Dunaway Timber Company, Inc.
Hazardous Waste Landfill
Permit Application Renewal

KYD #006-369-557

DUNAWAY
TIMBER COMPANY INC.

Fordsville, KY

Prepared for:

Henry Christ, President

November 19, 2020

SMR
ENVIRONMENTAL

Dunaway Timber

Application for Permit Renewal

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Acronyms	Use of Terms
AOC	Area of Interest
HDPE	High Density Polyethylene
MCL	Maximum Contaminant Level
RSL	Risk Screening Level
SWMU	Solid Waste Management Unit
VOC	Volatiles Organic Compound
WMU	Waste Management Unit

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 an on-going regulated activity that will continue for a period of time. (Includes HSM activity)
☐	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
	☐ Site was a TSD facility 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 Form

2. Site EPA ID Number

K	Y	D	0	0	6	3	6	9	5	5	7

3. Site Name

Dunaway Timber Company, Inc.

4. Site Location Address

Street Address **Highway 1700**		
City, Town, or Village **Fordsville**		County **Ohio**
State **KY**	Country **USA**	Zip Code **42343**

5. Site Mailing Address

☐ Same as Location Address

Street Address **P.O. Box 157**		
City, Town, or Village **Fordsville**		
State **KY**	Country **USA**	Zip Code **42343**

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) **321113**	C.
B.	D.

8. Site Contact Information

☐ Same as Location Address

First Name **Robert**	MI **H**	Last Name **Christ**
Title **President**		
Street Address **214 Easton Road, P.O. Box 157**		
City, Town, or Village **Fordsville**		
State **KY**	Country **USA**	Zip Code **42343**
Email **henry@dunawaytimber.com**		
Phone **270-276-3367**	Ext	Fax

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner

☑ Same as Location Address

Full Name **Dunaway Timber Company, Inc.**		Date Became Owner (mm/dd/yyyy)
Owner Type ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other		
Street Address		
City, Town, or Village		
State	Country	Zip Code
Email		
Phone	Ext	Fax
Comments		

B. Name of Site's Legal Operator

☑ Same as Location Address

Full Name **Dunaway Timber Company, Inc.**		Date Became Operator (mm/dd/yyyy) **12/31/1978**
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 (includes quantities imported by importer site) 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste; 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.

KOO1						
U019						
U220						
DOO6						
D008						

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. Other (specify) _____
	☐	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 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 266 Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is no longer an LQG or SQG.

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

☐ Y ☑ N	A. Opting into or currently operating under 40 CFR 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 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 VSQGs 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)

Hazardous Waste Landfill in Post-Closure Care

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) **11/19/2020**
Printed Name (First, Middle Initial Last) **Robert H Christ**	Title **President**
Email **henry@dunawaytimber.com**	

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

EPA ID Number	K	Y	D	0	0	6	3	6	9	5	5	7

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency
HAZARDOUS WASTE PERMIT PART A FORM

1. Facility Permit Contact

First Name	**Robert**	MI	**H**	Last Name	**Christ**
Title	**President**				
Email	**henry@dunawaytimber.com**				
Phone	**270-276-3367**	Ext		Fax	

2. Facility Permit Contact Mailing Address

Street Address	**P.O. Box 157**				
City, Town, or Village	**Fordsville**				
State	**KY**	Country	**USA**	Zip Code	**42343**

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

12/31/1978

4. Other Environmental Permits

A. Permit Type	B. Permit Number													C. Description
N	K	Y	0	0	8	9	2	9	0					**KPDES Permit**
P	S	1	5	0	0	7								**Air Permit**

5. Nature of Business

Dunaway Timber Company processes raw timber to sized wood products.

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		
0	1	D	8	0	4.9	A	1	Landfill

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	K	0	0	1	-	-	D	8	0							Pentachorophenol
																	CIP - Landfill Waste
0	2	U	0	1	9	-	-	D	8	0							Benzene
																	See CIP Waste Above
0	3	U	2	2	0	-	-	D	8	0							Toluene
																	See CIP Waste Above
0	4	D	0	0	6	-	-	D	8	0							Cadmium
																	See CIP Waste Above
0	5	D	0	0	8	-	-	D	8	0							Lead
																	See CIP Waste Above

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

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: $ 14,000.00 *(See instructions to determine your fee)*

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-006-369-557

B. AGENCY INTEREST Number: 44386

III. Existing and New Facilities

Existing Facilities, the date operation began or construction commenced: (mm/dd/yyyy) 12/31/78

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

IV. Contact Email Address

Facility Contact
Email address: henry@dunawaytimber.com

V. Facility Operator (2)

Name of Facility Operator 2 (see Instructions): Dunaway Timber Co, Inc.
HWY 1700
Fordsville, KY 42343

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:

City: Fordsville | **State:** KY | **County:** Ohio | **Zip Code:** 42343

Facility Operator 2 Telephone Number: 270-276-3367 | **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-006-369-557

Agency Interest Number: 44386

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	Landfill	PC	CP	Dirty closure completed of contaminated soils and plate metal
				"Closed landfill in post closure"

EPA ID Number: KYD -006-369-557 Agency Interest Number: 44386

XII. WASTE STREAM DESCRIPTION (See Instructions)

a. Line Number	b. Waste Stream Number	c. Waste Description
1	1	K001-D80 Pentachlorophenol CIP - Landfill Waste
2	1	U019-D80 Benzene See CIP Waste Above - Landfill Waste
3	1	U220-D80 Toluene See CIP Waste Above - Landfill Waste
4	1	D006-D80 Cadmium See CIP Waste Above - Landfill Waste
5	1	D008-D80 Lead See CIP Waste Above - Landfill Waste

EPA ID Number: KYD-006-369-557 **Agency Interest Number:** 44386

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. Robert H. Christ — Robert H Christ — 11/19/20 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. Robert H. Christ — Robert H Christ — 11/19/20 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. Robert H. Christ — Robert H Christ — 11/19/20 NAME (PRINT OR TYPE) — SIGNATURE — DATE

DUNAWAY TIMBER SITE MAP

LEGEND

- Monitoring Well
- Landfill Boundary

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	5/18/10	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=150'	JAA	1 OF 1

LEGEND

- Monitoring Well
- Landfill Boundary

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761
CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	12/12/19	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=300'	JAA	1 OF 1

FACILITY LAYOUT MAP

DUNAWAY TIMBER COMPANY, INC.

CONTOUR INTERVAL = 10'

SCALE: 1"=200'

RICHARDS R A HEIRS
10-21
158.409492
RICHARDS R A HEIRS
10-21
23.352656
RICHARDS R A HEIRS
172.227
11-27
28.899536
10-25
21.265013
REYNOLDS JOSEPHINE E
366-285
10-22
63.627008
REYNOLDS JOSEPHINE E
366-285
ROGER COOPER RD
10-22
27.041236
REYNOLDS JOSEPHINE E
366-285
10-24
27.355883
10-22
12.190845
CHRIST ROBERT H JR & DIANNA K
406-086
RUSHER PHILLIP
341-650
14-1
169.437079
CHRIST DIANNA K
412-663
15-3
189.400994
CHRIST HENRY
387-368
15-5
57.818984
RUSHER PHILLIP
341-652
14-9
45.316424
15-4
73.297096
HAMILTON DAVID A & ROSE E
250-709
MATTINGLY RICKY LEWIS
385-195
14-10A
52.232171
EASTON RD
14-10
3.214894
14-38
1.956216
15-6A
85.306714
CHRIST ROBERT H JR & DIANNA K
396-274
14-40
2.13384
15-8 ETAL
45.604978
15-6
41.952714
BEA LAND MANAGEMENT LLC
425-553
14-37
16.792406
FUQUA JAMES W & SANDRA
237-242
15-7 & 7C
58.719274
CARDEN PROPERTIES LLC
415-643
14-41
9.905593
BEAVIN JENNIFER N
385-695
14-9-2
4.182568
Jason Chinn, PVA
301 South Main Street
Courthouse
Hartford, KY 42347
Office: 270-298-4433
Ohio County
Property Valuation Adminstration
Print Date: December 13, 2019
Aerial Date: January 2018
N
W
E
S
Maps to be used
for identification only,
NOT for conveyance.
1 inch = 415 feet

TOPOGRAPHIC MAP

LEGEND

- Monitoring Well
- Landfill Boundary
- Property Boundary

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	12/12/19	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=300'	JAA	1 OF 1

FORDSVILLE USGS TOPOGRAPHIC QUADRANGLE

0' 625' 1250' 2500'

LEGEND

Property Boundary

Landfill Boundary

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	9/03/20	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=1250'	JAA	1 OF 1

DUNAWAY TIMBER LANDFILL

North View of Landfill.

