

- c) Is there a pending NPDES application on file with EPA for this discharge? yes ☐ no ☒
 If yes, date of submittal: _____ and permit number, if available _____

7. Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water.

Map attached? ☒

B. Discharge Information (attach additional sheets as needed):

1. Name of receiving water into which discharge will occur: Cold Spring Brook
 Freshwater ☒ Marine Water ☐
 State Water Quality Classification Class Warm Water Fishery B
 Type of Receiving Water Body (e.g., stream, river, lake, reservoir, estuary, etc.) Stream

2. Attach a line drawing or flow schematic showing water flow through the facility including sources of intake water, operations contributing to flow, treatment units, outfalls, and receiving water(s). **Line drawing or flow diagram attached?** ☒

3. Describe the discharge activities for which the owner/applicant is seeking coverage (e.g., building cooling, process line cooling, etc.) Non-Contact Cooling Water: See attachment B

4. Number of Outfalls 1 Latitude and Longitude to the nearest second for each Outfall. See EPA's siting tool at http://www.epa.gov/tri/reporting/siting_tool. Attach additional pages if necessary.

Outfall # 1	Latitude <u>42 15' 23.06"</u>	Longitude <u>71 27' 20.26"</u>
Outfall #	Latitude _____	Longitude _____
Outfall #	Latitude _____	Longitude _____

5. For each Outfall provide the following discharge information:

Outfall # 1
 a) Maximum Daily Flow .00876 MGD Average Monthly Flow 0 MGD
NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.
 b) Maximum Daily Temperature 80 °F Average Monthly Temperature 68 °F
 c) Maximum Monthly pH 7.9 s.u. Minimum Monthly pH 6.8 s.u.
 d) Outfall's discharge is: continuous ☐ intermittent ☒ seasonal ☐

Outfall # _____
 a) Maximum Daily Flow _____ MGD Average Monthly Flow _____ MGD
NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.
 b) Maximum Daily Temperature _____ °F Average Monthly Temperature _____ °F
 c) Maximum Monthly pH _____ s.u. Minimum Monthly pH _____ s.u.
 d) Outfall's discharge is: continuous ☐ intermittent ☐ seasonal ☐

Outfall # _____
 a) Maximum Daily Flow _____ MGD Average Monthly Flow _____ MGD
NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.
 b) Maximum Daily Temperature _____ °F Average Monthly Temperature _____ °F
 c) Maximum Monthly pH _____ s.u. Minimum Monthly pH _____ s.u.
 d) Outfall's discharge is: continuous ☐ intermittent ☐ seasonal ☐

6. Is the source of the NCCW potable water? yes ☐ no ☒

If yes, EPA will calculate a Total Residual Chlorine effluent limit for your facility.

7. Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.23 MGD
Attach any calculation sheets used to support stream flow and/or dilution calculations. See attachment D

8. For facilities that discharge to Massachusetts surface waters:

- a) Submit the completed engineering calculation of the surface water temperature rise as shown in Attachment B of the General Permit. Calculation attached? ☒

- b) Does the discharge occur in an Area of Critical Environmental Concern (ACEC)? yes ☐ no ☒

If yes, provide the name of ACEC _____

Note: See Part 3.4 and Appendix 1 of the General Permit for more information on ACEC.

C. Chemical Additives

1. Are any non-toxic neutralization and/or dechlorination chemicals used in the discharge(s)? yes ☐ no ☒

2. If yes, attach a listing of each chemical used. Include the chemical name and manufacturer; maximum and average daily quantity used on a monthly basis, as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC₅₀ in percent for typically acceptable aquatic organism).

3. Was the listing submitted with the facility's 2008 NCCWGP NOI? yes ☐ no ☒

D. NCCW Source Water Information

1. State the source of the NCCW (e.g., municipal water supply, private well, surface water withdrawal, etc.).

Source Private Well Name of Source Water Kidde-Fenwal Private Well

2. Is the source water registered/permitted under MA Water Management Act or NHDES User Registration Rule (ENV WQ 2202)? yes ☒ no ☐ If yes, registration number 31401402

3. If the source water is groundwater (non-municipal well water), see Appendix 9 of the General Permit and submit effluent (and receiving water hardness) test results, as required in Part 5.4 of the General Permit.

