

**Annual Document of
Polychlorinated Biphenyls
at the Paducah Gaseous Diffusion Plant,
Paducah, Kentucky, for
January 1, 2019–December 31, 2019**



This document is approved for public release per review by:


FRNP Classification Support

6-24-2020
Date

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Polychlorinated Biphenyls
at the Paducah Gaseous Diffusion Plant,
Paducah, Kentucky, for
January 1, 2019–December 31, 2019**

Date Issued—June 2020

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
FOUR RIVERS NUCLEAR PARTNERSHIP, LLC,
Managing the
Deactivation and Remediation Project at the
Paducah Gaseous Diffusion Plant
under Contract No. DE-EM0004895

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ACRONYMS

CD	Certificate of Disposal
<i>CFR</i>	<i>Code of Federal Regulations</i>
CY	calendar year
DSSI	Diversified Scientific Services, LLC
EPA	U.S. Environmental Protection Agency
IWTS	Integrated Waste Tracking System
TSDf	treatment, storage, and disposal facility
UHWm	Uniform Hazardous Waste Manifest

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EXECUTIVE SUMMARY

This *Annual Document of Polychlorinated Biphenyls at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, for January 1, 2019–December 31, 2019*, (Annual Document) was prepared to meet applicable requirements of the Toxic Substances Control Act, as codified in the *Code of Federal Regulations* at 40 *CFR* Part 761, Subpart J. The mailing address for the U.S. Department of Energy Paducah Site is 5501 Hobbs Road, Kevil, Kentucky 42053. The physical address is 5600 Hobbs Road, Kevil, Kentucky 42053. The U.S. Environmental Protection Agency (EPA) Identification Number is KY8-890-008-982. The Annual Document provides records and information required by 40 *CFR* § 761.180(a), Records and Monitoring.

The Annual Records required by 40 *CFR* § 761.180(a)(1) are located in Sections 1–4 and address the signed manifests, certificates of disposal, waste storage area inspections, and spill cleanup activities, respectively. The information for the annual document log, which is required by 40 *CFR* § 761.180(a)(2), is located in Section 1 and Sections 5–7. The annual document log includes the name, address, and EPA identification number of the facility, unique manifest number of every polychlorinated biphenyl (PCB) waste manifest generated by the facility during the calendar year (CY) (Section 1), PCB electrical equipment remaining in service at the end of the CY (Section 5), information on PCB waste shipped off-site and stored at the facility (Section 6), and PCB waste shipment receipt log (Section 7). The appendices contain the PCB waste manifests, PCB waste certificates of disposal, PCB waste storage area inspection records, and PCB waste inventory tables.

The PCB items in service and PCB activities at the Paducah Site for CY 2019 are summarized below:

PCB transformers in service as of 12/31/2019:	0
Total PCBs in kg in PCB transformers as of 12/31/2019:	0
PCB large capacitors in service as of 12/31/2019:.....	0
PCB waste in kg ¹ generated in CY 2019:	5,736
PCB waste in kg ² shipped off-site for treatment/disposal in CY 2019:.....	4,818
PCB waste in kg ³ remaining in storage for disposal as of 12/31/2019:.....	36,203

Throughout CY 2019, the Paducah Site generated nine manifested shipments of PCB wastes to off-site treatment/disposal facilities. Eight Certificates of Disposal were received in CY 2019 for PCB wastes disposed of.

Due to the nature and history of operations at the Paducah Site, all PCB waste is suspected of being radiologically contaminated, and all PCB waste is considered potentially radiologically contaminated until it is certified otherwise. The U.S. Department of Energy has ongoing programs to characterize the radiological contamination of waste so it can be disposed of appropriately. In accordance with 40 *CFR* § 761.65, PCB wastes shall not be stored for more than one year. Radiologically contaminated PCB wastes may be stored beyond the one-year limit as outlined in 40 *CFR* § 761.65(a)(1). Efforts to secure disposal of radioactive PCB waste items exceeding the one-year storage limitation are discussed in the *Annual Compliance Agreement Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, January 1 through December 31, 2019*, FRNP-RPT-0153, dated June 2020 in accordance with the

¹ The weights in kg are taken from the Integrated Waste Tracking System (IWTS), Requests for Disposal, or generator supplied information and may be estimated.

² The weights in kg were taken from the Uniform Hazardous Waste Manifests, as shown in Table 1.1, which differ from IWTS weights shown in Table D.4.

³ See note 1.

Modification to the February 20, 1992, Compliance Agreement Between the United States Department of Energy and the United States Environmental Protection Agency, Washington, D.C., Toxic Substances Control Act, approved May 30, 2017.

1. PCB WASTE MANIFESTS

Uniform Hazardous Waste Manifests (UHWMs) of polychlorinated biphenyl (PCB) wastes shipped by the facility during the calendar year (CY) are annual records required by 40 *CFR* § 761.180(a)(1)(i). This section of the Annual Document contains the signed manifests of PCB wastes shipped off-site for disposal during CY 2019.

Nine manifests with 30 containers of solid and liquid PCB wastes were shipped for disposal. Copies of the UHWMs are located in Appendix A. PCB wastes were shipped to the following disposal sites:

- EnergySolutions disposal facility in Clive, UT;
- Diversified Scientific Services, LLC, (DSSI) Perma-Fix facility in Kingston, TN; and
- Clean Harbors Deer Park, LLC facility in LaPorte, TX.

Table 1.1 summarizes the 2019 manifested PCB waste shipments. The table includes the manifest number, the shipment destination, the number of PCB containers/items on the manifest, and the net weight in kilograms of PCBs containers/items shipped. The weights listed in this table were obtained from the UHWMs. The weights of wastes listed on the manifests were calculated based on the weight of the PCB-contaminated waste contents of the shipping container(s) or the estimated volume of the shipment. The weight on the manifest may differ from the weight recorded in the Integrated Waste Tracking System (IWTS) and the PCB and Additional Information attachment to the UHWM. When completing manifest documentation, the Deactivation and Remediation Contractor works with various treatment, storage, and disposal facilities (TSDFs) to facilitate acceptance. On occasion, the manifested weights are adjusted due to factors such as differences in the receiving facility's scale or because the TSDF requires the gross weight to be manifested instead of the net weight; however, the waste database is kept intact to reflect the operating weights while the waste was managed on-site.

Table 1.1. PCB Waste Manifests Summary

UHMW Number	Date Shipped	Shipment Destination	Number of PCB Containers	Weight from UHMW (kg)^{1,2}
013496416FLE	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	9	1,410
019694554JJK	2/25/2019	<i>EnergySolutions</i> , Clive, UT	2	191
019694567JJK	2/27/2019	DSSI, Inc., Kingston, TN	4	772
019694615JJK	6/18/2019	<i>EnergySolutions</i> , Clive, UT	3	1,350
019694647JJK	8/21/2019	DSSI, Inc., Kingston, TN	4	839
019694669JJK	9/10/2019	DSSI, Inc., Kingston, TN	1	109
019694693JJK	10/31/2019	<i>EnergySolutions</i> , Clive, UT	5	118
019694703JJK	9/25/2019	DSSI, Inc., Kingston, TN	1	3
019694743JJK	12/16/2019	<i>EnergySolutions</i> , Clive, UT	1	25
Total UHMW: 9			30	4,818

¹ The weights in kg were taken from the UHMWs which may differ from IWTS weights shown in Table D.4.

² Due to rounding, the weight totals may vary by 1 kg.

2. PCB WASTE CERTIFICATES OF DISPOSAL

Certificates of Disposal (CDs) that have been received by the facility during the CY for PCB wastes disposed of are annual records required by 40 *CFR* § 761.180(a)(1)(ii). Eight CDs were received in 2019 from the following facilities:

- EnergySolutions disposal facility in Clive, Utah;
- DSSI Perma-Fix facility in Kingston, Tennessee; and
- Materials and Energy Corporation facility in Oak Ridge, TN.

Table 2.1 lists the UHWM number, disposal facility, date disposed of, number of PCB containers/items disposed of, and weight in kilograms of PCBs items shipped. The weights listed in the table were obtained from the UHWMs.

The CDs are presented in Appendix B. If the CD received in 2019 was for waste shipped in 2019, the manifests are shown in Table 1.1 and Appendix A.

Table 2.1. PCB Waste Certificates of Disposal Summary

UHWM	Earliest Date Removed from Service	Date Shipped	Disposer	Containers Disposed of	Net Weight from UHWM (kg) ¹	Date of Disposal	Date CD Received
006841816JJK	4/28/2016	8/19/2016	DSSI, Inc., Kingston, TN	1	29	4/29/2019	8/29/2019
006841816JJK	7/7/2016	8/19/2016	DSSI, Inc., Kingston, TN	1	11	4/29/2019	8/29/2019
006841893JJK	5/8/2017	7/11/2017	Materials and Energy Corporation, Oak Ridge, TN	1	0 ²	9/7/2017	1/18/2019
006841953JJK	9/19/2017	8/23/2018	DSSI, Inc., Kingston, TN	1	119	2/9/2019	2/14/2019
006841953JJK	9/20/2017	8/23/2018	DSSI, Inc., Kingston, TN	1	117	2/9/2019	2/14/2019
019694524 JJK	4/18/2018	9/26/2018	EnergySolutions , Clive, UT	1	24	6/13/2019	6/14/2019
019694524 JJK	6/7/2018	9/26/2018	EnergySolutions , Clive, UT	1	27	6/13/2019	6/14/2019
019694524 JJK	8/9/2018	9/26/2018	EnergySolutions , Clive, UT	1	26	6/13/2019	6/14/2019
019694525JJK	4/23/2018	9/26/2018	EnergySolutions , Clive, UT	1	191	8/16/2019	8/23/2019
019694554JJK	4/25/2018	2/25/2019	EnergySolutions , Clive, UT	1	169	6/27/2019	7/3/2019
019694554JJK	9/5/2018	2/25/2019	EnergySolutions , Clive, UT	1	23	6/27/2019	7/3/2019
019694615JJK	6/27/2018	6/18/2019	EnergySolutions , Clive, UT	1	471	6/27/2019	7/3/2019
019694615JJK	7/25/2018	6/18/2019	EnergySolutions , Clive, UT	1	360	6/27/2019	7/3/2019
019694615JJK	8/10/2018	6/18/2019	EnergySolutions , Clive, UT	1	519	6/27/2019	7/3/2019
019694647JJK	8/22/2018	8/21/2019	DSSI, Inc., Kingston, TN	1	306	12/10/2019	12/19/2019
019694647JJK	9/5/2018	8/21/2019	DSSI, Inc., Kingston, TN	1	153	12/10/2019	12/19/2019
Totals ³				16	2,546		

¹ The weights in kg were taken from the UHWMs, as shown in Table 1.1, which differs from IWTS weights shown in Table 6.1.

² Weight listed as zero due to rounding 0.045 kg.

³Due to rounding, the weight totals may vary by 1 kg.

3. PCB WASTE STORAGE AREA INSPECTION RECORDS

Records of inspections performed in accordance with 40 *CFR* § 761.65(c)(5) are annual records required by 40 *CFR* § 761.180(a)(1)(iii).

Table 3.1 lists the PCB waste storage areas (i.e., a building or an area within a building) established and/or operated for PCB wastes at the Paducah Site during CY 2019. Appendix C contains information from the PCB Waste Inspection database and lists the dates of inspection and a “Yes/No” check to indicate if leaks/spills were found.

Table 3.1. PCB Waste Storage Areas at the Paducah Site

Building	Waste Area Designator
C-331	G-331-PCB-01 ^{a, b}
C-335	G-335-04 ^{a, c}
C-337	G-337-02 ^a
C-337	G-337-03 ^a
C-337	G-337-05 ^{a, d}
C-337	G-337-PCB-02 ^a
C-337	S-337-05 ^{e, f}
C-733	C-733
C-746-Q	C-746-Q
C-752-A	C-752-A
C-753-A	C-753-A
C-757	G-757-03 ^a

^aWaste Area Designators that begin with a “G” indicate a generator staging area, which is a temporary storage area for non-Resource Conservation and Recovery Act, PCB, and/or low-level (radioactive) waste.

^bG-331-PCB-01 was closed on June 19, 2019.

^cG-335-04 was closed on June 19, 2019.

^dG-337-05 was closed on October 16, 2019.

^eWaste Area Designators that begin with a “S” indicate a satellite accumulation area, which is a temporary storage area for Resource Conservation and Recovery Act, PCB, and/or low-level (radioactive) waste.

^fS-337-05 was opened on July 30, 2019, and closed on October 16, 2019.

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4. PCB SPILL CLEANUP RECORDS

Records of cleanup and disposal of any spilled or leaked materials from PCB Items in storage in accordance with 40 *CFR* § 761.65(c)(5) are annual records required by 40 *CFR* § 761.180(a)(1)(iii). Because no spills occurred in PCB storage areas during CY 2019, there are no records.

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5. PCB ELECTRICAL EQUIPMENT IN SERVICE

No PCB (≥ 500 ppm) transformers or PCB (≥ 500 ppm) large capacitors were in service at the Paducah Site as of December 31, 2019, which is summarized in Table 5.1. In addition, no PCB transformers or PCB large capacitors were removed from service in CY 2019. Sixty-seven PCB transformers were removed from service, drained, and flushed during 2015. They were stored in place in C-337 during CY 2019. Residual flushate was removed over time as it drained through and collected in the units.

There are no CY 2019 PCB transformer maintenance records because there was no maintenance performed on these transformers, and the transformers currently are not in service.

**Table 5.1. PCB Electrical Equipment in Service
as of December 31, 2019**

Type	Number in Service	Volume (gal)	PCB (kg)
PCB transformers*	0	0	0
PCB large high-voltage capacitors	0	0	0

*There were 67 PCB transformers that were removed from service, drained, flushed, and stored in place in 2015. Due to their size and the structural interferences in the process buildings, options for disposal of these items continue to be evaluated.

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6. PCB WASTE ACTIVITY

PCB waste activities performed by the facility during the CY 2019 are annual records required by 40 *CFR* § 761.180 (a)(2)(iii). The PCB Waste Activity Summary for CY 2019 is shown in Table 6.1. Detail tables supporting the summary table are located in Appendix D. Throughout the tables, the PCB Date, often referred to as PCB DTS (date to storage), reflects the date PCB waste was first added to a container and is the origin date of the container.

The PCB Waste Inventory for December 31, 2018, has been adjusted from the “PCB Waste Inventory as of December 31, 2018,” reported as Table 10.9 of the *Annual Document of Polychlorinated Biphenyls at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, for January 1, 2018–December 31, 2018*, FRNP-RPT-0101. The net changes to the January 1, 2019, beginning inventory include adjustments because of in-process collection containers at the time of 2018 inventory, information received after the 2018 report submittal, and/or weight corrections. The detailed listing of the December 31, 2018, corrections and adjustments is provided in Appendix D, Table D.1.

The detailed listing of PCB waste generated during CY 2019 table is provided in Appendix D, Table D.2.

The detailed listing of the adjustments to the CY 2019 PCB inventory is provided in Appendix D, Table D.3.

The detailed listing of the PCB waste shipped in CY 2019 is provided in Appendix D, Table D.4.

The detailed listing of the PCB waste inventory as of December 31, 2019, is provided in Appendix D, Table D.5.

There was no PCB waste received from off-site facilities in CY 2019.

Table 6.1. PCB Waste Activity Summary for CY 2019

PCB Waste Items In Inventory	12/31/2018 Inventory		Corrections and Adjustments to Beginning Inventory ^a		1/1/2019 Inventory		Generated		Corrections to 2019 Inventory ^b		Shipped for Disposal		12/31/2019 Inventory	
	<i>pc</i>	<i>kg</i>	<i>pc</i>	<i>kg</i>	<i>pc</i>	<i>kg</i>	<i>pc</i>	<i>kg</i>	<i>pc</i>	<i>kg</i>	<i>pc</i>	<i>kg</i>	<i>pc</i>	<i>kg</i>
ARTICLES	2	32,795	0	0	2	32,795	0	0	0	0	0	0	2	32,795
<i>PCB Transformers (drained)</i>	2	32,795	0	0	2	32,795	0	0	0	0	0	0	2	32,795
ARTICLE CONTAINERS^c	5	2,714	0	56	5	2,771	2	1,018	0	0	5	2,771	2	1,018
<i>Large Capacitors</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Light Ballasts</i>	2	272	0	56	2	328	1	46	0	0	2	328	1	46
<i>Misc. Equip. (motors, pumps, etc.)</i>	3	2,442	0	0	3	2,442	1	973	0	0	3	2,442	1	973
CONTAINERS	9	1,143	0	321	9	1,463	30	4,718	0	0	25	3,791	14	2,390
<i>Liquids^d</i>	5	564	-1	310	4	874	17	3,315	0	0	15	2,943	6	1,246
<i>Solids</i>	4	579	1	11	5	590	13	1,403	0	0	10	848	8	1,144
BULK PCB REMEDIATION WASTE SOLIDS < 49 MG/Kg^e	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL^f	16	36,652	0	377	16	37,029	32	5,736	0	0	30	6,562	18	36,203

pc = piece count; *kg* = kilogram (rounded to the nearest whole number for the summaries)

^a The Corrections and Adjustments to Beginning Inventory column includes adjustments because of in-process collection containers at time of 2018 inventory, information received after the 2018 report submittal, characterization waste category adjustments, and/or weight corrections. Weights reported in this summary include the weight of the container (drum/box), except for tanks/tankers.

^b The Adjustments to 2019 Inventory column includes adjustments due to repackaging of wastes or because of in-process collection containers during time of 2019 inventory. Weights reported in this summary include the weight of the container (drum/box), except for tanks/tankers.

^c Article Containers are drums or boxes of PCB transformers, PCB large capacitors, electrical equipment, PCB light ballasts, or PCB small capacitors.

^d Portable (mobile) tanks and totes are counted as Containers.

^e PCB Remediation Waste Solids disposed at the on-site C-746-U Landfill

^f Due to rounding, the weight totals may vary by 1 kg.

7. PCB WASTE SHIPMENT RECEIPT LOG

A PCB waste shipment receipt log is required by 40 *CFR* § 761.180(a)(2)(viii). The log is included as Table 7.1. The table is an excerpt from a data file, which includes a record of phone calls or other agreed method to confirm receipt of PCB waste shipments. Information in the log that is not required for this report has been omitted from Table 7.1.

Table 7.1. CY 2019 PCB Waste Shipment Receipt Log

Actual Ship Date	Shipment Destination	UHMW #	Comments / Notes	Date Manifest Received	Comments for Manifest Inquiries and Requests	TSCA	Confirmation e-mail received from TSDF
5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE	(9) Containers of Hazardous/TSCA Waste	6/20/2019		RCRA/TSCA Mixed (RTM)	PCB confirmation of arrival from Vivian at CH on 5/29/19 via phone
2/25/2019	EnergySolutions, Clive, UT	019694554JJK	(2) Drums of TSCA/LLW	3/1/2019		TSCA MIXED (TM)	Received PCB confirmation from Albert Evans via e-mail on 2/28/2019
8/21/2019	DSSI, Inc., Kingston, TN	019694647JJK	(6) Drums of Mixed Waste (Unused Kerosene), (4) Drums of PCB/LLW (Oiled Filled Door Closures and Vent Duct Oil and Water), and (1) Drum of LLW (PF Pump Oil)	8/22/2019	Received signed manifest on 8/22/2019; however, further analysis will be completed prior to applying management codes. Received manifest with management codes on 9/25/2019.	RTM	Received PCB confirmation from Tibby Snipes via e-mail on 8/22/2019
9/10/2019	DSSI, Inc., Kingston, TN	019694669JJK	(41) Containers of MLLW and (1) Container of PCB/LLW	9/12/2019	Received UHMW with management codes on 10/08/2019.	RTM	Received PCB confirmation from Tibby Snipes via e-mail on 9/12/2019
10/31/2019	EnergySolutions, Clive, UT	019694693JJK	(5) Drums of TSCA Waste – RAGS, PANS, PLASTIC, PADS, PPE	11/18/2019		TM	Received PCB Delivery Confirmation from Albert Jones via e-mail on 11/5/2019
9/25/2019	DSSI, Inc., Kingston, TN	019694703JJK	(4) Drums of RCRA and TSCA Waste	9/28/2019	Received signed manifest on 9/28/2019; however, further analysis will be completed prior to applying management codes. Received management codes on 10/22/2019.	RTM	Received PCB confirmation from Tibby Snipes via e-mail on 9/28/2019
12/16/2019	EnergySolutions, Clive, UT	019694743JJK	(1) Drum of MLLW with TSCA	12/20/2019		RTM	Received PCB Delivery confirmation from EnergySolutions via phone on 12/19/2019
2/27/2019	DSSI, Inc., Kingston, TN	019694567JJK	(4) Drums of TSCA/LLW and (1) Drum of Corrosive Liquids-RCRA	2/28/2019	Received signed manifest on 2/28/2019; however, further analysis will be completed prior to applying management codes. Received signed manifest with management codes on 4/3/2019.	RTM	Received PCB confirmation from Tibby Smith via e-mail on 2/28/2019
6/18/2019	EnergySolutions, Clive, UT	019694615JJK	(3) ST-90s of MLLWTSCA (Pot Heads) & (8) Drums of MLLW (circuit boards and light bulbs)	6/24/2019		RTM	Received PCB confirmation from Albert Evans via phone call on 6/21/2019


APPENDIX A
PCB WASTE MANIFESTS

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UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY8890008982	2. Page 1 of 12	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 013496416 FLE		
5. Generator's Name and Mailing Address Four Rivers Nuclear Partnership, LLC 5511 Hobbs Road -Kevil, KY 42053 Generator's Phone: (270) 441-6698				Generator's Site Address (if different than mailing address) SAME			
6. Transporter 1 Company Name Clean Harbors Environmental Services, Inc.				U.S. EPA ID Number MAD039322250			
7. Transporter 2 Company Name <i>Deer Park</i>				U.S. EPA ID Number <i>TXD055141378</i>			
8. Designated Facility Name and Site Address Clean Harbors Deer Park, LLC 2027 Independence Parkway South La Porte, TX 77571 Facility's Phone: (281) 930-2306				U.S. EPA ID Number TXD055141378			
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	
			No.	Type			
	1.	UN3092, WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S., (PCB'S, LEAD), 9, PG III (1 LB) (PCB, D008)	9	DM	1410 3109	K P	
	2.						
13. Waste Codes D008 D009 D022 D039 DUTS2.9H							
14. Special Handling Instructions and Additional Information 1. CH1030668 ASB#171 Emergency phone # (270) 441-6211 MD: 0349674 Truck: 785437 Accumulation start date: 3/12/19 Contract retained by generator confers agency							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
TRANSPORTER / INTL	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name Steve Gaffard		Signature <i>Steve Gaffard</i>		Month Day Year 5/28/19		
Transporter 2 Printed/Typed Name Mark Stromms		Signature <i>Mark Stromms</i>		Month Day Year 10/1/19			
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	18b. Alternate Facility for Generator (if any) Manifest Reference Number: _____ U.S. EPA ID Number: _____						
18c. Signature of Alternate Facility (or Generator) BY: <i>[Signature]</i> Month Day Year _____							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H040		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 19a							
Printed/Typed Name Gray		Signature <i>Gray</i>		Month Day Year 6/15/19			

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. **DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM**
Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)		21. Generator ID Number KY8890008982	22. Page 2	23. Manifest Tracking Number 013496416 FIE						
24. Generator's Name Four Rivers Nuclear Partnership										
25. Transporter Company Name		Cleav Harbor's Env. Svcs. Inc.		U.S. EPA ID Number MAAD 039322250						
26. Transporter Company Name		U.S. EPA ID Number								
GENERATOR	27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		28. Containers		29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
		No.		Type						
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
32. Special Handling Instructions and Additional Information										
TRANSPORTER	33. Transporter Acknowledgment of Receipt of Materials									
	Printed/Typed Name Lauren Piwonka				Signature 	Month Day Year 16 5 19				
DESIGNATED FACILITY	34. Transporter Acknowledgment of Receipt of Materials									
	Printed/Typed Name				Signature	Month Day Year				
35. Discrepancy										
36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)										

PCB and Additional Information Attachment, Page 2 of 2

Manifest Number: 013496416 FLE

Shipment ID Number: 013496416 FLE

Shipment Date: 5/28/2019

UHM Section	RFD	Container / WASTE ID	Description	PCB Date to Storage	Accumulation Storage Date	WASTE VOLUME (gal)	GROSS WT (lb)	GROSS WT (Kg)	NET WT (lb)	NET WT (Kg)
9b.1	121734	121734-01	PCB Contaminated Transformer Oil	3/12/2019	03/12/19	7	426	193	370	168
9b.1	121734	121734-02	PCB Contaminated Transformer Oil	3/20/2019	03/20/19	6.73	446	202	390	177
9b.1	121734	121734-03	PCB Contaminated Transformer Oil	3/28/2019	03/28/19	6.73	446	202	390	177
9b.1	121734	121734-04	PCB Contaminated Transformer Oil	4/3/2019	04/03/19	7.4	436	198	381	173
9b.1	121734	121734-05	PCB Contaminated Transformer Oil	4/15/2019	04/15/19	7.4	410	186	354	161
9b.1	121734	121734-06	PCB Contaminated Transformer Oil	4/23/2019	04/23/19	7.4	428	194	372	169
9b.1	121734	121734-07	PCB Contaminated Transformer Oil	4/23/2019	04/23/19	7.4	434	197	378	171
9b.1	121734	121734-08	PCB Contaminated Transformer Oil	5/5/2019	05/05/19	7.4	430	195	374	170
9b.1	121734	121734-09	PCB Contaminated Transformer Oil	5/6/2019	05/06/19	7.4	156	71	100	45
Totals:						64.86	3612	1638	3109	1410

Equal Employment Opportunity, all provisions of the Executive Order 11246, as amended by Executive Order 11375, and of the rules, regulations, and relevant orders of the Secretary of Labor are incorporated herein.



Land Disposal Restriction
Notification Form

Printed Date : May 23, 2019

MANIFEST INFORMATION

Generator : Four Rivers Nuclear Partnership, LLC
Address: 5511 Hobbs Road
Kevil, KY 42053

Manifest Tracking Info.

013496416fle

EPA ID #: KY8890008982

Sales Order No: 1902715534

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1030668	NON-WASTEWATER	2 (This is subject to LDR.)

