr. Steven Coker
Communications and Power Industries
Beverly Microwave Division
150 Sohier Road
Beverly, MA 01915-5595

RE: NPDES Notice of Intent for the Non-Contact Cooling Water General Permit
MAG250520 - (Communications and Power Industries)

Dear Mr. Coker:

This letter is to acknowledge that your Notice of Intent (NOI) for the Non-contact Cooling Water General Permit has been received and has been reviewed by this office. The information submitted appears to be complete and will be kept in our offices until such time as a new Non-contact Cooling Water General Permit is reissued. Until the new permit is issued, and since you submitted a timely Notice of Intent (NOI), your facility is administratively continued under the old permit. It is expected that the new General Permit will be reissued in the fall of 2005.

Please note that should there be any changes to your processes which may affect your final permit, do not hesitate to contact me or my Department of Environmental Protection counterpart, Kathleen Keohane. I can be reached at (617)918-1519 and Kathleen can be reached at (508)767-2856 respectively.

Sincerely,

Olga Vergara
Environmental Protection Specialist
Municipal Assistance Unit

cc: K. Keohane, MA DEP

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Watershed Management, 627 Main Street 2nd Floor, Worcester, MA 01608

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ELLEN ROY HERZFELDER
Secretary

ROBERT W. GOLLEDGE, Jr.
Commissioner

January 26, 2005

Steve Coker
Communications and Power Industries
Beverly Microwave Division
150 Sohier Road
Beverly, MA 01915-5595

Re: NPDES General Permit for Non-Contact Cooling Water Discharges
MAG250520 Renewal Transmittal #W058896

Dear Mr. Coker:

The Department of Environmental Protection (DEP), Division of Watershed Management, has received your state permit application for the National Pollutant Discharge Elimination System Elimination System (NPDES) General Permit for Non-Contact Cooling Water Discharges. We have reviewed the BRP WM 11 application for administrative completeness, including proper fee payment, and have determined that all the application requirements have been fulfilled.

NPDES/Surface Water Discharge Permits are issued jointly by DEP and the U. S. Environmental Protection Agency (US EPA). EPA has not yet issued a new general permit for NCCW discharges, however, your coverage will be administratively continued and remains in force as described in Section I.D.3.c of the permit. You will receive written confirmation from EPA.

If you have any questions, please feel free to call me at 508-767-2856 or email kathleen.keohane@state.ma.us.

Very truly yours,

Kathleen Keohane

Kathleen Keohane
Environmental Engineer

Cc: Paul Hogan
Olga Vergara/EPA

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Watershed Management, 627 Main Street 2nd Floor, Worcester, MA 01608

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ELLEN ROY HERZFELDER
Secretary

ROBERT W. GOLLEDGE, Jr.
Commissioner

August 19, 2004

Steven Coker
Communications and Power Industries, Inc.
Beverly Microwave Division
150 Sohier Road
Beverly, MA 01915-5595

Re: NPDES General Permit No. MAG250520
General Permit for Non-Contact Cooling Water Discharges

Dear Mr. Coker:

The Department of Environmental Protection, Division of Watershed Management, has reviewed the information you submitted in your request to add a calcium carbonate treatment cylinder to CPI's non-contact cooling water system.

The use of this system is approved. Any changes to the system must be approved in writing prior to use, as required by part I.B.1.1 of the general permit published in the Federal Register on April 25, 2000 (40CFR24195).

Please feel free to call me at 508-767-2856 if you have any questions.

Very truly yours,

Kathleen Keohane

Kathleen Keohane
Environmental Engineer

Cc: Paul Hogan
Olga Vergara/EPA

CALGON

CALGON CARBON CORPORATION

Making Water and Air Safer and Cleaner

FILTRASORB® 300 & 400

Granular Activated Carbons for Potable Water

Description

FILTRASORB® 300 and FILTRASORB® 400 are two high activity granular activated carbons developed by Calgon Carbon Corporation for the removal of taste and odor compounds and dissolved organic compounds from water treatment.

These activated carbons are made from selected grades of bituminous coal to produce a high activity, durable granular product capable of withstanding the abrasion associated with repeated backwashing, air scouring, and hydraulic transport. Activation is carefully controlled to produce an exceptionally high internal surface area with optimum pore size for effective adsorption of a broad range of high and low molecular weight organic contaminants. The product is also formulated to comply with all the applicable provisions of the AWWA Standard for Granular Activated Carbon, edition B604-96, the stringent extractable metals requirements of ANSI/NSF Standard 61, and the Food Chemicals Codex.