Test results attached? ☒

4. Does the facility use both a primary and backup source of NCCW? yes ☒ no ☐ If yes, **attach information** that identifies and explains the primary and backup sources of NCCW and how often the backup supply was used in the past three years. See attachment F

E. Best Technology Available for Cooling Water Intake Structures (CWISs)

If the facility's discharge is covered by this General Permit and the facility **withdraws non-contact cooling water from a surface water**, you are subject to the BTA requirements at Part 4.2 of the General Permit.

1. Are you subject to the BTA requirements of the General Permit? yes ☐ no ☒

a) If no, explain Kidde-Fenwal does not use surface water for NCCW and skip to F.

- b) If yes, was the facility-specific BTA description submitted with the facility's 2008 NCCW GP NOI?
yes ☐ no ☐

- c) If yes, does that description accurately describe the facility current operations and practices? yes ☐ no ☐

2. If the facility is subject to the General Permit's BTA requirements and is requesting coverage under the NCCWGP for the first time, or if you answered "No" to question E.1.c. above, attach the facility-specific BTA description as required in Part 4.2 of the General Permit. For additional information and guidance, see Section IV of the Fact Sheet.

Include in your description:

- a) 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.
- b) 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.
- c) The attributes of the current CWIS.
- d) The design measures of the CWIS.
- e) The operation measures of the CWIS.
- f) The historical occurrence of impinged fish for the past five years.
- g) If applicable, a demonstration that the facility's intake rate is commensurate with a closed-cycle recirculation system.
- h) Other components to reduce impingement and/or entrainment of aquatic life.

3. Provide the following information for each CWIS to support your attached facility-specific BTA description:

- a) The design capacity of the of the CWIS _____ MGD
- b) Maximum monthly average intake of the CWIS during the previous five years _____ MGD
- c) The month in which this flow reported in 3.b. occurred _____
- d) The maximum through-screen design intake velocity _____ feet/second (fps)

4. For facilities where the CWIS is located on a freshwater river or stream, provide the following information:

- a) The source water's annual mean flow in MGD as available from USGS or other appropriate source _____ MGD
- b) 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.
- c) The source water's 7Q10 _____ MGD
- d) The design intake flow as a percent of the source water's 7Q10 _____ %

5. Provide a map showing the location of each cooling water intake structure; NCCW Outfall(s) and CWIS features referred to in the BTA description. **Map attached?** ☐

F. Endangered Species Act Eligibility Information

Using the instructions in Appendix 2 of the NCCW GP, which of the following criteria apply to your facility? USFWS

Criteria: A ☒ B ☐ C ☐

1. If you selected USFWS criteria B, has consultation with the U.S. Fish and Wildlife Service been completed?

yes ☐ no ☐

2. If consultation with US Fish & Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received?

yes ☐ no ☐

3. Attach documentation of ESA eligibility for USFWS as required at Part 3.4 and Appendix 2 of the General Permit.

Documentation attached? _____

4. Please indicate if your facility **directly intakes water for non-contact cooling** from any of the following waterbodies:

- ☐ Merrimack River
- ☐ Connecticut River
- ☐ Piscataqua River
- ☐ Taunton River

EPA will consult with the National Marine Fisheries Service on cooling water intakes covered under this permit in areas (in the above waterbodies) of the endangered Shortnose Sturgeon and Atlantic Sturgeon.

G. National Historic Properties Act Eligibility

1. 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 ☒

2. Have any State or Tribal Historic Preservation Officers been consulted in this determination? yes ☐ no ☒
If yes, attach the results of the consultation(s).

3. Which of the three National Historic Preservation Act scenarios listed in Appendix 3, Section C have you met?
☒ 1 ☐ 2 ☐ 3

H. Supplemental Information

Please provide any supplemental information, including antidegradation review information applicable to new or increased discharges. Attach any analytical data used to support the application. Attach any certification(s) required by the General Permit.

I. Signature Requirements

The NOI must be signed by the operator in accordance with the signatory requirements of 40 CFR § 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.

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.