Southwest View of Landfill.

SMR
ENVIRONMENTAL
SERVICES, LLC

319 W. Broad St., Suite C
P. O. Box 761
Central City, KY 42345

Phone: 270-754-3737
Fax: 270-754-9623
Website: smrenv.com

DUNAWAY TIMBER LANDFILL

Northeast View of Landfill.

East View of Landfill.

SMR
ENVIRONMENTAL
SERVICES, LLC

319 W. Broad St., Suite C
P. O. Box 761
Central City, KY 42345

Phone: 270-754-3737
Fax: 270-754-9623
Website: smrenv.com

DUNAWAY TIMBER COMPANY, INC.
Highway 1700, Fordsville, Kentucky
EPA ID #: KYD-006-369-557

PART B: FACILITY DESCRIPTION

B-1: General Facility Operation Description

Dunaway Timber Company is currently processing raw timber to sized wood products.

Some of the products are white oak slates for wood barrel making companies, sized wood for making pallets, chipped wood for paper manufacturers, and clean wood fiber for fiber board manufacturing companies.

At this time there are no chemicals or additives such as glue, paint, or preservatives used in the wood product processes. Therefore, there are no known hazardous wastes generated during the current wood processing at this facility.

Hazardous Waste Management Unit – Landfill (SWMU #1, #2, & #15)

Approximately forty (40) years ago, Dunaway Timber Company was conducting a wood preservative process that produced lumber that would meet requirements or specifications for underground coal mining timbers. This process activity, as revealed by Dunaway Timber, occurred between 1978 and October of 1981.

The process involved dipping wood into a set of dip tanks that contained diesel fuel and pentachlorophenol. Dunaway Timber Company described the wood preservative process activity as taking bundles of sized lumber and lowering into dip tanks, allowing to soak twenty-four (24) hours, raising bundles out of tanks, and setting on ground beside tanks, then loading onto transport (trucks with flatbed trailers).

After the wood preservative process was discontinued in 1981 the dip tanks remained on site and a spill occurred from one (1) of the tanks (5 total) in January 1987 that resulted in a fish kill within Adams Creek. Dunaway Timber was then subsequently issued a Notice of Violation that resulted in Agreed Order DWM #86020 to remedy the numerous hazardous waste violations. McEwen Engineering then proceeded to perform RCRA

Facility Investigation (RFI) activities at the site to define and characterize soil and groundwater impacted at the site as a result of the release. Initial remedial efforts also began by removing and disposing of the dip tanks and tank contents followed by excavating @ 173 cubic yards of contaminated soils in the area and disposing at the Outer Loop Landfill by removing approximately 1' of soils from the surface within the release area. Site Investigation activities indicated additional soil and groundwater contamination within the spill area. The residual soil contaminated areas and plate metal remnants from the dipping tank process where then capped with clay soils, geonet drainage layer and topsoil and denoted as a closure in place landfill that was completed in the fall of 1992. Currently this landfill site is in post-closure for a duration of 30 years beginning the first quarter 1993 and ending in 2023 (Post-Closure Permit issued 1995). Groundwater Monitoring has been conducted (8 wells) semi-annually since completion of the landfill cap in 1992 consisting of one upgradient well and three downgradient wells for the upper and lower groundwater transmitting zones indentified during the initial investigations. An additional downgradient well (SD-4) was added to the upper groundwater transmitting groundwater monitoring system on September 8, 2010 per the Interim Measures Work conducted September 8th, 2010 to March 7th, 2011. Each of the wells are sampled semi-annually and analyzed for Pentachlorophenol, Volatile Organic Compounds, Cadmium, and Lead.

Additional SWMU and AOC

In addition to the landfill unit that is comprised of SWMU #1, #2, & #15, Thirteen additional SWMU's and three AOC's were identified during the RFA field investigation by Kentucky Hazardous Waste Branch during the initial investigations. Confirmatory Sampling and/or Remedial Action has been conducted for these SWMU's or AOC's and have since been granted "no further action" determinations and are listed as follows:

SWMU #3	SWMU #4	SWMU #5	SWMU #6	SWMU #7	SWMU #8
SWMU #9	SWMU #10	SWMU #11	SWMU #12	SWMU #13	SWMU #14
AOC-A	AOC-B	AOC-C			

See Appendix E Site Sketch of SWMU and AOC Locations.

B-2: Topographic Map(s)

An updated topographic map (1" = 1,250') is provided illustrating Dunaway Timber Property Line, Landfill Boundary, and 1 mile radius in Appendix B along with a prior topographic map (1" = 300') and Seismic Evaluation Map.

B-3: Location Information

The subject site is located approximately 0.5 miles north of Fordsville on highway 1700 within the eastern portion of Ohio County, Kentucky. The local topography is generally expressed as rolling upland hills with elevations ranging from 470.0 to 550.0 feet AMSL. Geologically, the site is positioned within the Illinois Basin and within the Western Kentucky Coal Field, north of the Rough Creek Fault Zone.

B-3 a(1) & (2): Seismic Consideration :

Dunaway Timber Landfill (Fordsville Quadrangle) resides 6.5 miles north of the nearest fault within the Rough Creek Fault System (Olaton Quadrangle) per review of Kentucky Geologic Quadrangle Maps. See Appendix B – Seismic Evaluation Map for Dunaway Timber Landfill location relative to the Rough Creek Fault System.

B-3 (b): Floodplain Requirements

The closed disposal facility is located along a drainage break of a ridge system between elevation 495 to 515 (MSL). The closest intermittent stream is located over 200 feet north and 20 feet below the facility. The closest 100 yr. floodplain (headwater inundation) is over 600 feet toward the east, across the KY HWY 1700, below elevation 460 MSL.

B-4: Traffic Information

N/A- Not Applicable

B-5: Requirements for Applicants for Construction Permits

N/A- Not Applicable

B-6: Past Compliance Record

N/A- Not Applicable

B-7: <u>Financial Responsibility to Construct and Operate</u>

N/A- Not Applicable

B-8: <u>Public Participation</u>

N/A -Not Applicable

B-9: <u>Fees</u>

The Part A – Filing fee ($14,000.00) has been submitted previously per the March 27, 2019 Hazardous Waste Permit Renewal.

PART C: WASTE ANALYSIS PLAN

C-1: Introduction

Dunaway Timber Company does not currently have any ongoing production processes that would require any treatment, storage, or disposal of any hazardous waste at this facility. During a period, estimated between 1978 and October of 1981, Dunaway Timber was involved in a wood preservative process to produce sized underground coal mining roof supports. The dipping tanks contained a diesel fuel and pentachlorophenol (penta) mixture that was used as the preservative. The wood preservatives remained in the tanks after the wood treatment was discontinued and release occurred on January 1987. Following initial excavation and disposal of contaminated surface soils (173 cubic yards) the remaining contaminated residual soils and steel plates used in this process where left in place and capped as a designated "landfill" that is currently in post-closure.

Sampling and analysis of soil and groundwater was conducted during initial investigations for the known hazardous constituents and/or indicator parameters of the wood preservatives solution. The following is a list of hazardous constituents detected prior to the construction of the capped "landfill" that includes SWMU #1, #2, & #15 (401 KAR 39:060 Section 3 / 40 CFR 261).

EPA Hazard Waste No.	Contaminates	Chemical Abstract No.
K001	Pentachlorophenol	87-86-5
U019	Benzene	71-43-2
U220	Toluene	108-88-3
D006	Cadmium	7440-43-9
D008	Lead	7439-92-1

Groundwater Monitoring is currently being conducted semi-annually for nine wells around the landfill is monitored for Pentachlorophenol, Volatile Organic Compounds, Cadmium, and Lead.

