Linebach ▪ Funkhouser, Inc.
ENVIRONMENTAL COMPLIANCE & CONSULTING

November 11, 2022

Ms. April Webb
Division of Waste Management
Kentucky Department for Environmental Protection
300 Sower Boulevard
2nd Floor
Frankfort, KY 40601

RE: ***RCRA Part B Permit Renewal – September 30, 2022 NOD Response***
YKK (U.S.A.) Inc., Snap and Button Products
EPA ID No. KYD-044-914-356
1090 Industry Road
Lawrenceburg, Kentucky
AI No. 42

Dear Ms. Webb:

Linebach Funkhouser, Inc. (LFI) is submitting this revised RCRA Part B Permit renewal application on YKK (U.S.A.) Inc. Snap and Button Products' (YKK) behalf. The original RCRA Part B Permit renewal application was submitted on August 24, 2016. The Kentucky Department for Environmental Protection (KDEP) issued a Notice of Deficiency (NOD) for the application on September 30, 2022. The RCRA Part B Permit renewal application has been revised per the specific deficiencies identified in the NOD. Signed documents have been mailed hard copy and the complete application has been delivered digitally.

If you should have any questions or concerns regarding this matter, please do not hesitate to contact LFI or YKK's environmental representative, Mr. Todd Baldwin, at ToddBaldwin@YKK.com or at (502) 839-2222.

Sincerely,

Collin D. Linebach
Senior Scientist

R. William Johnston, PG
Principal Geologist

PART A

PART A PERMIT APPLICATION

This part presents a revised Part A permit renewal application for YKK (U.S.A.) Inc., Snap & Button Products (YKK) manufacturing plant located in Lawrenceburg, Kentucky. YKK is a wholly owned subsidiary of YKK, Inc. YKK, Inc. provides financial assurance through the corporate guarantee mechanism for YKK. Included in the part are:

- A brief description of the closed unit.
- The completed Part A permit renewal application, including maps showing the site location and unit location within the site.

The Part A application is in regard to the closed hazardous waste facility, which includes a settling lagoon closed by stabilization and fixing the material in-place. In addition, the closure activities included installation of a compacted clay cover and vegetated topsoil.

Approximately 4,000,000 gallons of materials were stabilized and closed in place. Closure certification was submitted to Kentucky Natural Resource and Environmental Protection Cabinet (KNREPC) on October 15, 1989.

Prior to closure activities, waste materials were considered hazardous due to EP-toxicity for cadmium, hexavalent chromium, nickel, cyanide (complexed) (assigned U.S. Environmental Protection Agency [EPA] hazardous waste numbers F006 and F007, and wastes F008 and F009 are toxic and reactive wastes [hazardous constituents: cyanide salts]) however, after treatment the wastes are neither ignitable, reactive, corrosive, or incompatible. The toxicity characteristic leaching procedure (TCLP) was not in effect during this closure.

Facility Name: YKK (U.S.A.) Inc., Snap & Button Products
EPA ID:KYD044914356
Agency Interest ID:42

Instructions: In order to help expedite the review process, please submit the following with the permit application: Part A – Part A Application Forms Checklist. Columns "Submitted" and "Location in Application" must be completed by the applicant. Failure to do so may result in an Administrative Notice of Deficiency by the Division. The "Technically Adequate" column is for use by KDWM staff.

All forms are available in the Hazardous Waste Forms Library. Both federal forms are part of the package named EPA 8700 Form.

**Notes: Y for Yes. N for No. NA for Not Applicable.*

Form	*Regulation (Federal or State)*	*Submitted (Y/N/NA)**	*Location in Application*	*Technically Adequate (Y/N)**	*Comments*
Federal Form 8700-12 RCRA Subtitle C Site Identification Form	RCRA Subtitle C Section 3010	Y	Part A		*The Site Identification Form is a required submittal for all facilities which generates, transports, or recycles regulated wastes, or operates a hazardous waste treatment storage or disposal facility.*
Federal Form 8000-23 Hazardous Waste Permit Part A Form	40 CFR 270.13	Y	Part A		*The Hazardous Waste Permit Part A Form is a required submittal for any new permit or permit renewal to operate a hazardous waste treatment, storage, or disposal facility.*
State Form DWM7058A Part A Addendum Form	401 KAR 39:060	Y	Part A		*The Part A Addendum Form is a required submittal for for any new permit or permit renewal to operate a hazardous waste treatment, storage, or disposal facility.*

United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (Select only one.)

☐	Obtaining or updating an EPA ID number for on-going regulated activities (Items 10-17 below) that will continue for a period of time.
☐	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
	☐ Site was a TSD facility, a reverse distributor, and/or generator of ≥ 1,000 kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in **one or more months of the reporting year** (or State equivalent LQG regulations)
☐	Notifying that regulated activity is no longer occurring at this Site
☐	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
☑	Submitting a new or revised Part A (permit) Form

2. Site EPA ID Number

K	Y	D	0	4	4	9	1	4	3	5	6

3. Site Name

YKK (U.S.A.) Inc.

4. Site Location Address

Street Address	1090 Industry Road				
City, Town, or Village	Lawrenceburg			County	Anderson
State	KY	Country	USA	Zip Code	40342
Latitude	38.0372222	Longitude	-84.896667	☐ Use Lat/Long as Primary Address	

5. Site Mailing Address ☑ Same as Location Street Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

6. Site Land Type

☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary) 339993	C.
B.	D.

8. Site Contact Information

☑ Same as Location Address

First Name **Todd**	MI **S**	Last Name **Baldwin**
Title **Director of Environmental Affairs**		
Street Address **1090 Industry Road**		
City, Town, or Village **Lawrenceburg**		
State **KY**	Country **USA**	Zip Code **40342**
Email **toddbaldwin@ykk.com**		
Phone **502-839-2222**	Ext	Fax **502-267-8920**

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner

☑ Same as Location Address

Full Name **YKK (U.S.A.) Inc.**	Date Became Owner (mm/dd/yyyy) **10/1/1987**
Owner Type ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other	
Street Address **1090 Industry Road**	
City, Town, or Village **Lawrenceburg**	
State **KY** / Country **USA**	Zip Code **40342**
Email **toddbaldwin@ykk.com**	
Phone **502-839-2222** / Ext	Fax **502-267-8920**
Comments	

B. Name of Site's Legal Operator

☑ Same as Location Address

Full Name	Date Became Operator (mm/dd/yyyy)
Operator Type ☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other	
Street Address	
City, Town, or Village	
State / Country	Zip Code
Email	
Phone / Ext	Fax
Comments	

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

☑ Y ☐ N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c	
☑	a. LQG	-Generates, in any calendar month, 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste (includes quantities imported by importer site); or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
☐	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
☐	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
☐ Y ☑ N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. *Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.*	
☑ Y ☐ N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.	
☐ Y ☑ N	4. Receives Hazardous Waste from Off-site	
☐ Y ☑ N	5 Recycler of Hazardous Waste	
☐	a. Recycler who stores prior to recycling	
☐	b. Recycler who does not store prior to recycling	
☐ Y ☑ N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.	
☐	a. Small Quantity On-site Burner Exemption	
☐	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

D001	F007	D011	D006			
D008	D003	F009	F003			
F006	D010	D005	P121			
D002	F008	D035	D007			
D009	D004	P106	F005			

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)

A. Other Waste Activities

☐ Y ☑ N	1. Transporter of Hazardous Waste—If "Yes", mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☑ N	2. Underground Injection Control
☐ Y ☑ N	3. United States Importer of Hazardous Waste
☐ Y ☑ N	4. Recognized Trader—If "Yes", mark all that apply.
☐	a. Importer
☐	b. Exporter
☐ Y ☑ N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If "Yes", mark all that apply.
☐	a. Importer
☐	b. Exporter

B. Universal Waste Activities

☐ Y ☑ N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If "Yes" mark all that apply. Note: Refer to your State regulations to determine what is regulated.
☐	a. Batteries
☐	b. Pesticides
☐	c. Mercury containing equipment
☐	d. Lamps
☐	e. Aerosol Cans
☐	f. Other (specify) _____
☐	g. Other (specify) _____
☐ Y ☑ N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

☐ Y ☑ N	1. Used Oil Transporter—If "Yes", mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☑ N	2. Used Oil Processor and/or Re-refiner—If "Yes", mark all that apply.
☐	a. Processor
☐	b. Re-refiner
☐ Y ☑ N	3. Off-Specification Used Oil Burner
☐ Y ☑ N	4. Used Oil Fuel Marketer—If "Yes", mark all that apply.
☐	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
☐	b. Marketer Who First Claims the Used Oil Meets the Specifications

D. Pharmaceutical Activities

☐ Y ☑ N	1. Operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals—if "Yes", mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
☐	a. Healthcare Facility
☐	b. Reverse Distributor
☐ Y ☑ N	2. Withdrawing from operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is a VSQG for all of your hazardous waste, including hazardous waste pharmaceuticals.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262, Subpart K.

☐ Y ☑ N	A. Opting into or currently operating under 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories— If "Yes", mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
☐	1. College or University
☐	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
☐	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
☐ Y ☑ N	B. Withdrawing from 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

☐ Y ☑ N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If "Yes", you must fill out the Addendum for Episodic Generator.

14. LQG Consolidation of VSQG Hazardous Waste

☐ Y ☑ N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If "Yes", you must fill out the Addendum for LQG Consolidation of VSQG hazardous waste.

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

☐ Y ☑ N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
	A. ☐ Central Accumulation Area (CAA) or ☐ Entire Facility
	B. Expected closure date: _____ mm/dd/yyyy
	C. Requesting new closure date: _____ mm/dd/yyyy
	D. Date closed : _____ mm/dd/yyyy ☐ 1. In compliance with the closure performance standards 40 CFR 262.17(a)(8) ☐ 2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

16. Notification of Hazardous Secondary Material (HSM) Activity

☐ Y ☑ N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.

17. Electronic Manifest Broker

☐ Y ☑ N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?

18. Comments (include item number for each comment)

19. Certification I certify under penalty of law that 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11)**.

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last) **Todd S Baldwin**	Title **Director Environmental Affairs**
Email **toddbaldwin@ykk.com**	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

16. Notification of Hazardous Secondary Material (HSM) Activity

☐ Y ☑ N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.

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☐ Y ☑ N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?

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19. Certification I certify under penalty of law that 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy) 11/11/2022
Printed Name (First, Middle Initial Last) **Todd S Baldwin**	Title **Director Environmental Affairs**
Email **toddbaldwin@ykk.com**	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT PART A FORM

1. Facility Permit Contact

First Name	**Todd**	MI	**S**	Last Name	**Baldwin**
Title	**Director of Environmental Affairs**				
Email	**toddbaldwin@ykk.com**				
Phone	**502-839-2222**	Ext		Fax	

2. Facility Permit Contact Mailing Address

Street Address	**1090 Industry Road**				
City, Town, or Village	**Lawrenceburg**				
State	**Kentucky**	Country	**USA**	Zip Code	**40342**

3. Facility Existence Date (mm/dd/yyyy)

10/1/1987

4. Other Environmental Permits

A. Permit Type	B. Permit Number													C. Description
M	0	4	-	4	0									Industrial User Permit
N	-	-	-											NPDES No Exposure Certificate
R	K	Y	D	0	4	4	9	1	4	3	5	6		RCRA LQG
S	V	-	2	2	-	0	1	0						Pending renewal
T	0	6	2	8	0	4	4	5	0	0	2	M		D.O.T. Program

5. Nature of Business

YKK (U.S.A.) Inc., Snap & Button Products (YKK) manufactures for the garment industry. In general, manufacturing processes involve stamping and forming light metal parts, which are either coated or electroplated. The electroplating process involves layering brass, nickel, zinc, copper or a combination of these metals onto the surface of the stamped and formed metal parts. The coating process involves layering the surface of the fasteners with lacquer or paint.

6. Process Codes and Design Capacities

Line Number		A. Process Code			B. Process Design Capacity		C. Process Total Number of Units	D. Unit Name
					(1) Amount	(2) Unit of Measure		
N	A	N	/	A	N/A	N/A	N/A	N/A

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.		A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes									
								(1) Process Codes									(2) Process Description (if code is not entered in 7.D1))
0	1	F	0	0	6	0	T	D	8	0							Landfill
0	2	F	0	0	8	0	T	D	8	0							Landfill
0	3	F	0	0	9	0	T	D	8	0							Landfill
0	4	F	0	0	7	0	T	D	8	0							Landfill

8. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

9. Facility Drawing

All existing facilities must include a scale drawing of the facility. See instructions for more detail.

10. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas. See instructions for more detail.

11. Comments

This is a RCRA closed 4,000,000 gallon surface impoundment, currently in post-closure. The waste was calcified and capped in accordance with the approved closure plan. The remaining 12.1 acre unit has been previously renewed.

Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
300 Sower Boulevard, Frankfort, KY 40601
(502) 564-6716

Part A Application Addendum

(EPA Form 8700-23)

FOR OFFICIAL USE ONLY.
DO NOT WRITE IN THIS SPACE.

FEE SUBMITTED: $13,000 *(See instructions to determine your fee)* Fee submitted with original application in 2016

I. Reason for Submittal *(see instructions)*

Reason for Submittal:

☐ **FIRST SUBMITTAL** – Must be accompanied by the completed forms EPA 8700-12 and Addendum DWM-7037A.

☐ **REVISION – Identify the classification of the revision.** See instructions for when a revised application should be submitted.
- ☐ **Class 1 not requiring approval**
- ☐ **Class 1 requiring approval**
- ☐ **Class 2**
- ☐ **Class 3**

☒ **RENEWAL** – See instructions for when a renewal application should be submitted.

☐ **STANDARDIZED PERMIT** – See instructions for the eligibility of a standardized permit.

II. ID Numbers

A. EPA ID Number: KYD-044-914-356

B. AGENCY INTEREST Number: 42

III. Existing and New Facilities

Existing Facilities, the date operation began or construction commenced: (mm/dd/yyyy) 8/15/1989

New Facilities, the date operation is expected to begin: (mm/dd/yyyy) __/__/____

IV. Contact Email Address

Facility Contact
Email address: toddbaldwin@ykk.com

V. Facility Operator (2)

Name of Facility Operator 2 (see Instructions)**:** YKK (U.S.A.) Inc., Snap & Button Products

VI. Type of Operator (2)

Type of Operator 2: ☐Federal (F) ☐State (S) ☐County (C) ☐Indian (I) ☐Municipal (M) ☐District (D) ☒Private (P) ☐Other (O) Specify:

VII. Operator Mailing Address (2)

Operator 2 Street Address or P.O. Box: P.O. Box 240

City: Lawrenceburg | **State:** KY | **County:** Anderson | **Zip Code:** 40342

Facility Operator 2 Telephone Number: 502-839-2222 | **Phone Number Extension:**

New Operator Assumed Responsibility for Facility on this Date: (mm/dd/yyyy) __ ____

VIII. Facility Operator (3)

Name of Facility Operator 3 (see Instructions)**:**

IX. Type of Operator (3)

Type of Operator 3: ☐Federal (F) ☐State (S) ☐County (C) ☐Indian (I) ☐Municipal (M) ☐District (D) ☐Private (P) ☐Other (O) Specify:

X. Operator Mailing Address (3)

Operator 3 Street Address or P.O. Box:

City: | **State:** | **County:** | **Zip Code:**

Facility Operator 3 Telephone Number: | **Phone Number Extension:**

New Operator Assumed Responsibility for Facility on this Date: (mm/dd/yyyy) __/__/____

EPA ID Number: KYD-044-914-356 **Agency Interest Number:** 42

XI. PROCESS DESCRIPTION: (See Instructions)

a. Commercial Indicator	b. Unique Unit or Group Name	c. Legal Status Code	d. Operating Status Code(s)	e. Description of Process
4	Closed Impoundment	PC	CP	This is a RCRA Closed 4,000,000 gallon surface impoundment, currently in post closure. The waste was calcified and capped in accordance with the approved closure plan. The remaining 12.1 acre unit has been previously permitted and renewed.

EPA ID Number: KYD-044-914-356 **Agency Interest Number:** 42

XII. WASTE STREAM DESCRIPTION (See Instructions)

a. Line Number	b. Waste Stream Number	c. Waste Description
1	001	F006 electroplating waste
2	002	F008 Plating bath residues from electroplating with cyanides used in the plating process
3	003	F009 Spent stripping and cleaning bath solution from electroplating with cyanides used in the plating process
4	004	F007 Spent cyanide plating bath solutions from electroplating operations

EPA ID Number: KYD-044-914-356	Agency Interest Number: 42
XIII. Facility Status	☒ Waste is NOT received from off-site ☐ Accepts waste from any off-site source(s) [A] ☐ Accepts waste from only a restricted group of off-site sources [R]: Specify:
XIV. Facility Owner Certification	If the facility owner is also the facility operator, please skip this section and complete item XV below. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. NAME (PRINT OR TYPE) SIGNATURE DATE
XV. Operator Certification	I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. NAME (PRINT OR TYPE) SIGNATURE DATE
XVI. Land Owner Certification	I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. NAME (PRINT OR TYPE) SIGNATURE DATE

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Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
300 Sower Blvd, Frankfort, KY 40601
(502) 564-6716

Registration Of Hazardous Waste Activity Addendum

(EPA Form 8700-12)

FOR OFFICIAL USE ONLY.
DO NOT WRITE IN THIS SPACE.

Fee Submitted: $13,000.00 (previously submitted with original 2016 renewal submittal) *(Fill in amount enclosed – see instructions to determine your fee)*

I. Reason for Submittal *(Mark all boxes that apply)*

Reason for Submittal:

- ☐ **NEW** – provide initial notification (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities)
- ☒ **RENEWAL** – renew your EPA ID Number. Enter month your current certificate expires
- ☐ **REACTIVATE AN EPA ID NUMBER**
- ☐ **MODIFICATION** – provide subsequent notification or update site identification information.

Mark all applicable modifications: ☐Generator Status ☐Contact Person ☐Add/Delete Waste Streams ☐Ownership✱ ☐Company Name✱ ☐Other (Explain)

✱Enter previous owner and/or company name:

II. Facility Name and Lat/Long

Facility Name: YKK (U.S.A.) Inc., Snap & Button Products
Facility Latitude: 38.034722 **Facility Longitude:** -84.883056

III. ID Numbers

A. EPA ID Number: KYD−044−914−356 **B. AGENCY INTEREST (AI) Number:** 42

IV. Legal Landowner of the Real Property:

Name of Landowner: YKK (U.S.A.) Inc.

Date Became Owner: (mm/dd/yyyy) __/__/____ **Landowner Type:** ☒Private ☐Federal ☐State ☐Municipal ☐County ☐Other

Phone Number: 502-839-2222 **Phone Number Extension:**

Street Address or P. O. Box: 1090 Industry Road

City: Lawrenceburg **State:** KY **Country:** USA **Zip Code:** 40242

V. Type of Regulated Waste Activity

Mark "X" in the appropriate boxes for waste activities not included in the EPA Form 8700. Complete any additional spaces as instructed.

If Marked on EPA Form 8700 as a Transporter of Hazardous Waste, then mark "X" in all boxes that apply

- ☐ a. Transporter for Hire
- ☐ b. Transfer Facility
- ☐ c. Transport for Self

If Marked on EPA Form 8700 as an Off-Specification Used Oil Burner, then mark "X" in all boxes that apply

- ☐ a. Utility Boiler
- ☐ b. Industrial Boiler
- ☐ c. Industrial Furnace

If Marked on EPA Form 8700 as a Recycler of Hazardous Waste, then mark "X" in all boxes that apply

- ☐ a. Recycler of Lead Acid Batteries
- ☐ b. Recycler of Precious Metals
- ☐ c. Other Recycler *Specify* _____

☐ **Used Oil Collection Center**

a. Storage capacity of facility:_____gallons

☐ **Laboratory Conducting Treatability Studies**

☐ **Used Oil Recycler**
a. Amount recycled in previous calendar year: _____gallons

☐ **E-Scrap Collection Center**

☐ **Publicly Owned Treatment Works (POTW) Receiving Hazardous Waste**

☐ **Household Collection**

☐ **Other** *(describe)*:Closed Surface Impoundment

☐ **Generator Treating Hazardous Waste On-Site***
Provide a brief description: _____

**Additional Application Requirements for Treatment On-Site Activities – see instructions*

EPA ID Number: KYD-044-914-356 **Agency Interest Number:** 42

VI. Description of Current Hazardous Wastes

Complete one line per waste stream. Use additional pages as necessary.
NOTE: *For modifications, all current waste streams must be listed in addition to any new ones.*

Description of Waste	EPA Waste Number(s)	Physical State	Maximum Amount of Waste Generated in a Calendar Month	Estimated Annual Quantity of Waste Generated	Unit of Measure
Example: paint related waste material	*D001 D035*	*L*	*500*	*1,500*	*P*
A. N/A - no new streams at this time					
B.					
C.					
D.					
E.					
F.					
G.					
H.					
I.					
J.					
TOTAL FOR ALL WASTE STREAMS					

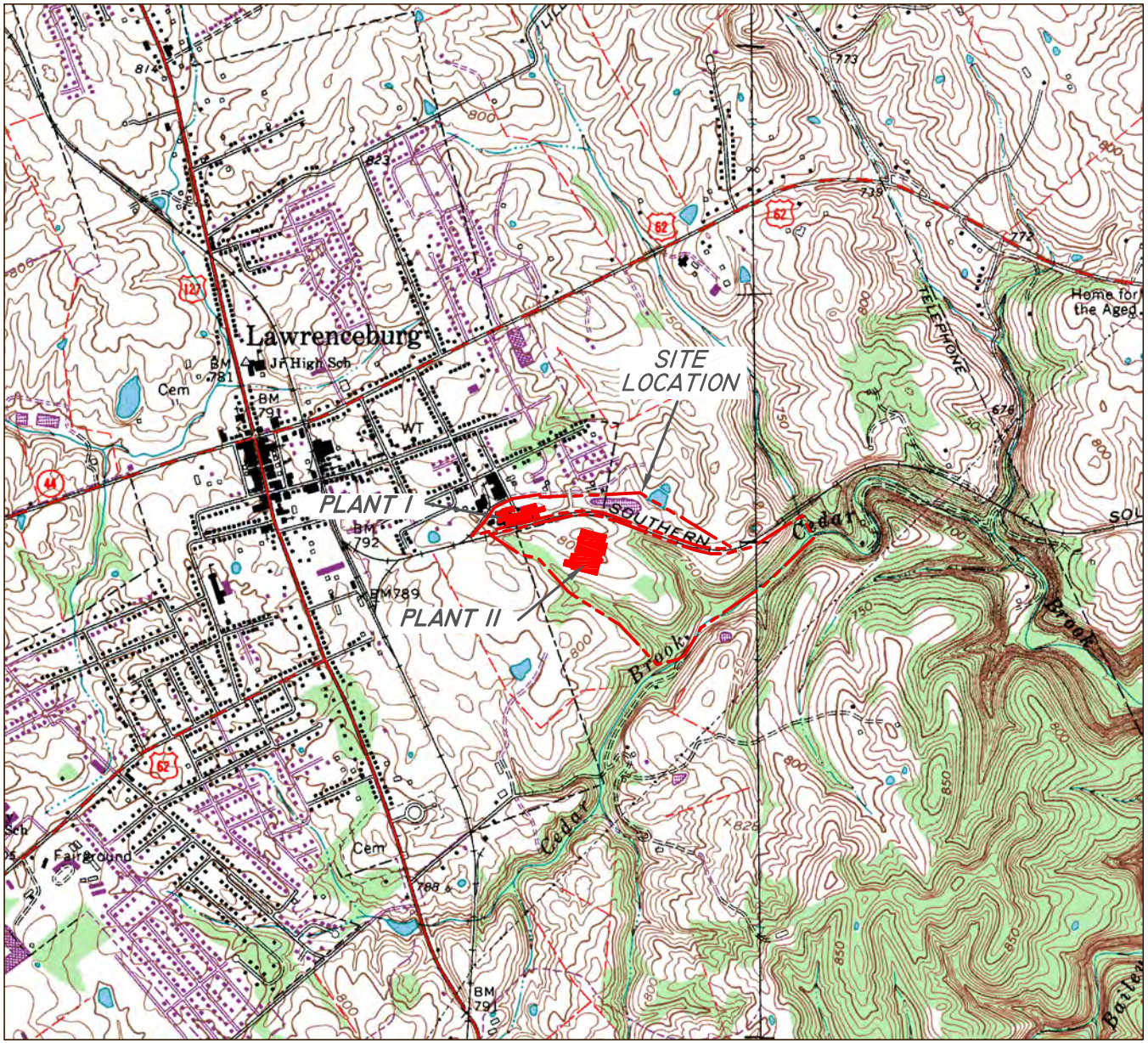
VII. Waste Streams Being Deleted

Refer to your previous registration and list any waste streams this facility is no longer generating.
This section is NOT APPLICABLE to first time applicants.

Description of Waste	EPA Waste Number(s)	Description of Waste	EPA Waste Number(s)
A. N/A - not removing streams at this time		D.	
B.		E.	
C.		F.	

VIII. Comments

This is a RCRA closed 4,000,000 gallon surface impoundment, currently in post-closure. The waste was calcified and capped in accordance with the approved closure plan. The remaining 12.1 acre unit has been previously permitted and renewed.



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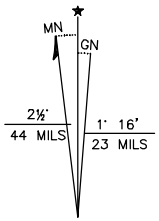


UTM GRID AND 1987 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

ALTON STATION, KY.
(Formerly Lawrenceburg, Ky.)

SW/4 FRANKFORT 15' QUADRANGLE

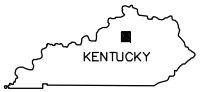
38084–A8–TF–024

1967

PHOTOREVISED 1987

DMA 4060 III SW-SERIES V853

7.5 MINUTE SERIES
(TOPOGRAPHIC)



QUADRANGLE LOCATION

SITE LOCATION MAP	SCALE:	1:24,000	FIGURE A-1
	DATE:	08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#:	090-09	
	DRAWN BY:	MKA	
	CHECKED BY:		

SCALE 1:24,000

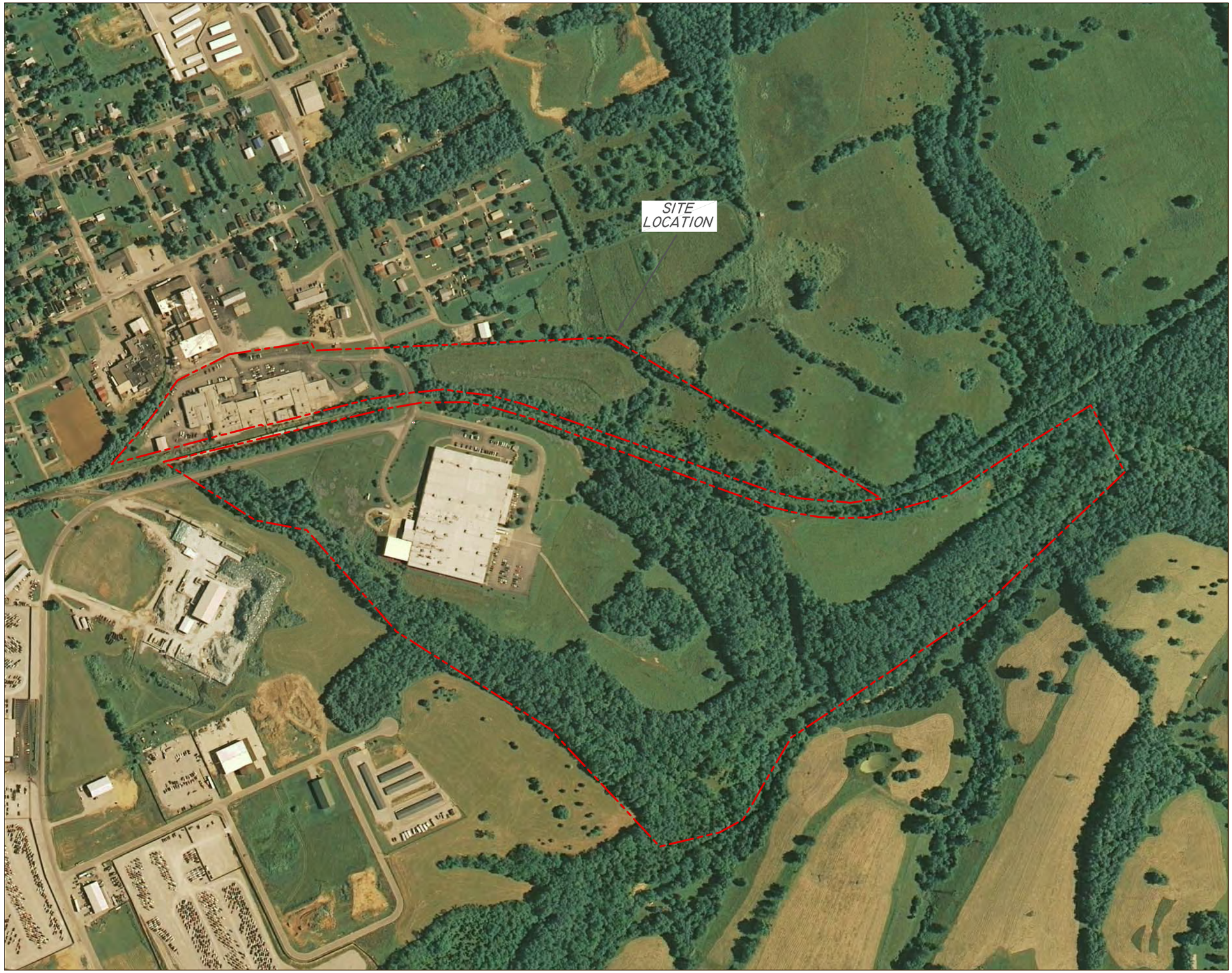
1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Linebach Funkhouser, Inc.
environmental compliance & consulting



LEGEND

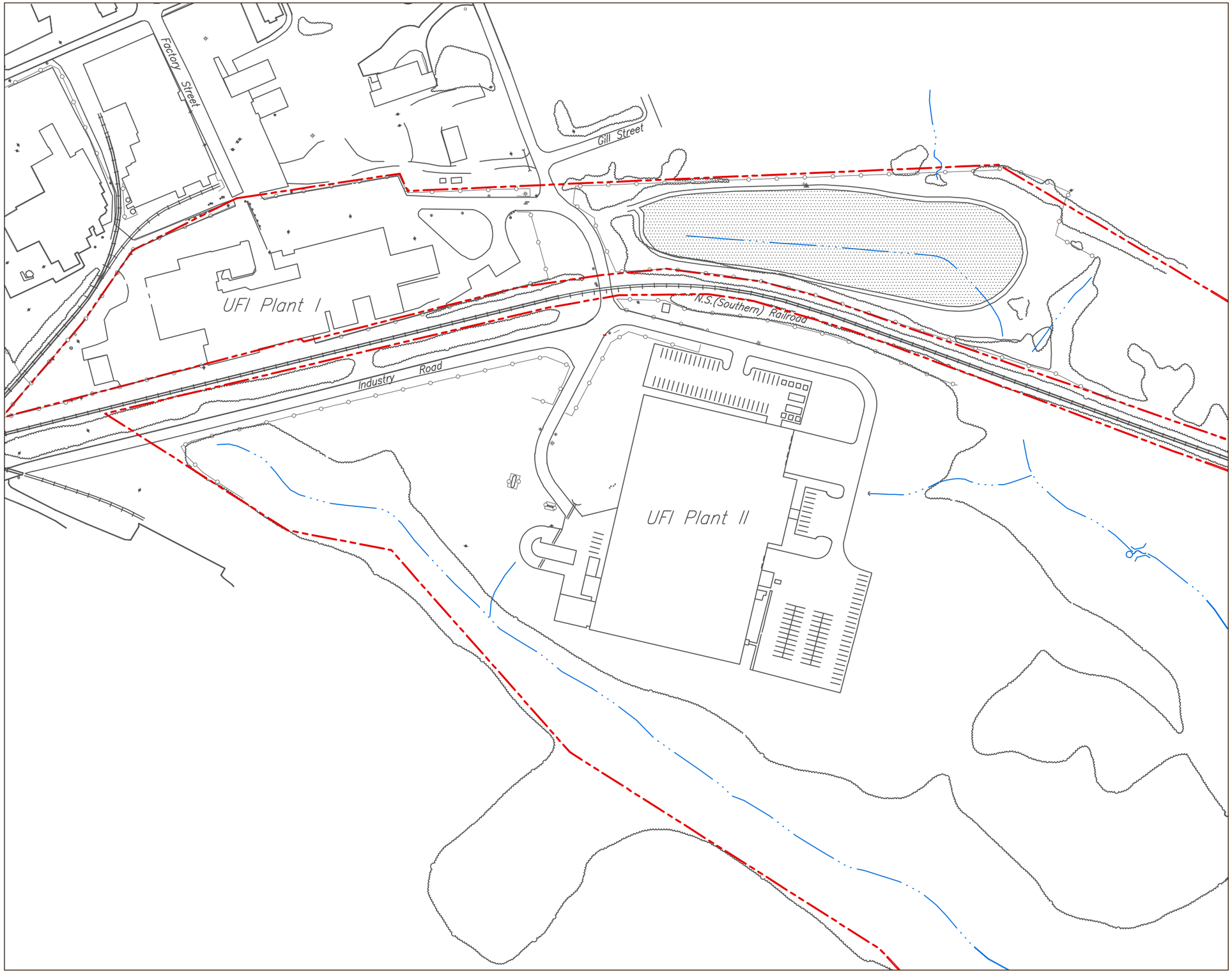
PROPERTY BOUNDARY

0 200 400
SCALE (ft)

SOURCE: ftp://ftp.kymartian.ky.gov/FSA_NAIP_2006_2FT/

FACILITY AERIAL PHOTO	SCALE:	1"=400'	FIGURE A-2
	DATE:	08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#:	090-09	
	DRAWN BY:	MKA	
	CHECKED BY:		

Linebach Funkhouser, Inc.
environmental compliance & consulting



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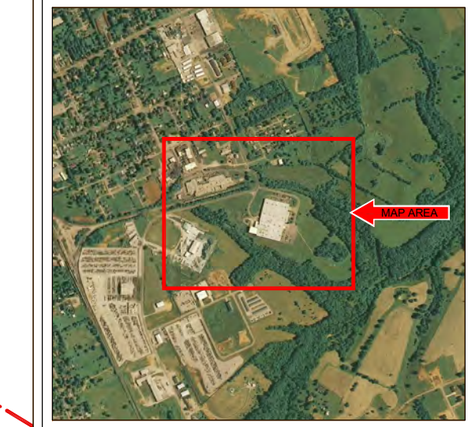
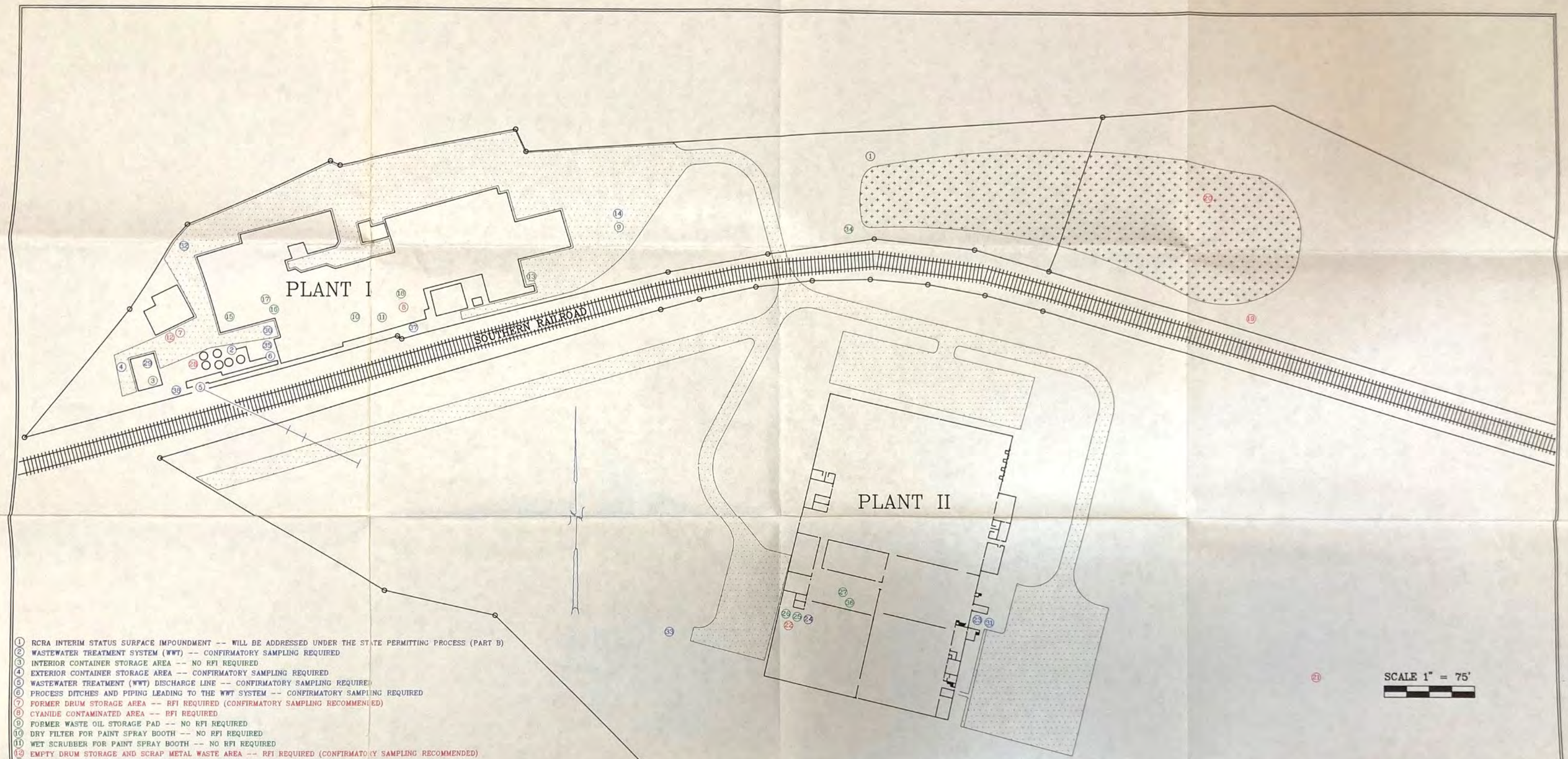


PROPERTY BOUNDARY

0 100 200
SCALE (ft)

SITE MAP	SCALE:	1"=200'	FIGURE A-3
	DATE:	08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#:	090-09	
	DRAWN BY:	MKA	
	CHECKED BY:		

Linebach Funkhouser, Inc.
environmental compliance & consulting



SCALE 1" = 75'

1. RCRA INTERIM STATUS SURFACE IMPOUNDMENT -- WILL BE ADDRESSED UNDER THE STATE PERMITTING PROCESS (PART B)
2. WASTEWATER TREATMENT SYSTEM (WWT) -- CONFIRMATORY SAMPLING REQUIRED
3. INTERIOR CONTAINER STORAGE AREA -- NO RFI REQUIRED
4. EXTERIOR CONTAINER STORAGE AREA -- CONFIRMATORY SAMPLING REQUIRED
5. WASTEWATER TREATMENT (WWT) DISCHARGE LINE -- CONFIRMATORY SAMPLING REQUIRED
6. PROCESS DITCHES AND PIPING LEADING TO THE WWT SYSTEM -- CONFIRMATORY SAMPLING REQUIRED
7. FORMER DRUM STORAGE AREA -- RFI REQUIRED (CONFIRMATORY SAMPLING RECOMMENDED)
8. CYANIDE CONTAMINATED AREA -- RFI REQUIRED
9. FORMER WASTE OIL STORAGE PAD -- NO RFI REQUIRED
10. DRY FILTER FOR PAINT SPRAY BOOTH -- NO RFI REQUIRED
11. WET SCRUBBER FOR PAINT SPRAY BOOTH -- NO RFI REQUIRED
12. EMPTY DRUM STORAGE AND SCRAP METAL WASTE AREA -- RFI REQUIRED (CONFIRMATORY SAMPLING RECOMMENDED)
13. FORMER WASTE OIL STORAGE AREA -- NO RFI REQUIRED
14. ROLL OFF BOX AREA -- CONFIRMATORY SAMPLING REQUIRED
15. SATELLITE ACCUMULATION AREA -- (1,1,1-TRICHLOROETHANE) -- NO RFI REQUIRED
16. "SAFETY-KLEEN" PARTS CLEANING UNIT -- NO RFI REQUIRED
17. PARTS CLEANING UNIT -- NO RFI REQUIRED
18. SATELLITE ACCUMULATION AREA (D008 SLUDGE) -- NO RFI REQUIRED
19. RCRA IMPOUNDMENT CLOSURE RELEASE -- RFI REQUIRED (CONFIRMATORY SAMPLING RECOMMENDED)
20. RCRA IMPOUNDMENT KPDES DISCHARGE -- RFI REQUIRED (UNABLE TO SAMPLE DUE TO CLOSED CAP)
21. BURIED DRUM SITE -- RFI REQUIRED (AREA HAS BEEN REMEDIATED -- DRAINAGE SYSTEM PROPOSED)
22. WASTEWATER TREATMENT SYSTEM (WWT) -- RFI REQUIRED (REGULATED UNDER DIVISION OF AIR -- SOME SAMPLING HAS BEEN COMPLETED FOR SLUDGE DRYER PERMIT)
23. WASTE OIL STORAGE PAD -- CONFIRMATORY SAMPLING AND INTEGRITY SAMPLING REQUIRED
24. PROCESS TRENCHES LEADING TO THE WWT SYSTEM -- LEACHATE COLLECTION SYSTEM (LINER) -- SHOULD BE FURTHER ADDRESSED WITH CONFIRMATORY SAMPLING
25. INTERIOR CONTAINER STORAGE AREA (F006 SLUDGE) -- NO RFI REQUIRED
26. EXTERIOR CONTAINER STORAGE AREA (F006) -- NO RFI REQUIRED
27. ELECTROSTATIC SPRAY BOOTH -- NO RFI REQUIRED
28. MACHINERY STEAM CLEANING AREA -- RFI REQUIRED (CONFIRMATORY SAMPLING RECOMMENDED)
29. FLOOR DRAINS LOCATED IN FILTER PRESS BUILDING -- CONFIRMATORY SAMPLING REQUIRED
30. DUMPSTERS (SOILD WASTE) -- CONFIRMATORY SAMPLING REQUIRED
31. SCRAP METAL STORAGE AREAS -- CONFIRMATORY SAMPLING AND PRIOR REMEDIATION REQUIRED
32. SANITARY SEWER (OLD PLANT) -- INTEGRITY TESTING REQUIRED (RESULTS WILL VERIFY CONFIRMATORY SAMPLING)
33. SANITARY SEWER (NEW PLANT) -- INTEGRITY TESTING REQUIRED (RESULTS WILL VERIFY CONFIRMATORY SAMPLING)
34. F006 TRUCK -- NO RFI REQUIRED
35. DRUM STORAGE AREA -- CONFIRMATORY SAMPLING REQUIRED
36. SATELLITE ACCUMULATION AREA (F003 & F006) -- NO RFI REQUIRED
37. POTENTIAL PCB (POLY CHLORINATED BI-PHENYL) RELEASE AREA -- CONFIRMATORY SAMPLING AND PRIOR REMEDIATION REQUIRED
38. STORMWATER DRAINS -- CONFIRMATORY SAMPLING REQUIRED

DATE		REVISION	AUTH'D
6/28/95	A	CHANGED TITLE BLOCK	TKA

UNIVERSAL FASTENERS, INC.
LAWRENCEBURG, KY.

DRAWN	DATE	CHECKED	DATE
TKA	6/24/93		

TITLE

SWMU SCHEMATIC

SUPERSEDES

REFERENCE

DRAWING NO. PLT-0015

—DO NOT SCALE PRINT—

PART B

PART B FACILITY DESCRIPTION

This part provides a general description of YKK's Lawrenceburg, Kentucky facility. It describes the location and geographical setting, physical layout and general waste management operations at the facility. Further details can be found in subsequent section of this application. A hydrogeologic description of the facility is found in Section E.

B-1 GENERAL DESCRIPTION

YKK has been located at the Lawrenceburg, Kentucky location since 1955. The facility's name and address has changed since 1955 due to administrative changes; however, the facility has not moved. Previous names include Universal Fasteners, Inc. and YKK Snap Fasteners America, Inc. (YSU). The previous facility address was changed from 302 Factory Street, Lawrenceburg, Kentucky to 1090 Industry Road, Lawrenceburg, Kentucky when the U.S. Post Office ceased service to Factory Street. YKK's current name and address are:

YKK (U.S.A.) Inc., Snap & Button Products
1090 Industry Road
P.O. Box 240
Lawrenceburg, Anderson County, Kentucky 40342

Figure B-1 presents a portion of the U.S.G.S Lawrenceburg, Kentucky 7 ½ minute topographic map with the location of the closed surface impoundment indicated. This figure gives the general location of the facility.

Industry Road, running in a north-south direction, bisects the property from the north and then turns and bisects the property again before exiting the west side of the property. The Southern Railroad spur traverses the property from west to east. The spur crosses Industry Road and separates the waste cell from the main manufacturing plant buildings. The geographic coordinates of the facility are north latitude 38° 02' 00" and west longitude 84° 53' 00'. The facility's United States Environmental Protection Agency Identification Number (EPA ID No.) is KYD-044-914-356.

YKK is a metal fabricating company engaged in the manufacture of metal buttons, snap fasteners, closures, and related items for the garment industry. Operations consist mainly of the metal forming of small parts, which are cleaned, deburred, polished, chromated, and electroplated and then decoratively finished to enhance their appearance. The wastewater generated by these processes must be chemically treated to neutralize the acidity and precipitate the metals prior to release. The metals are precipitated into sludge. The EPA hazardous waste numbers for the sludge and the wastewaters are F006, F007, F008, and F009.

Prior to January 29, 1987 the sludge was pumped to the on-site, clay lined surface impoundment, which was constructed in 1971. During the summer of 1981, the height of the impoundment was increased by three feet, increasing the sludge handling capacity of the impoundment to approximately 4,000,000 gallons. The impoundment covers 2+ acres.

The Kentucky Department for Environmental Protection (KDEP), Division of Water Quality issued operational permit number 04014011 for the period July 1, 1977 to July 28, 1982, which allowed the surface impoundment to discharge into Cedar Brook. This permit was in keeping with the NPDES permit number KY0001724 issued by the EPA. Prior to the expiration of the operational permit, a pumping system was installed which recirculated the water from the impoundment to the wastewater treatment units, making it a closed system.

The impoundment was closed with the waste in place pursuant to 401 KAR 39:090 (formerly 401 KAR 35:200) in accordance with a closure plan approved by the Kentucky Division of Waste Management. The closure plan was approved on November 14, 1988 and the closure was completed on October 15, 1989.

On March 21, 1994 YKK submitted a revised post-closure permit application for authorization of the planned monitoring and maintenance activities at the closed unit. A post-closure permit was issued by KDEP on January 6, 1995; the effective date of the permit was February 5, 1995. A minor modification to the permit, addressing groundwater monitoring was issued by the KDEP on January 26, 1998.

On August 24, 2016 YKK submitted a post-closure permit renewal application. On September 30, 2022 KDEP issued a Notice of Deficiency (NOD) for the renewal application. Otherwise, there have not been notable changes in monitoring wells, corrective actions or SWMUs since the previous renewal.

B-2 TOPOGRAPHY AND SURROUNDING LAND USE

Topography in the plant area is characterized by rolling hills dissected by streams. Natural surface elevations range from 690 feet above mean sea level (msl) to 810 feet msl. The maximum elevation of the closure cell is approximately 790 feet msl. Figure B-2 contains a copy of portion of the U.S.G.S. Lawrenceburg and Tyron, Kentucky 7 ½ minute topographic map showing the facility and the surrounding area. Figure B-2 is a map of the site at a scale of 1”=200’ showing the topography of the site and surrounding land use.

The closed landfill encompasses approximately 2 acres of the 96 acres owned by YKK. Most of the land owned by YKK is undeveloped except for the landfill, parking lots, and manufacturing buildings. Figure B-3 is a 1”=200’ topographic map of the facility.

Kentucky has a continental climate, experiencing wide extremes in temperatures and precipitation. Extremes in temperature range from 0 degrees Fahrenheit or below in the winter to

100 degrees Fahrenheit or higher in the summer. Generally, the extremes are short duration. The fall is generally the driest season and the spring is generally the wettest season. The average annual precipitation in the commonwealth is between 36 and 50 inches. Figure B-4 provides a wind rose for the area compiled from data provided by the Lexington airport.

Surface drainage features form the property boundaries. To the west and south lies an unnamed tributary to Cedar Brook, to the northeast lies a second unnamed tributary to Cedar Brook, and to the east lies Cedar Brook itself. The land surface slopes predominately to the south towards Cedar Brook. The land use to the north of the hazardous waste management area is residential, to the east is agricultural/forest and to the south and west is industrial.

Public water service is available for the City of Lawrenceburg and surrounding rural districts. The City of Lawrenceburg obtains its water supply from surface water, derived from the Kentucky River. There are no known groundwater supply wells within a ¼ mile radius of the plant's closed surface impoundment. The site has no injection or withdrawal wells. No other wells are located on-site except for groundwater monitoring wells, and there are no down-gradient, off-site wells within 1 mile of the facility.

YKK is connected to one sanitary sewer system which collects sanitary sewage from drains in the office area, lunchroom, and plant restrooms. No sewer drains exist in the wastewater treatment area or near the hazardous waste disposal area. No runoff goes into the sanitary system. There is no process sewer at this facility.

B-3 LOCATION INFORMATION

P.E. La Moreaux & Associates, Inc. (PELA) has investigated Geologic and Hydrogeologic conditions underlying the facility since 1993. The site lithology is composed of a surficial cover of clayey soil, underlain by a sequence of gently dipping limestone strata.

Sedimentary rocks of Ordovician age are brought to the surface by the Jessamine dome, a gently, broad irregular dome along the Cincinnati arch. Strata dip generally 20 to 30 feet per mile westward and somewhat less northward. East of the facility, the Jessamine dome is cut by two major normal-fault systems, the Kentucky River fault zone and the West Hickman-Bryan Station fault zone, which intersects the apex of the dome.

Stratigraphic units under lying the facility were identified as a result of review of published information, reconnaissance mapping, drilling at the facility, and geophysical logging include the Lexington Limestone of Middle to Upper Ordovician age, and tongue of the Clays Ferry Formation, the Brannon Limestone and the Grier Limestone. Residuum is also present at the facility. It consists of moderate yellow-brown silty clay, weathered Limestone and varies in thickness from 3 to 10 feet.

Bedrock immediately underling the facility is the Tanglewood Member of the Lexington Limestone, a medium gray to very light gray, fine to coarse-grained, well-sorted, fossiliferous calcarenite. Bedding is generally smooth surfaced and planar to wavy and usually 0.2 to 1.0 foot thick. The Tanglewood Limestone at the site is divided into an upper and lower member by a thick tongue of the stratigraphically overlying Clays Ferry Formation.

The Clays Ferry Formation at the site is about 9 feet thick, consisting of an olive gray to medium dark gray argillaceous calcisiltite. This formation was identified by lithologic descriptions of cutting and cores and interpretation of subsurface geophysical logs of boreholes at the facility. Bedding is generally even and planar and usually less than 0.5 foot thick. Bedding in the Clays Ferry is often disrupted at the contact with the Tanglewood Limestone.

The Brannon Limestone Member of the Lexington Limestone, an olive gray to dark gray, interbedded calcisiltite and shale underlies the Tanglewood Limestone. Based on lithologic descriptions from cuttings and core samples, the Brannon is a dark gray calcisiltite. Thickness of the Brannon Limestone at the site, determined from the descriptions of cutting and interpretation of subsurface geophysical logs is about 25 feet. Bedding is tabular and usually 0.2 to 0.3 foot thick. Bedding in the Brannon Limestone Member is also often disrupted at the contact with the Tanglewood Limestone.

The Grier Limestone Member, an olive gray, fossiliferous, interbedded calcisiltite and calcarenite, underlies the Brannon Limestone. Bedding is generally irregular and usually 0.5 foot thick. The lithologic descriptions of cutting and cores of this formation indicate the Grier is an olive gray, fossiliferous calcisiltite.

A network of wells was installed around the closed surface impoundment area to confirm the direction and quality of the groundwater within each of these stratigraphic units. Discussion of groundwater investigations is described in part E Section E-2 of this renewal application.

B-3a (1) SEISMIC CONSIDERATIONS

Requirements of this part only apply to new facilities.

B-3a (2) SUBSURFACE GEOLOGY AND KARST FEATURES

The rock units, which underlie the facility, are from Middle Ordovician System. The aquifer system in the area occurs in carbonate rocks. These sedimentary rocks are variable in their water-bearing characteristics. Secondary porosity and permeability, in the form of fracture, joints, and solutionally enlarged fractures, largely control the occurrence and movement of groundwater in these carbonate rocks. Water bearing zones and or perched zones can occur in the unconsolidated residuum in the area; however, these are of limited extent. Springs are common in the area and present points of groundwater discharge.

The Tanglewood Limestone, the uppermost member of the Lexington Limestone, underlies the northern portion of the facility. Groundwater occurs in the Tanglewood in discrete fractures that may have been enlarged through dissolution.

The Clays Ferry Formation overlies the Lexington Limestone, however at this facility the Clays Ferry interfingers with the underlying Tanglewood member, dividing it into two separate units. Fractures were not identified in the Clays Ferry during drilling. Based on observations made during drilling and water level relationships in the wells, the Clays Ferry acts as an aquitard at this facility.

Aquifer testing, including bailing and recovery tests, has been completed at the facility. The results of this testing indicated a bulk permeability of the localized horizons in the range from 1.31×10^{-5} to 2.95×10^{-3} cm/sec. These values are consistent with the information collected during drilling and field reconnaissance, indicating the limestones in the area of the facility are of low permeability.

In addition, the landfill cap prevents infiltration water and, therefore, the limestone underlying the landfill is less susceptible to karst development relative to the surrounding area.

B-3b FLOODPLAIN REQUIREMENTS

The Federal Emergency Management Agency, Flood Insurance Rate Map for Anderson County, Kentucky (Unincorporated Areas) dated May 15, 1986 and Federal Insurance Administration, City of Lawrenceburg, Kentucky Flood Hazard Boundary Map dated December 14, 1979 indicates that none of the YKK property is within the 100-year flood plain.

B-4 TRAFFIC INFORMATION

This section is not applicable to post-closure permit applications.

B-5 REQUIREMENTS FOR APPLICANTS FOR CONSTRUCTION PERMITS

This section is not applicable to post-closure permit applications.

B-6 PAST COMPLIANCE RECORD

Please see attached DEP 7087H as it pertains to YKK and Emergency Coordinators for YKK.

B-7 FINANCIAL RESPONSIBILITY TO CONSTRUCT AND OPERATE

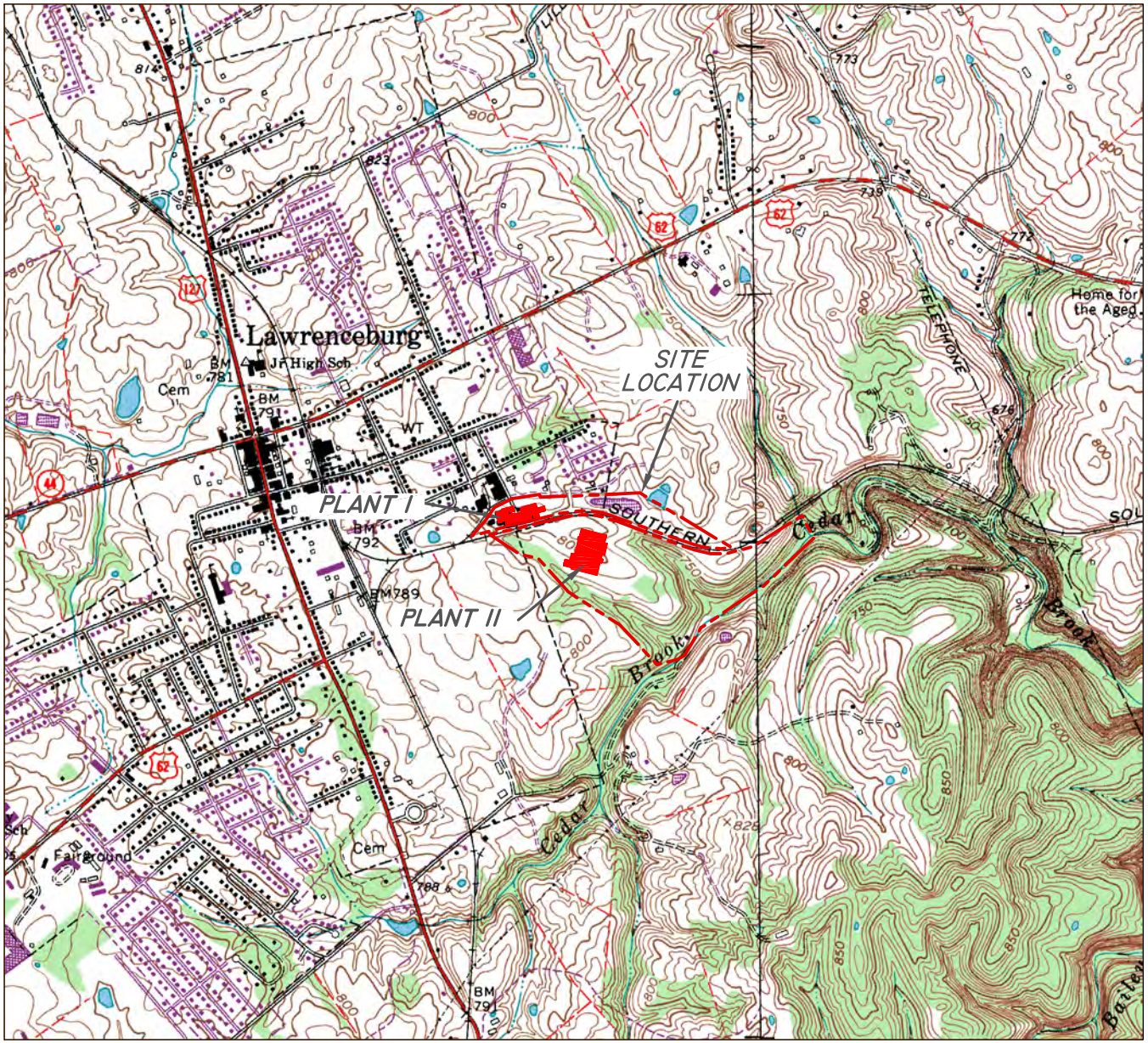
This section is not applicable to post-closure permit applications.

B-8 PUBLIC PARTICIPATION

This section is not applicable to post-closure permit applications.

B-9 FEES

Permit fees required under 401 KAR 39:120 Sections 2 and 3 (formerly 401 KAR 39:090 Sections 2 and 3) accompany this application's submittal to the Kentucky Department for Environmental Protection. A copy of the Check for $13,000 ($4,000 filing and $9,000 review fee), made payable to Kentucky State Treasurer, is included in Appendix B-1.



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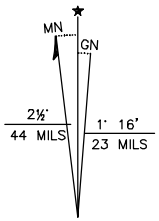


UTM GRID AND 1987 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

ALTON STATION, KY.
(Formerly Lawrenceburg, Ky.)

SW/4 FRANKFORT 15' QUADRANGLE

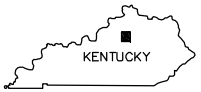
38084–A8–TF–024

1967

PHOTOREVISED 1987

DMA 4060 III SW-SERIES V853

7.5 MINUTE SERIES
(TOPOGRAPHIC)



QUADRANGLE LOCATION

SITE LOCATION MAP	SCALE:	1:24,000	FIGURE
	DATE:	08/24/16	**B-1**
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#:	090-09	
	DRAWN BY:	MKA	
	CHECKED BY:		

SCALE 1:24,000

1 ½ 0 1 MILE

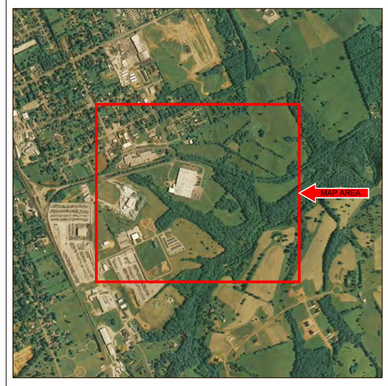
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Linebach Funkhouser, Inc.
environmental compliance & consulting

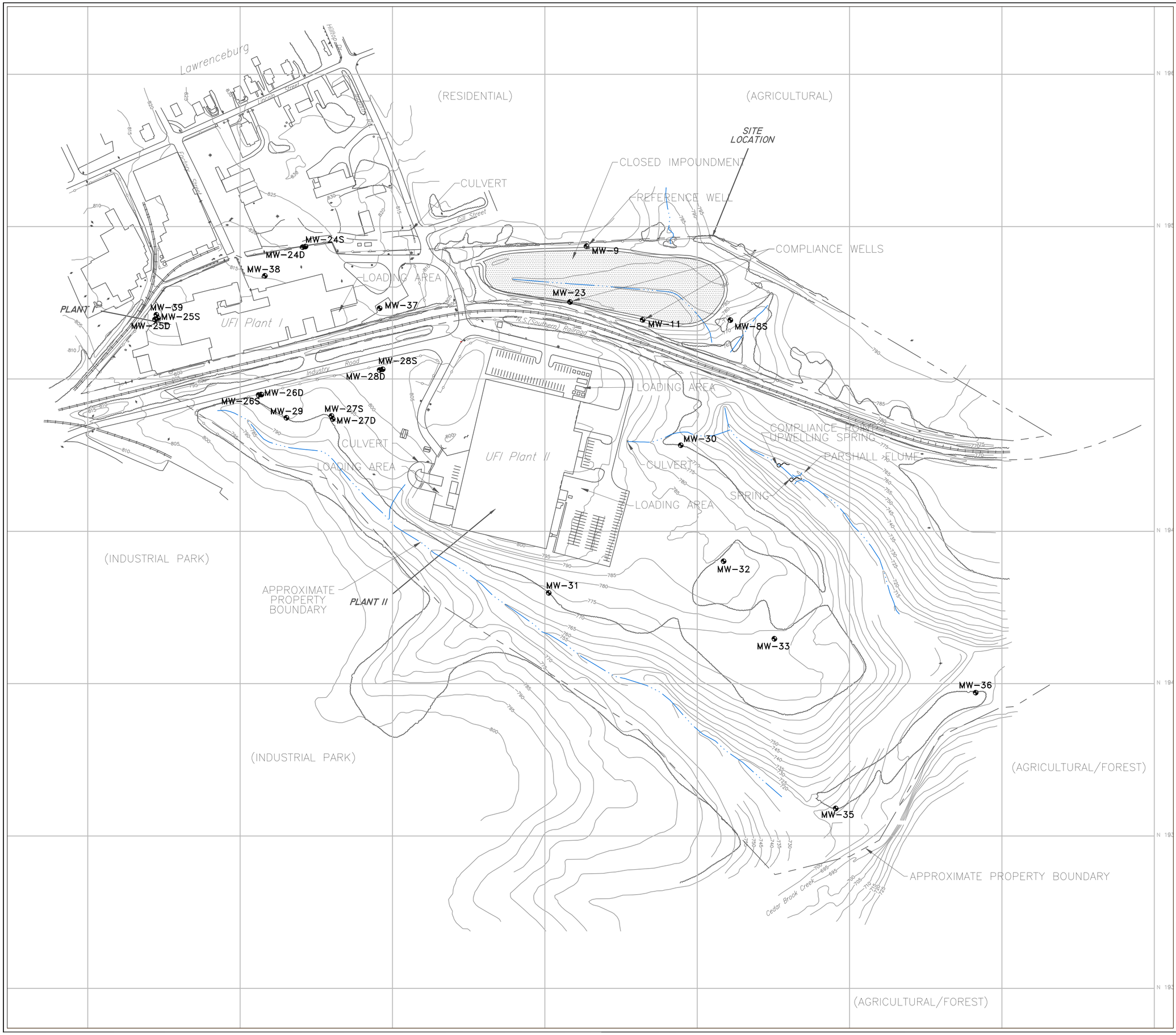
LEGEND



0 100 200
SCALE (ft)

SITE MAP	SCALE: 1"=200'	FIGURE B-2
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



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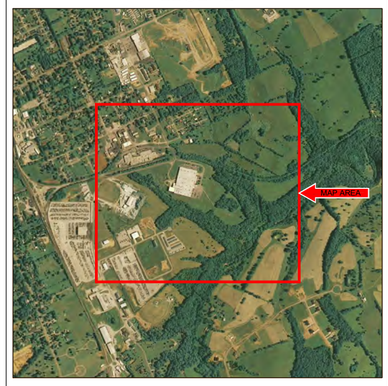
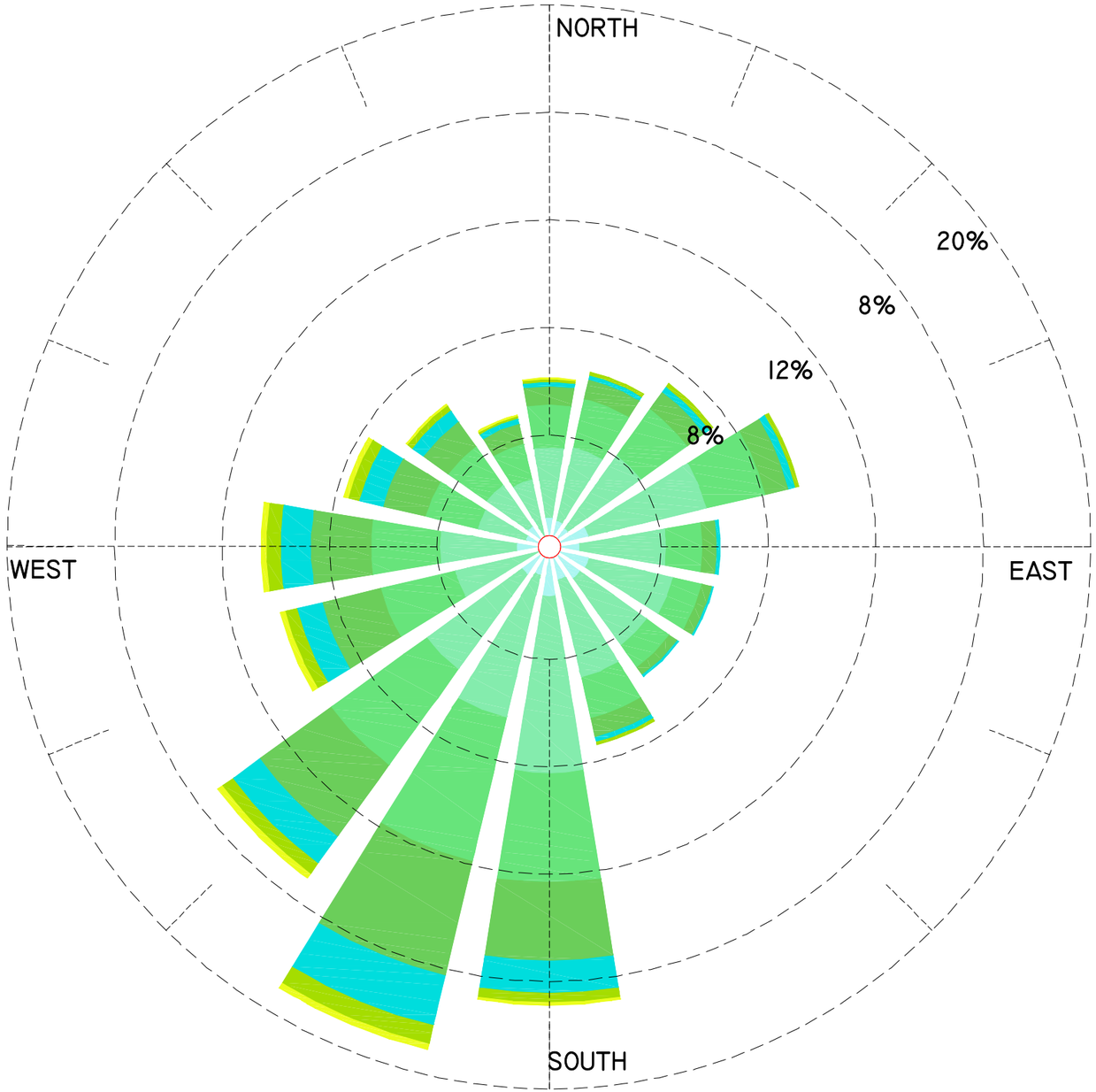


PROPERTY BOUNDARY

SCALE (ft)

SITE MAP	SCALE: 1"=200'	FIGURE B-3
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



LAWRENCEBURG, KENTUCKY

LEGEND

WIND SPEED
(KNOTS)

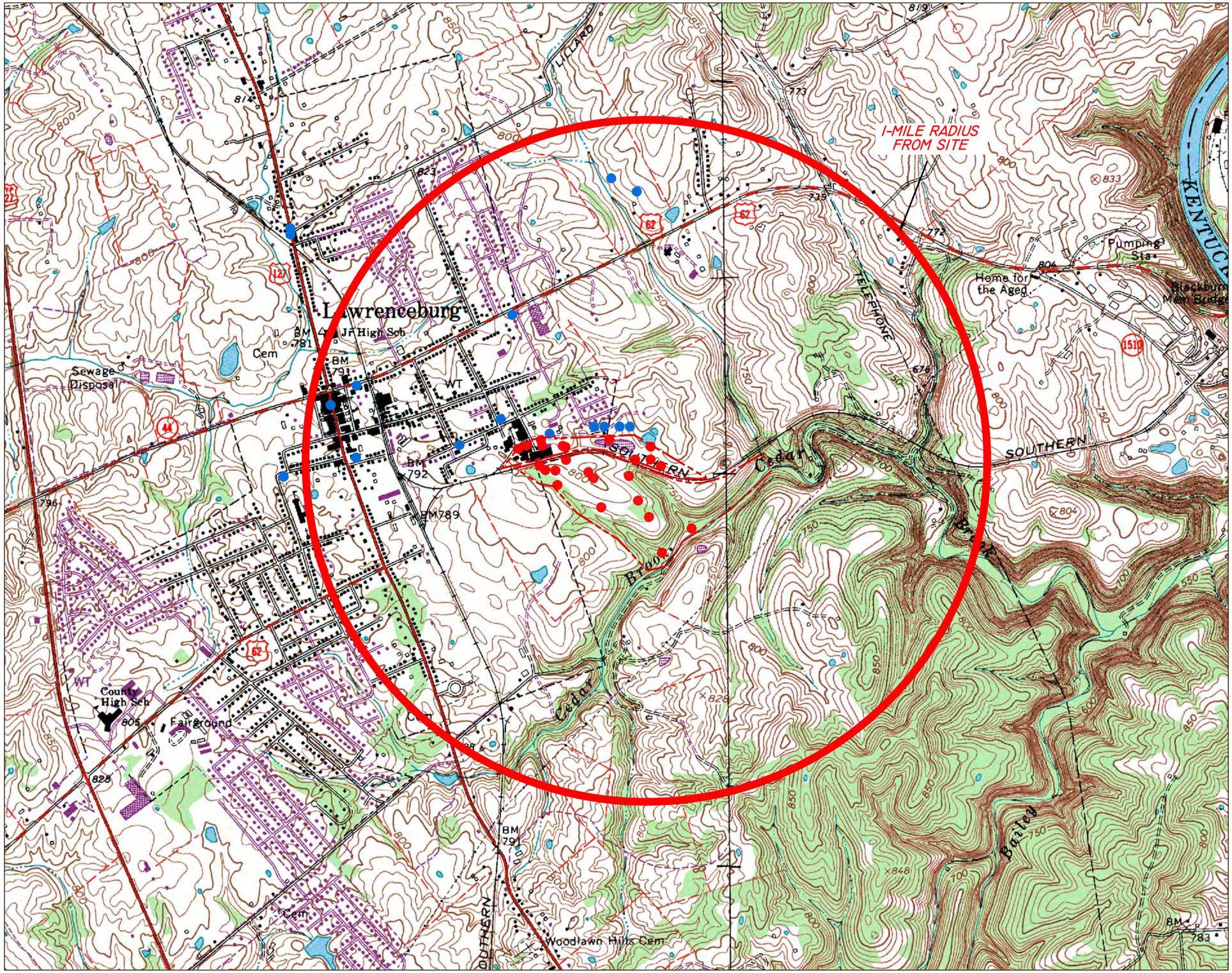
- >38
- >31
- >24
- >17
- >12
- >7
- >3
- >0

CALMS: 3.62%

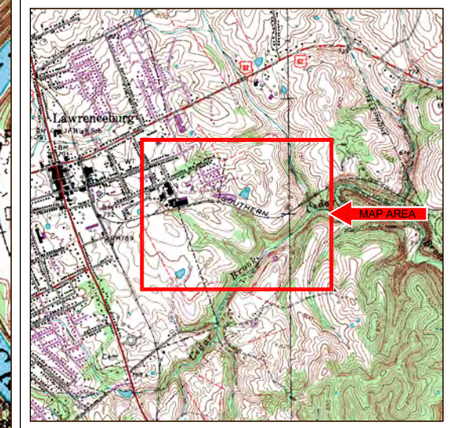
CITATION SOURCE: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/lawrenceburg_united-states_4297581

WIND ROSE CHART	SCALE: No Scale	FIGURE B-4
	DATE: 11/11/22	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



LEGEND

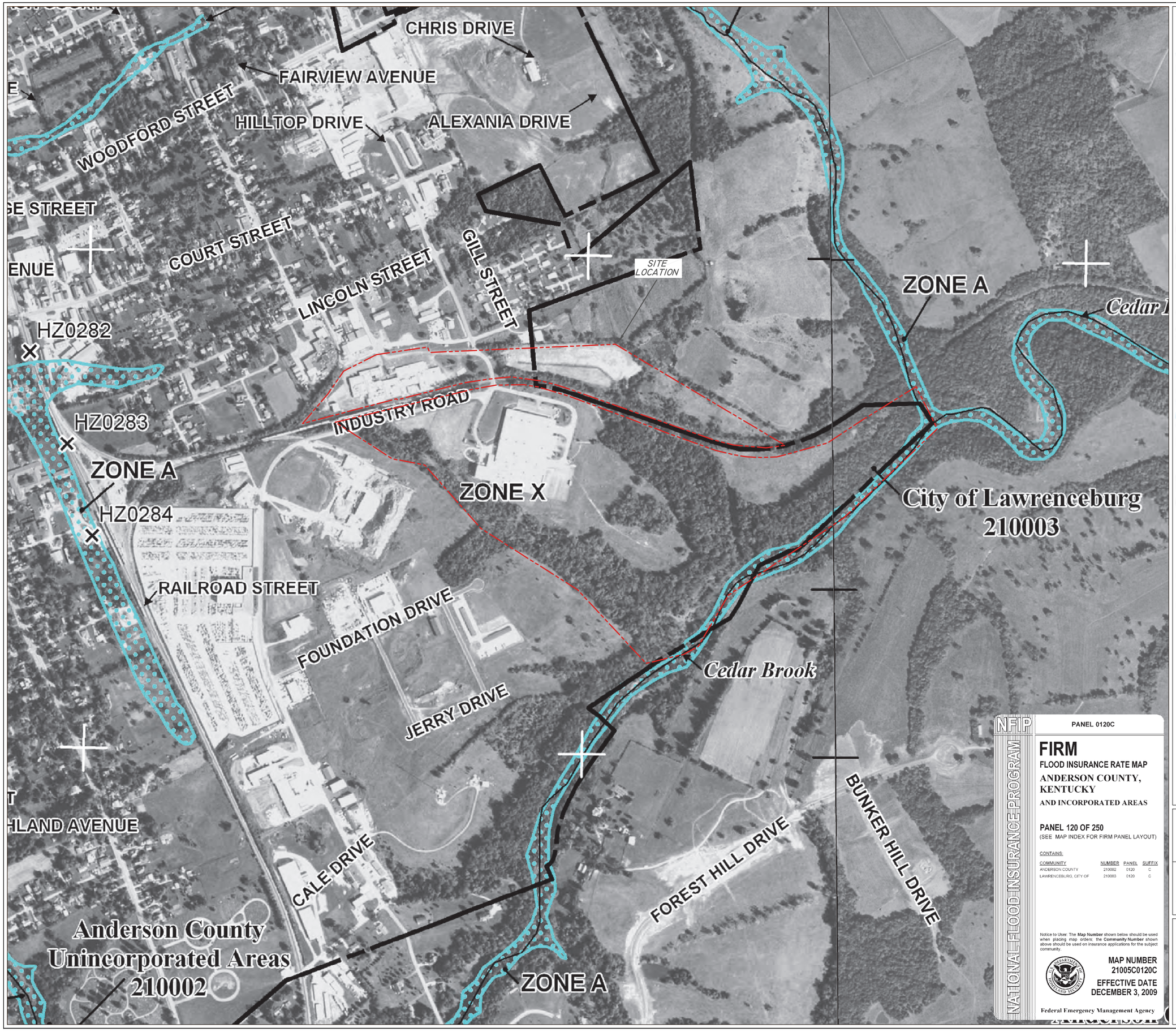


- ON SITE WELL LOCATIONS
- KY DEPARTMENT OF WATER REGISTERED WELL LOCATIONS

0 750 1500
SCALE (ft)

1-MILE RADIUS WELL MAP	SCALE: 1"=1500'	FIGURE B-5
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard may include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside of the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 10)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
(23)- - - - - -(23)	Transect line
85° 03' 45.0", 41° 24' 22.5"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4587000 M	1000-meter Universal Transverse Mercator grid values, zone 16
2250000 FT	5000-foot grid ticks: Kentucky State Plane coordinate system, zone (FIPSZONE 1600), Lambert Conformal Conic projection
KA0015 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
DECEMBER 3, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

0 200 400
SCALE (ft)

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0120C

FIRM
FLOOD INSURANCE RATE MAP
ANDERSON COUNTY, KENTUCKY
AND INCORPORATED AREAS

PANEL 120 OF 250
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ANDERSON COUNTY	210002	0120	C
LAWRENCEBURG, CITY OF	210003	0120	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

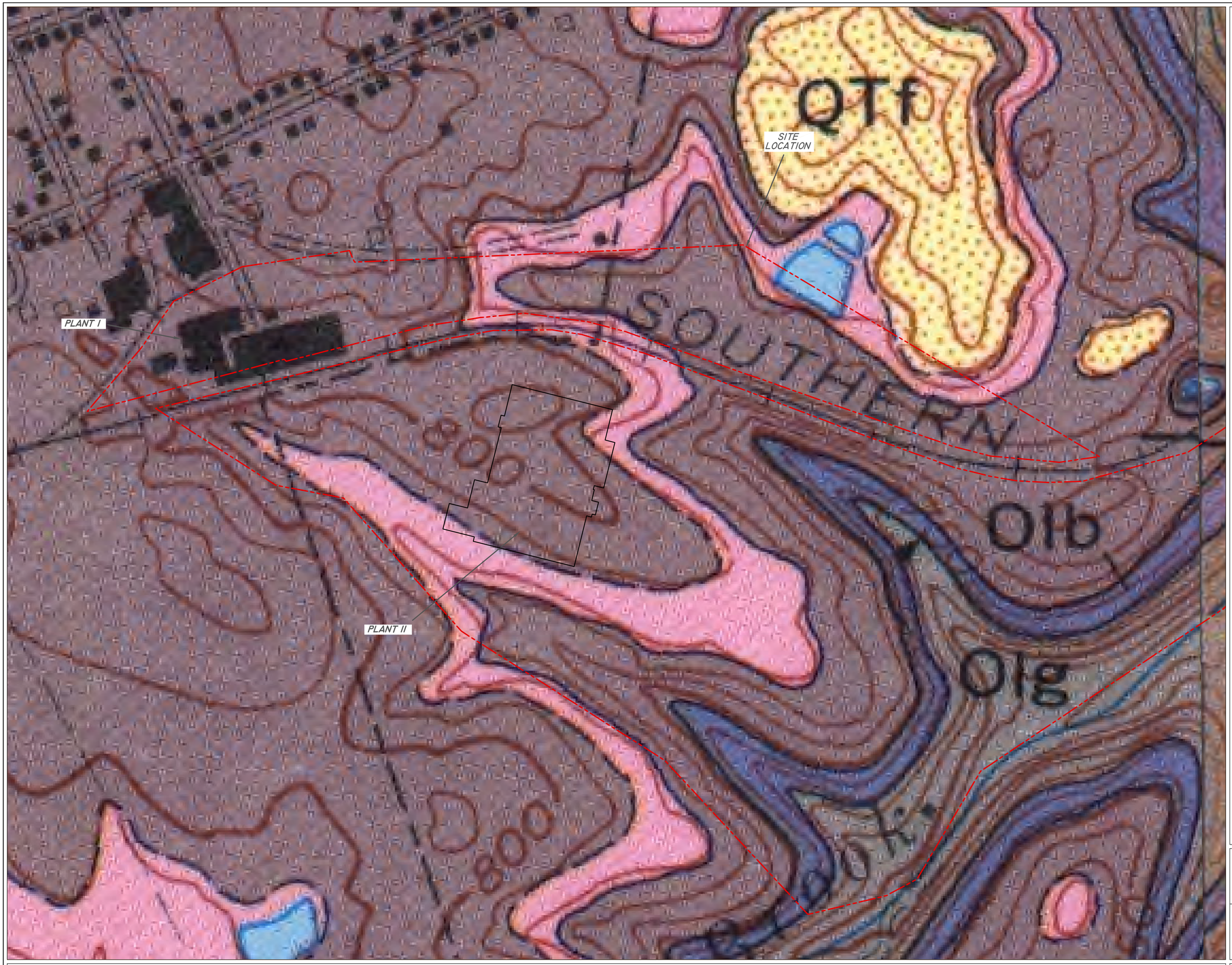
MAP NUMBER
21005C0120C

EFFECTIVE DATE
DECEMBER 3, 2009

Federal Emergency Management Agency

FLOOD PLAIN MAP	SCALE: 1"=400'	FIGURE B-6
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



GEOLOGY OF THE
LAWRENCEBURG QUADRANGLE,
KENTUCKY
GQ-1026

EXPLANATION

Holocene — Qal — Alluvium

Pliocene or Pleistocene — QTf — High-level fluvial deposits

TERTIARY QUATERNARY OR QUATERNARY

Upper Ordovician — Ord — Drakes(?) Formation

Middle and Upper Ordovician — so, Oct, Ocf, Olt, Ols, Olb, Olgm, Olg, Ob, Olc — Clays Ferry Formation and Lexington Limestone

Oct, *Clays Ferry Formation so, base of zone of abundant Sowerbyella*
*Olt, *Tanglewood Limestone Member*
*Ols, *Sulphur Well Member*
*Olb, *Brannon Member*
Olg, *Grier Limestone Member*
Olgm, *Macedonia Bed*
*Ol, *Logana Member*
Olc, *Curdsville Limestone Member*

ORDOVICIAN

Middle Ordovician — High Bridge Group — Ot — Tyrone Limestone

af — Artificial fill
Some small areas not shown

*Shown by line where too thin to show color

Contact
Dashed where inferred; dotted where concealed. Triangles indicate selected localities where contacts were well exposed at time of mapping

Fault
Dashed where approximately located; short dashed where inferred; dotted where concealed; bar and ball on downthrown side

700 — Structure contours
Drawn on base of Brannon Member of Lexington Limestone. Projected where outcrossed horizon is missing. Arrow indicates direction of dip. Not contoured in west-central part of quadrangle nor in small graben 2 miles north-northwest of Lawrenceburg. Contour interval 20 feet

ECONOMIC GEOLOGY

No quarries are active in the quadrangle, but the Tanglewood and Grier Limestone Members of the Lexington Limestone were quarried locally on a small scale in the past, probably for road metal. Parts of the Grier Limestone Member probably meet specifications for aggregate and road metal. The Tyrone Limestone is quarried in the adjacent Tyrone quadrangle for aggregate, road metal, and agricultural lime.