EPA Waste Code	EPA Waste SubCategory
D008	Toxicity Characteristic for Lead

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
CADMIUM	Y	N	N
TOTAL PCB'S (SUM OF ALL PCB ISOMERS, OR ALL AROCHL	Y	N	N

Certification

Applies to Manifest Line Items

Pursuant to 40 CFR 268.7(a), I hereby notify that this shipment contains waste restricted under 40 CFR Part 268.

1.

Waste analysis data, where available, is attached.

Signature : [Handwritten Signature]
Title : Transportation Specialist

Print Name : LaShelle Telford
Date : 5-23-19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 013496416 FLE
 Profile No.: CH1030668 State Manifest No.: NA

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
 2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

Waste Code	Subcategory	Hazardous Constituent(s)	Management	Other
1	D022	CHLOROFORM	<input checked="" type="checkbox"/>	A
2	D039	TETRACHLOROETHENE	<input checked="" type="checkbox"/>	A
3	D008	LEAD	<input checked="" type="checkbox"/>	A
4	D018	BENZENE	<input checked="" type="checkbox"/>	A

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. **RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1. **RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3. **GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4. **DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. **RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. **RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. **WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Doni Steh* Title Waste Engineer Date 5/21/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

Form A1 and F005 spent solvent constituents and other hazardous waste codes	Treatment Standard		Form A1 and F005 spent solvent constituents and other hazardous waste codes	Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CARBN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 613496416 FLE

Profile No.: CH1530668 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	USEPA Waste Code	USEPA Subcategory	Management	Other
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				

SS 5/21/19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Donna Stehr

Title Waste Engineer

Date 5/21/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 013496416 FLR
Profile No.: CH1030668 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste No.	Waste Description	Subcategory	Management	Other
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
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55				
56				
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60				
61				
62				
63				
64				
65				

SS 5/21/19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Dominic Steh* Date 5/21/19
Title Waste Engineer

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP

Manifest Doc. No. : 013496416 FLE

Profile No.: CH1030668

State Manifest No.: NA

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	5/21/19	0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxaryl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	A	0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs (All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol	5.6	170	Propam		0.056 ¹	1.4 ¹	
Isodrin	0.021	0.066	Propoxur		0.056 ¹	1.4 ¹	
Isosafrole	0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹	
Kepone	0.0011	0.13	Pyrene		0.067	8.2	
Methacrylonitrile	0.24	84	Pyridine		0.014	16	
Methanol	5.6	0.75 mg/l ¹	Safrole		0.081	22	
Methapyrilene	0.081	1.5	Silvex/2,4,5-TP		0.72	7.9	
Methiocarb	0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14	
Methomyl	0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001	
Methoxychlor	0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001	
3-Methylcholanthrene	0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0	
4,4'-Methylene bis(2-chloroaniline)	0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0	

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	55 5/21/19	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ¹
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium	A	0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate	0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴	
Vemolate	0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP	
Vinyl chloride	0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵	
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)	0.32	30	Silver		0.43	0.30 mg/l TCLP	
			Silver		0.43	0.14 mg/l TCLP ⁴	
			Sulfide		14	NA ²	
			Thallium		1.4	0.078 mg/l TCLP ¹	
			Thallium		1.4	0.20 mg/l TCLP ⁴	
			Vanadium		4.3 ²	1.6 mg/l TCLP ²	
			Zinc	A	2.61	4.3 mg/l TCLP ²	

1 These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
 2 Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
 3 These compounds are regulated by the sum of their concentration instead of as individual constituents.
 4 These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
 5 Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

FRNP is responsible for performing all Resource Conservation and Recovery Act (RCRA) generator activities on behalf of each FRNP and use for all activities under the RCRA... EM0004895, including, but not limited to, characterizing waste, manifesting waste to off-site facilities, packaging and labeling waste for transport, and storing and managing waste, in accordance with RCRA requirements. Transportation hereunder is for DOE and the actual total transportation charges paid are to be reimbursed by the Government pursuant to Contract DE-EM0004895.

Form Approved, OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY 8890008982	2. Page 1 of 2	3. Emergency Response Phone 1-270-441-6211	4. Manifest Tracking Number 019694554 JJK			
5. Generator's Name and Mailing Address Four Rivers Nuclear Partnership, LLC, (FRNP) on behalf of FRNP 5511 Hobbs Road, Kevill, KY 42053 Generator's Phone:				Generator's Site Address (if different than mailing address) FRNP on behalf of the FRNP Paducah Gaseous Diffusion Plant, 5511 Hobbs Rd, Kevill, KY 42053				
6. Transporter 1 Company Name RSB LOGISTICS Inc.				U.S. EPA ID Number WAR000012005				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address EnergySolutions Clive Disposal Bulk Waste US I-80 Exit 49, Clive, UT 84029 Facility's Phone: 1-435-884-0155				U.S. EPA ID Number UTD982598898				
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit W/LVol.	13. Waste Codes
	RQ	1. UN 2913, Radioactive material, surface contaminated objects (SCO-1), 7, (PCB), Np-237, Tc-99, Th-230, U-234, U-235, U-238, Solid/Oxide, 4B MBq, Fissile Excepted		2 DM		181	K	
		2.						
		3.						
		4.						
14. Special Handling Instructions and Additional Information Truck: 50116 Trailer: 253238 TID: 349526 <i>see above for additional info.</i> Accumulation Start Date: N/A PCB Start Date: 04/25/18 ERG # 162 In the event of an RQ Release, call 1-800-424-8802 If undeliverable, return to generator Exclusive Use Shipment. See PCB Attachment for Additional Info Shipment ID: 9750-09-0004								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Officer's Printed/Typed Name <i>Hegina Pea</i>				Signature <i>Hegina Pea</i>		Month Day Year 02 25 19		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name <i>Mark Patzner</i>				Signature <i>Mark Patzner</i>		Month Day Year 02 25 19		
Transporter 2 Printed/Typed Name				Signature		Month Day Year		
18. Discrepancy <input type="checkbox"/> Quantity <input checked="" type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
18a. Discrepancy Indication Space								
18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number _____								
18c. Signature of Alternate Facility (or Generator) BY: <i>[Signature]</i> Month Day Year _____								
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1. H132		2.		3.		4.		
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name <i>Albert Ems</i>				Signature <i>Albert Ems</i>		Month Day Year 02 28 19		

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

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PCB and Additional Information Attachment, Page 2 of 2

Manifest Number: 019694554 JJK

Shipment ID Number: 9750-09-0004

Shipment Date: 2/25/2019

UHWM Section	RFD	Container / WASTE ID	Barcode	Description	PCB Date to Storage	NET VOLUME (ft3)	GROSS Wt (lb)	Gross Wt (Kg)	NET Wt (lb)	Net Wt (Kg)	Maximum Activity MBq
9b.1	121424	121424-05	PAD18C40897	SPILL CLEANUP DEBRIS FROM VENT DUCT TROUGHS	09/05/18	7.4	106	48	50	23	23
9b.1	121516	121516-01	PAD18C40576	PCB LIGHT BALLASTS/TRANSFORMERS/CAPACITORS/ETC.	04/25/18	7.4	428	194	372	169	23
		Totals	2			14.8	534	242	422	191	46

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Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY 8890008982	2. Page 1 of 2	3. Emergency Response Phone 1-270-441-6211	4. Manifest Tracking Number 019694567 JJK			
5. Generator's Name and Mailing Address Four Rivers Nuclear Partnership, LLC, (FRNP) 5511 Hobbs Road, Kevil, KY 42053				Generator's Site Address (if different than mailing address) FRNP Paducah Gaseous Diffusion Plant, 5511 Hobbs Rd, Kevil, KY 42053				
6. Transporter 1 Company Name RSB LOGISTIC Inc.		U.S. EPA ID Number WAR000012005		7. Transporter 2 Company Name U.S. EPA ID Number				
8. Designated Facility Name and Site Address Diversified Scientific Services, Inc. DSSI 857 Gallaher Road Kinston, TN 37763 1-865-376-8747				U.S. EPA ID Number TND982109142				
9a. HM		9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
1. RQ		UN 2912, Radioactive material, low specific activity (LSA-I), 7. (PCB), Am-241, Np-237, Pu-238, Pu-239, Tc-98, Th-230, Liquid/Oxide, 1.76 MBq, Fissile Excepted		4 DM		772	K	
2. X		UN 1760, Waste, Corrosive liquids, n.o.s. (contains Zinc Chloride Solution), 8, III		1 DM		3	K	D002
3.								
<p>Four Rivers Nuclear Partnership, LLC (FRNP) and the U.S. Department of Energy (DOE) are co-generators pursuant to a Co-Generator agreement dated September 13, 2017. Under this agreement, FRNP is responsible for performing all Resource Conservation and Recovery Act (RCRA) generator activities on behalf of both FRNP and DOE for all activities under the scope of FRNP's Contract DE-EM0004895, including, but not limited to, characterizing waste, manifesting waste to off-site facilities, packaging and labeling waste for transport, and storing and managing waste, in accordance with RCRA requirements. Transportation hereunder is for DOE and the actual total transportation charges paid are to be reimbursed by the Government pursuant to Contract DE-EM0004895.</p>								
<p>14. Special handling instructions and Additional Information Truck: 50216 Van: 253251 TID: 2058516 Accumulation Start Date: 3/8/2018 PCB Date to Storage 10/10/17 ERG # 162, 154 In the event of an RQ Release, call 1-800-424-8802 If undeliverable, return to generator Exclusive Use Shipment, See Attachment for Additional Info Shipment ID:</p>								
<p>15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.</p>								
Generator's/Offeror's Printed/Typed Name <i>LaChelle Telfair on behalf of FRNP</i>				Signature <i>LaChelle Telfair</i>		Month Day Year 2 27 19		
<p>16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____</p>								
<p>17. Transporter Acknowledgment of Receipt of Materials</p>								
Transporter 1 Printed/Typed Name <i>Rick Campbell</i>				Signature <i>Rick Campbell</i>		Month Day Year 2 27 19		
Transporter 2 Printed/Typed Name				Signature		Month Day Year		
<p>18. Discrepancy</p>								
<p>18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection</p>								
18b. Alternate Facility (or Generator)						U.S. EPA ID Number		
Facility's Phone:						BY: <i>AR</i>		
18c. Signature of Alternate Facility (or Generator)						Month Day Year		
<p>19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)</p>								
1.		2.		3.		4.		
<p>20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a</p>								
Printed/Typed Name <i>Tiffany Clark</i>				Signature <i>Tiffany Clark</i>		Month Day Year 2 28 19		

PCB and Additional Information Attachment, Page 2 of 2

Manifest Number: 019694567 JJK

Shipment ID Number: DSSI-19-020

Shipment Date: 2/27/2019

UHMW Section	RFD	Container / WASTE ID	Barcode	Description	PCB Date to Storage	Accumulation Storage Date	NET VOLUME (ft3)	GROSS WT (lb)	Gross Wt (Kg)	NET WT (lb)	NET Wt (Kg)	Maximum Activity MBq
9b.1	121255	121255-02	PAD17C36463	Lube Oil/PCB Rinseate collected in Sight Glasses from Transformer Draining, Post-TSCA Rinse	10/10/2017	N/A	7.4	476	216	420	191	0.434
9b.1	121423	121423-02	PAD18C40024	VENTILATION DUCT OIL AND WATER	6/13/2018	N/A	5.95	446	202	390	177	0.403
9b.1	121423	121423-03	PAD18C40031	VENTILATION DUCT OIL AND WATER	9/25/2018	N/A	7.4	498	226	442	200	0.456
9b.1	121423	121423-04	PAD18C41096	VENTILATION DUCT OIL AND WATER	11/1/2018	N/A	7.4	506	230	450	204	0.465
9b.2	121466	121466-01	PAD18C40408	Corrosive Waste	N/A	03/08/18	0.67	18	8	7	3	0.002
Totals				5			28.82	1944	882	1709	775	1.76

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LAND DISPOSAL NOTIFICATION AND CERTIFICATION

7

Generator Name: FRNP Manifest Doc. No.: 019694564 JJK
 Profile No.: TS.4236 (19-02-016) State Manifest No.: NA CT 4-9-11

- Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
- Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

1	2	3	4	5
	D002	Corrosive	<input checked="" type="checkbox"/>	A
2			<input type="checkbox"/>	→
3		SS 2/19/19	<input type="checkbox"/>	
4	←		<input type="checkbox"/>	

To identify F039 or D001-D043 underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(s), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Dominic Atch Title Waste Engineer Date 2/19/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent **MUST** be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

Common Name of Solvent Constituent and Associated USEPA Hazardous Waste Code	Treatment Standard		Hazardous Waste Code (if not listed above)	Treatment Standard	
	Treatment Standard			Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CARBN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

7

Generator Name: US Department of Energy (Paducah Site) Manifest Doc. No.: 01969456A JJK 04-9-19

Profile No.: TS.4236 (19-02-016) State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Table with 5 columns: Waste Number, Waste Code, Description, Management, and Other. Rows 5-35 are mostly empty with a diagonal line drawn across them. Handwritten '5' and '2/19/19' are visible in the table area.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: Sonia Stahl
Title: Waste Engineer

Date: 2/19/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: US Department of Energy (Paducah Site) Manifest Doc. No.: 019694567 JJK
Profile No.: TS.4236 (19-02-016) State Manifest No.: NA 04-9-19

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Table with 5 columns: USEPA Waste Number, Description, Subcategory, Management, and Hazardous Constituent(s). The table is mostly empty with a diagonal line from row 36 to row 65. Handwritten 'SS' and '2/19/19' are visible in the middle rows.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Handwritten Signature] Title: Waste Engineer

Date: 2/19/19

121466-01

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: US Department of Energy (Paducah Site) Manifest Doc. No.: 01969456A 55K
 Profile No.: TS.4236 (19-02-016) State Manifest No.: NA

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

121466-01


CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	→	0.10	NA	p-Dimethylaminoazobenzene	→	0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodimethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate	SS	0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene	SS	0.055 ¹	10 ¹
Famphur	SS 2/19/19	0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)	SS 2/19/19	0.000035	0.001
Fluoranthene		0.068	3.4	PeCDFs (All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)	←	0.50	30	1,1,2,2-Tetrachloroethane	←	0.057	6.0

121466-01

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene		0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)		0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc		2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY 8890008882	2. Page 1 of 3	3. Emergency Response Phone 1-270-441-8211	4. Manifest Tracking Number 019694615 JJK				
5. Generator Name Four Rivers Nuclear Partnership, LLC, (FRNP) 5511 Hobbs Road, Kevil, KY 42053				Generator's Site Address (if different than mailing address) Paducah Gaseous Diffusion Plant, 5511 Hobbs Rd, Kevil, KY 42053					
Generator's Phone: 6. Transporter 1 Company Name CAST Transportation				U.S. EPA ID Number COR000005388					
7. Transporter 2 Company Name				U.S. EPA ID Number					
8. Designated Facility Name and Site Address Energy Solutions Clive Disposal Site-Treatment Facility US I-80 Exit 48, Clive, UT 84029 1-435-884-0155				U.S. EPA ID Number UTD982588888					
Facility's Phone:									
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
	RQ	1. UN 2913, Waste, Radioactive material, surface contaminated objects (SCO-II), 7, Np-237, To-99, Th-230, U-234, (D008, PCB), 2500 MBq, Fissile Excepted		3 CM		1350	K	D008	
	RQ	2. UN 2913, Waste, Radioactive material, surface contaminated objects (SCO-II), 7, Np-237, To-99, Th-230, U-234, (D008, D009), 14 MBq, Fissile Excepted		1 DM		28	K	D008 D009 D011	
	RQ	3. UN 2913, Waste, Radioactive material, surface contaminated objects (SCO-II), 7, Np-237, To-99, Th-230, U-234, (D009), 92 MBq, Fissile Excepted		4 DM		928	K	D009	
	RQ	4. UN 2913, Waste, Radioactive material, surface contaminated objects (SCO-II), 7, Np-237, To-99, Th-230, U-234, (D008, D011), 23 MBq, Fissile Excepted		2 DM		132	K	D008 D011 D012	
14. Special Handling Instructions and Additional Information Truck: 1443 Trailer: 525 TID: 0349660 Accumulation Start Date: 06/19/18 PCB Start Date: 06/27/18 ERG # 162 In the event of an RQ Release, call 1-800-424-8802 If undeliverable, return to generator Exclusive Use Shipment, See Attachment for Additional Info Shipment ID: 9750-01-0006									
15. GENERATOR/SOFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Officer's Printed/Typed Name Lachelle Jeffair on behalf of FRNP Signature Lachelle Jeffair Month Day Year 6 18 19									
TRANSPORTER	16. I, Four Rivers Nuclear Partnership, LLC (FRNP) and the U.S. Department of Energy (DOE) are co-generators pursuant to a Co-Generator agreement dated September 13, 2017. Under this agreement, FRNP is responsible for performing all Resource Conservation and Recovery Act (RCRA) generator activities on behalf of both FRNP and DOE for all activities under the scope of FRNP's Contract DE-EM0004895, including, but not limited to, characterizing waste, manifesting waste to off-site facilities, packaging and labeling waste for transport, and storing and managing waste, in accordance with RCRA requirements. Transportation hereunder is for DOE and the actual total transportation charges paid are to be reimbursed by the Government pursuant to Contract DE-EM0004895.								
	17. Transporter 1 Printed/Typed Name K. Artigue Signature K. Artigue Month Day Year 6 18 19								
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
	18b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number								
	Facility's Phone: 18c. Signature of Alternate Facility (or Generator) BY: [Signature] Month Day Year								
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. H132		2. H132		3. H132		4. H132			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a									
Printed/Typed Name Justin Lee Signature Justin Lee Month Day Year 6 21 19									

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)		21. Generator ID Number KY 8890008982	22. Page 2	23. Manifest Tracking Number 019894815 JJKJK				
24. Generator's Name Four Rivers Nuclear Partnership, LLC 5511 Hobbs Road, Kevit, KY 42053								
25. Transporter  Company Name CAST Transportation				U.S. EPA ID Number COR000005389				
26. Transporter _____ Company Name				U.S. EPA ID Number				
27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers		29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
		No.	Type			D006	D008	D009
RQ	UN 2813, Waste, Radioactive material, surface contaminated objects (SCO-II), 7, Np-237, Tc-99, Th-230, U-234, (D009, D010), 14 MBq, Fissile Excepted	1	DM	111	K	D010		
32. Special Handling Instructions and Additional Information <p style="text-align: right;">Accumulation Start Date: 02/18/19</p> ERG #162. In the event of an RQ Release, call 1-800-424-8802 If undeliverable, return to generator EXPLOSIVE USE SHIPMENT. See Attachment for Additional Info Shipment ID: 9750-01-0006								
33. Transporter Acknowledgment of Receipt of Materials								
Printed/Typed Name			Signature		Month Day Year			
34. Transporter Acknowledgment of Receipt of Materials								
Printed/Typed Name			Signature		Month Day Year			
35. Discrepancy								
36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
H132								

LT 05/12/2020

GENERATOR
TRANSPORTER
DESIGNATED FACILITY

Additional Information Attachment, Page 3 of 3

Manifest Number: 019694615 JJK

Shipment ID Number: 9750-01-0006

Shipment Date: 6/18/2019

UHWM Section	RFD	Container / WASTE ID	Barcode	Description	Accumulation Storage Date	NET VOLUME (ft3)	GROSS WT (lb)	Gross Wt (Kg)	Maximum Activity MBq	Net Wt (lb)	Net Wt (Kg)
9b.1	121546	121546-01	PAD18C40641	PCB/LEAD CABLE AND POTHEAD	06/27/18	90	1842	835.51	833.30	1039	471
9b.1	121546	121546-02	PAD18C40861	POTHEADS	08/10/18	90	1948	883.59	833.30	1145	519
9b.1	121546	121546-03	PAD18C40863	TRANSFORMER POTHEADS	07/25/18	90	1594	723.02	833.30	793	360
9b.2	121543	121543-01	PAD18C40589	MISCELLANEOUS LIGHT BULBS - SMALL FLUORESCENT, INCANDESCENT, SODIUM	06/19/18	7.4	117	53.07	13.57	61	28
9b.3	121678	121678-01	PAD18C41567	CRUSHED FLUORESCENT LIGHT BULBS	08/28/18	7.4	588	266.71	23.04	532	241
9b.3	121678	121678-02	PAD18C41568	CRUSHED FLUORESCENT LIGHT BULBS	11/08/18	7.4	576	261.27	23.04	520	236
9b.3	121678	121678-03	PAD18C40805	CRUSHED FLUORESCENT LIGHT BULBS	11/20/18	6.6	520	235.87	23.04	464	210
9b.3	121678	121678-04	PAD19C42556	CRUSHED FLUORESCENT LIGHT BULBS	01/15/19	7.4	587	266.26	23.04	531	241
9b.4	121665	121665-02	PAD18C40841	CIRCUIT BOARDS, FUSES, BULBS, CAPACITORS ETC.	10/30/18	6.5	200	90.72	11.92	144	65
9b.4	121665	121665-03	PAD19C42416	CIRCUIT BOARDS, FUSES, BULBS, CAPACITORS ETC.	03/22/19	6	202	91.63	11.00	146	66
27a.1	121729	121729-05	PAD19C42058	CIRCUIT BOARDS, LIGHT STARTERS, FUSES, SMALL BULBS, CAPACITORS	02/18/19	7.4	300	136.08	13.57	244	111
		Totals	11			326.1	8474	3844	2642	5619	2549

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LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 019694615JJK
 Profile No.: 9758-01-0006 State Manifest No.: NA

- Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
- Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF #	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY		HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE: NONE	SIMPLE OR NONE	
1	D008	LEAD	<input type="checkbox"/>	A
2	←		<input type="checkbox"/>	A
3			<input type="checkbox"/>	A
4			<input type="checkbox"/>	A →

To identify F039 or D001-D043 underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(s), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. **RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 **RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 **GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 **DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. **RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. **RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. **WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Donnie Steh Title Waste Engineer Date 6/6/19

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LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
	Acetone (F003)	0.28		160	Methanol (F003)
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

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LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694615JJK

Profile No.: 9758-01-0546 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF.	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY		HOW MUST THE WASTE BE MANAGED? ENTER FROM FORM A1 PAGE 1
		ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE, SIMPLY CHECK NONE	DESCRIPTION	
5				
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31				
32				
33				
34				
35				

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Donna Hahn*
 Title Waste Engineer Date 6/6/19

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 121546-02
 121546-03

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694615 SJK
 Profile No.: 9758-01-0006 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF.	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY		HOW MUST THE WASTE BE MANAGED? ENTER FROM FORM A1 PAGE
		ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE SIMPLY CHECK NONE	DESCRIPTION	
36	←			<input type="checkbox"/>
37				<input type="checkbox"/>
38				<input type="checkbox"/>
39				<input type="checkbox"/>
40				<input type="checkbox"/>
41				<input type="checkbox"/>
42				<input type="checkbox"/>
43				<input type="checkbox"/>
44				<input type="checkbox"/>
45				<input type="checkbox"/>
46				<input type="checkbox"/>
47				<input type="checkbox"/>
48				<input type="checkbox"/>
49				<input type="checkbox"/>
50				<input type="checkbox"/>
51				<input type="checkbox"/>
52				<input type="checkbox"/>
53				<input type="checkbox"/>
54				<input type="checkbox"/>
55				<input type="checkbox"/>
56				<input type="checkbox"/>
57				<input type="checkbox"/>
58				<input type="checkbox"/>
59				<input type="checkbox"/>
60				<input type="checkbox"/>
61				<input type="checkbox"/>
62				<input type="checkbox"/>
63				<input type="checkbox"/>
64				<input type="checkbox"/>
65				<input type="checkbox"/>

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Donnie Hahn*
 Title Waste Engineer Date 6/6/19

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F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP Manifest Doc. No.: 019694615 JJK
 Profile No.: 9750-01-0056 State Manifest No.: NA

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

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CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	VW (mg/l)	NWV (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	VW (mg/l)	NWV (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ^s		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ^s		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	X	0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propham		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

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CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	←	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	←	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromofom		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)	→	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	→	2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

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121543-01
D003, D006, D008, D009

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 019694615 JJK
Profile No.: 9258-61-0006 State Manifest No.: NA

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF #	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY		HOW MUST THE WASTE BE MANAGED?
		ENTER THE SUBCATEGORY DESCRIPTION FROM APPROPRIATE SIMPLY CHECK ONE	NONE	
1	D006		<input type="checkbox"/>	A
2	D008		<input type="checkbox"/>	A
3	D009		<input type="checkbox"/>	A
4	D010		<input type="checkbox"/>	A

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here

If no UHCs are present in the waste upon its initial generation check here:

To list additional USEPA waste code(s) and subcategory(s), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. RESTRICTED WASTE REQUIRES TREATMENT**
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
"I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Domin Stahn Title Waste Engineer Date 5/29/19

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121678-01, -02, -03, -04

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D009

D003, D006,
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LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS					
F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CARBN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) - Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

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LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694615JJK

Profile No.: 9758-01-0006 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

WASTE NUMBER	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY		HOW MUST THE WASTE BE MANAGED? ENTER EITHER NORMAL OR SPECIAL PAGE
		ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE SIMPLY CHECK NONE	NONE	
5	D011	SILVER	<input type="checkbox"/>	
6	D003	REACTIVE	<input type="checkbox"/>	
7			<input type="checkbox"/>	
8			<input type="checkbox"/>	
9			<input type="checkbox"/>	
10			<input type="checkbox"/>	
11			<input type="checkbox"/>	
12			<input type="checkbox"/>	
13			<input type="checkbox"/>	
14			<input type="checkbox"/>	
15			<input type="checkbox"/>	
16			<input type="checkbox"/>	
17			<input type="checkbox"/>	
18			<input type="checkbox"/>	
19			<input type="checkbox"/>	
20			<input type="checkbox"/>	
21			<input type="checkbox"/>	
22			<input type="checkbox"/>	
23			<input type="checkbox"/>	
24			<input type="checkbox"/>	
25			<input type="checkbox"/>	
26			<input type="checkbox"/>	
27			<input type="checkbox"/>	
28			<input type="checkbox"/>	
29			<input type="checkbox"/>	
30			<input type="checkbox"/>	
31			<input type="checkbox"/>	
32			<input type="checkbox"/>	
33			<input type="checkbox"/>	
34			<input type="checkbox"/>	
35			<input type="checkbox"/>	

55 5/29/19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Janie Stahl*
Title Waste Engineer Date 5/29/19

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LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP

Manifest Doc. No.: 019694615JJK

Profile No.: 9700-01-0006

State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF	USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		7. HOW MUST THE WASTE BE MANAGED? ENTER FROM FORM A1 PAGE 1
		ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE, SIMPLY CHECK NONE	DESCRIPTION	
36	←			<input type="checkbox"/>
37				<input type="checkbox"/>
38				<input type="checkbox"/>
39				<input type="checkbox"/>
40				<input type="checkbox"/>
41				<input type="checkbox"/>
42				<input type="checkbox"/>
43				<input type="checkbox"/>
44				<input type="checkbox"/>
45				<input type="checkbox"/>
46				<input type="checkbox"/>
47				<input type="checkbox"/>
48				<input type="checkbox"/>
49				<input type="checkbox"/>
50				<input type="checkbox"/>
51				<input type="checkbox"/>
52				<input type="checkbox"/>
53				<input type="checkbox"/>
54				<input type="checkbox"/>
55				<input type="checkbox"/>
56				<input type="checkbox"/>
57				<input type="checkbox"/>
58				<input type="checkbox"/>
59				<input type="checkbox"/>
60				<input type="checkbox"/>
61				<input type="checkbox"/>
62				<input type="checkbox"/>
63				<input type="checkbox"/>
64				<input type="checkbox"/>
65				<input type="checkbox"/>

SS 5/29/19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Signature]
Title Waste Engineer

Date 5/29/19

Form A2
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D009

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F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP

Manifest Doc. No.:

019694615JJK

Profile No.:

9750-01-0856

State Manifest No.:

NA

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

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CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Mollinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diiphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propham		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

53 5/29/19

55 5/29/19

121729-05
 D006, D009,
 D008, D010

121665-02, 03
 D006, D008
 D011

121678-01, 02, 03, 04
 D009

121548-01
 D003, D006
 D008, D009

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	←	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	←	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate	0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴	
Vernolate	0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP	
Vinyl chloride	0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵	
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)	0.32	30	Silver		0.43	0.30 mg/l TCLP	
			Silver		0.43	0.14 mg/l TCLP ⁴	
			Sulfide		14	NA ²	
			Thallium		1.4	0.078 mg/l TCLP ¹	
			Thallium		1.4	0.20 mg/l TCLP ⁴	
			Vanadium		4.3 ²	1.6 mg/l TCLP ²	
			Zinc		2.61	4.3 mg/l TCLP ²	

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

Four Rivers Nuclear Partnership, LLC (FRNP) and the U.S. Department of Energy (DOE) are co-generators pursuant to a Co-Generator agreement dated September 13, 2017. Under this agreement, FRNP is responsible for performing all Resource Conservation and Recovery Act (RCRA) generator activities on behalf of both FRNP and DOE for all activities under the scope of FRNP's Contract DE-EM0004895, including, but not limited to, characterizing waste, manifesting waste to off-site facilities, packaging and labeling waste for transport, and storing and managing waste, in accordance with RCRA requirements. Transportation hereunder is for DOE and the actual total transportation charges paid are to be reimbursed by the Government pursuant to Contract DE-EM0004895.