The two contaminant products of concern include pentachlorophenol and diesel fuel. The hazardous characteristic of pentachlorophenol is attributed to its toxicity to humans

and animals. Being in contact with free mixtures may be fatal if swallowed, inhaled, or absorbed through the skin and can cause eye and skin irritation.

The material is irritating to the mucous membranes and upper respiratory tract. It may cause damage to kidneys and liver. Toxic levels to laboratory animals are 50 kg/kg – oral, 105 mg/kg – skin contact, and 11700ug/kg – inhalation of dust.

The diesel fuel used in the preservative mixture causes health hazards when there is human contact over the permissible exposure level of 400 ppm. The effects of acute overexposure are:

Eyes – May cause severe irritation, tearing, blurred vision
Skin – prolonged or repeated contact may cause moderate irritation defatting dermatitis
Breathing – May cause central nervous system effects, including unconsciousness and asphyxiation
Swallowing – May cause gastro-intestinal irritation, aspiration of material into the lungs may cause chemical pneumonia which may be fatal.

Some physical or chemical characteristics of pentachlorophenol and diesel fuel that may help in considering proper treatment and/or disposal and containment of their hazardous constituents are as follows:

PENTACHLOROPHENOL:

1.) Is insoluble or only slightly insoluble in water
2.) Will be absorbed or bonded to solid organics or organics of solids
3.) Can be mobilized in solution with organic volatile compounds (liquids) before coming in contact with solid organics. It is possible to mobilize after bonding with solid organics if solids are detached, broken up, or deteriorated.

DIESEL FUEL:

1.) The liquid is lighter than water and can be transported by water
2.) The viscosity of the liquid allows it to adhere to surfaces and be absorbed into permeable media (soil, rock)
3.) Lighter constituents of the liquid will readily vaporize
4.) All constituents will bio-degrade naturally with time

C-2: <u>Waste Characterization</u>

N/A- Not Applicable / Landfill not accepting waste on or off site.

C-3: <u>Additional Waste Analysis Requirements Pertaining to Land Disposal Restrictions Characterization</u>

N/A- Not Applicable

Part D – PROCESS INFORMATION

Part D **Process Information**

In response to a release of diesel fuel and pentachlorophenol on January 6, 1987 from a former dipping tank operation at the Dunaway Timber Facility, a "dirty closure" landfill (1.2 acres) was constructed in the area's of SWMU #1,#2, & #15 and completed November of 1992. Contaminated soils, contaminated sawdust, and five dipping tanks (shreaded into small pieces) was capped via a low permeability 3' clay liner covered with a HDPE Geonet Drainage layer with double sided non-woven fabric followed by placement of 2' soil vegetative layer. Note that prior to construction of the landfill, a "Closure Plan" was approved September 2, 1992. After completion of the landfill construction a "Closure Certification Report" was submitted on January 4, 1992 and was approved on April 16, 1993. Enclosed is a copy of the "Closure Certification Report" Approval Letter in Appendix H and a survey plat of the deed restricted landfill boundary in Appendix D. Note that the "Closure Certification Report was to be included within this application but was not found within the Dunaway Files or Division of Waste Management Open Records Files. SMR made an attempt on 11-25-19 in conjunction with Catherine Garrison of the Hazardous Waste Branch to locate the file to include within this report but both parties were unable to locate this report. Although the landfill cap was completed in 1993 an approved Hazardous Waste Permit was not formally approved until 1995. The cover cap is inspected during each semi-annual groundwater sampling event by SMR and has maintained it's structural integrity since SMR took over the quarterly sampling. Dunaway Timber keeps the cap mowed on a regular basis and no signs of erosion has been noted.

D-6 a-n: **Landfill Design**

N/A- Not Applicable / Landfill is not accepting waste and is in Post-Closure Status.

- Closure Plan approved 9-2-1992
- Closure Certification Report submitted 1-4-1993
- Closure Certification Approval Letter 4-16-1993

PART E: GROUNDWATER MONITORING

E-1: Interim Status Groundwater Data

The spill site of the wood treatment dipping tanks has been closed via landfill capping and is currently in post-closure status. Dunaway Timber Company, Inc. is applying for a renewal to a post-closure permit.

E-2: General Hydrologic Information

Geology & Hydrology Summary:

In summary the landfill resides lithologically above a @2'-4' thick layer of silty clay subsoil followed by a weathered shale with interbedded sandstone ranging from @4'-10' in thickness that comprises the upper aquifer transmitting zone groundwater monitoring system. This unit is underlain by a shale layer acting as an aquitard. Note that these lithologic beds dip to the northeast and the underlain shale aquitard pinches out to the northeast and the lower aquifer transmitting zone dips in the opposite direction towards the southwest and is composed of a sandstone unit that has intermittent thin bedded shale layers within the sandstone unit and ranges from 7' to 14' in thickness. This unit is then underlain by a thinned bedded coal and shale layer that is considered an aquiclude below the lower transmitting zone dipping to the southwest. Therefore the hydrology the landfill unit consists of a perched aquifer within the upper transmitting zone that flows to the northeast along a shale bed that pinches out and appears capable of migrating into the lower transmitting zone that dips back to the southwest above a coal and shale bed that acts as an aquiclude. Please refer to the original closure plan for a more detailed understanding of the geology and hydrology that underlies the site.

Regional History

Based on published data, four (4) general groundwater systems have the potential to be identified within the subject site. These include water table aquifer associated with surface water infiltration into the soil, the weathered and/or fractured surface rock zone, basal Pennsylvanian channel sandstones, sandstone channels, and barrier bard

deposits associated with deltaic and tidal flat depositional environments, and groundwater associated with fractured or karstic limestones.

Local Hydrology

On site investigation of the subject site revealed two (2) perched groundwater systems identified above. They include groundwater associated with the water table aquifers within the soil and weathered and/or fractured surface rock and sandstone channels and barrier bars associated with the deltaic, tidal flat depositional environment. Both groundwater systems (upper & lower) are locally recharged from surface water infiltration. The sandstone channel/barrier bar groundwater systems outcrop at or just below the spill site.

Local Geology

After geologic investigation and evaluation of data, the following points were noted concerning the geology of the immediate area.

1.) The coal seam and claystone/shale strata positioned below the lower groundwater one is persistent throughout the immediate area. The dip of these strata is to the south-southwest at an average 2.0% slope which is consistent with the published trend on the Fordsville, KY U.S.G.S. Quadrangle Map (south-southwest at approximately 1.4% slope).

2.) The sandstone above the coal trends to get thicker down-dip.

3.) The confining layer of shale stratum/strata above the lower groundwater transmitting zone tends to get thinner and more weathered up-dip and towards a natural valley.

4.) The upper water transmitting zone media becomes more weathered and shown signs of having a thicker capillary fringe at lower elevation near a natural valley. The upper and lower water transmitting zones are more likely to be more directly interconnected toward the north and east at or below the spill site.

5.) After site investigation and inspection of cores within Waste Management Unit and adjacent area, it is concluded there is no solution or karst features.

Upper Groundwater Zones

The upper perched water table exists in sub-surface soils and fragmented rock layers overlying a confining layer of shale that tends to get thinner, softer, and more weathered to the north/northeast or lower surface elevations. After review of the variation of results, it would suggest that there is localized less permeability at lower elevations. The site development has most likely caused some non-uniformity as well as natural weathering at lower elevations in the transmitting media. In general, over the site the permeability of the media is low.

Lower Groundwater Zone

The media in which the lower groundwater transmitting zone exists is a series of sandstone strata situated below a shale or shale/clay layer and exposed at lower elevations to the northeast side of site. The upper portion of the zone consists of sandstone with shale bands (approximately 20%) usually weathered. The central portions is a massive fine grained sandstone with some shale lamentations and approximately 3.0 feet thick. The lower portion is fine grained sandstone with approximately 10% shale bands and is situated above a persistent coal seam. The permeabilities are lower farther into the ridge system and also near where this zone is expected to be exposed.

The potentiometric contours display a downward trend towards the west and southwest which is generally with the dip of the coal bed and in opposite direction of surface contours of the site investigated. See Appendix C – Geologic Cross Section Maps.

During geological investigation, a localized structural feature was detected that possibly influences the lower groundwater zone flow characteristics. This feature is a trough in the bedding plane which is suggested by the persistent coal seam (see geologic cross section A – A' coal elevation). The direction of flow can be assumed to follow the slope of the potentiometric surface, yet it is possible that transmissibility is greater near the center of this trough.