Signature



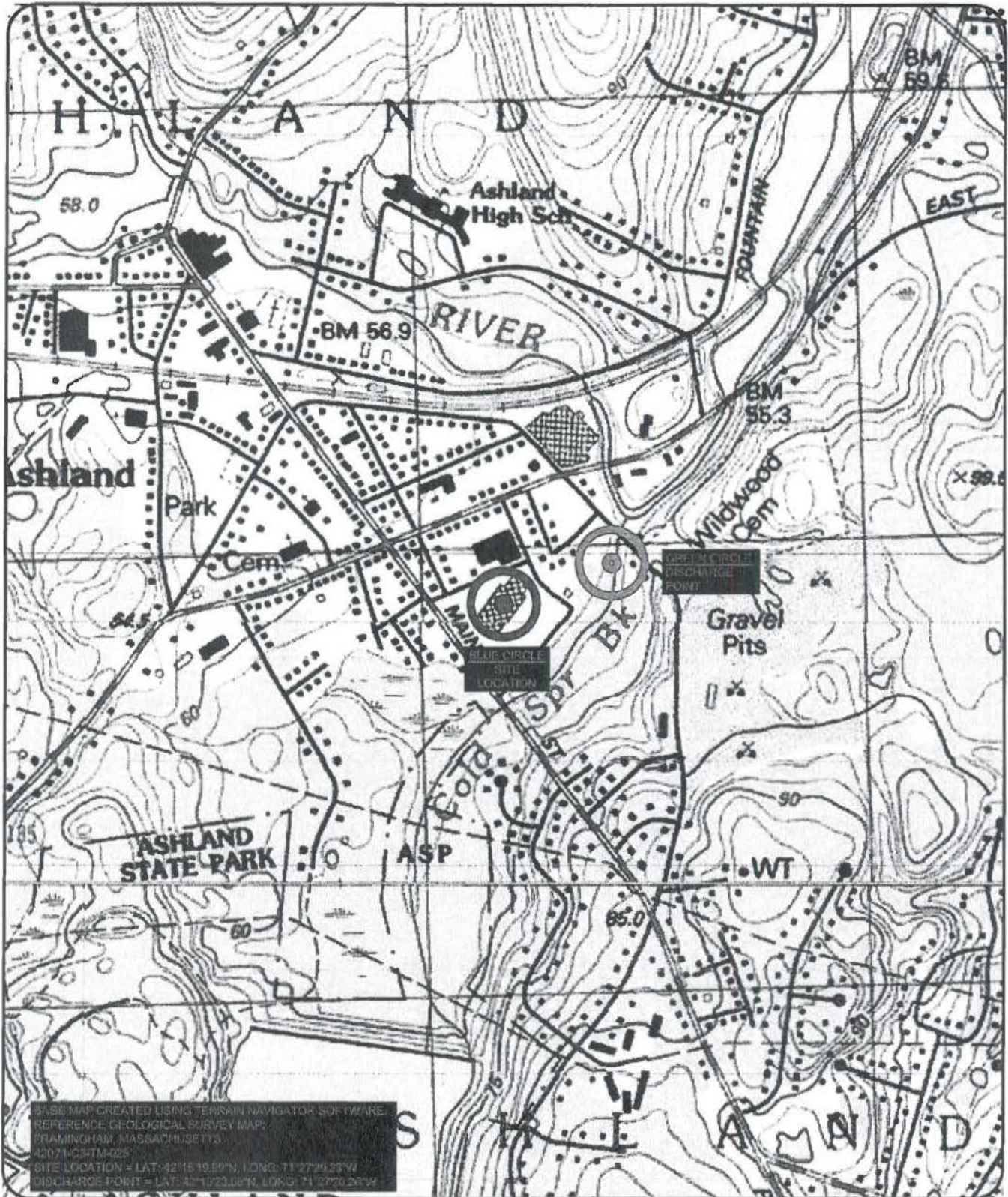
Date

1/26/2015

Printed Name and Title John Kliem, Operations Manager

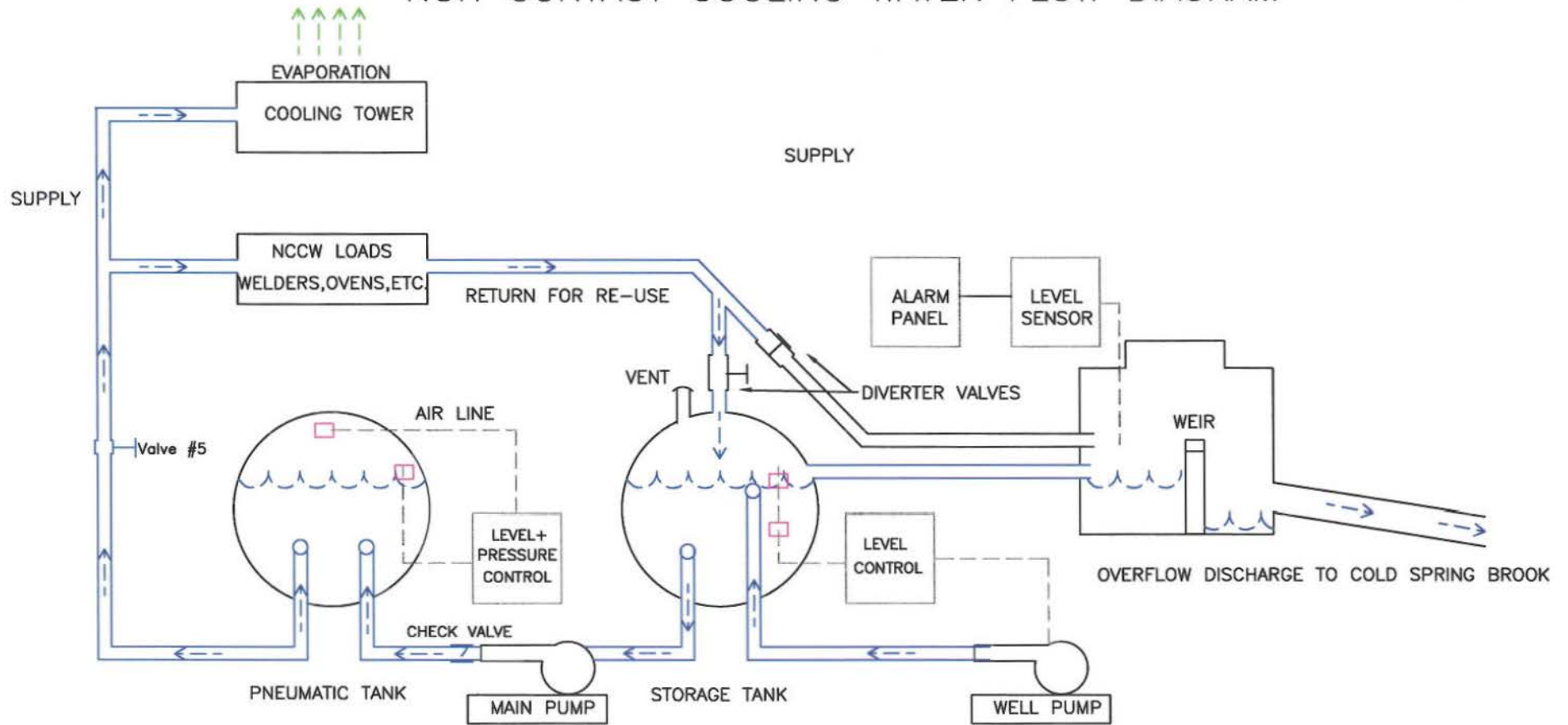
Federal regulations require this application to be signed as follows:

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.



CLIENT: Kidde-Fenwal 400 Main St., Ashland, MA 01721		Figure 1		Capacchio Environmental Engineering, Inc. 293 Boston Post Road-West Marlborough, MA 01752 (508) 970-0033 * www.capacchio.com "Helping Industry and the Environment Prosper"	
TITLE: Site Location Map	NORTH 	SCALE: 1" = 1000'-0"	DR BY: TJL	SIZE: A	
		JOB # 00-053AE	CK BY: LCS		
		DATE: 09-12-08	REV: B		