2050-0039

Please print

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY 8890008982	2. Page 1 of 3	3. Emergency Response Phone 1-270-441-8333	4. Manifest Tracking Number 019694647 JJK		
5. Generator's Name and Mailing Address Four Rivers Nuclear Partnership, LLC, (FRNP) on behalf of FRNP 5511 Hobbs Road, Kevill, KY 42053 Generator's Phone: 270-441-5025				Generator's Site Address (if different than mailing address) FRNP on behalf of the FRNP Paducah Gaseous Diffusion Plant 5511 Hobbs Rd, Kevill, KY 42053			
6. Transporter 1 Company Name RSB LOGISTICS Inc.				U.S. EPA ID Number WAR000012005			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address DSSI Treatment Waste Facility, 657 Gallaher Road, Kingston, TN 37763 Facility's Phone: 1-865-342-7609				U.S. EPA ID Number TND982109142 LTF002588888 @ 08/22/19			
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
RQ	1. UN 1993, Waste, Flammable liquids, n.o.s., (Kerosene), 3, PG III, (D001)	5	DM	780	K	D001	
RQ	2. UN 3321, Waste, Radioactive material, low specific activity (LSA-II), 7, Am-241, Np-237, U-234, Solid/Oxide, (D006, D007), 8 MBq, Fissile Excepted	1	DM	46	K	D006	D007 D008
RQ	3. UN 2912, Radioactive material, low specific activity (LSA-I), 7, Am-241, Pu-238, Pu-239, To-99, Th-230, Liquid/Oxide, (PCB), 1 MBq, Fissile Excepted	2	DM	380	K		
X	4. UN 3321, Radioactive material, low specific activity (LSA-II), 7, U-234, Liquid/Oxide, 0.1 MBq, Fissile Excepted	1	DM	12	K		
14. Special Handling Instructions and Additional Information Truck: 59816 Trailer: 253254 TID: 349478 Accumulation Start Date: 08/21/18 PCB Start Date: 08/22/18 ERG # 128, 162 In the event of an RQ Release, call 1-800-424-8802 If undeliverable, return to generator Exclusive Use Shipment, See Attachment for Additional Info Shipment ID: DSSI-18-087							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name Regina Pea on behalf of FRNP				Signature Regina Pea		Month Day Year 08 21 19	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name: Michael Jarman Signature: MJ Month Day Year: 08 21 19 Transporter 2 Printed/Typed Name: _____ Signature: _____ Month Day Year: _____							
18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: AUG 22 2019 18b. Alternate Facility (or Generator) U.S. EPA ID Number: BY: WAHINGTON Management Codes 18c. Signature of Alternate Facility (or Generator) Month Day Year: _____							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. _____ 2. _____ 3. _____ 4. _____							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name: Tiffany Clark Signature: _____ Month Day Year: 08 22 19							

ET

Four Rivers Nuclear Partnership, LLC (FRNP) and the U.S. Department of Energy (DOE) are co-generators pursuant to a Co-Generator agreement dated September 13, 2017. Under this agreement, FRNP is responsible for performing all Resource Conservation and Recovery Act (RCRA) generator activities on behalf of both FRNP and DOE for all activities under the scope of FRNP's Contract DE-EM0004895, including, but not limited to, characterizing waste, manifesting waste to off-site facilities, packaging and labeling waste for transport, and storing and managing waste, in accordance with RCRA requirements. Transportation hereunder is for DOE and the actual total transportation charges paid are to be reimbursed by the Government pursuant to Contract DE-EM0004895.

Please Print or Type

U.S. EPA Form 351 (Rev. 12-17) U.S. EPA Form No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY 8890008982		2. Page 1 of 3		3. Emergency Response Phone 1-270-441-6244 333		Manifest Tracking Number 019694669 JJK			
5. Generator's Name and Mailing Address Four Rivers Nuclear Partnership, LLC, (FRNP) on behalf of FRNP 5511 Hobbs Road, Kevil, KY 42053 Generator's Phone: 270-441-5025						Generator's Site Address (if different than mailing address) FRNP on behalf of the FRNP Paducah Gaseous Diffusion Plant 5511 Hobbs Rd, Kevil, KY 42053					
6. Transporter 1 Company Name RSB LOGISTICS Inc.						U.S. EPA ID Number WAR000012005					
7. Transporter 2 Company Name						U.S. EPA ID Number					
8. Designated Facility Name and Site Address DSSI Waste Treatment Facility, 657 Gallaher Rd., Kingston, TN 37763 Facility's Phone: 1-435-884-0155						U.S. EPA ID Number TND982109142					
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes					
		No.	Type								
RQ	1. NA3082, Hazardous waste, liquid, n.o.s., (lead, chloroform), 9, PG III, (D008, D022)	5	CM EM 09/10/19	4355	K	D008	D022	D038			
RQ	2. NA3082, Hazardous waste, liquid, n.o.s., (lead, cadmium), 9, PG III, (D008, D008)	2	DM	233	K	D008	D008	D018 D022 D038			
RQ	3. UN2812, Radioactive material, low specific activity (LSA-I), 7, (FCB), Np-237, Tc-99, Th-230, U-234, Solid/Oxide, 23 MBq, Fissile Excepted	1	DM	109	K						
RQ	4. NA3082, Hazardous waste, liquid, n.o.s., (Trichloroethylene, vinyl chloride), 9, PG III, (F001, F002)	1	CM	351	K	D043 U228	F001	F002			
14. Special Handling Instructions and Additional Information Truck: 524384 Trailer 3E+05 TID: 349284 Accumulation Start Date: 10/22/18 PCB Start Date: 09/10/18 ERG # 128, 162, 171 In the event of an RQ Release, call 1-800-424-8900 If undeliverable, return to generator Exclusive Use Shipment, See Attachment for Additional Info Shipment ID: DSSI-19-098											
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.											
Generator's/Offoror's Printed/Typed Name Regina Pea on behalf of FRNP						Signature Regina Pea			Month Day Year 09 10 19		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____											
17. Transporter Acknowledgment of Receipt of Materials											
Transporter 1 Printed/Typed Name GREGORY S. ROGERS						Signature Gregory S. Rogers			Month Day Year 09 10 19		
Transporter 2 Printed/Typed Name						Signature			Month Day Year		
18. Discrepancy											
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection											
18b. Alternate Facility (or Generator)						Manifest Reference Number: _____ U.S. EPA ID Number SEP 12 2019					
Facility's Phone:						BY:			Month Day Year		
18c. Signature of Alternate Facility (or Generator)											
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)											
1.			2.			3.			4.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a											
Printed/Typed Name Tiffany Clark						Signature 			Month Day Year 9 11 19		

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)		21. Generator ID Number KY 8990008982	22. Page 2	23. Manifest Tracking Number 019694669JJK				
24. Generator's Name Four Rivers Nuclear Partnershp, LLC, on behalf of FRNP 5511 Hobbs Road, Kevll, KY 42053								
25. Transporter _____ Company Name RSB LOGISTICS Inc.				U.S. EPA ID Number WAR000012005				
26. Transporter _____ Company Name				U.S. EPA ID Number				
27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers		29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
		No.	Type					
X	UN3321, Radioactive material, low specific activity (LSA-II), 7, U-234, Liquid/Oxide, 33 MBq, Fissile Excepted	2	DM	28	K			
RQ	UN1993, Waste, Flammable liquids, n.o.s., (Kerosene), 3, PG III, (D001)	1	DM	141	K	D001		
RQ	UN1993, Waste, Flammable liquids, n.o.s., (Diesel Fuel), 3, PG III, (D001, D018)	11	DM	1801	K	D001	D018	
RQ	UN1993, Waste, Flammable liquids, n.o.s., (Gasoline), 3, PG III, (D001, D018)	1	DM	82	K	D001	D018	
RQ	UN2912, Waste, Radioactive material, low specific activity (LSA-I), 7, (D004, D008), Am-241, Pu-238, Pu-239, K-40, Th-230, Liquid/Oxide, 17 MBq, Fissile Excepted	2	DM	242	K	D004	D008	D008
X	UN2912, Radioactive material, low specific activity (LSA-I), 7, Am-241, Pu-238, Pu-239, K-40, Th-230, Liquid/Oxide, 178 MBq, Fissile Excepted	11	DM	2143	K			
RQ	UN2912, Waste, Radioactive material, low specific activity (LSA-I), 7, (D008, D008), Am-241, Pu-238, Pu-239, K-40, Th-230, Liquid/Oxide, 182 MBq, Fissile Excepted	2	CM	2673	K	D008	D008	
RQ	NA3082, Hazardous waste, liquid, n.o.s., (lead, cadmium), 9, PG III, (D008, D008)	1	DM	11	K	D008	D008	
X	NA3082, Hazardous waste, liquid, n.o.s., (Trichloroethylene), 9, PG III	2	DM	8	K	D043	F001	F002
						U228		
32. Special Handling Instructions and Additional Information Accumulation Start Date: 09/10/18 ERG # 128, 162, 171 In the event of an RQ Release, call 1-800-424-8802 EXCLUSIVE USE SHIPMENT, See Attachment for Additional Info If undeliverable, return to generator Shipment ID: DSSI-19-096								
33. Transporter _____ Acknowledgment of Receipt of Materials Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____								
34. Transporter _____ Acknowledgment of Receipt of Materials Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____								
35. Discrepancy								
36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								

PCB and Additional Information Attachment, Page 3 of 3

Manifest Number: 019694669.JJK

Shipment ID Number: DSSI-19-096

Shipment Date: 9/10/2019

UHWM Section	RFD	Container / WASTE ID	Barcode	Description	PCB Date to Storage	PCB Date Storage	NET VOLUME (ft ³)	GROSS WT (lb)	Gross Wt (Kg)	NET Wt (lb)	NET Wt (Kg)	Maximum Activity MBq	
9b.1	121856	121856-01	PAD19C43001	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/09/19	N/A	44.11	2382	1080	2237	1015	N/A	
9b.1	121856	121856-02	PAD19C43002	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/09/19	N/A	44.11	2368	1074	2223	1008	N/A	
9b.1	121856	121856-03	PAD19C43003	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/10/19	N/A	44.11	2338	1060	2282	1035	N/A	
9b.1	121856	121856-04	PAD19C43004	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/10/19	N/A	40.1	2148	974	2003	909	N/A	
9b.1	121856	121856-05	PAD19C42963	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/22/19	N/A	22.72	1002	454	857	389	N/A	
9b.2	121444	121444-11	PAD19C42192	USED OIL FROM MOBILE EQUIPMENT	04/09/19	N/A	4	396	180	340	154	N/A	
9b.2	121444	121444-16	PAD19C42715	USED OIL FROM MOBILE EQUIPMENT	04/09/19	N/A	2.5	229	104	173	78	N/A	
9b.3	121625	121625-01	PAD18C41054	PCB LIGHT BALLASTS/TRANSFORMERS/CAPACITORS/ETC.	N/A	09/10/18	7.4	296	134	240	109	23	
9b.4	121584	121584-01	PAD18C41455	TCE SYSTEMS LIQUID	10/22/18	N/A	13.367	1240	562	774	351	N/A	
27b.1	121717	121717-01	PAD19C42104	USED OIL FROM WAP #2 IN C-310	N/A	N/A	0.67	33	15	29	13	15	
27b.1	121717	121717-02	PAD19C42105	USED OIL FROM WAP #2 IN C-310	N/A	N/A	0.67	38	17	33	15	18	
27b.2	121687	121687-03	PAD19C42401	KEROSENE DRAINED FROM TORPEDO HEATERS	03/07/19	N/A	6.68	367	166	311	141	N/A	
27b.3	121752	121752-01	PAD19C42213	DIESEL FUEL	02/20/19	N/A	6.59	401	182	345	156	N/A	
27b.3	121752	121752-02	PAD19C42173	DIESEL FUEL	03/21/19	N/A	7.27	413	187	357	162	N/A	
27b.3	121752	121752-03	PAD19C42418	DIESEL FUEL	03/23/19	N/A	6.73	410	186	354	161	N/A	
27b.3	121752	121752-04	PAD19C42180	DIESEL FUEL	03/26/19	N/A	6.73	418	190	362	164	N/A	
27b.3	121752	121752-05	PAD19C42181	DIESEL FUEL	03/26/19	N/A	6.73	420	191	364	165	N/A	
27b.3	121752	121752-06	PAD19C42182	DIESEL FUEL	03/26/19	N/A	6.73	432	196	376	171	N/A	
27b.3	121752	121752-07	PAD19C42183	DIESEL FUEL	03/27/19	N/A	6.73	418	190	362	164	N/A	
27b.3	121752	121752-08	PAD19C42187	DIESEL FUEL	04/02/19	N/A	6.015	431	195	375	170	N/A	
27b.3	121752	121752-09	PAD19C42195	DIESEL FUEL	04/12/19	N/A	6.86	420	191	364	165	N/A	
27b.3	121752	121752-10	PAD19C42199	DIESEL FUEL	04/22/19	N/A	6.42	388	176	332	151	N/A	
27b.3	121752	121752-11	PAD19C42714	DIESEL FUEL	05/18/19	N/A	7.4	435	197	379	172	N/A	
27b.4	121753	121753-01	PAD19C42214	GASOLINE	02/25/19	N/A	2.53	236	107	180	82	N/A	
27b.5	121755	121755-01	PAD19C42162	ETHYLENE GLYCOL (ANTIFREEZE)	02/25/19	N/A	7.4	531	241	475	215	15	
27b.5	121755	121755-02	PAD19C42709	ETHYLENE GLYCOL (ANTIFREEZE)	05/13/19	N/A	1.21	114	52	58	26	2	
27b.6	121797	121797-01	PAD19C42913	UNUSED SHELL TURBO 320 OIL	N/A	N/A	7.4	552	250	416	189	14	
27b.6	121797	121797-02	PAD19C42914	UNUSED SHELL TURBO 320 OIL	N/A	N/A	7.4	532	241	396	180	13	
27b.6	121798	121798-01	PAD19C42915	UNUSED WELCH VACUUM OIL	N/A	N/A	7.4	514	233	378	171	12	
27b.6	121798	121798-02	PAD19C42916	UNUSED WELCH VACUUM OIL	N/A	N/A	7.4	532	241	396	180	13	
27b.6	121801	121801-01	PAD19C42744	UNUSED WINTREX-GLYCOL	N/A	N/A	7.4	632	287	496	225	16	
27b.6	121801	121801-02	PAD19C42918	UNUSED WINTREX-GLYCOL	N/A	N/A	7.4	658	298	522	237	17	
27b.6	121802	121802-01	PAD19C42745	UNUSED CC WET (OUT OF DATE)	N/A	N/A	7.4	584	265	448	203	15	
27b.6	121802	121802-02	PAD19C42746	UNUSED CC WET (OUT OF DATE)	N/A	N/A	7.4	598	271	497	225	16	
27b.6	121851	121851-01	PAD19C42919	WATER DRAINED FROM THE C-310 TOPS PURGE 200 FT STACK	N/A	N/A	7.4	502	228	446	202	23	
27b.6	121851	121851-02	PAD19C42920	WATER DRAINED FROM THE C-310 TOPS PURGE 200 FT STACK	N/A	N/A	7.4	512	232	456	207	24	
27b.6	121851	121851-03	PAD19C42921	WATER DRAINED FROM THE C-310 TOPS PURGE 200 FT STACK - REPACKAGED FROM 121848-01	N/A	N/A	7.4	330	150	274	124	14	
27b.7	121809	121809-01	PAD19C42615	LIQUIDS FROM C-400 IRA GLYCOL	04/23/19	N/A	44.11	2944	1335	2944	1335	96	
27b.7	121809	121809-02	PAD19C42616	LIQUIDS FROM C-400 IRA GLYCOL	04/23/19	N/A	44.11	2948	1337	2948	1337	96	
27b.8	121810	121810-01	PAD19C42617	LUBE OIL C-400 IRA	04/23/19	N/A	7.4	80	36	24	11	N/A	
27b.9	121868	121868-01	PAD19C42835	TCE WATER-C400 IRA OUTSIDE	06/12/19	N/A	0.13	15	7	6	3	N/A	
27b.9	121868	121868-02	PAD19C42836	TCE WATER-C400 IRA OUTSIDE	06/12/19	N/A	0.13	19	9	10	5	N/A	
Totals							42	493.1	30,256	13,724	26,842	12,175	442

A-45

121584-01 DSSI-19-096

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: FRAP Manifest Doc. No.: 019694669JJK
 Profile No.: PAD-WD-0422-R7-V2 State Manifest No.: N/A

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
 2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

WASTE CODE(S)	DESCRIPTION	MANAGEMENT	STATE CITATION
1 D043	Vinyl Chloride	<input checked="" type="checkbox"/>	A
2 F001	Spent Halogenated Solvents Used in Degreasing	<input checked="" type="checkbox"/>	A
3 F002	Spent Halogenated Solvents	<input checked="" type="checkbox"/>	A
4 U228	Trichloroethylene	<input checked="" type="checkbox"/>	A

To identify F039 or D001-D043 underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. **RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 **RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 **GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 **DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. **RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. **RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. **WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Signature] Title Waste Engineer Date 09/08/2019

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

Hazardous waste code, constituent name, solvent constituents and their associated USEPA hazardous waste codes	Treatment Standards		Spent Solvent Constituents and Associated USEPA Hazardous Waste Codes	Treatment Standards	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CARBN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

121584-01

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRWP Manifest Doc. No.: 019694669JJK

Profile No.: PAD-WD-0422-R7-V2 State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF.	USEPA HAZARDOUS WASTE CODE(S)	ENTER THE SUBCATEGORY DESCRIPTION FROM 40 CFR 268.40, OR NONE	MANAGEMENT METHOD
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MS
9-9-19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Handwritten Signature]
Title Waste Engineer

Date 08/09/2019

121584-01

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK

Profile No.: PAD-WD-0422-R7-V2 State Manifest No.: NIA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

WASTE NUMBER	HAZARDOUS WASTE NUMBER	DESCRIPTION	MANAGEMENT	REMARKS
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MS
9-9-19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Handwritten Signature]
Title Waste Engineer

Date 09/08/2015

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRWP Manifest Doc. No.: 019694669JJK
 Profile No.: PAD-WD-0422-R7-V2 State Manifest No.: 21A

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene	←	0.059	3.4	2-Chloro-1,3-butadiene	←	0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/ Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	MS 9-9-19	0.10	NA	p-Dimethylaminoazobenzene	MS 9-9-19	0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs (All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol	5.6	170	Propham	0.056 ¹	1.4 ¹		
Isodrin	0.021	0.066	Propoxur	0.056 ¹	1.4 ¹		
Isosafrole	0.081	2.6	Prosulfocarb	0.042 ¹	1.4 ¹		
Kepone	0.0011	0.13	Pyrene	0.067	8.2		
Methacrylonitrile	0.24	84	Pyridine	0.014	16		
Methanol	5.6	0.75 mg/l ¹	Safrole	0.081	22		
Methapyrilene	0.081	1.5	Silvex/2,4,5-TP	0.72	7.9		
Methiocarb	0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene	0.055	14		
Methomyl	0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)	0.000063	0.001		
Methoxychlor	0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)	0.000063	0.001		
3-Methylcholanthrene	0.0055	15	1,1,1,2-Tetrachloroethane	0.057	6.0		
4,4'-Methylene bis(2-chloroaniline)	0.50	30	1,1,2,2-Tetrachloroethane	0.057	6.0		

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	← MS 6-6-9 9-9-19	0.056	6.0	INORGANIC CONSTITUENTS	← MS 9-9-19		
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodi carb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate	0.11	0.10 ¹	Nickel	3.98	11 mg/l TCLP ⁴		
Vernolate	0.042 ¹	6.0 ¹	Selenium	0.82	0.16 mg/l TCLP		
Vinyl chloride	0.27	6.0	Selenium	0.82	5.7 mg/l TCLP ⁵		
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)	0.32	30	Silver	0.43	0.30 mg/l TCLP		
			Silver	0.43	0.14 mg/l TCLP ⁴		
			Sulfide	14	NA ²		
			Thallium	1.4	0.078 mg/l TCLP ¹		
			Thallium	1.4	0.20 mg/l TCLP ⁴		
			Vanadium	4.3 ²	1.6 mg/l TCLP ²		
			Zinc	2.61	4.3 mg/l TCLP ²		

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.

² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.

³ These compounds are regulated by the sum of their concentration instead of as individual constituents.

⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.

⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

121810-01

DSSI-19-096

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: FRNP Manifest Doc. No.: 019694669 JJK
Profile No.: PAD-WD-0868-R2-V4 State Manifest No.: N/A

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [] Wastewater [X]
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: ID, USEPA Hazardous Waste Code(s), SUBCATEGORY, DESCRIPTION, and HOW MUST THE WASTE BE MANAGED. Rows include Cadmium (D006) and Lead (D008) with subcategory A.

To identify F039 or D001-D043 underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here []
If no UHCs are present in the waste upon its initial generation check here: [X]
To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.
Signature: [Handwritten Signature] Title: Waste Engineer Date: 08/07/2019
Form A1 Page 1 of 2

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS					
F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CARBN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

121810-01

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669 JJK

Profile No.: _____ State Manifest No.: NIA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE.	MANAGEMENT	
			MANAGEMENT METHOD	MANAGEMENT CODE
5				
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I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Handwritten Signature]
Title Waste Engineer

Date 08/07/2019

121810-01

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK

Profile No.: _____ State Manifest No.: NIA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	USEPA HAZARDOUS WASTE CODE(S)	ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE		HOW MUST THE WASTE BE MANAGED? ENTER FROM COLUMN 4 PAGE 1
		DESCRIPTION	NONE	
36			<input type="checkbox"/>	
37			<input type="checkbox"/>	
38			<input type="checkbox"/>	
39			<input type="checkbox"/>	
40			<input type="checkbox"/>	
41			<input type="checkbox"/>	
42			<input type="checkbox"/>	
43			<input type="checkbox"/>	
44			<input type="checkbox"/>	
45			<input type="checkbox"/>	
46			<input type="checkbox"/>	
47			<input type="checkbox"/>	
48			<input type="checkbox"/>	
49			<input type="checkbox"/>	
50			<input type="checkbox"/>	
51			<input type="checkbox"/>	
52			<input type="checkbox"/>	
53			<input type="checkbox"/>	
54			<input type="checkbox"/>	
55			<input type="checkbox"/>	
56			<input type="checkbox"/>	
57			<input type="checkbox"/>	
58			<input type="checkbox"/>	
59			<input type="checkbox"/>	
60			<input type="checkbox"/>	
61			<input type="checkbox"/>	
62			<input type="checkbox"/>	
63			<input type="checkbox"/>	
64			<input type="checkbox"/>	
65			<input type="checkbox"/>	

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Signature] Title Waste Engineer Date 08/07/2019

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP Manifest Doc. No.: 019694669 JJK
 Profile No.: _____ State Manifest No.: N/A

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene	←	0.059	3.4	2-Chloro-1,3-butadiene	←	0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene	→	0.057	6.0	Diethyl phthalate	→	0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propham		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyriline		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	←	0.056	6.0	INORGANIC CONSTITUENTS	→		
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.019 ¹	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.056 ¹	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate	0.11	0.10 ¹	Nickel	3.98	11 mg/l TCLP ⁴		
Vernolate	0.042 ¹	6.0 ¹	Selenium	0.82	0.16 mg/l TCLP		
Vinyl chloride	0.27	6.0	Selenium	0.82	5.7 mg/l TCLP ⁵		
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	→	0.32	30	Silver	0.43	0.30 mg/l TCLP	
				Silver	0.43	0.14 mg/l TCLP ⁴	
				Sulfide	14	NA ²	
				Thallium	1.4	0.078 mg/l TCLP ¹	
				Thallium	1.4	0.20 mg/l TCLP ⁴	
				Vanadium	4.3 ²	1.6 mg/l TCLP ²	
				Zinc	2.61	4.3 mg/l TCLP ²	

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

121755-01
121755-02

DSSI-19-096

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 019694669JJK
 Profile No.: PAD-WO-0838-V5 State Manifest No.: N/A

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
 2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

USEPA Hazardous Waste Code	USEPA Hazardous Waste Subcategory	Underlying Hazardous Constituent(s)	Check ONE	Management
1	D004	CADMIUM	<input checked="" type="checkbox"/>	A
2	D006	NON-WASTEWATER EXHIBITING THE CHARACTERISTIC	<input type="checkbox"/>	A
3	D008	NON-WASTEWATER EXHIBITING THE CHARACTERISTIC	<input type="checkbox"/>	A
4	D010	SELENIUM	<input checked="" type="checkbox"/>	A

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. **RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1. **RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3. **GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4. **DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. **RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. **RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. **WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Donna M. Hahn* Title Waste Engineer Date 8/23/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

Hazardous Waste Constituent (USEPA Hazardous Waste Code)	Treatment Standards		Spent Solvent Constituents and their Associated USEPA Hazardous Waste Code(s)	Treatment Standards	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CAREN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) - Greater than or equal to 10% total organic carbon.

- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK

Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

LINE	USEPA WASTE CODE(S) AND SUBCATEGORY	DESCRIPTION OF WASTE	MANAGEMENT	OTHER INFORMATION
5			<input type="checkbox"/>	
6			<input type="checkbox"/>	
7			<input type="checkbox"/>	
8			<input type="checkbox"/>	
9			<input type="checkbox"/>	
10			<input type="checkbox"/>	
11			<input type="checkbox"/>	
12			<input type="checkbox"/>	
13			<input type="checkbox"/>	
14			<input type="checkbox"/>	
15			<input type="checkbox"/>	
16			<input type="checkbox"/>	
17			<input type="checkbox"/>	
18			<input type="checkbox"/>	
19			<input type="checkbox"/>	
20			<input type="checkbox"/>	
21			<input type="checkbox"/>	
22			<input type="checkbox"/>	
23			<input type="checkbox"/>	
24			<input type="checkbox"/>	
25			<input type="checkbox"/>	
26			<input type="checkbox"/>	
27			<input type="checkbox"/>	
28			<input type="checkbox"/>	
29			<input type="checkbox"/>	
30			<input type="checkbox"/>	
31			<input type="checkbox"/>	
32			<input type="checkbox"/>	
33			<input type="checkbox"/>	
34			<input type="checkbox"/>	
35			<input type="checkbox"/>	

5 8/23/19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Signature] Date 8/23/19
 Title Waste Engineer

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK

Profile No.: _____ State Manifest No.: NIA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

WASTE NUMBER	USEPA HAZARDOUS WASTE CODE(S)	DESCRIPTION OF WASTE (including subcategory based on 40 CFR 268.40)	MANAGEMENT	HOW MUST THE WASTE BE MANAGED? (SEE 40 CFR 268.40)
36	←			
37				
38				
39				
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47				
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65				

55 8/23/19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *[Signature]* Date 8/23/19
 Title Waste Engineer

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP

Manifest Doc. No.: 0196946695JK

Profile No.: _____

State Manifest No.: DIA

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol	A	0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol	A	0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs (All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	←	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	←	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	→	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	→	2.61	4.3 mg/l TCLP ²

1 These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
2 Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
3 These compounds are regulated by the sum of their concentration instead of as individual constituents.
4 These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
5 Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

DSSI-19-096

121687-03

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 019694669JJK

Profile No.: PAD-WD-0711-RI-V5 State Manifest No.: N/A

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [X] Wastewater []
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: Row Number, Waste Code, Subcategory, Treatment, and Management. Row 1: 1, D001, HI TOC TREATMENT, [], A. Row 2: 2, [], [], [], []. Row 3: 3, [], [], [], []. Row 4: 4, [], [], [], [].

To identify F039 or D001-D043 underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here [X]
If no UHCs are present in the waste upon its initial generation check here: []
To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Signature] Title: Waste Engineer Date: 8/16/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

Hazardous Waste Code (USEPA Hazardous Waste Code)	Treatment Standards		Hazardous Waste Code (USEPA Hazardous Waste Code)	Treatment Standards	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CAREN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.

- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JK

Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

WASTE NUMBER	USEPA HAZARDOUS WASTE CODE(S)	DESCRIPTION OF WASTE	MANAGEMENT METHOD	OTHER INFORMATION
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Bonnie B. K...* Date 8/16/19
Title Waste Engineer

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No. : 019694669JJK

Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	USEPA Hazardous Waste Code	Description	Management	None
36				<input type="checkbox"/>
37				<input type="checkbox"/>
38				<input type="checkbox"/>
39				<input type="checkbox"/>
40				<input type="checkbox"/>
41				<input type="checkbox"/>
42				<input type="checkbox"/>
43				<input type="checkbox"/>
44				<input type="checkbox"/>
45				<input type="checkbox"/>
46				<input type="checkbox"/>
47				<input type="checkbox"/>
48				<input type="checkbox"/>
49				<input type="checkbox"/>
50				<input type="checkbox"/>
51				<input type="checkbox"/>
52				<input type="checkbox"/>
53				<input type="checkbox"/>
54				<input type="checkbox"/>
55				<input type="checkbox"/>
56				<input type="checkbox"/>
57				<input type="checkbox"/>
58				<input type="checkbox"/>
59				<input type="checkbox"/>
60				<input type="checkbox"/>
61				<input type="checkbox"/>
62				<input type="checkbox"/>
63				<input type="checkbox"/>
64				<input type="checkbox"/>
65				<input type="checkbox"/>

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Douglas Stahn* Date 8/14/19
Title Waste Engineer

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP

Manifest Doc. No. :

019694669JJK

Profile No.:

State Manifest No.:

N/A

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	→	0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine	A	0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs (All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine sailcylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyriline		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)	←	0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	→	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	←	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate	0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴	
Vernolate	0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP	
Vinyl chloride	0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵	
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	←	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	→	2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

DSSI-19-096

121753-01

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 019694669JJK
Profile No.: PAD-WD-0711-R1-V5 State Manifest No.: NIA

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [X] Wastewater []
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: Code, Description, Subcategory, Treatment, and Management. Row 1: D001, HI TOC TREATMENT, [], A. Row 2: D018, Benzene, [X], [].

To identify F039 or D001-D043 underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here [X]
If no UHCs are present in the waste upon its initial generation check here: []
To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Signature] Title: Waste Engineer Date: 8/14/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

F001 through F005 spent solvent constituents are then analyzed using a hazardous waste code	Treatment Standards		Hazardous Waste Code	Treatment Standards	
	W/Wastewater	NCWastewater		W/Wastewater	NCWastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CARBN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK

Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

WASTE NUMBER	USEPA WASTE CODE(S)	DESCRIPTION	MANAGEMENT
5			<input type="checkbox"/>
6			<input type="checkbox"/>
7			<input type="checkbox"/>
8			<input type="checkbox"/>
9			<input type="checkbox"/>
10			<input type="checkbox"/>
11			<input type="checkbox"/>
12			<input type="checkbox"/>
13			<input type="checkbox"/>
14			<input type="checkbox"/>
15			<input type="checkbox"/>
16			<input type="checkbox"/>
17			<input type="checkbox"/>
18			<input type="checkbox"/>
19			<input type="checkbox"/>
20			<input type="checkbox"/>
21			<input type="checkbox"/>
22			<input type="checkbox"/>
23			<input type="checkbox"/>
24			<input type="checkbox"/>
25			<input type="checkbox"/>
26			<input type="checkbox"/>
27			<input type="checkbox"/>
28			<input type="checkbox"/>
29			<input type="checkbox"/>
30			<input type="checkbox"/>
31			<input type="checkbox"/>
32			<input type="checkbox"/>
33			<input type="checkbox"/>
34			<input type="checkbox"/>
35			<input type="checkbox"/>

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Monica Stahl* Date 8/16/19
Title Waste Engineer

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No. : 0196946695JK

Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	USEPA Waste Code	USEPA Subcategory	Management Code	Notes
36				
37				
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I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Signature] Title Waste Engineer Date 8/16/19

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP

Manifest Doc. No. :

019694669JPK

Profile No.:

State Manifest No.:

N/A

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo (g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Mollnate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene	A	0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propham		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene		0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	←	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.056 ¹	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene	A	0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	A	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	→	2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

121856-05

PAD-WD-0868-R2-V7

DSSI-19-096

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 019694669JJK
Profile No.: PAD-WD-0868-R2-V6 State Manifest No.: NIA

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [] Wastewater [X]
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: ROW, USEPA HAZARDOUS WASTE CODES, STATE CATEGORY, DESCRIPTION, and HOW MUST THE WASTE BE MANAGED. Rows include Lead, Chloroform, and Tetrachloroethylene.

To identify F039 or D001-D043 underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here [X]
If no UHCs are present in the waste upon its initial generation check here: []
To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Signature] Title: Waste Engineer Date: 8/24/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

F001 through F005 spent solvent constituents and their associated USEPA Hazardous Waste Codes	Treatment Standards		All other spent solvent constituents and their associated USEPA Hazardous Waste Code(s)	Treatment Standards	
	Treatment Standards			Treatment Standards	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CARBN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019094669JPK
 Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself **IS NOT** an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY (ENTER THE SUBCATEGORY DESCRIPTION) - NOT APPLICABLE SIMPLY CHECK NONE	HOW MUST THE WASTE BE MANAGED? (ENTER FROM FORM A1 PAGE 1)	
			DESCRIPTION	NONE
5				<input type="checkbox"/>
6				<input type="checkbox"/>
7				<input type="checkbox"/>
8				<input type="checkbox"/>
9				<input type="checkbox"/>
10				<input type="checkbox"/>
11				<input type="checkbox"/>
12				<input type="checkbox"/>
13				<input type="checkbox"/>
14				<input type="checkbox"/>
15				<input type="checkbox"/>
16				<input type="checkbox"/>
17				<input type="checkbox"/>
18				<input type="checkbox"/>
19				<input type="checkbox"/>
20				<input type="checkbox"/>
21				<input type="checkbox"/>
22				<input type="checkbox"/>
23				<input type="checkbox"/>
24				<input type="checkbox"/>
25				<input type="checkbox"/>
26				<input type="checkbox"/>
27				<input type="checkbox"/>
28				<input type="checkbox"/>
29				<input type="checkbox"/>
30				<input type="checkbox"/>
31				<input type="checkbox"/>
32				<input type="checkbox"/>
33				<input type="checkbox"/>
34				<input type="checkbox"/>
35				<input type="checkbox"/>

M/S
8-29-19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Donna Stelm* Date 8/24/19
 Title Waste Engineer

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK
 Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF. NO.	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE, SIMPLY CHECK NONE	HOW MUST THE WASTE BE MANAGED? (ENTER FROM FORM A1 PAGE)
		DESCRIPTION	(NONE)
36	←		<input type="checkbox"/>
37			<input type="checkbox"/>
38			<input type="checkbox"/>
39			<input type="checkbox"/>
40			<input type="checkbox"/>
41			<input type="checkbox"/>
42			<input type="checkbox"/>
43			<input type="checkbox"/>
44			<input type="checkbox"/>
45			<input type="checkbox"/>
46			<input type="checkbox"/>
47			<input type="checkbox"/>
48			<input type="checkbox"/>
49			<input type="checkbox"/>
50			<input type="checkbox"/>
51			<input type="checkbox"/>
52			<input type="checkbox"/>
53			<input type="checkbox"/>
54			<input type="checkbox"/>
55			<input type="checkbox"/>
56			<input type="checkbox"/>
57			<input type="checkbox"/>
58			<input type="checkbox"/>
59			<input type="checkbox"/>
60			<input type="checkbox"/>
61			<input type="checkbox"/>
62			<input type="checkbox"/>
63			<input type="checkbox"/>
64			<input type="checkbox"/>
65			<input type="checkbox"/>

MS
8-29-19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Donis Stahl Date 8/24/19
 Title Waste Engineer

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP Manifest Doc. No. : 019694669590
 Profile No.: _____ State Manifest No.: N/A

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	VWV (mg/l)	NWV (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	VWV (mg/l)	NWV (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene	A	0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

MS 8-29-19

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	←	0.10	NA	p-Dimethylaminoazobenzene	←	0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	c-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	A	0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyriline		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)	→	0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

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CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	A	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium	A	0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)	A	2.77	0.60 mg/l TCLP ⁴
Trichloroethylene	A	0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel	A	3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)		0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	A	2.61	4.3 mg/l TCLP ²

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- 1 These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
- 2 Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
- 3 These compounds are regulated by the sum of their concentration instead of as individual constituents.
- 4 These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
- 5 Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

DSSI-19-096

121444-11 and 121444-16

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 0196946685K
Profile No.: PAD-WD-0868-R2-V6 State Manifest No.: N/A

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [X] Wastewater []
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: ID, Waste Code, Description, Treatment Standard, and State Citation. Rows include Cadmium, Lead, Benzene, and Chloroform.

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here [X]
If no UHCs are present in the waste upon its initial generation check here: []
To list additional USEPA waste code(s) and subcategory(s), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Signature] Title: Waste Engineer Date: 8/26/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent **MUST** be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS					
Applicable USEPA hazardous waste codes and their associated USEPA hazardous waste codes	Treatment Standards		Other listed USEPA hazardous waste codes	Treatment Standards	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669 JSK
 Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	USEPA Waste Code	Description	Management	Notes
5	D039	Tetrachloroethylene	<input checked="" type="checkbox"/>	A
6			<input checked="" type="checkbox"/>	
7			<input type="checkbox"/>	
8			<input type="checkbox"/>	
9			<input type="checkbox"/>	
10			<input type="checkbox"/>	
11			<input type="checkbox"/>	
12			<input type="checkbox"/>	
13			<input type="checkbox"/>	
14			<input type="checkbox"/>	
15			<input type="checkbox"/>	
16			<input type="checkbox"/>	
17			<input type="checkbox"/>	
18			<input type="checkbox"/>	
19			<input type="checkbox"/>	
20			<input type="checkbox"/>	
21			<input type="checkbox"/>	
22			<input type="checkbox"/>	
23			<input type="checkbox"/>	
24			<input type="checkbox"/>	
25			<input type="checkbox"/>	
26			<input type="checkbox"/>	
27			<input type="checkbox"/>	
28			<input type="checkbox"/>	
29			<input type="checkbox"/>	
30			<input type="checkbox"/>	
31			<input type="checkbox"/>	
32			<input type="checkbox"/>	
33			<input type="checkbox"/>	
34			<input type="checkbox"/>	
35			<input type="checkbox"/>	

MS
8-27-19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Bonita Hahn* Date 8/26/19
 Title Waste Engineer

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK
 Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste No.	USEPA Waste Code/Category	Description	None	How Must the Waste be Managed
36	←		<input type="checkbox"/>	
37			<input type="checkbox"/>	
38			<input type="checkbox"/>	
39			<input type="checkbox"/>	
40			<input type="checkbox"/>	
41			<input type="checkbox"/>	
42			<input type="checkbox"/>	
43			<input type="checkbox"/>	
44			<input type="checkbox"/>	
45			<input type="checkbox"/>	
46			<input type="checkbox"/>	
47			<input type="checkbox"/>	
48			<input type="checkbox"/>	
49			<input type="checkbox"/>	
50			<input type="checkbox"/>	
51			<input type="checkbox"/>	
52			<input type="checkbox"/>	
53			<input type="checkbox"/>	
54			<input type="checkbox"/>	
55			<input type="checkbox"/>	
56			<input type="checkbox"/>	
57			<input type="checkbox"/>	
58			<input type="checkbox"/>	
59			<input type="checkbox"/>	
60			<input type="checkbox"/>	
61			<input type="checkbox"/>	
62			<input type="checkbox"/>	
63			<input type="checkbox"/>	
64			<input type="checkbox"/>	
65			<input type="checkbox"/>	→

MS
8-27-19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: *[Signature]* Date: 8/26/19
 Title: Waste Engineer

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK
 Profile No.: _____ State Manifest No.: N/A

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

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CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Moliniate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	A	0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

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CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene		0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)	A	2.77	0.60 mg/l TCLP ⁴
Trichloroethylene	A	0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ¹ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel	A	3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)		0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	A	2.61	4.3 mg/l TCLP ²

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8-27-19

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

DSSI-19-096

121856-01/-02/-03/-04

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 019694669JJK
Profile No.: PAD-WD-0868-R2-V7 State Manifest No.: N/A

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [] Wastewater [X]
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: Row Number, Waste Code, Constituent Name, Management Method, and Certification. Rows include Lead, Chloroform, and Tetrachloroethylene.

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here [X]
If no UHCs are present in the waste upon its initial generation check here: []
To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Signature] Title: Waste Engineer Date: 8/26/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

F001 (F001), F002 (F002), F003 (F003), F004 (F004), F005 (F005) USEPA Hazardous Waste Code(s)	Treatment Standard		F001 (F001), F002 (F002), F003 (F003), F004 (F004), F005 (F005) USEPA Hazardous Waste Code(s)	Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK

Profile No.: _____ State Manifest No.: NIA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

WASTE NUMBER	HAZARDOUS WASTE CODE(S)	DESCRIPTION	MANAGEMENT	OTHER INFORMATION
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7				
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MS
8-27-19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Donna Steh Date 8/26/19
Title Waste Engineer

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JSK

Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

WASTE NUMBER	USEPA WASTE CODE	DESCRIPTION	MANAGEMENT METHOD	HOW MUST THE WASTE BE MANAGED
36				
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MIS
8-27-19

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Donna Doherty* Date 8/26/19
Title Waste Engineer

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK
 Profile No.: _____ State Manifest No.: N/A

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene	←	0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendlocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene	A	0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/ Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate	→	0.20	28

MS
5-27-19

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Mollinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	A	0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propham		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosaffrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

MMS
8-27-19

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene		0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium	A	0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)	A	2.77	0.60 mg/l TCLP ⁴
Trichloroethylene	A	0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ¹ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel	A	3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes - mixed isomers (sum of o-m- and p-xylene)		0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	A	2.61	4.3 mg/l TCLP ²

MS
8-27-19

- 1 These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
- 2 Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
- 3 These compounds are regulated by the sum of their concentration instead of as individual constituents.
- 4 These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
- 5 Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

121868-01, 121868-02

DSSI-19-096

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC Manifest Doc. No.: 019694669JJK

Profile No.: PAD-WD-0906 State Manifest No.: N/A

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [] Wastewater [X]
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: REF #, US EPA HAZARDOUS WASTE CODE(S), 4. SUBCATEGORY (DESCRIPTION, NONE), 5. HOW MUST THE WASTE BE MANAGED? (ENTER LETTER FROM BELOW). Rows include codes D040, F001, F002, and U228.

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here [X]
If no UHCs are present in the waste upon its initial generation check here: []
To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Handwritten Signature] Title Waste Engineer Date 8-19-2019

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS					
F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard ¹		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard ¹	
	Wastewaters	Nonwastewaters		Wastewaters	Nonwastewaters
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: Four Rivers Nuclear Partnership LLC Manifest Doc. No.: 019694669JJK
 Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	3. US EPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE.		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1, PAGE 1
		DESCRIPTION	NONE	
5			<input type="checkbox"/>	
6			<input type="checkbox"/>	
7			<input type="checkbox"/>	
8			<input type="checkbox"/>	
9			<input type="checkbox"/>	
10			<input type="checkbox"/>	
11			<input type="checkbox"/>	
12			<input type="checkbox"/>	
13			<input type="checkbox"/>	
14			<input type="checkbox"/>	
15			<input type="checkbox"/>	
16			<input type="checkbox"/>	
17			<input type="checkbox"/>	
18			<input type="checkbox"/>	
19			<input type="checkbox"/>	
20			<input type="checkbox"/>	
21			<input type="checkbox"/>	
22			<input type="checkbox"/>	
23			<input type="checkbox"/>	
24			<input type="checkbox"/>	
25			<input type="checkbox"/>	
26			<input type="checkbox"/>	
27			<input type="checkbox"/>	
28			<input type="checkbox"/>	
29			<input type="checkbox"/>	
30			<input type="checkbox"/>	
31			<input type="checkbox"/>	
32			<input type="checkbox"/>	
33			<input type="checkbox"/>	
34			<input type="checkbox"/>	
35			<input type="checkbox"/>	

NA WRC 8-19-2019

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *W. R. Aue*
 Title Waste Engineer

Date 8-19-2019

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: Four Rivers Nuclear Partnership LLC Manifest Doc. No.: 019694669JSK
 Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	3. USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE.		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1, PAGE 1
		DESCRIPTION	NONE	
36			<input type="checkbox"/>	
37			<input type="checkbox"/>	
38			<input type="checkbox"/>	
39			<input type="checkbox"/>	
40			<input type="checkbox"/>	
41			<input type="checkbox"/>	
42			<input type="checkbox"/>	
43			<input type="checkbox"/>	
44			<input type="checkbox"/>	
45			<input type="checkbox"/>	
46			<input type="checkbox"/>	
47			<input type="checkbox"/>	
48			<input type="checkbox"/>	
49			<input type="checkbox"/>	
50			<input type="checkbox"/>	
51			<input type="checkbox"/>	
52			<input type="checkbox"/>	
53			<input type="checkbox"/>	
54			<input type="checkbox"/>	
55			<input type="checkbox"/>	
56			<input type="checkbox"/>	
57			<input type="checkbox"/>	
58			<input type="checkbox"/>	
59			<input type="checkbox"/>	
60			<input type="checkbox"/>	
61			<input type="checkbox"/>	
62			<input type="checkbox"/>	
63			<input type="checkbox"/>	
64			<input type="checkbox"/>	
65			<input type="checkbox"/>	

NA WRC 8-19-2019

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *W. R. [unclear]*
 Title Waste Engineer

Date 2-19-2019

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: Four Rivers Nuclear Partnership LLC Manifest Doc. No.: 019694669JSK
 Profile No.: _____ State Manifest No.: N/A

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane	A	0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform	A	0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene	A	0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane	A	0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/ Ethylene dibromide	A	0.028	15
Bromodichloromethane	A	0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide	A	0.11	15	m-Dichlorobenzene	A	0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene	A	0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane	A	0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane	A	0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene	A	0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide	A	3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride	A	0.057	6.0	1,2-Dichloropropane	A	0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene	A	0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene	A	0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride	A	0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinat		0.042 ¹	1.4 ¹
Di-n-propyl nitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane	A	12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene	A	0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propham		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane	A	0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	A	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene	A	0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene	A	0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane	A	0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane	A	0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride	A	0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	A	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc		2.61	4.3 mg/l TCLP ²

- ¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
- ² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
- ³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
- ⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
- ⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

121868-01, 121868-02

DSSI-19-096

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC Manifest Doc. No.: 019694669JJK
 Profile No.: PAD-WD-0906 State Manifest No.: N/A

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
 2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF.	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY		HOW MUST THE WASTE BE MANAGED?
		ENTER THE SUBCATEGORY DESCRIPTION	ENTER APPROPRIATE STATE USEPA CODE	
1	D040	Trichloroethylene - Wastewater - Characteristically Toxic	<input type="checkbox"/>	A
2	F001	Trichloroethylene - Wastewater w/Spent Degreaser	<input type="checkbox"/>	A
3	F002	Trichloroethylene - Wastewater w/Spent Solvent	<input type="checkbox"/>	A
4	U228	Trichloroethylene - Wastewater - w/Spill of pure TCE	<input type="checkbox"/>	A

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. **RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 **RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 **GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 **DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. **RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. **RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. **WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Cheryl Rose* Title Waste Engineer Date 8-19-2019

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS					
Full range F001-F005 spent solvent constituents and their associated USEPA hazardous waste codes	Treatment Standard		Full range F001-F005 spent solvent constituents and their associated USEPA hazardous waste codes	Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: Four Rivers Nuclear Partnership LLC Manifest Doc. No.: 019694669JJK
 Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	3 USEPA HAZARDOUS WASTE CODE(S)	4 SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE. DESCRIPTION	NONE	5 HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1 PAGE 1
5			<input type="checkbox"/>	
6			<input type="checkbox"/>	
7			<input type="checkbox"/>	
8			<input type="checkbox"/>	
9			<input type="checkbox"/>	
10			<input type="checkbox"/>	
11			<input type="checkbox"/>	
12			<input type="checkbox"/>	
13			<input type="checkbox"/>	
14			<input type="checkbox"/>	
15			<input type="checkbox"/>	
16			<input type="checkbox"/>	
17			<input type="checkbox"/>	
18			<input type="checkbox"/>	
19			<input type="checkbox"/>	
20			<input type="checkbox"/>	
21			<input type="checkbox"/>	
22			<input type="checkbox"/>	
23			<input type="checkbox"/>	
24			<input type="checkbox"/>	
25			<input type="checkbox"/>	
26			<input type="checkbox"/>	
27			<input type="checkbox"/>	
28			<input type="checkbox"/>	
29			<input type="checkbox"/>	
30			<input type="checkbox"/>	
31			<input type="checkbox"/>	
32			<input type="checkbox"/>	
33			<input type="checkbox"/>	
34			<input type="checkbox"/>	
35			<input type="checkbox"/>	

NA WAC 8-19-2019

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *W. R. [unclear]* Date 8-19-2019
 Title Waste Engineer

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: Four Rivers Nuclear Partnership LLC