Fohs (1913, p. 488) described a barite and sphalerite vein 2½ miles southwest of Lawrenceburg, but the vein was not observed during mapping.

Ground water conditions have been studied by Hall and Palmquist (1960). Their work indicates that wells drilled in valley bottoms or low on valley sides will generally yield an adequate suppy of water for domestic use, but wells drilled elsewhere will not. Wells drilled in the Clays Ferry Formation are generally dry; those drilled in the Lexington Limestone, and particularly in the Tanglewood Limestone Member, are more likely to be successful.

REFERENCES CITED

Cressman, E. R., 1964, Geology of the Tyrone quadrangle, Kentucky: U.S. Geol. Survey Geol. Quad. Map GQ-303.
Fohs, F. J., 1913, Barytes deposits of Kentucky: Kentucky Geol. Survey, ser. 4, v. 1, pt. 1, p. 441-588.
Hall, P. R., and Palmquist, W. N., Jr., 1960, Availability of ground water in Anderson, Franklin, Shelby, Spencer, and Woodford Counties, Kentucky: U.S. Geol. Survey Hydrol. Inv. Atlas HA-24.
McFarlan, A. C., and Wesley, G. R., 1939, Areal and structural geological map of Anderson County, Kentucky: Kentucky Geol. Survey, ser. 6.

GEOLOGIC QUAD MAP	SCALE:	1"=200'	FIGURE B-7
	DATE:	08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#:	090-09	
	DRAWN BY:	MKA	
	CHECKED BY:		

0°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1963

SCALE 1:2,400

0.25 0.2 0.1 0 0.1 MILE 0.2 MILE 0.25 MILE

100 0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 FEET

0.1 .05 0 0.1 KILOMETER

CONTOUR INTERVAL 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

KENTUCKY
QUADRANGLE LOCATION

GEOLOGIC MAP OF THE LAWRENCEBURG QUADRANGLE, ANDERSON & FRANKLIN COUNTIES, KENTUCKY
By E.R. Cressman 1972

Linebach Funkhouser, Inc.
environmental compliance & consulting

LEGEND

PROPERTY BOUNDARY

0 100 200
SCALE (ft)

WELL LOCATIONS POINT OF COMPLIANCE	SCALE: 1"=200'	FIGURE B-8
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting

Applicant Compliance Record

Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
300 Sower Blvd, Frankfort, KY 40601
(502) 564-6716

DO NOT WRITE IN THIS SPACE

Kentucky Revised Statutes (KRS) 224.40-330 require all Applicant's for the issuance, renewal, major modification(s), or transfer of a hazardous waste management facility permit and each person who is a key personnel of the Applicant, to submit the following information to the Cabinet before the desired permit may be granted. This compliance record is also required prior to a change in key personnel of the Applicant.

1. ID Numbers	**EPA ID Number:** KYD−044−143−356	**Agency Interest Number:** 42	**Date:** 11/11/2022
2. Applicant Information	**Applicant's Complete Name:** Brian Cook		
	Social Security Number: 406-15-0678	**State of Incorporation or Registration:** Kentucky	
	Business Address (do not use P.O. Box Number): 1090 Industry Road		
	Mailing Address: P.O. box 240		
	City: Lawrenceburg		
	County: Anderson	**State:** Kentucky	**Zip Code:** 40342

3. Key Personnel

List the names of "Key Personnel" as defined by 224.1-010 (44), and their positions and titles (Attach additional sheets if necessary).

For each "Key Personnel" listed, a completed "Key Personnel Performance Record DEP Form 7087H2", must be attached to this Applicant's Compliance Record.

The number of Key Personnel Performance Records attached to this Applicant's Compliance Record is:

1. Name: Tim Baker	**Title/Positions:** Assistant Plant Manager
2. Name: Brian Cook	**Title/Positions:** Environmental / Safety
3. Name: Todd Baldwin	**Title/Positions:** Director of Environmental Affairs
4. Name:	**Title/Positions:**
5. Name:	**Title/Positions:**
6. Name:	**Title/Positions:**
7. Name:	**Title/Positions:**

4. Applicant's Experience Managing Hazardous Waste

Describe the Applicant's experience in managing hazardous waste. (Attach additional sheets if necessary.):

YKK (U.S.A.) Inc., Snap & Button Products' (YKK's) operations include stamping and finishing of metal button, snap fasteners, rivets and burrs. The processing operations include cleaning operations, chromate conversion coating, copper-cyanide, zinc, brass, antique nickel, and nickel electroplating, burnishing, wet painting and baking. The rinse waters are collected and treated in a wastewater treatment system from which hazardous waste is generated. The resultant F006 Hazardous Waste is placed in a hopper and held for transport to a Treatment Storage Disposal Facility (TSDF). In addition Flammable And Hazardous Waste Flammable F002, F003, F005 Material from painting operations is placed in 55-gallon drums and a 275-gallon tote tank which are located in a flammable storage room on the west side of facility. YKK has conducted similar operations on-site since opening at this location in 1955.

5. Permits or Licenses Presently Held by Applicant	**List all permits or licenses relating to hazardous waste management presently held by the Applicant in the United States. (Attach additional sheets if necessary.):**	
	1. Facility Name: YKK (U.S.A.) Inc., Snap & Button Products	**Permit/License No:** KYD-044-914-356
	Facility Location: 1090 Industry Road, Lawrenceburg, KY 40342	**Issuing Authority or Agency:** EPA/KDEP
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
6. Permits or Licenses Held within the Last 5 Years by the Applicant	**List all permits or licenses relating to hazardous waste management held by the Applicant within the last five (5) years not listed in response to Item 5 above. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Appliable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
7. Applicant's Experience Managing Solid Waste	**Describe the Applicant's experience in managing solid waste. (Attach additional sheets if necessary.):**	
	YKK (U.S.A.) Inc., Snap & Button Products' (YKK's) operations include stamping and finishing of metal button, snap fasteners, rivets and burrs. The processing operations include cleaning operations, chromate conversion coating, copper-cyanide, zinc, brass, antique nickel, and nickel electroplating, burnishing, wet painting and baking. Solid wastes resulting from YKK's operations are placed in designated locations/containers for disposal by YKK approved contractors. YKK has conducted similar operations on-site since opening at this location in 1955.	
8. Permits or Licenses Presently Held by Applicant	**List all permits or licenses relating to solid waste management presently held by the Applicant in the United States. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**

9. Permits or Licenses Held within the Last 5 Years by the Applicant	**List all permits or licenses relating to solid waste management presently held by the Applicant within the last five (5) years not listed in response to Item 8 above. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
10. Complaints That Resulted in a Fine or Penalty	**Have any civil or administrative complaints within the United States or its territories been brought or filed against the Applicant for the violation of any local, state, or federal environmental protection law which resulted in a fine or penalty greater than one thousand dollars ($1,000) within the five (5) year period immediately preceding the submission date of the Applicants permit application?** ☐ **Yes** ☒ **No** **If yes, describe each civil or administrative compliant which resulted in the fine or penalty. Include in the description the style of the compliant; the case, file or other identifying number, the identity of all parties named in the compliant; the forum in which the complaint was filed; the identity of each local, state, or federal agency that was involved with or named in the compliant; the amount of the fine(s) or penalties(s); whether the fine or penalty has been paid; the identity and description of each law or regulation violated or alleged to have been violated and upon which the fine(s) or penalties(s) is/are based; and state whether the fine was the result of a settlement or agreed order, an administrative order, or a court judgment. If litigation is ongoing, describe any orders or judgments entered and describe the current status of the litigation. (Attach additional sheets if necessary)** Not Applicable	

11. Complaints	**Have any civil or administrative complaints been brought or filed against the Applicant which alleges that an act or omission that constitutes a violation of a local, state, or federal environmental protection law or regulation presented a substantial endangerment to public health or to the environment?** ☒ **Yes** ☐ **No** **If yes, describe each civil or administrative compliant containing the allegation of the act or omission presenting a substantial endangerment to public health or the environment. Each description shall include at a minimum the following; the style of the compliant; the case, file or other identifying number; the identity of all parties named in the compliant; the forum in which the complaint was brought; the identity of each local, state, or federal agency that was involved with or named in the compliant; an explanation of the allege act or omission; the identity and description of the environmental protection law or regulation alleged to have been violated; an explanation of all corrective action measures performed to correct or mitigate the alleged violation(s); a description of the alleged endangerment to public health or to the environment; and state whether the issues raised in the compliant have been resolved, and if so, whether the resolution was the result of a settlement or agreement, an administrative order or a court order or judgment. If litigation on the allegation(s) is ongoing, describe any orders or judgments entered and describe the present status of the litigation. (Attach additional sheets if necessary)** Please see attached documentation regarding an air emission issue that was resolved in 2009-2010.
12. Pending Complaints	**Describe all pending criminal complaints which allege the Applicant's violation of a local, state, or federal environmental protection law or regulation. If none, write NONE. Each description below must include at a minimum the style of the case and the identifying case number, the date the compliant was filed, the forum in which the compliant is pending, the identity of the law or regulation allegedly violated and a narrative description of the law or regulation, whether the alleged violation(s) is a misdemeanor or a felony, and all actions and pleadings which have occurred or been filed in association with the compliant. Criminal complaints filed more than five (5) years prior to the date of submission of the Applicant's permit application need not be listed. (Attach additional sheets if necessary.)** Not Applicable

13. Judgments More Than 5 Years Prior to Submittal	**Describe all judgments of criminal conviction entered against the Applicant for the violation of any local, state, or federal environmental protection law or regulation. Convictions entered more than five (5) years before the submission date of the Applicant's permit application need not be listed. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** Not Applicable
14. Judgments Within 5 Years of Submittal	**Describe all judgments of criminal conviction of a felony under the law of any local, state, or the United States that have been entered against the Applicant within the five (5) year period preceding the date of submission of the Applicant's permit application. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** Not Applicable

15. Financial	List the names and address for all waste sites, waste facilities, solid waste management facilities, and hazardous waste management facilities in the United States or Territories in which the Applicant has a financial interest, or in which the Applicant is an officer, director or manager, and identify the nature of the Applicant's interest or involvement.		
	1. Site/Facility Name: YKK (U.S.A.) Inc., Snap & Button Products - Close Surface Impoundment		
	Site/Facility Address (Do not use P.O. Box number): 1090 Industry Road		
	City: Lawrenceburg	**State:** Kentucky	**Zip:** 40342
	Type of Interest: Financial Interest - Owner		
	Nature of Interest: Owner		
	2. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		
	3. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		
	4. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		

CERTIFICATION

An individual, by executing this document on behalf of a corporation or other entity, certifies that she or he is duly authorized to act on behalf of the corporation or other entity and provide the information contained herein.

THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS UNDER PENALTY OF PERJURY THAT THE INFOMRATION PROVIDED IN THIS COMPLIANCE RECORD IS COMPLETE, TRUE AND ACCURATE.

Brian Cook
Print Name

Title

Signature

11/11/2022
Date

STATE OF _____ **COUNTY OF** _____

Subscribed and sworn to before me by _____ **this is the** _____ **day of** _____**, 20** _____**.**

_____
NOTARY PUBLIC

My Commission Expires: _____

Notary Public's Name and Address:
_____.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

15. Financial	List the names and address for all waste sites, waste facilities, solid waste management facilities, and hazardous waste management facilities in the United States or Territories in which the Applicant has a financial interest, or in which the Applicant is an officer, director or manager, and identify the nature of the Applicant's interest or involvement.		
	1. Site/Facility Name: YKK (U.S.A.) Inc., Snap & Button Products - Close Surface Impoundment		
	Site/Facility Address (Do not use P.O. Box number): 1090 Industry Road		
	City: Lawrenceburg	**State:** Kentucky	**Zip:** 40342
	Type of Interest: Financial Interest - Owner		
	Nature of Interest: Owner		
	2. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		
	3. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		
	4. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		

CERTIFICATION

An individual, by executing this document on behalf of a corporation or other entity, certifies that she or he is duly authorized to act on behalf of the corporation or other entity and provide the information contained herein.

THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS UNDER PENALTY OF PERJURY THAT THE INFOMRATION PROVIDED IN THIS COMPLIANCE RECORD IS COMPLETE, TRUE AND ACCURATE.

Brian Cook
Print Name

Environmental / Safety Specialist
Title

B Cook
Signature

11/11/2022
Date

STATE OF Kentucky **COUNTY OF** Jefferson

Subscribed and sworn to before me by Brian Cook **this is the** 11th **day of** November, **20** 22.

NOTARY PUBLIC

My Commission Expires: December 8, 2023

Notary Public's Name and Address: Michele M Bracey 425 St Peters Church Road Corydon In 47112

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

Applicant Compliance Record

Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
300 Sower Blvd, Frankfort, KY 40601
(502) 564-6716

DO NOT WRITE IN THIS SPACE

Kentucky Revised Statutes (KRS) 224.40-330 require all Applicant's for the issuance, renewal, major modification(s), or transfer of a hazardous waste management facility permit and each person who is a key personnel of the Applicant, to submit the following information to the Cabinet before the desired permit may be granted. This compliance record is also required prior to a change in key personnel of the Applicant.

1. ID Numbers	**EPA ID Number:** KYD−044−143−356	**Agency Interest Number:** 42	**Date:** 11/11/2022
2. Applicant Information	**Applicant's Complete Name:** Timothy Darrel Baker		
	Social Security Number: 404-04-9994	**State of Incorporation or Registration:** Kentucky	
	Business Address (do not use P.O. Box Number): 1090 Industry Road		
	Mailing Address: P.O. box 240		
	City: Lawrenceburg		
	County: Anderson	**State:** Kentucky	**Zip Code:** 40342

3. Key Personnel

List the names of "Key Personnel" as defined by 224.1-010 (44), and their positions and titles (Attach additional sheets if necessary).

For each "Key Personnel" listed, a completed "Key Personnel Performance Record DEP Form 7087H2", must be attached to this Applicant's Compliance Record.

The number of Key Personnel Performance Records attached to this Applicant's Compliance Record is:

1. Name: Tim Baker	**Title/Positions:** Assistant Plant Manager
2. Name: Brian Cook	**Title/Positions:**
3. Name: Todd Baldwin	**Title/Positions:** Director of Environmental Affairs
4. Name:	**Title/Positions:**
5. Name:	**Title/Positions:**
6. Name:	**Title/Positions:**
7. Name:	**Title/Positions:**

4. Applicant's Experience Managing Hazardous Waste

Describe the Applicant's experience in managing hazardous waste. (Attach additional sheets if necessary.):

YKK (U.S.A.) Inc., Snap & Button Products' (YKK's) operations include stamping and finishing of metal button, snap fasteners, rivets and burrs. The processing operations include cleaning operations, chromate conversion coating, copper-cyanide, zinc, brass, antique nickel, and nickel electroplating, burnishing, wet painting and baking. The rinse waters are collected and treated in a wastewater treatment system from which hazardous waste is generated. The resultant F006 Hazardous Waste is placed in a hopper and held for transport to a Treatment Storage Disposal Facility (TSDF). In addition Flammable And Hazardous Waste Flammable F002, F003, F005 Material from painting operations is placed in 55-gallon drums and a 275-gallon tote tank which are located in a flammable storage room on the west side of facility. YKK has conducted similar operations on-site since opening at this location in 1955.

5. Permits or Licenses Presently Held by Applicant	**List all permits or licenses relating to hazardous waste management presently held by the Applicant in the United States. (Attach additional sheets if necessary.):**	
	1. Facility Name: YKK (U.S.A.) Inc., Snap & Button Products	**Permit/License No:** KYD-044-914-356
	Facility Location: 1090 Industry Road, Lawrenceburg, KY 40342	**Issuing Authority or Agency:** EPA/KDEP
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
6. Permits or Licenses Held within the Last 5 Years by the Applicant	**List all permits or licenses relating to hazardous waste management held by the Applicant within the last five (5) years not listed in response to Item 5 above. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Appliable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
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	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
7. Applicant's Experience Managing Solid Waste	**Describe the Applicant's experience in managing solid waste. (Attach additional sheets if necessary.):**	
	YKK (U.S.A.) Inc., Snap & Button Products' (YKK's) operations include stamping and finishing of metal button, snap fasteners, rivets and burrs. The processing operations include cleaning operations, chromate conversion coating, copper-cyanide, zinc, brass, antique nickel, and nickel electroplating, burnishing, wet painting and baking. Solid wastes resulting from YKK's operations are placed in designated locations/containers for disposal by YKK approved contractors. YKK has conducted similar operations on-site since opening at this location in 1955.	
8. Permits or Licenses Presently Held by Applicant	**List all permits or licenses relating to solid waste management presently held by the Applicant in the United States. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
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9. Permits or Licenses Held within the Last 5 Years by the Applicant	**List all permits or licenses relating to solid waste management presently held by the Applicant within the last five (5) years not listed in response to Item 8 above. (Attach additional sheets if necessary.):**	
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	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
10. Complaints That Resulted in a Fine or Penalty	**Have any civil or administrative complaints within the United States or its territories been brought or filed against the Applicant for the violation of any local, state, or federal environmental protection law which resulted in a fine or penalty greater than one thousand dollars ($1,000) within the five (5) year period immediately preceding the submission date of the Applicants permit application?** ☐ **Yes** ☒ **No** **If yes, describe each civil or administrative compliant which resulted in the fine or penalty. Include in the description the style of the compliant; the case, file or other identifying number, the identity of all parties named in the compliant; the forum in which the complaint was filed; the identity of each local, state, or federal agency that was involved with or named in the compliant; the amount of the fine(s) or penalties(s); whether the fine or penalty has been paid; the identity and description of each law or regulation violated or alleged to have been violated and upon which the fine(s) or penalties(s) is/are based; and state whether the fine was the result of a settlement or agreed order, an administrative order, or a court judgment. If litigation is ongoing, describe any orders or judgments entered and describe the current status of the litigation. (Attach additional sheets if necessary)** Not Applicable	

11. Complaints	**Have any civil or administrative complaints been brought or filed against the Applicant which alleges that an act or omission that constitutes a violation of a local, state, or federal environmental protection law or regulation presented a substantial endangerment to public health or to the environment?** ☒ **Yes** ☐ **No** **If yes, describe each civil or administrative compliant containing the allegation of the act or omission presenting a substantial endangerment to public health or the environment. Each description shall include at a minimum the following; the style of the compliant; the case, file or other identifying number; the identity of all parties named in the compliant; the forum in which the complaint was brought; the identity of each local, state, or federal agency that was involved with or named in the compliant; an explanation of the allege act or omission; the identity and description of the environmental protection law or regulation alleged to have been violated; an explanation of all corrective action measures performed to correct or mitigate the alleged violation(s); a description of the alleged endangerment to public health or to the environment; and state whether the issues raised in the compliant have been resolved, and if so, whether the resolution was the result of a settlement or agreement, an administrative order or a court order or judgment. If litigation on the allegation(s) is ongoing, describe any orders or judgments entered and describe the present status of the litigation. (Attach additional sheets if necessary)** Please see attached documentation regarding an air emission issue that was resolved in 2009-2010.
12. Pending Complaints	**Describe all pending criminal complaints which allege the Applicant's violation of a local, state, or federal environmental protection law or regulation. If none, write NONE. Each description below must include at a minimum the style of the case and the identifying case number, the date the compliant was filed, the forum in which the compliant is pending, the identity of the law or regulation allegedly violated and a narrative description of the law or regulation, whether the alleged violation(s) is a misdemeanor or a felony, and all actions and pleadings which have occurred or been filed in association with the compliant. Criminal complaints filed more than five (5) years prior to the date of submission of the Applicant's permit application need not be listed. (Attach additional sheets if necessary.)** Not Applicable

13. Judgments More Than 5 Years Prior to Submittal	**Describe all judgments of criminal conviction entered against the Applicant for the violation of any local, state, or federal environmental protection law or regulation. Convictions entered more than five (5) years before the submission date of the Applicant's permit application need not be listed. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** Not Applicable
14. Judgments Within 5 Years of Submittal	**Describe all judgments of criminal conviction of a felony under the law of any local, state, or the United States that have been entered against the Applicant within the five (5) year period preceding the date of submission of the Applicant's permit application. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** Not Applicable

15. Financial	List the names and address for all waste sites, waste facilities, solid waste management facilities, and hazardous waste management facilities in the United States or Territories in which the Applicant has a financial interest, or in which the Applicant is an officer, director or manager, and identify the nature of the Applicant's interest or involvement.		
	1. Site/Facility Name: YKK (U.S.A.) Inc., Snap & Button Products - Close Surface Impoundment		
	Site/Facility Address (Do not use P.O. Box number): 1090 Industry Road		
	City: Lawrenceburg	**State:** Kentucky	**Zip:** 40342
	Type of Interest: Financial Interest - Owner		
	Nature of Interest: Owner		
	2. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		
	3. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		
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	Site/Facility Address (Do not use P.O. Box number):		
	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		

CERTIFICATION

An individual, by executing this document on behalf of a corporation or other entity, certifies that she or he is duly authorized to act on behalf of the corporation or other entity and provide the information contained herein.

THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS UNDER PENALTY OF PERJURY THAT THE INFOMRATION PROVIDED IN THIS COMPLIANCE RECORD IS COMPLETE, TRUE AND ACCURATE.

Tim Baker
Print Name

Assistant Plant Manager
Title

_____
Signature

11/11/2022
Date

STATE OF _____ **COUNTY OF** _____

Subscribed and sworn to before me by _____ **this is the** _____ **day of** _____**, 20** _____**.**

_____
NOTARY PUBLIC

My Commission Expires: _____

Notary Public's Name and Address:
_____.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

15. Financial	List the names and address for all waste sites, waste facilities, solid waste management facilities, and hazardous waste management facilities in the United States or Territories in which the Applicant has a financial interest, or in which the Applicant is an officer, director or manager, and identify the nature of the Applicant's interest or involvement.		
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Tim Baker
Print Name

Assistant Plant Manager
Title

Tim Baker
Signature

11/11/2022
Date

STATE OF Kentucky **COUNTY OF** Jefferson

Subscribed and sworn to before me by Tim Baker **this is the** 11th **day of** November, **20** 22.

NOTARY PUBLIC

My Commission Expires: December 8, 2023

Notary Public's Name and Address: Michael M Bracey 425 St Peters Church Road Corydon, In 47112

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Applicant Compliance Record

Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
300 Sower Blvd, Frankfort, KY 40601
(502) 564-6716

DO NOT WRITE IN THIS SPACE

Kentucky Revised Statutes (KRS) 224.40-330 require all Applicant's for the issuance, renewal, major modification(s), or transfer of a hazardous waste management facility permit and each person who is a key personnel of the Applicant, to submit the following information to the Cabinet before the desired permit may be granted. This compliance record is also required prior to a change in key personnel of the Applicant.

1. ID Numbers	**EPA ID Number:** KYD-044-143-356	**Agency Interest Number:** 42	**Date:** 11/11/2022
2. Applicant Information	**Applicant's Complete Name:** Todd S. Baldwin		
	Social Security Number: 406-90-8393	**State of Incorporation or Registration:** Kentucky	
	Business Address (do not use P.O. Box Number): 1090 Industry Road		
	Mailing Address: P.O. box 240		
	City: Lawrenceburg		
	County: Anderson	**State:** Kentucky	**Zip Code:** 40342

3. Key Personnel

List the names of "Key Personnel" as defined by 224.1-010 (44), and their positions and titles (Attach additional sheets if necessary).

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2. Name: Brian Cook	**Title/Positions:**
3. Name: Todd Baldwin	**Title/Positions:** Director of Environmental Affairs
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5. Name:	**Title/Positions:**
6. Name:	**Title/Positions:**
7. Name:	**Title/Positions:**

4. Applicant's Experience Managing Hazardous Waste

Describe the Applicant's experience in managing hazardous waste. (Attach additional sheets if necessary.):

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	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
7. Applicant's Experience Managing Solid Waste	**Describe the Applicant's experience in managing solid waste. (Attach additional sheets if necessary.):**	
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13. Judgments More Than 5 Years Prior to Submittal	**Describe all judgments of criminal conviction entered against the Applicant for the violation of any local, state, or federal environmental protection law or regulation. Convictions entered more than five (5) years before the submission date of the Applicant's permit application need not be listed. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** Not Applicable
14. Judgments Within 5 Years of Submittal	**Describe all judgments of criminal conviction of a felony under the law of any local, state, or the United States that have been entered against the Applicant within the five (5) year period preceding the date of submission of the Applicant's permit application. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** Not Applicable

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	City: Lawrenceburg	**State:** Kentucky	**Zip:** 40342
	Type of Interest: Financial Interest - Owner		
	Nature of Interest: Owner		
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	City:	**State:**	**Zip:**
	Type of Interest:		
	Nature of Interest:		
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THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS UNDER PENALTY OF PERJURY THAT THE INFOMRATION PROVIDED IN THIS COMPLIANCE RECORD IS COMPLETE, TRUE AND ACCURATE.

Todd Baldwin
Print Name

Director of Environmental Affairs
Title

_____
Signature

11/11/2022
Date

STATE OF _____ **COUNTY OF** _____

Subscribed and sworn to before me by _____ **this is the** _____ **day of** _____**, 20** _____**.**

_____
NOTARY PUBLIC

My Commission Expires: _____

Notary Public's Name and Address:
_____.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

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	Type of Interest: Financial Interest - Owner		
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Todd Baldwin
Print Name

Director of Environmental Affairs
Title

Signature

11/11/2022
Date

STATE OF Kentucky **COUNTY OF** Jefferson

Subscribed and sworn to before me by Todd Baldwin **this is the** 11th **day of** November, **20** 22.

NOTARY PUBLIC

My Commission Expires: December 5, 2023

Notary Public's Name and Address: Michele M. Bracey 425 St. Peters Church Road Corydon In 47112

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Attorney-Client Privileged Communication

YKK

Little Parts. Big Difference.

社外秘
INTERNAL USE ONLY

YKK Snap Fasteners America Inc. (YSU)
Source ID # 021-005-0006/42
Title V Permit V-06-025

YKK
Little Parts. Big Difference.

社 外 秘
INTERNAL USE ONLY

History of YSU

- Founded in 1895, YSU has been making quality closures for more than one hundred years.
- Our manufacturing center is located in Lawrenceburg, Kentucky.
- The Lawrenceburg operation is utilized for short product runs, special orders, Research and Development, engineering, manufacturing, and houses the Technical Center.
- YSU manufactures metal buttons, snaps, and other metal fasteners.

Attorney-Client
Privileged
Communication

YKK
Little Parts. Big Difference.

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Air Emissions

- Facility wide Title V permit V-06-025
- Includes monitoring and record keeping requirements for VOCs and HAPs
- HAP limit of 2.6 lbs volatile organic HAP per gal of coating solids used during each 12-month average rolling compliance period
- Source wide VOC limit of 90.0 tons

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Timeline

- February 24, 2009 Joint Compliance Inspection from Region 4 EPA and KY DEP regarding 40 CFR Part 63, Subpart MMMM
- March 13, 2009 – NOV received from KY DEP

DAQ NOV | YSU Initial Response | DAQ YSU Follow Up letter

- March 19, 2009 – EPA Section 114 Information Request

EPA 114 Letter | YSU 114 Response Letter | AlstonBird Letter | YSU EPA ponse Letter 6-11- | YSU EPA esponse Letter 7-2

- May 4, 2009 – Vendor Information Request Examples

Vendor Request DeHart | Vendor Request Sherwin Williams

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Timeline

- November 10, 2009 Potential Deficiencies Letter received from EPA Region 4

EPA Potential Deficiencies Letter

- November 10, 2009 EPA Region 4 Inspection Report

EPA Letter 11-10-09

- November 19, 2009 EPA Region 4 Information Request

EPA Letter 11-19-09

- January 15, 2010 YSU resubmittal of documents

YSU EPA Letter 1-15-09

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YSU Response / Follow Up Meeting

- Responses:
  - 9 Responses to the EPA's November 10, 2009 letter and the December 17, 2009 Follow Up Meeting
  - 4 separate miscellaneous issues addressed

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1. Failure to submit the Initial Notification by January 2, 2005 (40 CFR § 63.3910(b))

YSU Response 1:

- YSU agrees the Initial Notification was not submitted by January 2, 2005.
- The Initial Notification for the facility was submitted on April 29, 2009.

YSU Initial
Notification Letter

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2. Failure to conduct initial compliance demonstration during the initial compliance period which began on January 3, 2007, and ended January 31, 2008 (40 CFR §§ 63.3940, 63.3950 and 63.3960)

YSU Response 2:

- Although YSU maintained HAP records during this period, it did not maintain the associated solids data.
- YSU conducted its initial compliance demonstration in April 2009.
- Updated MSDS/CPDS provided new information and data.
- YSU resubmitted the initial compliance demonstration on January 15, 2010.

YSU Initial
pliance Demonstra

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3. Failure to submit the Notification of Compliance Status (NOCS) by March 1, 2008 (40 CFR § 63.3910(c))

YSU Response 3:

- YSU submitted the NOCS on April 29, 2009.
- Updated MSDS/CPDS provided new information and data.
- YSU resubmitted the initial compliance demonstration on January 15, 2010.

YSU NOCS
1-15-10

NOCS Letter

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4. Failure to file an accurate and complete semi-annual report by July 31, 2008, and January 31, 2009 (40 CFR § 63.3920(a))

YSU Response 4:

- The semi-annual report for the 1st half of 2008 was dated August 10, 2008 and received by EPA on August 20, 2008.
- The semi-annual report for the 2nd half of 2008 was dated January 26, 2009 and received by EPA on February 3, 2009.
- These two reports for 2008 and the two semi- annual reports for 2007 were resubmitted on January 15, 2010.

YSU SemiAnnual 2007-2008

SemiAnnual Letter

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5. Failure to retain required records of solids used or solid fraction (40 CFR § § 63.3930, 63.3931 and 63.10(b)(1))

YSU Response 5:

- YSU maintained records of usage, purchase and HAP content for materials.
- The solids used or solids fraction was not available at the time of EPA's inspection.
- These records are available for 2007, 2008 and 2009.

YSU Solids Calculations

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6. Failure to determine compliance with standards and limitations prescribed at 40 CFR § 63.3890(b)(1) for subsequent periods (40 CFR § § 63.3941-63.3966 and 63.3891)

YSU Response 6:

- YSU began making compliance determinations in April 2009.
- Updated MSDS/CPDS provided new information and data.
- These determinations are available for the subsequent periods.

YSU Solids Determinations

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7. Failure to meet applicable standards and limitations prescribed at 40 CFR § 63.3890(b)(1)

YSU Response 7:

- As of December 2009 YSU is in compliance with the 2.6 lb VOHAP per gallon solids limitation.
- Switch to the Compliant Materials Option.

YSU Permit Status Letter

	Rolling 12month Average	
	VOC (tons)	VOHAP (lb VOHAP/gallon coating solids
Jan-09	34.76	5.35
Feb-09	34.46	5.42
Mar-09	33.78	5.17
Apr-09	39.51	5.03
May-09	38.52	4.84
Jun-09	36.11	4.49
Jul-09	34.65	4.56
Aug-09	34.20	4.59
Sep-09	33.79	4.74
Oct-09	33.21	4.93
Nov-09	32.58	5.02
Dec-09	32.66	4.86

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8. The Title V Annual Compliance Certification for 2007 and 2008 appear not to discuss the compliance status with the requirements of Section D of the Title V permit and the requirements of 40 CFR Part 63 Subpart MMMM.

YSU Response 8:

- YSU has revised the Title V Annual Compliance Certifications forms for 2007 and 2008.
- These documents were resubmitted on January 15, 2010.

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9. Miscellaneous Issues

YSU Response 9:

- YSU Centerville, TN facility- Accepted restrictions under its Title V air permit and as a result, was not subject to Subpart MMMM.

YSU TN Air Permit

- Examples of inaccurate MSDS- the corrected MSDS resulted in overall reduced VOHAP emissions.

MSDS Example Calculation

NEW MSDS

OLD MSDS

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9. Miscellaneous Issues (cont'd)

YSU Response 9:

- Economic benefit analysis- a benefit cost analysis was performed and is attached.

YSU BCA

- Other requested VOHAP data-

YSU VOHAP 2007

YSU VOHAP 2008

YSU VOHAP 2009

9. Miscellaneous Issues (cont'd)

- <u>Compliance option change notice-</u> According to KY Division of Air Quality (DAQ), no permit modification is necessary. The only requirement is to make a formal request in a letter format.

January 13, 2010

Kentucky Division for Air Quality (DAQ)
Frankfort Regional Office
643 Teton Trail
Suite H
Frankfort, KY 40601-1758

ATTN: Stanley Wolfe

Re: Permit Notification Change in Compliance Option
YKK Snap Fasteners America Inc. (YSU)
Lawrenceburg, KY Facility
Anderson County
Permit No. F-06-025
Source A. I. No. 42

Dear Mr. Wolfe,

This is to inform you that YKK Snap Fasteners America (YSU) located in Lawrenceburg, Kentucky is requesting a change in its compliance option [§63.3891]. Currently, YSU is operating under the compliance option "Emission Rate Without Add On Controls", which requires a 12-month emission rate rolling average and monthly records. YSU is requesting a switch from the compliance option of Emission Rate Without Add On Controls to the Compliance Material Option. Recently, the Lawrenceburg facility has switched all of its regulated coatings and solvents to compliance materials which makes this option now applicable. Material Safety Data Sheets/Product Data Sheets for the new compliance coatings can be provided upon request.

If you have any questions or require additional information, please contact me at 502-839-2222 (Direct). Thank you for your assistance and consideration in this matter.

Sincerely,

Todd Baldwin
Corporate Environmental Engineer
YKK Snap Fasteners America Inc. (YSU)

TSB/sb

Cc: KY DAQ
Central Files
200 Fair Oaks Lane, 1st Floor
Frankfort, KY 40601

File

CAAPERMITCHANGEREQ.01-13-10

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Corrective Actions

- Upon notice of potential violations, YSU initiated a process to utilize only compliant coatings.
- Non compliant inventory materials were scrapped.
- Initiated project with suppliers to create performance specific compliant coatings.
- Internal purchasing system updated/changed to eliminate the potential ordering and purchase of non compliant materials. Non compliant materials have been classified as obsolete in the purchasing system.

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Summary

- YSU desires to explore the opportunity to transition from the current organic HAP emission rate compliance method to the compliant material coating option.
- YSU will continue to submit the monthly reports beginning December 2009 to EPA until further notice.

Key Personnel Performance Record

Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
300 Sower Boulevard, Frankfort, KY 40601
(502) 564-6716

DO NOT WRITE IN THIS SPACE

Kentucky Revised Statutes (KRS) 224.40-330 and Kentucky Administrative Regulations (KAR) Title 401 39:060 Section 5 (14) require all applicants for the issuance, renewal, major modification(s), or transfer of a hazardous waste management facility permit and each Person who is a Key Personnel of the applicant, to submit the following information to the Cabinet before the desired permit may be granted. This compliance record is also required prior to a change in Key Personnel of the applicant.

1. ID Numbers	**EPA ID Number: KY**D−044−914−356 **Agency Interest Number:** 42 **Key Personnel #:** 1
2. Key Personnel Information	**The Person listed below is a Key Personnel (Listed in Applicants Compliance Record Item #3) for the above application.**
	Complete Name: Timothy Darrel Baker
	Social Security Number: 404-04-9994 / **State of Incorporation or Registration: KY**
	Business Address (do not use P.O. Box Number): 1090 Industry Road
	Mailing Address: P.O.Box 240
	City: Lawrenceburg
	County: Anderson / **State: Kentucky** / **Zip Code: 40342**
	Type of Person [Reference KRS 224.1-010(44)]: Manager
3. Relationship	**Describe the relationship between the Applicant and the "Person" identified in Item #2 (hereafter "Person") that establishes the "Person" as a Key Personnel of the Applicant:** Person is employed by the applicant.
4. Person's Experience Managing Hazardous Waste	**Describe the Person's experience in managing <u>hazardous waste</u>. (Attach additional sheets if necessary.):** Hazardous wastes are primarily handled by employees whose daily tasks generate the hazardous waste. The hazardous wastes are then managed primarily by the Applicant's Environmental Engineer.

5. Permits or Licenses Presently Held by Person	**List all permits or licenses relating to hazardous waste management presently held by the Person in the United States. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
6. Permits or Licenses Held within the Last 5 Years by the Person	**List all permits or licenses relating to hazardous waste management held by the Person within the last five (5) years not listed in response to Item 5 above. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
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	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
7. Person's Experience Managing Solid Waste	**Describe the Person's experience in managing solid waste. (Attach additional sheets if necessary.):**	
	Solid wastes are primarily handled by employees whose daily tasks generate the waste. With the exception of making hazardous waste determination of the solid waste, as trained, solid wastes are disposed in the predetermined location for disposal by a contractor. Non-hazardous solid waste management is primarily handled by the Environmental Engineer.	
8. Permits or Licenses Presently Held by Person	**List all permits or licenses relating to solid waste management presently held by the Person in the United States. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
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9. Permits or Licenses Held within the Last 5 Years by the Person	**List all permits or licenses relating to solid waste management presently held by the Person within the last five (5) years not listed in response to Item 8 above. (Attach additional sheets if necessary.):**	
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	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
10. Complaints	**Have any civil or administrative complaints within the United States or its territories been brought or filed against the Person or Key Personnel for the violation of any local, state, or federal environmental protection law which resulted in a fine or penalty greater than one thousand dollars ($1,000) within the five (5) year period immediately preceding the submission date of the Applicant's permit application? ☐ Yes ☒ No** **If yes, describe each civil or administrative compliant which resulted in the fine or penalty. Include in the description the style of the compliant; the case, file or other identifying number, the identity of all parties named in the compliant; the forum in which the complaint was filed; the identity of each local, state, or federal agency that was involved with or named in the compliant; the amount of the fine(s) or penalties(s); whether the fine or penalty has been paid; the identity and description of each law or regulation violated or alleged to have been violated and upon which the fine(s) or penalties(s) is/are based; and state whether the fine was the result of a settlement or agreed order, an administrative order, or a court judgment. If litigation is ongoing, describe any orders or judgments entered and describe the current status of the litigation. (Attach additional sheets if necessary)** **Not Applicable**	

11. Complaints	**Have any civil or administrative complaints been brought or filed against the Person or Key Personnel which allege that an act or omission that constitutes a violation of a local, state, or federal environmental protection law or regulation presented a substantial endangerment to public health or to the environment?** ☐ **Yes** ☒ **No** **If yes, describe each civil or administrative compliant containing the allegation of the act or omission presenting a substantial endangerment to public health or the environment. Each description shall include at a minimum the following; the style of the compliant; the case, file or other identifying number; the identity of all parties named in the compliant; the forum in which the complaint was brought; the identity of each local, state, or federal agency that was involved with or named in the compliant; an explanation of the allege act or omission; the identity and description of the environmental protection law or regulation alleged to have been violated; an explanation of all corrective action measures performed to correct or mitigate the alleged violation(s); a description of the alleged endangerment to public health or to the environment; and state whether the issues raised in the compliant have been resolved, and if so, whether the resolution was the result of a settlement or agreement, an administrative order or a court order or judgment. If litigation on the allegation(s) is ongoing, describe any orders or judgments entered and describe the present status of the litigation. (Attach additional sheets if necessary)** **Not Applicable**
12. Pending Complaints	**Describe all pending criminal complaints which allege the Person's or Key Personnel's violation of a local, state, or federal environmental protection law or regulation. If none, write NONE. Each description below must include at a minimum the style of the case and the identifying case number, the date the compliant was filed, the forum in which the compliant is pending, the identity of the law or regulation allegedly violated and a narrative description of the law or regulation, whether the alleged violation(s) is a misdemeanor or a felony, and all actions and pleadings which have occurred or been filed in association with the compliant. Criminal complaints filed more than five (5) years prior to the date of submission of the APPLICANTS permit application need not be listed. (Attach additional sheets if necessary.)** **Not Applicable**

13. Judgments More Than 5 Years Prior to Submittal	**Describe all judgments of criminal conviction entered against the Person or Key Personnel for the violation of any local, state, or federal environmental protection law or regulation. Convictions entered more than five (5) years before the submission date of the Applicant's permit application need not be listed. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** **Not Applicable**
14. Judgments Within 5 Years of Submittal	**Describe all judgments of criminal conviction of a felony under the law of any local, state, or the United States that have been entered against the Person or Key Personnel within the five (5) year period preceding the date of submission of the Applicant's permit application. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** **Not Applicable**

15. Financial	List the names and address for all waste sites, waste facilities, solid waste management facilities, and hazardous waste management facilities in the United States or Territories in which the Person or Key Personnel has a financial interest, or in which the Person or Key Personnel is an officer, director or manager, and identify the nature of the Person or Key Personnel interest or involvement.		
	a. Site/Facility Name: YKK (U.S.A.) Inc., Snap & Button Products – Closed Surface Impoundment		
	Site/Facility Address (Do not use P.O. Box number): 1090 Industry Road		
	City: Lawrenceburg	State: Kentucky	Zip: 40342
	Type of Interest: Manager/Officer		
	Nature of Interest: Emergency Coordinator in Contingency Plan		
	b. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	State:	Zip:
	Type of Interest:		
	Nature of Interest:		
	c. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	State:	Zip:
	Type of Interest:		
	Nature of Interest:		
	b. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	State:	Zip:
	Type of Interest:		
	Nature of Interest:		

CERTIFICATION

An individual, by executing this document on behalf of a corporation or other entity, certifies that she or he is duly authorized to act on behalf of the corporation or other entity and provide the information contained herein.

THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS UNDER PENALTY OF PERJURY THAT THE INFOMRATION PROVIDED IN THIS COMPLIANCE RECORD IS COMPLETE, TRUE AND ACCURATE.

_____Timothy Darrel Baker_____ **__Assistant Plant Manager____**
Print Name **Title**

_____ **_____**
Signature **Date**

STATE OF _____ **COUNTY OF _____**

Subscribed and sworn to before me by _____ this is the _____ day of _____, 20 _____.

_____
NOTARY PUBLIC

My Commission Expires: _____

Notary Public's Name and Address: _____.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

15. Financial	List the names and address for all waste sites, waste facilities, solid waste management facilities, and hazardous waste management facilities in the United States or Territories in which the Person or Key Personnel has a financial interest, or in which the Person or Key Personnel is an officer, director or manager, and identify the nature of the Person or Key Personnel interest or involvement.		
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	City:	State:	Zip:
	Type of Interest:		
	Nature of Interest:		
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	City:	State:	Zip:
	Type of Interest:		
	Nature of Interest:		

CERTIFICATION

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THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS UNDER PENALTY OF PERJURY THAT THE INFOMRATION PROVIDED IN THIS COMPLIANCE RECORD IS COMPLETE, TRUE AND ACCURATE.

Timothy Darrel Baker
Print Name

Assistant Plant Manager
Title

Tim Baker
Signature

11/10/2022
Date

STATE OF Kentucky COUNTY OF Jefferson

Subscribed and sworn to before me by Tim Baker this is the 10th day of November, 20 22.

NOTARY PUBLIC

My Commission Expires: December 8, 2023

Notary Public's Name and Address: Michele M Bracey 425 St. Peters Church Road Corydon In 47112.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

Key Personnel Performance Record

Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
300 Sower Boulevard, Frankfort, KY 40601
(502) 564-6716

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1. ID Numbers	**EPA ID Number: KY**D−044−914−356 **Agency Interest Number:** 42 **Key Personnel #:** 2
2. Key Personnel Information	**The Person listed below is a Key Personnel (Listed in Applicants Compliance Record Item #3) for the above application.**
	Complete Name: Brian Hassel Cook
	Social Security Number: 406-15-0768 **State of Incorporation or Registration: KY**
	Business Address (do not use P.O. Box Number): 1090 Industry Road
	Mailing Address: P.O.Box 240
	City: Lawrenceburg
	County: Anderson **State: Kentucky** **Zip Code: 40342**
	Type of Person [Reference KRS 224.1-010(44)]: Manager
3. Relationship	**Describe the relationship between the Applicant and the "Person" identified in Item #2 (hereafter "Person") that establishes the "Person" as a Key Personnel of the Applicant:** Person is employed by the applicant.
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10. Complaints	**Have any civil or administrative complaints within the United States or its territories been brought or filed against the Person or Key Personnel for the violation of any local, state, or federal environmental protection law which resulted in a fine or penalty greater than one thousand dollars ($1,000) within the five (5) year period immediately preceding the submission date of the Applicant's permit application? ☐ Yes ☒ No** **If yes, describe each civil or administrative compliant which resulted in the fine or penalty. Include in the description the style of the compliant; the case, file or other identifying number, the identity of all parties named in the compliant; the forum in which the complaint was filed; the identity of each local, state, or federal agency that was involved with or named in the compliant; the amount of the fine(s) or penalties(s); whether the fine or penalty has been paid; the identity and description of each law or regulation violated or alleged to have been violated and upon which the fine(s) or penalties(s) is/are based; and state whether the fine was the result of a settlement or agreed order, an administrative order, or a court judgment. If litigation is ongoing, describe any orders or judgments entered and describe the current status of the litigation. (Attach additional sheets if necessary)** **Not Applicable**	

11. Complaints	**Have any civil or administrative complaints been brought or filed against the Person or Key Personnel which allege that an act or omission that constitutes a violation of a local, state, or federal environmental protection law or regulation presented a substantial endangerment to public health or to the environment?** ☐ **Yes** ☒ **No** **If yes, describe each civil or administrative compliant containing the allegation of the act or omission presenting a substantial endangerment to public health or the environment. Each description shall include at a minimum the following; the style of the compliant; the case, file or other identifying number; the identity of all parties named in the compliant; the forum in which the complaint was brought; the identity of each local, state, or federal agency that was involved with or named in the compliant; an explanation of the allege act or omission; the identity and description of the environmental protection law or regulation alleged to have been violated; an explanation of all corrective action measures performed to correct or mitigate the alleged violation(s); a description of the alleged endangerment to public health or to the environment; and state whether the issues raised in the compliant have been resolved, and if so, whether the resolution was the result of a settlement or agreement, an administrative order or a court order or judgment. If litigation on the allegation(s) is ongoing, describe any orders or judgments entered and describe the present status of the litigation. (Attach additional sheets if necessary)** **Not Applicable**
12. Pending Complaints	**Describe all pending criminal complaints which allege the Person's or Key Personnel's violation of a local, state, or federal environmental protection law or regulation. If none, write NONE. Each description below must include at a minimum the style of the case and the identifying case number, the date the compliant was filed, the forum in which the compliant is pending, the identity of the law or regulation allegedly violated and a narrative description of the law or regulation, whether the alleged violation(s) is a misdemeanor or a felony, and all actions and pleadings which have occurred or been filed in association with the compliant. Criminal complaints filed more than five (5) years prior to the date of submission of the APPLICANTS permit application need not be listed. (Attach additional sheets if necessary.)** **Not Applicable**

13. Judgments More Than 5 Years Prior to Submittal	**Describe all judgments of criminal conviction entered against the Person or Key Personnel for the violation of any local, state, or federal environmental protection law or regulation. Convictions entered more than five (5) years before the submission date of the Applicant's permit application need not be listed. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** **Not Applicable**
14. Judgments Within 5 Years of Submittal	**Describe all judgments of criminal conviction of a felony under the law of any local, state, or the United States that have been entered against the Person or Key Personnel within the five (5) year period preceding the date of submission of the Applicant's permit application. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** **Not Applicable**

15. Financial	List the names and address for all waste sites, waste facilities, solid waste management facilities, and hazardous waste management facilities in the United States or Territories in which the Person or Key Personnel has a financial interest, or in which the Person or Key Personnel is an officer, director or manager, and identify the nature of the Person or Key Personnel interest or involvement.		
	a. Site/Facility Name: YKK (U.S.A.) Inc., Snap & Button Products – Closed Surface Impoundment		
	Site/Facility Address (Do not use P.O. Box number): 1090 Industry Road		
	City: Lawrenceburg	State: Kentucky	Zip: 40342
	Type of Interest: Manager/Officer		
	Nature of Interest: Emergency Coordinator in Contingency Plan		
	b. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	State:	Zip:
	Type of Interest:		
	Nature of Interest:		
	c. Site/Facility Name:		
	Site/Facility Address (Do not use P.O. Box number):		
	City:	State:	Zip:
	Type of Interest:		
	Nature of Interest:		
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	Site/Facility Address (Do not use P.O. Box number):		
	City:	State:	Zip:
	Type of Interest:		
	Nature of Interest:		

CERTIFICATION

An individual, by executing this document on behalf of a corporation or other entity, certifies that she or he is duly authorized to act on behalf of the corporation or other entity and provide the information contained herein.

THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS UNDER PENALTY OF PERJURY THAT THE INFOMRATION PROVIDED IN THIS COMPLIANCE RECORD IS COMPLETE, TRUE AND ACCURATE.

_____ _____
Print Name **Title**

_____ _____
Signature **Date**

STATE OF _____ **COUNTY OF** _____

Subscribed and sworn to before me by _____ **this is the** _____ **day of** _____**, 20** _____**.**

_____
NOTARY PUBLIC

My Commission Expires: _____

Notary Public's Name and Address: _____.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

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Brian Cook
Print Name

Environmental/safety Specialist
Title

B. Cook
Signature

11-10-22
Date

STATE OF Kentucky **COUNTY OF** Jefferson

Subscribed and sworn to before me by Brian Cook **this is the** 10th **day of** November, **20** 22.

NOTARY PUBLIC

My Commission Expires: December 8, 2023

Notary Public's Name and Address: Michele M Bracey 425 St Peters Church Road Cory Dunton 47112.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

Key Personnel Performance Record

Kentucky Department for Environmental Protection
Division of Waste Management
Hazardous Waste Branch
300 Sower Boulevard, Frankfort, KY 40601
(502) 564-6716

DO NOT WRITE IN THIS SPACE

Kentucky Revised Statutes (KRS) 224.40-330 and Kentucky Administrative Regulations (KAR) Title 401 39:060 Section 5 (14) require all applicants for the issuance, renewal, major modification(s), or transfer of a hazardous waste management facility permit and each Person who is a Key Personnel of the applicant, to submit the following information to the Cabinet before the desired permit may be granted. This compliance record is also required prior to a change in Key Personnel of the applicant.

1. ID Numbers	**EPA ID Number: KY**D−044−914−356 **Agency Interest Number:** 42 **Key Personnel #:** 3
2. Key Personnel Information	**The Person listed below is a Key Personnel (Listed in Applicants Compliance Record Item #3) for the above application.**
	Complete Name: Todd S. Baldwin
	Social Security Number: 406-90-8393 / **State of Incorporation or Registration: KY**
	Business Address (do not use P.O. Box Number): 1090 Industry Road
	Mailing Address: P.O.Box 240
	City: Lawrenceburg
	County: Anderson / **State: Kentucky** / **Zip Code: 40342**
	Type of Person [Reference KRS 224.1-010(44)]: Manager
3. Relationship	**Describe the relationship between the Applicant and the "Person" identified in Item #2 (hereafter "Person") that establishes the "Person" as a Key Personnel of the Applicant:** Person is employed by the applicant.
4. Person's Experience Managing Hazardous Waste	**Describe the Person's experience in managing <u>hazardous waste</u>. (Attach additional sheets if necessary.):** Hazardous wastes are primarily handled by employees whose daily tasks generate the hazardous waste. The hazardous wastes are then managed primarily by the Applicant's Environmental Engineer. Mr. Baldwin has managed hazardous waste operations at YKK since his employment at YKK began.

5. Permits or Licenses Presently Held by Person	**List all permits or licenses relating to hazardous waste management presently held by the Person in the United States. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
6. Permits or Licenses Held within the Last 5 Years by the Person	**List all permits or licenses relating to hazardous waste management held by the Person within the last five (5) years not listed in response to Item 5 above. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
7. Person's Experience Managing Solid Waste	**Describe the Person's experience in managing solid waste. (Attach additional sheets if necessary.):**	
	Solid wastes are primarily handled by employees whose daily tasks generate the waste. With the exception of making hazardous waste determination of the solid waste, as trained, solid wastes are disposed in the predetermined location for disposal by a contractor. Non-hazardous solid waste management is primarily handled by the Environmental Engineer.	
8. Permits or Licenses Presently Held by Person	**List all permits or licenses relating to solid waste management presently held by the Person in the United States. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
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	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	4. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**

9. Permits or Licenses Held within the Last 5 Years by the Person	**List all permits or licenses relating to solid waste management presently held by the Person within the last five (5) years not listed in response to Item 8 above. (Attach additional sheets if necessary.):**	
	1. Facility Name: Not Applicable	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	2. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
	3. Facility Name:	**Permit/License No:**
	Facility Location:	**Issuing Authority or Agency:**
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14. Judgments Within 5 Years of Submittal	**Describe all judgments of criminal conviction of a felony under the law of any local, state, or the United States that have been entered against the Person or Key Personnel within the five (5) year period preceding the date of submission of the Applicant's permit application. Each description given must include at a minimum the following (United States or Territories): Style, case number; forum in which conviction entered; date of judgment; sentence imposed; the identity and a description of each law applicant were convicted of violating; whether the conviction was the result of a plea agreement or a trial; and, if currently on appeal, the status of the appeal. (Attach additional sheets if necessary.)** **Not Applicable**

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CERTIFICATION

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THE UNDERSIGNED HEREBY SWEARS OR AFFIRMS UNDER PENALTY OF PERJURY THAT THE INFOMRATION PROVIDED IN THIS COMPLIANCE RECORD IS COMPLETE, TRUE AND ACCURATE.

_____Todd Baldwin_____ **_____Director of Environmental Affairs_____**
Print Name **Title**

_____ **_____**
Signature **Date**

STATE OF _____ **COUNTY OF _____**

Subscribed and sworn to before me by _____ this is the _____ day of _____, 20 _____.

_____
NOTARY PUBLIC

My Commission Expires: _____

Notary Public's Name and Address: _____.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

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Todd Baldwin
Print Name

Director of Environmental Affairs
Title

Signature

11/10/2022
Date

STATE OF Kentucky COUNTY OF Jefferson

Subscribed and sworn to before me by Todd Baldwin this is the 10th day of November, 20 22.

NOTARY PUBLIC

My Commission Expires: December 8, 2023

Notary Public's Name and Address: Michele M Bracey 425 St. Petus Church Rd Crestview Ky 4712.

Any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 will be guilty of a Class D felony, and upon conviction thereof will be punished by a fine not to exceed twenty-five thousand dollars ($25,000), or by imprisonment for a term of not less than one (1) year and not more than five (5) years, or by both fine and imprisonment.

PART C

PART C WASTE ANALYSIS PLAN

This part describes the chemical and physical nature of the hazardous wastes handled YKK's Lawrenceburg facility. It also describes the waste analysis activities necessary to characterize the waste materials that were stabilized and fixed during in-place closure. Since the application addresses post-closure activities at the closed facility, a waste analysis plan pursuant to 401 KAR 39:060 Section 5 (formerly 401 KAR 38:090 Section 2 (3)) and 401 KAR 39:090 Section 1 (formerly 34:020 Section 4) was not prepared.

C-1 INTRODUCTION

YKK historically operated a light metal stamping operation, which produced buttons, snaps, burrs, etc. for the garment trade. These products are finished by cleaning, polishing, chromating and electroplating for decorative appearance. The hazardous wastes generated during the plating operations consist of wastewater from the plating facility (F006), spent cyanide solution (F007), residue from the bottoms of the plating baths (F008), and spent stripping and cleaning bath solutions from the electroplating operation (F009). Waste F006 is a toxic waste (hazardous constituents: cadmium, hexavalent chromium, nickel, cyanide [complexed]). Wastes F008 and F009 are toxic and reactive wastes (hazardous constituent: cyanide salts) however, the treated and mixed wastes are not reactive. The results of an analysis of the waste prior to its solidification during closure are given in Table C-1 contained in Appendix C-1.

The plating wastewater was chemically treated with sodium bisulfite to reduce it from hexavalent to trivalent chromium. The pH was then adjusted with lime to start precipitation. The zinc, copper, and nickel from the plating operation were precipitated as a hydroxide. The cyanide bearing wastes were chlorinated and then neutralized. The precipitants formed a sludge in the bottom of a clarifier which, prior to January 29, 1987, was pumped to the surface impoundment for disposal. The wastes were mixed together for treatment, after which the waste was not ignitable, reactive, corrosive or incompatible.

The treated sludge placed in the impoundment contained hazardous wastes F006 (wastewater treatment sludges from electroplating), F008 (plating sludges), and F009 (spent stripping and cleaning bath solutions). As a part of closure, the free liquid on top of the sludge was pumped to the plant's wastewater treatment system and the remaining sludge was solidified with lime kiln dust. Approximately 3,795 tons of lime kiln dust was used for solidification. No actual treatment of the wastes occurred in the impoundment during its active life for closure. There was between 15,000 and 20,000 cubic yards of solidified waste in the impoundment at the time of closure. The waste was solidified to a point where it would pass the paint filter test and support the equipment required to place the cover.

LAND DISPOSAL UNIT – LANDFILL (CLOSED)

When the embankment was raised in 1981, a liner consisting of at least six (6) inches of clay indigenous to the area was installed. Permeability tests on two undisturbed soil samples taken from the area in 1980 yielded permeability rates of 2.01×10^{-8} cm/sec and 2.60×10^{-6} cm/sec. The permeability of the clay liner would be expected to be within this range. The engineer who designed and oversaw the construction of the impoundment has stated that the liner was placed on the entire base and interior sides of the impoundment.

At closure, the impoundment was capped with a minimum of two feet of clay, a 20 mil. PVC synthetic membrane, a one-foot sand drainage layer, filter fabric and two feet of soil to support a vegetative cover. The cap was designed to be less permeable than the liner. A typical section of the cap follows as Figure C-1.

C-2 WASTE CHARACTERIZATION

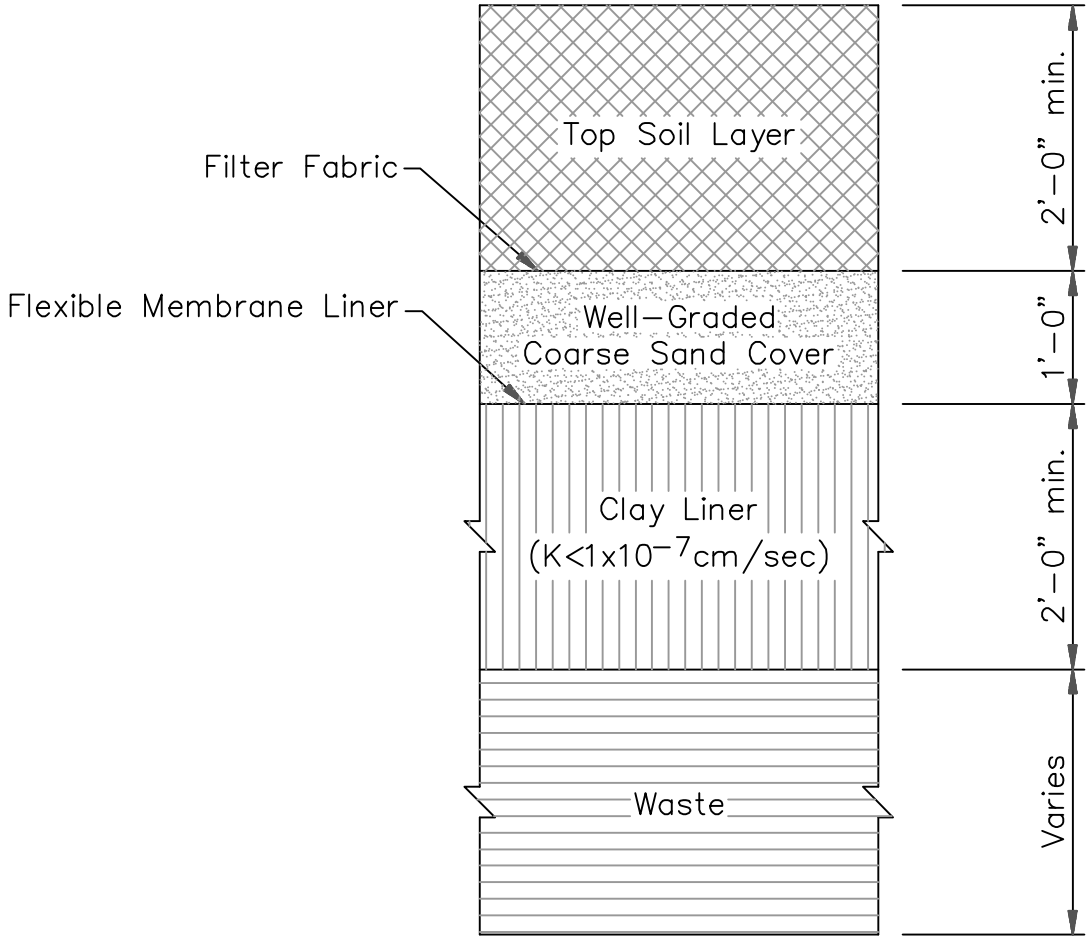
Facilities that do not accept waste generated off-site may skip C-2a and C-2b.

C-2c WASTE GENERATED ON-SITE

This part does not apply.

C-3 ADDITIONAL WASTE ANALYSIS REQUIREMENTS PERTAINING TO LAND DISPOSAL RESTRICTIONS

This part does not apply.



TYPICAL SECTION OF FINAL COVER	SCALE: No Scale	FIGURE C-1
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting

PART D

PART D PROCESS INFORMATION

This section is not applicable to a post-closure renewal application.

PART E

PART E GROUNDWATER MONITORING

This part provides as required by 401 KAR 39:060 Section 5 (formerly 401 KAR 38:100 *(el seq.)*), and 401 KAR 39:090 (formerly 401 KAR 34:060 *(el seq.)*), 40 CFR 270. 14(c)(I) through (76),265.90 *(el seq.),* 264.97 and 98 *(el seq.),* a description of YKK (U.S.A.) Snap & Button Products, Inc.'s (YKK) Lawrenceburg, Kentucky plant site geology. It also provides a definition of the uppermost aquifer, a summary of recent detection groundwater monitoring data, and the existing groundwater monitoring program for the post-closure period.

As is mentioned in previous parts of this application, YKK operated an on-site surface impoundment designed to store waste generated by their wastewater treatment system. In 1980, with the implementation of the Resource Conservation and Recovery Act (RCRA), this surface impoundment became designated as a hazardous waste unit and, as such, became subject to the groundwater monitoring requirements contained in this act.

The existing groundwater monitoring program was developed based on the results of a hydrogeological investigation conducted by P.E. La Moreaux & Associates, Inc. (PELA) beginning in 1991. This part also presents and evaluates the findings of this investigation.

E-l EXEMPTION FROM GROUNDWATER PROTECTION REQUIREMENTS

This unit does not qualify for exemption from groundwater protection requirements.

E-2 INTERIM STATUS MONITORING DATA

This section and subsections are not applicable to this post-closure renewal application.

E-3 GENERAL HYDROGEOLOGIC INFORMATION

Geologic and Hydrogeologic conditions underlying the facility were investigated by PELA and were presented in the Phase I and Phase II Hydrogeologic Investigations previously submitted as part of the original part B permit application. The following a description of YKK's Lawrenceburg, Kentucky plant site geology based on the findings of the previous investigation.

The site lithology is composed of a surficial cover of clayey soil, underlain by a sequence of gently dipping limestone strata. The Jessamine Dome, a gentle, broad irregular dome along the Cincinnati arch, brings sedimentary rocks of Ordovician age to the surface. Strata dip generally 20 to 30 feet per mile westward and somewhat less northward. East f the plant site, the Jessamine dome is cut by two major normal-fault systems the Kentucky River fault zone and the west Hickman-Bryan Station fault Zone, which intersect near the apex of the dome.

Stratigraphic units under lying the facility, were identified as a result of review of published information, reconnaissance mapping, drilling at the facility, and geophysical E-1 logging

include the Lexington Limestone of middle to Upper Ordovician age, a tongue of the Clays Ferry Formation, the Brannon Limestone and the Grier Limestone. Residuum is also present at the facility. It consists of moderate yellow-brown silty clay, weathered Limestone, and varies in thickness from 3 to 10 feet in thickness. Figure E-l presents a portion of the 7 ½, minute geologic quadrangle map for Lawrenceburg, Kentucky.

Bedrock immediately underlying the plant site is the Tanglewood Member of the Lexington Limestone, a medium grey to very light' gray, fine to coarse-grained, well sorted, fossiliferous calcarenite. Bedding is generally smooth surfaced and planar to wavy and usually 0.2 to 1.0 foot thick. The Tanglewood Limestone at the site is divided into an upper and lower member by a thick tongue of the stratigraphically overlying Clays Ferry Formation.

The Clays Ferry Formation at the site is about 9 feet thick, consisting of an olive gray to medium dark gray argillaceous calcisiltite. This formation was identified by lithologic descriptions of cutting and cores and interpretation of subsurface geophysical logs of boreholes at the facility. Bedding is generally even and planar and usually less than 0.5 foot thick. Bedding in the Clays Ferry is often disrupted at the contact with the Tanglewood Limestone.

The Brannon Limestone Member of the Lexington Limestone, an olive gray to dark gray, interbedded calcisiltite and shale underlies the Tanglewood Limestone. Based on lithologic descriptions from cuttings and core samples, the Brannon is a dark gray calcisiltite. Thickness of the Brannon Limestone at the site, determined from the descriptions of cutting and interpretation of subsurface geophysical logs is about 25 feet. Bedding is tabular and usually 0.2 to 0.3 foot thick. Bedding in the Brannon Limestone Member is also often disrupted at the contact with the Tanglewood Limestone.

The Grier Limestone Member, an olive gray, fossiliferous, interbedded calcisiltite and calcarenite, underlies the Brannon Limestone. Bedding is generally irregular and usually 0.5 foot thick. The lithologic descriptions of cutting and cores of this formation indicate the Grier is an olive gray, fossiliferous ca1cisiltite.

After a detailed hydrogeologic study of the site was completed, and the uppermost aquifer was identified, one new upgradient and three new downgradient wells were installed. The lower portion Tanglewood Member of the Lexington Limestone is considered the uppermost aquifer for the closed surface impoundment. Figure E-2 presents the monitoring wells and spring location. Monitoring wells MW-9, MW-8s, MW-11, MW-23, and the upwelling spring comprise the existing monitoring system for the closed landfill. Monitoring wells MW-9, MW-11, MW-23, and the upwelling spring comprise the proposed monitoring system for the closed landfill. Monitoring well MW-9 is considered the upgradient (background) well for the closed surface impoundment. Wells MW -11, and MW-23 are point of compliance wells. The upwelling spring will also be considered a point of compliance.

Table E-l provides a summary of monitoring well details. The cross sections in Figures E-3 and E-4 provide the lithological and groundwater conditions across the waste management area. The locations of the cross-sections are provided on Figure E- 2. Appendix E-l provides a complete set of boring logs and well construction details for the monitoring wells utilized for the post-closure period.

A spring survey was conducted as part of the hydrogeologic investigation. Seven springs were identified by the survey. One of these springs, an upwelling spring at elevation 730.40 approximately 500 feet downgradient of the impoundment is monitored as part of the existing groundwater monitoring program, but is not considered a point of compliance.

Aquifer testing has been completed at the facility these tests included bailing and recovery tests. The results of this testing indicated a bulk permeability of the localized horizons in the range from 1.31 x 10^{-5} to 2.9S X 10^{-3} cm/sec. These values are consistent with the information collected during drilling and field reconnaissance, indicating the limestones in the area of the facility are of low permeability.

The Elevation of each monitoring well casing was established with respect to msl datum. Figures E-5 and E-6 shows the groundwater surface over the last monitoring year (2003- 2004) from the existing monitoring system. The ground water flow pattern is characterized by the following main controls.

- The general direction of groundwater flow corresponds to the topography of the site. Groundwater flow to the east-southeast in the vicinity of the closed impoundment.
- Groundwater gradients are relatively mild to relatively steep beneath the closed impoundment, ranging from 0.003 to 0.05 ft/ft, estimating a porosity of 20 percent and using an observed hydraulic gradient of 0.034ft/ft between the upgradient well MW-9 and downgradient well MW-23, and hydraulic conductivities of 1.32 x 10^{-5} cm/sec and 2.51 x 10^{-3} cm/sec, respectively, typical seepage velocities are estimated to be between 6.0 x 10^{-3} per day to 1.2 feet per day.

EVALUATION OF SUBSURFACE GEOLOGIC FORMATIONS AND SURFACE TOPOGRAPHY FOR SOLUTION OF KARST FEATURES

The rock units, which underlie the facility, are from Middle Ordovician System. The aquifer system in the area occurs in carbonate rocks. These sedimentary rocks are variable in their water-bearing characteristics. Secondary porosity and permeability, in the form of fracture, joints, and solutionally enlarged fractures, largely control the occurrence and movement of groundwater in these carbonate rocks. Water bearing zones and or perched zones can occur in the unconsolidated residuum in the area; however, these are of limited extent. Springs are common in the area and represent points of groundwater discharge.

The Tanglewood Limestone, the uppermost member of the Lexington Limestone, underlies the northern portion of the facility. Groundwater occurs in the Tanglewood in discrete fractures that may have been enlarged through dissolution.

The Clays Ferry Formation overlies the Lexington Limestone, however at this facility the Clays Ferry interfingers with the underlying Tanglewood member, dividing it into two separate units. Fractures were not identified in the Clays Ferry during drilling. Based on observations made during drilling and water level relationships in the wells, the Clays Ferry acts as an aquitard at this facility.

What follows is an evaluation of the potential for subsidence of the closed unit, which is underlain by the Tanglewood Limestone Member of the Lexington Limestone and lower units. In the Inner Bluegrass Karst Region, subsidence occurs in the Tanglewood where flow conduits are developed beneath the regolith (soil and subsoil), which then may collapse into them. Such collapse of flow conduits is often in sinkholes (closed topographic depressions) but also may occur when concentrated flow is following a solutionally widened joint or other low area in the bedrock beneath the regolith.

A spring survey was conducted as part of the hydrogeologic investigation. Seven springs were identified by the survey. The presence of springs at or near the geologic contacts indicates that movement and discharge of groundwater is primarily controlled by fractures and/or openings along bedding planes at stratigraphic contacts. An upwelling spring at elevation 730.40 approximately 500 feet downgradient of the impoundment is the discharge point for the drainage basin in which the closed surface impoundment is located.

A review of the drilling logs confirms that no Karst features (cavities or voids) were detected during drilling and installation of the monitoring well system. Minor fractures within the selected stratigraphic intervals penetrated during drilling are the main water bearing zones. Therefore, the groundwater moves laterally along bedding planes until it reaches a discharge point (spring).

No sinkholes have been observed at the facility and none would be expected due to its location in a small valley with a high-gradient stream. The regolith is quite thin which is also consistent with the location. In addition, the landfill cap prevents infiltration water and, therefore, the limestone underlying the landfill is less susceptible to karst development relative to the surrounding area.

E-4 TOPOGRAPHIC MAP REQUIREMENTS

Pursuant to 401 KAR 39:060 Section 5 (formerly 401 KAR 38:100, Section 2(3)) the topographic maps Figures, B-1, B-2, and B- 3, included in Section B-2 shows the property boundary, location of monitoring wells, springs, and the closed landfill. Figure B-3 shows in more detail the closed landfill, point of compliance, monitoring well locations and groundwater flow direction. Figure E-7 shows in more detail the closed landfill, point of compliance, monitoring wells and spring location and groundwater flow direction. Figures E-5 and E-6 shows the groundwater surface over the last monitoring year (2003-2004) from the existing monitoring system. Figure E-8 shows the closed surface impoundment, existing monitoring well system, and the surrounding area within a 1000-foot radius.

The following topics were discussed previously in section E-2:

- Groundwater flow rate
- The extent and characteristics of the upper most aquifer, which for this application is designated to be the lower portion of the Tanglewood Limestone Member of the Lexington Limestone Formation.
- The relationship and degree of interconnection between limestone and strata above and below this unit.

E-5 CONTAMINANT PLUME DESCRIPTION

Based on the data available to date, there is no contaminant plume to define.

E-6 GENERAL MONITORING PROGRAM REQUIREMENTS

The existing post-closure groundwater monitoring system will include background well MW-9 and compliance wells MW-11 and MW-23, installed in the limestone formation, designated as the uppermost aquifer at the site. The upwelling spring will monitor the limestone formation designated as the uppermost aquifer at the site is also considered a point of compliance monitoring point. Water elevation at these well locations will be measured to verify groundwater flow direction during each sample event from the uppermost groundwater located within the limestone strata The post-closure monitoring program will be in accordance with the detection monitoring program in 401 KAR 39:090 (formerly 40l KAR 34:010) (40 CFR 264.98).

E-6a Description of Wells

The post-closure monitoring program includes the collection and analysis of water samples from a hydrologically upgradient well (MW-9) and a series of downgradient wells (MW-8s, MW- 11 and MW-23) and an upwelling spring. Table No. E-1 provides a summary of monitoring well details for the four wells utilized during the post-closure monitoring program. Locations of the existing monitoring wells and spring are shown on figures E-2, E-7, and E-8. Appendix E-1 contains the detailed boring logs and well construction details.

The total depth of each monitoring well was determined so that all wells were terminated at comparable elevation, thus ensuring that similar limestone horizons would be monitored across the site. The upwelling spring is also located at a similar horizon.

E-6b Description of Sampling and Analysis Procedures

The sampling and analysis procedures for the propose post closure monitoring program are described in Appendix E-2. The procedures include sample collection methods, sample preservation, and shipment, analytical procedures, chain of custody, documentation of proper sampling and analysis procedures, and a procedure for determination of groundwater elevation with each sampling event.

E-6c Procedures for Establishing Background Quality

Groundwater samples have been obtained from the monitoring wells and spring from March 1995 until present. Analytical results have been submitted quarterly to KDEP, Division of Waste Management (DWM). Copies of the detection monitoring program reports for the past year are

presented in Appendix E-3. During post-closure monitoring period, the existing monitoring wells (MW-9, MW-11, and MW-23) and the upwelling spring will continued to be monitored on a semi-annual basis for the parameters identified in Section E-6a.

E-6d Statistical Procedures

Refer to Section E-7d.

E-6e Proposed Compliance Points

The point of compliance will be wells MW-11, MW-23 and the upwelling spring. The upgradient well MW-9 will be sampled semi-annually and the point of compliance wells MW-11, and MW-23 and the upwelling spring will be sampled semi-annually as described in Section E-5c.

The data from the compliance wells (MW-11, and MW-23) and the upwelling spring will be compared to the data from the background well (MW9) to determine whether there is statistically significant evidence of contamination. The comparisons will be performed in accordance with the requirements in 401 KAR 39:090 (formerly 401 KAR 34:060 Section 8(8) and (9)) and EPA Interim Final Guidance "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities", April 1989. The statistical test shall be conducted separately for each hazardous constituent in each well and the spring and will be conducted semi-annually for all future monitoring events.

E-6f General Requirements

Refer to Section E-7.

E-7 DETECTION MONITORING PROGRAM

The types of hazardous wastes contained in the closed unit are explained in Section B-1 and C. These wastes are identified by regulation as F006, F007, F008, and F009. The waste constituents for each of these listed waste groups include cadmium, hexavalent chromium, nickel, and cyanide (complexed).

The nature of the plating operations throughout the history of YKK called for the heavy use of zinc and copper metals to attain certain finishes. Therefore, a good deal of zinc and copper hydroxides present in the sludges disposed in the former surface impoundment.

YKK has never operated a chrome plating line. However, a chromium solution was used in plating operations on the zinc plating line during the active life of the impoundment. A mix of 2.1 gallons of a proprietary solution, which contained 25% hexavalent chromium by volume, was added to the batch each shift. This equated to a volume of 1.58 gallons per day. A flow through process treatment system controlled pH on the acid side and added Sodium Bisulfite to transfer hexavalent chromium to the trivalent state. The trivalent chrome was then precipitated using hydrated lime slurry. This waste was collected through a drain system to a batch treatment tank, which was analyzed for hexavalent chromium and treated with sodium bisulfite if hexavalent chromium was found.

A second drain line from the plant area also discharged into the impoundment. This line carried storm water runoff from the former used oil/drum storage area sump at the east end of the plant.

No major spills have occurred in this area and no specific data is available on the quantity/quality of the discharge from this pipe. The discharge from this pipe had a negligible effect on the overall quality of the waste in the impoundment.

Therefore, the proposed post closure detection monitoring program had been designed to obtain representative groundwater samples for analysis of constituents found in the waste material on site.

E-7a List of Indicator Parameters, Waste Constituents, Reaction Products to be Monitored

Based on an evaluation of the waste generating processes, the following waste constituents will be monitored during the post closure period:

- cadmium,
- nickel,
- cyanide,
- copper,
- chromium,
- lead,·
- zinc, and
- Total Suspended Solids.

YKK. will also monitor the following additional parameters:

- pH,
- Specific Conductance, and
- Temperature
- Dissolved Oxygen (DO)
- Oxygen Reduction Potential (ORP)
- Turbidity

E-7b Description of Groundwater Monitoring System

The groundwater monitoring system will consist of:

- Background well MW-9
- Compliance point (downgradient) wells MW-11, and MW-23
- Compliance point (downgradient) upwelling spring.

Descriptions of the existing wells and spring are provided in Section E-5a. Locations are shown in figures E-2, E-7, and E-8.