NON CONTACT COOLING WATER FLOW DIAGRAM



SYSTEM DIAGRAM—NOT TO SCALE

Description of Discharge Conditions

Attachment B

Kidde-Fenwal, Inc.
400 Main Street
Ashland, MA

Under normal operating conditions the noncontact cooling water (NCCW) system at Kidde-Fenwal (KIDDE) is a partially closed loop system in which water re-circulates through the plant and back to the initial storage tank (see Attachment F for a detailed description). This tank is periodically replenished, via a private ground water well, when evaporation or sanitary discharge occurs. There is typically no discharge from this process to surface waters unless there is a malfunction in the system. In the event that the well pump fails to turn off, water overflows the storage tank and flows into a manhole equipped with a rectangular weir. If this manhole becomes full, the well water then overflows the rectangular weir and ultimately discharges to the brook on the south side of the property. Due to the fact this situation is not expected to take place KIDDE has estimated the average discharge to be zero gallons per day (GPD). However, due to the nature of the discharge KIDDE has used the worst case scenario of flow to the brook in all calculations included with this submittal. In doing this the maximum flow from the well was determined (146 gpm), and it was assumed that 100% of the water coming from the well would ultimately discharge to the brook, due the storage tank being eventually filled. Kidde has installed an alarm system tied into the building alarm system to provide notification of an overflow condition. In the event of an overflow the alarm will notify Kidde personnel, who would in turn shut down the well pump and prevent further overflow, within one hour of initial notification. The maximum well flow over one hour has been used for the maximum daily flow calculations. This discharge is not expected to take place; however, KIDDE wishes to be permitted for any discharge that may take place during an emergency situation.

Notice of Intent for Noncontact Cooling Water General Permit Attachment C

Kidde-Fenwal, Inc.
400 Main Street
Ashland, MA

Dilution Factor:

$$\text{Dilution Factor} = \frac{rO_r + fO_p \times 1.55V1}{(Q_p \times 1.55)}$$

$$\text{Dilution Factor} = \frac{r0.36 \text{ cfs} + (0.0088 \text{ MGD} \times 1.55)}{0.0088 \text{ MGD} \times 1.55}$$

$$\text{Dilution Factor} = (0.374/0.014)$$

$$\text{Dilution Factor} = 26.7$$

Note: Q_r determined from 7Q10

Q_p calculated assuming maximum flow from well (146 gpm) for a 60 minute period without interruption. This would only occur should pump controls malfunction and pump fail to shut off

Maximum Daily Total Residual Chlorine (TRC):

$$\text{Max Daily TRC} = (\text{Dilution Factor}) \times (\text{Water Quality Criteria Class Freshwater Acute})$$

$$\text{Max Daily TRC} = (26.7)(19 \text{ ug/L})$$

$$\text{Max Daily TRC} = 507.3 \text{ ug/L}$$

Average Monthly Total Residual Chlorine (TRC):

$$\text{Average Monthly TRC} = (\text{Dilution Factor}) \times (\text{Water Quality Criteria Class})$$

Freshwater Chronic)

$$\text{Average Monthly TRC} = (26.7)(11 \text{ ug/L})$$

$$\text{Average Monthly TRC} = 293.7 \text{ ug/L}$$

Notice of Intent for Noncontact Cooling Water General Permit Attachment D

Kidde-Fenwal, Inc.
400 Main Street
Ashland, MA

Receiving Water Temperature Engineering Calculation:

$$AT_r = (M_p / M_r) (AT_p)$$

AT_r = Change in river temp

M_p = Mass of Effluent M_r

= Mass of River

AT_p = Change in temp (effluent- influent) Volume

can be substituted for mass as long as units are consistent $V_p = .0088 \text{ MGD}$ $V_r = .232 \text{ MGD}$

$$AT_r = (V_p / V_r) (AT_p)$$

$$AT_r = (.0088 \text{ MGD} / .232 \text{ MGD}) (68^\circ \text{ F} - 60^\circ \text{ F})$$

$$AT_r = (0.002)(8)$$

$$AT_r = 0.016^\circ \text{ F}$$

Notes:

1. Mass of river determined from 7Q10
2. Effluent temperature of NCCW determined from the average of testing done by Kidde.
3. Influent temperature determined from average groundwater temperature
4. Discharge to brook would only occur during malfunction of well shut-off device.
5. Maximum daily flow from plant based on maximum well flow (~146 gpm) for one hour.
6. Kidde has committed to installing an alarm, with call-out capability, to notify them of an overflow condition. In the event of an overflow Kidde personnel will stop discharge to brook within one hour.