Due to the small area of the SWMU, localized structural features could have a more direct influence on contamination migration in groundwater flow than would the potentiometric surface. The point of entry of the contamination would contribute to the degree of effect from the localized structural feature. The results of the contamination isobar development indicate that the geologic structure feature did have some effect on the migration. The isobars suggest there has been a greater rate of migration occurring near the center of the structural trough.

The records of the static levels during pump-out and recharge activity did not suggest that the upper and lower transmitting zones had any immediate hydraulic interaction.

The fact that the upper and lower zones have shown some contamination does implicate that they are interconnected. The inspection of the strata at PZ-2 revealed weathered shale just above the sandstone of the lower groundwater zone.

The results of the investigation of the borings and sampling for contamination infers the interconnection of the upper and lower groundwater zones between the 493 and 495 surface contours.

E-3: Topographic Maps

Two topographic maps (Scale 1"=300' & 1"=1,250') are provided in Appendix B. These maps display the boundary of the waste management units (WMU's) and groundwater monitoring wells to be used in the detection monitoring program. These maps also provide information concerning groundwater potentiometric surfaces for the upper and lower groundwater transmitting zones. See Appendix B – Topographic Maps.

Dunaway Timber Company, Inc.'s wood processing facility legal property boundary is displayed on the topographic maps included in Appendix B.

E-4: Contamination Plume Description

All wastes and or any potential soil or groundwater contamination remains with the landfill boundary and no signs of migration is present as of current date.

E-5: General Groundwater Monitoring Requirements

E-5 (a): Description of Wells

The groundwater monitoring program will be composed of nine (9) monitoring wells located around the perimeter of the capped landfill to monitor both an upper and lower transmitting zone within the perched aquifer. The upper perched aquifer transmitting zone will consists of one upgradient background well (SB#1) and four downgradient compliance wells (SD#1, SD#2, SD#3, & SD#4). The lower perched aquifer transmitting zone will consist of one upgradient background well (DB#1) and three downgradient compliance wells (DD#1, DD#2, & DD#3). Below is a listing of monitoring wells;

Well ID#	Upper or Lower Aquifer Zone	Up or Down Gradient	Well Depth	Casing Diameter
SB#1	Upper	Up	16.30	2"
SD#1	Upper	Down	16.35	2"
SD#2	Upper	Down	11.80	2"
SD#3	Upper	Down	9.98	2"
SD#4	Upper	Down	8.70	2"
DB#1	Lower	Up	27.50	2"
DD#1	Lower	Down	40.35	2"
DD#2	Lower	Down	38.21	2"
DD#3	Lower	Down	36.25	2"

E-5 (b): Sampling and Analysis Procedures

This section identifies the protocols and procedures to be implemented during the groundwater sampling program at the Dunaway Timber Landfill. This section contains standard preparation, sampling, laboratory analysis, documentation, and reporting procedures to be used that will assure quality assurance/quality control (QA/QC) of the groundwater data.

Pre-Sampling Preparation

Dunaway Timber and the Kentucky Division of Waste Management – Hazardous Waste Branch Personnel will be notified at least seven (7) days prior to scheduled groundwater sampling event. In addition, sample collectors will provide sufficient notice to the analytical laboratory to ensure analyses are performed within the requisite holding times along with coordinating sample shipment to the laboratory. Sample container types, sample volume, preservative, and hold times are listed in the Groundwater Semi-Annual Analytical Parameters and Sampling Guide enclosed below.

Sampling Objectives

Groundwater sampling will be performed according to the general procedures outlined in this section. The objectives of groundwater sampling are to collect a representative sample of groundwater in the water-bearing zone (perched aquifer) of interest and minimize sample bias caused by the sampling techniques and equipment used.

Additional guidance is given in "*RCRA Ground-Water Monitoring: Technical Guidance*" (US EPA 1992).

Sample Locations and Designations

Groundwater samples will be designated by the name of the monitoring well (SB-1, SD-1, SD-2, SD-3, SD-4, DB-1, DD-1, DD-2, & DD-3) from which they were obtained and the date on which they are collected. Each sample container will be marked with a label identifying the specific parameters of interest. The label will record the date and time of sample collection, sample collector's identification, sample identification, parameters to be analyzed, and preservatives, if applicable. It is best and most practical to have sample bottles pre-labeled by the laboratory prior to each sampling event.

Sequence of Sample Collection

If relative groundwater quality can be inferred or is known from previous analyses, wells will be sampled in the order of least potential impact to most potential impact. The background monitoring well(s) will always be sampled first. In general, samples will be collected and containerized in the order of the volatilization sensitivity of the parameters

to be analyzed. The recommended collection order for groundwater parameters is therefore as follows:

- Volatile Organic Compounds (13 Compounds including Benzene & Toluene)
- Semi-Volatile Organic Compounds (Pentachlorophenol)
- Metals (Cadmium, Lead)

Field sampling will also be conducted measuring pH, Temperature, TDS, and Conductivity from a raw unpreserved container.

Purging and Sample Collection Procedures

Acceptable methods for purging and sampling are discussed in the following sections. Regardless of the methods used for purging and sampling, new plastic sheeting is to be placed over the concrete pad to prevent ground contact with hoses, ropes, pumps, etc. All groundwater sampling at each individual sampling point is to be conducted using properly cleaned equipment or new disposable equipment (i.e., sampling gloves, bailer twine, etc...). Sample bottles are to be capped immediately after they are filled. Following completion of groundwater sampling the wells are to be secured with cap and the lock in place to prevent access to the well.

Water Level Measurements

Groundwater levels will be measured prior to purging each well to be sampled using an electronic water level meter to determine the volume of water the must be removed to collect a representative groundwater sample. All water level measurements are taken from the top of the PVC well casing that has been previously been surveyed and measured to an accuracy of 0.01 feet. Water level measurements are to be recorded on the Groundwater Sampling Field Report, which is included in Appendix K.

Well Purge Volume Calculations

To calculate the volume of water contained in each well, the depth of standing water must be measured. In addition, the well casing diameter and screen length of each well must be known. This information, along with the following appropriate formulas is used to determine the volume to be purged from each well.

The following formula may be used to determine the volume of any well:

Volume in gallons = $5.875 \times C^2 \times H$

Where:

C=casing diameter, in feet; and

H=height of water column, in feet

The volume per linear foot of well casing of common casing sizes is listed below:

Nominal Casing Diameter (inches)	Volume per Linear Foot (gallon)
2"	0.17
4"	0.66

Submersible Low Flow Pump Purging and Sampling

Wells will be purged using a submersible low flow pump prior to sample collection to assure collection of representative groundwater samples by removal of any stagnant water in the well. Wells will be purged a minimum of three well volumes or until purged dry.

In some situations, even with slow purge rates, a well may be pumped dry. In these cases, the well can be sampled following sufficient recovery (i.e., enough well volume to fill all sample containers), as this generally constitutes an adequate purge. Monitoring wells will be sampled following adequate purging by use of a low flow submersible pump and collecting samples at @500 mL/min flow for metals & semi-volatile organic compounds and @ 100 mL/min flow for volatile organic compounds if achievable in the field.

The following procedures are adhered to when using submersible pumps:

- Teflon or Polyethylene tubing is to be used and decontaminated between purging of each well
- The pump should be lowered to a depth in the water column that assures continued flow, should drawdown of the water column occur;

- Monitor the pumping to ensure proper pump operation and pumping rate, and assure continuous discharge. If drawdown occurs, lower the pump deeper into the water column;
- Purged water will be collected in a graduated bucket or similar container to allow for measurement of total volume purged; and
- Groundwater samples will be collected following the purging of three well volumes or adequate recharge of the well has been established following purging or the well dry;
- Groundwater samples are preserved as necessary and placed immediately in ice chests and cooled to a temperature to 4°C.

Field QA/QC Samples

QA/QC samples will be prepared to check the validity of the analytical data. Field QA/QC samples will include duplicate, trip blank, equipment blanks.