E-7c Background Groundwater Concentration Values and Coefficients of Variation for Proposed Parameters

In order to perform the statistical method (see section E-7d), collection of background data has already been completed. Statistical evaluations will be conducted for each semi-annual sampling period. As described in Section E-7d, during each sample event, sequences of four samples will be collected from each well at one day intervals. In accordance with the U.S. EPA guidance

document, referenced in E-7d, the minimal time interval to assure that an independent sample is collected (based on hydrogeologic characteristics at the site) has been calculated to be one day.

E-7d Description of Proposed Sampling, Analysis and Statistical Comparison Procedures

There are several different background to compliance well statistical tests that are recommended by the U.S. EPA in their guidance documents "Statistical Analysis of Groundwater Monitoring data at RCRA facilities, Interim Final Guidance" April, 1989, (EPA 530-SW-89-029), and "Addendum to Interim Final Guidance, Statistical Analysis of Groundwater Monitoring data at RCRA facilities", June 1992.

Historically, concentrations of some water quality indicator parameters in samples from upgradient well MW-9 have been higher than that of samples from down gradient wells. A statistical comparison in this case may result in a false positive as a statistically significant difference maybe found between the downgradient wells and the upgradient well MW-9 that is not related to the closed landfill. After sampling calculations will be completed in accordance with the EPA guidelines as identified above.

The method and procedures deemed most appropriate for the site based on the historical data collected to date is a prediction interval. A prediction level will be calculated for each analyte in each well. The most recent analytical results for each analyte will be compared to the prediction intervals for that analyte in that well. A discussion of the procedures and method for the prediction level will be included within the groundwater monitoring reports submitted to the KDEP. If the concentration of an analyte exceeds its prediction interval the KDEP will be notified.

Samples will be collected semi-annually from both background and downgradient wells and spring. During each sampling event, a single sample will be taken from each well. Sufficient samples have now been collected from each well to adequately perform statistical analyses, and there is no longer a necessity to collect four samples per each sample event. .The samples will be analyzed for the parameters listed in section E-6a. Collections of the samples will include measurement of the groundwater surface elevation, analytical procedures, chain of custody, and documentation discussed in Appendix E-2.

The groundwater flow direction and velocity in the aquifer will be semi-annually estimated using Darcy's Law. Water level measurements will be made in both background and compliance wells prior to collection of the samples. From this data, a groundwater surface elevation will be plotted. The groundwater flow direction is assumed parallel to the dip of the groundwater surface.

The groundwater seepage rate will be estimated from the graphically determined hydraulic gradient based on Darcy's law:

$$v = Ki/n$$

Where,

K = hydraulic conductivity
i = hydraulic gradient
n = effective porosity
V = seepage velocity

This equation assumes that the formation is isotropic and homogeneous, but by using the higher values of hydraulic conductivity ascertained at the site and the steeper gradient observed, a conservative seepage velocity will be calculated.

E-7e Procedures to be Implemented if a Statistical Exceedance

If a Statistically significant increase in measured parameters is detected in wells at the point of compliance, steps will be taken in accordance with the provisions of 401 KAR 39:090 Section 8 (formerly 401 KAR 34:060 Section 9). Applicable portions of the regulation are summarized as follows:

- Notify KDEP in Writing within 7 days of intention to make demonstration that a source other than the regulated unit caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation.
- Resample suspect well(s) for parameter(s) determined to be statistically significant and report findings to KDEP within 30 days.
- Within 90 days, submit a report, which demonstrates that a source other than the regulated unit caused the increase, or that the increase resulted from an error in sampling, analysis, or evaluation.
- Within 90 days, submit an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility
- Continue to monitor in accordance with the detection-monitoring program.

Or

- If initial statistically significant increase has been confirmed with resampling event, immediately sample groundwater for parameters in 401 KAR 39:090 (formerly 401 KAR 34:360) (40 CFR 264 Appendix IX) in all monitoring wells. Certain parameters such as dioxin, furans, and pesticides/polychlorinated biphenyls (PCBs), which are unlikely to be present (based on previously determined waste and groundwater characteristics), will be excluded from analysis.
- Within 90 days, submit an application for a permit modification to establish a compliance-monitoring program.
- Within 180 days, submit a contingent engineering feasibility plan for corrective action program.

E-8 COMPLIANCE MONITORING PROGRAM

If necessary a compliance monitoring program will be implemented in accordance with the provisions of 401 KAR 39:090 (formerly 401 KAR 34:060). The general outline of compliance monitoring is described below.

Description of Monitoring Program

During Compliance monitoring, the monitoring wells and spring in Part E-6c will be monitored for the parameters specified in Part E-6a semi-annually.

For the total metals analysis, during each sampling event, one sample will be collected per well and spring, during each sample event. Each semi-annual event's data will be compared to the

concentration limits in Table I of 401 KAR 39:090 (formerly 401 KAR 34:060, Section 5) using confidence Intervals as described in the U.S. EPA guidance documents referenced in Section E-6d.

Annually, two of the downgradient wells (MW-11 and MW-23) will be tested for the parameters in 401 KAR 39:090 (formerly 401 KAR 34:060) (40 CFR Appendix IX). Certain parameters, such as dioxides, furans, and pesticides/PCBs, which are unlikely to be present (based on previous waste and groundwater analysis) will be excluded from analysis.

If statistically significant increase over the compliance limits is confirmed in any compliance well, provisions in 401 KAR 39:090 Section 8 (formerly 401 KAR 34:060 Section 10(9)) will be followed.

E-9 CORRECTIVE ACTION PROGRAM

If statistically significant increases are confirmed during compliance monitoring, a corrective action program plan utilizing the requirements of 401 KAR 39:090 Section 8 (formerly 401 KAR 34:060 Section 11) will be prepared.

A corrective action plan will be prepared that prevents hazardous constituents from exceeding their respective limits at the point of compliance point, and between the compliance point and downgradient property boundary of the facility. If background levels of these constituents are above the groundwater protection standard, compliance wells will be compared to the background well. The plan will consist of detailed engineering plans and report and will address the following:

- Identification of compliance point
- Plans for removing and handling hazardous wastes (if proposed)
- Design and construction plans and specifications for any proposed features to contain groundwater or redirect flow.
- A description of any treatment technologies to be employed to remove hazardous constituents from contaminated ground water
- Description of the operation and maintenance plans for the corrective action measures
- Description of any hydrogeologic data collected for use in designing the corrective action measures
- Schedule of implementation for the corrective action measures

In conjunction with the corrective action program, a groundwater monitoring program will be established to demonstrate the effectiveness of the corrective action program. The monitoring program may be based on the compliance monitoring program. The corrective action program will include procedures to remove or treat constituents identified through the compliance monitoring in the groundwater between the compliance point and the downgradient facility boundary. The program will include procedures for semi-annual written reports to KDEP on the effectiveness of the program.

The statistical procedures for comparing compliance data to the groundwater protection standard and/or background concentration limits will be described in the corrective action program. The program will also include statistical procedures for evaluating the effectiveness of the program.

In the event that alternate concentration limits are to be used, the program will include sufficient information to establish a compliance monitoring program meeting all requirements of 401 KAR 39:090 (formerly 401 KAR 34:060 Sections 4 (2) and 5(2)).

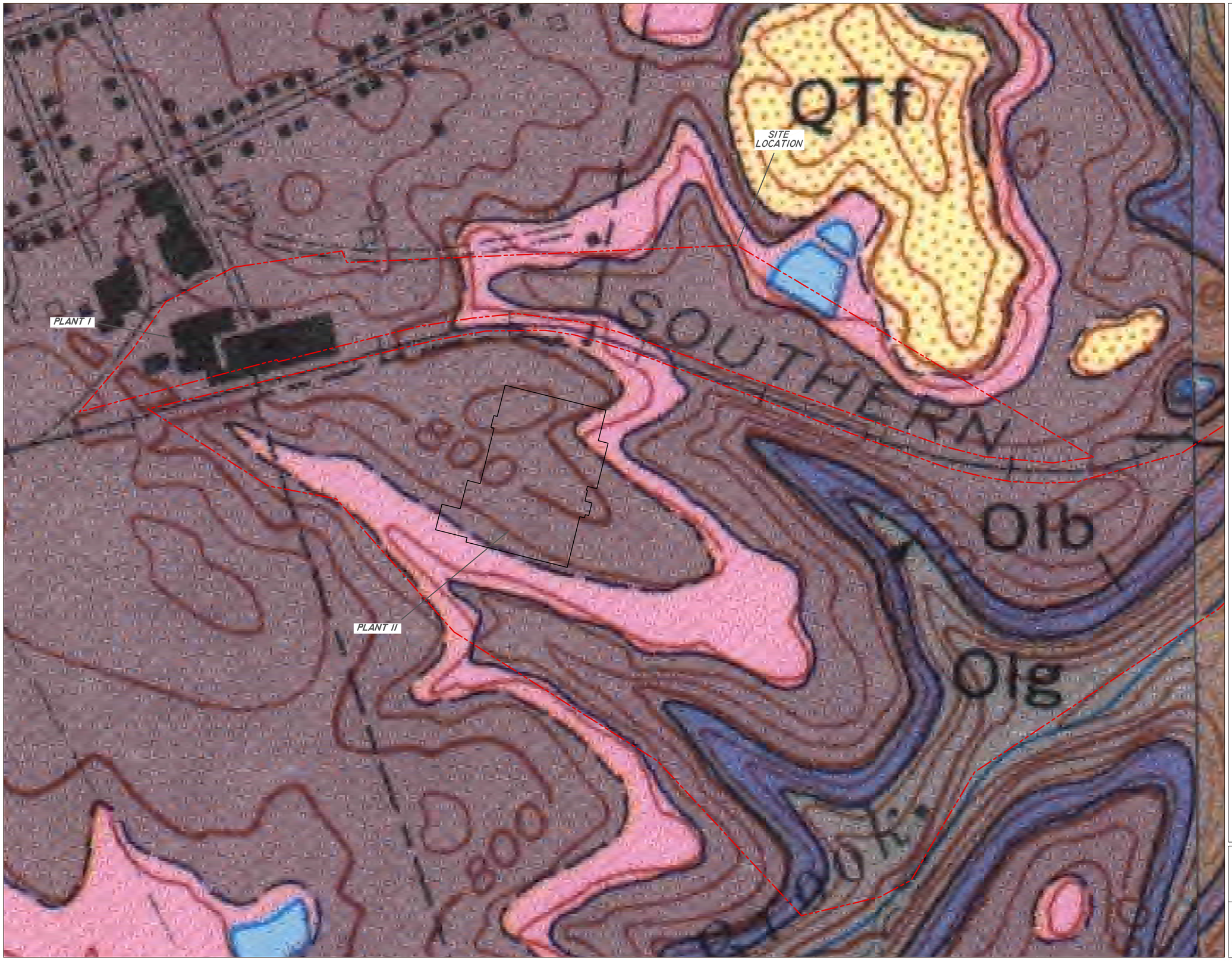
E-9 CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

The facility submitted Part A of the RCRA permit application to U.S. EPA Region IV on November 18, 1980, and on July 23, 1981, the facility received an interim status permit for the surface impoundment (SWMU 1). The facility's Part B application was received on September 30, 1985. The closure and post-closure plan for the surface impoundment was received on April 1, 1988, which identified the option of "clean closure" or closure in place. The closure plan was approved on November 14, 1988, and the closure was completed in October 1989. The facility submitted a revised Part B application on December 28, 1989, with the final approved version of the application being submitted in June 1994. On April 30, 1991, a final RCRA Facility Assessment Report (RFA) was issued by U.S. EPA Region IV. The information available at that time resulted in the identification of thirty-eight (38) Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs). The assessment also provided detailed information on the wastes generated at the facility, as well as unit descriptions, waste characteristics, probable migration pathways, evidence of releases, and exposure potential at each of the identified units.

On January 9, 1995, a final hazardous waste post-closure permit (Permit No. KYD 044 914 356) was issued to YKK in Lawrenceburg, Kentucky. The hazardous and solid waste amendments portion of the permit became effective on February 6, 1995 and will remain in effect until February 6, 2005. Section II.E. of the permit requires a RCRA Facility Investigation (RFI) for those SWMUs identified in Appendix A-I of the permit. The RFI work plan submitted in accordance with the requirements of Section II.E.1. and Appendix B of the permit was approved on June 13, 1996. An Addendum was submitted in August of 1997, in accordance with the Kentucky Division of Waste Management's request of May 27, 1997, which provided a Work Plan for the necessary RCRA Facility Investigation of SWMU #9&14 (at Sample Location 4), SWMU #31 (at Sample Location 2), and SWMU#24.

A SWMU Assessment Report (SAR) was submitted in August 2004 pursuant to the requirements of Section ILB.3 (page 16 of 29) of the HSW A portion of the RCRA Permit issued to the YKK. facility, located in Lawrenceburg, Kentucky. This report provides the following required elements relating to the previously identified Solid Waste Management Units 2, 5, 8, 19/20, and 39.

A RCRA Facility Investigation (RFI) report was submitted in May 2004 submitted to summarize the findings of the August 1997 Addendum #3 to the **RFI** Work Plan (May 1995). Revised March 1996, submitted by YKK. in accordance with Sections II.E, II.D.5 and IV.E.1.b of the facility's Federal RCRA Permit (Permit No. KYD 044914356). Addendum #3, was prepared in accordance with the Kentucky Division of Waste Management's request of May 27, 1997, it provided a Work Plan for the necessary RCRA Facility Investigation of Solid Waste Management Units (SWMUs) #9&14 (at Sample Location 4), SWMU #31 (at Sample Location 2) and SWMU #24. This information is current through August 2016.



GEOLOGY OF THE
LAWRENCEBURG QUADRANGLE,
KENTUCKY
GQ-1026

EXPLANATION

TERTIARY OR QUATERNARY

Holocene — Qal — Alluvium

Pliocene or Pleistocene — QTf — High-level fluvial deposits

ORDOVICIAN

Upper Ordovician — Od — Drakes(?) Formation

Middle and Upper Ordovician — Clays Ferry Formation and Lexington Limestone

Ocf, *Clays Ferry Formation*
so, *base of zone of abundant* Sowerbyella
*Olt, *Tanglewood Limestone Member*
*Ols, *Sulphur Well Member*
*Olb, *Brannon Member*
Olg, *Grier Limestone Member*
Olgm, *Macedonia Bed*
*Oll, *Logana Member*
Olc, *Curdsville Limestone Member*

Middle Ordovician — High Bridge Group — Ot — Tyrone Limestone

af — Artificial fill
Some small areas not shown

*Shown by line where too thin to show color

Contact
Dashed where inferred; dotted where concealed. Triangles indicate selected localities where contacts were well exposed at time of mapping

Fault
Dashed where approximately located; short dashed where inferred; dotted where concealed; bar and ball on downthrown side

700
Structure contours
Drawn on base of Brannon Member of Lexington Limestone. Projected where contoured horizon is missing. Arrow indicates direction of dip. Not contoured in west-central part of quadrangle nor in small graben 2 miles north-northwest of Lawrenceburg. Contour interval 50 feet

ECONOMIC GEOLOGY

No quarries are active in the quadrangle, but the Tanglewood and Grier Limestone Members of the Lexington Limestone were quarried locally on a small scale in the past, probably for road metal. Parts of the Grier Limestone Member probably meet specifications for aggregate and road metal. The Tyrone Limestone is quarried in the adjacent Tyrone quadrangle for aggregate, road metal, and agricultural lime.

Fohs (1913, p. 488) described a barite and sphalerite vein 2½ miles southwest of Lawrenceburg, but the vein was not observed during mapping.

Ground water conditions have been studied by Hall and Palmquist (1960). Their work indicates that wells drilled in valley bottoms or low on valley sides will generally yield an adequate supply of water for domestic use, but wells drilled elsewhere will not. Wells drilled in the Clays Ferry Formation are generally dry; those drilled in the Lexington Limestone, and particularly in the Tanglewood Limestone Member, are more likely to be successful.

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Hall, F. R., and Palmquist, W. N., Jr., 1960, Availability of ground water in Anderson, Franklin, Shelby, Spencer, and Woodford Counties, Kentucky: U.S. Geol. Survey Hydrol. Inv. Atlas HA-24.
McFarlan, A. C., and Wesley, G. R., 1936, Areal and structural geological map of Anderson County, Kentucky: Kentucky Geol. Survey, ser. 6.

GEOLOGIC QUAD MAP	SCALE: 1"=200'	FIGURE
	DATE: 08/24/16	E-1
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

0°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1963

SCALE 1:2,400

0.25 0.2 0.1 0 0.1 MILE 0.2 MILE 0.25 MILE

100 0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 FEET

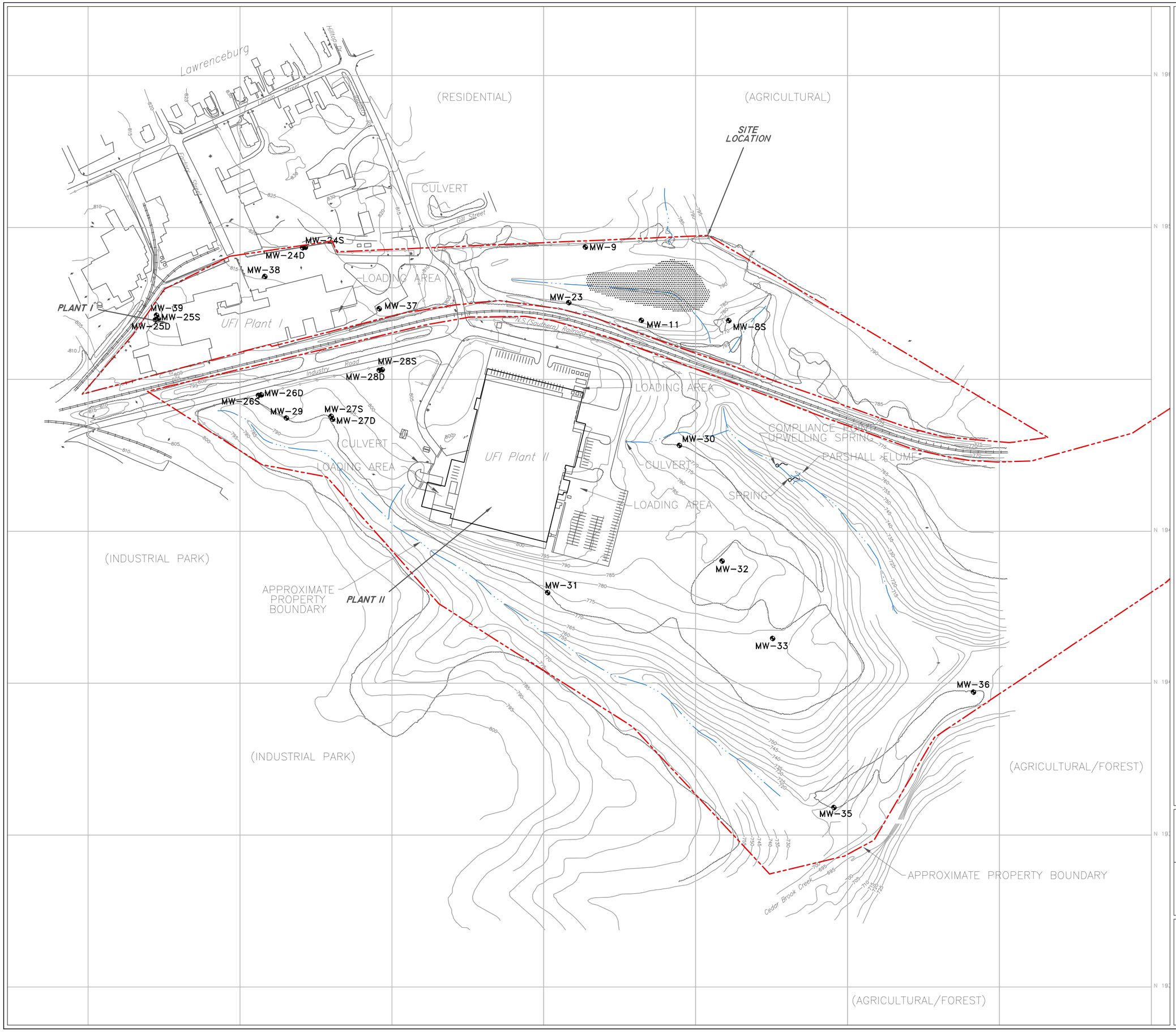
0.1 .05 0 0.1 KILOMETER

CONTOUR INTERVAL 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

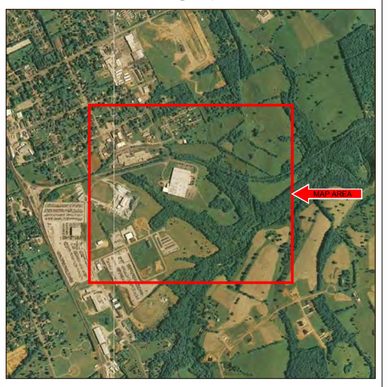
KENTUCKY
QUADRANGLE LOCATION

GEOLOGIC MAP OF THE LAWRENCEBURG QUADRANGLE, ANDERSON & FRANKLIN COUNTIES, KENTUCKY
By E.R. Cressman 1972

Linebach Funkhouser, Inc.
environmental compliance & consulting



LEGEND

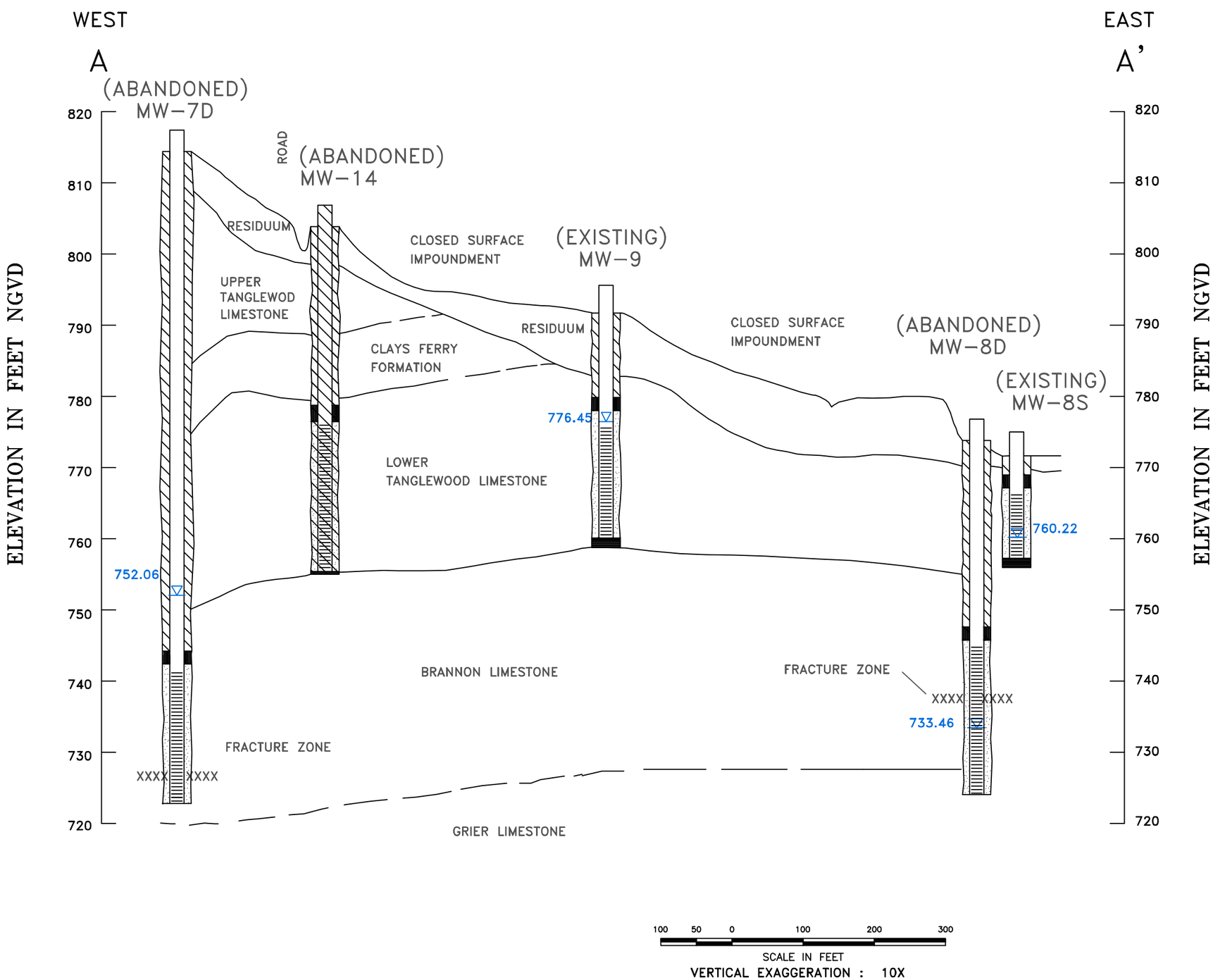


PROPERTY BOUNDARY

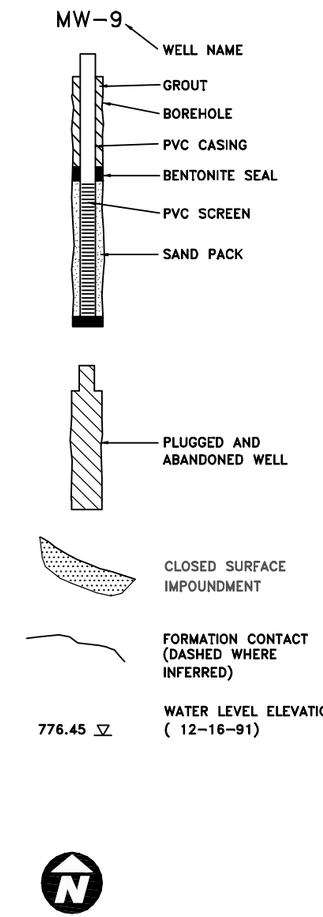
SCALE (ft)

WELL & SPRING MAP	SCALE: 1"=200'	FIGURE E-2
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting

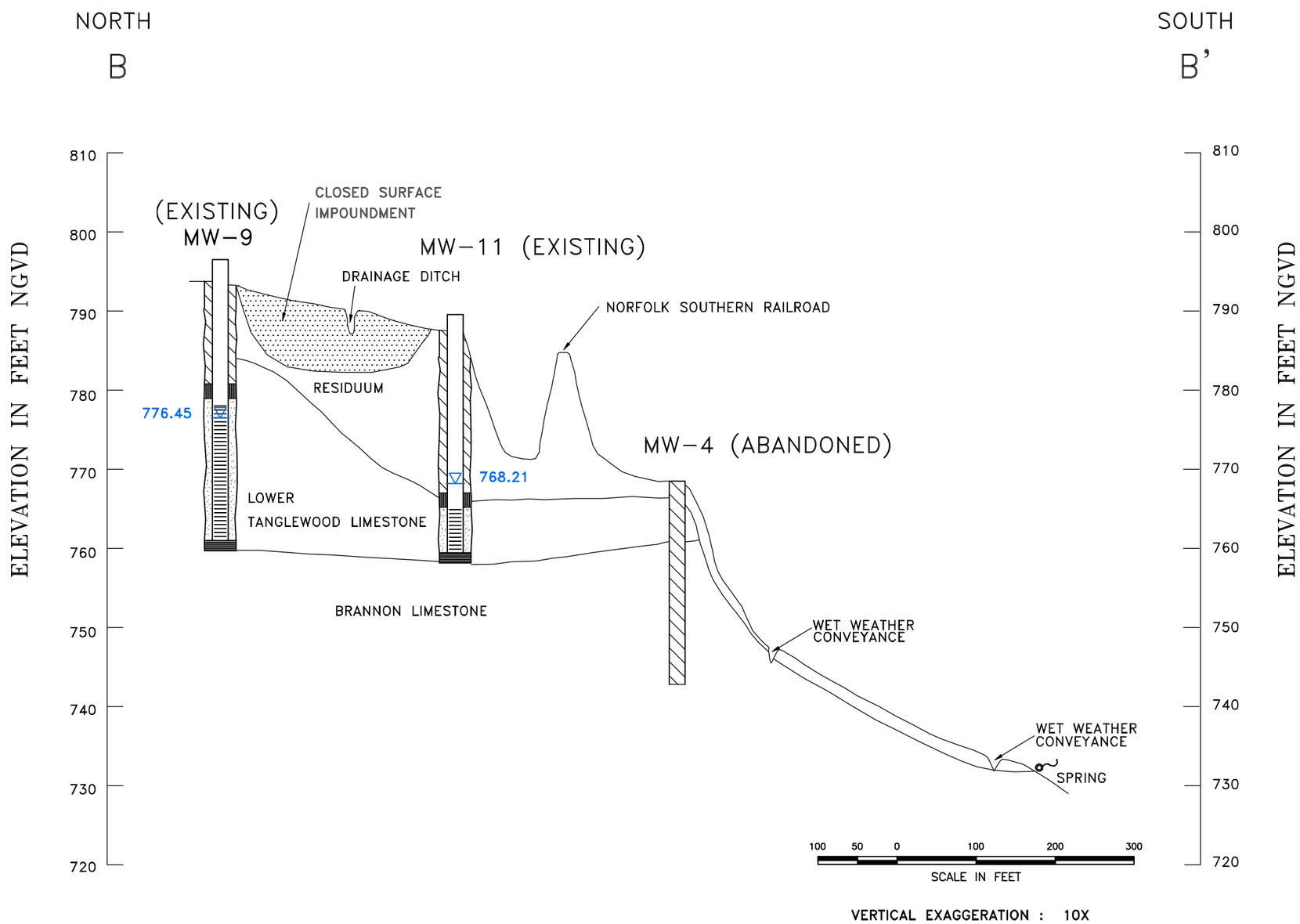


LEGEND



HYDROLGEOLOGIC SECTION A-A'	SCALE: VARIES	FIGURE **E-3**
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



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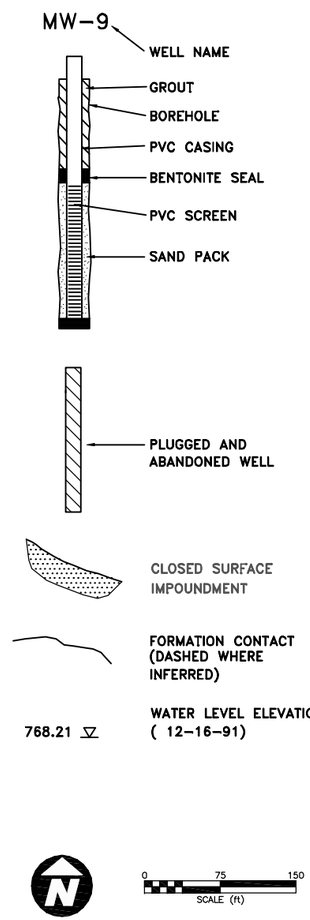
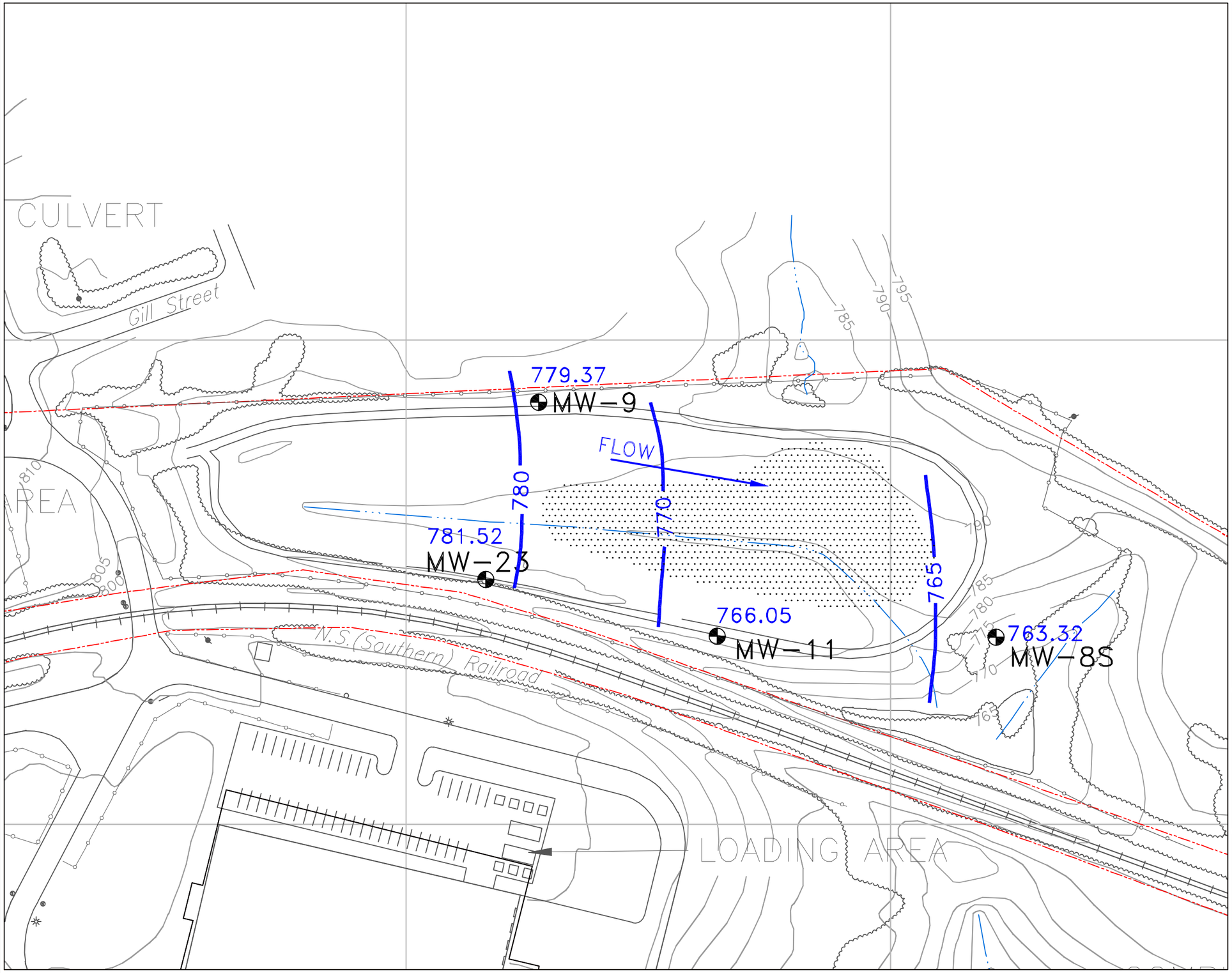


HYDROLGEOLOGIC SECTION B-B'	SCALE: VARIES	FIGURE E-4
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



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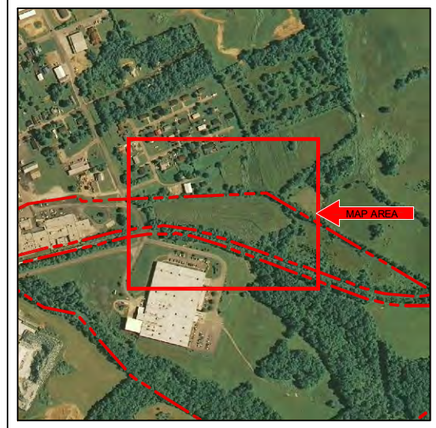


770 WATER CONTOURS FALL 2021

MW-11 760.29 WELL WITH WATER ELEVATION

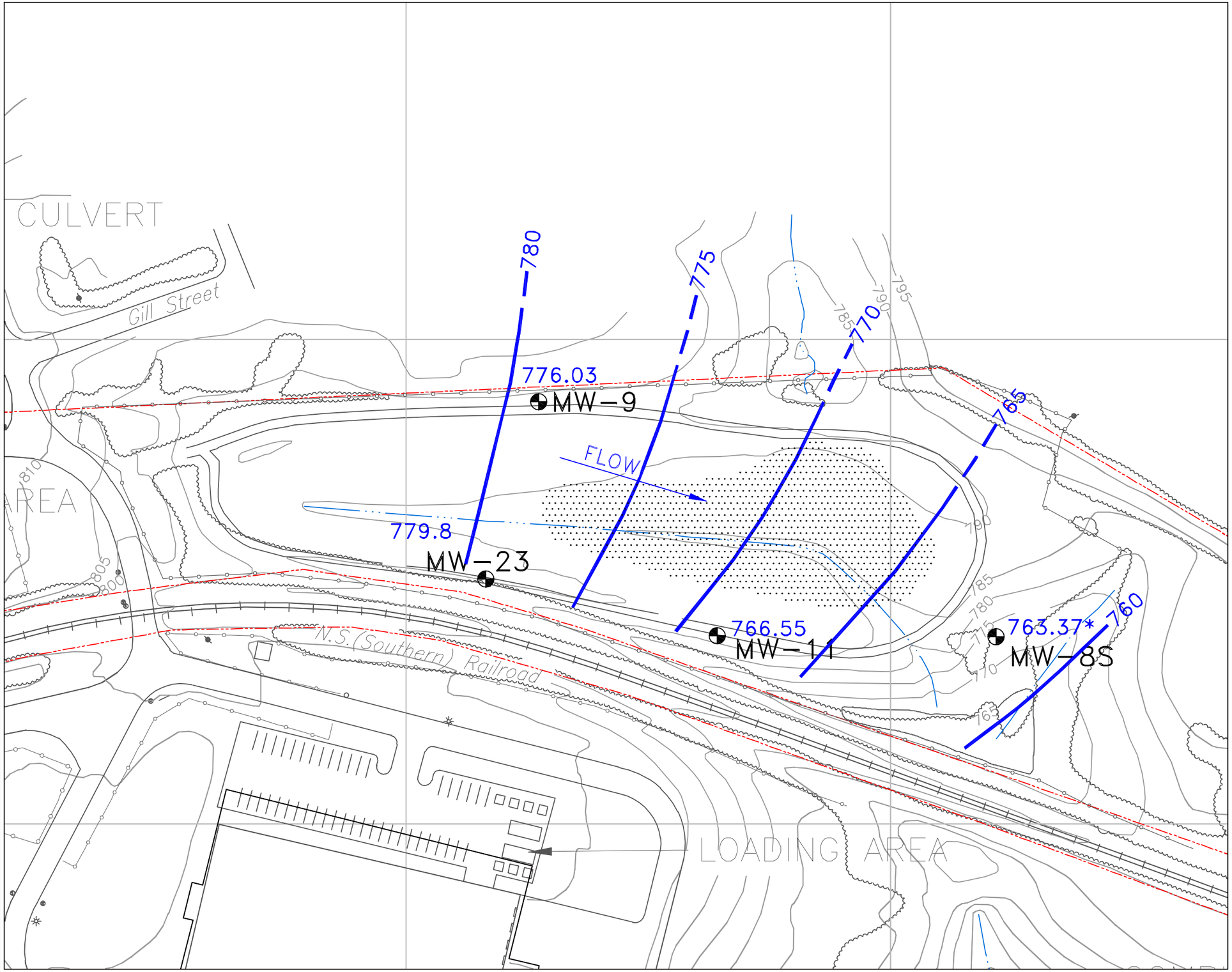
GROUND-WATER FLOW DIRECTION

CLOSED SURFACE IMPOUNDMENT

0 50 100
SCALE (ft)

FALL 2015 GROUNDWATER FLOW MAP	SCALE: 1"=100'	FIGURE E-6
	DATE: 11/11/22	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



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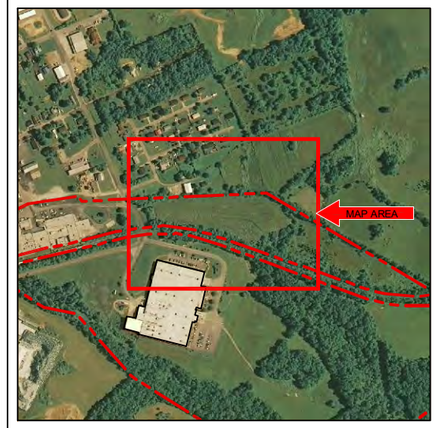


770 WATER CONTOURS SPRING 2022

763.37* ELEVATION NOT USED IN INTERPRETED CONTOURS

MW-11 760.29 WELL WITH WATER ELEVATION

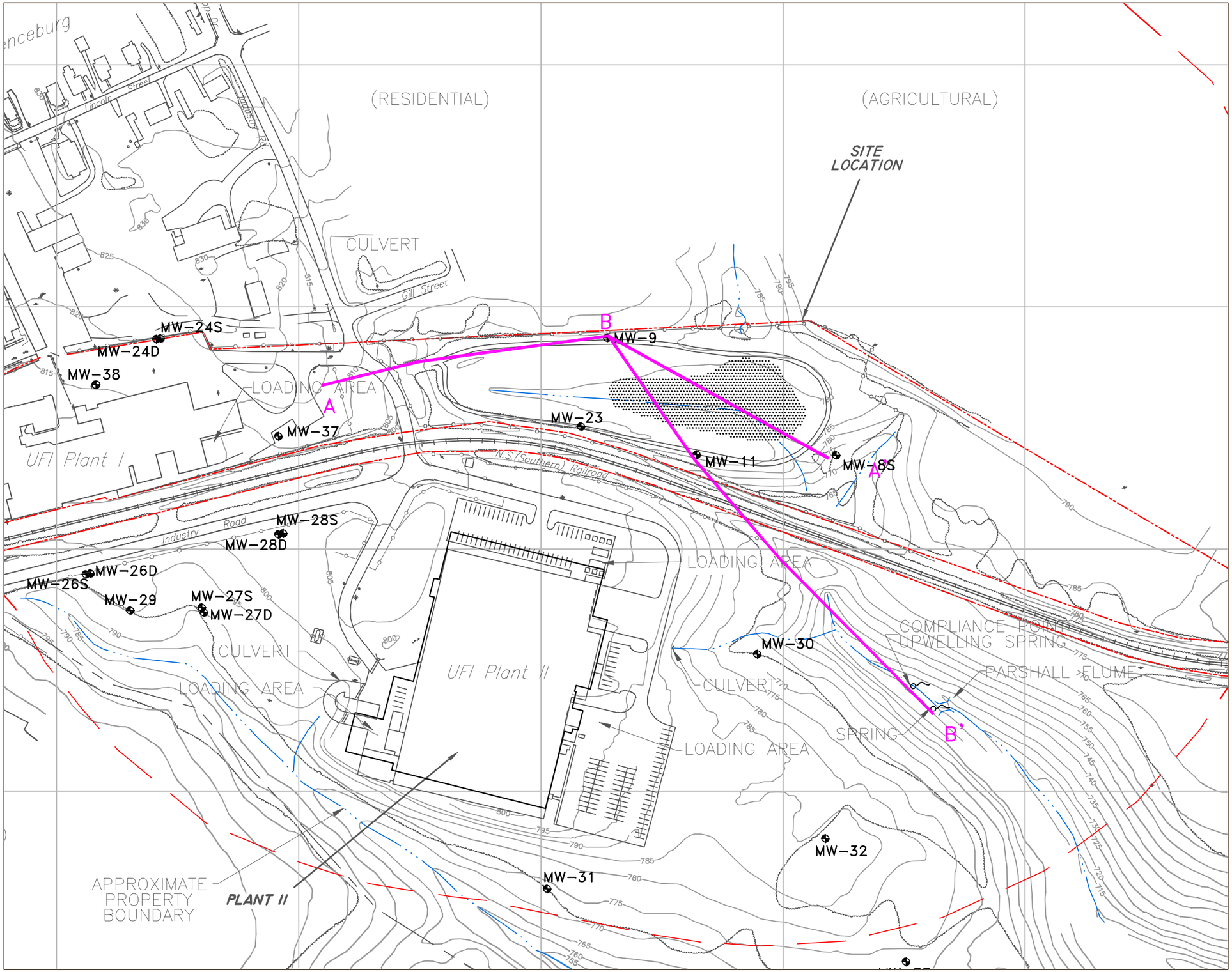
GROUND-WATER FLOW DIRECTION

CLOSED SURFACE IMPOUNDMENT

0 50 100
SCALE (ft)

SPRING 2015 GROUNDWATER FLOW MAP	SCALE: 1"=100'	FIGURE E-5
	DATE: 11/11/22	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



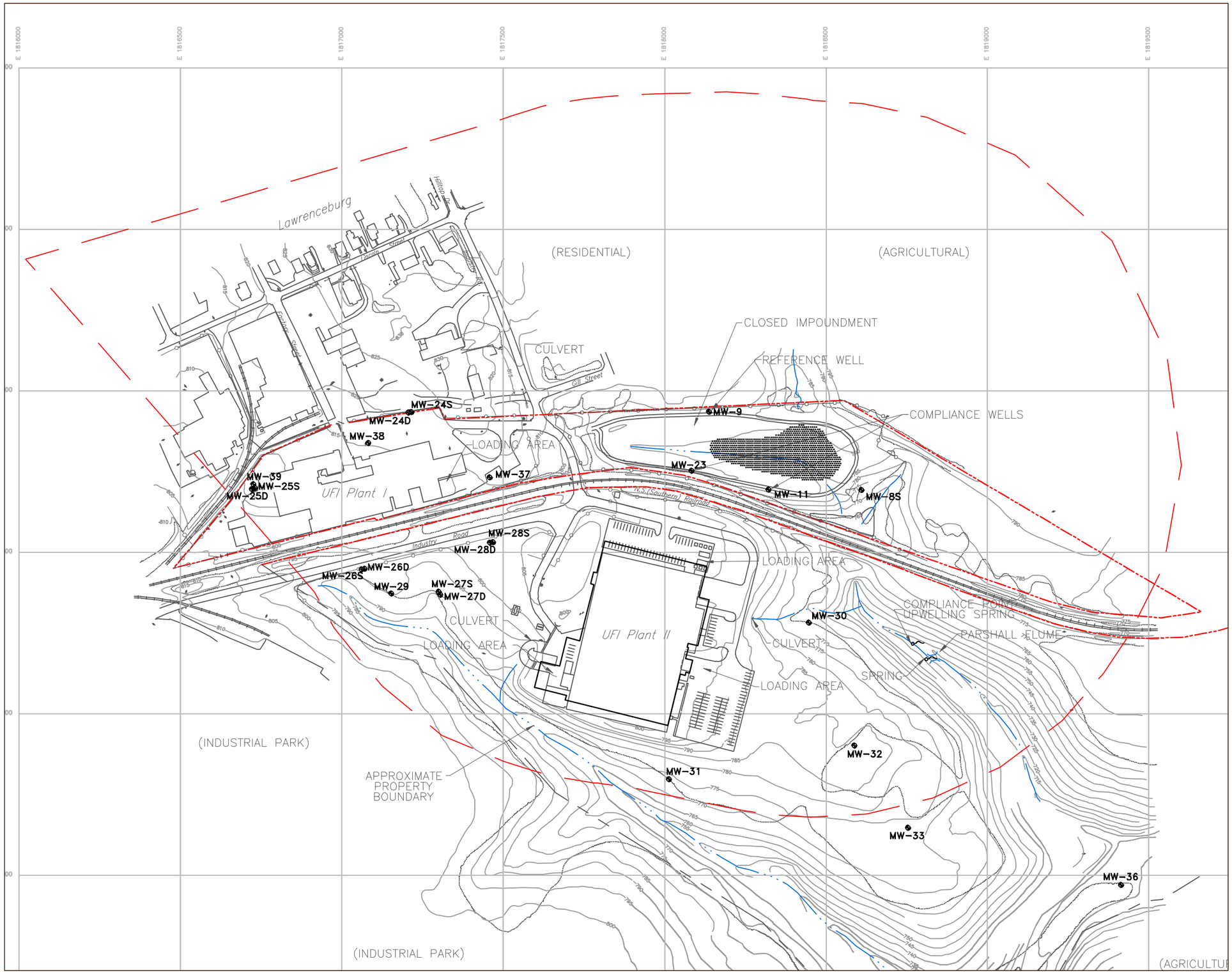
LEGEND

PROPERTY BOUNDARY

0 100 200
SCALE (ft)

DETAIL CLOSED HAZARDOUS WASTE UNIT	SCALE: 1"=200'	FIGURE E-7
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	DATE: 08/24/16	
	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting



LEGEND

PROPERTY BOUNDARY

0 150 300
SCALE (ft)

1000-FOOT RADIUS OF HAZARDOUS WASTE UNIT	SCALE: 1"=300'	FIGURE E-8
	DATE: 08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting

Appendix E – 1

Boring and Well Construction Logs

Table No. E-1 Monitoring Well Construction Data
For Closed Impoundment
Universal Fasteners, Inc.
Lawrenceburg, Kentucky

Well Id. #	MW-9	MW-8s	MW-11	MW-23
Well Construction Date	6/6/91	12/12/90	6/7/91	9/24/91
Drilling Method	Air Rotary	Air Rotary	Air Rotary	Air Rotary
Drilling Co.	Faulkner	Faulkner	Faulkner	Faulkner
Driller	B. Gibson	C. Gibson	B. Gibson	B. Gibson
Boring Dia.	8.75"	8.00"	8.75"	8.75"
Top Protective Cover	796.16	776.54	790.57	793.57
Top of Casing	795.87	775.87	789.80	790.57
Top of Ground	793.55	773.84	787.57	787.57
Pad	3'x 3' x 1.5'	3'x 3' x 0.5'	3'x 3' x 1.5'	3'x 3' x 1'
Top of Grout	792.05	773.84	786.07	786.57
Top of Bentonite	780.55	769.84	767.57	781.57
Top of Sand	778.55	767.84	765.47	778.57
Top of Screen	777.07	766.59	764.74	777.57
Bottom of Screen	762.06	756.59	759.45	767.57
Bottom of Well	762.04	756.59	759.27	767.07
Bottom of Boring	760.45	756.34	758.63	767.07
Total Well Depth	33.83	19.81	30.53	23.5
Protective Cover Dia.	8.0"	6.0"	8.0"	8.0"
Casing Material	PVC	PVC	PVC	PVC
Casing Dia.	4.5" O. D.	4.5" O. D.	4.5" O. D.	4.5" O. D.
Total Casing Length	18.82'	9.81	25.56	
Screen Material	PVC	PVC	PVC	PVC
Total Screen length	15.01'	10.0	4.97	
Screen Slot Size	0.010'	0.010'	0.010'	0.010'
Grout	Cement/Bent.	Cement/Bent.	Cement/Bent.	Cement/Bent.
Bentonite	Pellets	Pellets	Pellets	Pellets
Sand	No. 5	No. 4	No. 5	No. 5
Water Level	22.90	dry	27.01	
pH	7.19	-	7.30	
Sp. Cond	2300	-	850	
Temp.	20.8° C	-	20.0° C	

WELL CONSTRUCTION FORM

DRILLING DATA

Well ID MW-9 Project Number 531800
Project Name Universal Fasteners Corp
Location Plant site
Lawrenceburg, KY
Supervised by M.R. Burston
Date of Boring 6/6/91 Date Well Completed 6/6/91
Drilling Company Faulkner Drilling Co.
Driller Bennett Gibson
Drilling Method Air-Rotary
Bit Diameter (in.) 8 ¾" Hollow Stem I.D. (in.) _____ O.D. (in.) _____
Hours Drilled 1 Downtime _____
Decontamination Procedure Steam rinse of rig and rods before each Borehole
Sample Collection Procedure Collected rock cuttings at 5-foot intervals
Estimated % Recovery _____

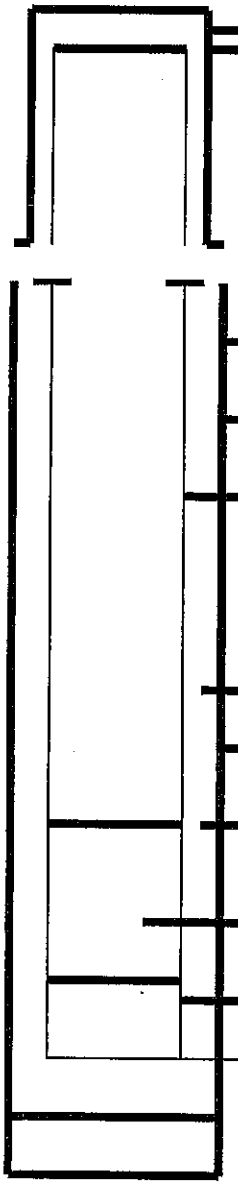
MATERIALS

Casing Material PVC Type Tri-Loc
Screen Material PVC Type Tri-Loc
Casing (in.) O.D. 4 ½ I.D. 4 LS to 16.48 ftbls
(in.) O.D. _____ I.D. _____ _____ to _____ ftbls
(in.) O.D. _____ I.D. _____ _____ to _____ ftbls
Total Casing (ft.) 18.82
Screen (in.) O.D. 4 ½ I.D. 4 LS to 16.48 ftbls
Slot Size (in.) 0.010" Total Screen (ft.) 15.01
Length of Cap (ft.) _____ Sump (ft.) _____
Centralizer Material _____ Length (in.) _____
Sand Pack Mtrl./Sz. No. 5 Torpedo sand
Lbs./Sacks Used 400 / 4 sks.
Grout Material Cement / Bentonite
Amt. Cement ~ 4 sks. Type Cement Portland
Lbs. Powdered Bentonite ¼ sk. Lbs. Bentonite Pellets 50 lbs.
Tremie Used 1" PVC Pump for Grout Used _____
Cement Plug _____
Length of Protective Casing (ft.) _____

DEVELOPMENT

Development Method Bail Total Hours 1.5
Date and Time Started 6/8/91 08:57
Date and Time Completed 6/11/91 11:53
Est. Gallons 26 Esti. Yield (gpm) _____
Static WL (ftbtoc) 22.90
Color/Turbidity: Start brown/turbid Finish tan/sl. turbid
Drawdown (ft.) _____ Time to Recovery _____
Final: pH 7.19 SC 2300 T (□C) °20.8°C Eh _____
Sand none Odor none
Water Discharged to ground

REMARKS



X Protective Casing(als)
__ Manhole Cover Lock On:
X Well Cover
_ Well Cap
~2.61 ftals / ftbls
2.34 ftals / ftbls
MP Descrip: TOC
LS Elev.: 793.55
MP Elev.: 795.87
4 Inches
8 Inches
Pad Dimension:
3' X 3' X 1.5'

Top of Casing:
_____ ft. bls

Cement Plug:
_____ to _____ ftbls

Borehole Diameter:
8 ¼ inches

Casing:
4.0 in. 40 sch.
__ in. _____ sch.

Casing Interval:
+2.34 to 16.48 ftbls

Grout:
LS to 13.0 ftbls

Bentonite Pellet Seal:
15.0 to 13.0 ftbls

Sand Pack:
15.0 to 31.4 ftbls

0.010-in. Slotted Screen:
31.4 to 16.48 ftbls

Cap/Sump:
____ to ____ ftbls

TD Well Cap:
31.4 ftbls

TD Borehole Reamed:
_____ Ftbls

TD Borehole:
33.1 ftbls

Total Length Casing Cap: _____ ft.

Centralizers:
____ Ftbls
____ ftbls

P. E. LaMoreaux & Associates, Inc. (PELA)

BORING LOG

NO: MW-9
LOCATION: Universal Fasteners Corp.
Plant site
Lawrenceburg, KY
DRILLER: Faulkner Drilling Company
DATE DRILLED: 6/6/91
DRILLING METHOD: Air-rotary
DATE INSTALLED: 6/6/91
TOTAL DEPTH BOREHOLE (FT): 33.1
BOREHOLE DIAMETER (IN): 8 3/4"
MP ELEVATION (FT): 795.87
LS ELEVATION (FT): 793.55
TOTAL DEPTH WELL (FT): 31.4
WATER LEVEL DURING DRILLING (FT BLS):
WATER LEVEL AFTER DRILLING (FT BLS):
DATE AND TIME:
PELA REP(S): M.R. Burston

Depth (feet BLS)	Interval (feet)	Description/Observations (Description from Rock Cuttings Collected at 5-Foot Intervals
0	0 – 9.0	Soil/Residuum: moderate yellow (2.5Y 6/6), clay (CL), silty, limestone fragments common near base.
5.0		
	9.0	Top of bedrock – Lower Tanglewood Limestone.
10.0	10.0 – 15.0	Calcarenite: medium gray (N5), fine- to medium-crystalline, brachiopod fragments.
15.0	15.0 – 20.0	Calcarenite: medium gray (N5), fine- to medium-crystalline, abundant sparry calcite, grains include brachiopod fragments.
20.0	20.0 – 25.0	Calcarenite: as in 15.0 – 20.0.
25.0	25.0 – 30.0	Calcarenite: light gray (N7), fine- to medium-crystalline, brachiopod fragments.
30.0	30.0 – 33.1	Calcarenite: light gray (N7), fine- to medium-crystalline, gastropod fragments, linguloid brachiopod fragments, possibly crinoid fragments.
35.0	33.1	Total depth.
40.0		

REMARKS: PELA Reference No: 531800
Lower Tanglewood Limestone exhibits little or no intercrystalline porosity.

WELL CONSTRUCTION FORM

DRILLING DATA

Well ID MW-8S Project Number 531800
Project Name Universal Fasteners Corp
Location Universal Fasteners Plant Site
Lawrenceburg, KY
Supervised by N.E. Moss
Date of Boring 12/12/90 Date Well Completed 12/12/90
Drilling Company Faulkner Drilling Co.
Driller Clarence Gibson/Delbert Logan
Drilling Method Air hammer
Bit Diameter (in.) 8" Hollow Stem I.D. (in.) ____ O.D. (in.) ____
Hours Drilled 1/2 Downtime 0
Decontamination Procedure Steam rinse of rig and rods before each Borehole
Sample Collection Procedure Collected rock cuttings at 5-foot Intervals
Estimated % Recovery ____

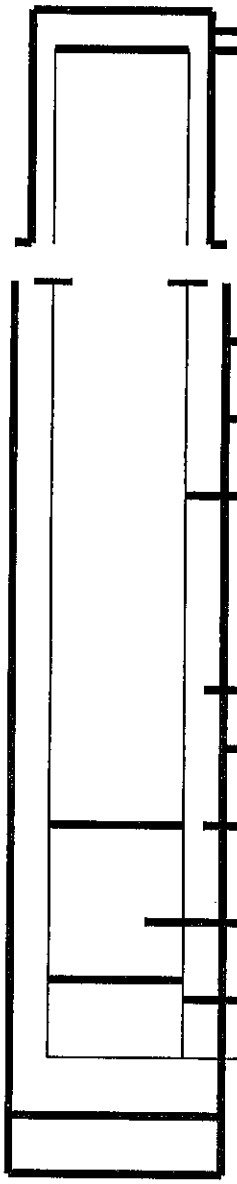
MATERIALS

Casing Material PVC Type Tri-Loc
Screen Material PVC Type Tri-Loc
Casing (in.) O.D. 4 I.D. ____ LS to 6.75 ftbls
(in.) O.D. ____ I.D. ____ ____ to ____ ftbls
(in.) O.D. ____ I.D. ____ ____ to ____ ftbls
Total Casing (ft.) 9.81
Screen (in.) O.D. 4 I.D. ____ 6.75 to 16.75 ftbls
Slot Size (in.) 0.010" Total Screen (ft.) 10
Length of Cap (ft.) 0 Sump (ft.) ____
Centralizer Material ____ Length (in.) ____
Sand Pack Mtrl./Sz. Silica sand/4.0
Lbs./Sacks Used 300/3
Grout Material Cement/bentonite
Amt. Cement 4 sx Type Cement Portland
Lbs. Powdered Bentonite ¼ sx Lbs. Bentonite Pellets 40
Tremie Used 1" PVC tubing Pump for Grout Used ____
Cement Plug ____
Length of Protective Casing (ft.) ~3.2

DEVELOPMENT

Development Method See Remarks Total Hours ____
Date and Time Started ____
Date and Time Completed ____
Est. Gallons ____ Esti. Yield (gpm) ____
Static WL (ftbtoc) ____
Color/Turbidity: Start ____ Finish ____
Drawdown (ft.) total Time to Recovery ____
Final: pH ____ SC ____ T (□C) ° ____ Eh ____
Sand ____ Odor ____
Water Discharged to ____

REMARKS Well dry after construction



X Protective Casing(als)
_ Manhole Cover Lock On:
_ Well Cover
_ Well Cap
~3.2 ftals / ftbls
3.06 ftals / ftbls
MP Descrip: TOC
LS Elev.: 773.34
MP Elev.: 775.87
4 Inches
6 Inches
Pad Dimension:
3' X 3' X 0.5'

Top of Casing:
____ ft. bls

Cement Plug:
____ to ____ ftbls

Borehole Diameter:
8.0 Inches

Casing:
4.0 in. 40 sch.
_ in. ____ sch.

Casing Interval:
LS to 6.75 ftbls

Grout:
LS to 4.0 ftbls

Bentonite Pellet Seal:
4.0 to 6.0 ftbls

Sand Pack:
6.0 to 17.0 ftbls

0.010-in. Slotted Screen:
6.75 to 16.75 ftbls

Cap/Sump:
____ to ____ ftbls

TD Well Cap:
16.75 ftbls

TD Borehole Reamed:
____ Ftbls

TD Borehole:
17.0 ftbls

Total Length Casing Cap: 19.81 ft.

Centralizers:
____ Ftbls
____ ftbls

P. E. LaMoreaux & Associates, Inc. (PELA)

BORING LOG

NO: MW-8S
LOCATION: Universal Fasteners, Inc. Lawrenceburg, KY
DRILLER: Faulkner Drilling Company
DATE DRILLED: 12/12/90
DRILLING METHOD: Air hammer
DATE INSTALLED: 12/12/90
TOTAL DEPTH BOREHOLE (FT): 17.0
BOREHOLE DIAMETER (IN): 8
MP ELEVATION (FT): 775.87
LS ELEVATION (FT): 773.34
TOTAL DEPTH WELL (FT): 16.75
WATER LEVEL DURING DRILLING (FT BLS): --
WATER LEVEL AFTER DRILLING (FT BLS): Dry
DATE AND TIME:
PELA REP(S): N.E. Moss

Depth (feet BLS)	Interval (feet)	Description/Observations (Description from Rock Cuttings Collected at 5-Foot Intervals
0	0 – 3.5	Clay/Soil: moderate yellowish-brown (10YR 5/4), silty with abundant weathered limestone.
	3.5	Top of bedrock – Tanglewood Limestone.
5.0	5.0	Calcarenite: medium gray (N5) to light gray (N7), weathered in part pale yellowish-brown (10YR 6/2) to dark yellowish-brown (10YR 4/2), medium to coarsely crystalline, grains include brachiopod and crinoid fragments, abundant sparry calcite, trace pyrite.
10.0	10.0	Calcarenite: medium gray (N5) to light gray (N7), fine to coarsely crystalline, grains include brachiopod and crinoid fragments, possible peloids, abundant sparry calcite, trace pyrite.
15.0		Calcarenite: as above, with calcisiltite, medium dark gray (N4), argillaceous.
	17.0	Total depth – 17.0 feet BLS.
20.0		
25.0		
30.0		
35.0		
40.0		

REMARKS: PELA Reference No: 531800

WELL CONSTRUCTION FORM

DRILLING DATA

Well ID MW-11 Project Number 531800
Project Name Universal Fasteners Corp
Location Plant site
Lawrenceburg, KY
Supervised by M.R. Burston
Date of Boring 6/7/91 Date Well Completed 6/7/91
Drilling Company Faulkner Drilling Co.
Driller Bennett Gibson
Drilling Method Air-Rotary
Bit Diameter (in.) 8 ¾" Hollow Stem I.D. (in.) _____ O.D. (in.) _____
Hours Drilled 0.75 Downtime 0
Decontamination Procedure Steam rinse of rig and rods before each borehole
Sample Collection Procedure Collected rock cuttings at 5-foot intervals
Estimated % Recovery _____

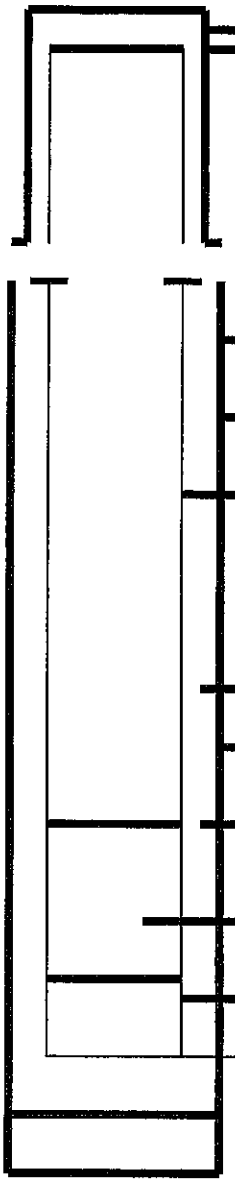
MATERIALS

Casing Material PVC Type Screw joint
Screen Material PVC Type Screw joint
Casing (in.) O.D. 4 ½ I.D. 4 2.73 als to 22.83 ftbls
(in.) O.D. _____ I.D. _____ _____ to _____ ftbls
(in.) O.D. _____ I.D. _____ _____ to _____ ftbls
Total Casing (ft.) 25.56
Screen (in.) O.D. 4 ½ I.D. 4 22.83 to 27.5 ftbls
Slot Size (in.) 0.010" Total Screen (ft.) 4.97
Length of Cap (ft.) _____ Sump (ft.) _____
Centralizer Material _____ Length (in.) _____
Sand Pack Mtrl./Sz. Torpedo #5 / Silica sand
Lbs./Sacks Used 225 / 2 ¼
Grout Material Cement / Bentonite
Amt. Cement ~ 5 bags Type Cement Portland
Lbs. Powdered Bentonite _____ Lbs. Bentonite Pellets 50 lbs.
Tremie Used 1" PVC Pump for Grout Used 10 hp
Cement Plug _____
Length of Protective Casing (ft.) ~ 3

DEVELOPMENT

Development Method Bail Total Hours 1.5
Date and Time Started 6/8/91 09:35
Date and Time Completed 6/11/91 12:28
Est. Gallons 20 Esti. Yield (gpm) _____
Static WL (ftbtoc) 27.01
Color/Turbidity: Start brown/turbid Finish tan/nearly clear
Drawdown (ft.) _____ Time to Recovery _____
Final: pH 7.30 SC 850 T (□C) °20°C Eh _____
Sand none Odor none
Water Discharged to ground

REMARKS



X Protective Casing(als)
__ Manhole Cover
Lock On:
X Well Cover
_ Well Cap
~3.0 ftals / ftbls
2.77 ftals / ftbls
MP Descrip: TOC
LS Elev.: 787.57
MP Elev.: 789.80
4 inches
8 inches
Pad Dimension:
3' X 3' X 1.5'

Top of Casing:
_____ ft. bls

Cement Plug:
_____ to _____ ftbls

Borehole Diameter:
8 ¼ inches

Casing:
4.0 in. 40 sch.
__ in. _____ sch.

Casing Interval:
+2.77 to 22.83 ftbls

Grout:
LS to 20.0 ftbls

Bentonite Pellet Seal:
20.0 to 22.1 ftbls

Sand Pack:
22.1 to 27.8 ftbls

0.010-in. Slotted Screen:
22.83 to 27.8 ftbls

Cap/Sump:
____ to ___ ftbls

TD Well Cap:
27.8 ftbls

TD Borehole Reamed:
_____ Ftbls

TD Borehole:
28.94 ftbls

Total Length Casing Cap: _____ ft.

Centralizers:
____ Ftbls
____ ftbls

P. E. LaMoreaux & Associates, Inc. (PELA)

BORING LOG

NO: MW-11
LOCATION: Universal Fasteners Corp.
Plant site
Lawrenceburg, KY
DRILLER: Faulkner Drilling Company
DATE DRILLED: 6/7/91
DRILLING METHOD: Air-rotary
DATE INSTALLED: 6/7/91
TOTAL DEPTH BOREHOLE (FT): 28.94
BOREHOLE DIAMETER (IN): 8 3/4"
MP ELEVATION (FT): 789.80
LS ELEVATION (FT): 787.57
TOTAL DEPTH WELL (FT): 27.94
WATER LEVEL DURING DRILLING (FT BLS):
WATER LEVEL AFTER DRILLING (FT BLS):
DATE AND TIME:
PELA REP(S): M.R. Burston

Depth (feet BLS)	Interval (feet)	Description/Observations (Description from Rock Cuttings Collected at 5-Foot Intervals
0	0 – 21.1	Soil/Residuum: moderate yellow (2.5Y 6/6), clay (CL), silty, limestone fragments common near base.
5.0		
10.0		
15.0		
20.0	21.1	Bedrock – Lower Tanglewood Limestone.
	21.1 – 25.0	Calcarenite: medium gray (N5), medium to coarsely crystalline, brachiopod fragments, sparry calcite, rare crinoid fragments.
25.0	25.0 – 28.9	Calcarenite: medium gray (N5), medium to coarsely crystalline, brachiopod fragments, moldic porosity filled with sparry calcite.
30.0	28.94	Total depth.
35.0		
40.0		

REMARKS: PELA Reference No: 531800
Lower Tanglewood Limestone exhibits little or no intercrystalline porosity.

WELL CONSTRUCTION FORM

DRILLING DATA

Well ID MW-23 Project Number 531800
Project Name Universal Fasteners Corp
Location Lawrenceburg, KY

Supervised by Abner Patton
Date of Boring 9/24/91 Date Well Completed 9/24/91
Drilling Company Faulkner Drilling
Driller Bennett Gibson
Drilling Method Air-Rotary
Bit Diameter (in.) 8 ¾" Hollow Stem I.D. (in.) ____ O.D. (in.) ____
Hours Drilled 1 Downtime ____
Decontamination Procedure Steam rinse of rig and rods before each borehole
Sample Collection Procedure ____

Estimated % Recovery ____

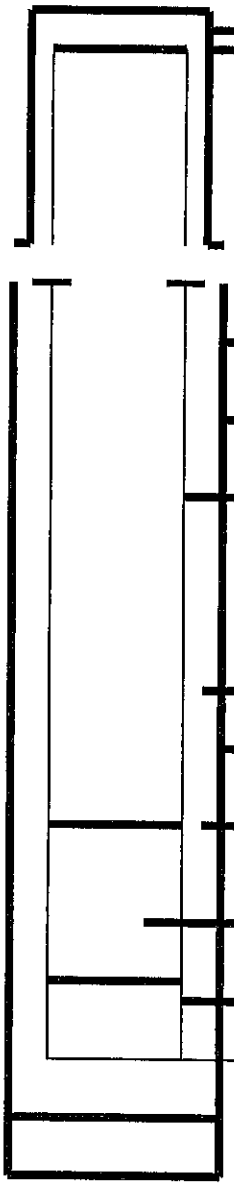
MATERIALS

Casing Material PVC Type Screw joint
Screen Material PVC Type Screw joint
Casing (in.) O.D. 4 ½ I.D. 4 LS to 10 ftbls
(in.) O.D. ____ I.D. ____ ____ to ____ ftbls
(in.) O.D. ____ I.D. ____ ____ to ____ ftbls
Total Casing (ft.) 13.0
Screen (in.) O.D. 4.5 I.D. 4.0 10 to 20 ftbls
Slot Size (in.) 0.010 Total Screen (ft.) 10.0
Length of Cap (ft.) 0.5 ft. Sump (ft.) ____
Centralizer Material ____ Length (in.) ____
Sand Pack Mtrl./Sz. 8-16
Lbs./Sacks Used ~4 sacks
Grout Material Cement/bentonite/sand
Amt. Cement 4 sacks Type Cement Portland
Lbs. Powdered Bentonite 1/4 Lbs. Bentonite Pellets 40 lbs.
Tremie Used Yes, 1" PVL Pump for Grout Used Yes
Cement Plug ____
Length of Protective Casing (ft.) 5 ft.

DEVELOPMENT

Development Method bail Total Hours 0.75
Date and Time Started 9/25/91 17:42
Date and Time Completed 9/24/91 18:30
Est. Gallons 7.5 Esti. Yield (gpm) ____
Static WL (ftbtoc) 16.25
Color/Turbidity: Start brown/turbid Finish mostly clear
Drawdown (ft.) 6.9' Time to Recovery ____
Final: pH 7.34 SC 1050 T (□C) °16.5°C Eh ____
Sand ____ Odor none
Water Discharged to ground

REMARKS ____



X Protective Casing(als)
__ Manhole Cover Lock On:
X Well Cover
__ Well Cap
____ ftals / ftbls
____ ftals / ftbls
MP Descrip: TOC
LS Elev.: ____
MP Elev.: ____
4.0 Inches
6.0 Inches
Pad Dimension: 36 X 36 in.

Top of Casing: 3.0 ft. bls

Cement Plug: LS to 1.0 ftbls

Borehole Diameter: 8 ¼ inches

Casing: 4.0 in. 40 sch.
__ in. ____ sch.

Casing Interval: +3.0 to 10.0 ftbls

Grout: 1.0 to 6.0 ftbls

Bentonite Pellet Seal: 6.0 to 9.0 ftbls

Sand Pack: 9.0 to 20.5 ftbls

0.010-in. Slotted Screen: 10.0 to 20.0 ftbls

Cap/Sump: 20.0 to 20.5 ftbls

TD Well Cap: 20.5 ftbls

TD Borehole Reamed: 20.5 Ftbls

TD Borehole: 20.5 ftbls

Total Length Casing Cap: ____ ft.

Centralizers:
____ Ftbls
____ ftbls

P. E. LaMoreaux & Associates, Inc. (PELA)

BORING LOG

NO: MW-23
LOCATION: Universal Fasteners Corp.
Plant site
Lawrenceburg, KY
DRILLER: Faulkner Drilling Company
DATE DRILLED: 9/24/91
DRILLING METHOD: Air-rotary
DATE INSTALLED: 9/24/91
TOTAL DEPTH BOREHOLE (FT): 20.5
BOREHOLE DIAMETER (IN): 8 1/4"
MP ELEVATION (FT):
LS ELEVATION (FT): 787.57
TOTAL DEPTH WELL (FT): 20.5 BLS
WATER LEVEL DURING DRILLING (FT BLS): 12.0
WATER LEVEL AFTER DRILLING (FT BLS):
DATE AND TIME: 9/24/91
PELA REP(S): A.F. Patton

Depth (feet BLS)	Interval (feet)	Description/Observations (Description from Rock Cuttings Collected at 5-Foot Intervals
0	0 – 5.0	Soil/fill/clay: moderate yellowish-brown (10YR 5/4), sandy, some rounded quartz gravel up to ½-inch of diameter.
2.5		
5.0		
7.5	7.0	Top of rock. Lower Tanglewood Limestone, calcarenite medium light gray (N6), to very light gray (N8), weathered in part, moderate yellowish-brown (10YR 5/4), fine to coarsely crystalline, sparry calcite, abundant bryozoans.
10.0	10.0	Calcarenite: medium light gray (N6) to very light gray (N8).
	12.0 – 12.5	Water producing fracture. Coarsely crystalline, trace of pyrite.
12.5		
15.0	15.0	Water producing fracture.
17.5		
20.0	20.5	Calcarenite: medium light gray (N6) to dark gray (N3), coarsely crystalline, trace brachiopods, abundant sparry calcite.

REMARKS: PELA Reference No: 531800

Appendix E – 2
Groundwater Monitoring Plan

Appendix E – 2

Groundwater Monitoring Procedures, Sample Collection, and Quality Assurance

Monitoring and Sampling

Sampling

The objective of the sampling program is to collect representative samples of groundwater and, following preservation to minimize changes in sample chemistry, to transport them to the laboratory. Methods are described here to achieve these objectives in a cost effective manner. Groundwater level measurement techniques are also described. Sampling methodology and procedures proposed in this document where prepared in accordance with EPA guidance documents and are described in detail in EPA publications, *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers, (EPA 542-S-02-001) May, 2002, Ground Water Issue, (EPA/540-S-95-504) April 1996, and EPA Region 4, Environmental Services Division, Environmental Investigations Standard Operating Procedures and Quality Assurance Manual, May 1996 (EISOPQAM).* This section is the form of a series of instructions, so that personnel may use it as a sampling manual.

Water Level Measurements

Upon arrival at site or at the beginning of each day calibrate all meters per the manufactures procedures and complete the attached meter calibration log, see figure No.1. Before sampling and prior to purging, the depth to groundwater will be measured in each well. The depth to groundwater should be recorded to an accuracy of 0.01 foot using an electronic water level indicator, marked in 0.01 foot intervals. Procedures are as follows:

Collecting Water Samples

1. Unlock protective cover and open well. Record the well location, reference numbers, time, date, weather conditions, (wind speed, precipitation, etc.), and other pertinent information in the field logbook and/or on a groundwater sampling log, see Figure No. 2.

2. Remove inner casing cap if necessary.

3. Measure the depth to groundwater to an accuracy of 0.01 foot using an electronic water level indicator, marked in 0.01-foot intervals and record in field notes the depth to water relative to reference point on the well casing with electronic water level indicator.

4. Check the available well information or field information for total depth of well. Use this information to calculate the well volume of the water in the monitoring

well or the volume in one casing. Record this information in the field logbook and/or on a groundwater sampling log.

5. Since the well already has a dedicated pump system installed refer to available monitoring well information and record the depth of the pump intake in the field logbook or on a groundwater sampling log.

6. Connect the controller to the air intake line and connect the air supply line to the air intake fitting on the wellhead.

7. Connect the discharge line from the pump to a flow through cell. The discharge line from the flow cell should be connected to a container to contain the purged water during purging and sampling of the monitoring well (if required to contain purge water).

8. Start pumping the well at a low flow rate (0.1 to 0.5 liter per minute) and slowly increase the speed. Check water level. Maintain a steady flow rate while maintaining a drawdown of less than 0.33 feet. If the drawdown is greater than 0.33 feet, lower the flow rate. This is down by adjusting pressure, along with refill and discharge times on controller. The goal is to purge the well so that the purge rate does not stress (drawdown) to the system to the extent practical taking into account established site sampling objectives. The purge rate is dependent on site specific hydrogeologic conditions within the screened interval of each well and may require adjustment based on these conditions and personal experience.

9. In low flow situations where the water level can not be stabilized or purging dewaters the well prior to achieving stabilization, it is permissible to purge one tubing volume (including the volume of water in the pump and flow-through-cell) and then commence sampling at a flow rate of 0.1 liter per minute or less, this is referred to as "passive" sampling.

10. Measure the discharge rate with a graduated container and stop watch. Also measure the water level and record both flow rate and water level in the field logbook or on a groundwater sampling log. Continue purging, monitor and record water levels and pump rate every three to five minutes during purging. Pumping rates should be kept at a minimal to ensure minimal drawdown in the monitoring well.

11. During purging, a minimum of one tubing volume (including the volume of water in the pump and flow-through-cell must be purged prior to recording the water quality indicator parameters.

12. Record the water-quality-indicator-parameters every three to five minutes. The water-quality-indicator-parameters are Specific Conductance, pH and Temperature. The stabilization criterion is based on three successive readings of the water-quality-indicator-parameters: pH within 0.1 pH units, Specific Conductance within

3% uS/cm, temperature 0.5 °C, and (DO and ORP) within 10%. Also the water level must remain within 0.33 of a foot over three consecutive readings. The turbidity should then be measured and recorded. Once this criteria, has been met indicating the water-quality-indicator-parameters have stabilized then sample collection can commence. Should additional space, be needed for recording stabilization data use the Supplement Field Information Form, see Figure No. 3.

13. Maintain the same pumping rate or reduce slightly for sampling (0.1 to 0.5 liter per minute) in order to minimize disturbance of the water column. Disconnect tubing from well to flow-through-cell. Samples are to be collected directly from the discharge port of the pump tubing.

14. All samples containers, should be filled, with minimal turbulence by allowing the groundwater to flow from the tubing gently down the inside of the container.

15. The proper preservatives, are then added to the appropriate containers if they are not already preserved.

16. The containers, are then capped and sealed and labeled if not pre-labeled. The label is completed with the well number, date, time, name, or initials of sample collector(s) analysis required and preservatives added if any.

17. A visual description of the water sample will also be recorded in the field logbook and/or on a groundwater sampling log, along with the field parameter sample data and time sampled.

18. Once all sample containers have been filled, sealed, and labeled they, are placed in a cooler with ice.

19. Measure and record the depth to water in the field logbook and/or on a groundwater sampling log.

20. Prior to locking well, measure the well depth (to 0.01 feet) and record in the field logbook and/or on a groundwater sampling log. Close and lock the well. Fill out site well condition inspection form.

21. Complete the field logbook and/or on a groundwater sampling log and chain of custody record, see Figure No. 4. These forms document how the samples were collected and provide a record of security of the samples from the point of collection to the laboratory. A copy of the chain of custody record should accompany the samples to the laboratory.

22. Once sampling of the wells has been completed, (at the end of each sample day), prepare a Chain of Custody (COC) for each sample, and place in each respective cooler along with a copy of the field logs for each cooler. (Note the COC should only contain information for the particular cooler it is placed in a separate COC is

required for each cooler) Seal full coolers with numbered custody seals and tape, initial at the seam so that tampering can be detected. Then deliver the samples to laboratory for analysis or the required shipping point for shipment to the appropriate laboratory for analysis. Shipping arrangements should be made in advance if being sent on a Friday or over a holiday.