Manifest Doc. No.: 019694669JSK

Profile No.: _____

State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

ITEM #	USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1 PAGE 1
		ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE	NONE	
		DESCRIPTION		
36				<input type="checkbox"/>
37				<input type="checkbox"/>
38				<input type="checkbox"/>
39				<input type="checkbox"/>
40				<input type="checkbox"/>
41				<input type="checkbox"/>
42				<input type="checkbox"/>
43				<input type="checkbox"/>
44				<input type="checkbox"/>
45				<input type="checkbox"/>
46				<input type="checkbox"/>
47				<input type="checkbox"/>
48				<input type="checkbox"/>
49				<input type="checkbox"/>
50				<input type="checkbox"/>
51				<input type="checkbox"/>
52				<input type="checkbox"/>
53				<input type="checkbox"/>
54				<input type="checkbox"/>
55				<input type="checkbox"/>
56				<input type="checkbox"/>
57				<input type="checkbox"/>
58				<input type="checkbox"/>
59				<input type="checkbox"/>
60				<input type="checkbox"/>
61				<input type="checkbox"/>
62				<input type="checkbox"/>
63				<input type="checkbox"/>
64				<input type="checkbox"/>
65				<input type="checkbox"/>

N/A WAC 8-19-2019

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: *W. R. Powell*
 Title: Waste Engineer

Date: 2-19-2019

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: Four Rivers Nuclear Partnership LLC Manifest Doc. No.: 019694669J5K
 Profile No.: _____ State Manifest No.: N/A

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane	A	0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform	A	0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene	A	0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane	A	0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide	A	0.028	15
Bromodichloromethane	A	0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide	A	0.11	15	m-Dichlorobenzene	A	0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene	A	0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane	A	0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane	A	0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene	A	0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide	A	3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride	A	0.057	6.0	1,2-Dichloropropane	A	0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene	A	0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene	A	0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride	A	0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.042 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.059	5.6
Di-n-propyl nitrosamine		0.40	14	Naphthalene		0.52	NA
1,4-Dioxane	A	12.0	170	2-Naphthylamine		0.27 ¹	14 ¹
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.028	28
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.068	14
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.32	28
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.028 ¹	13 ¹
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.12	29
Endosulfan I		0.023	0.066	p-Nitrophenol		0.40	28
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	2.3 ¹
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	17
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	2.3
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.013	35
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene	A	0.057	10	N-Nitrosopyrrolidine		0.056 ¹	0.28 ¹
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.014	4.6
Ethyl ether		0.12	160	Parathion		0.10	10
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.042 ¹	1.4 ¹
Ethyl methacrylate		0.14	160	Pebulate		0.055 ¹	10 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.000035	0.001
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3.4	PeCDFs (All Pentachlorodibenzofurans)		0.055	6.0
Fluorene		0.059	3.4	Pentachloroethane		0.055	4.8
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.089	7.4
Heptachlor		0.0012	0.066	Pentachlorophenol		0.081	16
Heptachlor epoxide		0.016	0.066	Phenacetin		0.059	5.6
Hexachlorobenzene		0.055	10	Phenanthrene		0.039	6.2
Hexachlorobutadiene		0.055	5.6	Phorate		0.021	4.6
Hexachlorocyclopentadiene		0.057	2.4	Phthalic acid		0.055 ¹	28 ¹
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Physostigmine		0.056 ¹	1.4 ¹
Hexachloroethane		0.055	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Promecarb		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Pronamide		0.093	1.5
Iodomethane		0.19	65	Propham		0.056 ¹	1.4 ¹
Isobutyl alcohol		5.6	170	Propoxur		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Prosulfocarb		0.042 ¹	1.4 ¹
Isosafrole		0.081	2.6	Pyrene		0.067	8.2
Kepone		0.0011	0.13	Pyridine		0.014	16
Methacrylonitrile		0.24	84	Safrole		0.081	22
Methanol		5.6	0.75 mg/l ¹	Silvex/2,4,5-TP		0.72	7.9
Methapyriene		0.081	1.5	1,2,4,5-Tetrachlorobenzene		0.055	14
Methiocarb		0.056 ¹	1.4 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methomyl		0.028 ¹	0.14 ¹	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
Methoxychlor		0.25	0.18	1,1,1,2-Tetrachloroethane	A	0.057	6.0
3-Methylcholanthrene		0.0055	15	1,1,2,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30				

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	A	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene	A	0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene	A	0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane	A	0.054	6.0	Chromium (Total)		2.77	0.86mg/l TCLP
1,1,2-Trichloroethane	A	0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride	A	0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	A	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc		2.61	4.3 mg/l TCLP ²

- ¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
- ² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
- ³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
- ⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
- ⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

121809-01 + 121809-02

DSSI-19-096

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: FRNP Manifest Doc. No.: 019694669JJK
Profile No.: PAD-WD-0838-V4 State Manifest No.: N/A

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [X] Wastewater []
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: ID#, USEPA HAZARDOUS WASTE CODE(S), SUBCATEGORY DESCRIPTION, NONE, HOW MUST THE WASTE BE MANAGED? (ENTER LETTER FROM COLUMN 5 ABOVE). Rows include Cadmium and Lead with 'A' in the management column.

To identify F039 or D001-D043 underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here []
If no UHCs are present in the waste upon its initial generation check here: [X]
To list additional USEPA waste code(s) and subcategory(s), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Handwritten Signature] Title Waste Engineer Date 08/07/2019

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	SOLVENT WASTE TREATMENT STANDARDS ¹				
	Treatment Standards ²		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standards ²	
	Wastewaters	Nonwastewaters		Wastewaters	Nonwastewaters
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CARBN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) - Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRUP Manifest Doc. No.: 019694669JJK

Profile No.: _____ State Manifest No.: N/A

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF.	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY (ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE, SIMPLY CHECK NONE)	HOW THE WASTE IS MANAGED. ENTER LETTER FROM COLUMN 4
5			
6			
7			
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9			
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I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: *[Handwritten Signature]*
 Title: Waste Engineer

Date: 08/07/2019

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694669JJK
 Profile No.: _____ State Manifest No.: NIA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself **IS NOT** an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF#	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE, SIMPLY CHECK NONE	NONE	HOW MUST THE WASTE BE MANAGED ENTER FROM FORM A1 PAGE 1
36			<input type="checkbox"/>	
37			<input type="checkbox"/>	
38			<input type="checkbox"/>	
39			<input type="checkbox"/>	
40			<input type="checkbox"/>	
41			<input type="checkbox"/>	
42			<input type="checkbox"/>	
43			<input type="checkbox"/>	
44			<input type="checkbox"/>	
45			<input type="checkbox"/>	
46			<input type="checkbox"/>	
47			<input type="checkbox"/>	
48			<input type="checkbox"/>	
49			<input type="checkbox"/>	
50			<input type="checkbox"/>	
51			<input type="checkbox"/>	
52			<input type="checkbox"/>	
53			<input type="checkbox"/>	
54			<input type="checkbox"/>	
55			<input type="checkbox"/>	
56			<input type="checkbox"/>	
57			<input type="checkbox"/>	
58			<input type="checkbox"/>	
59			<input type="checkbox"/>	
60			<input type="checkbox"/>	
61			<input type="checkbox"/>	
62			<input type="checkbox"/>	
63			<input type="checkbox"/>	
64			<input type="checkbox"/>	
65			<input type="checkbox"/>	

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: *[Handwritten Signature]*
 Title: Waste Engineer

Date: 08/07/2019

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRUP Manifest Doc. No.: 019694669JJK
 Profile No.: _____ State Manifest No.: N/A

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propham		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) (unless noted)	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) (unless noted)
Tetrachloroethylene	←	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	←	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)		0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	→	2.61	4.3 mg/l TCLP ²


¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.

² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.

³ These compounds are regulated by the sum of their concentration instead of as individual constituents.

⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.

⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)		21. Generator ID Number	22. Page	23. Manifest Tracking Number		
		KY 8890008982	2	019894647JJK		
24. Generator's Name Four Rivers Nuclear Partnership, LLC, on behalf of FRNP 5511 Hobbs Road, Kevil, KY 42053						
25. Transporter _____ Company Name				U.S. EPA ID Number		
RSB LOGISTICS Inc.				WAR000012005		
26. Transporter _____ Company Name				U.S. EPA ID Number		
27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers		29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes
		No.	Type			
RQ	UN 3077, Environmentally Hazardous substance, solid, n.o.s., (PCB), 9, PG III	2	DM	458	K	
32. Special Handling Instructions and Additional Information						
				Accumulation Start Date: 08/21/18		
ERG # 171 In the event of an RQ Release, call 1-800-424-8802				If undeliverable, return to generator		
EXCLUSIVE USE SHIPMENT, See Attachment for Additional Info				Shipment ID: DSSI-19-087		
TRANSPORTER	33. Transporter _____ Acknowledgment of Receipt of Materials		Signature		Month	Day
	Printed/Typed Name	<i>Michael J. Jannan</i>			8	21
TRANSPORTER	34. Transporter _____ Acknowledgment of Receipt of Materials		Signature		Month	Day
	Printed/Typed Name					
DESIGNATED FACILITY	35. Discrepancy					
36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						

PCB and Additional Information Attachment, Page 3 of 3

Manifest Number: 019694647JJK

Shipment ID Number: DSSI-19-087

Shipment Date: 8/21/2019

UHWM Section	RFD	Container / WASTE ID	Barcode	Description	PCB Date To Storage	Accumulation Start Date	NET VOLUME (ft3)	GROSS WT (lb)	Gross Wt (Kg)	Net Wt (lb)	Net Wt (Kg)	Maximum Activity MBq
27b.1	121618	121618-01	PAD18C41037	OIL FILLED DOOR CLOSERS	08/22/18	N/A	6	734	333	674	306	NA
27b.1	121618	121618-02	PAD18C41112	OIL FILLED DOOR CLOSERS	09/05/18	N/A	3	368	167	338	153	NA
9b.3	121423	121423-05	PAD19C42009	VENTILATION DUCT OIL AND WATER	02/13/19	N/A	6.59	466	211	410	186	0.423
9b.3	121423	121423-06	PAD19C42044	VENTILATION DUCT OIL AND WATER	04/17/19	N/A	7.4	484	220	428	194	0.442
9b.4	120885	120885-03	PAD19C42504	PF PUMP OIL	N/A	N/A	0.56	36	16	27	12	0.143
9b.1	121799	121799-01	PAD19C42747	UNUSED KEROSENE	N/A	06/19/19	11.4	500	227	420	191	NA
9b.1	121799	121799-02	PAD19C42748	UNUSED KEROSENE	N/A	06/19/19	11.4	483	219	403	183	NA
9b.1	121799	121799-03	PAD19C42749	UNUSED KEROSENE	N/A	06/19/19	11.4	336	152	256	116	NA
9b.1	121799	121799-04	PAD19C42750	UNUSED KEROSENE	N/A	06/19/19	11.4	323	147	243	110	NA
9b.1	121800	121800-01	PAD19C42917	UNUSED MINERAL SPIRITS	N/A	06/19/19	11.4	497	225	417	189	NA
9b.2	121586	121586-01	PAD18C40808	VACUUM DEBRIS AND PARTS	N/A	08/21/18	7.4	158	72	102	46	8.164
		Totals	11				87.95	4385	1989	3718	1686	9.1

A-124

121799-01/-02/-03/-04

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 319694647 JJK
 Profile No.: 19-08-041 State Manifest No.: NA

- Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
- Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

Waste Code	Subcategory	Underlying Hazardous Constituent(s)	Treatment Standard	Management
1	D001	HI TOC TREATMENT	<input type="checkbox"/>	A
2			<input type="checkbox"/>	
3			<input type="checkbox"/>	
4			<input type="checkbox"/>	

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Donna O'Neil* Title Waste Engineer Date 7/24/19

121/99-01/-02/-03/-04

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

Hazardous Waste Constituent (USEPA Hazardous Waste Code)	Treatment Standard		Hazardous Waste Constituent (USEPA Hazardous Waste Code)	Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or (WETOX or C HOXD) followed by CARBN	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) - Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

121/99-011-021-031-04

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694647JK
Profile No.: 19-08-041 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form. Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Table with 5 columns and 30 rows (5-34). The table is mostly empty with a diagonal line drawn across it from the top-left to the bottom-right. Each row has a small box in the 5th column.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Handwritten Signature] Title: Waste Engineer Date: 7/24/19

121/99-01/-02/-03/-04

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694647 JJK

Profile No.: 19-08-041 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	USEPA Waste Code	USEPA Subcategory	Management	Other
36				
37				
38				
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65				

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Handwritten Signature] Date 7/24/19
Title Waste Engineer

121 199-01/-02/-03/-04

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP

Manifest Doc. No. : 019694647 JJK

Profile No.:

19-08-041

State Manifest No.:

NA

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

121/99-01/-02/-03/-04

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	→	0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine	A	0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.066 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyriene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)	←	0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

121/99-01/-02/-03/-04

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	→	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	←	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)	←	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	→	2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership (FRNP) Manifest Doc. No.: 019694647 JJK
 Profile No.: 19-08-047 State Manifest No.: NA

- Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
- Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

1	D006	CADMIUM	<input checked="" type="checkbox"/>	A, A.1
2	D007	CHROMIUM	<input checked="" type="checkbox"/>	A, A.1
3	D008	LEAD	<input checked="" type="checkbox"/>	A, A.1
4			<input type="checkbox"/>	

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9/21/19

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Dominic Stahl Title Waste Engineer Date 8/19/19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent **MUST** be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

Hazardous Waste Constituent	Alternative Standards		Hazardous Waste Constituent	Treatment Standard	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: Four Rivers Nuclear Partnership (FRNP) Manifest Doc. No.: 019694647 JJK

Profile No.: 19-08-047 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself **IS NOT** an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	Waste Description	Subcategory	Management	Other
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
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29				
30				
31				
32				
33				
34				
35				

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *[Handwritten Signature]* Date 8/20/79
Title Waste Engineer

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: Four Rivers Nuclear Partnership (FRNP) Manifest Doc. No.: 019624647JJK
Profile No.: 19-08-047 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	Description	Quantity	Management	Other
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
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58				
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60				
61				
62				
63				
64				
65				

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Arnie A. [Signature] Date 8/20/19
Title Waste Engineer

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: Four Rivers Nuclear Partnership (FRNP) Manifest Doc. No.: 019694647 JJC
 Profile No.: 19-08-047 State Manifest No.: NA

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	←	0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	A	0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs (All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyriline		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)	→	0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	←	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ¹ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel	A	3.98	11 mg/l TCLP ⁴
Vemolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium	A	0.82	5.7 mg/l TCLP ⁵
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)	→	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver	A	0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium	A	1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc		2.61	4.3 mg/l TCLP ²

- ¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
- ² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
- ³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
- ⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
- ⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

121800-01

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership LLC (FRNP) Manifest Doc. No.: 519694647 JJK
 Profile No.: 19-08-041 State Manifest No.: NA

- Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
- Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

1	2	3	4	5
1	D001	HI TOC TREATMENT	<input type="checkbox"/>	A
2			<input type="checkbox"/>	
3			<input type="checkbox"/>	
4			<input type="checkbox"/>	

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Donna Stehr Title Waste Engineer Date 7/24/19

121800-01

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

F001 through F005 spent solvents, carbon tetrachloride, and other hazardous waste codes	Treatment Standards		F001 through F005 spent solvents, carbon tetrachloride, and other hazardous waste codes	Treatment Standards	
	Wastewater	Nonwastewater ³		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or ((WETOX or C HOXD) followed by CAREN)	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) - Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 01969464735K
Profile No.: 19-08-041 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Table with 5 columns: Waste Number, Description, Subcategory, Management, and Constituent(s). Rows 5-35 are mostly empty with a diagonal line across them.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Handwritten Signature] Title: Waste Engineer Date: 7/24/19

121800-01

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No. : 019694647 JJK

Profile No.: 19-08-041 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	USEPA Hazardous Waste Code	Subcategory	Management	Other
36				
37				
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I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Donna Atkin* Title Waste Engineer Date 7/24/19

121800-01

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FRNP

Manifest Doc. No. : 019694647 JJK

Profile No.: 19-08-041

State Manifest No.: NA

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo (g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/ Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

1.2.1.800-U1

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	→	0.10	NA	p-Dimethylaminoazobenzene	→	0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3L.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)	←	0.50	30	1,1,2,2-Tetrachloroethane	←	0.057	6.0

121800-01

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	→	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	←	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)	←	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	→	2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

PCB and Additional Information Attachment, Page 3 of 3

Manifest Number: 019694669JJK

Shipment ID Number: DSSI-19-096

Shipment Date: 9/10/2019

UHMW Section	RFD	Container / WASTE ID	Barcode	Description	Accumulation Start Date	PCB Date Storage	NET VOLUME (ft3)	GROSS WT (lb)	Gross Wt (Kg)	NET Wt (lb)	NET Wt (Kg)	Maximum Activity MBq
9b.1	121856	121856-01	PAD19C43001	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/09/19	N/A	44.11	2382	1080	2237	1015	N/A
9b.1	121856	121856-02	PAD19C43002	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/09/19	N/A	44.11	2368	1074	2223	1008	N/A
9b.1	121856	121856-03	PAD19C43003	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/10/19	N/A	44.11	2338	1060	2282	1035	N/A
9b.1	121856	121856-04	PAD19C43004	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/10/19	N/A	40.1	2148	974	2003	909	N/A
9b.1	121856	121856-05	PAD19C42963	TRANSFORMER OIL FROM C-537 SWITCHYARD	07/22/19	N/A	22.72	1002	454	857	389	N/A
9b.2	121444	121444-11	PAD19C42192	USED OIL FROM MOBILE EQUIPMENT	04/09/19	N/A	4	396	180	340	154	N/A
9b.2	121444	121444-16	PAD19C42715	USED OIL FROM MOBILE EQUIPMENT	04/09/19	N/A	2.5	229	104	173	78	N/A
9b.3	121625	121625-01	PAD18C41054	PCB LIGHT BALLASTS/TRANSFORMERS/CAPACITORS/ETC.	N/A	09/10/18	7.4	296	134	240	109	23
9b.4	121584	121584-01	PAD18C41455	TCE SYSTEMS LIQUID	10/22/18	N/A	13.367	1240	562	774	351	N/A
27b.1	121717	121717-01	PAD19C42104	USED OIL FROM WAP #2 IN C-310	N/A	N/A	0.67	33	15	24	11	15
27b.1	121717	121717-02	PAD19C42105	USED OIL FROM WAP #2 IN C-310	N/A	N/A	0.67	38	17	29	13	18
27b.2	121687	121687-03	PAD19C42401	KEROSENE DRAINED FROM TORPEDO HEATERS	03/07/19	N/A	6.68	367	166	311	141	N/A
27b.3	121752	121752-01	PAD19C42213	DIESEL FUEL	02/20/19	N/A	6.59	401	182	345	156	N/A
27b.3	121752	121752-02	PAD19C42173	DIESEL FUEL	03/21/19	N/A	7.27	413	187	357	162	N/A
27b.3	121752	121752-03	PAD19C42418	DIESEL FUEL	03/23/19	N/A	6.73	410	186	354	161	N/A
27b.3	121752	121752-04	PAD19C42180	DIESEL FUEL	03/26/19	N/A	6.73	418	190	362	164	N/A
27b.3	121752	121752-05	PAD19C42181	DIESEL FUEL	03/26/19	N/A	6.73	420	191	364	165	N/A
27b.3	121752	121752-06	PAD19C42182	DIESEL FUEL	03/26/19	N/A	6.73	432	196	376	171	N/A
27b.3	121752	121752-07	PAD19C42183	DIESEL FUEL	03/27/19	N/A	6.73	418	190	362	164	N/A
27b.3	121752	121752-08	PAD19C42187	DIESEL FUEL	04/02/19	N/A	6.015	431	195	375	170	N/A
27b.3	121752	121752-09	PAD19C42195	DIESEL FUEL	04/12/19	N/A	6.86	420	191	364	165	N/A
27b.3	121752	121752-10	PAD19C42199	DIESEL FUEL	04/22/19	N/A	6.42	388	176	332	151	N/A
27b.3	121752	121752-11	PAD19C42714	DIESEL FUEL	05/18/19	N/A	7.4	435	197	379	172	N/A
27b.4	121753	121753-01	PAD19C42214	GASOLINE	02/25/19	N/A	2.53	236	107	180	82	N/A
27b.5	121755	121755-01	PAD19C42162	ETHYLENE GLYCOL (ANTIFREEZE)	02/25/19	N/A	7.4	531	241	475	215	15
27b.5	121755	121755-02	PAD19C42709	ETHYLENE GLYCOL (ANTIFREEZE)	05/13/19	N/A	1.21	114	52	58	26	2
27b.6	121797	121797-01	PAD19C42913	UNUSED SHELL TURBO 320 OIL	N/A	N/A	7.4	552	250	416	189	14
27b.6	121797	121797-02	PAD19C42914	UNUSED SHELL TURBO 320 OIL	N/A	N/A	7.4	532	241	396	180	13
27b.6	121798	121798-01	PAD19C42915	UNUSED WELCH VACUUM OIL	N/A	N/A	7.4	514	233	378	171	12
27b.6	121798	121798-02	PAD19C42916	UNUSED WELCH VACUUM OIL	N/A	N/A	7.4	532	241	396	180	13
27b.6	121801	121801-01	PAD19C42744	UNUSED WINTREX-GLYCOL	N/A	N/A	7.4	632	287	496	225	16
27b.6	121801	121801-02	PAD19C42918	UNUSED WINTREX-GLYCOL	N/A	N/A	7.4	658	298	522	237	17
27b.6	121802	121802-01	PAD19C42745	UNUSED CC WET (OUT OF DATE)	N/A	N/A	7.4	584	265	448	203	15
27b.6	121802	121802-02	PAD19C42746	UNUSED CC WET (OUT OF DATE)	N/A	N/A	7.4	598	271	497	225	16
27b.6	121851	121851-01	PAD19C42919	WATER DRAINED FROM THE C-310 TOPS PURGE 200 FT STACK	N/A	N/A	7.4	502	228	446	202	23
27b.6	121851	121851-02	PAD19C42920	WATER DRAINED FROM THE C-310 TOPS PURGE 200 FT STACK	N/A	N/A	7.4	512	232	456	207	24
27b.6	121851	121851-03	PAD19C42921	WATER DRAINED FROM THE C-310 TOPS PURGE 200 FT STACK - REPACKAGED FROM 121848-01	N/A	N/A	7.4	330	150	274	124	14
27b.7	121809	121809-01	PAD19C42615	LIQUIDS FROM C-400 IRA GLYCOL	04/23/19	N/A	44.11	2944	1335	2944	1335	96
27b.7	121809	121809-02	PAD19C42616	LIQUIDS FROM C-400 IRA GLYCOL	04/23/19	N/A	44.11	2948	1337	2948	1337	96
27b.8	121810	121810-01	PAD19C42617	LUBE OIL C-400 IRA	04/23/19	N/A	7.4	80	36	24	11	N/A
27b.9	121868	121868-01	PAD19C42835	TCE WATER-C400 IRA OUTSIDE	06/12/19	N/A	0.13	15	7	6	3	N/A
27b.9	121868	121868-02	PAD19C42836	TCE WATER-C400 IRA OUTSIDE	06/12/19	N/A	0.13	19	9	10	5	N/A
Totals				42			493.1	30,256	13,724	26,833	12,171	442

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UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY 8890008982	2. Page 1 of 2	3. Emergency Response Phone 1-270-441-8333	4. Manifest Tracking Number 019694693 JJK			
5. Generator's Name and Mailing Address Four Rivers Nuclear Partnership, LLC (FRNP) on behalf of FRNP 5511 Hobbs Road, Kevil, KY 42053 Generator's Phone: 270-441-5025				Generator's Site Address (if different than mailing address) FRNP on behalf of the FRNP Paducah Gaseous Diffusion Plant 5511 Hobbs Rd, Kevil, KY 42053				
6. Transporter 1 Company Name Interstate Ventures, Inc.				U.S. EPA ID Number TNR000034878				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address Energy Solutions Clive Disposal Site-Waste Treatment Facility US I-80 Exit 49, Clive, UT 84029 Facility's Phone: 1-435-884-0155				U.S. EPA ID Number UTD982598898				
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
			No.	Type				
		1. UN 3077, Environmentally hazardous substance, solid, n.o.s., (PCB), 9, PGIII	5	DM	118	K		
		2.						
		3.						
	4. Four Rivers Nuclear Partnership, LLC (FRNP) and the U.S. Department of Energy (DOE) are co-generators pursuant to a Co-Generator agreement dated September 13, 2017. Under this agreement, FRNP is responsible for performing all Resource Conservation and Recovery Act (RCRA) generator activities on behalf of both FRNP and DOE for all activities under the scope of FRNP's Contract DE-EM0004895, including, but not limited to, characterizing waste, manifesting waste to off-site facilities, packaging and labeling waste for transport, and storing and managing waste, in accordance with RCRA requirements. Transportation hereunder is for DOE and the actual total transportation charges paid are to be reimbursed by the Government pursuant to Contract DE-EM0004895.							
14. Special Handling Instructions and Additional Information Truck: H58 Trailer 251689 TID: 349504 Accumulation Start Date: N/A PCB Start Date: 11/07/18 ERG # 171 In the event of an RQ Release, call 1-800-424-8802 If undeliverable, return to generator See Attachment for Additional Info Shipment ID: 7340-08-0005								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offeror's Printed/Typed Name <i>Regina Pea on behalf of FRNP</i>				Signature <i>Regina Pea</i>		Month Day Year 10 31 19		
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____							
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name <i>Michael Culp</i> Signature <i>Michael Culp</i> Month Day Year 10 31 19 Transporter 2 Printed/Typed Name _____ Signature _____ Month Day Year _____							
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
	18b. Alternate Facility (or Generator) Facility's Phone: _____				Manifest Reference Number: _____ U.S. EPA ID Number _____			
	18c. Signature of Alternate Facility (or Generator) <i>AA Trullshair</i>					Month Day Year _____		
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. <i>H132</i> 2. _____ 3. _____ 4. _____							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name <i>Albert Ems</i> Signature <i>Albert Ems</i> Month Day Year 11 4 19								