A non-dedicated low flow pump (only used at Dunaway but on multiple wells) is utilized for purging and sample collection from more than one monitoring well, therefore an equipment blank will be collected per sampling event to check for equipment cleanliness. Properly decontaminated sampling equipment will be washed with non-phosphate soap (i.e. alconox) and rinsed with deionized water and an equipment blank sample will be collected for analysis. Equipment water will be collected from a random selection of each type of sampling equipment used. The equipment blank sample will be analyzed for the same parameters as the samples which the equipment was used to collect.

One duplicate sample collected during each sampling event will be used to evaluate the precision of both the sample collection and analytical techniques. The duplicate sample will be collected at a random location using the same procedures as the primary sample. The duplicate sample will be handled in the same manner as the primary sample except that they will be assigned separate sample identifications. Laboratory analytical parameters for the duplicate sample will be the same as the primary sample.

Trip blanks will be prepared to provide the laboratory a means for evaluating performance of sample handling and internal laboratory QC by checking for potential constituent contamination introduced by the sample vials or the laboratory, sampling, or shipping environment. Trip blanks will be filled with organic-free deionized water at the

laboratory supplying the vials and will accompany the sample vials during shipment. One trip blank will be included in each cooler used for shipping groundwater samples to the laboratory. The trip blank samples will be analyzed for VOC's.

Sampling Handling, Preservation, and Shipment

Groundwater sampling is to be conducted by personnel wearing new gloves for each well location. Sample containers will be properly labeled (using waterproof, non-erasible ink), preserved, and packaged according to procedures outlined below. Containers used for sample collection shall be prepared and provided by the analytical laboratory. Immediately after collection, all samples requiring preservation must be preserved with the appropriate preservative (unless sample containers contain appropriate preservative provided by laboratory).

All samples are to be sealed immediately upon collection or sample preservation, immediately placed in a cooler, and maintained at approximately 4°C for shipment to the laboratory. See sampling guide below for quarterly groundwater analytical parameters and the corresponding requirements for sample containers, sample volume, preservation, and hold times.

Dunaway Timber Groundwater Semi-Annual Analytical Parameters and Sampling Guide					
Parameter	Container Type	Recommended Sample Volume	Preservative	Standard Hold Time	Analysis Method
Volatile Organic Compounds (13)	40 mL Amber Vial	40 mL	HCL	14 days	8260
Semi-Volatiles (Pentachlorophenol)	1 Liter VOA	1 Liter	None	40 days	8270
Metals (Cadmium, Lead)	250 Ml Plastic	250 mL	HNO3	180 days	6010B

Equipment Decontamination & Calibration

Field non-dedicated purging and sampling equipment will be thoroughly decontaminated in the field prior to and between sample locations. Decontamination of low flow purge pumps, water level meters will typically consist of :

- Wash or pump with water containing non-phosphate detergent to remove any foreign material;
- Rinse with or pump with tap (potable) water or deionized water for spraying off of field equipment such as water level indicator;

Field equipment is calibrated prior to each sampling event according to manufacturers specifications and is recorded in SMR Calibration Log kept on file at our office. In addition each employee is trained to operate field equipment and is recorded in SMR QA/QC Plan for field sampling.

Groundwater Sampling Field Report

The Groundwater Sampling Field Report (Appendix K) serves as a field log summary for information pertaining to groundwater sampling per event and is included in the Quarterly Monitoring Report submitted to Kentucky Division of Waste Management – Hazardous Waste Branch. Field report at a minimum will contain the following:

- Landfill name and permit number;
- Names of field personnel on site;
- Sampling date;
- Weather conditions;
- Suggested sampling sequence of sampling points;
- Well ID#;
- AKGWA#;
- Casing diameter;
- Total depth of well (to 0.01 feet);
- Top of casing elevation (to 0.01 feet);
- ISL – Depth to water prior to purging (to 0.01 feet);
- Static Water Level (to 0.01 feet);

- Calculated purge volume (3x);
- Actual purge volume removed;
- Time purged;
- Time sampled;
- Duplicate (yes or no);
- Trip Blank (yes or no);
- pH;
- Temperature;
- Conductivity;
- TDS; and

Any additional comments (including any signs that the integrity of the well is in need of repair)

Chain-of-Custody Form

The Chain-of-Custody Form is used to record the custody of all samples collected. This form documents transfer of the custody from the sampling personnel to another person, to the laboratory, or to another party such as a courier delivery service. The chain-of-custody form also serves as a sample logging mechanism for the laboratory sample custodian. These forms should generally contain the following information pertaining to the samples:

- Project name;
- Name(s) and signature(s) of the individual(s) collecting the samples;
- Sample location and identification;
- Date and time of sample collection;
- Total number of sample containers per sample location;
- Analytical parameters of interest for each sample;
- Remarks or observations;
- Signature(s) of all individual(s) relinquishing and receiving custody of the samples; and
- Name of the carrier shipping the samples.

Groundwater Monitoring Parameters and Frequency

Groundwater samples will be collected and analyzed for those parameters in accordance with the hazardous waste permit on a semi-annual basis listed as follows:

- Volatile Organic Compounds (13)
- Pentachlorophenol
- Cadmium
- Lead

In addition the following parameters will be recorded in the field and documented within the groundwater sampling field report as follows:

- pH
- Temperature
- Specific Conductance
- Total Dissolved Solids

Analytical Procedures

All laboratory analyses are to be approved EPA procedures and are listed in SW 846. Site specific listing of individual analysis as follows:

Parameter	Detection Limit mg/L	Original Permit Detection Limit	Current MCL or RSL	EPA 846 Method
Pentachlorophenol	0.001	0.01	0.001	8270C
Cadmium	0.002	0.001	0.005	6010B
Lead	0.005	0.01	0.015	6010B
*Benzene	0.001	0.001	0.005	8260B
*Toluene	0.001	0.001	1.0	8260B
*Ethylbenzene	0.001	0.001	0.7	8260B
*Xylenes	0.001	0.001	10.0	8260B
*Isopropylbenzene	0.001	0.001	- 0.45	8260B
*n-propylbenzene	0.001	0.001	- 0.66	8260B
*1,3,5-trimethylbenzene	0.001	0.001	- 0.06	8260B
*tert-butylbenzene	0.001	0.001	- 0.69	8260B

*1,2,4-trimethylbenzene	0.001	0.001	-	0.056	8260B
*sec-butylbenzene	0.001	0.001	-	2.0	8260B
*isopropyl toluene	0.001	0.001	-	-	8260B
*n-butylbenzene	0.001	0.001	-	1.0	8260B
*napthalene	0.005	0.001	-	-	8260B

*Volatile Organic Compounds

Data Evaluation and Reporting

Groundwater analytical results will be reviewed and the end of each semi-annual sampling event and compared to the Maximum Contaminant Levels (MCL's) or current Regional Screening Levels (RSL's) for tap water where MCL'S are not available.

Once the all data has been reviewed, and evaluated a Semi-Annual Groundwater Monitoring Report shall be submitted to the Cabinet within 60 days of sampling or 15 days after receipt of analyses, whichever is sooner. This report shall contain a cover letter, groundwater potentiometric surface map, groundwater sample data reporting form, groundwater sample analysis form, and laboratory data.

E-5 (c): Procedures for Establishing Background

The groundwater monitoring program will be composed of nine (9) monitoring wells located around the perimeter of the capped landfill to monitor both an upper and lower transmitting zone within the perched aquifer. The upper perched aquifer transmitting zone will consists of one upgradient background well (SB#1) and four downgradient compliance wells (SD#1, SD#2, SD#3, & SD#4). The lower perched aquifer transmitting zone will consist of one upgradient background well (DB#1) and three downgradient compliance wells (DD#1, DD#2, & DD#3). Below is a listing of monitoring wells;

Well ID#	Upper or Lower Aquifer Zone	Up or Down Gradient	Well Depth	Casing Diameter
SB#1	Upper	Up	16.30	2"
SD#1	Upper	Down	16.35	2"
SD#2	Upper	Down	11.80	2"
SD#3	Upper	Down	9.98	2"
SD#4	Upper	Down	8.70	2"

DB#1	Lower	Up	27.50	2"
DD#1	Lower	Down	40.35	2"
DD#2	Lower	Down	38.21	2"
DD#3	Lower	Down	36.25	2"

E-5 (d): Statistical Procedures

Currently each constituent is compared to the appropriate Drinking Water MCL or RSL. If there should be a repetitive analytical exceedance (corrective action required) above the MCL or RSL within any of the downgradient compliance wells from either the upper or lower monitoring zones, SMR will institute statistical evaluation. If the event should arise SMR shall perform groundwater analysis per DUMPStat version 2.1.9 software via inter-well comparison control charts to determine if any significant value differences per parameter per well (or spring) has occurred over established background values.