Spring Sampling

When collecting samples from springs, the sample will be obtained as close to the spring orifice as possible. The following is a description of the sampling procedure.

1. Remove cap from sample container.

2. The sample should be obtained by gently submersing the sample container into the discharge, if possible, or by placing container under the outfall, if a fall is present.

3. All samples containers should be filled with minimal turbulence by allowing the groundwater to flow from the spring discharge.

4. The containers are then capped, sealed and labeled if not pre-labeled. The label is completed with the well number, date, time, name or initials of sample collector(s) analysis required and preservatives added if any.

5. Once all sample containers have been filled, sealed and labeled place in a cooler with ice or ice packs.

6. The spring discharge will be estimated and recorded whenever the samples are taken.

7. A visual and olfactory description of the water sample will also be recorded.

8. All field parameters will be measured as close to the spring orifice as possible and recorded. .

9. Complete the field logbook or on a spring sampling log and chain of custody record, see Figure No.4 and figure No.5, respectively. The forms document how the samples were collected and provide a record of security of the samples from the point of collection to the laboratory. A copy of the chain of custody record should accompany the samples to the laboratory..

23. Once sampling of the spring has been completed, (at the end of each sample day), prepare a Chain of Custody (COC) for each cooler, and place in each respective cooler along with a copy of the field logs for each cooler. (Note the COC should only contain information for the particular cooler it is placed in a separate COC is required for each cooler) Seal full coolers with numbered custody seals and tape,

initial at the seam so that tampering can be detected. Then deliver the samples to laboratory for analysis or the required shipping point for shipment to the appropriate laboratory for analysis. Shipping arrangements should be made in advance if being sent on a Friday or over a holiday.

Laboratory Analyses

The samples will be analyzed at the laboratory using EPA- approved methods. These are contained in EPA Publication SW-846.

The laboratory currently being used is Microbac Laboratories, Inc. A copy of the laboratory's Quality Assurance Manual is includes in Appendix E-4.

Figure No.1

Meter Calibration Log

METER CALIBRATION LOG

Project Name	Date
Project Number	Sampler

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Solution °C

Conductivity Meter

Temp of Calibration Solution	Corrected Cond. @25°C	Calibration Range For Solution	Time

Dissolved Oxygen (DO) Meter

Temperature (°C)	Barometric Pressure (in Hg)	% Dissolved Oxygen	Time

Redox (ORP) Meter

Temperature (°C)	E_H Reading (mV)	Calibration Range For Solution	Time

Turbidity Meter

Gel Value 0-10 (NTU) Solution	Gel Value 10-100 (NTU) Solution	Gel Value 100-1000 (NTU) Solution	Time

Problems/Corrective Action

Signature	Date
QC'd By	Date

Figure No.2

Groundwater Sampling Log

GROUNDWATER FIELD LOG

Facility		Project No.	
Sample Point ID		Location	
AKGWA #		Samplers	
Weather A.M.		Weather P.M.	

Well Data and Evaluation Data

Bladder Pump ☐ Disposable Bailer ☐	Top of PVC Riser Elev.		Groundwater Elev.		Casing Material ☐ PVC ☐ S.S.
Purge Date		Total Well Depth		Well Diameter	
Start Purge Time		Initial Depth to Water		Require Purge Volume	
End Purge Time		Height Water Column		Purge Rate	
Depth to Water After Purge		Well Volume		Volume Purged	

Calibration Data

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
1st Reading								
2nd Reading								
3rd Reading								
4th Reading								
5th Reading								
6th Reading								
7th Reading								
Avg.								
10%								

Sample Data

	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
Sample									

Containers & Preservatives			Filtered ☐ Yes ☐ No
Color	Appearance	Odor	Weather

☐ Annual ☐ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other _____

Split Sample ☐ Yes ☐ No If yes, with whom

Well Condition		Concrete Pad Condition		Lock Functioning Properly	

Comments_____

Sampler(s) Signature _____ Date _____

Figure No.3

Supplement Field Data Log

SUPPLEMENTAL FIELD INFORMATION FORM

Site Name	Notes:	Total Depth (ft)	Measuring Point	Start	Date	Time	Well No.
Location	**AKGWA #**	**Casing Diameter (in)**	**Well Volume**	**Finish**	**Date**	**Time**	Page___of___

Date	Time	ET (min)	Depth to Water (ft)	Purge Rate ml/min	Volume Purged (L)	pH (SU)	Sp. Cond. (umhos/ cm)	Temp. (C°)	D.O (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Comments
		0										
		5										
		10										
		15										
		20										
		25										
		30										
		35										
		40										
		45										
		50										
		55										
		60										
		65										
		70										
		75										
		80										
		85										
		90										
		95										
		100										
		105										
		110										
		115										
		120										
		125										
		130										
		135										
		140										
		145										
		150										

Figure No.4

Chain of Custody

Microbac

www.microbac.com

Microbac Laboratories, Inc.
3323 Gilmore Industrial Blvd.
Louisville, KY 40213
Phone: 502-962-6400
Fax: 502-962-6411
Wats: 888-374-1911
Kentucky@microbac.com

Chain of Custody

RUSH ☐

Quote # _____ A2LA? Y / N

Microbac Laboratories, Inc.
2701 A North Cullen Avenue
Evansville, IN 47715
Phone: 812-464-9000
Fax: 812-424-0667
Wats: 800-444-4119
Evansville@microbac.com

For Office Use Only:

COA# _____

Due Date: _____/_____/_____

Client:

Street Address:

City, State & Zip:

Phone #: Fax #:

Attention:

Purchase Order #:

Sampler:

Site/Project Name:

Analysis Requested

Date/Time	Sample ID/Description	Number of Containers	Type of Containers	Preservative in Container	Solid, Water, Oil, Other	Temperature °C 1 = On Ice																	

EXAMPLE

Relinquished By:	Date/Time:	Special QC or DL: Report: Fax / Mail Only /E-mail
Received By:	Date/Time:	Notes:
Relinquished By:	Date/Time:	
Received By:	Date/Time:	

Standard RUSH TAT Charges: Same Day x 3; Next Day x 2; Three Day x 1.5

Figure No.5

Spring Sampling Log

SPRING LOG

Facility _____ Project No. _____
Location _____ Date _____
Sample ID _____ Sampler(s) _____
Weather Weather
A.M. _____ P.M. _____

CALIBRATION DATA

PH 4.0 _____ 7.0 _____ 10.0 _____
Conductivity Solution (uS) _____ (uS) Temp _____

FIELD DATA

	PH	CONDUCTIVITY	TEMP
Sample			
Odor		Color	
Flow (gpm)		Appearance	
Time			

Number and type of containers _____

☐ Semi-Annual ☐ Other

Split Sample ☐ Yes ☐ No If yes, with whom _____

Comments _____

Sampler(s)
Signature _____ Date _____

Quality Assurance/Quality Control

The quality assurance program will include both checks on the accuracy of results and control measures to maintain accuracy. Most of this section describes practical approaches to maintain the accuracy and usefulness of groundwater data, plus requirements for field blanks and laboratory sample spikes. Some checks on data accuracy are also suggested. Other quality assurance information can be found in the EPA publication, *Handbook for Analytical Quality Control in Water and Wastewater Laboratories (EPA 600/4-79-019), March 1979,* which also contains sections on sampling and sample handling.

Field Procedures and Equipment

The objective of sampling is to obtain a representative sample of groundwater from the monitoring well or spring. If the procedures described previously are followed, it should be possible to achieve a representative sample; however, problems can still occur. All field personnel will wear new disposable gloves while sampling each well or spring.

Dedicated low flow bladder pump systems have been installed in each monitoring well. These pumps are constructed of inert materials that do not affect groundwater quality. This should eliminate the potential for cross contamination of well from using non-dedicated sampling equipment such as pumps or bailers.

Field personnel will maintain a bound logbook to document field activities. Information entered in the logbook will include:

- Date
- Project name and number
- Project address and site identification number
- Events (i.e., description of operations)
- Time of initiation and completion of each event
- Name(s) of field personnel and pertinent visitor(s) or observers
- General weather conditions
- Data obtained in field (PID/FID readings, water-level measurements, etc.)
- Record of calibration of field instruments

All field metering equipment (including pH, specific conductance, temperature, etc.) will be calibrated in accordance with manufacturers' instructions. Calibration will be completed prior to use of equipment each day, unless manufacturers' instructions or other circumstances indicate that more frequent calibration is necessary. A record of all calibration procedures will be maintained in the field logbook

QA/QC Samples

All samples will be collected and analyzed using standard quality assurance/ quality control (QA/QC) protocol, in accordance with standard practices. Laboratory QA/QC

protocol include sample check-in and tracking, routine maintenance and calibration of instruments, and use of proper analytical methods and reporting.

Field Blank

Field blanks will be prepared for each sampling event by pouring distilled water into appropriate sample containers. The bottles will be filled near a sample point. One field blank will be collected each day when sampling occurs.

Equipment Blank (Rinsate)

As sampling equipment is dedicated to each well, no equipment blanks are necessary.

Duplicate Sample

A duplicate ground-water sample will be collected from a randomly selected well. The sample will be collected using the same methods and equipment used for collection of the investigatory sample. The sample will be preserved, sealed, labeled, transported to the laboratory, and independently analyzed for the same parameters as the investigatory sample from that well.

QA/QC of Laboratory Procedures

Replicates

Replicate samples are analyzed as required per method.

Spiked Samples

Spiked samples are analyzed as required per method.

Reagents

Reagents may be one or a combination of the following: "ACS" grade, analytical grade, pesticide grade, or a grade specified in an analytical method. Some chemical reagents alter slowly because of chemical or biological changes. For these chemical reagents, the practical life is indicated on the container label or stated in the analytical method. Outdated reagents shall not be used in any analysis. With every set of samples, deionized water, or an appropriate solvent, is analyzed to determine if the reagents contain interfering substances. All reagents (containers) should be shelf dated upon receipt and upon opening.

Calibration Standards

Calibration standards are analyzed with each set of samples in order to verify the accuracy of the calibration curve.

Calibration Curve

Curves are generated to determine and document the linear working-range for each analyte for a particular method or instrument. New curves are generated when new reagents are prepared, or when there is a modification, repair or replacement of the detector.

Precision

Precision is based on the results of replicate analyses and is expressed in terms of standard deviation (SD). Upper and lower control limits are established by values from 20 or more replicate pairs. Precision must be within 3.27 relative standard deviation (R.S.D.) for the data to be acceptable.

Accuracy

Accuracy is a measure of the difference between the mean of 20 determinations, which were used to establish the upper and lower control limits, and the known amount of chemical added to a sample. Accuracy is expressed as percent recovery of the amount of chemical added to the sample.

Surrogate Standards

Surrogate standards are either deuterated analogs of priority pollutants or compounds that have similar chemical characteristics to the analytes of interest but do not interfere with their analysis. Samples are spiked with a surrogate spiking solution. Recovery of the surrogate is used to determine accuracy of the analytical procedure.

Corrective Action for Unacceptable Quality Control Data

When results from spiked samples and replicate samples are outside the statistical control limits, or if values of either or both of these samples are on the same side of their respective mean value for seven successive analyses, the system is considered out-of-control. When an out-of-control situation occurs, the analyses will stop until the problem is resolved and its solution documented. All analyses since the last in-control point must be repeated.

The following is the basic method to identify and correct out-of-control data.

Out-of-Control Precision Data

When the difference between replicates is outside the control limits, each step of the method is examined to determine the source of the error. Causes leading to poor precision can be, but are not limited to: measuring errors, contaminated glass ware, improper mixing, plugged flow cell, erratic flow of solvents or gases, loss of sample, or the incorrect

recording of data. After the source of the error is corrected, a control sample is analyzed and any needed recalibration is performed.

Out-of-Control Accuracy Data

When the value for the spiked sample is outside the control limits, a control sample is analyzed to see if the problem is with the equipment or the sample. If the analysis of the control sample is acceptable, then the sample preparation must be examined. Standard addition or a modified sample preparation technique may be required if the error is not found in the concentration of, or volume of, the spiking solution.

If the analysis of the control sample is not acceptable, then the system is either recalibrated, parts replaced, or a service technician is called in order to produce an acceptable control sample analysis.

Out-of-Control by Trend Development

As the analytical system "ages," changes occur in the concentration of standards and reagents. Changes also occur in light sources, electrodes, columns, and other replaceable items. These changes slowly produce a deviation from the calculated means for precision and accuracy. When seven successive analyses result in values on the same side of the mean, the system is out-of-control. Changes are then made, such as making new standards, cleaning the detector or flow cell, and recalibration. Any samples analyzed since the last in-control point will be reanalyzed. In most cases, trend development is the least likely causes of out-of-control data because of the practice of using reagents, standards and controls within their dated shelf lives and performing routine maintenance on laboratory instruments.

Initiating Corrective Action

The analyst and/or the supervisor initiate corrective action. The quality control supervisor will approve any action after the reanalysis confirms a problem. The problem and its solution must be documented. If the problem is sample related, the laboratory supervisor will notify the field operators so that a new sampling schedule can be implemented allowing for the additional time for analyzing each sample with modifications.

Corrective action will also be initiated after receiving unacceptable results from QA activities including, but not limited to: performance and systems audits, interlaboratory comparison studies, performance and certification tests, and other evaluations required by Federal, local or private agencies.

Sample Custody

Field Custody Procedures

1. To simplify the chain-of-custody record and eliminate future litigation problems, as few people as possible will handle the samples or other physical evidence.

2. The field investigator is personally responsible for the care and custody of the samples collected until they are properly transferred to another person or facility.

3. Gummed labels or tags will be affixed to sample containers prior to or at the time of sampling and filled out with waterproof ink, at the time of collection, with the following minimum information:

   a. Sample number,
   b. Name of collector,
   c. Data and time of collection,
   d. Place of collection

4. All samples will be sealed immediately after collection utilizing the custody seal. The field investigator will write the date, sample number, and his signature on the seal. This requirement will be waived if the field investigator keeps the samples in his custody from the time of collection until they are delivered to the laboratory.

   All information pertinent to performance of a field survey or sampling will be recorded in a logbook. The book will be bound, preferably with consecutively numbered pages. At a minimum, entries in the log book will include the following:

   a. Purpose of sampling (surveillance, contract number)
   b. Location of sampling point
   c. Name and address of field contact
   d. Type of sample (sludge, wastewater, ground water, and surface water)
   e. Suspected waste composition, including concentrations
   f. Producer of waste and address, if different than location
   g. Type of process (if known) producing waste
   h. Number and volume of sample taken
   i. Description of sampling point and sampling methodology
   j. Date and time of collection
   k. Collector's sample identification number(s)
   l. Sample distribution and how transported (name of laboratory, UPS, Federal Express)

m. References such as maps or photographs of the sampling site
n. Field observations
o. Any field measurements made (water level, pH, Eh, temperature, conductivity, etc.)
p. Signatures of personnel responsible for observations

Chain-of-Custody Forms

To establish the documentation necessary to trace sample possession from the time of collection, a Chain-of-Custody form will be completed and will accompany every sample.

The record will contain the following minimum information.

Sample number
Signature of collector
Data and time of collection
Place and address of collection
Sample type
Signature of persons involved in the chain of possession (Field Collector, Courier, Laboratory Personnel)
Inclusive dates of possession

Transfer of Custody and Shipment

1. Packaging requirements for shipment of samples is dependent on the nature of the sample (type of sample, contaminants, and preservatives) and the mode of transportation. For hazardous samples, it is the responsibility of the person in charge of field sampling operations to use the proper requirements for shipping in accordance with the Hazardous Materials Table, 49 CFR 172.101.

2. A Chain-of-Custody form will accompany all samples. When transferring the possession of samples, the individuals receiving the samples will sign, date, and note the time that they received the samples on the form.

3. Samples will be properly packaged for shipment and delivered or shipped to the contract laboratory for analysis. Shipping containers will be secured by using nylon strapping tape and custody seal. The strapping tape will be placed on the container so that all joints of the tape are secured by the seal (the seal will be placed under the joint and wrapped over the top of it). Thus the tape cannot be removed without breaking the seal or cutting the tape. The seal will be signed, dated, and the time recorded by the field investigator.

4. Whenever samples are split with a facility, State regulatory agency, or other government agency, the facility, State regulatory agency, or other

government agency representative will sign the appropriate Chain-of-Custody record for these samples.

5. All samples shipped will be accompanied by the Chain-of-Custody form(s). The original and one copy of the form will be placed in a plastic bag inside the secured shipping container. The field investigator or project leader will retain one copy of the Chain-of-Custody form. The original of the Chain-of-Custody form will be transmitted to the field investigator or project leader after the laboratory accepts the samples.

6. If sent by mail, the package will be registered with return receipt requested. If sent by common carrier, a bill of lading or air bill shall be used. Receipts from post office, copies of bills of lading and air bills will be retained as part of the documentation of the chain-of-custody.

Laboratory Custody Procedures

1. Sample Delivery to the Laboratory.

The sample will be delivered to the laboratory for analysis as soon as practicable so that the tests are completed within appropriate holding times. The sample must be accompanied by the chain-of-custody record and by a request-sheet for sample analysis. The sample must be delivered to the person in the laboratory authorized to receive samples (often referred to as the sample custodian).

2. Receipt and Logging of Samples

a. In the laboratory, a custodian is assigned to receive the samples. After signing for receipt of chain-of-custody for a sample, the custodian will inspect the condition of the sample and the sample seal, reconcile the information on the sample label and seal against that on the chain-of-custody record, assign a laboratory number, log in the sample in the laboratory log book, and store the sample in a secured sample storage room or cabinet until assigned to an analyst for analysis.

b. The sample custodian will inspect the sample for any leakage from the container. A leaky container containing multiphase sample will not be accepted for analysis. This sample is no longer a representative sample. If the sample is contained in a plastic bottle and the container walls indicate that the sample is under pressure or releasing gases, the sample should be treated with caution because it may be explosive or release volatiles.

The custodian will examine whether the sample seal is intact or broken. Any discrepancies between the information on the sample label and seal and the information on the chain-of-custody record and the sample analysis

request sheet shall be resolved before the sample is assigned for analysis. This effort will require communication with the sample collector. Results of the inspection shall be documented on the sample analysis request sheet and on the laboratory sample logbook.

c. Incoming samples usually carry the inspector's or collector's identification numbers. To further identify these samples, the laboratory will assign its own identification numbers. Each sample should be marked with the assigned laboratory number. This number is correspondingly recorded on a laboratory sample logbook along with the information describing the sample. The information is copied from the sample analysis request sheet and crosschecked against that on the sample label.

3. Assignment of Sample for Analysis

a. In most cases, the laboratory supervisor assigns the sample for analysis. The supervisor will review the information on the sample analysis request sheet. The technician assigned to analysis shall record in the laboratory notebook the identifying information about the sample, the date of receipt, and other pertinent information. This record will also include the subsequent testing data and calculations. The sample may be split with other laboratories in order to obtain all the necessary analytical information. In such cases, the chain-of-custody procedures must be employed at the other laboratory and while the sample is being transported to the other laboratory.

b. After the sample has been received in the laboratory, the supervisor or assignee is responsible for its care and custody. He will be prepared to testify that the sample was in his possession or secured in the laboratory at all times from the moment it was received from the custodian until the analyses were performed.

Decontamination Of Equipment

Standard decontamination protocol for equipment will consist of:

Step 1: If needed, scrub equipment thoroughly with soft-bristle brushes in a phosphate-free detergent solution (i.e., Alconox® or Liquinox®) to remove sediment.

Step 2: Rinse equipment with distilled water by spraying until dripping.

Step 3: Rinse equipment with isopropanol by spraying until dripping; retain drippings.

Step 4: Rinse equipment with distilled water by spraying until dripping.

Step 5: Place equipment on plastic or aluminum foil and allow to air-dry for 5 to 10 minutes.

Step 6: Wrap equipment in plastic or aluminum foil for handling and/or storage until next use.

After decontamination, equipment will be handled only with new disposable gloves. Equipment that is not to be used immediately after decontamination will be allowed to dry and placed in a case or plastic bag.

In general, decontamination of equipment, personnel, etc., at the site will consist of rinsing with water and washing with a detergent/water solution (Alconox® or Liquinox®). The spent solution, contaminated clothing, brushes, sponges, containers, etc., used in the decontamination process will be considered investigative derived wastes (IDW), and will, until proven otherwise, be treated as contaminated material and properly disposed. Water and other liquids used in decontamination of equipment will be contained and disposed of in the wastewater treatment system at the site.

Appendix E3

Groundwater Monitoring Reports

YKK®

July 1, 2022

Kentucky Cabinet for Energy and Environment
Hazardous Waste Branch
KY Division of Waste Management
300 Sower Blvd.
Second (2nd) Floor
Frankfort, Kentucky 40601

Attn: Ms. Catherine Garrison

Re: 1st Semi-Annual Event 2022
Groundwater Monitoring Report
YKK (U.S.A.) Inc.
Lawrenceburg, Kentucky
U.S. EPA ID No.: KYD-044-914-356
Agency ID #42

Dear Ms. Garrison:

Please find enclosed the 1st semi-annual 2022 groundwater monitoring report from YKK. The reported results are for groundwater monitoring wells MW-9, MW-8s, MW-11, MW-23 and spring. All enclosures with the report form are in accordance with the Part-B permit effective January 30, 2007.

If you have any questions or require additional information, please contact me at (502) 839-2222.

Sincerely,

Todd Baldwin
Director of Environmental Affairs
YKK Corporation of America (YCA)

TSB/tsb

Enclosures

Cc: File

GROUNDWATER MONITORING REPORT FORMS

DEP-8046A (3/96)
Attach to DEP-8046 **Groundwater Sample Analysis** report

KENTUCKY NATURAL RESOURCES AND
ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE BRANCH
14 Reilly Road
Frankfort, KY 40601
502/564-6716

Do not write in this space

HAZARDOUS WASTE GROUNDWATER REPORT FORM

Read instructions for clarification.
Please type or print clearly in ink.

1. Name of Facility: YKK (U.S.A.) Inc

2. Facility's EPA ID Number: KYD-044-914-356

3. Facility Contact Person: TODD BALDWIN
   Title: DIRECTOR ENVIRONMENTAL AFFAIRS Phone Number: 502-839-2222

4. Reporting Period:
   (Check only one)

☐ First Quarter	199 ___	☒ Semi-annual: First Half	199 2022
☐ Second Quarter	199 ___	☐ Semi-annual: Second Half	199 ___
☐ Third Quarter	199 ___	☐ Annual	199 ___
☐ Fourth Quarter	199 ___	☐ Other, specify: ___	

5. Samples Collected By: TODD BALDWIN
   Representing: YKK (U.S.A.) Inc

6. Facility Certification:
   I certify under penalty of law that 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 directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for such violations.

TODD BALDWIN DIRECTOR ENVIRONMENTAL AFFAIRS
Name and Title

Signature

7-1-22
Date

LABORATORY INFORMATION

7. Name of Laboratory: MICROBAC LABORATORIES

8. KY Drinking Water Certification Number (if applicable): 00074
Date of Certification: 1/1/22

9. Laboratory Contact Person: SEAN HYDE
Title: DIRECTOR Phone Number: 502-962-6400

10. Mailing Address: 3323 GILMORE INDUSTRIAL BLVD
City: LOUISVILLE State: KY Zip Code: 40213

11. Comments:

Attach DEP-8046 Groundwater Sample Analysis report.
Attach all quality assurance/quality control information that pertains to these results.

Division of Waste Management
Hazardous Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502)564-6716

Facility ID: KYD044914356

Facility: UNIVERSAL FASTENERS, INC.

FINDS/UNIT: KYD044914356 / 1
LAB ID:
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS

(H)

AKGWA NUMBER[1], Facility Well/Spring Number	8000-7007	8000-7006	8000-7004	8000-7003
Facility's Local Well or Spring Number (e.g. MW-1, MW-2, etc.)	MW-9	MW-8S	MW-11	MW-23
Sample Sequence # (For Official Use Only)				
If sample is a Blank, specify Type (Field, Trip, Method, or Equipment)				
Sample Date and Time (Month/Day/Year hour:minutes)	5-9-22	5-9-22	5-9-22	5-9-22
Duplicate ('Y' or 'N')[2]				
Split ('Y' or 'N')[3]				
Facility Sample ID Number (if applicable)				
Laboratory Sample ID Number (if applicable)				
Date of Analysis (Month/Day/Year)	5-16-22	5-16-22	5-16-22	5-16-22
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)	UP	DOWN	DOWN	DOWN

CAS RN[4]		CONSTITUENT	TD[5]	UNIT OF MEASURE	METHOD SW846	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS
7440-09-7	0	Potassium											
57-12-5	0	Cyanide	T	mg/L	9012B	<0.005		<0.005		<0.005		<0.005	
S0145 - -	1	Specific Conductance	T	µS	1420	1490	A	610	A	913	A	627	A
7440-43-9	0	Cadmium	T	mg/L	6010D	<0.005		<0.005		<0.005		<0.005	
7440-50-8	0	Copper	T	mg/L	6010D	<0.01		<0.01		<0.01		<0.01	

[1]AKGWA # is 0000-0000 for any type of blank.
[2]Respond 'Y' if the sample was a duplicate of another sample in this report.
[3]Respond 'Y' if the sample was split and analyzed by separate laboratories.
[4]Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.
[5]'T' = Total; 'D' = Dissolved
[6]'<' indicates a non-detect; do not use 'ND' or 'BDL'. Value then shown is Practical Quantification Limit

STANDARD FLAGS:
J = Estimated value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution factor

Facility ID: KYD-044-914-356

Facility: YKK (U.S.A) Inc

FINDS/UNIT: _____ / ____

LAB ID: _____

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER, Facility Well/Spring Number						8000-7007		8000-7006		8000-7004		8000-7003	
Facility's Local Well or Spring Number (e.g. MW-1, MW-2, etc.						MW-9		MW-8S		MW-11		MW-23	
CAS RN[4]		CONSTITUENT	TD[5]	UNIT OF MEASURE	METHOD SW846	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS
7440-02-0	0	NICKEL	T	mg/L	6010D	<0.01		<0.01		<0.01		<0.01	
7440-66-6	0	ZINC	T	mg/L	6010D	<0.02		0.038		<0.02		<0.02	
SD 296	0	pH	T	SU UNITS	9040C	8.42	A	8.74	A	8.51	A	8.78	A
7439-92-1	0	LEAD	T	mg/L	6010D	<0.01		<0.01		<0.01		<0.01	
7440-47-3	0	CHROMIUM	T	mg/L	6010D	<0.01		<0.01		<0.01		<0.01	
10053	0	TSS	T	mg/L	I-3765-85	16		<5		9		22	

[4]Chemical Abstracts Service Registry number or unique identifier number assigned by agency.
[5]'T' = Total; 'D' = Dissolved
[6]'<' indicates a non-detect; do not use 'ND' or 'BDL'. Value then shown is Practical Quantification Limit.

STANDARD FLAGS:
J = Estimated value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution factor

Division of Waste Management
Hazardous Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502)564-6716

Facility ID: KYD044914356

Facility: UNIVERSAL FASTENERS, INC.

FINDS/UNIT: KYD044914356 / 1

LAB ID:

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS

(H)

AKGWA NUMBER[1], Facility Well/Spring Number				
Facility's Local Well or Spring Number (e.g. MW-1, MW-2, etc.)	SPRING			
Sample Sequence # (For Official Use Only)				
If sample is a Blank, specify Type (Field, Trip, Method, or Equipment)		FIELD BLANK	TRIP BLANK	
Sample Date and Time (Month/Day/Year hour:minutes)	5-9-22	5-9-22	5-9-22	
Duplicate ('Y' or 'N')[2]	N	N	N	
Split ('Y' or 'N')[3]	N	N	N	
Facility Sample ID Number (if applicable)				
Laboratory Sample ID Number (if applicable)				
Date of Analysis (Month/Day/Year)	5-16-22	5-16-22	5-16-22	
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)	DOWN	BLANK	BLANK	

CAS RN[4]		CONSTITUENT	T D[5]	UNIT OF MEASURE	METHOD SW846	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS
7440-09-7	0	Potassium											
57-12-5	0	Cyanide	T	mg/L	9012B	<0.005		<0.005		<0.005			
S0145 - -	1	Specific Conductance	T	µS	1420	540		—		—			
7440-43-9	0	Cadmium	T	mg/L	6010D	<0.005		<0.005		<0.005			
7440-50-8	0	Copper	T	mg/L	6010D	<0.01		<0.01		<0.01			

[1]AKGWA # is 0000-0000 for any type of blank.
[2]Respond 'Y' if the sample was a duplicate of another sample in this report.
[3]Respond 'Y' if the sample was split and analyzed by separate laboratories.
[4]Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.
[5]'T' = Total; 'D' = Dissolved
[6]'<' indicates a non-detect; do not use 'ND' or 'BDL'. Value then shown is Practical Quantification Limit

STANDARD FLAGS:
J = Estimated value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution factor

Facility ID: KYD-044-914-356

Facility: YKK (U.S.A.) Inc.

FINDS/UNIT: ____ / ____

LAB ID: ____

For Official Use Only

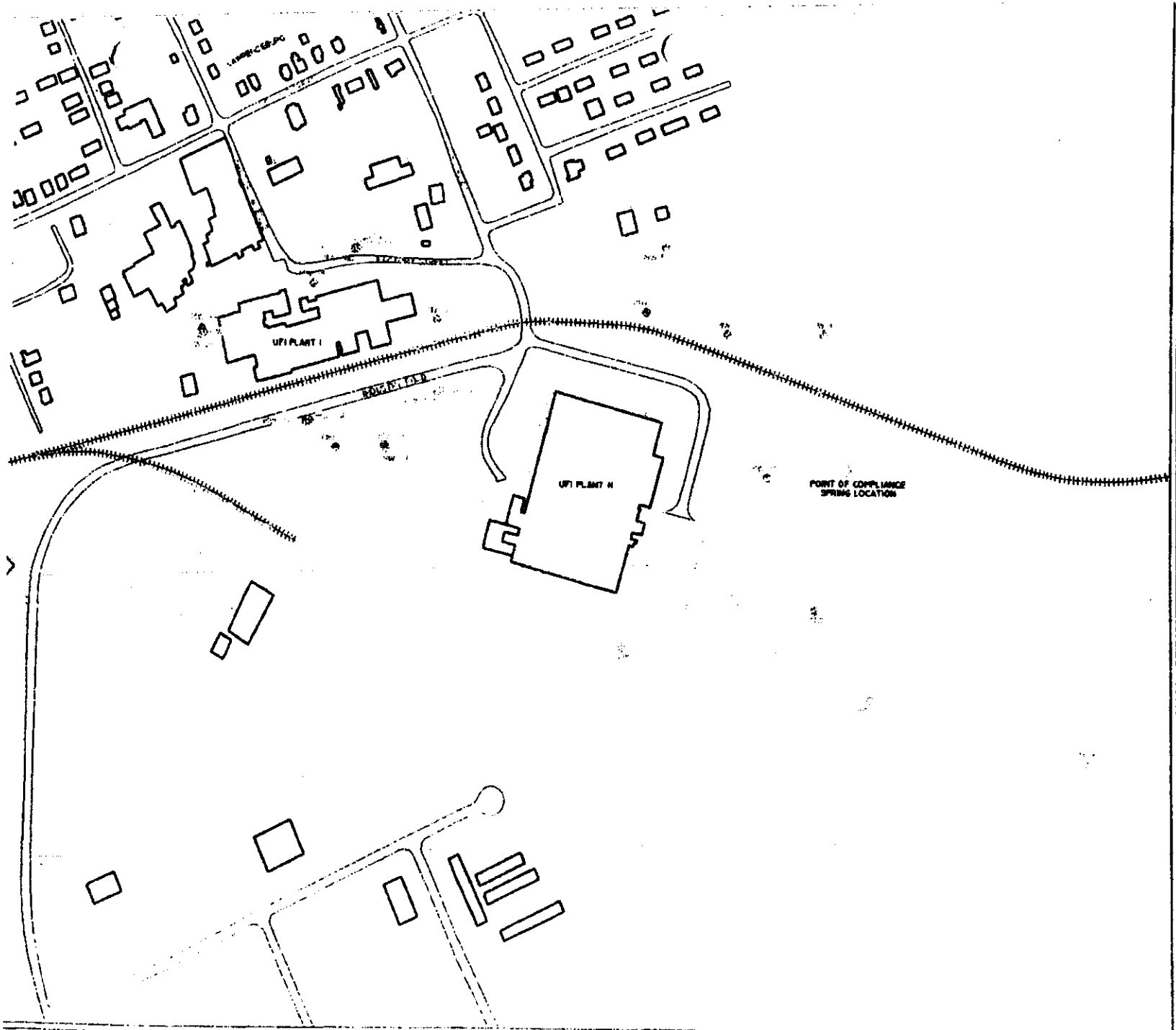
GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER, Facility Well/Spring Number														
Facility's Local Well or Spring Number (e.g. MW-1, MW-2, etc.						SPRING		FIELD BLANK		TRIP BLANK			
CAS RN[4]		CONSTITUENT	TD[5]	UNIT OF MEASURE	METHOD SW846	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS
7440-02-0	O	NICKEL	T	MG/L	6010 D	<0.01		<0.01		<0.01			
7440-66-6	O	ZINC	T	MG/L	6010D	0.033		<0.02		<0.02			
SO296	O	PH	T	SU UNITS	9040C	9.80	A	—		—			
7439-92-1	O	LEAD	T	MG/L	6010D	<0.01		<0.01		<0.01			
7440-47-3	O	CHROMIUM	T	MG/L	I-3765-85	<5		<5		<5			
10053	O	TSS											

[4]Chemical Abstracts Service Registry number or unique identifier number assigned by agency.
[5]'T' = Total; 'D' = Dissolved
[6]'<' indicates a non-detect; do not use 'ND' or 'BDL'. Value then shown is Practical Quantification Limit.

STANDARD FLAGS:
J = Estimated value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution factor

GROUNDWATER MONITORING WELL and SPRING LOCATIONS



LEGEND

EXISTING STRUC

ROADS

MONITORING W

POINT OF COMPL
LOCATION

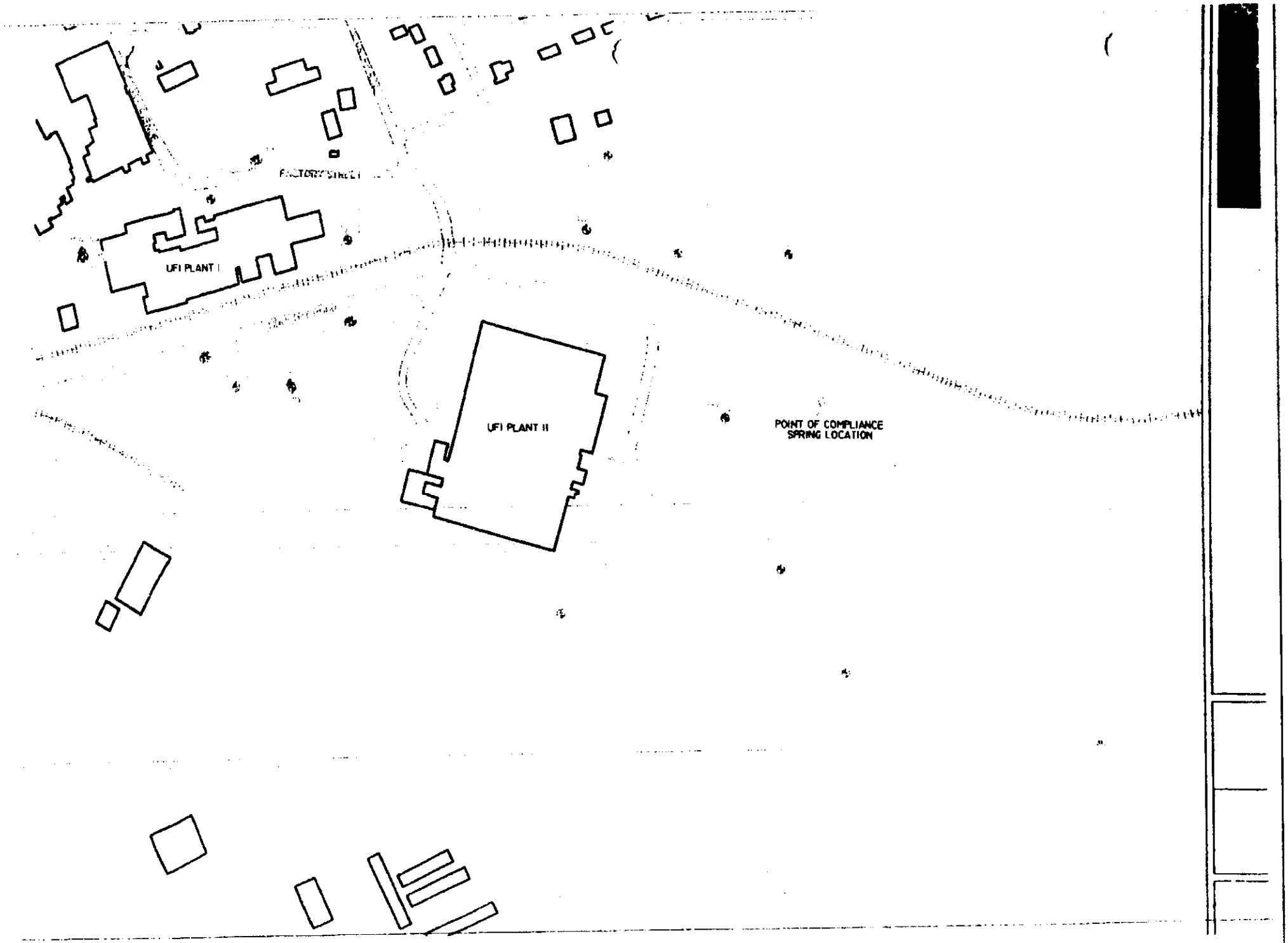
SCALE:

DATE:

PROJ#:

DRAWN BY:

CHECKED B


UFI PLANT I
UFI PLANT II
POINT OF COMPLIANCE
SPRING LOCATION

GROUNDWATER MONITORING
FIELD LOGS

GROUNDWATER FIELD LOG

Facility	YKK	Project No.	Part - B
Sample Point ID	MW9	Location	Lawrenceburg, KY
AKGWA #	8000 7007	Samplers	T Baldwin
Weather A.M.	Warm Sunny	Weather P.M.	—

Well Data and Evaluation Data

Bladder Pump ☑ Disposable Bailer ☐	Top of PVC Riser Elev.	—	Groundwater Elev.	—	Casing Material ☑ PVC ☐ S.S.
Purge Date	5-9-22	Total Well Depth	33.38	Well Diameter	4"
Start Purge Time	11:20 ~~12:45~~	Initial Depth to Water	19.84	Require Purge Volume	8.80 G
End Purge Time	11:27 ~~12:52~~	Height Water Column	13.54	Purge Rate	CPM 4 10/5
Depth to Water After Purge	22.33	Well Volume	8.80 G	Volume Purged	~2.0 G

Calibration Data See Attached

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time	
1st Reading	8.40	1490	17	0.00	-36	1.20	22.33	~~12:54~~	11:29
2nd Reading	8.40	1480	17	0.00	-36	1.25	22.33	~~12:56~~	11:31
3rd Reading	8.45	1500	17	0.00	-35	1.30	22.33	~~12:58~~	11:33
4th Reading									
5th Reading									
6th Reading									
7th Reading									
Avg.									
10%									

Sample Data

AVG	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time	
Sample	5-9-22	8.42	1490	17	0.00	-36	1.25	22.33	~~1:00P~~	11:35A

Containers & Preservatives	Plastic: metals/HNO_3 - CN^-/NaOH		Filtered ☐ Yes ☑ No
Color None	Appearance Clear	Odor None	Weather Warm Sunny

☐ Annual ☑ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other _____

Split Sample ☐ Yes ☑ No If yes, with whom

Well Condition	✓	Concrete Pad Condition	✓	Lock Functioning Properly	✓

Comments

Sampler(s) Signature [signature] Date 5-9-22

GROUNDWATER FIELD LOG

Facility	YKK	Project No.	Part - B
Sample Point ID	MW 8S	Location	Lawrenceburg, KY
AKGWA #	8000 7006	Samplers	T Baldwin
Weather A.M.	—	Weather P.M.	Warm Sunny

Well Data and Evaluation Data

Bladder Pump ☑ Disposable Bailer ☐	Top of PVC Riser Elev.	—	Groundwater Elev.	—	Casing Material ☑ PVC ☐ S.S.
Purge Date	5-9-22	Total Well Depth	18.96	Well Diameter	4"
Start Purge Time	11:45	Initial Depth to Water	12.50	Require Purge Volume	4.20 G
End Purge Time	11:52	Height Water Column	6.46	Purge Rate	CPM 4 10/5
Depth to Water After Purge	13.46	Well Volume	4.20 G	Volume Purged	~2.0 G

Calibration Data See Attached

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
1st Reading	8.72	600	17	0.00	9	0.25	13.46	11:54
2nd Reading	8.74	610	17	0.00	8	0.20	13.46	11:56
3rd Reading	8.75	620	17	0.00	9	0.25	13.46	11:58
4th Reading								
5th Reading								
6th Reading								
7th Reading								
Avg.								
10%								

Sample Data

AVG	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
Sample	5-9-22	8.74	610	17	0.00	9	0.23	13.46	12:00P

Containers & Preservatives: Plastic: Metals/HNO_3 - CN^-/NaOH — Filtered ☐ Yes ☑ No

Color None — Appearance Clear — Odor None — Weather Warm Sunny

☐ Annual ☑ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other _____

Split Sample ☐ Yes ☑ No If yes, with whom

Well Condition	✓	Concrete Pad Condition	✓	Lock Functioning Properly	✓

Comments _____

Sampler(s) Signature _____ Date 5-9-22

GROUNDWATER FIELD LOG

Facility	YICK	Project No.	Part - B
Sample Point ID	MW 11	Location	Lawrenceburg, KY
AKGWA #	6000 7004	Samplers	T Baldwin
Weather A.M.	—	Weather P.M.	Warm Sunny

Well Data and Evaluation Data

Bladder Pump ☑ Disposable Bailer ☐	Top of PVC Riser Elev.	—	Groundwater Elev.	—	Casing Material ☑ PVC ☐ S.S.
Purge Date	5-9-22	Total Well Depth	31.38	Well Diameter	4"
Start Purge Time	12:15	Initial Depth to Water	23.25	Require Purge Volume	5.29 G
End Purge Time	12:27	Height Water Column	8.13	Purge Rate	CPM 4 10/5
Depth to Water After Purge	24.13	Well Volume	5.29G	Volume Purged	~ 2.0 Gal

Calibration Data See Attached

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
1st Reading	8.45	920	17	0.75	9	2.50	24.13	12:29
2nd Reading	8.57	910	17	0.80	9	2.53	24.13	12:31
3rd Reading	8.50	910	17	0.80	9	2.60	24.13	12:33
4th Reading								
5th Reading								
6th Reading								
7th Reading								
Avg.								
10%								

Sample Data

AVG	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
Sample	5-9-22	8.51	913	17	0.78	9	2.54	24.13	12:35

Containers & Preservatives	Plastic: metals / HNO_3 – CN⁻ / NaOH		Filtered ☐ Yes ☑ No
Color None	Appearance Clear	Odor None	Weather Warm Sunny

☐ Annual ☑ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other

Split Sample ☐ Yes ☑ No If yes, with whom

Well Condition	✓	Concrete Pad Condition	✓	Lock Functioning Properly	✓

Comments

Sampler(s) Signature

Date 5-9-22

GROUNDWATER FIELD LOG

Facility	YKK	Project No.	Part - B
Sample Point ID	MW 23	Location	Lawrenceburg, KY
AKGWA #	8000 7003	Samplers	T Baldwin
Weather A.M.	———	Weather P.M.	Warm Sunny

Well Data and Evaluation Data

Bladder Pump ☑ Disposable Bailer ☐	Top of PVC Riser Elev.	———	Groundwater Elev.	———	Casing Material ☑ PVC ☐ S.S.
Purge Date	5-9-22	Total Well Depth	23.15	Well Diameter	4"
Start Purge Time	12:45	Initial Depth to Water	10.77	Require Purge Volume	8.05 G
End Purge Time	12:52	Height Water Column	12.38	Purge Rate	CPM 4 10/5
Depth to Water After Purge	12.00	Well Volume	8.05 G	Volume Purged	~ 2.0 G

Calibration Data See Attached

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
1st Reading	8.80	640	16	0.05	45	300	12.00	12:54
2nd Reading	8.60	620	16	0.05	48	290	12.00	12:56
3rd Reading	6.75	620	16	0.05	48	280	12.00	12:58
4th Reading								
5th Reading								
6th Reading								
7th Reading								
Avg.								
10%								

Sample Data

AUG	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
Sample	5-9-22	8.78	627	16	0.05	47	290	12.00	1:00

Containers & Preservatives	Plastic: metals / HNO_3 - Cr / NaOH		Filtered ☐ Yes ☑ No
Color None	Appearance Clear	Odor None	Weather Warm Sunny

☐ Annual ☑ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other ———

Split Sample ☐ Yes ☑ No If yes, with whom

Well Condition	✓	Concrete Pad Condition	✓	Lock Functioning Properly	✓

Comments

Sampler(s) Signature [signature] Date 5-9-22

UNIVERSAL FASTENERS, INC.

SPRING LOG

FACILITY YKK PROJECT ID. Part-B

LOCATION Lawrenceburg, KY COLLECTOR(S) T Baldwin

DATE 5-9-22 SAMPLE POINT ID Spring

TIME: A.M. — P.M. 1:40

WEATHER: Warm Sunny

REPLICATE SAMPLE DATA: pH and Conductance are automatically temperature compensated at time of measurement

Temp. Deg. C. 8 pH @ 25 9.80 Cond. @ 25, umhos/cm: 540

Temp. Deg. C. pH @ 25 Cond. @ 25, umhos/cm:

Temp. Deg. C. pH @ 25 Cond. @ 25, umhos/cm:

Temp. Deg. C. pH @ 25 Cond. @ 25, umhos/cm:

SAMPLE CHARACTERISTICS

pH 9.80 Flume Reading: —

Specific Conductance 540 Flow Rate: ~ 5 GPM

Temperature 8 Odor None

Sample Time 1:40 Color None

Turbidity: NONE - SLIGHT - MODERATE - HIGH

ANALYTE TYPE, COLLECTION ORDER, SAMPLE CONTAINERS, VOLUMES, PRESERVATIVES AND TEST TO BE PERFORMED: Plastic No Preservative
metals / HNO_3
CN^- / NaOH

PARAMETERS:

( ) ANNUAL ( ) MONTHLY (✓) SEMI-ANNUAL ( ) QUARTERLY ( ) OTHER
☑ Cadmium ☑ Chromium ☑ Copper ☑ Lead ☑ Nickel ☑ Zinc ☑ Cyanide
☐ Sodium ☐ Chloride TSS ✓

OBSERVATIONS/COMMENTS:

CERTIFICATION [signature] DATE 5-9-22

METER CALIBRATION LOG

Project Name Part-B Date 5-9-22

Project Number Event #1 2022 Sampler T Baldwin

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Solution °C
8:30	—	7.00	4.01	24

Conductivity Meter

Temp of Calibration Solution	Corrected Cond. @25°C	Calibration Range For Solution	Time
24	12.88	12.88	8:45

Dissolved Oxygen (DO) Meter

Temperature (°C)	Barometric Pressure (in Hg)	% Dissolved Oxygen	Time
24	—	0.0	8:55

Redox (ORP) Meter

Temperature (°C)	E_H Reading (mV)	Calibration Range For Solution	Time
24	0.0	0.0	9:05

Turbidity Meter

Gel Value 0-10 (NTU) Solution	Gel Value 10-100 (NTU) Solution	Gel Value 100-1000 (NTU) Solution	Time
~~0.002~~ (0.02) 0.02	99.9 (100)	799 (800)	9:15

Problems/Corrective Action

Signature [signature] Date 5-9-22

QC'd By [signature] Date 5-9-22

GROUNDWATER MONITORING ANALYSIS SUMMARY AND RESULTS

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2E0511

YKK (U.S.A.) INC.

Todd Baldwin
1090 Industry RD
Lawrenceburg, KY 40342

Project Name: Groundwater Monitoring - Lawrenceburg
Project / PO Number: N/A
Received: 05/11/2022
Reported: 05/23/2022

Analytical Testing Parameters

Client Sample ID:	MW-9		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L2E0511-01	**Collection Date:**	05/09/2022 11:35

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		05/17/22 1221	05/20/22 1456	ABG

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	16		5	mg/L		05/12/22 1626	05/12/22 1730	DKB

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		05/13/22 1047	05/13/22 2056	SSL
Chromium	<0.010		0.010	mg/L		05/13/22 1047	05/13/22 2056	SSL
Copper	<0.010		0.010	mg/L		05/13/22 1047	05/13/22 2056	SSL
Lead	<0.010		0.010	mg/L		05/13/22 1047	05/13/22 2056	SSL
Nickel	<0.010		0.010	mg/L		05/13/22 1047	05/13/22 2056	SSL
Zinc	<0.020		0.020	mg/L		05/13/22 1047	05/13/22 2056	SSL

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2E0511

Client Sample ID:	MW-8S		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L2E0511-02	**Collection Date:**	05/09/2022 12:00

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		05/17/22 1221	05/20/22 1458	ABG

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	<5		5	mg/L		05/12/22 1626	05/12/22 1730	DKB

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		05/13/22 1047	05/13/22 2101	SSL
Chromium	<0.010		0.010	mg/L		05/13/22 1047	05/13/22 2101	SSL
Copper	<0.010		0.010	mg/L		05/13/22 1047	05/13/22 2101	SSL
Lead	<0.010		0.010	mg/L		05/13/22 1047	05/13/22 2101	SSL
Nickel	<0.010		0.010	mg/L		05/13/22 1047	05/13/22 2101	SSL
Zinc	0.038		0.020	mg/L		05/13/22 1047	05/13/22 2101	SSL

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CERTIFICATE OF ANALYSIS

L2E0511

Client Sample ID:	MW-11		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L2E0511-03	**Collection Date:**	05/09/2022 12:35

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		05/17/22 1221	05/20/22 1500	ABG

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	9		5	mg/L		05/13/22 0843	05/13/22 1138	DKB

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		05/16/22 1046	05/16/22 2113	SSL
Chromium	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2113	SSL
Copper	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2113	SSL
Lead	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2113	SSL
Nickel	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2113	SSL
Zinc	<0.020		0.020	mg/L		05/16/22 1046	05/16/22 2113	SSL

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CERTIFICATE OF ANALYSIS

L2E0511

Client Sample ID:	MW-23		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L2E0511-04	**Collection Date:**	05/09/2022 13:00

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		05/17/22 1221	05/20/22 1502	ABG

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	22		5	mg/L		05/13/22 0843	05/13/22 1138	DKB

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		05/16/22 1046	05/16/22 2118	SSL
Chromium	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2118	SSL
Copper	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2118	SSL
Lead	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2118	SSL
Nickel	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2118	SSL
Zinc	<0.020		0.020	mg/L		05/16/22 1046	05/16/22 2118	SSL

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2E0511

Client Sample ID:	Sprring		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L2E0511-05	**Collection Date:**	05/09/2022 13:40

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		05/17/22 1221	05/20/22 1508	ABG

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	<5		5	mg/L		05/13/22 0843	05/13/22 1138	DKB

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		05/16/22 1046	05/16/22 2138	SSL
Chromium	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2138	SSL
Copper	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2138	SSL
Lead	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2138	SSL
Nickel	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2138	SSL
Zinc	0.033		0.020	mg/L		05/16/22 1046	05/16/22 2138	SSL

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2E0511

Client Sample ID:	Field Blank		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L2E0511-06	**Collection Date:**	05/09/2022 11:25

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		05/17/22 1221	05/20/22 1510	ABG

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	<5		5	mg/L		05/13/22 0843	05/13/22 1138	DKB

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		05/16/22 1046	05/16/22 2123	SSL
Chromium	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2123	SSL
Copper	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2123	SSL
Lead	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2123	SSL
Nickel	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2123	SSL
Zinc	<0.020		0.020	mg/L		05/16/22 1046	05/16/22 2123	SSL

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L2E0511

Client Sample ID:	Trip Blank		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L2E0511-07	**Collection Date:**	03/28/2022 18:00

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L	H1a	05/17/22 1221	05/20/22 1512	ABG

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	<5		5	mg/L	H1	05/12/22 1356	05/12/22 1457	DKB

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		05/16/22 1046	05/16/22 2143	SSL
Chromium	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2143	SSL
Copper	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2143	SSL
Lead	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2143	SSL
Nickel	<0.010		0.010	mg/L		05/16/22 1046	05/16/22 2143	SSL
Zinc	<0.020		0.020	mg/L		05/16/22 1046	05/16/22 2143	SSL

*Results in **bold** have exceeded a limit defined for this project. Limits are provided for reference but as regulatory limits change frequently, Microbac Laboratories, Inc. advises the recipient of this report to confirm such limits and units of concentration with the appropriate Federal, state or local authorities before acting on the data.*

Definitions

H1:	Sample received outside of holding time for these analytes.
H1a:	Sample was received past holding time.
mg/L:	Milligrams per Liter
RL:	Reporting Limit

Project Requested Certification(s)

Microbac Laboratories, Inc. - Chicagoland

E-10397	Kansas Dept Health & Env. NELAP
108202	Kentucky UST-Energy and Environment Cabinet
90147	Kentucky Wastewater Laboratory Certification Program

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

*The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. **The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:

David Lester
Customer Relationship Manager
Reported: 05/23/2022 13:33

UNIVERSAL FASTENERS, INC.
REQUEST FOR SAMPLING & ANALYSIS

Sample Site: Lawrenburg, KY Project ID. Part-B
Person Requesting Sampling: T Baldwin Phone No. 502 839 2222
Date to be Sampled: 5-9-22 Sampler(s) Requested: T Baldwin
Dates Results Due 5-23-22
Comments/Special Instructions:

No. Samples	Sample Location	Sample Code	Rush Analysis Yes	Rush Analysis No
☑	Wells MW9 MW8S MW11 MW23	A	☐	☑
☑	Trip & Field Blank ~~& Equipment Blank~~	A	☐	☑
☑	Springs	A	☐	☑

Sample Codes

A. Wells (Cd, Cr, Cu, Pb, Ni, Zn, Cy) B. Wells (Na, Cl) C. Spring (Cd, Cr, Cu, Pb, Ni, Zn, Cy)
D. Spring (Na, Cl)

Expected Laboratory Turn-Around Time: 2 Weeks
Project Manager: D Lester Date: 5-9-22
Sampling Manager: T Baldwin Date: 5-9-22
Laboratory Manager: S Hyde Date: 5-9-22

GROUNDWATER MONITORING
CHAIN OF CUSTODY

MICROBAC®

Kentucky Testing Divison

3323 Gilmore Industrial Blvd. Louisville, KY 40213 502.962.6400 Fax: 502.962.6411

Evansville 812.464.9000 Lexington 859.276.3506 Paducah 270.898.3637 Hazard 606.487. 0511

CHAIN OF CUSTODY

Route Freq.

YKK (U.S.A.) INC.
Todd Baldwin
1090 Industry Road
Lawrenceburg, KY 40342

Cust. # E4600
Phone (502) 839-2222
Fax (502) 839-2292
Email tbaldwin@ykksnap-america.com
Acct. Mgr. David Lester

Project SA Groundwater - Lawrenceburg
Cust. P.O.
Permit #

Analysis	Method	Containers/Preservative	Suppress On COA	# Bottles	Units	Min	Max
Instructions							
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
Pick-Up Charge	NA	No Container			Days		
Sample Disposal	*** DEFAULT SPECIFIC METHOD ***	No Container			NA		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		

MICROBAC

Kentucky Testing Divison

3323 Gilmore Industrial Blvd. Louisville, KY 40213 502.962.6400 Fax: 502.962.6411

Evansville 812.464.9000 Lexington 859.276.3506 Paducah 270.898.3637 Hazard 606.487.0511

CHAIN OF CUSTODY

	Route	Freq.	
YKK (U.S.A.) INC.	Cust. #	E4600	Project SA Groundwater - Lawrenceburg
Todd Baldwin	Phone	(502) 839-2222	
1090 Industry Road	Fax	(502) 839-2292	Cust. P.O.
Lawrenceburg, KY 40342	Email	tbaldwin@ykksnap-america.com	Permit #
[redacted]	Acct. Mgr.	David Lester	

Analysis	Method	Containers/Preservative	Suppress On COA	# Bottles	Units	Min	Max
Instructions							
[redacted]							
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		

MICROBAC®
Kentucky Testing Divison
3323 Gilmore Industrial Blvd. Louisville, KY 40213 502.962.6400 Fax: 502.962.6411
Evansville 812.464.9000 Lexington 859.276.3506 Paducah 270.898.3637 Hazard 606.487.0511

CHAIN OF CUSTODY

SETUP:_____Deg C Sunny/Cloudy/Ptly Cloudy/Rain **REC:**_____Deg C Sunny/Cloudy/Ptly Cloudy/Rain **Rain During Event:** YES / NO

NOTES:

Sampled By:

Relinq. Date/Time/Sign: 5/11/22 8:00 AM Rec'd Date/Time/Sign:

Relinq. Date/Time/Sign: Rec'd Date/Time/Sign:

Relinq. Date/Time/Sign: Rec'd Date/Time/Sign:

Relinq. Date/Time/Sign: Rec'd Date/Time/Sign:

SAMPLE RECEIPT DOCUMENTATION

Cooler/Sample Temp (Deg C): LEX_____ EVV_____ PAD_____ LOU_____ HAZ_____

COC & proper paperwork provided & complete / COC, samples, & bottles are in agreement: YES / NO

Appropriate bottles provided intact with sufficient volume / Samples are within hold time / Samples properly preserved : YES / NO

Chain of Custody seal intact?_____Samples on Ice?_____Number of bottles_____? Thermometer ID_____

Notes, Correspondence, Subcontracting, & Non-Conformance Documentation (All Non-Conformances must be documented & client notified) :

YKK®

January 21, 2022

Kentucky Cabinet for Energy and Environment
Hazardous Waste Branch
KY Division of Waste Management
300 Sower Blvd.
Second (2nd) Floor
Frankfort, Kentucky 40601

Attn: Ms. Catherine Garrison

Re: 2nd Semi-Annual Event 2021
Groundwater Monitoring Report
YKK (U.S.A.) Inc.
Lawrenceburg, Kentucky
U.S. EPA ID No.: KYD-044-914-356
Agency ID #42

Dear Ms. Garrison:

Please find enclosed the 2nd semi-annual 2021 groundwater monitoring report from YKK. The reported results are for groundwater monitoring wells MW-9, MW-8s, MW-11, MW-23 and spring. All enclosures with the report form are in accordance with the Part-B permit effective January 30, 2007.

If you have any questions or require additional information, please contact me at (502) 839-2222.

Sincerely,

Todd Baldwin
Director of Environmental Affairs
YKK Corporation of America (YCA)

TSB/tsb

Enclosures

Cc: File

YKK (U.S.A.) Inc. 1101 Industry Road, Lawrenceburg, KY 40342 Tel: 502-839-6971; Fax: 502-839-3166
Snap and Button Products

GROUNDWATER MONITORING REPORT FORMS

DEP-8046A (3/96)
Attach to DEP-8046 **Groundwater Sample Analysis** report

KENTUCKY NATURAL RESOURCES AND
ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE BRANCH
14 Reilly Road
Frankfort, KY 40601
502/564-6716

Do not write in this space

HAZARDOUS WASTE GROUNDWATER REPORT FORM

Read instructions for clarification.
Please type or print clearly in ink.

1. Name of Facility: YKK (U.S.A.) Inc

2. Facility's EPA ID Number: KYD-044-914-356

3. Facility Contact Person: TODD BALDWIN
   Title: DIRECTOR ENVIRONMENTAL AFFAIRS Phone Number: 502-839-2222

4. Reporting Period:
   (Check only one)

☐ First Quarter	199 ___	☐ Semi-annual: First Half	199 ___
☐ Second Quarter	199 ___	■ Semi-annual: Second Half	~~199~~ 2021
☐ Third Quarter	199 ___	☐ Annual	199 ___
☐ Fourth Quarter	199 ___	☐ Other, specify: ___	

5. Samples Collected By: TODD BALDWIN
   Representing: YKK (U.S.A.) Inc

6. Facility Certification:
   I certify under penalty of law that 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 directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for such violations.

TODD BALDWIN DIRECTOR ENVIRONMENTAL AFFAIRS
Name and Title

Signature

1-21-22
Date

LABORATORY INFORMATION

7. Name of Laboratory: MICROBAC LABOROTORIES

8. KY Drinking Water Certification Number (if applicable): 00074
Date of Certification: 1-1-21

9. Laboratory Contact Person: SEAN HYDE
Title: DIRECTOR Phone Number: 502-962-6400

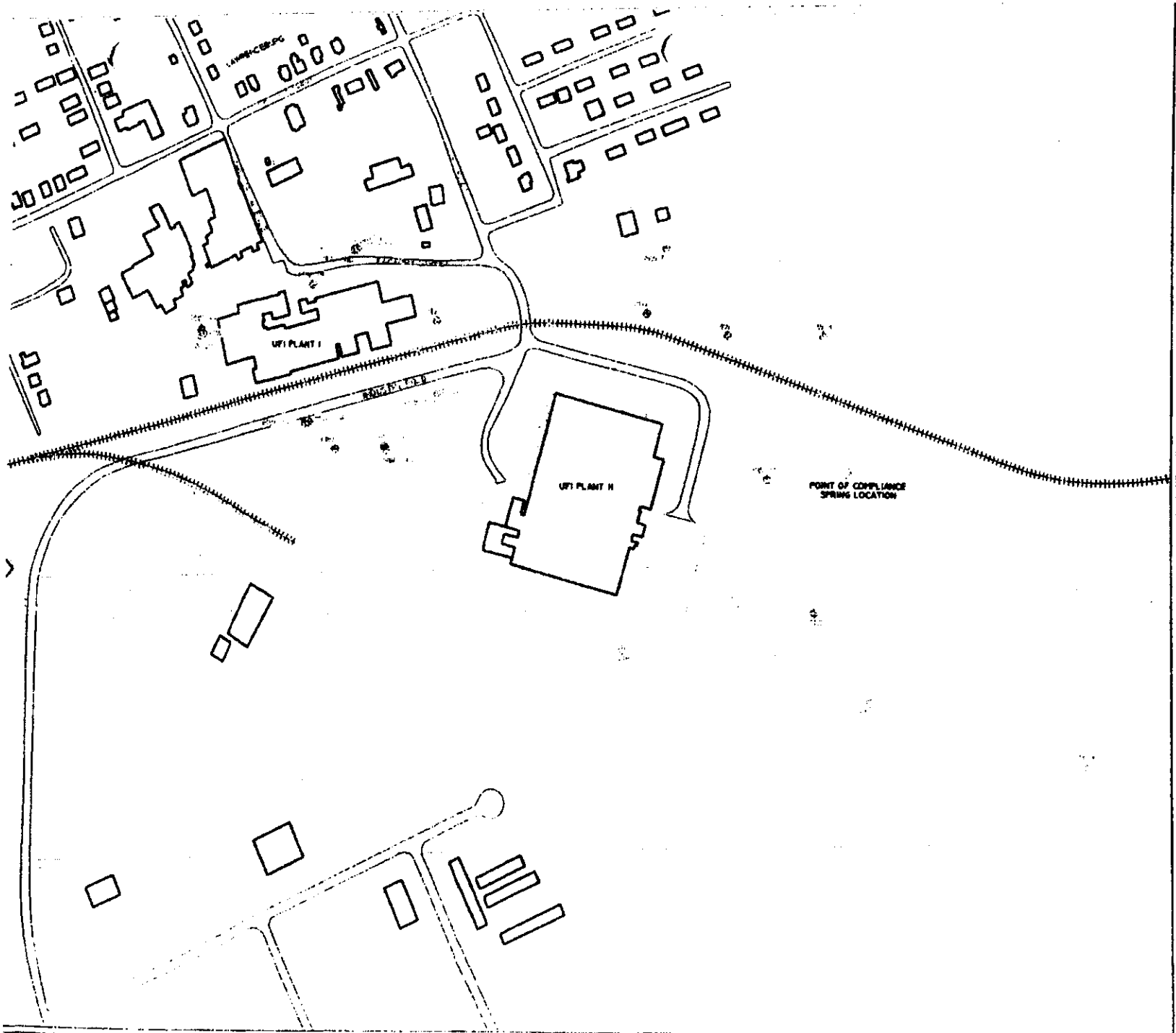
10. Mailing Address: 3323 GILMORE INDUSTRIAL BLVD
City: LOUISVILLE State: KY Zip Code: 40213

11. Comments:

Attach DEP-8046 Groundwater Sample Analysis report.
Attach all quality assurance/quality control information that pertains to these results.

GROUNDWATER MONITORING WELL

and SPRING LOCATIONS



LEGEND

EXISTING STRUC

ROADS

MONITORING W

POINT OF COMP
LOCATION

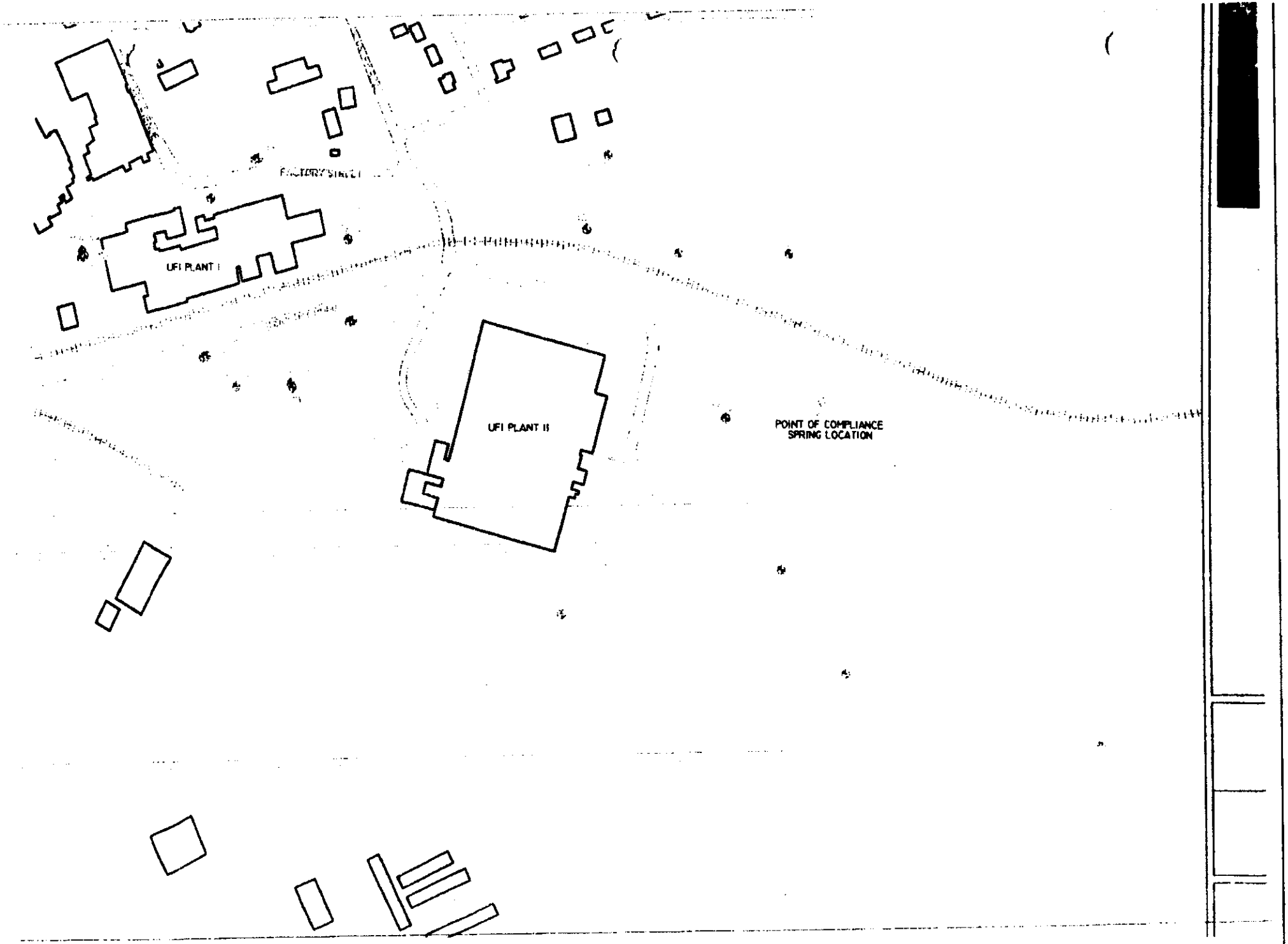
SCALE:

DATE:

PROJ#:

DRAWN BY

CHECKED B


FACTORY STREET
UFI PLANT I
UFI PLANT II
POINT OF COMPLIANCE
SPRING LOCATION

Division of Waste Management
Hazardous Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502)564-6716

Facility ID: KYD044914356

Facility: UNIVERSAL FASTENERS, INC.

FINDS/UNIT: KYD044914356 / 1
LAB ID:
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS (H)

AKGWA NUMBER[1], Facility Well/Spring Number	8000-7007	8000-7006	8000-7004	8000-7003
Facility's Local Well or Spring Number (e.g. MW-1, MW-2, etc.)	MW 9	MW-8s	MW-11	MW-23
Sample Sequence # (For Official Use Only)				
If sample is a Blank, specify Type (Field, Trip, Method, or Equipment)				
Sample Date and Time (Month/Day/Year hour:minutes)	12-8-21	12-8-21	12-8-21	12-8-21
Duplicate ('Y' or 'N')[2]				
Split ('Y' or 'N')[3]				
Facility Sample ID Number (if applicable)				
Laboratory Sample ID Number (if applicable)				
Date of Analysis (Month/Day/Year)	12-14-21	12-14-21	12-14-21	12-14-21
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)	UP	Down	Down	Down

CAS RN[4]		CONSTITUENT	T D[5]	UNIT OF MEASURE	METHOD SW846	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS
7440-09-7	0	Potassium											
57-12-5	0	Cyanide	T	mg/L	9012B	<0.005		<0.005		<0.005		<0.005	
S0145 - -	1	Specific Conductance	T	µS	1420	1027	A	607	A	657	A	697	A
7440-43-9	0	Cadmium	T	mg/L	6010D	<0.005		<0.005		<0.005		<0.005	
7440-50-8	0	Copper	T	mg/L	6010D	<0.005		<0.005		<0.005		<0.005	

[1]AKGWA # is 0000-0000 for any type of blank.
[2]Respond 'Y' if the sample was a duplicate of another sample in this report.
[3]Respond 'Y' if the sample was split and analyzed by separate laboratories.
[4]Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.
[5]'T' = Total; 'D' = Dissolved
[6]'<' indicates a non-detect; do not use 'ND' or 'BDL'. Value then shown is Practical Quantification Limit

STANDARD FLAGS:
J = Estimated value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution factor

Facility ID: KYD044914356

Facility: YKK (U.S.A.) Inc.

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER, Facility Well/Spring Number						8000-7007		8000-7006		8000-7005		8000-7003	
Facility's Local Well or Spring Number (e.g. MW-1, MW-2, etc.						MW-9		MW-8S		MW-11		MW-23	
CAS RN[4]		CONSTITUENT	TD[5]	UNIT OF MEASURE	METHOD SW846	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS
7440-02-0	O	NICKEL	T	MG/L	6010D	<0.005		<0.005		<0.005		<0.005	
7440-66-6	O	ZINC	T	MG/L	6010D	<0.01		<0.01		<0.01		0.01	
SO 296	O	pH	T	STD UNITS	9040C	8.28	A	8.72	A	8.53	A	8.60	A
7439-92-1	O	LEAD	T	MG/L	6010D	<0.005		<0.005		<0.005		<0.005	
7440-47-3	O	CHROMIUM	T	MG/L	6010D	<0.005		<0.005		<0.005		<0.005	
10053	O	TSS	T	MG/L	I-3765-85	<5		48		53		32	

[4]Chemical Abstracts Service Registry number or unique identifier number assigned by agency.
[5]'T' = Total; 'D' = Dissolved
[6]'<' indicates a non-detect; do not use 'ND' or 'BDL'. Value then shown is Practical Quantification Limit.

STANDARD FLAGS:
J = Estimated value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution factor

Division of Waste Management
Hazardous Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502)564-6716

Facility ID: KYD044914356

Facility: UNIVERSAL FASTENERS, INC.

FINDS/UNIT: KYD044914356 / 1

LAB ID:

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS

(H)

AKGWA NUMBER[1], Facility Well/Spring Number				
Facility's Local Well or Spring Number (e.g. MW-1, MW-2, etc.)	SPRING			
Sample Sequence # (For Official Use Only)		FIELD BLANK	TRIP BLANK	
If sample is a Blank, specify Type (Field, Trip, Method, or Equipment)				
Sample Date and Time (Month/Day/Year hour:minutes)	12-8-21	12-8-21	12-8-21	
Duplicate ('Y' or 'N')[2]	N	N	N	
Split ('Y' or 'N')[3]	N	N	N	
Facility Sample ID Number (if applicable)				
Laboratory Sample ID Number (if applicable)				
Date of Analysis (Month/Day/Year)	12-14-21	12-14-21	12-14-21	12-14-21
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)	DOWN	BLANK	BLANK	

CAS RN[4]		CONSTITUENT	T D[5]	UNIT OF MEASURE	METHOD SW846	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS
7440-09-7	0	Potassium											
57-12-5	0	Cyanide	T	mg/L	9012B	<0.005		<0.005		<0.005			
S0145 - -	1	Specific Conductance	T	µS	1420	460		—		—			
7440-43-9	0	Cadmium	T	mg/L	6010D	<0.005		<0.005		<0.005			
7440-50-8	0	Copper	T	mg/L	6010D	<0.005		<0.005		<0.005			

[1]AKGWA # is 0000-0000 for any type of blank.
[2]Respond 'Y' if the sample was a duplicate of another sample in this report.
[3]Respond 'Y' if the sample was split and analyzed by separate laboratories.
[4]Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.
[5]'T' = Total; 'D' = Dissolved
[6]'<' indicates a non-detect; do not use 'ND' or 'BDL'. Value then shown is Practical Quantification Limit

STANDARD FLAGS:
J = Estimated value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution factor

Facility ID: KYD-044-914-356

Facility: YKK (U.S.A.) Inc.

FINDS/UNIT: _____ / ___

LAB ID: _____

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER, Facility Well/Spring Number														
Facility's Local Well or Spring Number (e.g. MW-1, MW-2, etc.						SPRING		FIELD BLANK		TRIP BLANK				
CAS RN[4]		CONSTITUENT	T D[5]	UNIT OF MEASURE	METHOD	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS	DETECTED VALUE OR PQL[6]	FLAGS
					SW846								
7440-02-0	0	NICKEL	T	mg/L	6010D	<0.005		<0.005		<0.005			
7440-66-6	0	ZINC	T	mg/L	6010D	0.012		<0.01		<0.01			
So 296	0	pH	T	STD UNITS	9040C	460	A	NA		NA			
7440-92-1	0	LEAD	T	mg/L	6010D	<0.005		<0.005		<0.005			
7440-47-3	0	CHROMIUM	T	mg/L	6010D	<0.005		<0.005		<0.005			
10053	0	TSS	T	mg/L	I-3765-85	11		<5		<5			

[4]Chemical Abstracts Service Registry number or unique identifier number assigned by agency.
[5]'T' = Total; 'D' = Dissolved
[6]'<' indicates a non-detect; do not use 'ND' or 'BDL'. Value then shown is Practical Quantification Limit.

STANDARD FLAGS:
J = Estimated value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution factor

GROUNDWATER MONITORING
FIELD LOGS

GROUNDWATER FIELD LOG

Facility	YKK	Project No.	Part - B
Sample Point ID	MW-9	Location	Lawrenceburg, KY
AKGWA #	8000-7007	Samplers	T Baldwin
Weather A.M.	Cool / Pt. Cloudy	Weather P.M.	———

Well Data and Evaluation Data

Bladder Pump ☑ Disposable Bailer ☐	Top of PVC Riser Elev.	———	Groundwater Elev.	———	Casing Material ☑ PVC ☐ S.S.
Purge Date	12-6-21	Total Well Depth	33.38	Well Diameter	4"
Start Purge Time	11:15 AM	Initial Depth to Water	16.50	Require Purge Volume	10.97 Gal
End Purge Time	11:22 AM	Height Water Column	16.88	Purge Rate	CPM 4 10/5
Depth to Water After Purge	18.47	Well Volume	10.97 G	Volume Purged	~2.0 Gal

Calibration Data See Attached

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
1st Reading	8.25	1030	14	0.00	-30	1.35	18.47	11:24
2nd Reading	8.31	1020	14	0.00	-30	1.30	18.47	11:26
3rd Reading	8.27	1030	14	0.00	-31	1.30	18.47	11:28
4th Reading								
5th Reading								
6th Reading								
7th Reading								
Avg.								
10%								

Sample Data

Avg	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
Sample	12-6-21	8.28	1027	14	0.00	-30	1.32	18.47	11:30 AM

Containers & Preservatives: Plastic: Metals/HNO_3 - Cr^-/NaOH — Filtered ☐ Yes ☑ No

Color None — Appearance Clear — Odor None — Weather Cool / Pt. Cloudy

☐ Annual ☑ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other ———

Split Sample ☐ Yes ☑ No If yes, with whom

Well Condition	✓	Concrete Pad Condition	✓	Lock Functioning Properly	✓

Comments

Sampler(s) Signature [signature] Date 12-6-21

GROUNDWATER FIELD LOG

Facility	YKK	Project No.	Part - B
Sample Point ID	MW - 8s	Location	Lawrenceburg, KY
AKGWA #	8000 - 7006	Samplers	T Baldwin
Weather A.M.	Cool / Pt. Cloudy	Weather P.M.	—

Well Data and Evaluation Data

Bladder Pump ☑ Disposable Bailer ☐	Top of PVC Riser Elev.	—	Groundwater Elev.	—	Casing Material ☑ PVC ☐ S.S.
Purge Date	12-6-21	Total Well Depth	18.86	Well Diameter	4"
Start Purge Time	11:35 A	Initial Depth to Water	12.55	Require Purge Volume	4.12 Gal
End Purge Time	11:42 A	Height Water Column	6.41	Purge Rate	CPM 4 10/5
Depth to Water After Purge	12.85	Well Volume	4.12	Volume Purged	~2.0 Gal

Calibration Data See Attached

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
1st Reading	8.75	600	12	0.70	8	0.35	12.85	11:44 A
2nd Reading	8.71	610	12	0.70	9	0.31	12.85	11:46 A
3rd Reading	8.70	610	12	0.70	8	0.33	12.85	11:48 A
4th Reading								
5th Reading								
6th Reading								
7th Reading								
Avg.								
10%								

Sample Data

AVG	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
Sample	12-6-21	8.72	607	12	0.70	8	0.33	12.85	11:50 A

Containers & Preservatives: Plastic: metals / HNO_3 - CN⁻ / NaOH — Filtered ☐ Yes ☑ No

Color None — Appearance Clear — Odor None — Weather Cool / Pt. Cloudy

☐ Annual ☑ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other _____

Split Sample ☐ Yes ☑ No If yes, with whom

Well Condition	✓	Concrete Pad Condition	✓	Lock Functioning Properly	✓

Comments

Sampler(s) Signature [signature] Date 12-6-21

GROUNDWATER FIELD LOG

Facility	YKK	Project No.	Part - B
Sample Point ID	MW - 11	Location	Lawrenceburg, KY
AKGWA #	8000 - 7004	Samplers	T Baldwin
Weather A.M.	—	Weather P.M.	Cool / Pt. Cloudy

Well Data and Evaluation Data

Bladder Pump ☑ Disposable Bailer ☐	Top of PVC Riser Elev.	—	Groundwater Elev.	—	Casing Material ☑ PVC ☐ S.S.
Purge Date	12-6-21	Total Well Depth	31.38	Well Diameter	4"
Start Purge Time	11:57 A	Initial Depth to Water	23.75	Require Purge Volume	4.96 G
End Purge Time	12:02 P	Height Water Column	7.63	Purge Rate	CPM 4 10/5
Depth to Water After Purge	25.53	Well Volume	4.96 G	Volume Purged	~2.0 G

Calibration Data See Attached

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
1st Reading	8.55	660	12	0.75	7	2.50	25.53	12:04 P
2nd Reading	8.50	660	12	0.75	7	2.70	25.53	12:06 P
3rd Reading	8.55	650	12	0.73	7	2.75	25.53	12:08 P
4th Reading								
5th Reading								
6th Reading								
7th Reading								
Avg.								
10%								

Sample Data

AVG	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
Sample	12-6-21	8.53	657	12	0.74	7	2.65	25.53	12:10 P

Containers & Preservatives: Plastic: metals / HNO_3 - CN- / NaOH — Filtered ☐ Yes ☑ No

Color None — Appearance Clear — Odor None — Weather Cool / Pt. Cloudy

☐ Annual ☑ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other _____

Split Sample ☐ Yes ☑ No If yes, with whom _____

Well Condition	✓	Concrete Pad Condition	✓	Lock Functioning Properly	✓

Comments _____

Sampler(s) Signature _____ Date 12-6-21

GROUNDWATER FIELD LOG

Facility	YKK	Project No.	Part - B
Sample Point ID	MW-23	Location	Lawrenceburg, KY
AKGWA #	8000-7003	Samplers	T Baldwin
Weather A.M.	—	Weather P.M.	Cool / Pt. Cloudy

Well Data and Evaluation Data

Bladder Pump ☑ Disposable Bailer ☐	Top of PVC Riser Elev.	—	Groundwater Elev.	—	Casing Material ☑ PVC ☐ S.S.
Purge Date	12-6-21	Total Well Depth	23.15	Well Diameter	4"
Start Purge Time	12:15 P	Initial Depth to Water	9.05	Require Purge Volume	9.17 G
End Purge Time	12:22 P	Height Water Column	14.10	Purge Rate	CPM 4 10/5
Depth to Water After Purge	9.37	Well Volume	9.17 G	Volume Purged	~2.0 G

Calibration Data See Attached

pH	4.0	7.0	10.0	Temp	eH/ORP	Conductivity	D.O.