PCB and Additional Information Attachment, Page 2 of 2

Manifest Number: 019694693JJK

Shipment ID Number: 7340-08-0005

Shipment Date: 10/31/2019

UHWM Section	RFD	Container / WASTE ID	Barcode	Description	PCB Date to Storage	NET VOLUME (ft3)	GROSS WT (lb)	Gross Wt (Kg)	NET WT (lb)	NET WT (Kg)
9b.1	121424	121424-06	PAD18C41095	RAG, PANS, PLASTIC, PADS, PPE	11/07/18	7.4	82	37	26	12
9b.1	121424	121424-07	PAD19C42008	RAG, PANS, PLASTIC, PADS, PPE	01/24/19	7.4	98	44	42	19
9b.1	121424	121424-08	PAD19C42042	RAG, PANS, PLASTIC, PADS, PPE	03/06/19	7.4	126	57	70	32
9b.1	121424	121424-09	PAD19C42043	SPILL CLEANUP DEBRIS/ENCAPSULATION WASTE	03/14/19	7.4	118	54	62	28
9b.1	121424	121424-10	PAD19C42502	RAG, PANS, PLASTIC, PADS, PPE	05/09/19	7.3	116	53	60	27
		Totals	5			36.9	540	245	260	118

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Four Rivers Nuclear Partnership, LLC (FRNP) and the U.S. Department of Energy (DOE) are co-generators pursuant to a Co-Generator agreement dated September 13, 2017. Under this agreement, FRNP is responsible for performing all Resource Conservation and Recovery Act (RCRA) generator activities on behalf of both FRNP and DOE for all activities under the scope of FRNP's Contract DE-EM0004895, including, but not limited to, characterizing waste, manifesting waste to off-site facilities, packaging and labeling waste for transport, and storing and managing waste, in accordance with RCRA requirements. Transportation hereunder is for DOE and the actual total transportation charges paid are to be reimbursed by the Government pursuant to Contract DE-EM0004895. 2050-0039

Please print or type

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY 8890008882	2. Page 1 of 2	3. Emergency Response Phone No. 1-270-447-8333	4. Manifest Tracking Number 019694703 JJK				
5. Generator Name and Address (if different than mailing address) Four Rivers Nuclear Partnership, LLC. (FRNP) 5511 Hobbs Road, Kevil, KY 42053			Generator's Address (if different than mailing address) Paducah Gaseous Diffusion Plant, 5511 Hobbs Rd, Kevil, KY 42053						
6. Transporter 1 Company Name RSB LOGISTICS Inc.			U.S. EPA ID Number WAR000012005						
7. Transporter 2 Company Name			U.S. EPA ID Number						
8. Designated Facility Name and Site Address Diversified Scientific Services, Inc. (DSSI) 857 Gallaher Road, Kingston, TN 37763 1-865-376-8747			U.S. EPA ID Number TND982109142						
Facility's Phone:									
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	X 1.	UN 3089, Waste, Metal powders, flammable, n.o.s. (Niobium Powder, Molybdenum Powder), 4.1, PG-II	1	DM	7	K	D001	D003	
	X 2.	UN 3209, Waste, Metallic substance, water-reactive, self-heating, n.o.s. (Carbon Powder, Aluminum Powder), 4.3 (4.2), PG-II	1	DM	1	K	D001	D003	
	RQ 3.	UN 1479, Waste Oxidizing solid, n.o.s. (Potassium Permanganate, Potassium Persulfide), 5.1, RQ (Potassium Permanganate), PG-II	1	DM	39	K	D001	D003	
RQ 4.	UN 1992, Waste Flammable liquids, toxic, n.o.s., (Methanol, PCB), 3(5.1), RQ (PCB), PG-II	1	DM	3	K	D001	U154		
14. Special Handling Instructions and Additional Information ERG # 170, 138, 140, 131 In the event of an RQ Release, call 1-800-424-8802 See PCB Attachment for Additional Info						Accumulation Start Date: 09/27/18		PCB Start Date: 09/27/18	
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						If undeliverable, return to generator Shipments ID: PF0881-02-703 DSSI-19-105			
Generator's/Offoror's Printed/Typed Name Michelle Telfair on behalf of FRNP		Signature Michelle Telfair		Month Day Year 9 25 19					
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit:						
	Transporter signature (for exports only):		Date leaving U.S.:						
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials		Signature Rick Campbell		Month Day Year 9 25 19				
	Transporter 1 Printed/Typed Name Rick Campbell		Signature Rick Campbell		Month Day Year 9 25 19				
DESIGNATED FACILITY	18. Discrepancy		18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection		Manifest Reference Number:				
	18b. Alternate Facility (or Generator)		U.S. EPA ID Number		Facility's Phone:				
	18c. Signature of Alternate Facility (or Generator)		Month Day Year						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. 2. 3. 4.									
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name Tiffany Clark		Signature Tiffany Clark		Month Day Year 9 27 19					

Please print or type.

Form Approved. OMB No. 2050-0039

177-51503-55492

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UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number KY 8800008882	2. Page 1 of 2	3. Emergency Response Phone 1-270-441-8333	4. Manifest Tracking Number 019694743 JJK		
5. Generator's Name and Mailing Address Four Rivers Nuclear Partnership, LLC. (FRNP) 5511 Hobbs Road, Kevil, KY 42053				Generator's Site Address (if different than mailing address) FRNP Paducah Gaseous Diffusion Plant, 5511 Hobbs Rd, Kevil, KY 42053			
6. Transporter 1 Company Name Interstate Ventures, Inc.				U.S. EPA ID Number TNR000034678			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address EnergySolutions Clive Disposal Site-Treatment Facility US I-80 Exit 48, Clive, UT 84029				U.S. EPA ID Number UTD982598898			
Facility's Phone: 1-435-884-0155							
9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
RQ	1. UN 3321, Waste, Radioactive material, low specific activity (LSA-II), 7, Th-230, U-234, (D004, PCB), 23 MBq, Fissile Excepted	1	DM	25	K	D004 D006 D007	D008
	2.						
	3.						
	4. Four Rivers Nuclear Partnership, LLC (FRNP) and the U.S. Department of Energy (DOE) are co-generators pursuant to a Co-Generator agreement dated September 13, 2017. Under this agreement, FRNP is responsible for performing all Resource Conservation and Recovery Act (RCRA) generator activities on behalf of both FRNP and DOE for all activities under the scope of FRNP's Contract DE-EM0004895, including, but not limited to, characterizing waste, manifesting waste to off-site facilities, packaging and labeling waste for transport, and storing and managing waste, in accordance with RCRA requirements. Transportation hereunder is for DOE and the actual total transportation charges paid are to be reimbursed by the Government pursuant to Contract DE-EM0004895.						
14. Special Handling Instructions and Additional Information Truck: BBG1 Van: 251669 TID: 0349667 Accumulation Start Date: 07/25/19 PCB Start Date: 07/25/19 ERG # 162 In the event of an RQ Release, call 1-800-424-8802 If undeliverable, return to generator Exclusive Use Shipment, See Attachment for Additional Info Shipment ID: 9750-01-0008							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offeror's Printed/Typed Name C. C. Kelleher on behalf of FRNP				Signature C. C. Kelleher		Month Day Year 12 16 19	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name James Stacy Cox				Signature James Stacy Cox		Month Day Year 12 16 19	
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: _____ U.S. EPA ID Number: _____							
18b. Alternate Facility (or Generator) Facility's Phone: _____ U.S. EPA ID Number: _____							
18c. Signature of Alternate Facility (or Generator) BY: _____ Month Day Year _____							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H132		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Aunt Ems				Signature Aunt Ems		Month Day Year 12 19 19	

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Additional Information Attachment, Page 2 of 2

Manifest Number: 019694743 JJK

Shipment ID Number: 9750-01-0008

Shipment Date: 12/16/2019

UHMW Section	RFD	Container / WASTE ID	Barcode	Description	Accumulation Storage Date	Date to Storage	NET VOLUME (ft3)	GROSS WT (lb)	Gross Wt (Kg)	Maximum Activity MBq	Net Wt (lb)	Net Wt (Kg)
9b.1	121872	121872-01	PAD19C42840	Vacuums and vacuum debris	07/25/19	07/25/19	7	112	50.80	23.04	56	25
Totals			1				7	112	51	23	56	25

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121872-01

POOR QUALITY ORIGINAL

PAD-WD-0901-R1

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership, LLC (FRNP) Manifest Doc. No.: 012694743 JJK
Profile No.: 9750-01-0008 State Manifest No.: NA

- 1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater [] Wastewater [X]
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory.

Table with 5 columns: ID, Waste Code, Constituent Name, Check Box, and Subcategory. Rows include Arsenic (D004), Cadmium (D006), Chromium (D007), and Lead (D008).

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here [X]
If no UHCs are present in the waste upon its initial generation check here: []
To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here: []

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT
B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.
Signature: [Signature] Title: WASTE ENGINEER Date: 10/31/2019

121872-01

POOR QUALITY ORIGINAL

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

F001-F005 Spent Solvent	Treatment Standards		Spent Solvent Constituent	Treatment Standards	
	Wastewater	Nonwastewater		Wastewater	Nonwastewater
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- Isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p- isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) - Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

121872-01

POOR QUALITY ORIGINAL

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694743 JJK

Profile No.: 12-19 95 9750-01-0008 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

WASTE NUMBER	USEPA HAZARDOUS WASTE CODES	DESCRIPTION	MANAGEMENT	OTHER INFORMATION
5				
6				
7				
8				
9				
10				
11				
12				
13				
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16				
17				
18				
19				
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21				
22				
23				
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25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Signature]
Title: WASTE ENGINEER

Date: 10/31/2019

121872-01

POOR QUALITY ORIGINAL

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: FRNP Manifest Doc. No.: 019694743 JOR

Profile No.: 9750-01-0008 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Waste Number	Waste Description	Subcategory	Management
36			
37			
38			
39			
40			
41			
42			
43			
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45			
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49			
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51			
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62			
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64			
65			

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Handwritten Signature]
Title WASTE ENGINEER

Date 10/31/2019

121872-01

POOR QUALITY ORIGINAL

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: FLNP Manifest Doc. No.: 019694743JJK
 Profile No.: 9720-01-0008 State Manifest No.: NA

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/ Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadlm		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

121872-01

POOR QUALITY ORIGINAL

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	WW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	WW (mg/kg) unless noted
Chlorobenzilate		0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	A	0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3.4	PeCDFs (All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)		0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

Form B1
Page 2 of 3

121872-01

POOR QUALITY ORIGINAL

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene		0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony		1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel	A	3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate		0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴
Vernolate		0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP
Vinyl chloride		0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵
Xylenes - mixed isomers (sum of o-, m-, and p-xylene)		0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc		2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.

² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.

³ These compounds are regulated by the sum of their concentration instead of as individual constituents.

⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.

⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

PCB and Additional Information Attachment, Page 2 of 2

Manifest Number: 019694703 JJK

Shipment ID Number: DSSI-19-105

Shipment Date: 9/25/2019

UHWM Section	RFD	Container / WASTE ID	Barcode	Description	PCB Date to Storage	Accumulation Storage Date	NET VOLUME (ft3)	GROSS WT (lb)	Gross Wt (Kg)	NET WT (lb)	Net Wt (Kg)
9b.1	121465	121465-13	PAD18C41132	Unused Lab Chemicals	N/A	09/27/18	0.67	27	12	15	7
9b.2	121465	121465-15	PAD18C41129	Unused Lab Chemicals	N/A	09/27/18	0.67	13	6	1	0.5
9b.3	121644	121644-01	PAD18C40704	Unused Lab Chemicals	N/A	09/27/18	1	116	53	86	39
9b.4	121645	121645-01	PAD18C40715	Unused Lab Chemicals	09/27/18	09/27/18	0.205	10	5	6	3
Totals				4			2.5	166	75	108	49

A-159

~~121465-06/07/08/09/11/16~~ 121644-01
 CT 9-23-19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership (FRNP) Manifest Doc. No.: 019694703JJK
 Profile No.: 19-09-063 State Manifest No.: NA

- Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
- Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF #	USEPA HAZARDOUS WASTE CODE(S)	SUBCATEGORY		HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE SIMPLY CHECK NONE	NONE	
1	D003	Reactive	<input checked="" type="checkbox"/>	A
2			<input type="checkbox"/>	
3			<input type="checkbox"/>	
4			<input type="checkbox"/>	

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *L. DeBorja* Title Waste Engineer Date 9-23-19

121403-00-07-08-09-11110 121641-01
 LT 9-23-19
LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS ¹					
F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard ²		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard ²	
	Wastewaters	Nonwastewaters		Wastewaters	Nonwastewaters
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

- D001:
- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
 - B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
 - C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.
- D002:
- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
 - E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: (FRNP) Manifest Doc. No.: 019694703JJK

Profile No.: 19-09-063 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF. #	3. USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1, PAGE 1
		ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE	DESCRIPTION	
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I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Lochlan Jelfan*
Title Waste Engineer Date 9-23-19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: (FRNP) Manifest Doc. No.: 019694703 JJK

Profile No.: 19-09-063 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	3. USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1, PAGE 1
		ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE	NONE	
36			<input type="checkbox"/>	
37			<input type="checkbox"/>	
38			<input type="checkbox"/>	
39			<input type="checkbox"/>	
40			<input type="checkbox"/>	
41			<input type="checkbox"/>	
42			<input type="checkbox"/>	
43			<input type="checkbox"/>	
44			<input type="checkbox"/>	
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58			<input type="checkbox"/>	
59			<input type="checkbox"/>	
60			<input type="checkbox"/>	
61			<input type="checkbox"/>	
62			<input type="checkbox"/>	
63			<input type="checkbox"/>	
64			<input type="checkbox"/>	
65			<input type="checkbox"/>	

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Signature] Date 9-23-19
 Title Waste Engineer

POOR QUALITY ORIGINAL

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: (FRNP)

Manifest Doc. No.: 0196 94703 JJK

Profile No.: 19-09-063

State Manifest No.: NA

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	→	0.10	NA	p-Dimethylaminoazobenzene	→	0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)		0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3.4	PeCDFs (All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)		0.000063	0.001	Phthalic anhydride		0.055	28 ¹
Hexachloroethane		0.055	30	Physostigmine		0.056 ¹	1.4 ¹
Hexachloropropylene		0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene		0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹
Iodomethane		0.19	65	Pronamide		0.093	1.5
Isobutyl alcohol		5.6	170	Propam		0.056 ¹	1.4 ¹
Isodrin		0.021	0.066	Propoxur		0.056 ¹	1.4 ¹
Isosafrole		0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹
Kepone		0.0011	0.13	Pyrene		0.067	8.2
Methacrylonitrile		0.24	84	Pyridine		0.014	16
Methanol		5.6	0.75 mg/l ¹	Safrole		0.081	22
Methapyrilene		0.081	1.5	Silvex/2,4,5-TP		0.72	7.9
Methiocarb		0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14
Methomyl		0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001
Methoxychlor		0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001
3-Methylcholanthrene		0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0
4,4'-Methylene bis(2-chloroaniline)	←	0.50	30	1,1,2,2-Tetrachloroethane	←	0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	→	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	→	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromofom		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate	0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴	
Vernolate	0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP	
Vinyl chloride	0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵	
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	←	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	←	2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

121465-13/~~14~~-15
 19-09-19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership (FRNP) Manifest Doc. No.: 019694703JJK
 Profile No.: 19-09-052, 19-09-054 State Manifest No.: NA

- Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
- Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF #	3. USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE	NONE	
1	D001	Ignitable	<input checked="" type="checkbox"/>	A
2	D003	Reactive	<input checked="" type="checkbox"/>	A
3			<input type="checkbox"/>	
4			<input type="checkbox"/>	

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(s), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Signature] Title Waste Engineer Date 9-23-19

12140-13/14/15
 12145-13
 121465-15
 7-29-19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS ¹					
F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard ²		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard ²	
	Wastewaters	Nonwastewaters		Wastewaters	Nonwastewaters
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.
³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.

121405-13-14-15 CT 8-24-19

121465-13
121465-15

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: (FRNP)

Manifest Doc. No.: 019694703 JJK

Profile No.: 19-09-052, 19-09-054

State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	3. USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1, PAGE 1
		ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE	NONE	
5			<input type="checkbox"/>	
6			<input type="checkbox"/>	
7			<input type="checkbox"/>	
8			<input type="checkbox"/>	
9			<input type="checkbox"/>	
10			<input type="checkbox"/>	
11			<input type="checkbox"/>	
12			<input type="checkbox"/>	
13			<input type="checkbox"/>	
14			<input type="checkbox"/>	
15			<input type="checkbox"/>	
16			<input type="checkbox"/>	
17			<input type="checkbox"/>	
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22			<input type="checkbox"/>	
23			<input type="checkbox"/>	
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25			<input type="checkbox"/>	
26			<input type="checkbox"/>	
27			<input type="checkbox"/>	
28			<input type="checkbox"/>	
29			<input type="checkbox"/>	
30			<input type="checkbox"/>	
31			<input type="checkbox"/>	
32			<input type="checkbox"/>	
33			<input type="checkbox"/>	
34			<input type="checkbox"/>	
35			<input type="checkbox"/>	

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Handwritten Signature]

Title Waste Engineer

Date 9-23-19

121405-13-147-13 CR-24-19
 121465-13
 121465-15

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: (FRNP) _____ Manifest Doc. No.: 019694703JJK
 Profile No.: 19-09-052, 19-09-054 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	3. USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1, PAGE 1
		ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE	DESCRIPTION	
36				
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I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [Signature] Date 9-23-19
 Title Waste Engineer

Form A2
Page 2 of 2

POOR QUALITY ORIGINAL

121402-13-14-15 Lt 9-24-19

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

121465-13
121465-15
Generator Name:

(FRNP)

Manifest Doc. No. :

019694703 JJK

Profile No.:

19-09-052, ~~19-09-051~~ 4TS-249

State Manifest No.:

NA

If D001-D043 requires treatment to the 40 CFR 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene		0.059	3.4	2-Chloro-1,3-butadiene		0.057	0.28 ¹
Acenaphthene		0.059	3.4	Chlorodibromomethane		0.057	15
Acetone		0.28	160	Chloroethane		0.27	6.0
Acetonitrile		5.6	38 ¹	bis(2-Chloroethoxy)methane		0.036	7.2
Acetophenone		0.010	9.7	bis(2-Chloroethyl)ether		0.033	6.0
2-Acetylaminofluorene		0.059	140	Chloroform		0.046	6.0
Acrolein		0.29	NA	bis(2-Chloroisopropyl)ether		0.055	7.2
Acylamide		19 ¹	23 ¹	p-Chloro-m-cresol		0.018	14
Acrylonitrile		0.24	84	2-Chloroethyl vinyl ether		0.062 ¹	NA ¹
Aldicarb sulfone		0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride		0.19	30
Aldrin		0.021	0.066	2-Chloronaphthalene		0.055	5.6
4-Aminobiphenyl		0.13	NA	2-Chlorophenol		0.044	5.7
Aniline		0.81	14	3-Chloropropylene		0.036	30
Anthracene		0.059	3.4	Chrysene		0.059	3.4
Aramite		0.36	NA	o-Cresol		0.11	5.6
alpha-(BHC)		0.00014	0.066	m-Cresol		0.77	5.6
beta-(BHC)		0.00014	0.066	p-Cresol		0.77	5.6
delta-(BHC)		0.023	0.066	m-Cumenyl methylcarbamate		0.056 ¹	1.4 ¹
gamma-(BHC)		0.0017	0.066	Cyclohexanone		0.36	0.75 mg/l ¹
Barban		0.056 ¹	1.4 ¹	o,p'-DDD		0.023	0.087
Bendiocarb		0.056 ¹	1.4 ¹	p,p'-DDD		0.023	0.087
Benomyl		0.056 ¹	1.4 ¹	o,p'-DDE		0.031	0.087
Benzene		0.14	10	p,p'-DDE		0.031	0.087
Benz(a)anthracene		0.059	3.4	o,p'-DDT		0.0039	0.087
Benzal chloride		0.055 ¹	6.0 ¹	p,p'-DDT		0.0039	0.087
Benzo(b)fluoranthene ³		0.11	6.8	Dibenz(a,h)anthracene		0.055	8.2
Benzo(k)fluoranthene ³		0.11	6.8	Dibenz(a,e)pyrene		0.061	NA
Benzo(g,h,i)perylene		0.0055	1.8	1,2-Dibromo-3-chloropropane		0.11	15
Benzo(a)pyrene		0.061	3.4	1,2-Dibromomethane/ Ethylene dibromide		0.028	15
Bromodichloromethane		0.35	15	Dibromomethane		0.11	15
Bromomethane/Methyl Bromide		0.11	15	m-Dichlorobenzene		0.036	6.0
4-Bromophenyl phenyl ether		0.055	15	o-Dichlorobenzene		0.088	6.0
n-Butyl alcohol		5.6	2.6	p-Dichlorobenzene		0.090	6.0
Butylate		0.042 ¹	1.4 ¹	Dichlorodifluoromethane		0.23	7.2
Butyl benzyl phthalate		0.017	28	1,1-Dichloroethane		0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb		0.066	2.5	1,2-Dichloroethane		0.21	6.0
Carbaryl		0.006 ¹	0.14 ¹	1,1-Dichloroethylene		0.025	6.0
Carbenzadim		0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene		0.054	30
Carbofuran		0.006 ¹	0.14 ¹	2,4-Dichlorophenol		0.044	14
Carbofuran phenol		0.056 ¹	1.4 ¹	2,6-Dichlorophenol		0.044	14
Carbon disulfide		3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D		0.72	10
Carbon tetrachloride		0.057	6.0	1,2-Dichloropropane		0.85	18
Carbosulfan		0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene		0.036	18
Chlordane (alpha and gamma isomers)		0.0033	0.26	trans-1,3-Dichloropropylene		0.036	18
p-Chloroaniline		0.46	16	Dieldrin		0.017	0.13
Chlorobenzene		0.057	6.0	Diethyl phthalate		0.20	28

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	→	0.10	NA	p-Dimethylaminoazobenzene	→	0.13 ¹	NA
2,4-Dimethyl phenol	↖	0.036	14	Methylene chloride	↖	0.089	30
Dimethyl phthalate	↖	0.047	28	Methyl ethyl ketone	↖	0.28	36
Di-n-butyl phthalate	↖	0.057	28	Methyl isobutyl ketone	↖	0.14	33
1,4-Dinitrobenzene	↖	0.32	2.3	Methyl methacrylate	↖	0.14	160
4,6-Dinitro-o-cresol	↖	0.28	160	Methyl methansulfonate	↖	0.018	NA
2,4-Dinitrophenol	↖	0.12	160	Methyl parathion	↖	0.014	4.6
2,4-Dinitrotoluene	↖	0.32	140	Metolcarb	↖	0.056 ¹	1.4 ¹
2,6-Dinitrotoluene	↖	0.55	28	Mexacarbate	↖	0.056 ¹	1.4 ¹
Di-n-octyl phthalate	↖	0.017	28	Molinate	↖	0.042 ¹	1.4 ¹
Di-n-propylnitrosamine	↖	0.40	14	Naphthalene	↖	0.059	5.6
1,4-Dioxane	↖	12.0	170	2-Naphthylamine	↖	0.52	NA
Diphenylamine ³	↖	0.92	13 ¹	o-Nitroaniline	↖	0.27 ¹	14 ¹
Diphenylnitrosamine ³	↖	0.92	13 ¹	p-Nitroaniline	↖	0.028	28
1,2-Diphenylhydrazine	↖	0.087	NA	Nitrobenzene	↖	0.068	14
Disulfoton	↖	0.017	6.2	5-Nitro-o-toluidine	↖	0.32	28
Dithiocarbamates (total)	↖	0.028	28 ¹	o-Nitrophenol	↖	0.028 ¹	13 ¹
Endosulfan I	↖	0.023	0.066	p-Nitrophenol	↖	0.12	29
Endosulfan II	↖	0.029	0.13	N-Nitrosodiethylamine	↖	0.40	28
Endosulfan sulfate	↖	0.029	0.13	N-Nitrosodimethylamine	↖	0.40	2.3 ¹
Endrin	↖	0.0028	0.13	N-Nitroso-di-n-butylamine	↖	0.40	17
Endrin aldehyde	↖	0.025	0.13	N-Nitrosomethylethylamine	↖	0.40	2.3
EPTC	↖	0.042 ¹	1.4 ¹	N-Nitrosomorpholine	↖	0.40	2.3
Ethyl acetate	↖	0.34	33	N-Nitrosopiperidine	↖	0.013	35
Ethyl benzene	↖	0.057	10	N-Nitrosopyrrolidine	↖	0.013	35
Ethyl cyanide/Propanenitrile	↖	0.24	360	Oxamyl	↖	0.056 ¹	0.28 ¹
Ethyl ether	↖	0.12	160	Parathion	↖	0.014	4.6
Bis(2-Ethylhexyl)phthalate	↖	0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	↖	0.10	10
Ethyl methacrylate	↖	0.14	160	Pebulate	↖	0.042 ¹	1.4 ¹
Ethylene oxide	↖	0.12	NA	Pentachlorobenzene	↖	0.055 ¹	10 ¹
Famphur	↖	0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)	↖	0.000035	0.001
Fluoranthene	↖	0.068	3.4	PeCDFs(All Pentachlorodibenzofurans)	↖	0.000035	0.001
Fluorene	↖	0.059	3.4	Pentachloroethane	↖	0.055	6.0
Formetate hydrochloride	↖	0.056 ¹	1.4 ¹	Pentachloronitrobenzene	↖	0.055	4.8
Heptachlor	↖	0.0012	0.066	Pentachlorophenol	↖	0.089	7.4
Heptachlor epoxide	↖	0.016	0.066	Phenacetin	↖	0.081	16
Hexachlorobenzene	↖	0.055	10	Phenanthrene	↖	0.059	5.6
Hexachlorobutadiene	↖	0.055	5.6	Phenol	↖	0.039	6.2
Hexachlorocyclopentadiene	↖	0.057	2.4	Phorate	↖	0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)	↖	0.000063	0.001	Phthalic acid	↖	0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)	↖	0.000063	0.001	Phthalic anhydride	↖	0.055	28 ¹
Hexachloroethane	↖	0.055	30	Physostigmine	↖	0.056 ¹	1.4 ¹
Hexachloropropylene	↖	0.035	30	Physostigmine salicylate	↖	0.056 ¹	1.4 ¹
Indeno(1,2,3-c,d)pyrene	↖	0.0055	3.4	Promecarb	↖	0.056 ¹	1.4 ¹
Iodomethane	↖	0.19	65	Pronamide	↖	0.093	1.5
Isobutyl alcohol	↖	5.6	170	Propam	↖	0.056 ¹	1.4 ¹
Isodrin	↖	0.021	0.066	Propoxur	↖	0.056 ¹	1.4 ¹
Isosafrole	↖	0.081	2.6	Prosulfocarb	↖	0.042 ¹	1.4 ¹
Kepone	↖	0.0011	0.13	Pyrene	↖	0.067	8.2
Methacrylonitrile	↖	0.24	84	Pyridine	↖	0.014	16
Methanol	↖	5.6	0.75 mg/l ¹	Safrole	↖	0.081	22
Methapyrilene	↖	0.081	1.5	Silvex/2,4,5-TP	↖	0.72	7.9
Methiocarb	↖	0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene	↖	0.055	14
Methomyl	↖	0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)	↖	0.000063	0.001
Methoxychlor	↖	0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)	↖	0.000063	0.001
3-Methylcholanthrene	↖	0.0055	15	1,1,1,2-Tetrachloroethane	↖	0.057	6.0
4,4'-Methylene bis(2-chloroaniline)	↖	0.50	30	1,1,2,2-Tetrachloroethane	↖	0.057	6.0