E-5 (e) Proposed Point(s) of Compliance

Points of compliance is considered any of the downgradient wells for either the upper (SD#1, SD#2, SD#3, & SD#4) or lower (DD#1, DD#2, & DD#3) groundwater monitoring zones for the landfill.

E-5 (f) General Requirements

The groundwater monitoring plan has been conducted for the first twenty four (24) years with approximately 6 years of groundwater monitoring remaining to fulfill the 30 year post–closure period.

All monitoring and analytical data records will be on file at the Dunaway Timber Company, Inc.'s office in Fordsville, Kentucky. Data will be reported as outlined in Part E-5 (b).

The proposed frequency of groundwater monitoring is semi-annually. The estimated cost for the remaining groundwater monitoring program as is follows:

Two (2) background monitoring, and seven (7) detection wells analyses semi-annually for six (6) years.

Per Event:		
Sampling including personnel, equipment, mileage, etc..		$940.00
Analysis		$2,700.00
Reporting		$420.00
	Subtotal	$4,060.00
12 Remaining Sampling Events X $4,600.00	Total	$48,720.00

E-6 Detection Monitoring Program

The regulated hazardous constituents associated with this closed unit are listed in Part E-5(b).

The proposed contingency plan for this facility if there is statistically significant evidence of contamination at the compliance point as is follows:

1.) The Department will be notified in writing seven (7) days when a groundwater exceedance occurs above the established MCL or RSL parameter concentration allowable limit.

2.) The facility will take the option to re-sample and re-evaluate the data within one month.

3.) If re-sampling and analysis shows no detection of hazardous constituents or no statistically significant increase at the compliance point, then the Department will be notified within seven days the cause of the error or possible cause and demonstrate that the source of the contamination came from other than the regulated unit. The demonstration may be submitted within the ninety (90) days or the permit will be modified to revise the detection monitoring program.

4.) An Engineering Feasibility Plan for corrective action will be submitted within 180 days, unless all monitored constituents are below their groundwater protection standards.

The facility may pursue alternate concentration limits.

5.) When the facility determines that the monitoring and analysis results show that the facility no longer meets a detection monitoring program, they will submit a permit modification within ninety (90) days for an appropriate program.

E-7: Compliance Monitoring Program

See information listed in E-5 & E-6

E-8: Corrective Action Program

Should the facility incur groundwater exceedances above the established groundwater MCL's or RSL's for more than two consecutive semi-annual sampling events, SMR and Dunaway Timber shall meet with the Kentucky Hazardous Waste Branch to formulate a corrective action measure appropriate for the specific release if one should occur.

E-9: Corrective Action for SWMU(s) and AOC(s)

The US EPA identified fifteen (15) Solid Waste Management Areas (SWMUs) and three (3) Areas of Concern (AOCs) within the 1991 RFA submitted to Dunaway Timber Company, inc. per an agreed order. Three SWMUs (#1, #2, and #15) were incorporated into the current landfill area. The remaining SWMUs #3 - #14 and AOCs A, B, and C have been addressed per the August 30, 2000 "*Confirmatory Sampling Work Plan*" and have since been closed per additional corrective action detailed in the July 15, 2005 "*Confirmatory Sampling and Corrective Action Report*".

At this time there are no further actions to complete for any of the listed SWMUs or AOCs. See the above mentioned reports for details and locations.

Note that interim measures were conducted between September 8th, 2010 and March 7th, 2011 to address the presence of pentachlorphenol within SD-3 per sampling events conducted on July 22, 2009 (3.87 ug/L), January 26, 2009 (2.89 ug/L), May 6, 2008 (4.12 ug/L), and January 22, 2008 (2.92 ug/L). Interim measures included the installation of one new monitoring well SD-4 within the upper water table to determine if there was any further migration of pentachlorophenol downgradient. Note that this well is now included within the semi-annual sampling plan and has had no exceedances to date for any of the required constituent parameters. In addition enhanced fluid recovery (Air and Water Vacuum Recovery) was implemented on monitoring well SD-3 to remove possible pentachlorophenol vapors, free product (none witnessed), dissolved phase pentachlorophenol, and groundwater from the perched upper zone aquifer. Since completion of these activities there has not been any further exceedances for Pentachlorophenol within SD-3 and the Interim Measures Report was approved by the Kentucky Division of Waste Management as of September 19, 2011 letter.

Since there has not been any further evidence of any pentachlorophenol within SD-3, SMR would like to formally request a "No Further Action" for Interim Measures as more than 8 sampling events have been concluded with no exceedances.

PART F: PROCEDURES TO PREVENT HAZARDS

F-1: Security

Dunaway Timber Company, Inc.'s Waste Management Unit (WMU) has been closed as a "dirty closure" landfill and is currently in post-closure status. The wood processing facility continues daily and the related buildings, work areas and product storage areas border the closed WMU to the north, east, and south. Dense woodland borders the west side of the WMU. The closed unit is remotely located from potential of an unauthorized entry of persons or livestock. There is only one main road that leads into Dunaway Timber and one access lane into the landfill area off of that main road. There is a small office when entering the main road and many buildings to go past to access the landfill before being noticed by Dunaway Timber Employees. The landfill is inspected quarterly to ensure that the warning signs are intact around the landfill unit.

F-2: Inspection Schedule

The landfill is inspected quarterly by Dunaway Personnel. See Appendix L – Quarterly Inspection Checklist.

F-3: Waiver of Preparedness and Prevention Requirements

N/A -Not Applicable / Hazardous Waste is no longer being handled.

F-4: Prevention Procedures, Structures, and Equipment

N/A -Not Applicable / The SWMU has been closed and there are no remaining structures or equipment related to this landfill.

F-5: Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste

N/A -Not Applicable / There are no ignitable, reactive, or incompatible waste that are involved with the closed WMU.

PART G: CONTINGENCY PLAN

G-1: General Information

Dunaway Timber Company, Inc. is located at Highway 1700 Fordsville, Kentucky and possesses a 1.2 acre landfill (EPA # KYD-006-369-557) composed of diesel fuel contaminated soils, pentachlorophenol contaminated soils, and metal plate waste currently in post-closure status. Groundwater is monitored semi-annually for the presence of volatiles, pentachlorphenol, cadmium and lead to ensure there is no release from the existing landfill facililty. In the event there is a detection of hazardous constituents at the compliance point, the contingency plan will be followed as outlined in Part E-6 of this submittal.

The waste constituents closed in the facility do no have the concentrations or characteristics to pose a threat of fire, explosions, or sudden release of hazardous waste constituents to air, soil, surface, or groundwater.

Other necessary contingency activities will be to perform maintenance to all the physical features to the closed landfill as noted from inspection. These activities shall be done in a manner to bring the closed landfill to a self-sustaining status as practically possible.

In the event that a release or occurs the following entities shall be notified as listed:

EMERGENCY CONTACTS

Kentucky Department for Environmental Protection Emergency Response Hotline For – (Substantial Raw Material Release at landfill or facility)	1-800-928-2380
Kentucky Hazardous Waste Branch For – (Groundwater Exceedance at Point of Compliance)	1-502-782-6470
Henry Christ / Dunaway Timber	Office- 270-276-3376 Cell- 270-929-2820
Jason Anderson / SMR Environmental Services, LLC.	Office- 270-754-3737 Cell- 270-256-2621
Fordsville Fire Department For – (Fire or Spill Release)	911 270-276-3336
Ohio County Sheriffs Office	911 270-298-4444

PART H: PERSONNEL TRAINING

H-1: Training Program

The landfill is currently closed in "post-closure status" and has an established legal area of approximately 1.2 acres. Gavin Christ with Dunaway Timber is the environmental coordinator with Dunaway Timber and is responsible for inspection and care for this unit. There are no employees assigned to the closed landfill. All current and new employees will be advised as to the precautions to take when around the landfill unit to include staying a minimum of 25 feet outside the waste boundary.