Field Analytical Data

	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
1st Reading	8.55	700	12	0.05	40	300	9.37	12:24 P
2nd Reading	8.60	690	12	0.05	43	290	9.37	12:26 P
3rd Reading	8.65	700	12	0.05	44	290	9.37	12:28 P
4th Reading								
5th Reading								
6th Reading								
7th Reading								
Avg.								
10%								

Sample Data

AVG	Date	pH (SU)	Sp. Cond. (uS or mS)	Temp. (C°)	D. O. (mg/L-ppm)	eH/ORP (mV)	Turbidity (ntu)	Depth to Water (ft)	Time
Sample	12-6-21	8.60	697	12	0.05	42	293	9.37	12:30 P

Containers & Preservatives	Plastic: Metals / HNO_3 - CN- / NaOH		Filtered ☐ Yes ☑ No
Color None	Appearance Clear	Odor None	Weather Cool / Pt. Cloudy

☐ Annual ☑ Semi-Annual ☐ Quarterly ☐ Monthly ☐ Other _____

Split Sample ☑ Yes ☑ No If yes, with whom

Well Condition	✓	Concrete Pad Condition	✓	Lock Functioning Properly	✓

Comments

Sampler(s) Signature _____ Date 12-6-21

UNIVERSAL FASTENERS, INC.

SPRING LOG

FACILITY YKK PROJECT ID. Part - B

LOCATION Lawrenceburg, Ky COLLECTOR(S) T Baldwin

DATE 12-6-21 SAMPLE POINT ID Spring

TIME: A.M. — P.M. 1:00 P

WEATHER: Cool / Pt. Cloudy

REPLICATE SAMPLE DATA: pH and Conductance are automatically temperature compensated at time of measurement

Temp. Deg. C. 12 pH @ 25 8.75 Cond. @ 25, umhos/cm: 460

Temp. Deg. C. pH @ 25 Cond. @ 25, umhos/cm:

Temp. Deg. C. pH @ 25 Cond. @ 25, umhos/cm:

Temp. Deg. C. pH @ 25 Cond. @ 25, umhos/cm:

SAMPLE CHARACTERISTICS

pH 8.75 Flume Reading: —

Specific Conductance 460 Flow Rate: ~ 5 GPM

Temperature 12 Odor None

Sample Time 1:00 P Color None

Turbidity: NONE - SLIGHT - MODERATE - HIGH

ANALYTE TYPE, COLLECTION ORDER, SAMPLE CONTAINERS, VOLUMES, PRESERVATIVES AND TEST TO BE PERFORMED: Plastic: No Preservation
HNO_3 / Metals
NaOH / CN-

PARAMETERS:

( ) ANNUAL ( ) MONTHLY (✓) SEMI-ANNUAL ( ) QUARTERLY ( ) OTHER

☑ Cadmium ☑ Chromium ☑ Copper ☑ Lead ☑ Nickel ☑ Zinc ☑ Cyanide

☐ Sodium ☐ Chloride TSS ✓

OBSERVATIONS/COMMENTS:

CERTIFICATION TB DATE 12-6-21

METER CALIBRATION LOG

Project Name	Part - B	Date	12-6-21
Project Number	Event #2 2021	Sampler	T Dalbusi

pH METER

Time	pH 10 Buffer Check	pH 7 Buffer Check	pH 4 Buffer Check	Temp of Calibration Solution °C
8:00	—	7.00	4.01	24

Conductivity Meter

Temp of Calibration Solution	Corrected Cond. @25°C	Calibration Range For Solution	Time
24	12.88 mS	12.88 mS	8:15

Dissolved Oxygen (DO) Meter

Temperature (°C)	Barometric Pressure (in Hg)	% Dissolved Oxygen	Time
24	—	0.0	8:25

Redox (ORP) Meter

Temperature (°C)	E_H Reading (mV)	Calibration Range For Solution	Time
24	0.0	0.0	8:35

Turbidity Meter

Gel Value 0-10 (NTU) Solution	Gel Value 10-100 (NTU) Solution	Gel Value 100-1000 (NTU) Solution	Time
0.02 (0.02)	99.9 (100)	798 (800)	8:45

Problems/Corrective Action

Signature	[signature]	Date	12-6-21
QC'd By	[signature]	Date	12-6-21

GROUNDWATER MONITORING ANALYSIS SUMMARY AND RESULTS

MICROBAC®

Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L1L0474

YKK (U.S.A.) INC.

Todd Baldwin
1090 Industry RD
Lawrenceburg, KY 40342

Project Name: Groundwater Monitoring - Lawrenceburg
Project / PO Number: N/A
Received: 12/08/2021
Reported: 12/20/2021

Analytical Testing Parameters

Client Sample ID:	MW-9		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L1L0474-01	**Collection Date:**	12/08/2021

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		12/15/21 1033	12/15/21 1713	BSB

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	<5		5	mg/L			12/15/21 1510	SSL

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2238	SSL
Chromium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2238	SSL
Copper	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2238	SSL
Lead	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2238	SSL
Nickel	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2238	SSL
Zinc	<0.010		0.010	mg/L		12/10/21 0945	12/16/21 1547	SSL

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CERTIFICATE OF ANALYSIS

L1L0474

Client Sample ID:	MW-8S		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L1L0474-02	**Collection Date:**	12/08/2021

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		12/15/21 1033	12/15/21 1715	BSB

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	48		5	mg/L			12/15/21 1510	SSL

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2243	SSL
Chromium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2243	SSL
Copper	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2243	SSL
Lead	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2243	SSL
Nickel	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2243	SSL
Zinc	<0.010		0.010	mg/L		12/10/21 0945	12/16/21 1553	SSL

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CERTIFICATE OF ANALYSIS

L1L0474

Client Sample ID:	MW-11		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L1L0474-03	**Collection Date:**	12/08/2021

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		12/15/21 1033	12/15/21 1717	BSB

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	57		5	mg/L			12/15/21 1510	SSL

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2249	SSL
Chromium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2249	SSL
Copper	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2249	SSL
Lead	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2249	SSL
Nickel	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2249	SSL
Zinc	<0.010		0.010	mg/L		12/10/21 0945	12/16/21 1559	SSL

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CERTIFICATE OF ANALYSIS

L1L0474

Client Sample ID:	MW-23		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L1L0474-04	**Collection Date:**	12/08/2021

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		12/15/21 1033	12/15/21 1719	BSB

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	32		5	mg/L			12/15/21 1510	SSL

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2255	SSL
Chromium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2255	SSL
Copper	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2255	SSL
Lead	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2255	SSL
Nickel	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2255	SSL
Zinc	<0.010		0.010	mg/L		12/10/21 0945	12/16/21 1604	SSL

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CERTIFICATE OF ANALYSIS

L1L0474

Client Sample ID:	Spring		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L1L0474-05	**Collection Date:**	12/08/2021

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		12/15/21 1033	12/15/21 1721	BSB

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	11		5	mg/L			12/15/21 1510	SSL

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2300	SSL
Chromium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2300	SSL
Copper	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2300	SSL
Lead	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2300	SSL
Nickel	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2300	SSL
Zinc	0.012		0.010	mg/L		12/10/21 0945	12/16/21 1610	SSL

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L1L0474

Client Sample ID:	Field Blank		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L1L0474-06	**Collection Date:**	12/08/2021

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		12/15/21 1033	12/15/21 1723	BSB

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	<5		5	mg/L			12/15/21 1510	SSL

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2306	SSL
Chromium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2306	SSL
Copper	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2306	SSL
Lead	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2306	SSL
Nickel	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2306	SSL
Zinc	<0.010		0.010	mg/L		12/10/21 0945	12/16/21 1615	SSL

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Microbac Laboratories, Inc., Louisville

CERTIFICATE OF ANALYSIS

L1L0474

Client Sample ID:	Trip Blank		
Sample Matrix:	Ground Water	**Collected By:**	CUSTOMER
Lab Sample ID:	L1L0474-07	**Collection Date:**	12/08/2021

Analyses Performed by: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 9012B								
Cyanide, Total	<0.0050		0.0050	mg/L		12/15/21 1033	12/15/21 1725	BSB

Analyses Performed by: Microbac Laboratories, Inc., Louisville

Inorganics Total	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: USGS I-3765-85								
Solids, Total Suspended	<5		5	mg/L			12/15/21 1510	SSL

Metals Total by ICP	Result	Limit(s)	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 6010D								
Cadmium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2311	SSL
Chromium	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2311	SSL
Copper	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2311	SSL
Lead	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2311	SSL
Nickel	<0.0050		0.0050	mg/L		12/10/21 0945	12/14/21 2311	SSL
Zinc	<0.010		0.010	mg/L		12/10/21 0945	12/17/21 1617	SSL

*Results in **bold** have exceeded a limit defined for this project. Limits are provided for reference but as regulatory limits change frequently, Microbac Laboratories, Inc. advises the recipient of this report to confirm such limits and units of concentration with the appropriate Federal, state or local authorities before acting on the data.*

Definitions

mg/L: Milligrams per Liter
RL: Reporting Limit

Project Requested Certification(s)

Microbac Laboratories, Inc. - Chicagoland

E-10397	Kansas Dept Health & Env. NELAP
108202	Kentucky UST-Energy and Environment Cabinet
90147	Kentucky Wastewater Laboratory Certification Program

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:

David Lester
Customer Relationship Manager
Reported: 12/20/2021 17:22

UNIVERSAL FASTENERS, INC.
REQUEST FOR SAMPLING & ANALYSIS

Sample Site: Lawrenceburg, KY Project ID. Part-B
Person Requesting Sampling: T Baldwin Phone No. 502 839 2222
Date to be Sampled: 12-6-21 Sampler(s) Requested: T Baldwin
Dates Results Due 12-20-21
Comments/Special Instructions:

No. Samples	Sample Location	Sample Code	Rush Analysis Yes	Rush Analysis No
☑	Wells MW9 / MW85 / MW11 / MW23	A	☐	☑
☑	Trip & Field Blank ~~& Equipment Blank~~	A	☐	☑
☑	Springs	A	☐	☑

Sample Codes

A. Wells (Cd, Cr, Cu, Fe, Ni, Zn, Cy) B. Wells (Na, Cl) C. Spring (Cd, Cr, Cu, Fe, Ni, Zn, Cy)
D. Spring (Na, Cl)

Expected Laboratory Turn-Around Time: 2 ~~3~~ weeks
Project Manager: D Lester Date: 12-6-21
Sampling Manager: T Baldwin Date: 12-6-21
Laboratory Manager: S Hyde Date: 12-6-21

GROUNDWATER MONITORING
CHAIN OF CUSTODY

L1L0474 David Lester

MICROBAC

Kentucky Testing Divison

3323 Gilmore Industrial Blvd. Louisville, KY 40213 502.962.6400 Fax: 502.962.6411

Evansville 812.464.9000 Lexington 859.276.3506 Paducah 270.898.3637 Hazard 606.487.0511

CHAIN OF CUSTODY

Route Freq.

YKK (U.S.A.) INC.
Todd Baldwin
1090 Industry Road
Lawrenceburg, KY 40342

Cust. # E4600
Phone (502) 839-2222
Fax (502) 839-2292
Email tbaldwin@ykksnap-america.com
Acct. Mgr. David Lester

Project SA Groundwater - Lawrenceburg
Cust. P.O.
Permit #

Analysis	Method	Containers/Preservative	Suppress On COA	# Bottles	Units	Min	Max
Instructions							
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
Pick-Up Charge	NA	No Container			Days		
Sample Disposal	*** DEFAULT SPECIFIC METHOD ***	No Container			NA		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE		12/6/21	mg/L	12:30 PM	
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		

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CHAIN OF CUSTODY

Route Freq.

YKK (U.S.A.) INC.
Todd Baldwin
1090 Industry Road
Lawrenceburg, KY 40342

Cust. # E4600
Phone (502) 839-2222
Fax (502) 839-2292
Email tbaldwin@ykkusap-america.com
Acct. Mgr. David Lester

Project SA Groundwater - Lawrenceburg
Cust. P.O.
Permit #

Analysis	Method	Containers/Preservative	Suppress On COA	# Bottles	Units	Min	Max
Instructions							
[redacted]							
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE			mg/L		
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE		12/6/21	mg/L	11:00 AM	
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		
[redacted]							
Solids, Total Suspended	USGS I-3765-85	1L-Bottle HDPE		12/6/21	mg/L	11:10 AM	
Cadmium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Chromium	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Copper	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Lead	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Nickel	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Zinc	EPA 6010D	250ml-Bottle HDPE-HNO3			mg/L		
Cyanide, Total	EPA 9012B	250ml-Bottle HDPE-NaOH			mg/L		

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CHAIN OF CUSTODY

SETUP:_____Deg C Sunny/Cloudy/Ptly Cloudy/Rain REC:_____Deg C Sunny/Cloudy/Ptly Cloudy/Rain Rain During Event: YES / NO

NOTES:

Sampled By: CUSTOMER

Relinq. Date/Time/Sign: 12/8/21 8:00 AM	Rec'd Date/Time/Sign: 12/8/21 0800
Relinq. Date/Time/Sign: 12/8/21 0945	Rec'd Date/Time/Sign:
Relinq. Date/Time/Sign:	Rec'd Date/Time/Sign:
Relinq. Date/Time/Sign:	Rec'd Date/Time/Sign:

SAMPLE RECEIPT DOCUMENTATION

Cooler/Sample Temp (Deg C): LEX_____ EVV_____ PAD_____ LOU 4.2 HAZ_____

COC & proper paperwork provided & complete / COC, samples, & bottles are in agreement: YES / NO

Appropriate bottles provided intact with sufficient volume / Samples are within hold time / Samples properly preserved : YES / NO

Chain of Custody seal intact? N/A Samples on Ice? Y Number of bottles 21 ? Thermometer ID L-24

Notes, Correspondence, Subcontracting, & Non-Conformance Documentation (All Non-Conformances must be documented & client notified) :

PART F

PART F PROCEDURE TO PREVENT HAZARDS

F-l SECURITY

The closed landfill is enclosed in a 6-foot high, steel chain link fence with three strands of barbed wire on top. The gates as the east and west ends are chained and locked. This fence will provide adequate security for the closed surface impoundment. Warning signs visible from each approach have been placed on the fence.

F-2 INSPECTION SCHEDULE

The closed surface impoundment will be inspected according to Table F-1. Exhibit F-1 and F-2 are copies of the inspection form.

F-3 THROUGH F-5

These Sections are not applicable.

TABLE F-1

LIST OF ITEMS TO BE COVERED DURING INSPECTIONS OF CLOSED SURFACE IMPOUNDMENT

Inspector Name:

Date and Time of Inspection:

Items to Check	Frequency of Inspection	Types of Problems to check for
1. Final Cover	Monthly & after storms	Integrity of cover (erosion, grass covering, cracks, subsidence)
	Annually for the first three years following closure	Elevation and grades (3 to 5%)
2. Groundwater Monitoring Wells	Monthly	Well head covers intact Locks and seals intact
3. Run-on and Run-off controls	Monthly & after storms	Clogging/blockage Integrity
4. Fence around closed area	Monthly	Broken posts, gaps, warning signs, gate and gate lock
5. Benchmarks	Monthly	Damage, Disturbance

*If visual evidence of subsidence is noted during either, the monthly or post-storm inspections, the elevations of the settlement markers and final cover grades are to be surveyed.

Figure F-1
RCRA Inspection Form
Universal Fasteners, Inc.
Lawrenceburg, Kentucky

PLANT I

MACHINE SHOP/FTC/ MAINTENANCE SATELLITE ACCUMULATION AREA (D001)

# Drums	
Labeling	
Emergency Equipment	
Comments	

PLANT II

PAINT STORAGE/ MAINTENANCE SATELLITE ACCUMULATION AREA (F003/F005)

# Totes	
Labeling	
Emergency Equipment	
Comments	

PAINT STILL

# Drums	
Labeling	
Emergency Equipment	
Comments	

FILTER PRESS OPERATION

# Roll-Off Boxes (ROBs)	
Labeling	
Accumulation Start Date	
Comments	

CLOSED SURFACE IMPOUNDMENT

Front Gate		Rear Gate	
Fence Condition		Run-On Drainage	
Run-Off Drainage		Groundwater Wells	
Cover Integrity		Warning Signs	
Comments			

LIFT STATIONS

Plant I		Plant II	

Inspection Conducted By:	
Signature:	
Date:	
Time:	

FIGURE F-2

Venturri Scrubber System

Inspection Form

YKK (U.S.A.) Snap & Button Products, Inc.

Lawrenceburg, Kentucky

LB-MNT-FM-014-A
Rev. Date: 1/29/03

Scrubber Checklist

Week of _____

☐ System # 1	☐ System # 2	☐ System # 3	☐ System # 4	☐ System # 5
Model # F102-16	**Model # F102-6**	**Model # F102-6**	**Model # F102-20**	**Model # F102-6**
Make- up water GPM ------2.4	Make- up water GPM ------0.9	Make- up water GPM ------0.9	Make- up water GPM ------3.0	Make- up water GPM ------0.9
System Recirc Water GPM----48	System Recirc Water GPM----18	System Recirc Water GPM----18	System Recirc Water GPM----63	System Recirc Water GPM----18
Number of Nozzles----------10	Number of Nozzles----------4	Number of Nozzles----------4	Number of Nozzles----------12	Number of Nozzles----------4
Pump Model ----------CMNP5-6-3T	Pump Model ----------CMNP3-4-3T	Pump Model ----------CMNP3-4-3T	Pump Model ----------CMNP6-7-3T	Pump Model ----------CMNP3-4-3T
UFI Serial #---------- 680099	UFI Serial #---------- 680100	UFI Serial #---------- 680101	UFI Serial #---------- 680098	UFI Serial #---------- 680102
C.F.M. ----------17378	C.F.M. ----------6200	C.F.M. ----------6100	C.F.M. ----------21,000	C.F.M. ----------5,768
PUMP HP----------2	PUMP HP----------1	PUMP HP----------1	PUMP HP----------3	PUMP HP----------1
Add ----------1 Gal Sulfuric Acid	Add ----------1 Gal Sulfuric Acid	Add -----500 Mls Liquid caustic soda	Add ----------1 Gal Sulfuric Acid	Add -----500 Mls Liquid caustic soda

Note: Pump seal kit - #15032 (Sherwood)

Inspected by: (Please initial)	Mon.	Tue.	Wed.	Thu.	Fri.
1. Is the Make-up water flowmeter indicating proper flow?					
2. Is the system recirc water flowmeter indicating the proper flow?					
3. Is there sufficient water returning to the make-up tank?					
4. Are the indicator lights on the central control panel illuminated?					
5. Add daily the proper amount of sulfuric acid to the make-up tank?					
6. Are all of the nozzles on both spray headers spraying correctly?					
7. Is the blower electrical disconnect in the "ON" position?					
8. Is the water valve in the "ON" position at the scrubber?					
9. Is there water leaking from the scrubbers or from plumbing on roof?					

Note any problems in the area below

Mon._____

Tue._____

Wed._____

Thu._____

Fri._____

This form is a controlled document. Contact your supervisor to request changes.

PART G

PART G CONTINGENCY PLAN

Contingency Plan and Emergency Procedures for Hazardous Materials and Waste (RCRA 40 CFR 262 Subpart M)

Employee Emergency Action Plan and Fire Prevention Plan (OSHA 29 CFR 1910.38)

YKK (U.S.A.) Inc.
Snap & Button
Lawrenceburg, KY
(502) 839-6971

Plan Revised: JUL 2018

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YKK (U.S.A.) Inc.

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X. Quick Reference Guide

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YKK (U.S.A.) Inc.

I. General Information

Company Name: YKK (U.S.A.) Inc. Snap & Button
A Subsidiary of YKK Corporation of America (YCA)

Mailing Address: P.O. Box 240
Lawrenceburg, KY 40342

Plant Location: 1101 Industry Road (Plant 1)
Lawrenceburg, KY 40342
1090 Industry Road (Plant 2)
Lawrenceburg, KY 40342

Emergency Coordinators:

1. Tim Baker - Assistant Plant Manager
2. Bobby Elliott – Safety Specialist
3. Aza Shumate – Plant Manager
4. Todd Baldwin – Dir. Environmental Affairs
5. Greg Pass – Director Safety (Alternate)

Type of Facility: This facility is a one story building used for the manufacturing of metal buttons, snap fasteners and rivets for the garment industry and other industrial/commercial/military fastening applications.

Facility Site Plan: See attached plant layout map for site plan and utility emergency shut-off locations.

Description of Activities:
Manufacturing operations include stamping and finishing of metal button, snap fasteners, rivets and burrs. The processing operations include cleaning operations, chromate conversion coating, copper-cyanide, zinc, brass, antique nickel, and nickel electroplating, burnishing, wet painting and baking.

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YKK (U.S.A.) Inc.

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The rinse waters are collected and treated in a wastewater treatment system from which hazardous waste is generated. The resultant F006 Hazardous Waste is placed in a hopper and held for transport to a Treatment Storage Disposal Facility (TSDF). In addition Flammable And Hazardous Waste Flammable F002, F003, F005 Material from painting operations is placed in 55-gallon drums and a 275-gallon tote tank which are located in a flammable storage room on the west side of facility.

Fire Prevention: (See Fire Prevention Plan)

List of major workplace fire hazards
Spray painting operations involving flammable solvents
Welding operations
Employee smoking practices

Proper handling and storage practices:

Segregate flammables from oxidizers
Segregate reactive cyanides from acids
Storage containers closed
Store flammables in approved storage room or cabinets
Avoid welding operations near flammable materials
Smoke only in approved smoking areas

Fire control:

Fire extinguishers are located throughout the facility. Fires which cannot be extinguished with a single fire extinguisher should be left to trained firefighters.

Name and job title of person responsible for fire safety management:

Tim Baker, Assistant Plant Manager

II. Overview

The purpose of this document is to minimize hazards to human health or the environment from fires, explosions, or any unplanned releases of hazardous materials or hazardous substances to the air, soil, or surface water. The provisions of this document will be carried out immediately whenever there is a fire, explosion, or release of hazardous materials or hazardous substances which could threaten human health or the environment.

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YKK (U.S.A.) Inc.

A copy of this document and all revisions will be maintained at the facility and submitted to the local fire department and state and local emergency response teams that may be called upon to provide emergency service

This document will be reviewed, and immediately amended, if necessary whenever;

1. Applicable regulations are revised;

2. The plan fails in an emergency;

3. The facility changes-in its design, constructions, operation, maintenance, or other circumstances-in a way that materially increases the potential for fires, explosions, or releases of hazardous materials or hazardous substances, or changes the responses necessary in an emergency;

4. The list of emergency coordinators changes; or

5. The list of emergency equipment changes.

III. Emergency Coordinators

There shall be an Emergency Coordinator on the premises or on call at all times. The Coordinator(s) shall be responsible for coordinating all emergency response measures and have the authority to commit resources to carry out the Contingency and Emergency Action Plan. Please contact any Coordinator regarding questions concerning this plan.

Persons listed as Emergency Coordinators are familiar with and have knowledgeable of:

1. All aspects of the Contingency and Emergency Action Plan;

2. All operations and activities at the facility;

3. The location and characteristics of the wastes handled;

4. The location of all records within the facility; and facility layout.

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YKK (U.S.A.) Inc.

Primary Emergency Coordinators:

Tim Baker - Assistant Plant Manager
(502) 839-2256 Office
(502) 839-9200 Home
(502) 320-2885 Cell

First Alternate Emergency Coordinator:
Bobby Elliott – Safety Specialist
(502) 839-2371 Office
(859) 734-0757 Home
(502) 680-2593 Cell

Second Alternate Emergency Coordinator:
Aza Shumate – Plant Manager
(502) 839-2426 Office
(859) 200-0474 Home
(502) 600-0596 Cell

Third Alternate Emergency Coordinator:
Todd Baldwin – Dir. Environmental Affairs
(502) 839-2222 Office
(502) 267-6069 Home
(502) 680-4278 Cell

Fourth Alternate Emergency Coordinator:
Greg Pass – YKK Corporate Director, Safety
(502) 839-2236 Office
(859) 356-1219 Home
(502) 680-5747 Cell

IV. Implementation of Contingency and Emergency Action Plan (EAP)

This Contingency and EAP must be implemented if an imminent or actual incident could threaten human health or the environment.

The following are the Contingency and EAP implementation criteria for the three types of incidents of concern:

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YKK (U.S.A.) Inc.

Spills

A. The spill could result in release of flammable liquids or vapors, creating a fire or explosion hazard.

B. The spill could cause the release of toxic liquids or gases.

C. The spill cannot be contained on-site.

Fires

A. The fire could cause the release of toxic fumes.

B. If the fire spreads, it could ignite materials at other locations on-site.

C. The fire could spread to off-site areas.

Explosions

A. An imminent danger exists that an explosion could occur.

B. An explosion has occurred.

V. Emergency Response Procedure

Once the decision is made to implement the Contingency and the Emergency Action Plan, the Emergency Coordinator must take a series of actions: 1) immediately upon discovery of an emergency, 2) during the emergency control phase, and 3) immediately following attainment of control. The following are the specified procedures:

NOTE: **The facility has designated two (2) 90-day hazardous waste storage areas. One is located at the rear of Plant 2 outside under the lean-to. The other is located inside the former filter press room of Plant 2 near the lab and adjacent to the outside location. These areas meet all the containment criteria as defined by EPA as well as have all the necessary emergency response and preparedness equipment. The outside area utilizes a push-station alarm to notify personnel inside (WWT lab and Supervisor's office) of any chemical releases or emergencies. Hazardous waste is also accumulated in various satellite accumulation areas throughout the plants and is identified and listed as such.**

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A. Immediately upon discovery of an imminent or actual emergency situation:

1. Activate the internal alarms or communications system to notify facility personnel. In the event of a plant evacuation, where and when possible shut-off all plant utilities at locations indicated on attached map.

    a. Account for all personnel.

    b. Determine if there are any injuries.

Minor injuries should be referred to:

Dr. James Gilbert
512 Saffel Street
Lawrenceburg, Kentucky
(502) 839-4091

Health Works
2030 Hoover Boulevard
Frankfort, Kentucky
(502) 695-9990

Serious injuries are referred to

Frankfort Regional Hospital or
299 King's Daughter Drive
Frankfort, Kentucky
(502) 875-5240 (Frankfort)
(502) 839-5575 (Lawrenceburg)

Bluegrass Community Hospital
(859) 873-3111

Be prepared to provide the attending emergency personnel with information about chemicals involved in overexposure accidents

2. Notify local, state, and federal agencies.

    a. Local Dial 911 for Emergency

Lawrenceburg Fire Department (911) and (502) 839-5125
Lawrenceburg, KY 40342

Lawrenceburg Police Department (911) and (502) 839-5125

Lawrenceburg Publicly Owned Treatment Works (502) 839-5372
Lawrenceburg, KY 40342
Mitch Hudson, WWT Plant Operator

County Emergency Preparedness (502) 839-5372

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YKK (U.S.A.) Inc.

Lawrenceburg, KY 40342

Local Emergency Planning Committee (LEPC)
City of Lawrenceburg
Bart Powell (502) 839-7642

b. State

State Env. Protection & Env. Response Team (502) 564-5715

c. Federal

U.S. Coast Guard National Response Center
(800) 424-8802 or (202) 426-2675

USEPA Region IV (404) 347-1033
345 Courtland Street
Atlanta, GA 30365

National Response Center telephone report must include:

(i) Name and telephone number of reporter;
(ii) Name and address of facility;
(iii) Time and type of incident (e.g., release, fire);
(iv) Name and quantity of material(s) involved, to the extent known;
(v) The extent of injuries, if any; and the possible hazards to human health, or the environment, outside the facility.

3. Identify the character, exact source, amount and extent of any released materials

   a. Determine if facility evacuation is necessary
   b. Determine if facility personnel can control the situation.
   c. Notify one of the listed commercial emergency response vendors if facility personnel and local public safety personnel cannot control the situation.

4. Assess hazards to the environment and human health.

5. Determine if evacuation of the local area is advisable. If so, notify local authorities.

6. Take all reasonable measures necessary to ensure that fire, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility.

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YKK (U.S.A.) Inc.

Internal Emergency Phone Number
839-6971

Commercial Emergency Response Vendors:

Linebach Funkhouser
Collin Linebach
(502) 895-5009 Office
(502) 721-5705 Direct

2DSD
Dan DiCarlo
(513) 617-0013 Office/Cell

Accel Environmental Services, Inc.
John Reynolds
(502) 267-3080 Office
(502) 396-9090 Cell

CHEMTREC
(800) 424-9300

Poison Center
(800) 222-1222

B. Emergency Control Phase Measures

Drum Storage Spill

1. Determine the source of spill and material(s) involved.
2. Determine the hazard(s) involved.
3. Responding personnel are to be properly equipped with safety equipment, clothing, and respiratory protection.
4. Responding personnel are to approach the leaking drum or spilled material from an upwind direction, if possible.
5. Contain the spill to the smallest area possible.
6. Upright any overturned drums or over-pack leaking containers.
7. If the spilled material is unrecoverable, treat or absorb the material.
8. Remove spilled and absorbent materials and contaminated soils.
9. Clean, restore, or replace spill response equipment and return it to original location(s).

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YKK (U.S.A.) Inc.

Drums or Tank Storage Area Fire or Explosion

1. Determine what is on fire.
2. Determine the hazard(s) involved.
3. Evacuate all endangered or unnecessary personnel.
4. Determine if evacuation of off-site areas is necessary.
5. Small (single barrel) fires may be responded to by on-site personnel while the fire department is in route. Water hoses, fire extinguishers, dirt or sand may be utilized. Any such response may be taken only if it will not endanger the responder's life or health. appropriate safety equipment must be worn.
6. Allow the fire department to take appropriate and necessary measures.
7. After the fire is extinguished, clean up affected areas.
8. Clean, restore, or replace emergency equipment and return it original location(s).

C. Response Measures for Oxidizer Incidents

The following oxidizers are present at the facility:

Nitric Acid, Chromic Acid

Small Spills are less than 55 gallons
Isolate persons in all directions 500 feet
Protect persons downwind 0.1 miles during the day and 1.2 miles at night

Large Spills are over 55 gallons
Isolate persons in all directions 500 feet
Protect persons downwind 0.2 miles during the day and 1.6 miles at night

Fire or Explosion

Oxidizers may ignite with other combustible materials (wood, paper, oil, etc.). These materials will accelerate burning when they are involved in a fire; some may react violently with fuels. Flammable poisonous gases may accumulate in tanks. Runoff to sewer may create fire or an explosion hazard.

Health Hazard

If inhaled, may be harmful. Contact may cause burns to skin or eyes. Fire may produce irritating or poisonous gases. Runoff from fire control or dilution water may cause pollution.

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Emergency Action

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, keep out of low areas. Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide limited protection.

Fire

Small Fires: Water only; no dry chemical or CO2
Large Fires: Flood area with water. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks. **NEVER SPRAY WATER INTO CONTAINER**. For massive fire withdraw from area and let fire burn.

Spill or Leak

Keep combustibles (wood, paper, oil, etc.) away from spilled material. Do not touch or walk through spilled material; stop leak if you can do it without risk.

Use water spray to reduce vapor; do not get water inside container.

Small Dry Spills: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Small Liquid Spills: Flush area with flooding amounts of water.

Large Liquid Spills: Dike far ahead of liquid spill for later disposal.

D. Follow-up Activities

1. Provide for treating, storing or disposing of recovered waste, contaminated soil, surface water or other material resulting from the incident.

2. Ensure that clean-up procedures are completed and emergency equipment is fit for use before resuming operations in the affected areas.

3. Notify Local, State and Federal officials before resuming operations.

3. Submit written report on the incident to the Kentucky Cabinet of Energy and Environment, Kentucky Department of Environmental Protection (KDEP) and the U.S. Environmental Protection Agency (EPA).

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VI. List of Emergency Equipment for Hazardous Waste Purposes

Hazardous wastes generated by YKK are temporarily accumulated in the wastewater treatment area and paint storage room. The purpose of this list is to inventory all emergency equipment that may be used in an emergency situation involving YKK's hazardous wastes. This list includes, for each item:

a. location; b. physical description; and c. brief outline of capabilities

Fire Extinguishers

There are numerous hand-held dry chemical fire extinguishers in the plant near the hazardous waste accumulation area. Extinguishers have a 4 A-60 B C rated capacity. These extinguishers are effective on combustible material (A), flammable liquid (B), and electrical (C) fires. If a fire could not be extinguished with these units, the Fire Department would be called immediately, and the Contingency and Emergency Action Plan put into effect. There is also a fire extinguisher located in the employee break room and at the entrance to the flammable storage building.

Alarm

Please see following and attached pages (13.a and 13.b.) for two (2) basic evacuation alarms utilized by YKK. Details are provided. One is an air horn utilized for weather emergencies and the other is the fire alarm utilized for any chemical release emergencies. Telephones are located in the office areas and throughout the plant. In the event of the need for evacuation an announcement or other evacuation notice would be made. In addition the facility is protected by an ADT automatic dispatch alarm. In the event of a fire, the dispatch and police would be called automatically.

Communication System

Telephones are located in the main offices and also throughout the plant. These phones can be used to access emergency services, or to make internal or external phone calls.

Neutralization Agent

A fiber drum (200 lb. capacity) will be kept full of a powdered alkali - specifically soda ash. Soda ash effectively neutralizes and solidifies spills of wastewater treatment sludge and any free liquids from the treatment process. The drum will be kept in the wastewater treatment facility.

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Spill Kits

Numerous spill kits are located throughout the facility in many departments. Not all spill kits are the same, as they may apply to specific substances, like acids, oils, solvent, etc.

Absorbent

A fiber drum (100 lbs. capacity) will be kept full of granular calcified clay absorbent (Oil-Dry, Zorb-All, Maltan, or similar brand names). These absorbents are effective on most liquid spills. The drum will be kept in the southwest corner of the wastewater treatment facility. A pallet with at least 8 – 50 pound bags of absorbents will be maintained as a supplement to the fiber drum.

Eyewash/Shower Facilities

An emergency deluge shower with eyewash capabilities are located in the battery changing area, one in the plating department and two in the wastewater treatment facility. These units is capable of decontaminating personnel exposed to hazardous wastes or hazardous material residues, by flushing such residues for extended periods of time with copious volumes of water.

Empty Drums

At least two empty open head drums will be kept at the North end loading dock. These drums are 55 gallons in capacity, and can be used to contain spilled materials, or to contain materials transferred from leaking containers.

Personal Protective Equipment

Employees involved in handling hazardous waste or chromate solutions are issued chemical resistant boots, gloves, aprons, and face shields for their personal use. These items are normally located in the storage lockers near the work area when not in use.

VII. Coordination Agreement

YKK (U.S.A.) Inc. has made arrangements with local police and fire departments and hospitals for hazardous materials/waste emergencies. Copies of the YKK Contingency Plan and Emergency Procedures document have been transmitted to these agencies.

Agreements have been obtained in this regard. The Lawrenceburg Fire Department has inspected the plant and agreed to respond to any alarm or telephone call for assistance. The City of Lawrenceburg Police Department and/or the Anderson County Sheriff's Department will work in conjunction with the Fire Department, and secure the general area, provide traffic control, and conduct any necessary evacuation of surrounding areas. The Memorial Hospital will provide emergency services.

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Coordination Agreements

Lawrenceburg Fire Department
Name of Fire Chief: Bobby Hume
Phone: (502) 839-5125
Cell: (502) 680-0524

Fire Equipment
4 Pumpers - Capacity
1976 Ford (Jaco) 500 gallon tank @ 1000 GPM
1965 G.M.C. (Midwest) 500 gallon tank @ 750 GPM
1980 Sutphen 600 gallon @ 1250 GPM
1978 Pearce Hendricks Aerial 400 gallons @ 1250 GPM

YKK is located in a hydrant area

Rescue Squad Equipment
1 1965 GMC Equipment Truck
3 Anderson Co., ALS Ambulances
1 1975 Ford Mini-Pumper Light Rescue

Firefighters
0 full time, 30 volunteers, 1 chief, 4 captains, 4 assistant captains
Response time 3-4 min.

Classification
First Responders

Ambulance Service
County wide paramedic/ambulance service

For a structure fire
Full response from 1 station

2 Stations Mutual aid available from: Anderson Co. Fire Protection District

First response 3 pumpers and 5 tankers
5 pumpers @ 1000 GPM
5 tankers @ 1000 Gallon

Mutual Aid Available:
City of Frankfort Station - 20 minutes response time
City of Versailles Station - 20 minutes response time

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Coordination Agreement

Frankfort Regional Hospital
Frankfort, KY
(502) 875-5240

Police Department
(911) and (502) 839-5125

Jurisdiction:

Anderson County Emergency Services

The City of Lawrenceburg Police Department and/or Anderson County Sheriff's Department will respond and provide traffic control and assist with any evacuation deemed necessary. On the initial call they would activate the Fire Department. On a major fire event, the City of Lawrenceburg Police Department and /or County Sheriff's Department would initiate response from nearby fire departments. Once the first fire department is on scene an Incident Commander will take control of emergency operations, set up a discreet radio channel, and will instruct the City Police and/or Sheriff's department on any assistance required.

VIII. Evacuation Plan

In the event the evacuation of the facility is deemed necessary, the following procedure should be followed:

a. Refer to YKK Emergency Evacuation and Storm Shelter Employee List, revised 08-04-2015

b. Follow the evacuation route marked on the attached Evacuation Plan Map;

c. All employees are to assemble at the Evacuation Assembly Area located in the parking lot;

d. Supervisors are to take a Employee List from a bulletin board;

e. All employees are to be accounted for;

f. The Emergency Coordinator is to be notified of any missing employees;

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g. No one may re-enter the facility unless cleared by the Emergency Coordinator.

IX. Required Reports

Written Follow-up Reporting

All oral reports of a reportable quantity (RQ) spill to the sanitary sewer must be followed up by a written report within five (5) days to the Publicly Owned Treatment Works (POTW).

POTW Information

Water Pollution Control Plant
City Hall
P.O. Box 290
Lawrenceburg, KY 40342

All oral reports to KDEP of water threat or spill must be followed by written report within ten (10) days to KDEP. Report Hazardous Material Releases, Oil Spills, Fish Kills and Radiological Incidents to KDEP.

KDEP Information

Kentucky Department of Environmental Protection

Content of Report in Writing

The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Regional Administrator. The report must include:

(1) Name, address, and telephone number of the owner or operator;
(2) Name, address, and telephone number of the facility;
(3) Date, time, and type of incident (e.g., fire, explosion);
(4) Name and quantity of material(s) involved;
What substance was released; CAS #
Amount of release;
Where was release to: air, soil, water, sewer
(5) The extent of injuries, if any;
(6) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

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(7) Estimated quantity and disposition of recovered material that resulted from the incident.
Agencies notified
Cause of release
Corrective actions taken
Plan to prevent reoccurrence

Chemical Release Reporting (TRI)

Under Title III of the Superfund Amendments and Reauthorization Act, the submission of U.S. EPA Form R, the Toxic Chemical Release Inventory (TRI) is required. Facilities are required to report quantities of routine and accidental releases into the environment of certain listed toxic chemicals.
40 CFR Part 372

Submit Form R Reports to:
State Emergency Response Commission (SERC)
Kentucky Department of Environmental Protection

U.S. EPA
EPCRA Reporting Center
P. O. Box 3348
Merrifield, VA 22116-3348
Attn: TRI

If sending the report certified mail, send to:
U.S. EPA
EPCRA Reporting Center
4301 N. Fairfax Drive, 6th Floor, Suite 650
Arlington, VA 22203

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Report Form

(1) Owner or Operator Information:

Owner or Operator

_____

Address

Telephone Number_____

(2) Facility Information:

_____

Name

_____

Address

_____

Telephone Number_____

(3) Incident Information:

_____

Date

_____

Time

_____

Type of Incident (e.g., fire, explosion)

(4) Materials Involved:

_____

Name of Substance (CAS #)

_____

Quantity

_____

Released to air, soil, water, sewer

(5) Extent of Injuries:

_____

Type of Injuries

_____

Number of Injured

_____

Disposition of Injured (transported to)

_____

(6) Assessment of Hazard:

_____

Actual or Potential Hazard to Human Health

_____

Actual or Potential Hazard to the Environment

_____

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(7) Disposal of Recovered Material:

_____

Quantity Recovered

_____

Disposition of Material

_____

(8) Other Information:

_____

Agencies Notified

_____

Cause of Release

_____

Corrective Actions Taken

_____

Plan to Prevent Reoccurrence

_____

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YKK (U.S.A.) Inc.

X. Quick Reference Guide

Names of Hazardous Waste Present at Any One Time

1. Electroplating Waste (Wastewater Treatment Sludge) in Bulk (20 Cubic Yards)
2. Various Electroplating Wastes (with/without Cyanides) in Drums (550 Gallons)
3. Hazardous Waste Metal Fines in Drums (110 Gallons)
4. Spent Solvents/Paints in Drums and Bulk (375 Gallons)
5. Various Electroplating Wastes with Corrosive/Acidic/Caustic Characteristics

Some hazardous wastes generated which contain cyanides where exposure has occurred, could require unique and special treatment by emergency first responders and/or hospital staff.

A facility/site/street maps are attached to indicate where hazardous waste is generated, stored and treated, as well as access to on-site utilities/alarm systems.

Names of Emergency Coordinators and Telephone Numbers are as Follow:

Tim Baker - Assistant Plant Manager
(502) 839-2256 Office
(502) 839-9200 Home
(502) 320-2885 Cell
Bobby Elliott – Safety Specialist
(502) 839-2371 Office
(859) 734-0757 Home
(502) 680-2593 Cell
Aza Shumate – Plant Manager
(502) 839-2426 Office
(859) 200-0474 Home
(502) 600-0596 Cell
Todd Baldwin – Dir. Environmental Affairs
(502) 839-2222 Office
(502) 267-6069 Home
(502) 680-4278 Cell
Greg Pass – YKK Corporate Director, Safety (Alternate)
(502) 839-2236 Office
(859) 356-1219 Home
(502) 680-5747 Cell

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PART H

HAZARDOUS WASTE MANAGEMENT PROCEDURES
YKK (U.S.A.) Snap & Button Products, Inc.
Lawrenceburg, Kentucky
EPA I.D. No. KYD044914356

PERSONNEL TRAINING

At this time, the plant's Environmental Engineer is responsible for insuring that all employees receive the appropriate hazardous waste training. The Environmental Engineer's required training includes: OSHA Hazard Communication Standard (29 CFR1910.1200), RCRA Initial Generator Training (40 CFR 265.16) and DOT Safe Transportation Training (49 CFR 172.700). The training module is attached.

A. General:

This document is designed to comply with the requirements outlined in the Federal Register, Vol. 45, No. 98/Monday, May 19, 1980 *I* Rules and Regulations, paragraph 265.16, Personnel Training.

B. Job Description:

Environmental Engineer: Has overall responsibility for the safe and expedient handling of wastes, including effluent and sludge. Must be familiar with all aspects of waste treatment: treating holding tanks, functions of essential waste treatment equipment, disposal of hazardous sludge materials and contingency procedures as outlined in this document. Responsible for advising management on new developments and requirements relating to waste treatment. He must be knowledgeable of Federal and State regulations and maintain coordination with Federal and State agencies and other interested government agencies with respect to waste treatment, water pollution abatement and other matters of environmental and ecological concern. Along with the Finishing Engineer will be responsible for initial and ongoing training of waste treatment operators. Responsible to the Primary Emergency Coordinator during emergency waste treatment actions.

Maintenance Supervisor: Must be familiar with all equipment relating to waste treatment. Must be familiar with the contingency procedures as outlined in this document. Will provide assistance, as necessary, to assure the proper disposition of waste materials. Will serve as Primary Emergency Coordinator.

Finishing Engineer: Must be proficient in waste disposal techniques. Must be knowledgeable of all equipment relating to wastewater treatment. Along with the Environmental Engineer will be responsible for initial and ongoing training of waste treatment operators. Will conduct or monitor annual oral or written review of Waste Treatment Operators to assure proficiency and knowledge concerning emergency (contingency) waste treatment operations.

Plating Supervisor: Responsible to the Finishing Engineer for assisting in all duties designated to him in the foregoing paragraph. Responsible for the monitoring of waste treatment operations during their respective shifts. May be delegated any or all duties designated to the Finishing Engineer in his absence.

Waste Treatment Operator: Responsible for maintaining thorough proficiency and knowledge of all aspects of waste treatment. Must be knowledgeable concerning waste treatment equipment, processes and laboratory tests. Must be thoroughly proficient in hazardous waste emergency (contingency) operations. Will annually demonstrate to the Finishing Engineer, Environmental Engineer, or his designated representative, proficiency in all aspects of emergency operations. Requires initial training under the supervision of a qualified Water Treatment Operator, the Finishing Engineer, and the Environmental Engineer until thoroughly familiar with all aspects of waste treatment, including emergency operations.

Paint Operator: Must be familiar with all aspects of the painting operations. Must be knowledgeable of procedures for managing paint waste and must be familiar with contingency procedures outlined in this document.

Maintenance Personnel: Must be familiar with proper procedures for transporting waste via forklift or drum cart. Requires a working knowledge of the Plant Contingency Plan and procedures to be taken in case of an emergency.

A list of the above personnel follows on next page. Select YKK Job Description forms are attached. Complete YKK Job Descriptions for employees whose positions at the facility is related to hazardous waste management are maintained at the facility.

1-4 Emergency Response Procedures

1-4 Notification (40 CFR 264.56 (a))

In the event of an emergency situation, the emergency coordinator will be notified first; subsequently, all facility personnel, appropriate federal, state or local agencies, and fire or police department will also be notified. See figure 4 and 5.

1-4b Identification of Hazardous Waste (40 CFR 264.56 (b))

The emergency coordinator will immediately identify the character, exact source, amount and area of extent of the release or spill. The initial identification method will be to utilize visual analysis of the material and location of the release.

1-4c Assessment (40 CFR 256.52 (c) and (d))

The emergency coordinator will assess possible hazards, both direct and indirect, to human health and/or the environment.

1-4d Control Procedures (40 CFR 256.52 (a))

Potential accidents fall under three general classifications: (1) fire and/or Explosions, (2) spills or material release, and (3) floods. Natural disasters such as earthquakes or tornadoes are assumed to fall into one of these three classifications. An over-view of the emergency plan of action is outlined in Figure 4. Figure 5 is more detailed emergency plan of action, including phone numbers.

Fire and/or Explosion

In case of a fire or explosion, numerous fire extinguishers are located throughout the plant and in each waste management area. If the fire cannot be contained, the local fire department will be alerted. Response time is three to four (3-4) minutes.

LIST OF PERSONNEL

Position	**1st Shift**
Production manager	Aza Shumate
Environmental Engineer	Todd Baldwin
Maintenance Supervisor	Tim Baker
Finishing Engineer	Michael Hopper
Plating Supervisor	Lance Sims
Waste Treatment Operation	Brian Cook
	Wayne Chesser
Paint Operator	Amanda Powell
	Mike Yount
	Wiley Cunningham
Maintenance personnel	Scott Chesser
	Kelly Sea
	Judley Darnell
	Dwayne Gilbert
	Tammie Parks
	Steve Coulter

C. Purpose: The following outline establishes an initial training program for newly hired personnel whose position impacts on hazardous waste management.

SECTION A

OUTLINE OF INITIAL TRAINING PROGRAM

Initial training will be provided by the Corporate Environmental Engineer and Finishing Engineer and monitored by the Senior Plating Foreman.

I. Waste Treatment Facilities and Equipment

1. General layout (Appendix I)
   - a) Effluent point to POTW
   - b) CN holding tank
   - c) Non-CN holding tank
   - d) Tumbling / burnishing equalization tank
   - e) CN oxidation tanks
   - f) T /B lift station
   - g) ET-60
   - h) ET-120
   - i) Final pH adjust
   - j) Sludge thickness
   - k) Filter press

2. Waste Treatment testing
   - a) Use of pH meter
   - b) Use of pipette
   - c) Use of burette
   - d) Use of spectrophotometer/colorimeter, atomic absorption
   - e) Hood/Bunsen burners, flasks, etc.
   - f) Conducting actual tests under supervision
     - (1) CN before treatment
     - (2) CN after treatment
     - (3) Hexavalent chrome
     - (4) pH
     - (5) Other tests as directed by the instructing operator or the Plating Foreman

3. Daily / Weekly / Monthly / Yearly WWT Duties (See Appendix II for WWT Manual)
   - a) Cleaning probes
   - b) Chemical makeups
   - c) Calibrating probes
   - d) Service flow meters
   - e) Tank clean-out

4. Flume
   - a) Effluent checks
   - b) Flow meter
   - c) Sampling for in-house tests
   - d) Sampling for out-of-house tests

5. Filter Press Operation and Management of Sludge (See Appendix III for Filter Press Procedures)
   a) Press operation
   b) Sludge pumps
   c) House keeping

6. Plating processes
   a) Familiarization (including drainage system)
   b) Tests
   c) Adds

II. Additional Waste Streams Training

1. Paint sludge generated at Plant II
   a) Dewatering
   b) Stabilizing
   c) Proper equipment and labeling

2. Solvent flush from Plant II paint machine
   a) Drum handling procedures
   b) Proper labeling

III. Emergency Response Training
1. Equipment use
2. Communication System
3. Review of Emergency Procedures and Contingency Plan

D. Continuing Training:

As continuing training for hazardous waste management personnel, an annual review of the hazardous waste management procedures and any modifications made to the procedures during the year will be performed.

1. Type and Amount of Training:

Position	***Training Outline Sections***
Corporate Environmental Engineer	All

SECTION B

EMERGENCY PROCEDURES

This section will be reviewed annually by all personnel listed under Personnel training, paragraph 2, responsibilities. In addition waste treatment operators will demonstrate familiarity with the General Information part of this section and proficiency in dealing with the problems listed in the SPECIFIC EMERGENCIES part of this section.

I. General Information

1. Personnel:

The following is a list of personnel and the order in which they are to be called in case of an emergency:

Name	Title	Address	Phone Numbers
Tim Baker	Assistant Plant Manager	1192 Mays Road Lawrenceburg, KY	502-839-2256 (Work) 502-839-9200 (Home) 502-320-2885 (Cell)
Greg Pass	Director, Human Resources, Safety and Health	1120 Birdie Road Lawrenceburg, KY	502-839-2236 (Work) 859-839-9117 (Home) 502-680-5747 (Cell)
Todd Baldwin	Environmental Engineer	15530 Bridle Gate Drive Lawrenceburg, KY	502-839-2222 (Work) 502-267-6069 (Home) 502-680-4278 (Cell)
Bobby Elliott	Press Room Supervisor	1598 Warwick Road Harrodsburg, KY	502-839-2371 (Work) 859-734-0757 (Home) 859-265-0565 (Cell)
Aza Shumate	Plant Manager	Available upon request	502-839-2426 (Work) 859-200-0474 (Home) 502-600-0596 (Cell)
Sean Meadows	Safety Specialist	Available upon request	502-839-2342 (Work) 606-356-4734 (Home) 502-680-2593 (Cell)

All of the above personnel can be reached at work during normal production hours (8am-5pm) at 839-6971.

2. Maintenance and Inspection:

   The waste treatment plant is equipped with "spare parts" in critical areas such as piping and valves. All mechanical equipment is subject to overhaul once each year and worn or defective parts are replaced.

   Routine inspection of all equipment is made by the operator before using. The operators submit a report of any defective equipment to the Supervisor.

   The Fire Department inspects the facility annually.

3. Breakdown at Treatment Plant:

   The Waste Treatment Plant is a continuous treatment process. In the event of a breakdown, the operation could be simply shut down. It is possible to manually oxidize the cyanide, or to manually add caustic slurry to acid tanks. Therefore, the treatment system could be manually operated until necessary mechanical or electrical repairs are made.

4. Safety:

   Cyanide rinse waters flow into holding tanks.

   A sprinkler system is installed throughout the waste treatment plant to minimize any fire spread.

   Fire extinguishers are available if needed.

   A sign labeled, "Danger - Unauthorized Personnel - Keep Out", is posted both at the Waste Treatment Plant and at the closed landfill.

5. Emergency Response:

   Power failure - there would be no discharge. Shut down and call repairman.

   Fire Department - (502) 839-4500

   Division of Water Quality- (502) 564-3410

II. Waste Handling:

The non-hazardous filter media from the automatic spray-paint booth is manually removed by the operator. This filter media which captures paint overspray is replaced as needed, usually 1-2 times per week. This waste is disposed in an on-site special waste container.

The D001/F003/F005 hazardous waste generated from the solvent recovery unit is manually removed by the operator and disposed in an on-site 275-gallon containment tote tank. This waste is reused as a primary fuel in a cement kiln when disposed by a vendor.

The non-hazardous waste generated from on-site parts washer units is collected by the vendor and replaced with clean parts washer solution. The waste solution is disposed at a vendor recycling facility.

Non-hazardous waste oil generated on-site from stamping operations is stored in on-site above ground plastic storage tanks. These waste oils are shipped off-site for recycling and are remanufactured as hydraulic fluids.

Rubber gloves and face shields are provided for operator protection to handle these waste disposal activities.

III. Specific Emergencies:

Problem # 1:

Out of control condition in clarifier (cyanide, chrome, pH, or: any potentially hazardous metallic or organic substance in excess of prescribed limits).

a) Treat the clarifier for the specific condition(s).
b) Notify your plating supervisor.
c) Request maintenance assistance, if required.

Problem # 2:

Cyanide treatment tank overflows.

a) Shut off inlet valve to affected tank. Transfer flow to another tank as required.
b) Check for cyanide after treatment.
c) Treat further, if necessary.
d) Record time and date of event. Also, make a record of approximate amount of release and actions taken.
e) Notify your plating supervisor.
f) Try to determine probable cause of problem with supervisor and maintenance personnel.

Problem # 3:

Acid treatment tank overflows:

a) Shut off inlet valve to affected tank. Transfer flow to other tank as required.
b) Treat spill with lime.
c) Check pH of treated spill.
d) Treat further, if necessary.
e) Record time, date approximate amount of release and actions taken.
f) Notify your plating supervisor.
g) Try to determine probable cause of problem with supervisor and maintenance personnel.

Problem # 4:

Sludge spill form roll-off container.

a) Contain spill with absorbent "pigs".

b) Notify your supervisor.

c) Record date, time, approximate amount of release and actions taken.

d) Try to determine probable cause of problem with supervisor and maintenance personnel.

Problem # 5:

Ruptured totes containing waste solvent (F003-F005).

a) A leaking container should be handled as follows:

(1) When a leak is detected, it should be corrected by replacing the container.

(2) Material that has leaked out should be soaked up with absorbent socks, and the socks should be put into an approved container.

b) Notify your supervisor.

c) Record date, time approximate amount of release and actions taken.

d) Try to determine probable cause of problem with supervisor and maintenance personnel.

e) In the event of a spill when transporting containers to the storage area or when loading a truck for the storage area, follow steps a thru d above.

CAUTION: these materials are flammable and care must be taken not to ignite the fumes. Good ventilation must be available prior to handling any spilled material. A cartridge respirator fitted with cartridges for organic vapors should be worn to prevent headaches and dizziness when working in confined areas.

Problem # 6:

Ruptured drum containing paint sludge (D008)

a) Leak should be corrected by replacing drum and/or securing leak.

b) Material that has leaked out should be soaked up with absorbent socks and sock should be put in appropriate container.

c) Notify your supervisor

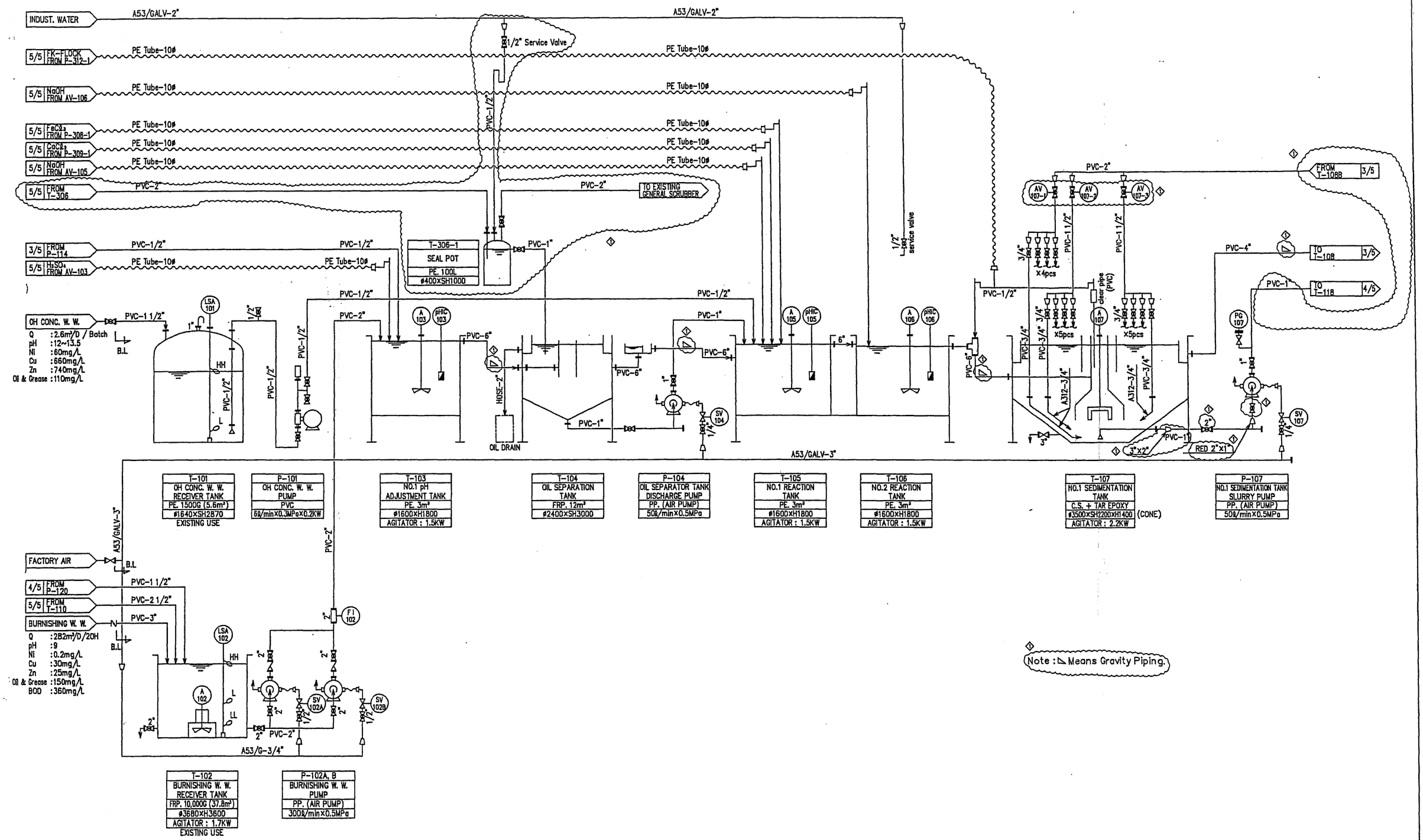
d) Record date, time approximate amount of release and actions taken.

e) Try to determine probable cause of problem with supervisor and maintenance personnel.

f) In the event of a spill when transporting containers to the storage area or when loading a truck for the storage area, follow steps a thru d above.

CAUTION: these materials are flammable and care must be taken not to ignite the fumes. Good ventilation must be available prior to handling any spilled material. A cartridge respirator fitted with cartridges for organic vapors should be worn to prevent headaches and dizziness when working in confined areas.

Appendix I



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		COMPANY: YKK Universal Fasteners Inc.						DWG.NO. F-04012-01 / REV. ◺
								MICRO FILM / FILE No. / A1

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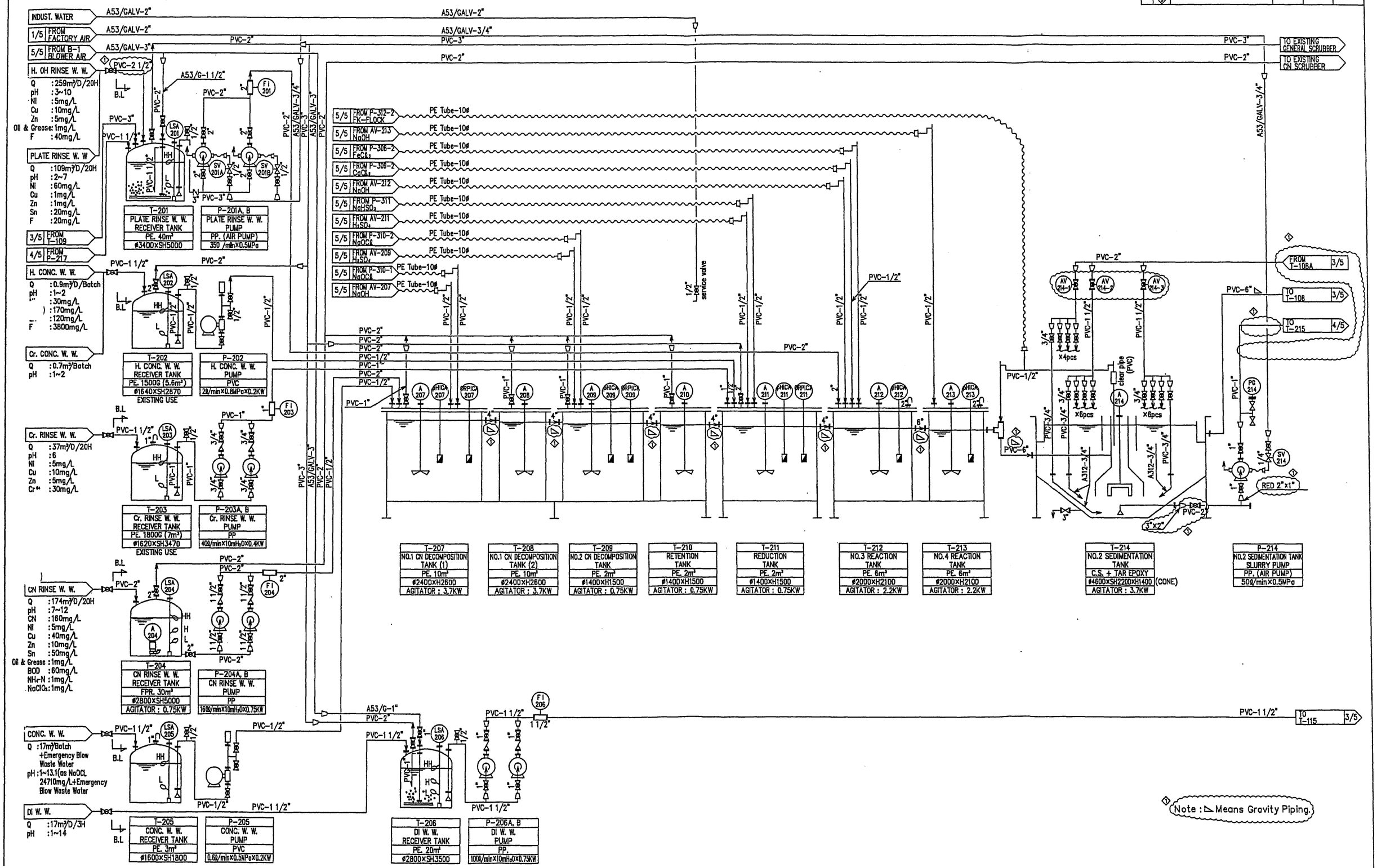

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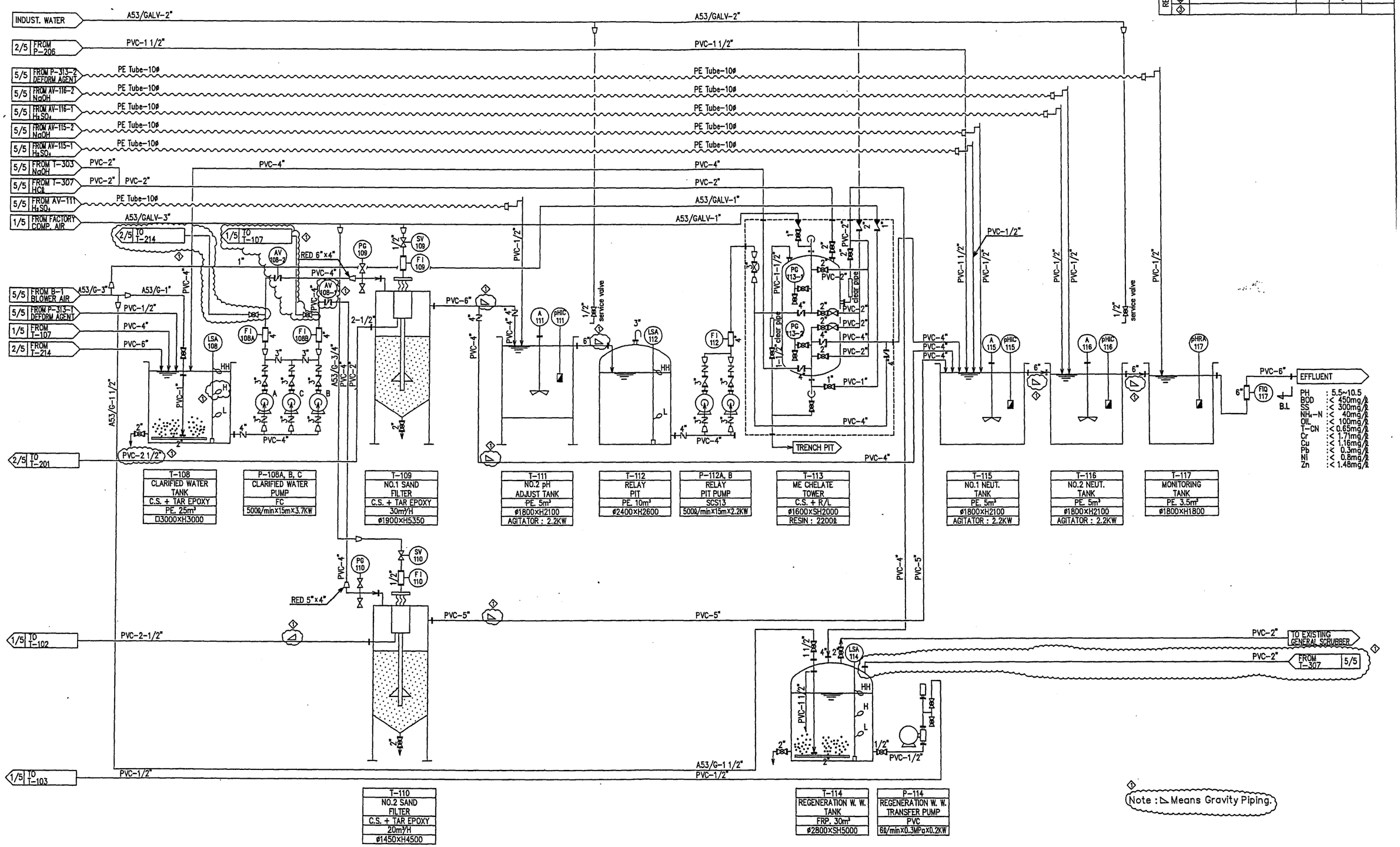

T-108
CLARIFIED WATER TANK
C.S. + TAR EPOXY
PE. 25m³
□3000×H3000

P-108A, B, C
CLARIFIED WATER PUMP
FC
500ℓ/min×15m×3.7KW

T-109
NO.1 SAND FILTER
C.S. + TAR EPOXY
30m³/H
ø1900×H5350

T-111
NO.2 pH ADJUST TANK
PE. 5m³
ø1800×H2100
AGITATOR : 2.2KW

T-112
RELAY PIT
PE. 10m³
ø2400×H2600

P-112A, B
RELAY PIT PUMP
SCS13
500ℓ/min×15m×2.2KW

T-113
ME CHELATE TOWER
C.S. + R/L
ø1600×SH2000
RESIN : 2200ℓ

T-115
NO.1 NEUT. TANK
PE. 5m³
ø1800×H2100
AGITATOR : 2.2KW

T-116
NO.2 NEUT. TANK
PE. 5m³
ø1800×H2100
AGITATOR : 2.2KW

T-117
MONITORING TANK
PE. 3.5m³
ø1800×H1800

T-110
NO.2 SAND FILTER
C.S. + TAR EPOXY
20m³/H
ø1450×H4500

T-114
REGENERATION W. W. TANK
FRP. 30m³
ø2800×SH5000

P-114
REGENERATION W. W. TRANSFER PUMP
PVC
6ℓ/min×0.3MPa×0.2KW

Note : ⊿ Means Gravity Piping.

DWG.NO.	REV.	FILE NO.

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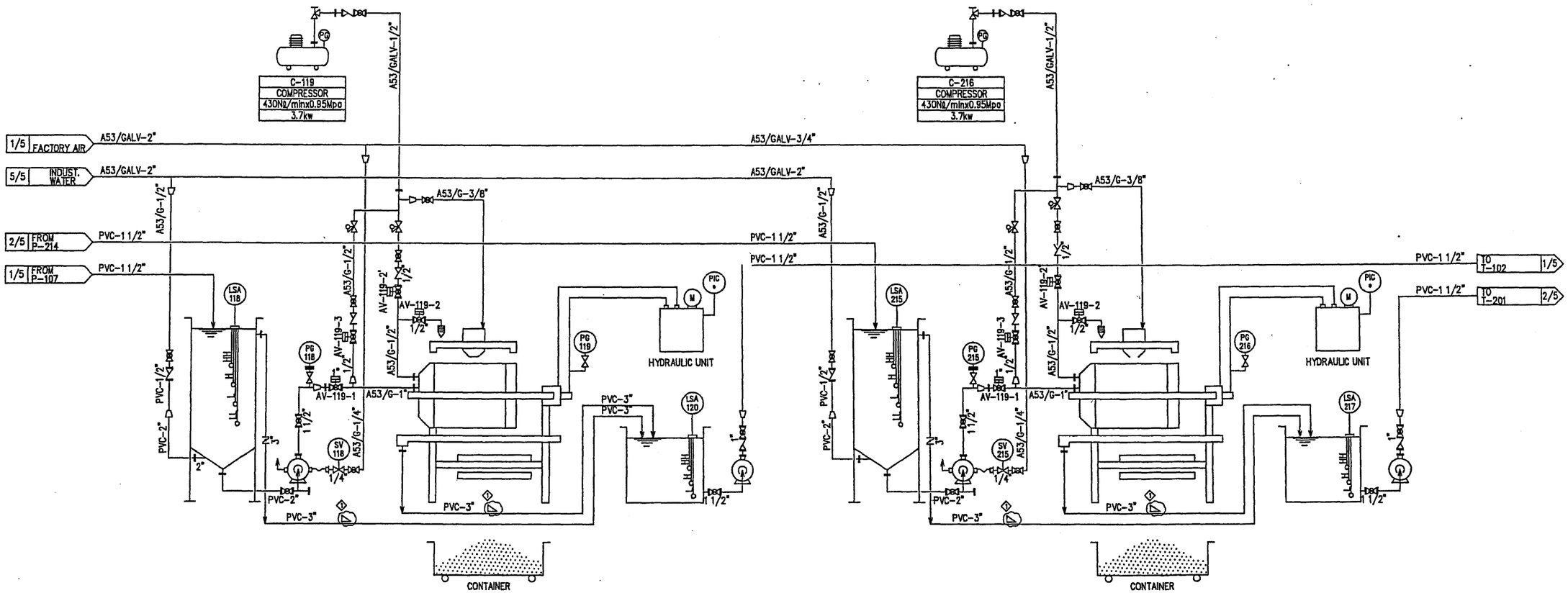
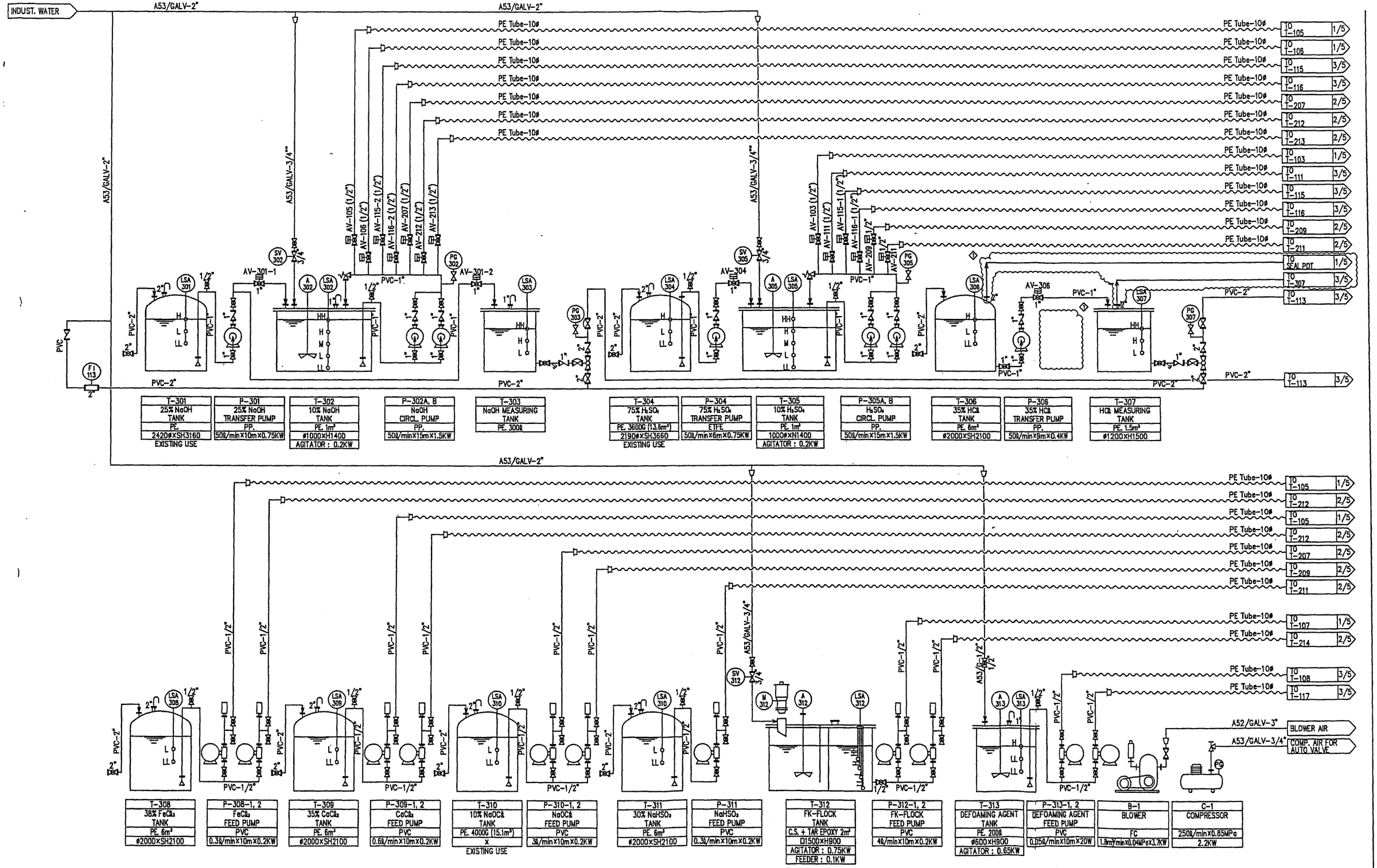


T-118	P-118	U-119	T-120	P-120	T-215	P-215	U-216	T-217	P-217
BURNISHING SLUDGE TANK	BURNISHING SLUDGE FEED PUMP	NO.1 DEHYDRATOR	NO.1 TRANSFER TANK	NO.1 TRANSFER PUMP	PLATE SLUDGE TANK	PLATE SLUDGE FEED PUMP	NO.2 DEHYDRATOR	NO.2 TRANSFER TANK	NO.2 TRANSFER PUMP
FRP. 2500G (9.5m³)	PP(Air Pump)	200ℓ 14m³	PE. 500ℓ	FC	FRP. 2500G (9.5m³)	PP(Air Pump)	200ℓ 14m³	PE. 500ℓ	FC
1800ø×SH4500	100ℓ/min×0.5Mpa	AUTO MATIC	ø900×H900	100ℓ/min×15mH₂O×0.4KW	1800ø×SH4500	100ℓ/min×0.5Mpa	TOTAL APPROX 7KW	ø900×H900	100ℓ/min×15mH₂O×0.75KW
EXISTING USE		TOTAL APPROX 7KW			EXISTING USE				

Note : ▷ Means Gravity Piping.



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FUJIKASUI ENGINEERING CO.,LTD.

PLANT	Waste Water Treatment System	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
COMPANY	YKK Universal Fasteners Inc.	NTS	SEP. 09.'03 H.Ida	SEP. 09.'03 H.FUJISAWA	DEC.02.'03 H.Ida	DEC.02.'03 M.Naitoh

DRAWING TITLE: P&ID (5/5)

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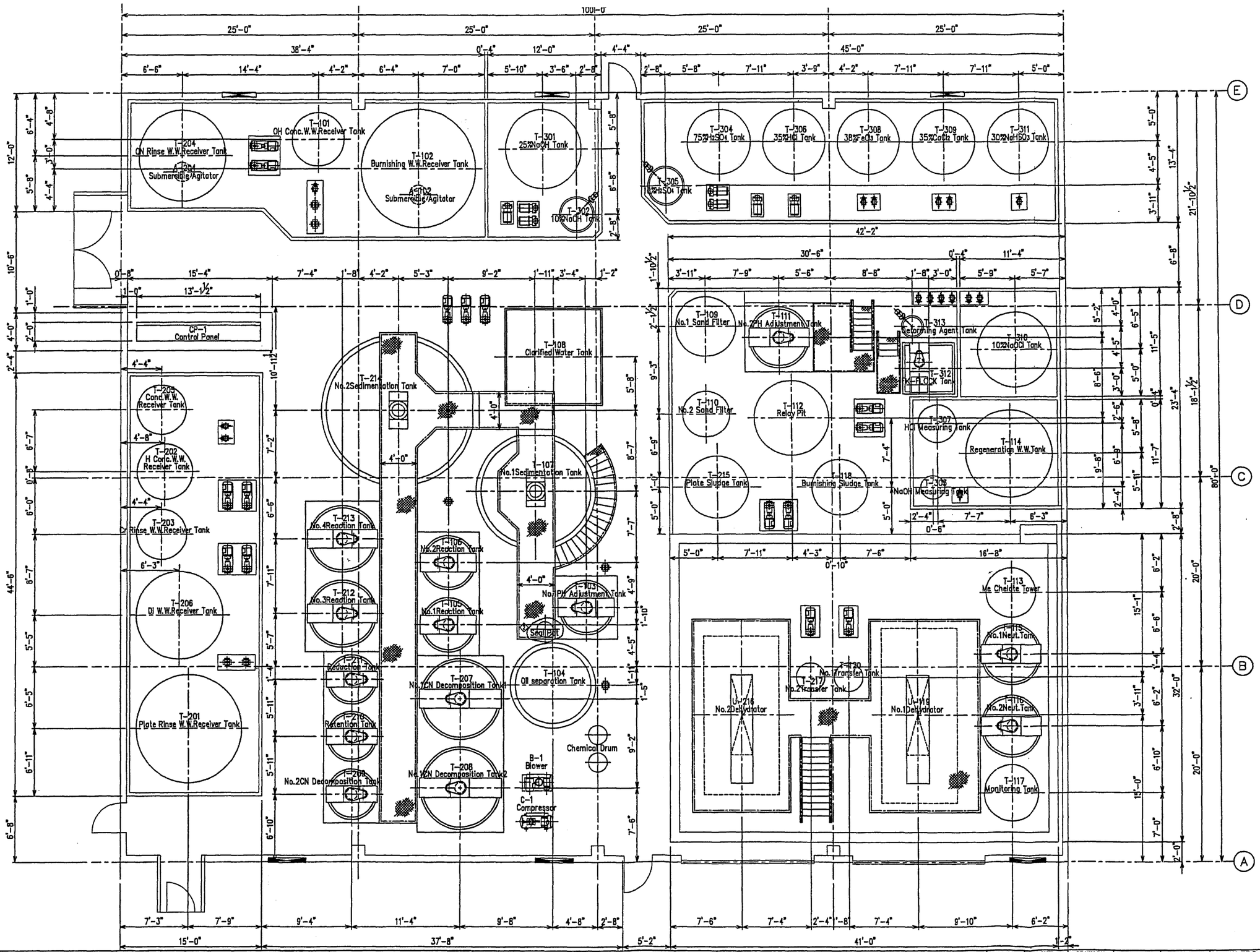

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富士化水工業株式会社
FUJIKASUI ENGINEERING CO., LTD.