121465-13
121465-15

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	→	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	→	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromoform		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate	0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴	
Vernolate	0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP	
Vinyl chloride	0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵	
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	←	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	←	2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION

Generator Name: Four Rivers Nuclear Partnership (FRNP) Manifest Doc. No.: 019694708 JJK
 Profile No.: 19-09-064 State Manifest No.: NA

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Non-wastewater Wastewater
 2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF ID	3. USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE	NONE	
1	D001	Ignitable	<input checked="" type="checkbox"/>	A
2	U154	Methanol	<input checked="" type="checkbox"/>	A
3			<input type="checkbox"/>	→
4			<input type="checkbox"/>	→

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here
 If no UHCs are present in the waste upon its initial generation check here:
 To list additional USEPA waste code(s) and subcategory(ies), use the supplemental sheet provided (Form A2) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B3, B4, or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
 For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49, to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
 For hazardous debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."
- E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS**
 This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature *Robert J. J...* Title Waste Engineer Date 9-23-19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS ¹					
F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s)	Treatment Standard	
	Wastewaters	Nonwastewaters		Wastewaters	Nonwastewaters
Acetone (F003)	0.28	160	Methanol (F003)	5.6	0.75 (TCLP) ³
Benzene (F005)	0.14	10	Methylene chloride (F001, F002)	0.089	30
n-Butanol (n-butyl alcohol) (F003)	5.6	2.6	Methyl ethyl ketone (F005)	0.28	36
Carbon disulfide (F005)	3.8	4.8 (TCLP) ³	Methyl isobutyl ketone (F003)	0.14	33
Carbon tetrachloride (F001)	0.057	6.0	Nitrobenzene (F004)	0.068	14
Chlorobenzene (F002)	0.057	6.0	2-Nitropropane (F005)	INCIN or {(WETOX or C HOXD) followed by CARBN}	INCIN
o-Cresol (F004)	0.11	5.6	Pyridine (F005)	0.014	16
Cresol (m- and p- isomers) (F004)	0.77	5.6	Tetrachloroethylene (F001, F002)	0.056	6.0
Cyclohexanone (F003)	0.36	0.75 (TCLP) ³	Toluene (F005)	0.080	10
o-Dichlorobenzene (F002)	0.088	6.0	1,1,1-Trichloroethane (F001, F002)	0.054	6.0
2-Ethoxyethanol (F005) also called ethylene glycol, monoethyl ether	INCIN or BIODG	INCIN	1,1,2-Trichloroethane (F002)	0.054	6.0
Ethyl acetate (F003)	0.34	33	Trichloroethylene (F001, F002)	0.054	6.0
Ethyl benzene (F003)	0.057	10	Trichloromonofluoromethane (F002)	0.020	30
Ethyl ether (F003)	0.12	160	1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	0.057	30
Isobutanol (Isobutyl Alcohol) (F005)	5.6	170	Xylenes (sum of o-, m-, and p-isomers) (F003)	0.32	30

¹ All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

² For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of the constituents or less than 10x the standard listed.

³ These solvents require a TCLP standard with units of mg/l.

SUBCATEGORY REFERENCE

D001:

- A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.
- B. Ignitable characteristic wastes, except for the 40 CFR 261.21(a) (1) High TOC subcategory, that are managed in CWA/CWA-equivalent or Class I SDWA systems.
- C. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a) (1) – Greater than or equal to 10% total organic carbon.

D002:

- D. Corrosive characteristic wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.
- E. Corrosive characteristic wastes that are managed in CWA, CWA-equivalent, or Class I SWDA systems.

Form A1
Page 2 of 2

POOR QUALITY ORIGINAL

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: (FRNP) Manifest Doc. No.: 019694703JJK

Profile No.: 19-09-064 State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

REF #	3. USEPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1, PAGE 1
		ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE	DESCRIPTION	
5				<input type="checkbox"/>
6				<input type="checkbox"/>
7				<input type="checkbox"/>
8				<input type="checkbox"/>
9				<input type="checkbox"/>
10				<input type="checkbox"/>
11				<input type="checkbox"/>
12				<input type="checkbox"/>
13				<input type="checkbox"/>
14				<input type="checkbox"/>
15				<input type="checkbox"/>
16				<input type="checkbox"/>
17				<input type="checkbox"/>
18				<input type="checkbox"/>
19				<input type="checkbox"/>
20				<input type="checkbox"/>
21				<input type="checkbox"/>
22				<input type="checkbox"/>
23				<input type="checkbox"/>
24				<input type="checkbox"/>
25				<input type="checkbox"/>
26				<input type="checkbox"/>
27				<input type="checkbox"/>
28				<input type="checkbox"/>
29				<input type="checkbox"/>
30				<input type="checkbox"/>
31				<input type="checkbox"/>
32				<input type="checkbox"/>
33				<input type="checkbox"/>
34				<input type="checkbox"/>
35				<input type="checkbox"/>

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Signature] Title: Waste Engineer Date: 9-23-19

LAND DISPOSAL NOTIFICATION AND CERTIFICATION (PHASE IV)

Generator Name: (FRNP)

Manifest Doc. No.: 019694703JJK

Profile No.: 19-09-064

State Manifest No.: NA

This form is a continuation from form A1 for a waste identified by more than five USEPA waste code/subcategory groups. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form.

Continue (from form A1, Page 1) to identify ALL USEPA hazardous wastes that apply to this waste shipment (as defined by 40 CFR 261). For each waste number, identify the corresponding subcategory (write in the description from 40 CFR 268.40, or check NONE if the waste does not have a subcategory.). Also identify in column 5 how the waste must be managed. Spent solvents are listed on Form A1, Page 2. F039 constituent(s) and underlying hazardous constituent(s) if applicable, must be listed and attached.

Table with 5 columns: REF #, 3 USEPA HAZARDOUS WASTE CODE(S), 4 SUBCATEGORY (DESCRIPTION/NONE), 5 HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM FORM A1, PAGE 1. The table is mostly empty with a large diagonal line from row 36 to row 65.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature: [Handwritten Signature]

Title: Waste Engineer

Date: 9-23-19

F039/UNDERLYING HAZARDOUS CONSTITUENT (UTS) (Phase IV)

Generator Name: (FRNP)

Manifest Doc. No. :

019694703JJK

Profile No.:

19-09-064

State Manifest No.:

NA

If D001-D043 requires treatment to the 40 CRF 268.48 standards, then each underlying hazardous constituent (UHC) present in the waste at the point of generation and at a level above the Universal Treatment Standard (UTS) constituent specific standard must be listed. Write the letter (A1, B1, B2, B3, or C that corresponds to the letter on the land disposal form A1) beside each constituent present to properly describe how the constituent(s) must be managed under 40 CFR 268.7. If contaminated soil requires treatment to 40 CFR 268.49 standards, then each UHC in the waste at the point of generation and at a level above 10 times the UTS must be listed. Write the appropriate letter which corresponds to the letter on the LDR form.

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Acenaphthylene	→	0.059	3.4	2-Chloro-1,3-butadiene	→	0.057	0.28 ¹
Acenaphthene	→	0.059	3.4	Chlorodibromomethane	→	0.057	15
Acetone	→	0.28	160	Chloroethane	→	0.27	6.0
Acetonitrile	→	5.6	38 ¹	bis(2-Chloroethoxy)methane	→	0.036	7.2
Acetophenone	→	0.010	9.7	bis(2-Chloroethyl)ether	→	0.033	6.0
2-Acetylaminofluorene	→	0.059	140	Chloroform	→	0.046	6.0
Acrolein	→	0.29	NA	bis(2-Chloroisopropyl)ether	→	0.055	7.2
Acylamide	→	19 ¹	23 ¹	p-Chloro-m-cresol	→	0.018	14
Acrylonitrile	→	0.24	84	2-Chloroethyl vinyl ether	→	0.062 ¹	NA ¹
Aldicarb sulfone	→	0.056 ¹	0.28 ¹	Chloromethane/Methyl chloride	→	0.19	30
Aldrin	→	0.021	0.066	2-Chloronaphthalene	→	0.055	5.6
4-Aminobiphenyl	→	0.13	NA	2-Chlorophenol	→	0.044	5.7
Aniline	→	0.81	14	3-Chloropropylene	→	0.036	30
Anthracene	→	0.059	3.4	Chrysene	→	0.059	3.4
Aramite	→	0.36	NA	o-Cresol	→	0.11	5.6
alpha-(BHC)	→	0.00014	0.066	m-Cresol	→	0.77	5.6
beta-(BHC)	→	0.00014	0.066	p-Cresol	→	0.77	5.6
delta-(BHC)	→	0.023	0.066	m-Cumenyl methylcarbamate	→	0.056 ¹	1.4 ¹
gamma-(BHC)	→	0.0017	0.066	Cyclohexanone	→	0.36	0.75 mg/l ¹
Barban	→	0.056 ¹	1.4 ¹	o,p'-DDD	→	0.023	0.087
Bendiocarb	→	0.056 ¹	1.4 ¹	p,p'-DDD	→	0.023	0.087
Benomyl	→	0.056 ¹	1.4 ¹	o,p'-DDE	→	0.031	0.087
Benzene	→	0.14	10	p,p'-DDE	→	0.031	0.087
Benz(a)anthracene	→	0.059	3.4	o,p'-DDT	→	0.0039	0.087
Benzal chloride	→	0.055 ¹	6.0 ¹	p,p'-DDT	→	0.0039	0.087
Benzo(b)fluoranthene ³	→	0.11	6.8	Dibenz(a,h)anthracene	→	0.055	8.2
Benzo(k)fluoranthene ³	→	0.11	6.8	Dibenz(a,e)pyrene	→	0.061	NA
Benzo(g,h,i)perylene	→	0.0055	1.8	1,2-Dibromo-3-chloropropane	→	0.11	15
Benzo(a)pyrene	→	0.061	3.4	1,2-Dibromomethane/ Ethylene dibromide	→	0.028	15
Bromodichloromethane	→	0.35	15	Dibromomethane	→	0.11	15
Bromomethane/Methyl Bromide	→	0.11	15	m-Dichlorobenzene	→	0.036	6.0
4-Bromophenyl phenyl ether	→	0.055	15	o-Dichlorobenzene	→	0.088	6.0
n-Butyl alcohol	→	5.6	2.6	p-Dichlorobenzene	→	0.090	6.0
Butylate	→	0.042 ¹	1.4 ¹	Dichlorodifluoromethane	→	0.23	7.2
Butyl benzyl phthalate	→	0.017	28	1,1-Dichloroethane	→	0.059	6.0
2-sec-Butyl-4,6-dinitrophenol/Dinoseb	→	0.066	2.5	1,2-Dichloroethane	→	0.21	6.0
Carbaryl	→	0.006 ¹	0.14 ¹	1,1-Dichloroethylene	→	0.025	6.0
Carbenzadim	→	0.056 ¹	1.4 ¹	trans-1,2-Dichloroethylene	→	0.054	30
Carbofuran	→	0.006 ¹	0.14 ¹	2,4-Dichlorophenol	→	0.044	14
Carbofuran phenol	→	0.056 ¹	1.4 ¹	2,6-Dichlorophenol	→	0.044	14
Carbon disulfide	→	3.8	4.8 mg/l TCLP ¹	2,4-Dichlorophenoxyacetic acid/2,4-D	→	0.72	10
Carbon tetrachloride	→	0.057	6.0	1,2-Dichloropropane	→	0.85	18
Carbosulfan	→	0.028 ¹	1.4 ¹	cis-1,3-Dichloropropylene	→	0.036	18
Chlordane (alpha and gamma isomers)	→	0.0033	0.26	trans-1,3-Dichloropropylene	→	0.036	18
p-Chloroaniline	→	0.46	16	Dieldrin	→	0.017	0.13
Chlorobenzene	←	0.057	6.0	Diethyl phthalate	←	0.20	28

Form B1
Page 1 of 3

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Chlorobenzilate	↔	0.10	NA	p-Dimethylaminoazobenzene		0.13 ¹	NA
2,4-Dimethyl phenol		0.036	14	Methylene chloride		0.089	30
Dimethyl phthalate		0.047	28	Methyl ethyl ketone		0.28	36
Di-n-butyl phthalate		0.057	28	Methyl isobutyl ketone		0.14	33
1,4-Dinitrobenzene		0.32	2.3	Methyl methacrylate		0.14	160
4,6-Dinitro-o-cresol		0.28	160	Methyl methansulfonate		0.018	NA
2,4-Dinitrophenol		0.12	160	Methyl parathion		0.014	4.6
2,4-Dinitrotoluene		0.32	140	Metolcarb		0.056 ¹	1.4 ¹
2,6-Dinitrotoluene		0.55	28	Mexacarbonate		0.056 ¹	1.4 ¹
Di-n-octyl phthalate		0.017	28	Molinate		0.042 ¹	1.4 ¹
Di-n-propylnitrosamine		0.40	14	Naphthalene		0.059	5.6
1,4-Dioxane		12.0	170	2-Naphthylamine		0.52	NA
Diphenylamine ³		0.92	13 ¹	o-Nitroaniline		0.27 ¹	14 ¹
Diphenylnitrosamine ³		0.92	13 ¹	p-Nitroaniline		0.028	28
1,2-Diphenylhydrazine		0.087	NA	Nitrobenzene		0.068	14
Disulfoton		0.017	6.2	5-Nitro-o-toluidine		0.32	28
Dithiocarbamates (total)		0.028	28 ¹	o-Nitrophenol		0.028 ¹	13 ¹
Endosulfan I		0.023	0.066	p-Nitrophenol		0.12	29
Endosulfan II		0.029	0.13	N-Nitrosodiethylamine		0.40	28
Endosulfan sulfate		0.029	0.13	N-Nitrosodimethylamine		0.40	2.3 ¹
Endrin		0.0028	0.13	N-Nitroso-di-n-butylamine		0.40	17
Endrin aldehyde		0.025	0.13	N-Nitrosomethylethylamine		0.40	2.3
EPTC		0.042 ¹	1.4 ¹	N-Nitrosomorpholine		0.40	2.3
Ethyl acetate		0.34	33	N-Nitrosopiperidine		0.013	35
Ethyl benzene		0.057	10	N-Nitrosopyrrolidine		0.013	35
Ethyl cyanide/Propanenitrile		0.24	360	Oxamyl		0.056 ¹	0.28 ¹
Ethyl ether		0.12	160	Parathion		0.014	4.6
Bis(2-Ethylhexyl)phthalate		0.28	28	Total PCBs (sum of all PCB isomers or all Aroclors)	A	0.10	10
Ethyl methacrylate		0.14	160	Pebulate		0.042 ¹	1.4 ¹
Ethylene oxide		0.12	NA	Pentachlorobenzene		0.055 ¹	10 ¹
Famphur		0.017	15	PeCDDs (All Pentachlorodibenzo-p-dioxins)		0.000035	0.001
Fluoranthene		0.068	3.4	PeCDFs(All Pentachlorodibenzofurans)		0.000035	0.001
Fluorene		0.059	3.4	Pentachloroethane		0.055	6.0
Formetanate hydrochloride		0.056 ¹	1.4 ¹	Pentachloronitrobenzene		0.055	4.8
Heptachlor		0.0012	0.066	Pentachlorophenol		0.089	7.4
Heptachlor epoxide		0.016	0.066	Phenacetin		0.081	16
Hexachlorobenzene		0.055	10	Phenanthrene		0.059	5.6
Hexachlorobutadiene		0.055	5.6	Phenol		0.039	6.2
Hexachlorocyclopentadiene		0.057	2.4	Phorate		0.021	4.6
HxCDDs (All Hexachlorodibenzo-p-dioxins)		0.000063	0.001	Phthalic acid		0.055 ¹	28 ¹
HxCDFs (All Hexachlorodibenzofurans)	0.000063	0.001	Phthalic anhydride		0.055	28 ¹	
Hexachloroethane	0.055	30	Physostigmine		0.056 ¹	1.4 ¹	
Hexachloropropylene	0.035	30	Physostigmine salicylate		0.056 ¹	1.4 ¹	
Indeno(1,2,3-c,d)pyrene	0.0055	3.4	Promecarb		0.056 ¹	1.4 ¹	
Iodomethane	0.19	65	Pronamide		0.093	1.5	
Isobutyl alcohol	5.6	170	Propam		0.056 ¹	1.4 ¹	
Isodrin	0.021	0.066	Propoxur		0.056 ¹	1.4 ¹	
Isosafrole	0.081	2.6	Prosulfocarb		0.042 ¹	1.4 ¹	
Kepone	0.0011	0.13	Pyrene		0.067	8.2	
Methacrylonitrile	0.24	84	Pyridine		0.014	16	
Methanol	5.6	0.75 mg/l ¹	Safrole		0.081	22	
Methapyrilene	0.081	1.5	Silvex/2,4,5-TP		0.72	7.9	
Methiocarb	0.056 ¹	1.4 ¹	1,2,4,5-Tetrachlorobenzene		0.055	14	
Methomyl	0.028 ¹	0.14 ¹	TCDDs (All Tetrachlorodibenzo-p-dioxins)		0.000063	0.001	
Methoxychlor	0.25	0.18	TCDFs (All Tetrachlorodibenzo-furans)		0.000063	0.001	
3-Methylcholanthrene	0.0055	15	1,1,1,2-Tetrachloroethane		0.057	6.0	
4,4'-Methylene bis(2-chloroaniline)	↔	0.50	30	1,1,2,2-Tetrachloroethane		0.057	6.0

CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted	CONSTITUENT	HOW MUST THIS CONSTITUENT BE MANAGED?	WW (mg/l)	NWW (mg/kg) unless noted
Tetrachloroethylene	→	0.056	6.0	INORGANIC CONSTITUENTS			
2,3,4,6-Tetrachlorophenol		0.030	7.4	Antimony	→	1.9	2.1 mg/l TCLP
Thiodicarb		0.0191	1.4 ¹	Antimony		1.9	1.15 mg/l TCLP ⁴
Thiophanate-methyl		0.0561	1.4 ¹	Arsenic		1.4	5.0 mg/l TCLP
Toluene		0.080	10	Barium		1.2	7.6 mg/l TCLP
Toxaphene		0.0095	2.6	Barium		1.2	21 mg/l TCLP ⁴
Triallate		0.042 ¹	1.4 ¹	Beryllium		0.82	0.014 mg/l TCLP
Tribromomethane/Bromofom		0.63	15	Beryllium		0.82	1.22 mg/l TCLP ⁴
2,4,6-Tribromophenol		0.035	7.4	Cadmium		0.69	0.19 mg/l TCLP
1,2,4-Trichlorobenzene		0.055	19	Cadmium		0.69	0.11 mg/l TCLP ⁴
1,1,1-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.86 mg/l TCLP
1,1,2-Trichloroethane		0.054	6.0	Chromium (Total)		2.77	0.60 mg/l TCLP ⁴
Trichloroethylene		0.054	6.0	Cyanides (Total)		1.2	590
Trichloromonofluoromethane		0.020	30	Cyanides (Amenable)		0.86	30 ¹
2,4,5-Trichlorophenol		0.18	7.4	Fluoride		35	NA ⁴
2,4,6-Trichlorophenol		0.035	7.4	Lead		0.69	0.37 mg/l
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T		0.72	7.9	Lead		0.69	0.75 mg/l ⁴ TCLP
1,2,3-Trichloropropane		0.85	30	Mercury (Nonwastewater from Retort)		NA	0.20 mg/l · TCLP
1,1,2-Trichloro-1,2,2-trifluoroethane		0.057	30	Mercury (All others)		0.15	0.025 mg/l TCLP
Triethylamine		0.081 ¹	1.5 ¹	Nickel		3.98	5.0 mg/l TCLP
Tris-(2,3-Dibromopropyl)phosphate	0.11	0.10 ¹	Nickel		3.98	11 mg/l TCLP ⁴	
Vernolate	0.042 ¹	6.0 ¹	Selenium		0.82	0.16 mg/l TCLP	
Vinyl chloride	0.27	6.0	Selenium		0.82	5.7 mg/l TCLP ⁵	
Xylenes – mixed isomers (sum of o-, m-, and p-xylene)	←	0.32	30	Silver		0.43	0.30 mg/l TCLP
				Silver		0.43	0.14 mg/l · TCLP ⁴
				Sulfide		14	NA ²
				Thallium		1.4	0.078 mg/l TCLP ¹
				Thallium		1.4	0.20 mg/l TCLP ⁴
				Vanadium		4.3 ²	1.6 mg/l TCLP ²
				Zinc	←	2.61	4.3 mg/l TCLP ²

¹ These constituents are only applicable as underlying hazardous constituents. These constituents are not constituents that require treatment in F039 wastes.
² Not an underlying hazardous constituent requiring treatment in a D001-D043 waste.
³ These compounds are regulated by the sum of their concentration instead of as individual constituents.
⁴ These constituents are effective in authorized states or states with no LDR program on 8/24/99. These concentrations are effective in all other states upon adoption by the state.
⁵ Effective 8/24/98 in unauthorized states or states with no LDR program. Selenium at 5.7 mg/l is not an underlying hazardous constituent in D001-D043 waste. This becomes effective in authorized states upon adoption by the state.

APPENDIX B

PCB WASTE CERTIFICATES OF DISPOSAL

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CERTIFICATE OF DISPOSAL

3 miles South, Exit 49, I-80
Clive, Utah 84029
EPA ID: UTD982598898

DOE, Paducah, Paducah

This certificate acknowledges that the following manifested shipments have been disposed of as listed below:

<u>Shipment</u>	<u>Manifest</u>	<u>Disposal Date</u>	<u>Volume (Cu/Ft)</u>	<u>Process</u>	<u>Disposal Location</u>
9750-01-0006	4615	06/27/2019	348.0	Landfill	Mixed Waste

RECEIVED
 JUL 03 2019
 BY: 

The total volume above represents the cubic feet of waste disposed of at EnergySolutions' Disposal Facility Landfill. Disposal is subject to EnergySolutions' Radioactive Material License, all other applicable licenses, permits and regulations, and the Disposal Agreement.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identification section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.



Brian Beynon
Jul 2 2019 11:29 AM

cosign

Brian Beynon
Operations Manager

Date

T

CERTIFICATE OF DISPOSAL

3 miles South, Exit 49, I-80
Clive, Utah 84029
EPA ID: UTD982598898

DOE, Paducah, Paducah

This certificate acknowledges that the following manifested shipments have been disposed of as listed below:

<u>Shipment</u>	<u>Manifest</u>	<u>Disposal Date</u>	<u>Volume (Cu/Ft)</u>	<u>Process</u>	<u>Disposal Location</u>
9750-04-0003	94525	08/16/2019	7.5	Landfill	Mixed Waste



The total volume above represents the cubic feet of waste disposed of at EnergySolutions' Disposal Facility Landfill. Disposal is subject to EnergySolutions' Radioactive Material License, all other applicable licenses, permits and regulations, and the Disposal Agreement.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identification section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Brian Beynon
Aug 22 2019 4:11 PM

Brian Beynon
Operations Manager

Date cosign

CERTIFICATE OF DISPOSAL

3 miles South, Exit 49, I-80
Clive, Utah 84029
EPA ID: UTD982598898

DOE, Paducah, Paducah

This certificate acknowledges that the following manifested shipments have been disposed of as listed below:

<u>Shipment</u>	<u>Manifest</u>	<u>Disposal Date</u>	<u>Volume (Cu/Ft)</u>	<u>Process</u>	<u>Disposal Location</u>
9750-05-0002	94524	06/13/2019	22.5	Landfill	Mixed Waste



The total volume above represents the cubic feet of waste disposed of at EnergySolutions' Disposal Facility Landfill. Disposal is subject to EnergySolutions' Radioactive Material License, all other applicable licenses, permits and regulations, and the Disposal Agreement.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identification section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.

Brian Beynon
Jun 14 2019 12:47 PM

cosign

Brian Beynon
Operations Manager

Date


CERTIFICATE OF DISPOSAL

3 miles South, Exit 49, I-80
Clive, Utah 84029
EPA ID: UTD982598898

DOE, Paducah, Paducah

This certificate acknowledges that the following manifested shipments have been disposed of as listed below:

<u>Shipment</u>	<u>Manifest</u>	<u>Disposal Date</u>	<u>Volume (Cu/Ft)</u>	<u>Process</u>	<u>Disposal Location</u>
9750-09-0004	94554	06/27/2019	15.0	Landfill	Mixed Waste
9750-09-0005	94589	06/27/2019	67.5	Landfill	Mixed Waste

RECEIVED
 JUL 03 2019
 BY: 

The total volume above represents the cubic feet of waste disposed of at EnergySolutions' Disposal Facility Landfill. Disposal is subject to EnergySolutions' Radioactive Material License, all other applicable licenses, permits and regulations, and the Disposal Agreement.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identification section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate and complete.