Applications

FILTRASORB® 300 and 400 activated carbons can be used to treat surface and groundwater sources for the production of drinking water. These products can be used as a complete replacement for sand and anthracite media. FILTRASORB® 300 and 400 activated carbons function as dual purpose media, providing both filtration and adsorption. FILTRASORB® has been used successfully in drinking water applications for over 40 years.

Design Considerations

As a replacement for existing filter media, conversion to FILTRASORB® 300 and 400 granular activated carbons impose no major changes to a plant's normal filtration operations. Calgon Carbon Corporation can also provide complete modular adsorption systems as an add-on treatment stage if required.

Features	Benefits
• Bituminous-based raw material	• Provides higher hardness relative to other raw materials reducing the generation of fines and product losses during backwashing • Generates the hardness and abrasion resistance required for thermal reactivation and minimizing generation of fines in operations requiring backwashing
• Coal is pulverized and reagglomerated with suitable binder	• Pore structure provides a wider range of contaminant removal capabilities relative to other starting material • High density, wets readily, and does not float, thus minimizing loss during backwash operations • Creates optimal transport paths for faster adsorption

Specifications	F300	F400
Iodine Number, mg/g (min)	900	1000
Moisture, weight % (max %)	2	2
Abrasion Number (min)	78	75
Effective Size, mm	0.8 - 1.0	0.55-0.75
Uniformity Coefficient (max)	2.1	1.9
Ash, weight % (max)	8	9
Apparent Density, g/cc (min)	0.48	0.44
US Sieve Series, weight %		
Larger than No. 8 (max)	15	-
Smaller than No. 30 (max)	4	-
Larger than No. 12 (max)	-	5
Smaller than No. 40 (max)	-	4

Carbon and Process Media

Visit our website at **www.calgoncarbon.com**, or call 800-422-7266 to learn more about our complete range of products and services, and obtain local contact information.