PLANT	Waste Water Treatment System	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
COMPANY	Universal Fasteners Inc.	1/60	2003. 10. 8 H.Ida	2003. 9. 9 K.SHIMIZU	2003. 10. 17 H.Ida	

DRAWING TITLE: LAY OUT

DWG. No. LH-03042-04

REV. 2

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Appendix II

YKK (U.S.A.) Snap & Button Fasteners, Inc.
Select Job Descriptions

JOB DESCRIPTION

JOB TITLE: **Chemical Finishing Engineer**	**FLSA STATUS:** **Exempt**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK USA Inc., Engineering, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Senior Chemical Engineer**	**EFFECTIVE DATE:** 03/02/2016

JOB SUMMARY:

Responsible for the design, development, testing, documentation, and implementation of new and improved product finishes and their associated processes and machinery by performing the following duties:

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Is responsible to provide engineering support to YKK and to SMM (Mexico) in the maintenance and improvement of existing finishing processes as well as the acquisition, installation, start up, and training for new equipment and new finishing materials.

2. Develops new finishes and new or improved finishing processes for YKK's product line. Conducts cost analysis to determine benefits and savings. Ensures that the new/improved processes are scalable to production.

3. Reviews (checks) product finish design for compliance with engineering principles, company standards, customer requirements, and current legal requirements. Is responsible for suggesting changes or blocking the development of unsafe or unstable finishes.

4. Is responsible to support the QC/QA groups to maintain correct work instructions, bills of materials, and routings to assure that finishes are repeatable and can be judged correctly from a standard. Is required to enter engineering change requests (ECR) to correct any nonconformance in this area.

5. Is responsible to support the waste water treatment facility and the laboratory technicians with technical training as well as trouble shooting assistance on an as required basis.

6. Is responsible to assist and advise YKK's customer base regarding garment finishing issues as they relate to YKK's metal hardware.

7. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.

8. Performs other position related duties as assigned.

SUPERVISION AND SCOPE OF POSITION:

This job has no direct supervisory responsibilities.

QUALIFICATION AND REQUIREMENTS:

Education/Experience: BSChE or a BS in Chemistry and 2-5 related experience (particularly in the electroplating industry or the mass finishing industry).

Qualifications: Fluency in Spanish is a plus.

JOB TITLE: **Chemical Finishing Engineer**	**FLSA STATUS:** **Exempt**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK USA Inc., Engineering, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Senior Chemical Engineer**	**EFFECTIVE DATE:** 03/02/2016

Certificates and Licenses: None Required

Travel Requirements: Extensive travel (25%) may be required at times.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Michael Hopper	DATE: 03/02/2016
APPROVED BY: Greg Pass	DATE: 03/02/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: **Closing Setup**	**FLSA STATUS:** **Hourly**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Closing Dept., Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Production Supervisor I**	**EFFECTIVE DATE:** 03/02/2016

JOB SUMMARY:

Sets up, assembles, or produces product using varied components, raw material, and equipment.

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Follows company polices and procedures in regards to safety, 5S, Code of Ethics, Company Rules, ISO Quality, ISO Environmental reporting any possible violations to management.

2. Repairs, maintains, and operates assembly equipment using shop orders, computer systems, computer programs, blueprints, hand tools, and work instructions a satisfactory and safe manner.

3. Produces or processes plastic components used to make garment fasteners using manufacturing equipment, shop orders, computer systems, computer programs, blueprints, tools, and work instructions specific to the department in a satisfactory and safe manner.

4. Operates material handling equipment.

5. Performs other jobs as needed where trained to do safely and satisfactorily.

6. In the event that the employee in this position is a Lead, he/she will be responsible to assign work, answer production related employee questions, record any safety related occurrences, attend and report required information during regular scheduled meetings, and alert management of any abnormal activity or situation. Leads are not responsible for issuing disciplinary actions. Other duties may be assigned by the area Supervisor.

7. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.

SUPERVISION AND SCOPE OF POSITION:

This job has no direct supervisory responsibilities.

QUALIFICATION AND REQUIREMENTS:

Education/Experience:
High school diploma or general education degree (GED); or one to three months related experience and/or training; or equivalent combination of education and experience.

JOB TITLE: **Closing Setup**	**FLSA STATUS:** **Hourly**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Closing Dept., Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Production Supervisor I**	**EFFECTIVE DATE:** 03/02/2016

Qualifications:
To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Certificates and Licenses: None Required

Travel Requirements: Minimal travel

PHYSICAL DEMANDS:
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Bobby Elliott	DATE: 03/02/2016
APPROVED BY: Greg Pass	DATE: 03/02/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: **Environmental Engineer**	**FLSA STATUS:** **Exempt**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Engineering, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Director of Engineering**	**EFFECTIVE DATE:** 02/03/2016

JOB SUMMARY:

Responsible for all aspects of multi-media [Air, Water and Waste Management] and other environmentally related projects for YKK, S&B. Is the Management Representative, lead auditor, developer, and trainer of the company's ISO 14001 Environmental Management System (EMS). Plans, directs, and coordinates activities and documentation for manufacturing procedures and equipment that impact the environment in any way by performing the following duties:

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Is responsible for the satisfaction of all legal, environmental, and insurance (property loss) compliance requirements as listed in the ISO 14001 document EMS-FM-4.5.2-002.

2. Administers and is the Lead Auditor for YKK S&B's ISO 14001 Environmental Management System (EMS) and is a member of the YKK Corp Environmental Compliance Committee (ECC), where on a rotating frequency, also serves as Co-Chair of the Committee. Also serves as Leader of YKK NCA Environmental Committee working as a liaison between YKK and other YKK Group companies.

3. Studies, interprets, Implements, and maintains the requirements of all multi-media (Air, Water, and Waste) permits issued to YKK S&B, as well as other YKK Group companies, as required by the YKK Environmental Compliance Committee (ECC).

4. Conducts and is responsible for the training of all employees as related to ISO 14001 goals and Objectives. Is responsible for specific employee training for HAZMAT, RCRA, and SPCC.

5. Prepares environmental project feasibility studies, formulates plans, coordinates project activities, reviews technical aspects of projects and signs off on capital requests that have environmental aspects or impacts. Responsible for all environmental related reporting and tracking requirements (daily, weekly, monthly, quarterly, semi-annually and annually).

6. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.

7. Act as auditor and/or lead auditor for YKK Group companies as required by YKK ECC, as well as off-site facilities receiving YKK S&B wastes.

8. Characterize wastestreams (hazardous, non-hazardous, special, universal, etc.) per applicable regulations. Assure wastes are properly packaged, labeled, stored, inspected (weekly), manifested and shipped or transported per State and Federal environmental regulations.

9. Tracks and updates all applicable Safety Data Sheets (SDSs) as they relate to YKK S&B's operational processes for inclusion into the SiteHawk database.

10. Performs other position related duties as assigned.

SUPERVISION AND SCOPE OF POSITION:

This job has no direct supervisory responsibilities.

JOB TITLE: **Environmental Engineer**	**FLSA STATUS:** **Exempt**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Engineering, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Director of Engineering**	**EFFECTIVE DATE:** 02/03/2016

QUALIFICATION AND REQUIREMENTS:

Education/Experience: BS in an appropriate discipline and five (5) years of related experience and/or training; or equivalent combination of education and experience.

Qualifications: Although not required, it is preferred this position be familiar with multi-media (air, water and waste) regulations at the local, State and Federal levels. Being familiar with regulations in States where YKK maintains other facilities is a plus, as well as being familiar with international environmental regulations including Canada, Mexico and Central America. An on-going knowledge of environmental laboratory procedures is also important.

Certificates and Licenses: This position requires ISO 14001 Internal Lead Auditor Certification and/or training; or the ability to obtain this Certification within the first six months of employment.

Travel Requirements: Moderate travel

PHYSICAL DEMANDS:
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Greg Pass	DATE: 02/03/2016
APPROVED BY: Greg Pass	DATE: 02/03/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: Finishing Operator, Shell finish	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Finishing, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Finishing Supervisor	**EFFECTIVE DATE:** 03/2/2016

JOB SUMMARY:

Cleans and burnishes product to achieve a desired appearance using standards, chemicals and media.

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Follows company policies and procedures in regards to Safety, 5S, Code of Ethics, OSHA Standards, Company Rules, ISO Quality, & ISO Environmental reporting possible violations to management.
2. Cleans and burnishes product using manufacturing equipment, computer systems, computer programs, shop orders, measuring devices, work instructions, and hand tools in a satisfactory and safe manner to achieve a desired appearance using standards, chemicals and media.
3. Operates material handling equipment.
4. Performs other jobs as needed where trained to do safely and satisfactorily.
5. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.
6. In the event that the employee in this position is a Lead, he/she will be responsible to assign work, answer production related employee questions, record any safety related occurrences, attend and report required information during regular scheduled meetings, and alert management of any abnormal activity or situation. Leads are not responsible for issuing disciplinary actions. Other duties may be assigned by the area Supervisor.
7. Performs other position related duties as assigned.

SUPERVISION AND SCOPE OF POSITION:

This job has no direct supervisory responsibilities.

QUALIFICATION AND REQUIREMENTS:

Education/Experience:

High School Diploma and be a graduate of a Trade School or Vocational School with special skill training in machine shop technology or have extensive (three or more years) related experience and / or training; equivalent combination of education and experience.

Qualifications:

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill and/ or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Certificates and Licenses: None Required

Travel Requirements: Minimal travel

JOB TITLE: Finishing Operator, Shell finish	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Finishing, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Finishing Supervisor	**EFFECTIVE DATE:** 03/2/2016

PHYSICAL DEMANDS:
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision; see color variation and have ability to adjust focus.

WORK ENVIRONMENT:
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts, water, chemicals. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Lance Sims	DATE: 03/02/2016
APPROVED BY: Greg Pass	DATE: 03/02/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: Finishing Operator, Burnish	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Cleaning, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Finishing Supervisor	**EFFECTIVE DATE:** 03/02/2016

JOB SUMMARY:

Cleans and burnishes product to remove sharp edges, remove oil, and to create different finishes

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Follows company policies and procedures in regards to Safety, 5S, Code of Ethics, OSHA Standards, Company Rules, ISO Quality, & ISO Environmental reporting possible violations to management.
2. Cleans and burnishes product using manufacturing equipment, computer systems, computer programs, shop orders, measuring devices, work instructions, and hand tools in a satisfactory and safe manner.
3. Operates material handling equipment.
4. Performs other jobs as needed where trained to do safely and satisfactorily.
5. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.
6. In the event that the employee in this position is a Lead, he/she will be responsible to assign work, answer production related employee questions, record any safety related occurrences, attend and report required information during regular scheduled meetings, and alert management of any abnormal activity or situation. Leads are not responsible for issuing disciplinary actions. Other duties may be assigned by the area Supervisor.
7. Performs other position related duties as assigned.

SUPERVISION AND SCOPE OF POSITION:

This job has no direct supervisory responsibilities.

QUALIFICATION AND REQUIREMENTS:

Education/Experience:

High School Diploma and be a graduate of a Trade School or Vocational School with special skill training in machine shop technology or have extensive (three or more years) related experience and / or training; equivalent combination of education and experience.

Qualifications:

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill and/ or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Certificates and Licenses: None Required

Travel Requirements: Minimal travel

JOB TITLE: Finishing Operator, Burnish	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Cleaning, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Finishing Supervisor	**EFFECTIVE DATE:** 03/02/2016

PHYSICAL DEMANDS:
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Lance Sims	DATE: 03/02/2016
APPROVED BY: Greg Pass	DATE: 03/02/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: Finishing Operator, Paint	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (U.S.A.) Inc.,Paint, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Production Supervisor I (Closing and Paint)	**EFFECTIVE DATE:** 03/02/2016

JOB SUMMARY:

Paints product by applying various paints

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Follows company policies and procedures in regards to Safety, 5S, Code of Ethics, OSHA Standards, Company Rules, ISO Quality, & ISO Environmental reporting possible violations to management .
2. Set's up, color matches and paints parts using manufacturing equipment, computer systems, computer programs, shop orders, measuring devices, work instructions, and tools in a satisfactory and safe manner.
3. Using proper PPE, maintains coating by using analytical results and methods to achieve quality results While accurately accounting for raw material usage as it relates to inventory balances and ISO tracking.
4. Performs other jobs as needed where trained to do so safely and satisfactorily.
5. The position requires working in areas where hazardous waste is present, annual training is required in the handling, storage, labeling and disposal of such wastes. Employees in these areas are to notify supervision and/or the Environmental Engineer of any hazardous waste concerns.
6. Work Instructions are provided under ISO 14001 to address specifics of particular wastes and includes handling, storage, recycling and/or disposal.
7. In the event that the employee in this position is a Lead, he/she will be responsible to assign work, answer production related employee questions, record any safety related occurrences, attend and report required information during regular scheduled meetings, and alert management of any abnormal activity or situation. Leads are not responsible for issuing disciplinary actions. Other duties may be assigned by the area Supervisor.
8. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.

SUPERVISION AND SCOPE OF POSITION:

This job has no direct supervisory responsibilities.

QUALIFICATION AND REQUIREMENTS:

Education/Experience:

High School Diploma and be a graduate of a Trade School or Vocational School with special skill training in machine shop technology or have extensive (three or more years) related experience and / or training; equivalent combination of education and experience.

Qualifications:

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill and/ or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

JOB TITLE: Finishing Operator, Paint	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (U.S.A.) Inc.,Paint, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Production Supervisor I (Closing and Paint)	**EFFECTIVE DATE:** 03/02/2016

Certificates and Licenses: None Required

Travel Requirements: Minimal travel

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Bobby Elliott	DATE: 03/02/2016
APPROVED BY: Greg Pass	DATE: 03/02/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: Finishing Operator, Plate	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Plating, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Finishing Supervisor	**EFFECTIVE DATE:** 03/02/2016

JOB SUMMARY:

Operators electroplating equipment to apply varied finishes to product

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Follows company policies and procedures in regards to Safety, 5S, Code of Ethics, OSHA Standards, Company Rules, ISO Quality, & ISO Environmental reporting possible violations to management.
2. Plates parts with electroplating equipment using computer systems, computer programs, shop orders, measuring devices, work instructions, and hand tools in a satisfactory and safe manner.
3. Operates material handling equipment.
4. Performs other jobs as needed where trained to do so safely and satisfactorily.
5. The position requires working in areas where hazardous waste is present, annual training is required in the handling, storage, labeling and disposal of such wastes. Employees in these areas are to notify supervision and/or the Environmental Engineer of any hazardous waste concerns.
6. Work Instructions are provided under ISO 14001 to address specifics of particular wastes and includes handling, storage, recycling and/or disposal.
7. In the event that the employee in this position is a Lead, he/she will be responsible to assign work, answer production related employee questions, record any safety related occurrences, attend and report required information during regular scheduled meetings, and alert management of any abnormal activity or situation. Leads are not responsible for issuing disciplinary actions. Other duties may be assigned by the area Supervisor.
7. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.

SUPERVISION AND SCOPE OF POSITION:

This job has no direct supervisory responsibilities.

QUALIFICATION AND REQUIREMENTS:

Education/Experience:

High School Diploma and be a graduate of a Trade School or Vocational School with special skill training in machine shop technology or have extensive (three or more years) related experience and / or training; equivalent combination of education and experience.

JOB TITLE: Finishing Operator, Plate	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Plating, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Finishing Supervisor	**EFFECTIVE DATE:** 03/02/2016

Qualifications:

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill and/ or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Certificates and Licenses: None Required

Travel Requirements: Minimal travel

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Lance Sims	DATE: 03/02/2016
APPROVED BY: Greg Pass	DATE: 03/02/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: **Production Supervisor I**	**FLSA STATUS:** **Exempt**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Manufacturing, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Assistant Plant Manager**	**EFFECTIVE DATE:** 02/16/2016

JOB SUMMARY:

Supervises and coordinates activities of production employees

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Supervises employees to produce or process product using shop orders, computer systems, computer programs, blueprints, tools, processes, work instructions, and equipment specific to the department(s) supervised prioritizing as needed making sure all resources are available to produce product in a satisfactory and safe manner.

2. Monitors, maintains, and is responsible for product quality for departments supervised.

3. Attends staff meetings prepared to discuss production status of their areas of responsibility.

4. Works on improvement teams to analyze, study, and provide improvement ideas using established procedures.

5. Communicates verbally and creates written documentation as needed pertaining to essential duties and responsibilities listed.

6. Secures services, parts, and/or supplies from service departments using established Procedures.

7. The position requires working in areas where hazardous waste is present, annual training is required in the handling, storage, labeling and disposal of such wastes. Employees in these areas are to notify supervision and/or the Environmental Engineer of any hazardous waste concerns. (WWT/Finishing/Closing Supervisor only)

6. Work Instructions are provided under ISO 14001 to address specifics of particular wastes and includes handling, storage, recycling and/or disposal.

7. Establishes, monitors, and records departmental and personal goals pertaining to productivity, safety, and departmental status.

8. Performs other position related duties as assigned.

9. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.

SUPERVISION AND SCOPE OF POSITION:

Directly supervises 5 to 30 employees in the Production Department. Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities include interviewing, hiring, and training employees; planning, assigning, and directing work; appraising performance; rewarding and disciplining employees; addressing complaints and resolving problems.

JOB TITLE: **Production Supervisor I**	**FLSA STATUS:** **Exempt**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc., Manufacturing, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Assistant Plant Manager**	**EFFECTIVE DATE:** 02/16/2016

QUALIFICATION AND REQUIREMENTS:

Education/Experience:
Bachelor's degree; or two to four years related experience and/or training; or equivalent combination of education and experience.

Qualifications:
To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Certificates and Licenses: None Required

Travel Requirements: Minimal travel

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Tim Baker	DATE: 02/16/2016
APPROVED BY: Greg Pass	DATE: 02/16/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: **Senior Finishing Engineering**	**FLSA STATUS:** **Exempt**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (U.S.A.) Inc., Mfg Engr, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Director of Engineering**	**EFFECTIVE DATE:** 03/7/2016

JOB SUMMARY:

Supervises Finishing Engineering personnel and assigns duties as required. Responsible for the design, development, testing, documentation, and implementation of new and improved product finishes and their associated processes and machinery performing the following duties:

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Controls operations budget for the WWT System operation. Assures that the chemical inventory is audited regularly so that it is accurate and complete. Is responsible for waste water quality compliance to all Federal, State, and local regulations. Reviews the activities and abilities/training of all WWT Technicians and other assigned Finishing Engineering personnel.

2. Is responsible to provide engineering support to YSU and to SMM (Mexico) in the maintenance and improvement of existing finishing processes as well as the acquisition, installation, start up, and training for new equipment and new finishing materials.

3. Develops new finishes and new or improved finishing processes for YSU's product line. Conducts cost analysis to determine benefits and savings. Ensures that the new/improved processes are scalable to production.

4. Reviews (checks) product finish design for compliance with engineering principles, company standards, customer requirements, and current legal requirements. Is responsible for suggesting changes or blocking the development of unsafe or unstable finishes.

5. Is responsible to support the QC/QA groups to maintain correct work instructions, bills of materials, and routings to assure that finishes are repeatable and can be judged correctly from a standard. Is required to enter engineering change requests (ECR) to correct any nonconformance in this area.

6. Is responsible to assist and advise YSU's customer base regarding garment finishing issues as they relate to YSU's metal hardware.

7. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.

8. Performs other position related duties as assigned.

SUPERVISION AND SCOPE OF POSITION:

This job supervises two to six WWT Technicians and Finishing Engineers. Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities include training employees; planning, assigning, directing, and reviewing work performance; addressing complaints, arranging schedules, filling out time cards, and resolving personnel and technical problems.

JOB TITLE: **Senior Finishing Engineering**	**FLSA STATUS:** **Exempt**
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (U.S.A.) Inc., Mfg Engr, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: **Director of Engineering**	**EFFECTIVE DATE:** 03/7/2016

QUALIFICATION AND REQUIREMENTS:

Education/Experience: BSChE and 2-5 related experience (particularly in the electroplating industry or the mass finishing industry).

Qualifications: Fluency in Spanish is a plus. Proven management skills within the current YKK organization would be a plus.

Certificates and Licenses: None Required

Travel Requirements: Extensive travel (25%) may be required at times.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Terry Hamagata	DATE: 03/7/2016
APPROVED BY: Greg Pass	DATE: 03/7/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

JOB DESCRIPTION

JOB TITLE: WWT Technician	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc.,WWT, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Production Supervisor 1 (Finishing/WWT Supervisor)	**EFFECTIVE DATE:** 03/02/2016

JOB SUMMARY:

Maintains WWT system, Monitors Waste Streams, and Maintains Electroplating baths.

ESSENTIAL DUTIES & RESPONSIBILITIES:

1. Follows company policies and procedures in regards to Safety, 5S, Code of Ethics, OSHA Standards, Company Rules, ISO Quality, & ISO Environmental reporting possible violations to management.
2. Operates WWT equipment and monitors wastes streams to assure rinses from electroplating process are properly treated to comply with established standards by using computer systems, computer programs, measurement devices, analytical test equipment, technical manuals, work instructions, and chemical data sheets in a satisfactory and safe manner.
3. Operates material handling equipment.
4. The position requires working in areas where hazardous waste is present, annual training is required in the handling, storage, labeling and disposal of such wastes. Employees in these areas are to notify supervision and/or the Environmental Engineer of any hazardous waste concerns.
5. Work Instructions are provided under ISO 14001 to address specifics of particular wastes and includes handling, storage, recycling and/or disposal.
6. In the event that the employee in this position is a Lead, he/she will be responsible to assign work, answer production related employee questions, record any safety related occurrences, attend and report required information during regular scheduled meetings, and alert management of any abnormal activity or situation. Leads are not responsible for issuing disciplinary actions. Other duties may be assigned by the area Supervisor.
7. Performs other jobs as needed where trained to do safely and satisfactorily.
8. Comply with YKK's Compliance Program including Environmental, Quality, Health & Safety, and Confidential Information Management guidelines.

SUPERVISION AND SCOPE OF POSITION:

This job has no direct supervisory responsibilities.

QUALIFICATION AND REQUIREMENTS:

Education/Experience:

High School Diploma and be a graduate of a Trade School or Vocational School with special skill training in machine shop technology or have extensive (three or more years) related experience and / or training; equivalent combination of education and experience.

JOB TITLE: WWT Technician	**FLSA STATUS:** Hourly
COMPANY, DIVISION, DEPARTMENT & LOCATION: YKK (USA) Inc.,WWT, Lawrenceburg, KY	**JOB NUMBER:**
REPORTS TO TITLE: Production Supervisor 1 (Finishing/WWT Supervisor)	**EFFECTIVE DATE:** 03/02/2016

Qualifications:

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill and/ or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Certificates and Licenses: None Required

Travel Requirements: Minimal travel

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; stoop, kneel, crouch, or crawl and talk or hear. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision and ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to fumes or airborne particles, risk of electrical shock, and vibration. The noise level in the work environment is usually moderate to loud. The employee is required to wear appropriate safety protective equipment at the proper times and in the proper environments as required by safety program rules.

PREPARED BY: Lance Sims	DATE: 03/02/2016
APPROVED BY: Greg Pass	DATE: 03/02/2016
EMPLOYEE'S NAME (PRINTED): _____ EMPLOYEE'S SIGNATURE: _____	DATE:

Appendix III

OPERATING PROCEDURES FOR THE FILTER PRESS

1. See that the air compressor and air dryer are on. They are to be left running all of the time.

2. Drain all of the water from the bottom of the air compressor.

3. Filter press:

   A. Turn on the air supply~
   B. Close the filter press.
   C. Close the drip trays.
   D. The plate shifter should be off.
   E. Check the main plate cylinder pressure gauge. It must be at least 3,500 psi or you shouldn't run it.
   F. Cover the plates with plastic.

4. Sludge pumps: 5.

   A. Close the sludge line bleed off valve.
   B. Open the clarifier valve next to the prefilter.
   C. Open the outlet valve on the pump you are going to use. (Alternate using both pumps)
   D. Open the intake valve on the pump you are going to use.
   E. Set the air regulator to the pump at 100 psi.
   F. Open the airline valve to the shock absorber.
   G. Open the airline to the pump you are going to use. Do this very slowly.
   H. Set the stroke at 2 - 3 seconds.
   I. Record the time of start up in the log book.
   J. Check the system for leaks.
   K. Observe the return water to see that it is clear. It will take several minutes to fill the lines and filter press with solution.

5. Stop pumping when the stroke gets to 14 seconds. If the press gets full before this time then the back pressure will cause the pumps to stop. Should the prefilter get plugged then the pumps will stop also.

6. Sludge pumps:

   A. Turn the pumps air valve off.
   B. Close the clarifier valve by the pre-filter.
   C. Close the outlet valve from the pump.
   D. Close the inlet valve to the pump.
   E. Open the sludge line bleed off valve.
   F. Record the time of shut down in the log book.

7. Filter press:

   A. Remove the plastic covering from the filter plates.
   B. Open the filter press.

C. Let water drain from the plates for 5 minutes.
D. Open the drip trays.
E. Turn on 'the plate shifter. Let it run until all plates have been moved, then turn it off.
F. Close the drip trays.
G. Wash off the end plate around the center hole.
H. Close the filter press.
I. Cover the filter plates with plastic.

8. Sludge pumps:

A. Clean the prefilter and its housing. This must be done every time the press is filled
B. Place any sludge, from the prefilter into the sludge hauling truck.
C. Wash the floor around the pumps.

9. Check the preventative maintenance schedule for service needing to be done.

PREVENTATIVE MAINTENANCE -- FILTER PRESS BUILDING

1. Daily:

A. Wash the floor around the sludge pumps.

2. Weekly:

A. Wash the drip tray and drip tray trough.
B. Wash walls around sludge press of splashed sludge ..
C. Sweep the building.

3. Monthly:

A. Clean the lights and light fixtures.
B. Clean blower and motor.
C. Lubricate the door lifts and rollers

PREVENTATIVE MAINTENANCE -- WILDEN AIR OPERATED DOUBLE DIAPHRAGM PUMPS

1. Weekly:

A. Twice per week check the oil level in the sump.
B. Fill with 10 weight oil.

PREVENTATIVE MAINTENANCE -- HANKISON SERIES 80 AIR DRYER MODEL 1304-2 OIL REMOVAL FILTER- AND CENTRIFEX SEPARATOR FOR WATER

1. Daily:

A. Check all three units for normal operation.

2. Weekly:

A. Check the water separator and oil removal filter for proper drainage.

PREVENTATIVE MAINTENANCE -- PERRIN FILTER PRESS

1. Daily:

A. Check the filter cloths for creases or holes.

2. Weekly:

A. Check the hydraulic oil quality and quantity.
B. Take the oil filter apart and clean it if necessary.
C. Wash off all of the filter cloths with a water hose.

3. Monthly:

A. Open the press and check the level of oil in the reservoir. Add premium grade anti-wear hydraulic oil if the sight glass is below the high level point.
B. Drain any accumulated water in the oil reservoir, through the Y-strainer under the reservoir&
C. Apply mineral oil to the conveyor chain.
D. Apply a light oil to the pick-up pawls where the linkage connects to the conveyor chain. Keep the linkage clean and free of rust.
E. Grease all drip tray bearings and plate shifter bearings.
F. Oil the side bars. These are the places where the plates rest.

6 Months:

A. Change the oil in the speed reducer motor. This motor drives the chain. Use #8 gear lubricant oil.

5. 18 Months:

A. Change the hydraulic oil. It holds 6 gallons.

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RCRA HAZARDOUS WASTE LABELING CONTINGENCY PLANS HAZMAT SECURITY PLAN SPCC

APRIL 2016

Fastening Products Group

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Relevant Thinking

- What is hazardous waste?
- What are generator responsibilities?
- How do employees respond to emergencies?
- How do employees/processes dispose hazardous waste?

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Types of Wastes

"Characteristic" wastes have D waste code and exhibit one or more of the following hazardous properties:

Corrosive – pH < 2.0 or > or equal to 12.5 (D002)

Ignitable (solids-D001) or **Flammable** (liquids-F003/F005) flashpoint < 140 degrees F

Toxic – fails toxic characteristic leaching procedure (TCLP)

Reactive – liberates poison gas (cyanides-D003)

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YKK Waste Generator

- We are generators of Universal Waste (e.g., light bulbs, batteries) and must comply with RCRA hazardous waste management standards for containers, labels, storage (one year maximum) and training
- We qualify as a Large Quantity Generator (LQG) which generates over 2200 pounds (1000 kg) hazardous waste per month or 1 kg of acutely listed waste

YKK Waste Generation 2015

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- Registered for 17 different waste codes
- Almost 100 profiles for waste disposal
- Had 122 off-site waste shipments…49 hazardous waste shipments and 73 non-hazardous waste shipments (compared to 113 total shipments in 2014)
- Generated about 389,000 pounds hazardous waste (compared to 311,000 pounds in 2014)
- Currently searching for new plating solutions recycling vendor

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Generator/Employee Responsibilities

- Must have EPA identification number
- LQG – store hazardous waste up to 90 days (180 days if TSDF is over 270 miles away)
- Storage Area – 90 days maximum storage and signage identifying "Hazardous Waste"
- Satellite Accumulation Area – located at or near site of waste generation. Can store 55-gallon maximum hazardous waste and 1-quart maximum acutely hazardous waste

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Generator/Employee Responsibilities

- Containers for storing hazardous wastes must be in good physical condition, compatible with waste, stored closed top, inspected weekly and properly stacked with 24 inches minimum aisle space
- Labeling requirements include “Hazardous Waste” and start date for accumulation (unless satellite accumulation area)

Generator/Employee Responsibilities

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- When waste is generated, employees must use either 55-gallon plastic drum for liquids and/or 55-gallon open-top metal drums for solids (plating ISO 14001 Work Instructions)
- Small 30-gallon plastic barrels should **NOT** be used at any time for any wastestreams (Haz/Non-Haz)
- When waste is generated, proper notification must be made to WWT lab personnel or to Environmental Engineer for proper labeling and disposal of waste

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Job Descriptions

- Each hazardous waste related position at YKK must have a job title and written job description
- HR has updated job descriptions for affected employees
- Records must be kept that document training or job experience required to perform hazardous waste duties
- Certain ISO 14001 (EMS) Work Instructions in place for handling hazardous waste

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Training

- YKK personnel/employees in Painting, SOD, Maintenance, Shipping-Receiving, WWT, Plating and Burnishing must take part in annual training
- Training program should be designed to ensure YKK employees are able to respond effectively to emergency situations, including spills
- HAZCOM/HAZMAT, SPCC and RCRA training
- Training records must be kept until facility is closed

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Written Contingency Plans

- Designed to minimize hazards to human health or the environment from fires, explosions or releases of hazardous waste to air, soil or water
- Describes actions to be taken in an emergency
- Spill Prevention, Control and Countermeasures Plan (SPCC)
- Emergency contact data varies and is particular to each department
- Contact information and arrangements for fire, police, hospitals, emergency contacts and response teams is listed separately

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Written Contingency Plans

- Names and telephone numbers of primary emergency coordinators
- Evacuation plan
- Emergency coordinators either on-site or on-call 24 hours/day 7 days/week
- Coordinator identifies released materials, makes a hazard assessment, notifies YKK personnel and regulatory agencies (if applicable) and files reports (if required)

HAZMAT Transportation Security Plan

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Plan Statement:

YKK is committed to the safe and secure handling, storing and transporting of hazardous materials and wastes. This commitment also ensures the physical safety of all employees handling hazardous materials and wastes and to reduce or prevent hazardous waste cargo theft.

HAZMAT Transportation Security Plan

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Plan Objective:

The objective of this written plan is to ensure the safety of all employees handling hazardous materials and hazardous wastes from point of origin to final destination.

HAZMAT Transportation Security Plan

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Plan Scope:

YKK's written Hazardous Materials and Hazardous Waste Transportation Security Plan contains the following three (3) basic areas of responsibility…

Personnel Security

Unauthorized Access

En Route Security

Written Emergency Plans By Title:

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- Contingency Plan for Emergency Procedures for Hazardous Materials and Waste
- Handling Cyanide Solids and Cleanup/Emergency Procedures
- Emergency Action for Accidental Chemical Releases and Chemical Disposal
- Spill Prevention Control and Countermeasures (SPCC) Plan
- Groundwater Pollution Prevention Plan (GPP)
- Stormwater Pollution Prevention Plan (SP3)
- Emergency Action Plan with Evacuation and Storm Shelter Employee List

NOTE: Contingency Plans Located Outside Chemical Storage and Hazardous Waste 90-Day Storage Areas (Inside/Outside)

SPILL CONTROL/PREVENTION (Oils and Lubricants)

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- Identify Source and Material that is Leaking
- Repair or Slow Leakage as Much as Possible, if Applicable
- Block Floor Drains and Pathways that Exit Facility, if Applicable
- Report Leak/Spill Using YKK Incident Report Procedure/Flowchart (Attached), Then Report to YKK Using ECC Incident Report Form, if Applicable
- Contain Spill/Leak Using Inert Materials, if Applicable
- Spill Kits for Various Substances Spilled (Oils, Solvents, Acids, Bases, Etc…) Located Throughout Facility
- Contact WWT Personnel and/or Environmental Engineer for Correct Labeling of any Waste Generated from Cleanup and for Disposal

YKK Snap and Button EH&S Incident Report Procedure

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Incident
Chemical Spill and/or Other (Health & Safety) Emergency Event

Immediate and/or Direct Impact Individuals and Depertment/Shift Supervisor

911
If Fire or Medical Emergency

Complete Employee Accident Reports, if Applicable and Complete Root Cause Analysis

Tim Baker, Assistant Plant Manager

Environmental
Todd Baldwin, Env Eng
Terry Hamagata, Dir Eng
Aza Shumate, Plant Mng

Notify Kentucky Cabinet for Energy and Environment (and/or Appropriate Federal Agency), if Release/Spill Greater than Reportable Quantity (RQ)

Health & Safety Greg Pass, Director Human Resources Sean Meadows, Safety Specialist

OSHA Within 8 Hrs of incident
If 1 Fatality or 3 or More Employees Hospitalized

Steve Furuki, General Mng and John Smith, President

Phone Numbers

Department	Name	Office	Phone Number (Other)	
Assistant Plant Mng	Tim Baker	5028392256	5023202885	Cell
			5028399200	Home
Human Resources	Greg Pass	5028392236	5026805747	Cell
			5028399117	Home
Environmental Eng	Todd Baldwin	5028392222	5026804278	Cell
			5022676069	Home
Director Engineering	Terry Hamagata	5028392308	5025103993	Cell
Plant Manager	Aza Shumate	5028392426	5026000596	Cell
			8592000474	Home
General Manager	Steve Furuki	5028392316	5025989310	Cell
			8592712689	Home
President YKK S&B	John Smith	7704212304	7703138739	Cell
WWT Supervisor	Lance Sims	5028392213	5025171730	Cell
			5028592575	Home
Production Supervisor	Bobby Elliott	5028392371	8592650565	Cell
			8597340757	Home
WWT - 1st Shift	Brian Cook	5028392213	8595763524	Cell
WWT - 2nd Shift	Wayne Chesser	5028392213	5028593146	Home
	National 24-Hour Emergency Response Line			
	(To Report RQ Spills)		8004248802	
	Kentucky Cabinet for Energy and Environment			
	(To Report an Environmental Emergency)		8009282380	

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SPCC Summary

- Written and Up-to-Date SPCC Plan Required for Facilities Which Use and Store Oil Above Ground in Amounts Greater Than 1,320 U.S. Gallons
- Plan Available on ISO Shared File or Hard Copy Located in Environmental Engineer's Office
- Monthly SPCC Inspection Form (Completed by Environmental Engineer) Includes Groundwater Protection and Stormwater Protection Requirements

Hazardous Materials Liquid Chemical Spills (Raw Materials and Waste)

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- Identify spilled material
- Secure area (no unauthorized personnel)
- Stop flow by containment or absorption, if applicable
- Clean up spill using proper PPE, if applicable
- Dispose clean up and used materials properly

Hazardous Materials Solid Chemical Spills (Raw Materials and Waste)

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- Small spills will be identified as contents less than those of a 55-gallon drum
- Anything more than contents of 55-gallon drum will be considered a large spill and will be evaluated for clean up by YKK personnel or third party contractor (depends upon quantity and material spilled)
- Any cyanide materials as part of large spills require plant evacuation using fire-station pull-alarms located throughout plant

Shutdown Procedures and Evacuation

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- Emergencies may require equipment shutdown and employee evacuation
- Wastewater treatment shutoffs include waste feed pumps, lift stations, chemical feed pumps, clarifier sludge pumps and filter press pumps
- Plant utility shutoffs include city water, natural gas and electric
- In the event of an evacuation, it may not be possible to shut off all utilities

Shutdown Procedures and Evacuation

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- Be familiar with evacuation plan and exits
- Shut off equipment (if possible)
- Leave through nearest exit
- Assemble in designated area
- Assist emergency responders (if possible)
- Also Refer to YKK Emergency Action Plan with Evacuation Storm Shelter Employee List updated MAR 2016

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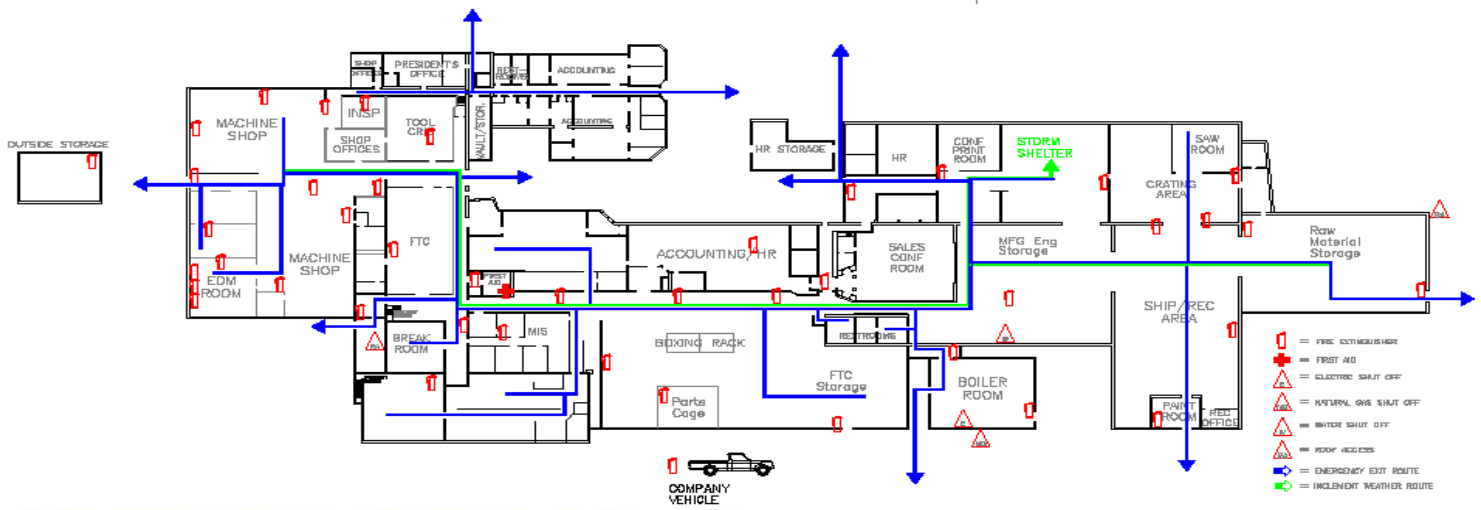
LB1 Plant Layout

EMS-REF-4.4.7-001-A
Rev. Date: 07/10/2015

YKK (U.S.A.) Inc.
Snap & Button Products
LB1 Evacuation Map



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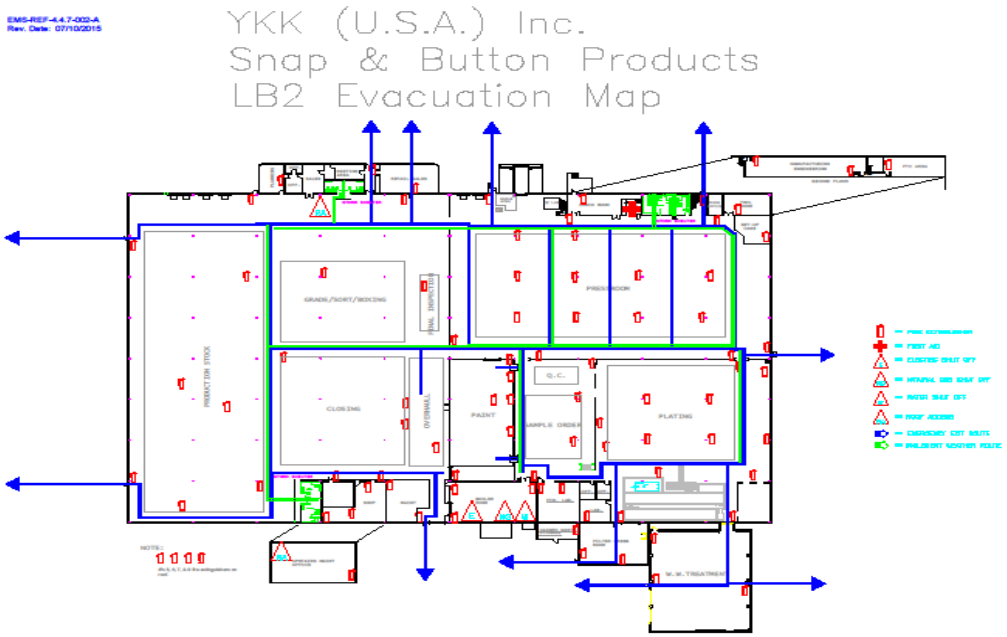
LB2 Plant Layout



PART I

PART I CLOSURE PLAN, POST-CLOSURE PLAN AND FINANCIAL REQUIREMENTS

I-1 CLOSURE PLAN

The impoundment was closed with the waste in place pursuant to 401 KAR 39:090 (formerly 401 KAR 35:200) in accordance with a closure plan approved by the Kentucky Division of Waste Management (KDWM). The closure plan was approved on November 14, 1988 and the closure was completed in October, 1989. KDWM released YKK (then UFI) from the requirement to maintain financial assurance for closure on February 19, 1993. Briefly the closure proceeded as follows:

1. The free standing liquids on the surface were pumped to the plant's wastewater treatment facilities.

2. The remaining sludge was solidified with lime kiln dust.

3. Grade was established using the solidfied waste and off-site borrow.

4. All equipment which had come in contact with the waste was decontaminated.

5. A two foot clay cap with a maximum permeability of 1×10^{-7} cm/sec. was placed over the waste area.

6. A 20 mil polyvinyl chloride (PVC) flexible membrane cap was placed over the clay cap.

7. A one foot thick layer of sand with a permeability greater than 1×10^{-3} cm/sec. was placed over the PVC cap.

8. A geotextile filter was placed over the sand and covered with two feet of soil to support a vegetative cover.

9. A rock armored drainage channel was installed to control runoff from the site.

10. The area was seeded and mulched.

The closure cap was designed to provide long-term minimization of migration of liquids through the closed facility, function with minimum maintenance, promote and control drainage and minimize erosion or abrasion of the cover and have a permeability less than or equal to the permeability of the natural subsoils present.

1-2 POST-CLOSURE PLAN

Planned maintenance of the closed surface impoundment consists of:

1. Inspections in accordance with the schedule shown in Table I-1.

2. Based on the results of the inspection, make immediate repairs to insure that integrity of all areas of concern (cover, groundwater monitoring, run-off system, security fence, etc.) is maintained. Materials needed for repairs will be obtained off-site.

3. Area will be mowed at least twice each year and revegetated when necessary. Crops will not be grown in this area.

4. On an annual basis, the post-closure plan will be reviewed to determine if the plan needs to be updated. Should the regulated unit be found to be leaking or other conditions change, the post-closure plan will be updated as necessary. All proposed modification to the post-closure plan will be submitted to the Kentucky Division of Waste Management by YKK for approval prior to being made.

Two copies of the post-closure plan will be maintained at the plant site at the following location:

Corporate Environmental Engineer
P.O. Box 240
Industry Road
Lawrenceburg, Kentucky 40342
Telephone during business hours (502) 839-2222

Chief Plant Engineer is responsible for inspection and maintenance of the closed surface impoundment. He will be responsible for updating the facility's copies of post-closure plan and providing copies of any updates to the state for inclusion in their and EPA's copies of the plan.

The post closure groundwater monitoring program and geologic conditions are detailed in Section E of this application. The groundwater monitoring network consists of one upgradient and two downgradient wells plus a downgradient spring. The upgradient well and the downgradient wells/spring will be sampled semi-annually. Results of the analyses of the samples are to be evaluated statistically using a method appropriate for the data. Background quality is to be established utilizing the Moving Average concept for continually updating the background data base. This monitoring network will serve as the groundwater monitoring network for both interim status 401 KAR 39:090 Section 2 (formerly 401 KAR 35:060) and permitted status 401 KAR 39:090 Section 8 (formerly 401 KAR 34:060).

If any of the existing monitoring wells have to be abandoned, the following procedure will be followed:

1. The protective cover and concrete plug shall be removed.

2. A hollow core auger shall be placed over the well casing and advanced to the bottom of the original borehole.

3. The well casing and screen shall be removed from the auger if possible; if not, the auger shall be removed with the well casing and screen lodged within its core.

4. If not removed at this point, the auger shall be removed from the borehole.

5. A tremmie pipe shall be lowered to the bottom of the borehole; if excessive caving has occurred, the tremmie pipe shall be removed, the hollow core auger shall be returned to the borehole, and the tremmie pipe shall be lowered to the bottom of the auger's hollow core.

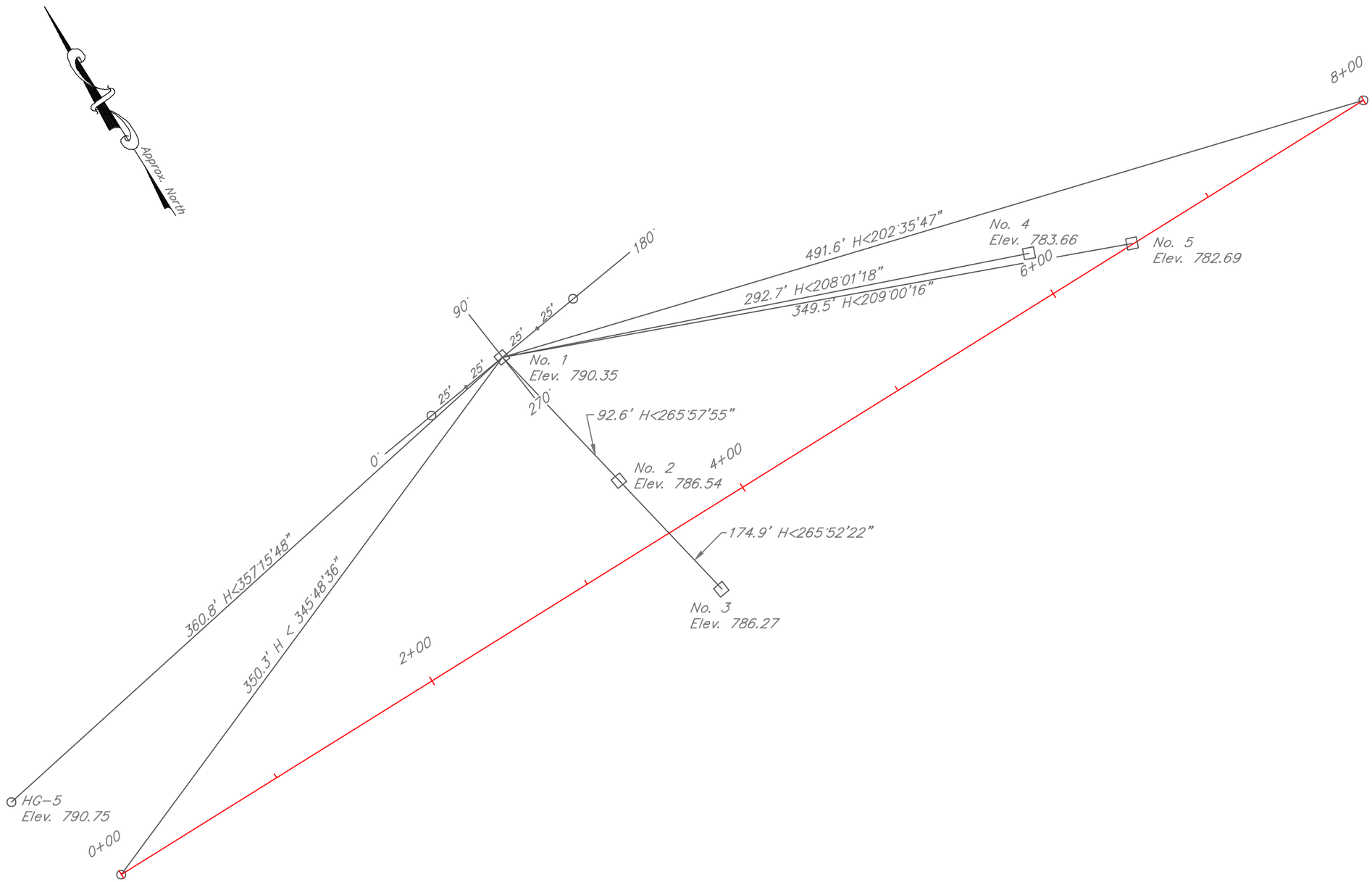
6. Cement/Bentonite grout shall be pumped through the tremmie pipe to the bottom of the borehole. As the borehole is filled with grout, the tremmie pipe (and auger, if in the borehole) shall be gradually removed. The tremmie pipe shall remain below the grout surface at all times, thus insuring grout continuity and an effective seal.

The protective covers on the monitoring wells will be kept from rusting by being repainted as needed. Any new wells required will be installed in accordance with the procedures in the Phase II Hydrogeologic Investigation.

The hazardous waste management area is enclosed by a 6-foot high, steel chain link fence with three strands of barbed wire at the top. The gates at the east and west ends are chained and locked. This fence will provide adequate security for the closed facility.

The final cover was designed in accordance with United States EPA's Standard Landfill Cover Design because it was based on meeting requirements such as 401 KAR 39:090 Section 1 (formerly 401 KAR 34:200 Section 8) and minimizing the potential for final cover damage. This design was used in order to minimize the need for post-closure maintenance, minimize or eliminate releases of hazardous waste, leachate and contaminated rainfall to the air, groundwater, surface water and surrounding land.

The grass covered slopes of the closed impoundment are designed to be between 3-5% which will promote drainage and allow for settlement while not developing run-off velocities high enough to result in erosion damage. Almost the entire perimeter of the closed impoundment is diked with virtually no drainage onto the site. The capacity of the run-off control rock armored ditch is more than adequate to control the run-off from a 25-year - 24-hour storm event without being damaged.



LEGEND

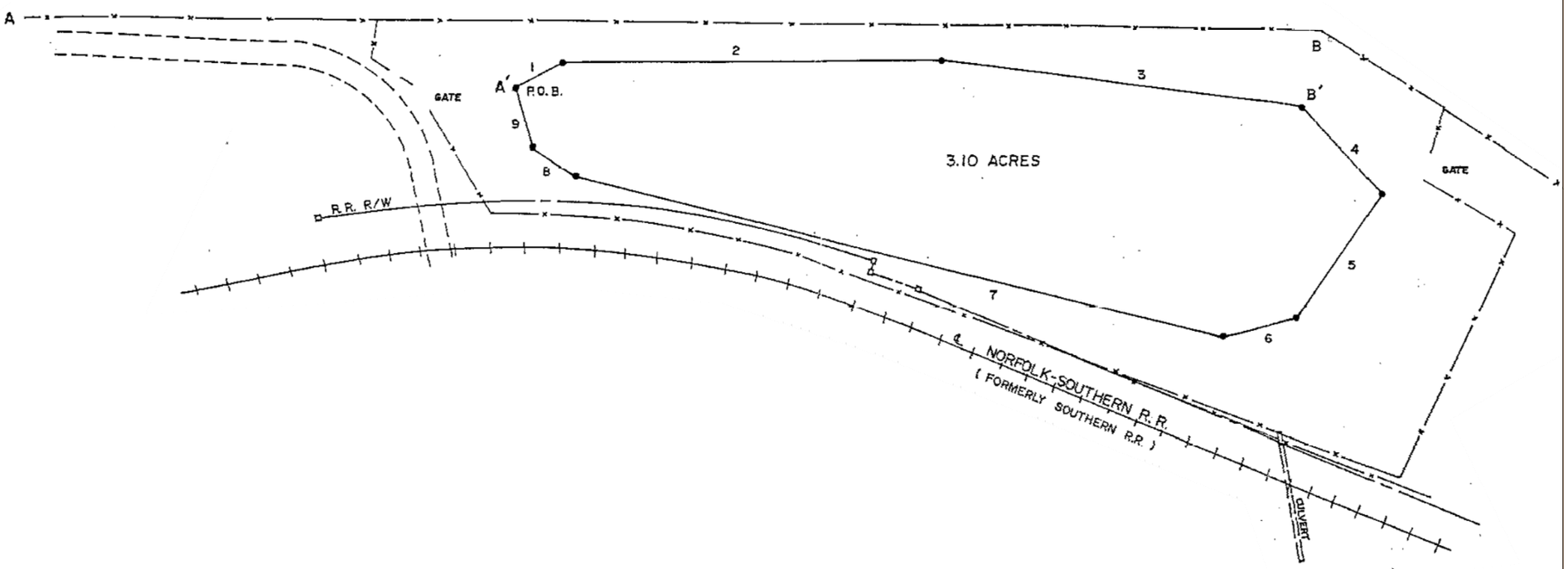
Hub
Concrete Monument
Stake

NOTE: All elevations are based on a ground elevation of 801.60 at the Monitoring Well located on the north side of the railroad tracks at the west end of the Impoundment.

0 30 60
SCALE (ft)

SETTLEMENT MONITORING MONUMENTS	SCALE:	1"=60'	FIGURE
	DATE:	08/24/16	
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#:	090-09	1-1
	DRAWN BY:	MKA	
	CHECKED BY:		

Linebach Funkhouser, Inc.
environmental compliance & consulting



LINE	BEARING	DISTANCE
1	N 62° 22' 35" E	48.33'
2	N 89° 19' 44" E	359.40'
3	S 82° 33' 04" E	344.90'
4	S 42° 41' 51" E	111.47'
5	S 35° 35' 38" W	142.09'
6	S 73° 53' 49" W	70.34'
7	N 75° 56' 12" W	633.57'
8	N 57° 30' 06" W	47.03'
9	N 15° 15' 59" W	57.89'

STATE OF KENTUCKY
JAMES H. DAVIS
2495
REGISTERED
LAND SURVEYOR

SURVEYORS CERTIFICATE

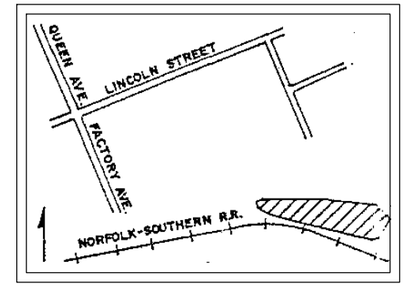
I HEREBY CERTIFY THAT THIS PLAT DEPICTS A SURVEY MADE UNDER MY DIRECTION BY THE METHOD OF RANDOM TRAVERSE. THE BEARINGS AND DISTANCES SHOWN HEREON HAVE BEEN ADJUSTED FOR CLOSURE. THIS SURVEY AND PLAT MEETS OR EXCEEDS THE MINIMUM STANDARDS OF GOVERNING AUTHORITIES.

James H. Davis 12-21-1989
JAMES H. DAVIS L.S. 2495 DATE

KENNETH HOLT
D.B. 128 PG. 184
(NOW OR FORMERLY)

0 60 120
SCALE (ft)

VICINITY MAP



SURVEY NOTES

1. A–A' = S 82° 00' 11" E, 480.80'. A, IS A 3" STEEL POST STATED AS BEING 41.0 FEET SOUTHEAST FROM THE POINT OF BEGINNING OF THE PARCEL DESCRIBED IN DEED BOOK 115, PAGE 380, EXHIBIT A–4.
2. B–B' = S 13° 38' 06" W, 75.22'. B, IS A FENCE POST (FORMERLY A STAKE) SITUATED AT THE NORTHERNMOST CORNER OF THE PARCEL DESCRIBED IN DEED BOOK 115, PAGE 379, EXHIBIT A–3.
3. THIS PARCEL MAY BE SUBJECT TO SEWER/DRAINAGE EASEMENTS OF INDEFINITE LOCATION—SEE REFERENCES TO RECORDED DOCUMENTS IN DEED BOOK 115, PAGE 374.

GENERAL NOTES

1. THE CLOSED SURFACE IMPOUNDMENT WAS USED TO MANAGE HAZARDOUS WASTES F006 (WASTEWATER TREATMENT SLUDGE), F008 (PLATING BATH RESIDUES FROM THE BOTTOM OF PLATING BATHS) & F009 (SPENT STRIPPING AND CLEANING BATH SOLUTIONS) FROM ELECTROPLATING OPERATIONS. THE ESTIMATED QUANTITY OF FIXED WASTE IS 15,000 TO 20,000 CUBIC YARDS.
2. USE OF THIS LAND IS RESTRICTED BY KENTUCKY WASTE MANAGEMENT REGULATION 40 KAR 34:070 TO ACTIVITIES THAT WILL NOT DISTURB THE INTEGRITY OF THE FINAL COVER SYSTEM OR THE MONITORING SYSTEM DURING THE POST-CLOSURE CARE PERIOD.
3. THIS PLAT IS BEING FILED WITH THE ANDERSON COUNTY PLANNING COMMISSION, DIRECTOR OF THE KENTUCKY DIVISION OF WASTE MANAGEMENT AND THE REGIONAL ADMINISTRATOR, U.S. EPA, REGION IV.

Kenneth D. Taylor 12/26/89
KENNETH D. TAYLOR P.E. 11660 DATE

SOURCE: SURVEY PLAT
CLOSED SURFACE IMPOUNDMENT
UNIVERSAL FASTNERS, INC.
FACTORY AVE. LAWRENCEBURG, KY 40242
KENVIRONS, INC.
452 VERSAILLES RD. FRANKFORT, KY.
502-695-4327
IN CONJUNCTION WITH
DAVIS ENGINEERING, INC. SOMERSET, KY.

CLOSED SUFACE IMPOUNDMENT	SCALE: 1"=120'	FIGURE
	DATE: 08/24/16	I-2
YKK (USA) INC., SNAP & BUTTON FASTENERS LAWRENCBURG, ANDERSON COUNTY, KENTUCKY	PROJ#: 090-09	
	DRAWN BY: MKA	
	CHECKED BY:	

Linebach Funkhouser, Inc.
environmental compliance & consulting

TABLE I-1

LIST OF ITEMS TO BE COVERED DURING INSPECTIONS OF CLOSED SURFACE IMPOUNDMENT

Inspector Name:

Date and Time of Inspection:

	Items to Check	Frequency of Inspection	Types of Problems to check for
1.	Final Cover	Monthly & after storms	Integrity of cover (erosion, grass covering, cracks, subsidence)*
		Annually for the first three years following closure	Elevation and grades (3 to 5%)
2.	Groundwater Monitoring Wells	Monthly	Well head covers intact Locks and seals intact
3.	Run-on and Run-off controls	Monthly & after storms	Clogging/blockage Integrity
4.	Fence around closed area	Monthly	Broken posts, gaps, warning signs, gate and gate lock
5.	Benchmarks	Monthly	Damage, Disturbance*

*If visual evidence of subsidence is noted during either, the monthly or post-storm inspections, the elevations of the settlement markers and final cover grades are to be surveyed.

Concrete benchmarks have been established and clearly marked to insure they are not damaged when area is mowed. In the event a benchmark is damaged, it will be replaced. Chances of damage due to vandalism are remote since the hazardous waste management area is fenced and access is restricted by locked gates. The locations and references for the benchmarks are given on Figure 1-1.

I-3 NOTICES REQUIRED FOR DISPOSAL FACILITIES

The facility owner has prepared and submitted the required notice to the appropriate land use authority, and Kentucky Division of Waste Management, KNREPC with a copy for the EP A Region IV Administrator.

A notation has been placed on the facility deed that notifies any potential purchaser of the property that:

1. The property has been used to manage hazardous wastes; and,

2. Use of the land is restricted to activities that will not disturb integrity of final cover system, or monitoring system during the post-closure care period.

I-3a Notice to Local Land Authority

Local land authority is the Anderson County Planning Commission, Lawrenceburg, Kentucky. Figure 1-2 is a copy of the survey plat YKK has provided the Commission which has the following information:

1. Location and dimensions of the surface impoundment with respect to permanently surveyed benchmarks.

2. Use of the land is restricted to activities that will not disturb integrity of final cover system, or monitoring system during the post-closure care period.

3. The impoundment area (single cell) has been used to manage hazardous wastes.

4. Type of wastes placed in the impoundment area.

I-3b Notice in Deed to Property

YKK is currently placing a notation on the facility deed that notifies any potential purchaser of the property that:

1. This impoundment has been used to manage hazardous wastes.

2. Use of the land is restricted to activities that will not disturb integrity of final cover system or monitoring system during the post-closure care period.

3. The required information (survey plat, etc.) has been filed with the Anderson County Planning Commission.

YKK will submit a copy of the amended deed to KDEP DWM (attention Mr. Kenneth Logsdon, pertaining to this Part B renewal application) once it has filed with the Anderson County Clerk, Anderson County Courthouse, Lawrenceburg, Kentucky 40342. YKK expects this to document to be filed prior to the expiration of the current RCRA Part B Permit in February 2017.

I-4 POST-CLOSURE COST ESTIMATE

Total annual cost for post-closure care is estimated to be $30,563.00 for the beginning year. The derivation of this figure is:

1. Groundwater Monitoring
    a. Analysis Costs

Cost per Laboratory Analysis:

Parameter	**Cost/Test**
Cadmium	$21
Chromium	$21
Copper	$21
Cyanide	$24
Lead	$21
Nickel	$21
Zinc	$21
	$150

Cost per Field Analysis

Parameter	**Cost/Test**
pH	$4
Specific Conductance	$5
Temperature	$1
	$10

Additional Spring Analysis

Parameter	**Cost/Test**
Chloride	$12
Sodium	$16
	$28

Number of Analyses per year:

Description	**Sample Frequency**	**Number of Lab Analyses/Yearly Sampling**	**Total**	**Number of Field Analyses/Yearly Sampling**	**Total**
Background well	Semi-Annually	2	2	2	2
Blanks (3)	Semi-Annually	2	6	-	-
3-Downgradient wells	Semi-Annually	2	6	2	6
Upwelling Spring	Semi-Annually	2	2	2	2
	TOTAL		16		10

Estimated Cost per year:

Laboratory Analysis = $150 x 14 = $2,100

Field Analysis = $10 x 10 = $100

TOTAL cost per year = $2,200

b. Sampling

Assume it takes 2 man-days to collect samples from the entire groundwater monitoring system.

2 days x 2 times per year x 8 hours x $45 per hour = $1,440

Assume it takes 1 man-day to collect samples from just the background (upgradient) well.

1 day x 2 times per year x 8 hours x $45 per hour = $720

Estimated Total Groundwater Monitoring Costs = $4,360

2. Site Maintenance

a. Mowing

Assume two times per year, one tractor plus operator at $40 per hour: $320 per year

b. Cover Repair

Assume two days per year, two men at $25 per hour plus one tractor or grader at $40 per hour: $1,040 per year

c. Fence Repair

Assume one day per year, one man at $25 per hour: $200 per year

d. Miscellaneous Supplies

Fill material, seed, fertilizer, etc.: $750 per year

Estimated Total Site Maintenance Costs: $2,310

3. Inspections

a. Monthly

Assume 3 hours per inspection, one man at $35 per hour: $1,260 per year

b. Rainfall Events

Assume 8 events per year, 2 hours per inspection: $560 per year

Estimated Inspection Costs $1,820 per year

4. Administration and Recordkeeping

   a. Assume 25 hours per year at $45 per hour: $1,125 per year

5. Miscellaneous (set at approximately 7% of normal yearly cost to cover items such as redeveloping wells, replacement well installation, etc.): $2,000

Total Post-Closure Costs

Groundwater Monitoring	$4,360
Site Maintenance	$2,310
Inspections	$1,820
Administrations & Recordkeeping	$1,125
Miscellaneous	$2,000
Total	$11,615
Total Post-Closure Cost Estimate (25 years at $11,615 per year)	**$290,375**

I-5 FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE

YKK will post a Letter of Credit for $916,890.00 as the post-closure financial assurance mechanism. The Letter of Credit is irrevocable and contains the wording required in 401 KAR 39:090 (formerly 401 KAR 34:152). A cover letter in accordance with 401 KAR 39:090 (formerly 401 KAR 34:152) accompanies the Letter of Credit, see Appendix 1-1.

I-6 LIABILITY REQUIREMENTS

YKK currently has a Hazardous Waste Facility Certificate of Liability Insurance with limits of $4,000,000.00 per occurrence and $8,000,000.00 aggregate, which meets the requirements of 401 KAR 39:090 (formerly 401 KAR 34:120. A copy of this certificate along with the other necessary information is currently on file with the Kentucky DWM, see Appendix 1-1.

Appendix I-1

FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE

AND

LIABILITY REQUIREMENTS

Todd Baldwin

From: <DavidSchwartz@YKK-USA.COM>
To: "Todd Baldwin" <tbaldwin@universal-fasteners.com>; <BrianBeebe@ykk-usa.com>; <TimPhillips@ykk-tapecraft.com>; <DannyWozniak@ykk-api.com>
Sent: Wednesday, October 06, 2004 4:01 PM
Subject: Environmental Liability Insurance - 2005 Renewal Planning

Good afternoon gentlemen:

In November 2001, we decided to purchase a three-year EIL policy from ECS, which now is XL Insurance company. The purpose of this insurance was to cover any Bodily Injury or Property Damage claimed against us by third parties. A total of eight locations were listed (insured) on the policy. The policy would also pay towards a government ordered clean-up, legal defense, and claims that would Involve a vehicle transporting our hazardous waste, on a contingent basis (over the carrier's coverage). In addition, we had coverage for eleven landfills or chemical disposal sites listed by the company.

The policy costs approx. $ 45,000 for Three-years. The limit was $ 2,000,000. By amortizing this cost over several subsidiaries, the cost impact was minimal for each company.

You may recall, that one of the areas we benefited from by purchasing this insurance was that the underwriter agreed to provide us Free Risk Assessments at Macon, YKKUFI, and YKK AP. Our plants each scored very high marks on these inspections, which told us we were doing a fine job, and also gave our underwriter confidence in pricing the policy as competitively as she did.

The current policy will expire on 12/31/04, and we had a pre-renewal meeting in our Lyndhurst Office yesterday to discuss the strategy involved in re-marketing this coverage. We also discussed several underwriting requirements in terms of documentation etc. that we will have to furnish, in order to secure a quotation for either a 1-3-5 year policy going forward.

Our targets at the present time:

1) Dove-tail on our relationship with XL's underwriter;
2) Ask for same pricing, even though we know that the market pricing is up approx. 50% since 2002;
3) Request some additional "free-bees" in terms of Terms & Conditions

How can you help?

In the next couple of weeks, Vivian will be asking each one of you to take a fresh look at the underwriting data you provided three years ago. For example, she will asking about any UST's, including plans to remove such or abandon in place, Non-owned disposal locations where we are shipping

hazardous waste streams, and copies of any RFA's or significant corresponsence with any governmental authorities re: SWMU's etc. Copies of any Environmental Impact Studies (EID's) or Indoor Air Quality testing would also be reportable. Also, don't forget to tell us if you implemented ISO 14001 (enclose a copy the certification). This really helps when it comes to underwriting.

Once you receive our questionnaire, we would greatly appreciate you returning it by the due date requested. We want to be able to get our quotations prior to the typical year-end squeeze. Pls. keep in mind that our insurer is one of the few insurers continuing to write this type of business. Our underwriter will pay more attention to our submission if it is made in a very timely manner.

Thanks for all Your cooperation in the past, and we hope to be able to do a great job again this time around, for this very important type of insurance coverage.

Best regards,

David

David G. Schwartz
Senior Vice President - Risk Management
YKK Corporation of America
1251 Valley Brook Avenue
Lyndhurst, NJ 07071

David G. Schwartz
President
YKK Insurance Company of America
100 Bank Street, Suite 610
Burlington, VT 05401

David G. Schwartz
President
Alumerica Inc.
c/o YKK Corporation of America
1251 Valley Brook Avenue
Lyndhurst, NJ 07071

201-935-4200 Ext. 204
201-935-5267 (Fax)
201-638-7569 {Cellular}
E-Mail: DavidSchwartz@YKK-USA.com

PHILLIP J. SHEPHERD
SECRETARY

BRERETON C. JONES
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
FRANKFORT OFFICE PARK
18 REILLY ROAD
FRANKFORT, KENTUCKY 40601

February 19, 1993

Mr. Todd Baldwin
Universal Fasteners, Inc.
Factory Avenue
P. O. Box 240
Lawrenceburg, Kentucky 40342

RE: Closure Certification Report and
Financial Assurance Requirements for Former
Surface Impoundment
Universal Fasteners, Inc.
Lawrenceburg, Anderson County, Kentucky
EPA ID# KYD-044-914-356
Pending File #86-087

Dear Mr. Baldwin:

The Division of Waste Management has received the closure certification report for the surface impoundment at the facility referenced above, submitted with a letter dated December 18, 1989, and has finalized the review of the document. The report has been found acceptable and in accordance with 401 KAR 35:090, Section 11, Universal Fasteners, Inc. is hereby released from the requirement to maintain financial assurance for closure of the referenced regulated unit. However, in accordance with KRS 224.46-520 (3)(c), post closure assurance and both sudden and nonsudden accidental liability coverage must be maintained until "termination" (see statutory definition of KRS 224.01-010). In addition, financial assurance for any corrective measures will be required to be demonstrated in accordance with KRS 224.46-530.

In accordance with 401 KAR 35:090, Section 5(10), the Letter of Credit Number 9040870700 providing closure assurance for this facility is hereby terminated. The original Letter of Credit has been returned to the Industrial Bank of Japan for termination.

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If you have any questions and/or comments regarding this letter, please contact Massoud Anjumshoa at 502/564-6716, extension 219.

Sincerely,

Caroline P. Haight, Director
Division of Waste Management

CPH/lm

Attachment: Letter to Industrial Bank of Japan

cc: Alan Farmer, US EPA Region IV
Sam Lofton, Frankfort Regional Office
Leah MacSwords, Enforcement Branch
Abbie Meyer, Hazardous Waste Branch
Brian Baker, Hazardous Waste Branch
Faith burns, Department of Law
Pending File #86-087

PHILLIP J. SHEPHERD
SECRETARY

BRERETON C. JONES
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
FRANKFORT OFFICE PARK
18 REILLY ROAD
FRANKFORT, KENTUCKY 40601

February 19, 1993

Hiroshi Suzuki
Senior Vice President
Industrial Bank of Japan Trust Company
245 Park Avenue
New York, New York 10167-0037

RE: Universal Fasteners, Inc.
Anderson County, Kentucky
KYD-044-914-356
Release of Letter of Credit #9040870700

Dear Mr. Suzuki:

On February 19, 1993, the Kentucky Division of Waste Management approved the closure certification report for the above-referenced hazardous waste facility. In accordance with 401 KAR 35:090, Section 11, Universal Fasteners is hereby released from the requirement to maintain financial assurance for closure. Thus, Letter of Credit #9040870700 is enclosed for your disposition.

Please contact Abbie Meyer at 502/564-6716 if you have questions concerning this letter.

Sincerely,

Caroline P. Haight

Caroline P. Haight, Director
Division of Waste Management

CPH/am/lm

Attachment: Original Letter of Credit #9040870700

cc: Sam Lofton, Frankfort Regional Office
Leah MacSwords, Enforcement Branch
Faith Burns, Department of Law
Abbie Meyer
Brian Baker
Todd Baldwin, Universal Fasteners, Inc., P. O. Box 240, Lawrenceburg, Kentucky 40342

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Corporate Offices

Universal Fasteners INC

SUBSIDIARY OF YKK CORP.

P.O. Box 240
Lawrenceburg, KY 40342
502/839-2200
Telex 510/543-3757
Fax # 502/839-3166 - Main Office
Fax # 502/839-6525 - Sales Dept.

September 16, 1994

Ms. Abbie Meyer
Hazardous Waste Branch
Division of Waste Management
Frankfort Office Park
18 Reilly Road
Frankfort, Kentucky 40601

Re: Second Amendment
Post-Closure Financial Assurance
Letter of Credit No. SL0002070
Universal Fasteners, Inc.
Lawrenceburg, Kentucky

Dear Ms. Meyer:

Please find enclosed the second amendment to our post-closure mechanism Letter of Credit No. SL0002070 dated September 20, 1994. The amount has been adjusted from $377,762 to $916,890 as stated in our last response in March 1994 to a third Notice of Deficiencies (NOD) for our Part-B Permit Application.

Please make copies available to Mr. Brian Baker and to Mr. Mike Guffey as requested, referencing our last response. Please be aware that in accordance with 401 KAR 35:100, Section 1(2), the Division approved closure certification for this facility on February 18, 1993 and therefore, no further inflationary increases for the post-closure Letter of Credit were required. If you have any questions or require any additional information, please contact me at (502)839-2222. Thank you for your assistance in this matter.

Sincerely,

Todd S. Baldwin
Environmental Engineer

tsb

Enclosure

The Industrial Bank of Japan Trust Company

245 PARK AVENUE
NEW YORK, N.Y. 10167-0037

TELEPHONE
(212) 557-3535

TELEX
ITT 425754
RCA 233679
CABLE ADDRESS
KOGINTRUST NEWYORK

SECOND AMENDMENT TO LETTER OF CREDIT NO. SL 0002070

Dated: September 20, 1994

To
Beneficiary: Division of Waste Management
Department for Environmental Protection
Natural Resources and Environmental Protection Cabinet
Frankfort, Kentucky 40601
Attn: Director

Dear Gentlemen:

We refer to Letter of Credit No. SL0002070 dated February 18, 1992 issued by us in favor of you, as amended by the First Amendment dated February 18, 1993 (as may be further amended from time to time, the "Letter of Credit"). At the request of Universal Fasteners, Inc. (the "Account Party), we hereby agree to amend the Letter of Credit as follows (the "Second Amendment"):

The amount of the Letter of Credit of "Three Hundred Seventy Seven Thousand Seven Hundred Sixty Two U.S. dollars, $377,762" set forth in lines six, seven and eight of the first paragraph thereof, shall be deleted and replaced with "Nine Hundred Sixteen Thousand Eight Hundred Ninety U.S. dollars, $916,890".

This Second Amendment is to be considered part of the Letter of Credit and must be attached thereto when such Letter of Credit is presented to us for payment.

Except as amended herein, all other terms and conditions of the Letter of Credit remain unchanged and in full force and effect.

Very truly yours,

The Industrial Bank of Japan Trust Company

By: Hiroshi Suzuki
Name: Hiroshi Suzuki
Title: Senior Vice President

T2:unvlcam5

The Industrial Bank of Japan Trust Company

245 PARK AVENUE
NEW YORK, N.Y. 10167-0037

TELEPHONE
(212) 557-3535

TELEX
ITT 425754
RCA 233679
CABLE ADDRESS
KOGINTRUST NEWYORK

September 20, 1994

Division of Waste Management
Department for Environmental Protection
Natural Resources and Environmental
Protection Cabinet
Frankfort, Kentucky 40601
Attn: Director

RE: Letter of Credit No. SL0002070 ("Letter of Credit") issued by The Industrial Bank of Japan Trust Company at the request of Universal Fasteners, Inc. (the "Account Party")

Dear Director:

The Account Party recently informed us that the amount of the Letter of Credit needed to be increased from $377,762 to $916,890 ("New Amount").

Attached please find the Second Amendment to the Letter of Credit dated September 20, 1994 increasing the amount to the New Amount.

Please attach this Second Amendment to the Letter of Credit immediately because it must be submitted together with the Letter of Credit as evidence that the Bank owes you the New Amount.

T2:unvlcam5

Please sign the enclosed copy of this letter acknowledging that you have received the original Second Amendment and consenting to the terms thereof, and send it back to us in the enclosed self-addressed stamped envelope.

Sincerely yours,

The Industrial Bank of Japan
Trust Company

By: Hiroshi Suzuki
Name: Hiroshi Suzuki
Title: Senior Vice President

The undersigned acknowledges receipt of, and consents to the terms and conditions of, the Second Amendment on this ___ day of September, 1994.

_____
Name:
Title:

PHILLIP J. SHEPHERD
SECRETARY

BRERETON C. JONES
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
FRANKFORT OFFICE PARK
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601

September 26, 1994

Mr. Todd S. Baldwin
Environmental Engineer
Universal Fasteners, Inc.
Post Office Box 240
Lawrenceburg, Kentucky 40342

RE: Universal Fasteners, Inc.
EPA I.D. #KYD-044-814-356; Anderson County
Approval of Letter of Credit for Postclosure Assurance

Dear Mr. Baldwin:

The Kentucky Division of Waste Management has reviewed the second amendment to Letter of Credit Number SL0002070 submitted with your letter dated September 16, 1994. In accordance with 401 KAR 35:100 and 34:100, the amended Letter of Credit is hereby approved for $916,890 of postclosure assurance.

Please contact Abbie Meyer at (502) 564-6716 if you have questions regarding the financial assurance requirements for hazardous waste facilities.

Sincerely,

David W. Morgan for

Caroline P. Haight, Director
Division of Waste Management

CPH/AM:ds

c: Abbie Meyer, Hazardous Waste Branch
Frankfort Regional Office
Brian Baker, Hazardous Waste Branch
Mike Guffey, Hazardous Waste Branch
Central File: Universal Fasteners

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HENRY C. LIST
SECRETARY

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
FRANKFORT OFFICE PARK
14 REILLY RD
FRANKFORT KY 40601

October 8, 2003

Mr. Todd S. Baldwin
Environmental Engineer
Universal Fasteners, Inc.
P.O. Box 240
Lawrenceburg, Kentucky 40342

RE: Financial Assurance
Universal Fasteners, Inc.
KYD-044-914-356; Anderson County

Dear Mr. Baldwin:

The Kentucky Division of Waste Management has reviewed the above mentioned facility's financial assurance instruments that are currently on file with the Division. In accordance with 401 KAR 35:100 and 35:120, the Letter of Credit number SL0002070 from The Industrial Bank of Japan Trust Company for $916,890 in postclosure liabilities, and the Letter of Credit number SL0001870 from The Industrial Bank of Japan Trust Company for $8,000,000 annual aggregate in sudden/nonsudden liability assurances, are still in effect. If this is not correct, it will be necessary for you to provide updated information to the Division as soon as possible.

If you have any questions concerning the financial assurance requirements, please contact John Moore at (502) 564-6716.