Brian Beynon
Jul 2 2019 11:29 AM

Brian Beynon
Operations Manager

Date

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FEB 14 2019
BY: AA

EPA ID # TND982109142

DIVERSIFIED SCIENTIFIC SERVICES, INC.

COD Number: TSDSSI-18-104-20190209



Certificate of Disposal

Diversified Scientific Services, Inc. of Kingston, Tennessee is providing this certificate to confirm the disposal of TSCA Regulated PCB waste by Alternate Thermal Treatment (40CFR 761.60(e)).

Hereby certifies such destruction on: 2/9/2019

Attached list of containers from Shipment Number DSSI-18-104

Shipped on Hazardous Waste Manifest Number 006841953JJK

Generator Name US Dept of Energy - Four Rivers (formerly Fluor Federal Services, Inc.)

EPA ID No. KY8890008982

Address 5511 Hobbs Road

Contact Kevil, KY 42053-
LaChelle Telfair

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U. S. C. 1001 and 15 U. S. C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as a company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

By: Jon Keplinger
Title: Waste Tracking Representative

Signature: Jon Keplinger
Digitally signed by Jon Keplinger
Date: 2019.02.14 08:39:49 -05'00'

EPA ID # TND982109142

DIVERSIFIED SCIENTIFIC SERVICES, INC.



COD Number: TSDSSI-19-087-20191210

Certificate of Disposal

Diversified Scientific Services, Inc. of Kingston, Tennessee is providing this certificate to confirm the disposal of TSCA Regulated PCB waste by Alternate Thermal Treatment (40CFR 761.60(e)).

Hereby certifies such destruction on: 12/10/2019

Attached list of containers from Shipment Number DSSI-19-087

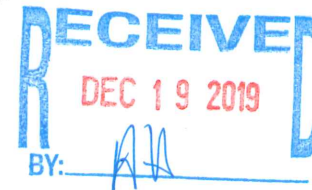
Shipped on Hazardous Waste Manifest Number 019694647JJK

Generator Name US Dept of Energy - Four Rivers (formerly Fluor Federal Services, Inc.)

EPA ID No. KY8890008982

Address 5511 Hobbs Road

Contact Kevil, KY 42053-
Regina Pea



Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U. S. C. 1001 and 15 U. S. C. 2615). I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as a company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

By: Ralph Sheffield

Title: Waste Tracking Representative

Signature:

A handwritten signature in blue ink, appearing to read 'Ralph Sheffield', written over a horizontal line.

Digitally signed by Ralph Sheffield
Date: 2019.12.12 08:27:35 -05'00'

Certificate of Disposal
TSDSSI-19-087-20191210

Shipment Number	Haz Manifest Number	WPS Number	Package Number	Item Number	Burn Campaign Number	Date Processed	Generator Code	Waste Code	Date Received
DSSI-19-087	019694647JJK	19-08-045	79796	121618-01	19-016	12/10/2019	KYFLU01	Bulk Solids - PCBs	8/22/2019
DSSI-19-087	019694647JJK	19-08-045	79797	121618-02	19-016	12/10/2019	KYFLU01	Bulk Solids - PCBs	8/22/2019

Certificate of Disposal
TSDSSI-18-104-20190209

Shipment Number	Haz Manifest Number	WPS Number	Package Number	Item Number	Date Processed	Generator Code	Waste Code	Date Received
DSSI-18-104	006841953JJK	18-08-028	77796	125150-01	2/9/2019	KYFLU01	Bulk Liquid - PCBs	8/24/2018
DSSI-18-104	006841953JJK	18-08-028	77797	125150-02	2/9/2019	KYFLU01	Bulk Liquid - PCBs	8/24/2018

CERTIFICATE OF DISPOSAL

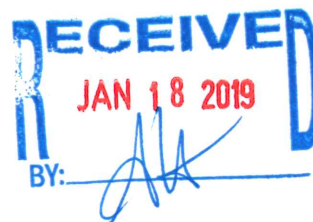
for
USDOE BJC Paducah

Materials and Energy Corporation
2010 Hwy 58 Suite 1020
Oak Ridge, TN 37830

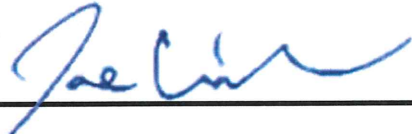
EPA ID: TNR000005397

This certificate acknowledges that the following manifested shipments have been disposed of as detailed below.

Item Number	Package Number	Incoming Shipment	Shipment ETTP-17-103	Process	Manifest 006841893 JJK	Date Processed	Discussion
120624-01	110877	ETTP-17-103		No TSCA regulated treatment performed		9/7/2017	The Entire Volume of Waste Was Consumed During Sampling.



Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.



Joseph Crider

1/17/2019

Date

EPA ID No. : FLD 980 711 071
Florida Part B Permit No. : 17680-011-HO

Certificate No. 20190507-001



Certificate of Management

Perma-Fix of Florida, Inc. has

managed wastes received from: U.S. DOE c/o Fluor Federal Services, Inc. (FPDP)

EPA ID Number: KY8890008982

Manifest Number: 0006841816JJK

4/29/2019

as identified in waste

**and hereby certifies such management as of
in accordance with applicable Federal and
State Regulations.**

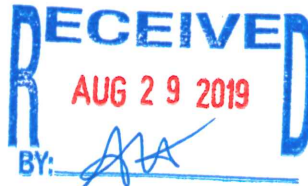
(Refer to the attached table for container specific information)

Shipment ID Number: NUC-265-O

Date Received: 8/22/2016

Generator: U.S. DOE c/o Fluor Federal Services, Inc. (FPDP)

Address: 5511 Hobbs Road
Kevil, KY 42053



By: Randy Self
Title: Site Nuclear Manager

Signature: _____

A handwritten signature in blue ink, appearing to read "Randy Self", written over a horizontal line.



**Certificate
of
Management**

Perma-Fix ID No.	Generator ID No.	Profile No.	Final Package ID No.	Disposal Manifest No.	Date Shipped	Receiving Facility
NUC-265-01	120702-01	RS-11631	M-10978	009947786JJK	4/29/2019	DSSI
NUC-265-02	120703-01	RS-11630	M-10978	009947786JJK	4/29/2019	DSSI
NUC-265-03	119807-01	60845	16293	013853680JJK	10/31/2016	Geocycle

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AUG 29 2019
BY: 

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APPENDIX C

PCB WASTE STORAGE AREA INSPECTION RECORDS

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PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
C-331					
	G-331-PCB-01	1/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	G-331-PCB-01	1/31/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	G-331-PCB-01	2/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	G-331-PCB-01	3/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	G-331-PCB-01	4/24/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	G-331-PCB-01	5/22/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Closed 6/19/2019
C-335					
	G-335-04	1/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-3

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-335-04		1/31/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-335-04		2/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-335-04		3/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-335-04		4/24/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-335-04		5/22/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Closed 6/19/2019
C-337					
G-337-02		1/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		1/31/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-4

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-337-02		2/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		3/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		4/24/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		5/22/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		6/19/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		7/17/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		8/14/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		9/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

G-5

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-337-02		10/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		11/7/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-02		12/5/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		1/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		1/31/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		2/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		3/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		4/24/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-6

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-337-03		5/22/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		6/19/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		7/17/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		8/14/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		9/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		10/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		11/7/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-03		12/5/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-7

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-337-05		1/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		1/31/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		2/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		3/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		4/24/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		5/22/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		6/19/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		7/17/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-8

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-337-05		8/14/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		9/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-05		10/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Closed 10/16/2019
G-337-PCB-02		1/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		1/31/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		2/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		3/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		4/24/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

G-9

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-337-PCB-02		5/22/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		6/19/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		7/17/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		8/14/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		9/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		10/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		11/7/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-337-PCB-02		12/5/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-10

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
S-337-05		8/14/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Open 7/30/2019
S-337-05		9/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S-337-05		10/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
S-337-05		11/7/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Closed 10/16/2019
C-733					
C-733		1/2/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		1/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		1/29/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-11

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
C-733		2/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		3/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		4/23/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		5/21/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		6/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		7/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		8/6/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		9/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-12

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
C-733		10/1/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		10/29/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		11/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-733		12/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q					
C-746-Q		1/2/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		1/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		1/29/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-13

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
C-746-Q		2/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		3/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		4/23/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		5/21/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		6/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		7/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		8/6/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		9/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-14

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
C-746-Q		10/1/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		10/29/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		11/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-746-Q		12/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A					
C-752-A		1/2/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		1/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		1/29/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-15

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
C-752-A		2/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		3/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		4/23/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		5/21/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		6/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		7/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		8/6/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		9/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-16

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
C-752-A		10/1/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		10/29/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		11/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-752-A		12/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A					
C-753-A		1/2/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		1/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		1/29/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-17

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
C-753-A		2/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		3/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		4/23/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		5/21/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		6/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		7/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		8/6/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-753-A		9/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
	C-753-A	10/1/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	C-753-A	10/29/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	C-753-A	11/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	C-753-A	12/26/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C-19	C-757				
	G-757-03	1/3/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	G-757-03	1/31/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	G-757-03	2/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-757-03		3/27/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-757-03		4/24/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-757-03		5/22/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-757-03		6/19/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-757-03		7/17/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-757-03		8/14/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-757-03		9/11/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-757-03		10/9/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C-20

PCB Waste Inspection Summary Report

Building	Area	Date Inspected	Leaks Yes	Leaks No	Comments
G-757-03		11/7/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
G-757-03		12/5/2019	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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APPENDIX D
PCB WASTE INVENTORY TABLES

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TABLES

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Table D.1. Corrections and Adjustments to the December 31, 2018, Inventory

Adj	RFD	Waste ID	PCB Item	Description	PCB Date	Physical	Adjustment to Gross Wt (kg)	Source	Waste Cat	Comments
0	121255	121255-02	PCB Container	LUBE OIL/PCB RINSEATE COLLECTED IN SIGHT GLASSES FROM TRANSFORMER DRAINING. POST-TSCA RINSE.	10/10/2017	Liquid (L)	177	C-337	TSCA MIXED (TM)	Weight changed from 39 kg to 216 kg
0	121423	121423-04	PCB Container	VENTILATION DUCT OIL AND WATER	11/1/2018	L	138	Proc Bldgs	TM	Weight changed from 92 kg to 230 kg
0	121424	121424-06	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	11/7/2018	Solid (S)	6	C-337	TM	Weight changed from 31 kg to 37 kg
0	121625	121625-01	PCB Article Container	PCB LIGHT BALLASTS/TRANSFORMERS/CAPACITORS/ETC.	8/28/2018	S	56	Various	TM	Weight changed from 78 kg to 134 kg
0	121645	121645-01	PCB Container	UNUSED LAB CHEMICALS	9/27/2018	L	-5	C-710	RCRA/TSCA Mixed (RTM)	Physical Changed from Liquid to Solid
0	121645	121645-01	PCB Container	UNUSED LAB CHEMICALS	9/27/2018	S	5	C-710	RTM	Physical Changed from Liquid to Solid

TOTAL CORRECTIONS AND ADJUSTMENTS TO THE DECEMBER 31, 2018, INVENTORY: 377

Table D.2. PCB Waste Generated in 2019

RFD	Waste ID	PCB Item	Description	PCB Date	Gross Wt (kgs)	Physical	Current Facility	Source	Waste Category
121255	121255-03 ^a	PCB Container	LUBE OIL/PCB RINSEATE COLLECTED IN SIGHT GLASSES FROM TRANSFORMER DRAINING. POST-TSCA RINSE.	4/3/2019	132	Liquid (L)	C-752-A	C-337	TSCA MIXED (TM)
121423	121423-05	PCB Container	VENTILATION DUCT OIL AND WATER	2/13/2019	211	L	C-752-A	Proc Bldgs	TM
121423	121423-06	PCB Container	VENTILATION DUCT OIL AND WATER	4/17/2019	220	L	C-752-A	Proc Bldgs	TM
121423	121423-07	PCB Container	VENTILATION DUCT OIL AND WATER	5/9/2019	225	L	C-752-A	Proc Bldgs	TM
121423	121423-08	PCB Container	VENTILATION DUCT OIL AND WATER	6/24/2019	227	L	C-752-A	Proc Bldgs	TM
121423	121423-09	PCB Container	VENTILATION DUCT OIL AND WATER	8/20/2019	223	L	C-752-A	Proc Bldgs	TM
121423	121423-10	PCB Container	VENTILATION DUCT OIL AND WATER	10/30/2019	216	L	C-752-A	C-337	TM
121423	121423-11	PCB Container	VENTILATION DUCT OIL AND WATER	12/2/2019	223	L	C-752-A	Proc Bldgs	TM
121424	121424-07	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	1/24/2019	44	Solid (S)	C-752-A	C-337	TM
121424	121424-08	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	3/6/2019	57	S	C-752-A	C-337	TM
121424	121424-09	PCB Container	SPILL CLEANUP DEBRIS/ENCAPSULATION WASTE	3/14/2019	54	S	C-752-A	C-337	TM
121424	121424-10	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	5/9/2019	53	S	C-752-A	C-337	TM
121424	121424-11	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	6/4/2019	93	S	C-752-A	C-337	TM
121424	121424-12	PCB Container	SPILL CLEANUP DEBRIS FROM VENT DUCT TROUGHS	7/24/2019	93	S	C-752-A	Proc Bldgs	TM
121424	121424-13	PCB Container	SPILL CLEANUP DEBRIS FROM VENT DUCT TROUGHS	7/25/2019	110	S	C-752-A	Proc Bldgs	TM
121424	121424-14	PCB Container	SPILL CLEANUP/ENCAPUSLATION DEBRIS	8/1/2019	136	S	C-752-A	Proc Bldgs	TM
121424	121424-15	PCB Container	SPILL CLEANUP/ENCAPUSLATION DEBRIS	9/3/2019	125	S	C-752-A	C-337	TM
121424	121424-16 ^a	PCB Container	SPILL CLEANUP/ENCAPUSLATION DEBRIS	12/2/2019	69	S	C-752-A	C-337	TM
121546	121546-04	PCB Article Container	PCB/LEAD CABLE AND POTHEAD	4/3/2019	973	S	C-752-A	C-333	RCRA/TSCA Mixed (RTM)
121734	121734-01	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	3/12/2019	193	L	C-752-A	C-533	RCRA/TSCA Non-Rad (RTN)

Table D.2. PCB Waste Generated in 2019 (Continued)

RFD	Waste ID	PCB Item	Description	PCB Date	Gross Wt (kgs)	Physical	Current Facility	Source	Waste Category
121734	121734-02	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	3/20/2019	202	L	C-752-A	C-533	RTN
121734	121734-03	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	3/28/2019	202	L	C-752-A	C-533	RTN
121734	121734-04	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	4/3/2019	198	L	C-752-A	C-533	RTN
121734	121734-05	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	4/15/2019	186	L	C-752-A	C-533	RTN
121734	121734-06	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	4/23/2019	194	L	C-752-A	C-533	RTN
121734	121734-07	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	4/23/2019	197	L	C-752-A	C-533	RTN
121734	121734-08	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	5/5/2019	195	L	C-752-A	C-533	RTN
121734	121734-09	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	5/6/2019	71	L	C-752-A	C-533	RTN
121872	121872-01	PCB Container	VACUUMS AND VACUUM DEBRIS FROM CLEANUP OF PCB GASKET SPILL 2019. (ACCOUNTABLE MATERIAL)	7/25/2019	51	S	C-752-A	C-333	RTM
121918	121918-01 ^b	PCB Article Container	PCB LIGHT BALLASTS/TRANSFORMERS/CAPACITORS	9/17/2019	46	S	C-757	Various	TM
121993	121993-01 ^b	PCB Container	CONDUIT/METAL WITH PCB CONTAMINATION	12/23/2019	60	S	C-333	C-333	TM
121950	121950-01 ^a	PCB Container	PCB CONTAINMENT DIKE	11/4/2019	458	S	C-752-A	C-337	TM

^cTOTAL PCB WASTE GENERATED IN CY 2019: 5,736

^aIndicates a collection container as of December 31, 2019.

^bIndicates a collection container still in use. Weight is estimated.

^cDue to rounding, the weight totals may vary by 1 kg.

Table D.3. Adjustments to the 2019 Inventory

Adj	RFD	Waste ID	PCB Item	Description	PCB Date	Physical	Gross Wt (kg)	Source	Waste Cat	Comments	
TOTAL ADJUSTMENTS TO CY 2019 INVENTORY:							0				

Note: No adjustments were necessary for this report year.

Table D.4. PCB Waste Shipped for Disposal in 2019

RFD	Waste ID	PCB Item	Description	PCB Date	Current Facility	Gross Wt (kgs)	Physical	Source	Waste Category	Ship Date	Ship Location	Manifest
121255	121255-02	PCB Container	LUBE OIL/PCB RINSEATE COLLECTED IN SIGHT GLASSES FROM TRANSFORMER DRAINING. POST-TSCA RINSE.	10/10/2017	C-752-A	216	Liquid (L)	C-337	TSCA MIXED (TM)	2/27/2019	DSSI, Inc., Kingston, TN	019694567JJK
121423	121423-02	PCB Container	VENTILATION DUCT OIL AND WATER	6/13/2018	C-752-A	202	L	Proc Bldgs	TM	2/27/2019	DSSI, Inc., Kingston, TN	019694567JJK
121423	121423-03	PCB Container	VENTILATION DUCT OIL AND WATER	9/25/2018	C-752-A	226	L	Proc Bldgs	TM	2/27/2019	DSSI, Inc., Kingston, TN	019694567JJK
121423	121423-04	PCB Container	VENTILATION DUCT OIL AND WATER	11/1/2018	C-752-A	230	L	Proc Bldgs	TM	2/27/2019	DSSI, Inc., Kingston, TN	019694567JJK
121423	121423-05	PCB Container	VENTILATION DUCT OIL AND WATER	2/13/2019	C-752-A	211	L	Proc Bldgs	TM	8/21/2019	DSSI, Inc., Kingston, TN	019694647JJK
121423	121423-06	PCB Container	VENTILATION DUCT OIL AND WATER	4/17/2019	C-752-A	220	L	Proc Bldgs	TM	8/21/2019	DSSI, Inc., Kingston, TN	019694647JJK
121424	121424-05	PCB Container	SPILL CLEANUP DEBRIS FROM VENT DUCT TROUGHS	9/5/2018	C-752-A	48	Solid (S)	Proc Bldgs	TM	2/25/2019	EnergySolutions, Clive, UT	019694554JJK
121424	121424-06	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	11/7/2018	C-752-A	37	S	C-337	TM	10/31/2019	EnergySolutions, Clive, UT	019694693JJK
121424	121424-07	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	1/24/2019	C-752-A	44	S	C-337	TM	10/31/2019	EnergySolutions, Clive, UT	019694693JJK
121424	121424-08	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	3/6/2019	C-752-A	57	S	C-337	TM	10/31/2019	EnergySolutions, Clive, UT	019694693JJK
121424	121424-09	PCB Container	SPILL CLEANUP DEBRIS/ENCAPSULATION WASTE	3/14/2019	C-752-A	54	S	C-337	TM	10/31/2019	EnergySolutions, Clive, UT	019694693JJK
121424	121424-10	PCB Container	RAG, PANS, PLASTIC, PADS, PPE	5/9/2019	C-752-A	53	S	C-337	TM	10/31/2019	EnergySolutions, Clive, UT	019694693JJK
121516	121516-01	PCB Article Container	PCB LIGHT BALLASTS/TRANSFORMERS/CAPACITORS	4/25/2018	C-752-A	194	S	Various	TM	2/25/2019	EnergySolutions, Clive, UT	019694554JJK
121546	121546-01	PCB Article Container	PCB/LEAD CABLE AND POTHEAD	6/27/2018	C-752-A	836	S	Various	RCRA/TSCA Mixed (RTM)	6/18/2019	EnergySolutions, Clive, UT	019694615JJK
121546	121546-02	PCB Article Container	POTHEADS	8/10/2018	C-752-A	884	S	Various	RTM	6/18/2019	EnergySolutions, Clive, UT	019694615JJK
121546	121546-03	PCB Article Container	TRANSFORMER POTHEADS	7/25/2018	C-752-A	723	S	Various	RTM	6/18/2019	EnergySolutions, Clive, UT	019694615JJK
121618	121618-01	PCB Container	OIL FILLED DOOR CLOSERS	8/22/2018	C-752-A	333	S	C-400	TM	8/21/2019	DSSI, Inc., Kingston, TN	019694647JJK
121618	121618-02	PCB Container	OIL FILLED DOOR CLOSERS	9/5/2018	C-752-A	167	S	C-400	TM	8/21/2019	DSSI, Inc., Kingston, TN	019694647JJK
121625	121625-01	PCB Article Container	PCB LIGHT BALLASTS/TRANSFORMERS/CAPACITORS	9/10/2018	C-757	134	S	Various	TM	9/10/2019	DSSI, Inc., Kingston, TN	019694669JJK
121645	121645-01	PCB Container	UNUSED LAB CHEMICALS	9/27/2018	C-733	5	S	C-710	RTM	9/25/2019	DSSI, Inc., Kingston, TN	019694703JJK
121734	121734-01	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	3/12/2019	C-752-A	193	L	C-533	RCRA/TSCA Non-Rad (RTN)	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE

Table D.4. PCB Waste Shipped for Disposal in 2019 (Continued)

RFD	Waste ID	PCB Item	Description	PCB Date	Current Facility	Gross Wt (kgs)	Physical	Source	Waste Category	Ship Date	Ship Location	Manifest
121734	121734-02	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	3/20/2019	C-752-A	202	L	C-533	RTN	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE
121734	121734-03	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	3/28/2019	C-752-A	202	L	C-533	RTN	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE
121734	121734-04	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	4/3/2019	C-752-A	198	L	C-533	RTN	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE
121734	121734-05	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	4/15/2019	C-752-A	186	L	C-533	RTN	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE
121734	121734-06	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	4/23/2019	C-752-A	194	L	C-533	RTN	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE
121734	121734-07	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	4/23/2019	C-752-A	197	L	C-533	RTN	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE
121734	121734-08	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	5/5/2019	C-752-A	195	L	C-533	RTN	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE
121734	121734-09	PCB Container	PCB CONTAMINATED TRANSFORMER OIL FROM C-533 SWITCHYARD	5/6/2019	C-752-A	71	L	C-533	RTN	5/28/2019	Clean Harbors Deer Park, LaPorte, TX	013496416FLE
121872	121872-01	PCB Container	VACUUMS AND VACUUM DEBRIS FROM MCLEANUP OF PCB GASKET SPILL 2019. (ACCOUNTABLE MATERIAL)	7/25/2019	C-752-A	51	S	C-333	RTM	12/16/2019	EnergySolutions, Clive, UT	019694743JJK
*TOTAL PCB WASTE SHIPPED FOR DISPOSAL IN CY 2019:						6,562						

*Due to rounding, the weight totals may vary by 1 kg.

Table D.5. PCB Waste Inventory as of December 31, 2019

RFD	Waste ID	Description	PCB Date	Physical	Gross Wt (kgs)	Current Facility	Source	Waste Category
106744	106744-01	DAMAGED, DISCONNECTED, DE-ENERGIZED, AND DRAINED PCB TRANSFORMER B983126. FORMERLY STAGED AT C-337 U2C3 "B" LOCATION.	11/7/2005	Solid (S)	15,649	C-337	C-337	TSCA MIXED (TM)
107839	107839-01	DAMAGED, DISCONNECTED, DE-ENERGIZED, AND DRAINED PCB TRANSFORMER RHL-0610. FORMERLY STAGED AT C-337 U2C8 "B" LOCATION.	6/27/2004	S	17,146	C-337	C-337	TM
121255	121255-03 ^a	LUBE OIL/PCB RINSEATE COLLECTED IN SIGHT GLASSES FROM TRANSFORMER DRAINING. POST-TSCA RINSE.	4/3/2019	Liquid (L)	132	C-752-A	C-337	TM
121423	121423-07	VENTILATION DUCT OIL AND WATER	5/9/2019	L	225	C-752-A	Proc Bldgs	TM
121423	121423-08	VENTILATION DUCT OIL AND WATER	6/24/2019	L	227	C-752-A	Proc Bldgs	TM
121423	121423-09	VENTILATION DUCT OIL AND WATER	8/20/2019	L	223	C-752-A	Proc Bldgs	TM
121423	121423-10	VENTILATION DUCT OIL AND WATER	10/30/2019	L	216	C-752-A	C-337	TM
121918	121918-01 ^b	PCB LIGHT BALLASTS/TRANSFORMERS/CAPACITORS	9/17/2019	S	46	C-757	Various	TM
121993	121993-01 ^b	CONDUIT/METAL WITH PCB CONTAMINATION	12/23/2019	S	60	C-333	C-333	TM
121423	121423-11	VENTILATION DUCT OIL AND WATER	12/2/2019	L	223	C-752-A	Proc Bldgs	TM
121424	121424-11	RAG, PANS, PLASTIC, PADS, PPE	6/4/2019	S	93	C-752-A	C-337	TM
121424	121424-12	SPILL CLEANUP DEBRIS FROM VENT DUCT TROUGHS	7/24/2019	S	93	C-752-A	Proc Bldgs	TM
121424	121424-13	SPILL CLEANUP DEBRIS FROM VENT DUCT TROUGHS	7/25/2019	S	110	C-752-A	Proc Bldgs	TM
121424	121424-14	SPILL CLEANUP/ENCAPUSLATION DEBRIS	8/1/2019	S	136	C-752-A	Proc Bldgs	TM
121424	121424-15	SPILL CLEANUP/ENCAPUSLATION DEBRIS	9/3/2019	S	125	C-752-A	C-337	TM
121424	121424-16 ^a	SPILL CLEANUP/ENCAPUSLATION DEBRIS	12/2/2019	S	69	C-752-A	C-337	TM
121546	121546-04	PCB/LEAD CABLE AND POTHEAD	4/3/2019	S	973	C-752-A	C-333	RCRA/TSCA Mixed (RTM)
121950	121950-01 ^a	PCB CONTAINMENT DIKE	11/4/2019	S	458	C-752-A	C-337	TM
^cTOTAL PCB WASTE INVENTORY AS OF DECEMBER 31, 2019:					36,203			

^aIndicates a collection container as of December 31, 2019.

^bIndicates a collection container still in use. Weight is estimated.

^cDue to rounding, the weight totals may vary by 1 kg.

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