ANALYTICAL REPORT

Lab Number:	L1501270
Client:	Kidde-Fenwal, Inc. 400 Main Street Ashland, MA 01721
ATTN:	Deke Mousseau
Phone:	(508) 881-2000
Project Name:	NCCW
Project Number:	Not Specified
Report Date:	01/22/15

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Serial_No:01221514:01

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1501270-01	NCCW 1	WATER	Not Specified	01/20/15 00:00	01/20/15

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Case Narrative (continued)

Report Submission

The element list for the metals analysis was specified by the client.

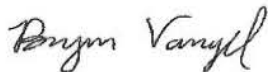
Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were hand-delivered to the laboratory without ice.

L1501270-01 was received above the appropriate pH for the Metals analysis. The laboratory added additional HNO₃ to a pH <2.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Bryan Vangel

Title: Technical Director/Representative

Date: 01/22/15

METALS

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

SAMPLE RESULTS

Lab ID: L1501270-01
Client ID: NCCW 1
Sample Location: Not Specified
Matrix: Water

Date Collected: 01/20/15 00:00
Date Received: 01/20/15
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.050	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Arsenic, Total	ND		mg/l	0.005	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Cadmium, Total	ND		mg/l	0.005	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Chromium, Total	ND		mg/l	0.01	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Copper, Total	0.287		mg/l	0.010	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Iron, Total	1.6		mg/l	0.05	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Lead, Total	ND		mg/l	0.010	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Mercury, Total	ND		mg/l	0.00020	--	1	01/21/15 15:23	01/22/15 10:26	EPA 245.1	3,245.1	AB
Nickel, Total	ND		mg/l	0.025	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Selenium, Total	ND		mg/l	0.010	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Silver, Total	ND		mg/l	0.007	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Zinc, Total	ND		mg/l	0.050	--	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH
Total Hardness by SM 2340B - Westborough Lab											
Hardness	67		mg/l	0.66	NA	1	01/21/15 14:51	01/22/15 11:00	EPA 3005A	19,200.7	JH



Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG757358-1									
Mercury, Total	ND	mg/l	0.00020	--	1	01/21/15 15:23	01/22/15 09:56	3,245.1	AB

Prep Information

Digestion Method: EPA 245.1

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG757443-1									
Antimony, Total	ND	mg/l	0.050	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Arsenic, Total	ND	mg/l	0.005	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Cadmium, Total	ND	mg/l	0.005	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Chromium, Total	ND	mg/l	0.01	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Copper, Total	ND	mg/l	0.010	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Iron, Total	ND	mg/l	0.05	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Lead, Total	ND	mg/l	0.010	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Nickel, Total	ND	mg/l	0.025	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Selenium, Total	ND	mg/l	0.010	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Silver, Total	ND	mg/l	0.007	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH
Zinc, Total	ND	mg/l	0.050	--	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Westborough Lab for sample(s): 01 Batch: WG757443-1									
Hardness	ND	mg/l	0.66	NA	1	01/21/15 14:51	01/22/15 10:22	19,200.7	JH

Prep Information

Digestion Method: EPA 3005A



Serial_No:01221514:01

Lab Control Sample Analysis
Batch Quality Control

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG757358-2								
Mercury, Total	106		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG757443-2								
Antimony, Total	91		-		85-115	-		
Arsenic, Total	113		-		85-115	-		
Cadmium, Total	113		-		85-115	-		
Chromium, Total	105		-		85-115	-		
Copper, Total	108		-		85-115	-		
Iron, Total	100		-		85-115	-		
Lead, Total	109		-		85-115	-		
Nickel, Total	103		-		85-115	-		
Selenium, Total	114		-		85-115	-		
Silver, Total	109		-		85-115	-		
Zinc, Total	107		-		85-115	-		
Total Hardness by SM 2340B - Westborough Lab Associated sample(s): 01 Batch: WG757443-2								
Hardness	103		-		85-115	-		