Sincerely,

Michael V. Welch, P.E., Manager
Hazardous Waste Branch

MVW/jm

c: John Moore, Hazardous Waste Branch
Frankfort Regional Office
Central Files: Universal Fasteners, Inc. / Financial Assurance

EDUCATION PAYS
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Universal Fasteners Inc.
Subsidiary of
YKK Corporation of America

ISO 9001
Quality System Certified

November 18, 2003

Kentucky Department for Environmental Protection
Frankfort Office Park
14 Reilly Road
Frankfort, Kentucky 40601

ATTN: Mr. John Moore
Hazardous Waste Branch

Re: Universal Fasteners Inc. (UFI)
US EPA ID No. KYD-044-914-356
Anderson County
Financial Assurance

Dear Mr. Moore:

The purpose of this letter is to respond to previously requested information from the Division (copy enclosed). The listed financial assurance instruments on file with the Division are still currently maintained by UFI. Letter of Credit number SL0002070 from the Industrial Bank of Japan Trust Company for $916,890 in post-closure liabilities expires February 18, 2004 and is renewed each year. Letter of Credit number SL0001870 from the Industrial Bank of Japan Trust Company for $8,000,000 annual aggregate in sudden/non-sudden liability assurances expires January 23, 2004 and is renewed each year.

If you have any further questions or require any additional information, please contact me at 502-839-2222.

Sincerely,

Todd S. Baldwin
Corporate Environmental Engineer
Universal Fasteners Inc.

TSB/tsb

Enclosure

Cc: Tommy Nakatomi – UFI
File

kdepfinassur.2004

KENVIRONS
INCORPORATED
452 Versailles Road, P.O. Drawer V, Frankfort, Kentucky 40602 502 695-4357

April 30, 1992

RECEIVED
MAY - 1 1992
DIVISION OF
WASTE MANAGEMENT

Mr. Mohammad Alauddin, Manager
Hazardous Waste Branch
Division of Waste Management
14 Reilly Road
Frankfort, Kentucky 40601

Re: Universal Fasteners, Inc.
Post Closure Part B
Hazardous Waste Application #85-060
EPA I.D. No. KYD-044-914-356

Dear Mr. Alauddin:

Universal Fasteners, Inc. (UFI) has authorized Kenvirons, Inc. to submit the attached revised Post-Closure Part B permit application in response to your August 29, 1990, Second Notice of Deficiencies. Also included are an item by item response and replacement instructions. The response should be complete except for the statistical analysis of the past 1987 groundwater monitoring data which is being tabulated and will be submitted in the near future.

If you have any questions or comments, please do not hesitate to contact Todd Baldwin at UFI or myself.

Sincerely,

Kenneth D. Taylor

Kenneth D. Taylor, P.E.
Associate

KDT:sp

Attachments

cc: Universal Fasteners, Inc.

KENVIRONS
INCORPORATED
452 Versailles Road, P.O. Drawer V, Frankfort, Kentucky 40602 502 695-4357

April 30, 1992

Mr. Mohammad Alauddin, Manager
Hazardous Waste Branch
Division of Waste Management
14 Reilly Road
Frankfort, Kentucky 40601

Re: Universal Fasteners, Inc.
Post Closure Part B
Hazardous Waste Application #85-060
EPA I.D. No. KYD-044-914-356

Dear Mr. Alauddin:

Universal Fasteners, Inc. (UFI) has authorized Kenvirons, Inc. to submit the attached revised Post-Closure Part B permit application in response to your August 29, 1990, Second Notice of Deficiencies. Also included are an item by item response and replacement instructions. The response should be complete except for the statistical analysis of the past 1987 groundwater monitoring data which is being tabulated and will be submitted in the near future.

If you have any questions or comments, please do not hesitate to contact Todd Baldwin at UFI or myself.

Sincerely,

Kenneth D. Taylor

Kenneth D. Taylor, P.E.
Associate

KDT:sp

Attachments

cc: Universal Fasteners, Inc.

REPLACEMENT INSTRUCTIONS
APRIL 30, 1992 SUBMITTAL RESPONSE
TO SECOND NOTICE OF DEFICIENCIES
POST-CLOSURE PERMIT APPLICATION
UNIVERSAL FASTEENERS, INC.
EPA I. D. NO. KYD-044-914-356

PART A
1. REPLACE PAGE 1 OF FORM 3 WITH THE ATTACHED PAGE 3.

PART B
1. REPLACE ALL OF THE PREVIOUSLY SUBMITTED PART B.

PART C
1. REPLACE ALL OF THE PREVIOUSLY SUBMITTED PART C.

PART D
1. REPLACE ALL OF THE PREVIOUSLY SUBMITTED PART D.

PART E
1. REPLACE THE ENTIRE TEXT OF PART E.
2. REPLACE ALL TABLES IN PART E.
3. DELETE FIGURES E-1 THROUGH E-7 AND ADD FIGURES E1 AND E-2.
4. ADD EXHIBITS E-1 THROUGH E-4.
5. THERE ARE NO CHANGES TO APPENDIX E-1.
6. ADD THE ATTACHED FIELD LOGS AND LABORATORY ANALYSIS REPORTS TO APPENDIX E-2.
7. THERE ARE NO CHANGES TO APPENDIX E-3.
8. THERE ARE NO CHANGES TO APPENDIX E-4.
9. ADD APPENDIX E-5, WHICH CONTAINS THE PHASE I AND PHASE II HYDROGEOLOGIC INVESTIGATION.

PART I
1. REPLACE ALL OF THE PREVIOUSLY SUBMITTED PART I.

PART J
1. THERE ARE NO CHANGES TO PART J.

PART K
1. THERE ARE NO CHANGES TO PART K.

ITEM BY ITEM RESPONSE
TO SECOND
NOTICE OF DEFICIENCIES
DATED AUGUST 29, 1990
POST-CLOSURE PERMIT APPLICATION
UNIVERSAL FASTENERS, INC.
EPA I.D. NO. KYD-044-914-356

APRIL 30, 1992

PART A - APPLICATION

Form 3 - Section II - The information and X in Item II.A have been deleted. This is a revised application.

PART B - APPLICATION

Part B Facility Description

B-2 Topographic Map

- Figure B-3 as submitted covers a minimum distance of 1,000 feet around the facility property line and does not need to be revised.
- The surface waters are now highlighted in blue in addition to being labeled or indicated with standard symbols.
- The map date is given in the lower left hand corner as it was on the previously submitted map.

B-3b Floodplain Standards

- The approximate facility boundaries, which clearly show the facility is not within the designated 100-year floodplain, have been added to Figures B-5 and B-6.

Part C Waste Characteristics

- This data has been carried forward in table form since the original Part B Application was prepared in 1985. At this time we do not have the laboratory control numbers nor even know which laboratory to go to recover the reports.

Part D Process Information

D-3a Lists of Wastes

- Original cross-sections of the impoundment do not exist so it is impossible to provide a more accurate figure of the amount of solidified waste. The text has been amended to give the amount of lime kiln dust added during the solidification process.

D-3b Liner System Description

- As requested, a typical section of the final cover cap has been added to this section.

Part E Groundwater Monitoring

E-1 Interim Status Monitoring Data

Appendix E-2

- Copies of the missing March 29, 1983, August 6, 1984 and June 13, 1989 data are included.

- As stated in the April 16, 1990 submittal, the 6-22-83 and 10-10-83 pH analysis reports cannot be located and all static water level logs available have been submitted. We have also been unable to locate the June 22, 1983 laboratory reports for MW-2 and MW-4.

Tables E-1, E-6 thru E-9, E-11, E-18, E-20 thru E-23

- The appropriate corrections have been made to these tables. The correct sodium concentration on March 29, 1983 is 50 as reported on the Supplemental Laboratory Report dated 5/9/83 a copy of which should be in the 12/28/89 submittal.

Text

- The initial background arithmetic mean and variance values for the four parameters listed in 401 KAR 35:060 Section 3(2)(c) from MW-1 are now included at the end of the text in Exhibit E-1.

- The interim status monitoring data for MW-5 and MW-6 have been added to the appropriate tables and Appendix E-2.

- Due to the extensive nature of the questions concerning the existing interim status groundwater monitoring system, an extensive hydrogeologic study has been conducted and the monitoring system completely reestablished. The pertinent sections of Part E have also been rewritten to reflect the findings. Copies of the findings (Phase I and Phase II) of the investigation are included as Appendix E-5. The rewritten text and study findings should answer the questions and comments listed.

E-2 General Hydrogeologic Information

- The previous text in this section is being deleted in its entirety. The information required in this section is provided by the Phase I and Phase II Hydrogeologic Investigation included as Appendix E-5.

- E-2a Evaluation of Subsurface Geologic Formations and Surface Topography for Solution of Karst Features - The

text remains intact based on the Phase I and Phase II Hydrogeologic Investigations.

E-3 Topographic Map Requirements

- The groundwater flow paths have been deleted from Figure B-4.

- Figures E-1, E-2, E-3, E-4 and E-5 have been deleted from the application. The actual spring location is on the southern side of the stream channel.

E-4 Contaminant Plume Description

- This comment is addressed in the Groundwater Quality discussion on page 20 of the PELA Phase I Report in Appendix 5. The data to date does not indicate any groundwater contamination from the closed surface impoundment.

E-5 General Monitoring Program Requirements

<u>E-5a Description of Wells</u>

- All of the monitoring wells that existed when the second N.O.D. was issued have been abandoned and plugged. Information on the new wells is given in the Phase II Hydrogeologic Investigation.

- The old wells, both cased and uncased, were abandoned in accordance with the procedures outlined in the second N.O.D.

<u>E-5b Description of Sampling/Analysis Procedures</u>

- Deionized water is now called for.

- The purging procedure has been revised to specify that three consecutive measurements of pH, specific conductance and temperature within 10% of each other must be obtained.

- The procedures have been revised to include cleaning of sample containers, indicate sample volumes required, describe sample field storage and transport with a sample chain-of-custody, and to include the laboratory QA/QC program.

<u>E-5c Procedures for Establishing Background Quality</u>

<u>Pages 13, 14 and 15</u>

This section has been revised to reflect the installation of the new groundwater monitoring system

and abandonment of the old system. Use of the Moving Average method of determining background values has been retained. The procedures used to establish background in the old system have been included in Exhibit E-1.

Page 13 - Specific conductance and pH have been treated the same as originally proposed pursuant to the DWM's letter dated July 8, 1991.

Page 13 - The Hydrogeologic Investigation supplies the assurance that samples obtained from the new upgradient monitoring well are representative of groundwater which is not affected by the regulated unit.

Pages 15-18 - Documentation and results of the statistical evaluations performed on the interim status groundwater monitoring data are included in Exhibit E-1.

Pages 16-17 - Use of the AR t-test has been deleted from the groundwater monitoring statistical analyses and discussion of the CABF t-test has been added in Exhibit E-3. A proposed method of dealing with concentrations below detection limit has been added to E-5e.

E-5d Proposed Compliance Point

This section has been revised to reflect the installation of the three new downgradient wells.

E-6 Description of Detection Monitoring Program

E-6a List of Indicator Parameters, Waste Constituents, Reaction Products to be Monitored

Pages 18 and 19 - A discussion of the second influent pipe has been added. Due to its not having an effect on the quality of the waste in the impoundment, it should not affect the groundwater monitoring program.

Page 19 - The statistical procedures are now referenced in Section E-5e.

E-6b Background Groundwater Concentration

Page 20 - The data on the abandoned monitoring system is given in Exhibit 1 and information on the procedures to calculate the applicable statistical values (mean and coefficient of variation) are given in Exhibit 3.

Page 20 - The statistical procedure proposal of Section E-6b has been amended to include the procedures of 401 KAR 34:060 Section 8.

E-6c Description of Groundwater Monitoring System

Pages 20 and 21 - Section E-6c has been revised to reflect the installation of the new monitoring system.

E-6d Description of Proposed Sampling Analysis and Statistical Comparison Procedures

This section has been amended to reflect the new groundwater monitoring system and statistical analysis procedures of 401 KAR 34:060 Section 8. A provision that all statistical evaluations will be completed within 30 days of sampling has been added. Information on the slug test has been added. The reference to E-5d has been changed to E-5e.

E-6e Procedure to be implemented

Pages 17 and 18 - Section E-5d has been amended to require that 401 KAR 34:060 Section 9(8) procedures will be followed if a significant increase is confirmed.

Page 22 - The reference to Section E-5e has been added.

Part I Post-Closure Plan and Financial Requirements

Table I-1 List of Items

- Space has been provided between the "monthly and after storms" and "annually for the first three years following closure" entries to more clearly indicate the intent.

- There is no proposed inspection schedule for the elevation and grades after the first three years. If measurable settlement is going to occur it will be within the first three years.

I-2a Post-Closure Plan

- The previously submitted post-closure plan is basically restated under I-2 Post-Closure Plan. As stated, two copies of the Post-Closure Plan will be maintained and updated at the plant site by the Chief Plant Engineer. We would assume that the copies submitted to KDWM and U.S. EPA Region IV would also be maintained and updated, however, as these entities are not under UFI's control, we would not want to make this a part of the application. Also as stated, any modifications to the Post-Closure Plan will be submitted to KDWM and it is assumed that they will provide U.S. EPA Region IV with the modifications as in the past.

- Given below is a brief response for each of the specific items listed in the NOD.

  - Facility monitoring equipment: The only on-site facility monitoring equipment are the bench marks and groundwater monitoring wells. As stated, the bench marks are to be inspected monthly for damage or disturbance and needed repairs are to be made immediately. Discussion of possible monitoring well repair/replacement has been added.

  - Security devices: Inspection and repair of the security fence and signs was included in the previous submittal.

  - Erosion damage: Inspection and repair of erosion damage to the final cover was included in the previous submittal.

  - Vegetative cover: Inspection and repair of the grass cover was included in the previous submittal.

  - Leachate collection, detection, and removal system: This facility does not have a leachate collection, detection and removal system.

  - Gas venting system: This facility does not have a gas venting system.

  - Groundwater Monitoring System: The discussion of the groundwater monitoring system has been expanded.

  - Fugitive dust control system: This facility does not have a fugitive dust control system.

  - pH Control: There are no pH controls or monitoring specified for this facility.

- A discussion of the procedures for modifying the post-closure permit including the groundwater monitoring plan has been added.

I-2a(1) Landfill

- Compliance with 35:060: A brief description of the groundwater monitoring system and procedures has been added.

- Cap Erosion (run-on/run-off): A brief description of the run-on/run-off control facilities as they relate to the erosion potential of the final cover have been added.

- Leachate collection/removal system operation: This facility does not have a leachate collection/removal system.

I-4 Post-Closure Cost Estimate

- The post-closure cost estimate has been revised to reflect the changes in the groundwater monitoring system and to add administrative and recordkeeping costs. The costs were also reviewed relative to today's prices and found to be adequate. As this facility is no longer active, we do not feel from 401 KAR 35:100 Section 1 that the statement regarding inflation factors is applicable nor must the cost estimate be updated annually. The cost estimate will be reviewed annually since it is a part of the post-closure plan.

I-5 Post-Closure Letter of Credit

- UFI has now posted a Letter-of-Credit complying with the KNREPC provisions.

POST-CLOSURE PART B
PERMIT APPLICATION

UNIVERSAL FASTENERS, INC.
P.O. Box 240
Factory Avenue
Lawrenceburg, Kentucky 40342

VOLUME I

SECTIONS A, B, C, D, I, J, and K

DECEMBER 28, 1989

REVISED APRIL 16, 1990

REVISED APRIL 30, 1992

POST-CLOSURE PART B
PERMIT APPLICATION

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VOLUME I

SECTIONS A, B, C, D, I, J, and K

DECEMBER 28, 1989

REVISED APRIL 16, 1990

REVISED APRIL 30, 1992

Please print or type in the unshaded areas only
(fill—in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-S80004

FORM 3 RCRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

S													T/A	C
F	K	Y	D	0	4	4	9	1	4	3	5	6		1

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

C | YR. | MO. | DAY — FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

☐ 2. NEW FACILITY *(Complete item below.)*

YR. | MO. | DAY — FOR NEW FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES — CODES AND DESIGN CAPACITIES

A. PROCESS CODE — Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code*(s)* in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY — For each code entered in column A enter the capacity of the process.
1. AMOUNT — Enter the amount.
2. UNIT OF MEASURE — For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below):* A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

S		T/A	C
C	DUP		1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5				
X-2	T03	20	E		6				
1	D80	CLOSED (See III)			7				
2					8				
3					9				
4					10				

CONTINUE ON REVERSE

SECTION B

FACILITY DESCRIPTION

B-1 General Description

Universal Fasteners, Inc. is a metal fabricating company engaged in the manufacture of metal buttons, snap fasteners, closures, and related items for the garment industry. Operations consist mainly of the metal forming of small parts which are cleaned, deburred, polished, chromated, and electroplated and then decoratively finished to enhance their appearance. The wastewater generated by these processes must be chemically treated to neutralize the acidity and precipitate the metals prior to releasing. The metals are precipitated into a sludge. The EPA hazardous waste numbers for the sludge and wastewaters are F006, F008 and F009.

Prior to January 29, 1987 the sludge was pumped to an on-site, clay lined, surface impoundment which was constructed in 1971. During the summer of 1981 the height of the impoundment was increased by three feet increasing the sludge handling capacity of the impoundment to 4,000,000 gallons. The impoundment covered 2+ acres.

The Commonwealth of Kentucky, Department for Natural Resources and Environmental Protection, Division of Water Quality issued operational permit number 04014011 for the period July 1, 1977 to July 28, 1982 which allowed the surface impoundment to discharge into Cedar Brook. This permit was in keeping with the NPDES permit number KY0001724 issued by the United States Environmental Protection Agency (EPA). Prior to the expiration of the operational permit a pumping system was installed which recirculated the water from the impoundment to the wastewater treatment units making it a closed system.

The impoundment was closed with the waste in place pursuant to 401 KAR 35:200 in accordance with a closure plan approved by the Kentucky Division of Waste Management. The closure plan was approved on November 14, 1988 and the closure was completed in October 15, 1989.

The contact and party responsible for the hazardous waste management activities at Universal Fasteners, Inc. is: Chief Plant Engineer (502) 839-6971.

B-2 Maps

Figure B-1 is a copy of a portion of the U.S.G.S. Lawrenceburg, Kentucky 7 1/2 minute topographic map with the location of the closed surface impoundment indicated. This

figure gives the general location of the facility. Figure B-2 is a wind graph for Lexington, Kentucky based on the years 1948-1978. Figure B-3 is a copy of portions of the U.S.G.S. Lawrenceburg and Tyrone, Kentucky 7 1/2 minute topographic maps photographically enlarged to a scale of 1"=200'. Figure B-4 is a 1"=100' topographic map of the facility with a contour interval of 2'.

The land use to the north of the hazardous waste management area is residential, to the east is agricultural/forest and to the south and west is industrial.

The site has no injection or withdrawal wells. No other wells are located on site except for groundwater monitoring wells and there are no off site wells within 1000 feet of the facility.

Universal Fasteners has one sanitary sewer system which collects sanitary sewage from drains in the office area, lunchroom, and plant restrooms. No sewer drain exists in the wastewater treatment area or near the hazardous waste disposal area. No run-off goes into the sanitary system. There is no process sewer at this facility.

B-3 Location Information

Universal Fasteners, Inc. is located within the city limits of Lawrenceburg, Kentucky. The street address is:

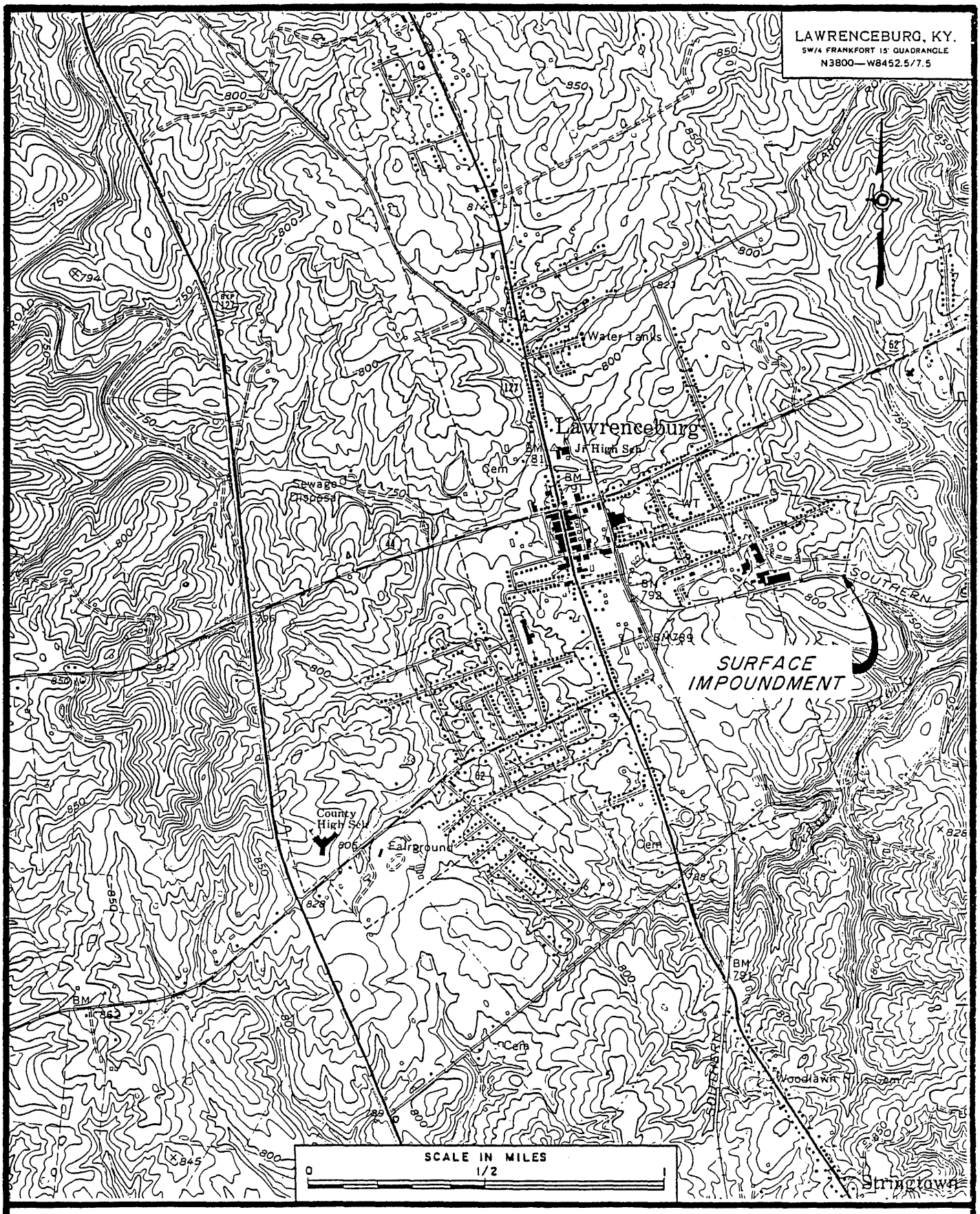
Universal Fasteners, Inc.
Factory Avenue
Lawrenceburg, Kentucky 40342

The mailing address is:

Universal Fasteners, Inc.
P.O. Box 240
Lawrenceburg, Kentucky 40342

Universal Fasteners, Inc. has been located at the Lawrenceburg location since 1957. The manufacturing facility is situated on 96 acres at the southeast end of town.

The Federal Emergency Management Agency, Flood Insurance Rate Map for Anderson County, Kentucky (Unincorporated Areas) dated May 15, 1986 and Federal Insurance Administration, City of Lawrenceburg, Kentucky Flood Hazard Boundary Map dated December 14, 1979 indicate that none of the Universal Fasteners' property is within the 100 year flood plain.



SITE LOCATION

UNIVERSAL FASTENERS, INC.

FIGURE B-1

LEX LEXINGTON, KY

CLASS 7

1948 - 1978

CEILING-VISIBILITY

WIND GRAPH

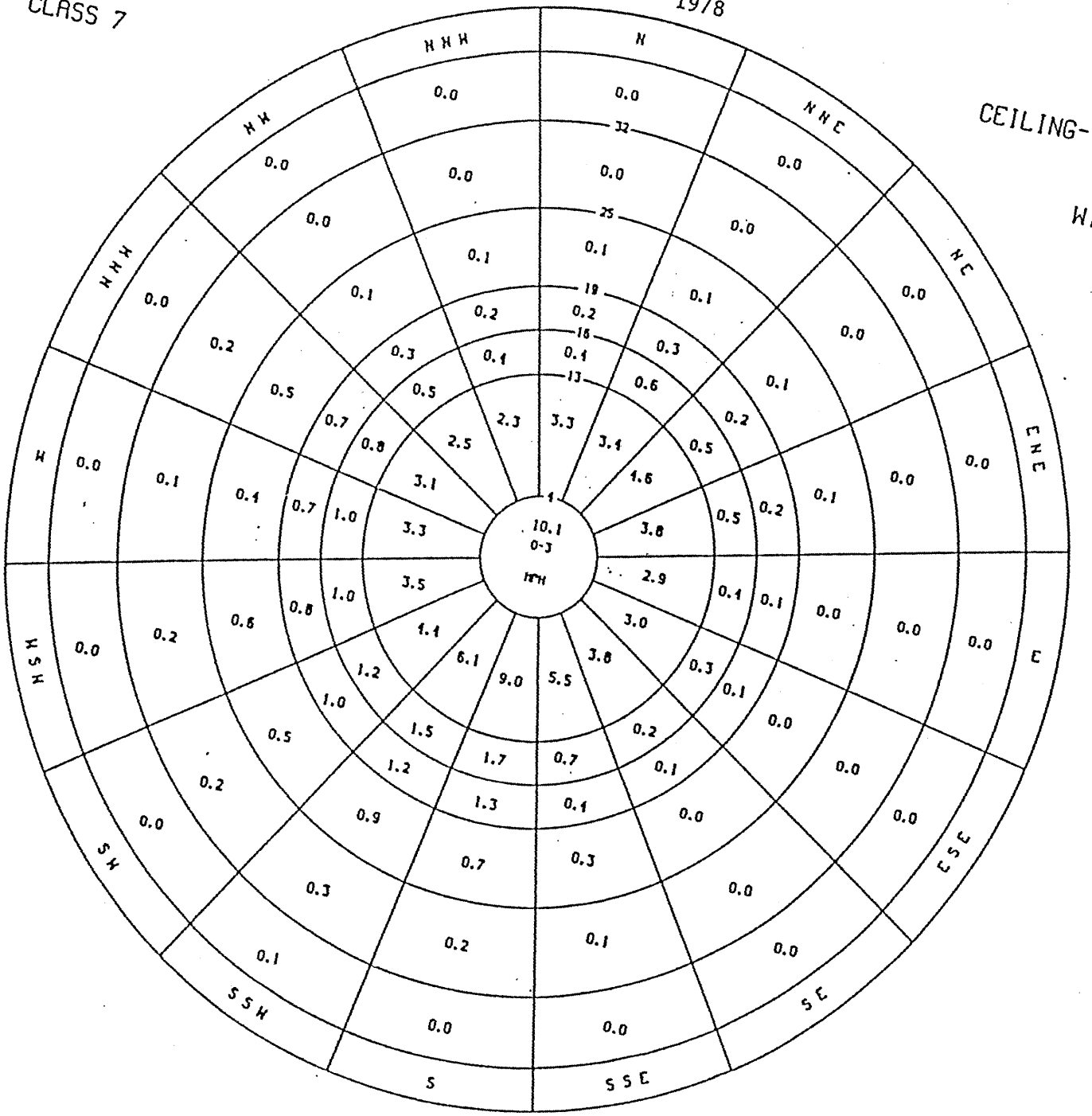
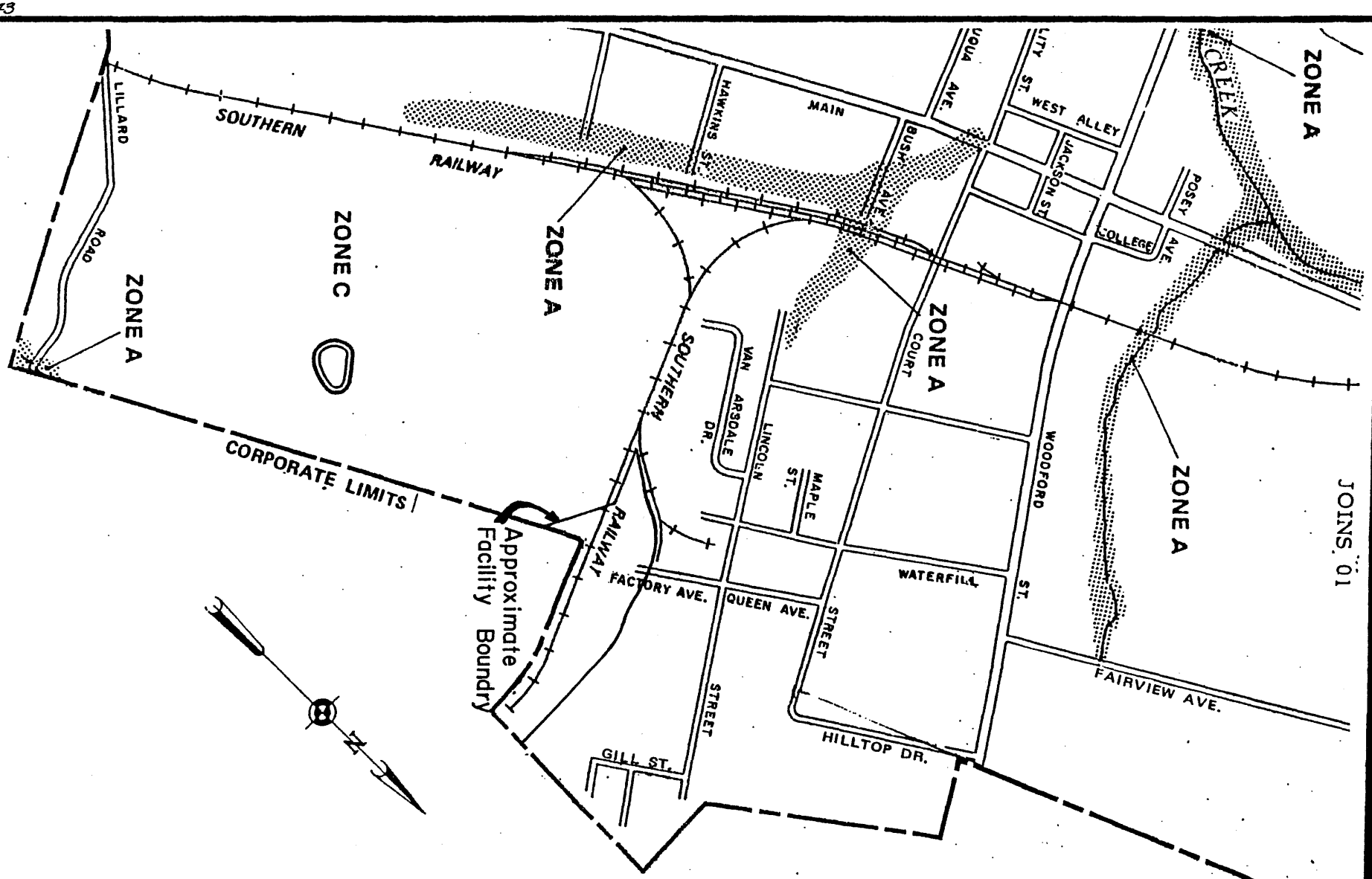


FIGURE B-2

88043



APRIL, 1992
FIGURE B-6

02

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

CITY OF LAWRENCEBURG, KY
(ANDERSON CO.)

APPROXIMATE SCALE
500 0 1000 2000 3000 FEET

FLOOD HAZARD BOUNDARY MAP H-02
FLOOD INSUR[illegible]CE RATE MAP I-02

Effective Date
DECEMBER 14 1979

SECTION C

WASTE CHARACTERISTICS

Universal Fasteners operates a light metal stamping operation which produces buttons, snaps, burrs, etc. for the garment trade. These products are finished by cleaning, polishing, deburring, chomating and electroplating for decorative appearance. The hazardous wastes generated during the plating operation consist of wastewater from the plating facility (F006), residue from the bottoms of the plating baths (F008), and spent stripping and cleaning bath solutions from the electroplating operation (F009). Waste F006 is a toxic waste (hazardous constituents: cadmium, hexavalent chromium, nickel, cyanide (complexed). Wastes F008 and F009 are toxic and reactive wastes (hazardous constituents: cyanide (salts)) however, the treated and mixed wastes are not reactive. The results of an analysis of the waste prior to its solidification during closure are given in Table C-1.

The plating wastewater is chemically treated with sodium bisulfite to reduce it from hexavalent to trivalent chrome. The pH is then adjusted with lime to start precipitation. The zinc, copper, and nickel metals from the plating operation are precipitated as a hydroxide. The cyanide bearing wastes are chlorinated and then neutralized. The precipitants form a sludge in the bottom of a clarifier which prior to January 29, 1987 was pumped to the surface impoundment for disposal. The wastes are mixed together for treatment after which the waste is neither ignitable, reactive, corrosive, or incompatible.

TABLE C-1

WASTE ANALYSES RESULTS

Constituent	Concentration, mg/l Average of 4 tests	Max. Concentration Allowed, mg/l
Arsenic	<.0001	5.0
Barium	1.157	100.0
Cadmium	.344	1.0
Chromium T	.141	5.0
Lead	.8515	5.0
Mercury	<.0002	0.2
Selenium	<.0004	1.0
Silver	.081	5.0
Nickel	36.81	(20)
Cyanide, Complexed	315.81	
pH	8.3	
Flash Point	N/A	

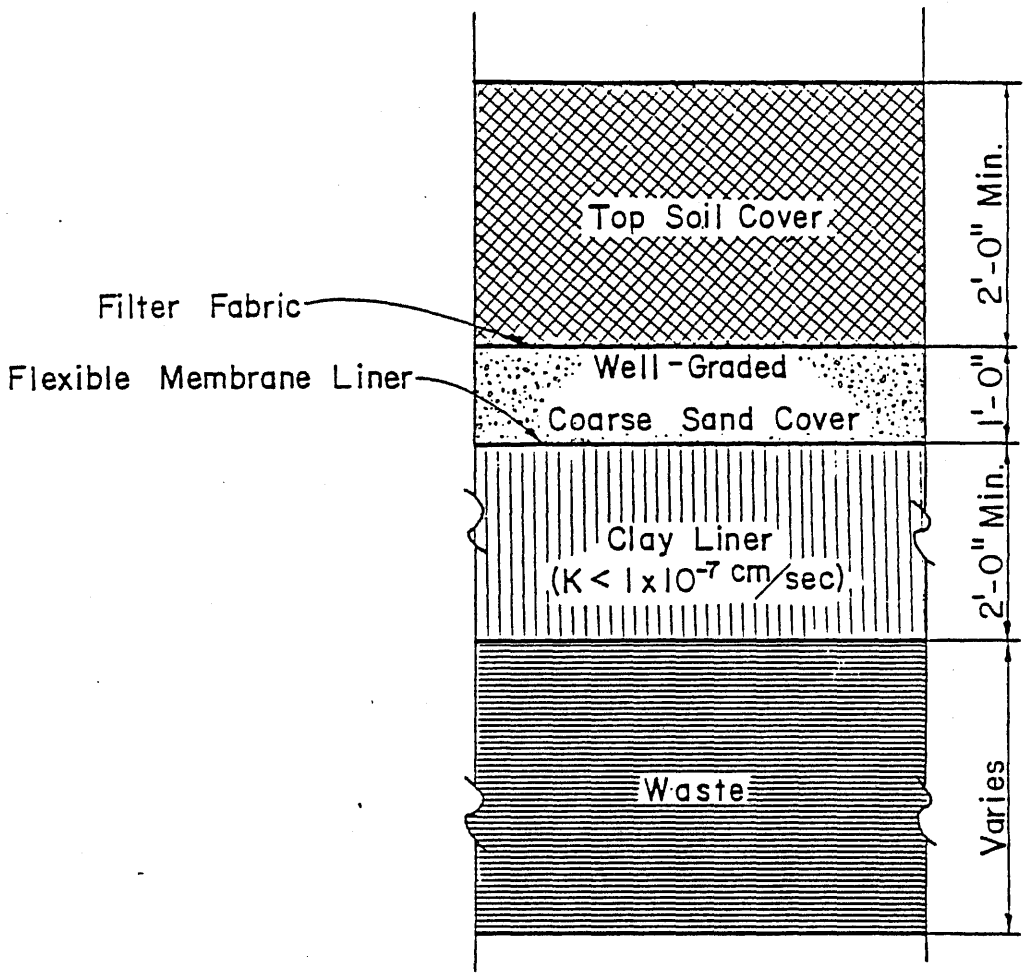
SECTION D

PROCESS INFORMATON

The treated sludge placed in the impoundment contained hazardous wastes F006 (wastewater treatment sludges from electroplating operations), F008 (plating sludges), and F009 (spent stripping and cleaning bath solutions). As a part of closure the free liquid on top of the sludge was pumped to the plant's wastewater treatment system and the remaining sludge was solidified with lime kiln dust. Approximately 3,795 tons of lime kiln dust was used for solidification. No actual treatment of the wastes occurred in the impoundment during its active life or closure. There was between 15,000 and 20,000 cubic yards of solidified waste in the impoundment at the time of closure. The waste was solidified to a point where it would pass the paint filter test and support the equipment required to place the cover.

When the embankment was raised in 1981 a liner consisting of at least six (6) inches of clay indigenous to the area was installed. Permeability tests on two undisturbed soil samples taken from the area in 1980 yielded permeabilities of 2.01×10^{-8} cm/sec and 2.60×10^{-6} cm/sec. The permeability of the clay liner would be expected to be within this range. The engineer who designed and oversaw the construction of the impoundment has stated that the liner was placed on the entire base and interior sides of the impoundment.

At closure the impoundment was capped with two feet of clay, a 20 mil PVC synthetic membrane, a one foot sand drainage layer, filter fabric and two feet of soil to support a vegetative cover. The cap was designed to be less permeable than the liner. A typical section of the cap follows as Figure D-1.



TYPICAL SECTION OF FINAL COVER

FIGURE D-1

37125

SECTION I

CLOSURE PLAN, POST-CLOSURE PLAN
AND FINANCIAL REQUIREMENTS

I-1 Closure Plan

The impoundment was closed with the waste in place pursuant to 401 KAR 35:200 in accordance with a closure plan approved by the Kentucky Division of Waste Management. The closure plan was approved on November 14, 1988 and the closure was completed in October, 1989. Briefly the closure proceeded as follows:

1. The free standing liquids on the surface were pumped to the plant's wastewater treatment facilities.

2. The remaining sludge was solidified with lime kiln dust.

3. Grade was estabilished using the solidfied waste and off-site borrow.

4. All equipment which had come in contact with the waste was decontaminated.

5. A two foot clay cap with a maximum permeability of 1×10^{-7} cm/sec. was placed over the waste area.

6. A 20 mil polyvinyl chloride (PVC) flexible membrane cap was placed over the clay cap.

7. A one foot thick layer of sand with a permeability greater thatn 1×10^{-3} cm/sec. was placed over the PVC cap.

8. A geotextile filter was placed over the sand and covered with two feet of soil to support a vegetative cover.

9. A rock armored drainage channel was installed to control runoff from the site.

10. The area was seeded and mulched.

The closure cap was designed to provide long-term minimization of migration of liquids through the closed facility, function with minimum maintenance, promote and control drainage and minimize erosion or abrasion of the cover and have a permeability less than or equal to the permeability of the natural subsoils present.

I-2 Post-Closure Plan

Planned maintenance of the closed surface impoundment consists of:

1. Inspections in accordance with the schedule shown in Table I-1.

2. Based on the results of the inspection, make immediate repairs to insure that integrity of all areas of concern (cover, groundwater monitoring, run-off system, security fence, etc.) is maintained. Materials needed for repairs will be obtained off-site.

3. Area will be mowed at least twice each year and revegetated when necessary. Crops will not be grown in this area.

4. On an annual basis, the post-closure plan will be reviewed to determine if the plan needs to be updated. Should the regulated unit be found to be leaking or other conditions change, the post- closure plan will be updated as necessary. All proposed modification to the post-closure plan will be submitted to the Kentucky Division of Waste Management by UFI for approval prior to being made.

Two copies of the post-closure plan will be maintained at the plant site at the following location:

Chief Plant Engineer
P.O. Box 240
Factory Avenue
Lawrenceburg, Kentucky 40342
Telephone during business hours (502) 839-6971

Chief Plant Engineer is responsible for inspection and maintenance of the closed surface impoundment. He will be responsible for updating the facility's copies of post-closure plan and providing copies of any updates to the state for inclusion in their and EPA's copies of the plan.

The post closure groundwater monitoring program and geologic conditions are detailed in Section E of this application. The groundwater monitoring network consists of one upgradient and three downgradient wells plus a downgradient spring. The upgradient well is sampled quarterly and the downgradient wells/spring semi-annually. Results of the analyses of the samples are to be evaluated statistically using the Cochran's Approximation to the Behrens-Fisher Students' t-test. Background quality is to be established utilizing the Moving Average concept for continually updating the background data base. This monitoring network will serve as the groundwater monitoring network for both interim status 401 KAR 35:060 and permitted status (401 KAR 34:060).

If any of the existing monitoring wells have to be abandoned, the following procedure will be followed:

1. The protective cover and concrete plug shall be removed.

2. A hollow core auger shall be placed over the well casing and advanced to the bottom of the original borehole.

3. The well casing and screen shall be removed from the auger if possible; if not, the auger shall be removed with the well casing and screen lodged within its core.

4. If not removed at this point, the auger shall be removed from the borehole.

5. A tremmie pipe shall be lowered to the bottom of the borehole; if excessive caving has occurred, the tremmie pipe shall be removed, the hollow core auger shall be returned to the borehole, and the tremmie pipe shall be lowered to the bottom of the auger's hollow core.

6. Cement/Bentonite grout shall be pumped through the tremmie pipe to the bottom of the borehole. As the borehole is filled with grout, the tremmie pipe (and auger, if in the borehole) shall be gradually removed. The tremmie pipe shall remain below the grout surface at all times, thus insuring grout continuity and an effective seal.

The protective covers on the monitoring wells will be kept from rusting by being repainted as needed. Any new wells required will be installed in accordance with the procedures in the Phase II Hydrogeologic Investigation contained in Appendix E-5.

The hazardous waste management area is enclosed by a 6-foot high, steel chain link fence with three strands of barbed wire at the top. The gates at the east and west ends are chained and locked. This fence will provide adequate security for the closed facility.

The final cover was designed in accordance with United States EPA's Standard Landfill Cover Design because it was based on meeting requirements such as 401 KAR 34:200 Section 8 and minimizing the potential for final cover damage. This design was used in order to minimize the need for post-closure maintenance, minimize or eliminate releases of hazardous waste, leachate and contaminated rainfall to the air, groundwater, surface water and surrounding land.

TABLE I-1

LIST OF ITEMS TO BE COVERED DURING
INSPECTIONS OF CLOSED SURFACE IMPOUNDMENT

Inspector Name:

Date and Time of Inspection:

	Items to Check	Frequency of Inspection	Types of Problems to check for
1.	Final Cover	Monthly & after storms	Integrity of cover (erosion, grass covering, cracks, subsidence)
		Annually for the first three years following closure	Elevation and grades (3 to 5%)
2.	Groundwater Monitoring Wells	Quarterly	Well head covers intact Locks and seals intact
3.	Run-on and Run-off controls	Monthly & after storms	Clogging/blockage Integrity
4.	Fence around closed area	Monthly	Broken posts, gaps, warning signs, gate and gate lock
5.	Benchmarks	Monthly	Damage, Disturbance

The grass covered slopes of the closed impoundment are designed to be between 3-5% which will promote drainage and allow for settlement while not developing run-off velocities high enough to result in erosion damage. Almost the entire perimeter of the closed impoundment is diked with virtually no drainage onto the site. The capacity of the run-off control rock armored ditch is more than adequate to control the run-off from a 25-year - 24-hour storm event without being damaged.

Concrete benchmarks have been established and clearly marked to insure they are not damaged when area is mowed. In the event a benchmark is damaged, it will be replaced. Chances of damage due to vandalism are remote since the hazardous waste management area is fenced and access is restricted by locked gates. The locations and references for the benchmarks are given on Figure I-1.

I-3 Notices Required for Disposal Facilities

The facility owner has prepared and submitted the required notice to the appropriate land use authority, and Kentucky Division of Waste Management, KNREPC with a copy for the EPA Region IV Administrator.

A notation has been placed on the facility deed that notifies any potential purchaser of the property that:

1. The property has been used to manage hazardous wastes; and,

2. Use of the land is restricted to activities that will not disturb integrity of final cover system, or monitoring system during the post-closure care period.

I-3a Notice to Local Land Authority

Local land authority is the Anderson County Planning Commission, Lawrenceburg, Kentucky. Figure I-2 is a copy of the survey plat Universal Fasteners has provided the Commission which has the following information:

1. Location and dimensions of the surface impoundment with respect to permanently surveyed benchmarks.

2. Use of the land is restricted to activities that will not disturb integrity of final cover system, or monitoring system during the post-closure care period.

3. The impoundment area (single cell) has been used to manage hazardous wastes.

4. Type of wastes placed in the impoundment area.

I-3b Notice in Deed to Property

Universal Fastener has placed a notation on the facility deed that notifies any potential purchaser of the property that:

1. This impoundment has been used to manage hazardous wastes.

2. Use of the land is restricted to activities that will not disturb integrity of final cover system or monitoring system during the post-closure care period.

3. The required information (survey plat, etc.) has been filed with the Anderson County Planning Commission.

Universal Fastener has filed the amended deed containing the information in I-3b in the format given in Attachment I-1 with the Anderson County Clerk, Anderson County Courthouse, Lawrenceburg, Kentucky 40342.

I-4 Post-Closure Cost Estimate

Total annual cost for post-closure care is estimated to be $11,448.00 for the beginning year. The derivation of this figure is:

1. Groundwater Monitoring

A. Analysis Costs

Cost per Laboratory Analysis:

Parameter	Cost/Test
Cadmium	$ 16.00
Copper	15.00
Cyanide	24.00
Nickel	17.00
Zinc	17.00
	$ 89.00

Cost per Field Analysis

pH	$ 4.00
Specific Conductance	5.00
Temperature	1.00
	$ 10.00

Number of Analyses per year:

Sample Description	Frequency	No. of Lab. Analyses/ Sampling	Yearly Total	No. of Field Analyses/ Sampling	Yearly Total
Background well	Quarterly	4	16	1	4
Field Blank	Quarterly	1	4	-	-
3-Downgradient wells	Semi-Annually	4	24	1	6
Spring	Semi-Annually	1	2	1	2
		TOTAL	46		12

Estimated Cost per year Laboratory Analysis = $89.00 x 46 = $4,094.00

Estimated Cost per year Field Analyses = $10.00 x 12 = $120.00

Total Cost per Year = $4,214.00

B. Sampling

Assume it takes 2 man-days to collect samples from the entire groundwater monitoring system.

2 days x 2 times/yr x 8 hrs x $25/hr = $800.00

Assume it takes 1 man-day to collect samples from just the background (upgradient) well.

1 day x 2 times/year x 8 hours x $25/hr = $400.00

Estimated Total Groundwater Monitoring Costs

$5,414.00

2. Site Maintenance

A. Mowing

Assume two times/yr, one tractor plus operator at $40/hr.

4 hrs to mow one time x 2 = 8 hrs x $40/hr = $320.00/yr.

B. Cover Repair

Assume 2 days/yr two men at $25/hr plus one tractor or grader at $40/hr

2 days/yr x 8 hrs/day x $65/hr = $1,040.00/yr.

C. Fence Repair

Assume one day per year, one man at $25/hr

1 day/yr x 8 hrs/day x $25/hr = $200.00/yr.

D. Miscellaneous Supplies

Fill material, seed, fertilizer, etc. $750.00/yr

Estimated Total Site Maintenance Costs $2,310.00

3. Inspections

A. Monthly

Assume 3 hrs/inspection, one man at $35/hr.

3 hrs x 23/yr x $35/hr. = $1,260.00/yr

B. Rainfall Events

Assume 8 rainfall events/yr, 2 hrs/inspection

2 hrs. x 8 yr x $35/hr. = $ 560.00/yr.

Estimated Inspection Costs $1,820.00.yr.

4. Administration and Recordkeeping

Assume 25 hours/year at $35.00 per hour

25 hours/year x $35.00/hour = $875.00/year

5. Miscellaneous (set at approximately 10% of normal yearly cost to cover items such as redeveloping wells, replacement well installation, etc.) - $1,029.00

Total Post-Closure Costs

Groundwater Monitoring	$5,414.00
Site Maintenance	$2,310.00
Inspections	$1,820.00
Administration & Recordkeeping	875.00
Miscellaneous	$1,029.00
TOTAL	$11,448.00/year

Total Post-Closure Cost Estimate = 30 yrs. x $11,448.00 per year = $343,440.00

I-5 Financial Assurance Mechanism for Post-Closure

Universal Fasteners has posted a Letter of Credit for $343,440.00 as the post-closure financial assurance mechanism. The Letter of Credit is irrevocable and contain the wording required in 401 KAR 34:152. A cover letter in accordance with 401 KAR 34:152 accompanies the Letter of Credit.

I-6 Liability Requirements

UFI currently has a Hazardous Waste Facility Certificate of Liability Insurance with limits of $4,000,000.00 per occurrence and $8,000,000.00 aggregate, which meets the requirements of 401 KAR 34:120. A copy of this certificate along with the other necessary information is currently on file with the Kentucky DWM.

ATTACHMENT I-1

SAMPLE NOTICE IN DEED

EXHIBIT 3-7

SAMPLE NOTICE IN DEED

TO WHOM IT MAY CONCERN:

I, _____ (owner or operator) _____ the undersigned, of

_____ (street address) _____, City of _____, County of _____, State of _____, hereby give the following notice as required by 40 CFR 264.119 or 265.119:

1. I am, and since _____, 19__ have been in possession of the following described lands _____ (legal description) _____

_____

2. Since _____, 19__, I have disposed of hazardous chemical wastes under the terms of regulations promulgated by the United States Environmental Protection Agency on/in the above-described land.

3. The future use of the above-described land is restricted under the terms of 40 CFR Subpart G: the post-closure use of the property must never be allowed to disturb the integrity of either the containment system or the facility's monitoring system, unless the Regional Administrator or State Director determines that the proposed use (1) will not increase the potential threat to human health or the environment, or (2) is necessary to reduce the threat to human health or the environment.

4. Any and all future purchasers of this land should inform themselves of the requirements of the regulations and ascertain the amount and nature of wastes disposed of on/in the above-described property.

5. I have filed a survey plat with the (name and address of local land authority) and with the Regional Administrator of EPA, Region # (or State Director, State of _____), at (address of Regional Administrator or State Director) showing the location and dimensions of landfill cells and a record of the type, location and quantity of waste disposal within each area of the facility.

Signed:

(owner or operator) _____ date _____

(notary public) _____ date _____

Certificates of Insurance

Certificates of Insurance

DEFINITION

A certificate of insurance is a document that verifies an insurance policy has been written, and its states the nature of the coverage in general terms.

PURPOSE

A certificate of insurance is often used as proof of insurance in loan transactions, and for other legal requirements. This should be used for information purposes only and not as a contract. Use of special wording (i.e., additional insureds, waivers of subrogation, primary wording) should be kept to a minimum and used only when necessary.

EFFECT

A customer of YKK who requests to be named as an "additional insured" and asks for evidence of such (certificate of insurance), is saying that in the event that they are sued as a result of bodily injury or property damage allegedly caused by our product, they (our customer) would expect YKK's insurance coverage to respond to the suit.

Naming our customers as additional insured(s), may result in YKK paying an additional premium in order to obtain this coverage. More important than the premium, is the fact that by naming a customer as an additional insured, further exposes YKK to defending suits that may or may not be the result of an occurrence relating to our product. In addition, any claims charged against YKK will ultimately lead to higher premiums. An important point to note is that even if no certificate of insurance was issued, a customer's insurance company can still request YKK's insurance company to defend a suit.

COMPANY POLICY

It is for the above mentioned reasons, that good business judgment be exercised if and when a YKK salesperson or any other employee, consent to issue a customer a certificate of insurance.

Company policy dictates that a certificate of insurance not be issued unless it is a requirement for doing business with a customer, or required for legal purposes. It is imperative that all parties concerned be aware that the insurance specified in the certificate is subject to all the terms, exclusions and conditions of such policies.

REQUEST FOR CERTIFICATES

"Request for Certificate of Insurance" Form INS102 has been developed, in order that each Divisional Controller formally approve a request for the issuance of a certificate of insurance by Corporate Headquarters. A sample of this form is attached. Any questions which may arise regarding the issuance of certificates of insurance should be brought to the attention of Vivian Russo at YCA-NJ.

BROKER INVOLVEMENT

Upon written instructions from Corporate Headquarters, the broker of record will complete the certificates, and forward to the certificate holder with a copy to Corporate Headquarters.

SPECIAL INSTRUCTIONS

- No Company is to be named as an additional insured without YKK approval.
- Maximum umbrella limit to be shown is $10,000,000.

Supplier Purchase Orders

All outgoing purchase orders will have the following information contained therein:

Supplier shall defend and indemnify YKK, including YKK"s directors and officers, employees, agents, representatives, subcontractors or independent contractors, against all costs associated with any and all damages, liability, claims, losses, liens, death, accidents and expenses (including reasonable attorney fees) arising out of, or resulting in any way from any defect in the items purchased hereunder or from any act or omission of Supplier, its agents, employees, subcontractors or independent contractors. This includes any situation where Supplier's employees, subcontractors or independent contractors come onto YKK's property, including for installation or items. YKK shall only be responsible for loss or damage caused by YKK's sole negligence. Supplier shall maintain such general liability insurance, including items liability, completed operations, contractors liability, and protective liability, personal injury liability, automobile liability (including non- owned auto liability), Workmen's Compensation and employers liability as shall adequately protect YKK against such damage, liabilities, claims, losses and expenses (including reasonable attorney's fees). Supplier agrees that YKK shall be listed as additional insured on all such applicable policies. Upon YKK's request, Supplier shall submit certificates of insurance evidencing insurance coverage meeting or exceeding the following requirements: Insurance required herein shall be by insurance companies holding a General Policyholders Rating of at least "A" as set for in the most recent issue of Best's Insurance Guide.

Liability - Contractual, Automobile, CGL
Bodily Injury - $1,000,000 each occurrence
Property Damage - $1,000,000 each occurrence
Umbrella/ Excess Liability
General Aggregate - $2,000,000
Employers Liability
Bodily Injury by Accident - $500,000 each accident
Bodily Injury by Disease - $500,000 policy limit
Bodily Injury by Disease - $500,000 each employee

YKK Corporation of America & Subsidiaries Procedures for Certificates of Insurance Contractors

In the normal course of business, many persons (company representatives) enter the premises of YKK Corporation of America/Subs facilities. It is a prudent business practice to confirm that these persons (entities) have adequate insurance in force. Accordingly, no contractor or assignees are permitted on YKK facilities prior to the submittal of a current certificate of insurance.

Every certificate of insurance must be carefully examined to ensure that the requirements set forth are met and that YKK Corporation of America and its subsidiaries are adequately protected:

- YKK Corporation of America and its subsidiaries require contractors to maintain insurance coverages as detailed in Exhibit I.

- Insurance companies listed on the certificate of insurance should have an A.M. Best Rating of A or better.

- YKK Corporation of America and its subsidiaries should be named as an additional insured, as their interest may appear, on the certificate of insurance. If there are any other indemnified parties, they should also be named as additional insureds. Please discuss any deviations with YCA Risk Management and the Legal Department as necessary.

- In the case of major construction projects, the certificate of insurance must always reference the project name and location accurately (project number if available).

- The certificate of insurance must always provide 30 days prior notice of the effective date of cancellation of a policy.

- The original copy of the certificate of insurance must be safeguarded and filed with all original executed documents. A copy must also be provided to the accounts payable department in order to authorize vendor payments.

The attached sample Certificate - Contractor, will help you identify the conditions which have been mentioned above and the limits of insurance set forth in Exhibit I - Insurance Requirements. The requirements must be incorporated into each certificate of insurance submitted by a contractor or subcontractor.

When a contractor/subcontractor advises that they are self-insured or evidence a large Self-Insured Retention/Deductible ($250,000 or greater) on a certificate, a copy of their financial statement should be reviewed in order to determine the contractor's/subcontractor's financial strength.

SAMPLE CERTIFICATE OF INSURANCE

Date

Vendor Name and Address

Dear Vendor (or Sir Madam or personalize if you wish)

Please have your insurance agent or broker provide us with a Certificate of Insurance with your company as Insured with the following minimum requirements:

Type of Insurance	Limits	
Commercial General Liability	General Aggregate	$1,000,000
	Products Completed Operations	$1,000,000
	Personal & Advertising Injury	$1,000,000
	Each Occurrence	$1,000,000
	Fire Damage (any one fire)	$50,000
	Medical Expense	$5,000
Automobile Liability- any auto	Combined Single Limit	$1,000,000
Excess Liability- Umbrella Form	Each Occurrence	$1,000,000
	Aggregate	$1,000,000
Worker's Compensation		Statutory Limits
Employer's Liability	Each Accident	$100,000
	Disease-Policy Limit	$500,000
	Disease- Each Employee	$100,000

The certificate shall also state:

- General Liability/Excess Liability – (YKK or subsidiary company) is included as Additional Insured with respect to liability arising out of the insured's ongoing operations performed for (YKK or subsidiary company)
- Any major exclusions that effect our interest
- Cancellation – 30 days written notice to the certificate holder note: "will endeavor" to be stricken
- Certificate Holder:

Please provide us with the Certificate of Insurance within 20 days of the date of this letter. Please also send us renewal certificate prior to policy expiration and for renewals thereafter.

We appreciate your continued business with us.

Very Truly Yours,

Exhibit I - Insurance Requirements

THE CONTRACTOR or SUBCONTRACTOR shall procure, prior to the time it shall commence performance under a purchase order and/or contract, carry, at their sole cost and maintain in force continuously the following coverages:

1. **General Liability Insurance** on an Occurrence basis in the amount of $1,000,000 each occurrence and $1,000,000 general aggregate to include the following:

   (a) Products and Completed Operations coverage;
   (b) Blanket Contractual coverage, including both oral and written contracts;
   (c) Personal Injury coverage;
   (d) Broad Form Property Damage coverage, including completed operations;
   (e) Deductibles/Self Insured Retention must be evidenced.
   (f) YKK Corporation of America and its subsidiaries should be included as an additional insured as respects the Contractors' and Subcontractors' ongoing operations for them.

2. **Business Auto Liability Insurance** in the amount of $1,000,000 combined single limit for bodily injury and/or property damage liability to include the following:

   (a) Owned Autos and/or Scheduled Autos;
   (b) Hired or Borrowed Autos;
   (c) Non-Owned Autos;
   (d) Deductibles/Self Insured Retention must be evidenced.

3. **Umbrella/Excess Liability** evidencing the following limit:

   (a) General Aggregate: $2,000,000

4(a).**Workers' Compensation Insurance** - Statutory Limits

4(b).**Employers' Liability** minimum limits:

   (a) Bodily Injury by accident: $1,000,000 each accident;
   (b) Bodily Injury by disease: $1,000,000 policy limit;

(c) Bodily Injury by disease: $1,000,000 each employee.

Special Notes:

(A) No endorsement limiting or excluding a required coverage is permitted.

(B) Certain trades perform work which is less hazardous than most and therefore, in these situations, lower limits are acceptable.

YKK Corporation of America & Subsidiaries Procedures for Certificates of Insurance Trucking (Carting) Companies

In accordance with the conditions set forth in the YKK Corporation of America and its subsidiaries freight contract, carriers are required to maintain not less than the minimum insurance required by law. Evidence of such insurance should be submitted, in the form of a certificate of insurance, issued to the applicable YKK entity.

Every certificate of insurance must be carefully examined to ensure that the requirements set forth are met and that YKK Corporation of America and its subsidiaries are adequately protected:

- YKK Corporation of America and its subsidiaries require contractors to maintain insurance coverages as detailed in Exhibit I — Insurance Requirements.

- Insurance companies listed on the certificate of insurance should have an A.M. Best Rating of A or better.

- As per the YKK freight contract, YKK Corporation of America and its subsidiaries should be named as an additional insured, as their interest may appear, on the certificate of insurance. If there are any other indemnified parties, they should also be named as additional insureds. Please discuss any deviations from this procedure with YCA Risk Management and the Legal Department as necessary.

- The certificate of insurance must always provide 30 days prior notice of the effective date of cancellation of a policy.

- The original copy of the certificate of insurance must be safeguarded and filed with all original executed documents. A copy must also be provided to the accounts payable department in order to authorize vendor payments.

The attached sample Certificate - Trucking (Carting), will help you identify the conditions which have been mentioned above and the limits of insurance set forth in Exhibit I - Insurance

Requirements. The requirements must be incorporated into each certificate of insurance submitted by a contractor or subcontractor.

When a trucking (common) carrier advises that they are self-insured or evidence a large Self-Insured Retention/Deductible ($250,000 or greater) on a certificate, a copy of the financial statement should be reviewed in order to determine their financial strength.

Exhibit I - Insurance Requirements

THE TRUCKING CARRIER OR OTHER COMMON CARRIER shall procure, prior to the time it shall commence performance under a purchase order and/or contract, carry, at the sole cost of the Trucking (Common) Carrier and maintain in force continuously the following coverages:

1. **General Liability Insurance** on an Occurrence basis in the amount of $1,000,000 each occurrence and $1,000,000 general aggregate to include the following:

(a) Products and Completed Operations coverage;
(b) Blanket Contractual coverage, including both oral and written contracts;
(c) Personal Injury coverage;
(d) Broad Form Property Damage coverage, including completed operations;
(e) Deductibles/Self Insured Retention must be evidenced.
(f) YKK Corporation of America and its subsidiaries should be included as an additional insured as respects the Contractors' and Subcontractors' ongoing operations for them.

2. **Business Auto Liability Insurance** in the amount of $1,000,000 combined single limit for bodily injury and/or property damage liability to include the following:

(a) Owned Autos and/or Scheduled Autos;
(b) Hired or Borrowed Autos;
(c) Non-Owned Autos;
(d) Trailer Interchange coverage for value of the trailer must be evidenced.
(e) Deductibles/Self Insured Retention must be evidenced.

3. **Umbrella/Excess Liability** evidencing the following limit:

(a) General Aggregate: $2,000,000

4(a).**Workers' Compensation Insurance** - Statutory Limits

4(b). **Employers' Liability** minimum limits:

(a) Bodily Injury by accident: $1,000,000 each accident;
(b) Bodily Injury by disease: $1,000,000 policy limit;
(c) Bodily Injury by disease: $1,000,000 each employee.

5. **Motor Truck Cargo** including the following limits:

(a) $500,000 Per Conveyance

Special Notes:

(A) No endorsement limiting or excluding a required coverage is permitted.

(B) In certain instances where a courier service is utilized, lower limits may be acceptable. Contact the Risk Management Department for advice, if necessary.

Pollution and Remediation Legal Liability

Named Insured	YKK Corporation of America and any subsidiary, associated or affiliated company, corporation firm, organization, partnership, joint venture or individual under its management or control as now or hereafter constituted or acquired, including any predecessor organizations of such companies; and any other party in interest that is required by contract to be named as an additional named insured.
Company/Policy No.	Indian Harbor Insurance Company IHIC-PARL4CP
Term	December 20, 2001 to December 20, 2004
Limit	$2,000,000 each Loss, Remediation Expense or Legal Defense Expense / $2,000,000 total All Losses, Remediation Expenses or Legal Defense Expenses
Self-Insured Retention:	$250,000 each Loss, Remediation Expense or Legal Defense Expense
Premium	$44,822 (does not include excess and surplus lines taxes)
Coverage	For locations scheduled on the insurance policy: Coverage A – Pollution Legal Liability Coverage B – Remediation Legal Liability Coverage C – Legal Defense Expense Coverage D – Contingent Transportation Coverage
Some Major	1. Known pollution conditions existing prior to the inception date of the policy and not disclosed in the application 2. Lead Based Paint and asbestos 3. Underground storage tanks, unless scheduled to insurance policy 4. Contamination exclusion applies at (1) Tape Craft Corporation facility at 17 South Hunter Street, Anniston, AL, (2) Universal Fastners Inc., 302 Factory Street, Lawrenceburg, KY 40342, and (3) YKK AP America, Inc., 332 Firetower Road, Dublin, GA 31021

Data to be Maintained Locations schedule and underground storage tank inventory.

PART J

PART J – OTHER FEDERAL LAWS

The federal laws given in 401 KAR 39:060 Section 5 (formerly 401 KAR 38:010 Section 2) do not apply to this permit for the reasons stated below.

1) 16 USC 1273-1287 (The Wild and Scenic Rivers Act): Issuance of this permit will not be assisting the construction of any water resources project that would have a direct, adverse effect on the values for which a national (or state) wild and scenic river was established.

2) 16 USC 470 (The National Historic Preservation Act of 1966, as amended): Issuance of this permit will not have the potential to adversely affect properties listed or eligible for listing in the National Register of Historic Places.

3) 16 USC 1531 (The Endangered Species Act, as amended): Issuance of this post-closure permit is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat.

4) 16 USC 1451 (The Coastal Zone Management Act, as amended): Issuance of this permit will not have the potential to adversely affect coastal areas as identified in the Coastal Zone Management Act.

5) 16 USC 661 et. seq. (The Fish and Wildlife Coordination Act of 1958, as amended): This permit does not propose or authorize the impoundment, diversion or other control or modification of any body of water.

The Kentucky Nature Preserves Commission website was consulted for data pertaining to priority watersheds, blackside dace streams and federally listed plants in Kentucky.

Habitat Characterization Model for *Federally Listed Plants* in Kentucky

Kentucky State Nature Preserves Commission

Nicholas Drozda, Eric Ivanovich, Deborah White and Sara Hines

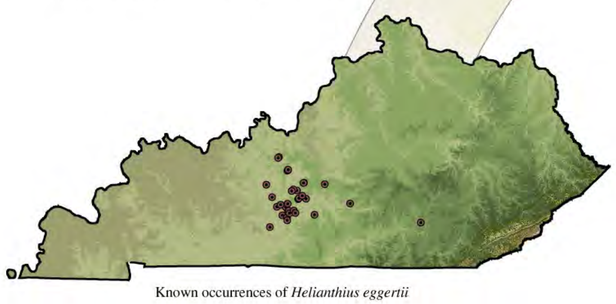
Habitat prediction modeling utilizes a geographic information system (GIS) to integrate information about the habitat characteristics for a species. Physical, geologic, hydrologic, or ecological parameters that are characteristic of the known occurrences of a species are identified and the associated spatial data are incorporated into the model. GIS allows for the integration of these parameters, thus enabling potential habitat to be identified and ranked.

The Kentucky Natural Heritage Database (KNHD), a database maintained by Kentucky State Nature Preserves Commission (KSNPC) on rare species and natural communities, was utilized for this project. The authors used the locations of known occurrences for the species to be modeled and their familiarity with these species to identify characteristics of the habitat that could be used in habitat modeling. Each identified parameter of the model was differentially weighted relative to the statistical/perceived importance to the occurrence of the species. Modeled habitat areas were given a "score" based on the number of parameters that coincide in a particular area.

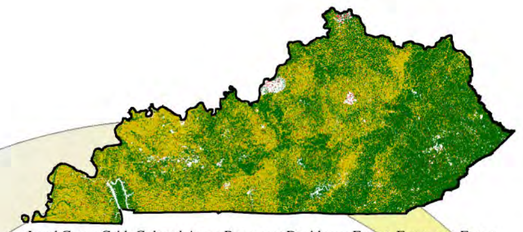
The objective of this work was to develop habitat models for nine federally listed plant species in Kentucky. The species in this example is *Helianthus eggertii* (Eggert's sunflower). Known species occurrences were used to assist in the identification of the appropriate spatial datasets to incorporate. The following five spatial datasets were utilized to characterize the potential habitat sites (the numbers in parentheses indicate the weight values of the datasets):

1) Land Cover (2)
2) Soil pH (1,2)
3) Karst Topography (1)
4) Elevation (1)
5) Alluvial Soils Excluded (2)

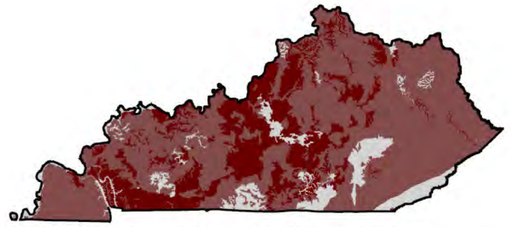
The *Helianthus eggertii* Model rankings range from 0 (low probability) to 8 (high probability)



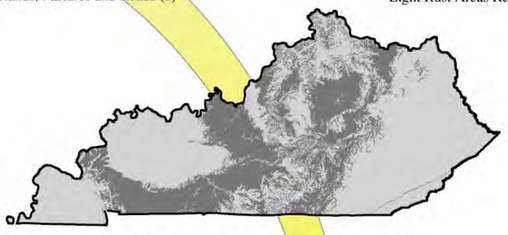
Known occurrences of *Helianthius eggertii*



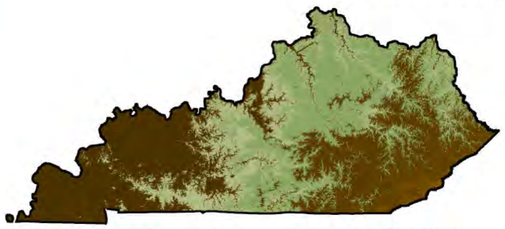
Land Cover Grid: Colored Areas Represent Deciduous Forest, Evergreen Forest, Mixed Forest Lands, Croplands, Pastures and Roads (2)



Soil pH Grid: Dark Rust Areas Represent Soil pH Ranges of 5.6-6.0 (2)
Light Rust Areas Represent Soil pH Ranges of 5.1-5.5 and 6.1-6.5 (1)

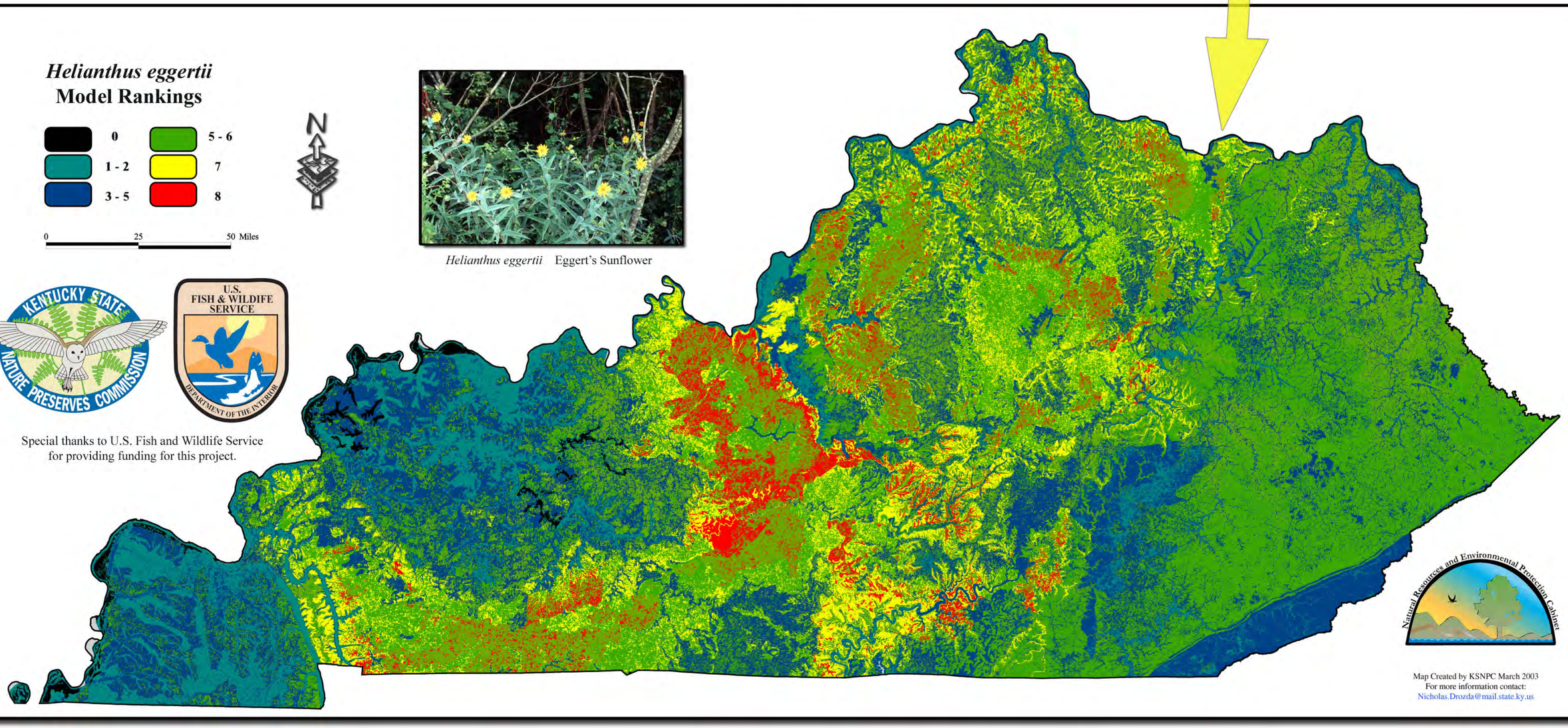


Karst Grid: Dark Areas Represent Karst Topography (1)



Elevation Grid: Shades of Green Represent Elevation from ~600-900 ft. (1)

Soil Grid: Dark Areas Represent Upland Soils (Model Excluded Alluvial Soils) (2)



Helianthus eggertii Eggert's Sunflower

Special thanks to U.S. Fish and Wildlife Service for providing funding for this project.

Map Created by KSNPC March 2003
For more information contact:
Nicholas.Drozda@mail.state.ky.us

AN ASSESSMENT of "HOT SPOTS" & PRIORITY WATERSHEDS
for Conservation of Imperiled Freshwater Mussels and Fishes in Kentucky

Ronald R. Cicerello and Greg Abernathy
Kentucky State Nature Preserves Commission
Frankfort, KY 40601

INTRODUCTION

Kentucky's native freshwater fish and mussel faunas are among the richest in North America (NA), the center of worldwide freshwater mussel and temperate freshwater fish biodiversity (1, 2, 3). Thirty-five percent of the NA freshwater mussel fauna (297 taxa) and approximately 30% of the NA freshwater fish fauna (ca. 800 taxa) are known from Kentucky (4, 5). The Kentucky fish and mussel faunas rank third and fourth, respectively, in species richness among the states. Both groups are dependent upon good physical habitat and water quality, but mussels also are dependent ecologically on fishes, which serve as hosts for mussel larvae. Mussels and fishes are among the most imperiled taxonomic groups nationally (3); the distribution of these groups in Kentucky is well documented (4, 6, 7). During the last century, habitat destruction and degradation (e.g., dams, pollution, introduced non-indigenous mussels) caused the extirpation or extinction of 21% and 4% of Kentucky's mussel and fish taxa, respectively. Of the extant taxa, 41% of mussels and 25% of fishes are imperiled because of significant declines in diversity, numbers and distribution. Efforts to conserve Kentucky's imperiled mussels and fishes are underway (e.g., The Green River Bioreserve project by The Nature Conservancy, USFWS, KY Department of Fish and Wildlife Resources et al.), but priority areas for conservation have not been assessed. Priority areas must be identified so limited conservation funds can be expended wisely. Our objectives were to identify hot spots, watersheds with the highest species richness, and priority watersheds for conservation of imperiled freshwater mussels and fishes in Kentucky.

MATERIALS AND METHODS

We followed methods used by Master et al. (3). Using a Geographic Information System, we scored each of 616 Kentucky watersheds (11-digit U.S Geological Survey hydrologic unit codes (HUC)) for post-1984 records of imperiled mussels (23 taxa) (freshly-dead or living specimens) and fishes (50 taxa) in the KSNPC Natural Heritage Program database as of 6 October 2004 (Figure 1, Table 1). Imperiled mussels and fishes are those listed as endangered, threatened, or of special concern or are candidates for listing as endangered or threatened by the USFWS (8, 9, 10), NOAA (11), and/or the KSNPC (12). The data were analyzed as follows:

Hot Spot Analysis:
- o We summed the number of imperiled taxa in each watershed.
- o Hot Spots are watersheds with ≥ 8 imperiled fish and/or mussel taxa.

Priority Watersheds Analysis:
- o We calculated a rarity-weighted richness index (RWRI) (13, 14) for each taxon. Each imperiled taxon was scored, as 1 divided by the number of watersheds the taxon inhabits. A taxon inhabiting only one watershed was scored 1.0, and one inhabiting 20 was scored 0.05. The RWRI for each watershed is the sum of scores for each taxon occurring in that watershed. The minimum RWRI for inclusion as a priority watershed was 1.23, which equals the mean RWRI and 1 standard deviation (mean = 0.44, SD = 0.79, n = 190).
- o Criteria for Identifying Priority Watersheds to Conserve Imperiled Taxa in each of 17 drainages (Figure 2):
  - · Watersheds with RWRI ≥ 1.23 or with ≥ 5 taxa;
  - · Watersheds with the highest RWRI value in each drainage; and
  - · Add watersheds with the highest RWRI value or the most viable population to ensure all imperiled taxa are included at least twice (except taxa restricted to one watershed).

LITERATURE CITED

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RESULTS AND DISCUSSION

Hot Spot Watersheds

Only 31% of 616 11-digit watersheds in Kentucky had at least one imperiled taxa and only 1.9% support 8 or more imperiled taxa. The Green River near Munfordville is the top hot spot with 21 imperiled mussel and fish taxa (Figure 1, Table 2). The second and third most important watersheds are contiguous with the top watershed and harbor 18 and 13 taxa, respectively. These three watersheds are habitat for 24 imperiled taxa, including 8 USFWS/NOAA-listed or candidate species, and they are isolated from adjacent watersheds and mussel and fish populations by Green River Lake Dam upstream and by Lock and Dam 6 downstream. Terrapin Creek, a tributary to the Obion River in west Tennessee, has 11 imperiled taxa, all listed only by KSNPC, plus an undescribed, endemic form of *Lampetra aepyptera* not included in this analysis. Contiguous lower Ohio River watersheds each support 8 imperiled taxa, but when merged they include 14 species. The Green River near Munfordville also is the most important watershed for conservation of USFWS/NOAA-listed and candidate species (Figure 3, Table 3). Conservation of the top 10 hot spot watersheds (12 watersheds totaling ca. 403,653 hectares) would protect populations of 88% of imperiled mussel taxa and 58% of imperiled fish taxa.

Priority Watersheds to Conserve Imperiled Taxa

Conservation of 53 watersheds totaling ca. 1,490,886 hectares or 14% of Kentucky will protect all taxa restricted to one watershed and at least two watersheds for each of the remaining taxa (Figure 4, Table 2). Priority watersheds are concentrated in drainages extending from the Mississippi River to the upper Green and upper Cumberland rivers, areas with diverse habitats and high species richness. Eight of the top 10 priority watersheds are in three drainages (Mayfield and Obion Creeks and Bayou de Chien, the Upper Green River, and the Upper Cumberland below the Falls). Drainages extending from the Tradewater River to the Big Sandy River generally have lost imperiled taxa to habitat destruction and degradation. Terrapin Creek, the top priority watershed (RWRI = 7.11) and a focus of KSNPC conservation efforts, has five taxa restricted to one watershed and it exclusively shares two additional taxa with only one other watershed. These species are widely distributed and relatively abundant in the lower Mississippi River valley and in Gulf Slope drainages. Six drainages (3, 4, 10, 11, 13, and 17) support few imperiled or range-limited taxa. Only the watershed with the highest RWRI score in each of these drainages is a conservation priority. Priority watersheds generally include populations with the best viability and integrity (i.e., size, condition, and landscape context). However, some priority watersheds have been severely degraded (e.g., Little South Fork Cumberland River and Horse Lick Creek) and the viability of imperiled taxa and entire taxonomic groups (e.g., mussels) in these watersheds is questionable (15, 16). Population size for *Epioblasma obliquata obliquata*, *E. torulosa rangiana*, and *Obovaria retusa* probably is below the minimum for viability and these taxa will likely be lost in Kentucky. Larger scale watersheds probably are required to ensure viability of some species. Migratory species such as lake sturgeon probably require larger watersheds to ensure that all life requisites are met. Removal of abandoned navigation dams on the Green River, for example, would reconnect and restore riverine habitat and probably increase the viability of mussels (e.g., *Pleurobema plenum* and *P. rubrum*). There are challenges to the conservation of these watersheds. Some watersheds are highly developed and conservation is at best a secondary priority (e.g., the Mississippi, Ohio, and lower Tennessee rivers). More than two populations of each taxon must be protected to ensure the long-term survival of imperiled mussel and fishes, requiring the protection of additional land. The large number and mean size (28,139 hectares) of priority watersheds overwhelms the resources required to protect them. Despite these and other challenges, efforts to protect several priority watersheds are already underway (e.g., the Rockcastle and Licking rivers). This preliminary assessment focused on imperiled mussels and fishes. A future assessment will use data for all native mussel and fish taxa to determine priorities for biodiversity conservation of these groups.