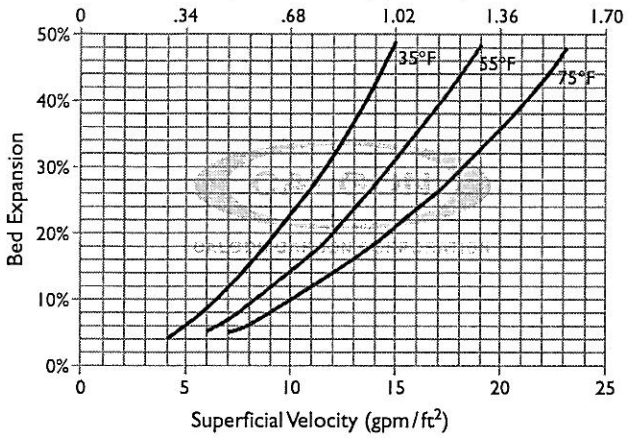
CPM-PB1042-0304

Responsible Care®
Good Chemistry at Work

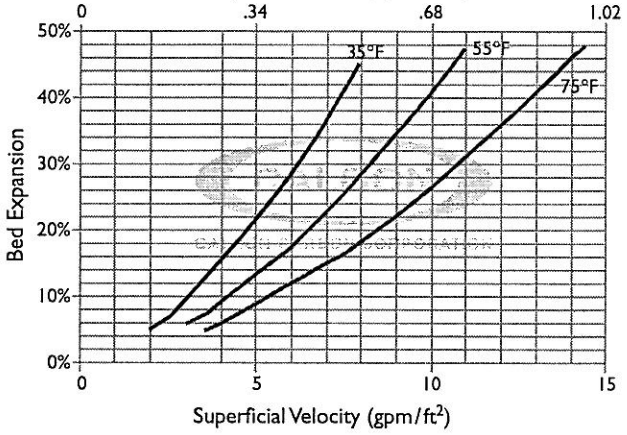
FILTRASORB® 300 & 400

Granular Activated Carbons for Potable Water

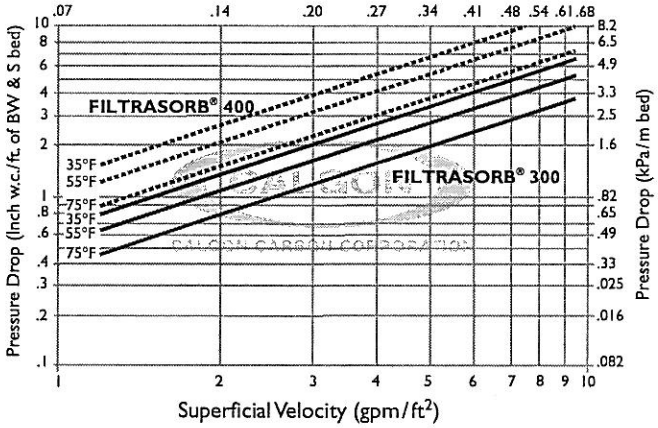
FILTRASORB® 300 – Bed Expansion
Backwashed & Segregated Bed



FILTRASORB® 400 – Bed Expansion
Backwashed & Segregated Bed



FILTRASORB® Downflow Pressure Drop
Backwashed & Segregated Bed



Safety Message

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low oxygen spaces should be followed, including all applicable federal and state requirements.

Visit our website at **www.calgoncarbon.com**

CALGON

CALGON CARBON CORPORATION

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Chemviron Carbon

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Fx: + 32 (0) 64 54 15 91

Your local office

CPM-PB1042-0304

Material Safety Data Sheet
[OSHA 29 CFR 1910.1200]

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30329

Emergency Telephone Number
(770) 216-9580

Information Telephone Number
(770) 216-9580

Revision: July 2003

MSDS C

SECTION I: PRODUCT IDENTIFICATION

Product Types: LIMESTONE AGGREGATES

QUIKRETE® Product Name	Code #	QUIKRETE® Product Name	Code #
AGRICULTURAL LIMESTONE	1111	MARBLE CHIPS	9906
PATIO PAVER LIMESTONE BASE	1150-49	ATHLETIC FIELD MARKER	1954
PELLETIZED LIME	1125-40		

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components	CAS No.	PEL (OSHA) mg/M^3	TLV (ACGIH) mg/M^3
Limestone (Calcium Carbonate)	1317-65-3	5	5
Silica Sand, crystalline (1)	14808-60-7	$\frac{10}{\%SiO_2+2}$	0.05 (respirable)

Other Limits: National Institute for Occupational Safety and Health (NIOSH). Recommended standard maximum permissible concentration=0.05 mg/M^3 (respirable free silica) as determined by a full-shift sample up to 10-hour working day, 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica.

(1) Low levels of crystalline Silica (0.01-1.5 %) may be found in this product either naturally occurring in the limestone materials or due to low levels of contamination which occurs in the manufacturing process.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance : White to off white crushed, ground or powdered solid

Specific Gravity:	~2.7	**Melting Point:**	NA	**Boiling Point:**	Decomposes to CaO
Vapor Pressure:	None	**Vapor Density:**	None	**Evaporation Rate:**	None
Solubility in Water:	Slight	**Odor:**	None		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability: Noncombustible and not explosive.
Extinguishing Media: None required.

SECTION V - REACTIVITY DATA

Stability: Stable.

Incompatibility (Materials to Avoid): Reacts with strong acids to liberate carbon dioxide

Hazardous Decomposition or By-products: None

Hazardous Polymerization: Will Not Occur.

SECTION VI - HEALTH HAZARD DATA

The product contains silica particles that may be broken down to the respirable size range during shipping, handling, or use, and thus may be inhaled.

Route(s) of Entry: Inhalation

Health Hazards (Acute and Chronic): Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

Carcinogenicity listings: Crystalline silica, a trace component in the product is listed as follows:

NTP:	Known carcinogen
OSHA:	Not listed as a carcinogen
IARC Monographs:	Group 1 Carcinogen
California Proposition 65:	Known carcinogen

NTP: The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al.*, 1997; Hind *et al.*, 1997)

IARC: The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans (*Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates..." (1997)

Signs and symptoms of Exposure: Undue breathlessness, wheezing, cough, and sputum production.

Medical Conditions Generally Aggravated by Exposure: Pulmonary function may be reduced by inhalation of respirable crystalline silica. Also lung scarring produced by such inhalation may lead to a progressive massive fibrosis of the lung (silicosis) which may aggravate other pulmonary conditions and diseases and which increases susceptibility to pulmonary failure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of

scleroderma, Tuberculosis and possibly increased incidence of kidney lesions. Smoking aggravates the effect of exposure.