Serial_No:01221514:01

Matrix Spike Analysis
Batch Quality Control

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757358-4 QC Sample: L1500844-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00511	102		-	-		70-130	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757443-4 QC Sample: L1500844-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.538	108		-	-		75-125	-		20
Arsenic, Total	ND	0.12	0.138	115		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.056	110		-	-		75-125	-		20
Chromium, Total	ND	0.2	0.20	100		-	-		75-125	-		20
Copper, Total	0.077	0.25	0.334	103		-	-		75-125	-		20
Iron, Total	0.10	1	1.0	90		-	-		75-125	-		20
Lead, Total	ND	0.51	0.531	104		-	-		75-125	-		20
Nickel, Total	ND	0.5	0.497	99		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.140	117		-	-		75-125	-		20
Silver, Total	ND	0.05	0.055	110		-	-		75-125	-		20
Zinc, Total	0.121	0.5	0.644	105		-	-		75-125	-		20
Total Hardness by SM 2340B - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757443-4 QC Sample: L1500844-01 Client ID: MS Sample												
Hardness	76	66.2	140	97		-	-		75-125	-		20

Serial_No:01221514:01

Project Name: NCCW
Project Number: Not Specified

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L1501270
Report Date: 01/22/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757358-3 QC Sample: L1500844-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757443-3 QC Sample: L1500844-01 Client ID: DUP Sample						
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	0.077	0.073	mg/l	5		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.121	0.119	mg/l	2		20

INORGANICS & MISCELLANEOUS

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

SAMPLE RESULTS

Lab ID: L1501270-01
Client ID: NCCW 1
Sample Location: Not Specified
Matrix: Water

Date Collected: 01/20/15 00:00
Date Received: 01/20/15
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	130		mg/l	10	--	10	-	01/21/15 09:12	1,9251	LA
pH (H)	5.9		SU	-	NA	1	-	01/20/15 19:14	30,4500H+-B	AS
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/20/15 19:40	01/20/15 19:50	30,3500CR-B	MR



Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG757116-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/20/15 19:40	01/20/15 19:50	30,3500CR-B	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG757253-1										
Chloride	ND		mg/l	1.0	--	1	-	01/21/15 08:43	1,9251	LA



Serial_No:01221514:01

Lab Control Sample Analysis Batch Quality Control

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG757116-2								
Chromium, Hexavalent	98		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG757122-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG757253-2								
Chloride	93		-		90-110	-		

Serial_No:01221514:01

Matrix Spike Analysis
Batch Quality Control

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757116-4 QC Sample: L1501270-01 Client ID: NCCW 1												
Chromium, Hexavalent	ND	0.1	0.099	99		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757253-4 QC Sample: L1501266-03 Client ID: MS Sample												
Chloride	5.9	20	26	100		-	-		58-140	-		7

Serial_No:01221514:01

Project Name: NCCW
Project Number: Not Specified

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L1501270
Report Date: 01/22/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757116-3 QC Sample: L1501270-01 Client ID: NCCW 1						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757122-2 QC Sample: L1501270-01 Client ID: NCCW 1						
pH (H)	5.9	5.9	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG757253-3 QC Sample: L1501266-03 Client ID: DUP Sample						
Chloride	5.9	6.0	mg/l	2		7

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler

N/A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1501270-01A	Plastic 500ml HNO3 preserved	N/A	<2	11.8	Y	Absent	NI-UI(180),SB-UI(180),AG-UI(180),ZN-UI(180),FE-UI(180),HARDU(180),SE-UI(180),HG-U(28),CD-UI(180),CR-UI(180),AS-UI(180),CU-UI(180),PB-UI(180)
L1501270-01B	Plastic 500ml unpreserved	N/A	8	11.8	Y	Absent	CL-9251(28),HEXCR-3500(1),PH-4500(.01)

*Values in parentheses indicate holding time in days

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1.8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

Report Format: Data Usability Report



Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

Data Qualifiers

- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: NCCW
Project Number: Not Specified

Lab Number: L1501270
Report Date: 01/22/15

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

Last revised December 16, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility

EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

EPA 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

EPA 625: 4-Chloroaniline, 4-Methylphenol.

SM4500: Soil: Total Phosphorus, TKN, NO₂, NO₃.

EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility

EPA 8270D: Biphenyl.

EPA 2540D: TSS

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water

EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Ti; **EPA 200.7:** Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C,**
SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B
EPA 332: Perchlorate.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water

EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Ti,Zn;

EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;

EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**
EPA 353.2: Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.