Table 1. Species List

The following table lists the 83 species of mussels (33 taxa) and fishes (50 taxa) included in the analysis. The table includes conservation status information, the number of 11-digit Hydrologic Units (HUC) the species is found in, and a Species Code which is used in the Table 2. Species only known from a single watershed are highlighted in yellow.

Status Legend:
KSNPC: Kentucky State Nature Preserves Commission
E = Endangered T = Threatened S = Special Concern
USFWS: U.S. Fish and Wildlife Service / NOAA: National Oceanic and Atmospheric Administration
LE = Listed Endangered LT = List Threatened C = Candidate for Federal Listing

MUSSELS

Scientific Name	Common Name	KSNPC	USFWS	NOAA	# of HUC11s Found In	Species Code
Alasmidonta atropurpurea	Cumberland Elktoe	E	LE		5	1
Alasmidonta marginata	Elktoe	T			13	2
Anodontoides denigratus	Cumberland Papershell	E			9	3
Cumberlandia monodonta	Spectaclecase	E	C		3	4
Cyprogenia stegaria	Fanshell	E	LE		12	5
Epioblasma brevidens	Cumberlandian Combshell	E	LE		4	6
Epioblasma florentina walkeri	Tan Riffleshell	E	LE		2	7
Epioblasma obliquata obliquata	Catspaw	E	LE		1	8
Epioblasma torulosa rangiana	Northern Riffleshell	E	LE		2	9
Epioblasma triquetra	Snuffbox	E			16	10
Fusconaia subrotunda subrotunda	Longsolid	S			18	11
Lampsilis abrupta	Pink Mucket	E	LE		7	12
Lampsilis ovata	Pocketbook	E			12	13
Lasmigona compressa	Creek Heelsplitter	E			3	14
Obovaria retusa	Ring Pink	E	LE		3	15
Pegias fabula	Littlewing Pearlymussel	E	LE		4	16
Plethobasus cooperianus	Orangefoot Pimpleback	E	LE		3	17
Plethobasus cyphyus	Sheepnose	E	C		15	18
Pleurobema clava	Clubshell	E	LE		4	19
Pleurobema oviforme	Tennessee Clubshell	E			7	20
Pleurobema plenum	Rough Pigtoe	E	LE		6	21
Pleurobema rubrum	Pyramid Pigtoe	E			9	22
Potamilus capax	Fat Pocketbook	E	LE		6	23
Potamilus purpuratus	Bleufer	E			3	24
Ptychobranchus subtentum	Fluted Kidneyshell	E	C		7	25
Quadrula cylindrica cylindrica	Rabbitsfoot	T			13	26
Simpsonaias ambigua	Salamander Mussel	T			11	27
Toxolasma lividus	Purple Lilliput	E			4	28
Toxolasma texasiensis	Texas Lilliput	E			6	29
Villosa lienosa	Little Spectaclecase	S			20	30
Villosa ortmanni	Kentucky Creekshell	T			10	31
Villosa trabalis	Cumberland Bean	E	LE		11	32
Villosa vanuxemensis	Mountain Creekshell	T			8	33

FISHES

Scientific Name	Common Name	KSNPC	USFWS	NOAA	# of HUC11s Found In	Species Code
Acipenser fulvescens	Lake Sturgeon	E			4	34
Alosa alabamae	Alabama Shad	E		C	2	35
Amblyopsis spelaea	Northern Cavefish	S			6	36
Ammocrypta clara	Western Sand Darter	E			2	37
Cyprinella camura	Bluntface Shiner	E			2	38
Cyprinella venusta	Blacktail Shiner	S			3	39
Erimystax insignis	Blotched Chub	E			3	40
Erimyzon sucetta	Lake Chubsucker	T			7	41
Esox niger	Chain Pickerel	S			3	42
Etheostoma chienense	Relict Darter	E	LE		1	43
Etheostoma cinereum	Ashy Darter	S			9	44
Etheostoma fusiforme	Swamp Darter	E			1	45
Etheostoma lynceum	Brighteye Darter	E			1	46
Etheostoma maculatum	Spotted Darter	T			11	47
Etheostoma microlepidum	Smallscale Darter	E			3	48
Etheostoma parvipinne	Goldstripe Darter	E			2	49
Etheostoma percnurum	Duskytail Darter	E	LE		2	50
Etheostoma proeliare	Cypress Darter	T			9	51
Etheostoma pyrrhogaster	Firebelly Darter	E			1	52
Etheostoma rafinesque	Cumberland darter	E	C		6	53
Etheostoma swainii	Gulf Darter	E			2	54
Fundulus chrysotus	Golden Topminnow	E			1	55
Hybognathus hayi	Cypress Minnow	E			3	56
Ichthyomyzon castaneus	Chestnut Lamprey	S			2	57
Ichthyomyzon fossor	Northern Brook Lamprey	T			8	58
Ichthyomyzon greeleyi	Mountain Brook Lamprey	T			3	59
Ictiobus niger	Black Buffalo	S			13	60
Lampetra appendix	American Brook Lamprey	T			6	61
Lepomis marginatus	Dollar Sunfish	E			3	62
Lepomis miniatus	Redspotted Sunfish	T			13	63
Macrhybopsis gelida	Sturgeon Chub	E	C		1	64
Macrhybopsis meeki	Sicklefin Chub	E	C		1	65
Menidia beryllina	Inland Silverside	T			7	66
Moxostoma poecilurum	Blacktail Redhorse	E			1	67
Notropis ahlizonatus	Palezone Shiner	E	LE		1	68
Notropis maculatus	Taillight Shiner	T			5	69
Notropis sp. 4	Sawfin Shiner	E			3	70
Noturus exilis	Slender Madtom	E			2	71
Noturus hildebrandi	Least Madtom	E			1	72
Noturus phaeus	Brown Madtom	E			1	73
Noturus stigmosus	Northern Madtom	S			13	74
Percina macrocephala	Longhead Darter	E			4	75
Percina squamata	Olive Darter	E			3	76
Percopsis omiscomaycus	Trout-perch	S			13	77
Phenacobius uranops	Stargazing Minnow	S			8	78
Phoxinus cumberlandensis	Blackside Dace	T	LT		28	79
Scaphirhynchus albus	Pallid Sturgeon	E	LE		1	80
Thoburnia atripinnis	Blackfin Sucker	S			5	81
Typhlichthys subterraneus	Southern Cavefish	S			3	82
Umbra limi	Central Mudminnow	T			5	83

Table 2. Priority Watersheds by Drainage

		Hot Spot	RWRI	Species
1	**Mississippi River and Minor Tributaries**			
	08010100010 - Hazel Creek	6	1.10	41, 42, 56, 60, 63, 66
	08010100020 - Shawnee Creek	5	0.61	41, 51, 60, 63, 69
	08010100030 - Mississippi River, below Sandy Br	7	3.75	23, 29, 39, 60, 64, 65, 80
	08010100040 - Mississippi River, below Hickman	2	0.83	24, 57
	08010100050 - Mississippi River, KY. Bend	1	0.50	35
2	**Ohio River - Mississippi River to Sinking Creek**			
	05140206060 - Ohio River, below Little Bayou Creek	9	1.48	13, 17, 18, 23, 56, 60, 63, 66, 69
	05140206110 - Ohio River, above Truman Creek	9	1.50	12, 13, 17, 18, 24, 26, 34, 66, 74
3	**Ohio River - Sinking Creek to Kentucky River**			
	05140104060 - Ohio River, Brandenburg	1	0.25	19
4	**Ohio River - Kentucky River to South Portsmouth**			
	05090201050 - Ohio River, near Quincy	1	0.25	34
5	**Mayfield and Obion Creeks and Bayou de Chien**			
	08010201040 - Obion Creek	8	1.75	24, 29, 30, 41, 56, 62, 69, 83
	08010201050 - Bayou de Chien	6	1.92	29, 39, 41, 43, 63, 83
	08010202020 - Terrapin Creek	11	7.11	38, 46, 49, 52, 54, 62, 63, 67, 72, 73, 83
	08010202070 - Old Knob Creek	2	1.00	38, 54
	08010202330 - Pond Slough	7	2.83	29, 45, 51, 55, 62, 63, 66
6	**Tennessee River**			
	06040005290 - Blood River	3	0.81	49, 51, 83
	06040005310 - Tennessee River, at Jonathan Creek*	4	1.08	42, 51, 57, 66
	06040006010 - Tennessee River, below the Dam*	10	1.78	11, 12, 13, 15, 17, 18, 22, 26, 35, 60
	06040006050 - West Fork Clarks River	6	0.84	29, 30, 41, 63, 69, 83
7	**Lower Cumberland River**			
	05130205170 - Donaldson Creek	1	0.50	71
	05130206150 - Whippoorwill Creek	5	1.18	16, 20, 33, 40, 48
	05130206160 - Red River, below Keysburg	4	0.78	26, 33, 40, 48
8	**Upper Cumberland River (below Cumberland Falls)**			
	05130102040 - Rockcastle River, above Skegg Creek	5	0.94	2, 32, 44, 59, 76
	05130102050 - Horse Lick Creek	8	1.39	2, 16, 20, 25, 28, 32, 44, 76
	05130103030 - Buck Creek	6	0.98	6, 20, 25, 28, 32, 44
	05130103040 - Lower Buck Creek	5	0.68	6, 10, 20, 25, 32
	05130104220 - Big South Fork, above Bear Creek	9	2.18	1, 6, 7, 16, 20, 25, 32, 44, 50
	05130104250 - Big South Fork, below Bear Creek	6	1.70	6, 7, 16, 32, 44, 50
	05130104290 - Rock Creek	4	0.73	1 , 25, 70, 79
	05130104310 - Little South Fork	5	1.94	20, 25, 59, 68, 70
9	**Upper Cumberland River (above Cumberland Falls)**			
	05130101290 - Laurel Fork	4	0.52	1, 3, 53, 79
	05130101400 - Jellico Creek	2	0.21	53, 79
	05130101410 - Marsh Creek	3	0.35	1, 3, 79
	05130101420 - Laurel Creek	2	0.21	53, 79
10	**Tradewater River**			
	05140205050 - Tradewater River, below Dawson Springs	2	0.31	29, 41
11	**Lower Green River**			
	05110004020 - Rough River headwaters	3	0.32	30, 31, 36
12	**Upper Green River**			
	05110001050 - Green River, near Greensburg	13	1.75	2, 5, 10, 11, 13, 19, 21, 26, 28, 47, 61, 75, 78
	05110001070 - Russell Branch	7	1.20	28, 30, 31, 47, 59, 75, 78
	05110001130 - Green River, near Munfordville	21	3.38	2, 4, 5, 9, 10, 11, 12, 13, 15, 18, 19, 21, 22, 26, 30, 31, 36, 47, 61, 78, 82
	05110001140 - Dry Prong	18	3.44	4, 5, 9, 10, 11, 13, 15, 18, 19, 21, 22, 26, 31, 36, 37, 47, 78, 82
	05110001220 - Green River, near Shanty Hollow Lake	10	2.17	4, 5, 8, 11, 12, 13, 18, 21, 22, 78
	05110002030 - Barren River, near Bowling Green	7	0.91	5, 11, 13, 22, 75, 78, 81
	05110002180 - Skaggs Creek	1	0.20	81
	05110002190 - Barren River Lake	8	1.06	5, 11, 12, 13, 21, 22, 47, 82
13	**Salt River**			
	05140103020 - Rolling Fork	4	0.27	5, 10, 30, 74
14	**Kentucky River**			
	05100201150 - North Fork Kentucky River, mouth	2	0.56	11, 37
	05100204120 - Red River Gorge	5	0.53	2, 10, 27, 58, 61
15	**Licking River**			
	05100101120 - Licking River, below Cave Run Lake	6	0.49	2, 10, 11, 12, 18, 74
	05100101180 - Licking River, near Blue Licks	5	0.37	2, 5, 11, 18, 74
	05100101230 - Licking River, near Falmouth	5	0.39	2, 5, 11, 27, 74
	05100102040 - South Fork Licking River	3	0.67	2, 27, 71
16	**Little Sandy River, Tygarts Creek and Ohio River - South Portsmouth to West Virginia**			
	05090103110 - Tygarts Creek, near Carter Caves Lake	3	0.47	10, 14, 77
	05090103140 - Tygarts Creek, near South Shore	3	0.47	10, 14, 77
17	**Big Sandy River**			
	05070203065 - Beaver Creek, near Martin	1	0.13	58

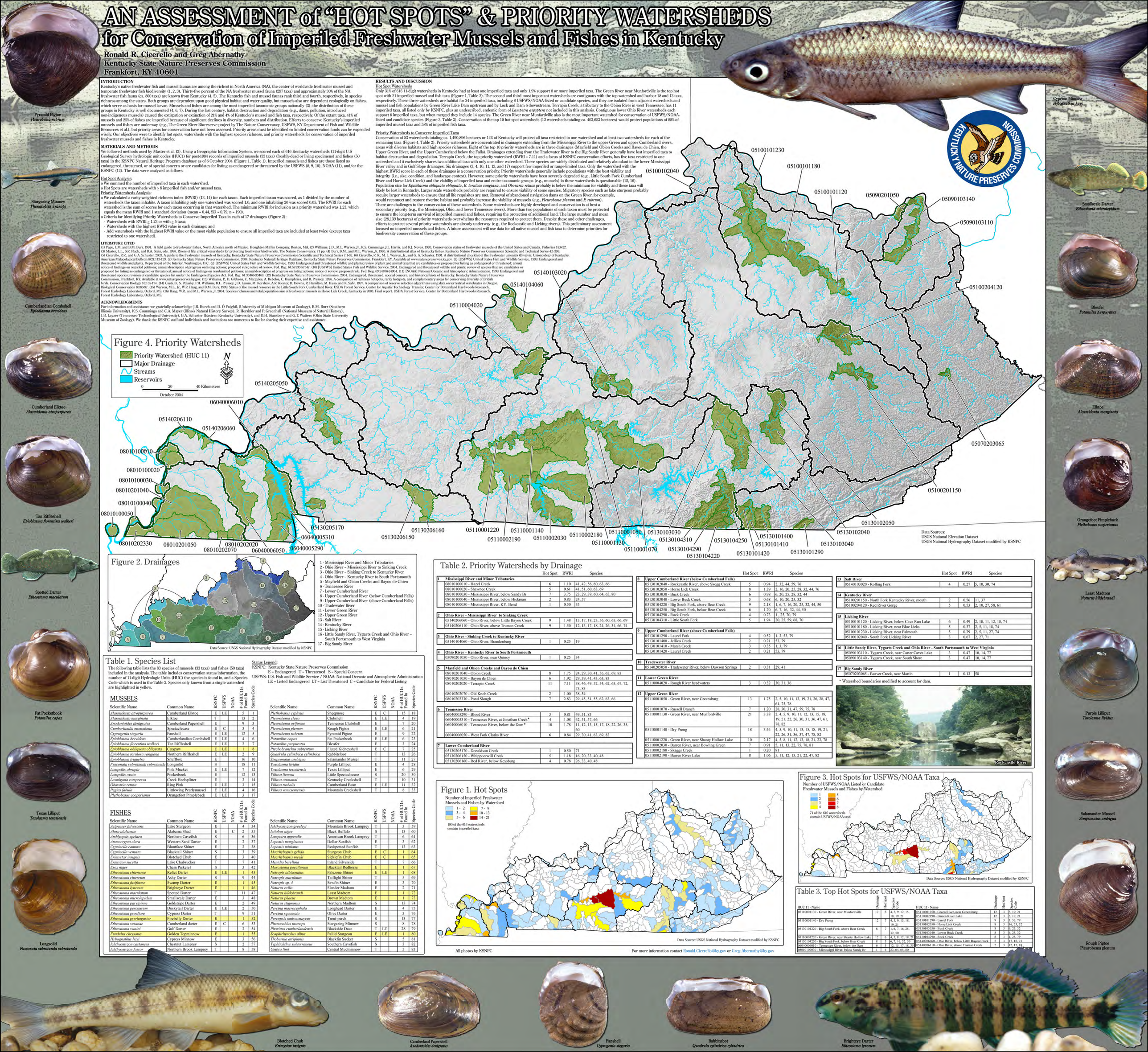
* Watershed boundaries modified to account for dam.

Table 3. Top Hot Spots for USFWS/NOAA Taxa

HUC 11 - Name	Drainage	Hot Spot	Species Code
05110001130 - Green River, near Munfordville	12	8	4, 5, 9, 12, 15, 18, 19, 21
05110001140 - Dry Prong	12	7	4, 5, 9, 15, 18, 19, 21
05130104220 - Big South Fork, above Bear Creek	8	7	1, 6, 7, 16, 25, 32, 50
05110001220 - Green River, near Shanty Hollow Lake	12	6	4, 5, 8, 12, 18, 21
05130104250 - Big South Fork, below Bear Creek	8	5	6, 7, 16, 32, 50
06040006010 - Tennessee River, below the Dam	6	5	12, 15, 17, 18, 35
08010100030 - Mississippi River, below Sandy Br	1	4	23, 64, 65, 80
05110001050 - Green River, near Greensburg	12	3	5, 19, 21
05110002190 - Barren River Lake	12	3	5, 12, 21
05130101290 - Laurel Fork	9	3	1, 53, 79
05130102050 - Horse Lick Creek	8	3	16, 25, 32
05130103030 - Buck Creek	8	3	6, 25, 32
05130103040 - Lower Buck Creek	8	3	6, 25, 32
05130104290 - Rock Creek	8	3	1, 25, 79
05140206060 - Ohio River, below Little Bayou Creek	2	3	17, 18, 23
05140206110 - Ohio River, above Truman Creek	2	3	12, 17, 18

All photos by KSNPC

For more information contact Ronald.Cicerello@ky.gov or Greg.Abernathy@ky.gov



PART K

PART K WASTE MINIMIZATION

YKK's waste minimization program is designed to reduce the quantity and toxicity of the plant's waste streams to the maximum extend economically practicable. The program is periodically reviewed and updated. A written description of the waste minimization program is available at the facility for inspection by state and federal inspectors, and a copy of the plan is attached.

YKK (U.S.A.) Inc.

Snap and Button Products

Waste Minimization/Pollution Prevention Plan
"The P2 Plan"

for

Lawrenceburg, Kentucky
Facilities and Locations (LB1/LB2)

JULY 2016

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1.0 INTRODUCTION

1.1 Purpose of Plan

In accordance with the United States Environmental Protection Agency Resource Conservation and Recovery Act (RCRA) as Amended by the Hazardous and Solid Waste Amendments of 1984, YKK (U.S.A.) Inc. (YKK) has developed a Waste Minimization/Pollution Prevention (P2) Plan that will encourage employees to conscientiously strive to reduce waste and prevent pollution. This Waste Minimization/P2 will be referenced in this document as "The P2 Plan." This Plan will be integrated with YKK ISO 14001/Environmental Management System (EMS). The purpose of this Plan is to achieve YKK Environmental Management Programs (EMPs) of its ISO 14001/EMS. This Plan is designed as a practical aid for use at YKK facilities. This Plan focuses on achieving YKK's EMPs through obtaining objectives and targets for each calendar year. The following discusses waste minimization and P2 since they are closely related. For the purposes of this Plan, YKK will concentrate its efforts on P2 opportunities for achieving its EMPs.

1.1.1 Waste Minimization

Waste Minimization means the reduction to the extent feasible, of hazardous waste that is generated prior to treatment, storage and disposal. It is defined as any source reduction or recycling activity that results in either (1) reduction of the total volume of hazardous waste, (2) reduction of the toxicity of the hazardous waste, or (3) both. Practices that are considered waste minimization include source separation, product substitution, manufacturing process changes, recycling, and the use of less toxic raw materials.

1.1.2 Pollution Prevention

P2 is the use of materials, processes, or practices that eliminate or reduce the creation of pollutants or wastes at the source. It includes practices that reduce the use of hazardous and non-hazardous materials, energy, water, or other resources as well as those that protect natural resources through conservation or more efficient use. When elimination or source reduction cannot be achieved, reuse and recycling are preferred over treatment or disposal. Treatment and disposal are viewed as last measures, since they do not involve the reduction or reuse of wastes. For this Plan, P2 also includes practices that increase efficient use of energy, water, or other natural resources. P2 differs from the traditional approach to waste management because it addresses the connections between processes and the inputs and outputs linked to those processes.

1.2 Scope of Plan

The scope of this Plan applies to all YKK activities, products and/or services according to its ISO 14001/EMS.

1.3 Legislation

The following discusses the Pollution Prevention Act of 1990, and the applicable Kentucky and Tennessee legislation.

1.3.1 Pollution Prevention Act of 1990

The Pollution Prevention Act (PPA) defined P2 as:

> "…any practice which reduces the amount of hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and any practice which reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants." The PPA focuses attention on preventing pollution through cost-effective changes in producing, operating, and using raw materials, establishing source reduction as a more desirable solution than waste management or pollution control.

1.3.2 Kentucky Legislation and Policy

In 1994, the Kentucky General Assembly passed legislation establishing a Commonwealth policy to:

"Encourage environmental leadership in pollution prevention by source reduction when technically feasible and economically practicable, without shifting risks from one part of a process or environmental medium to another."

In the Kentucky Revised Statutes (KRS) Chapter 224 Environmental Protection (KRS 224.46-305, etc), P2 is defined as:

"In-plant practices that reduce, avoid, or eliminate the generation of hazardous waste or the release of toxic chemicals at their source, rather than controlling, treating, or managing hazardous waste or toxic chemicals after their generation or release, to reduce the risks to employees, public health, and the environment."

Kentucky is a voluntary P2 program that is based on the elements of EPA's voluntary "program-in-place" federal guidelines. The "program-in-place" will help facilities meet the certification requirements found on the Hazardous Waste Manifest.

1.3.3 Tennessee Legislation and Policy

Tennessee has legislated three important waste reduction laws. In 1988, the Tennessee General Assembly passed legislation that established a state waste reduction policy and waste reduction program. Tennessee's policy states that " wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is generated should, in order of priority, be reduced at its source, recovered and reused, recycled, treated, or disposed of so as to minimize the present and future threat to human health and the environment."

In 1990, the Tennessee General Assembly passed Tennessee's Hazardous Waste Reduction Act. This bill was followed by the Solid Waste Act in February 1991. With the Tennessee Hazardous Waste Reduction Act of 1990, and the Solid Waste Act of 1991, the General Assembly requires a strong commitment to P2 and waste reduction. The Tennessee Hazardous Waste Reduction Act of 1990 (TCA 68-212-301) requires that large and small quantity generators of hazardous waste develop a waste reduction plan.

In the Tennessee Hazardous Waste Reduction Act of 1990 (TCA 68-212-301), source reduction or waste reduction is defined as:

"….the reduction or elimination of waste at the source, usually within a process, including process modifications, feedstock substitutions, improvements in feedstock purity, housekeeping and management practices, increases in the efficiency of machinery and on-site, closed-loop recycling, or any action that reduces the amount and toxicity of the waste exiting the production process."

1.4 Reviews and Revisions of Plan

The ISO 14001 Management Representative (MR) will review this Plan at least annually and modify as necessary. All previous versions of the Plan will be maintained as records.

1.5 Environmental Policy

An environmental program must be dynamic and aggressive, requiring a commitment from the entire company. Changing employee's attitudes toward resource conservation and source reduction is fundamental to the success of an environmental program. YKK is committed to eliminating or reducing the negative environmental impacts of its activities, products and/or services through its ISO 14001/EMS. In support of this commitment, the YKK environmental policy statement that is aligned with its ISO 14001/EMS has been distributed to all YKK employees and posted on banners in all plants for external parties. A

signed copy of this policy is posted on bulletin boards in the plants and in the human resources offices.

1.6 YKK P2 Projects

YKK has pursued P2 opportunities and the following list P2 projects that have been implemented at YKK:

- Reuse of water on plating lines and burnishing operations
- Recovery of nickel and copper from plating operations (Not currently active)
- Recovery of solvent on-site
- Segregation of hazardous and non-hazardous sludge
- Reduction of sludge volume through purchase of sludge dryer (No longer in use)
- Recycling of scrap metal
- Recycling of used oil/coolant
- Recycling of coalescer waste
- Recycling of white paper
- Recycling shrink wrap
- Recycling plastic and plastic drums
- Recycling e-waste
- Recycling aluminum cans
- Recycling of cardboard
- Recycling metal drums
- Recycling nickel plating solutions and not disposing as hazardous waste

YKK will continue P2 projects through this Plan as well as its ISO 14001/EMS and their individual EMPs.

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2.0 Description of YKK Operations

YKK is a leading designer and manufacturer of standard and custom metal and plastic notions. YKK's primary engineering and production functions are located in Lawrenceburg, KY. Its headquarters is located in Lawrenceburg, Kentucky.

YKK is a world-class supplier of metal notions with a customer list that includes major manufacturers of jeans, jackets, rental uniforms, tailored apparel, children's wear, and casual wear throughout the world. YKK has also diversified more into industrial type fastening systems, including safety, auto, boat and military. YKK prides itself in its long-term customer relationships built on an attitude of commitment, responsiveness, and flexibility.

YKK's customers are provided with a wide selection of ergonomically designed attaching equipment. It is available with a variety of options including different power sources. YKK provides direction to Eastlex Machine Corp. and other sources in the development and manufacture of our attaching equipment. YKK's vertically integrated manufacturing system and up-to-date equipment provides our customers with the highest service and quality.

2.1 YKK Lawrenceburg, Kentucky Facility

The YKK Lawrenceburg, Kentucky facility has been operating for about 58 years at 1101 Industry Road. The newer manufacturing plant (LB2) is located on the same property but separately at 1190 Industry Road. This facility manufactures specialty items of fasteners, such as metal buttons, rivets, burrs and hook and eye, for the garment industry. These are mostly metal, but some are plastic-metal composite units. Typical products are stamped or pressed from brass, steel, aluminum, copper and carbon steel. These metals are in the form of rolled sheet or wire. The facility has about 150 employees that operate two (2) 10-hour shifts four (4) days per week; and as required, with one/two Saturdays per month as necessary. Operations can be expanded to five (5) days per week as business orders allow. Maximum daily production is about 4166 MPieces per day. YKK Lawrenceburg is a large quantity generator of hazardous waste. The YKK Lawrenceburg facility submitted a RCRA Part B post-closure permit in 1989 that became effective in 1995.

A variety of finishes are applied to the fasteners, such as plated copper, nickel, zinc and black-oxide coatings and paints. The electroplating-line system and the wastewater treatment system (WWT) were installed in 1988 with newer modifications in 2005 (WWT) and 2007 (Flex Line). A new decorative plating line was installed in 1993, featuring finishes such as antique nickel and black nickel. This line was recently decommissioned in January 2012 and moved to YKK's affiliate location in Mexico. All related systems are modern and well instrumented. Pressed metal (steel, aluminum, copper and brass) fastener parts are electroplated. There are three (3) barrel-type plating lines, each dedicated to specific types of plating finishes. They are copper, nickel and flex decorative coatings. The decorative line consisted of tin plating, antique nickel plating and black nickel plating. All are capable of programmed sequencing and timing on all operations. A chromate/lacquer dip process finishes some fasteners. Some are also spray-painted using a modern air-assisted electrostatic spray system. A new WWT system was installed in 2005.

2.2 YKK Centerville Facility

The YKK Centerville, Tennessee facility had operated for about 33 years at Highway 50 West & Universal Drive. The facility was closed at the end of the 2007 calendar year and is currently listed for sale/lease.

Manufacturing processes were the same as the YKK Lawrenceburg facility. YKK Centerville maintains its US EPA ID number for any applicable future cleanup. The facility currently no longer meets the definition of a large quantity generator of hazardous waste. The YKK Centerville facility submitted a RCRA Part B post-closure permit in 1988 that became effective in 1990.

3.0 ISO 14001/Environmental Management Systems

ISO 14001 is the international standard against which Environmental Management Systems (EMSs) are benchmarked. An ISO 14001/EMS is a business system that allows a company to manage environmental issues in a systematic, organized manner that is based on continual improvement. This system can save time and money by streamlining environmental management matters such as environmental compliance and performance. It also provides a framework through which a company can systematically establish and achieve P2 objectives and targets of its EMPs.

An ISO 14001/EMS focus is:

- Support and commitment of top management,
- Accountability/responsibility of all employees,
- Involvement and training of all employees,
- Documentation of the EMS,
- Operational controls, and
- Periodic checking and review with corrective action.

ISO 14001/EMS helps to:

- Identify environmental aspects (e.g. waste generation, air emissions, etc.),
- Determine significant impacts of its environmental aspects,
- Identify and track legal and other requirements, and
- Determine EMPs with applicable objectives and targets.

ISO 14001/EMS is the preferred method for integrating environmental issues throughout it activities, products and/or services. An ISO 14001/EMS takes established business practices and uses them for ensuring environmental performance. Tracking of environmental performances demonstrates that an ISO 14001/EMS helps to implement P2 projects. Environmental performance measures may include:

- Decreased waste generation and air emissions, etc
- Company savings achieved through P2 projects,
- Avoided compliance penalties and fines through checking and corrective action, and
- Company time and labor savings from streamlining administration of environmental issues.

3.1 ISO 14001/EMS Benefits

An ISO 14001/EMS formalizes environmental issues into an easily managed system that may result in a number of benefits for a company. The following sections discuss these benefits.

3.1.1 Accountability/Responsibility

Traditionally, environmental issues have been delegated from top management and not according to its activities, products and/or services. When an EMS is in place, all employees, including top management, have responsibility for overseeing and ensuring environmental performance. Production employees are accountable for compliance with standards and requirements. Top management is responsible for providing the needed resources for the EMS and ensuring that performance, evaluation, and preventative and corrective procedures are in place to support the EMPs.

3.1.2 Consistent, Reliable Results

An EMS helps ensure consistent, environmental performance when there are key employee changes. There are other employees knowledgeable about their EMS for ensuring its performance. This reduces exposure to regulatory liability, and fines and risk of environmental mishaps that may result in negative public perception.

3.1.3 Measurement

An EMS focuses on setting measurable objectives and targets and then periodically tracking performance and progress toward meeting them. Measurable objectives and targets may include regulatory compliance and P2. Focusing on measurable objectives and targets, may help a company avoid unnecessary paperwork and costs associated with excess waste generation.

3.1.4 Regulatory Compliance

While regulatory compliance is not 100% guaranteed with an ISO 14001/EMS, the periodic checking and emphasis on continual improvement will make it more likely that a company will find and have the opportunity to correct potential non-compliances.

4.0 Environmental Management Program Strategy

An EMP primary objective is to reduce negative environmental impacts by either eliminating or reducing hazardous materials used and wastes generated, leading to a more efficient, cost-effective, and safe plant. EMPs are a crucial part of YKK ISO 14001/EMS for achieving its objectives and targets. As a baseline for YKK's EMPs, P2 will be the preferred method for achieving its objectives and targets.

EMPs are the basis for generating and selecting P2 projects. A thorough understanding of a process such as its inputs and outputs is fundamental to both generating P2 opportunities (particularly less obvious ones) and selecting optimal P2 projects. For each EMP, P2 opportunities will be evaluated and applicable P2 projects will be identified, then selected and implemented.

The ISO 14001 Management Representative has overall responsibility to develop and implement P2 Projects. Responsibilities of the ISO 14001 Management Representative and YKK employees are included in YKK ISO 14001/EMS.

EMPs will be performed based on its ISO 14001/EMS. **Appendix A** includes YKK EMPs for each calendar year. **YKK should conduct these EMPs in the calendar years 2015-2016.** After these EMPs objectives and targets have been achieved, other EMPs and selection of P2 projects will be implemented.

The following discusses the strategy for achieving these EMPs.

4.1 Organize an EMP Team

EMPs involve looking closely at a process or activity to thoroughly understand its inputs and outputs. For each EMP, a team will be formed and comprised of a variety of experience and knowledge. Plant employees have first-hand knowledge and experience with production and operation processes. These employees can assist especially in assessing operational or procedural changes, or in equipment modifications affecting the way they work.

By bringing together employees with a variety of skills and knowledge, the EMP team is often able to identify P2 opportunities that would normally be overlooked. Similarly, the team is able to foresee potential problems or unexpected benefits of a given opportunity. Employees should be trained about P2 opportunities and encouraged in suggesting ideas for P2 opportunities for each EMP.

Depending on the EMP, the team may consists of employees from:

- Management
- Environmental
- Safety
- Operators
- Engineering
- Quality
- Purchasing
- Production
- Shipping/Receiving
- Consultants
- Vendors/Suppliers

4.2 Conduct an Assessment

To find cost-effective P2 opportunities for each EMP, it is necessary to understand the relationship between processes, the toxic substances used, and the wastes generated. The EMP team will conduct an assessment for each EMP. An assessment should identify and profile the waste streams, how they are generated, and the amount of waste generated for each process. The assessment should consist of a site inspection, process mapping and evaluating P2 opportunities for all processes to determine how the process actual operates for each EMP. The following discusses the site inspection, process mapping and evaluating P2 opportunities for each EMP.

4.2.1 Site Inspection

The assessment should consist of a site inspection of all processes for determining how the process actually operates. While conducting the visual site inspection, the team should talk with employees who operate processes and equipment. After the site inspection, the team should review the information to determine if there is any missing or inaccurate information. The site inspection should examine each step in the process from receiving raw materials to the shipping of the final product. After all information is obtained, the EMP team will use process mapping to further determine if all information has been obtained as well as for understanding the inputs and outputs for each process.

4.2.2 Process Mapping

Process mapping is a tool to visually illustrate how the work flows in smaller, manageable elements. Process mapping assesses existing plant processes and develops a detailed road map for ongoing change and continual improvement.

Process mapping also improves the understanding of processes and operational performance. When process mapping is used properly, it may reduce operating costs significantly by eliminating steps and root causes of systemic problems.

Process mapping can save a company time and simplify projects because these maps:

- Identify process improvement opportunities.
- Thoroughly understand processes and improve performance.
- Effectively communicate ideas, information and data visually.
- Aid in solving problems and making decisions.
- Identify actual or ideal paths and can determine root causes and potential solutions.
- Show processes broken down into steps.
- Show an entire process from beginning to end and how each process relates to the whole operation

The EMP team will use process mapping for understanding processes major elements that are inputs, outputs, activity steps, decision points, enablers and functions. The team will map these major elements for each process of the EMPs. Process mapping helps to identify and determine applicable P2 opportunities for each EMP. A crucial step in developing a successful P2 project is identifying the operational processes common to YSU and tracking the hazardous raw materials and wastes. Process mapping improves processes through:

- Eliminating processes or sub-processes that may be unnecessary.
- Automating manual activity steps.
- Combining steps.
- Outsourcing elements of the process.
- Changing the location where steps are done or the employee performing them.
- Altering or modifying how activity steps are done.

Appendix B includes additional information about process mapping.

4.2.3 Evaluate P2 Opportunities

P2 opportunities typically changes the way a process is done or introduces an intermediate action to the process, such as installing equipment on site to recycle used solvent. P2 opportunities frequently involve initial investment in equipment or employee training, but offer high level of cost return.

For example, by implementing a suggested P2 opportunity, a hazardous material use may be drastically reduced or even eliminated, as well as the subsequent disposal costs.

Some common categories of P2 opportunities include the following:

- Policy changes
- Procedural changes
- Material inventory control
- Material substitution
- Solvent substitution
- Waste segregation
- Recycling
- Housekeeping practices
- Training
- Technology needs
- Equipment modifications
- Equipment purchases

Source reduction opportunities may include:

- Improved operating practices
- Employee training and awareness programs
- Scheduling to eliminate frequent equipment cleaning
- Process improvements
- Input changes
- Changes in the composition or design of a product
- Separation of wastes

Reuse/Recycling opportunities may include:

- Using a waste in the originating process as a substitute for raw materials
- Using a waste as a raw material in another process
- Reclaiming a waste for sale or use as fuel
- Utilizing waste exchange services

Treatment may include processing a waste (hazardous or not), to reduce disposal cost and minimize environmental liability. Treatment options will only be considered after all P2 opportunities have been eliminated for a process.

The EMP team should list all possible P2 opportunities to eliminate or reduce the waste for each EMP. This list may include several opportunities for each EMP. At this stage, the team should not consider in detail the technical or economical usefulness of any particular opportunity.

4.2.3.1 Best Management Practices

A Best Management Practice (BMP) is an operational improvement or practice that normally does not require capital investment, and primarily involves existing equipment operations or work practices. A P2 BMP can be easily incorporated into the everyday practices of the plant, such as keeping the cover to the parts washer closed to minimize the amount of solvent that evaporates**.** BMPs may be identified either by teams during P2 projects or by employees as they notice ways of preventing pollution.

4.2.3.2 Material Product Substitution

An important part of a successful EMP is incorporating material product substitution. Material product substitution means replacing a chemical with an environmentally preferable alternative.

The Hazardous and Solid Waste Amendments (HSWA) of 1984 to Resource Conservation Recovery Act established that hazardous waste be reduced or eliminated to the extent possible. Because of this, environmentally preferable products have emerged to replace the previously used hazardous material. Product substitution can help reduce hazardous waste, save money, and protect employees.

Frequently, when a waste stream cannot be eliminated, a P2 opportunity may involve substituting a less toxic material for the one currently used. While it can sometimes be difficult to determine whether one chemical is more toxic than another, there are guidelines. In general, aqueous (water-based) solvents and cleaners are usually preferable to organically based solvents.

4.3 Identify P2 Projects

When the causes of waste are understood, the EMP Team will identify P2 projects for each EMP. Identifying P2 projects for each EMP should be easier after the completion of the assessment and process mapping for all the elements of the EMPs. **Appendix D** includes P2 opportunities for painting and coatings. Many resources are available for finding information, assistance, and guidance on P2. **Appendix E** includes available P2 resources.

4.4 Select P2 Projects

The EMP Team will select optimal P2 projects from the identified P2 projects. P2 projects will be selected based on the following environmental aspect criteria designated in its ISO14001/EMs:

- Cost to implement,
- Legal and other requirements,
- Liability,
- Impact to quality of product,
- Resource depletion,
- Risk to environment, and
- Impact to environment.

Besides these criteria, the team will consider whether the project is technically feasible. This would be determining whether the proposed P2 project will work and if there are any facility constraints or product requirements that will make it technically unwise to implement. All team members should review the P2 project and determine that it is technically feasible for that EMP.

4.5 Implementation of P2 Projects

After P2 projects have been determined to be applicable according to Section 4.4, the EMP team will develop a documented implementation plan for these projects. These plans will include the implementation schedule, necessary equipment, conceptual design, implementation requirements, management requirements and cost estimates. Each plan will list in detail the necessary tasks for completing each P2 project for the EMPs. The implementation schedule will:

- Designate time frames for completing each task as well as the overall P2 project
- Identify steps or phases for implementing the plan
- Identify employee responsible for each task
- Determine and complete training for all necessary employees

A critical step to ensuring the success of P2 projects is properly training employees to use new equipment or methods. The ISO 14001 Management Representative or appropriate department supervisor will arrange for training employees and developing any appropriate materials (such as vendor information) for ongoing reference to be kept at facilities according to its ISO 14001/EMS.

The P2 project is not considered complete until it is funded and scheduled and all tasks are implemented. There may be some barriers to implementing P2 projects. These barriers for P2 projects may include that there is lack of capital resources, there is skepticism that it will not work and the process already works so why change it. The EMP team may overcome these barriers by ensuring that all P2 projects for each EMP has been completely identified and analyzed.

4.6 EMP Performance Tracking

The data for each P2 project will be compiled and tracked according to its EMP. The resulting information will indicate the program's successes and failures or the need for further data. Evaluation and feedback activities can be performed at the EMP or P2 project level. The ISO 14001 Management Representative and EMP Team will gather quantitative and qualitative baseline information. The ISO 14001 Management Representative will examine changes in waste generation, combined with production levels, to evaluate the effectiveness of the EMP and progress toward achieving objectives and targets. Targets for percentages of reduction of wastes have been adopted as quantifiable measures for EMP Nos. 1 and 2. The data will also be summarized for each EMP and its calendar year as described in YKK ISO 14001/EMS. **Appendix F** includes the EMP performance tracking forms for EMPs for 2014 (complete) and 2015 (on-going). Also included are EMPs for the new 2015 Fiscal Year (FY), starting April 1, 2015 ending June 30, 2015.

This performance tracking measurement may not be accurate at all times. For instance, this measurement may not be accurate for large quantities of waste that is generated infrequently. To assure accuracy, it is necessary to distinguish between production-related wastes, maintenance-related wastes and clean-up wastes. Also, a few waste streams may be inversely proportional to production rate. For example, waste from expired shelf life materials will increase if the production rate decreases. This is true because these materials will expire when the production use decreases.

Where quantitative data is not available, qualitative or subjective information can also be useful to give a "snapshot" of a P2 project and to explain the data. Qualitative data collected will include information related to specific P2 projects implemented, including a description of each project and its effectiveness, and any elimination, source reduction, reuse, recycling or other initiatives accomplished.

Other measurements may be considered when determining the success of an EMP. The following are some of these other measurements:

- Savings in raw material costs and waste disposal costs
- Changes in the composition and/or toxicity of wastes
- Insurance and liability savings for environmental, health and safety improvements
- Decreases in utilities and maintenance costs
- Changes in production capacity and product quality
- Ratio of raw materials consumed to production rate, before and after implementation
- Reduced health and safety exposure of workers and the community
- EMP's actual costs and savings compared with initial estimates

Based on evaluations of waste quantities and specific P2 projects, this Plan will be updated to reflect changes in EMPs and P2 projects planned, and any needed changes in performance tracking systems.

Appendix A

YKK Environmental Management Programs
Calendar Year 2015-2016

Program	Objective	Target/Units	Action	Responsible Person(s)	Target Date
Electricity Usage Reduction (KWH) FY 2015	**Decrease Electrical Usage (KWH) 5% Compared to FY 2014 Total MPieces Produced**	**5% Reduction (KWH)/Total MPieces Produced Compared to FY 2014**	**Purchase and Install More Electrically Efficient Air Compressor Using Less Horse Power**	**Assistant Plant Manager, Maintenance Supervisor and Staff, Environmental Engineer and Plantwide Supervision**	**04/01/15-03/31/16**
Natural Gas Usage Reduction (MCF) FY 2015	**Decrease Natural Gas Usage (MCF) 5% Compared to FY 2014 Total MPieces Produced**	**5% Reduction (MCF)/Total MPieces Produced Compared to FY 2014**	**Purchase and Install New and More Efficient Natural Gas Fired Boiler Using Less Natural Gas**	**Assistant Plant Manager, Maintenance Supervisor and Staff, Environmental Engineer and Plantwide Supervision**	**04/01/15-03/31/16**
Copper/Nickel Waste Solutions Disposal Reduction (Pounds) FY 2015	**Decrease Copper/Nickel Waste Solutions Shipped Off-Site for Disposal (Pounds) 10% Compared to FY 2014 Total MPieces Produced**	**10% Reduction (Pounds)/Total MPieces Produced Compared to FY 2014**	**Search for New Recycling Partner and Continued Emphasis on Conservation and Resource Depletion in Training**	**WWT Supervisor, Environmental Engineer, Plating Supervisor, Plant Operations, Assistant Plant Manager and Other Supervisors/Managers**	**04/01/15-03/31/16**

Note: All Measures will be adjusted by production index.
EMPs will be updated on an annual basis (FY).

Reviewed By: Todd Baldwin

Date: 6/30/2015

Appendix B

Information on Process Mapping

Appendix C

Metal Finishing P2 Opportunities

<Insert Metal Finishing Excel Spreadsheet>

<Insert Metal Finishing Excel Spreadsheet>

Metal Finishing Pollution Prevention Techniques
The following sections discuss reduction in waste generation through source reduction techniques such as improved process control and substitute chemistries. Alternative recovery and treatment measures are also discussed.

1. Reduce Drag-out

Chemical drag-out is the primary source of contaminated rinse water, which requires treatment to remove harmful or regulated pollutants before the water is reused or discharged. Reducing drag-out has many benefits:

- Expensive process bath solutions are saved.
- Process bath solutions are kept from contaminating subsequent process baths.
- Less rinse water is needed, and thus less has to be treated.

Several process modifications that affect minimizing drag-out are listed below.

1.1 Drain Time (Hang Time)

A drain time of at least 10 seconds has been demonstrated to reduce drag-out by 40+% in comparison to the typical average three-second-drain time that industry uses. Longer drain time over the process solution allows more drag-out to be returned to the bath. Drain times can be controlled by posting drain times at tanks as a reminder to employees on manual process lines or by building in delays on automatic process lines.

1.2 Drain Boards

Drain boards are used to collect drag-out/drippings from work pieces on racks, and direct the solution back into its previous bath. Drain boards save solutions and keep them off the floor. These boards may be constructed of any compatible material. It is important that they be oriented to direct drips to the correct tank. Use of drain boards is a cost-effective technique, which will reduce chemical consumption as well as the amount of rinse water.

1.3 Angled Barrels

For large, horizontal double hung type barrels, no producer/vendor of angled barrel technology has been found. However, one of the following modifications of existing barrels may prove useful in minimizing drag-out.

- Lengthen or shorten one arm, so as to create an off-horizontal position, which allows for quicker runoff
- Attach a drip bar at the bottom of barrel edges to facilitate droplet collection and runoff
- Design a slope at the top of barrel carriers; this, and lengthening or shortening one arm, may require alteration of tank depth to accommodate angled barrels

Prior to implementing an angled or sloped barrel technique, the design of all tanks must be checked to assure proper clearance for the modified system.

2. Improve Rinsing Efficiency

Improving rinse efficiency will reduce your water and sewer bills, as well as treatment costs.

2.1 Flow Restrictors

Flow restrictors are placed directly in the rinse water inlet of a rinse tank in order to restrict the flow of water to a predetermined acceptable level. Flow restrictors work well to maintain flow rates at their predetermined values. However, because restrictors are non-adjustable in use, they may be less suitable in job shops where the variety of materials being plated typically requires variable flow rates. Good practice entails turning off flowing rinses when not in use and educating/training operating employees in the advantages of water conservation.

2.2 Conductivity Controls

Flow controllers utilizing conductivity controls can solve the problem of adjusting rinse water flow rates to variable production rates. These sensors give an indication of contamination in the rinse water (the higher the contaminant concentration, the higher the rinse water conductivity). The sensors trigger the inflow of clean water when the tank water becomes contaminated, the excess contaminated water overflowing to the drain. Water is added only to lower the concentration of contaminants to a predetermined level, thus reducing the amount of overflow water requiring treatment. A conductivity-controlled rinsing system consists of a conductivity meter, two sensors, solenoid valves and additional piping and electrical wiring. New, non-contact, torroidal type of sensors for the conductivity meters has been developed for lowers annual operation and maintenance costs.

2.3 Contact Time

Contact time specifically refers to the length of time the work pieces are in the tank. For a given work piece and tank size the efficacy of rinsing varies with contact time. Production rate, on the other hand, varies inversely with contact time. Through experimentation, the operator must find the contact time that satisfies production requirements while providing high rinse efficiency. For the same rinse efficiency, agitation of rinse waters may shorten required contact time.

2.4 Counter-Current or Counter Flow Rinsing

This procedure substantially reduces the amount of water required for rinsing, thereby reducing the amount of wastewater to be treated. Implementation of this procedure is most efficient when several rinse tanks are used in series. Fresh water is supplied to the rinse tank farthest from the process tank. The flow of rinse water is from this farthest tank toward the process tank, countercurrent to the flow of plated work pieces. The counter-current rinse overflows to the preceding rinse tanks until it reaches the tank immediately following the process tank. Often the overflow from this first rinse tank discharges to the drain. However, if the process tank operates at a temperature high enough to cause sufficient evaporation, the overflow may enter the process tank, thereby reclaiming much of the drag-out. Overflow to the process tank is only practical when **deionized (DI) water** is used for rinsing.

2.5 Static Rinsing (Recovery Rinsing)

If direct counter-current rinse water overflow to the process tank is not possible, the first rinse tank after a process bath may be a static rinse that builds up a concentration of "drag-in." Using the static rinse water to replenish the process bath reclaims much of the drag-out. Good practice requires that the static rinse tank initially be filled with **DI water**. Periodically the static rinse water should be concentrated for recycle/reclaim into the plating bath.

2.6 Rinse Bath Agitation

Agitation of rinse water baths reduces required contact time and improves rinsing efficiency. Experience has shown that air sparging is often not an efficient agitation technique. Recirculation of a sidestream from the rinse tank is reasonably effective, but use of a propeller type agitator results in the highest efficiency. Selection of the optimum method of agitation entails balancing capital and operating costs against revenues from increased production rates.

2.7 Size of Rinse Tanks

Rinse tanks should be sized as small as possible depending on the largest barrel to be immersed. This improves rinse efficiency and reduces water usage.

2.8 Rinse water reuse and recycling

Methods to reuse wastes from one process as raw material for another process can reduce costs. Below are some uses for "dirty" rinse water.

- Used acid cleaning rinse water can be used for rinsing after an alkaline process bath.
- Use the same rinse tank to rinse parts after both acid and alkaline baths.
- A water recycling system can be installed to treat the wastewater for reuse. In "open loop" recycling systems the final rinse still uses fresh water to ensure good rinsing. A small amount of waste is produced in the form of concentrated wastes, precipitates, or sludges.

2.9 Photosensors or Pressure Plate Switches

Rinses can be turned on and off automatically by using sensors (e.g. photosensors or pressure plate switches) to check that the operator is present.

3. Reduce sludge generation

The amount of sludge generated by treating plating wastewater is proportional to the concentration of platables and other ions that precipitate at alkaline pH. Any of the techniques for reducing drag-out will also reduce sludge generation.

3.1 Use DI Water

As the hardness in the water supply will also form sludge, the use of **DI water** for rinsing will reduce sludge generation.

3.2 Use Magnesium Hydroxide

The use of magnesium hydroxide, instead of sodium hydroxide, to raise the pH and precipitate heavy metal hydroxides, will also reduce sludge generation because a lesser mass of precipitant is required and because the resultant sludge cake will dewater more easily. In some cases, use of the sulfide ion to precipitate the heavy metals, as sulfides will result in a lesser mass of sludge.

4. Change Bath Composition

Proper control of bath operating parameters will result in more consistent work piece quality as well as longer bath life. The strategy is simple: determine critical operating parameters and maintain them within the established acceptable limits. After values for these parameters have been determined, it is essential to regularly monitor bath chemistry to confirm stability or to establish the need for corrective actions. For many platables, simple field test kits are available which can be used to establish bath concentrations. **Suppliers sometimes set specifications for concentrations at levels higher than required for effective operation.** Experimentation with lowering levels to adjust above the concentration at which defects will occur can lead to reduce chemical costs.

To further extend process bath life, the following should be evaluated:

- Use high quality raw materials to reduce contamination.
- Ensure that parts are properly cleaned before entering process baths and rinsed of contaminating solutions from previous baths.
- Quickly remove dropped parts and tools from process baths to reduce contamination. Have rakes handy to remove dropped items.
- Impurities can be removed from baths by:
  - filtration (continuous or batch)
  - activated carbon adsorption (continuous or batch)
  - chemical precipitation (batch)
  - low current (dummy) plating (batch)
- Use "purified" (deionized, distilled, or softened) water instead of tap water for makeup. Contaminants in tap water can foul up bath chemistry and create extra sludge.
- Cover the baths with lids when not in use to prevent unwanted materials from entering the baths.

The following discusses chemical bath operating parameters.

4.1 pH

In many cases optimum plating occurs only in a relatively narrow pH range. Plating tanks can be equipped with pH monitors and a control system with a means of adding acid or base as needed. Savings in bath chemicals and improved work piece quality usually will rapidly defray the associated capital costs.

4.2 Temperature

In several cases optimum plating occurs only over a relatively narrow range of temperatures (i.e., hexavalent chromium). Heating elements and a control system are a normal part of the plating equipment, so no additional capital expenditures are involved in securing good performance, but rather good practices. Management encouragement and provision of periodic training for operating personnel will help promote these good practices.

4.3 Platable Ion Concentration

The concentration of the platable ion typically specified may not correspond to the concentration that minimizes drag-out while enabling good plating efficiency. Experimentation to achieve good plating at lower ion concentrations not only can save chemical cost, but can also reduce drag-out.

4.4 Additive Concentration

Chemicals such as brighteners and surfactants may be added to plating baths to improve quality or reduce drag-out. Keeping the concentration of additive in the optimum range will prevent pollution by reducing drag-out, and the amount of rework or scrap.

4.5 Surface Tension

The tendency of liquid to cling to a work piece being withdrawn from the body of liquid can be reduced by using an additive to lower the liquid surface tension. This technique may be applied to rinsewaters as well as to plating baths. Experimentation will show which surfactant is most compatible with process fluids, and at what frequency additional surfactant must be added to maintain low drag-out.

5. Treatment and Chemical Recovery

Optimizing the process, followed by the segregation of waste streams and chemical recovery, will reduce treatment and disposal costs. Conventional treatment trough precipitation generates large amounts of sludge as a hazardous waste. The following discusses technology for treatment and chemical recovery of plating operations.

5.1 Solution Purification - Ion Exchange

In this process rinsewaters are pumped through beds of resin. Platable cations in the rinse water attach to the resin by displacing hydrogen or alkali/alkaline earth cations, which leave in the effluent. When these resin beds become saturated, regenerating solutions restore them to usefulness by stripping the platable cations and recharging the resin with hydrogen or alkali/alkaline earth cations. Platable cations, concentrated in the spent regenerating solution, may be treated, recycled or reclaimed. The ion exchange process can produce treated water with very low concentrations of pollutants. Platable cation concentrations of 0.1 mg/l are attained with typical installations. With some additional investment, significantly lower values can be achieved. This characteristic identifies ion exchange as a technology suitable for use in achieving 100% recycle of wastewater.

5.2 Electrolytic Recovery – Electrowinning (Dummy Plating)

If solution concentrations become high enough, platable metal ions may be removed and the solution partially purified, by simply plating the metal ion onto a stub electrode. The recovered metal is either sold or recycled to the plating process. Because the plating process becomes inefficient at low metal ion concentrations, this technique usually is not suitable by itself for producing wastewater that complies with discharge regulations. In conjunction with another technique, however, such as ion exchange, plating out may allow reclaim/recycle at lower capital costs. The technique may be used on spent plating bath solutions, recovered spills, discharge from static rinse tanks, and regeneration solutions from ion exchangers.

5.3 Porous Pots

For hexavalent chromium plating baths the technique of porous pot plating has been used to extend bath life, thereby reducing the discharge of pollutants. During plating, the concentrations of iron and other cationic impurities build up in a hexavalent chromium bath to the extent that plating becomes unsatisfactory. If this bath is placed in a porous pot, in which a semipermeable membrane separates cathode from anode, and power is applied, the iron and other contaminant metal ions pass through the membrane and accumulate in the cathode chamber, from which they are periodically removed for disposal. Chromate ion remains in the anode compartment as part of an analyte which, after purification, may be returned to the plating tank for further use. Using this technique wastes less chromium. The liquid in the cathode compartment must be handled as waste.

5.4 Membrane Processes

The Ultrafiltration (UF), Nanofiltration (NF), and Reverse Osmosis (RO) processes all operate on the principle of separating suspended or dissolved solids in solutions by use of a membrane surface. The passage of liquid (called permeate) and the blocking of solids is a function of the size of the openings in the membrane, the size of the impurities, and the magnitude of the pressure applied.

UF allows dissolved solids to pass through. NF blocks some dissolved solids but allow others to pass through. RO blocks almost all dissolved solids. UF is very effective in separating water from emulsified oil, and is used in some cases in the metal finishing industry to separate suspended metals from rinse waters. NF and RO are being used in the plating industry to provide a similar separation for dissolved solids. Depending on the type of system (UF-NF-RO) and the characteristics of contaminated solution being processed, permeates may be reused. During operation of any of these systems, the contaminated liquid is recirculated many times and becomes increasingly concentrated. In some cases it is also possible to reuse this concentrated portion.

UF-NF-RO systems have proved to be economical methods to clean up waste streams, to recover resources and to meet discharge limits. Operating costs for UF systems used to clean aqueous machining coolants run between $0.013/gal (70,000 gallons per day) to $0.10/gal (1,000 gallons per day). Operating costs for NF and RO systems are

higher because of the higher operating requirement. Nevertheless, metal finishers moving toward zero aqueous discharge or total recycling should consider these systems carefully.

6. Evaporation

Evaporation may be successfully used to recover various plating bath chemicals. This technology is based on physical separation of water from dissolved solids. Water is evaporated from the collected rinse water to allow the chemical concentrate to be returned and reused in the process bath. The water vapor may be condensed and reused in the rinse system. Evaporation units are operated either at atmospheric pressure or under vacuum. Evaporation is often used in conjunction with rinse water minimization techniques as the process is **energy intensive** and becomes expensive for facilities with large flow rates.

6.1 Atmospheric Evaporation

Atmospheric evaporation is more commonly used than vacuum evaporation due to its lower capital cost. The evaporation unit either operates at the normal boiling point of the solution with added heat, or relies on evaporation at bath temperature. These units are useful in reducing the volume of a liquid waste for treatment or disposal, or for concentrate recycling. However, high temperatures can degrade constituents of the solution.

6.2 Vacuum Evaporation

Evaporation under less than atmospheric pressure serves to lower the boiling point of the solution. Solutions with heat sensitive constituents can be evaporated using the vacuum technology with little or no degradation to the solution. These units can substantially reduce the boiling points of solutions. The capital cost for vacuum evaporation units is higher than the cost of atmospheric units. Use of heat pumps in evaporation and condensation can lower operating costs.

7.0 Chemical Replacement

Chemical replacement is a technique supported by continuing plating research on a number of fronts. Many manufacturers of plating bath chemicals have active research programs. EPA regulations spur the development of substitute materials and alternate plating processes. The following discussion focuses on some chemical replacements currently proving successful.

7.1 Chromium

Hexavalent chromium is used extensively in decorative and functional plating applications as well as conversion coatings. Approximately 80% of the available power supplied to a hexavalent chromium bath generates hydrogen gas. Evolution of the gas produces a mist of fine water particles with entrained hexavalent chromium. As hexavalent chromium is a carcinogen and a designated hazardous air pollutant, protection of worker health and safety as well as the environment requires control of its emission. Wastewater treatment incurs the cost of an added step to reduce hexavalent to trivalent chromium. **NOTE: There is currently no Chromium electroplating at YKK. The Chromium process is immersion or dip only.**

In some applications, especially decorative plating, the use of trivalent chromium has proven successful. Use of trivalent chrome eliminates both misting and the added step in wastewater treatment. Because bath concentration is much lower for trivalent chromium than for hexavalent chromium, drag-out is less and the amount of sludge produced by wastewater treatment is substantially reduced. Plating thickness is limited to 0.1 mil; thicker coatings exhibit cracking and spalling. Thus, the technique is usually unsuitable for hard chromium coatings, which may be 20 mils or more in thickness. Although the color tones of trivalent chromium coatings are different from those of hexavalent chromium, additives to the trivalent chromium bath can often ameliorate the difference.

For reducing air emissions:

- Switch to trivalent chrome or some other coating.
- Cover the surface of the bath with polypropylene balls.
- Use mechanical agitation instead of air sparging.
- Add surface tension reducers. This will allow bubbles to dissipate before they reach the surface, instead of bursting.
- Add fume suppressants. This will create a foam blanket on the surface of the bath.

Install a pollution control device such as a packed-bed scrubber, composite mesh pad system, or fiber-bed mist eliminator. These require strict work practice standards including a formal operation and maintenance plan.

7.2 Cyanide

The cyanide anion is an excellent complexer and exhibits wide tolerance to impurities and variations in bath composition. It has long been used in baths for plating copper, zinc, and other metals. Its principal disadvantage is its high toxicity. Another disadvantage is the cost of treating cyanide in wastewater. Because of its toxicity and adverse environmental impacts, EPA regulations severely limit the discharge of cyanide.

For plating copper, certain non-cyanide alkaline baths of proprietary composition have been developed. An alkaline pyrophosphate bath is in use which exhibits good throwing power and coating ductility. It is used in printed circuit board manufacture. A strike is required if plating over steel or zinc. This bath is expensive and its wastewater hard to treat.

An acidic copper plating bath using the sulfate ion has proved versatile; however, the low pH permits substrate attack and increasing iron concentrations in the bath. Fluoboric acid is the basis for another copper plating bath, which affords enhanced solubility and conductivity, as well as high plating speeds. This bath is more costly, has fewer additive systems available, and is more hazardous to use. Treatment of its wastewater is more costly.

A non-cyanide alkaline bath based on sodium hydroxide is in use for plating zinc. When operated with concentrations and other parameters in control, it performs as well as cyanide-based baths, and is the least expensive of all zinc plating baths. Zinc may also be plated from an acid chloride system, of which there are three types. Acid baths offer higher cathode efficiencies and lower voltages. Throwing power is less, but deposits are brilliant and leveling.

The majority of alkaline immersion stripping is accomplished with cyanide, which does not attack steel substrates but dissolves a number of other metals used as coatings. Several non-cyanide alkaline immersion stripping baths are available to remove copper or nickel from various substrates. These baths typically employ either the ammonium ion or an amine to provide complexing. Persulfate or chlorite anions may be used, as well as proprietary formulations.

Other Chromium and Cyanide Elimination/Reduction

- Substitute boric sulfuric acid anodize for chromic acid anodize
- Substitute non-cyanide Nickel-Zinc in place of cyanide
- Use alkaline zinc instead of cyanide zinc
- Use alkaline copper instead of cyanide copper
- Substitute Alodine 600 for Alodine 1200S

Appendix D

P2 Opportunities for Painting, Coatings and Lacquers

Painting and Coatings Pollution Prevention Techniques
Many products require a preparation step prior to painting or coating. This step is commonly called pretreatment for new products, and paint stripping for products that need to be reworked.

1.0 Pretreatment of Parts

For waste reduction in pretreatment of new parts, the first step is assessing cleanliness of the parts. An important part of the assessment is to determine the

1) sources of contamination
2) cleanliness level or standard needed to satisfy the pretreatment process.
3) whether some or all contamination sources can be eliminated.

For example, it may be possible to eliminate finger oil contamination through the use of gloves in areas of parts handling. Gloves can be made of lint free material, or lint can be removed with a dry cloth.

If contamination cannot be reduced enough through process changes, cleaning methods must be assessed.

1.1 Methods of Cleaning

Another pretreatment method often used in the surface preparation of metal parts is phosphatizing. The primary waste reduction option for phosphatizing is reduced water use. The water added to maintain the solution in the phosphatizing bath can be reduced by analyzing and controlling each solution's temperature, chemical concentration, and pH level in each step, and by recirculating solution or rinse water from one bath to others where possible. An added benefit is the potential for reduced chemical use.

1.2 Material Substitution

There is seldom a "drop-in" replacement for a halogenated organic solvent in a cleaning operation. Substitutes may include: non- halogenated solvents; aqueous cleaners (such as alkaline or acid cleaners), or detergent/water solutions; and abrasive cleaning systems.

In general, like removes like. Ionic contaminants (finger prints, flux, etc.) can best be removed with ionic solvents, such as water or alcohol. Contaminants that are organic in nature (oils) can be best removed either with organic solvents or water with surfactants added to make the oil and water miscible. Important factors in the design of the new cleaning system include the nature of the contamination, the substrate to be cleaned, and the degree of cleanliness required. The best alternative method can be determined only through testing.

1.3 Alternative Solvents

Due to the increased need to reduce VOC emissions, alternative cleaning solvents are being used. They include dibasic esters (DBE) and dimethyl sulfoxide (DMSO). Although toxicology information specific to these chemicals is relatively limited at this

time, it is believed that the relative safety of similar chemicals means that they might be viable alternatives to organic solvents in certain applications.

2.0 Paint and Painting Equipment

Once parts are ready to be painted, the type of coating material and application method selected have an impact on transfer efficiency. Transfer efficiency is the amount of paint applied to the object being painted, divided by the amount of paint used. High transfer rates offer financial incentives by reducing the amount of paint wasted while minimizing solid, liquid, and air emissions. Simply stated, transfer efficiency measures how much paint makes it from the paint can onto the surface being painted.

In spray-painting applications, liquid paint is converted to an atomized spray in order to coat the object being painted. Differences in spray- painting equipment are based on how the equipment atomizes paint. The more highly atomized the paint, the more likely transfer efficiency is to decrease. Highly atomized paint spray can more readily drift away from the painting surface due to forces such as air currents and gravity.

To achieve the best transfer efficiency, it is advisable to study the application equipment available and actually evaluate equipment performance using each coating material considered acceptable for your application. Because each application equipment combination has its own characteristics, the advantages and disadvantages must be weighed against the coating specifications set for a particular product.

The viscosity of the paint may need adjustment before it can be sprayed. This is accomplished by reduction with organic solvents, or with water for certain water-based coatings. Using solvents for reduction requires the purchase of additional materials and increases air emissions. An alternative method of reducing the viscosity is to use heat. Benefits from the purchase of paint heaters include lower solvent usage, lower solvent emissions, more consistent viscosities, and faster curing rates.

2.1 Spray Application Technology

The following discusses the various spray application technology for painting and coatings.

2.1.1 Conventional Spray

This technology, in use for over 40 years, uses air at high pressure (40 - 70 pounds per square inch [psi]) to atomize a liquefied stream of paint. The high-energy air stream that is mixed with the paint causes atomization that is generally very fine and easily applied. This yields very good finishes with high-quality visual characteristics.

A disadvantage is that along with a high degree of atomization comes a spray that is very fine and highly susceptible to overspray, resulting in more paint waste and less transfer efficiency. The solvent in the paint is also highly atomized along with the paint solids, meaning that volatile organic compound (VOC) emissions from the solvent in paint are increased.

2.1.2 High-Volume/Low-Pressure (HVLP)

A high volume of air at low pressure is used to atomize paint. The defined air-pressure limit for HVLP is 10 psi at the center of the air cap on the spray gun. It is this reduced gun spray energy level that reduces overspray and improves transfer efficiency. Generally, fluid delivery rates up to 10 ounces per minute with low viscosity paint will work best with the HVLP gun. However, continued development is underway to accomplish faster delivery rates to accommodate higher production. At higher fluid-delivery rates and with heavier materials, HVLP may not atomize well enough to achieve an acceptable finish.

2.1.3 Airless

This is a method of atomizing paint without the use of compressed air. The paint is pumped at high pressure through a small opening at the spray tip to achieve atomization. Adjustments in airless spraying are made by adjusting the viscosity or the system pressure. This method has higher transfer efficiencies than conventional spray. Many high-viscosity coatings can be applied without costly solvent thinning. Also, this method allows for rapid application of a heavy paint coat, which is useful for keeping up with a fast-moving painting line.

2.1.4 Air-Assisted

This is a spraying system that helps or "assists" airless systems by using supplemental air jets to guide the paint spray and boost the level of atomization. ***Air-assisted airless*** technology combines the best characteristics of both air and airless spray. Benefits include substantial material savings and reduced overspray when compared to conventional air spray, and improved transfer efficiency and finishing appearance when compared to airless technology. The ability to reduce the fluid pressure from airless is the primary factor in the increased finish quality. Operator technique also is enhanced as the application rate is reduced and the operator can more easily coat the product uniformly.

2.1.5 Electrostatic

With this method, the paint and the part are given opposite electrical charges. The result is that transfer efficiency is increased because the paint is drawn to the part by an electric field. As a result, paint spray is less susceptible to drafts and air currents that increase overspray. Even water-based paints can be applied with a high-voltage electrostatic charge in some cases.

2.1.6 Rotary Atomization

This application system atomizes paint by dropping a stream of liquid on a disk or bell-shaped object spinning at high speed. Rotary atomizers utilize electrostatics to attract paint to the part. Rotary atomization is useful for high-viscosity paints. This process can create a spray without use of thinner and tends to have high transfer efficiency. However, the equipment needed for this type of application is very specialized and usually requires a major conversion of a painting line.

2.2 Coating Types

The following list coating options that are available.

2.2.1 Organic Solvent-Based

This is the traditional type of painting material, typically containing about 40 percent solids with a relatively high organic-solvent content. While this coating material is one of the most versatile, its low solid content and high percentage of solvent carrier can cause it to have low overall (solids) transfer efficiency. To get the required coverage, more material must be sprayed compared to materials with higher solids content and lower VOC emissions.

2.2.2 High-Solids

This paint type has a higher percentage of paint solids and a lower percentage of solvent carrier. Overall transfer efficiency tends to be better than traditional solvent-based paint. The increased solids content means that fewer applications are needed to get the required film thickness. Air emissions from the solvent are generally lower due to reduced organic solvent content. However, a paint heater may be required to reduce viscosity and the film thickness is more difficult to control.

2.2.3 Water-Based

These paint types typically have a high solids content, utilize water as the solvent, and have very low or no organic-solvent content. Advantages of these paint types include reduced VOC emissions, reduced fire hazard, minimized or eliminated hazardous waste disposal, and easy cleanup. However, using a water-based coating may require stainless steel components in the preparation and delivery areas, a cleaner surface, longer drying times, increased oven temperatures, and a temperature-controlled paint storage area. The switch to water-based materials must be done carefully. Water-based coating technology is the fastest changing in the market today.

2.2.4 Catalyzed or Two-Component

These coatings are created by mixing two low-viscosity liquids just before entering the application system. One liquid contains reactive resins, and the other contains a catalyst that promotes polymerization of the resins. These coatings eliminate or reduce solvents and cure at low temperatures.

However, it is important to remember that catalysts and paint components may be hazardous themselves and create a different set of emission and exposure problems than those of organic solvents. Catalyzed painting also means that more material may be used if strict attention is not paid to the pot life.

2.2.5 Powder Coating

These coatings use 100 percent resin in dry, powdered form which must cure in an oven. Powder-coating materials can provide a high-quality, durable, corrosion-resistant coating. There are little to no VOC emissions, hazardous overspray wastes, or wastewater sludges. With powder coating it is also possible to collect the dry coating

material that does not stick to the part and reuse it. Reuse allows powder coaters to achieve very high transfer efficiencies.

Powder coating requires specialized application equipment using electrostatic charges to apply the material. Its use also means that the substrate must be able to tolerate the curing temperature of the oven (typically 300 - 450o F). However, advancements in powder coating formulations are occurring at a rapid pace, and new coating powders are increasingly becoming available to meet special manufacturing needs.

2.2.6 Radiation Cured

Ultraviolet (UV), Electron Beam (EB), and Infrared (IR) coatings use electromagnetic radiation to cure. These coatings typically have lower VOC content than conventional coatings, require smaller ovens, and allow for increased production rates due to shorter curing period. The shape of the part will effect the curing; flat surfaces are easiest to cure. Capital investments are usually higher than conventional ovens and the cost of the raw material coating is higher.

3.0 Training of Operators

The techniques spray painters use during application has a definite effect on transfer efficiency and potential waste reduction. All manufacturer specifications should be checked to ensure that operators are using the proper technique for their equipment. Operator training and experience will provide operators with knowledge of the various painting techniques needed to paint parts of different configurations. Different techniques are helpful when painting inside corners, outside corners, slender parts, round parts, flat parts, large parts, or small parts.

Standard operating techniques will not be fully successful if other problems exist, such as the room temperature changing throughout the day (which changes the viscosity of the paint), or if equipment needs repair. Operators cannot be expected to compensate for broken gauges, worn fluid tips, or other equipment problems.

Whenever adjusting the spray technique of operators, it is important to note that over a period of time the coating and the selection or use of equipment may have been made to conform to the present incorrect technique. Equipment settings and materials may need to be changed to conform to the improved technique.

4.0 Equipment Cleaning

When a painting process is completed, a color change is needed, or maintenance is required during regular operation, equipment cleaning is required. Equipment cleaning offers opportunities for waste reduction and for reductions in air emissions.

When assessing the cleaning process, all the typical cleaning tasks should be reviewed to learn whether cleaning is necessary. While it is assumed that spray guns, tips and lines must be cleaned for reuse, cleaning some low cost items may not be advisable. Costs from cleaning solvent purchases, solvent waste disposal and solvent emissions

could be higher than simply replacing the item being cleaned. However, the cost of proper disposal must be taken into account.

Next, the ways in which cleaning solvents are handled should be reviewed. All solvents should be in covered containers when not in use. Leaving solvents in the open air creates unnecessary solvent waste and VOC/VOHAP emissions. In addition, a standard should be set to assure that used solvent is disposed of or recycled only when it loses its cleaning effectiveness, not just because it looks dirty.

For equipment that requires cleaning, methods that minimize solvent use and reduce evaporation should be implemented wherever practical. Using a gun washer to clean spray guns is one example. A gun washer is a piece of equipment similar to a dishwasher. It is designed to hold a number of spray guns and related equipment and cleans by circulating solvent inside a closed chamber. The result is rapid cleaning and extended solvent cleaning life while reducing solvent waste and the emissions from evaporation.

Line cleaning is another area where use of special equipment can decrease cleaning time, improve efficiency of solvent use, and decrease waste. One method used to improve line cleaning efficiency is to introduce turbulence into the solvent going through the line during cleaning. Equipment that forces alternating pulses of solvent and compressed air is one way to accomplish this. Payback on this equipment can come from increased production output through more rapid color changes as well as from material savings through decreased solvent use.

5.0 Solvent Reuse Alternatives

On-site recycling of used solvent is another way to reduce waste and save money. First, savings come from reducing the amount of solvent purchased. Second, savings come from reduced disposal cost by reducing the volume of spent solvent that must be sent off-site. Three common methods of solvent recycling are settling, filtering, and distilling.

Settling is putting used solvent in a container and letting the particulate matter settle out. The container should be designed to allow removal of solvent without shaking up the sludge which has settled out. Filtering equipment, which removes the particulate matter from solvents, is also available. Distillation is an attractive option for many organic solvent users. Equipment is available in a variety of sizes.

6.0 Paint Removal

When repainting a part, the old paint often must be removed prior to application of the new paint coat. The waste reduction assessment should start by examining what causes the need for repainting: inadequate initial part preparation; defects in coating application; equipment problems; or coating damage due to improper handling.

NOTE: YKK is committed to and aware of the environmental impact some chemicals used in the processes can have. Therefore, YKK has agreed to use

only those chemicals that are considered COMPLIANT throughout the YKK Kentucky location. Those chemicals must comply with the Subpart MMMM requirements of the Title V air permit and not exceed 2.6 pounds VOHAPs per coated gallon solids.

While no process is perfect, reducing the need for repainting has a direct effect on the volume of waste generated from paint removal. Once the need for paint stripping has been reduced to a minimum, alternate paint stripping approaches can be considered.

Key concerns are the type and volume of waste produced. Chemical stripping commonly has been used in a number of applications, but alternate methods that are less toxic and less costly are available. For example, a barrel reconditioning operation was able to replace chemical stripping with mechanical stripping using metal and nylon brushes.

Paint-stripping technologies that are alternatives to chemicals include: abrasive blasting with a variety of materials; mechanical removal using scrapers, wire brushes and sand paper; pyrolysis (vaporization of the paint coating in a furnace or molten salt bath); cryogenics ("freezing" the paint off); and extremely high-pressure water or air.

Key factors that must be considered when selecting a paint-stripping method include: potential for cross-media transfer; the characteristics of the substrate to be stripped; the type of paint to be removed; and the volume and type of waste produced. Waste type and volume can have a major impact on cost-benefits associated with a change. Often, a combination of removed paint and chemical stripper requires disposal as hazardous waste.

7.0 Spray Booths

Two basic types of enclosures are used in most painting applications: dry booths and wet booths. The key difference is that a dry booth depends on a filter of paper, fiberglass, Styrofoam , or metal to collect overspray, while the wet booth uses water with chemical additives. T he type of booth selected can affect the volume and type of paint waste generated. Decisions made about this equipment should be made based on the type and volume of painting done and the volume of waste generated.

Generally, small-volume painting operations will find the lower purchase cost of a dry filter booth will meet their requirements. One disadvantage in the use of a dry-filter booth is in the disposal of the waste. Typically the majority of this waste is the filter media itself which has been contaminated by a relatively small amount of paint. Reusable filters may decrease waste volume and reduce disposal cost. In some applications, overspray can be collected for reuse.

If overall painting volume can justify the investment, a wet booth may work to your advantage. This type of booth eliminates disposal of filter media and allows waste to be reduced in weight and volume. This is achieved by separating the paint from the water through settling, drying, or using a centrifuge or cyclone.

Appendix E

Pollution Prevention Resources

Pollution Prevention Resources		
Resource	**Description/Category**	**Resource Information**
The American Electroplaters and Surface Finishers (AESF) Society Inc	International, individual membership professional society (Metal Finishing)	Website: http://www.aesf.org
Environmental Protection Agency-EnviroSense	EPA website that has: 1. Introduction to Industry Sector Material (Metal Finishing) 2. Cooperatives (Metal Finishing) 3. Solvent Substitution Data System (Painting and Coatings) 4. National P2 Vendor Database (Metal Finishing and Painting and Coatings)	1. Website: http://es.epa.gov/cooperative/topics/intro.html 2. Website: http://es.epa.gov/cooperative/topics/metalfin.html 3. Website: http://es.epa.gov/ssds/ssds.html 4. Website: http://es.epa.gov/vendors
The Finishing Industry	General Source (Metal Finishing)	Website: http://www.finishing.com
National Metal Finishing Resource Center	Resource Center (Metal Finishing)	Website: http://www.nmfrc.org Phone: 734-995-4911
National Painting and Coatings Association	Non-profit trade association (Painting and Coatings)	Website: http://www.paint.org Phone: 202-462-6272 Fax: 202-462-8549 Email: npca@paint.org
Pacific Northwest Pollution Prevention Resource Center	Paint and Coatings Manufacturing Industry Resources	Website: http://www.pprc.org Phone: 206-352-2050 Email: office@pprc.org
TechSolve	Pollution Prevention Resource for Industry Sectors (P2IRIS) (Metal Finishing and Painting and Coatings)	Website: http://www.iams.org Phone: 1-800-345-4482 Fax: 513-948-2109
Waste Management and Research Center	Resource/Fact Sheets (Metal Finishing and Painting and Coatings)	Website: http://www.wmrc.uiuc.edu/ Phone: 217-333-8940 Fax: 217-333-8944
Waste Management and Research Center	Metal Finishing Pollution Prevention Notebook (Metal Finishing)	Website: http://www.wmrc.uiuc.edu/main_sections/info_services/library

The American Electroplaters and Surface Finishers (AESF) Society Inc
Website: http://www.aesf.org

Environmental Protection Agency-EnviroSense
Introduction to Industry Sector Material (Metal Finishing)
Website: http://es.epa.gov/cooperative/topics/intro.html

Environmental Protection Agency-EnviroSense
Cooperatives (Metal Finishing)
Website: http://es.epa.gov/cooperative/topics/metalfin.html

Environmental Protection Agency-EnviroSense
Solvent Substitution Data System (Painting and Coatings)
Website: http://es.epa.gov/ssds/ssds.html

Environmental Protection Agency-EnviroSense
National P2 Vendor Database
(Metal Finishing and Painting and Coatings)
Website: http://es.epa.gov/vendors

The Finishing Industry
Website: http://www.finishing.com

National Metal Finishing Resource Center
Website: http://www.nmfrc.org
Phone: 734-995-4911

National Painting and Coatings Association
Website: http://www.paint.org
Phone: 202-462-6272
Fax: 202-462-8549
Email: npca@paint.org

Pacific Northwest Pollution Prevention Resource Center
Website: http://www.pprc.org
Phone: 206-352-2050
Email: office@pprc.org

TechSolve
Pollution Prevention Resource for Industry Sectors (P2IRIS)
(Metal Finishing and Painting and Coatings)
Website: http://www.iams.org
Phone: 1-800-345-4482
Fax: 513-948-2109

Waste Management and Research Center
Resource/Fact Sheets
(Metal Finishing and Painting and Coatings)
Website: http://www.wmrc.uiuc.edu/
Phone: 217-333-8940
Fax: 217-333-8944

Waste Management and Research Center
Metal Finishing Pollution Prevention Notebook
(Metal Finishing)
Website:
http://www.wmrc.uiuc.edu/main_sections/info_services/library
Phone: 217-333-8940
Fax: 217-333-8944

Appendix F

YKK Environmental Management Performance Tracking

<Insert Performance Tracking Forms for Lawrenceburg Facility>

PART L

PART L CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Date: 11/11/2022

Signature: _____