Emergency and First Aid Procedures: Eye Contact: Wash immediately with water. If irritation persists, seek medical attention. For gross inhalation, remove person immediately to fresh air, give artificial respiration as needed, seek medical attention as needed.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Spills: Use dustless methods (vacuum) and place into covered container for disposal or flush with water. Do not dry sweep. Wear protective equipment specified below.

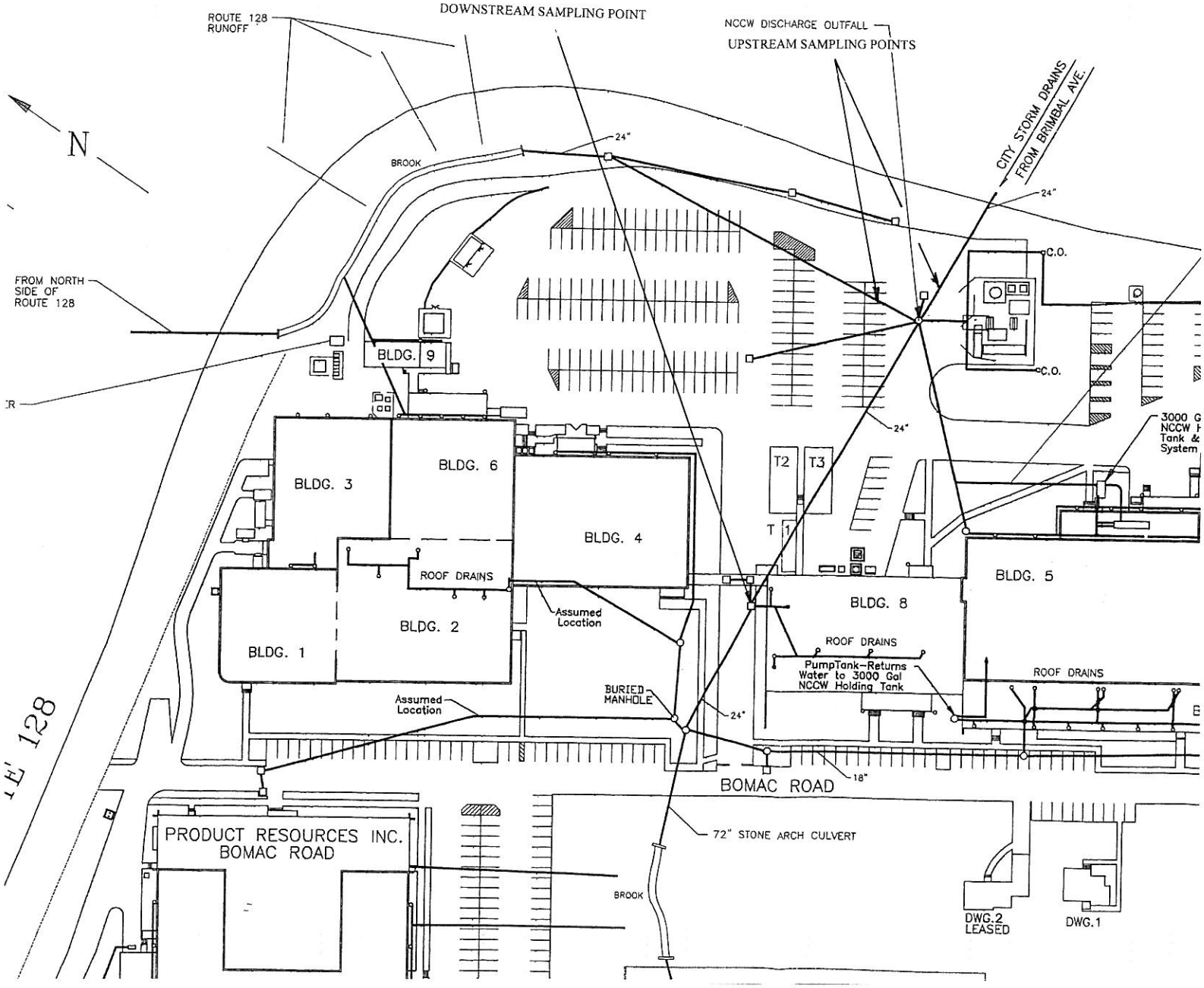
Waste Disposal Method: The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under RCRA or CERCLA.