Any training necessary will be for the advising employees of the landfill location and post-closure care responsibility of Dunaway Timber Company, Inc. Some of these responsibilities would include mowing, protection of vegetation on the final cap, protection of monitoring wells, maintenance and repair of security devices and restrictions for activity around the unit.

Any personnel that come into contact with or performs maintenance must have the 40 Hour HAZWOPER training. All training must comply with 401 KAR 39:090, Section 1 and 40 CFR 264.16.

H-2: Implementation of Training Program

The training director (Gavin Christ) will train new employees within six (6) months of their employments. A record documenting training of employees (Appendix M) will be kept in the facility files.

PART I: Closure Plan, Post Closure Plan, and Financial Requirements

I-1: Closure Plan

Below is a listing of Closure Plan Activities;
Closure Plan approved 9-2-1992
Closure Certification Report submitted 1-4-1993
Closure Certification Approval Letter 4-16-1993

I-1 (f): Closure Certification

Closure Certification Report was submitted to the Division of Waste Management on January 4, 1993 and approved on April 16, 1993 (Appendix H) prior to start of Post Closure Groundwater Detection Monitoring. As stated before a copy of the Closure Certification Report was not found during the preparation of this report via open records request and is not included with this Permit Renewal Application

I-2: Post-Closure Plan

Dunaway Timber Company, Inc. has implemented a Post-Closure Plan of the "dirty closed" facility. This plan will continue for a period of thirty (30) years after the date of closure completion.

The primary purpose of the closure activities is to prevent or fetter migration of contamination in the surface soil and groundwater transmitting zones. The restrain of migration may allow the contamination to somewhat bio-degrade naturally within a controlled area with time. The construction of a low permeability cap, over the areas where infiltration would influence migration of the contaminates, is completed to meet the objectives. A groundwater monitoring program has been implemented in order to determine if the migration has been controlled. Eight (8) groundwater monitoring wells and an additional (9) ninth monitoring well has added to be monitored for a period of thirty (30) years. (See Part E of this submittal). Nine total wells have been constructed to date, with the addition of SD-4.

The Post-Closure Plan shall be implemented to achieve the following:

a. Maintain the integrity and effectiveness of the final cover including making repairs to the cap as necessary to correct the effects of erosion or other events.

All augmented seeding mixtures should be applied at the minimum rates of the initial Revegetation Plan approved in the Closure Design. Analyses for soil amendments shall be obtained from soil samples of areas that are to be re-seeded and the specified amendments shall be applied during the re-seeding.

Mowing of vegetative cover should occur frequently enough so as to not allow growth of small trees or bushes and control weeds. (A minimum of five times every growing season). Mowing machines shall be no longer than a small farm tractor.

b. Diversion Ditches: Three (3) diversion ditches were constructed to control run-on and run-off of drainage about the final cover. All ditches will be inspected for needed maintenance with inspection events occur for final cover. Ditches shall be cleaned or cleared of debris and silt in order that the design ditch line, grade and cross-section will be maintained. All areas of minor erosion shall be prepared for a seed bed and re-seeded and re-mulched according to the initial approved closure plan rates.

In the event of excessive erosion (deep gullies) occur, the owner shall contact a qualified consultant to make an assessment of the conditions and, if needed, develop a plan o f remediation. The maintenance shall occur in a manner so that the ditches approach a self-sustaining status.

c. Survey Benchmarks, Facility Markers, Signs or Barriers: All survey benchmarks or control points shall be maintained and their integrity preserved. All control point guard stakes or markers shall be maintained throughout the post-closure care period.

If any noticeable disturbance has been detected of the control points during routine maintenance inspection, the owner shall contract a qualified consultant to check over the points and if necessary, re-establish the reference datum. The change of control point datum will be supplied to the owner and made part of the "post-closure care" data files.

The closed facility will have several signs and boundary or barrier markers that will need to be maintained. They shall be repaired and/or painted in a manner to display maximum clarity and visibility.

Amendment of Plan

The owner or operator will submit a written request for a permit modification for authorization to change the approved Post-Closure Plan whenever there is a change in the expected time of closure.

The owner will submit a request for the permit modification at least sixty (60) days prior to the proposed change in the facility design or operation, or no later than sixty (60) days after an unexpected event occurred that will affect he post-closure plan.

In the event that the Director of Waste Management requests a modification due to the conditions described above, the operator will submit the written modified plan to the Director within sixty (60) days of receipt of the Director's request.

I-2 (g): Post-Closure Security

The owner/operator's plan for security will involve limiting traffic to authorized personnel to the closed waste management unit, and maintaining warning signs posted during post-closure period. Maintenance inspection checklists (Appendix L) shall document the current person(s) responsible for security or access control.

In the event Dunaway Timber Company, Inc. ceases the current wood processing facility, the method of security will be revised and may involve the installation of additional barriers such as a gate and fence around the facility.

All revised plans will be prepared and submitted to the Division for approval sixty (60) days prior to the expected time for need of change in the security control methods.

I-2 (h): Post-Closure Contact

The current contact during the post-closure period will be Mr. Henry Christ, President, Dunaway Timber Company, Inc., P.O. Box 157, Fordsville, Kentucky 42343, Phone: (270) 276-3367.

I-3: Notices Required for Disposal Facilities

I-3 (a): Certification of Closure

Prior to sixty (60) days after completion of the post-closure care period, the owner will submit to the Director by registered mail, a certification that the Post-Closure Care Plan was performed in accordance with the approved Post-Closure Plan. The certification will be signed by a registered professional engineer registered in the Commonwealth of Kentucky and by the owner. Upon the Director's request, documentation will be supplied supporting the engineer's certification until the Director releases the owner of financial assurance requirements of the post-closure plan.

I-4: Closure Cost Estimate

Post-Closure Care Cost Estimate

The following cost estimate is based on the expected cost during the remaining post-closure period of approximately six (6) years. The groundwater monitoring frequency is currently semi-annually. All amounts are based on today's costs.

Final Cover and Ditches:

Mowing Services (Subcontract Services)
Five (5) Times per year at $125.00 per event x 6 years
Owner plans on continuing on site maintenance services

$125.00 x 30 events = $3750.00

Spot re-seeding and mulching two (2) times (including equipment
two men and materials $700.00/day X 4 days = $2,800.00

Cleaning diversion ditches two (2) times (including two (2) men,
Mobilization and equipment) $850.00/day X 2 days = $1,700.00

Repair and paint boundary markers and signs
Two (2) times (Lump Sum) $1,500.00

Repair damage to monitoring well heads and barrier posts
Or survey control points at an estimated four (4) incidents

For six (6) years at $400.00 per incident $1,600.00

Subtotal: $11,350.00

*Administration:

Assuming administration is performed by a consulting
Firm - $100.00/hr. at 4 hours per year X 6 years.....$2,400.00

Transportation – six (6) trips at 60 miles each
$0.70/mile X 360 miles.....$252.00

*Inspection:

Assuming obtaining consultant for services
$90.00/hr at 6 hours per year X 6 years.....$3,240.00

Transportation – twelve (12) trips at 60 miles each
$0.70/mi. X 720 miles.....$480.00

Subtotal: $6,372.00

Post-Closure Groundwater Monitoring:

Two (2) background monitoring, and seven (7) detection wells analyses semi-annually for six (6) years.

Per Event		
Sampling including personnel, equipment, mileage, etc...		$940.00
Analysis		$2,700.00
Reporting		$420.00
		$4,060.00
12 Remaining Sampling Events x $4,060.00	Subtotal	$48,720.00

Fencing should Dunaway Timber no longer continue operations

Chain link fencing with one gate upon landfill boundaries	$18,000.00
Estimated Financial Liability for Remaining of	
Post Closure Care Period.....TOTAL	**$84,442.00**

*NOTE: At this time owner intends to conduct the maintenance services, administration, and inspection responsibilities "in house".

Copies of the current Post-Closure Care Plan will be posted with the owner at the facility.

At this time, the owner has appointed SMR Environmental Services, LLC, P.O. Box 761, Central City, KY 42330, to be responsible for updating the Post-Closure Care Plan. Mr. Henry Christ of Dunaway Timber Company, Inc. will be responsible for keeping the updated Post Closure Care Plan on file at the facility and also maintaining a copy of the post-closure period data files.

The consultant responsible for preparing, revisions or amendments to the plan will also, upon approval, be responsible for updating all copies of the posted post-closure care plans.

Financial Assurance

- $98,248 remains in balance per the original Escrow Agreement 6035J and 6035I
- $1,000,000 remains in balance per the original Trust Agreement to Demonstrate Liability Coverage 6035P.

*This was verified on March 19th, 2018 by BB&T Bank Vice President Marlene Rogers.

Financial Assurance documents are provided in Appendix M.

PART J: OTHER FEDERAL LAWS

Dunaway Timber Company, Inc.'s wood processing facility has been in operation at the same location prior to 1974. No additional land has been disturbed as a result of the spill event and subsequent "dirty closure" of the SWMU. There are no other federal laws or regulations Dunaway Timber is to comply with, in regards to the closed SWMU Landfill.

PART K: WASTE MINIMIZATION

No waste is generated onsite. The facility has had closure completed since December, 1992. Dunaway Timber Company, Inc. is currently conducting Post-Closure Care activities.

PART L: SIGNATURES

"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 knowing violations".

SIGNATURE: Robert H Christ DATE: 11/19/20

President – Dunaway Timber Company, Inc.

Subscribed and sworn to before me by: Robert H. Christ

This title 19th day of November, 2020

Notary Public: Rebecca D. Gaines #610588

My Commission Expires: 10/15/2022 State at Large Kentucky

APPENDIX A: Site Maps

DUNAWAY TIMBER SITE MAP

LEGEND

- Monitoring Well
- Landfill Boundary

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	5/18/10	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=150'	JAA	1 OF 1

LEGEND

- Monitoring Well
- Landfill Boundary

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	12/12/19	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=300'	JAA	1 OF 1

FACILITY LAYOUT MAP

DUNAWAY TIMBER COMPANY, INC.

CONTOUR INTERVAL = 10'

SCALE: 1"=200'

RICHARDS R A HEIRS
10-21
158.409492
RICHARDS R A HEIRS
10-21
23.352656
RICHARDS R A HEIRS
172-277
11-27
28.899536
10-25
21.265015
REYNOLDS JOSEPHINE E
366-285
10-22
63.627008
REYNOLDS JOSEPHINE E
366-285
ROGER COOPER RD
10-22
27.041236
REYNOLDS JOSEPHINE E
366-285
10-24
27.355883
CHRIST ROBERT H JR & DIANNA K
406-088
10-22
12.190845
RUSHER PHILLIP
341-650
14-1
169.437079
CHRIST DIANNA K
412-663
15-3
189.400994
CHRIST HENRY
387-368
15-5
57.818984
RUSHER PHILLIP
341-652
14-9
45.316424
15-4
73.297096
HAMILTON DAVID A & ROSE E
250-793
MATTINGLY RICKY LEWIS
305-195
14-10A
52.232171
EASTON RD
14-10
0.214894
14-39
1.956216
15-6A
85.306714
CHRIST ROBERT H JR & DIANNA K
396-276
15-8 ETAL
65.604878
14-40
2.13984
15-6
41.952714
BEA LAND MANAGEMENT LLC
425-553
14-37
16.792406
FUQUA JAMES W & SANDRA
237-242
15-7 & 7C
58.719274
GARDEN PROPERTIES LLC
415-643
14-41
0.305903
BEAVIN JENNIFER N
366-665
14-9-2
4.182568
Jason Chinn, PVA
301 South Main Street
Courthouse
Hartford, KY 42347
Office: 270-298-4433
Ohio County
Property Valuation Adminstration
Print Date: December 13, 2019
Aerial Date: January 2018
N
W
E
S
Maps to be used
for identification only,
NOT for conveyance.
1 inch = 415 feet

APPENDIX B

APPENDIX B: Topographic Maps & Seismic Evaluation Map

TOPOGRAPHIC MAP

LEGEND

- Monitoring Well
- Landfill Boundary
- Property Boundary

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

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		SCALE	CHECKED BY	PAGE
		1"=300'	JAA	1 OF 1

TOPOGRAPHIC MAP

FORDSVILLE USGS TOPOGRAPHIC QUADRANGLE

0' 625' 1250' 2500'

LEGEND

Property Boundary

Landfill Boundary

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
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FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	9/03/20	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=1250'	JAA	1 OF 1

SEISMIC EVALUATION MAP

EXPLANATION

WELLS

1 Exxon No. 1 Choice Duncan

2 Exxon No. 1Jimmy Bell

3 Conoco No. 1 Mark Turner

4 Texas Gas Transmission No. 1 Herman Shain

5 Sun Exploration and Production No. 1 W. W. Stephens

Anticline

Syncline

Fault

contour interval 2,500 ft

Geology and Structure of the Rough Creek Area, Western Kentucky

William D. Johnson Jr.
U.S. Geological Survey, Emeritus
and
Howard R. Schwalb
Kentucky Geological Survey and
Illinois State Geological Survey, Retired
2010

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	9/03/20	JAA	020305
		SCALE	CHECKED BY	PAGE
		No Scale		___OF___

APPENDIX C

APPENDIX C: Potentiometric Surface & Geologic Cross-Section Maps

GROUNDWATER POTENTIOMETRIC SURFACE MAP

UPPER TRANSMITTING ZONE

05-27-20

MONITORING WELL #	TOP OF CASING ELEV.	(ISL)	DATE
SB-1	509.94'	502.60	05-27-20
DB-1	503.80'	484.15'	05-27-20
SD-1	501.90'	495.42'	05-27-20
SD-2	500.12'	495.40'	05-27-20
SD-3	495.73'	491.58'	05-27-20
DD-1	510.85'	477.65'	05-27-20
DD-2	509.65'	478.60'	05-27-20
DD-3	508.27'	482.22'	05-27-20
SD-4	491.11	484.41	05-27-20

LEGEND

- Monitoring Well
- Landfill Boundary
- Groundwater Flow Direction

SMR
ENGINEERING & ENVIRONMENTAL SERVICES, INC.
P.O. DRAWER 761 CENTRAL CITY, KY 42330

DUNAWAY TIMBER LANDFILL
LANDFILL PERMIT # KYD-006-369-557
FORDSVILLE, KENTUCKY

REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	5/18/10	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=150'	JAA	1 OF 1

GROUNDWATER POTENTIOMETRIC SURFACE MAP

LOWER TRANSMITTING ZONE

05-27-20

MONITORING WELL #	TOP OF CASING ELEV.	(ISL)	DATE
SB-1	509.94'	502.60	05-27-20
DB-1	503.80'	484.15'	05-27-20
SD-1	501.90'	495.42'	05-27-20
SD-2	500.12'	495.40'	05-27-20
SD-3	495.73'	491.58'	05-27-20
DD-1	510.85'	477.65'	05-27-20
DD-2	509.65'	478.60'	05-27-20
DD-3	508.27'	482.22'	05-27-20
SD-4	491.11	484.41	05-27-20

LEGEND

- Monitoring Well
- Landfill Boundary
- Groundwater Flow Direction

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REVISIONS	BY	DATE	DRAWN BY	JOB #
	JAA	5/18/10	JAA	020305
		SCALE	CHECKED BY	PAGE
		1"=150'	JAA	1 OF 1

— LEGEND —

- Piezometer
- Piezometer & Geologic Boring
- Boring for Stratum Reference
- Approximate Existing Contours
- Upper Groundwater Transmitting Zone Potentiometric Contours
- Hydraulic Gradient
- Approximate Direction Of Groundwater Flow
- Contamination Concentration - Naphthalene
- Approximate Boundary Of Plume
- Groundwater Monitoring Stations
- Waste Management Area Limits
- Compliance Points
- Bore Hole To Coal

Scale 1" - 20'

NOTE All contours or elevations shown hereon are referenced to approximate Mean Sea Level Datum

September 13, 1991

McEWEN

Engineering & Mining Consultants, Inc.

Reynolds Metals Company, Inc.

Water Groundwater Transmitting Zone Information

Peat Chasma Part "B"

SECTION A-A'

(GEOLOGIC SECTION BEGINS UPPER RIVER - DOWN GRADIENT)

SECTION A – A' GEOLOGIC CROSS SECTION

APPENDIX D

APPENDIX D: Survey Plat