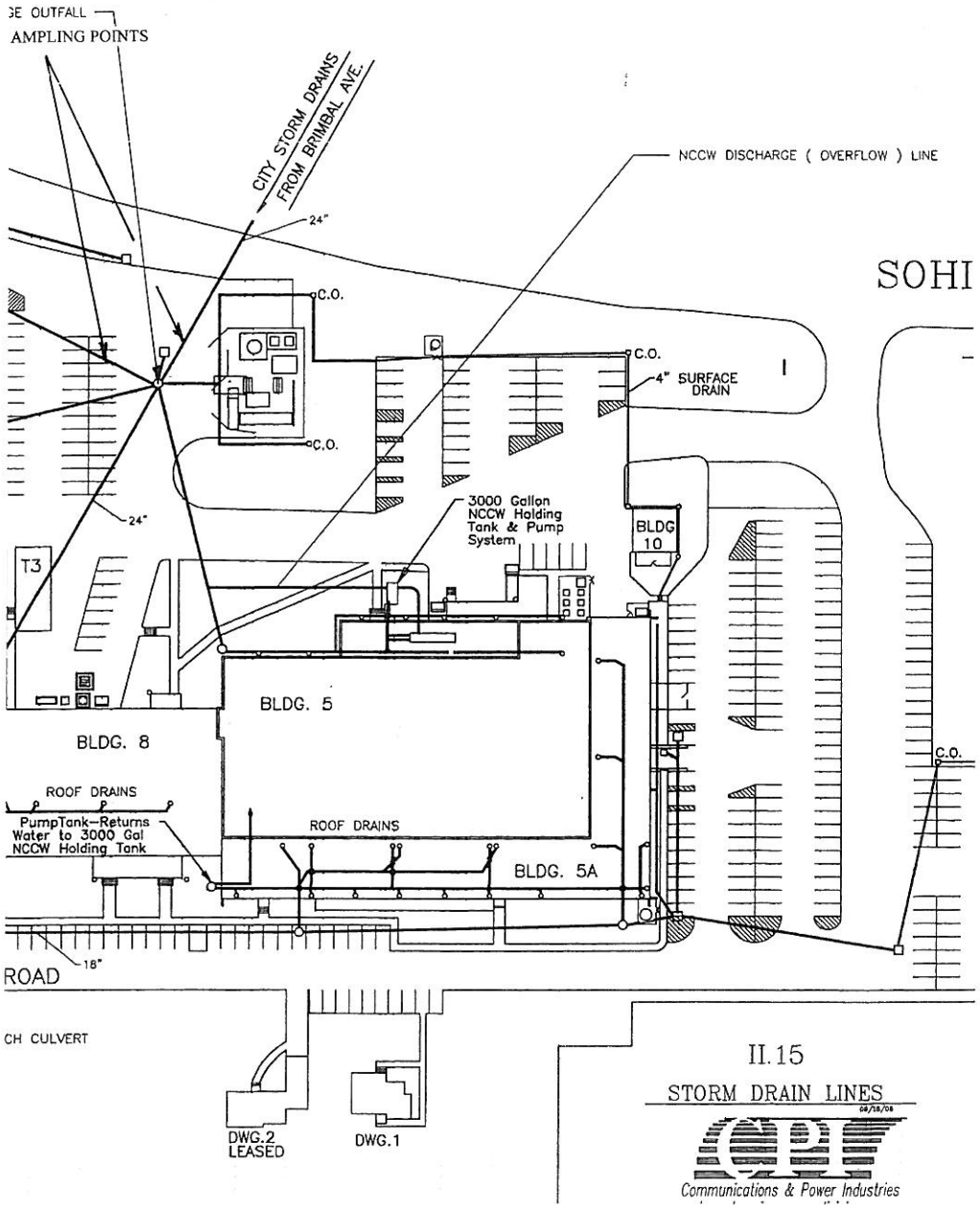
SECTION VIII - CONTROL MEASURES/PERSONAL PROTECTION

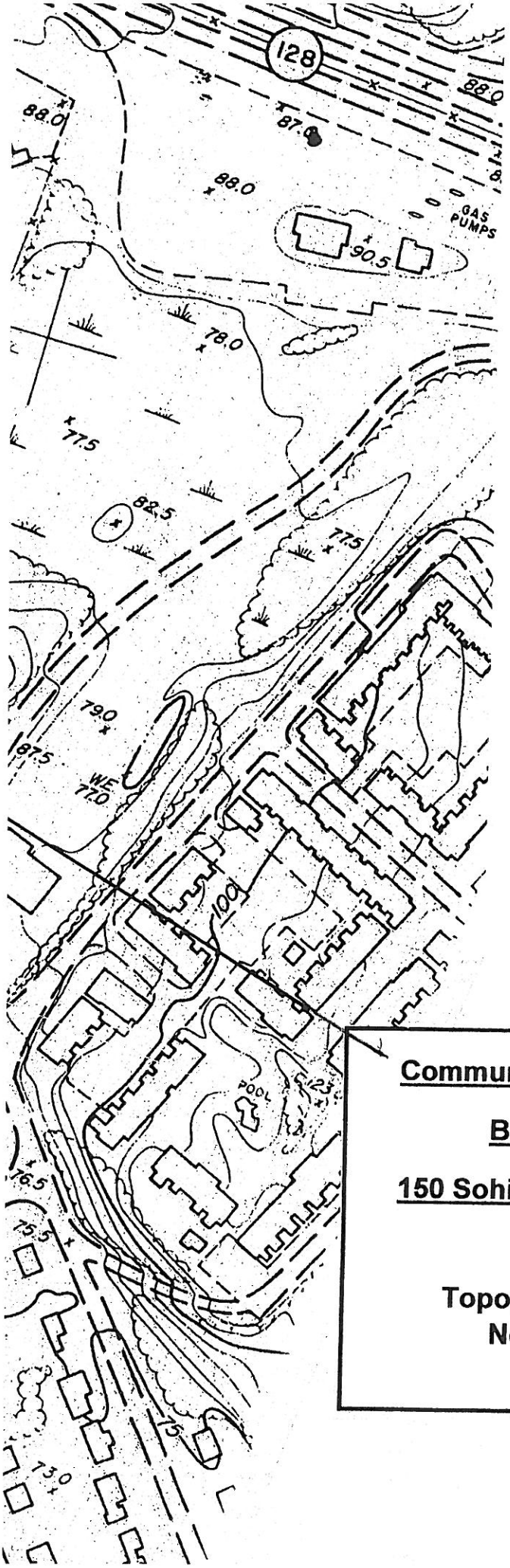
Inhalation: DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator is recommended. Local exhaust can be used, if necessary, to control airborne dust levels.
Eyes: Wear tight fitting goggles

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products. Customers-users must comply with all applicable health and safety laws, regulations and orders covering silica.


ROUTE 128
RUNOFF
DOWNSTREAM SAMPLING POINT
NCCW DISCHARGE OUTFALL
UPSTREAM SAMPLING POINTS
CITY STORM DRAINS
FROM BRIMBAL AVE.
N
BROOK
24"
FROM NORTH
SIDE OF
ROUTE 128
C.O.
BLDG. 9
BLDG. 3
BLDG. 6
BLDG. 4
T2
T3
T1
BLDG. 5
BLDG. 8
ROOF DRAINS
BLDG. 2
BLDG. 1
Assumed
Location
PumpTank-Returns
Water to 3000 Gal
NCCW Holding Tank
BURIED
MANHOLE
18"
BOMAC ROAD
PRODUCT RESOURCES INC.
BOMAC ROAD
72" STONE ARCH CULVERT
DWG.2
LEASED
DWG.1
128


SE OUTFALL
SAMPLING POINTS
CITY STORM DRAINS FROM BRIMBAL AVE.
NCCW DISCHARGE (OVERFLOW) LINE
24"
SOHI
C.O.
C.O.
4" SURFACE DRAIN
C.O.
24"
3000 Gallon NCCW Holding Tank & Pump System
BLDG 10
T3
BLDG. 5
BLDG. 8
ROOF DRAINS
PumpTank-Returns Water to 3000 Gal NCCW Holding Tank
ROOF DRAINS
BLDG. 5A
C.O.
18"
ROAD
CH CULVERT
DWG.2 LEASED
DWG.1
II.15
STORM DRAIN LINES
04/28/08
CPI
Communications & Power Industries



MAP on file IN EPA office 9/25/08

Communications & Power Industries Inc.

Beverly Microwave Division

150 Sohier Road, Beverly, Ma 01915-5595

Topography for the NCCW-NPDES Notice of Intent Application

9/22/2008